

# THE ARCHITECTS' JOURNAL



## standard contents

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

## NEWS and COMMENT

*Astragal's Notes and Topics*

*Letters*

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*Criticism*

## TECHNICAL SECTION

*Information Sheets*

*Information Centre*

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## CURRENT BUILDING

*Major Buildings described:*

*Details of Planning, Construction,  
Finishes and Costs*

*Buildings in the News*

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*Architectural Appointments*

*Wanted and Vacant*

No. 3353]

[Vol. 129

THE ARCHITECTURAL PRESS

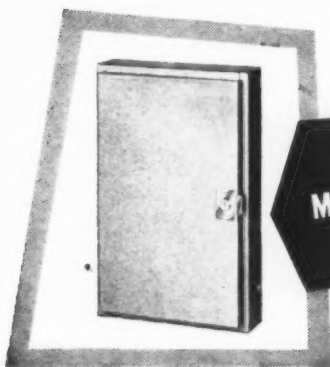
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★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ii one week, Ii to Z the next. In all cases where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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Royal 1826
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5533
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James's Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 5861
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BC	Building Centre, 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portland Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Faling, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BE	Building Exhibition. 11, Manchester Square, W.1.	Hunter 1951
BEDA	British Electrical Development Association, 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, A.R.I.B.A., Borough Architect and Director of Housing, Town Hall, High Holborn, W.C.1.	Holborn 3411
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
COLD	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), Stafford House, Norfolk Street, W.C.2.	Covent Garden 3008
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 33, John Street, W.C.1. Tel.: Chancery 7583 (6 lines)	
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers, 100, Park Street, Grosvenor Square, W.1.	Mayfair 7086



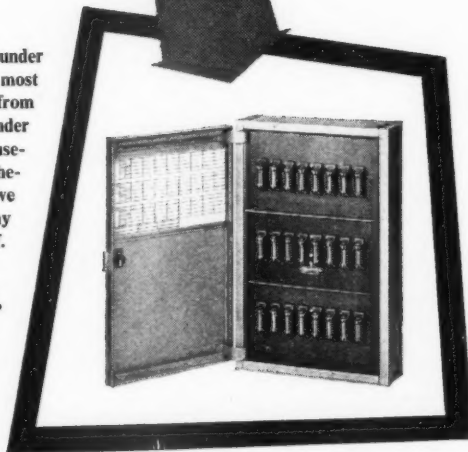
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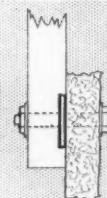
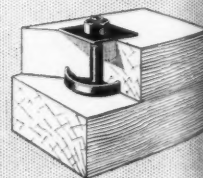
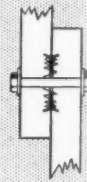
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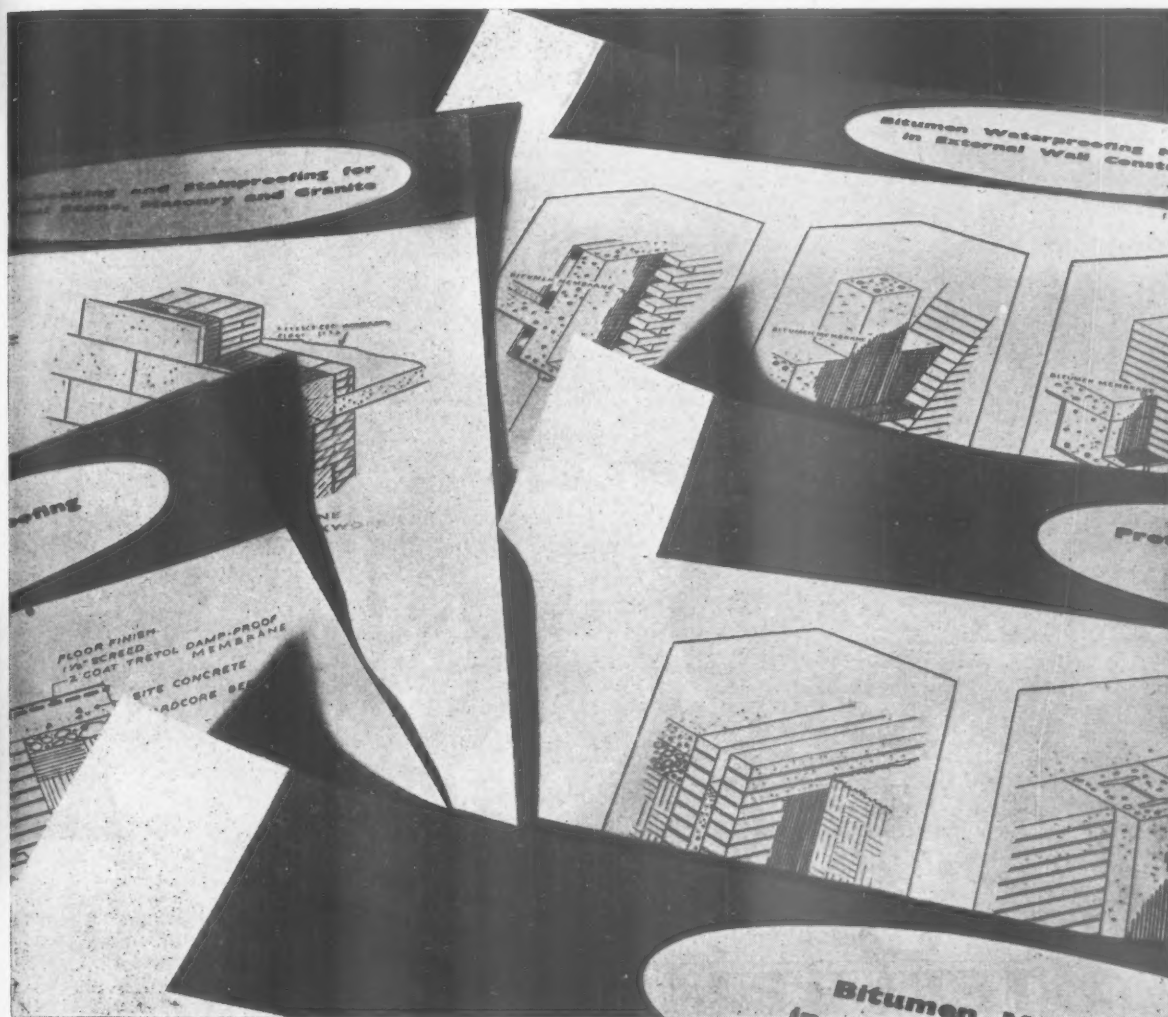
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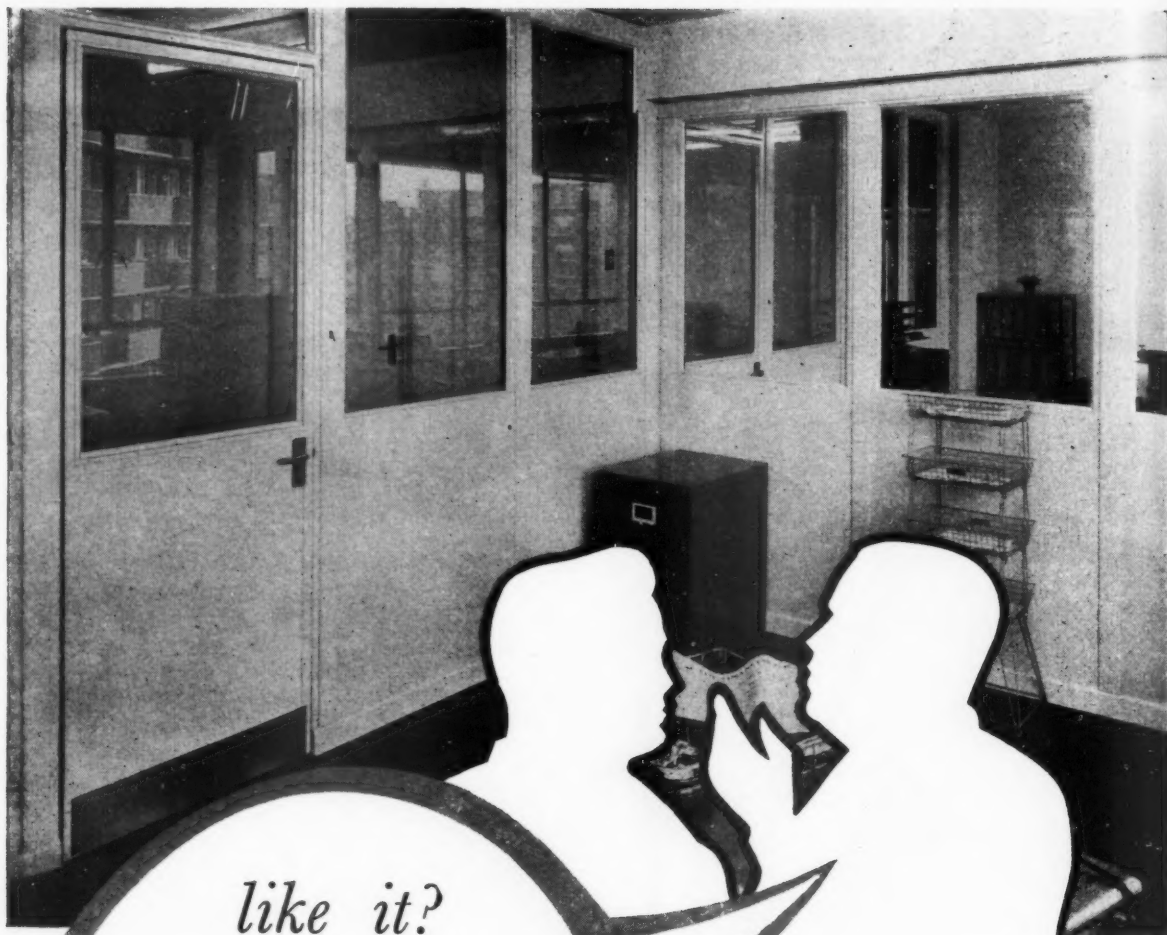


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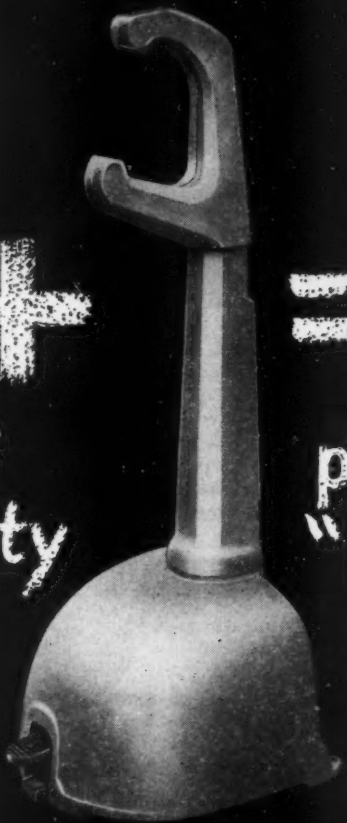
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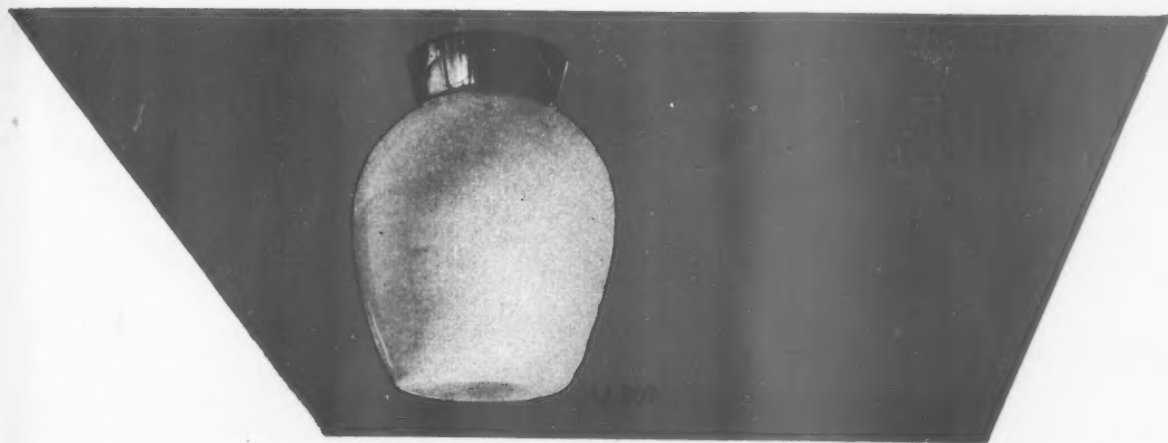
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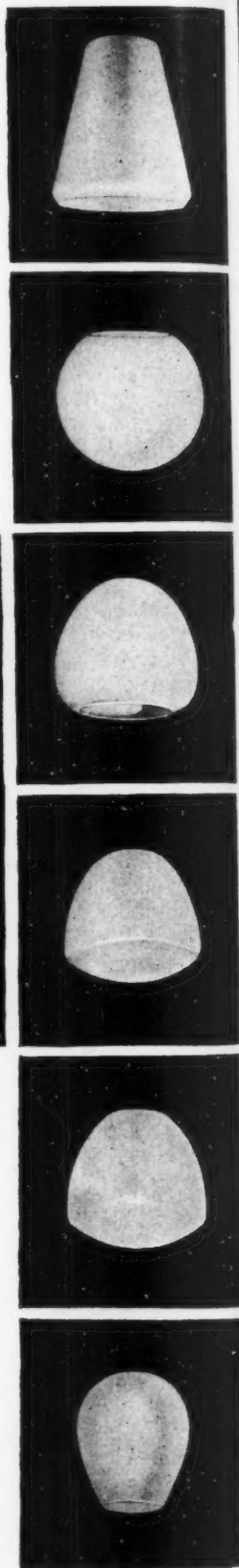
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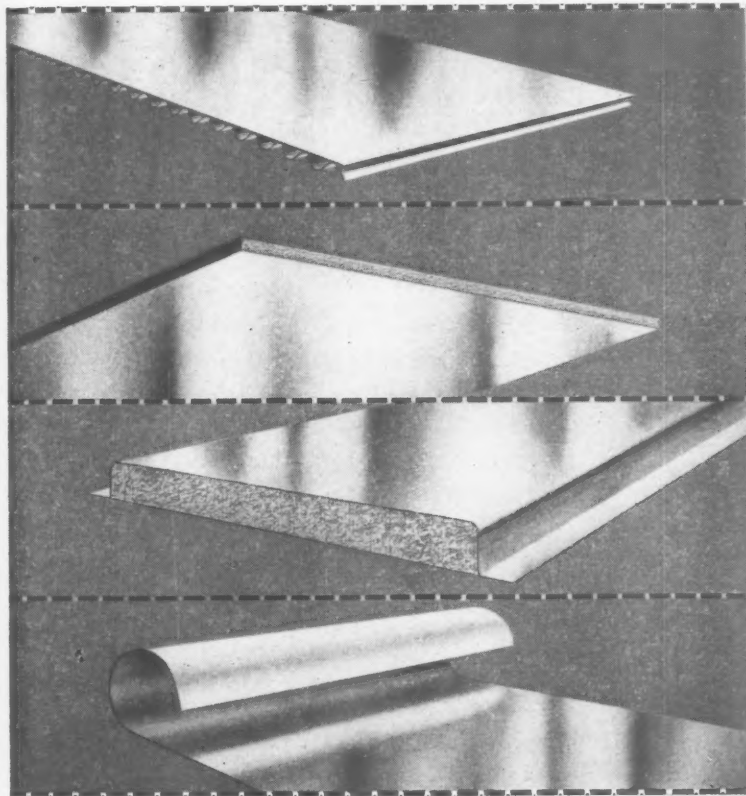
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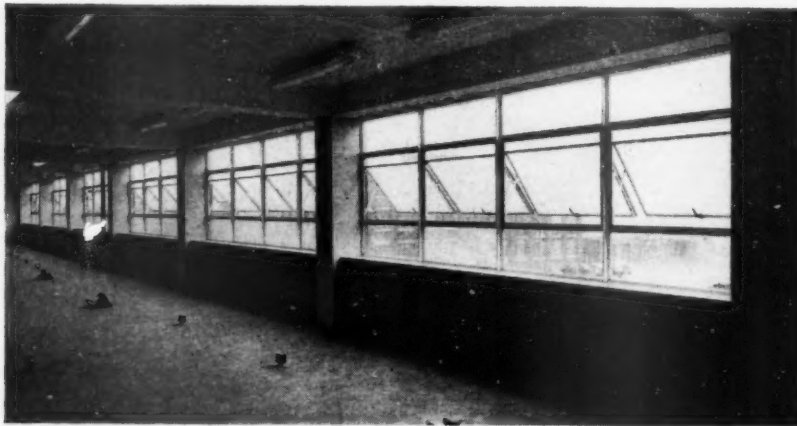
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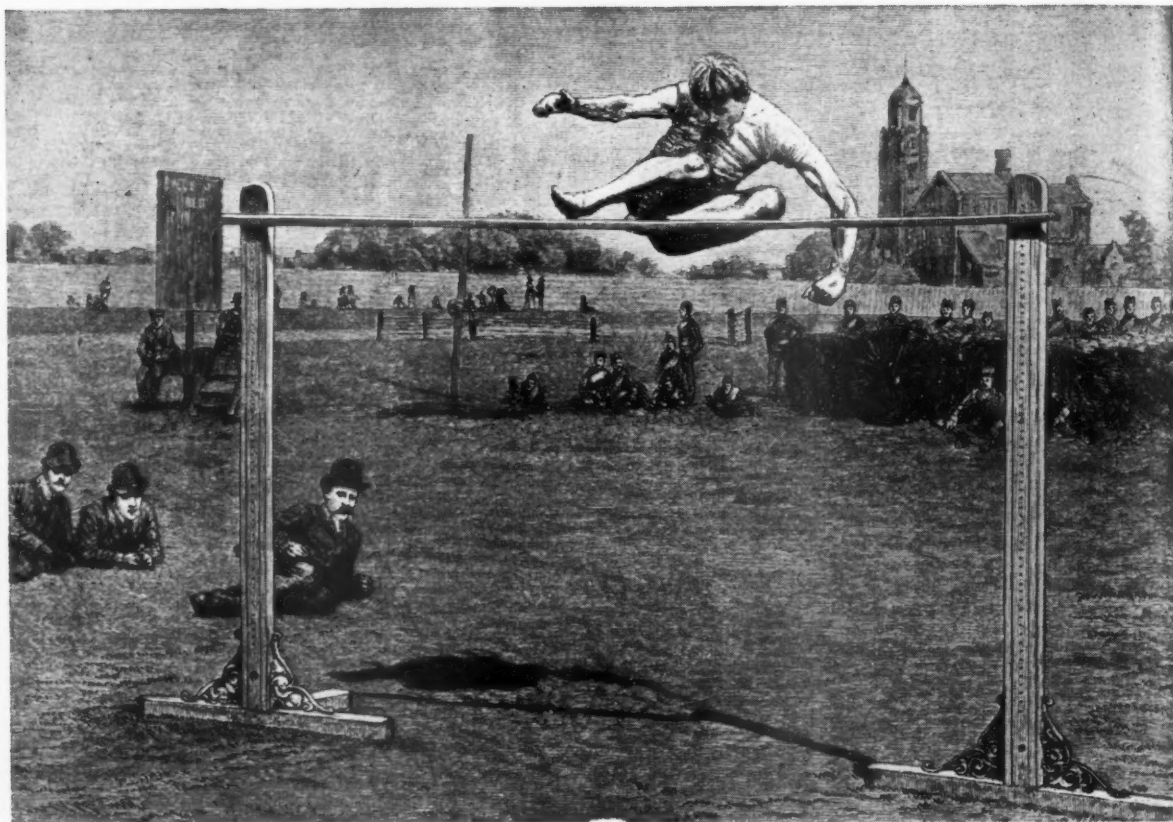
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*Contractors: Witcombe & Blackwell Ltd., Leicester.*

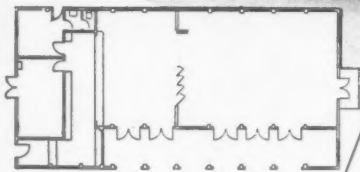
*Photograph: Thomas-Photos, Oxford.*

*(reproduced by permission of the University Authorities)*  
*Lighting Fittings: Troughton & Young (Lighting Ltd.)*



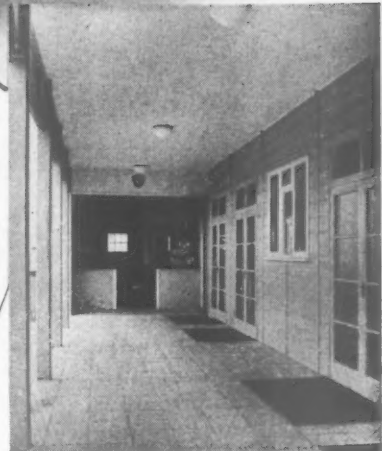
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# Jobs like this



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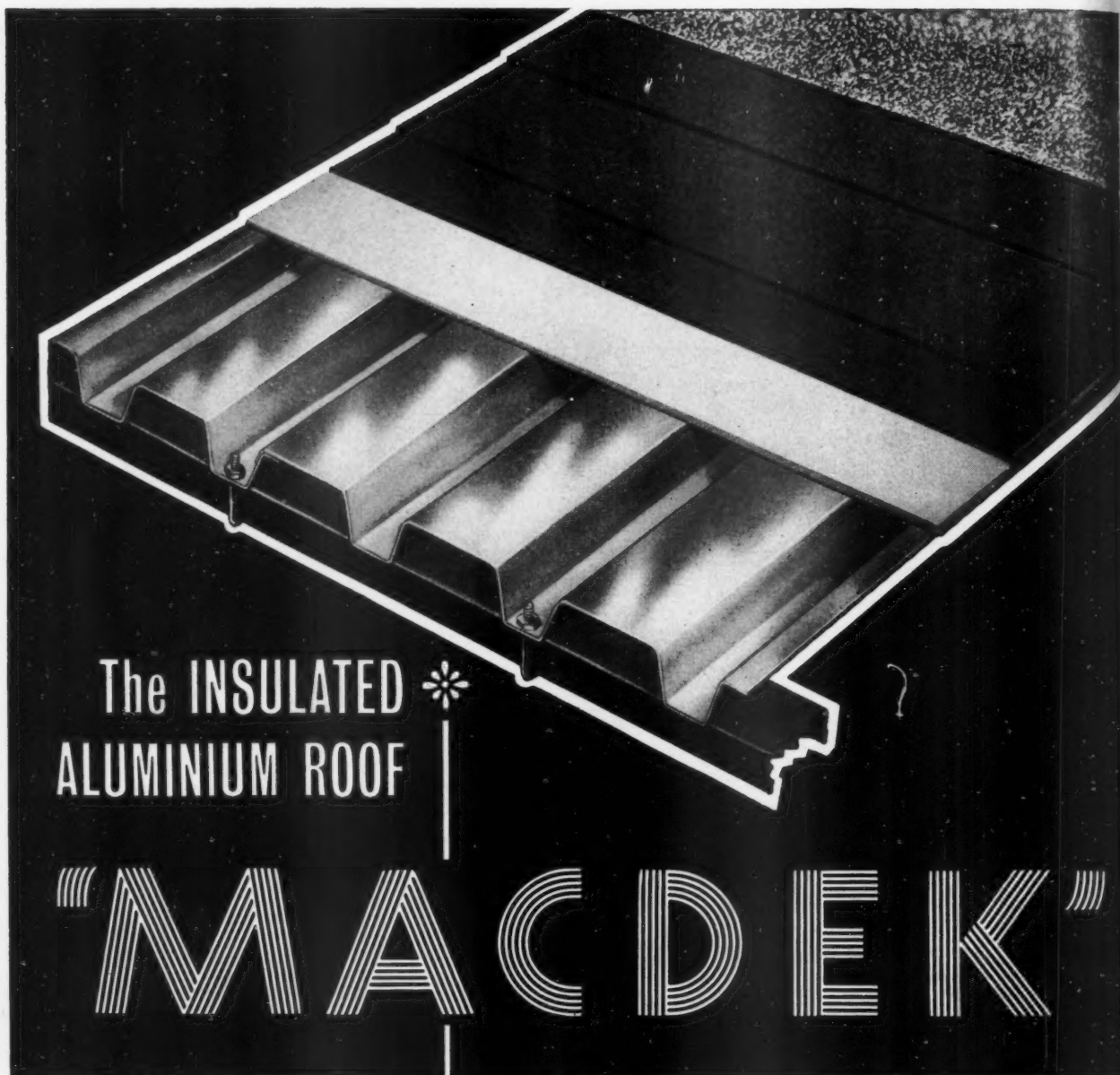
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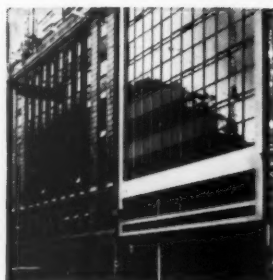
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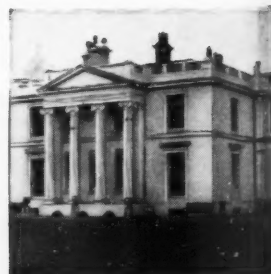
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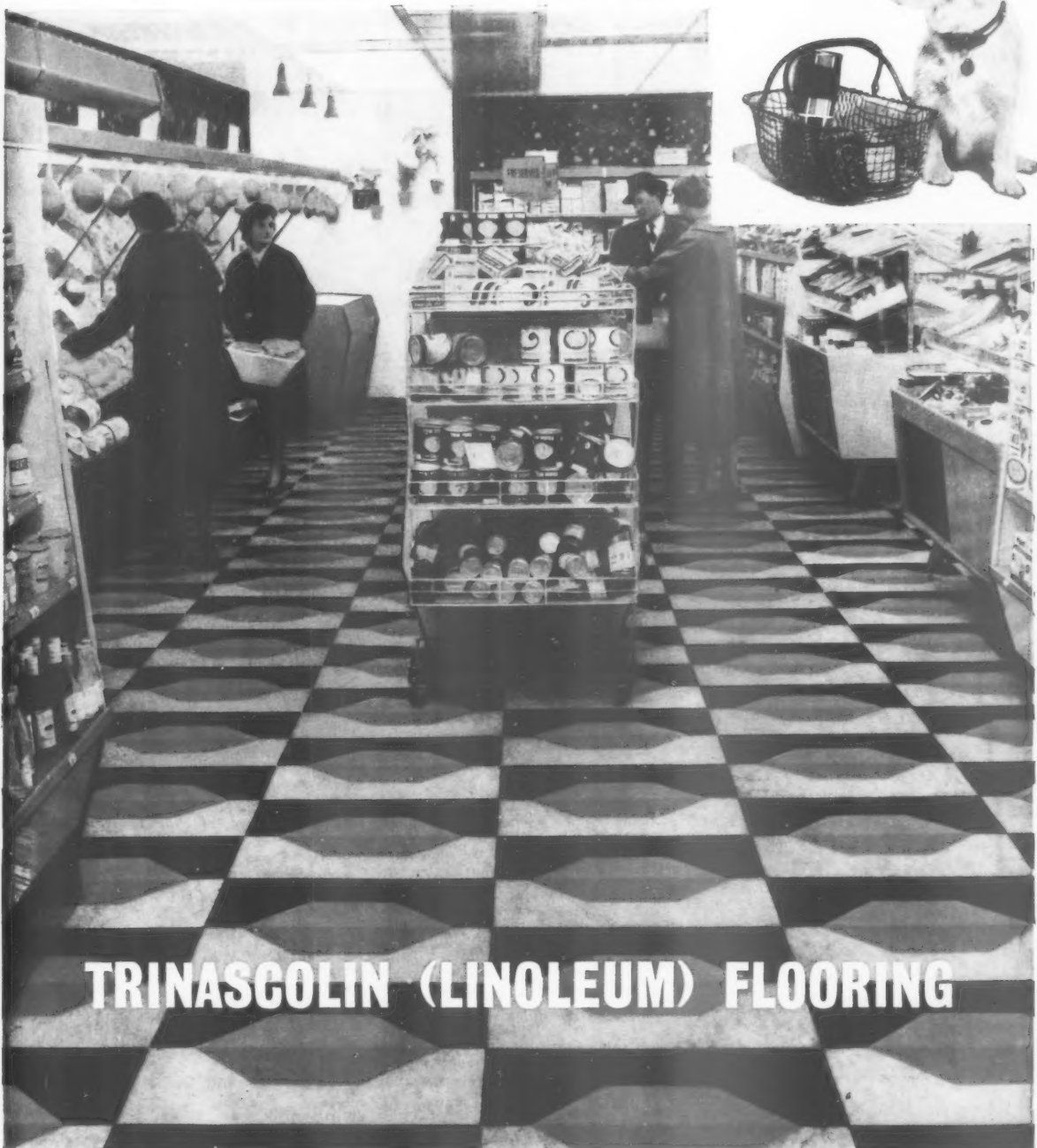
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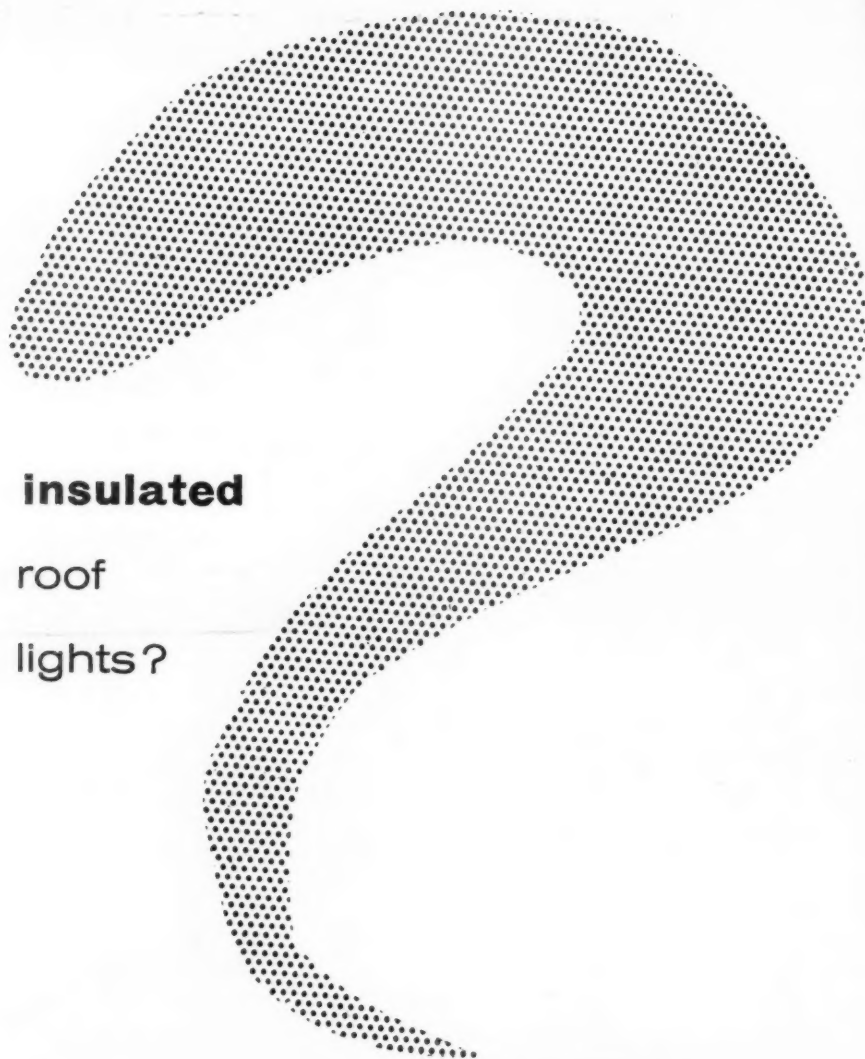
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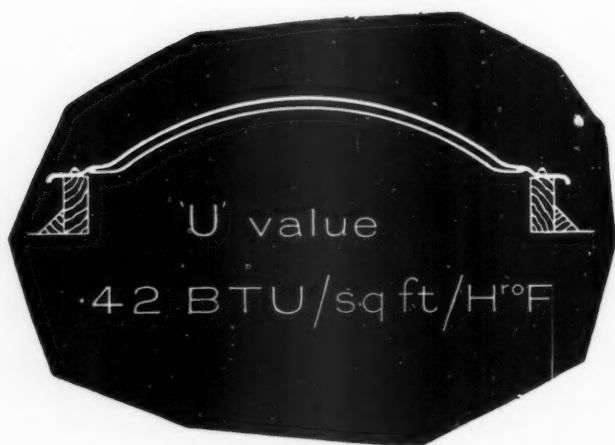


