

The Architects' JOURNAL for March 24th, 1960

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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[Vol. 131

ARCHITECTURAL PRESS

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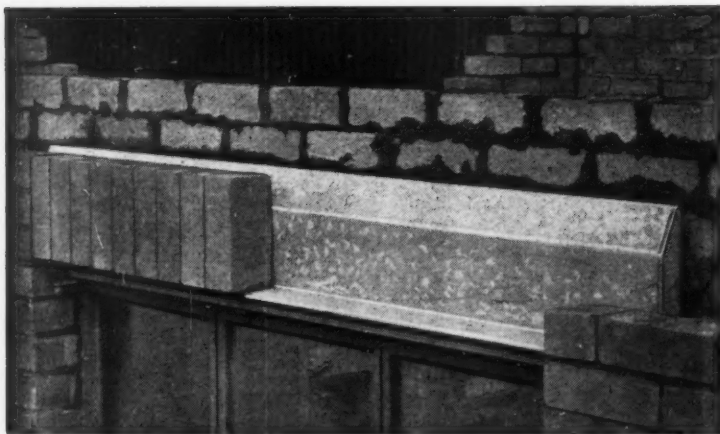
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★A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to I in one week, I to Z the next. In all cases where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

ILA	Institute of Landscape Architects. 1, Park Crescent, Portland Place, W.1. Museum 3473
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1. Museum 7197
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1. Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851
IRA	Institute of Registered Architects. 68, Gloucester Place, W.1. Welbeck 9966
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1. Sloane 7128
JFRO	Joint Fire Research Organisation (DSIR & Fire Offices' Committee). Fire Research Station, Boreham Wood, Herts. Elstree 1341/1797
LDA	Lead Development Association. 18, Adam Street, W.C.2. Whitehall 4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3891
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1. Trafalgar 7711
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1. Hyde Park 7070
MOH	Ministry of Health. 23, Savile Row, W.1. Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1. Whitehall 4300
MOLNS	Ministry of Labour and National Service, 8, St. James's Square, S.W.1. Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, W.C.2. Gerrard 6933
MOT	Ministry of Transport, Berkeley Square House, Berkeley Square, W.1. Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1. Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 14 Howick Place, Victoria Street, S.W.1. Victoria 1600 & 6477
NAS	National Association of Shopfitters. 2, Caxton St., S.W.1. Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1. Welbeck 0619
NCBMP	National Council of Building Material Producers. 10 Storey's Gate, S.W.1. Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalte Industry. 21, John Adam Street, Adelphi, W.C.2. Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4. Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1. Whitehall 1693
NHBRC	National House Builders Registration Council. 58, Portland Place, W.1. Langham 0064/5
NPL	National Physical Laboratory. Head Office, Teddington. Molesey 1380
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3. Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers, Bridge Street, S.W.1. Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1. Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1. Langham 5533
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. Whitehall 5322/9245
RFAC	Royal Fine Arts Commission. 5, Old Palace Yard, S.W.1. Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1. Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2. Trafalgar 2366
RSH	Royal Society of Health. 90, Buckingham Palace Road, S.W.1. Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19. Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1. Victoria 2186
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1. Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, E.C.3. Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, W.C.1. Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1. Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4. City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1. Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4. City 5040
WDC	War Damage Commission, 6, Carlton House Terrace, S.W.1. Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1. Grosvenor 6636



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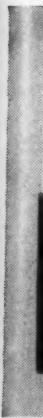
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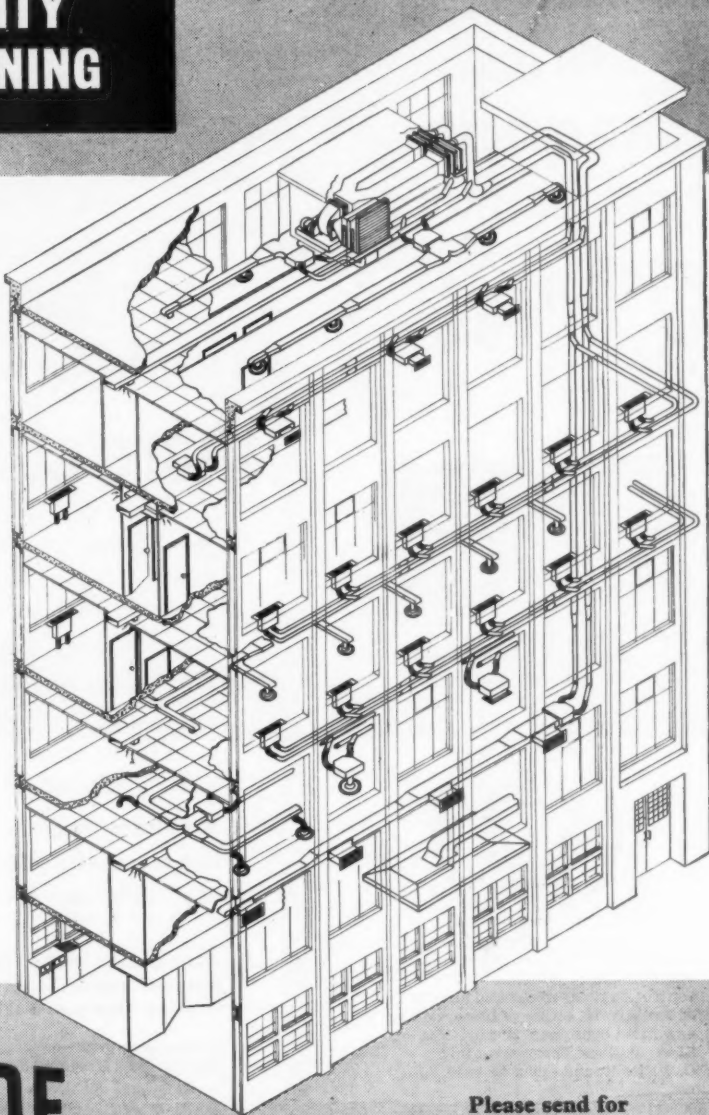
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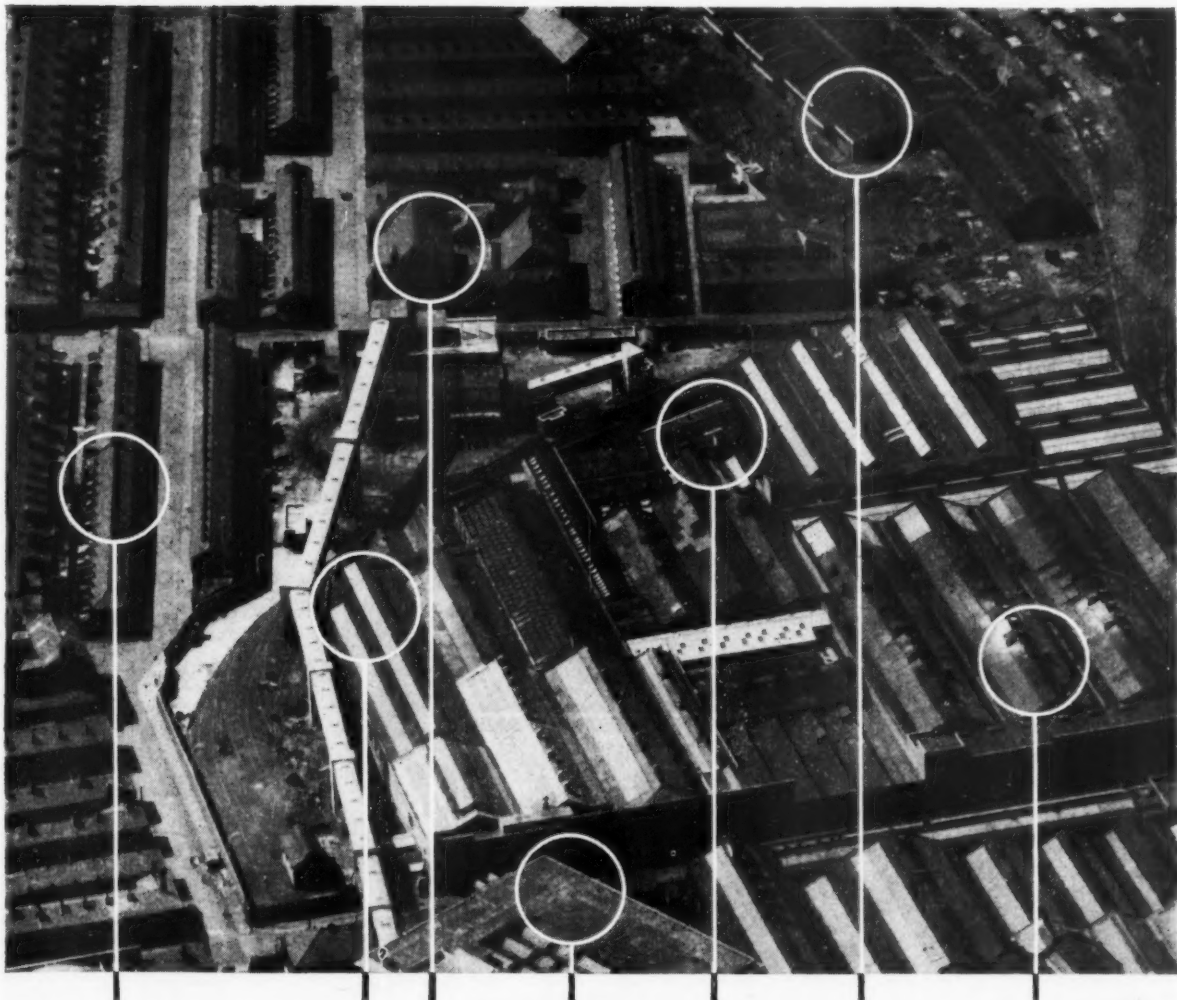
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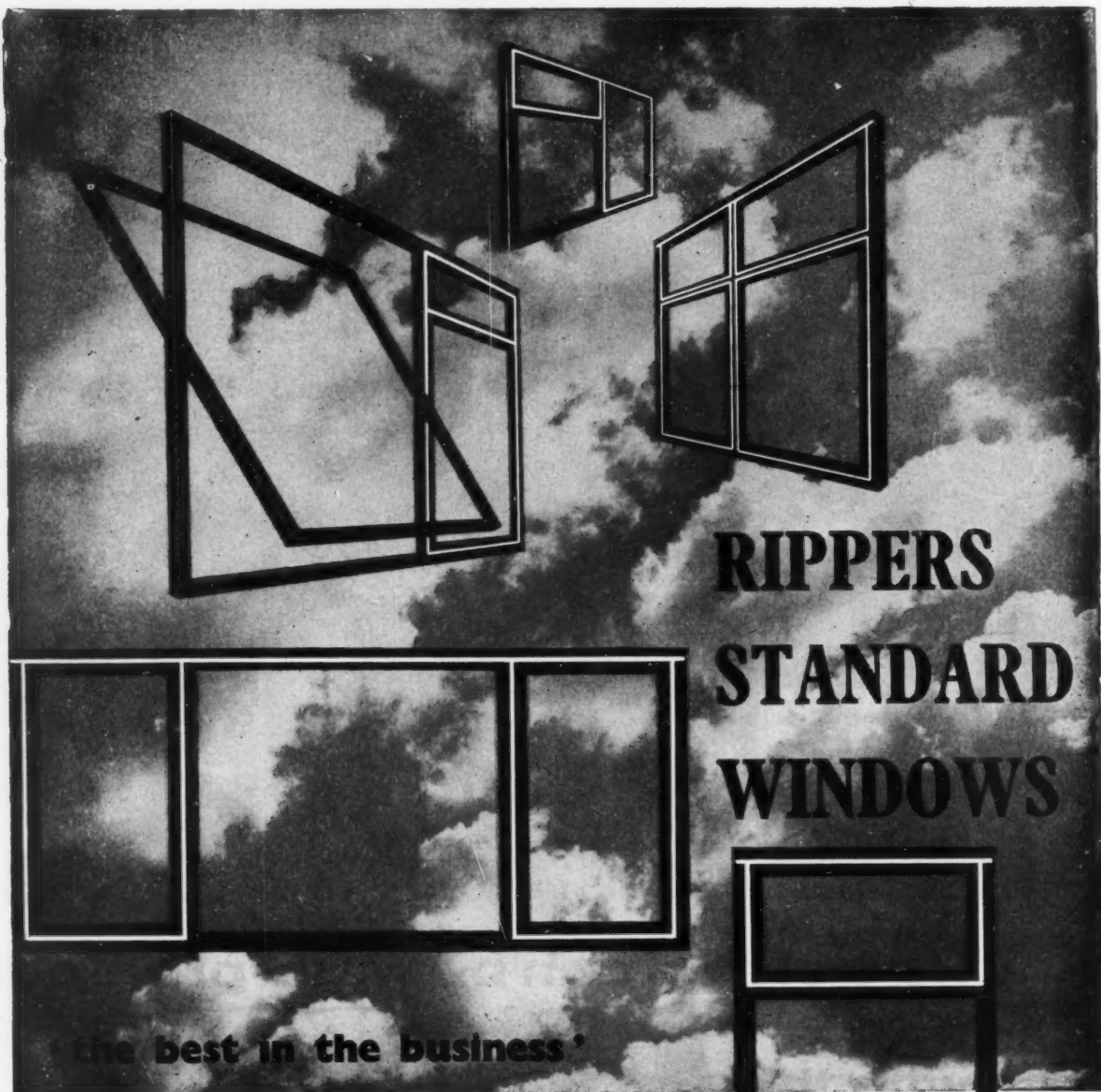
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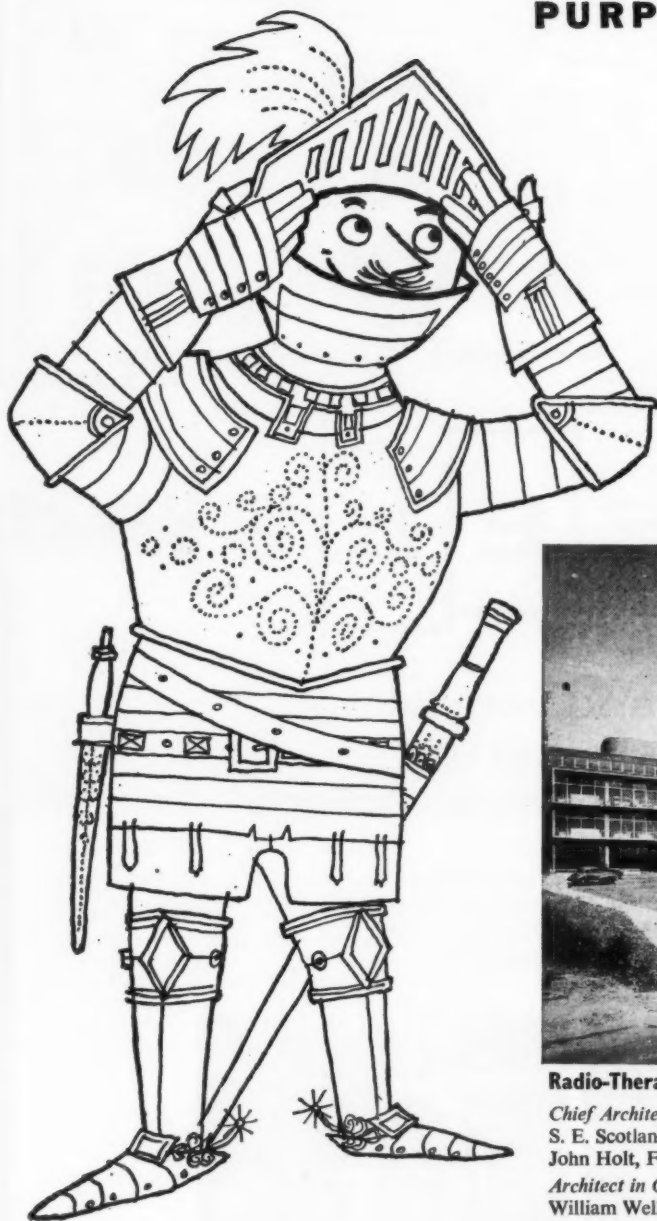
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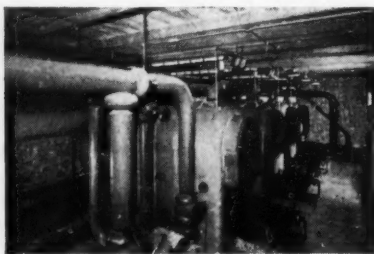
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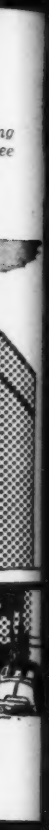
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THE TRINIDAD LAKE ASPHALT CO. (NORTH WESTERN) LTD.,

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THE WESTERN TRINIDAD LAKE ASPHALT CO. LTD.,

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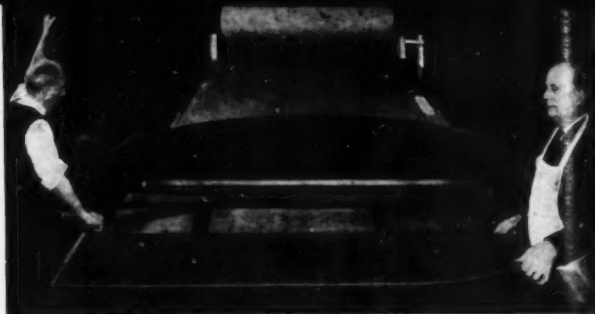
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This is the second in a series of articles designed to interest and inform architects on the techniques and scope of linoleum opportunities open to them with modern linoleum floorcoverings.

linoleum contractors' techniques

To an increasing extent in the last few years, flooring contractors have cut linoleum into tiles instead of laying it in the form of sheet; some of them say that they use tiles for 90% of their work. This article explains some of the reasons for the change and suggests ways in which the architect can turn this new flexibility to advantage.

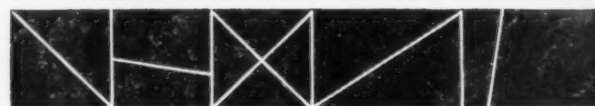
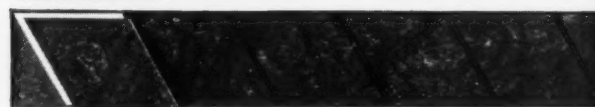
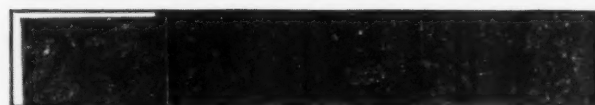
Linoleum in sheet form is still cheaper to lay when large unobstructed areas are to be covered; but when faced with complex outlines and central pillars, especially in cramped areas, flooring contractors have found that they can install tiles with very little waste of material, and at costs that are competitive with sheet linoleum. It is here that some knowledge of the contractors' techniques and working methods can help the architect to design interesting floors and still keep down costs.



Photos of guillotining and die-cutting: Courtesy E. J. Elgood Ltd.



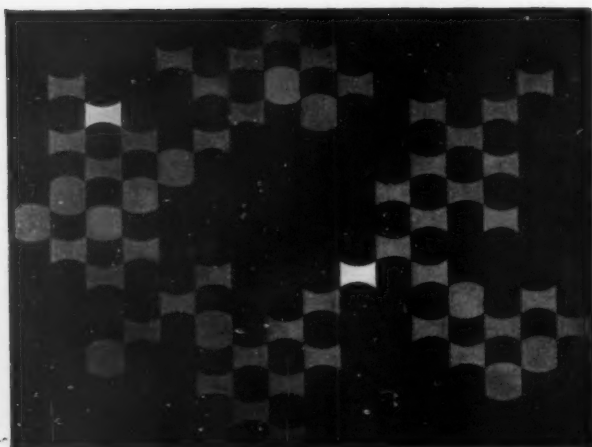
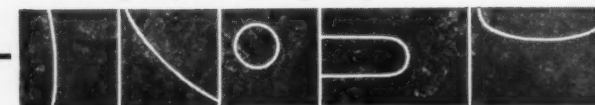
Cutting tiles The contractor uses a guillotine to cut 'slabs' of linoleum across the roll, wide enough to allow a small margin for trimming the tile later. The tiles themselves can be hand-cut by knife—a slow and expensive process—guillotined, or die-cut.



Guillotining Hand-operated or power-driven guillotines can cut squares, oblongs and triangles almost equally economically.



Die-cutting Some contractors have semi-automatic machines that cut tiles up to 18" square in one movement. These machines also accept special dies to cut other shapes—such as those below—simultaneously with the rectangular tile. (Both parts of the tile should be used in the design to minimise waste.) The design of such shapes should avoid running the shaped cutter into the corner of the tile, where it would create strong side pressures during cutting.



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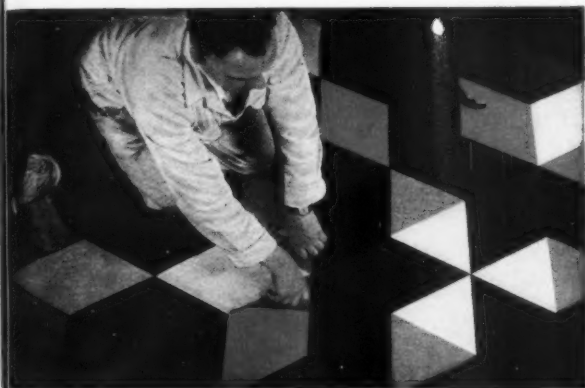


Strip cutting Lacing strips and border strips, in widths ranging from 1/2 inch to 18 inches, are used to form decorative effects or borders. (For use as borders, they are cut slightly wide to allow for fitting to irregularities of the wall line.) The cutting machine slices almost through the thickness of the linoleum to make the strips, which are then finally separated as required by the layer on site.

Economical tile sizes Since linoleum is delivered in rolls 72 inches wide, contractors find the following sizes the most economical to cut:

NOMINAL: * 9 inches, 12 inches, 18 inches, 24 inches, 36 inches.

Actual sizes are approximately 1/4-inch less than the nominal sizes of all purpose-cut tiles.



THE USES OF SHEET LINOLEUM

This article does not, of course, set out to show that tiles have entirely replaced the traditional way of laying linoleum in sheet form—even where the architect wants to introduce designs in his floor. Below are three ways of using sheet linoleum in individual situations:—

Hand-cut designs Linoleum is easier than most floor coverings to cut into individual designs, and cutting by hand offers the designer the greatest possible freedom of treatment in producing a spectacular floor like the one shown below. At such a focal point—it was, in fact, John Piper's 'Baroque Room' in *The Observer's* Film Festival—the extra cost would be amply justified.

Courtesy Design magazine



IN SYMBOL DESIGNED BY RAYMOND LOWEY
Courtesy International Harvester Company
of Great Britain Limited

Architects: *Albert W. Moore & Son*
Flooring Contractors: *The Lino-Tile Co. Ltd*

Hand-cut motifs Most contractors employ craftsmen who will enjoy reproducing in linoleum a motif like this one, laid in the entrance hall of International Harvester's offices in City Road, London.

Repeated motifs hand-cut by template For special purposes, the contractor can make a hardboard or metal template to cut out several motifs—and the corresponding spaces for them in the background.

NAIRN DESIGN BOOK

A full-colour book illustrating new directions in floor design will soon be available to all interested architects. If you would like to receive a free copy immediately upon publication, please write to: Michael Nairn & Company Limited, P.O. Box 1, Kirkcaldy, Scotland.

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The new range of colours of Nairn Melotone Linoleum, consisting of 8 muted shades with softly blended marking, is illustrated on the right-hand edge of this page, together with a selection of colours from the plain and marble ranges in 4.50 mm gauge. A large selection is also available in 6.70 mm gauge. Please write for information to one of the addresses below or consult your technical representative.

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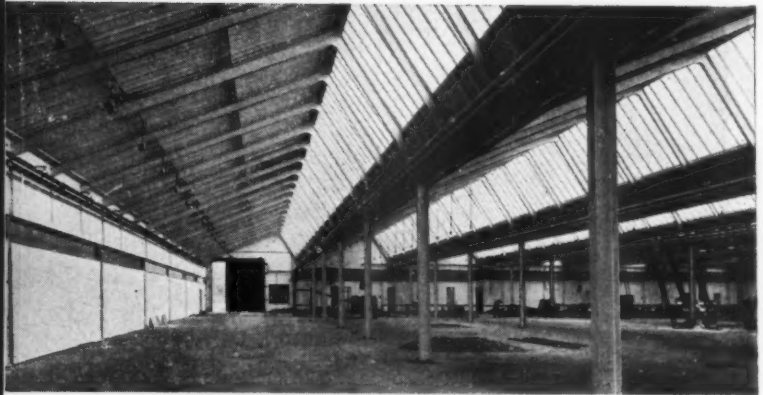
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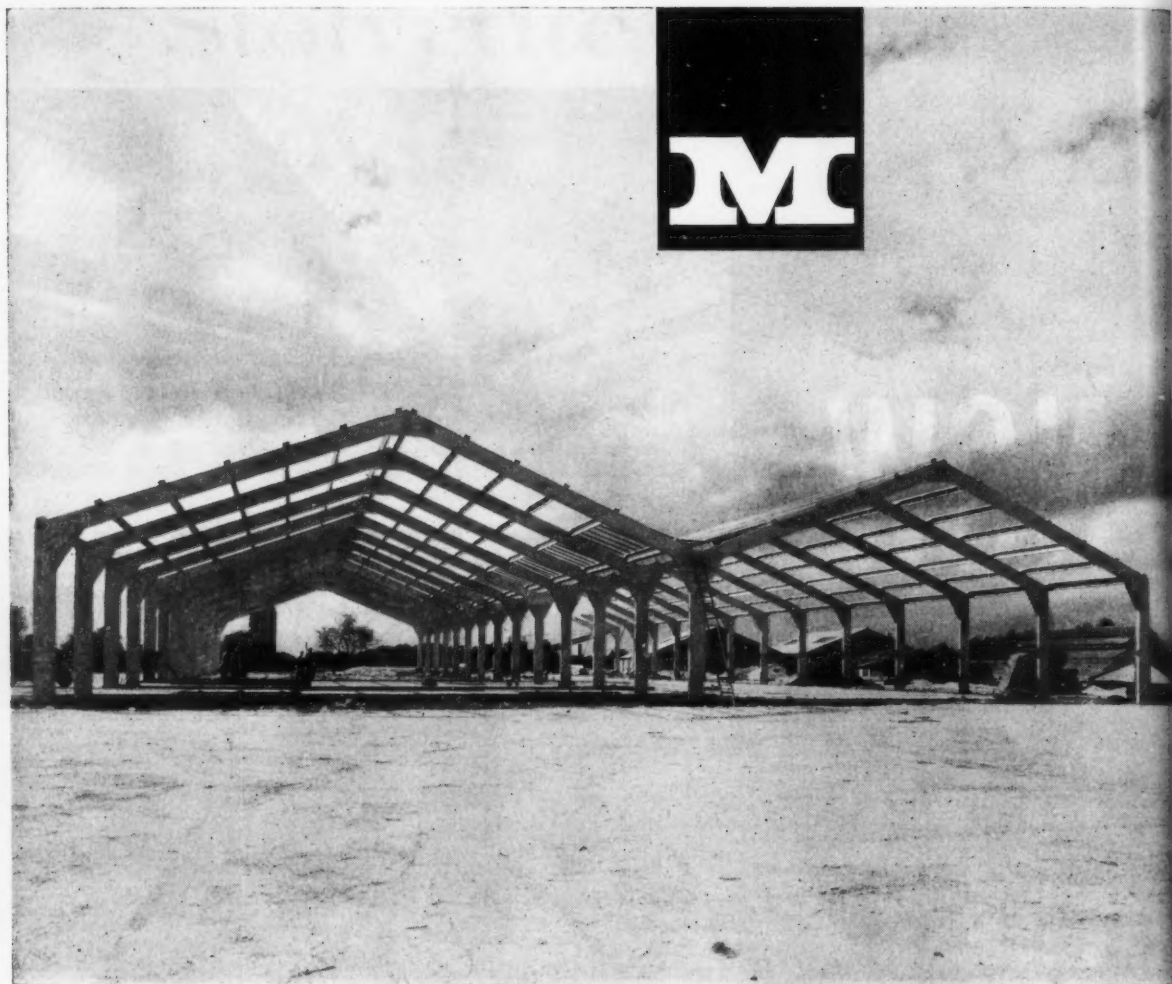
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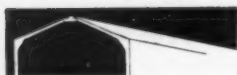


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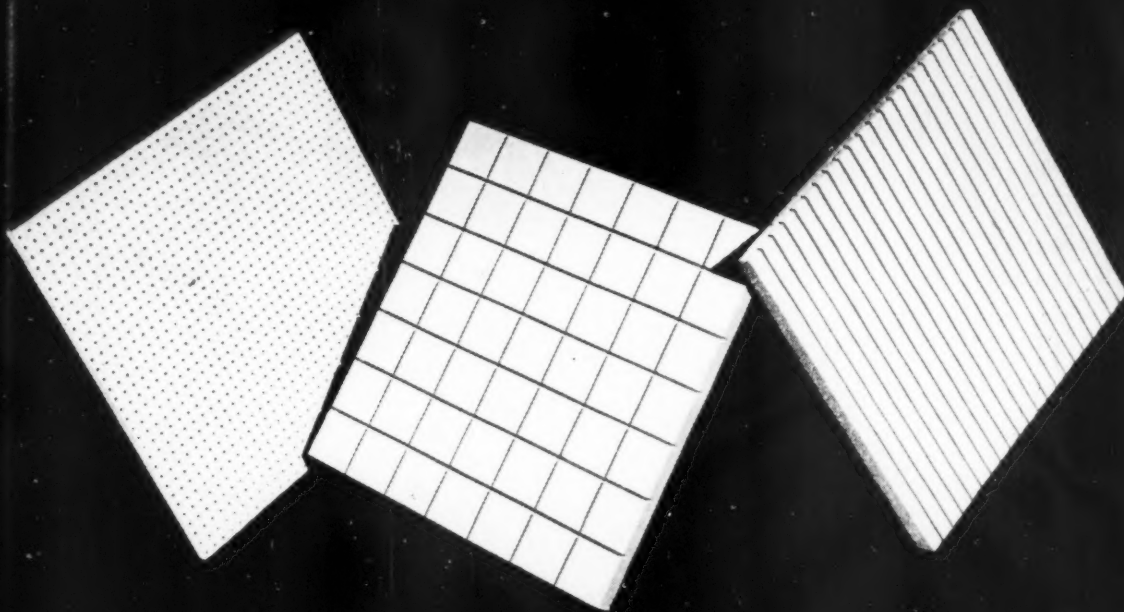
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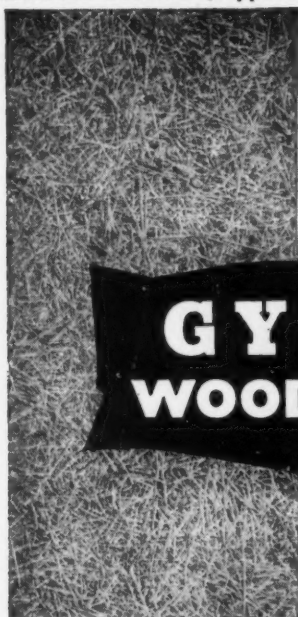
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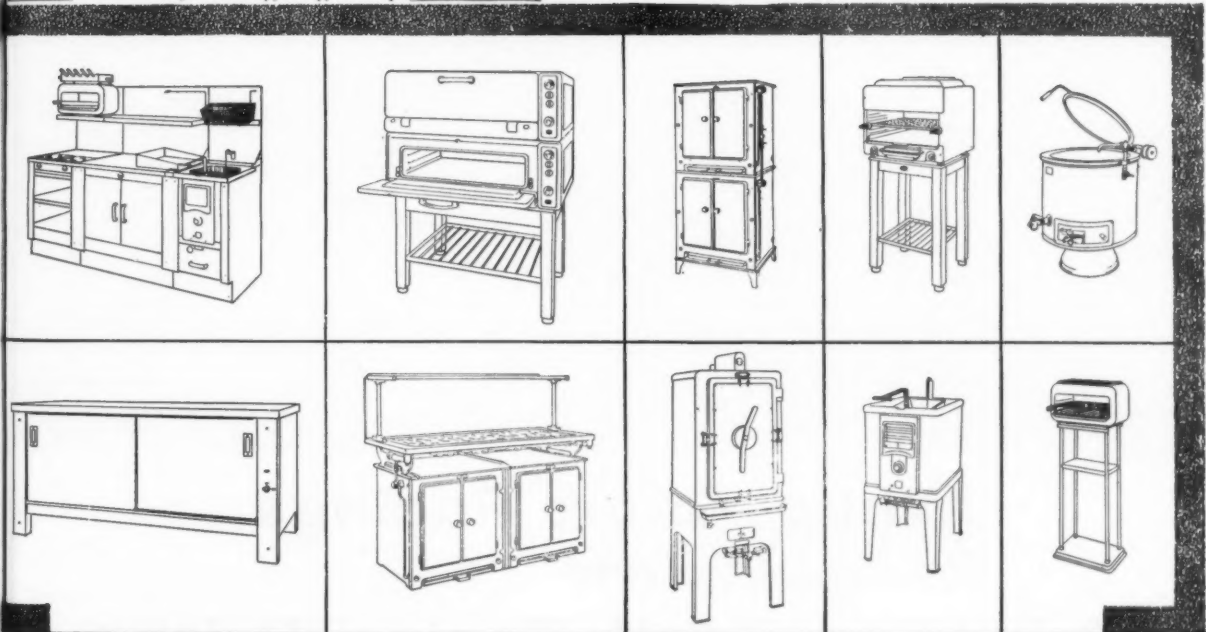
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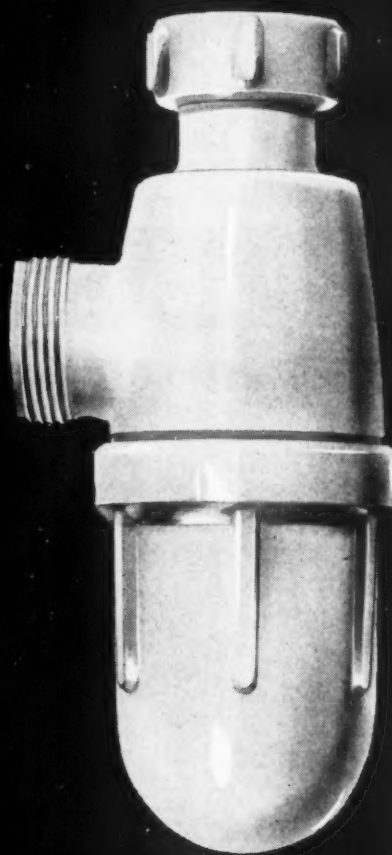
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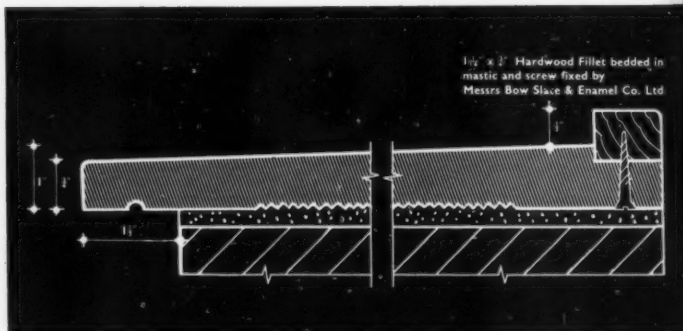
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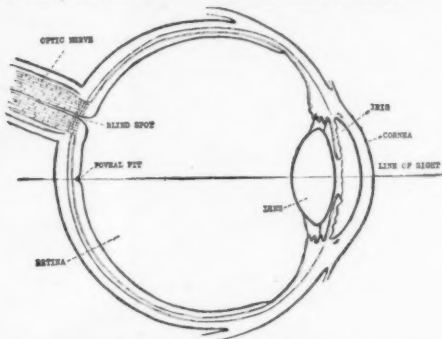


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COLOUR

the logical use of colour in building-No. 2

Upon the properties of a square millimetre of retina with its more than 50,000 cones contained within the foveal pit is built all our measurement of colour.



Sketch of a horizontal cross section of the human eye.

colour vision

The human eye is the receiver of all colour messages. Yet mystery still surrounds even the initial light reaction in the colour receptors (the so-called "cones") of the retina of the human eye, let alone the final emergence of a colour sensation in consciousness.

There are many reasons for this state of affairs. The cones in the centre of the retina, where colour vision is at its best, are very small. This area is fitted

to give us acute vision and colour vision at the same time. Upon the properties of this square millimetre of retina, with its more than 50,000 cones, is built the measurement of colour.

Colour vision is also dynamic in nature. Some people are capable of maintaining a steady fixation or stare for long periods. Such people find that quite large differences in colour rapidly disappear when viewed steadily. It has been shown that colour vision rapidly disappears when the image is fixed on the retina. For acute vision and colour vision the eye must rove over the picture and the image pass across the retina. In other words, in visual perception an essential part is played by the movement of the image across the retina.

It is extremely probable then that a single colour is not seen by the eye and that unconscious comparisons are being made all the time.

In order to use colour satisfactorily, variety and texture, to give the moving image, must always be kept in mind. In order to emphasise the colour of an object, such as a door, it should be framed, the surround being painted another colour. Abutting colours should be avoided unless similarity of appearance is desired.

The next announcement in this series will be on "The Age Effect."

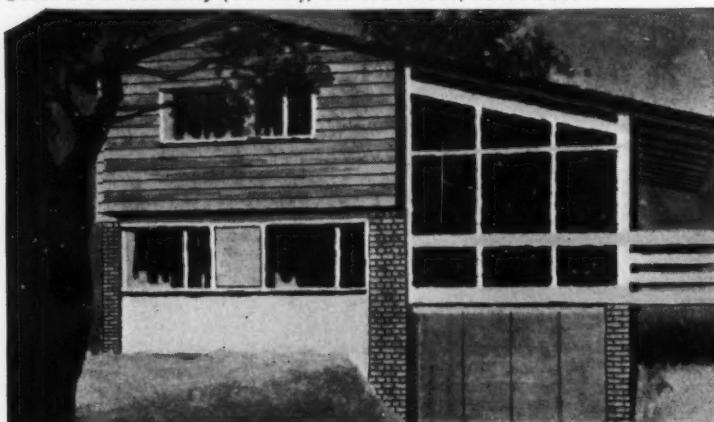
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COLOUR

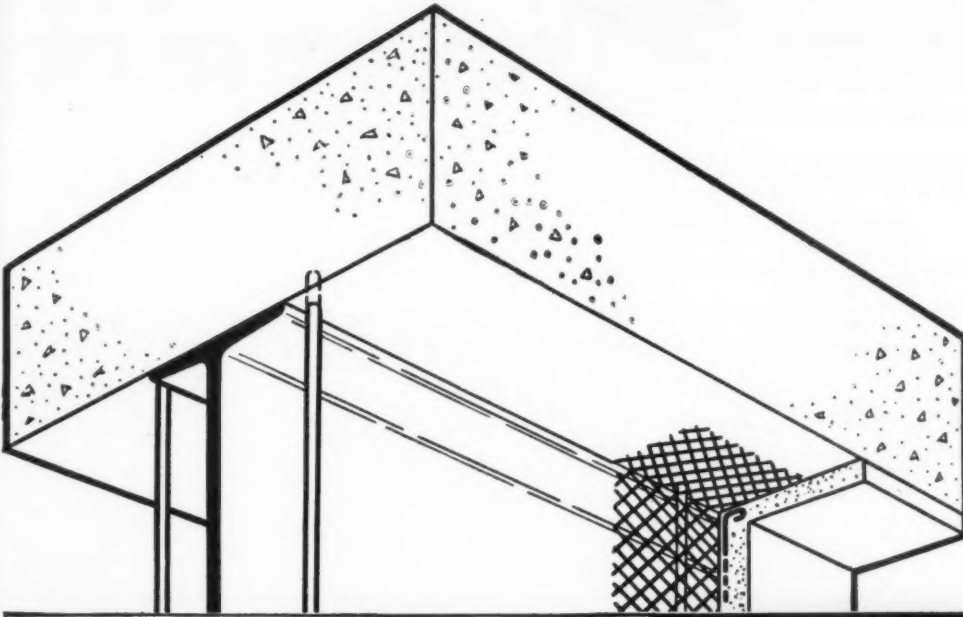


Western red cedar

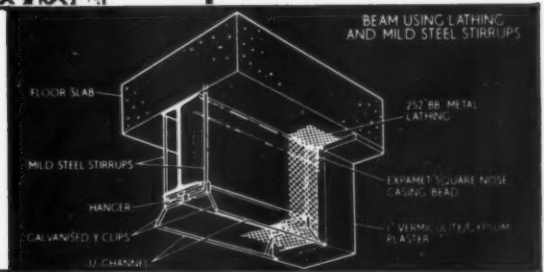
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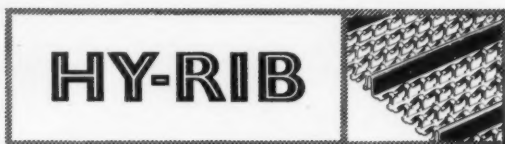
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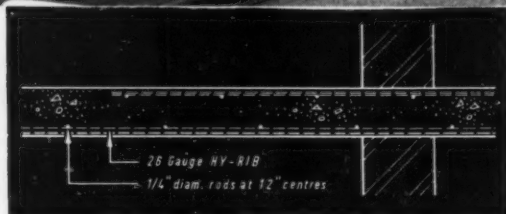


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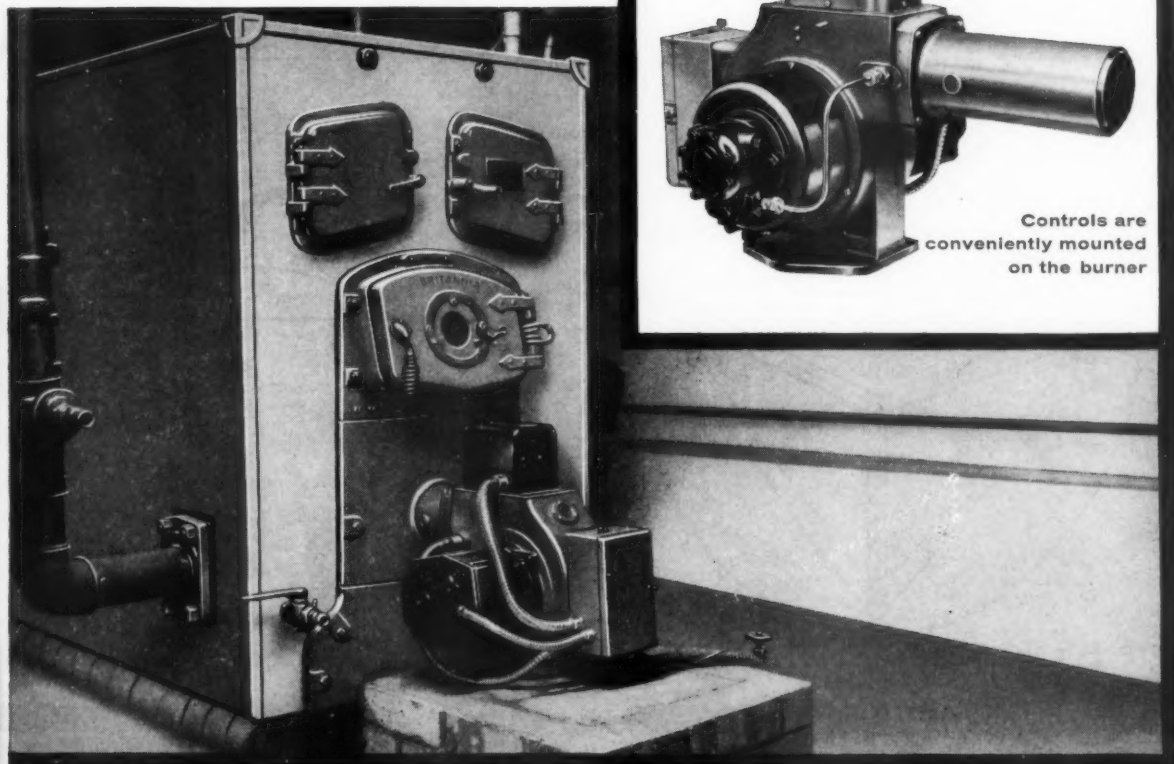


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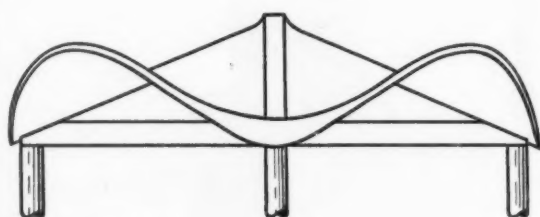
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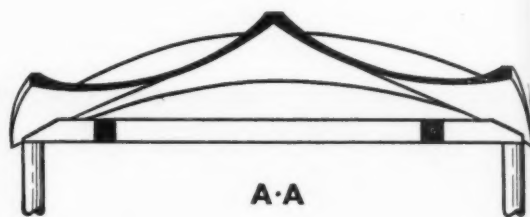
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DESIGNS IN CONCRETE

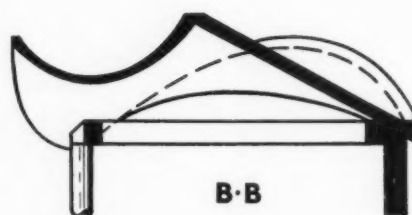
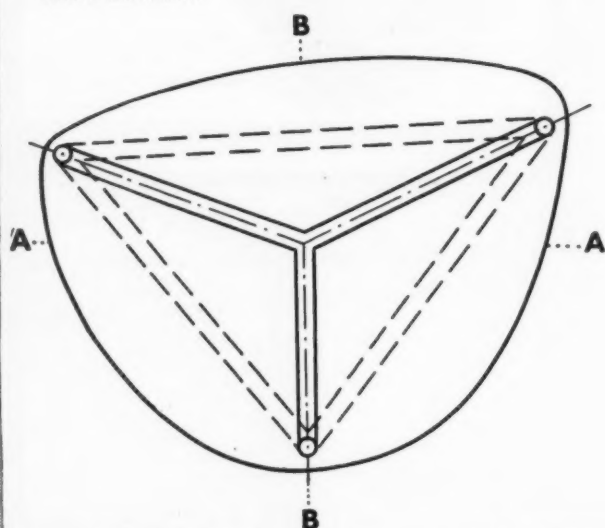
9



FRONT ELEVATION



A-A



B-B

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Reinforced Concrete Designers: G.K.N. Reinforcements Ltd.
Contractor: Joseph Moss & Son Ltd.