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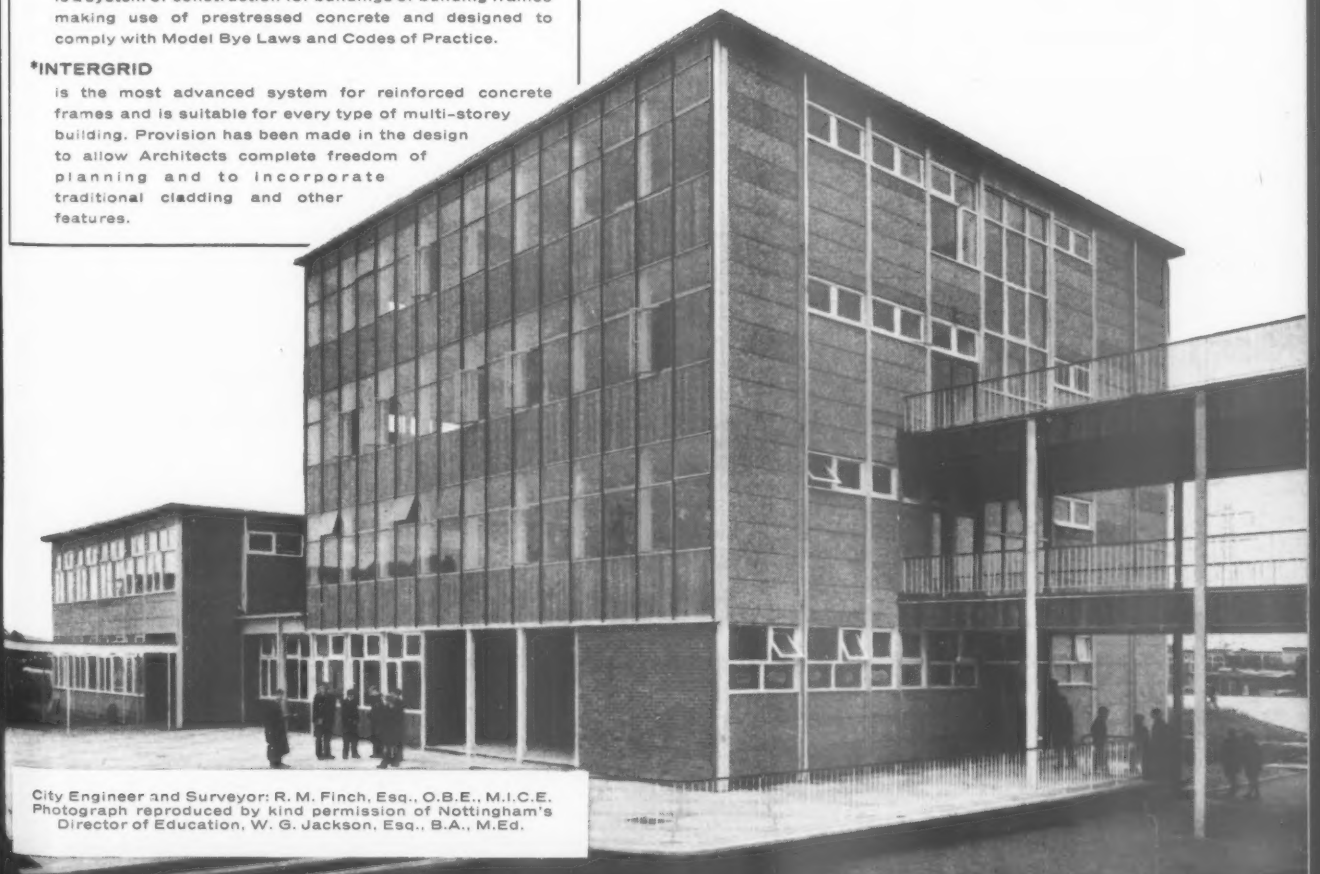
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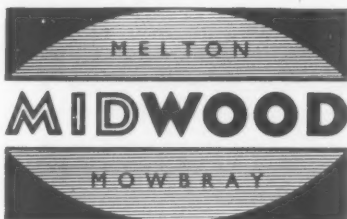
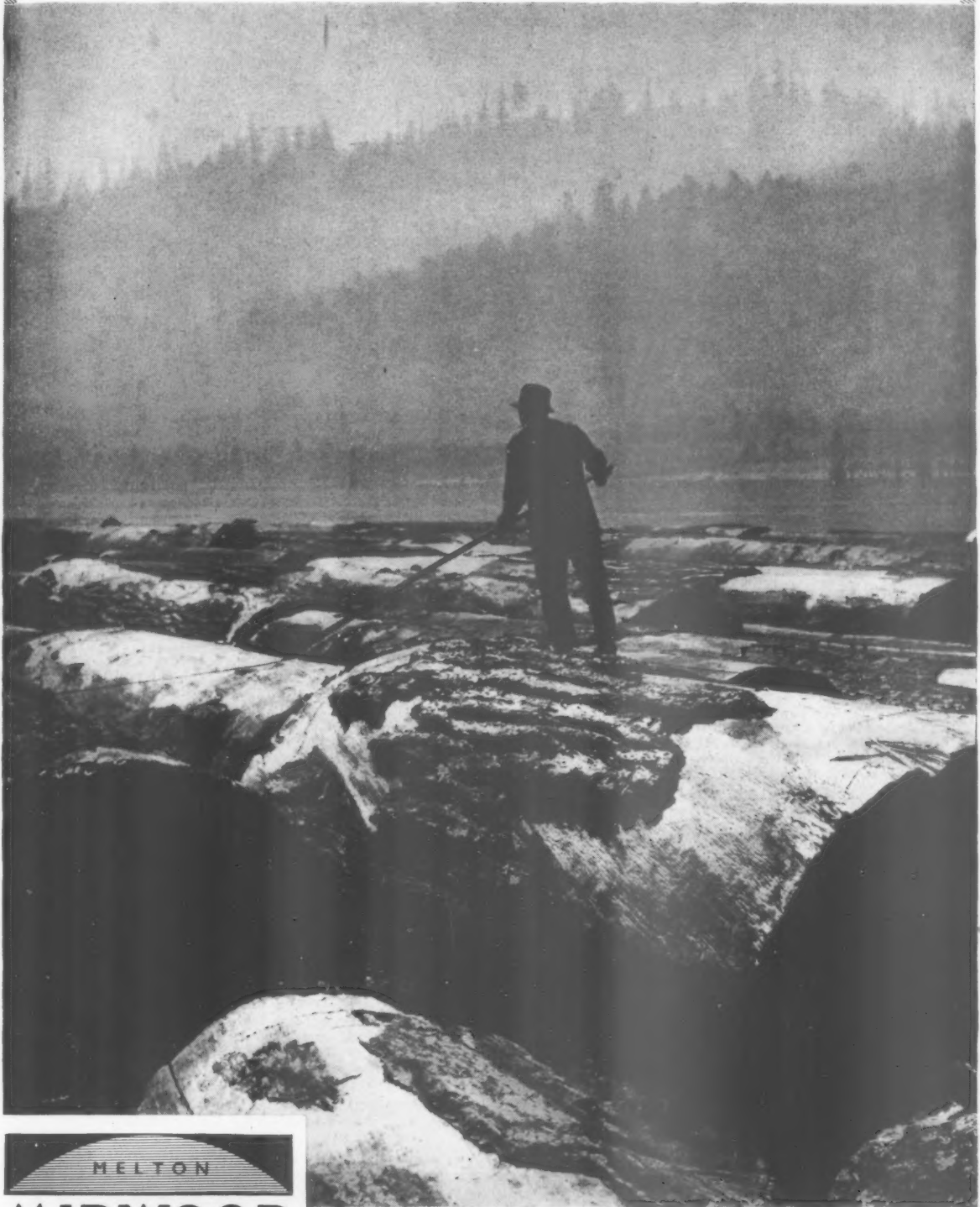
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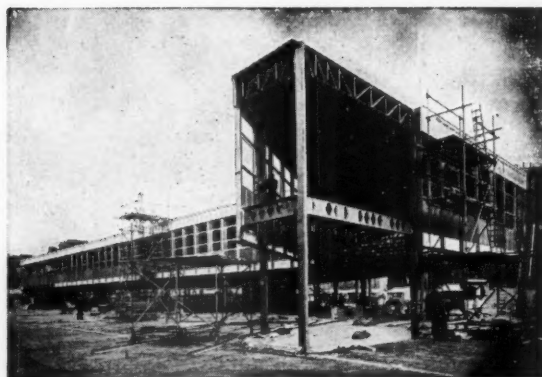
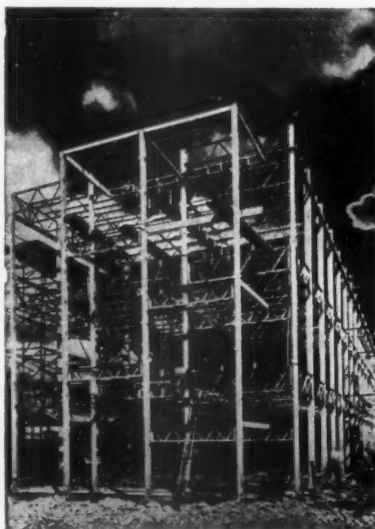
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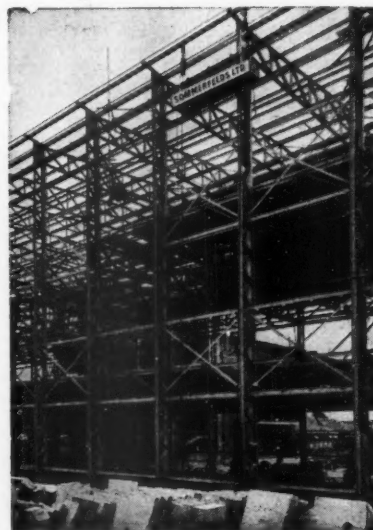


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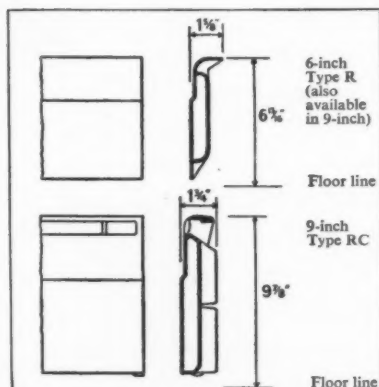
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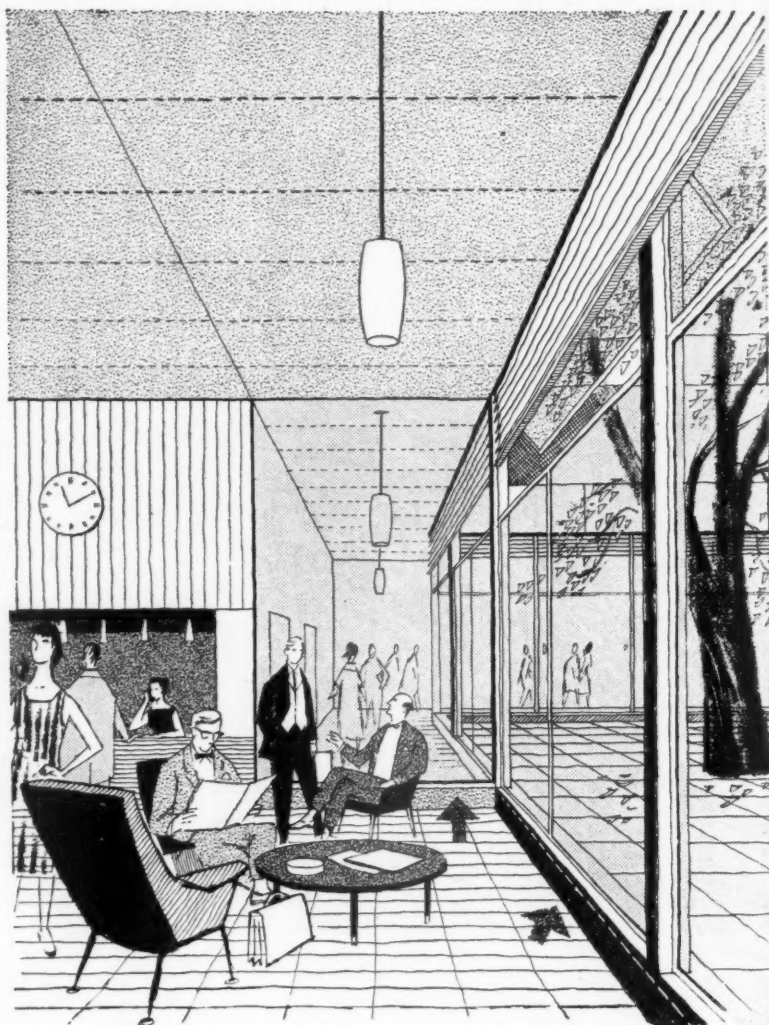


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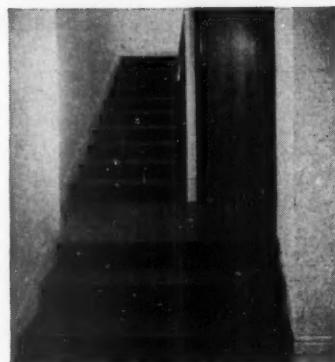
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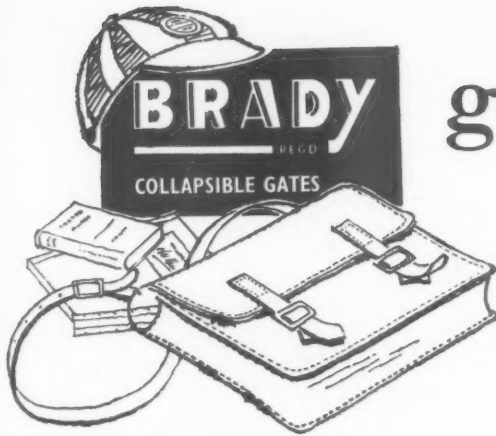


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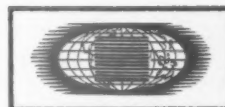
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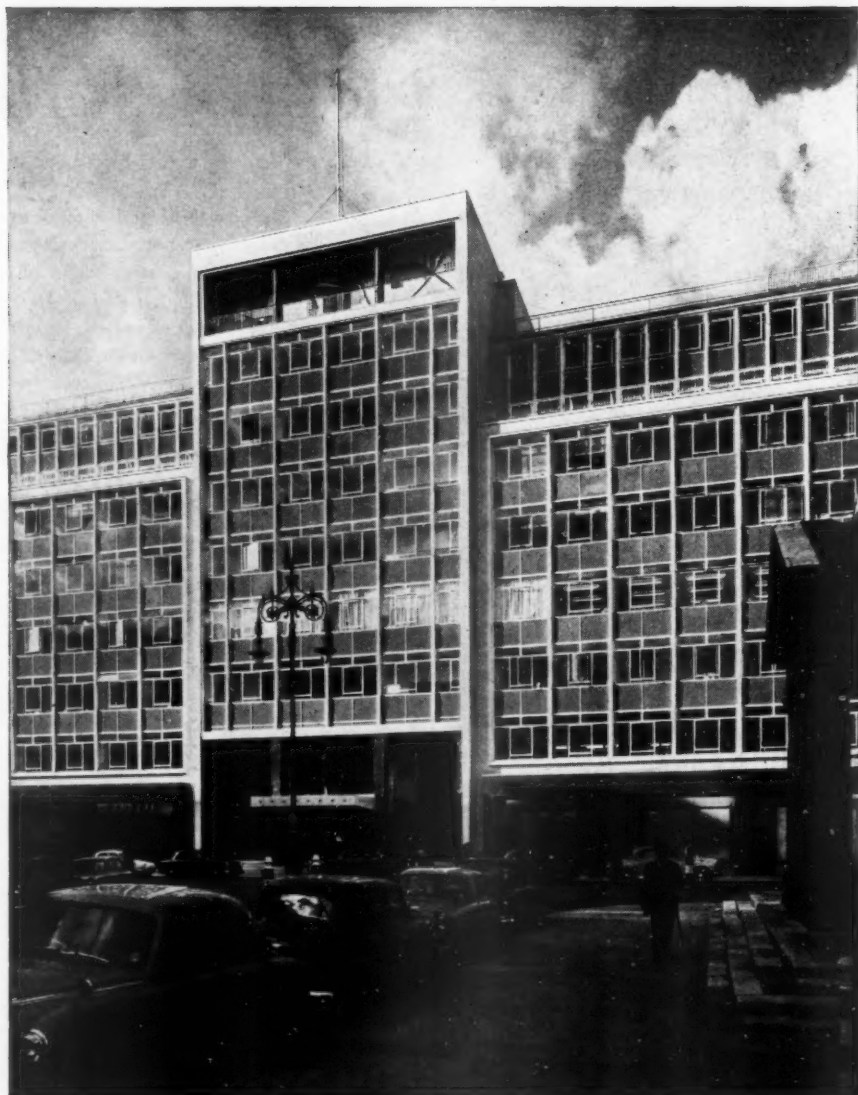
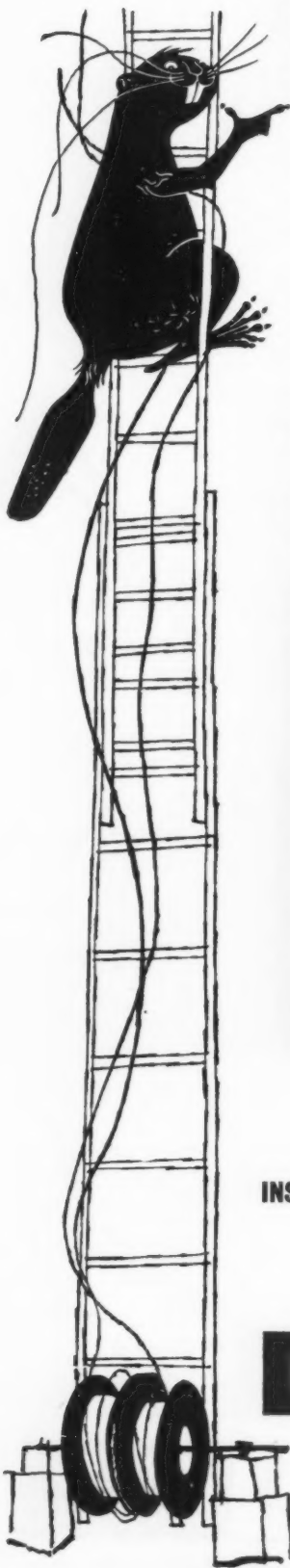
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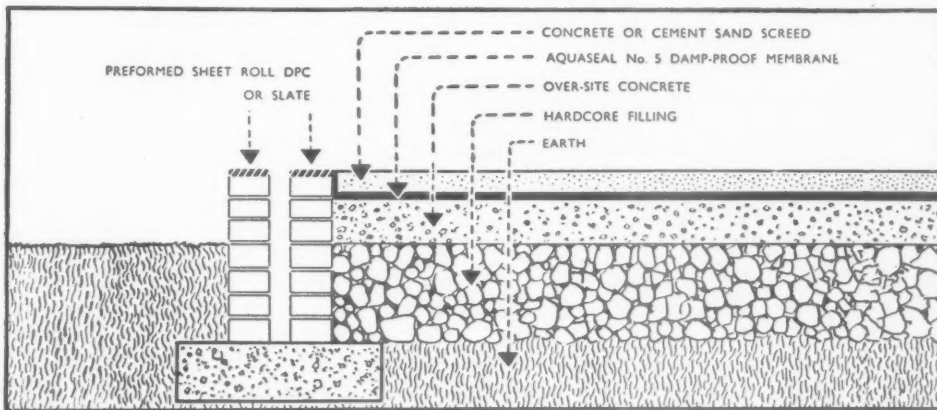
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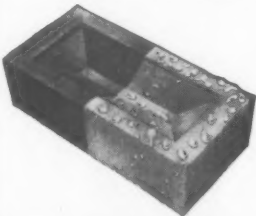
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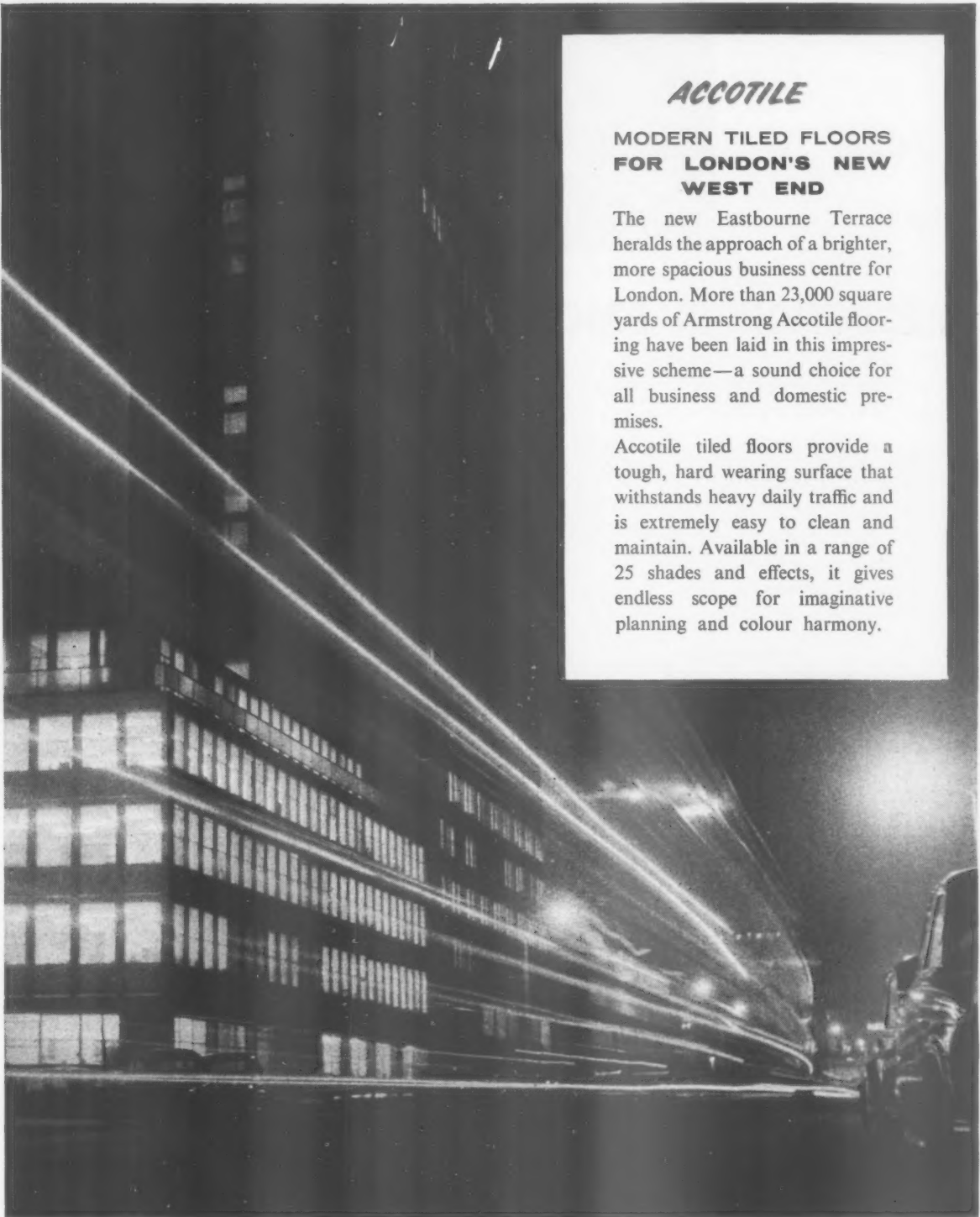
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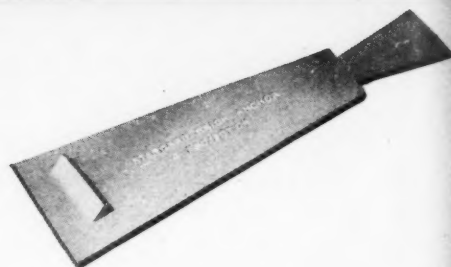
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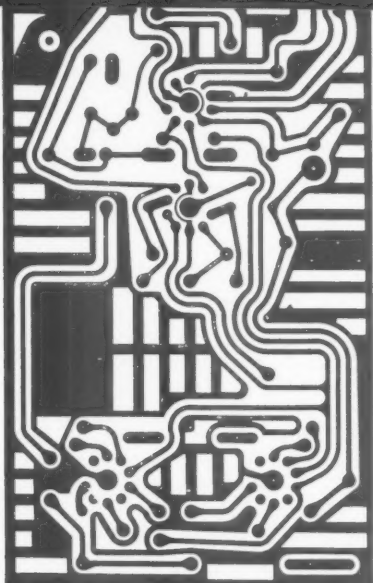
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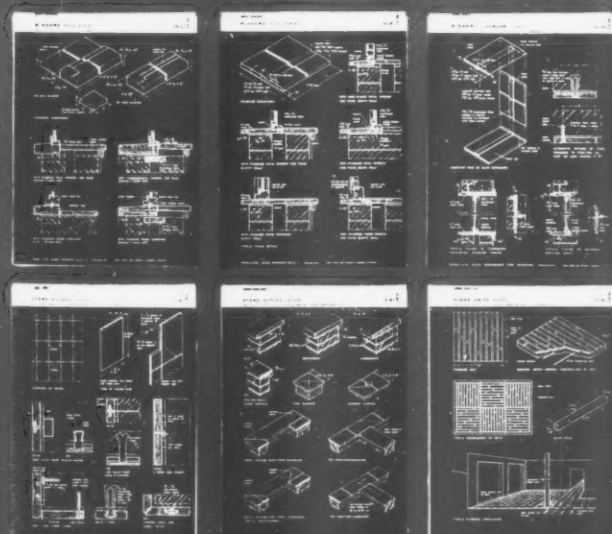


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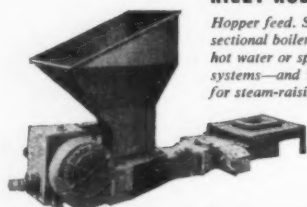
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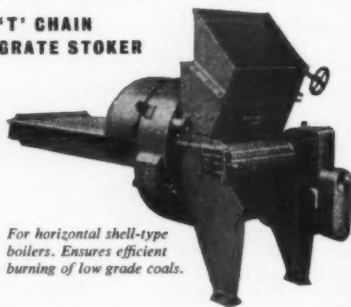
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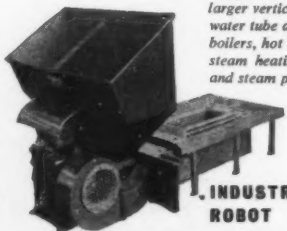


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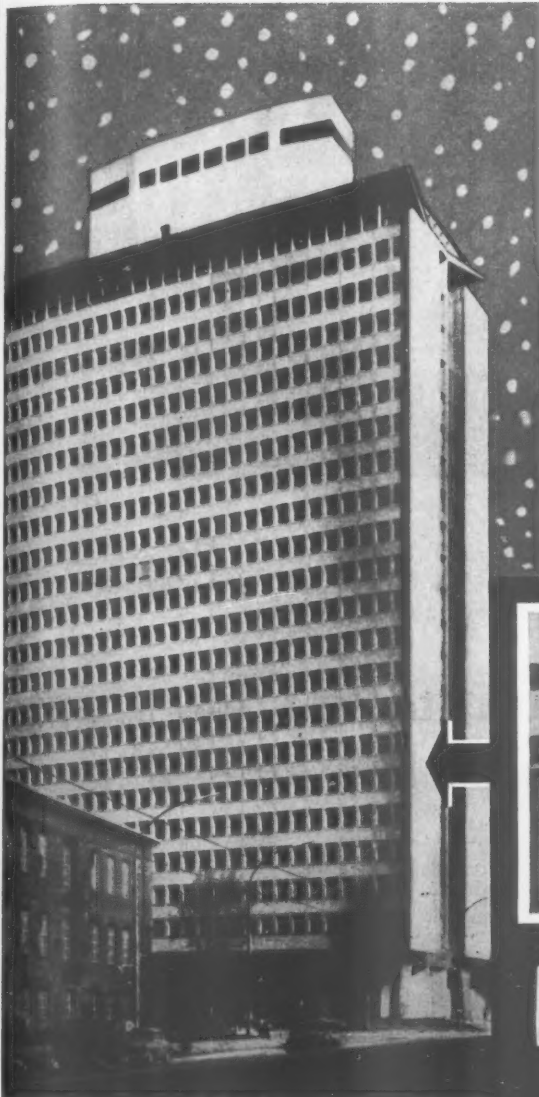
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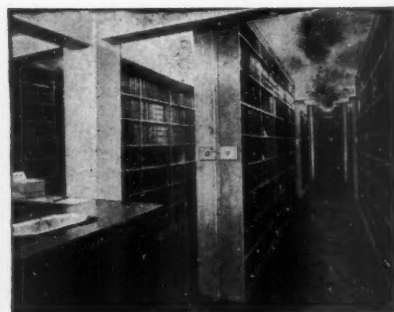


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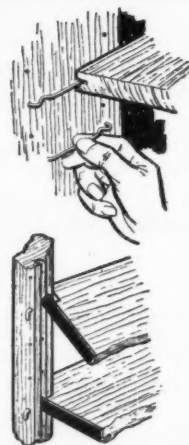
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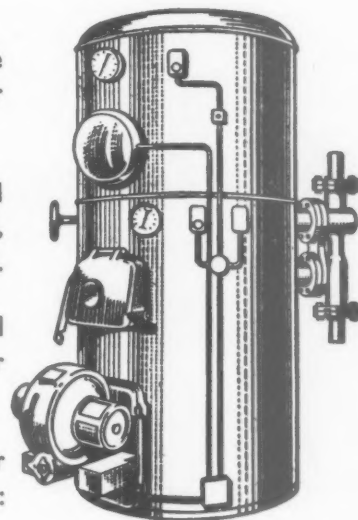


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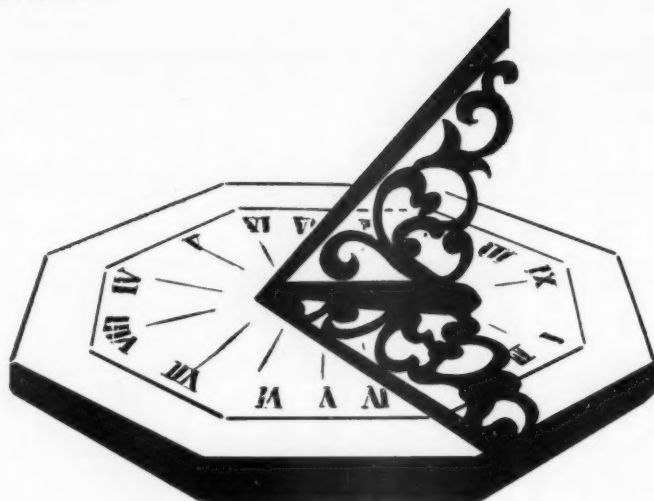
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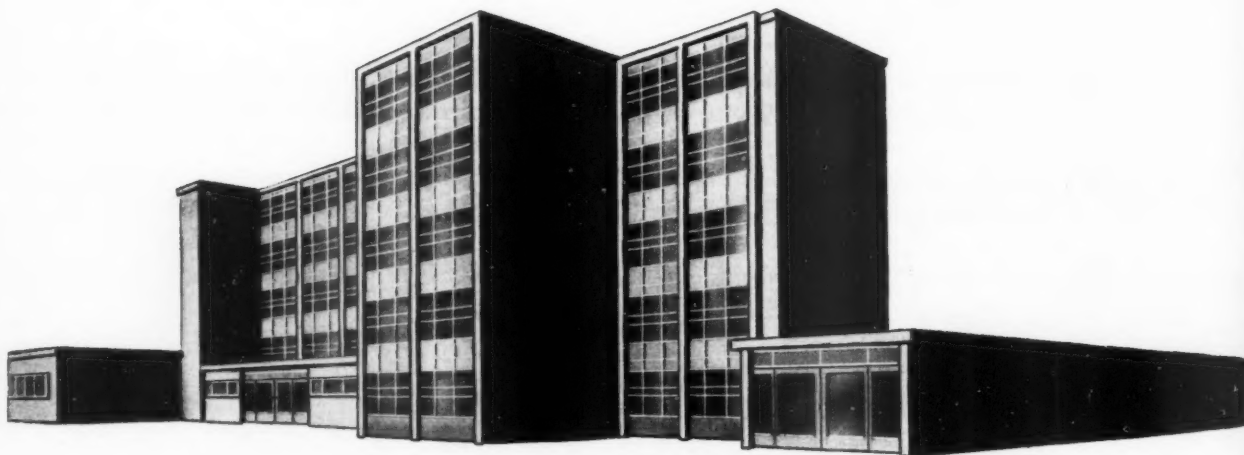
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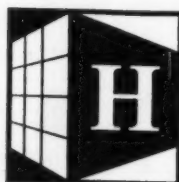