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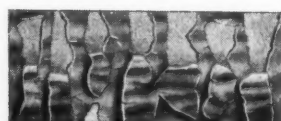
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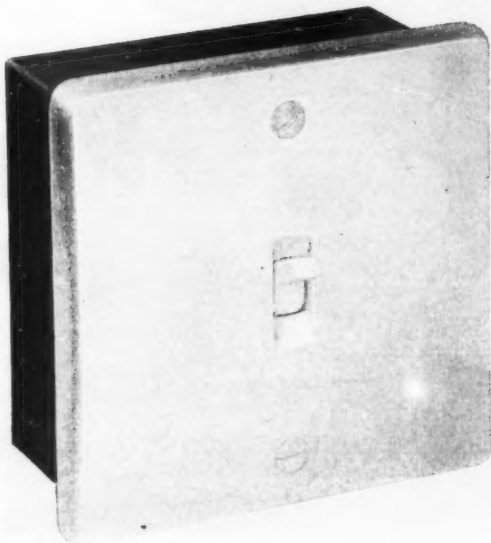
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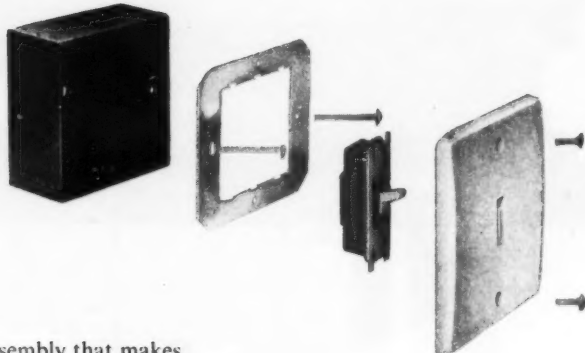
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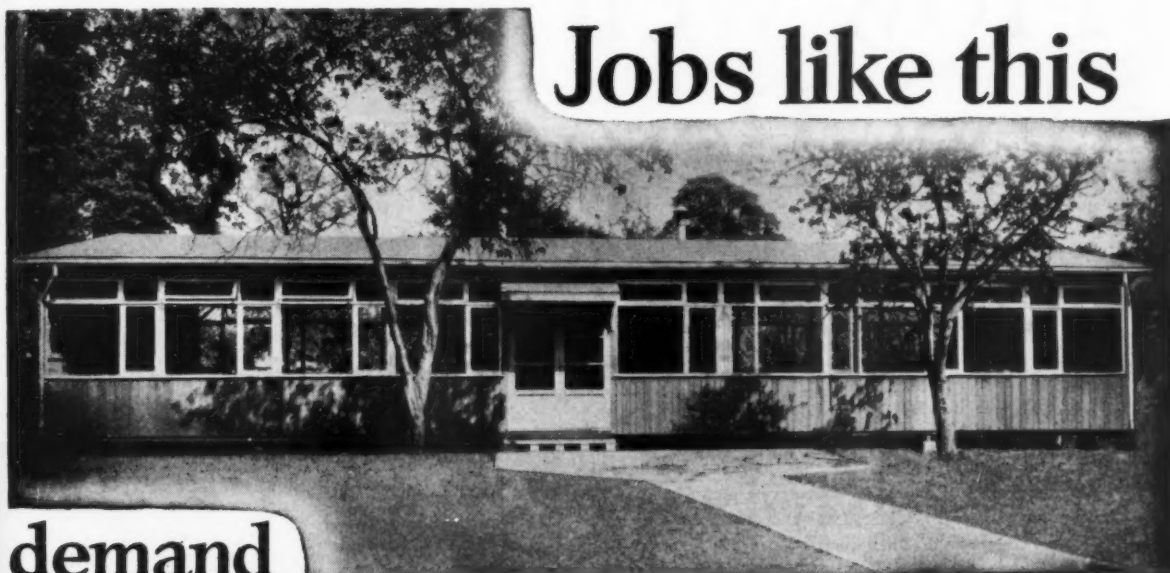
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CASE RECORDS FROM THORNS' FILES - 2

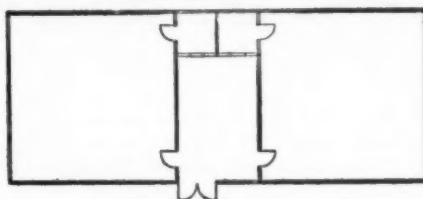
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SPECIFICATION
 A timber building to form two classrooms, each 24' x 24'. A store room for each classroom and a cloak bay to house 80 coat pegs. A timber floor and flat ceiling providing space for electric lighting. The building to be based on a panel unit, capable of being dismantled and removed to another site in approximately two years' time. Erection to be carried out by supplier on a prepared foundation.



FAIRFORD FARMOR'S SECONDARY MODERN SCHOOL near Cirencester, Glos.

Thorns' Contemporary Design, which conforms to Ministry of Education recommendations for school buildings, was eminently adaptable for this requirement. The consequent saving in time and cost was substantial. A trained THORNS' team was ready to start erection as soon as the foundations were completed.

The size agreed upon was 60ft. x 24ft. x 8ft. 6in. eaves. Walls were clad with vertical tongued and grooved boarding of Western Red Cedar with building paper behind, and lining of hardboard and insulation board.

Partitions, similarly lined, were fitted to plan. The floor was constructed of tongued and grooved boards on joists, with sleeper plates. Rain-water goods were included in the contract.

Photographs by courtesy of the County Architect, Gloucestershire County Council.



THORNS

THORNS' prefabricated sections, as used at Fairford Farmor's School, are available on a 6ft. multiple basis.

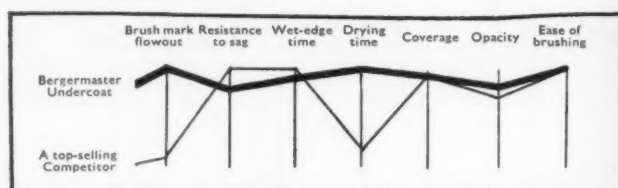
All or any part of the construction work is undertaken by THORNS, at the client's request. Catalogue of designs and prices on request. Ask THORNS to quote for your own job.

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Our tests show, briefly, that Bergermaster has balanced seven conflicting but desirable paint characteristics. And that no one else has managed to do so to the same degree. The result is a tractable undercoat/gloss combination which produces an immaculate and durable finish. All other paints in the Bergermaster systems are of an equivalent standard, and the systems provide a finish for virtually every purpose.

Does it offer a better colour choice?

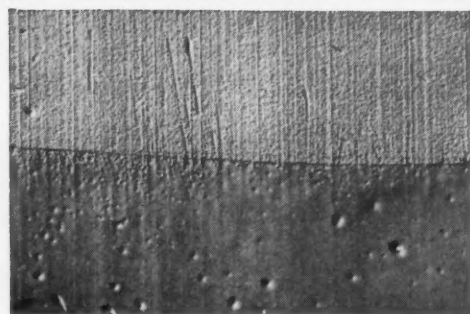
Yes. Bergermaster have the BS2660 101 range ready in stock of course, and a number of exclusive additional colours for 1960. For these, Bergermaster consulted a specialist who wasn't fresh out of art school with a thing about the Fauvists, and tempered his advice with their own research findings. We think the new colours are vital, subtle, *sympatico*, bold and right. Some of them have names of the Atoll Sunrise school, but this is a trivial irritation and their quality and function is unimpaired.

What sort of service do you get?

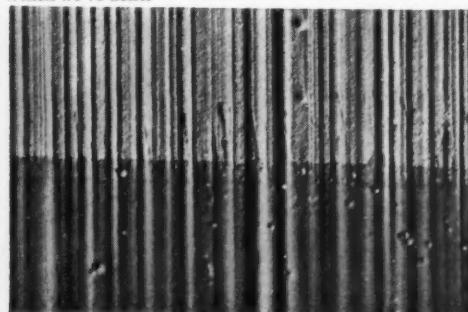
A good one, free consultation and assistance with specification to site. Architects who aim to mix white from two spare Bergermaster blacks can call the Architectural Service Department for a snap judgement on their prospects. Books of divisible colour specimens, specifications and the like are readily available; if you subscribe to the Barbour Index, you'll find the material there. Supply is now fast and dependable.



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complete paint systems for architects



PROOF BY PHOTOGRAPHY—these shots, highly magnified, are absolutely unretouched or rigged in any way. Random samples were painted onto identical test surfaces (vertical) with identical brushes under identical conditions. See how (above) Berger Undercoat goes on smoothly so that its top coat inherits no brushmarks, and neither coat suffers sagging. You get a first class finish, in contrast with, for example, that shown in the lower photo; a top-selling brand. Both show dust marks, inevitable when you magnify *without* retouching. Which we've done.



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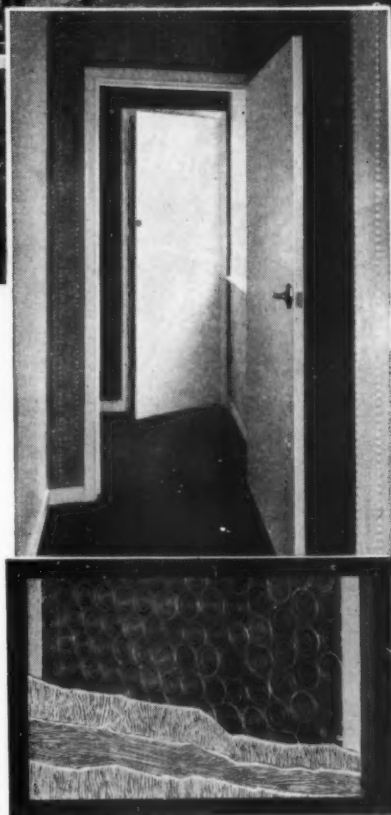


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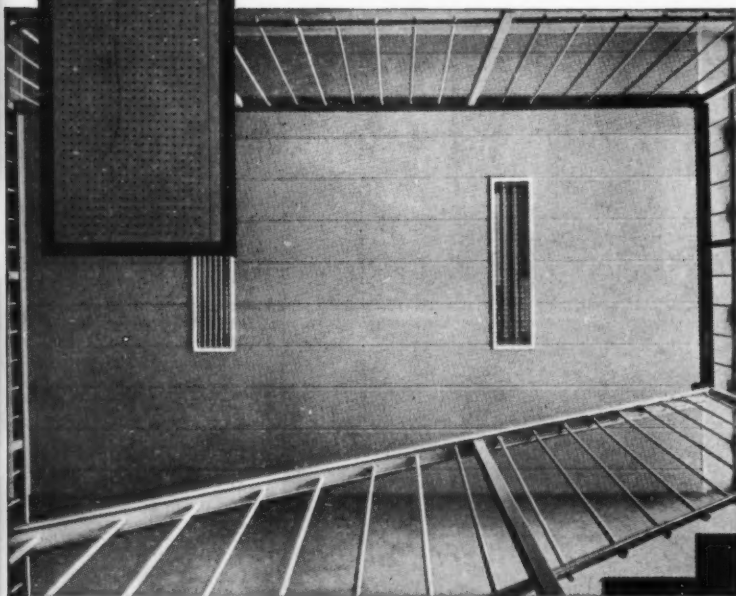
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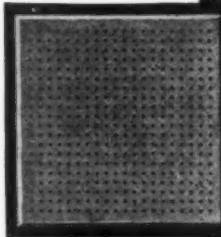
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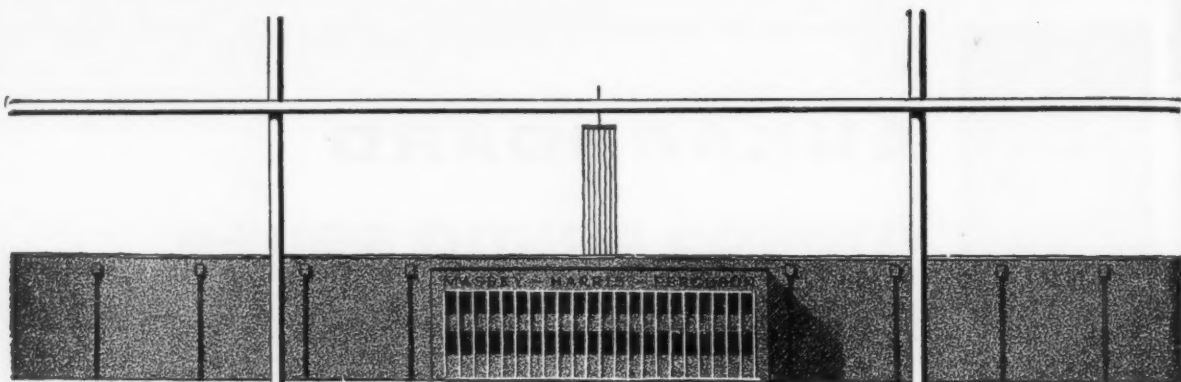
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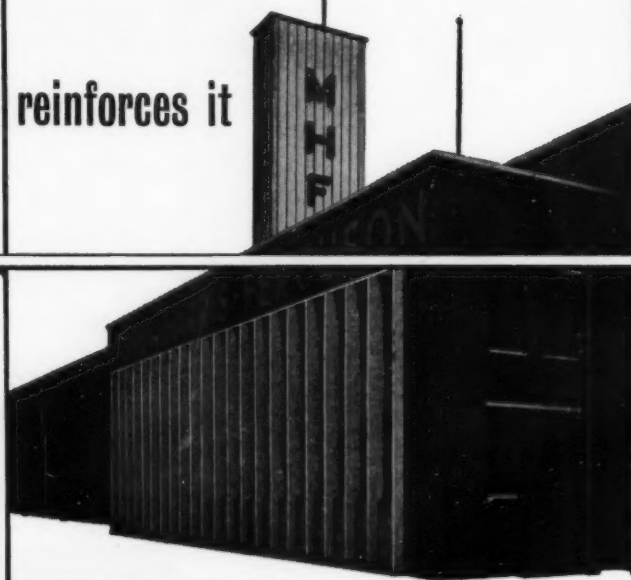
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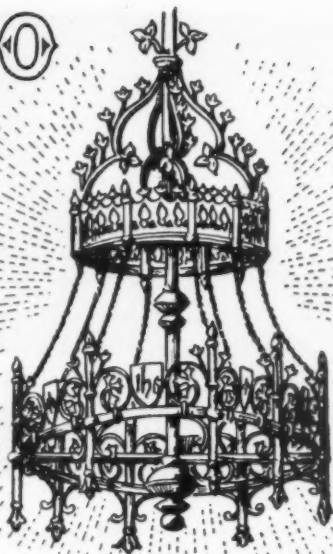
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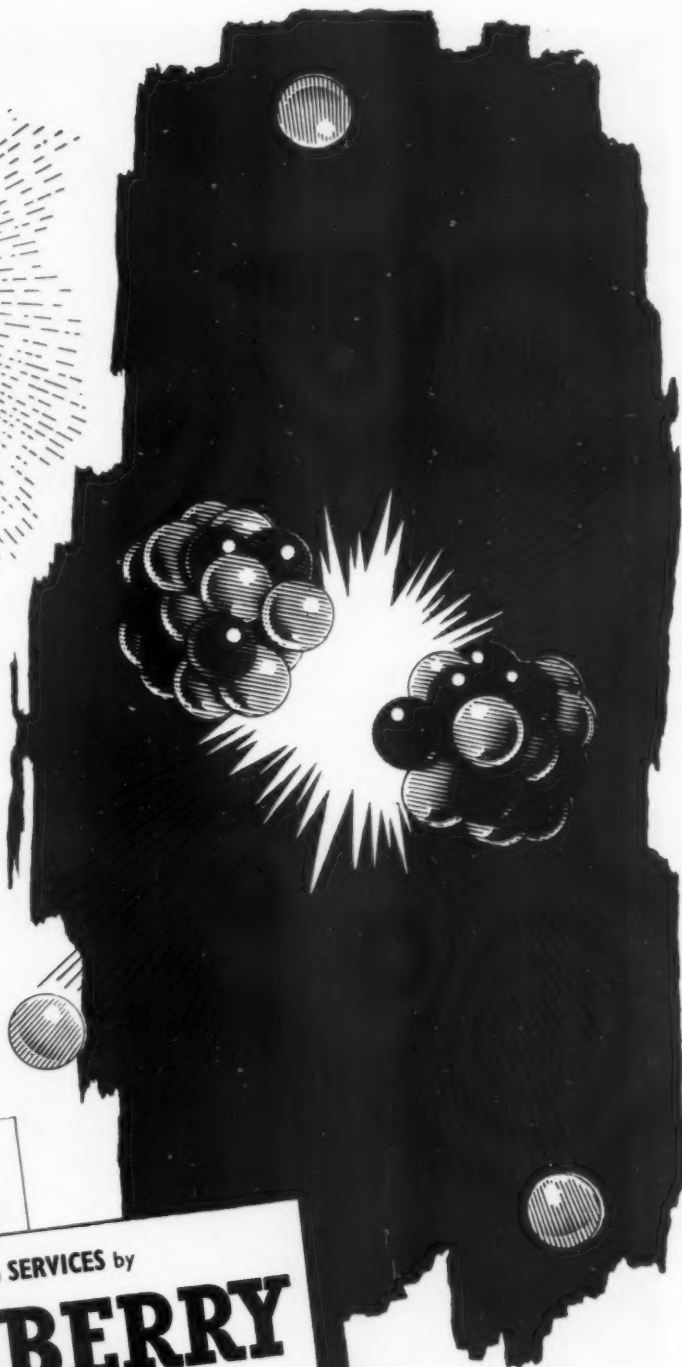
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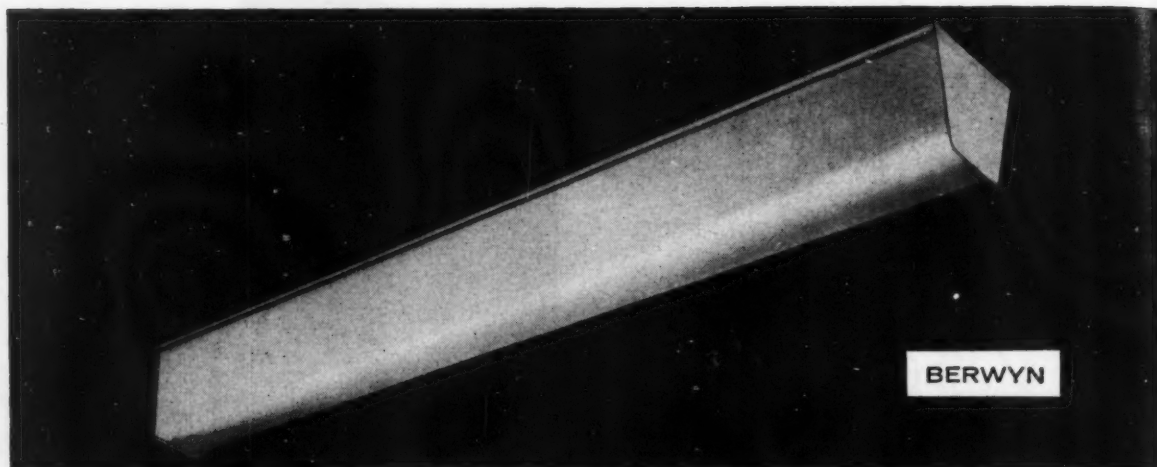


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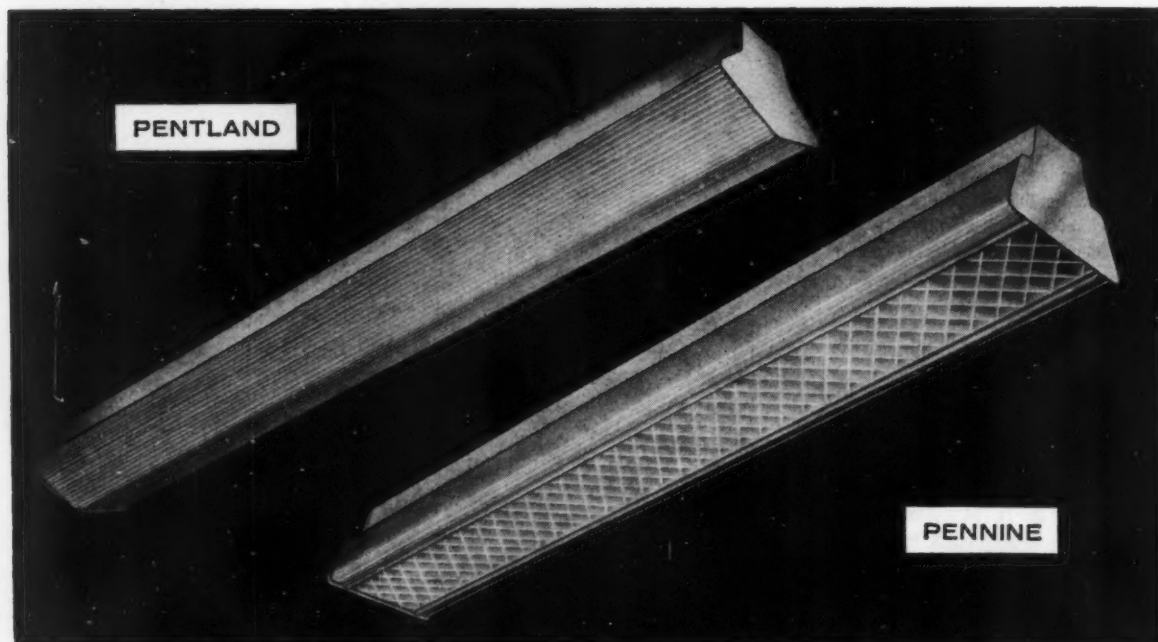
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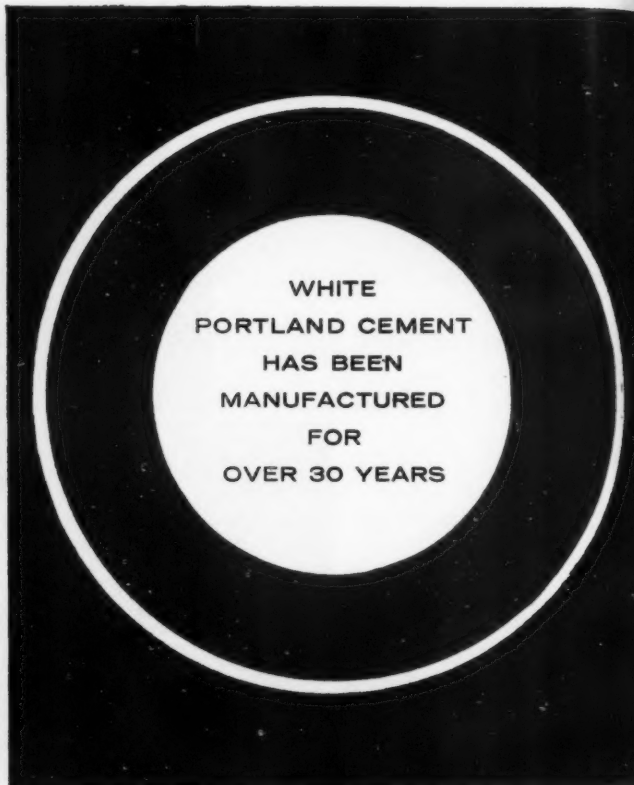
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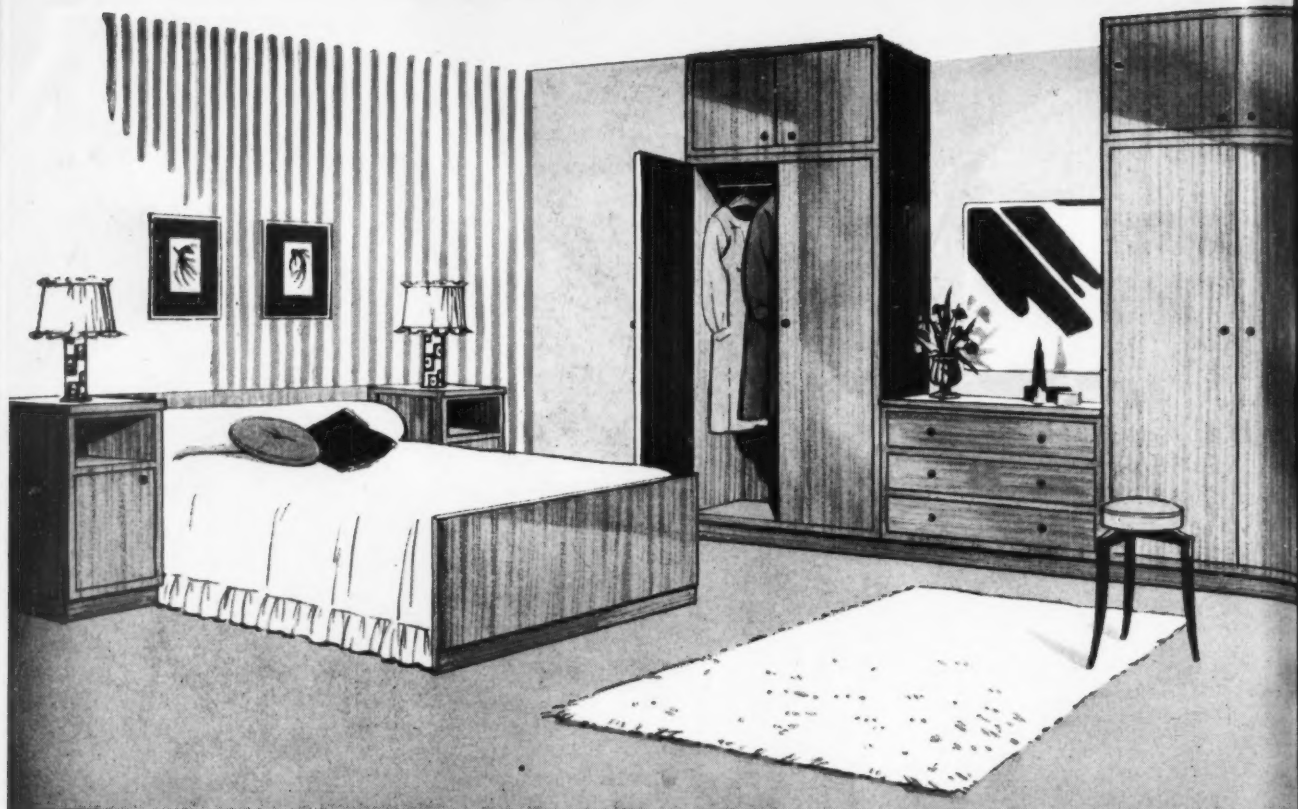


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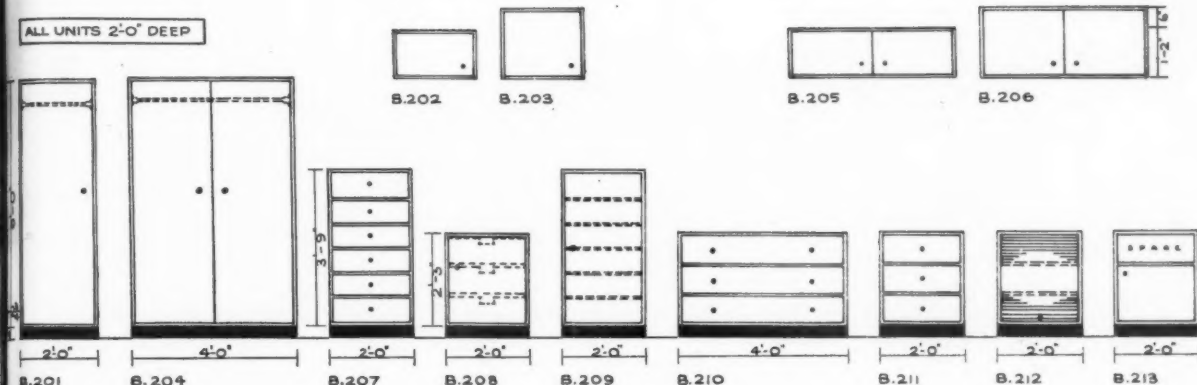
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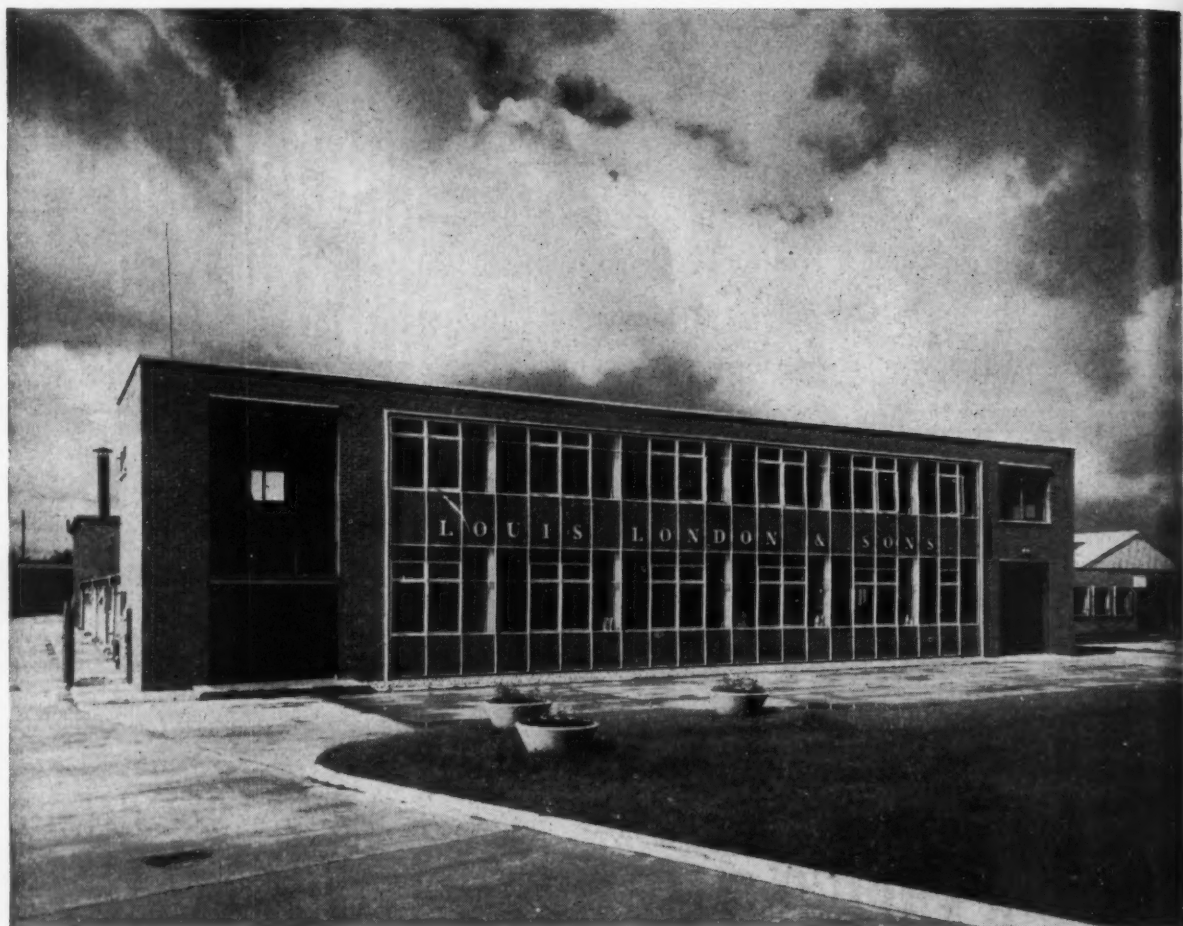
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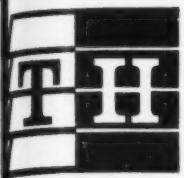
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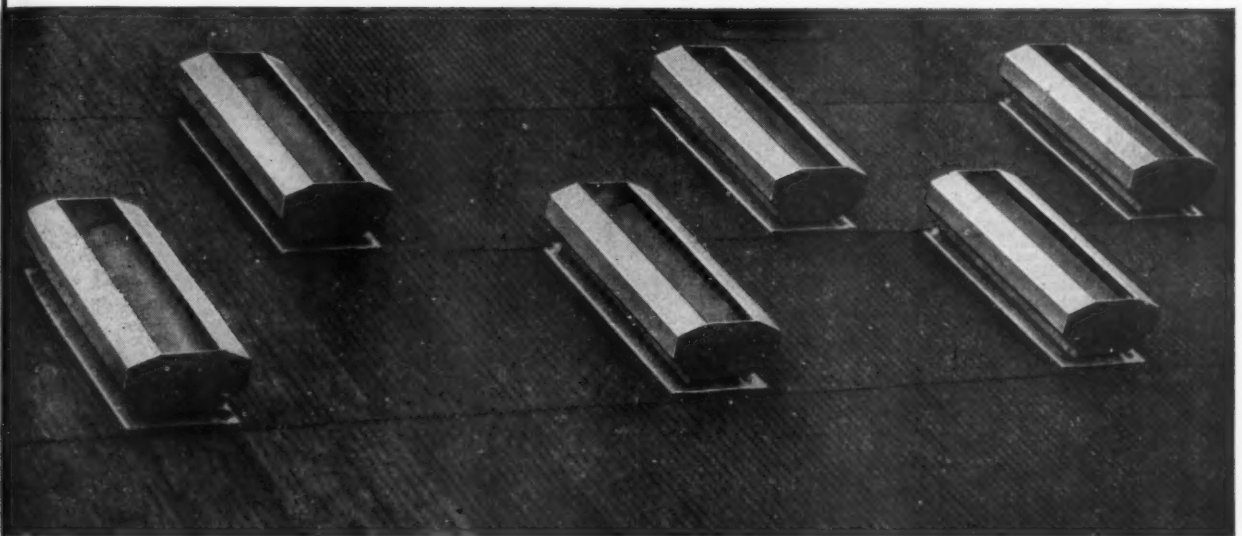
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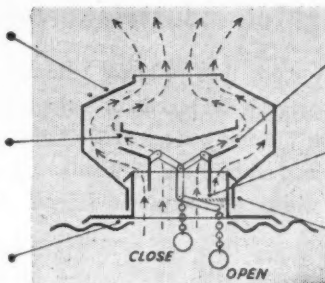
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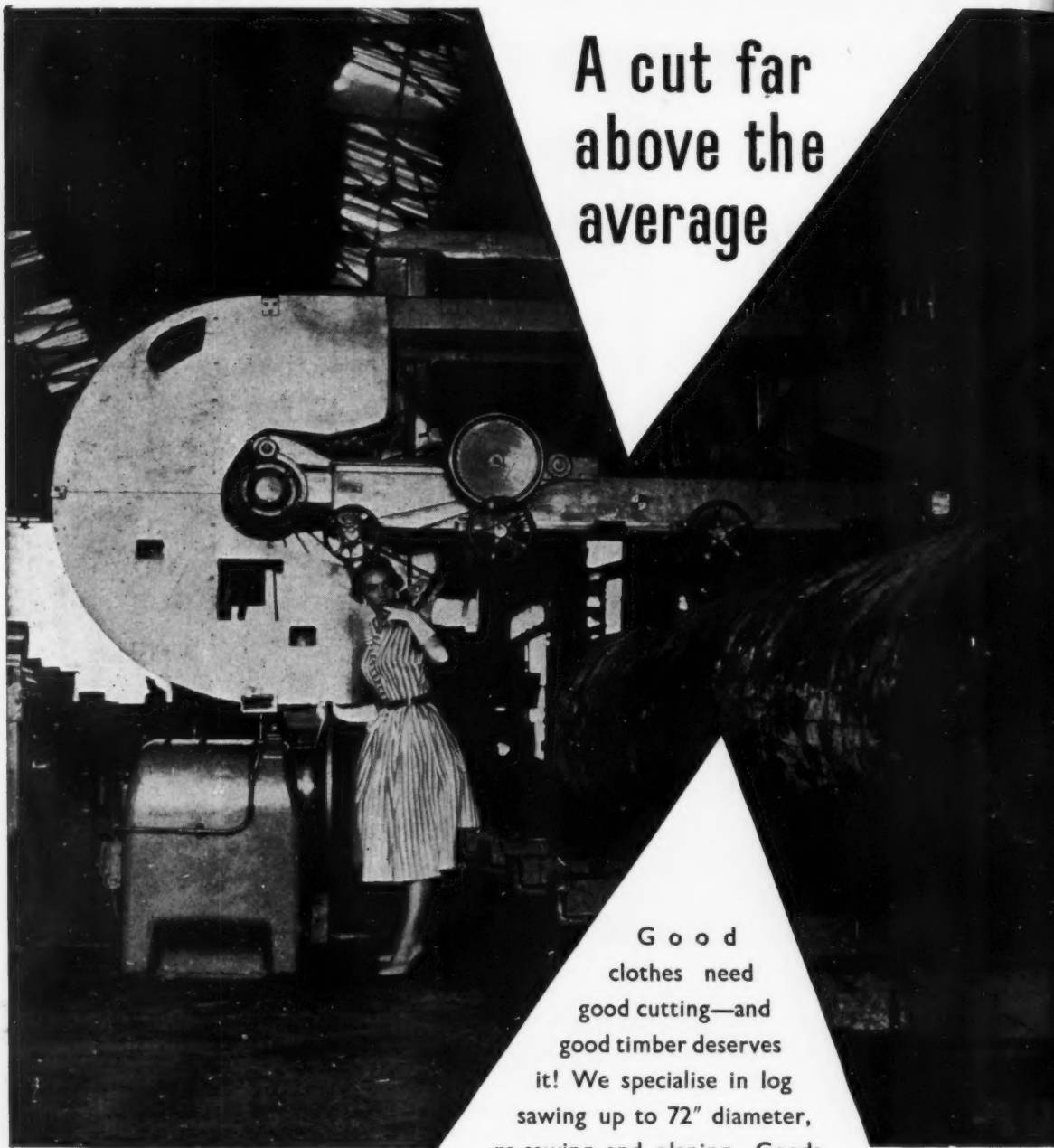
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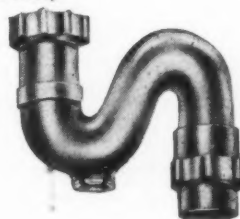
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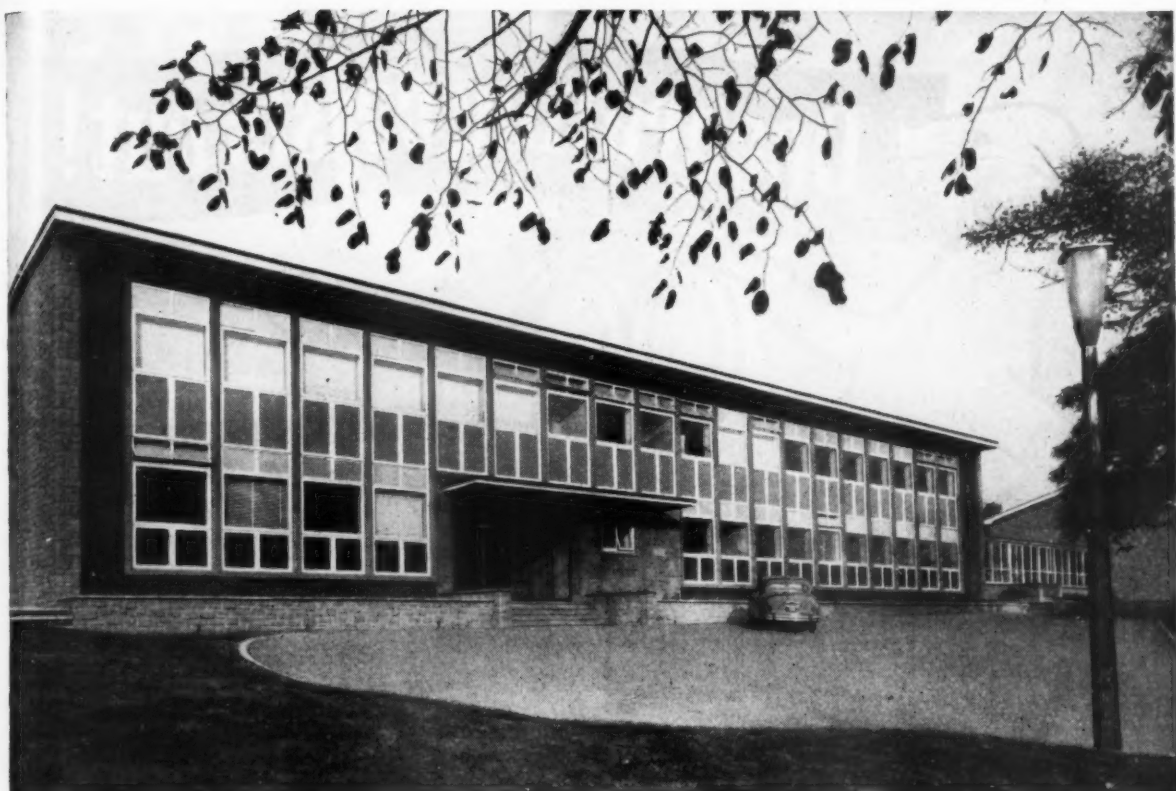
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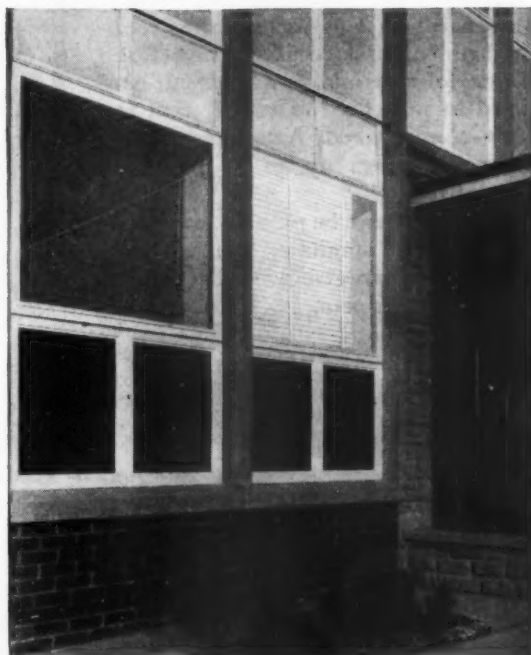
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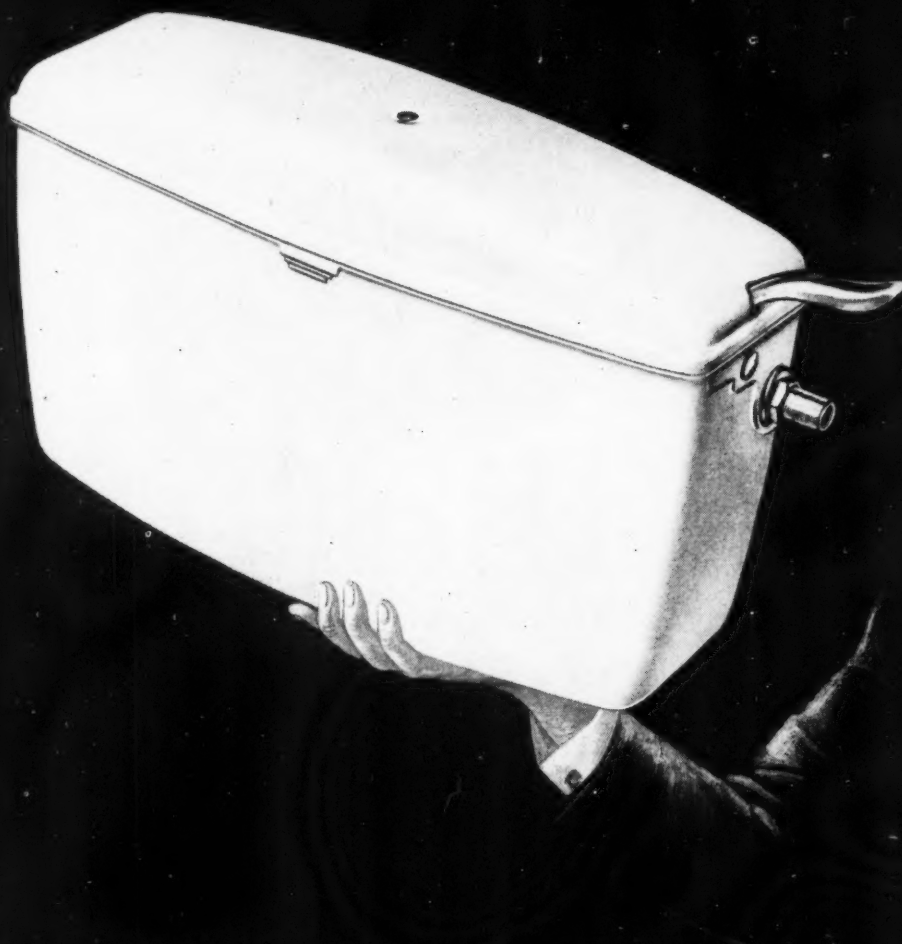
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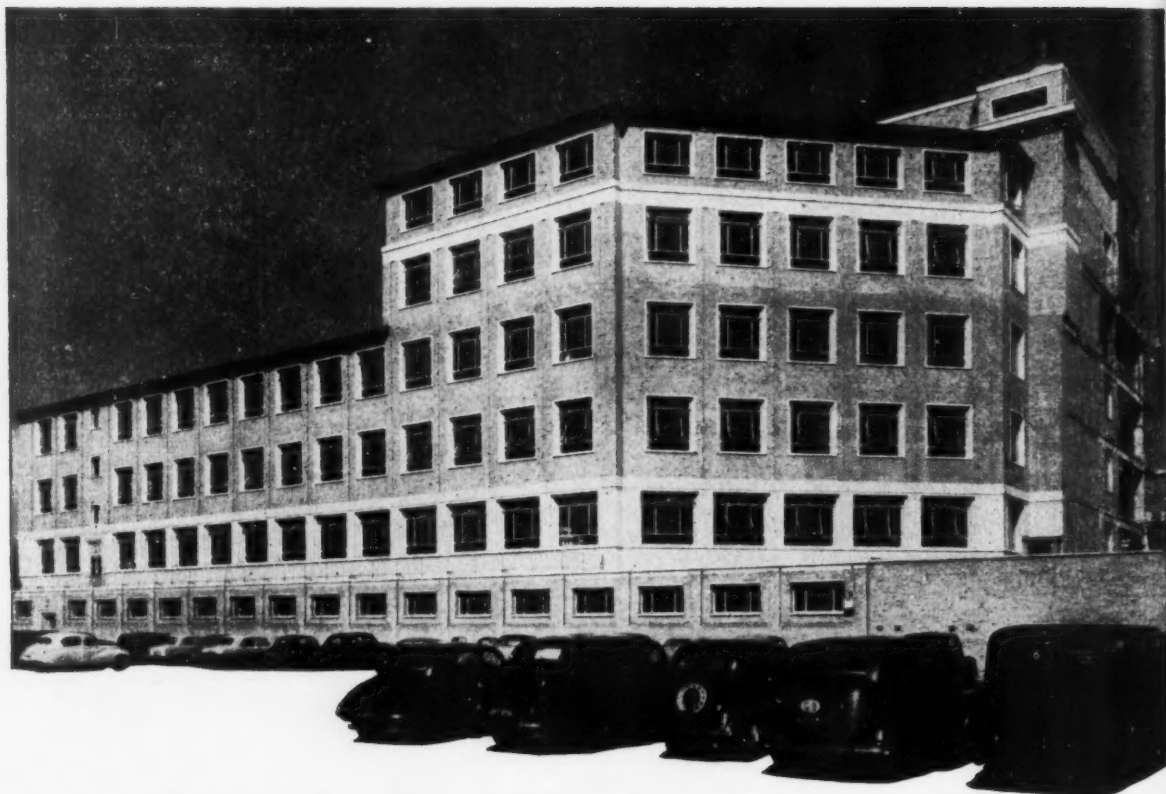


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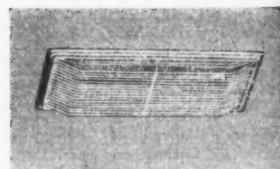
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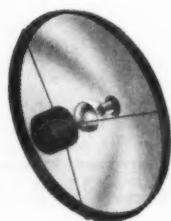
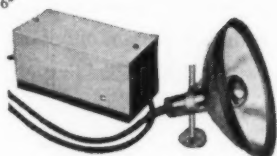
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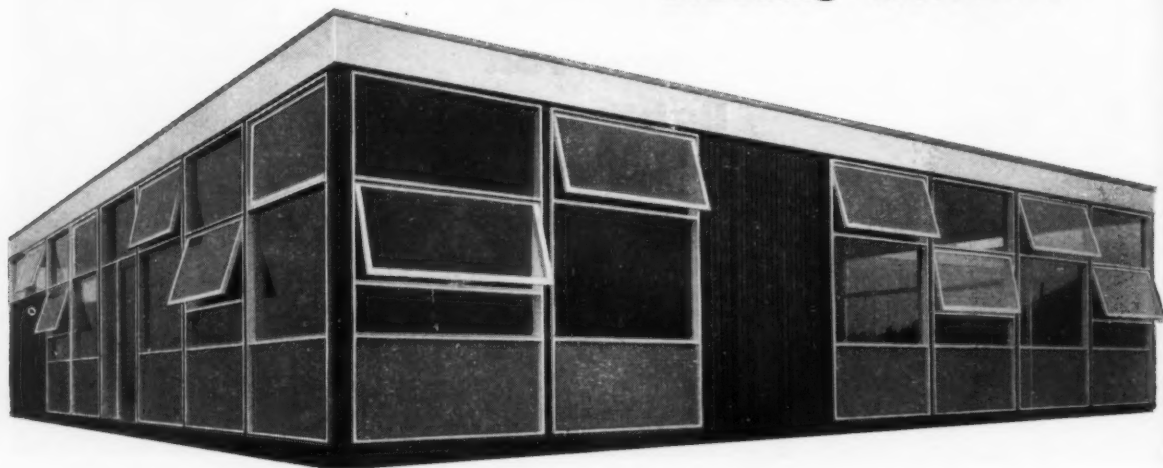
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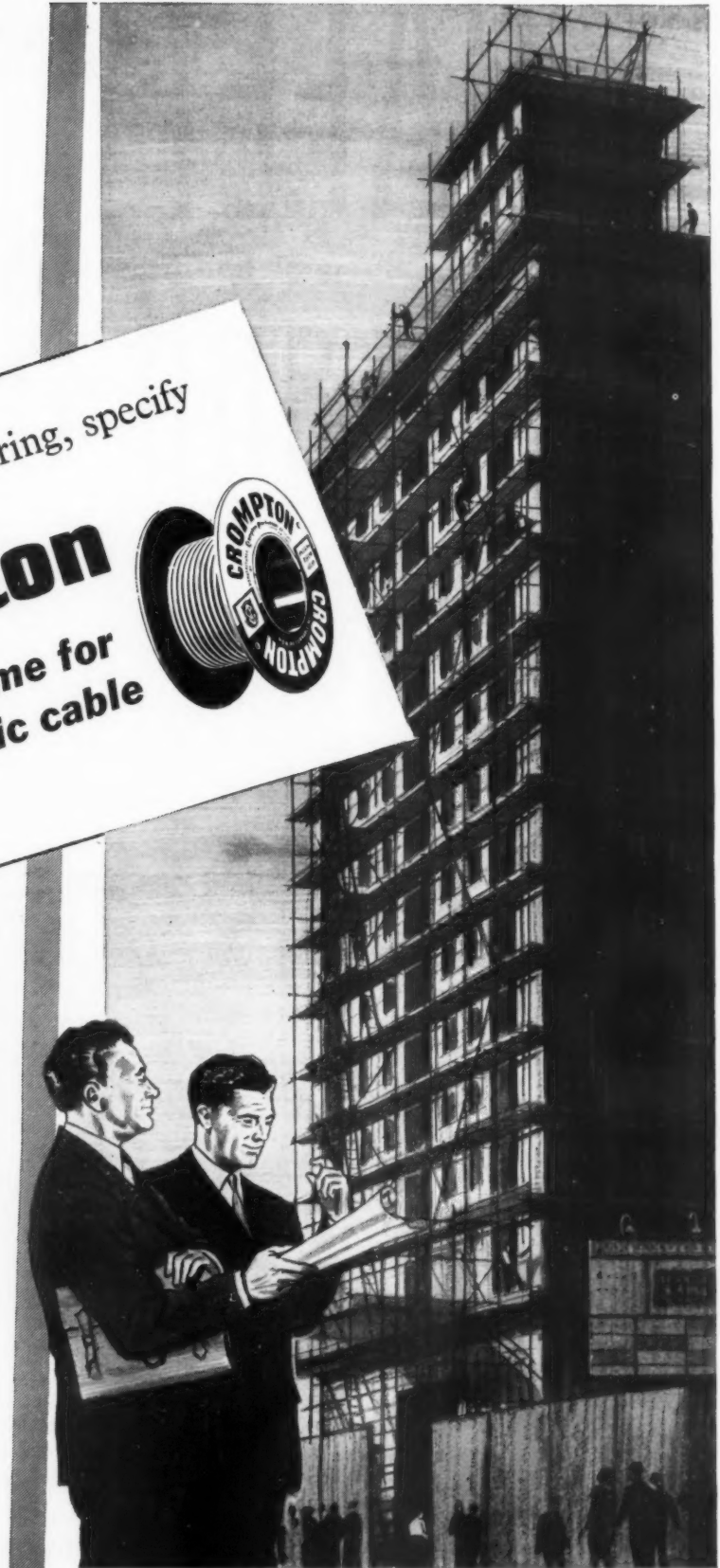
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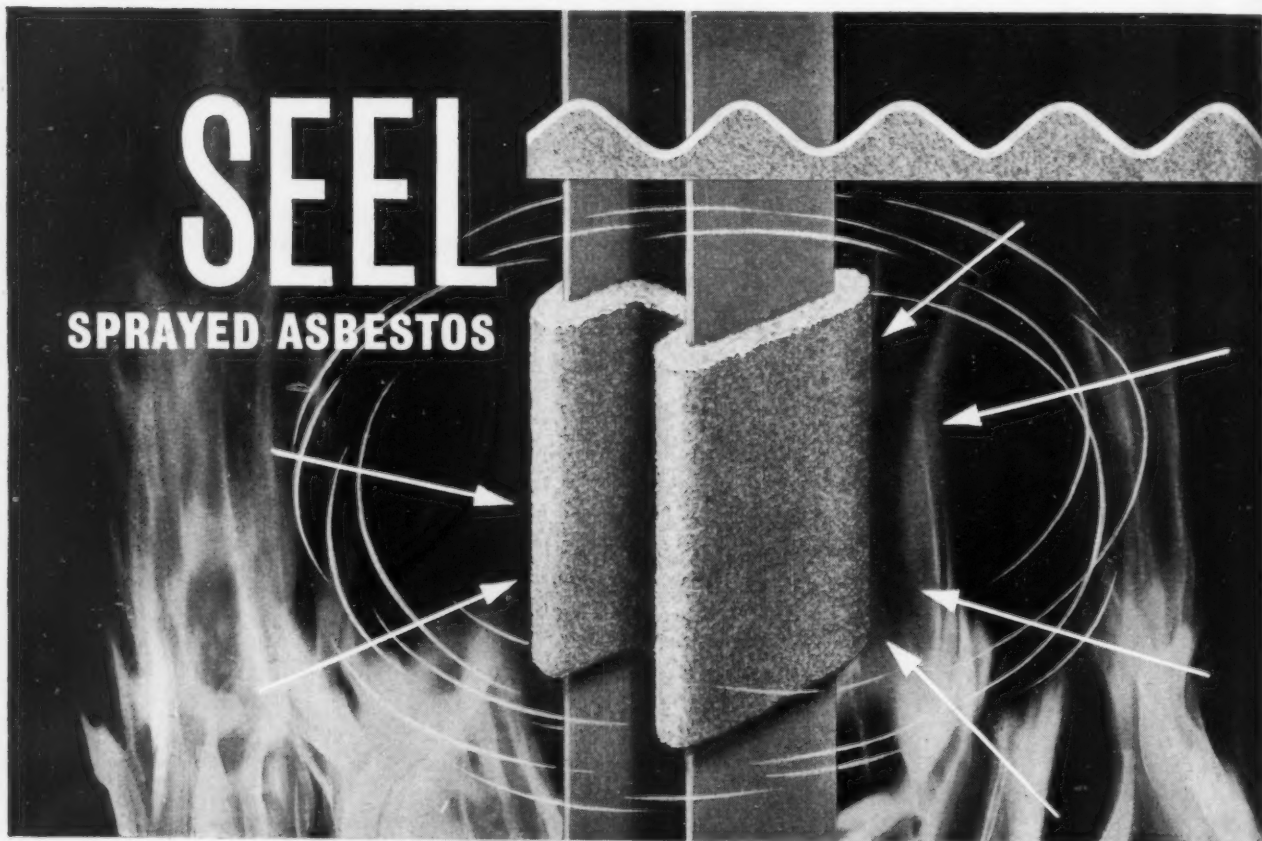
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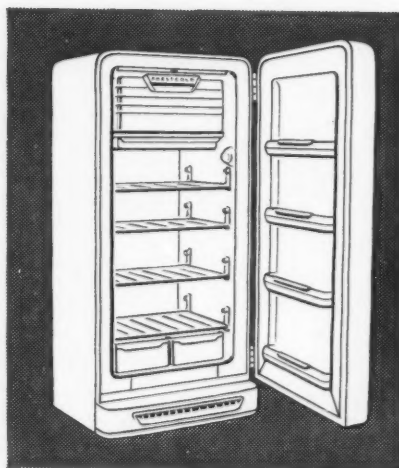
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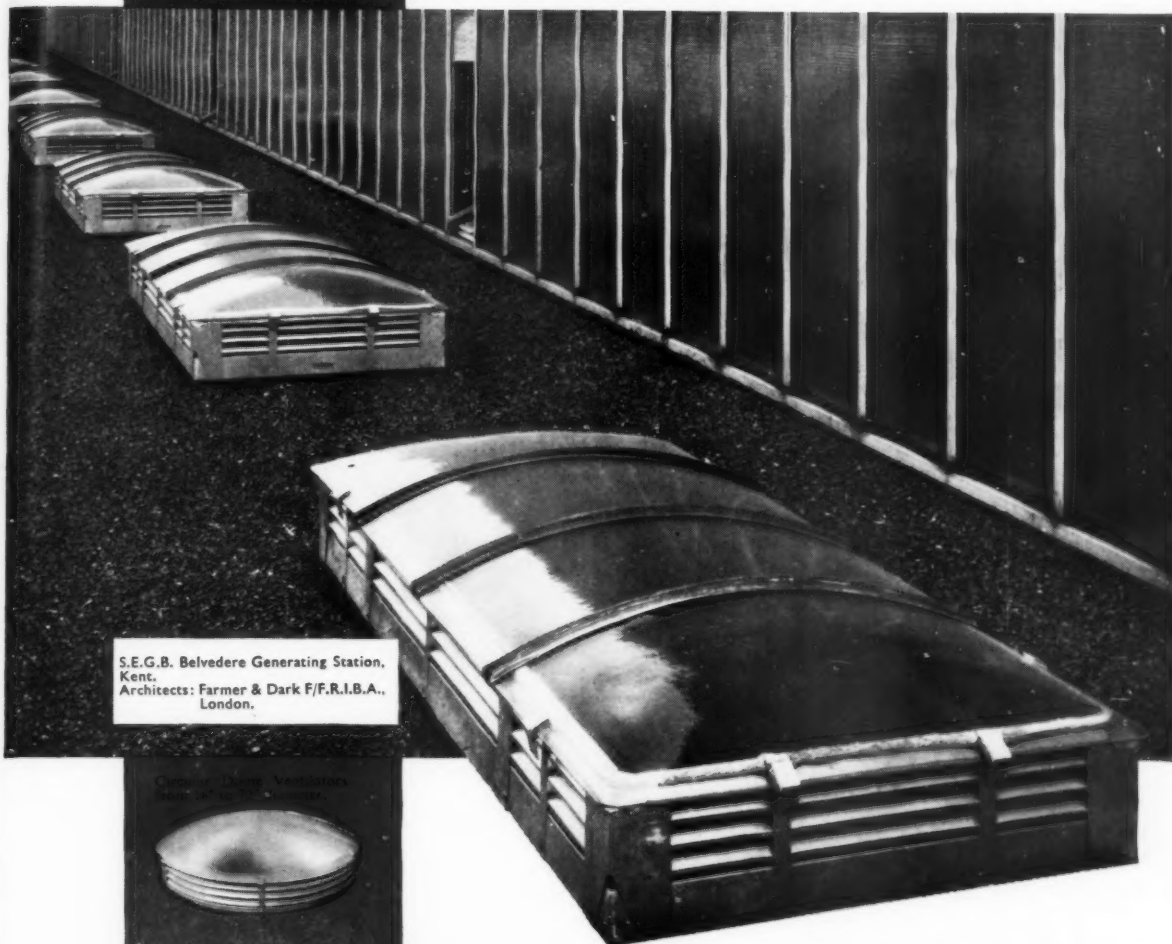
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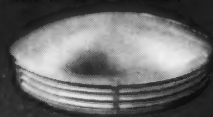
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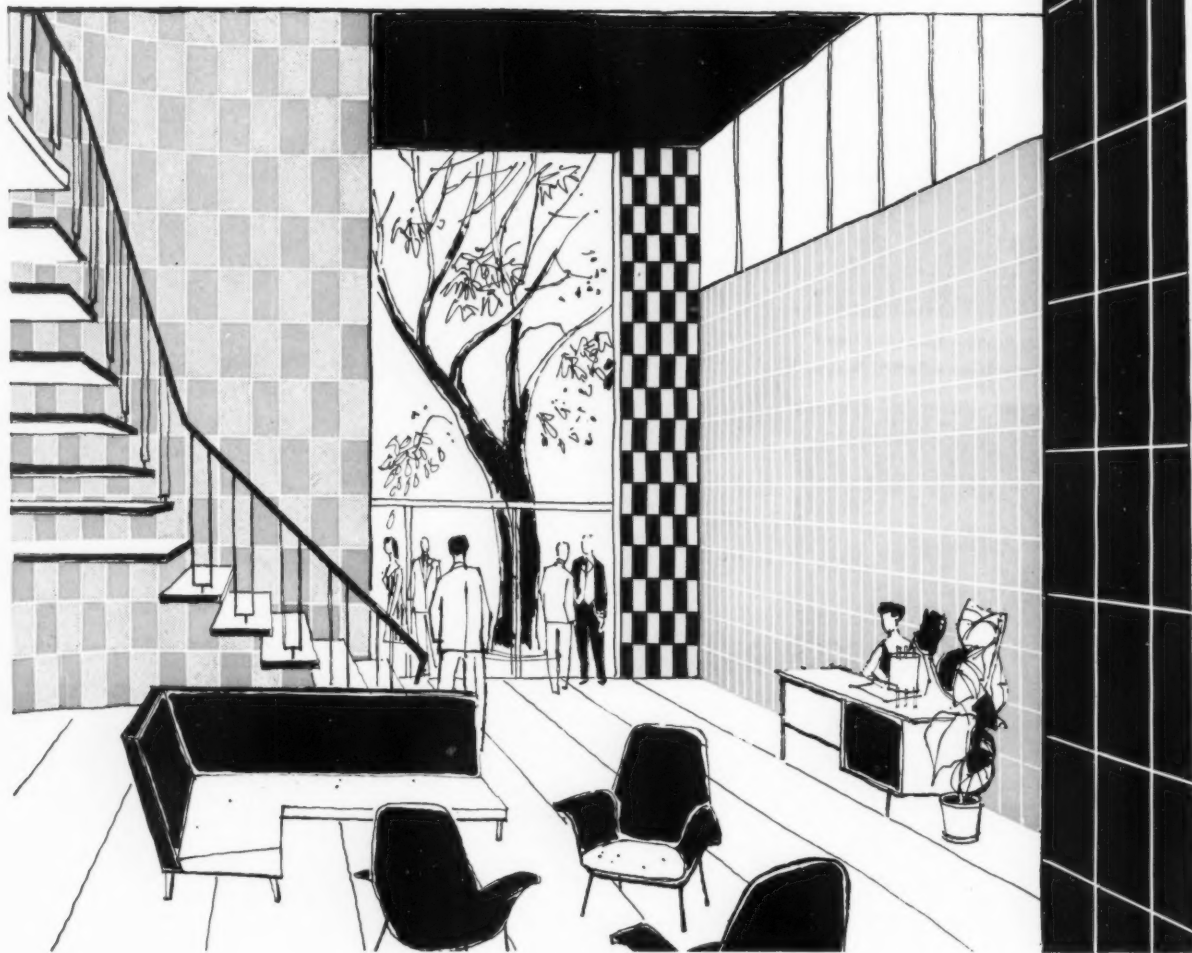
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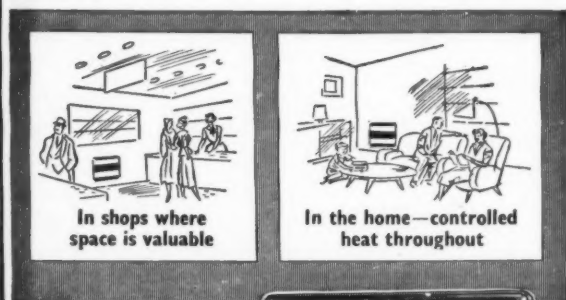
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The Architects' Journal

No. 3388. Vol. 131. March 24, 1960

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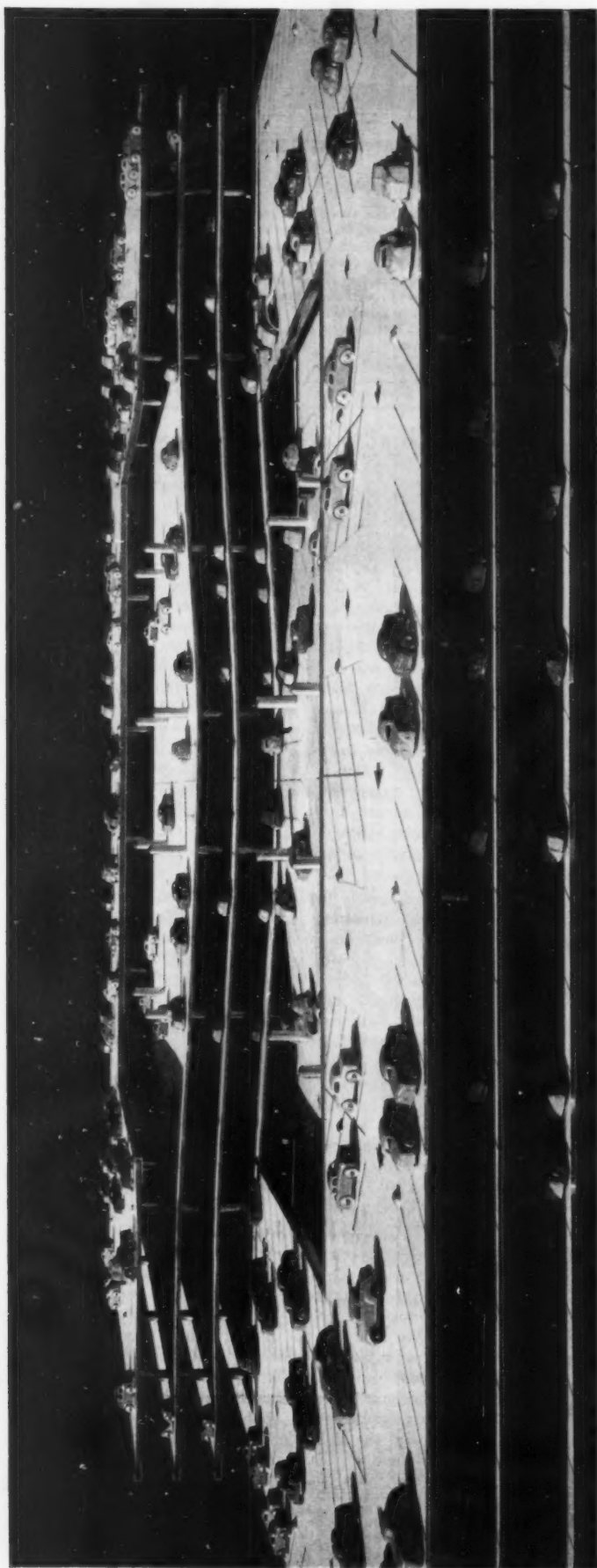
Bricks

"It was a most cheerful wedding, no crying & At. Helen behaved like a brick . . ." wrote Princess May. Mr. James Pope-Hennessy, in his recently published life of Queen Mary, explains early in the book* that her Royal Highness, having three younger brothers, grew up in a world of schoolboy slang. But even without this warning, the simile should scarcely surprise; to our grand-parents, bricks were synonymous with absolute, steadfast reliability. But anyone who has recently ploughed through those useful BRS Digests, the *Selection of Clay Building Bricks*, *Sulphate Attack on Brickwork*, *Mortars for Jointing* (and others) will be startled by the sheer innocence of such a remark. Little did they know, those confident, progressive Victorians, or so it appears, anyway at first glance.

Presumably they had their failures, now so long crumbled that they are forgotten, but the enormous quantity, and the quality, of their successes is overwhelming. It seems unfair that carefree 19th-century builders, apparently ignorant of the hazards of sulphates in the soil, sulphates in the bricks, sulphates in the mortar, lime mortar, damp brickwork, and frost (to name but a few), should leave as their memorial, huge railway cuttings, dockyards and warehouses, not to mention mile after mile of housing and yard upon yard of high-class ecclesiastical type brickwork, all immune from the pitfalls that beset us.

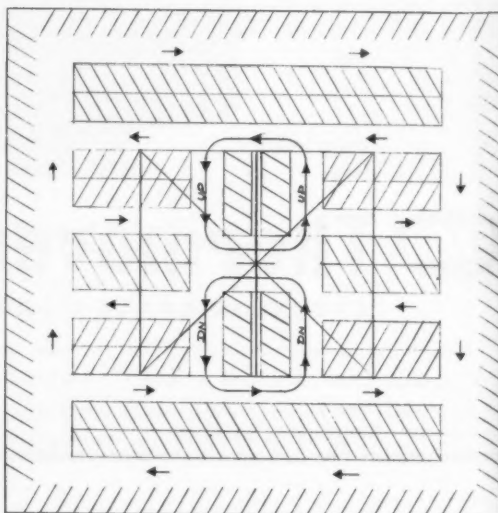
For someone like myself, whose real knowledge of bricks might cover a snap header if written fairly bold, it would be fascinating to be told, for a start, why 19th-century brickwork held together at all. It is said that lime mortar, now frowned upon by the experts because of its weakness and poor resistance to frost, was used almost universally (magnesium lime being the exception rather than the rule). Compare the following specification for St. Katherine's Dock (engineer Thomas Telford), from THE CIVIL ENGINEER AND ARCHI-

* *Queen Mary*, by James Pope-Hennessy, George Allen & Unwin, 1959.



The one that got missed out

On Thursday, March 17, Mr. Marples opened the British Road Federation's Exhibition "Car Parking" (see report on page 467). Informed opinion suggests that the ramped garage is likely to be the rule in this country and the mechanized garage the exception. It was a pity, therefore, that, in exhibiting all the best ideas in parking that the organizers could find, they somehow managed to miss the one idea which represents a positive advance in the ramp-type version. This, which we illustrate here, is a project worked out by E. M. Khoury of California. One of the snags of the ramp-type garage is that the ramp itself takes up a lot of space. Mr. Khoury gets over this by using a warped floor



which is split in the middle (see diagram, right, and plan, left). Cars can pass down and up by passing through the split. Mr. Khoury estimates that this makes a 5 per cent saving on space on the most favourable of the remaining versions of ramp. Other advantages are that, as the peripheral floors are horizontal, they could be used for office space; also that the floor-ceiling height is the same at every point in the floor. As the ramped parts of the floor can be constructed in straight sloping runs (like a hyperbolic paraboloid roof) construction would not be much more expensive than that of a conventional structure.

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TECT'S JOURNAL, November, 1839, with the type of advice given today. "The inverted arch of the lock is to be elliptical and of brickwork 2 ft. 3 in. thick at the bottom, and increasing upwards as shown by the transverse section, with stone coins at every termination. The bricks to be well burnt, hard sound grey stocks laid flush in mortar, mixed in the proportions one part Dorking or Merstham lime powder, and two parts clean sharp river sand." A surprisingly simple answer to an unpromising situation—heavily loaded brickwork, soaked with water containing unthinkable combinations of salts both from the sea and the jetsam and sewage in the Thames. Dorking lime is said to have made particularly good mortar, but it was not magnesium lime. Furthermore, one feels that engineering bricks, at least, might have featured in the spec.

It is terse specifications like this that bring the 19th century suddenly to life. Knowing from Dickens and the Christmas card trade that winters were as hard, if not harder, than our own, and from BRS Digests if not personal experience, that lime mortar will not stand up to frost, it is suddenly brought home that the massive viaducts, cliffs of warehouses, and all the rest, were built only in the long Victorian summers. The first October frost must have thrown thousands out of work. Perhaps there were winter jobs to turn to, but competition for these must have been sharp. Brickfield workers, stonemasons, agricultural labourers, and dozens of others would be out. Seasonal occupation, with something to tide over the slack periods, sounds ideal. Time to sit and think, or just sit. But with nothing put by and nothing coming in, winters must have been bleak, even in the good years, when there was no famine to contend with. No National Assistance; not even the Telly.

But if they survived, eventually to emerge from the winter's hibernation, or from shift-work in some factory, begging, or poaching, or any other method of survival, there must have been a certain kick about building those gigantic monuments. The fireworks, holidays, canon-vollies, and eating and drinking, that marked the opening of most of these 19th-century works suggest this. There was nothing half-hearted in the ceremony of laying the first brick or hammering home the last rivet.

Bricks have had their day in slang; so, for that matter, have rivets. There are so many sorts of brick, clay and otherwise, and trade names anyway are unmentionable. Portland cement is not an entirely unmixed blessing; had it been in general use in 1904, it might have been wiser to say that the Princess of Waldeck and Pyrmont behaved like a well fired stock. Such a remark would, however, have triggered off a sharp retort from Augusta, Grand Duchess of Mecklenburg-Strelitz, whose quoted correspondence is nothing if not pithy. But bricks in everyday building are fortunately very much with us; in the main, it is before the Digests have been completely digested, that their use seems unexpectedly alarming.

ELISABETH BEAZLEY

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

The Editors

FIRST GADARENE STEPS

THE architectural profession's "... contribution to living is thought of as pleasant but inessential, and therefore not worth paying a high price for." This statement appears in the RIBA's comment, published in last week's AJ, on the report of the Royal Commission on Doctors' and Dentists' Remuneration. The sentence (part of which we have italicised) indicates what the RIBA imagines is the view of "too many people" about the service of architecture. The sentence can be interpreted as implying that the RIBA accepts the shattering admission that architecture can only be obtained at a high price. Which is all too often true of imperfect architects, but not of architecture.

The RIBA's proposed Gallup Poll may show how many of the public have that view. In the meantime we hazard the guess that very few responsible citizens hold it. It is generally realised (if not in Portland Place) that the bulk of new building in this country is handled by architects.

The fear of being thought dispensable (instead of being simply disliked) leads the RIBA in their report to imply that the profession should advertise and "give greater publicity to success stories." And the fact that the Minister of Housing and the building societies have asked whether the code of professionalism is too rigid prompts the RIBA to ask whether a change might not improve the low income of the profession. Fear and avarice are not what one expects to find at the RIBA. It may well be that builders earn more than architects. They also carry heavier risks. It is pointed out that Civil Engineers can work either as contractors or as consultants, and it is supposed that this leads to a better overall performance. But there is not one ounce of proof behind it.

Discrete advertising and directorships in building and manufacturing firms may pull in the pounds. But out will go a considerable measure of the architect's none too large reputation for integrity.

The general public, central and local government, and industry have got to have advice from a professional man on their building problems. If not from an architect, then from a surveyor. Someone has got to be available who is disinterested and unbiased (unlike the salesman, the builder) and in whom the public has confidence. The RIBA should look for higher remuneration through increased efficiency.

LIFT SLAB CONSTRUCTION

We record this week an event of some historical significance. This is an account, on p. 473, of England's first lift slab buildings. They are three blocks of 9-storey flats for the Birmingham City Corporation. It is depressing to reflect that this technique was invented in the USA more than ten years ago, that in Australia and Canada it is well established,* but that in this country it has been ignored, except for references in the JOURNAL, until in 1958 a Birmingham firm of builders became interested and obtained British patent rights. It is late in the day but British Lift Slab Ltd. and the Birmingham City Architect are to be congratulated on pioneering the technique here.

Lift slab construction, however, is a major advance in constructional techniques and failure to exploit its many tremendous advantages over traditional construction is liable to make a mockery of it. The advantages are many, the one foremost to mind being the elimination of formwork other than perimeter formwork when the slabs are poured altogether on the ground. But its greatest single advantage is that it allows so much of the awkward, messy and often more expensive site operations to be carried out at ground level. The Americans have this to a fine art but at Birmingham far too much work still seems to be carried out up in the air, and it is to be hoped that the next lift slab building goes further towards exploiting all the advantages aimed at by the inventors.

*A.J., December 10, 1959.



SPENDING WISELY

If you have any questions to ask about design and cost planning (and who

hasn't?) don't forget to take them along to the RIBA next Tuesday, when they will be answered—it is hoped—by three architects, an engineer and a quantity surveyor.* We've been told in advance that one of the questions will be: "Are Aesthetics and Cost Planning Incompatible?" I hope the speakers will explain why the answer is "no."

*

Too many people think cost planning is something you have to do to build cheaply, and that when you have a generous budget you needn't bother with it. But of course the real purpose of a cost plan is to ensure that the money—however much or little—is sensibly allocated to different building elements. It is just as important for the architect to work to a cost plan as to recognize the limitations of the site, the fireproofing requirements and the needs of the building's occupants.

* Grenfell Baines, Geoffrey Powell, Erno Goldfinger, A. J. Morris and Jim Nisbet.

I have two questions for the meeting and I hope to publish the answers afterwards. (1) Why are Bills of Quantities not prepared in a form which would make their translation into cost analyses more comprehensible to the student and architect? (2) Why are students not usually taught how to prepare cost analyses and cost plans? And perhaps someone would like to have fun by asking the 64,000 dollar question: "Are architects and cost planning incompatible?"

STATISTICS MERELY ENGINEERED

Will we ever close the gap between engineers and architects? Each profession says it believes in collaboration, but the engineers want the area of collaboration to be narrowly circumscribed. I was reminded of this, and of the importance of architects and engineers being educated together, when I listened to architect Frederick Gibberd and engineer Rowland Nicholas talking about motorways in cities at the joint meeting of the RIBA and the ICE. They seemed to be talking about different things in different languages.

*

One of the much-quoted advantages of joint education is that the architect would have a training based on science. But this meeting showed that engineers are not always scientific. Mr. Marchant, the Greenwich borough engineer, explained how his metropolitan colleagues produced a London road plan in three months without basic data; and Rowland Nicholas rather spoiled his estimate that motor traffic in cities would eventually be doubled by admitting it was mere speculation.

BASELESS PYRAMID

It is good to see the RIBA celebrating its healthy financial position by taking on more top-grade staff (up to £2,000 a year) as a move towards acquiring a team that can solve some of the profession's problems. But can the three newcomers—technical information officer, deputy librarian and deputy secretary of education—make much progress unless each has some assistance? The library needs a technical section using the S&B classification. And one or two whole-time educationists are needed to unravel the kno-

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being tied by the Oxford Conference Committee and others, and to present a coherent plan for educating architects within the framework of education for the building industry. And an information service is a tremendous undertaking which needs a small army of assistants if it is to be worthwhile.

Wouldn't it be better if these newcomers were brought together to work on the most important problems? I'm thinking particularly of the need for a study of architects' offices and efficient design, in order that the mass of architects can be better paid.

LIGHT ENTERTAINMENT

How should illuminated signs be used? Several speakers at the ICA's discussion on "City Lights" had different ideas. John McHale, the painter, wanted spontaneous combustion (plenty of monsters and godzaloos as in Times Square), no interference and to hell with the architecture and architects. Derek Phillips, architect, wanted control and as much integration as possible between signs and buildings. And Peter Smithson wanted the best of both worlds—spontaneity and relationship to the buildings. He showed an excellent constructivist example in the Cineac cinema by Duiker at Amsterdam, where the signs really are part of the design. Naturally enough there was a lot of talk about Piccadilly Circus, and Kenneth Browne's coloured slides showed what a loss the giant signs there would be. He also showed, in contrast, some restrained German examples of the variety of good colour and letter forms that can be achieved with "neon" tube (misnamed, because neon is only the red tube).

Misha Black, in the chair, deplored Mr. McHale's "pop art" viewpoint and said that much of the spontaneity had taken a long time to work out. The meeting didn't really have any conclusions, except that architects should think a lot more about sign designs and that local planning officers should think about them a lot less—because control by such individual taste is a bad thing.

WHY NOT SHOOT THE PEOPLE?

Kent's County Planning Officer, James Adama, is a man to command respect. It was a surprise, therefore, to hear that his county is to pull down listed



This Belgian "Drive-In" Bank, shown at the British Road Federation's exhibition on parking garages at the ICE, typifies the nasty and senseless building one can expect if it becomes accepted that man should become legless. For those who walk, as the picture shows, the perils of the narrow pavement are increased by the stream of vehicles crossing it to enter the bank. In the ordinary bank the car at least keeps to the road.

medieval and Georgian buildings by the castle in Tonbridge High Street. The demolition will, of course, make the road wider, the traffic faster and the main shopping street more dangerous. Can't the street be by-passed—and by-passed more wisely than it is at the moment? (At present through-traffic is diverted down a residential road past two schools—a brilliant lethal touch).

If we try to keep pace with motor traffic by making small road improvements we shall end up by whittling half the streets away. An expedient like this ruined part of Tonbridge's main street many years ago.

FACE-LIFTING

I understand the Civic Trust has had a lot of requests from towns that would like to carry out face-lifting experiments in their streets on the lines of the Magdalen Street scheme in Norwich. Good. In the meantime those of you who haven't seen Norwich will enjoy reading the coloured illustrated booklet* on how the scheme was carried out at a reasonably low cost. It should be compulsory reading for all town councillors (perhaps Allied Societies could distribute a few), particularly for

those in industrial areas who wonder why their citizens move south.

A warning. Before the Norwich-type scheme is tried out at Leeds or Newcastle a study of the vernacular should be made. Norwich verges on being too pretty. The architects have done well to camouflage really ugly buildings, but occasionally the gilding shows only too clearly.

TYRED BUT BEAUTIFUL

As I've never been sure of the difference between "veteran" and "vintage" cars I was glad to find George Oliver lumping them together in his book* as early motor-cars. His twelve colour plates—for all the world like 19th century French carriage prints—are superb, and are accompanied by admirably brief and informative descriptions. The early cars—occasionally seen at rallies, beautifully kept and treated like *objets d'art*, are fast becoming antiques with their own market value. Some have been faked up while others, like the 1901 Oldsmobile, are actually being reproduced. And the first Model T handbook is now sought after as though it were a Shakespeare First Folio.

* *Magdalen Street, Norwich 1958-59*. The Civic Trust, 79 Buckingham Palace Road, S.W.1.

* *Early Motor Cars 1904-1915*. Illustrated and described by George A. Oliver. 1st Series. Hugh Evelyn Ltd. 52s. 6d.

All the cars in this book were built between 1904 and 1915, a period of development and experiment—technically and aesthetically—in car design as well as architecture. And as with the buildings of this period, the variety of design and the quality of craftsmanship are often breathtaking. I look forward to later volumes from Mr. Oliver.

COMPLIMENT FROM FINLAND

Three years ago, ASTRAGAL's colleague J. M. Richards, who has always taken an interest in Finnish architecture, visited Finland at the request of the Finnish Institute of Architects to advise them about the exhibition they were planning in London. It was subsequently held at the RIBA and was a great success. As a measure of their appreciation the Finns have now made J. M. Richards a Chevalier (First Class) of the Order of the White Rose of Finland—a charming gesture. This award has only been given to a dozen or so Englishmen since the war, and never before for services to art and architecture. So Richards has received a singular honour with an unusually attractive title.

SEE YOU THERE

Talking of the AA reminds me that my favourite professional jaunt, the Annual Reception, is coming round again. It's being held on April 7, and the AA Council has reduced the charge slightly this year. Why don't you come? Your wife (or husband) can get in for only 15s., whereas it will cost you a pound.

ASTRAGAL

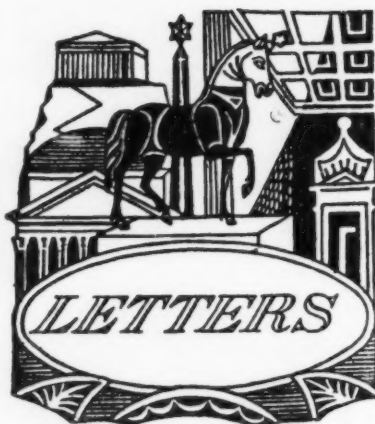
DIARY

Discussion on Design and Costs. Speakers: G. Grenfell Baines, Geoffrey Powell, E. Goldfinger, A. J. Harris and J. Nisbet; Chairman R. Baden Hellard. At the RIBA, 66, Portland Place, W.1. 6.30 p.m. MARCH 29

Mosques, Moghuls and Mausolea. Talk by Roger Dixon at the AA, 34/36, Bedford Square, W.C.1. 6.15 p.m. MARCH 30

Thermal Insulation, Services and Mural Techniques. Last in a series of four illustrated talks by Oliver Cox and Robert Purdew at the AA, 34/36, Bedford Square, W.C.1. 6.15 p.m. MARCH 31

Architects' Christian Union Reception. In the Henry Jarvis Hall of the RIBA, 66, Portland Place, W.1. 7 p.m.-8.30 p.m. MARCH 31



A. C. Dalrymple,

Managing Director, Maurice G. Parker Ltd.

Cedric Price, A.R.I.B.A.

AJ Specialist Editor (Lighting)

Professor R. J. C. Atkinson

Trade and Technical Literature

SIR: I was interested to read the letter from your correspondent R. W. Barbour in regard to the trade and technical literature competition. May I say how fully I agree with the points he raises regarding the presentation of the entries submitted.

My company had the satisfaction of producing and entering one of the successful items of literature in this competition, and when our clients were notified that they had received an "honourable mention" arrangements were made for the managing director of the client concerned and also myself to be present at the presentation.

I arrived at the Building Centre in Store Street half an hour before the ceremony was due to begin with the dual object of looking at the entries and attending the presentation. The location of the "exhibition"—in one corner of a bare unprepossessing room at the top of the building—and the unimaginative manner in which the exhibits were laid out for inspection gave one the impression that the whole thing had been delegated to some junior who had no interest in what he or she was doing.

The presentation to which so many had looked forward to turned out to be an extremely abbreviated affair during which only the top three contestants were awarded certificates. Surely in a competition of this nature certificates could have been given to the small number of other successful entrants.

In his final paragraph your Mr. Barbour mentions "if this series of competitions is to succeed manufacturers must be convinced that it is worth the trouble of entering." Although not an actual manufacturer, I can assure Mr. Barbour that for my part, I should not be too much enamoured of the

idea of entering again on behalf of our clients unless the ultimate result could make the initial effort worth while.

A. C. DALRYMPLE
Managing Director,
Maurice G. Parker Ltd.

Birmingham

Never Had It So Bad?

SIR: *Never Had It So Good* (reviewed in AJ, March 17) had as its plot a situation which could have achieved exciting, worthwhile theatre. However, the self-conscious dialogue and ham acting achieved nothing but the emptiness of boredom in which one sat waiting for the next architectural "funny"—"there are more ways of killing the Devil than by abusing him in an aircraft hangar" (Coventry Cathedral).

The laboured moralizing—"we've just got to go on living" might raise a Good Try rating at fifth-form level but to compare such a juvenile effort to a Joan Littlewood job borders on criminal folly. If the Coventry audience's reaction was laughter or silence as "each shot went home" then the play evoked nothing of more value than the smugness of an audience which knows the comedian's jokes but likes to hear them told out loud.