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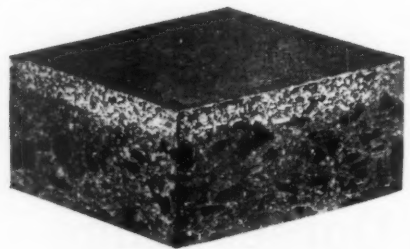
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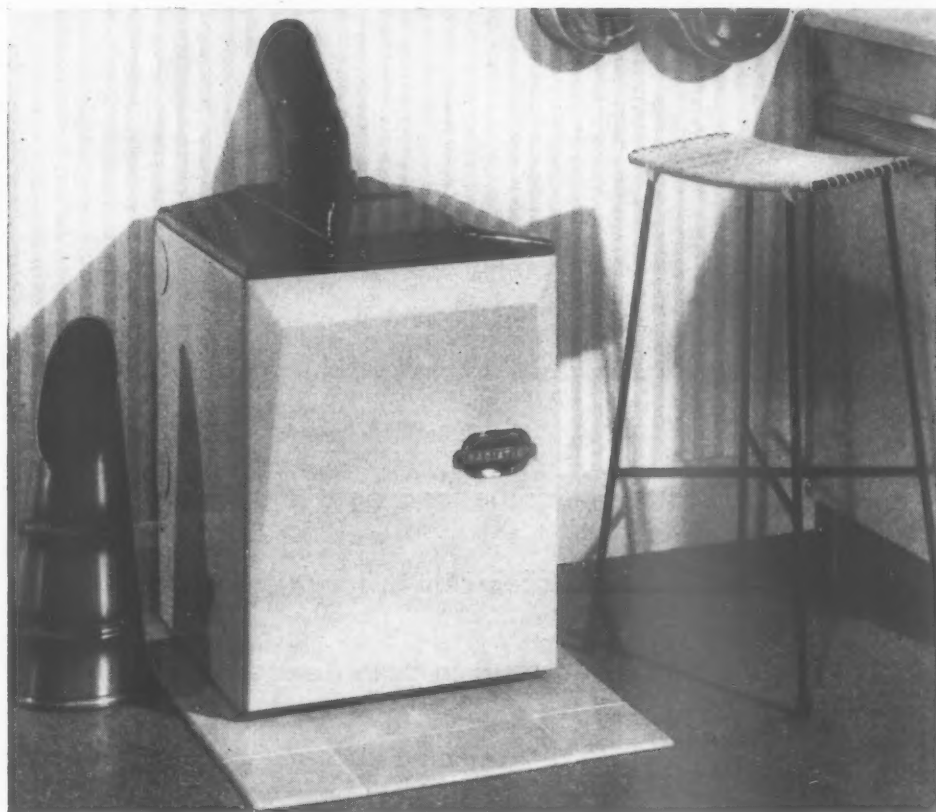
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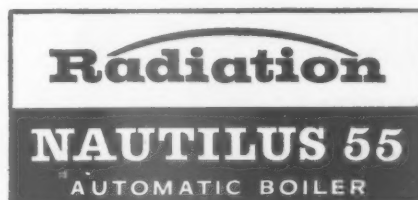
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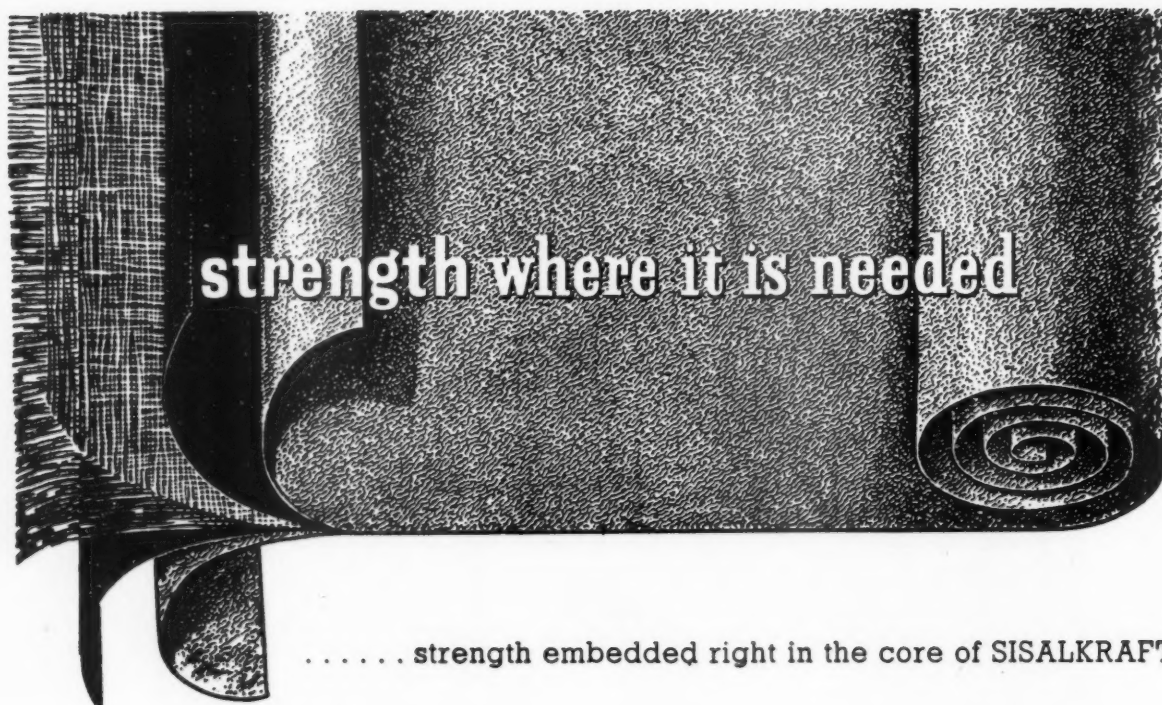
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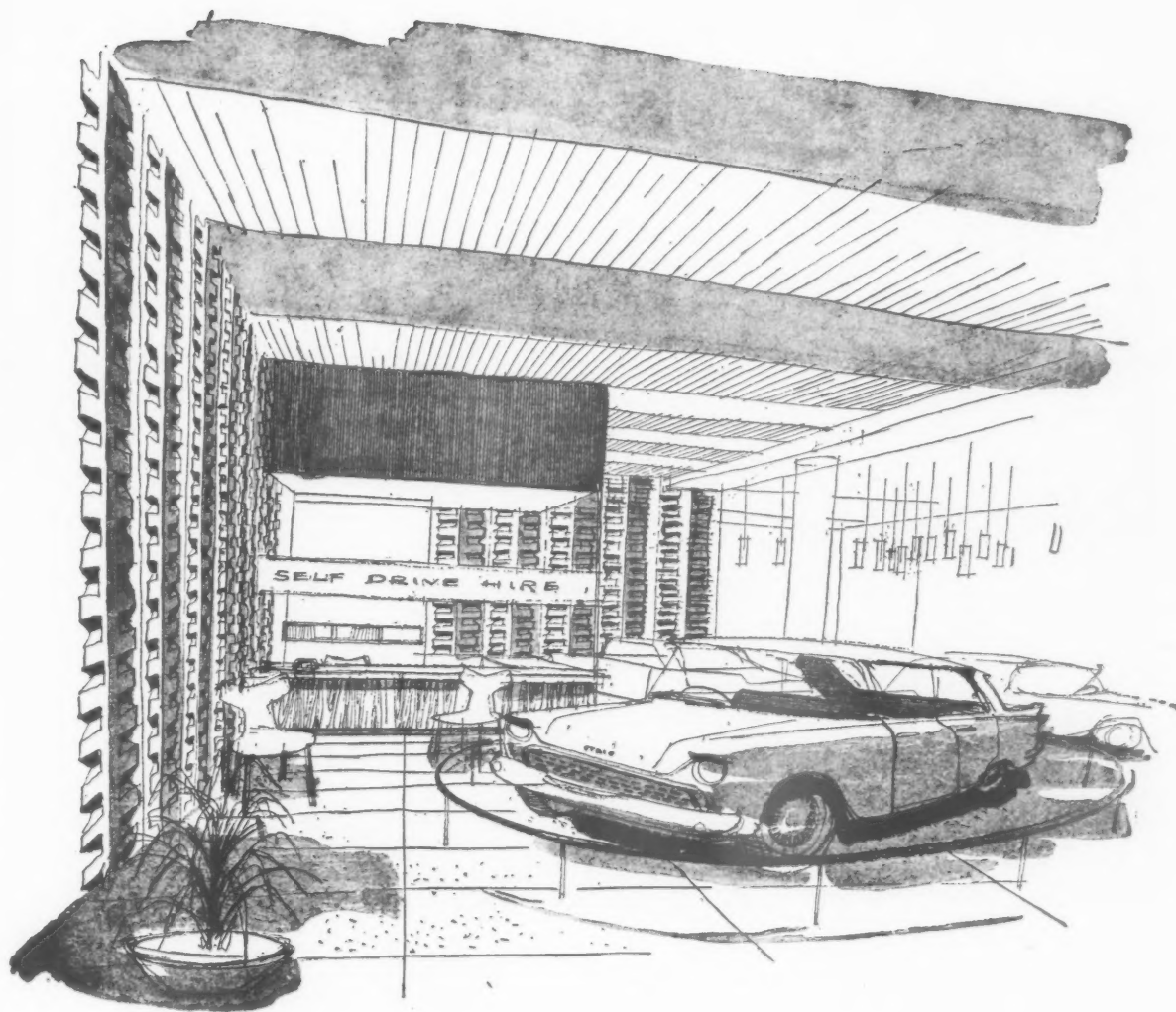
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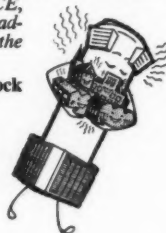
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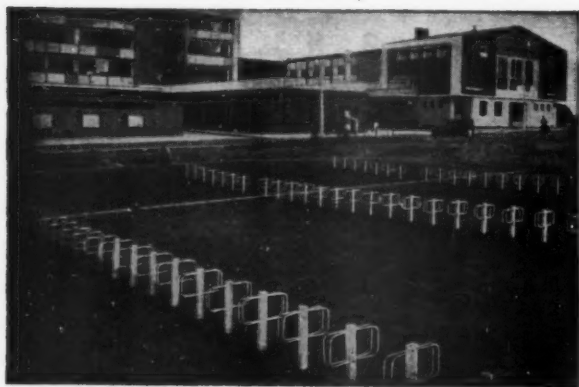
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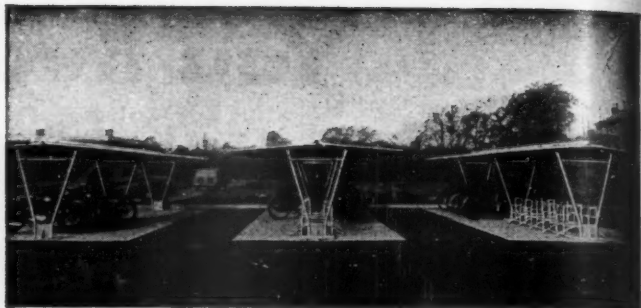
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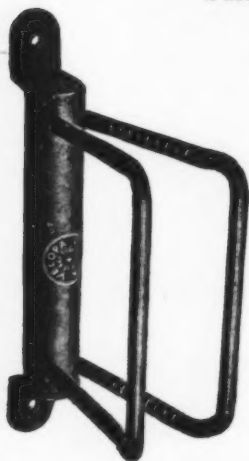
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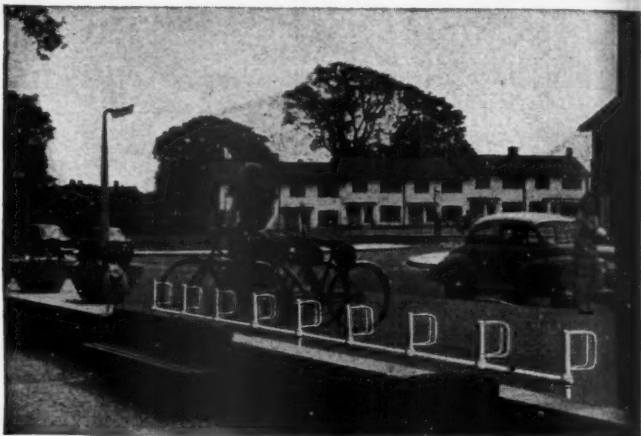
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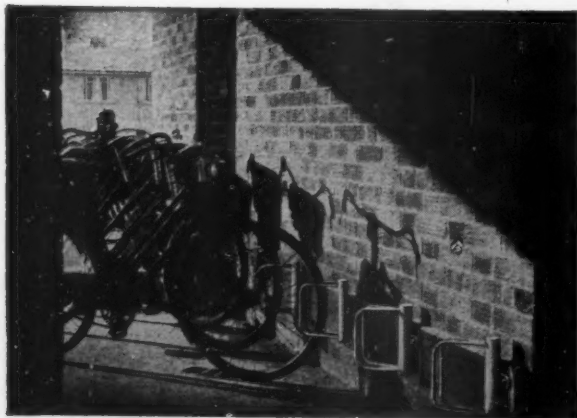
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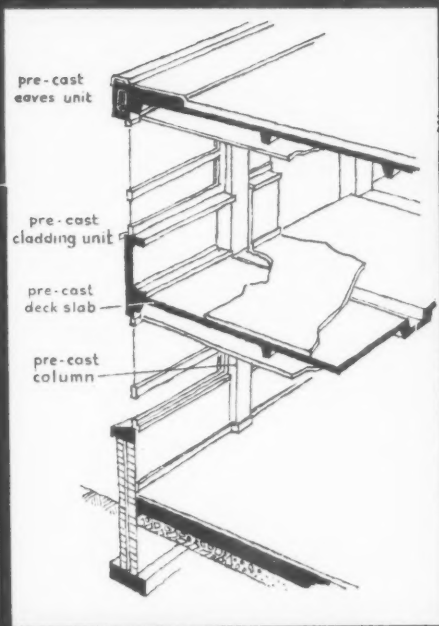
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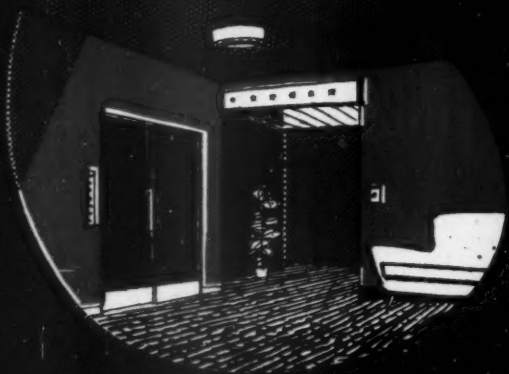
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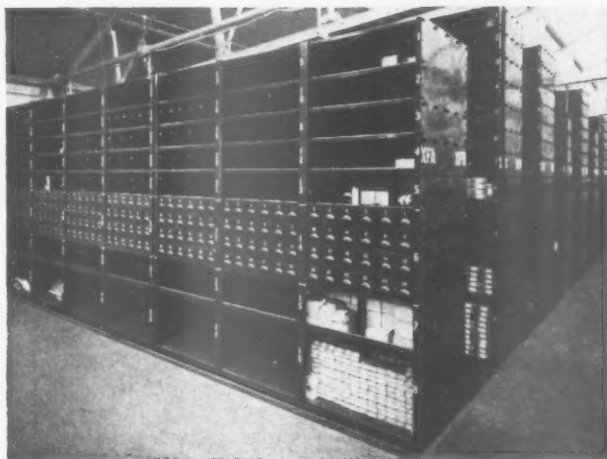
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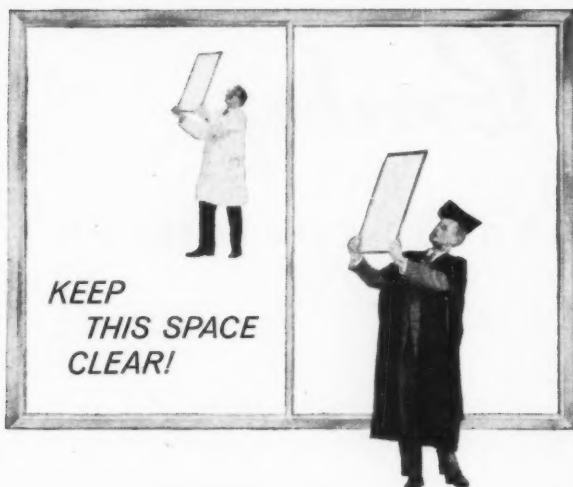
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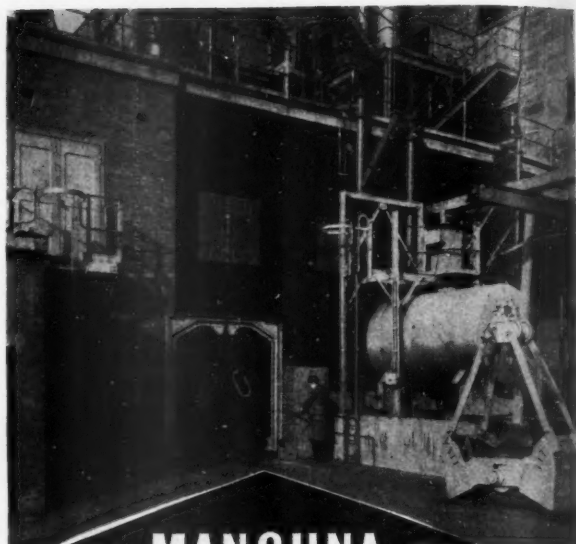


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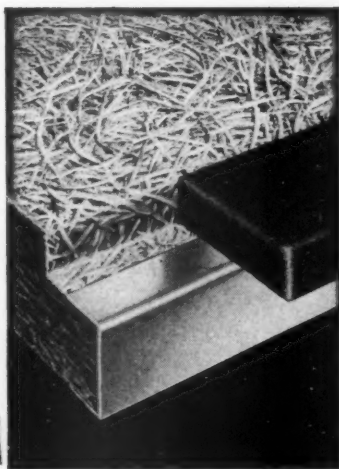
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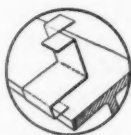
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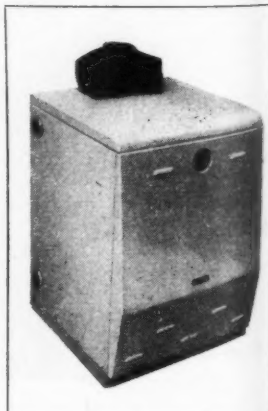
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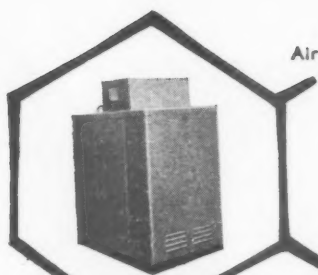
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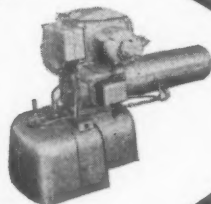


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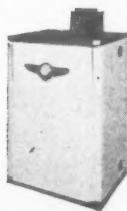
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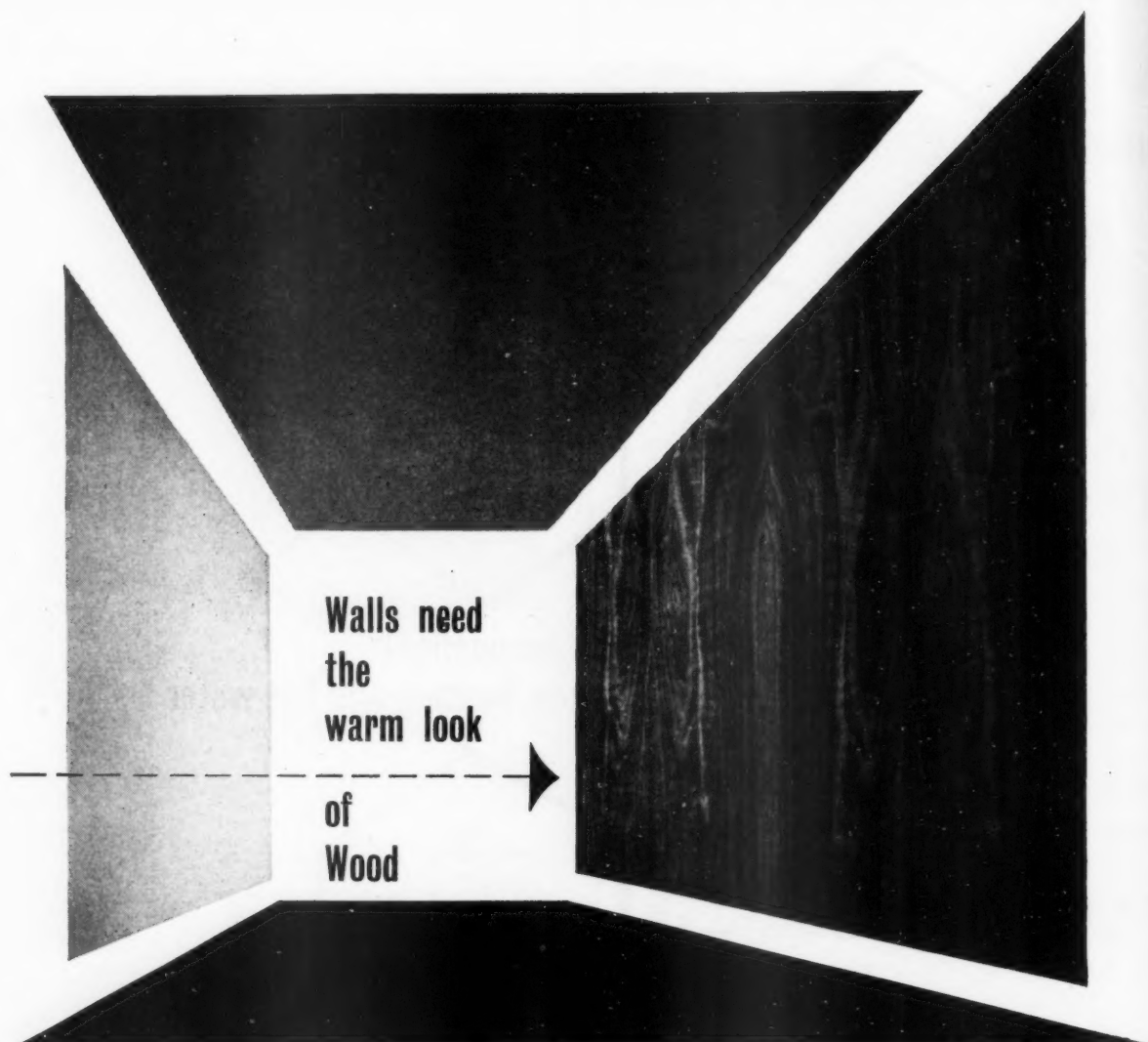
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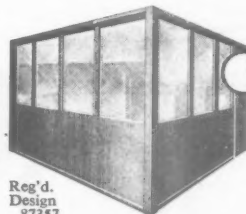
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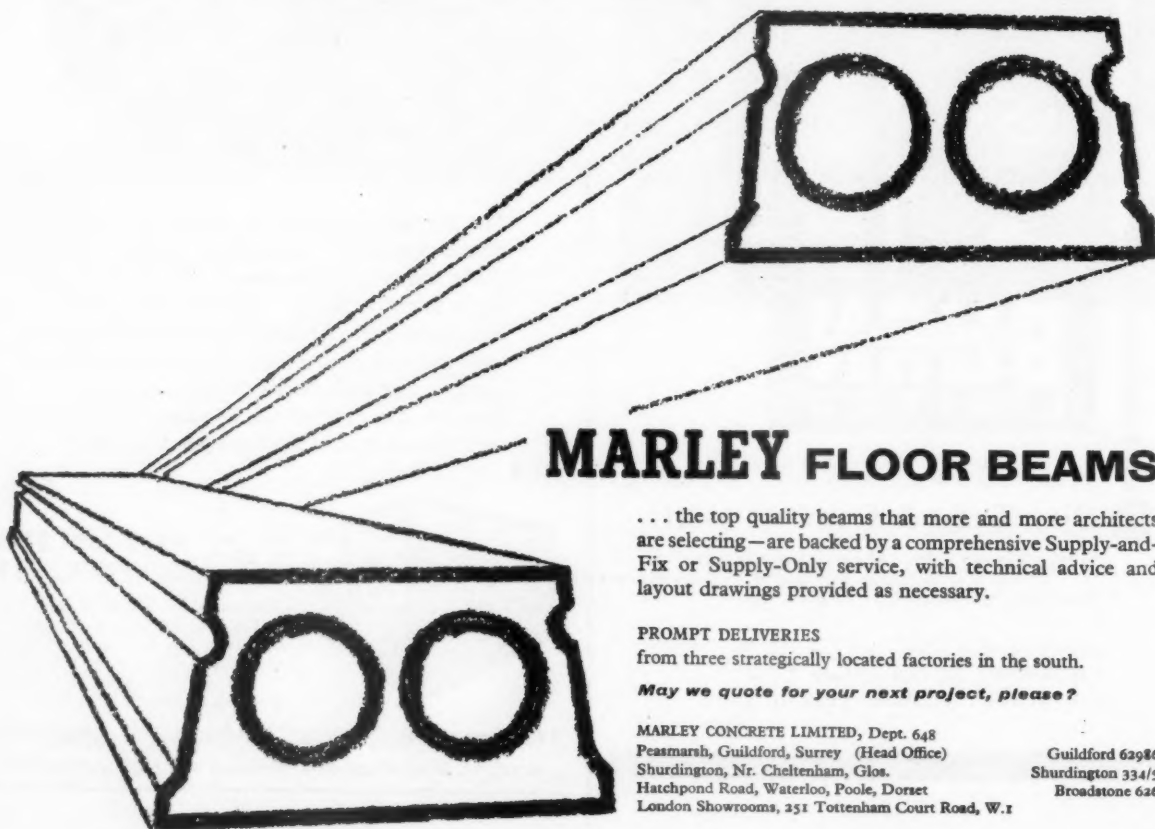
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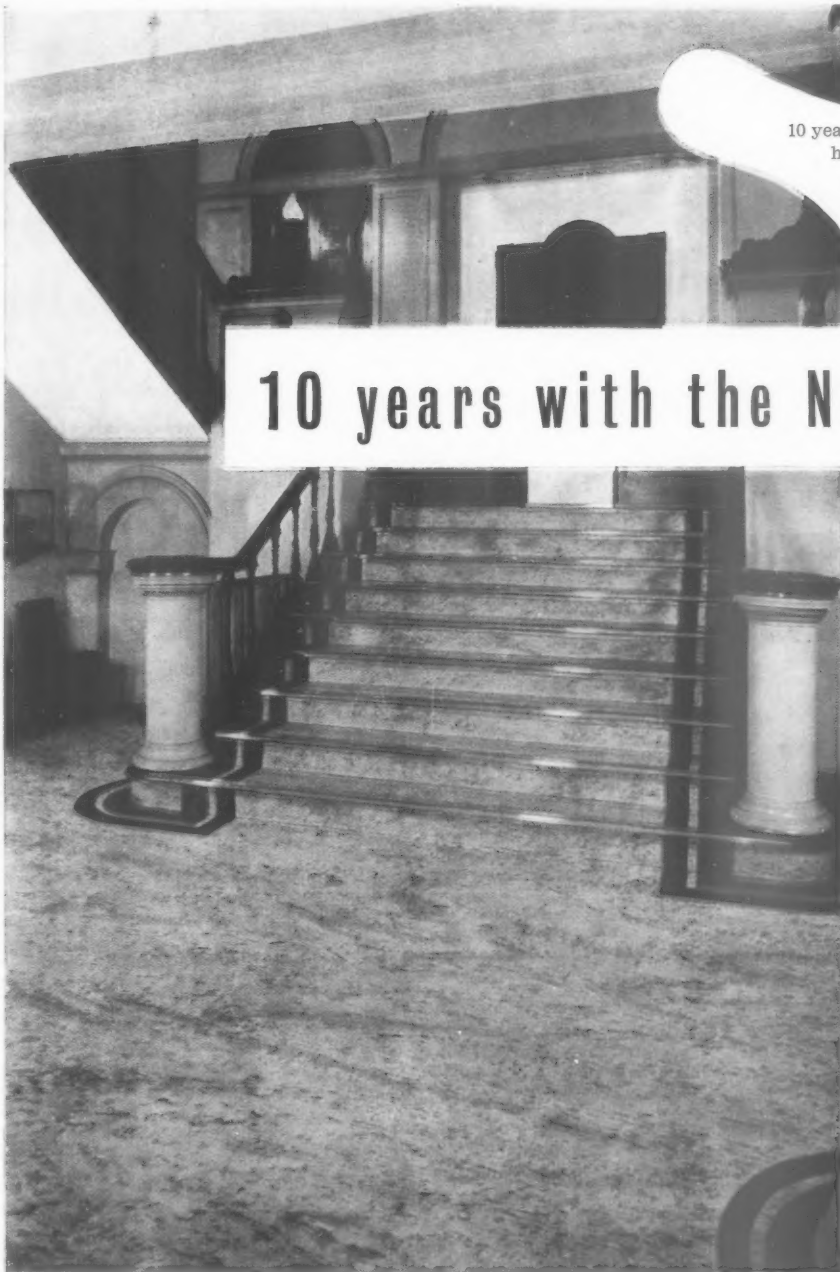
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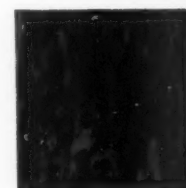
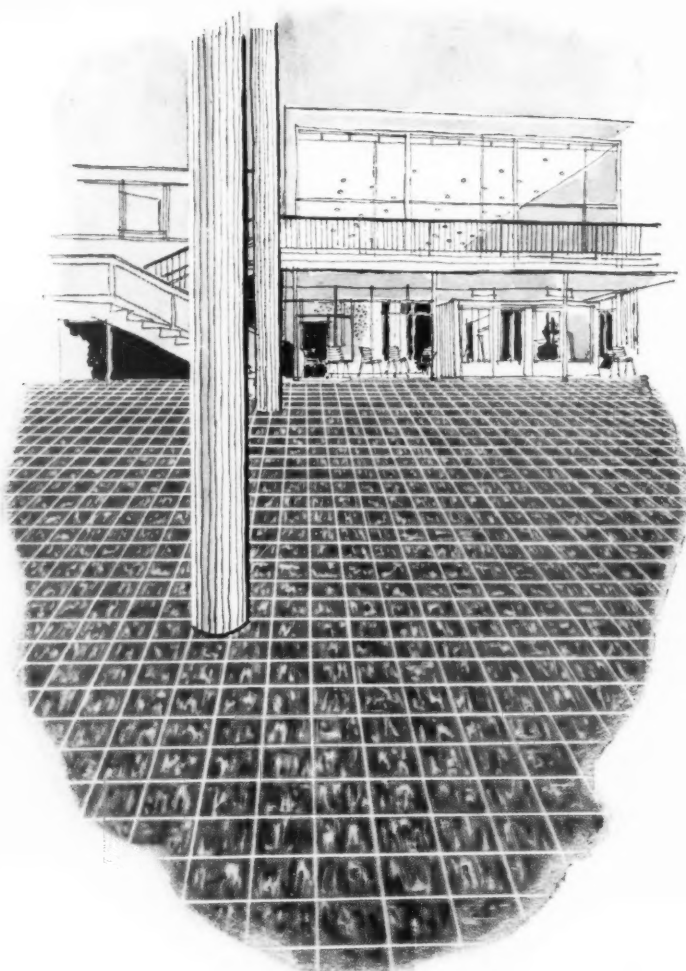
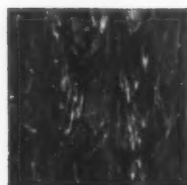
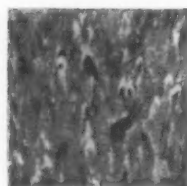
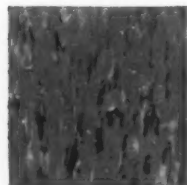
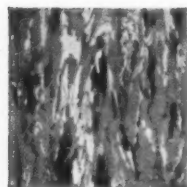
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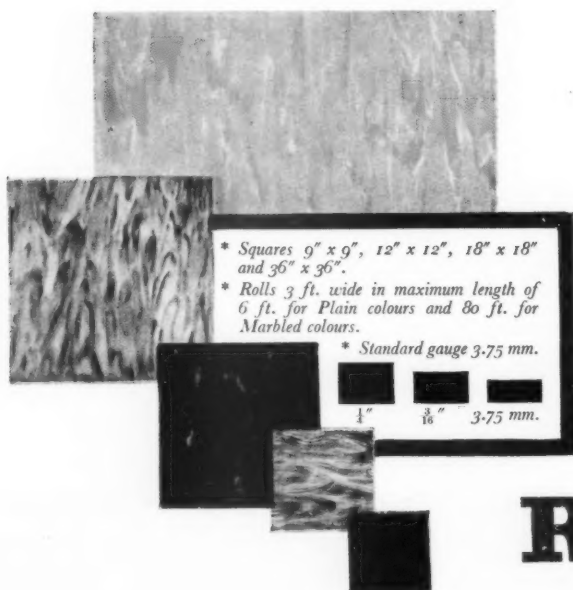
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No 3353. Vol 129. June 4, 1959

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NOT QUITE ARCHITECTURE

## GROWERS HAVE LOST THE SCENT

It used to be the first smell of summer, that intoxicating mixture of strawberries and carnations that filled the vast marquee where Chelsea's summer cup tie is fought out so bravely by the gardeners and socialites each year. With regret and indignation it must be recorded that this is now a thing of the past. The strawberries still have nose appeal, but you can stand by a bank of carnations twenty feet long and not get a whiff from them.

\*

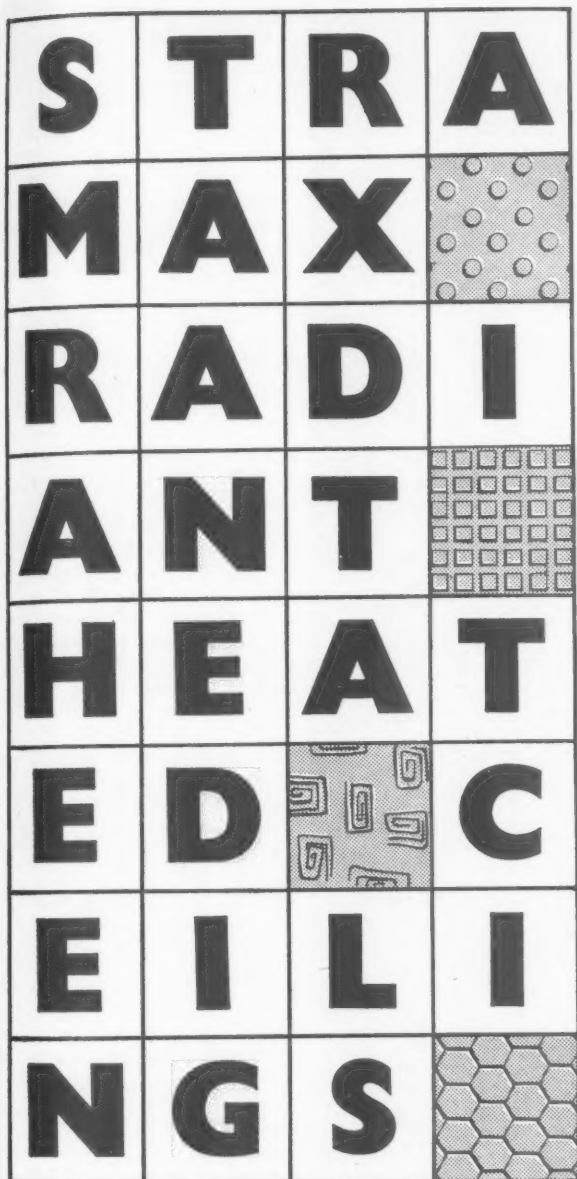
What a contrast to my good old Mrs. Sinkins. This weekend no sooner did I get within weeding distance of her than I met a great surge of sweetness bursting out of the half-opened buds. While Mrs. Sinkins can do this, however untidily her petals break out on one side, and however feebly she lies down on her face when it rains, I will go on preferring the old lady to the magnificent, spherical, brilliant Chelsea flowers which could easily be simulated in plastic or dyed feathers.

\*

If wild thyme or clover ceased to smell we should regard it as a natural calamity—probably due to genetic damage caused by Strontium 90. Yet here are our top-flight plant breeders, if not deliberately, indifferently destroying one of the most poignant qualities of flowers in their single-minded pursuit of size, colour and novelty.

\*

Brooding sourly about this as I sniffed uselessly about a sweetpea stall that might just as well have been a display of nylon lingerie, I formed schemes for getting the smell back into flowers. What about a Grand Petition of Gardeners to the RHS, asking the Society to initiate research into the causes of lost scent and how to get it back again? If this were accompanied by gold medals for the best perfumed roses, carnations, sweetpeas, or collections of



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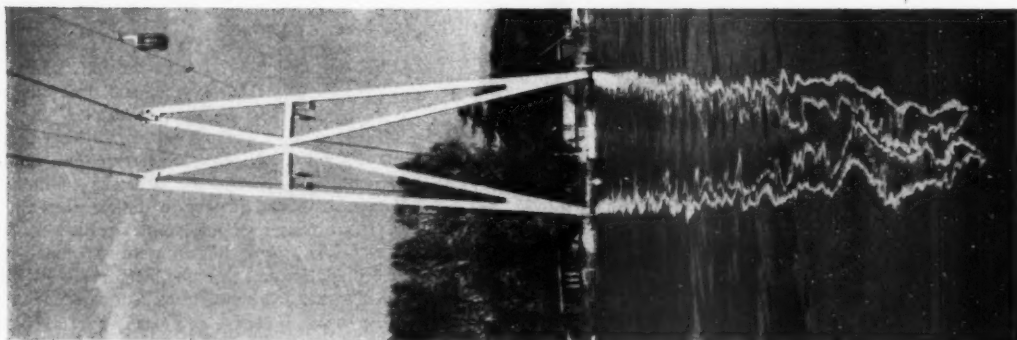
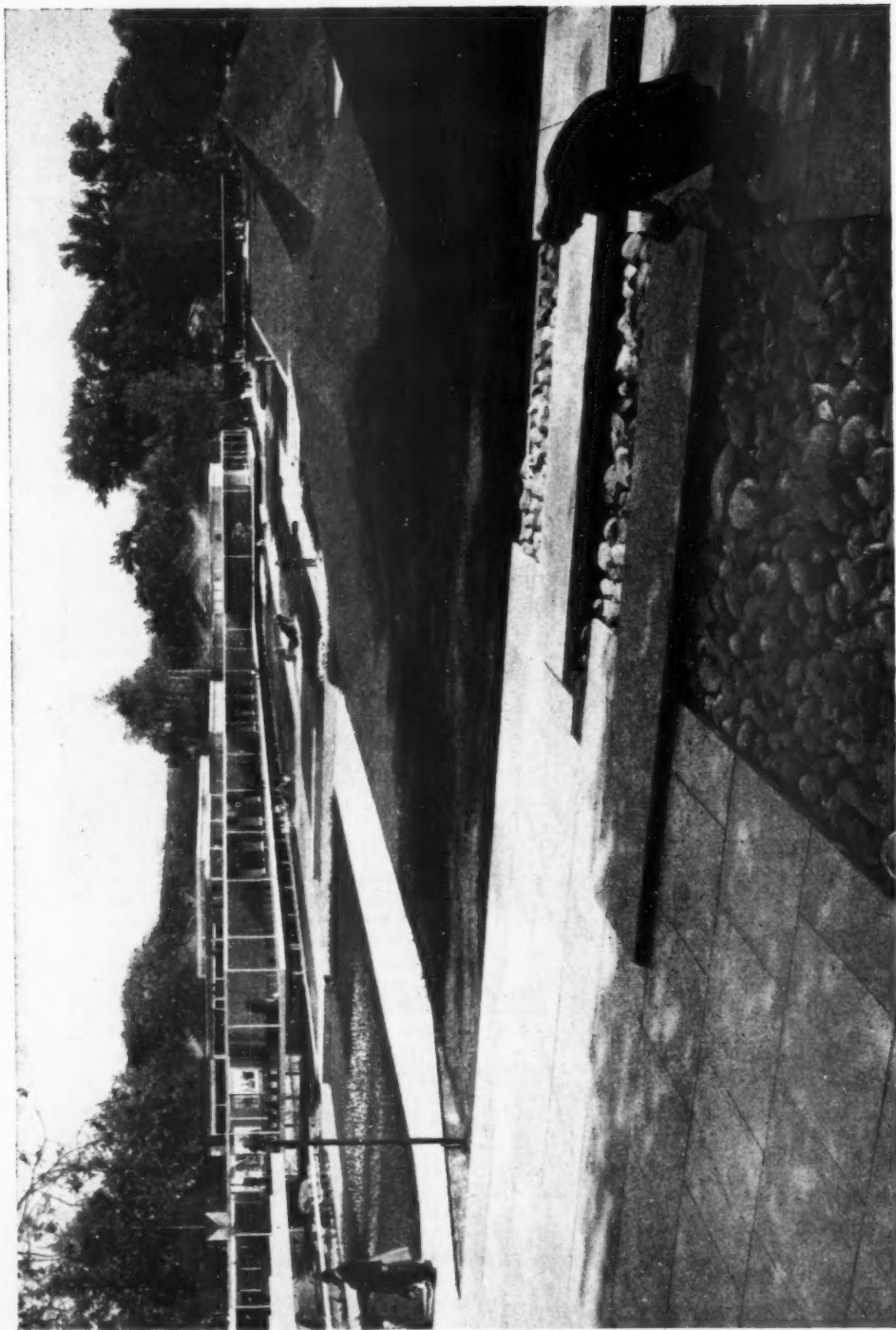


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## Gardens '59



Landscape and garden layout is unfortunately a relatively minor aspect of the Chelsea Flower Show. It is odd that the nation which has excelled in landscape in the past is now content to let other nations set the pace. Let those who left Chelsea frustrated by its emphasis on mere detail find relief in the size and seriousness with which the Swiss treat the subject. Above are two illustrations of the Swiss Landscape Architecture Exhibition now open in Zurich

until October. It is laid out on both banks of the Lake of Zurich which are linked by a mile-long overhead cable railway of striking simplicity, shown left. Fello Atkinson, who has visited the exhibition, says it is as good as anything since G55, the Gothenburg exhibition. There is, he says, a brilliant display of flowers, amongst a great variety of small fountains, pavilions and restaurants, with, above all, an extraordinarily rich use of concrete.

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plants, would not this help to put breeders on the scent again?

Of course Chelsea is full of heavenly plants one longs to grow, many of them old standbys, that provoke one to good resolutions—to stake the delphinium in time next year, to grow more columbines, and blue poppies, and iceland poppies, and astilbes, and *Dictamnus fraxinella*—the genuine “burning bush” of Moses which, so I am told, can actually be induced to burst into flame in very hot, dry weather. And tree prœonies, whatever else there is no room for.

Kelways had the best show of these for several years, including a superb white single one, Mrs. Wm. Kelway, a delicious double pink called Raphael, and one like a raspberry coloured sea anemone called Bowl of Beauty—an unworthy name for such a creature, suggestive of skinfood.

Fuchsias have been getting more and more double for the past few years, until last year's were completely globular: now suddenly the newest variety is exquisitely long and slim—a bright, bright turkey red called Red Rufus, which, if it is as strong-growing and long-flowering as all good fuchsias are, will be one to look out for.

It is one of the difficulties of those who go to a show like Chelsea to buy plants that so many of the multitudes on show are too new to have been tried out thoroughly in ordinary gardens, in ordinary soil (not “rich loam” as catalogues say), in ordinary semi-shade (not “a sunny position” which all nursery gardens are), through droughts, wet summers and long winters. Since healthy exuberance is an important and attractive attribute of any garden plant, I would like to see a marquee at Chelsea devoted to varieties, none less than 20 years old, which have stood this test and proved as tough as their parents.

Foreign presentations are evidently to be a feature of the Show in future: last year we had the exquisite formal vegetable garden from France and an exotic display from Holland. This year German and Belgian growers contributed two richly unpleasurable gardens. The German garden you would never see in Germany, I think (whereas one of the charms of the French garden was that you could picture the French farmhouse behind which it might be found): it was an extraordinary mixture of incompatibles—great swampy looking foliage plants with carpet bedding around them of forced, twice-life-size lilies-of-the-valley and calceolarias as neatly arranged as scrambled eggs in a cafeteria. The Belgian garden (typical?) had lots of paving, large black Ali Baba type oil jars filled with exotics, and would provide a suitable background for cocktails to celebrate a take-over bid. But not for me or Mrs. Sinkins.

Cacti are out this year, by the way: swamps are in. Kew presented a quite sinister swamp garden, which really called for an alligator to complete the decor.

SHEILA LYND

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

## The Editors

### RED LIGHT FOR DODOISTS

THE situation in which the AA finds itself could hardly be more disheartening. It was all too evident from last week's discussion that the old AA Council was hopelessly split over the method of achieving integrated training and there is every prospect that the newly elected council will be similarly split, though, possibly, the majority will now be in favour of, instead of against, integrated training with the LCC. It may well be too late, however, for negotiations to be resumed because the LCC is now negotiating with one of its own schools.

Even if the new AA Council is in favour of the LCC project it does not follow that the constitutionally necessary two-thirds majority of the membership is also in favour. The blame for this can be laid firmly on the shoulders of AA Councils over the last ten years. They have done virtually nothing to arouse the interest of members in educational issues, or to discover their views and experience. The Council is run by a largely self-perpetuating clique of officers who are not directly voted for by the members. Inevitably it becomes secretive, self-important and mysterious. And because no voting member knows the AA problems or the views of the candidates for election, the democratic process is stultified. The AA Council has in miniature, in fact, all the failings which once beset the RIBA Council. Unfortunately, while the RIBA membership has become aware in time of its own and Council failings and started to correct them, the AA membership remains apathetic. It seems to have acquired, as a very eminent architect remarked recently, a death-wish.

The AA has, therefore, two immediate tasks to perform: to revise its constitution so that it becomes a more efficient, progressive and democratic body. And to study the problem of architectural education, particularly in the context of the training of the whole building industry.

Modern architecture inevitably strides the gap between the arts and the technologies. Its strength depends on having equal footing in both. It must be able to interpret the multifarious needs of society, perfect them in three dimensional form, and translate them into practical techniques. The architect is criticised for imperfections in all three aspects of his art, but in recent years the emphasis in criticism has been on his weakness in getting his design ideas efficiently and economically built. And builders, engineers and quantity surveyors are

also criticised for not giving the architect (and therefore society) the quality of service he needs. The pressure of criticism of the design content in building has not, so far, been so great, so it is reasonable, when discussing advances in education for the building industry, to propose integrating the operational, rather than the theoretical side, at least *as a start*. In an integrated course of this kind the architectural student is liable to carry the greatest burden. He has to learn to put quality before expediency in the face of pressure to do just the opposite. But just because of this, amongst other, challenges, the AA school, with its reputation and tradition, stands the best chance of creating a new attitude in the industrial side of building.

There are plenty of university schools of architecture which will doubtless attempt partial integration with other disciplines of science, and the arts. There also exist plenty of opportunities for architectural schools to work closer with students of the fine arts. The proposed college of architecture and building is a new and equally fundamental approach to attempt to integrate that which is logically indivisible: design and production. It is a challenge to the ivory-towerism latent in architects which the AA School is peculiarly well equipped to meet, the safeguard being the school's close association with practising members. But those who have been endeavouring to achieve this project, the MOE and the LCC, must show themselves to be patient and tolerant. The AA risks more than anyone else in this venture, so negotiations should be slow and not too secretly conducted, and no attempt should be made (like forbidding the eventual creation of a school of planning) to choke arbitrarily what might become a great factor of progress in building.

### THE NIGHT THE ROOF BLEW OFF

Those who have been feeling uneasy about their lightweight monopitch roofs now have their minds set at rest. BRS have produced a Digest\* which corrects and amplifies the Code of Practice†, which hitherto was our only guide. The chief fault of those who framed the Code seems to have been that they assumed that the wind, when at its most lethal, blows always from one direction and that, "normal to the eaves." This would not have mattered if the wind, when in this direction, produced the most taxing pressures. But, in fact, wind tunnel tests have shown that pressures are worst when the wind blows obliquely; and that, whatever the direction, they are much greater (by four or five times) in the four feet next the roof edge. In this, it is worth noting, the monopitch roof is no different from any other. We have here what is evidently a critical design requirement. It is only a pity that its fulfilment is still—despite this Digest—difficult for the architect. It is not at all easy for him to find out with certainty the correct basic wind pressure to use in any given circumstances (the Meteorological Office, it seems, keep the wrong data for his purpose) and the method for computing the actual pressure on a given roof is not so luminously clear as he could have wished.

\* See Information Centre, page 841. † CP3 Chapter V (1952).



### CLORES OFF OUR PUBS

The fuss in last week's papers about Mr. Clore's attempted take-over of Watneys naturally made pub-frequenter wonder what changes he planned to make in the pubs themselves. He seems to have in mind abolishing multiple bars—which would be a bad thing—and livening up the gaunt barn-like interiors of the big pubs in main shopping streets—which would be a good thing.

\*

Even if this livening up meant—as it easily might mean—changing the traditional pub into something more like the American drug-store, that is perhaps the sort of change that is bound to come, but let us implore Mr. Clore (if his deal comes off) to be discriminating about the type of pub he chooses to revolutionize. A town wants both kinds: the crowded busy, come-and-go pub-cum-snack-bar-cum-bazaar) and good luck to all attempts to bring this kind up to date, and the intimate, small-scale kind in which the best qualities of the old pub tradition still survive.

### OUT OF THE FRYING PAN

The BBC still regards anything serious about architecture (like Arthur Ling's talk on the urban renewal symposium) as Third Programme stuff; when it brings an architect on to the Home Service, as it did last week for

a discussion on traffic, its approach is quite different. Maxwell Fry was put up by Percy Cudlipp in "Matters of Moment" as an Aunt Sally to be knocked down by Wilfred Andrew, chairman of the Roads Campaign Council. His view that there are too many cars already, and that it must somehow be made illegal for some people to buy or use them, in ways that he could not explain, confirmed the ordinary man's image of the impractical architect with woolly ideas concerned only with vague artistic notions about good living. Most thinking people will agree with Fry that unlimited multiplication of the motor-car will have to be discouraged. But to imply that buying motor-cars should be made a crime is not the right way to set about it.

#### ANTI-UGLYSKIS

The *New Statesman* carried an account last week of an Anti-Ugly campaign being waged in the Soviet Union against bad taste, in which young Communists have been taunting the buyers of china dogs or sentimental paintings, while everything from silk lampshades to aspidistras has been exposed as "petty-bourgeois philistine taste." With typical Communist zeal public lectures, and organized visits to explain the fundamentals of design have been arranged, and at long last the need for design in industry is being appreciated.

\*

There is something slightly comical, however, about the fate of the poor old rubber plant, which is now being driven out in Moscow just when it is riding the popularity wave here. Couldn't the Russians export them to as under the new trade pact?

#### CHANGES IN THE REVIEW

Perhaps my note last week about Ian McCallum's departure from *The Architectural Review* to direct a new museum of American decorative arts should have made it clear that he isn't going until the end of the summer. When he has gone I understand that J. M. Richards is going to take full charge of the *Review*, resuming his earlier job of executive editor as well as remaining a member of the editorial board. And Reyner Banham is to become assistant editor.

#### ASTRAGAL

#### ASTRAGAL DESCRIBES BRITISH ARCHITECTS' TRIBUTES TO GOLD MEDALLIST MIES VAN DER ROHE



There was a jam-packed audience at the RIBA last Tuesday to see President Basil Spence confer the Royal Gold Medal on Mies van der Rohe, who is seen above being congratulated on his award. But the make-up of the audience was not—as some might have suspected—predominantly teen-agers in striped jeans and BASA shirts, but included plenty of solid citizens and their equally solid wives (because Mies is accepted now) who heard about the most erudite set of citation speeches ever uttered on these occasions. The names of Goethe, Luther, Simone Weill, St. Augustine, W. H. Auden, came up either as terms of comparison or as the sources of quotations felt to be apt to Mies—who quietly out-gamesman-shipped everybody in his short speech by quoting St. Thomas Aquinas in *Latin*.

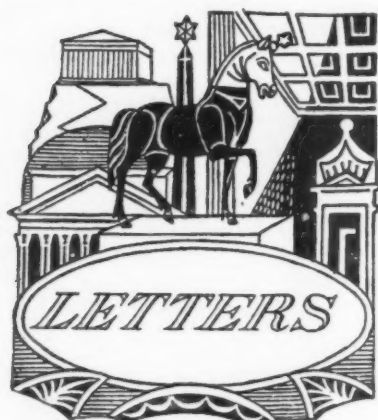
It was, in fact, a curiously dignified evening—very little impassioned rhetoric from the platform. Rather, a series of attempts to examine the conscience of architecture, and what Mies has done for some well-established architectural catch-words. Thus, Lionel Brett brooded on Anonymity, J. M. Richards on Truth, Richard Llewellyn Davies on Integrity, Peter Chamberlin on Timelessness, Sir William Holford on Finality.

Afterwards Mies was given dinner by the RIBA and met the speakers, some members of the architectural press, and the finalists in the Churchill College competition, which seemed a happy way of discriminating between the hundreds of architects who must have been anxious to meet him. Throughout the evening Mies remained friendly, gently smiling, very quiet but obviously moved by the respect and admiration with which he was greeted.

The following night at the AA under the mellowing effect of popping corks and clinking glasses, he relaxed, and got as much fun as the members out of answering questions fired at him from all sides as H. T. Cadbury-Brown showed slides of his work. He described Tugendhat, whose house at Brunn is one of the early milestones, as a careful man "... you know, the sort who does not have one doctor. He has three." He remained unconvinced of the authenticity of a view of the Lake Shore Drive apartments under construction. When asked about Japanese influence he denied this, saying, "I have never been to Japan. I have not seen Japanese work. But my work I do by reason and maybe they do too."

In the final salutation at the Architecture Club's dinner in the heavily sumptuous Fishmongers' Hall on Thursday Richard Sheppard gave a rather rambling, very informal but obviously sincerely felt speech in proposing Mies' health. In reply Mies thanked the Club and said, quite briefly, "I am much simpler than you think. I would like to talk but I am terrible at talk. I enjoyed my stay, very hectic but, once in a while, very nice."





Bryan Westwood, A.R.I.B.A.

S. A. G. Cook, A.R.I.B.A.

Hon. Secretary, City and Borough Architects' Society

Nigel C. Mould, D.F.C.

Anthony Goss, A.R.I.B.A.

Peter Cowan, A.R.I.B.A.

## Experiment or Expire

SIR: As one of the AA negotiators, I have read your leading article "Experiment or Expire" with interest. Your title I believe to be appropriate and I find the AA Council's decision keenly disappointing. The Council apparently believes in the kind of education the new centre is destined to undertake, but I cannot see how two centres of "integrated" architectural training can be run in London simultaneously. So far as I am aware, no other equally hopeful educational advance has yet appeared in sight. So far as your leader is concerned, there are two points on which I would take issue. Firstly, the gratuitous criticism of the Advisory Council, which, unless I heard wrongly, supported the principle of integrated education in principle and was not so adversely concerned with how it would be carried out as to withdraw its support on the grounds of expediency. Secondly, the secrecy was not of the AA's making as, surely you, sir, must know.

BRYAN WESTWOOD

London

We fully agree with Mr. Westwood's first paragraph. As regards our criticism of the Advisory Council, it is good to learn that the Council supported the principle of integrated education. Our comment was based on the AA President's letter, which stated "it was apparent from the views of the Advisory Council . . . that an adequate majority was extremely unlikely." As regards secrecy: how many times has the AA discussed the principle of integrated education and the means of achieving it? The Editors.

## The Black List

SIR: You are to be congratulated upon the publication of the Black List of local authorities without chief architects. There are, however, two corrections which should be made:

- (a) Cardiff has a City Architect—John Dryburgh, A.R.I.B.A., A.R.I.C.S., A.M.T.P.I. He has been a member of the City and Borough Architects Society since December, 1958.
- (b) Merthyr Tydfil recently appointed a Borough Architect—K. W. Craven, A.R.I.B.A., Dip.T.P.(Man.), A.M.T.P.I. He is also a member of the Society.

S. A. G. COOK

Hon. Secretary, City and Borough Architects' Society

London

## RIBA Examinations

SIR: Following the publication by you of my letter of protest about RIBA exams (AJ, February, 12), subsequently backed up by another on March 5 from Roger Thompson and Colin Smith (and many thanks to them for it), I would be grateful if space can be found for the information I give herewith. I am certain that it is of paramount interest to all those who, like myself, have suffered the indignities of sitting the Design subject of the Final externally. I have, at long last, received a reply dated May 4 to my letter of protest of January 17 to the Board of Architectural Education. The Secretary to the Board states that: "the matter (of examination conditions at the RIBA) has been very actively taken up by the honorary Officers of the Board, and with the approval of the Finance and House Committee the following steps have been or are being taken:—

1. The lighting in the Florence Hall and other rooms where necessary at the RIBA will be adapted to ensure increased lighting for the winter examinations.
2. For the subject of Design the candidates are being given two desks each, instead of one, to allow greater ease of working.
3. In addition, more space is being given to each candidate for all subjects of the examinations.

Two desks are being allotted for the time being until the larger desks which the Finance and House Committee have approved can be obtained from the makers."

And now, having given credit where it is undoubtedly (and unexpectedly!) due, let us hope that those concerned will make a logical advance further and, having granted more reasonable conditions for sitting, bring the setting of the Design paper into line with these proposals. Surely it is not impossible, "sweet reasonableness" prevailing, to set a Design paper which (A) gives the candidate the *maximum* time on the first day to produce sketch plans of a basic kind—i.e., eight or nine hours; (B) will test his skill in design *without* the subject being so vast a project as would take two or three weeks to find an answer in a normal office (*viz.*: a central Town Development), and (C) requires plans, elevations and sections drawn up in sketch plan form and not as academic

finished drawings, as he has submitted enough evidence, in all conscience, of having reached the required standard in the latter.

NIGEL C. MOULD

London

## The Doctors' Dilemma

SIR: Is the medical profession really such a model to be imitated in its educational methods? (Peter Scher's article, AJ May 14). Surely *Doctor in the House* has done enough to reveal the many imperfections in the training of a doctor? Even though it may be a caricature, the basis is there in fact of the "dim-wit" who sits his Final MB again and again until he is eventually dragged through.

There obviously has to be a great deal of thought devoted to increasing the value of the lengthened period of practical training what will be required of future architects. Unfortunately, in my experience, large public authority offices also have a long way to go in providing really useful practical training for students. Too often the student comes to an office for a couple of months in the vacation, is allocated to a particular scheme without any instruction or briefing and used purely as a draughtsman, being left to pick up what he can from this experience.

The key question seems to be, who controls practical training? The answer must surely be that control, including standards and methods of such training, must at all times remain in the hands of the architectural schools. For this reason I feel that, on the whole, the "live project" method developed particularly by Birmingham School of Architecture has the most to recommend it; the teaching staff is in control of the projects and the students actually participate in all stages of the design, working drawings, construction and site supervision of a contract under model conditions.

Apart from the practical and administrative difficulties involved in a scheme for "teaching offices" in the larger public authorities, there is also the added difficulty of the tenuous links between architectural teaching and such offices. While some architects in this type of office may teach in the evenings, most part-time architectural teaching appears to be done by architects from private practice offices. Moreover, it is a great deal easier to move from private practice to full-time teaching of architecture and vice versa than to interchange between teaching and work with the main public authorities. Thus for the "teaching office" to be fully effective there would need to be a great deal more free interchange of staff from which the public authorities as well as the architectural schools could derive benefit.

ANTHONY GOSS

Basildon

## A Quaint Attitude

SIR: I gather, both from Mr. Cockburn's piece in the last BASA supplement, and from the views of the majority of candi-



dates for the RIBA Council, that the profession generally, is resisting the idea of the package deal.

Maybe I am naïve, but upholding the virtue of independent practice, as opposed to working in a group containing all members of the building organization, seems an incredibly quaint attitude.

If the architect holds aloof, he cannot always expect the other members to woo him as a prima-donna. At present the architect controls most of the distribution of building and consulting work, but, if present trends continue, and the building public becomes more and more dissatisfied with the service given by the profession, this control will disappear.

The advantages of group working, with no single person occupying the position of "leader" are well illustrated by an example from the scientific field. In the development of Cybernetics, as described by Dr. Weiner, a group of scientists from widely differing specialities (mathematics, physics, biology, anthropology, physiology, psychology) were organized into a team. The interesting point is that although Dr. Weiner, who was the initiator and sustainer of the project, is a mathematician, mathematical concepts were not allowed to dominate the project, but were used as tools on an equal footing with the methods of the other sciences involved.

If the architect is unable to integrate, and becomes redundant, it will be his own fault for not realizing and developing those aspects in which he can make a real contribution to the building team. These lie in the direction of programme functions—the composition, analysis and interpretation of clients' programmes and the communication of data obtained by analysis to the other members of the team in concise and relevant terms.

Unfortunately these methods and subjects receive no attention in the schools and I would suggest that there is great need for the teaching of the scientific *method* in programming a piece of research work, which, after all, is only another project, similar, as far as method goes, to a building.

PETER COWAN

London

## DIARY

*Paris—The City Exemplar?* Talk with slides by members of an LCC group who recently spent a weekend there, led by Percy Johnson-Marshall. At The Planning Centre, 28, King Street, Covent Garden, W.C.2.

JUNE 8

*Royal Institute of Chartered Surveyors AGM.* 12, Great George Street, S.W.1. 5 p.m.

JUNE 8

*British Architects' Conference.* At Cardiff. JUNE 10 TO 13

*Ministry of Works Building Exhibition.* At Greenford, Middlesex. JUNE 10 TO 17

*Models and Presentation Drawings.* Informal talk at the AA, 34/36, Bedford Square, W.C.1. 6.15 p.m. JUNE 11



## RIBA DISCUSSIONS

### Planning Problems

The series of three meetings on planning problems, held at the RIBA last week in conjunction with the SPUR exhibition, attracted audiences of moderate size, which displayed considerable qualities of staying power and eloquence. The discussions themselves were of very uneven quality.

#### 1. Communities

The first, on "Communities and Neighbourhoods," provided an opportunity for sociologists to teach architects and planners some lessons. Ruth Glass was in the chair, a role that did not inhibit her from intervening vehemently and at length against those with whom she disagreed. John Westergaard, of the London School of Economics, and G. Brooke Taylor, of Hemel Hempstead Development Corporation, were the speakers, and there was a sprinkling of sociologists in the audience. Yet the impression left at the end was one of confusion, of theories based on flimsy or non-existent evidence, of the inability of sociologists to provide reliable answers to questions that architects and planners are certainly asking.

The discussion developed, in fact, into a heated, if somewhat obscure wrangle between Westergaard and Ruth Glass on the one hand, and Peter Wilmot and Ralph Samuel (both of the Bethnal Green Institute of Community Studies) on the other, which at times became muddled up with new and anti-new town arguments. Westergaard considered that Wilmot's school have grossly exaggerated the influence that planning, layout and architecture can have on social structure and relationships, and disputed above all the idea that decentralization and low densities were endangering the working class "gossip street" or leading to obsession with individual and family matters. The breakdown in the working class community and extended family, he argued, was the result far less of low densities and dispersal than of other social and economic changes. Wilmot, while conceding the importance of these factors, gave far more weight to the influence of density and layout on social

behaviour. He urged architects to find ways of achieving high density with privacy, and without building too high, and housing managers to enable people to go on living together in their existing social groups when redevelopment took place.

Neither produced any serious evidence for their views, each relying on a survey of a single housing estate, which seemed capable of varying interpretations. Brooke Taylor, while clearly agreeing with Westergaard, laid his main emphasis on the danger of premature judgments in the new towns before the people have had a chance to settle down or the town to be completed, and Wilmot admitted that he had modified earlier views based on a study of a newly completed housing estate. His survey of Dagenham showed him that while people did not get to know each other as well as in the East End, something like the old groups had grown up.

#### 2. Transport

The second meeting, on public and private transport, took the form of a debate between J. Churchill, assistant secretary of London Transport, and A. Greig, assistant secretary of the standing committee of the motoring organizations. This did not produce the clash of extreme views that might have been expected as each, not unnaturally, conceded that the form of transport represented by the other had a legitimate place. Mr. Churchill's theme is that the private motorist, particularly the commuter, uses the street as a free garage, chokes the roads and makes it impossible for public transport to operate. His remedy is that public transport must be given the chance to compete on equal terms, by forcing the all-day parker off the street, and making him pay the full cost of providing him with off-street parking. He also showed convincingly that in London the new Victoria tube could make a big contribution. Mr. Greig, of course, argued for "construction not restriction," new radial and ring roads in every town and city, and made a minor concession to architects by agreeing that in the resulting destruction buildings of historic and architectural interest should be spared. Must the best contribution come, however, from the chairman, Colin Buchanan, who is convinced that while there is a lot of grumbling about traffic hold-ups, there is no widespread concern about the intolerable conditions that are destroying civilized life in the towns. The task of urban renewal was not merely, he said, to speed up vehicular movement, but to bring the vehicle firmly under control so that civilization can survive with all the benefits that modern transport can offer.

One of his conclusions, at the end of a wide-ranging discussion, was that we should study the American experience very carefully. "Are we," he asked, "being taken for a ride by the motor car along a one-way street, and have we got to go through the painful process they have gone through in America, where they are now thinking about public transport?"

The third meeting, on "The Big City," took place too late to be reported in this issue.

## AA MEMBERS DEMAND REFERENDUM

### *A College of Architecture and Building*

*At an "informal meeting" of the Architectural Association last week members expressed, by a show of hands, an overwhelming majority for a referendum of the membership on the AA's participation in a proposed College of Architecture and Building. We publish below, first, a summary of the proposals, and second, a report of the meeting.*

### THE PROPOSALS

We referred last week and on May 14 to the breakdown of negotiations between the AA and the LCC (which had been initiated by the MOE) to achieve a college of architecture and building. In the next column is a report of the discussion which took place between AA members following the AA Council's decision to discontinue negotiations "if this involved association with the LCC." No formal explanations for the decision have been offered, the AA claiming that negotiations with the LCC were confidential. To try and clarify the position we print the following brief account of the situation based on what can be learnt from unofficial and published sources.

*Educational proposal:* A partially residential college, with university standards, for training in architecture, structural engineering, quantity surveying, building and engineering services: a college where integrated education will be developed as far as it is practicable, while maintaining the AA's lively tradition. Details to be left to the principal and governors. *Site and buildings:* It was to be sited in central London, the buildings designed by the LCC's architects department and costing about £2m. with equipment. *Courses:* Full-time post-graduate and sandwich, open to national and international entrants. The architectural students would be the largest group and the only whole-time course. Builders, quantity surveyors and engineers would do four-year sandwich courses leading to Higher National Diploma and Dip. Tech. qualifications respectively. *Administration:* A governing body would be formed consisting of representatives of the LCC, the AA, the four building bodies, the other professions, and other local education authorities. The AA would form the biggest block. Each course would be run by an advisory committee. The AA School Committee would therefore remain intact, but it would include representatives of the other advisory boards and *vice versa*. The *Architectural Association* would rent club accommodation. It would not be able to withdraw the school from the scheme, once committed, but it could withdraw as an Association.

#### Criticisms:

That there were not enough AA members on the governing body and no representatives of research, such as BRS. *Answer:* the representatives should not be warring factions: for instance, the LCC representatives in the Chelsea Art School board include Henry Moore.

That in order to get the best design for the buildings an international competition should be held. *Answer:* the competition system is not always satisfactory.

As the LCC would be promoting the competition its own architects could not compete.

That the college would be subject to financial control by local government liable to arbitrary political change.

That LCC administration would tend to reduce the venture to a drab, technical college and institutional level which the AA's members would not want to visit for the AA affairs and functions and, if membership in consequence dwindled, the unique quality of the AA school would be lost. *Answer:* it depends on the standards the AA sets and insists on, on faith and determination.

That the college placed too much emphasis on technical subjects and not enough on town planning, the arts and sciences. *Answer:* maybe, but a start on integration has got to be made somewhere. Builders and architects are interdependent, but architects, and, say, philosophers and physicists are not.