A play that cannot travel from Coventry to London without losing all significance—*Lysistrata* and *The Hostage* travelled further and longer—should not travel at all.

However, on re-reading your review of a "sharp spoken, hard hitting, convincingly presented play," I can only assume that I saw an entirely different play with the same hackneyed title.

CEDRIC PRICE

London

New Light

SIR: I would like as briefly as possible to reply to David Moizer's letter (AJ, March 10) on the subject of permanent supplementary artificial lighting, as discussed recently at the RIBA under the title "New Freedoms in Lighting."

This idea of using artificial lighting to reinforce the daylight, so that you can have in multistorey buildings, deeper rooms or lower ceilings—or a combination of the two—is obviously a matter of very great importance in architectural design. If I understand David Moizer correctly, he is concerned that I described it as now being a valid method of design for congested urban sites, and that this opens the way for the misuse of the results of research, which may then bring them into disrepute. Or I put it in the venacular, don't knock Dr. Hopkinson.

There are two points that I would like to make in reply. Firstly that it was not John Bickerdike but Dr. Hopkinson himself who was quoting (I hope correctly) as saying that this method was the best way of overcoming urgent daylighting difficulties in high density development. This can, of course, be taken out of context, and be likely to make Dr. Hopkinson feel almost as enraged as the

critic who was recently quoted on a placard outside a London theatre as saying "By all means go and see this play" when what he really wrote was "If triviality is what you happen to be wanting, by all means . . ." I would have hoped, however that by saying in my report that this is not a matter of using artificial lighting as a palliative where the daylight is bad or inadequate, and then describing in some detail one of the case studies, that the sort of misinterpretation discussed by David Moizer could not occur. I can only suggest that he is getting out of context, not I.

Secondly, as David Moizer quite rightly implies, there are dangers in attempting to apply what are in effect only the preliminary results of a programme of research. This is a pertinent point of view, coming as it does from a member of the Nuffield Group. I cannot accept, however, any suggestion as a result of these dangers either that the research worker should be gagged until he can produce some cut and dried results, or that the architect should remain inactive until he is provided with all the answers. The reason is obvious, in this case at least. Here is a matter which fundamentally affects one or more projects currently on the drawing boards in practically every major architectural office in the country, and these have got to proceed based on the best knowledge currently available. It was for this very reason that the RIBA discourse with Dr. Hopkinson representing BRS, and John Bickerdike the profession, jointly discussing some incompletely understood field, was such a valuable and necessary meeting.

AJ SPECIALIST EDITOR (LIGHTING)

Woodhenge and Stonehenge

SIR: Your contributor ASTRAGAL must take a very naive view of the nature of archaeological research if he supposes that I am ignorant of the prehistoric timber monument at Arminghall, near Norwich, which he wrongly calls Woodhenge. This name belongs solely to the site near Amesbury described in my *Guide*. Apart from the fact that both sites are circular and both contain internal timber structures there is little resemblance between the two.

The word "henge," or preferably "henge monument," is a term coined and used by archaeologists to designate the class of open-air prehistoric sanctuary to which Stonehenge, Woodhenge and the Arminghall monument all belong. They are generally circular in plan, surrounded by an earthwork in which the ditch is commonly though not invariably *inside* the bank, and have either a single entrance, or two entrances opposed. Where internal features have been identified by excavation, they are occasionally of timber, more commonly of standing stones, and in some instances consist merely of a ring of ritual pits. Their date lies within the first half of the second millennium BC.

R. J. C. ATKINSON

Wenvoe



COMPETITION

Neath Civic Centre

Neath Borough Council and Neath Rural District Council announce an open competition for a new Civic Centre at Fairfield, Neath. The premiums offered are First, £1,000; Second, £500; Third, £300. The assessor is Sir Percy Thomas. The accommodation to be provided includes a Council Chamber and some ancillary rooms for the use of both Councils, and separate rooms for the use of each council for committees and other purposes. Conditions from the Town Clerk, Town Hall, Neath, Glamorgan.

TCPA

"More New Towns"

Urgent Government action to sponsor a number of new towns with a total population of 700,000 is urged by the Town and Country Planning Association in a memorandum which it has submitted to the Minister of Housing and Local Government. Peter Self explained at a press conference last week that the main aim of these new towns (most of which would be expanded existing towns) would be to harness and control the flood of people now moving out from the big cities to settle haphazardly beyond the green belts. He accused the Government of complacency and said that the development plans in the Home Counties were under great strain. If the Government failed to act to guide development in this way he foresaw a great disaster, and the spread of Subtopia for enormous distances. He said the TCPA had 20-30 sites in view. He thought there should be about six new towns for London, and that sites could be found closely related to the M1 and other motorways.

The memorandum is entitled *Planning Problems of the Large Towns*. It states that in and around large towns almost all the land allocated for house building in the Development Plans in the 20 years 1951 to 1971 has already been used. Families wanting to buy their own homes are flocking out of the great towns in search of better conditions. At the same time, others flock to-

wards the great centres in search of better jobs.

"Total population is increasing, and the number of families wanting separate housing is increasing even faster. For many years ahead, at least 300,000 additional houses a year will be needed. Nearly 50 per cent. of the population live in and around the large urban centres. In many of these centres are our worst and most extensive slums. But slum clearance, redevelopment and road improvements are being held up by lack of sites for housing displaced families.

"The great and growing demand for additional housing can only satisfactorily be met by starting more new towns. Because of the shortage of suitable virgin sites, these would mainly be large-scale town expansions, carried out by development corporations to secure the speedy and co-ordinated provision of housing, employment, commercial and social facilities. They should have a very much larger proportion of private housing than do existing new towns. "Some new towns should also be started in more distant areas, both to act as counter-magnets for employment and people otherwise certain to be drawn to the big cities, and to help arrest economic and social decline in the areas where they are established. In suitable cases, development corporations should carry out two, three or four related town expansion schemes."

In support of this memorandum the TCPA provides some interesting figures. Of the million new jobs created since 1952 over 400,000 have been created in Greater London—over 40 per cent. of the new jobs where only 25 per cent. of the population lives. Of these jobs about 210,000 have been created in built-up London, and the remainder up to 20 miles further out. Within the dozen largest authorities there are a million more families than can be accommodated within their boundaries. New and expanded towns will take 350,000 at most by 1971, so there is need, the memorandum argues, for planned overspill for 700,000 more people.

It was very apparent at the Press conference that the TCPA has few new ideas on new towns. It suggests no changes in the uniform pattern of the old new towns. The memorandum does suggest some new towns right outside the city regions, but its main emphasis is in fact on building new towns within the regions. In the London Region Mr. Self suggested that the new towns should be 40 or 50 miles out. The urgent thing, as he sees it, is to cope with the spontaneous development around the cities, accepting the fact that development is going to take place within the region. He said that the TCPA had an open mind on size, but the only figure he mentioned was 50,000 to 60,000 inhabitants, a size which, he said, worked all right.

RIBA

Technical Information Service

The background to the RIBA Council's decision, reported last week, to appoint a

Technical Information Officer to institute the Technical Information Service is as follows:

For many years the Text Books Committee has been conscious that the overall standard of reference and text books for architects is inadequate. The Technical Information Committee has always held the belief that the profession should build up its efficiency on the experience of the profession as a whole, and that the Institute has a duty to provide architects with a service which collates the experience of the profession.

Co-operation with the building industry

The necessity for improvement in both the form and the content of technical information is widely recognized. There is a need to co-ordinate and simplify existing services and a need to fill some of the "gaps" which exist in our information. No one organization can provide all the information required but together we should be able to do so. It is one of the primary objectives of the RIBA's Technical Department to find ways and means of doing so. As part of the programme to co-ordinate and improve technical information for the building industry it is considered essential for the RIBA to make a start on producing its own technical information for architects succinctly.

RIBA Notes

The series of publications planned by the Institute has been termed "RIBA Notes." These will normally be in the form of monographs and will often be of a size which is too large for publication in the Technical Press but too small for publication in the form of a traditional textbook. Speed will be an essential factor and for this reason they will be published in sections as the work is ready.

The Technical Information Officer will be asked to collaborate, to the greatest extent possible, with the Technical Press, BRS, BSI and other producers of information for architects, in order to avoid duplication. The intention in appointing an officer at this moment is that he or she should advise on the final form of the service, which has not yet been finalized.

A description of the first four publications, which are being planned at present may help to explain the sort of work which is envisaged:

The first is a building filing manual explaining the Sfb/UDC filing system; a system which is being recommended by the RIBA, for use in architects' offices. This monograph will include the filing tables and a subject index showing the notation for building products and techniques.

The second is the first part of a handbook on architectural management. This will eventually include notes for guidance and sample forms and check lists for all the processes which go on in an architect's office.

The third is an index of sources of information; much of the information has already been published but is nevertheless difficult to find.

The fourth is an elementary ABC on the background to hospital planning.

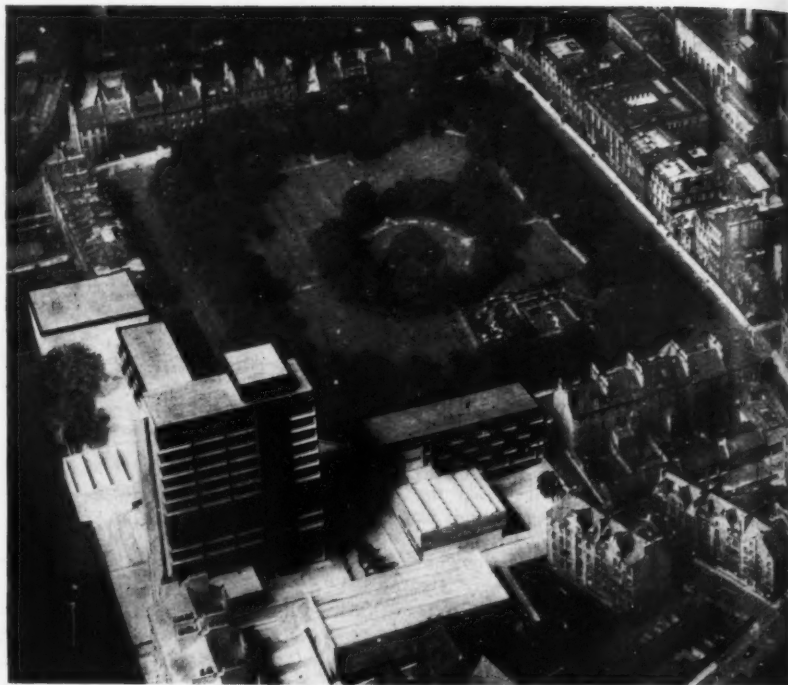


Photo montage showing Robert Matthew and Johnson-Marshall's Arts Faculty Building for Edinburgh University as it will appear at the south-east corner of George Square.

GEORGE SQUARE

Development To Go Ahead

A correspondent writes:

The Secretary of State for Scotland, J. S. Maclay, announced on March 10 that he could see no justification for the reconsideration of Edinburgh University's scheme for the redevelopment of George Square. Edinburgh Town Planning Committee last week approved the detailed design for the Arts Faculty building by Robert Matthew and Johnson-Marshall. The Corporation has also licensed the demolition of buildings in the south-east corner of the square.

Although this might seem to settle the issue, the battle of George Square continues to be waged with undiminished fierceness.

One of the principal objectors to the University's plans, the Rev. Ian Simpson, has raised an action in the Court of Session against the University and the Corporation, asking for a declarator that the university did not apply for planning permission in 1955 to develop the east and south sides of George Square, and that the "pretended grant" of outline planning permission given in March, 1959, for Professor Robert Matthew's Arts Faculty buildings (illustrated in the AJ on March 10) was invalid.

Mr. Simpson lives at 25, George Square, the former house of Sir Walter Scott, which lies on the west side which, by common consent, has not been included in the University's redevelopment proposals and is to be preserved. He has offered to withdraw the action if the Secretary of State agrees to hold a public inquiry. The Secretary of

State, on the other hand, has indicated that he cannot order a public inquiry because the legal action is pending, although he also states that in any event he sees no justification for an inquiry.

The amenity societies are also strongly contesting the Secretary of State's rejection, in his statement of March 10, of the alternative scheme proposed by the societies. This alternative scheme proposed to meet the immediate needs of the Arts Faculty by adapting 18 houses in the south-east corner of the square to provide tutorial accommodation for the teaching departments, and replanning the rest of the accommodation in the land to the rear of the south and east sides of the square.

Mr. Maclay considers, however, that this alternative is unworkable for various reasons: the buildings are structurally unsuitable for permanent use for teaching purposes on the scale required, having no damp course and substantial infection with dry rot. The risk of fire and accident would be serious if major departments with between 400 and 500 students were housed in Georgian houses with corridors and winding staircases only 3 ft. and 3 ft. 6 in. wide. There would not be room for an essential suite of lecture rooms. Lavatory and cloak-room accommodation could not be provided on the scale required for 2,000 or more students, the facilities required by a modern University could not be provided without fundamental structural alterations, and car parking would be inadequate.

One might add that it is carrying facade preservation to extraordinary lengths when it is suggested that the rear elevations of the old houses are a good setting for new buildings.

The Impact of Motorways on Cities

Paper by Rowland Nicholas

There was little sign of any meeting of minds between the engineers and the architects at the joint meeting of the RIBA and the ICE at Portland Place, last week. The two principal speakers, Rowland Nicholas, the City Surveyor, Engineer (and Planning Officer) of Manchester, and Frederick Gibberd, did not even talk about the same subject. Mr. Nicholas spoke on "The Impact of Motorways on Cities" and Mr. Gibberd on "The Impact of Motorways on the Urban Environment," but he substituted the word "motor-cars" for "motorway," and thereby opened the way for a masterly and comprehensive treatment of the whole traffic problem which was in striking contrast to the narrow scope of Mr. Nicholas's paper.

Sir Herbert Manzoni, the newly elected President of the ICE, took over the chair from Basil Spence, which was a pleasant gesture of courtesy. Sir Herbert was an affable chairman, with sufficient diplomatic skill to state the engineers' claim to superiority in the most agreeable and charming way. He began, for instance, by describing the meeting as "entertainment," and quietly deflated Mr. Gibberd at the outset by noting that while Mr. Nicholas was going to deal with the facts, Mr. Gibberd was going to enunciate principles that he had heard Mr. Nicholas advocating a few years ago. And when he threw the meeting open for discussion Sir Herbert remarked that the *apparent* difference between the speakers was the difference that always appeared between the Government and the Opposition—the engineers being the Government who actually did the job, and had to modify their dreams accordingly, whereas the architects did not have to apply their principles and were able to state them broadly. The inference appeared to be that the engineers intend to remain "the Government."

The lack of common understanding between the engineers and the architects emerged not only in the papers (of which a summary appears below), but in the subsequent discussion which, it must be said, did credit to neither learned institution. Mr. P. V. Marchant, who supported Mr. Nicholas's paper, unconsciously betrayed the width of the gulf between the professions when, after suggesting that motor roads should be built over railways "to avoid architects' complaints," he said that engineers always welcomed architects in the "clothing" of bridges and the design of lighting columns (which, he said, were nearly always designed by architects). Only in the last minute of the meeting did an architect, Professor Gardner-Medwin, point out that it was a popular misconception to regard architecture as sugar icing to be put on after the concrete cake had been cooked, and recall that the architect to the George Washington Bridge in New York had advised that the best treatment was to leave it alone. Professor Gardner-Medwin was also the only person to take up another of Mr. Marchant's misconceptions—that highway planning must come before town planning. (Mr. Nicholas, however, had said that the two could not be separated.) Gardner-Medwin, saying that the purpose of the highway was to serve the community, stressing the all-embracing character of town planning, and the importance of design in achieving a civilized quality in the whole environment.

Unfortunately, Frederick Gibberd's paper—which Sir Herbert Manzoni rightly described as "thought-provoking"—failed to provoke much thought. One engineer, a Mr. Harding, suggested carrying motorways over cities on suspension bridges as large as the Forth Bridge (they would be much more beautiful than Castrol House, he thought), much cheaper than sunk roads, and wouldn't sterilize any land except at the piers. Nigel Seymer touched on one obviously controversial point in Gibberd's paper—his assertion that urban motorways were contradictions in terms—but failed to elicit from Mr. Gibberd any further explanation for a statement which seemed to Mr. Seymer to be itself contradicted by Mr. Gibberd's statement that the multi-purpose road was out of date.

Mr. Nicholas had the last word, and said that anyone who was producing an urban road today without complete segregation of pedestrian from vehicular traffic was missing the bus. Neither Sir Herbert Manzoni nor any of the assembled architects and engineers who are engaged on schemes lacking just such segregation were seen to blush.

Mr. Nicholas opened his paper by attempting to estimate the future growth of motor traffic, and recalling the underestimation in the past of future growth. In 1950 the Ministry of Transport had suggested that in urban areas an increase of 40 per cent. over 1938 would be adequate—a figure that was attained about 1954. The Ministry's present estimate was 75 per cent. over 1954 in rural areas, but there was no guidance for urban areas. Mr. Nicholas himself had suggested in 1957 that one vehicle per family could be envisaged, amounting to 14 million vehicles, or two and a half times the 1954 total.

He also noted that on an average less use was being made of vehicles than before the war, and suggested that this might be due to the inadequate road system and to the existence of satisfactory public transport systems. He anticipated increased usage as the standard of living rose or road conditions improved, and pointed out that a return to the pre-war usage would increase present traffic by 50 per cent.

It seemed possible that throughout the country as a whole traffic might grow to about three and a half times that in 1954, or about three times present-day traffic flows. It was likely, however, that in the urban centres, if a complete spider's web system of highways were in being, traffic flows might increase to about double the present figures. Mr. Nicholas said that the application of comprehensive origin and destination surveys was long overdue, and would be likely to show not only that the highway proposals included in the development plans might individually be inadequate, but that the whole future highway network might have to be completely recast.

Magnetic effect

The second point to be stressed by Mr. Nicholas was the magnetic effect of new highways, which initially tend to draw an extraordinary volume of traffic from a wide area because existing urban roads are so inadequate. He therefore advocated over-provision of capacity in the first roads to be provided. He recognized the importance of timing as many highway proposals as possible to coincide with normal development. It seemed that the problem arising from the much more rapid growth of traffic was "to find the minimum number of new roads of modern design which can be provided to give the maximum relief to the existing system, and in positions where the minimum amount of useful property has to be demolished." Compared with rural motorways, alignment would not be so important, but junction design would be all-important. Location should be influenced more by the needs of commercial traffic than of commuting traffic, where road capacity for peak-hour traffic would remain largely unused throughout the day. Location must also satisfy all planning requirements, particularly enabling satisfactory neighbourhood and precinct planning in the adjoining areas of development.

Mr. Nicholas saw no need to fear the aes-

thetic effects of viaducts and other road constructions. British civil engineers could plan roads to be elegant as well as useful. There was, in his view, no alternative to the motorway if the necessary additional road capacity was to be provided.

Failure to provide them could only result in the disintegration of the commercial and industrial centres, and the overall loss would be far greater than the cost of a modern road system. The large use of the motor vehicle also made it compellingly more urgent to secure complete pedestrian segregation.

The following is a summary of Mr. Gibberd's paper.

Paper by Frederick Gibberd

I intend to substitute the word motor-cars for motorways, as they are only one kind of road and if we isolate the word "motorway" it tends to acquire a kind of mystique.

It is necessary to consider the kind of urban environment in which architecture can flourish; the aesthetics of town design, which is quite a long way from motorways. We may take it as read that the future growth of the motor industry, relative to the present growth of rural and urban development, will ultimately end in disaster; that the situation is so complex that there can be no one formula or ready-made solution; and that the problems are so diverse that each profession concerned with the urban environment must make a contribution—this is no case for "going it alone."

Motorways and the architect

We believe that the motorway is a fundamental part of the equipment of an industrial society. The large volume of traffic it can carry and the tremendous cost make it obvious to us that its routes can only be determined after a most exhaustive physical, economic and social study; that is, in terms of a national plan.

The architect is conscious that, as a thing in itself, the motorway is a quite new design form and has nothing but admiration for the dynamic lines of its carriage-ways and the fantasy of its multi-level intersections. His only interest in its design is likely to be with bridges and here he is content to take a secondary role. Our first axiom might be as follows:

"The design of motorways is the function of the road engineer and the landscape architect working in collaboration."

Motorways in cities

When the motorway enters the built-up area the architect loses his enthusiasm. It is abundantly clear that motorways in the city can generate urban sprawl which demands more cars which, in turn, demand more motorways until ultimately we arrive at the destruction of all civic values.

The huge scale of the motorway and its function make it impossible to associate it with groups of buildings. Its uncompromising character completely severs one area from another, making a homogeneous city impossible. The motorway is a landscape

form; the term urban motorway, now being bandied about, associates two diametrically opposed functions and might well be abandoned. The motorway has no place in the small town. In the large urban concentrations it can only be allowed after all other alternatives have been tried. The architect's second axiom will then be something like this:

"The term 'urban motorway' is a contradiction in terms and no motorway may penetrate an urban area unless all other alternatives have been examined and found wanting."

Road design subservient to town planning

We have now all learnt the lesson of Mr. Alker Tripp and other traffic experts, that the old all-purpose road—building frontage, vehicles, pedestrians—is now defunct. We have learnt, too, that interlocking with this structure must be a pattern of car parks or garages designed to draw the motor off the heart of the precincts.

In our acceptance of an elementary principle such as the foregoing, we are apt to forget what advantages we have over countries like the Americas which are held up to us as models.

We have, for instance, built few urban roads and so we are not faced with magnificent new structures in the wrong position. Down the centre of Caracas is a splendid dual-carriageway road carrying six traffic lanes and terminating in the twin 30-storey towers of the Centre Simon Bolivar, under which are vast underground car parks and multi-level traffic intersections and the traffic jam is absolutely terrifying.

Unlike so many other countries, we have one of the best techniques yet devised for controlling the development of towns. Although we recognize that traffic problems can only be assessed in terms of the town's complete structure, we have unfortunately not yet come to a state of automatic technical collaboration. How often does one see proposals for beautifully designed ring roads with only the vaguest ideas about what is going on inside them? Yet again, does there not exist the situation of a Highways Committee producing a new road design and passing it on to a Town Planning Committee for information? The conclusion we reach is, therefore:

"Roads are one part of the town's organism and their design is subservient to town planning."

The architect and road engineering

The architect is most concerned with the aesthetics of town design. The reason why he cares about these visual things is because he is an artist as well as a technician. An architect receives a five-year basic training of the imagination. His perception and his intuition become keener and more acute than that of the technician.

The intrusion of the motor-car into the urban scene has introduced many ugly objects and few of those objects have been given any formal relationship to other objects. The situation will not change until it is recognized that the problem goes beyond engineering. The background to the urban

scene is architecture. You can have a town without trees, without lampposts, without roads but you cannot have one without buildings. The dogma that summarises these views may be stated as follows:

"All problems of road engineering within the urban environment are inseparable from architecture and their solution requires the collaboration of the architect."

Road as a part of urban space

The motor-car has totally changed the architect's attitude to the relationship of roads to buildings. Cars cannot be left to meander with pedestrians over the free medieval space. Neither can they be canalized into the lines of the seventeenth-century axial vista without splitting asunder the architectural compositions composed about that axis. A new solution is required and that solution must dissociate the building composition from the path of fast or dense traffic streams. The purpose of the walls of a building is to enclose space but they also define external ones; they are the planes out of which the urban scene is made; they are the indispensable element in town design. The essential quality of an urban space, that of being a place to be in, is destroyed when a road passes through it as it is the nature of a road to lead you somewhere else. The traffic divides the space into two and the road structure destroys the floor of the space by carving it up into one-directional planes and lines—the effect is of running a footpath through a living room.

Furthermore, the modern road and its junctions are exceptionally wide elements and tend to open up or break asunder the spatial pattern with disastrous results.

"No road may pass through an urban composition formed by the walls of buildings."

Pedestrian cores

What this, in effect, amounts to is composing new centres around a pedestrian core and in existing centres, slowly replacing the motor-car by the pedestrian. There are no difficulties of any kind in designing a new centre as a pedestrian precinct. The complement of the previous axiom is then:

"All new shopping and civic centres should be designed round a pedestrian core."

This is perhaps obvious enough but we still find proposals for neighbourhood centres with a traffic street down the middle and several new civic centres have appeared recently with huge buildings composed around grandiose approach drives and car parks, thereby encouraging the motor-car to penetrate to the one place it should not be.

In existing centres it is immensely hard to take out the motor-car but it should be the objective. Progress has been made abroad, only because some of the medieval centres are so tightly built that there was no alternative. At Leamington Spa plans are being made to equip the central area with a system of periphery roads and car parks which one day will make possible the closing of the principal shopping street, The Parade, to motor-cars. Let us get into the habit of thinking about existing centres in terms of the pedestrians and agree that

"The centres are the core."

Assessing

In consideration of the core, the architect's role is to create a necessary character, equal, if not superior, to the pedestrian's. The little esthetic survey in

Traffic in

In consideration of the subconsequence, not being sections, to complete the still core, to round the traffic is building position island is should urban scene the like, created for the prime "Major around buildings; An obvious most with condemn drawing-

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"The objective in the redesign of existing centres is to restore the pedestrian to the core."

Assessing pedestrian flow

In considering the impact of the motor-car on the city we will think more in terms of relegating the road in importance, not increasing it. Instead of beginning at the perimeter and trying to discover how to get cars to the centre, we must begin with the core have the introduction of the pedestrian as the objective and the more cars that are kept away the better.

Before any road proposals are made it is necessary to obtain basic data about traffic character, movement value and so on. Of equal, if not greater, importance, are surveys into pedestrian movement. It is a complicated subject and one on which we have little established technique but:

"Traffic surveys require a complementary survey into pedestrian flow."

Traffic intersections and building frontage

In considering urban space, the architect subconsciously excludes all those large, functional spaces with which buildings should not be associated, such as traffic intersections. Whilst few people would attempt to compose buildings round a fly-over, it is still common practice to try to relate them to roundabouts and similar intersections. A traffic island is functionally unsuitable for building frontage and the architectural composition should turn away from it. The island is a quite useless space as such and should not have visual significance in the urban scene—bedding-out rock gardens and the like are too small in scale to be appreciated from the driving seat. We have then the principle:

"Major traffic intersections are spaces around which it is undesirable to compose buildings."

An obvious principle and one on which most will agree, but if they do agree they condemn outright many designs now on the drawing-board or even under construction.

The parked car and urban space

The parked car destroys an urban space because it occupies it. The parked car and its revolting trappings of signs and symbols must be taken out of our urban spaces, to make them civilised again. I appreciate how difficult it is to find parking space for the continuous increase in the number of vehicles. Nevertheless, if we have an objective, we can at least prevent further desecration and will, in time, achieve the objective, namely:

"The floors of urban spaces must be re-designed for the pedestrian and not the motorist to come to rest."

The carriage-way exclusively for movement

We are all suffering from the psychology of the "Queen's Highway," the all-purpose surface on which it was once possible, short of highway robbery, to behave as one liked. It is not possible to leave a car on the carriage-way of motorways: it should not be possible on the carriage-ways of the central area.

Certain sections of the highway, where function and appearance allow, can be set aside for short-term parking, controlled and paid for by a system such as the parking meters, supported by a series of car parks and possibly parking garages adjacent to the pedestrian cores for both short- and long-term parking. When this is achieved we shall be in a position to say:

"Carriage-ways in central areas are exclusively for moving traffic."

The architect would expect, for example, to find at every point of access to the motorway or trunk road a car park and service area associated with a public transport system; he would expect to find car parks at railway and bus stations; and he would also expect them on the edges of areas of special use such as an industrial estate or town park.

It is obvious that the provision of car parks must be an integral part of a detailed development plan for a central area. We can say that:

"Road plans for central areas must include detailed proposals for the provision of car parks."

Effective public transport essential

If the use of private cars increases against a decrease in the use of public transport, the traffic problem will become even more intolerable. We will borrow a conclusion from the quite remarkable special number of the ARCHITECTS' JOURNAL:

"No solution is likely to be found unless full use is made of a modernised public transport system for the mass movement of people in centres."

Theoretical central area circulation

Somehow or other vehicles have got to get to the buildings by service or distributive roads. The distributive roads cannot be dissociated from building frontage: but that frontage need not be the chief building frontage: that primarily used by the pedestrian as in a shopping parade. The distributive roads will run behind the buildings parallel to the pedestrian way and from them service roads or courts will give access to the service areas of the buildings.

In an existing town the main streets are often both principal building frontage and the means of distribution. The objective in design must then be to separate them. The principal building frontage must be taken from the distributive road which, in practice, probably means turning a street like a shopping street into a pedestrian one and forming new distributive roads within the old pattern of minor roads at the rear. We then have the axiom:

"Distributive roads must never form a principal building frontage."

The need for comprehensive redevelopment

In the past new roads were in part financed by the building frontage they provided. Money has to be found to pay for the necessary new roads which have no building frontage on them. Everything points to a comprehensive area of redevelopment, in which the commercial value of new pre-

cinctual frontages helps to pay for the roads independent of it. We will here state the elementary:

"The solution to traffic problems in large and dense centres calls for comprehensive redevelopment."

Upper-level pedestrian ways

Traffic intersections in the heart of a great metropolis are often bound up in design with such valuable building frontage and such astronomical site values—Oxford Circus, Cambridge Circus, Knightsbridge, Piccadilly—that there is little hope of divorcing the principal building frontages from the principal road frontages. None the less, we must still strive for the ultimate objective of segregation.

What was so retrogressive about the proposals for the rebuilding of the Monico site in Piccadilly was not just that the building was commonplace, but that it was dumped down on the site as so much shopping frontage with only 15 ft. separating it from the traffic.

Two-level circulation is worth having simply for the pleasures it gives of different views of the civic scene. If it is worth having for its own sake, the more so when it helps to solve a traffic problem. Piccadilly has a pedestrian subway on which shops are sited and there are many other examples, such as in Stockholm. The advantage of putting the pedestrian below the car is that less headroom is required and probably less space. Nevertheless, most architects are uncompromisingly against subways because the architectural scene is the necessary background to urban life and an unnecessary background to traffic. Furthermore, they will suggest that sunshine and shadow, the sky and trees are natural elements that will refresh even the most brutalized of city dwellers. We may say, therefore, that:

"Where principal building frontage cannot be separated from a principal traffic junction, the aim in design should be to segregate pedestrians from vehicles by forming upper-level pedestrian ways or terraces."

Two-level centres

Architects have made proposals for two-level centres: what is now needed is some exhaustive research by other specialists into their practicability. One might reasonably have expected the Ministry of Housing and Local Government to have followed up their valuable handbook on Central Area Redevelopment, published in 1947 and now out of print, with a series of further studies. Perhaps, too, it would not be too much to ask the Ministry of Transport to state what rethinking they have done since their wartime publication *The Design and Layout of Roads in Built-up Areas*. The problems of the motor-car in the urban area are probably too diverse for any one profession to undertake a programme of research; but all of us would undoubtedly make very important contributions. Maybe we should encourage the appropriate ministers by a resolution something like this:

"The problem of traffic and the city centre requires continuous research which, if instigated by the government, would receive tech-

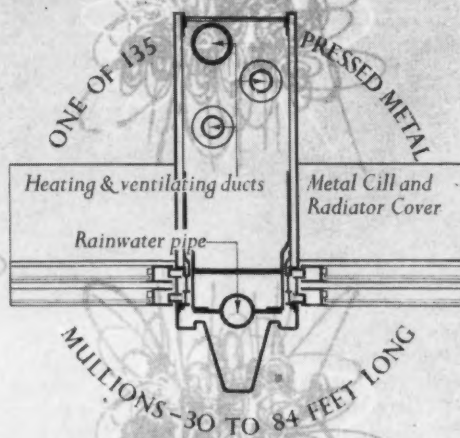
SANDERSON

NEW BUILDING, BERNERS STREET, LONDON, W.1

Slater and Uren, F.F.R.I.B.A., Architects

HOPE'S WINDOW WALL

with aluminium double hung sliding sash



HENRY HOPE & SONS LTD

Smethwick, Birmingham & 17 Berners St., London, W.1

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Fast urban traffic routes

The motorway does not enter into the urban pattern unless all other alternatives have been found wanting. Nevertheless, there exist the large concentrations of population such as Greater London, the Midlands and South Lancashire, where fast traffic routes will have to penetrate the urban area.

The route of the road will be determined by a study of the regional plan and the town plan. This should ensure that it is properly related to functional zones upon which traffic concentrates; that the least possible disturbance is caused to the internal functioning of the town; that those areas of individuality and character which give the town its personality are not destroyed; and that it is not sited on land of great value for other purposes. In practice the road will pass between building zones like neighbourhoods, on land which is of the least use for other purposes.

If the road has to penetrate a built-up area it is preferable to depress rather than elevate it. There may be instances where there is no practical alternative to the elevated road, in which case it is preferable to follow the line of existing barriers such as railway lines rather than cut across properties.

There may be topographical features which offer tempting lines of communication to the traffic engineer—a viaduct across a park, a carriage-way cantilevered over a river bank: we can study them in the American scene. If he succumbs to the temptation then he may be subject to a barrage of objections from "long-haired" planners, architects and preservationists. Before such objections are dismissed the question must be asked whether the road line justifies the destruction of human values and whether, in the long run, that destruction is sound economics—man has a tendency to gravitate from

a totally debased environment.

Architects would expect that enough land is acquired to enable the gash through the existing environment to be healed; they would expect a detailed study of the road's relationship to architecture and landscape; and they would want a series of detailed designs for the reconstruction of the fringe areas—the urban squalor that can result from a neglect of these issues can be seen in the new Boston Freeway in the USA.

Threat of the regional city

A new system of motorways, coupled with better urban communication, can, if unchecked, open the flood-gates to a torrent of building speculation. The town as a cohesive and comprehensive organism could disintegrate and be replaced by the regional town, a town in which man travels long distances on high-speed roads between places of living, places of work, shopping centres and places of amusement. It is already a familiar pattern in the vast wildernesses of Los Angeles and New York State.

The regional city is a seductive idea because, on the one hand, it has all the glamour of "big thinking" and, on the other, no one need do very much about it. In this country such a pattern would mean the destruction of the traditional hierarchy of city, town and village; the destruction of the countryside and its closely-knit rural building; and it would mean radical changes in our way of life.

Decentralization the complement of road design

The motorway, with its complement of urban roads, is a great force for urban expansion: it can accelerate concentration and generate the ills it is designed to cure, or it can be an instrument of decentralization and draw off congestion in the big cities to a more even, natural balance. The writing is on the walls of Los Angeles; let us be sure the right choice is made.

and impartial intellectual service to the community, based upon knowledge and experience."

The fact was that professions were esteemed in accordance with the sense of responsibility which their members possessed individually and displayed collectively. They could not evade responsibility to the community, or escape the eye of the state. Until recently a profession gave its services to the client who could afford to consult him. Today he was increasingly expected to provide a service open to all who needed it: a neat illustration of this being the work-studies which fixed "the expected throughput per chair-side hour" as the basis for payment of dentists.

The responsibilities of the architectural profession called, in Mr. Allen's view, for four requirements: the highest quality of entrants, training of quite exceptional calibre, high-grade discussion and information service, and the maintenance of an efficient, liberal and powerful Institute mechanism.

In education the toughest problem was in handling science and technology, the ground-work both of art and of general competence, and the vital training ground for the mind, the place to develop its capacity to think logically and incisively. Architects had been unable to free themselves from the handicaps of books and teaching based on engineering. They required, not watered-down courses to acquaint them with such technologies as foundations, structures and so on, but the basis for sound policy decisions about design. This often involved not engineering alone, but economic, industrial and human parameters. One or two courageous but insufficient moves had been made, but nevertheless something radical was now needed by way of improvement, and Mr. Allen looked to the reformed Board of Architectural Education to act vigorously in this field.

A second educational question was building costs and value for money. These, Mr. Allen insisted, must be linked to national economic planning and money policies, and include the methods of financing building as well as their true costs in use. They must be concerned not only for individual building but for the nation's building.

A third educational question was the failure to cultivate a strong collective sense of professionalism. There were still two or three major departments of Central Government and 36 County Boroughs with large building programmes but no effective architectural control. This was wrong and irresponsible, but the country had not yet crossed the border line between "desirability" and "indispensability" in its view of the architect's services. Mr. Allen was confident that this was only a matter of time, for the profession itself had only recently accepted the modern concept of a service to the community.

The nation's investment

Through the success of the schools and other Local Authority programmes, the profession had become the channel for the largest single factor of the community's

THE PROFESSION IN CONTEMPORARY SOCIETY

'Service To The Community' As The New Concept

The idea dominating William Allen's paper on "the profession in contemporary society" at the RIBA on March 8 was that, in the scientific age, the chief characteristic of the professions will be organization for collective action on behalf of the community. In elaborating this idea William Allen concentrated on four issues: the first was that science, industry and the professions must see themselves as interdependent activities and work more obviously in that sense. The second was the change in the nature of the professions, from the concept of consultation to the idea of service to the community through the social use of knowledge. The third was that the architectural profession must gear itself to a new level of responsibility because it handles a large volume of the country's capital resources. And the fourth was that the architects must take the initiative in seeing that the building profes-

sions as a group function well together.

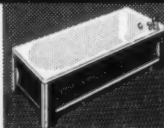
The formation of the professional bodies in the 19th century (the first RIBA Charter dates from 1837) was, he said, the natural result of the thirst for knowledge in the scientific age, but was partly a response to criticism, and engendered at the outset one of the fundamental characteristics of professions—that membership should be an assurance of competence and honesty. Mr. Allen questioned, however, whether there were not now too many professional bodies. Had the fragmentation of engineering not gone too far? Was it sensible to have made separate bodies necessary for town planning and quantity surveying? He doubted it, and thought the tendency towards amalgamation should be encouraged, and might be the next stage of development.

Mr. Allen saw the essence of professionalism as "the offering of a specialized



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capital investment, responsible for an expenditure of somewhere between £700 and £800 million annually. Architects should, therefore, keep before themselves, both in the schools and in practice, the idea that their main concern was the wise investment of the country's resources, looking to high dividends both in economic and human terms, for it was their decisions that mainly determined the value the community got for its money.

Mr. Allen then examined the question of publication and discussion. He found the practice of the RIBA superior to that of the Electrical or Civil Engineers, whose papers were almost exclusively technical, but it failed seriously to gather in experience or to advance learning. If a member of the public picked up the *RIBA Journal* what would he find as evidence that they had made original contributions to his and the world's advancement? One advance was the Council's decision to initiate a new kind of information service. But real advances by architects were made in the design of individual projects which were scarcely ever discussed.

Two tiers?

Turning to questions of practice Mr. Allen made some observations on the two-tier profession: first, that the profession could not get on without unqualified staff; second that, as many were striving for an architectural qualification because it was the only status of value within their reach, even though not well suited to their abilities, this raised the question whether some better training and status could not be devised for them: third, that this type of staff might be specifically trained to carry part of the technical burdens of the modern office, both at junior and senior levels.

Directorships of building firms seemed to Mr. Allen no real issue at all. Civil engineering work was often better done because firms were run by civil engineers, and their Institute benefited too.

To assist architects to discuss individual buildings more Mr. Allen suggested that, following the example of the Architects in Industry group, several groups might be formed dealing with different building types, with two principal functions: first, to organize the discussion of individual projects, and second, to encourage and advise upon research.

Professional collaboration

Finally, Mr. Allen dealt with the lack of collaboration between the building professions; a failing which, he said, laid them open to the charge of treating the public interest lightly when it was considered that they were responsible for the use of more than £2,000 million value per annum of materials and labour.

The different professions had come to their present level of organization independently. Their members were increasingly thrown together by the developing needs of building, but as organizations they had not seriously begun to look at their operation together. The architect had the main duty of ensuring the smooth collaboration of the whole array of interests, professional and industrial.

ICE

Car Parking Exhibition

An exhibition entitled "Car Parking" organized by the British Road Federation was opened at the Institution of Civil Engineers on March 17 by Mr. Marples, the Minister of Transport. It is devoted to parking in its widest sense, to include service areas on motorways, motels, drive-in banks and (rather illogically) shopping precincts. By far the most interesting and the largest section, however, is that devoted to multi-storey parking garages. These are illustrated partly by photographs, partly by models. Foreign examples, as they have mostly been built, are shown in photographs; British examples, as they are mostly projects only, are generally shown as models. There is a good catalogue which gives as much information about building costs and parking charges as could be got from the suppliers of material and probably more than they were willing to give.

Customer or attendant parking?

The big issues, of course, are whether to go for "customer" or "attendant" parking; and if you choose the latter, what degree of mechanization to use. Rumours from America suggest that the trend there is away from "attendant" and back to the earlier form of "customer" parking; but this has not discouraged the sudden spate of new mechanical parking systems on the British market. Mechanical car parks are normally more expensive in first cost, but they save space. On the other hand they need more attendance and their rate of reception and delivery at rush hours is slower. Sir Herbert Manzoni commenting on these facts in his paper to the RIBA of two years ago suggested that mechanized car parks are only likely to prove economical where land values are very high and where users are prepared to pay the relatively high rates occasioned by attendant parking. He added the proviso (which must be difficult to fulfil) that users must come and go regularly through the day and not all together; also that the size may have to be limited to about 100 cars.

Degrees of mechanization

Mechanization may be complete (e.g., Zidpark, Pigeon Hole, etc.) where the attendant remains at drive-in level and manoeuvres cars up and into their berths by merely pressing buttons; or mechanization may be partial (e.g., Cap, Carpac, etc.) where the owner or attendant must remain in the car until it nears its final destination. The aim of partial mechanization is usually to cut down the space needed for manoeuvring. The degree of mechanization which is most favourable in each case is surely something which can be found out by time and motion studies. Either these have not been made or the results are being carefully concealed, for it is impossible for the visitor to the Exhibition to form any serious opinion of the circumstances (if any) in which any one system is likely to prove advantageous. Throughout the exhibition there is that

hearty lack of candour which is natural to commerce, but which is so intensely irritating to the professional man. Surely the Road Federation could save a great deal of money (public and private) if they were to carry out some investigation of claims. Alternatively, what have the Road Research Laboratory and BRS been doing? It is ludicrous that we should have been thus taken by surprise.

Examples

The architectural quality of the exhibits is not high and none comes up to the example (not in the exhibition) which we illustrate on page 456. We show on the next page three representative models. Top is a ramp type garage now being erected in Aldersgate Street, London (architect Oscar Garry and Partners; engineers, Fram Reinforced Concrete Company Limited). In this the ramps run from front to back at right angles to the main facade and the architectural expression is little different from that of an office block. In the centre is a spiral ramp type garage under construction at Bath (architect, R. Jelinek-Karl; engineers, G. C. Mander and E. N. Underwood) in which the parking space is itself part of the ramp and the latter is clearly expressed externally. Bottom is a mechanical multi-storey car park to be built for the Borough of Woolwich (architects, T. and P. H. Braddock; engineer, J. A. Stirling). This, with its open sides and bare framework is characteristic of the fully mechanized parks. It is to be noticed that as only cars and not people have normal access to the upper tiers, floor to ceiling heights can be reduced. The functional criteria suggest that the last, though undistinguished, is nearest the mark; for there seems no case for enclosing the side walls, even partially. Fortunately the car when nesting in an architectural framework is less of a visual distraction than when parked in great numbers in the open.

Conclusion

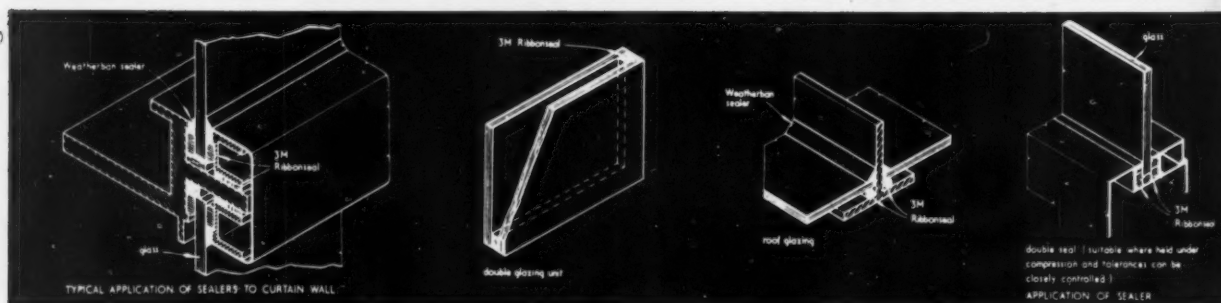
The exhibition as a whole is indigestible, chiefly from the lack of any kind of exposition on the part of the organizers of the criteria to be aimed at. Even the prices, so laudably given in the catalogue, have an air of unreality about them, particularly the British prices. It seems to have got round among the frenzied speculators that a figure of £300 to £350 per car, excluding land is "about right" and these figures are accordingly given for the most diverse solutions. Yet the Pearce Garage at Birmingham which is one of the very few of the post war garages to be actually built, achieved a figure, at 1956 prices, of £230 per car, excluding land and the Hemel Hempstead Development Corporation are aiming at £215 per car inclusive of land. This is an immensely important subject: it is a pity that it should have got away to such an inauspicious start. The exhibition closes on March 26. It is open daily from 10 a.m. to 6 p.m., excluding Sundays. Admission is free.



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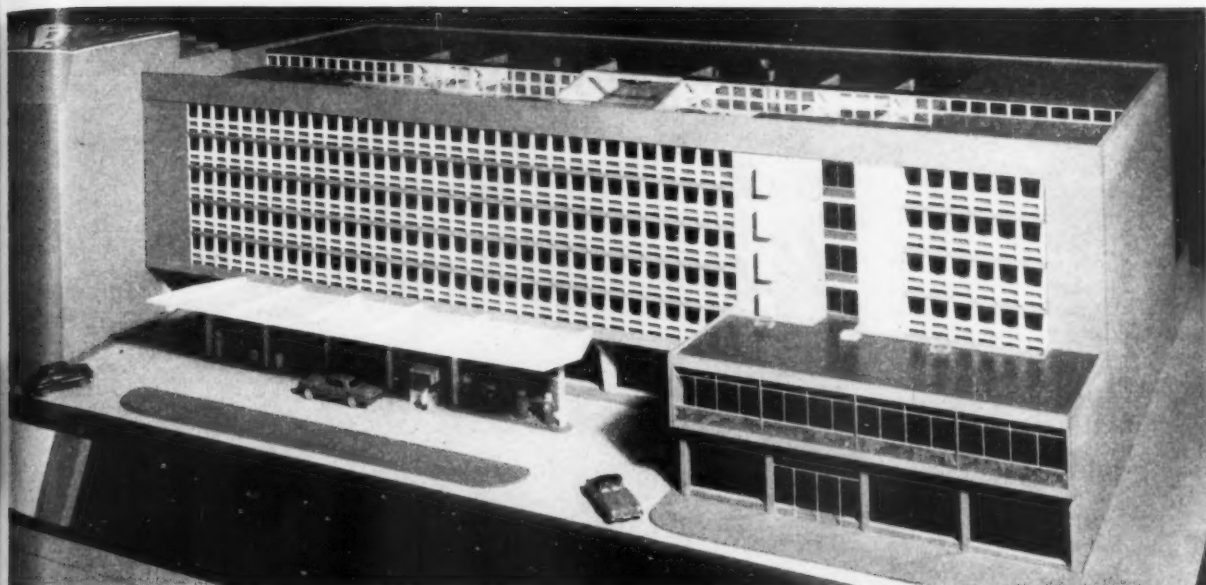
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Car Parking Exhibition

Above, ramp type garage for Aldersgate Street, London, designed by Oscar Garry and Partners. Right, Spiral ramp garage now under construction at Bath, designed by R. Jelinek Karl. Bottom right, mechanical multi-storey car park for Woolwich, designed by T. and P. H. Braddock.



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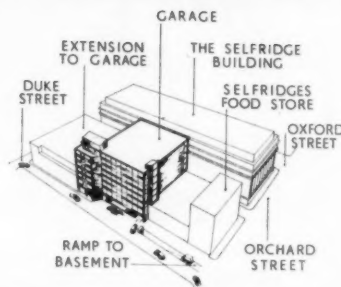


planning study

MULTI-STOREY PARKING GARAGE IN DUKE STREET, W.1



The main elevation seen from Orchard Street.



The vehicle entrance.



The multi-storey Lex-Selfridge parking garage, recently opened in Duke Street, W.1, designed by Sydney Clough, Son and Partners, is an example of effective collaboration between the architects of a large firm, Duke and Simpson, and outside consultants called in to design a specialised building. It is the first example of this building type to go up in London since the war, although it is a type which we might have expected to have developed as part of the redevelopment of our blitzed, worn-out and traffic-logged central areas. However, historical precedent in Britain is scant and unimpressive, only a handful of parking garages were built here before the war, mainly by large service garage groups, and it is only now, it seems, that the need for such buildings has been recognised.

The Lex-Selfridge enterprise has been criticised as only partially successful on the grounds that relatively high parking charges deter potential customers, and if it is left to private enterprise to provide buildings of this type on immensely expensive city-centre sites, that is probably inevitable. It must be clear, however, that from traffic and town planning viewpoints, this garage will be the forerunner of many similar structures.

Much of the congestion in central area and indeed urban streets generally results from the many functions which they fulfil: they are at the same time through highways, pedestrian thoroughfares, loading and unloading "bays," public transport routes, and short- and long-term parking areas.

Congestion can be mitigated by prohibiting parking on through roads and streets, establishing limited meter parking in side streets, and developing multi-level parking garages, above or below ground, with or without service facilities, either as separate buildings or as adjuncts to offices or shops.

Capital outlay on even the simplest type of multi-level garage is considerable, land values are highest where the need is greatest, and the financial return on this type of building is spread over a long period. Yet parking must now be regarded as a necessary extension of the highway system, and grants from the Treasury should be available, as for road construction, to assist with the capital cost of such developments, whether undertaken by private enterprise or public authorities.

The Lex-Selfridge garage is at the rear of Selfridges Oxford Street department store, and has direct access to the store at ground floor and several other levels. Basically it consists of seven parking floors housing nearly 1,000 cars, a ground floor motor showroom, restaurant, offices, reception and garage entrance, and a basement approached

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MULTI-STOREY PARKING GARAGE IN DUKE STREET, W.1: continued

by a separate ramp for Selfridges reception and despatch department, which handles an average of 400 vehicles a day.

The structure consists of an *in situ* reinforced concrete frame on *in situ* r.c. piles, with a 35 ft. x 33 ft. grid of square columns, 3 ft. 3 in. on the ground floor and 2 ft. 9 in. on the upper floors, and an average beam depth of 2 ft. 6 in. Headroom is 9 ft. 1 in. on the first floor and 7 ft. 8 in. on all upper floors. Floors are reinforced concrete, 7 in. thick, with a granolithic finish.

The vehicle entrance, over which there is an illuminated parking space indicator panel (this is difficult to read when the sun is shining on it), is in the north-west corner of the garage. Access to the parking floors is by a two-way ramp, adequate in width and with good visibility on corners: traffic keeps to the right to avoid cross circulation. Customers drive in onto the parking floor and attendants drive the car into the final parking position. Turntables installed in the centre of each floor speed up attendant parking. Ticket issue is at first floor level, and ticket colours correspond with the colour of the column bands and dados on the parking floor to which the motorist is directed. Lift lobby colours and floor selection buttons in the lifts also conform to this colour system. The ramps are "brushed" concrete finished and heating coils are incorporated in external ramps and inside the vehicle entrance.

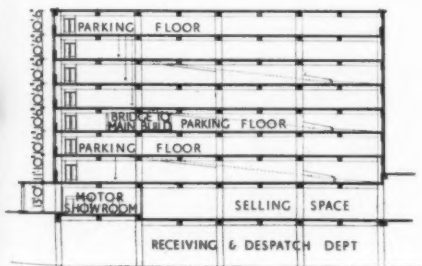
On the parking floors finishes are relatively good: all exposed concrete is colour-washed white, and there is



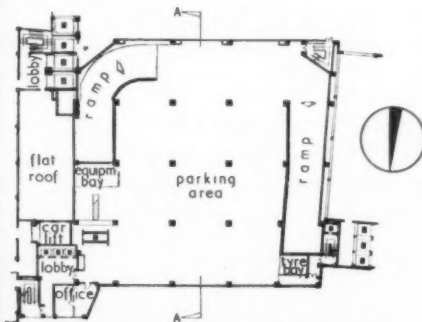
A typical parking floor.



The motor showroom on the ground floor.



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



Ground floor plan typical parking area [Scale: $\frac{1}{80}'' = 1' 0''$]

a high standard of artificial lighting. Direction signs are bold and legible. Public lavatories, sited adjacent to the parking floors, have a good standard of fittings and finishes although the colours might be thought garish.

At ground level a concrete canopy projects over the petrol pumps in front of the motor showroom. External ground floor columns and walls are faced with dark grey terrazzo, and the showroom has a terrazzo floor and fibrous plaster ceiling with semi-recessed circular fluorescent fittings. A clear-glazed, fire-resisting screen separates it from the store. There is a parcel delivery service from the store to a ground floor office adjoining the lifts, and a restaurant accessible from both the store and the garage.

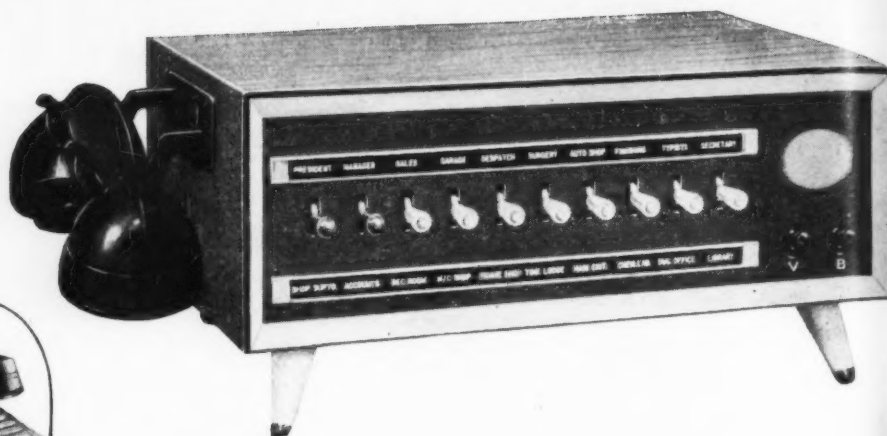
The main facade of the garage was designed by Duke and Simpson's and is a curtain wall consisting of a framework of stainless steel-cased mild steel mullions with an aluminium-painted steel sub-framing and clear fixed glazing. Spandrels of grey and blue opaque glass are in front of the concrete upstand beams. Grills for fresh air intake to the parking floors are "glazed" into the curtain wall. There are steam-heated coils in the intakes, and air is extracted at the opposite (south) side of the building through vertical ducting. Extract fans are sited on the roof. The small-scale articulation of this facade and the termination of the

curtain wall against end-wall slabs of Portland stone are out of sympathy with the simple and directly functional structure.

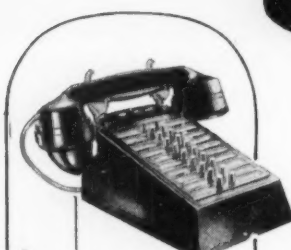
The wing which projects from the facade houses the main pedestrian entrance to administration offices and lavatories, and is adjacent to the lifts and stairs. Flank walls to this wing are faced with tile mosaic giving a general colour effect of pinkish mauve, while the spandrels under the windows on the front wall are in lemon yellow tiles. The wholesale polychromatic treatment of the front of the building is confusing and excessive. The flank walls to the garage are faced with Portland stone. The cost of the entire contract for this building was undoubtedly high, and an approximate cost of £1,250,000 has been quoted for the entire contract, which covers the link with the existing building, special foundations, the restaurant, and the ramp and basement for Selfridges deliveries and goods collection.

Of that total, the cost of the garage, including contingencies, was around £468,000, of which, as the architect points out, an unusually heavy cost was for impeccable fire precautions, insisted upon very rightly by the LCC, since the parking garage is linked directly to a shop through which 100,000 people pass every day. This sum works out at approximately 4s. 10d. per cu. ft., and 54s. per sq. ft. of floor area.

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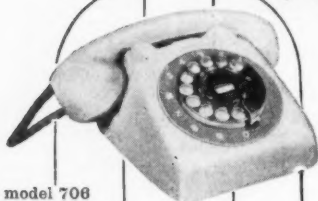


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THE INDUSTRY

The industry this week is devoted to a description by Sheila Lynd of cookers at the Ideal Home Exhibition, Olympia.

Makers of electric cookers spent most effort in trying to emulate the virtues of gas: makers of gas cookers, the advantages of electricity. The result is a wide range of cookers which have successfully obliterated the disadvantages of both. Thus most new gas cookers now have automatic lighting and thermostatic simmering rings, and many use electric automatic time switches and pingers, while electric cookers boast of superspeedy hot plates with 6-heat control and simmerplates which cannot make milk boil over.

The Oven of the Year is the new Cannon gas cooker, with eye-level barbecue-grill, which when not wanted folds flat against the splash plate so that you don't bang your forehead when peering into saucepans. The cost is £68 5s. 0d., and having designed this barbecue, Cannon has discovered that we have never been able to roast before, only to bake, and that baked meat, "fatty impregnated and at times case-hardened," is indigestible and extravagant.

The spit of the barbecue is turned by electricity: it could be clockwork, but an electric turnspit is more reliable and does not require winding.

Like several other gas cooker firms, Cannon is no longer fixing automatic switchgear to all upper price models, finding them less of a sales point than was once supposed. The gas people would naturally like to get away from using electric gadgets which make fixing and servicing more complicated, as they have to be connected and serviced by an electrician. A rumour (at the Building Centre) that the gasmen are now working at clockwork and chemico-thermal gadgets instead was unheard of by salesmen at the Ideal Home.

Outstanding among top-priced electric ovens is the new GEC Supreme, which is on castors and can easily be moved aside for cleaning behind. This costs £79 with four

superspeed simmer-controlled plates, or £74 with three. Its oven has a drop door and inner, glass door, and will bake a 36-lb. turkey. These drop door ovens certainly make it much easier to lift out a joint for basting and turning and since we shall persist in baking our meats this is a big advantage. On the other hand, it makes cleaning right to the back more difficult, on those rare and hateful occasions when this has to be done. There is a separately heated bottom drawer, and automatic time-switch and pinger. (But does the type who needs a glass peer door to the oven also need these reminder instruments?) Ovens, by the way, are now generally measured in turkey sizes, just as extra-large grills are "Dover-sole sized."

The cheapest electric cooker, the Jackson Estate—£28—is also on sale with automatic time switch for £35. Here the time switch is expected to be popular because this cooker is bought by so many young couples who both go out to work.

Its equivalent in gas cookers is the New

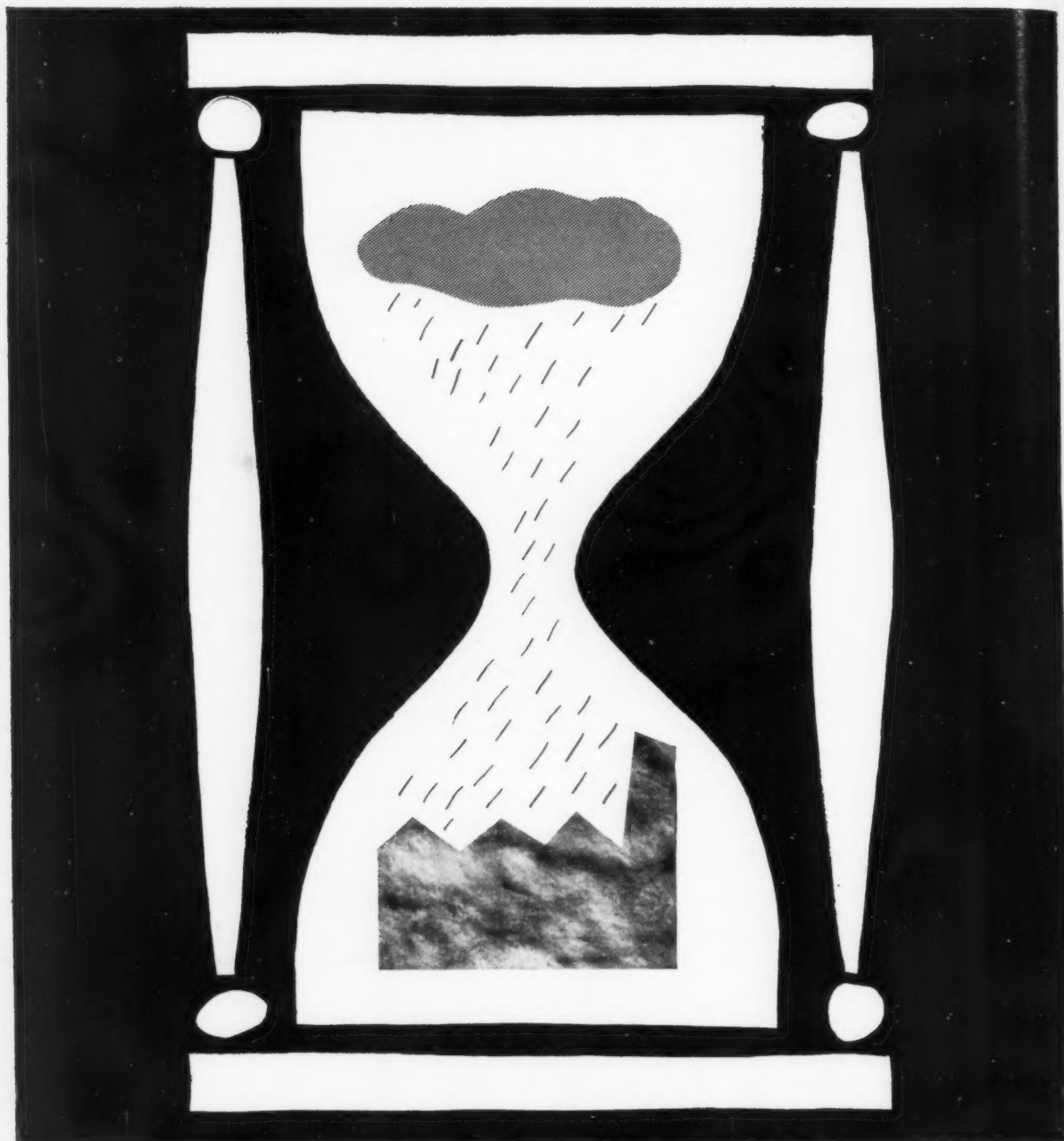
World 33—£29—which has achieved a flat cooking top by placing a stainless steel grid over sunken burners of a new type. This cooker has an eye-level grill and storage cupboard at the bottom.

Radiation Group Ltd. has also introduced the New World 90—the largest and simplest cooker on the market, designed for small hotels and cafés and costing £76 11s. 6d. With six boiling rings, a large eye-level grill, and a two-door oven capable of accommodating three legs of lamb together on one shelf, this is a stove for the professional, full-time cook, entirely without gadgets—apart from a gas-match, extra. It is hard to see how the handles of the cooking pots in the middle can fail to get terribly hot.

Cookers, by the way, have burst out into pastel shades and romantically named colours this year. The Cannon Supreme is in "white or honeysuckle," instead of white or cream, and its gas taps can be supplied in "Guardsman red or Dresden blue."

Left, the Cannon gas cooker with barbecue grill closed. Right, the GEC Supreme electric oven.





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19 CONSTRUCTION: COMPLETE STRUCTURES**lift slab at Birmingham**

It is more than ten years since the Youtz-Slick technique of lift slab construction was devised in the USA.* Since then it has been used extensively in that country and, more recently, in Australia and Canada. At last it has come to Britain. In 1958 a Birmingham firm of builders took out British patent rights and towards the end of last year this company erected a one-storey store building in their own yard and are at present building three blocks of nine-storey flats which are described in this article. At this stage we can only wait and see whether, at the end of the job, the builders will be able to show a saving in time and cost which justifies the exercise. Advantages of lift slab are only marginal unless its influence can be spread through the whole of the building operation. In this instance there is disappointingly little evidence of this approach, as is discussed on page 478, but the architects and builders say they were more concerned to get the first lift slab building under way to familiarise themselves with the technique. They are considering constructing a multi-storey car park by lift slab in which they expect to be able to benefit by their experience on this job.

* AJ, January 18, 1951.

John Douglas, a director of R. M. Douglas (Contractors) Ltd., of Birmingham, paid a routine visit to Australia early in 1958 and was impressed with the amount of lift slab construction going on at the time. He decided to investigate the possibility of introducing the technique here and negotiated for British patent rights. The subsidiary company, British Lift Slab Ltd., was formed to undertake contracts involving this system.

Towards the end of 1958 the Birmingham City Architect agreed to negotiate a contract with British Lift Slab Ltd. for the structural design and complete construction of three blocks of nine-storey flats at Long Nuke Road, Northfield, using the lift slab method. A contract was subsequently awarded the company in September, 1959, and work commenced on the site later that month. The lifting of the first slabs commenced at the beginning of February. It is anticipated that lifting operations will take about six weeks per block of flats.

Design of the flats

The three blocks of flats occupy a site at Long Nuke Road adjacent to estates at Bangham Pit and Northfield. The flats are of identical design, being one of the standard designs for multi-storey flats produced by the Birmingham City Architect's Department. Each block contains 34 two-bedroom flats, one one-bedroom flat and one bed-recess flat. The plan is rectangular, approximately 75 ft. x 47 ft. and projecting balconies occur at either end of each long elevation. Entrance way, stairs, lift and access corridor divide the long dimension at the centre. Structural design, which is flat slab, is described later. There are 12 columns on either side of the central corridor. External walls are cavity construction comprising an outer skin of facing bricks and an inner skin of breeze block. Internal walls are breeze blocks. Party walls between flats comprise two skins of 2½-in. thick cement/clinker blocks with a fibre glass quilt in the cavity between. The flats are heated with electric withdrawable floor-warming cables laid on top of a 1-in. fibre glass quilt on the floor slab and buried in a 2-in. thick screed. Floor finishes generally are thermoplastic tiles.

Lift slab construction

The principle of lift slab is that all floor slabs are poured at ground level and then "lifted" to their final positions by means of hydraulic jacks mounted on the tops of the columns and operated, in this case, in batches of 12 (i.e., from 12 columns). Needless to say, where more than one column lift is necessary the jacks are mounted at the top of each successive column lift and the slabs lifted in stages. This is necessary in any building of a height exceeding 40 ft. or, say, four storeys. Two threaded rods, each 1½-in. diameter high

technical section



Fig. 1. A perspective of the nine-storey flats. The projecting balconies have wired glass spandrels and the recessed panels between windows on the end elevations are precast exposed aggregate.

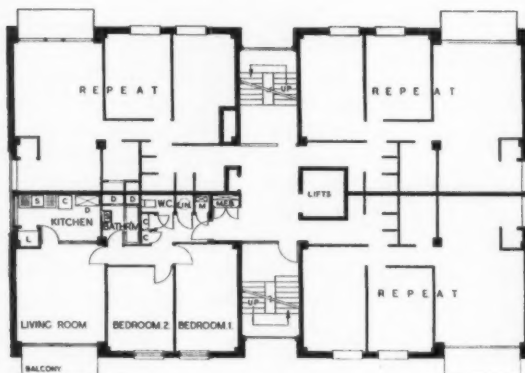


Fig. 2. Typical upper floor plan.

tensile steel, connect each jack with a collar which slides up the column. The collar acts as the supporting plate of the flat slab structure.

Usually the collars (one per column per slab) are threaded over the columns immediately after the first column lift is erected and before concrete is poured. On this occasion, however, the collars were threaded on to the columns before erection whilst the columns were supported in a horizontal position at ground level. The contractors considered this to be quicker and simpler than hoisting collars by crane 30 or 40 ft. in the air and manœuvring them over the column heads.

In America, where steel is cheap relative to labour costs, it is usual to cast the collars in one piece. This was also done in the Royal Exchange Assurance Building in Sydney.* At Birmingham, however, it was

decided that to fabricate the collars from angle sections and plates would be cheaper. Another difference is that instead of the usual "keyhole" slots, one on either side of each collar through which the rods from the lifting jacks are threaded, simpler details were used, one of which, Fig. 4, consists of a semi-circular hole cut from the edge of the collar plate. The "keyhole" effect is achieved by forming a larger hole in the concrete next the hole in the collar. Each lifting rod has a bushing at the bottom, of a diameter less than the hole in the concrete and greater than the hole in the collar. It is dropped through the former and moved across and held under the latter.

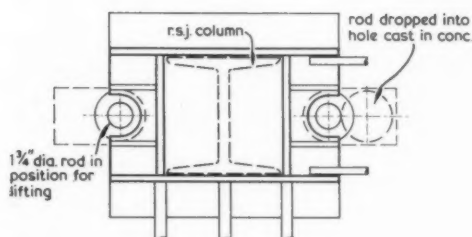
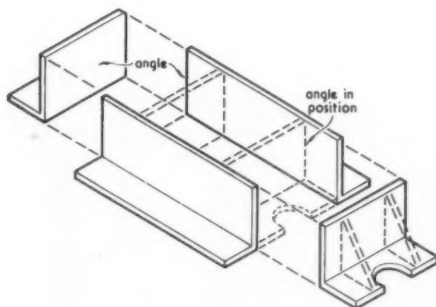
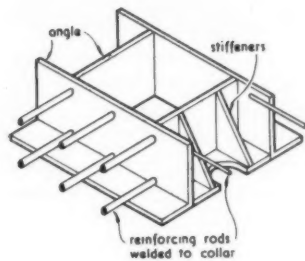
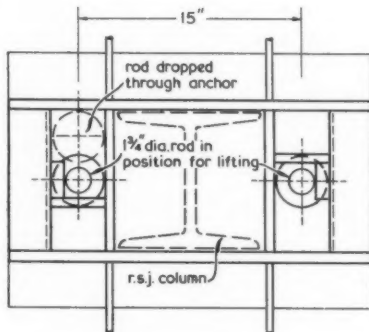
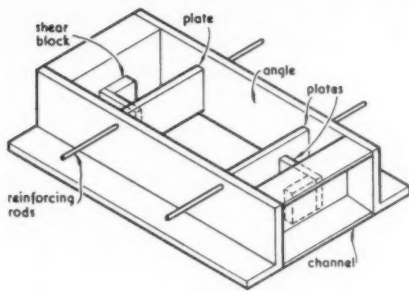
The lifting jacks (Fig. 8) are operated by hydraulic pressure through a central control console (Fig. 9) mounted on the top slab. One man operates this console during lifting operations. At Birmingham each block of flats has two consoles. Each console controls 12 jacks.

Each floor is divided into two sections (Fig. 10) for the purpose of lifting so that 12 jacks are used to lift each slab. The sections are separated by the stair wells and a 3-ft. wide gap along the middle of the corridor on each floor connecting them. This gap is filled with concrete after the slabs have been lifted. The full height of columns is made up in three lifts, the first to a position above third floor level, the second to a position above sixth floor level and the third to roof level. The sequences of lifting operations is shown in Fig. 11. All slabs are poured, one on top of another at ground level, the roof slab (No. 9) is hoisted to the top of the first column lift thus providing lateral stability to the columns, then slabs 5 to 8 inclusive are lifted and also temporarily fixed in a position immediately below the roof slab. This is followed by the lifting of slabs 1 to 4—1, 2 and 3 being "dropped off" and fixed in their final positions on the way. At this stage the second column lift is placed in position, the roof slab lifted to the top of this and slabs 4 to 8 lifted—4, 5 and 6 being "dropped off" and fixed in their final positions on the way. The process is repeated for the third and final column lift. The maximum number of slabs lifted at any one time is four.

Instead of a usual parting compound, such as a resin dissolved in a volatile spirit, 250 gauge polythene sheet was laid between floor slabs to prevent them sticking together. One effect of this was to produce very smooth surfaces to the concrete, a fact which should be taken into account when considering floor and ceiling finishes. A smooth surface to the underside of a slab could make the application of a plaster or render surface difficult. Once stripped from the underside of the concrete after slab lifting the polythene sheet was found to be unsuitable for further use.

The method of fixing the floor slabs in their final positions is to fillet-weld mild steel plates, called shear blocks, to the columns and the collars. Columns are 10 in. × 10 in. and 8 in. × 8 in. rolled steel joists of Universal section. A plate is welded between the flanges of the column on either side at the level of the underside of each floor slab and shear

technical section



Left, top to bottom alternative collar details: Fig. 3. Type of collar used on inner columns carrying maximum dead loads. Fig. 4. Plan of this collar. Fig. 5. Type of collar used on perimeter columns. Fig. 6. "Exploded" view showing the fabrication from four angle sections. Fig. 7. Plan of this collar.

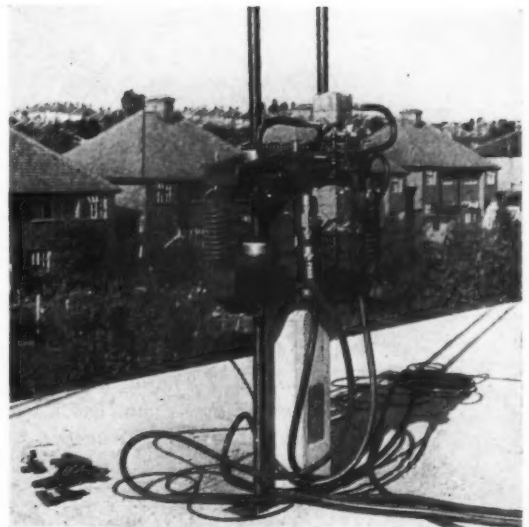


Fig. 8. The hydraulic jack used for slab lifting. This one is shown on top of a concrete column at the lift slab store building erected by the builders in their own yard immediately before the Birmingham flats project.

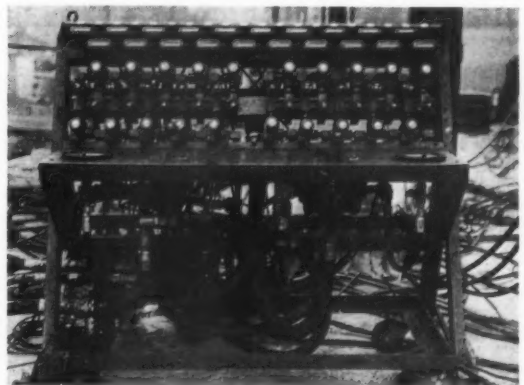


Fig. 9. The console at which the operator controls the lifting jacks. This machine can operate 20 jacks simultaneously although it operated only 12 at Birmingham.

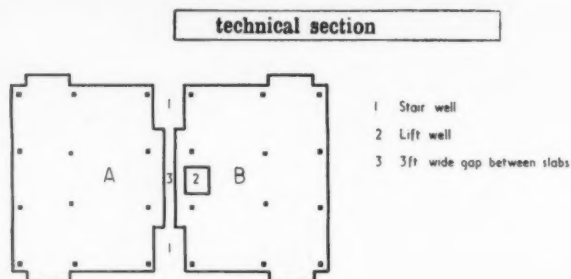
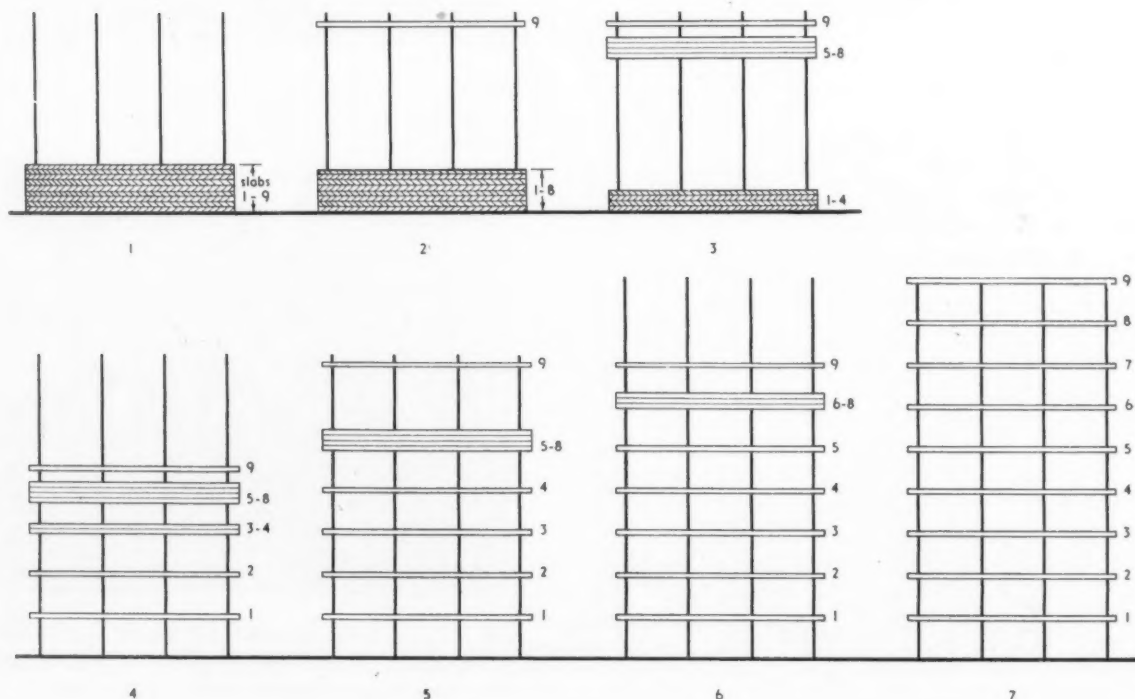


Fig. 10. Plan showing the division of each floor into two areas, A and B, for the purpose of lifting.

Fig. 11. The sequence of lifting operations: (1) first column lift in position, all slabs poured. (2) Roof slab raised to top of columns, temporarily "parked." (3) Slabs 5-8 raised and temporarily "parked." (4) Slabs 1-4 raised, 1, 2 and 3 fixed in their final positions, second column lift in position. (5) Roof slab raised to top of columns, slabs 5-8 raised, 6, 7 and 8 temporarily "parked," 5 in final position, 4 raised and in final position. (6) Third column lift. (7) All slabs in final position.



blocks are welded to this. An additional shear block is welded to each flange at the same level so that each collar is supported on all four sides. Support for slabs "parked" temporarily at various levels is provided by short channel sections fillet-welded at the legs on to the flanges of the column. When the slabs are to be moved up the welds are burned off and the channels removed. All columns are encased in concrete on completion of lifting operations.

Structural design

The structural design is substantially the same as for orthodox flat slab construction, using the moment distribution analysis of continuous frames laid down in CP 114. Certain other factors must be considered such as stresses imposed on both slabs and columns during lifting. Stresses arising out of slabs being at different elevations during lifting must be considered, though such difference can be controlled to a maximum of $\frac{3}{8}$ in. and more accurately if necessary.

The collar acts as a shear head and bearing plate to transmit the reaction to the column. A linear distribution of bearing stress across the collar is assumed and the various parts of the collar and the welds connecting the parts are designed to resist the bending moments and shears arising from these moments. Bending moments are transferred by means of reinforcing rods welded to the collar before concrete is placed. The load from the collar is transferred to the column by means of shear blocks (four to each collar) the thickness of which is determined from bearing requirements. The length of the fillet welds is determined from the load to be transmitted in shear. Bending moments are transmitted by the horizontal fillet weld between collar and shear block.

technical section

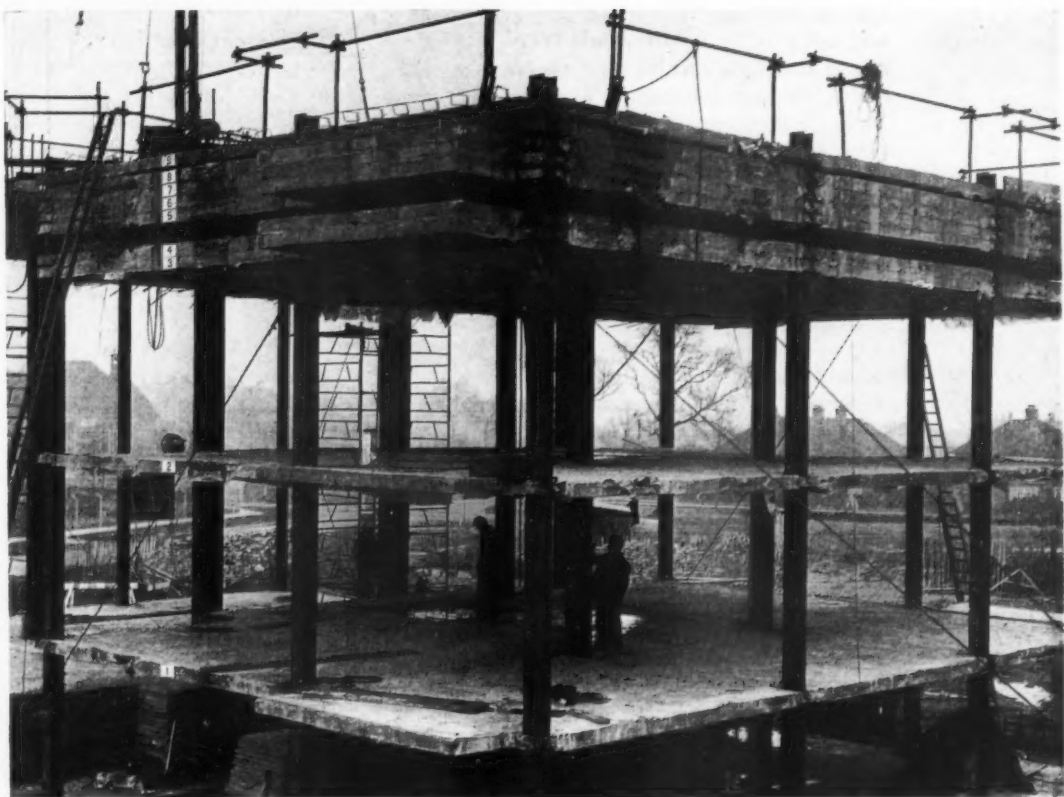
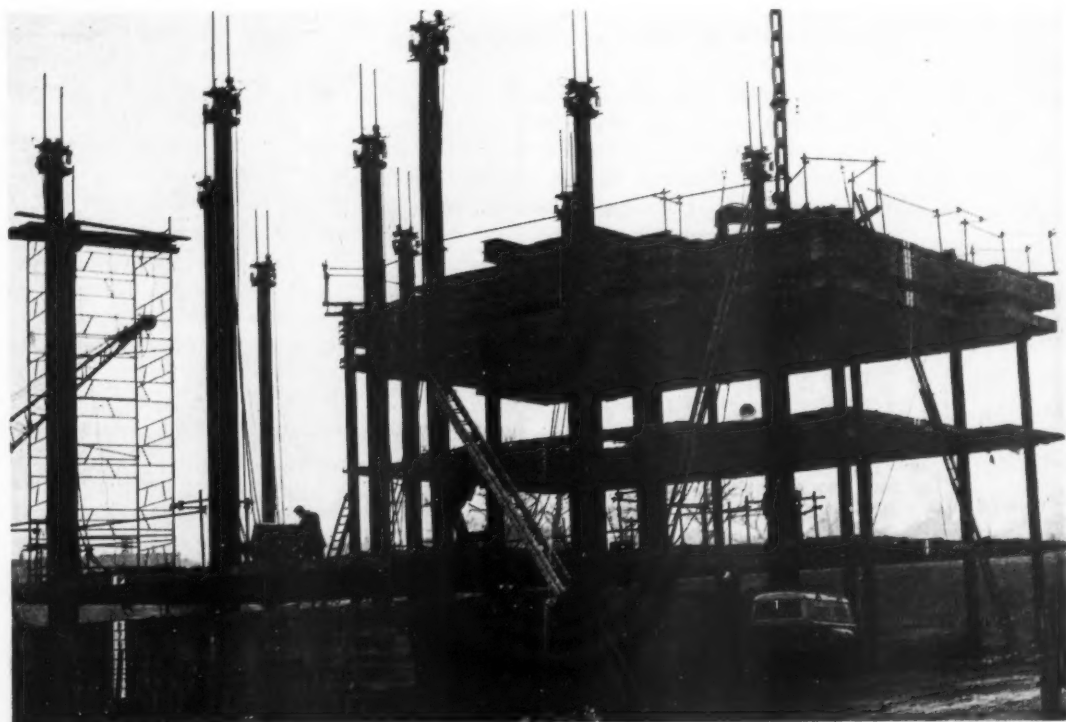


Fig. 12 (above). The position at the end of the first lifting operation. Slabs 1, 2 and 3 are in their final positions. The outer edges of collars around the corner column (top centre of photograph) have not been fully covered with concrete. Fig. 13 (below). The jacks are

mounted on top of the columns for the first lift to the second section of one of the blocks of flats. The first section slabs (right background) have been hoisted to the top of the first column lift.



technical section

Conclusions

Lift slab is not a new structural system. It is a new way of erecting a building using an orthodox system, namely flat slab construction in which there are no beams as such and the floor slab soffits are flush. With lift slab, formwork is eliminated, other than perimeter formwork at ground level, and work can be carried out at ground level which otherwise would have to be done up in the air. There are other advantages, but these two are of the greatest significance as they allow speedier and safer construction and consequent savings in the cost of building. It may be a little early at Birmingham to know if such savings will be realized. But if, in the final analysis, they are not, the explanation is less likely to be the unfamiliarity of the building worker with a new technique than that the designers did not attempt, on this occasion, to exploit fully the inherent possibilities of lift slab. Both a director of the building company and its chief engineer have visited the USA where they have had the opportunity of studying lift slab at first hand. They should not be inexperienced in its application. Whether they have met with conservatism here in their efforts to give lift slab a fair trial is a matter for conjecture. There are one or two aspects of the Birmingham job the effects of which must be to make the first trial of lift slab in this country less than fair. The structure for this type of building using orthodox erection methods would probably cost between 20 and 25 per cent of the total cost of the building. If savings are to be made, therefore, it is essential to develop the technique to the full so that other operations, including services and finishing trades, can benefit. If an advantage of lift slab is to be able to organize work in a factory manner at ground level it is unnecessarily handicapping it if only part of the work is done on the ground and the remainder, traditional fashion, "up in the air."

It is usual in North America, for example, to cast hot water heating coils in the structural floor slab. The coils are wired to the reinforcement before concrete is poured. Manufacturers in this country should examine the feasibility of doing this with withdrawable electric floor warming. Putting the floor warming equipment into the main slab would mean that this operation also could be performed at ground level. This was not attempted at Birmingham, the builders, apparently, being reluctant to introduce another trade into the working cycle at this stage. Their objection—a familiar one—is not necessarily insuperable and could surely be overcome with thoughtful site programming. The three blocks of flats are each divided into two lift slab sections, making six sections in all. Was it not possible to arrange a programme divided into six parts in which more than just the perimeter formwork, placing of reinforcement and pouring of concrete was included? Could not the electrical conduits and conduit boxes be cast into the floor slabs at ground level?

These are real problems. But one would have expected the designers to meet and resolve them in

terms of lift slab construction at the programme planning stage. The question of adequate sound and thermal insulation is a vexed one. Any obvious solution such as putting the floor warming in the main slab and using a false ceiling resolves one or two aspects of the problem at the expense of others. If you put insulation between slab and screed (which holds floor warming) you get the best sound insulation at reasonable cost. If you put it on the underside of the slab you get the advantage of being able to use the whole of the slab for "heat storage." It may be that this advantage is marginal unless off-peak rates for electricity are attractive. Nonetheless to obtain best results (*i.e.*, slab used for storage of heat coupled with best sound/thermal insulation) the most satisfactory construction would appear to be insulation to the underside of the slab such as expanded polystyrene applied direct as a ceiling finish and a soft floor finish, such as rubber, with floor warming in the slab. At the moment this is considered rather costly construction for multi-storey housing where orthodox structural techniques and erection methods are employed. But, balanced against the inherent advantages of lift slab, it may well be an economic proposition. At least such factors should be taken into account when techniques such as lift slab promise quicker, safer and simpler construction work. The design of the Birmingham flats is a standard one and was not produced with the idea of lift slab construction. Whatever the reason for this it is unfortunate that a structural system has been forced to fit a preconceived plan and it is obvious that the engineers for British Lift Slab Ltd. were inhibited, though they were permitted to rearrange the column centres to some extent. In a paper delivered to the Institution of Structural Engineers in 1958,* W. Sefton explained that in Canada it was considered necessary to keep the outside columns 2 ft. back from the perimeter of the building. The cantilever effect thus achieved seems logical as uneven bearing on the shear blocks would be avoided. At Birmingham the collars on the edge column do not seem to have had a full distribution of concrete during pouring and the outer edge of the collar was apparently filled later.

In the USA and parts of the Commonwealth, labour costs are very high compared with materials and any process which speeds building must save money even if it is less economical of material. In England, materials tend to represent the higher item in building costs. Steel, for example, is not so cheap and the extra steel used in lift slab construction, both for the flat slab structure and for the columns will have to be balanced against savings resulting from speedier erection. In this context it is interesting to observe that the engineers for a new lift slab factory at Bedford, the construction of which has just started, are using concrete columns, having devised a neat steel cap for the connection between column and collar. This building will be described later in the AJ.

* *Proceedings of the Fiftieth Anniversary Conference, October, 1956.* The Institution of Structural Engineers, London, £5.