## AA

### *Members' Meeting*

Denis Clarke Hall began by giving three reasons why the AA Council had rejected the LCC's proposal: first, the AA desires to be independent of local authority control; second, the LCC, by controlling finance, would therefore be in control of the school; third, fear of a technical college atmosphere. K. J. Campbell set two conundrums which nobody ever answered: first, how does the Council imagine the AA can maintain full independence and control over the finances, organization and training of the school, and at the same time integrate with other professions and disciplines? Second, if the LCC is untouchable, why were negotiations ever allowed to begin? Bryan Westwood explained that the MOE began the negotiations three years ago, and then handed the AA over to the LCC, but that was the only answer. R. Furneaux Jordan asked whether the corpse was finally and irrevocably dead, a question which received a variety of answers in the course of the evening, ranging from "yes" (Brandon Jones) to "no" (Michael Austin Smith), while the chairman thought it was a matter of opinion.

The case for breaking off negotiations was put by John Brandon Jones. Although he admitted that the MOE had said that it would not consider an independent school directly financed on the lines of the RCA, he considered that it was still possible to fight for this. The negotiations had broken down, he said, because the LCC was too narrow-minded and treated building only as a technical science. He had two propositions: that money should be spent now on extending existing facilities, and that a standing joint committee of staff and the governing bodies of schools be formed in London to consider co-ordination of research and experiment. He neither affirmed nor denied the principle of integration, but opposition to it was implied in his statement that the importance of the AA lay in the fact that it was the only school in the country controlled by architects. Another argument against the college was put by B. Adams, who did not want a "narrow technological school" because he considered that architects were a dead loss in such fields as imaginative planning and civic design.

Another argument, not necessarily against integration, adopted by a number of speakers, was that the AA must first decide what it meant by integration. One speaker, who said he had spent two years at an LCC School of Building without speaking to an engineer, a quantity surveyor or a plumber's mate, said that he was terrified to hear that the LCC's first move was to say that the AA must not tell its members what was being discussed. Hilton Wright said that this was the reason why he had voted for the resolution. John Outram, student, wanted the AA to work out the curriculum for the proposed new college before committing itself.

A very large number of speakers, several of them Council members, were sharply critical of the Council's decision. Nobody

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took Mr. Brandon Jones's alternatives of a standing joint committee or of a direct grant college like the RCA very seriously. It was disclosed by Gabriel Epstein that the LCC's plan was for a residential college to cost, with equipment, £2 million. Other speakers contributed additional scraps of information, such as that the site was to be in Portman Square, and there were to be research laboratories and residential accommodation.

Peter Newnham said that Brandon Jones's alternative ideas had been skulking around the AA for 20 years, and no one had been able to bring them into a coherent policy for lack of money, which the LCC would provide. He was not at all sure that independence, which had been the glory of the AA in the 19th century, was so desirable in the 20th. Michael Patrick, head of the AA school, said that schools could only be integrated by bringing them together in one place, and that meant residence. He pointed out that the technological colleges that had been criticized for being "narrow" taught very much wider subjects than did the AA. Bryan Westwood, who said he was bitterly disappointed, believed that the project was dead, and could see no alternative as the government said this was the only way.

One of the most popular attacks on the Council majority was delivered by George Fairweather, who said that architects needed a wider field for their training than the AA could provide. Integration meant physical proximity, proximity meant buildings, buildings meant money, for which there were three possible sources. The Ministry had refused a direct grant, the building industry had never shown itself willing to pay for the AA as such, so that left the LCC. If it meant going to the LCC for their teaching instrument, they should go to the LCC.

The suggestion that the AA must first draw up a curriculum for an integrated school was answered by K. J. Campbell, who couldn't see the LCC and the Ministry waiting five years; by Gabriel Epstein, who recalled that Gropius had gone into the Bauhaus without any curriculum; and by W. Allen, who thought it would be unwise to define integrated education in advance because it was a new idea in education. He thought it was a sound thing to commit oneself to an act of faith.

There was some argument about the LCC's reasons for approaching the AA. Brandon Jones said that the LCC wanted to use the AA to get RIBA recognition for the new college: it wanted, he said, the best label on the bottle—"ours is champagne, the others are beer." Leo de Syllas, however, thought the Ministry approached the AA because it valued the AA's tradition and methods of education, while K. J. Campbell considered the Ministry's approach was a compliment to the AA.

On the major issue, what to do about it, Michael Austin Smith urged re-opening negotiations with the LCC as quickly as possible, for he did not think the corpse was dead at all. The chairman having stated that for three months the Council was barred by its byelaws from reversing its decision, Austin Smith suggested that the three

months be used to take a referendum of the members to ask if they agreed with the principle of integration. If they did, the Council should do everything to persuade the Ministry and others that it wanted the new college. Colin Boyne, while agreeing with this proposal, pointed out that he had put his ear to the ground and discovered that three months was a very long time, for negotiations were going on with other bodies. He suggested that it was ridiculous for the AA to cut its own throat rather than break its rigid byelaws.

As the chairman seemed unable to put this question to the meeting (it was supposed to be "informal"), Robert Jordan appealed to members who were in favour of a referendum to show, whereupon nearly every member present raised an arm in support. The chairman said at the end of the meeting that there was no need to take any further votes, as a record had been taken, and the next council would probably consider what had been said.

A feature of the meeting was the large number of students present. On their behalf the chairman of the students' committee, Roy Summers, read out the following statement (the circulation of which the chairman somewhat ineffectively ruled "out of order"):

"1. There is no definite direction or public-stated policy for the AA. This results in a devitalized atmosphere and a feeling of uncertainty as to our future. 2. A lack of dynamic leadership results in student apathy and a breakdown in the democratic running of the school. 3. The AA has the reputation of leading architectural education. Many people both inside and outside the school, feel that this reputation is no longer held with merit. They consider that we are stagnating.

"We feel that we are considering Architecture in vacuo. We want our education integrated not only with other members of the building team, but also with other arts and disciplines (for example, sociology, philosophy and so on). While preserving the vitality which stems from the intimacy and independence of the AA, we wish to avoid the tendency towards the dilettante found in the university schools.

"The need for this sort of integration is apparent to us now. In architecture and planning we are making ad hoc and arbitrary decisions as amateur technicians and production engineers, and as amateur sociologists, etc., all with reference with half-known philosophies that we do not know how to evaluate.

"The Committee resolved to ask the Council to consider the setting up of a Committee, with adequate student representation, to consider the question of the future of the AA, and the type of education necessary to produce the architects we ought to be."

## AA

### Council Elections

The new Council of the Architectural Association is as follows: *President:* H. T. Cadbury-Brown; *Vice-Presidents:* J. M.

Austin-Smith and Edward Playne; *Hon. Secretary:* Anthony Cox; *Hon. Treasurer:* John Lacey; *Hon. Editor:* Leo de Syllas; *Hon. Librarian:* G. Epstein. *Members of Council* (number of votes in brackets): Eric Lyons (541); Leonard Manasseh (529); Denys Lasdun (509); John Smith (485); J. M. Richards (444); B. L. Adams (419); John Broadbent (409); Hilton Wright (390); Peter Newnham (380); Geoffrey Powell (380).

## ROADS COMPETITION

### Finalists in Competition

The five finalists in the Roads Campaign Council competition for a long-term plan of highway development in London are as follows: Jan W. Morrison, Doodlakine, West Australia; J. A. Proudlove, Department of Civil Engineering, Liverpool University; W. K. Smigielski, Rawdon, near Leeds; Dr. Boileau, G. E. Chadwick and D. F. Medhurst, A.R.I.B.A., Town and Country Planning School, Manchester University; P. Brigham, A.R.I.B.A., G. E. Latter, A.R.I.B.A., and B. Mecartney, London. Mr. Morrison is an Australian engineer, who worked in the LCC Planning Division until a few months ago, when he returned to Australia. The finalists receive £250 each. In the final stage, for which the closing date is October 30, the first three competitors will receive additional prizes of £1,750, £750 and £250.

## ABM COMPETITION

### Three Finalists

Three finalists have been selected by the assessors in the first stage of the Associated Builders' Merchants Ltd. competition for the design of ceramic sanitaryware. They are: L. Daniels, A.R.I.B.A., Hanley School of Architecture, John V. Sharp, A.R.I.B.A., London, and Gordon H. Taylor, Wolverhampton. Arrangements will now be made with these finalists for the production of prototypes with nominated manufacturers and the preparation of further preliminary drawings, after which the final awards of first, second and third prizes will be made by the assessors.

## TRUSCON AWARD

### Travelling Scholarship

The 1959 Truscon Travelling Scholarship has been awarded to Peter Whiteley, who is in private practice in London and also lectures at the Hammersmith College of Art and Building. A similar scholarship has been awarded to D. F. Smith, an engineer in Truscon's Liverpool Office. Each scholarship is valued at £125 and will enable the recipients to undertake a continental tour of about three weeks' duration. They will jointly study concrete work with particular reference to collaboration between architect and engineer.



# The future of town planning

by Professor Robert H. Matthew (at the RIBA Symposium)

*"If we architects do not take and hold the initiative in pressing for a new and basic reappraisal of the whole process of planning, no one else will"—Robert Matthew.*

If a strong and effective lead is not given from the top, all our efforts, all our visions will be in vain. To those of us who have been in planning from the pre-war days nothing has been more striking, and at the same time more depressing, than the graph representing the flow and ebb of government support.

We saw, during the war itself, the setting-up of the first ministry of planning; the establishment of a central and powerful group of planners whose job it was to set the theoretical basis for post-war planning. Then came a whole series of plans, local and regional. The stage was set for the start of a great process that would lift this country out of the muddle of a century and a half of random development, into something that in a physical sense might justify our claim to be a great country. Now we seem to be in the Slough of Despond. The real tragedy is that now, when the immediate problems of the post-war years are behind us, and we are able to look ahead, the basic structure, the foundation on which we may build is just not there. There is no broad, comprehensive national plan. The drift south still goes on. The Ministry of Transport, by concentrating all its resources on a motorway system based on London, seems hell-bent on increasing the attractive power of the Metropolitan area. Are the assumptions made in the Barlow Report—published 20 years ago—still valid? We do not know. All is silence at this level of planning.

The central group of technicians—the brains behind Government planning policy—has also been dispersed. Since the publication of the Handbook on the Redevelopment of Central Areas in 1947 we have had almost nothing in this field. Planning, after a gradual demotion among Government departments, has no longer even a titular appearance. If it has gone in the letter, it has gone even more in the spirit. If it has virtually disappeared at national level, it has also vanished at regional level. The theory was that the Ministries themselves would, through their regional offices, provide the regional basis into which local development would fit, but this has also gone.

We have the pathetic spectacle of a great city like Manchester with virtually no virgin land left for housing within its boundaries, thrashing about literally for years for somewhere to take its overspill without, as far as I can see, getting any satisfactory answer. The Secretary of State for Scotland only last year agreed, 15 years after Abercrombie gave the facts, that an overspill of 300,000 people from Glasgow—one quarter of the total population—is inevitable and redevelopment is now proceeding on the basis of this quite staggering figure. What is altogether absent is the national or even regional plans that Abercrombie called for to cope with the implications, in terms of economic balance and industrial location, of this relatively enormous shift and spread of population. Urban renewal, under these circumstances, while im-

proving local slum conditions, looks like building up formidable trouble for the future, and in fact is creating more new problems than it is solving.

So, too, with those towns, and indeed whole regions, that no longer attract new enterprise. They are the very towns most in need, if they are to continue in existence at all, of renewal. Private enterprise here will not touch redevelopment. Normal resources from the local authority are entirely inadequate, and there is no sign that any special funds are likely to be forthcoming from the Treasury. To talk about urban renewal in any real sense under these circumstances is surely unrealistic. Such towns are doomed to piecemeal patching as long as their economic future is uncertain. With the drive and impetus gone from the top the opportunity has not been taken to develop the machinery of planning itself. It has remained static. Creating, by planning, a new environment involves new techniques, new ways of taking the initiative, of making others take it. Above all it needs imagination and enterprise, breaking ground in many directions. The deliberate creation of a new environment is a new process: it will not be attained by old methods. Planning means inter-relation and integration; but the great machine of government is geared to separation.

We have 28 University towns. If, in each of these, a Department of Urban Renewal worked through a programme of research, and if these were co-ordinated, the range of problems facing planning authorities today might well have some answers in a short time. If each such department had always in hand a redevelopment area to work out in detail, the techniques of renewal would take a considerable step forward. I hope one result of this Symposium will be heavy pressure on the Government to set up again its central research and development group on urban redevelopment. Speed is the essence of the matter. Our obsolescent areas will not stand up much longer. The demands of traffic are forcing action in terms of urban motorways, flyover junctions, grade separation of traffic, and the like. It seems certain that in the next decade very large sums of money will be spent on palliative measures to make the traffic flow. The question that has by no means been clearly answered is whether these traffic measures will be part and parcel of a considered plan for urban renewal; past experience of road works does not give us much reassurance, and the absence of a co-ordinating ministry of planning with adequate powers may well be disastrous. We cannot leave the situation as it is, and I believe that if we, as architects, do not take and hold the initiative in pressing, by every means in our power, for a new and basic reappraisal of the whole process of planning, then no one else will. Urban renewal will remain an empty phrase, and there will be no future for our towns and cities. I suggest that none of us can, or should, accept that possibility.

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## RIBA SYMPOSIUM

*"The Living Town"*

*In conjunction with the SPUR exhibition on "Better Towns for Better Living," the RIBA organized, on May 22, a symposium on "The Living Town." Its aim was to launch a national drive for the renewal of the outworn inner rings and central areas of our towns and cities. A summary of Professor Robert H. Matthew's important paper on "The Future" appears on the opposite page, and a report of the symposium begins below.*

Nobody could call this a conference of optimists. Despite the exuberance of Percy Johnson-Marshall and the wit of Sir Hugh Casson, the more important speeches struck a sombre note. If the conference, nevertheless, contrived to be optimistic, it was because it did not take the easy way out of glossing over the difficulties and singing revivalist hymns about planning. Its success was due to the fact that it dragged the difficulties out into the light of day, and showed ways in which it might be possible to solve them.

BASIL SPENCE, in a brief opening speech, disarmed anybody who might have been jealous of architects by emphasizing that, because no one profession could master all the mysteries of planning, they must collaborate. He also warned that the movement was doomed to failure unless planning could win public favour by stressing its constructive rather than its negative side. SIR WILLIAM HOLFORD, as usual a suave and capable chairman, brought the conference at the outset up against the fact that the living town could so easily become the dying town. The world was full of dying towns, which had lost the point of their existence, and the town would go into slow but inevitable decline unless people like themselves took the trouble to overcome the very real difficulties of urban development.

PERCY JOHNSON-MARSHALL then administered what Holford called "shock treatment by our leading psychiatrist," putting the audience "into the picture" with two projectors, illustrating the problems created by the legacy of the past. One of his most valuable comments was that the difficulties to be overcome are to be found not only on the ground but in the minds of the people to whom planning was still a new idea.

The morning session on "Experience in Practice" was opened by ARTHUR LING, who illustrated his paper with slides on the reconstruction of Coventry city centre, and drew the moral from Coventry's experience that unless all aspects of city design were united under one committee and one department, time was wasted on conflict instead of being spent on design. Even more important, the Council should be enthusiastic for comprehensive planning (though he could count such authorities on the fingers of one hand) and once a decision had been made to design and rebuild comprehensively a new sense of purpose was given to local government. But to give the town planner the job of trying to co-ordinate in-

numerable small-scale design efforts into something worth while, using the very blunt tools of a zoning map and a series of regulations, was absolutely impossible.

The starting point for a re-integration of the design effort was, he believed, comprehensive landownership, although municipal ownership of land did not mean excluding private enterprise. Leasehold control gave the local authority powers to enforce a comprehensive scheme in a way that was impossible under town planning powers. Enforcement, however, was only a last resort: the aim was to achieve co-operation, so that all concerned felt they were contributing their own more brilliant ideas to the creation of an overall design.

Mr. Ling explained that in Coventry the slum clearance drive had accentuated the movement outwards instead of leading to central area development because the only accommodation for displaced tenants was in the suburbs, while the areas produced by slum clearance were rarely large enough for comprehensive development, and rigid tidiness in zoning had reserved the centre almost entirely for commercial and civic buildings. The plan now provided, however, for blocks of flats and other residences in the centre, for which there was a growing demand.

Another big problem in Coventry mentioned by Mr. Ling was the pressure by private builders for zoning more land for housing in the green belt, because most of the land zoned for building in the outskirts had been used up, and the price of land had soared to two or three times the level of a year ago. To safeguard the green belt, and give the builders a positive outlet elsewhere, Mr. Ling suggested that their energies must be harnessed to the renewal of the older areas at the centre.

Mr. Ling then explained the financial difficulties that were slowing down development in the two comprehensive redevelopment areas of Hillfields and Spon End, which will be completed in 577 years at the present rate of progress. Fifty-six dwellings at Willenhall Wood, on the edge of the city, cost £69,888, the same number of multi-storey dwellings with similar accommodation near the centre at Hillfields would cost £124,259. In this particular case site costs are low, and as it is a blitzed site no demolition or rehousing are involved, so that on an average central site costs would be about 100 per cent. higher. Charging economic rents would force the tenants to leave the area in which they had been living. Meeting a large

rate deficit was not an attractive proposition, so the council, feeling it had to do something, proceeded at a snail's pace. A programme to built 250 dwellings a year and complete the scheme in 10 years had been drastically curtailed when the effect on the rates had been more precisely calculated. The financial position would become worse when all the slums had been demolished in two or three years, for all housing would then be without subsidy except one-bedroom flats and bedsitters.

From this analysis of Coventry's difficulties Mr. Ling drew the lesson that assistance and guidance were required from the Ministry of Housing and Local Government if they were to make a success of urban renewal. To this end he made two suggestions. The first was that a dramatic change could be effected overnight if the government announced that housing subsidies were to be introduced for all comprehensive development areas approved by the Ministry. The second was that the Ministry should set up a planning development group, parallel to that now set up on the housing side, which would take an actual town like Warwick or Burnley, and get to grips with all the difficulties involved in collaboration with the local authority.

The very different problems of Norwich were discussed by its City Architect, DAVID PERCIVAL. He showed a slide of a piece of waste land beside a medieval church on which the City Engineer (who is responsible for planning) wanted to put a multi-storey car park, and another of a suburban road that was treeless because the Parks, Housing and Roads Committees could not decide whose responsibility it was to plant trees. Two other slides, intended to show what could be achieved by architectural control, only impressed the writer with the dismal character of the achievement when compared to the agreeable Georgian house that had been destroyed.

PETER CHAMBERLIN after describing the new circulation patterns at different levels in the Barbican plan, emphasized that it had only been possible to adopt the principle of segregation because of the scale adopted. He had two main points. The first was the need to resolve the jealous conflicts between a multiplicity of committees and authorities. A multiplicity of administrative boundaries, he said, was being substituted for a multiplicity of property boundaries and no progress would have been made in the Barbican if the City had not set up the Barbican Committee to co-ordinate the conflict.

The second was to suggest that some sort of insurance policy (to guarantee courageous authorities against the consequences of mistakes) could lead to solutions instead of tinkering. Mr. Chamberlin argued that because it took people a long time to get used to unfamiliar ideas, and because the solutions to many 20th century planning problems were unfamiliar (e.g., the idea that roads and pavements were anachronistic) the absence of full-scale precedents was holding back progress by 20 years. Once a radical solution for urban renewal had been postulated, and on examination at the national level held out some possibility of

being the best solution, it should be tried out.

SIR HUGH CASSON, began his talk on "Town Sense," in the afternoon session, with a characteristically irrelevant piece of advice on lifemanship: ask your neighbour at dinner how much he pays his forester, and you've got him at your mercy. He spoke primarily to the laymen, shot a few sacred cows ("Brazilia and Chandigarh are tombs for civil servants") and made many excellent detailed points, which really put a new gloss on the planning method of survey, analysis and plan. The principles were, he said, to get out of the committee room and know your city as well as your own sitting room; to work with the town and not against it, evaluating the information to enrich the town's personality. He advised avoiding arguments about taste, never trust to reason ("it never gets you anywhere in this country"), and seeking judgment not justice ("the essence of town planning is being unfair").

His best piece of advice, however, was that if councillors wanted to make themselves loved they should make sure that every object owned by the municipality was first rate in design and colour.

The most disappointing part of the symposium was "the local government team in action," in which RICHARD EDMONDS, chairman of the LCC Town Planning Committee, and HUBERT BENNETT, Architect to the LCC, were the speakers. Neither of them really discussed the subject allocated to them, although Mr. Edmonds got nearest to it. He deplored the Ministry of Transport's proposal that roads in London should be "divorced from the planning authority," and insisted that teamwork must be based on the planning authority. In the LCC, he said, the planning committee was the roads committee. He emphasized, too, that if anyone was going to re-create the towns it was going to be the elected representatives, whose duty it was to push for what the technicians were asking. Mr. Bennett spoke principally on his recent visits to Poland (where city planning is part of regional planning) and Caracas.

The discussion, as so often happens, tended to concentrate on a single remark made by a speaker, in this case Arthur Ling's statement that "it isn't really civilized to throw open one's city centre to the highest bidder." W. L. WAIDE, the Cambridgeshire Planning Officer, defended the competition between developers for the Lion's Yard, Cambridge, which would result, he said, in a profit to the town not only in money but in the facilities available. The result of going out to eight firms was a better solution than would have been got in the first place: three schemes were better in terms of cost than the one accepted, two were rejected for bad design, and one for bad planning. But he admitted that while, in his view, justice had been done, justice had not been seen to be done. There should have been a much clearer statement of the reasons why the particular development was selected. HUBERT BENNETT then referred to the well-known dangers of this technique when



*The Careers Exhibition at Olympia designed by Eric Lyons and Hulme Chadwick*

bids were invited from six or seven speculative developers. It was very difficult for the committee to accept a loss of £500,000 over 99 years on architectural grounds. It was very easy for the Finance Committee to say "surely the recommended firm will produce something satisfactory," but some of the firms did not take a keen interest in architecture, and did not have very good architects; one could not get a good building from bad architects however much one helped them. SIR HUGH CASSON sensed the danger of "a centralized army boot marching over England," because so many of these jobs were being done by people who were not personally involved in the town, and employed an architect who hadn't time to take note of its particular quality. The planning committee had to make absolutely certain that the people designing it had some affection for the town.

MAX LOCK explained how the private developer was being given a chance at Sevenoaks.

WALTER BOR, an LCC architect-planner, said that after spending 12 years and almost breaking his heart trying to achieve comprehensive redevelopment in the east end he felt that they had failed to tackle the "hard bits," the frontages. While welcoming Arthur Ling's suggested subsidies for CDAs, he also urged a return to the 90 per cent. grant for CDAs and setting up a central government fund. The conference was summed up by Lionel Brett.

## CAREERS EXHIBITION

### *Lively Presentation*

Eric Lyons and Hulme Chadwick claim to have achieved a record low cost for exhibition design, with the light, prefabricated framework they have used for the Education and Careers Exhibition, organized by the National Union of Teachers at Olympia this week and next. Working to a 12 ft. 9 in.

module they have used steel scaffolding to support a single type of pin-up board paneling, the cost working out at 18s. 6d. per square foot of exhibition space. "Fantastic," said Hulme Chadwick. "Even in the '30's you expected exhibition stands to work out at 35s. a foot."

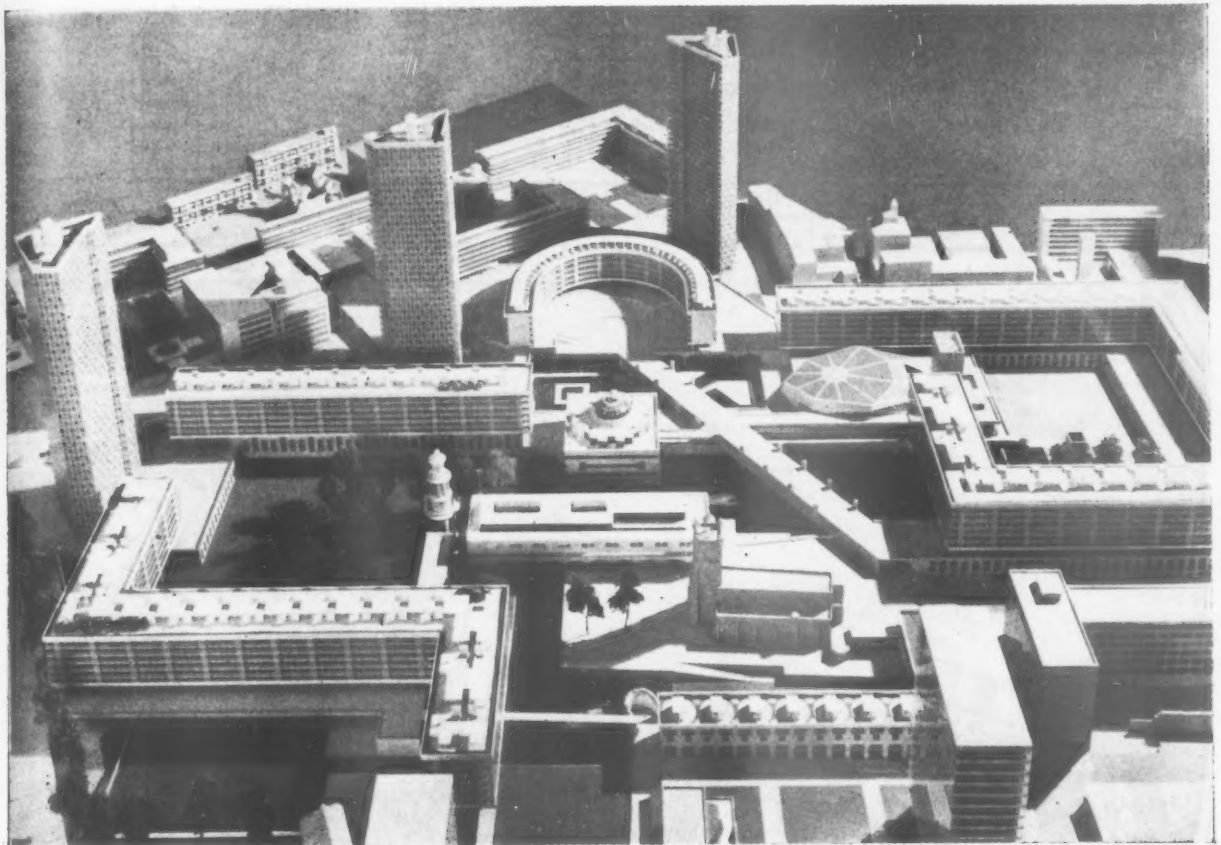
Using this framework they have, in the first place, given logical shape to a most complex brief—"it was as thick as a dictionary," according to Mr. Chadwick, and his whiskers twitched like antennæ as he recalled it—outlining a route through which one hopes thousands of inquiring parents and children will first pass through a section vividly summarizing life in the state schools today, from infancy to the GCE, and then direct them towards the particular careers of their bent.

In the second place this frame provides the wallspace for an exhibition of school work of staggering quality and variety, explained with admirably clear, brief legends, and the background to a daily series of live demonstrations by some 7,000 children, students and teachers, who are presenting plays, choirs, bands, films made by children (they have such promising titles as "The Mysterious Parcel" and "Fat Fred"), Morris dancing of course, and—even more interesting—arithmetic lessons.

Architecture as a career is regrettably little presented here. (Compare the high-powered salesmanship of the "Careers in Laundry Work" stall: no longer is the washerwoman the most oppressed of beings, the very word has disappeared.) I did find "Architect," however, listed on an ingenious button board, along with "Physicist" and other noble professions, and eagerly pressed the architect button. A series of arrows lit up, leading through a maze of alternative routes to a red light at the top. Beside the lowest arrow I read with surprise "Two-year corsetry course"—then realized that these words were not illuminated but were to be skipped by those en route for the Presidency of the RIBA.

S. L.

## DETAILED PROPOSALS FOR THE BARBICAN REDEVELOPMENT

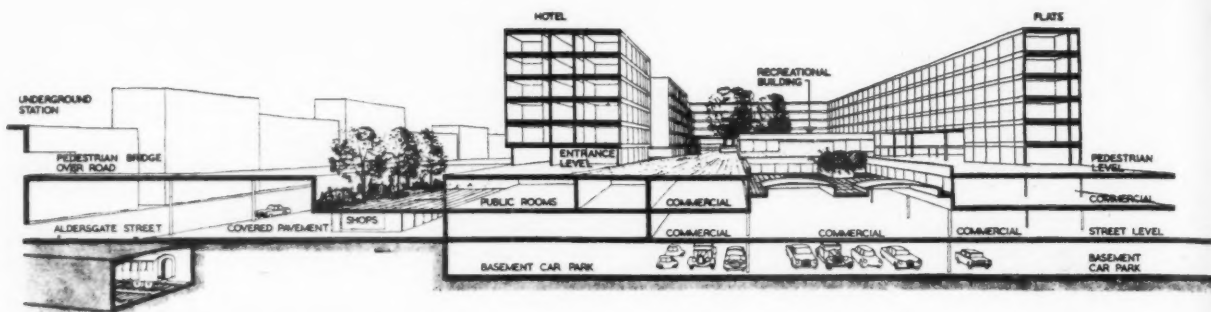


Chamberlin, Powell and Bon set out to design the Barbican redevelopment area as "a coherent residential precinct in which people can live conveniently and with pleasure," and that intention has unquestionably been achieved. It is now under consideration by the Court of Common Council and no less than four committees of the City of London Corporation. Undoubtedly it is an architectural success, the dual circulation system being the most interesting part of the scheme. Accepting the principle that pedestrian and vehicular traffic should be divorced from one another, a number of problems presented themselves from the outset, among them the necessity for the realignment and decking over of the Underground railway line between Moorgate and Aldersgate stations to prevent disturbance to Barbican's future residents. An earlier plan proposed that road traffic should by-pass the area altogether, but it was made clear that this would not be acceptable as a solution, and the City Engineer favoured a more direct route running roughly north and south through the centre of the site. The site is already split into two sections, one to the north and the other to the south of Barbican and to have split the layout further with a main road would have proved disastrous. A formal lake with a totally enclosed roadway bridging it, the latter carrying a pedestrian causeway on top, is the proposed

solution, and a good one, not only because it prevents the threatened split but because it adds to the amenities of the area. Access roads to the various buildings are also separate from pedestrian walks and parking space for about 2,600 cars is provided at ground and basement level. This is a very high proportion of covered parking space but considering the class of tenant being catered for and the relief it will bring to the City parking situation it cannot be called extravagant. The project incorporates the construction of 2,150 dwellings in the form of flats and maisonettes, ranging in size from one to five rooms, and in rent from £190 to £575 per annum. This does not include general water rates, heating or internal repairs, and a rough estimate of the cost of these for a five room flat is £70 a year. The accommodation is mostly in blocks of six storeys, but also in three tall blocks, 37 storeys high. The six-storey blocks stand on podia which carry the pedestrian access walks, and underneath are the main parking areas. These blocks are arranged to a scale and with a feeling comparable to traditional London squares, and particular attention has been paid to the landscape treatment of the ground between the buildings, including extensive lawns, tree planting, the lake, paving and decorative planting. The three 37-storey blocks, along with the 18-storey buildings to the south, serve to offset



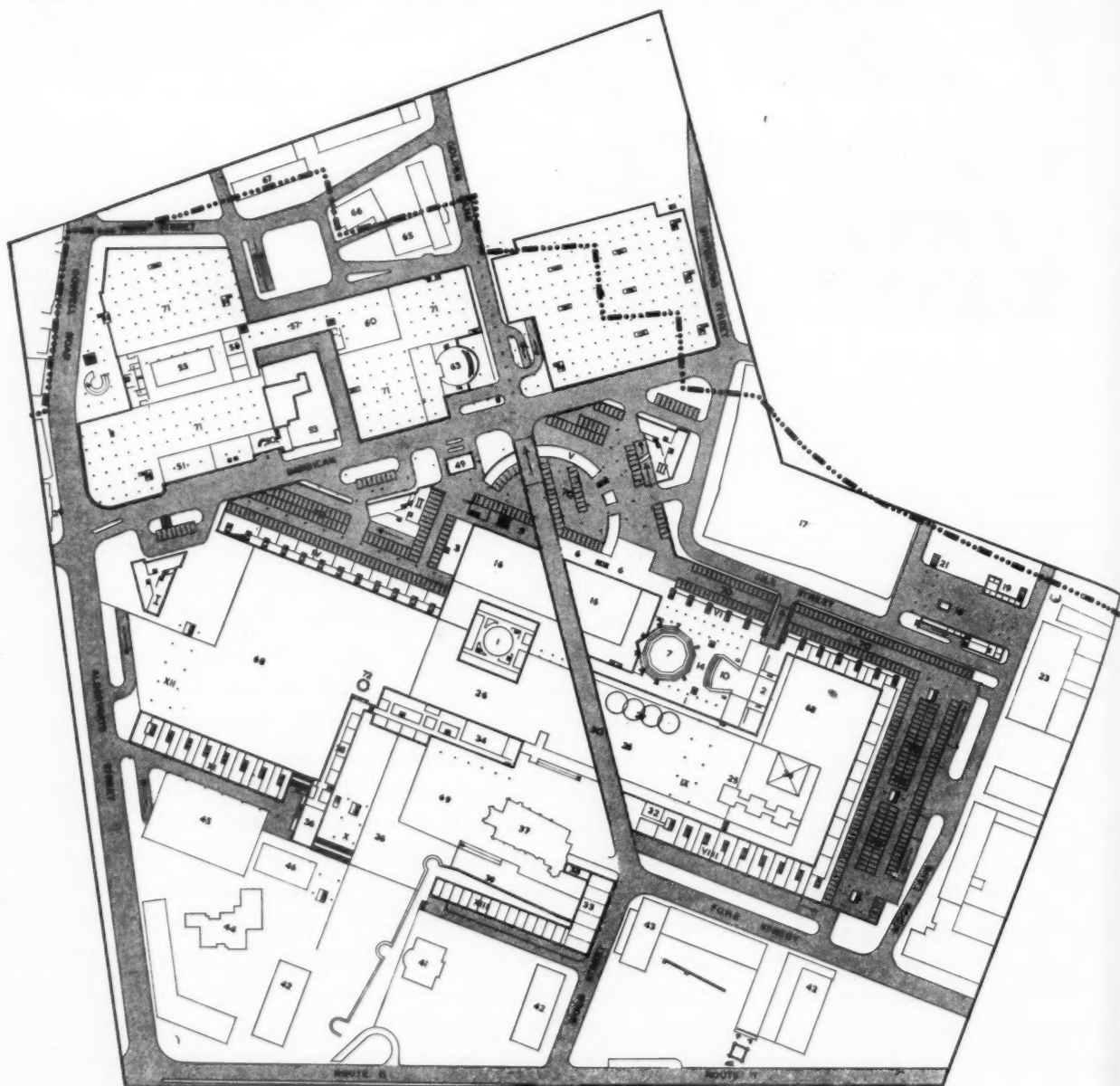
# DETAILED PROPOSALS FOR THE BARBICAN REDEVELOPMENT.