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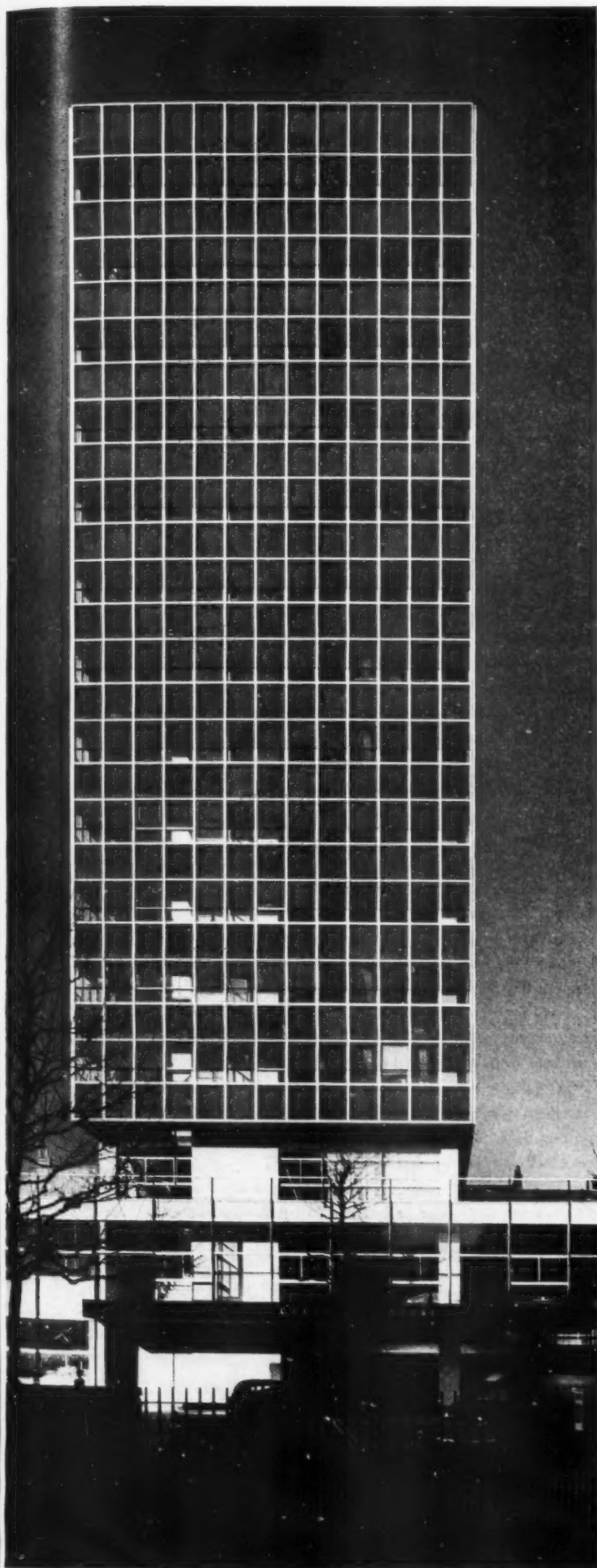
OFFICES

in MARYLEBONE ROAD,
LONDON, N.W.1

designed by GOLLINS, MELVIN, WARD
AND PARTNERS

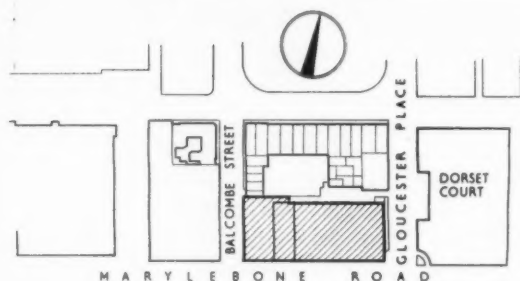
assistants A.J. HOFFMAN, H. PRIME,
T. STUTELY

quantity
surveyor H.R. HEASEMAN AND PARTNERS
consultants
(structural) W.V. ZINN
(mechanical) EDWARD A. PEARCE AND
PARTNERS



Castrol House has already become a landmark in the Marylebone Road, almost dwarfing the Marylebone Town Hall lower-lying opposite, and providing a shining contrast to most of the heavy and pompous buildings which line this thoroughfare. It could easily have been just another cliff of offices—it was a condition of the ground-landlords that the whole area of the site should be built on: instead it provides the required accommodation in a building of soaring lightness. Regrettably, no costs are available for publication.

building illustrated



Site plan

APPRAISAL: Castrol House, erected by the Hammerson Group of Companies as a speculative development, was let to C. C. Wakefield & Co. while still in course of erection and can be considered as one of the most elegant and sophisticated prestige buildings to appear in Central London in recent months. It is refreshing to find a large industrial concern willing to accept the machine aesthetic, not only in cars and aeroplanes but also in architecture.

Here is a rectangular site of good proportion bounded on three sides by roads, offering an excellent opportunity to break away from the conventional approach of unrelieved cliff covering the whole site with the attendant bogies of long dark corridors, poorly lit internal light wells, etc. The architects have taken full advantage of this in designing a light and airy 15-storey tower poised over a two- and three-storey podium.

The tower contains offices served by four lifts, with a walk-up top floor containing caretaker's flat and apartments for visitors who wish to stay overnight. The staircases and lifts are arranged with separate lobby approach to conform with fire regulations and means of escape in high buildings. The absence of lifts to the top floor gives the tower a very clean skyline.

The low block has executives' suites and a cinema on the upper floor overlooking the roof terrace. On the ground floor there is a large canteen and entrance hall under the tower.

The basement provides car parking for 100 cars and there is a sub-basement containing boiler-house and air-conditioning plant.

As the exterior views of the building show, the building's envelope is a curtain wall consisting of deep anodized aluminium droppers and transoms, of natural colour on the tower and black on the low block. Mullions are spaced at about 8-ft. centres in the low block and 4-ft. centres in the tower, allowing for flexibility in internal partitioning. Spandrel panels are of green non-actinic glass in the tower and white sicilian marble.

Windows are vertical sliding in the tower and horizontal sliding in the low block, allowing a free drop for venetian blinds and presumably reducing the possibility of damage in high winds on the upper storeys. The face of the building is cleaned and maintained by means of a power-operated gondola suspended from a trolley running on tracks on the tower roof—the low block can be dealt with from ground level.

There is a generous feeling of space in the entrance hall accentuated by the canopy which is a projection of the intermediate floor within, with the same lighting treatment. Here a low relief sculpture in cast aluminium by Geoffrey Clarke rises through two floors on the back wall, the upper floor designed for exhibitions and displays. One minor point of criticism is that on the main entrance doors the "push" side is not very clearly indicated, resulting in some confusion.

The character inside the building is consistent with the outside (see page 485), with very clear cut and precise detailing and well integrated relationships between the external mullions and partitions, the recessed light fittings and the elimination of any awkward beam or column projections. The strong lineal emphasis of the perforated aluminium ceiling and aluminium framing to partitioning is, however, somewhat overpowering at times. It is a relief to find in the canteen (page 488) a breakaway from the grid pattern with an interesting arrangement of coloured glass panels set in a plain wall surface.

The standard of finishes in the directors' suites and conference rooms are of an extremely high order. It is obvious that the occupants have been willing to spend a considerable amount of money in obtaining luxurious and comfortable working conditions, but the detailing is still restrained and does not descend to fussiness—the main effect being achieved by well designed light fittings, rich carpeting, and wall panelling of simple form in a varied choice of veneers. The use of indoor plants is another pleasant addition.

The structure is of reinforced concrete, the high and low blocks being on independent foundations to allow for differential settlement. The lower floors of the tower block were put in high in relation to the low block to allow for a calculated settlement of 1½ in. Floors are of flat slab construction with a series of 6-ft. wide beams spanning between columns. This was economical in shuttering and allows maximum flexibility in running services. Lift enclosures and fire break walls are structural and run from basement to roof to provide wind bracing and lateral stability. Columns are set back from the external face of the building and spaced at about 24-ft. centres, and vary in size from 30 in. square in basement, ground and first floor, and 24 in. square in the next four floors, to 21 in. square in the upper part of the tower block and the two-storey block.]

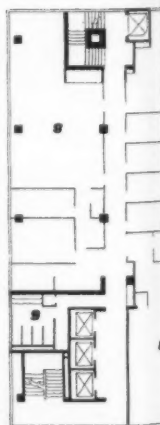
Space heating is by means of hot water pipes fixed above the aluminium suspended ceiling served by oil-fired boilers in the basement.

Lighting throughout the building is by cold cathode tubes fixed in troughs in the ceiling and enclosed by moulded plastic diffusing trays. If additional lighting is required, it is a fairly simple matter to take out sections of the ceiling and replace them with light fittings. The lighting is controlled automatically by photo-electric cell according to the daylight factor.

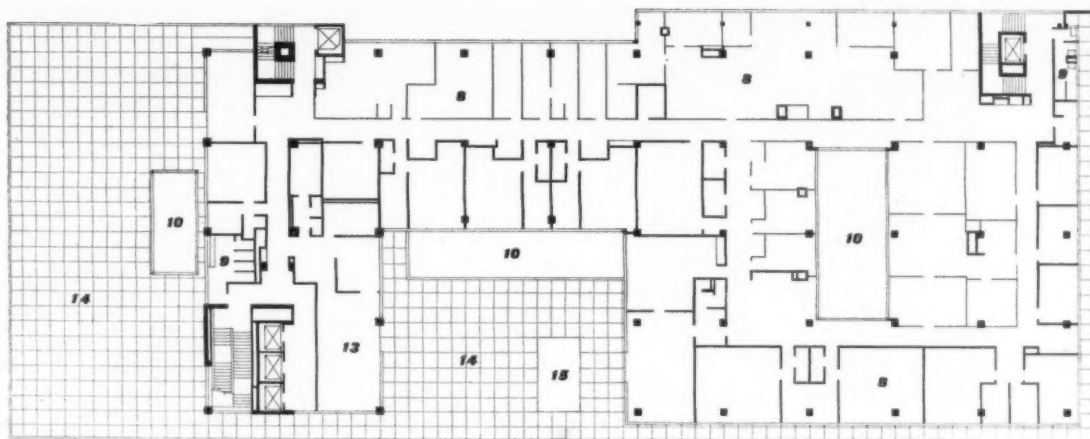
There is an interesting use of green cold cathode tubes fixed behind the spandrel panels to illuminate the tower after dark, giving the effect of a series of fluorescent green trays. There is an internal postal delivery service to all departments by means of Lamson tubes worked by compressed air.

KEY

1. Main entrance
2. Entrance hall
3. Rear entrance
4. Service yard
5. Loading bay
6. Ramp down to garage
7. Bank
8. Office space
9. Lavatories
10. Light well
11. Rear canopy
12. Upper entrance hall
13. Boardroom
14. Roof terrace
15. Pool



Typical tower floor



Second floor plan



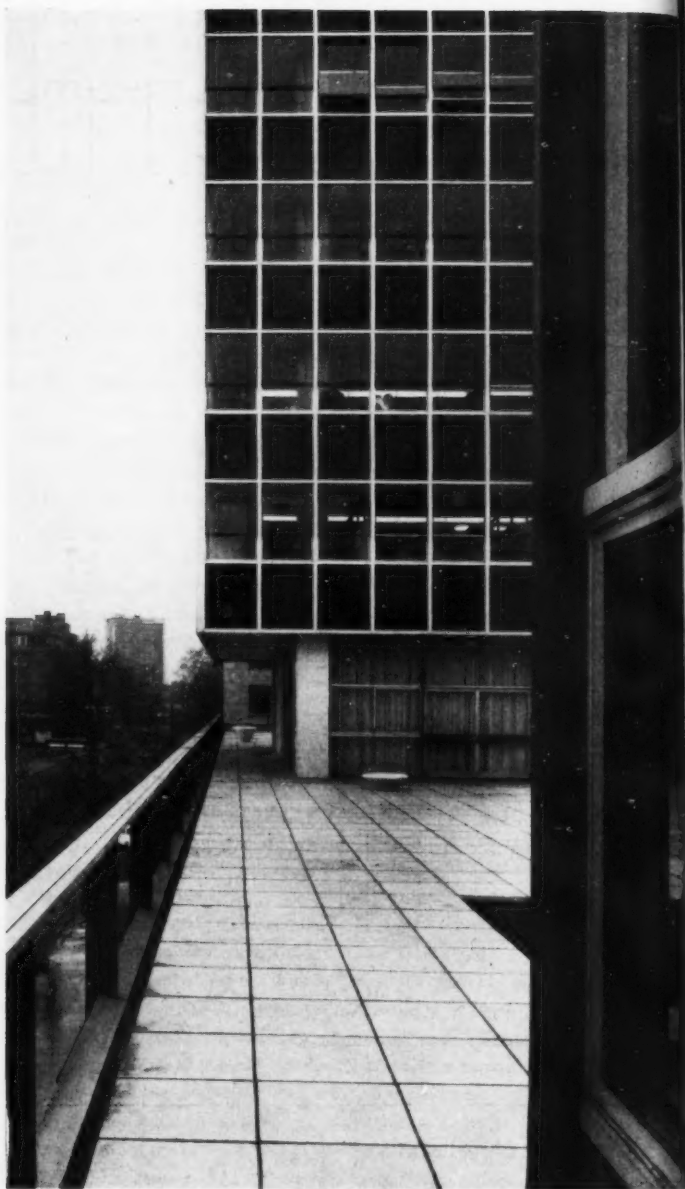
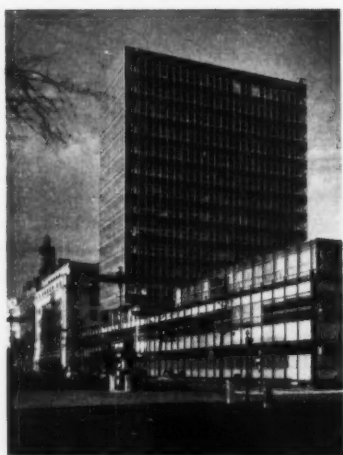
First floor plan

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Ground floor plan

building illustrated

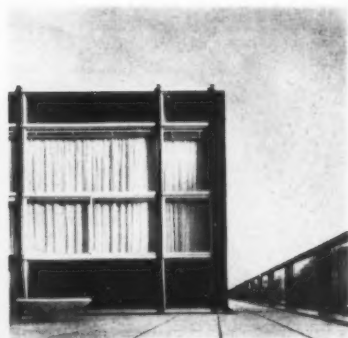


Above: from the terrace on top of the podium, looking west. The uprights of the balustrade are extensions of the curtain wall droppers below.

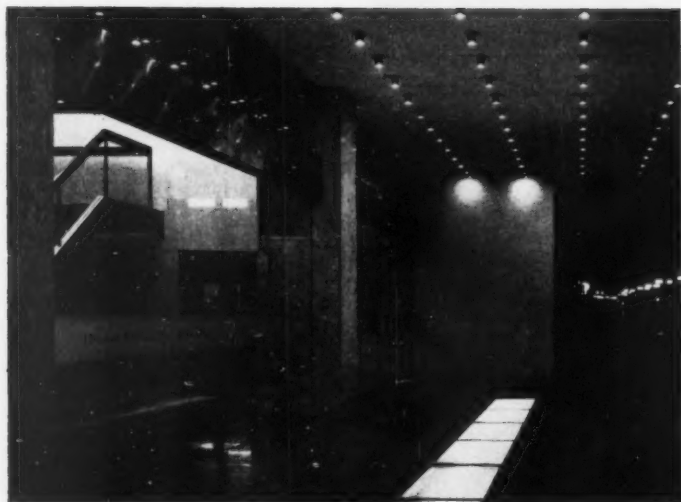
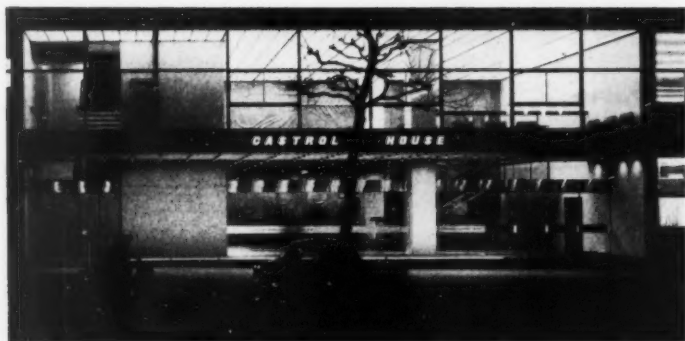
Left, top to bottom : from the top of Montagu Street, looking north-east across Marylebone Road. Looking north-west across Marylebone Road ; the main entrance is beneath the tower; on the right, the set-back third storey of the low block. At night; the building is brightly illuminated, both inside and externally, by tubes placed behind the green glass spandrel panels, and makes an exciting landmark. The rear elevation from Dorset Square.



Left: looking along the Marylebone Road front towards the tower and entrance. The spandrel panels are white Sicilian marble. Below: corner of the third storey of the lower block.



building illustrated



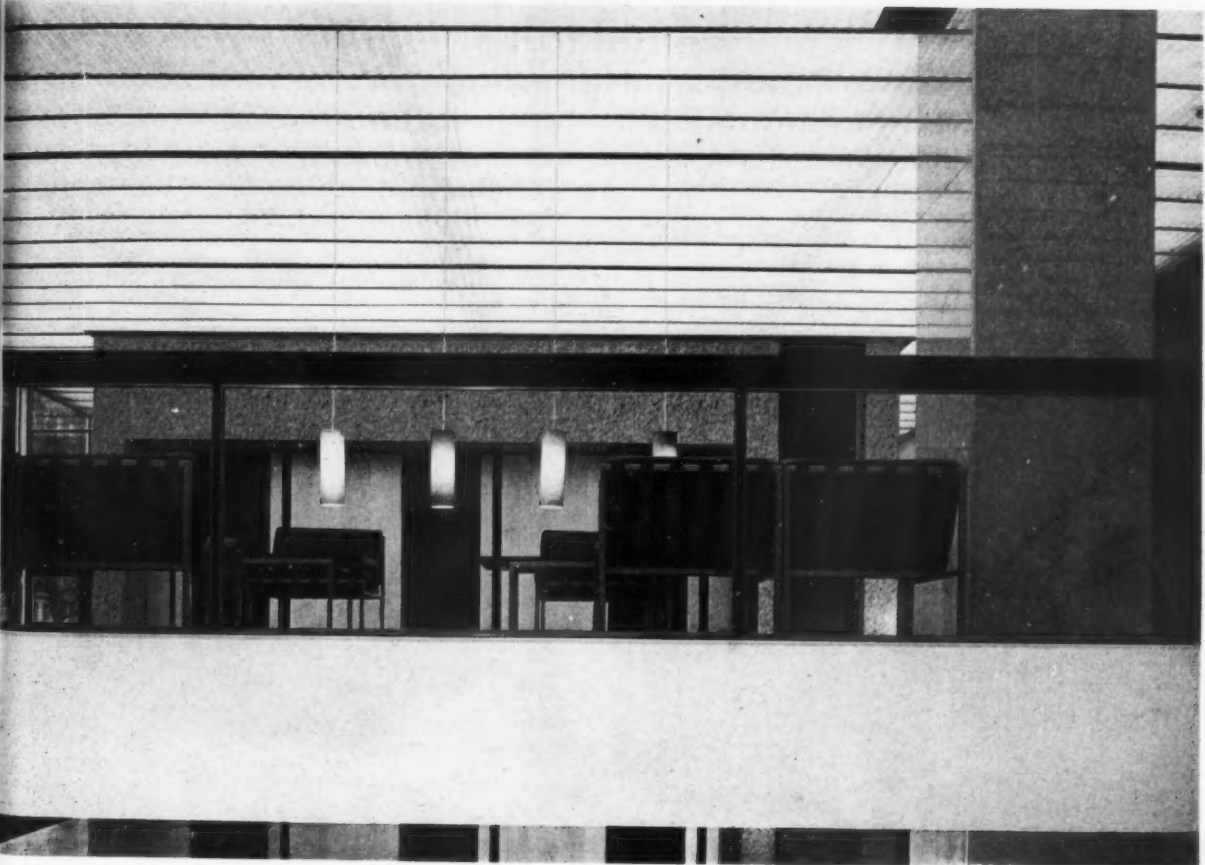
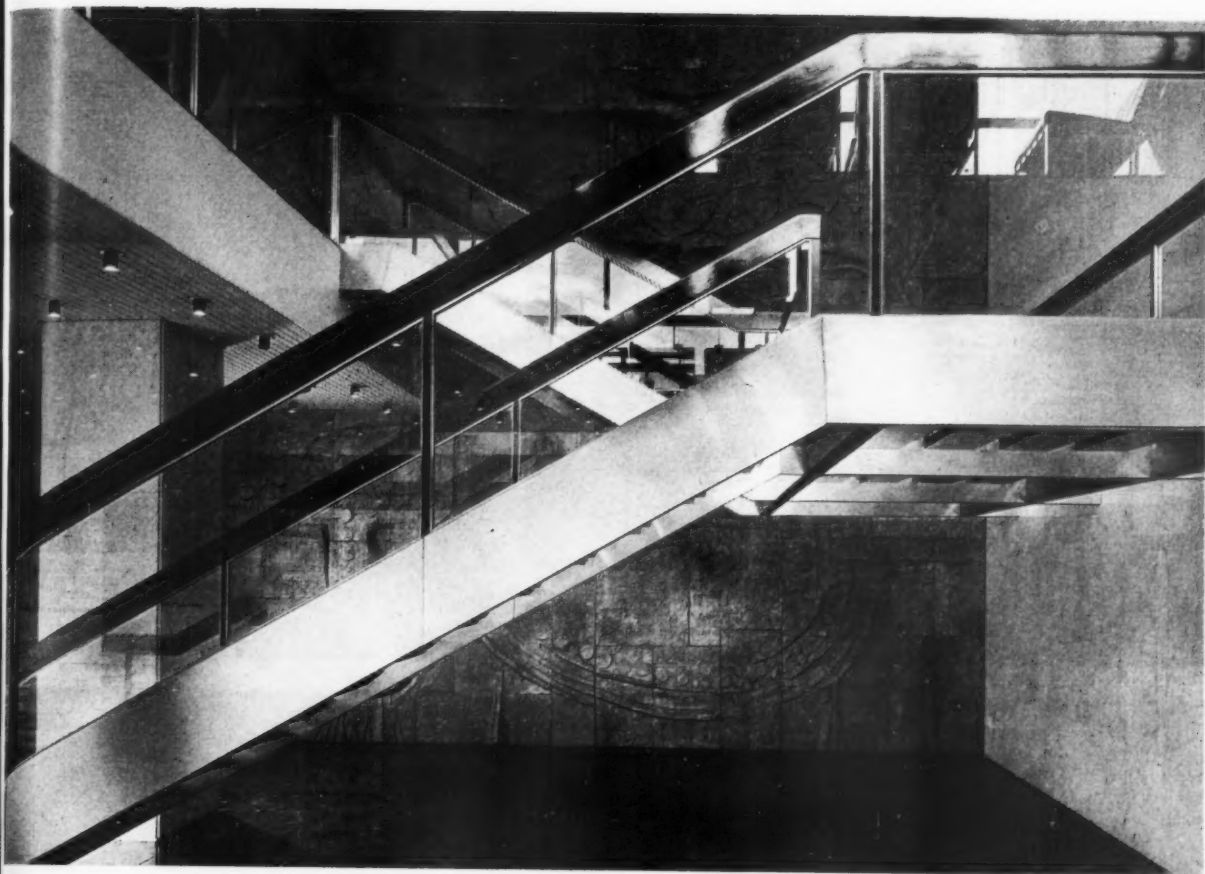
Left: view up the tower from the pavement in front of the entrance hall, showing the aluminium curtain wall. Black anodized aluminium sash windows and green glass spandrel panels.

Centre left: the entrance hall at night, with the base of the lift tower to the left. Bottom left: the main entrance, lit from below by a series of tubes in the floor covered by diffusing glass, while sparkle is provided by tungsten fittings in the canopy and ceiling over the glass doors. The far wall and column are cased in white Sicilian marble and the lift enclosure, to the left, in variegated orange mosaic which covers the outside of the shaft right up through the tower. The floor finish is Belgian fossil marble.



Above: the entrance hall, looking towards the free standing stairs, with Geoffrey Clarke's low-relief sculpture—its subject is a history of oil. The cast aluminium panels are dark grey, and lit up by some of the ceiling lights being directed onto them. This area is all grey and white, with floor of Belgian fossil marble, walls and column in white Sicilian marble, ceiling of perforated aluminium strip.

Opposite page, top: close up of the main staircase, with Geoffrey Clarke's mural behind. Stair treads are terrazzo, balustrade are cased in stainless steel and handrails of ebonised timber. Bottom: view of the upper hall from the staircase.

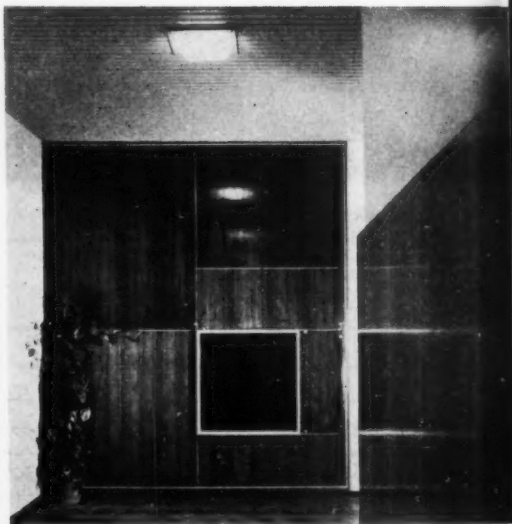
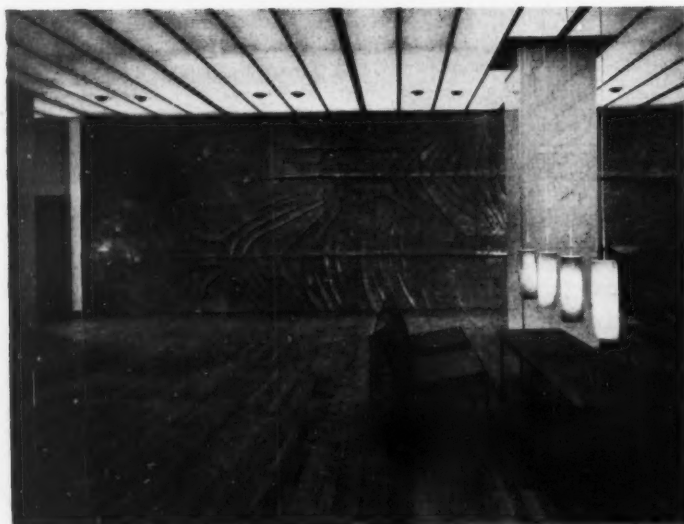


building illustrated

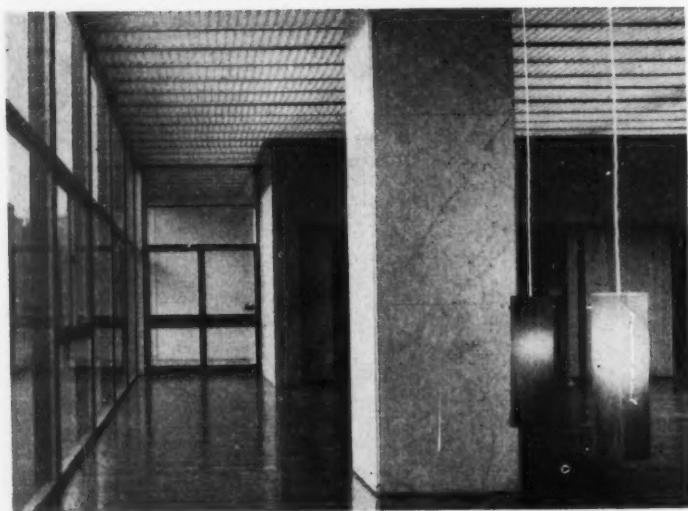


Left: looking outwards from the upper hall towards Marylebone Town Hall.

Centre left: the top half of Geoffrey Clarke's mural at upper hall level. The chairs were designed by Robin Day.



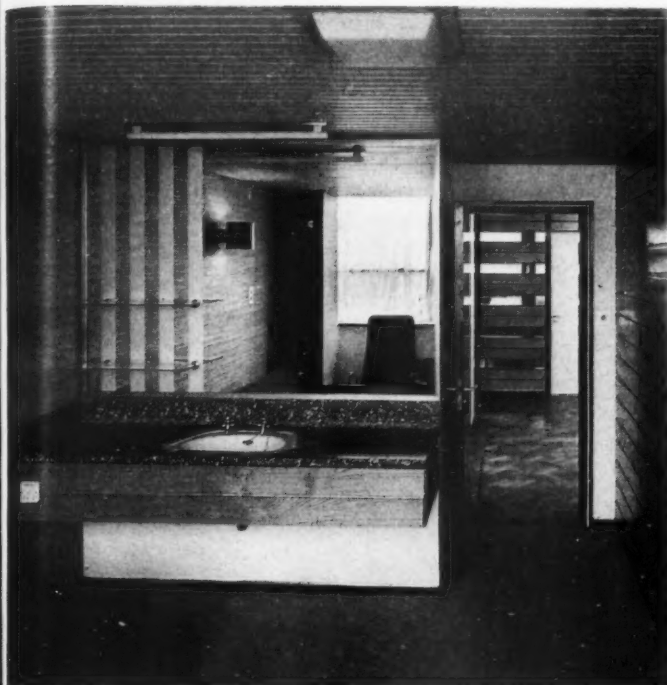
New style letterbox: one of the panels of the internal postal delivery service.



Left: looking towards the lift in the upper hall. The illuminated ceiling is faced with translucent corrugated plastic sheet, supported on metal tees. Floors are of teak strip.

the upper
Hall.

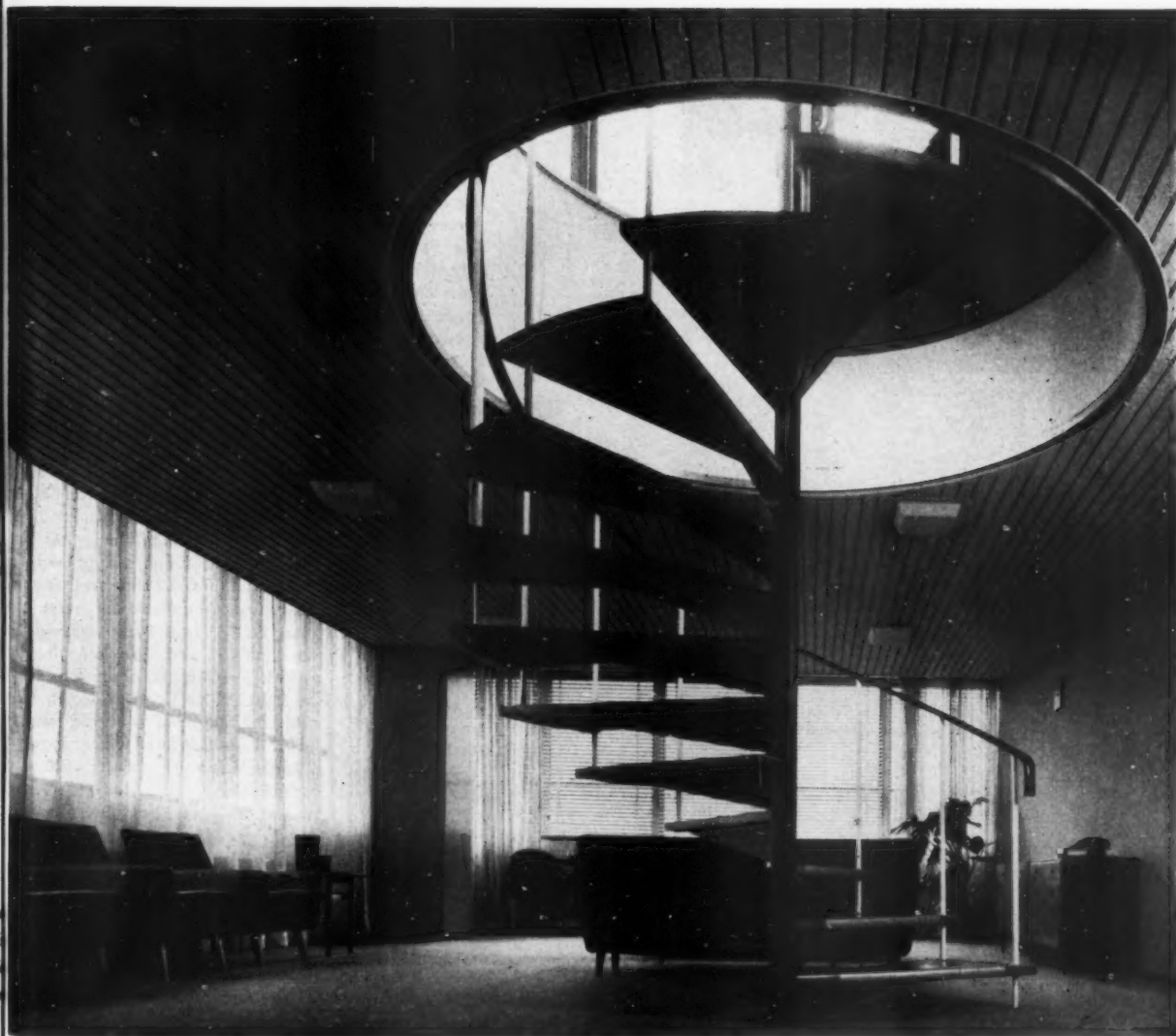
Geoffrey
level. The
day.



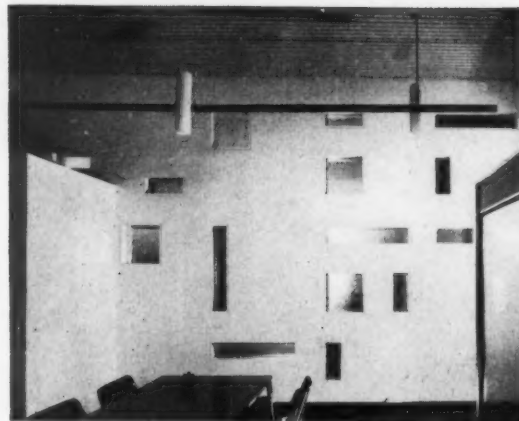
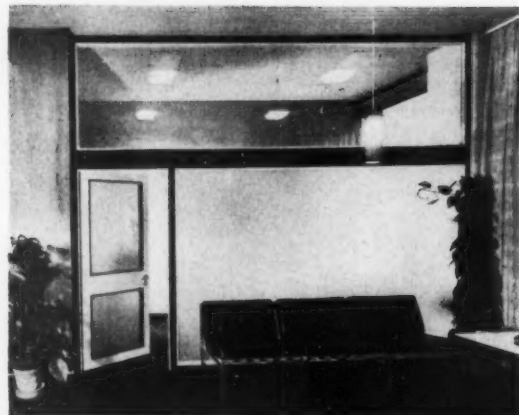
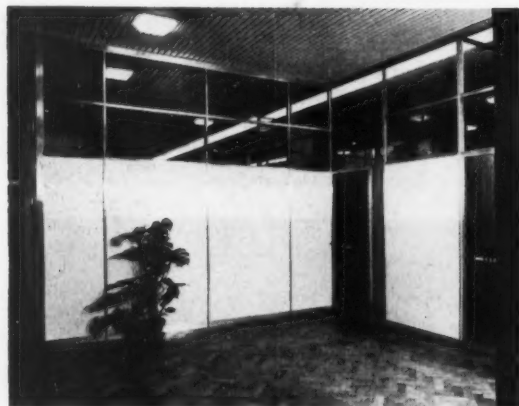
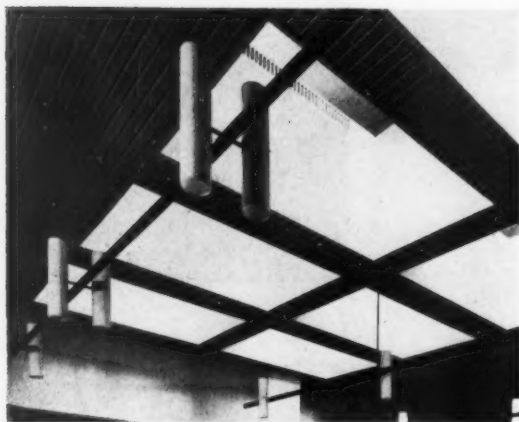
So that the top of the tower can present a clean, rectangular shape to the world, the lifts stop at the penultimate floor, and the top of the lift shaft is contained in the top floor, with a caretaker's flat, and apartments for visitors staying overnight. Above and below, the top floor reception room, from the middle of which an open circular staircase leads up to the roof. Above left, one of the visitors' apartments on the same floor.

the post
delivery

ft in the
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Floors are



building illustrated



Left, top to bottom: detail of boardroom ceiling. Typical office floor, with aluminium-framed, demountable partitions dividing the space; the ceiling here is of perforated aluminium of Danish design backed by a glass fibre quilt; lighting is either by continuous strip or individual fittings. One of the waiting areas outside the conference rooms and executive offices. The end wall of the canteen, perforated and filled with coloured glass.

CONTRACTORS

General contractors: Sir Robert McAlpine & Sons Ltd. Sub-contractors—Curtain walling, blind boxes: Williams & Williams Ltd. Glass and glazing: Clark Eaton & Co. Ltd. Marblework: Walter W. Jenkins Ltd. Mosaic and terrazzo: The Alpha Mosaic & Terrazzo Co. Ltd. Precast granolithic work: Cooper Wetheren. Plaster and granolithic work: J. Abbott (Plasterers) Ltd. Wall and floor tiling: Tiling & Decorations Ltd. Roof paving (low block): Empire Stone Co. Ltd. Roof paving (tower block): Ruberoid Paving Co. Ltd. Rubber and thermoplastic tiles: Semtex Ltd. Woodblock and strip flooring: The Philip Flooring Co. Ltd. Asphalt roofing: Ragusa Asphalte Co. Ltd. Mechanical services: Matthew Hall & Co. Ltd. Plumbing, patent solids diverter plant: Pulsometer Engineering Co. Ltd. Drainage: J. & S. Wright & Sons. Sanitary fittings: John Bolding & Son Ltd. Kitchen: Benham & Son. Metal grilles and decking: Somerville Barnard. Electrical services: Electrical Installations Ltd. Cold cathode lighting, floodlighting, main entrance hall ceiling: Ionlite Ltd. Special light fittings: Courtney Pope (Electrical) Ltd. Fredrick Thomas & Co. Ltd. Internal telephones, clock system: Telephone Rentals Ltd. Joinery, doors and panelling: Samuel Elliott & Son (Reading) Ltd. Lifts: Otis Elevator Co. Ltd. Roof screeds: Isocrete Ltd. Cleaning cradles: Palmers Traveling Cradle & Scaffold Co. Ltd. Balustrading, shopfitting (entrance halls), lift laylights and fronts, canopy fascia and illuminated lettering, helical staircase, main entrance hall staircase: Grundy Arnatt Ltd. Main entrance screen sandblasting: Robinson, King & Co. Ltd. Pneumatic messenger service: Lamson Engineering Co. Ltd. Armoured fire door: Mather & Platt & Co. Ltd. Fire shutters: Dennison, Kett & Co. Ltd. Sliding gates: Bolton Gate Co. Ltd. Access ladder and trap: Loft Ladders. Suspended ceilings: Daempe Acoustics Ltd. Rooflights: T. & W. Ide Ltd. Column guards: Huntley & Sparkes Ltd. Incinerators: Barrywald. Soap dispensers: Horton Manufacturing Co. Ltd. Waterproofing: Quickset Water Sealers Ltd. Venetian blinds: J. Avery & Co. Ltd. Domestic kitchen fittings: Kandya Ltd. Paints and varnishes: Goodlass Wall & Co. Ltd. Internal partitioning: Holoplast Ltd. Ironmongery and lettering: G. & S. Allgood. Special glass work: The London Sandblast & Decorative Co. Cinema panelling and special fittings: The Anderson Construction Co. Ltd. Cinema seating: Dawsons (Seating) Ltd. Interior furnishing: Heals Contracts Ltd. Office furniture: Shannon System Ltd. Machine room wall lining: Isulatal Ltd. External flower tubs: Mono Concrete Ltd.

working detail

SPIRAL STAIRCASE: CHURCH IN ROTTERDAM

J. H. van den Broek and J. B. Bakema (material supplied by Martin Lawrence)



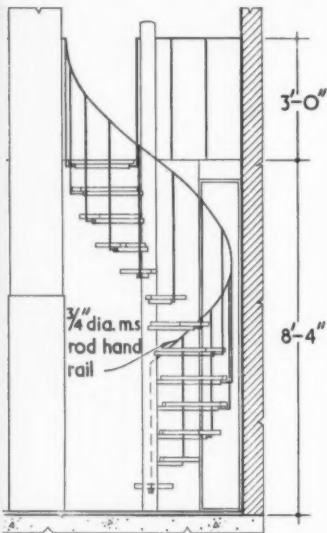
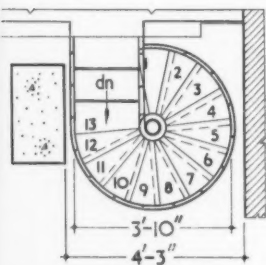
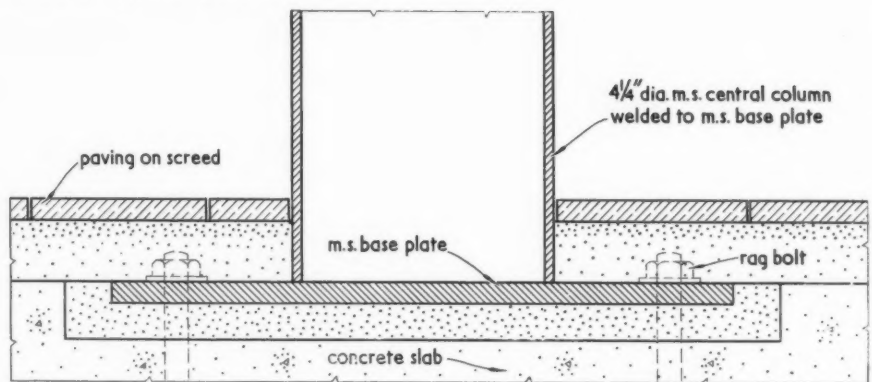
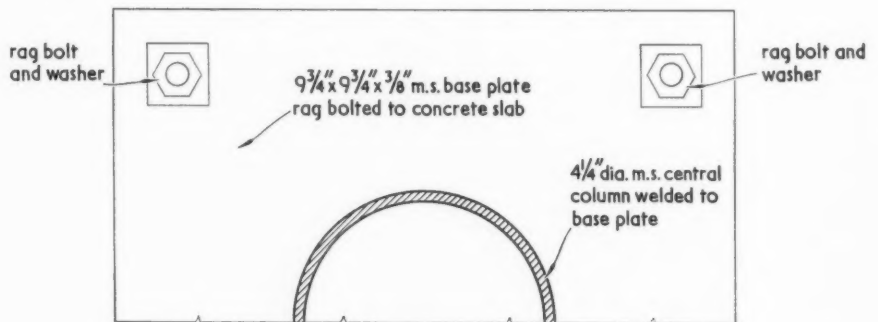
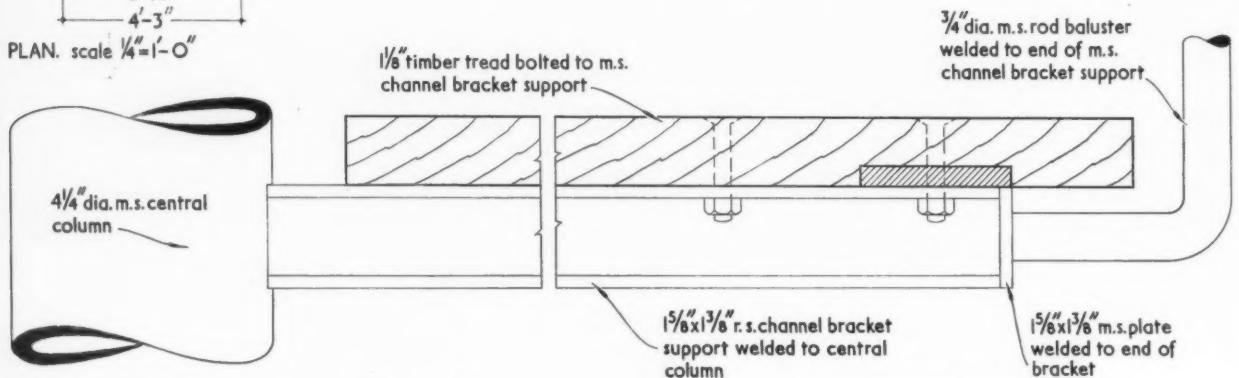
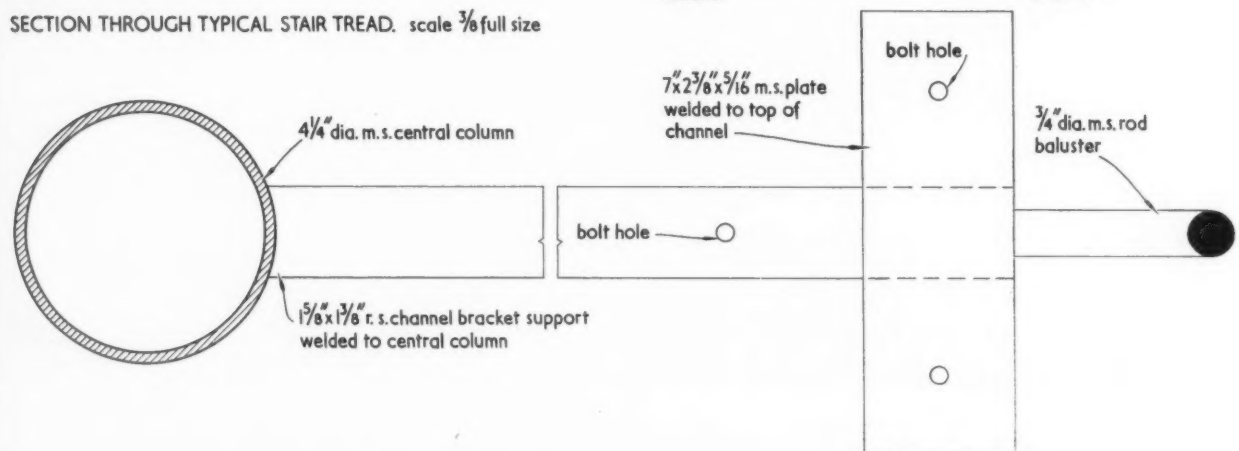
This is an exceptionally neat version of the iron circular stair. Note the iron bracket plates sunk into the underside of hardwood treads (visible in the drawing only) and the termination of the handrail at the bottom in the lowest tread.

working detail

STAIRCASES: 54

SPIRAL STAIRCASE: CHURCH IN ROTTERDAM

J. H. van den Broek and J. B. Bakema (material supplied by Martin Lawrence)

ELEVATION. scale $\frac{1}{4}''=1'-0''$ PLAN. scale $\frac{1}{4}''=1'-0''$ SECTION THROUGH CENTRAL COLUMN. scale $\frac{3}{8}''$ full sizePLAN OF BASE PLATE. scale $\frac{3}{8}''$ full sizeSECTION THROUGH TYPICAL STAIR TREAD. scale $\frac{3}{8}''$ full sizePLAN OF BRACKET SUPPORT TO TREAD. scale $\frac{3}{8}''$ full size

note: figured dimensions in feet and inches are approximate

working detail

TIMBER STAIRCASE: HOUSE IN DROTTNINGHOLM, SWEDEN

Hans Borgstrom and Bengt Lindroos, architects (material supplied by D. Hooper)

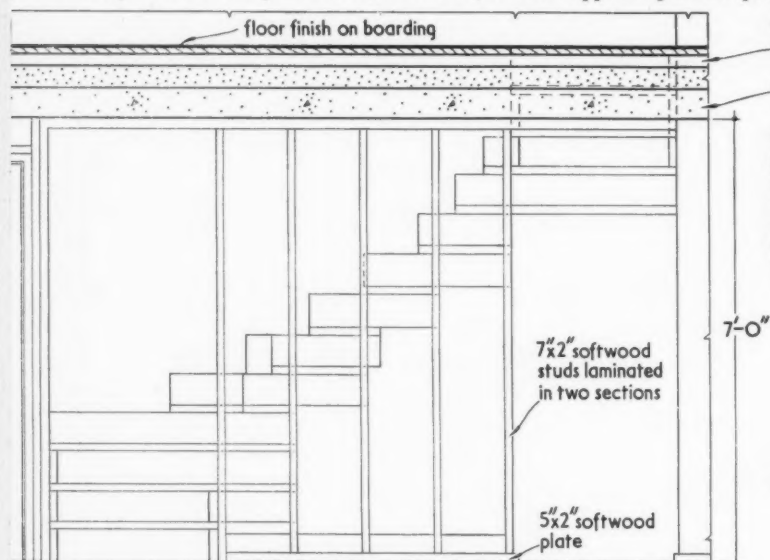
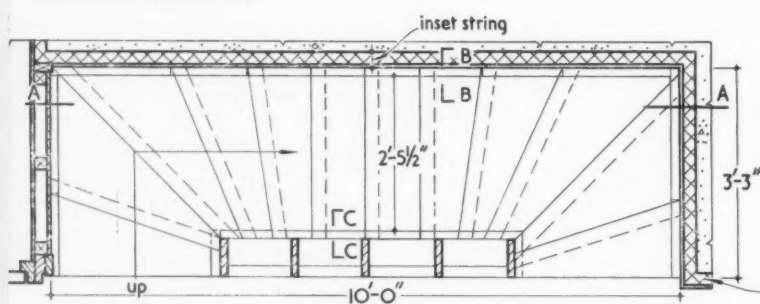
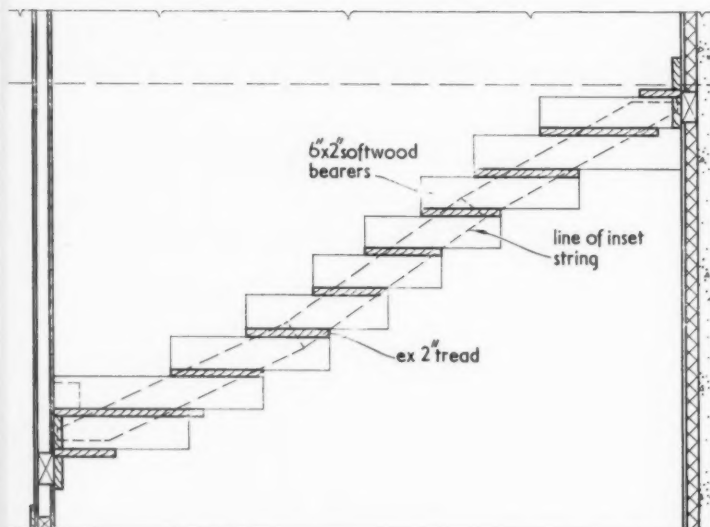
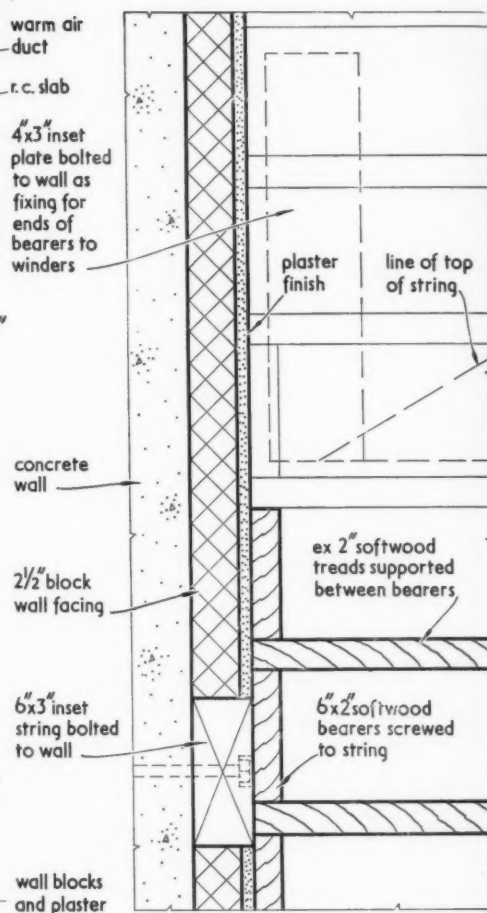
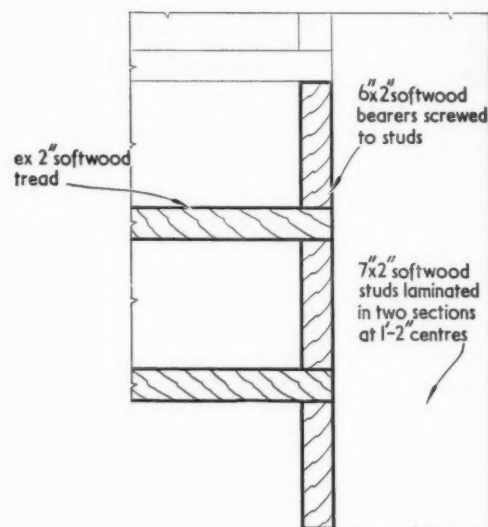


The treads of this cellar stair, instead of being housed in the usual way, are supported on 6 in. by 2 in. bearers. These are attached on the wall side to a concealed string and on the open side to vertical studs.

working detail

TIMBER STAIRCASE: HOUSE IN DROTTHINGOLM, SWEDEN

Hans Borgstrom and Bengt Lindroos, architects (material supplied by D. Hooper)

ELEVATION. scale $\frac{3}{8}$ "=1'-0"PLAN. scale $\frac{3}{8}$ "=1'-0"SECTION A-A scale $\frac{3}{8}$ "=1'-0"SECTION B-B. scale $\frac{1}{8}$ full sizeSECTION C-C. scale $\frac{1}{8}$ full size

note: figured dimensions in feet and inches are approximate







This is a Shell photograph showing Shell Centre, London, under construction.

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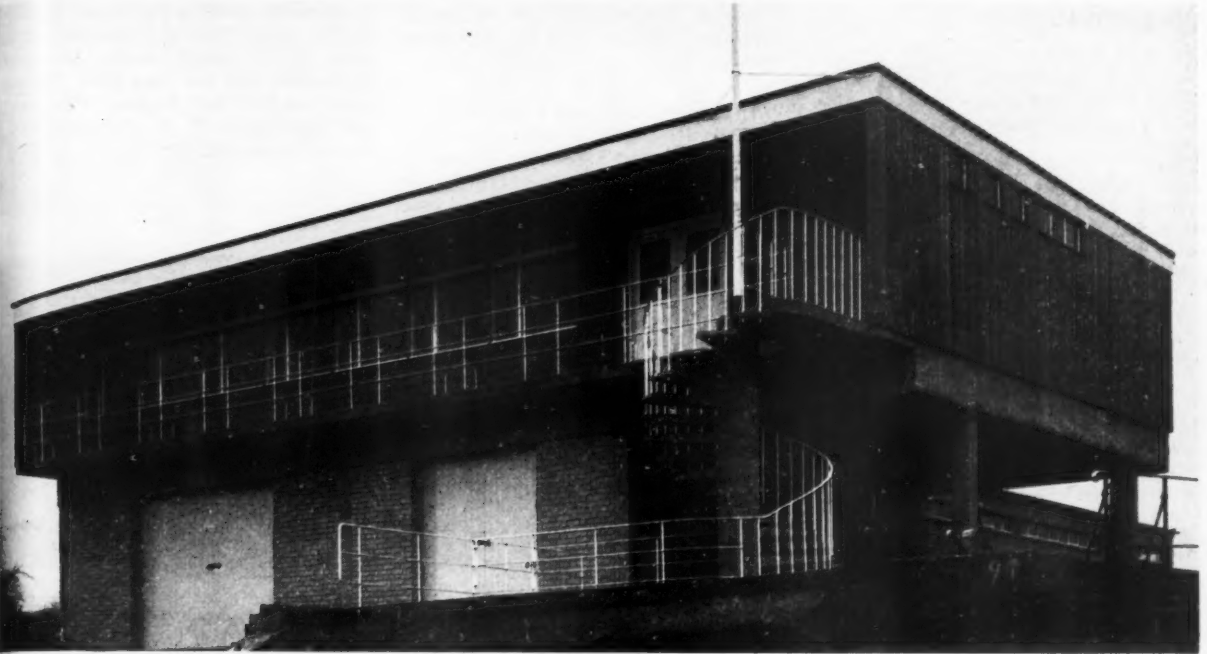
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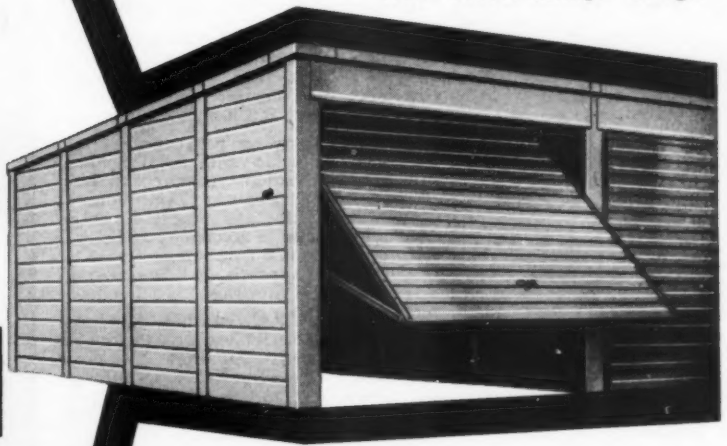
NEW BOATHOUSE ON THE THAMES



Officially opened on March 11, this is the first boathouse of modern design to be built on the Thames. It is for Emanuel School to whom it was presented by the builders, Norman, Ronald and Allen Wates. It was designed by Laurence King (partner in charge, Ian Picken) and was built at a cost of approximately £13,000. The building contains accommodation for the school's boats on the lower floor and changing rooms and a refreshment room above.

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Announcements

PROFESSIONAL

Charles M. Swannell, F.R.I.B.A. (practising as Swannell & Templeman), will shortly be retiring from practice, and therefore asks that his name be removed from all mailing lists.

Cecil F. Baker, F.R.I.C.S., Chartered Quantity Surveyor, has taken into partnership A. J. MacFarlane, R. S. M. Clarke and D. M. Crosse. The title of the firm will be Cecil F. Baker & Partners.

Z. Peter Slaski, architect, has now moved to 7, Cromwell Road, London, S.W.7 (telephone Kensington 8549/8334).

T. P. Bennett & Son, Chartered Architects, have taken into partnership Herbert H. Hayns, A.R.I.B.A., and will continue to practise as T. P. Bennett & Son at 43, Bloomsbury Square, London, W.C.1.

TRADE

British Insulated Callender's Cables Ltd. have appointed K. A. Fillmore as divisional sales manager, Leigh Works. Mr. Fillmore succeeds D. I. S. Hinton who is taking up an appointment with BICC-Burndy Ltd.

C. Perry is now a street lighting engineer with the South East Region of Philips Electrical Ltd.

In line with the general policy of centralization of offices of the Gliksten Group of Companies, Merediths Ltd. have moved to Carpenters Road, Stratford, E.15 (telephone Amherst 3300).

W. Pigdon, who has been general manager of the Wells factory of EMI Electronics Ltd., is to take up a new appointment as executive vice-president of EMI-Cossor Electronics Ltd., in Halifax, Nova Scotia, Canada.

I. B. Cooke is now director and general manager of the Industrial Fan & Heater Co. Ltd., of Birmingham.

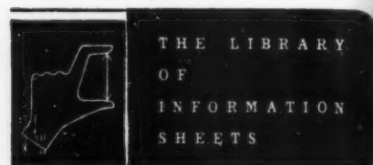
Allied Ironfounders Ltd. announce that all press inquiries should now be addressed to the company's News and Information Service at 47, Princes Gate, London, S.W.7 (telephone Kensington 4577).

Gordon Liley is now on the board of British Lead Mills Ltd., a member of the Firth Cleveland Group. Mr. Liley was formerly an Executive Director of the Company.

Sir Gordon Russell, C.B.E., M.C., R.D.I., who recently retired from the directorship of the Council of Industrial Design, is to join the Board of Cockade Ltd. as chairman, next month.

Correction

In the recent article in the JOURNAL illustrating War Office housing at Aldershot, it was stated that the post of Director, Mechanical Engineering had not been filled. We now learn that the Chief Engineer (Mechanical and Electrical) is C. L. Champion, B.Sc., M.I.C.E., M.I.Mech.E., M.I.E.E.



19.G1—4. 29.G2. CANCELLATIONS

19.G1 published 15.4.51 should be cancelled from readers' collections: it is replaced by 19.G1 published 18.2.60.

19.G2—4. These Sheets are in process of revision and as each is republished it will automatically cancel the Sheet of earlier date with the same classification number.

29.G2 published 22.8.57 is cancelled and will be replaced by 29.G2 to be published 31.3.60.

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Architects: Malcolm Peck,
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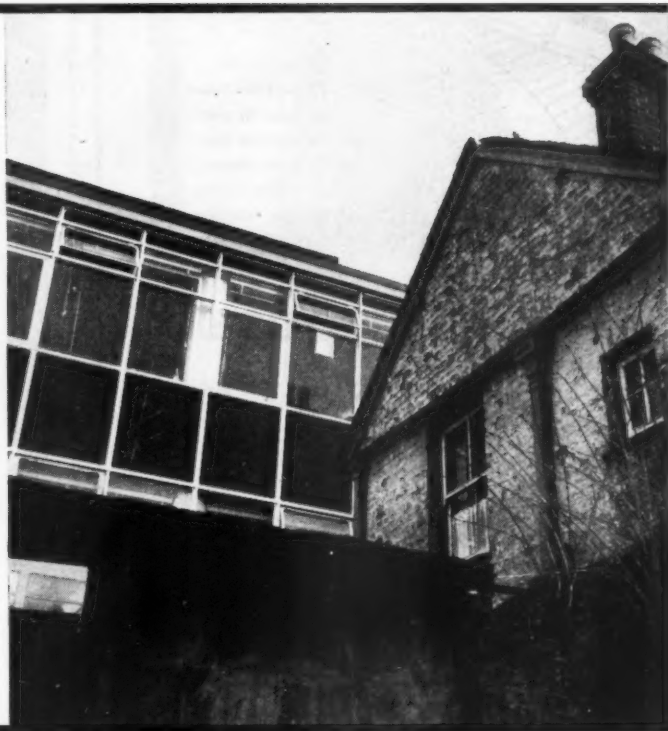
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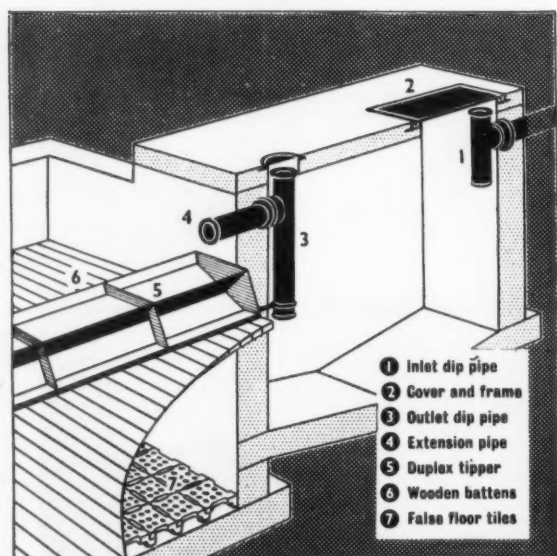
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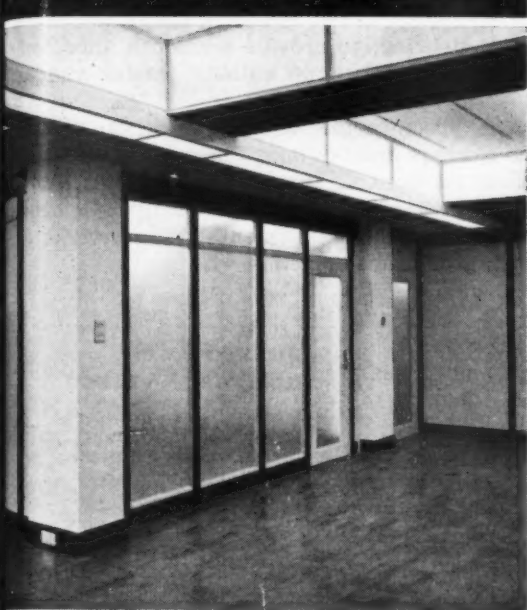
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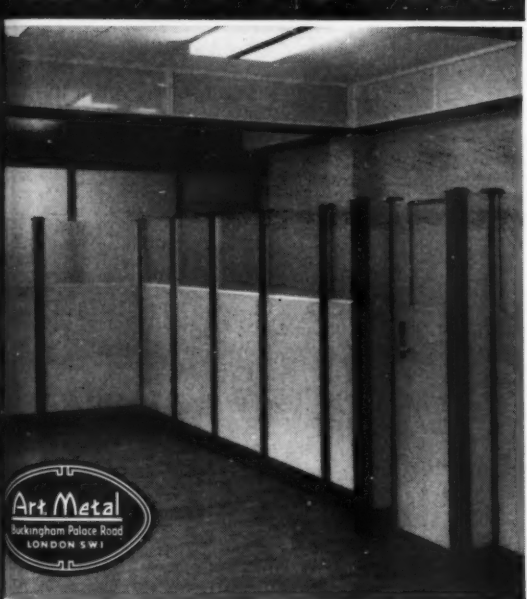
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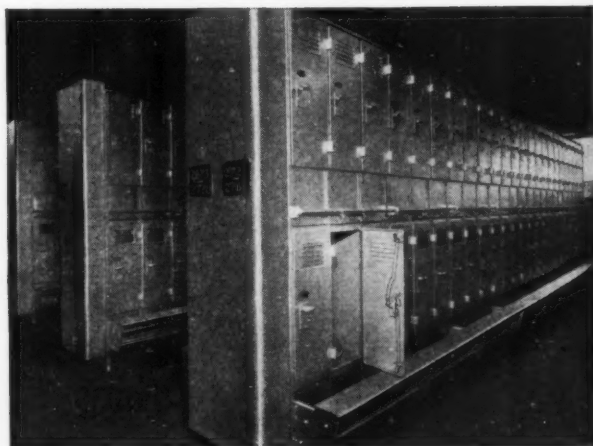
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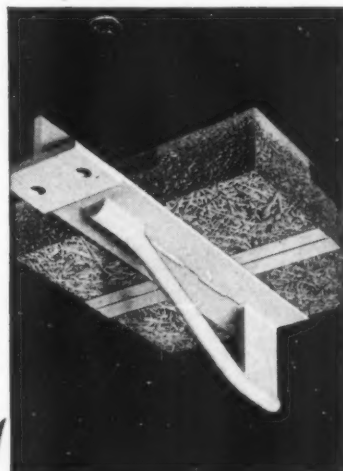
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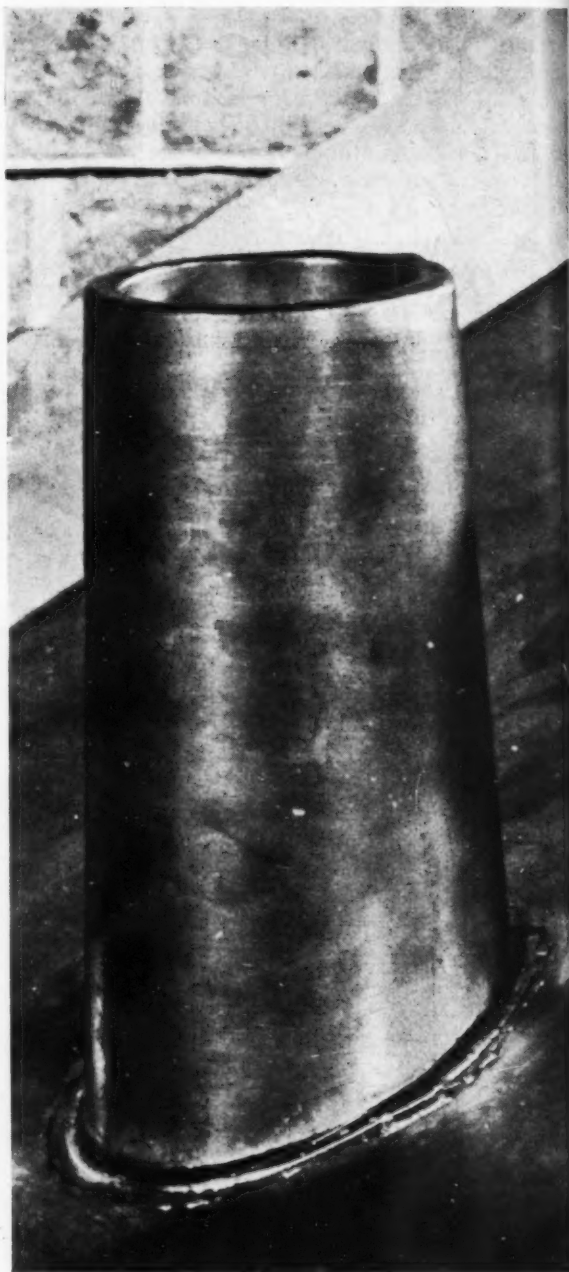
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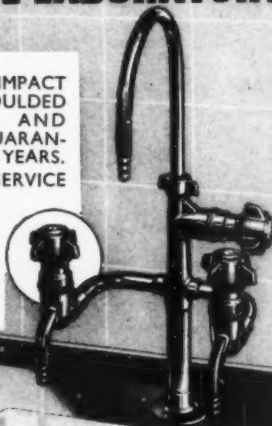
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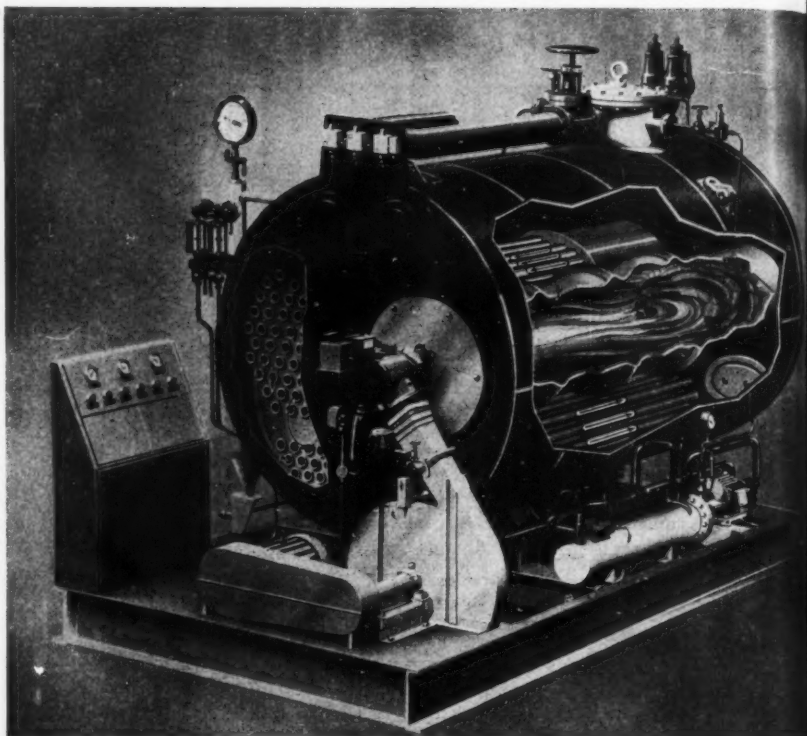
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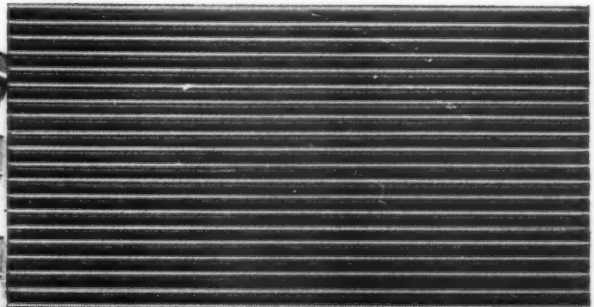
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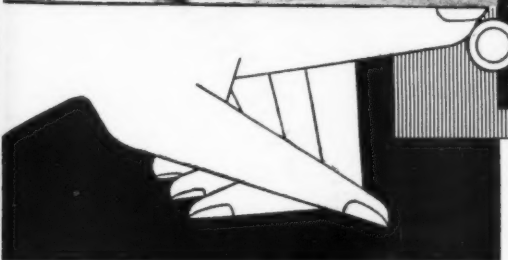
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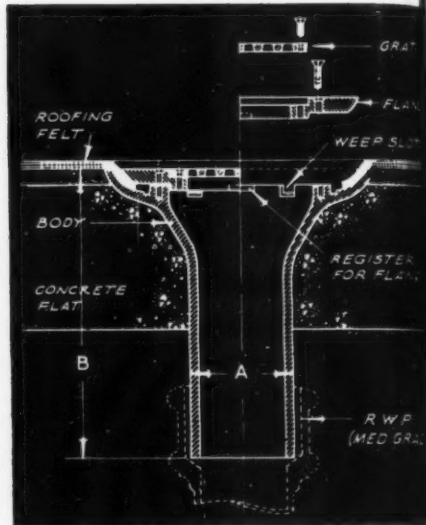
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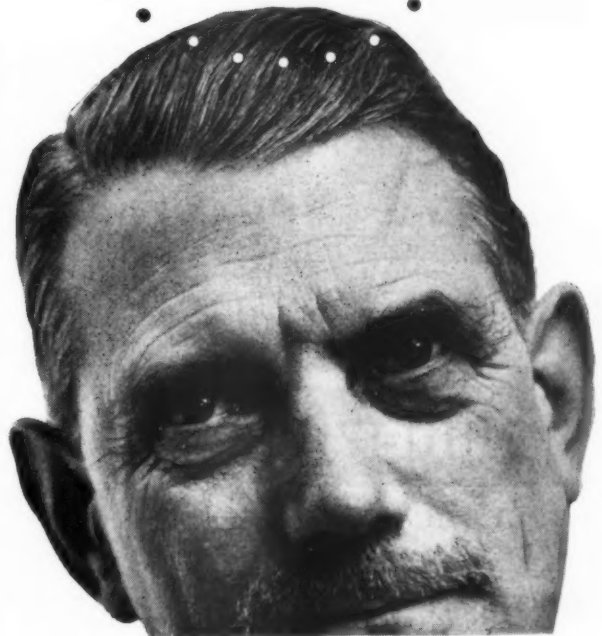
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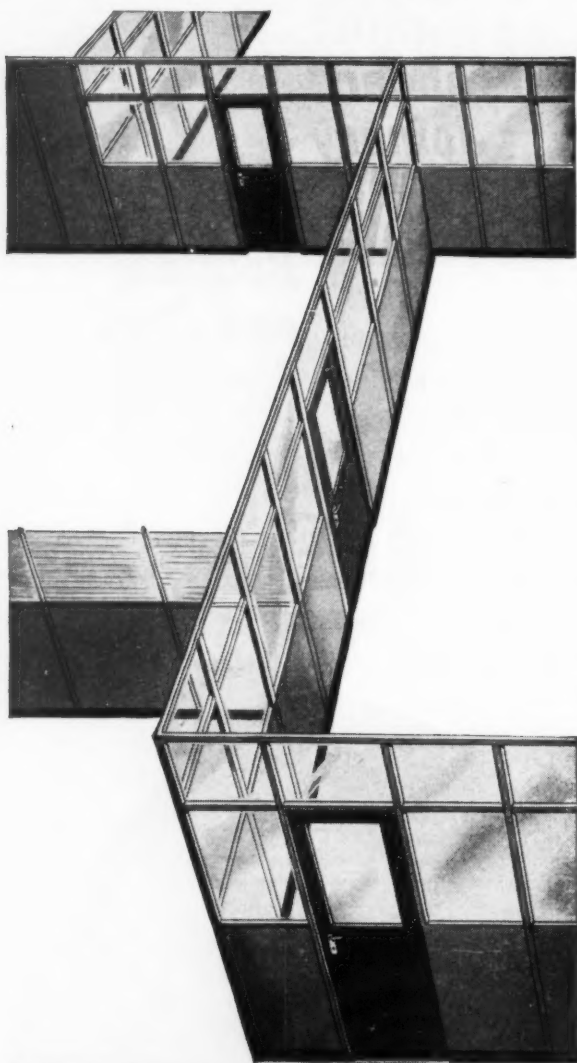


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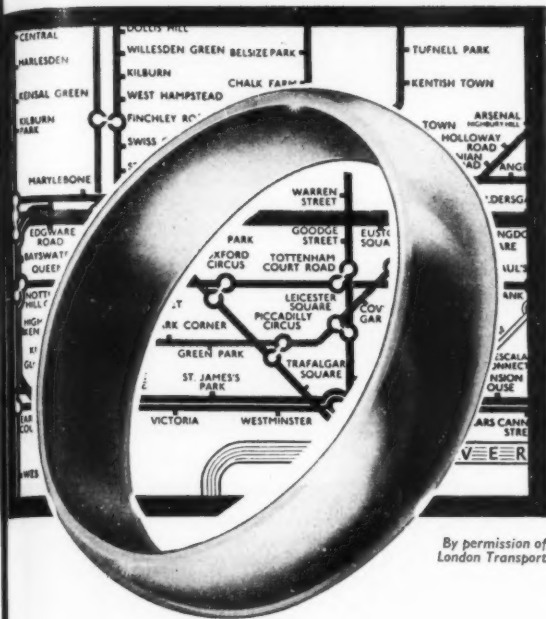
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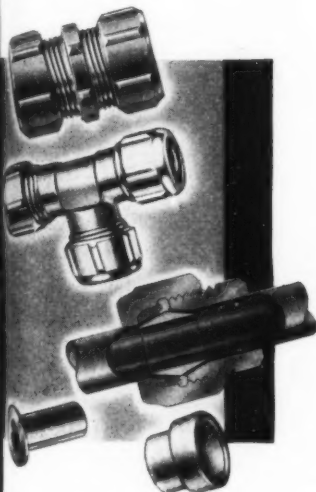


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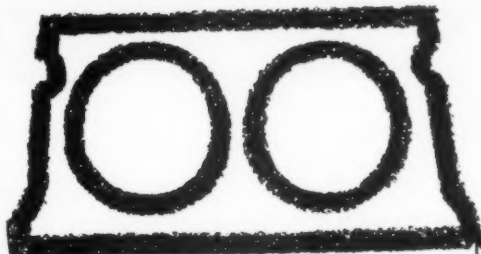
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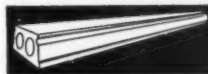
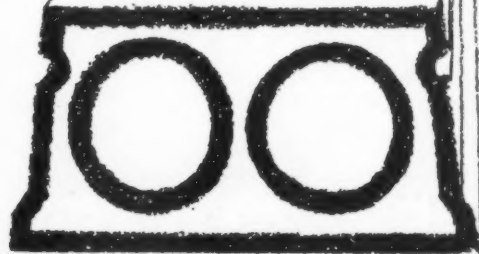
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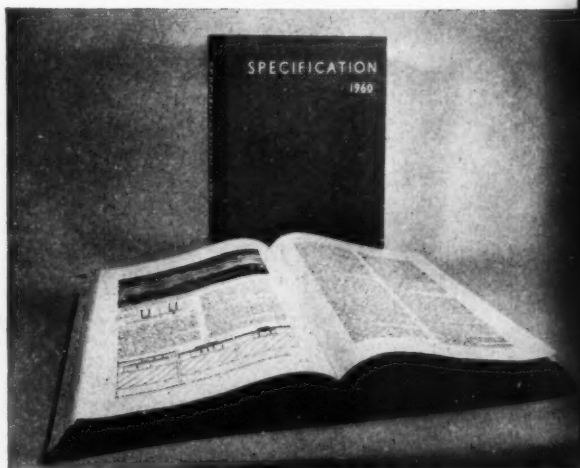
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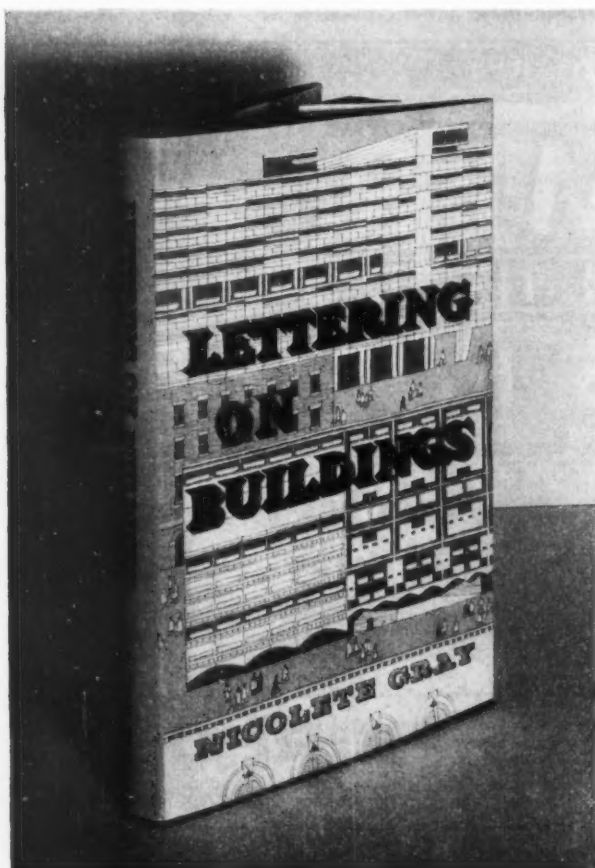
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Nicolette Gray

LETTERING ON BUILDINGS

THIS IS THE FIRST BOOK to deal with lettering as applied to all kinds of buildings. The author, an internationally acknowledged authority on the history of letter forms, breaks new ground in this study of the relationship between lettering and architecture itself: her aim is no less than to create a new approach to the subject, to get away from doctrinaire ideas. She first examines and illustrates the history and development of letter forms from Roman times to our own day. This examination leads her to outline a comprehensive theory of lettering which may serve as a starting point, a new way of looking at problems and possibilities for the present and the future. Her theoretical approach is illustrated by, and throws light on, many existing nineteenth- and twentieth-century examples of all kinds of lettering *in situ*; and she thus demonstrates how present-day architects and designers can successfully tackle the task of integrating lettering on and in all kinds of buildings. 'My hope for this book', says the author, 'is that it may help to bring lettering back into the full life of the modern movement. . . .'

Size of book 9 x 5½ in. 192 pages with 270 halftone and line illustrations. 25s. net, postage 1s. 2d.

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

★ JUST PUBLISHED ★

EXPERIENCING ARCHITECTURE

by

S. E. RASMUSSEN

Illustrated—30s. net.

This book is based on a series of discourses, delivered in 1958 at the Royal Institute of British Architects, which were widely reported and praised and to which *The Times* devoted a leading article. Professor Rasmussen maintains that architecture should not be a professional mystery, but should be determined by common sense, backed by the aesthetic understanding of ordinary people as well as architects. The simple attributes on which good architecture has always been founded, whatever its style and period: Proportion and scale; rhythm; daylighting; colour; are discussed in clear language, and many illustrations complement the text.

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CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Adv. 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.

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

AIR-MAIL SERVICE available on request:

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

Public and Official Announcements

36s. per inch; each additional line, 3s.

BOROUGH OF ENFIELD
BOROUGH ENGINEER & SURVEYOR'S
DEPARTMENT

Applications are invited for the post of ARCHITECTURAL ASSISTANT, Grade A.P.T. I (£610-£765 per annum, plus a London Weighting Allowance of £10-£30 per annum according to age).

Applicants must have had experience in the preparation of plans, specifications, etc., including the maintenance of public buildings.

Saturday mornings are normally free of duty. Application forms obtainable from H. D. Peake, M.Sc.(Eng.), M.I.C.E., Borough Engineer & Surveyor, 7 Little Park Gardens, Enfield, Middx., returnable to the undersigned.

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

Public Offices,
Enfield, Middx. 8454

ADMINISTRATIVE COUNTY OF LEICESTER
(a) SENIOR ASSISTANT ARCHITECT £1,075-£1,220

(b) ASSISTANT ARCHITECT £785-£1,070.

Candidates for (a) must be chartered members of the R.I.B.A., have had considerable experience and be capable of taking charge of contracts from inception to completion; for (b) must have passed Parts I and II of the R.I.B.A. final and be capable of executing working drawings. Lodging allowance and removal expenses may be paid to a married man.

Apply to County Architect, 123 London Road, Leicester. 8763

EXETER CITY COUNCIL
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:

(a) SENIOR ASSISTANT ARCHITECT. Salary within Special Grade (£785 to £1,070 per annum). Applicants must have passed Parts I and II of the R.I.B.A. Final Examination or Special Final or equivalent. Preference will be given to those with experience in modern design and construction of schools and civic buildings.

(b) JUNIOR ARCHITECTURAL ASSISTANT. Salary within A.P.T. Grade I (£610 to £765 per annum). Applicants must have passed the Intermediate Examination of the Royal Institute of British Architects.

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

Applications, stating age, qualifications, previous and present appointments and salaries, full details of experience and earliest possible date then available, should be sent to the City Architect, Municipal Offices, Exeter, not later than 4th April, 1960. 9004

COUNTY BOROUGH OF CARLISLE

Applications are invited for the appointment of ASSISTANT ARCHITECT in the City Surveyor's Department at a salary in accordance with A.P.T. Special Scale £785-£1,070. Starting salary according to qualifications and experience.

Applicants should be A.R.I.B.A. This post is in a Section normally carrying out General Work, but at present Educational Work is also being done.

The office is sectionalised, the architectural work being under the immediate control of the Deputy City Architect.

Forms of application from City Surveyor, 18, Fisher Street, Carlisle, returnable to him not later than 31st March, 1960.

H. D. A. ROBERTSON,
Town Clerk.

9010

MIDDLESEX COUNTY COUNCIL

JUNIOR ARCHITECTURAL ASSISTANTS required in Westminster. Salary £285 rising to possible maximum of £760 or A.P.T. I, £610-£765 plus London weighting up to £30.

Post-entry training scheme is in operation and staff appointed will be expected to study for the examinations of the R.I.B.A.

Application forms (s.a.e.) from County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1. Returnable by 4th April. Prescribed conditions. (Quote C.86 A.J.) 8955

CITY OF WINCHESTER

Applications are invited for the post of ARCHITECTURAL ASSISTANT in the City Engineer's office (C. C. Steptoe, A.R.I.B.A., Chief Assistant Architect). It is essential that the applicant should be a neat and accurate draughtsman and have had previous experience in an architect's office and have passed the Intermediate Examination of the R.I.B.A. Salary, according to experience, will be within Grade A.P.T. I of the National Scales, and the appointment is subject to the Local Government Superannuation Act. This post has been designated as a key post for housing purposes and suitable housing accommodation will be made available.

Applications stating age and details of experience together with names and addresses of two referees, should be addressed to the City Engineer, Guildhall, Winchester, and should reach his office not later than Thursday, 7th April, 1960. Canvassing, either directly or indirectly, will disqualify.

R. H. MCALL,
Town Clerk.

9005

Guildhall,
Winchester.

BUILDING MAINTENANCE SURVEYOR required by HAYES & HARTINGTON U.D.C. Salary within Special Grade, i.e., £785-£1,070 p.a. plus appropriate London weighting. Applicants must have administrative ability, possess a sound knowledge of building construction and services and considerable experience of specification writing. Preference will be given to candidates possessing R.I.C.S. (Building Section) qualifications. Successful candidate will be required to control the works of maintenance and improvements to schools and municipal properties other than housing. Five-day week. Casual User Car Allowance. Housing accommodation if required. Further particulars, conditions of service and form of application obtainable from the undersigned, which when completed must be returned by 4th April, 1960.

GEORGE HOOPER,
Clerk and Solicitor.

Town Hall,
Hayes, Middx. 9071

RADNORSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of ARCHITECTURAL DRAUGHTSMAN. Salary A.P.T. Grade II (£765 to £880). Good drawing board experience essential and candidates should have a knowledge of school and house design and construction. Preference will be given to those holding the Intermediate R.I.B.A.

The appointment will be terminable by one month's notice in writing on either side and will be subject to the provisions of the Local Government Superannuation Acts and to the passing of a medical examination.

The Conditions of Service will be those of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services. Travelling allowance as casual user on County Scale.

Applications stating age, qualifications and experience with the names of two referees must be received by the undersigned not later than 31st March, 1960.

D. C. S. LANE,
Clerk of the Council.

County Hall,
Llandrindod Wells,
Radnorshire 9031

CITY OF CANTERBURY

Applications are invited from persons who have passed the Final Examination of the R.I.B.A. for the appointment of an ASSISTANT ARCHITECT, Special Scale (£785-£1,070). Commencing salary according to qualifications and experience.

Applicants should have had good general experience in design and working drawings.

Housing accommodation available if required.

Applications, together with the names of two referees, must reach the City Architect and Planning Officer, Mr. John L. Berbers, F.R.I.B.A., A.M.T.P.I., not later than Friday, 1st April, 1960.

Canvassing will disqualify.

J. ROYLE,
Town Clerk.

Municipal Buildings,
Canterbury. 9064

CORPORATION OF LONDON

require ASSISTANT ARCHITECT in Architectural and Building Division of City Surveyor's Department. Applicants should have passed Final R.I.B.A.; sound knowledge of architecture necessary with capability to prepare sketch schemes, working drawings and specifications of a wide variety of buildings.

Salary up to £1,325 dependent upon experience and qualifications.