Section showing principle of multi-level circulation

- I. 37-storey flats
- II. 36-storey flats
- III. 35-storey flats
- IV. 5 storeys of flats with maisonnettes above and two-storey houses underneath the podium
- V. 4 storeys of flats with maisonnettes above the 2 storeys of flats under the podium
- VI, XI. 5 storeys of flats with maisonnettes above and 3-storey houses under the podium

- VII, VIII. 5 storeys of flats with maisonnettes above and 2 storeys of flats under the podium
- IX, X, XII. 5 storeys of flats with maisonnettes above
- XIII. Terrace of 3-storey houses
- XIV, XVI, XIX, XX. 6 storey flats with pent houses above
- XV, XVIII. 6 storeys of maisonnettes and one floor of flats
- XVII, XXI. 4 storeys of maisonnettes with penthouse above.



- KEY
- 1. Guildhall
  - Mus.
  - 2. Dicto
  - 3. Libran
  - 4. Shops
  - 5. Galler
  - 6. Art ga
  - 7. Conce
  - 8. Open
  - 9. Under
  - 10. Theat
  - 11. Dram
  - 12. Fly co
  - 13. Resta
  - 14. Foyer
  - 15. Amph
  - 16. Arts
  - 17. White
  - 18. Fire st
  - 19. Weigh
  - 20. Coron
  - 21. Civil
  - 22. City
  - 23. 27-sto
  - 24. Conse
  - 25. Wate
  - 26. The la
  - 27. Fount
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  - 30. Enclor
  - 31. Pedes
  - 32. Public
  - 33. Electr
  - 34. City
  - 35. Dicto
  - 36. Dicto

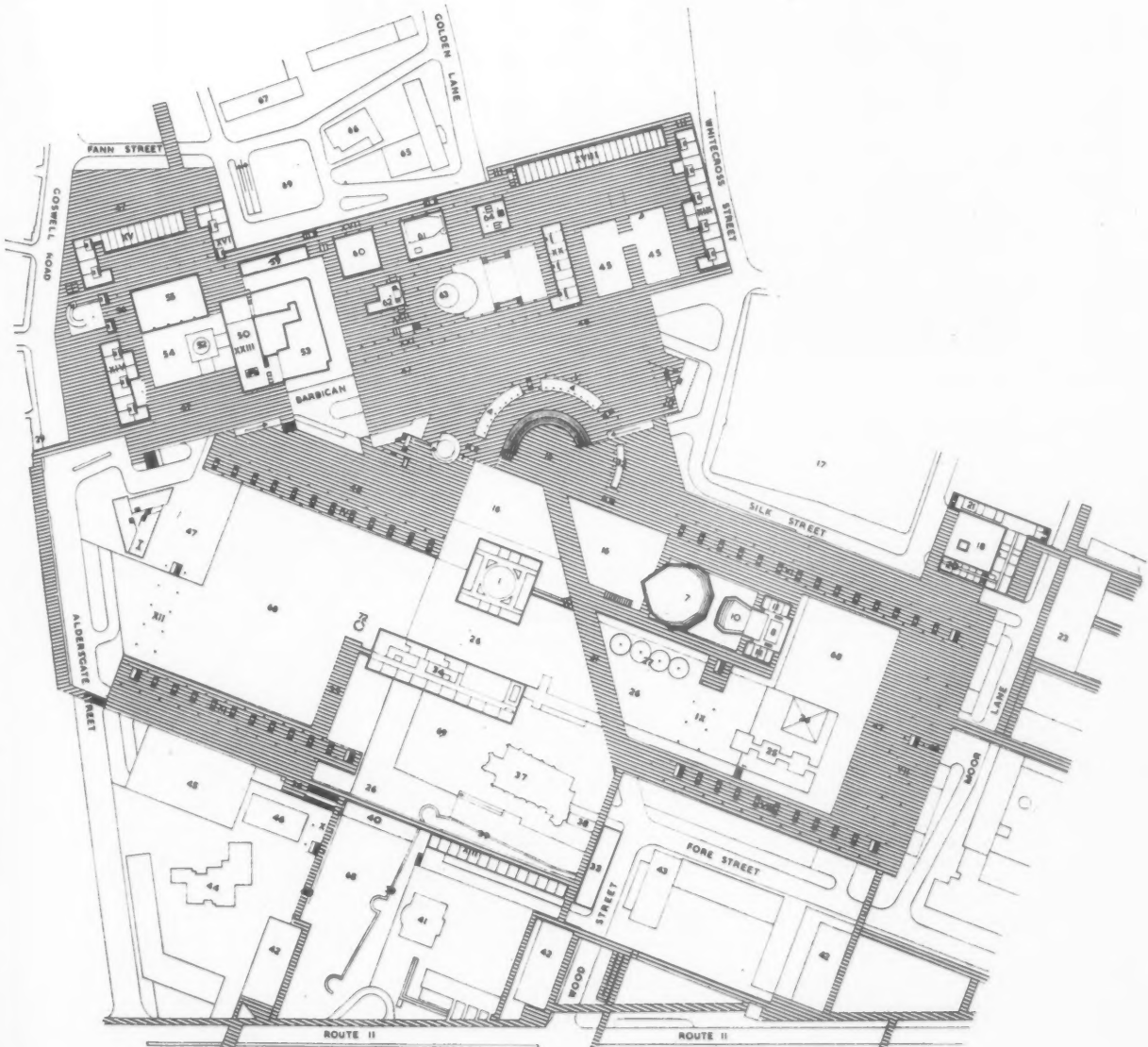


# T: MULTI-LEVEL CIRCULATION

## KEY

1. Guildhall School of Music and Drama
2. Ditto—Drama school
3. Library
4. Shops
5. Gallery for Lord Mayor's coach
6. Art gallery
7. Concert hall
8. Open-air stage
9. Understage
10. Theatre
11. Drama studios
12. Fly tower of theatre
13. Restaurant
14. Foyer
15. Amphitheatre
16. Arts Centre court
17. Whitebreads Brewery
18. Fire station
19. Weights and Measures Department
20. Corner's court
21. Civil Defence school
22. City Greenyard and mortuary
23. 27-storey office block
24. Conservatory
25. Water garden
26. The lake
27. Fountains
28. Underground railway station
29. Enclosed viaduct
31. Pedestrian causeway over viaduct
32. Public house
33. Electricity supply station
34. City of London School for Girls
35. Ditto. Preparatory school
36. Ditto. Gymnasium
37. St. Giles' church
38. Vicarage
39. London wall
40. Pedestrian footbridge
41. Barber Surgeons' Hall
42. 18-storey office blocks
43. Roman house
44. Ironmongers' Hall
45. Tennis courts
46. Games court
47. Podium terrace
48. Podium over garages
49. Petrol filling station
50. Hotel
51. Hotel conference hall
52. Hotel restaurant
53. Existing office building
54. Garden court
55. Swimming pool
56. Roof of swimming pool, restaurant and cafe
57. Physical recreation building
58. Squash courts
59. Badminton courts
60. Gymnasium
61. Recreation building
62. Hostel
63. Cripplegate
64. Cripplegate Secretarial College
65. Metropolitan Police section house
66. Jewin Methodist chapel
67. Golden Lane estate
68. Lawn
69. Paved court
70. Covered car park
71. Commercial
72. Tower (Coal Exchange)

the mainly horizontal treatment of the main scheme. The area to the north of Barbican has been approved as suitable for comprehensive general development and in the northern part of the scheme the podium extends across a part of Barbican and over a re-aligned Golden Lane and separates the pedestrian area and flats above from commercial development below. In an earlier scheme the three tall blocks were rectangular in plan, but it was considered that this would create monotony, both in looking at the flats, and from them. An irregular polygonal plan has therefore been evolved, although at the cost of introducing some awkwardly shaped rooms in the flats within. One five-room and two four-room



Plan showing pedestrian circulation

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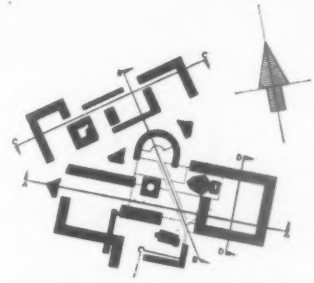
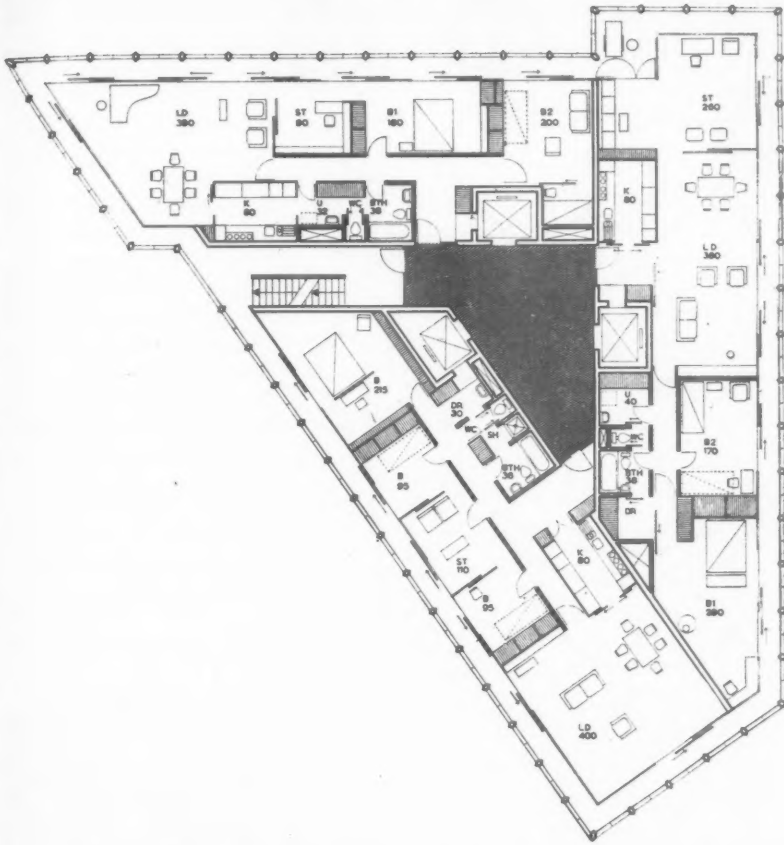
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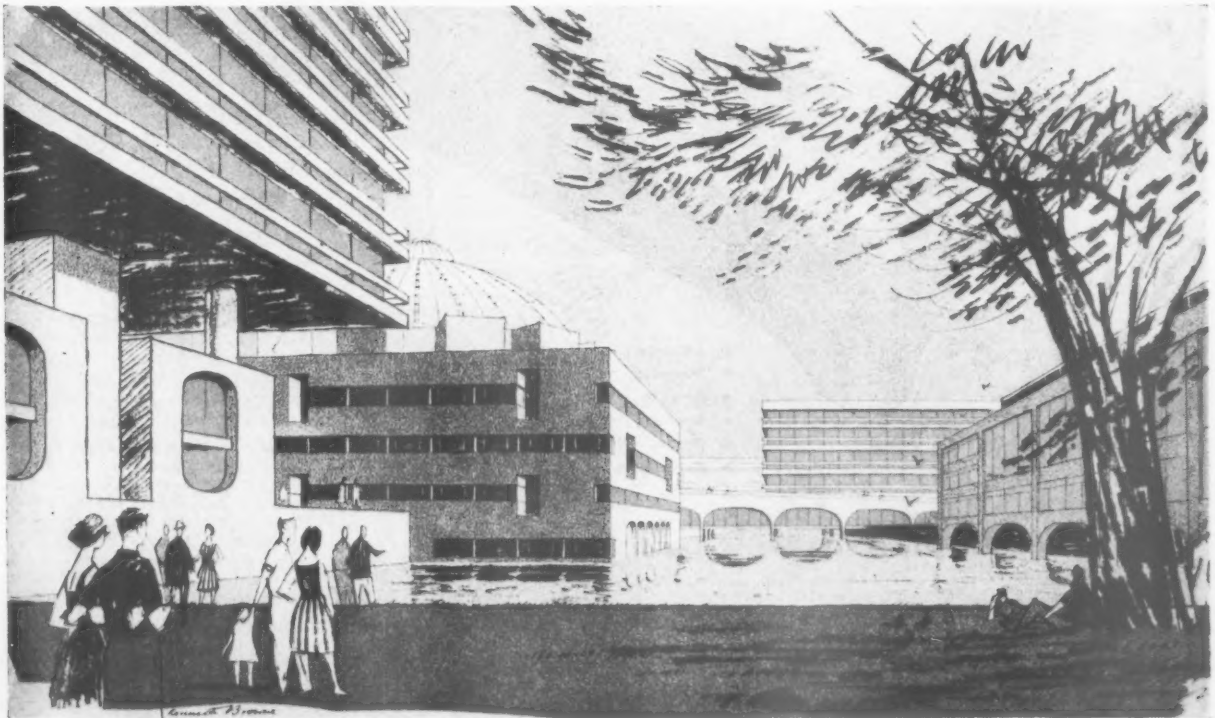
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# PROPOSALS FOR THE BARBICAN REDEVELOPMENT: continued



Above, block plan showing main axes of site. Left, typical plan of 37-storey block. [Scale:  $\frac{1}{16}'' = 1' 0''$ ]

flats will occupy each floor of these blocks. Whether the polygonal rooms within must be a matter of opinion. By reason of their exterior form has sufficiently enhanced the aesthetic appeal of new shape, the blocks are given relationship to the buildings of the whole scheme to more than compensate for some oddly shaped over which they tower and to the two main axes of the site. They

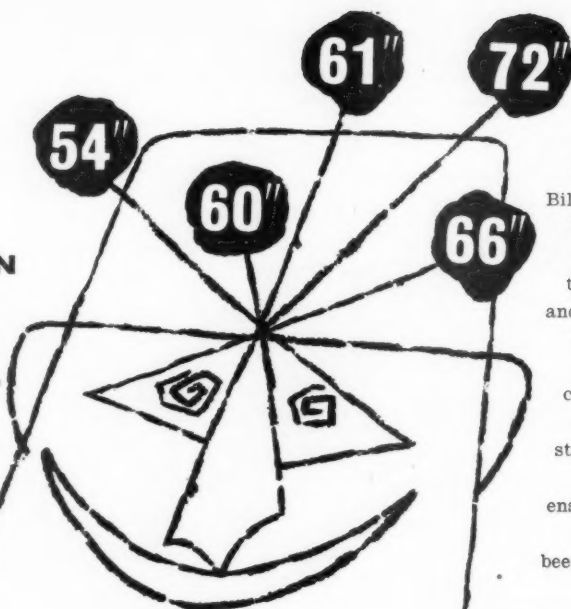


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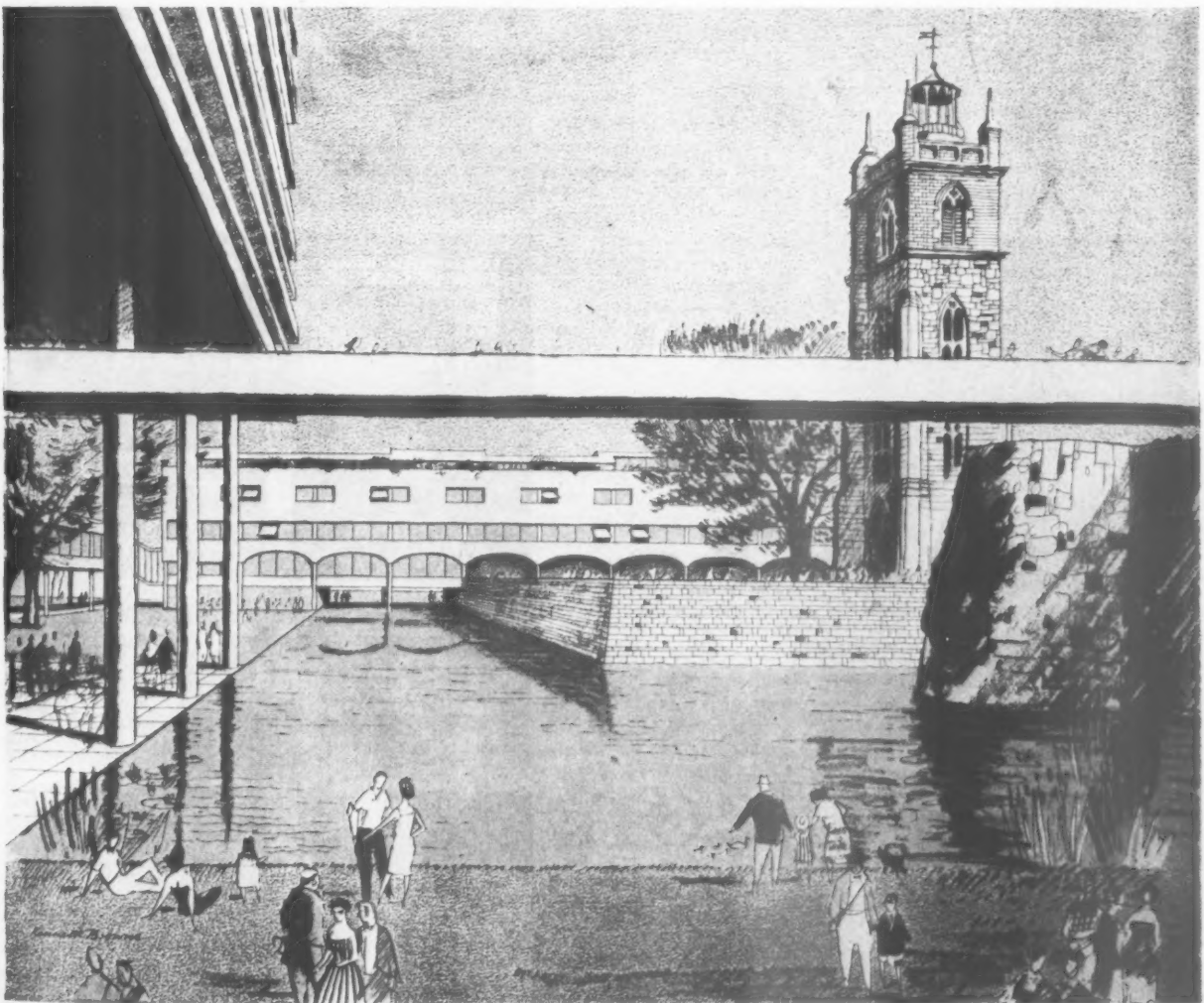
Bilston Foundries Ltd Bilston · Staffordshire · Illustrated literature is available on request



## PROPOSALS FOR THE BARBICAN REDEVELOPMENT: continued

will help to provide a continuously changing view for people moving about in the precinct. Thirty-seven storeys put these blocks well in the London race for the sky and will serve to give the district identity from afar. Besides the purely residential buildings, the design has provided extensive amenities. An arts centre is planned, focused on the new Guildhall School of Music and Drama and including a theatre, concert hall, art gallery, public library and restaurant. There is provision for sports such as swimming, squash and tennis. Among the existing buildings on the site at present is the old Coal Exchange: this has to be pulled down to allow for the widening of Thames Street, so the architects propose to re-erect the cast iron rotunda to form the central concourse of the Music School (p. 838). Just south of this will be the new City of London School for Girls (below), which is sited close to St. Giles' church, another of the original buildings that have been spared. Other new buildings in the scheme are a group of shops, a hotel, a hostel with 100 bed-sitting rooms for students of the Guildhall School, a fire brigade station, city

mortuary, coroners' courts, City Greenyard and, as a future development, new buildings for the Cripplegate Institute. If this scheme for the Barbican area is ever realized it will undoubtedly be the pleasant place to live as envisaged by the architects, who have produced a scheme full of imagination and bright ideas. And yet the Barbican scheme has already provoked protest as well as approval, and questions which call for an answer. For here, in one of our most important schemes for urban renewal to date, is a local authority proposing to carry through a housing programme accompanied by outstandingly good amenities of all kinds, which can only benefit people in the high income groups who are already perfectly capable of fending for themselves. The question arises, is this the only way in which the rebuilding of our city centres can be financed under existing conditions? If not, then the choice of providing luxury dwellings instead of flats for some of those on London's long housing lists, is discreditable to those who made it, but if the decision was unavoidable, there is a deeper and more widespread evil to be faced.



# Precast floors for all purposes



TYPE HW precasted T beam and hollow tile

\* lightness means speed and economy

\* designs for all load conditions

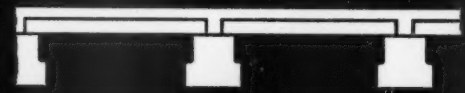


TYPE 1 precast unit with open soffit



TYPE 3

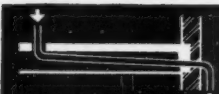
a long-span prestressed development



TYPE RW precasted T beam and precast panel

\* up to 4-hour fire resistance

\* any type of ceiling can be fixed



\* open soffits accommodate services with ease



TYPE 2 precast unit with suspended timber tread

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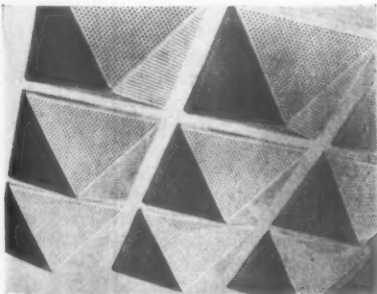
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## THE INDUSTRY

*From the industry this week Brian Grant describes a range of decorated asbestos cement sheets, sound absorbing tiles, key cupboards and a new gas water heater.*

**Asbestos cement sheets**

The latest leaflet from Turners deals with Granitone decorated asbestos cement sheets, which are available in a range of nine different colour combinations, and which are suitable both for internal and external use. The finish is applied during manufacture and is claimed to be proof against any tendency to laminate, crack or splinter: the sheets are suitable for panel wall infillings, internal partitions, bathroom panels, kitchen linings or shop fronts. The sheets are produced in standard sizes of 8 ft. by 4 ft. and in thicknesses of  $\frac{1}{4}$  in. and  $\frac{1}{2}$  in., and cut sizes can be supplied to order. A full range of anodized aluminium fixing strips is made for use where the fixings must be concealed. (Turners Asbestos Cement Co. Ltd., Trafford Park, Manchester, 17.)



A group of Marley acoustic pyramids.

**Sound absorption**

The Marley Group has recently introduced a pyramidal acoustic absorber made from rigid p.v.c., perforated and filled with mineral wool. The base of each pyramid is 22 in. square, including a  $\frac{1}{4}$ -in. flange, and

the apex height is  $8\frac{1}{2}$  in. At frequencies of 1,000 c.p.s. the pyramids have a sound absorption of 95 per cent., and for all frequencies from 125 to 2,000 c.p.s. the figure is over 60 per cent. Installation is simple: a spiral spring fixed inside the pyramid apex is attached to a hook in the wall or ceiling, so that there need be no interference with existing fittings, and the layout can be quickly modified if conditions change. The p.v.c. is produced in a range of colours and needs no decoration, though it can be painted if necessary without loss of acoustic efficiency. The makers maintain an advisory service to suggest layouts for all types of installation. (The Marley Group, Sevenoaks, Kent.)

**Hotel equipment**

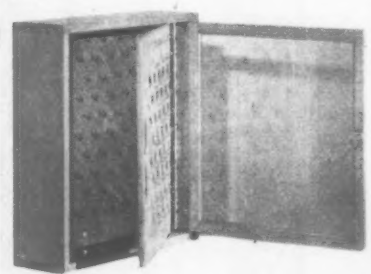
The illustration above, right, shows one of a range of key cupboards which are made with one or two leaves to hold up to 250 keys. Prices vary from £10 for 50 hooks to £16 for 250. The cupboards can be supplied with numbered discs in various colours and corresponding key rings. Cabinet dimensions are  $23\frac{1}{2}$  in. high and 22 in. wide, while the depth of the two-leaf model is only  $6\frac{1}{2}$  in. (D. Matthews & Son Ltd., 61, Dale Street, Liverpool 2.)

**New small multi-point**

A new small sink or multi-point instantaneous gas water heater called the Princess has just been announced by Robinsons of Liverpool. With a gas consumption of 75 cu. ft. an hour, the main difference between this and other heaters is that there is a control for the water outlet temperature, which can be set to any temperature from 105 deg. to 165 deg. F., and will not vary more than 5 deg. either way irrespective of variations in water pressure. Output varies from 27 to 50 gallons an hour according to temperature, and the heater can be used as a sink unit with a swivel spout, or as a multi-point supplying basins or showers. Price is £14 12s. 6d. and the standard finishes are cream or white. The design consultant was J. Beresford Evans. (J. H. Robinson & Co. (Liverpool) Ltd., Mill Lane, Old Swan, Liverpool 13.)

**Correction**

On April 23, reference was made in these notes to the prefabricated buildings produced by Coseley. The spans of their standard portal frames should have been given



A key cupboard by D. Matthews & Son Ltd.

as 30 to 100 ft. in 10-ft. increments. It should also have been added that their aluminium buildings for export are produced in 20-ft. as well as in 10-ft. spans. (Coseley Buildings Ltd., Lanesfield, Wolverhampton.)

The Aintree Princess Multi-point gas water heater.





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## technical section

INFORMATION  
CENTRE

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

## 10.179 design: building types

## FACTORIES FOR LIGHT INDUSTRY

*Modern Multi-Storey Factories.* A discussion of their design by W. A. Allen. HMSO. 2s. 6d.

This is a significant publication as there has been no authoritative data readily available to industry on factory design.

It was to meet this obvious need that the Factory Building Research Committee was set up in May, 1956. A programme of research is at present being carried out in three main divisions: 1. Building planning and design. 2. Building performance. 3. Building costs.

Series of notes are to be published on individual aspects of the study as the work is completed. These publications are being written primarily for factory managements and architects, and have as their object the listing of the factors to be borne in mind in planning new factories, the assembling of factual data, and the provision of guidance on the standards that are needed and the various means by which they may be attained.

This publication, the first in the series, is designed to be read by both client and architect. An architect has to provide for and to satisfy in a co-ordinated whole, a wide variety of requirements. He is faced with a mass of technical data, and his task will be considerably eased if the information available can be assembled in a convenient form and put into perspective. As regards the client it is, as the Preface to this publication points out, "a truism to say that the efficiency of a building in use depends on the brief of requirements or programme set out by the client."

There are no standardized designs in this booklet, since this is not the object of the study. There is, however, a most useful discussion on many of the fundamental principles which affect factory design, whether single or multi-storied, and having read it, an architect will have ready in his mind a multitude of arguments to put to a client who does not appreciate the problems involved, and whose idea of a brief is to state laconically "Give us the space, we'll put in the rest." Conversely no client who had read this publication could possibly bring himself to instruct his architect in such terms. Although there are only a few new facts in this study, it is of immense value in bringing the architect and client into close

and sensible collaboration at the outset.

15.143 materials: applied finishes and treatments  
VARNISHES

*Exterior Clear Finishes for Timber.* Advisory Service Leaflet No. 8. TDA Free.

Gives results of tests on proprietary products, dividing them into three categories. Those in category A are estimated to be capable of a life of at least 1½ years on oak and two years on Western Red Cedar if applied in three coats. Those in category B give one year on oak and 1½ years on cedar. Those in category C require five coats to give at least one year's life on oak and four coats to give the same on cedar. None seem to show up very well.

18.203 construction: theory  
DESIGN OF ROOFS

*Wind Effects on Roofs.* BRS Digest 122. HMSO, 3d.

This digest sets out to fill the alarming gap in our knowledge on roof design brought to light by the Hatfield catastrophe. After discussing the effect of wind generally, the Digest reviews the data given in BS Code of Practice CP3 Chapter V (1952). After quoting the four typical exposures given in the Code, the writer says: "Designers must obtain more information about the particular site before deciding on the wind velocity to be assumed." He then suggests that the LA will give this information—surely a forlorn hope. Meteorological records usually give the mean velocity of wind per hour: 10 m.p.h. should be added to this to give the mean velocity per minute which is the criterion adopted in the Code.

Having got your maximum wind velocity and thence the basic wind pressure (p) in lbs. per sq. ft. for different roof heights, you are then in a position to obtain a figure for different roof slopes. Different figures will apply to the main structure, to the roof covering and to the fastenings for the covering. A weakness of the Code was that it assumed that the wind would always blow normal to the eaves (!). Common-sense suggests that it doesn't and experiments in wind tunnels show that the highest pressures are set up when it blows on to the corner: indeed, at points near the corner the pressure may be as much as five times the basic pressure. This becomes more serious in lightweight roofs as these have less weight to hold them down and respond to gusts of shorter duration. The recommendation in the Digest is that the wind pressures in the Code should be generally accepted, but that a standard value of 1.5p should be used within a distance of 4 ft. from the edge of the roof; and that, in the case of the end house of a terrace, the given values for the roof as a whole should be raised by 50 per cent and a standard value of 2.25p be adopted within 4 ft. from the roof edge. Unless the dead weight of a roof is at least three times the pressure of the wind force threatening to overturn it, it must be held down by special anchorages.

There seems to be one inconsistency in this

generally useful Digest. The last diagram shows a flat roof at the end of a terrace to which the revised values are applied. This shows the direction of the wind as being normal to the eaves on one of the long faces and the four foot rule is applied only to this face and to the end. But the moral of the Digest is surely that the wind may come from any quarter and, in consequence, the four foot rule should surely be applied to all eaves.

27.23 furniture and fittings  
OFFICE FURNITURE

*Anthropometric Recommendations for Dimensions of Non-Adjustable Office Chairs, Desks and Tables.* BSI 3079:1959. 4s.

This standard which, the introduction tells us, was got out in a hurry, is useful for architects. Wisely it considers the table and chair together. The dimensions it gives could well be memorized. They are:

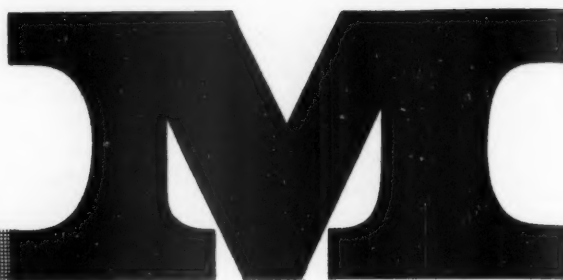
Chair seat height (i.e. front edge: it is recommended that the seat is sloped backwards 3°)	17 in.
Maximum effective depth	15 in.
Minimum width (no arms)	16 in.
Minimum distance between arms	19 in.
Height of elbow rest above seat	8½ in.
Desk height	28 in.
Minimum kneehole space	18 in. × 18 in. × 26 in. high.

The surprises in these figures are the 28 in. for desk height and 17 in. for chair seat height. Desks are commonly 30 in., chairs 18 in., but the framers of this standard take the view that 28 in. for desk and 17 in. for chair seat will enable people to "get over their task" more easily.

The standard is interesting on the back rest. This should start not less than 8 in. above the seat and extend not more than 13 in. above the seat; should be curved horizontally in a radius of about 16-18 in. and—ideally—vertically as well, to produce a saddle shape. Now is the chance for architects, tape in hand, to make a thundering nuisance of themselves in furniture shops.

*Prototype chair designed by students of the RCA in accordance with the recommendations of the BSI Committee and shown at the COID.*





# Introducing space-saver doors

OPEN OR SHUT THEY OCCUPY

NO ROOM SPACE

Vertically pleated vinyl folding doors, initially available in a range of 4 qualities with a choice of 5 colours. Suitable for any type of building from the inexpensive to the luxurious, there are no installation problems. The colour range of grey, beige, red, green, brown, provides doors appropriate to virtually any colour scheme. Space-Saver doors are designed to fill openings of 6ft. 6in., 6ft. 8in. and 8ft. 0in. high and from 2ft. 3in. to 8ft. 0in. widths—in single units. All doors can be paired and can be used to enclose widths up to 16ft. 0in.

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### THE STANDARD RANGE:

#### REGAL

The Regal is the most luxurious door in the Space-Saver range. Ease of opening, closing and neat folding is assured by the fully pantographic action, along with the smooth running glide-wheels on their precision-machined track. The heat sealed vinyl pockets contain solid core panels to reduce sound transmission. 'Tear drop' handles with security latch ensure simple locking action. Vinyl bumper strip on the leading edge protects woodwork and eliminates 'slam' noise. Valance boards, covered in matching vinyl enhance the up-to-the-minute design.

#### PRINCESS

The Princess matches the quality of the Regal door, but does not include the pantographic action.

A nylon glide, mounted on the top of each rigid hardboard core panel and sliding in a vinyl coated steel track, produces a silent, easy movement.

'Tear drop' handles with a security latch, two valance boards and the vinyl bumper strip are also features of the Princess door.

#### WALLDOOR

The pre-pleated vinyl pockets of the Walldoor contain solid Insulcore struts to ensure rigidity, and to give trim and permanent fold lines.

Nylon runners glide easily in a steel track. A vinyl bumper strip on the leading edge of the door prevents marking and ensures noiseless closing. The door is fitted with moulded high-impact plastic handles and security latch.

A matching valance board adds to its appearance.

#### ACCORDION

Made from single ply, pre-pleated everlasting vinyl, concealed steel weights at the bottom add to the rigidity and even folding. Maintenance free overhead track and nylon glides ensure silent, easy movement. The opening edge has a concealed metal reinforcement. It incorporates Walldoor handles and security latch.

Fig. 1

## technical section

## 26 SERVICES AND EQUIPMENT

small electrical installations, 9  
mineral insulated copper covered cable

This week the authors of these articles, Peter Jay and Clive Wooster consider the advantages of mineral insulated copper covered cable (m.i.c.c., for short). Briefly these are that it is unaffected by age, it takes up less space and is neater in appearance when on the surface.

Until about two years ago only one firm marketed this kind of cable, and it was generally known by the proprietary name. Now that other firms have entered the field it is becoming customary to refer to it by the lengthier, but more descriptive term, usually abbreviated to m.i.c.c.

The cable consists of a copper outer sheath, containing copper conductors, each consisting of a single strand separated from the sheath and each other by highly compressed magnesium oxide powder (Fig. 1). This powder, when sufficiently fine and dry, has properties rather like a viscous liquid, and the cable may be bent into shape comparatively easily.

The cable is made with from one to four, and seven cores in the smaller sizes. As the conductor size increases, cables with many cores become progressively more difficult to make, and the largest sizes are available only with a single core.

The method of manufacture is as follows: All cables start as a tube of copper 30 ft. long into which the conductors are fitted as rods, and the tube is then packed with magnesium oxide, either as a powder, or in the form of highly compressed cylinders with holes for the conductors. The assembly so formed is drawn out, in stages, with careful annealing at each stage, until a cable of the correct dimensions is achieved.

As all cables start off from the standard length of 30 ft., the length of the finished coil varies with the conductor size.

The longest coil so formed is nearly 700 yds., the shortest about 65 yds. Allowing for the time spent in annealing ovens, it takes up to six weeks, starting from the 30 ft. assembly, to make a finished coil of cable.

Since all the conductors in m.i.c.c. cable consist of one strand only, the conductor sizes are referred to by their cross-sectional area, thus 2/002 cable refers to a twin cable, with conductors of cross-section 0.002 sq. in.

The following table lists the stranded conductors which have a cross-sectional area equivalent to that of the m.i.c.c. cables.

Mineral insulated copper covered cable  
Comparative cable sizes

M.i.c.c. (cross sectional area, sq. in.)	V.l.r., t.r.s., p.v.c., etc. (stranded, with diameters given in inches)
0.0015	1/044
0.002	3/029
0.003	3/036
0.0045	7/029
0.007	7/036
0.01	7/044

## Rating

As explained in the first article of this series, all cables become heated when carrying a current, and the rating of a cable is the maximum current which it can carry for a given temperature rise, this rise being that which will give a reasonable life to the insulation. Both rubber and p.v.c. can suffer damage under the influence of heat, and the permissible temperature rise when these materials are used for insulation is therefore comparatively small.

For m.i.c.c. cables the insulating material is magnesium oxide, which is quite unaffected by heat so that the permissible temperature rise, and therefore the current rating of the cable, can be much higher. The limiting factor in this case is the temperature of the copper sheath, which must not be allowed to become too hot, otherwise it can damage the structure to which it is secured.

Further, the rating depends not only on the conductor size, but on the number of conductors enclosed within one sheath. Clearly, a cable containing several conductors must be rated somewhat lower than if there is only one.

## Grades of cable

Two grades of cable are available—"light duty," for the smaller sizes and 660 v. grade for the heavier cables. The two grades do not exactly correspond to the grades for other kinds of cable, and, in general, reflect the fact that the larger sizes must be of a generally heavier construction than the smaller. Certain sizes are available in both grades. Outside industry, we see no reason to use the 660 v. grade cable if the size required is available in light duty.

## Correspondence of sizes

We do not think that it is a particularly good idea to use 0.0015 cable in place of 0.002 for lighting circuits. The smaller cable is adequate, but there is no factor of safety to cover damage on site or faulty workmanship, so that for the highest standard of work 0.002 should always be used.

For ring and power circuits 0.003 twin cable corresponding in current rating to 7/029 should be used. For connection to cookers, either 0.0045 twin, or 0.007 twin should be used, depending on the size of the cooker. These cables are obtainable only in 660 v. grade.

In view of the comparative complexity of the rating of m.i.c.c. cables, architects who wish to go more deeply into the matter are advised to seek data from the manufacturers.

## Cable endings

To make connections to m.i.c.c. cables the copper sheath has to be stripped back to expose the cores,



Fig. 1

# Design in Merchandising



Messrs. Dolcis' Shop in Liverpool  
Architect: Ellis E. Somake F.R.I.B.A. (DIP. ARCH. LON.) F.R.S.A., F.B.I.A.



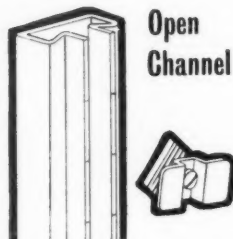
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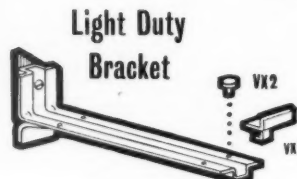
Open Channel



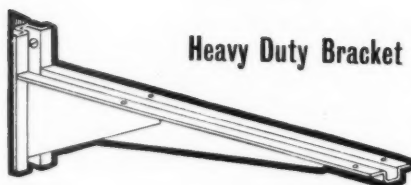
Panel Clip



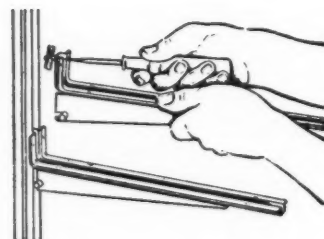
Regular Duty Bracket



Light Duty Bracket



Heavy Duty Bracket



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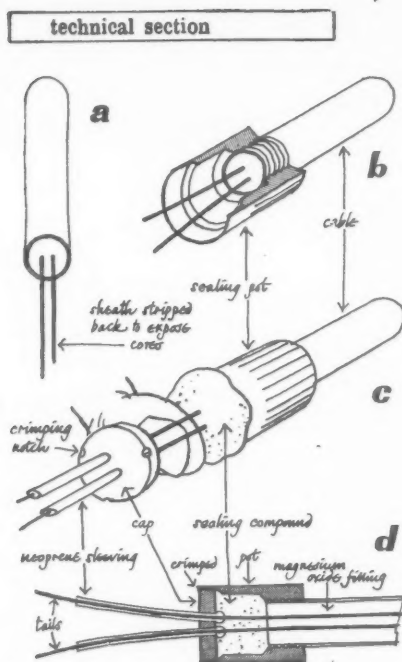


Fig. 2

which are left without insulation as soon as the oxide filling falls away. Further, the magnesium oxide exposed at the cable end will absorb water from the atmosphere unless protected by some means. For these reasons, cable ends have to be provided with seals whose function is to make an ending impervious to atmospheric moisture, and also to provide a fixing for the Neoprene sleeving which is used to insulate the ends of the conductors or tails. Fig. 2 shows the method of applying the seal in one manufacturer's system, and a cross-section of the assembly which results.

It will be seen that the sealing pot, which is the name given to the brass component which is screwed on to the end of the cable, is packed with a *sealing compound* and the rim of the pot is crimped by means of a special tool after the *cap* has been applied.

The seal so described is suitable for use up to 80 deg. C (176 deg. F). For temperatures higher than this special *heat seals* are obtainable which will withstand temperatures up to 250 deg. C (480 deg. F).

#### Glands

All lengths of cable terminate in sealing pots, and means must be provided of securing these pots to boxes and fittings.

In the simplest case the pot can merely be gripped by a clamp on the box, but in other cases more elaborate devices, called *glands* will be required.

The various methods available are described in a later section.

#### Testing

M.i.c.c. cables should always be tested with an insulation tester about 24 hours after the seals have been made, to ensure that they are excluding all moisture. Provided that the seals have been correctly fitted the testing instrument should read infinity. If it does not,

this is a sign that the seals are inadequate, although the insulation resistance at the time of testing is still likely to be as high, or higher, than would be considered satisfactory for a conduit or t.r.s. installation. However high the insulation resistance, if it is less than infinity the seals should be rejected.

#### Properties of m.i.c.c. cable

These cables are quite impervious to heat, and will continue to work satisfactorily after quite severe mechanical damage. As a demonstration they may be hammered out almost flat, or drawn out to one-half their normal diameter without any loss of insulating efficiency. However, the sheath can be punctured by a sharp tool and after this has happened the cable will function satisfactorily for a time (unless the damage has forced the conductors into contact with each other or the sheath) but the magnesium oxide filling will commence to absorb moisture from the atmosphere and its insulating properties will deteriorate, although the cable will in most cases still carry its rated current without giving trouble.

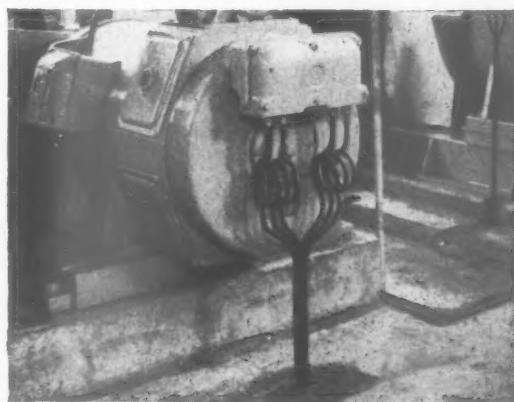
The cables are more or less unaffected by vibration, although in making connection to a machine with this cable it is a good thing to form a coil of two or three turns first, in order to spread the flexing over a greater length, and so reduce its amplitude (Fig. 3).

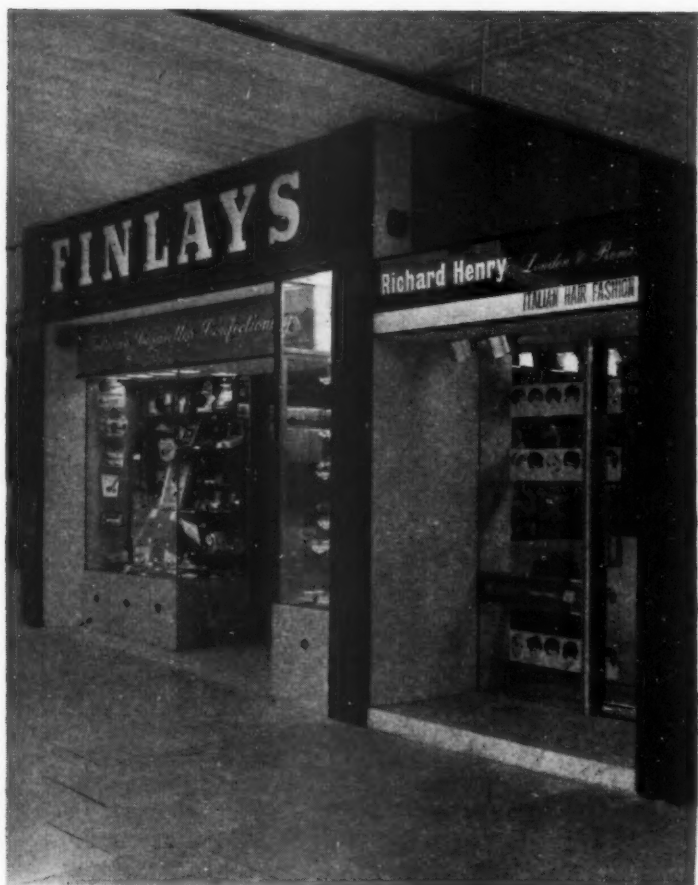
It would be fair to say that the mechanical properties of these cables make them comparable with t.r.s., in the sense that they can be bent into shape and laid with very little trouble, while they offer an electrical security at least equal to that of conduit. In certain applications, for instance where the temperature is high or the fire risk severe, they are the only type of cable that can be used at all.

#### Method of use

These cables are used in a very similar way to t.r.s. All connections and terminations must be made in boxes, and these are exactly the same as those used with conduit. The only difference is that whereas t.r.s. is a cheap material, and it is rarely desirable to go to much trouble to save a few feet of cable, m.i.c.c. cables are rather more expensive, and it is worth going to a good deal of trouble to save cable.

Fig. 3





## Stevenage

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## technical section

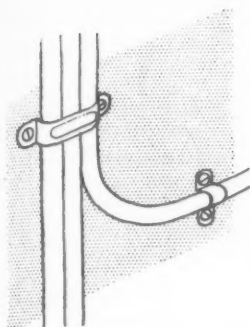


Fig. 4

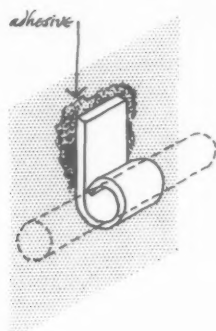


Fig. 5

**Fixing of m.i.c.c. cables**

Very much the same considerations apply in the fixing of m.i.c.c. cables as in the fixing of t.r.s. cables. Special copper saddles are used (Fig. 4) which have to be secured by means of brass or copper screws. The smaller cables when mounted on the surface should be secured at 12-in. centres which may be increased to 18 in. or more for the larger sizes. Concealed cables should be secured at not more than 36-in. centres, and more frequently near bends, etc.

Plastic clips (Fig. 5), which may be secured to walls and ceiling surfaces by means of special adhesive, may now be obtained and are very convenient for securing m.i.c.c. cables to surfaces which will later be plastered. The adhesive must be allowed a few hours to harden, but even so, it is very much simpler to do this than to plug a thin plasterboard or breeze partition.

The cable is fairly robust and will withstand hard usage, except when struck hard by a pointed object. It should, therefore, be protected by means of a wooden or metal channel when mounted below a height of about 4 ft., unless it is mounted in such a position that it could not be damaged or is protected by an adjacent door frame, etc.

No special protection against corrosion is required, although it is usual to specify that cables may be run

only vertically from the ceiling down to switchdrops or from the floor vertically up to wall brackets, etc. This is purely to minimize the risk of a nail being put through the cable by confining it to the more obvious routes.

Now that the thickness of plaster finish is rarely more than  $\frac{1}{2}$ -in., and all efforts are concentrated towards using the cheapest and thinnest possible materials for internal partitions, especially within flats, m.i.c.c. cables are becoming increasingly advantageous, since they can be embedded even in this small plaster thickness without chasing, although chases will, of course, be required for the outlet boxes.

If cables have to be run through a screed, for instance to an island bench, it is probably better to draw them through a length of conduit, or to protect them in some similar way otherwise they may be damaged as the screed is poured.

The IEE regulations require that m.i.c.c. cables shall be wrapped in bituminized felt or some similar material, if laid underground, and they should also be protected by means of cable tiles in case some sharp stone should be forced down on to them during back-filling.

As remarked in an earlier article, they are very useful in feeds to outbuildings, such as garages, and are probably the cheapest form of cable which may be used underground for carrying small loads.

**P.v.c. sheathed cables**

Mineral insulated cables may now be obtained with a p.v.c. outer sheathing for use in situations in which the copper might suffer some corrosion, and sheathed cables are now generally used in place of bituminous wrapping for underground work. Apart from conditions in which high humidity and high temperatures are common, the most interesting case in which the use of such sheaths is desirable is in stone buildings.

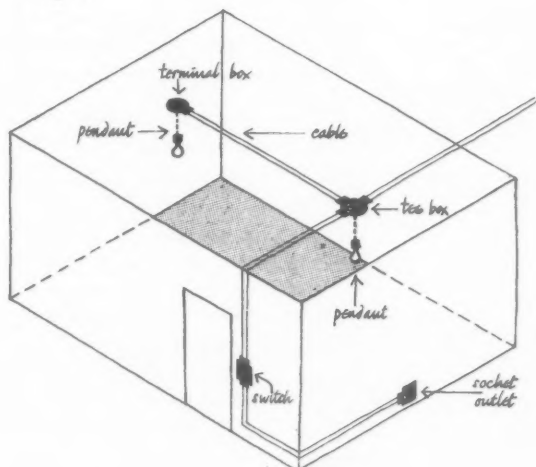
If m.i.c.c. cables are clipped direct to certain types of stonework they will in time become covered with a thin layer of verdigris. Although this is unlikely to penetrate very deep, and does not weaken the sheath significantly, it is unsightly and will stain the stonework so that it is better to prevent its formation by using a p.v.c. outer sheath.

**Terminations at outlets**

All outlets, that is, switches, sockets and lighting points, are made in conduit boxes of exactly the same pattern as those used with screwed conduit. Fig. 6 shows a simple installation with two lighting points and one socket in a room wired with m.i.c.c. cables.

In certain types of work, mainly lighting, it may be sufficient to clamp the sealing pot under the cleat of a special conduit box (Fig. 7). The earthing continuity so obtained is somewhat superior to that achieved with light gauge conduit, but is inferior to that of screwed conduit. One possible solution is to crimp an *earthing tail* (a bare earth wire) to the interior of the sealing pot (Fig. 8) and the result is then rather like the end of a t.r.s. twin with earth cable, and should be treated

Fig. 6



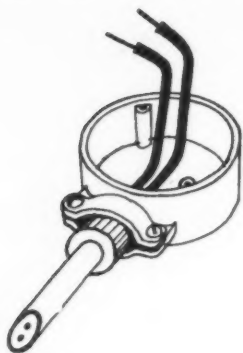


Fig. 7

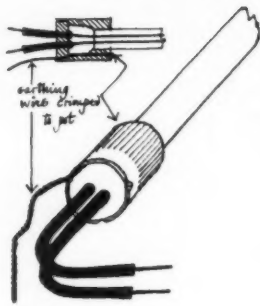


Fig. 8

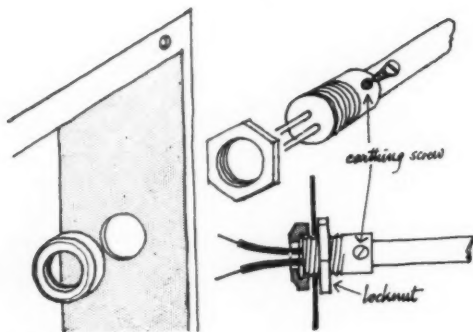


Fig. 9

in much the same way—the earth wire being secured by an earthing terminal or screw in the box, socket or fitting, as appropriate.

A better alternative is to use the *earthing screw gland*. This is generally similar to a sealing pot, but is larger and is fitted with an earthing screw which bites into the sheath of the cable. The gland itself is threaded, and can be clamped to the hole in a sheet metal box by means of a female bush and locknut, as shown in Fig. 9. This is suitable for wiring to flush socket outlets in domestic and commercial installations.

For work on the surface, or in industrial applications a more robust type of gland is required and one manufacturer's version is shown in Fig. 10. It is called the *universal ring-type gland*. The brass sleeve is compressed as the gland is tightened up, and bites into the cable sheath, completing electrical contact.

Such a gland is extremely reliable, and is not, in practice, so complicated as it may look on paper.

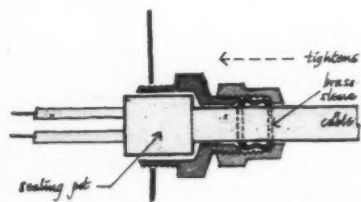


Fig. 10a (above).

Fig. 10b (right)

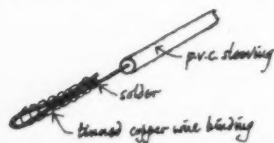


Fig. 11

### Planning of wiring

In general, m.i.c.c. wiring is planned in a manner very similar to that of t.r.s., and the same techniques should be employed. However, it is customary to specify that joints and connections between different lengths of t.r.s. shall be made only at outlets, that is, at switches, lighting points or sockets, but this requirement need not be so rigorously enforced with m.i.c.c. cables. T.r.s. is a cheap material, and it is never worth using a connector box merely in order to save a few yards of cable; m.i.c.c. cables are relatively more expensive, and there are cases where the use of a connector box may save an appreciable sum of money.

It is impossible to give any general rule here, and all such cases must be treated on their merits. In general, where a connector box will save, say, 7s. 6d. or more in cable, and will be readily accessible after the installation has been completed (this proviso is most important) we should ourselves be inclined to allow it.

An excellent example of a similar kind is a spur from a ring circuit. We have insisted that these are quite unnecessary when wiring in t.r.s. or conduit, since in most cases they only save a few feet of cable and this saving is too small to offset the other disadvantages.

Where m.i.c.c. cables are used this argument no longer holds. The cost of the extra cable may be quite appreciable, and as m.i.c.c. cables are relatively unaffected by overloading, the slight risk of excessive load on a spur can be neglected.

### Terminals and connections

In one of the earlier articles in this series we pointed out that it is very difficult to grip a single strand of cable in a screw terminal, and that this is one reason for avoiding the use of 1/044 t.r.s. or v.i.r. cables.

All cores in m.i.c.c. cables consist of a single strand only, and the disadvantage must be accepted for the sake of the other advantages these cables offer.

Particular care should be taken when the ends are secured under screw terminals, and where a choice of terminal size is possible (for instance, when using connectors) the smallest terminal should be used which will accommodate the end. However, in many cases the cable must terminate in a switchfuse fitted with a terminal far too large for it.

The end of the cable should then be turned back, bound round with a single strand of tinned copper wire, and soldered (Fig. 11). An end such as this can be secured quite easily even in a large switchfuse.

### Summary of advantages

It may be seen from the foregoing account that m.i.c.c. cable has the following advantages:

1. It is unaffected by age or moderate heating, such as might be caused by an accidental overload.
2. It needs less space than any cable of like rating.
3. Its appearance on the surface is neater than any other.

But many architects are unwilling to use it because it is thought to be very much more expensive than standard conduit. In fact, it is competitive in many kinds of installation, which will be dealt with in the next article.

TWO

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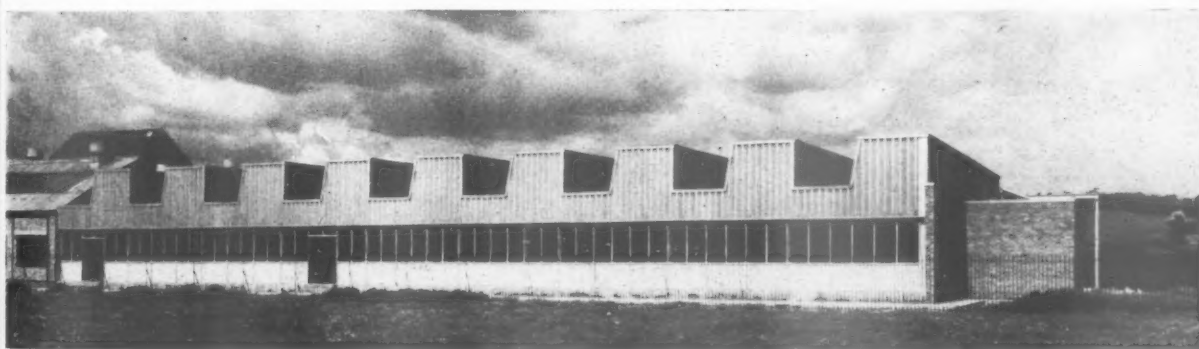
building illustrated

*Two industrial buildings: 1, factory extension at Gotham, Notts. 2, storage depot and offices at Leeds*

## TWO INDUSTRIAL BUILDINGS

1. FACTORY EXTENSION at GOTHAM, NOTTS; designed by BARTLETT and GRAY; quantity surveyor, M. C. FELTON
2. STORAGE DEPOT and OFFICES at KIRKSTALL ROAD LIGHT INDUSTRIAL ESTATE, LEEDS, designed by T. TREPESS; architect-in-charge, A. WILSON; assistant architects, T. F. DEWHURST, F. W. BROWN quantity surveyor, J. MCCLELLAND

The two quite unassuming industrial buildings illustrated here have in common that both were designed for a restricted site, and fitted to a fairly tight budget: the depot at Leeds was also confined by planning restrictions that give a handle to the anti-planners. In such circumstances, architectural criticism is necessarily limited to asking whether the buildings do the job for which they were designed and compare well with the average of their type.

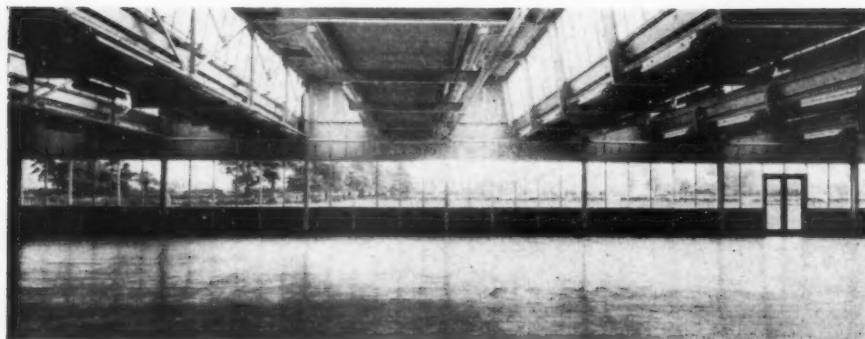


Above, viewpoint 1 of the factory extension at Gotham, Notts, from the south. Below, viewpoint 1 of the storage depot at Leeds.



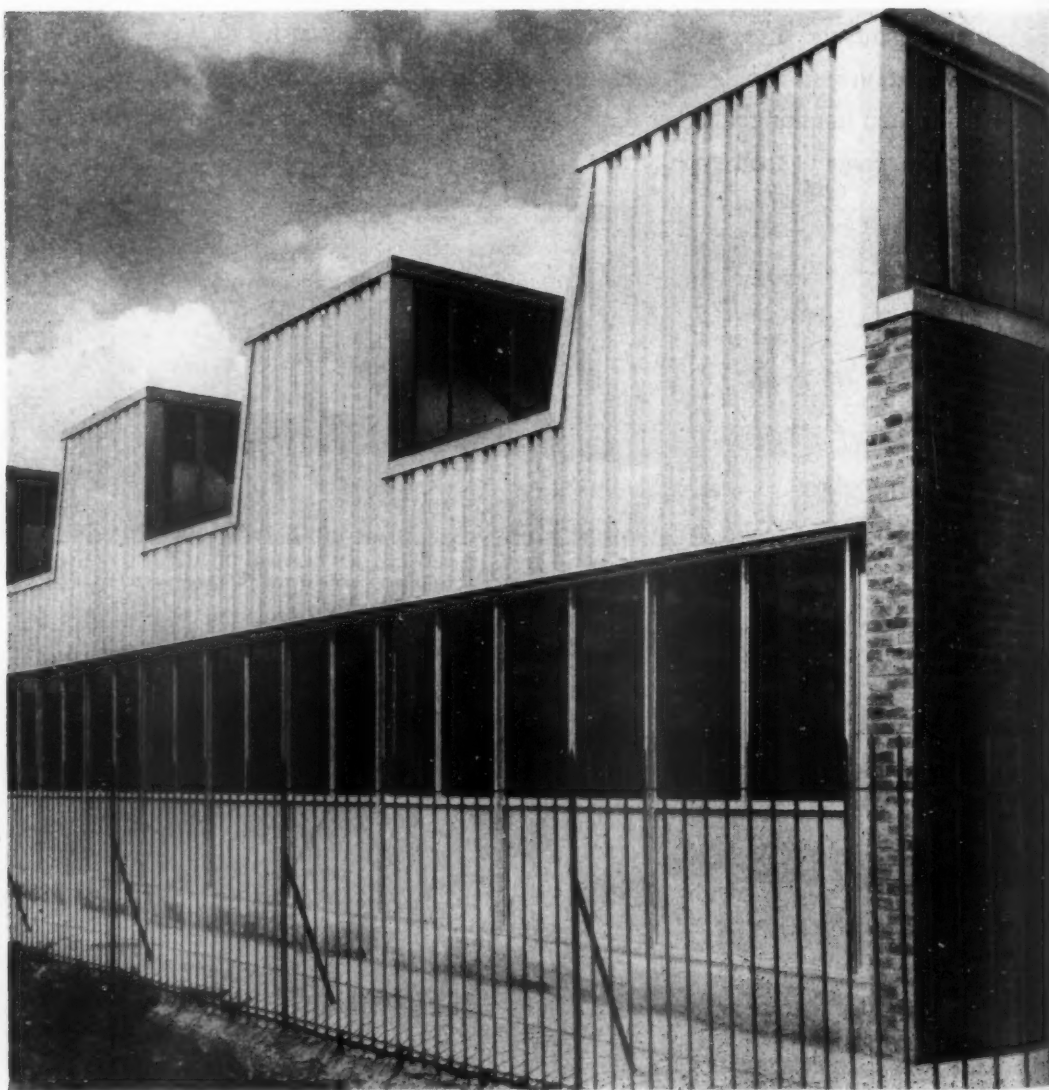
building illustrated

Factory extension at Gotham



*This is the first of a planned series of extensions to an existing factory which produces woollen wear. The site is restricted, but the architects have been able to design the entire future development of the factory at this initial stage. The first project is a single-storey factory addition with an unobstructed floor area, which has the unusual feature of a wood block floor, shown above in viewpoint 2, which was chosen because of*

*the high value of clean woollen waste. The ends of the monitors are clad with insulated aluminium sheeting (viewpoint 3, below) below which is aluminium curtain walling, with a continuous band of clear glass above insulated spandrel panels. The use of clear glass at viewing level in an industrial building improves the feeling of space internally, and gives a crisper external expression than is normally achieved with wired cast glass.*



NOTING

Site pl

Ground

## analysis

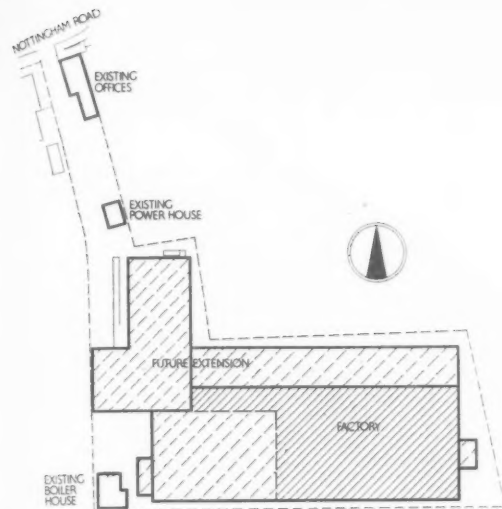
## CLIENT'S REQUIREMENTS

Planned development of a restricted site near Nottingham for a factory producing woollen wear, the building programme to be phased to spread capital expenditure over the development period and to keep up with increasing production, at the existing factory on the site. The first stage (illustrated here) to be an additional production area, the second a warehouse block with offices, lavatories and canteen, and the last phase a 2-storey factory building on the north of the new winding room.

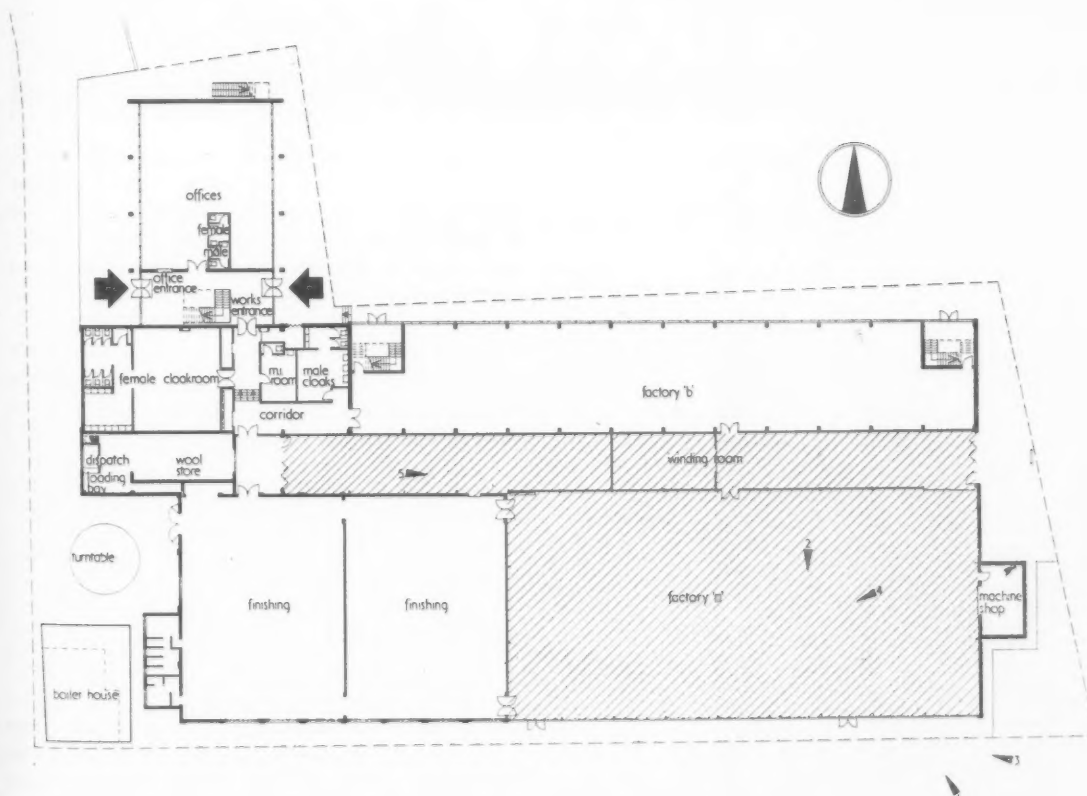
## PLANNING AIMS

General: to achieve maximum use of site and to maintain the flow of production in spite of restricted entry and exit space for material at the west end of the site. A turntable was introduced in this small turning area, and the limited number of deliveries and dispatches per day make this a reasonable solution to the problem.