Applications in writing, giving full particulars of age, experience, etc., together with names of three referees, to The City Surveyor, Guildhall, London, E.C.2, within 14 days. 9060

BUILDING SURVEYORS

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

Up to £1,135 (under review) commencing according to qualifications and experience. Application F.R.I.B.A., Architect to Council (EK/AJ/494/3a form and particulars from Hubert Bennett, County Hall, S.E.1. 9076

COUNTY OF BERWICK

COUNTY ARCHITECT'S DEPARTMENT
Applications are invited for the appointment of an ASSISTANT ARCHITECT at a salary in accordance with Salary Scale £980-£1,060, with placing.

Applicants must be Registered Architects and Members of the Royal Institute of British Architects.

Applications, stating age, qualifications, experience, etc., together with the names and addresses of two referees to be lodged with the undersigned not later than 31st March, 1960.

ROBERT MARTIN,
County Clerk.

County Buildings,
Duns. 8949

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

ARCHITECT/PLANNERS required. Tasks include three-dimensional planning in Comprehensive Development Areas and all other important areas of new development throughout London, including those associated with road improvements. Up to £1,135 (under review) according to experience and qualifications.

Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council (EK/AJ/527/3a), County Hall, S.E.1. 9077

BEDFORDSHIRE COUNTY COUNCIL

Applications are invited for the following posts:

(a) SENIOR ASSISTANT ARCHITECT, A.P.T. IV (£1,065-£1,220).

(b) ASSISTANT ARCHITECTS (Special Scale £785-£1,070).

(c) ARCHITECTURAL ASSISTANTS, A.P.T. I (£610-£765).

(d) ASSISTANT QUANTITY SURVEYORS (Special Scale £785-£1,070).

Applicants for (a) and (b) should be members of the R.I.B.A., and for (d) Associates R.I.C.S.

The office has an extensive and interesting programme of works for Schools, Colleges, Aged Persons Homes, Police and Fire Stations, and public buildings.

Application forms from J. C. Barker, Dipl. Arch., A.R.I.B.A., A.M.T.P.I., County Architect, Shire Hall, Bedford, to be returned by 30th March, 1960. 9117

CAERNARVONSHIRE COUNTY COUNCIL
COUNTY PLANNING DEPARTMENT

Applications invited for post of SENIOR PLANNING ASSISTANT. Commencing salary according to qualifications and experience within the Grades A.P.T. III/IV (£880-£1,220).

New housing accommodation available if required.

Applicants should be corporate members of the Town Planning Institute or hold an equivalent qualification and must have had experience in the preparation of development plans, preferably including comprehensive development areas.

Further particulars and application forms from Clerk of County Council, Caernarvon, Closing date, 16th April, 1960. 9116

WARWICKSHIRE COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:

SENIOR ASSISTANT ARCHITECTS—Grade A.P.T. III-IV (£880-£1,220).

Applicants must be members of the Royal Institute of British Architects and be competent designers with a good knowledge of modern methods of construction.

ASSISTANT ARCHITECTS—Special Grade (£785-£1,070).

Applicants must have passed Parts I and II of the R.I.B.A. Final or Special Examinations or their equivalent at one of the recognised schools of architecture. The successful applicants will work in teams on large projects, but opportunity will be given to men with enthusiasm and ability to design and carry out smaller projects under a Group Architect.

The commencing salary can be within the grade according to ability and experience. Application forms and other conditions applicable to the appointments can be obtained from Eric Davies, F.R.I.B.A., A.M.T.P.I., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
Clerk of the Council

Shire Hall,
Warwick. 9115

March, 1960.

DEVON COUNTY COUNCIL
COUNTY PLANNING DEPARTMENT

Applications are invited from suitably qualified persons for the following posts:

1. PLANNING ASSISTANT, Special Scale (£785-£1,070).

The post is in the Eastern Divisional Office at Exeter. Applicants should be A.M.T.P.I. and/or have a degree in Geography or Economics and experience in a Planning Department.

2. PLANNING ASSISTANT, A.P.T. I (£610-£765).

The post is at Headquarters in the Development Plan Section, which also deals with Redevelopment Schemes and other projects. Good draughtsmanship essential.

In approved cases, loans for house purchase and removal expenses are available, also lodging allowance of 50s. per week for married officers whilst seeking accommodation.

Forms of application, giving further details and returnable by Monday, 28th March, 1960, from: County Planning Officer, "Bellair," Topsham Road, Exeter. 9118

BOROUGH OF FINCHLEY
TEMPORARY ARCHITECTURAL ASSISTANT
 HOUSING DEPARTMENT
 Salary within Special Grade (£1765 x £440 (approx.)-£1,070). London weighting additional. Candidates must have had practical office experience (preferably on Local Authority Housing work) in the preparation of working drawings and detailing.

The National Scheme of Conditions of Service and the Local Government Superannuation Acts apply and medical examination required. Applications, stating age and full particulars of qualifications and experience, with the names of two referees, to the Borough Housing Officer, The Avenue, Finchley, N.3, by first post on 30th March, 1960.

R. M. FRANKLIN,
 Town Clerk.

Municipal Offices,
 N.3. 9102

WORCESTERSHIRE COUNTY COUNCIL
SENIOR PLANNING ASSISTANTS, A.P.T. IV.
 Two experienced Planners are required in connection with the review of the County Development Plan, preparation of new Towns Maps, redevelopment of built-up areas by Comprehensive Development Area Schemes. Salary £1,065-£1,220. Candidates must be A.M.T.P.I. and additional qualifications in architecture and/or surveying would be an advantage.

JUNIOR PLANNING ASSISTANT, A.P.T. I.
 This Assistant will work in the Development Plan Section on the review of the County Development Plan, research and preparation of new Towns Maps. Salary £610-£765. Candidates should be University graduates and/or have passed Intermediate T.P.I. Examination.

All posts are pensionable and subject to a medical examination. Car required—allowance. Help given in removal expenses. Application forms from: County Planning Officer, County Buildings, Worcester. (XIII.) 9131

WANSTEAD AND WOODFORD CORPORATION
SENIOR PLANNING ASSISTANT, A.P.T. IV
 (£1,065-£1,220 plus London weighting)

Applicants must hold the Final Examination of the Town Planning Institute and additional architectural or engineering qualifications would be advantageous. Applicants will be preferred who have experience in urban redevelopment with a local authority in addition to routine development control. Starting salary will be fixed in accordance with the experience of the successful applicant. A casual user car allowance is payable and housing accommodation will be made available as soon as practicable.

Forms are obtainable from and are to be returned to L. S. Jeffery, Borough Engineer, Surveyor and Planning Officer, Municipal Offices, High Road, London, E.18, by the 1st April, 1960. 9126

BOROUGH OF DARTFORD
 Applications are invited for the appointment of:

ARCHITECTURAL ASSISTANT. Salary: Special Scale (£1765-£1,070), and in addition a "passage" rate of £20 or £30 (according to age) will be paid.

The successful applicant will hold a senior position and he should have passed the Final Examination of the R.I.B.A. The commencing salary will be in accordance with qualifications and experience.

Housing accommodation will be available. Applications, stating age, qualifications, and experience, and the names of three referees, should be forwarded to the Borough Surveyor, The Bridge House, Dartford, by the 8th April, 1960.

THOMAS ARMSTRONG,
 Town Clerk. 9125

CWMBRAN NEW TOWN MONMOUTHSHIRE
(a) TWO CHIEF ASSISTANT ARCHITECTS,
 Grade VII (£1,257 to £1,485).

(b) ONE SENIOR ASSISTANT ARCHITECT,
 Grade V (£1,220 to £1,375).

(c) TWO ASSISTANT ARCHITECTS, Grade III
 (£880 to £1,065).

Applications are invited from suitably qualified Architects for the above posts in my Department. The programme of future work includes large scale residential development of new areas, the Commercial Centre of the New Town and a variety of other projects including neighbourhood shopping centres, industrial buildings, etc.

Candidates for (a) and (b) must be Associates of the R.I.B.A. with first class experience in design. In the case of (c) considerable responsibility will be required of the successful candidate, who will take charge of the development of new housing and commercial projects respectively. Candidates for (c) should be Associates of the R.I.B.A. with good office experience, preferably including housing design and layout. Conditions of Service are similar to those in Local Government and housing accommodation will be available if required.

Please write for details and forms of application which must be returned to me by Tuesday, 19th April, 1960.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,
 Chief Architect.

Cwmbran Development Corporation,
 Victoria Street,
 Cwmbran, Mon. 9124

LANARK COUNTY COUNCIL
ARCHITECTURAL ASSISTANTS (Qualified A.R.I.B.A.) required for County Architect's Department with headquarters at Motherwell, on the following J.I.C. Salary Scales:—Admin. "D", £1,040/£1,120; Professional Assistant, £795/£1,075. Placing on both scales may be given according to qualifications and experience. Employment offers wide scope in development of modern building programme.

Medical examination. Superannuation. No canvassing.

Applications, stating age, qualifications and experience, together with names and addresses of three referees, should be lodged with County Clerk, P.O. Box No. 1, Glasgow, within 14 days of advertisement. 9103

COUNTY BOROUGH OF ROTHERHAM ARCHITECTS

Applications are invited for the following appointments:—

(a) ARCHITECTURAL ASSISTANTS, A.P.T. I
 (£610-£765) to Special Grade (£785-£1,070).

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

The department has a varied and interesting programme of architectural work and candidates for (a) are required to have passed Parts I and II of the R.I.B.A. Final Examination and (b) to be Associate Member of the R.I.B.A. with good general experience in design and construction. The commencing salary in the grades will be according to capabilities and experience.

Housing accommodation will be available if necessary for the higher grade appointment.

Applications to be endorsed "Architects," stating age, qualifications and details of experience, together with names of two referees, should be received by me not later than Monday, 4th April, 1960.

Canvassing will disqualify.

JOHN S. WALL,
 Town Clerk.

Municipal Offices,
 Rotherham,
 March, 1960. 9122

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for two appointments of **PERSONAL SECRETARY** (Scale I) (Female) to (i) the Deputy Treasurer and (ii) the Deputy Architect. Commencing salary up to £572 p.a. dependent upon age and shorthand and typing proficiency based on R.S.A. examinations, rising by annual increments to £660 p.a.

Applications, stating age, qualifications, experience, present appointment and salary, and giving names of two referees, to be sent to the undersigned at 40, Eastbourne Terrace, London, W.2, by 31st March.

E. G. BRAITHWAITE,
 Secretary. 9121

BOROUGH OF SOLIHULL
APPOINTMENT OF SENIOR ASSISTANT ARCHITECTS AND ASSISTANT QUANTITY SURVEYOR

Applications are invited from qualified Architects and Quantity Surveyors having suitable experience for appointment as Senior Assistant Architects at a salary in accordance with A.P.T. Grade V (£1,220-£1,375 per annum) and as an Assistant Quantity Surveyor at a salary in accordance with A.P.T. Grade IV (£1,065-£1,220 per annum).

Solihull has a population of approximately 90,000, and is still expanding rapidly. It is an Exempted District for Education and has been recommended for County Borough status by the Local Government Commission for England. There is a considerable programme of varied work ahead.

In appropriate cases the Council will assist in the provision of housing accommodation and half removal expenses will be paid.

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

Applications, giving full particulars as to age, qualifications and past and present appointments and experience, together with the names and addresses of two referees, should be submitted to the Borough Surveyor, 90, Station Road, Solihull, so as to reach him not later than 31st March, 1960.

W. MAURICE MELL,
 Town Clerk. 9120

BOROUGH OF RAMSGATE
TEMPORARY QUANTITY SURVEYING ASSISTANT

Applications are invited for the above-mentioned appointment at a salary in accordance with A.P.T. Grade II (£765-£890).

Candidates should have experience in all types of work, measurements of variation and settlement of final accounts.

Applications endorsed "Quantity Surveying Assistant," giving details of qualifications, experience, and the names and addresses of two referees, must be received by the Borough Engineer, Municipal Buildings, Ramsgate, by not later than Friday, 8th April, 1960.

Candidates must disclose whether or not they are related to any member of or the holder of any senior office under the Council.

Canvassing will disqualify.

K. F. SPEAKMAN,
 Town Clerk. 9205

BUCKINGHAMSHIRE COUNTY COUNCIL

Applications are invited for the appointment of **ASSISTANT ARCHITECTS** in the County Architect's Department on Architect's Special Scale (£785 to £1,070 per annum).

The appointment is superannuable and subject to medical examination, and applicants should be suitably qualified.

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

Applications, on forms provided, must be returned by 4th April, 1960.

F. B. POOLEY,
 County Architect.

County Offices,
 Aylesbury. 9119

HARLOW DEVELOPMENT CORPORATION
ASSISTANT ARCHITECTS. Applications are invited from Candidates interested in taking part in New Town work. Candidates should have passed R.I.B.A. Intermediate or equivalent.

Salary within the range £765-£880 p.a. Housing allowance in suitable cases. Applications within fourteen days to General Manager, Terling, Harlow, Essex. 9128

CITY OF BIRMINGHAM PUBLIC WORKS DEPARTMENT

PLANNING & REDEVELOPMENT SECTION
Vacancy for PLANNING ASSISTANT (Research). Salary Grade—Special Scale £785/£1,070 per annum, according to qualifications and experience.

Applicants should be Associate Members of the Town Planning Institute and/or hold a University degree in Economics or Geography.

The appointment is permanent, superannuable and subject to a medical examination.

Applications stating qualifications, age and experience and naming two referees should reach the undersigned by the 23rd April, 1960.

Canvassing disqualifies.

HERBERT J. MANZONI,
 City Engineer and Surveyor.

Civic Centre,
 Birmingham, 1. 9168

BOROUGH OF BEXLEY
ARCHITECTURAL ASSISTANT

Applications are invited for this appointment in the Borough Engineer and Surveyor's Department. The salary is within Grade A.P.T.II (£765-£880 per annum) plus London Weighting. Preference will be given to suitably qualified candidates with experience of housing and school projects.

Form of application and conditions of appointment are obtainable from the Borough Engineer, West Lodge, Broadway, Bexleyheath, Kent, to whom completed applications must be returned by Monday, 11th April, 1960.

The Council may be prepared to assist in the provision of housing accommodation. Canvassing will disqualify.

ARTHUR GOLDFINCH,
 Town Clerk. 9178

UNIVERSITY OF KHARTOUM

Applications are invited for the **SENIOR LECTURESHIP or LECTURESHIP IN ARCHITECTURE** in the Faculty of Engineering.

Salary Scale: Senior Lecturer: £8,205.2 x 75-£8,217.2 p.a.

Lecturer: £8,107.7 x 75-£8,197.7 p.a.

Entry point according to qualifications and experience. Cost of living allowance approximately £8,180 p.a. Outfit allowance £50. Family allowances: Wife £50 p.a., 1st child £50 p.a., 2nd and 3rd child £30 p.a. each. £6.1.0 (d.b.) schooling for apprentice and family on appointment, termination and annual leave. Initial appointment 5 years, with possible renewal. Superannuation scheme: arrangements can be made to maintain F.S.S.U. policies. Unfurnished accommodation provided at rent up to 7½% of salary.

Applications (10 copies) detailing qualifications and experience and naming 3 referees by 20th April 1960 to Registrar, University of Khartoum, c/o Inter-University Council for Higher Education Overseas, 29 Woburn Square, London, W.C.1. from whom further particulars may be obtained.

GOVERNMENT OF NORTHERN IRELAND
ASSISTANT ARCHITECT CLASS I

Applications invited for pensionable post in Ministry of Health and Local Government. Candidates must be Registered Architects by examination with good general experience. Duties connected with Housing, Slum Clearance and Redevelopment. Salary scale £1,210-£1,550. Existing pension rights may in certain circumstances be transferred. Preference for ex-Servicemen.

Application forms obtainable from Secretary, Civil Service Commission, Stormont, Belfast, to be returned by 7 April, 1960.

WEST SUSSEX COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

TEMPORARY ASSISTANT ARCHITECTS
 salary in accordance with Qualifications and Experience, ranging up to £1,400 per annum.

Further particulars should be obtained from County Architect, County Hall, Chichester, to whom detailed applications should be submitted by 19th April, 1960.

T. C. HAYWARD,
 Clerk of the County Council.

County Hall,
 Chichester. 9157

**BOROUGH OF ROWLEY REGIS
BUILDING DEPARTMENT**

Applications are invited for:
ARCHITECTURAL ASSISTANT
A.P.T.I. (£610-£755).

ASSISTANT QUANTITY SURVEYOR
A.P.T.I.I. (£765-£880).

(a) Applicants should be experienced in housing and other architectural works normally undertaken by a Local Authority.

(b) Applicants must be experienced in preparing estimates, bills of quantities, checking interim and final accounts.

Applications, stating age, qualifications and experience, together with two recent testimonials, should be sent to the undersigned not later than Friday, the 1st April, 1960.

JOHN HILTON,
Town Clerk

Municipal Buildings,
Old Hill, Staffs.
March, 1960. 9208

BOROUGH OF AYLESBURY

APPOINTMENT OF ASSISTANT ARCHITECT
Applications are invited from suitably qualified persons for the above appointment in the Consultant Architect's office at a salary within the Special Grade (maximum £1,070 per annum) with allowance.

The Council has embarked on a scheme of town expansion under the Town Development Act 1952 for the acceptance of industry and population from the greater London area entailing a considerable architectural programme including the provision of new Civic buildings, town centre shopping facilities, industrial and housing development.

The appointment will be subject to the Local Government Superannuation Acts and to the National Scheme of Conditions of Service and will be terminable by one month's notice on either side. The successful candidate will be required to pass a medical examination.

Applications giving the names of two referees should be sent to F. B. Pooley, F.R.I.B.A., Consultant Architect to the Borough Council, Church Street, Aylesbury, Bucks, not later than 4th April, 1960.

R. D. W. MAXWELL,
Town Clerk

Town Hall,
Aylesbury. 9206

WESTERN REGIONAL HOSPITAL BOARD

ARCHITECTURAL DIVISION
The Board has decided to expand considerably its Architectural Department in order to undertake with its own staff a substantial proportion of the increased volume of new hospital building, and applications are invited for the undermentioned.

Additional opportunities will be available in design, construction and function of hospitals in sketch plan stage to completion.

Hospital experience is not essential. The salary rates quoted below are currently under review.

Architects

(a) **DEPUTY CHIEF ARCHITECT.**
£1,415-£1,670.

(b) **PRINCIPAL ASSISTANT ARCHITECT**
Scale I, £1,235-£1,510.

(c) **SENIOR ASSISTANTS.** £1,050-£1,245.

(d) **ASSISTANTS.** £730-£1,055.

(e) **TRAINEES** (Salary according to age;
£195 at 15 rising to £455 at 25).

(f) **ASSISTANT.** £730-£1,055.

Candidates for all posts other than Trainees, must possess full Professional Qualifications. All are subject to National Health Service Commissioning and are superannuable. Applications in writing stating age, qualifications and previous experience, together with the names and addresses of three referees, should be sent to Secretary, Western Regional Hospital Board, 64 West Regent Street, Glasgow, not later than 15th April, 1960.

9184

BRISBANE CITY COUNCIL

(QUEENSLAND, AUSTRALIA)

(A) ZONING ARCHITECT

Applications, closing on 30th APRIL, are invited for the position of (A) Zoning Architect and (B) Neighbourhood Centres Architect, at a salary in the range of A1,825-A2,000 per annum, plus cost of living adjustment at present amounting to 5 per cent.

Salary will be payable as from date of emolument.

Applicants should be associate members of the R.I.B.A. and of the T.P.I. or hold higher qualifications.

First-class fares from the United Kingdom to Brisbane will be provided for the appointees and their families.

Application Forms, a list of duties, and further particulars relating to these positions may be obtained from the AGENT-GENERAL FOR QUEENSLAND, 409/410 STRAND, LONDON, W.C.2.

9182

J. C. SLAUGHTER,

Town Clerk.

9157

TEMPORARY SENIOR ASSISTANT is required for the Architect's Department of the Milk Marketing Board. Applicants should be capable of preparing working drawings and details of factory and office buildings. The appointment will be for at least 12 months and the salary will be according to qualifications and experience. Applications should be sent to: Personnel Officer, Marketing Board, Thames Ditton, Surrey, 279.

9188

BRITISH RAILWAYS

TOTEM

ASSISTANT ARCHITECTS REQUIRED

Applicants are required for work on the comprehensive re-development of major stations. The developments will include offices, hotels, multi-storey car parks, shopping centres and many ancillary facilities of an industrial nature.

Wide scope will be given to imaginative designers of experience who are prepared to work at high pressure. In the senior positions it is essential that applicants should have experience of the control and direction of staff. All applicants must be qualified members of the R.I.B.A. and should preferably also hold the Diploma of a recognised School of Architecture.

Vacancies exist for—

SECTIONAL ARCHITECTS—

Salary range £1,475/£1,695 per annum.

SENIOR ASSISTANT ARCHITECTS—

Salary range £1,200/£1,420 per annum.

LEADING ASSISTANT ARCHITECTS—

Salary range £1,095/£1,200 per annum.

Vacancies also exist within the salary range £875 to £1,034 and applicants for these posts, who will be required for general work, should be either qualified or have intermediate and several years' experience.

Five day week and concessionary rail travel.

Applications in writing quoting reference No. 100 (A.J.) and stating qualifications, age, experience and salary required to—

W. R. Headley, A.R.I.B.A., A.A.Dipl.,

Regional Architect,

Chief Civil Engineer's Office,

British Railways,

London Midland Region,

5a Euston Grove,

London, N.W.1. 9212

COUNTY BOROUGH OF PRESTON

Appointment of

(a) SENIOR ARCHITECT (Salary APT V:

£1,220-£1,375).

(b) ASSISTANT ARCHITECT (Special Grade

salary: £785-£1,070).

Applications are invited for the above-mentioned appointments in the Borough Surveyor's Department. Candidates must be Registered Architects and Corporate members of the R.I.B.A.

The programme of works is large and varied and the appointments afford opportunities for good experience, particularly in educational buildings.

The National Scheme of Conditions of Service and Local Superannuation Acts apply, and the successful applicants will be required to pass a medical examination.

Forms of application can be obtained from the undersigned, to whom they must be returned, completed, not later than 20th April, 1960.

W. E. E. LOCKLEY,

Town Clerk.

9197

BOROUGH OF LEYTON

(in the County of Essex)

COMMITTEE FOR EDUCATION

APPOINTMENT OF ARCHITECTURAL

ASSISTANT

Applications are invited for the permanent appointment of Architectural Assistant, Grade A.P.T.II £765-£880 per annum, plus London Weighting. The successful applicant will be employed by the Essex County Council, and will work in the School Architect's Section of the Borough Engineer & Surveyor's Department, Town Hall, Leyton, E.10, five-day week is operated.

Details and forms of application from the Borough Education Officer, Education Offices, Kirkdale Road, Leytonstone, E.11, to whom they should be returned within 10 days from the appearance of this advertisement.

D. J. OSBORNE,

Town Clerk.

9162

BOROUGH OF CASTLEFORD

APPOINTMENT OF ASSISTANT ARCHITECT

Salary Grade A.P.T.I. (£610-£765); Commencing salary according to qualifications and experience; N.J.C. Service Conditions; superannuable; terminable on one month's notice either side.

Applicants should have passed the Intermediate R.I.B.A. Examination or its equivalent at one of the recognised Schools of Architecture.

The successful applicant will be required to pass satisfactorily a medical examination.

If required housing accommodation will be provided for the successful married applicant.

Applications, on forms obtainable from me, to be returned by the 9th April, 1960.

Canvassing disqualifies.

ERNEST HUTCHINSON,

Town Clerk.

9163

CORPORATION OF GLASGOW

ARCHITECTURAL AND PLANNING

DEPARTMENT

ASSISTANT QUANTITY SURVEYORS

Vacancies exist for a number of qualified assistants as above. Salary scale £795-£1,240 with placing according to experience.

Applications should be addressed to the City Architect and Planning Officer, 20, Tronsgate, Glasgow, C.1. Those who have submitted applications during the past 12 months should not reply to this advertisement.

A. G. JURY,

City Architect and Planning Officer.

9015

LONDON MIDLAND

REGION

EUSTON

ARCHITECTS AND BUILDING SURVEYORS

Vacancies in Architect's Department, L.C.C., for Architects or Building Surveyors experienced in surveying existing buildings, preparing sketch schemes, working drawings and specifications and supervising works in progress, for the complete internal replanning and modernisation of the older blocks of Council flats (jobs up to £50,000).

Applicants should have initiative, a real interest in this type of work and ability to act on their own judgment since the maximum opportunity will be afforded for each to carry his own job through from survey to completion.

Salaries range £700-£1,135 (under review). Promotion by merit.

Application form from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/AJ/620/3), County Hall, S.E.1.

EAST BARNET URBAN DISTRICT COUNCIL

Applications are invited for the following permanent appointments:—

(a) **SENIOR ASSISTANT ARCHITECT—Special**

Grade (£785-£1,070, plus London Weighting).

Applicants should have passed the Final examination of the Royal Institute of British Architects.

(b) **ASSISTANT ARCHITECT—A.P.T.II (£765-£880, plus London Weighting).**

Applicants should have passed the Intermediate examination of the Royal Institute of British Architects, or equivalent.

(c) **ARCHITECTURAL DRAUGHTSMAN**

A.P.T.I. (£610-£765, plus London Weighting).

(d) **SENIOR ASSISTANT ENGINEER—Special**

Grade (£785-£1,070, plus London Weighting).

Applicants should have passed the Final examination of either the Institution of Civil Engineers or the Institution of Municipal Engineers.

(e) **ASSISTANT ENGINEER—A.P.T.II (£765-£880, plus London Weighting).**

Applicants should have passed Part I of the Institution of Civil Engineers or the Intermediate examination of the Institution of Municipal Engineers, or equivalent.

(f) **ENGINEERING DRAUGHTSMAN, A.P.T.I**

(£610-£765, plus London Weighting).

Application forms, obtainable from the Engineer & Surveyor, Town Hall, Station Road, New Barnet, Hertfordshire, must be returned by not later than Monday, 11th April, 1960.

9172

QUANTITY SURVEYING ASSISTANTS.

Grade III, required by AIR MINISTRY in the PROVINCES. Duties include abstracting and billing, site measurement and preparation of estimates. Candidates must hold O.N.C. (Building or Builders' Quantities) or equivalent and have good experience under Quantity Surveyor or Building Contractor. Knowledge W.D. Schedule an advantage. Financial assistance and time off given for recognised courses of study. Promotion and pension prospects. Five-day week with 18 days' leave a year initially. Overseas tours for which special allowances granted.

Salary ranges from £680 (at age 25) to £850. Commencing salary dependent upon age, qualifications and experience. Applicants, who must be natural born British subjects, should write stating age, qualifications and previous appointments including type of work done, to Manager (P.E.2) Professional and Executive Register, Ministry of Labour, Atlantic House, Farringdon Street, London, E.C.4. No original testimonials should be sent. Candidates selected will normally be interviewed in London and certain expenses reimbursed. Only applicants selected for interview will be advised.

8336

BOROUGH OF EDMONTON

BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments in connection with the Council's Capital Building Programme including multi-storey housing and public buildings, and maintenance and improvement works. Applicants should be appropriately qualified:—

ARCHITECTURAL ASSISTANTS—Salary

within Special Grade, £785-£1,070 plus London weighting.

ARCHITECTURAL ASSISTANTS—Salary

within Grade A.P.T. II, £765-£880 plus London weighting.

QUANTITY SURVEYING ASSISTANTS—Salary

within Grade A.P.T. II, £765-£880 plus London weighting.

Applications on forms obtainable from the Town Clerk, Town Hall, Edmonton, N.9, must be delivered by the 2nd of April, 1960.

9099

ROYAL COUNTY OF BERKSHIRE

ASSISTANT ARCHITECT—Special Grade.

£785-£1,070. Candidates should have had good architectural training and possess energy, ability and initiative.

ARCHITECTURAL ASSISTANT, A.P.T. Grade II (£765-£880).

Applicants should be studying for the Final Examination of the R.I.B.A. One day per week will be allowed for study at a recognised School of Architecture.

Opportunities for obtaining a good general experience exist in this expanding County, and in particular work is now in hand on new Police Divisional Headquarters, Courts and Colleges of Further Education.

There is a number of staff houses and flats, some of which become available from time to time and assistance up to 75 per cent. is given with removal expenses.

Application forms and particulars of the Department can be obtained from J. T. Castle, A.R.I.B.A., A.M.P.I., County Architect, Wilton House, Parkside Road, Reading, to whom they should be returned not later than Tuesday, the 5th April, 1960.

9153

BOROUGH OF ACTON
BOROUGH ENGINEER'S DEPARTMENT
Applications are invited for the following permanent appointments:—
ENGINEERING ASSISTANT—Special Grade.
ENGINEERING ASSISTANTS (2)—A.P.T. 1/11 Special Grade.
ARCHITECTURAL ASSISTANT—A.P.T. IV.
ARCHITECTURAL ASSISTANT—Special Grade.
BUILDING SURVEYING ASSISTANT—Special Grade.
JUNIOR ARCHITECTURAL ASSISTANT—A.P.T. I.
ASSISTANT BUILDING INSPECTOR—A.P.T. 1/11.

Successful candidates will be engaged on general municipal works and on multi-storey housing development and conversion of properties. Applicants should have passed appropriate sections of the I.C.E.; I.Mun.E.; R.I.B.A.; or R.I.C.S. examinations.

Starting salaries will be according to age, qualifications and experience. London weighting (max. £30 p.a.) is payable in addition. The Council operates a five-day week.

Conditions of appointment and forms of application may be obtained from and returned to the Borough Engineer, Town Hall, Acton, W.3. by 11th April, 1960. 9101

COUNTY COUNCIL OF THE WEST RIDING

OFFICE OF THE COUNTY ARCHITECT

Applications are invited for the posts of—
ARCHITECTURAL ASSISTANT—

A.P.T. III. £880—£1,065
JUNIOR ARCHITECTURAL ASSISTANT—

A.P.T. II. £765—£880

in the Divisional Architect's Office at Wakefield. Applications to be submitted by the first post on Tuesday, 12th April, 1960, on forms to be obtained from and returned to the undersigned.

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

Bishopgarth,
Weston Road,
Wakefield. 9167

LONDON COUNTY COUNCIL

ARCHITECTURAL DRAUGHTSMEN

Unqualified ARCHITECTURAL ASSISTANTS required in Housing Division, Architect's Department. Candidates must have drawing board experience in an architect's office. Preference to those proposing to qualify by evening study though others will be considered. Full programme of new work. Promotion opportunities.

Starting salaries according to age and experience. Form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/AJ/619/3), County Hall, S.E.1. 9154

BOROUGH OF LUTON

Applications invited for:—
(a) SENIOR ARCHITECTURAL ASSISTANTS, A.P.T. IV. (£1,065—£1,220).
(b) ARCHITECTURAL ASSISTANTS, A.P.T. I/Special (£610—£1,070).
(c) HEATING ENGINEERING ASSISTANT, A.P.T. III. (£880—£1,065).

Applicants for posts (a) must be A.R.I.B.A. and should have had considerable practical experience.

The grade and commencing salary for (b) will be within the range stated according to experience and qualifications.

Large constructional and development programme offers a variety of work and experience. Consideration will be given to the provision of housing accommodation and payment of removal expenses in approved cases.

Application forms from Borough Architect, Town Hall, Luton, returnable by 4th April, 1960. 9138

CORBY DEVELOPMENT CORPORATION

ARCHITECTURAL ASSISTANTS

There are vacancies on the staff of the Chief Architect for Architectural Assistants.

The appointments will be made within A.P.T. Grades I (£610—£765) or II (£765—£880). The Grade and the commencing salary within the Grade will depend upon qualifications and experience.

Candidates will be expected to have passed the Intermediate Examination of the Royal Institute of British Architects, or an equivalent examination recognised by the Architects Registration Council.

Appointments are subject to supernannuation under the Local Government Supernannuation Scheme.

Housing is available. Removal expenses paid. Applications, stating age, education, training, qualifications, experience, appointments held and salaries, together with the names of two referees, must reach the undersigned by Monday, 4th April, 1960.

R. F. BROOKS GRUNDY,
General Manager.

Spencer House,
Corporation Street,
Corby, Northants. 9136

ASSISTANT ARCHITECTS required in Office of Architect, Waterloo Station.

Applicants must have had good comprehensive experience in design and construction of buildings of varied types with emphasis on modern structural techniques. Associate Membership of the R.I.B.A. essential. Commencing salary £990, rising to £1,034 per annum after two years. Free and other travel facilities. Supernannuation Fund. Five-day week. Apply, giving details of experience and qualifications to Chief Civil Engineer, British Railways (Southern Region), Waterloo Station, London, S.E.1. 9160

STEPNEY MBC require DRAUGHTSMAN and TRACING ASSISTANT, Male or Female, £400—£795. Forms and other particulars from Town Clerk, 227, Commercial Road, E.1. Closing date 31st March, 1960. 9114

STEPNEY MBC require ARCHITECTURAL LEARNER, £315 at 16 years. G.C.E. in English, Maths. and three other subjects required. Opportunity to become qualified Architect (£1,250 p.a.). Application form and other particulars from Town Clerk, 227, Commercial Road, E.1. Closing date 31st March, 1960. 9113

JUNIOR ASSISTANT ARCHITECT. The London Hospital, Whitechapel, E.1, has a vacancy in the Architect's Office. Salary scale: £565—£795 p.a. Starting salary dependent on qualifications, age and experience. The post is equally suitable for a junior or someone near retiring age. Applications, with full details, to the House Governor. 9135

HUNTINGDONSHIRE

COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

(a) ARCHITECTURAL ASSISTANT—Special Grade (£785—£1,070).

(b) ARCHITECTURAL ASSISTANTS—Grade A.P.T. II (£765—£880).

The successful applicants will become members of architectural teams engaged in projects of varying size, and should be keenly interested in architecture with an up-to-date approach in both planning and design.

Application forms may be obtained from S. M. Holloway, A.R.I.B.A., County Architect, County Buildings, Huntingdon, and completed forms should be returned to the undersigned by Friday, 8th April, 1960.

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

County Buildings,
Huntingdon. 9127

Public Notice

36s. per inch; each additional line, 3s.

ADMINISTRATIVE COUNTY OF LONDON

London Building Act (Amendment) Act, 1935

London Building (Constructional) By-laws, 1952

Clean Air Act, 1956

The London County gives notice in accordance with Section 8(h) of the London Building Act (Amendment) Act, 1935, that on 26 January, 1960, it made the London Building (Constructional) Amending By-law, 1959, under the above-mentioned Acts amending the London Building (Constructional) By-laws, 1952, by the addition thereto of a by-law requiring the provision in new buildings of such arrangements for heating and cooking as are calculated to prevent, so far as is practicable, the emission of smoke.

The Council has fixed 1st April, 1960, as the date on which the by-law shall come into operation.

A copy of the by-law is deposited at the County Hall, Westminster Bridge, S.E.1, and can be inspected at all reasonable hours.

Copies can be obtained from the Information Bureau at the County Hall on request. Requests by post should be accompanied by a stamped addressed envelope.

W. O. HART,
Clerk of the Council.

The County Hall, S.E.1,
21st March, 1960. 9156

Architectural Appointments Vacant

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

TWO ARCHITECTURAL ASSISTANTS required—Intermediate R.I.B.A. standard—who have had good office experience. Salary £600—£800 according to experience. Housing accommodation could be provided. Reply, giving particulars of age and experience and salary required, to: Francis W. Keyworth, L.R.I.B.A., 20, Park Road, Melton Mowbray, and 31, Friar Lane, Leicester. 8775

C. H. BLSOM & PARTNERS require ASSISTANTS for work on theatres, laboratories, shops, stores and town centre redevelopment, etc. Apply to 10, Lower Grosvenor Place, S.W.1. VIC. 4304. 8688

ARCHITECTURAL ASSISTANT required, Intermediate/Final standard. Varied and interesting work. Good draughtsmanship, sound knowledge of construction and ability to manage jobs, essential. Five-day week. Apply, stating age, experience and salary required, to: George Lowe & Partner, 4, High Street, CROYDON 3608/9. 8645

ARCHITECT requires CHIEF or SENIOR ASSISTANT also JUNIOR ASSISTANT for interesting work including shops, offices and schools. Apply in writing, stating age, experience and salary required, to: Roff Marsh, F.R.I.B.A. M.T.P.I., 125/7, London Road, Chelmsford. 8991

ARCHITECTURAL ASSISTANTS required. Starting salary £915 per annum, Glasgow office, five-day week. Schools, Offices, etc. State experience. D. Harvey & A. Scott, 2, Lynedoch Place, Glasgow, C.3. 8992

OUR Design Sections have vacancies for JUNIOR ASSISTANTS with experience. Work includes schools, churches and some commercial work. Scope for really keen individuals. Applications in writing. Arthur Farebrother & Partners, 99, Seymour Grove, Manchester, 16. 8960

ARCHITECTURAL ASSISTANTS required. Starting salary £750 per annum, Glasgow office, five-day week. State experience. D. Harvey & A. Scott, 2, Lynedoch Place, Glasgow, C.3. 8992

ARCHITECTURAL ASSISTANT of Intermediate standard required for busy general practice. Write, stating age, experience and salary required, to: Bulp, Badger & Harrison, A.R.I.B.A., Guild Chambers, Scholars Lane, Stratford-on-Avon. 8991

SENIOR and Intermediate Standard ARCHITECTURAL ASSISTANTS required in London and West—super-Mare. Write full particulars including salary required. R. G. Gallanough, L.R.I.B.A., 54, Queen Anne Street, London, W.1. 8992

ASSISTANTS required of Final and Intermediate standard for interesting and temporary projects, Civic Centres, Flats and Schools, etc. Apply, stating experience and salary required, to: Sir John Brown, A. E. Henson & Partners, 117, Sloane Street, London, S.W.1. 8993

ARCHITECTURAL ASSISTANTS of all grades required in busy London Office. Applicant must be prepared to work on their own initiative and be capable of producing working drawings and details for new contracts of contemporary design. Pleasant working conditions, with a five-day week, 9.30 a.m. to 5.30 p.m., and Lunch Voucher scheme. Write, stating experience, age and salary required, to: W. Russell Orme & Partners, 55, Manchester Street, W.1. or telephone HUNTER 1498. 8994

ARCHITECTURAL ASSISTANT required. Intermediate standard. Apply stating experience and salary required. Howell, Freeman & Batten, Chartered Architects, Reading. 8995

ARCHITECTURAL ASSISTANT required. A 25-35. Full qualifications not as essential as experience in an architect's office and ability to produce working drawings. Apply Oliver L. & Partners, 36, Ebury Street. (SLO. 2488). 8996

THE TILLING ASSOCIATION have vacancies for both qualified and unqualified ARCHITECTS with design and construction ability and administrative experience. The work includes large and small scale commercial and industrial development. Luncheon facilities. Starting salaries within the range of £800—£1,200 p.a. according to qualifications and experience. Apply, preferably in writing, or by telephone. Alan A. Briggs, F.R.I.B.A., 10, Fleet Street, London, E.C.4. Telephone No. City 4400. 8997

GOLLINS, MELVIN, WARD & PARTNERS require ARCHITECTURAL ASSISTANTS for their Sheffield Office. Write: 221, Gloss Road, Sheffield 10, or telephone Sheffield 29 for an appointment. 8998

SENIOR ARCHITECTURAL ASSISTANT required in busy practice with interesting and varied projects in hand. Five-day week. Salary £800—£1,000. Graham Crump & Denis Crump, F.R.I.B.A., 43, George Street, Croydon. 8999

ARCHITECTURAL ASSISTANTS required in Croydon office. Intermediate standard with several years' office experience. Interesting and varied work. Salary £600—£800 according to ability. Five-day week. Graham Crump & Denis Crump, F.R.I.B.A., 43, George Street. 8999

ARCHITECTURAL ASSISTANTS required in Reading Office. Good prospects. Apply G. W. Hives & Sons, 46, Queen's Road, Reading (Telephone 55484/5). 8999

ARCHITECTURAL ASSISTANTS: Two Senior and one Junior required in busy practice. Apply, giving details of qualification, experience and salary required, to: Geoff Bazeley & Barbary, F.R.I.B.A., 5, Port Square, Plymouth. 8999

EXPERIENCED ARCHITECT required to assist Staff Architect to Public Works Company in City; salary by arrangement up to £1,500. TWO ARCHITECTURAL ASSISTANTS (Intermediate-Final standard, £800—£1,100) required to complete team on interesting and varied projects including offices, flats and town area redevelopment schemes. Telephone M. Day, A.R.I.B.A., MONarch 0237, for an appointment. 8999

INTELLIGENT ASSISTANT required, capable of handling small contracts of varied nature. Pleasant office conditions. State salary required. Apply F. C. Levitt, F.R.I.B.A., Commercial House, Biggleswade, Beds. 8999

MORRISON, ROSE & PARTNERS require immediate vacancies for First Class ASSISTANTS, Final and Intermediate standard. Salary by arrangement. Tel.: LAN. 8061. Wimpole Street, W.1. 8999

DEVEREUX & DAVIES require capable, enthusiastic ARCHITECTURAL ASSISTANTS salary £750 per annum or according to experience and ability. 3 Gower St., Bedford London, W.C.1. 8999

QUALIFIED ARCHITECTS and ASSISTANTS of intermediate standard requiring unpaid positions, with an interesting variety of work, please telephone AMB. 8189 for appointment. 8999

ASSISTANTS required in Bank Architect's office in City. Salary range £700/£800 according to age and ability. Good prospects of advancement for suitable applicants. Write, stating age, particulars of experience and salary required. Box 9159. 8999

ASSISTANT ARCHITECT required by Hasker & Hall, L./F.R.I.B.A., for responsible position in their London office, 13, Welbeck Street, W.1. (WEL. 0061.) 9051

ARCHITECTURAL ASSISTANTS required. Senior and Intermediate standards. Salary scale £750-£1,100 and £600-£700 respectively. Five-day week. Superannuation scheme in operation. Please write, giving full particulars of experience, to: Johns, Slater and Haward, F.A.R.I.B.A., 32, Foundation Street, Ipswich. 9063

KENNETH LINDY & PARTNERS' City Office requires experienced ASSISTANT ARCHITECT. Varied practice. Salary to £1,100, Avenue 5029 or 4430. 9057

FARMER AND DARK require experienced ARCHITECTS, all levels. Offices, Laboratories, Factories, Schools, etc. Apply in writing, stating salary required: Romney House, Tufton Street, S.W.1. 9056

W. LESLIE JONES & PARTNERS require further ASSISTANTS at both their Bolton and Poole offices. Salaries £450-£1,000. Please apply in first instance to 59, High Street, Great Missenden, Bucks. 9054

INTERMEDIATE ASSISTANT wanted, capable of thoughtful detailing and prepared to take individual responsibility. Small City office with varied and interesting work. Salary £750-£850, according to ability. Please telephone Central 506 or write Box 9164. 9166

DEREK PHILLIPS primarily engaged in consultant work in lighting and servicing, requires assistant to help with expanding architectural practice in Hertfordshire. Transport almost essential. Apply stating age, experience and salary required to No. 1, Boxington Green, St. Hemel Hempstead, Herts. 9165

ARCHITECTS. Qualified Men or Women required. To run Church, School, and Industrial projects from sketch design to completion. Experience in private practice an advantage. Starting salary £1,000 to £1,500 or more for above-average ability. Weightman & Bullen, Architects, 76, Rodney Street, Liverpool, 1. Five-day week. Bonus and Pension Scheme. 9166

BASIL SPENCE AND PARTNERS require a qualified and experienced ARCHITECTS to all positions of responsibility on a major building programme. Write to 48 Queen Anne Street, W.1, stating experience and salary required. 8829

ARCHITECTURAL ASSISTANT of Intermediate standard with some office experience required for small office in Holborn area. Must be interested in Contemporary Architecture. Telephone Alexander Leifer, A.R.I.B.A. MET 012. 8836

ARCHITECTURAL STAFF, all grades, required for interesting work. Good salary, bonus, superannuation scheme. House Purchase Assistance Scheme. Excellent working conditions. Five-day week. Please apply, giving details of qualifications, experience and salary required to: George Brown & Partners, A./R.I.B.A., F.I.A.S., and Eric Ross F.R.I.B.A., Equity & Law Builders, Baldwin Street, Bristol, 1. 8838

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ARCHITECTURAL ASSISTANT. Previous office experience in the preparation of working drawings required, qualifications not essential. Write stating age and experience to Halliday & Agate, F.A.R.I.B.A., Chartered Architects, 4, Fountain Street, Manchester, 2. 9144

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ARCHITECTURAL ASSISTANT (Senior Designer) required for busy office with interesting and varied work. Salary £1,200 p.a. Five-day week. Apply in writing or telephone Covell & Matthews, 34 Sackville Street, London, W.1. REGent 2291. 8306

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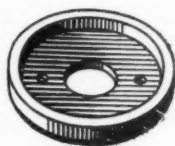
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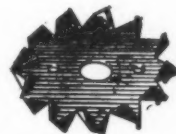


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