Particular: Stage I—an unobstructed factory area for knitting machinery allowing complete flexibility of labour. High level daylight and an even temperature, but no humidification was required. A winding room for machines 42 ft. long by 4 ft. 6 in. wide. As production increases conveyors will be fitted.

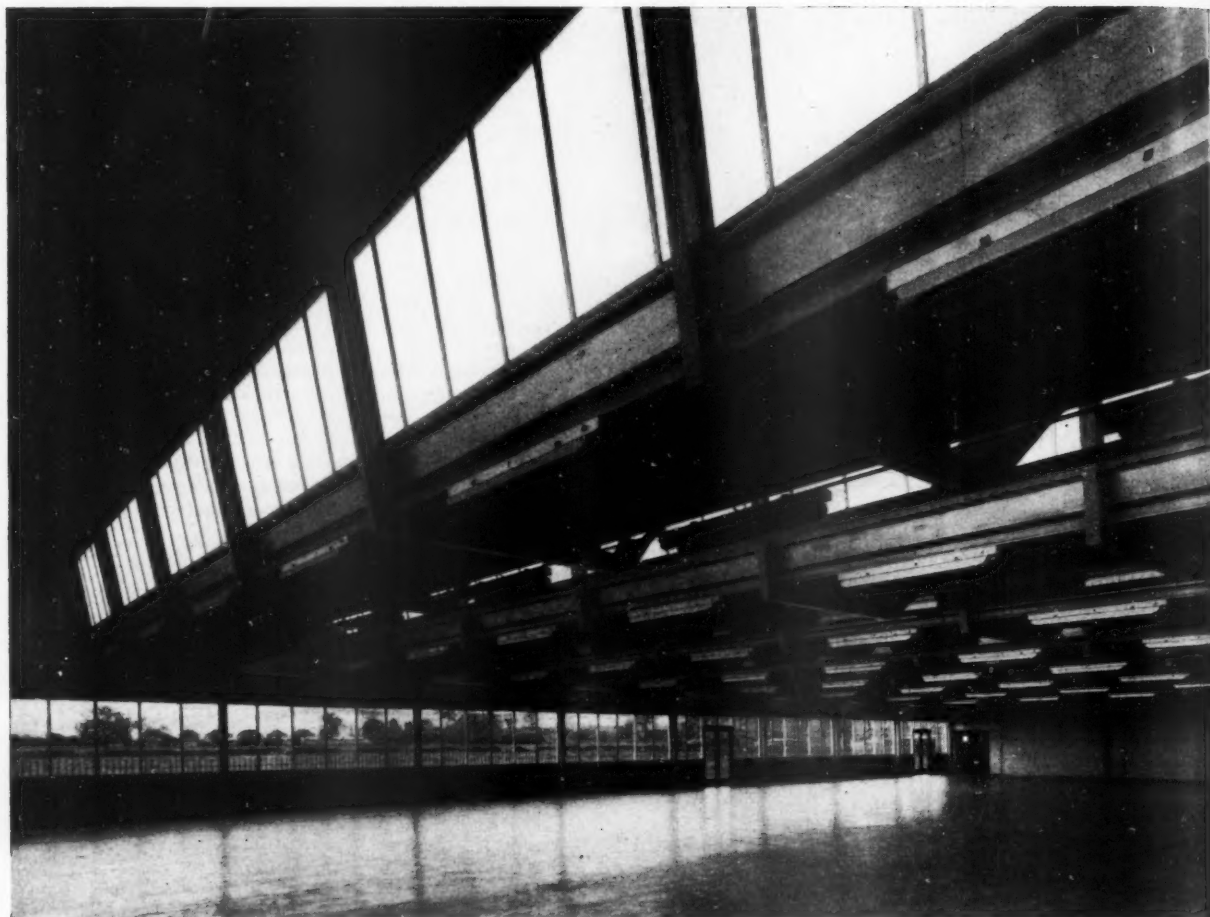


Site plan

Ground floor plan (finished section shown hatched) with photographic viewpoints [Scale:  $\frac{1}{16}'' = 1' 0''$ ]

building illustrated

*Factory extension at Gotham*



The roof consists of lattice girders spanning the width of the factory at 15-ft. centres, with cranked beams forming the monitors, as shown in viewpoint 4, above. This method produces a simple structure which is complemented by the judicious positioning of the fluorescent light fittings. Colour has also been used to add internal liveliness to a simple building. The structural steelwork generally is painted blue (BS7-083), the insulating lining over the windows is blue (8-087), the asbestos cement panels at the base of the curtain wall are red-brown (1-024), the east and west walls, pale yellow (4-053), and the north wall is blue (8-087).



The winding room, viewpoint 5 (left), is a long narrow room which separates the factory from its future extension, and has a continuous rooflight, woodblock floor and fluorescent lighting. The badly sited loudspeaker for the public address system is an unfortunate intrusion into the stark simplicity of this element.



## analysis

## SUMMARY

Ground floor area: 12,483 sq. ft.  
 Total floor area: 12,483 sq. ft.  
 Type of contract: LS with quantities.  
 Tender date: March 20, 1957.  
 Work began: September, 1957.  
 Work finished: April, 1958.  
 Contract price of foundations, superstructure, installations and finishes: £41,017.  
 Final price: £39,053.  
 Contract price of external works and ancillary buildings: £843.  
 Final price: £1,381.  
 Approximate final price: £41,434.

	cost per sq. ft.	s	d
Preliminaries and insurances		1	11
Contingencies			

Work below ground floor level	5	5½
Column bases and reinforced-concrete beams spanning between.		
14 bases are of larger size than the others, to take the future two-storey section.		

## STRUCTURAL ELEMENTS

Frame or load-bearing element	12	8½
Steel frame: 6-ft. deep lattice beams spanning main factory with cranked I-sections forming monitor lights.		

External walls and cladding	2	2
11-in. cavity brickwork with 2½-in. multi-rustic wire cut facing bricks. Aluminium cladding on south wall backed with ½-in. insulation board fixed with aluminium tees.		
Ratio: $\frac{\text{solid wall}}{\text{floor area}} = \frac{0.48}{1}$		

Windows	1	7½
Fixed lights on south wall of main factory; monitor lights with one complete geared opening section to each alternate monitor. Rooflight to winding room.		
Ratio: $\frac{\text{windows}}{\text{floor area}} = \frac{0.054}{1}$		

External doors	2½	
Slide-fold flush ply to winding room.		
Glazed hardwood and flush ply escape doors.		
Ratio: $\frac{\text{doors}}{\text{floor area}} = \frac{0.027}{1}$		

Roof construction	4	1½
Insulated metal decking: 1,225 sq. yds.		
Precast concrete beams: 20 sq. yds.		

Rooflights	6	6½
Number of lights: 11. Total area: 7,090 sq. ft.		

Glazing		
Cost is included under "rooflights" and "windows."		

Total of structural elements: 27s 4½d

## PARTITIONS

Internal partitions	3
Halfbrick wall, pointed both sides.	
Area: 130 sq. yds.	

Internal doors	6½
1 single, 1 pair double, 2 pairs metal-faced swing doors.	
1 metal faced sliding-folding door.	
1 metal roller shutter to machine shop.	

Ironmongery	3
BMA: lever handles.	

Fittings	
None under this contract.	

Total of partitions: 1s 0½d

## FINISHES

Floor finishes	6	3½
Factory floor, 12,042 sq. ft., of mahuhu wood blocks with coil inserts, chosen because a better price is obtained for clean woollen waste from wood floors. Price per sq. yd.: 44s 6d.		
Elsewhere: 2½-in. granolithic. Price per sq. yd.: 16s 9d.		

Wall finishes	
Decoration only.	

Ceiling finishes	0½
Generally aluminium left unpainted.	

Roof finishes	3	7½
Spar finish three layers of bituminous felt.		
Area: 11,205 sq. ft.		

Decorations	1	2½
Plaster soffit to beams.		
Painting generally		

Total of finishes: 11s 1½d

## SERVICES

Plumbing	5½
Aluminium rainwater pipes slung from roof structure and walls at high level internally due to high storm drain invert at west end of factory. There are no hot and cold water installations or sanitary fittings as these facilities are in the existing factory.	

Heating	7	5½
Heating is by a patent withdrawable under-floor system, using off-peak electricity.		
Internal temperature, 70 deg. F. The surface temperature of the floor is 75 deg. F.		

Electrical installation	7	4
Cable tap trunking under dropped roof sections at 15-ft. intervals over whole area of main factory. Method chosen to allow flexible machine layout. The cost includes trough reflector light fittings.		

Total of services: 15s 3d

## analysis

## Factory extension at Gotham

## Drainage

Owing to the fact that the only storm water drain available on the site lies on the west boundary with a relatively high invert level, it was necessary to use high level rain water drainage. This was carried out by internal aluminium pipes slung from the structure at a sufficiently high level not to impede future conveyor systems. These pipes discharge at the west end of the building into sub-surface drainage in glazed earthenware pipes. Connections to the internal aluminium pipes are made by pre-formed aluminium outlets by the roofing sub-contractor.

## Other elements

Loading gantry and hoist.

Total per sq. ft. of floor area:

£39,053 (net cost excluding external works and alterations to existing building)

12,483 sq. ft.

= 62 6½

## COST COMMENTS

This factory is virtually an empty rectangular box, providing uninterrupted space within and the maximum amount of natural lighting: some 20 per cent. of the cost of the building has gone into the frame. Apart from this the major items of cost were the aluminium cladding and glazing of the south wall, the floor finish and heating.

The ratio of cladding to floor area somewhat conceals the unit cost of the aluminium patent glazing, which amounts

to  $\frac{1s. 7\frac{1}{2}d.}{0.054}$  or 30s. 6d. per square foot.

The amount that had to be spent on the wood block floor is offset in the finishes total by minimal finishes to walls, and the undecorated underside of the aluminium roof deck. The 3-layer felt roof finish, at 3s. 7½d. per sq. ft. of floor area is equivalent to a unit cost of 4s. 0½d. per sq. ft., a cost influenced by the interrupted roof surfaces with consequent drips and flashings.

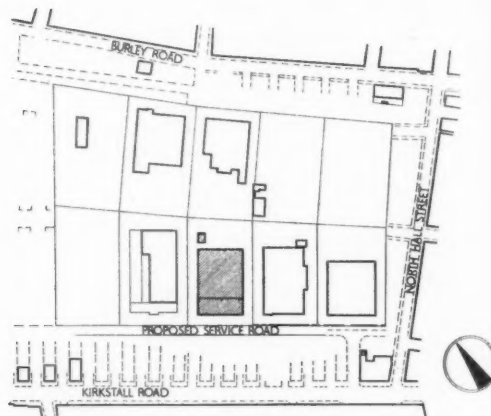
Minimal plumbing requirements are offset by the heating and electrical installations, which share almost equally approximately 23 per cent. of the total cost. The proportion spent on under-floor electrical heating seems high at first sight, at 7s. 5½d. per sq. ft. of floor area, but the type used here is withdrawable as opposed to the embedded system. The initial cost of this system can be almost twice as high, but the advantage is that faults can be located and repaired without breaking up the floor. The latest developments in this field, however, have produced a withdrawable system which can be installed at a cost not much greater than the embedded system.

## CONTRACTORS

General contractor: J. H. Fryer Ltd. Sub-contractors: Steelwork: Siddons (Redhill) Ltd. Roof deck and finish: Wm. Briggs and Sons Ltd. Electrical installation: W. Danby. Electric floor heating: Panelec (GB) Ltd. Woodblock flooring: Hollis Bros. Ltd. Light fittings: Phillips Electrical Ltd. Aluminium glazing and walling: Williams and Williams Ltd.

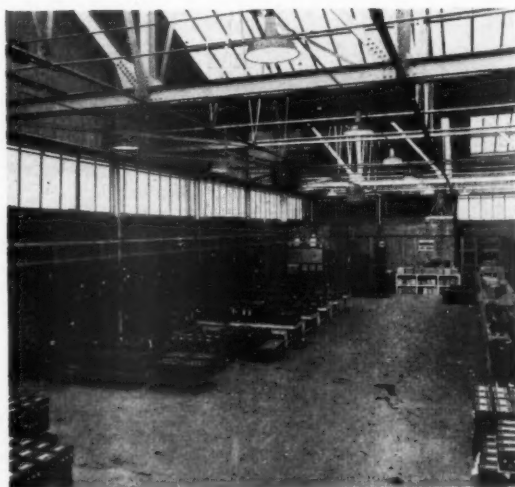
## building illustrated

## Storage depot and offices at Leeds

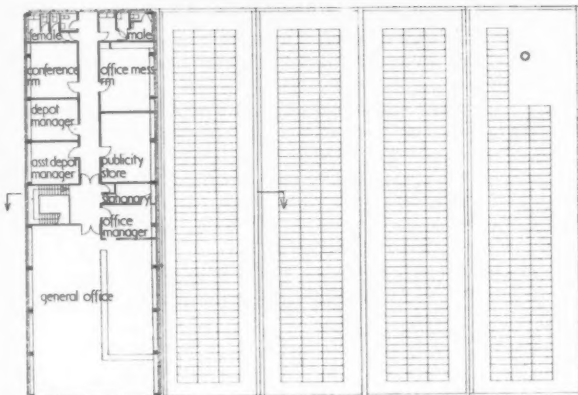
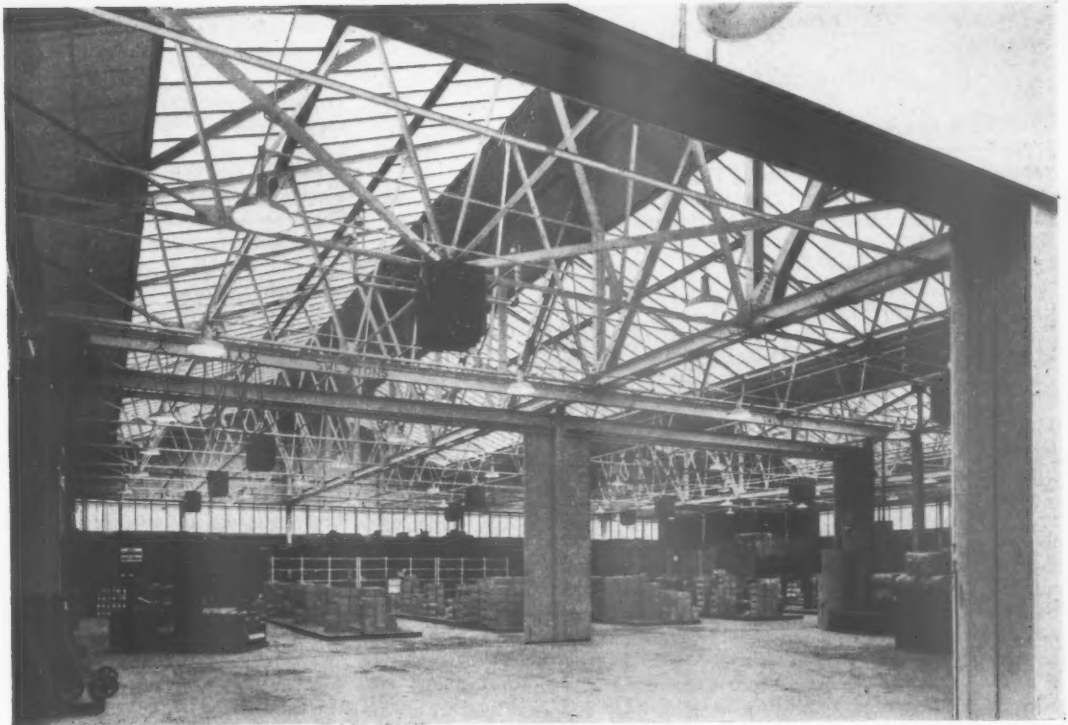


Site plan

This factory is a self-contained area depot for a firm of electric accumulator manufacturers, which contains both offices and factory areas for the storage, charging and repair of accumulators, stands on a restricted rectangular site in an industrial estate, closely surrounded by other industrial buildings of no architectural merit whatever. The offices and welfare rooms occupy a two-storey section forming the "facade" which the factory presents to the service road. The local authority has imposed planning restrictions on this estate, including insistence on a uniform building height on the road frontage which seems to be completely illogical. In this case it has resulted in a 5-ft. high parapet to the two-storey office block. The relationship and treatment of clear and obscure panels in the curtain walling of these offices provides little relief from the inhibiting glazing frame, and bears hardly any relationship to the pitched roofed actory area which occupies the rest of the site.



The factory area, shown above in viewpoint 2, consists of a conventional steel frame with insulated pitched roofs and roof and perimeter patent glazing.

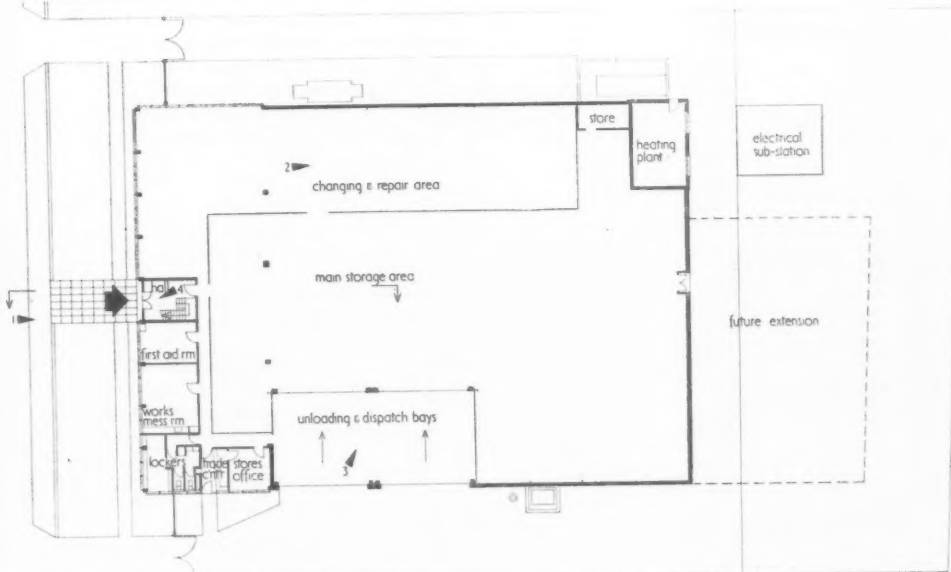


First floor plan

Lattice girders have been used for the main spans across the factory with roof trusses running at right angles to them; an arrangement which results in a very congested roof space, shown above in viewpoint 3.



Cross section [scale:  $\frac{1}{8}'' = 1' 0''$ ]



Ground floor plan with photographic viewpoints [Scale:  $\frac{1}{8}'' = 1' 0''$ ]

## analysis

## Storage depot and offices in Leeds

## CLIENT'S REQUIREMENTS

A building to house the North East of England area sales and administrative staff of a firm making electric accumulators, with facilities for the storage, charging and repair of electric accumulators.

## PLANNING AIMS

The site, which forms part of an area being developed by Leeds City Corporation, is situated on the Kirkstall Road Light Industrial Estate and fronts on to Kirkstall Road. The local authority imposed 25-ft. building lines on all four boundaries of the site and also insisted that the building should have a height of 34 ft. fronting onto Kirkstall Road. This latter requirement resulted in the administration unit being placed on the first floor, with ancillary offices related to the storage, repair and charging areas on the ground floor. A 5-ft. high parapet wall had to be adopted to make up the height to 34 ft. Stacking of batteries takes place to a height of about 10 ft. and a height of 15 ft. from ground floor level to underside of steelwork is a suitable height for such depots. A lightweight curtain walling system was chosen for the Kirkstall Road elevation, both for its character and in consideration of the low bearing capacity of the ground.

## SUMMARY

Ground floor area: 18,448 sq. ft.  
Total floor area: 22,518 sq. ft.  
Type of contract: RIBA with quantities.  
Tender date: August, 1955.  
Work began: March, 1956.  
Work finished: November, 1957.  
Tender price of foundations, superstructure, installations and finishes: £64,154 18 10½d.  
Tender price of external works and drainage: £4,527 18 1½d.  
Total: £68,681 3s 0d.

*Viewpoint 4, view of the entrance hall to the offices, and staircase to the first floor landing. The view through the fully glazed doorway is decidedly discouraging, but perhaps adds to one's appreciation of this building.*



	cost per sq. ft.	s	d
Preliminaries and insurances		3	
Contingencies		9	

Work below ground floor level	4	4
Ground floor slabs	1	10

The site was previously occupied by terraced houses with 8 ft. basement. Ground to a depth of 12 ft. only capable of supporting 1½T sq. ft. Stanchions to office block and lattice girders were taken down to 12 ft. Brickwork and remaining stanchions taken on continuous strip foundations. Reinforced concrete ground floor slab 6 in. thick and prepared to receive floor finish, laid on 12-in. hardcore.

## STRUCTURAL ELEMENTS

Frame or load bearing element	10	3½
Steel frame with steel roof trusses and main stanchions at 12-ft. 3-in. centres. Two lattice girders each 110 ft. span the full width of the storage area and are 60 ft. apart. Steelwork to two-storey section encased in concrete. Pre-cast concrete units to roof and first floor with <i>in situ</i> strip to first floor housing electrical services.		

External walls	7	10½
11-in. cavity brickwork in selected commons to walls of single-storey sections. Aluminium cladding with insulating lining to gable walls of single-storey area above the vertical patent glazing. The two-storey section is clad with aluminium curtain walling with aluminium windows. Solid infilling panels are made up of a composite panel of ½-in. asbestos insulation board, 1-in. mineral wool and ¾-in. asbestos insulation board, framed together with panels of the latter. The outer face of the panel is stove enamelled, blue in colour. A sheet of rough cast glass is fitted in front of the coloured face with an airspace between the glass and the composite panel.		

$$\text{Ratio: } \frac{\text{solid wall}}{\text{floor area}} = \frac{0.532}{1}$$

Windows	1	10½
Aluminium windows with single glazing with top hung ventilators fixed into brickwork and aluminium curtain walling. Vertical side wall glazing using aluminium bars and double glazing above brickwork in single-storey section. Twelve 8 ft. wide × 5 ft. 6 in. high top-hung opening lights formed in patent glazing and gear-operated.		

$$\text{Ratio: } \frac{\text{windows}}{\text{floor area}} = \frac{0.16}{1}$$

External doors	1	6
Main entrance doors, polished mahogany with glazed panels. All other timber doors, painted softwood. Two pairs of power operated metal sliding folding doors to the unloading and despatch bay, each pair filling a 26 ft. wide × 15 ft. high opening.		

$$\text{Ratio: } \frac{\text{doors}}{\text{floor area}} = \frac{0.045}{1}$$

Upper floor		
Cost included in "frame or load-bearing element."		
Span: 37 ft. Area: 4,074 sq. ft.		
Superload: 50 lb. per sq. ft.		



## analysis

## Staircases

R.c. staircase with polished hardwood treads with non-slip nosings.  
Metal balustrades and polished hardwood handrail.  
Width: 3 ft. 6 in. Total rise: 15 ft. 9 in.  
Cost of r.c. work included under "frame."

## Roof construction

Single-storey section, 2-in. compressed straw boards covered with 3-ply felt. Kerb and cutters formed with pre-cast T-section concrete units hook-bolted to angle iron supports. Falls and gutters laid in lightweight concrete. Extra layer of felt laid below lightweight concrete.

Area: 6,574 sq. ft.

Two-storey section, 3-ply felt grit finish on 1-in. cork on screed laid to falls. Back up wall to parapet in hollow clay blocks rendered and felt covered.

Area: 4,070 sq. ft.

## Rooflights

One openable light, 4 ft. × 3 ft., in flat roof.

Area: 12 sq. ft.

3-tier aluminium bar double glazed roof glazing to single-storey section, complete with flashings.

Area: 7,692 sq. ft.

## Glazing

The cost of glazing is included under windows, doors and rooflights.

Total of structural elements: 26s 10d

## PARTITIONS AND FITTINGS

## Internal partitions

Hollow clay blocks with plaster or tile finish to first floor offices.

4½-in. and 9-in. brickwork with plaster or tile finish to ground floor.

	Hollow clay block	Brickwork
Per sq. ft.:	4½d	5½d
Area:	3,771 sq. ft.	2,592 sq. ft.

## Screens

Timber screen separating typists' area from remainder of General office. All in painted softwood with 32-oz. glass above 3 ft. 3 in.

Area: 500 sq. ft. Cost per sq. ft.: 2½d.

Metal screens separating storage area from remainder of ground floor sections. Average height: 7 ft. 6 in.

Area: 2,264 sq. ft. Cost per sq. ft.: 9½d.

## Internal doors

All doors flush softwood. Double doors with 32-oz. glazed panels.

No. of single doors: 28.

No. of double doors: 2 pairs.

## Ironmongery

Front entrance unit, chromium plated. Elsewhere, BMA finish.

Master lock system incorporated.

## Fittings

Cloakroom fittings, mirrors, hooks, incinerator.

Kitchen cupboards in mess rooms.

Counter and display in trade counter.

Flower box on staircase.

5 Various cupboards and shelves in general office.

Total of partitions and fittings: 4s 6½d

## FINISHINGS

## Floor finishes

Type of finish	Location	Area in sq. ft.	Price per sq. yd.
Acid resisting asphalt	Charging and repair areas	4,400	16s 8d
Dust-resisting granolithic	Storage area	11,376	14s 1½d
Terrazzo tiles	Lavatories	468	40s 0d
Thermoplastic tiles	Offices, corridor, etc.	4,303	22s 2d
Thermoplastic tiles to ground floor area are laid on ½ in. thick asphalt underlay.			

## Wall finishes

Storage and repair area, fair-faced brickwork. Offices generally plaster, finished emulsion paint.

2 2½ Lavatories and w.c.s and splash back to mess rooms, 6-in. × 6-in. × ½-in. cream tiles.

Private w.c., 6-in. × 6-in. × ½-in. grey tiles.

Infilling panels to curtain walling, emulsion painted.

## Ceiling finishes

Asbestos insulation board and tile. Suspended ceilings have been used throughout. Ceilings to ground floor offices are plain tiles, with services laid above them.

Ceilings to general office, depot manager's office, assistant depot manager's conference room and first floor corridor, perforated acoustic tiles.

All other first floor ceilings, plain tiles.

## Roof finishes

Included under "roof construction."

## Decorations

Steelwork, all woodwork, external and internal, and external metalwork, gloss paint.

Underside of roof deck, plaster walls, suspended ceilings, flat oil paint.

Hardwood, polished.

Total of finishings: 6s 8½d

## SERVICES

## External plumbing

6-in. cast iron r.w.p.s. with lead sleeve between pre-cast concrete units and head of pipes.

Aluminium channels and 4-in. r.w.p. to rear of office block.

## Hot and cold water installation

2-in. copper ring main fed from rising main for hose reels.

Supply direct from rising main for drinking water. Two 500-gall. storage tanks supplying washing and swilling down points.

Hot water from electrically heated storage tanks. Pipework, copper throughout.

## Heating and ventilation

7½ Low pressure hot water system with pumped circulation supply. Fan and blown unit heaters mounted at underside of roof trusses, and cabinet type radiators in offices, mounted from floor and placed under windows.

## analysis

## Storage depot and offices in Leeds

## Sanitary fittings

Type of fitting	No. of each type
Urinal	1
W.c.s	6
Lavatory basins	5
Sinks	2
Trough	1
Surgeon's sink	1
Drinking fountains	2
Sink units	2

Horizontal oil fired fully automatic boiler unit rated at 1,812,000 BTUs p.h. and burning 200 sec. oil supplied from a 2,000-gall. oil storage tank lagged and with immersion heater fitted.

Whole system thermostatically controlled to give temperatures of 65 deg. F in offices and 60 deg. F in storage area, with an outside temperature of 32 deg. F.

Air changes: Offices 2 per hour. Storage area 1½ per hour.

"U" values: Office walls 0.48, roof 0.23.

Storage area walls 0.33, roof 0.37.

## Electrical installation

Incoming electric main is run from a Yorkshire Electricity Board sub-station on the site. Supply is brought in at 415 v on 3 phase and then fed to a main distribution board, from which a connection is taken to a 200 amp. glass bulb type rectifier supplying 115 v d.c. to a copper bus bar system in the charging and repair section. From the distribution board a 3-phase system is used for power points and a single phase and neutral system for lighting points.

Lighting in storage area is by 300 w. tungsten dispersive type fittings giving 12 to 14 lumens; in offices is by 5-ft. 80 w. perspex covered fluorescent fittings, giving 20 to 25 lumens.

External lighting, tungsten fittings.

A master clock system incorporates 8 slave clocks and a time recorder.

Automatic 50-line external telephone system.

Hot cupboards, cooker grill and tea boiler in mess rooms.

## Other services

Compressed air service from single stage piston type unit compressor and cylinder suitable for 7½ cubic ft. per min. at 150 lb. per sq. in.

Gravity feed bulk acid supply from two 750-gall. lead-lined timber storage tanks mounted on roof over boiler house.

Total of services: 11s 9d

## Drainage

Separate soil and surface water drainage systems. The majority of drains are concrete encased and a neutralising system is provided for the effluent from the charging and repair sections.

## External works

Concrete roads at the sides of the building, with concrete and paved areas in front. Gates, railings and boundary wall to front of site.

Total per sq. ft. of floor area :

£64.154 1s 10½d

22,518 sq. ft.

## COST COMMENTS

s d  
4 This analysis is a typical example of a factory combining mainly low-cost production and storage areas with more expensive office building. The result is an average cost for each element—yet contains a few surprises.

*Planning restrictions:* One can only hazard a guess at the cost to the client resulting from the planning restrictions. The cost of the aluminium curtain walling complete with in-fill panels might be anything from 25s. to 30s. per sq. ft. This means that the 5-ft. high parapet wall around the perimeter of the two-storey block would probably cost £7 per foot run for the curtain walling alone. Restrictions have also resulted in placing the administration unit on the first floor with the added cost of waste disposal from the accompanying lavatory accommodation, heavier suspended floors to carry additional partitions, etc.

*Pre-planning:* A seven-month delay occurred between tender date and commencement of work. Whether this was due to the client, planning restrictions, or any other cause is not shown; in any event the contract must start with a sense of frustration and a series of wage claims.

*Preliminaries* are down to a minimum, which might not be expected on a restricted site such as this. This may mean either that the remainder of the contract carried the overheads, or that they have been deliberately omitted partly as a contractual risk in the face of keen competition and partly through good site organization.

4 8 *Foundations*, due to made-up ground, are more expensive than normal.

*Frame, etc.:* The advantages of an unobstructed main storage area has been paid for by the cost of the 110-ft. span lattice girders.

*External walls:* The cost per sq. ft. of floor area of 7s. 10½d. is equivalent to an average unit cost of 14s. 9d. per sq. ft. for (a) 11-in. fair-faced common brickwork, (b) aluminium cladding and lining, and (c) aluminium curtain walling with infill panels.

*Rooflights:* Apart from one small openable light the rooflights are double glazed aluminium bar, at an approximate unit cost of 6s. 6d. per sq. ft. including flashings, which seems very reasonable.

*Screens:* The unit cost of the metal screens can be calculated thus:

22,518 × 9½d.

2,264

= 7s. 8d. per sq. ft.

*Finishes:* The total for this group of elements, 6s. 8½d. per sq. ft. of floor area, is a small proportion of the whole, due to the large cheap factory area.

1 0 *Heating:* The initial cost of double glazing to rooflights and clerestory factory windows will be recouped in both the installation and running costs.

## CONTRACTORS

*General contractors:* T. and E. Warrington (Hyde) Ltd. *Precast concrete floor and roof units and reinforcement:* Matthews and Mumby. *Roofing:* Permanite Ltd. *Patent glazing, curtain walling and aluminium windows:* Williams and Williams, Ltd. *Curtain walling infilling panels and suspended ceiling:* Cape Asbestos Ltd. *Aluminium gable cladding:* Imperial Chemical Industries. *Power-operated shutter doors:* Bolton Gate Co. *Sanitary fittings:* Shires & Co. *Plumbing, compressed air and acid service:* A. Linsey. *Armstrong cork thermoplastic tiles:* Rohan & Bowden. *Asphalt work:* John Dickinson (Bolton) Ltd. *Plastering:* A. C. Marsden. *Painting:* Lunn and Cardno. *Ceramic tiling:* A. Francis and Co. *Granolithic flooring:* Stuarts Granolithic. *Ironmongery:* Walker and Wood. *Locks:* Kaye Lock Co. *Heating:* Brightside Heating Co., Ltd. *Electrical work:* J. Winder. *Paints:* North British Chemical Co. *Metal fencing gates and balustrading:* George Wragge Ltd.

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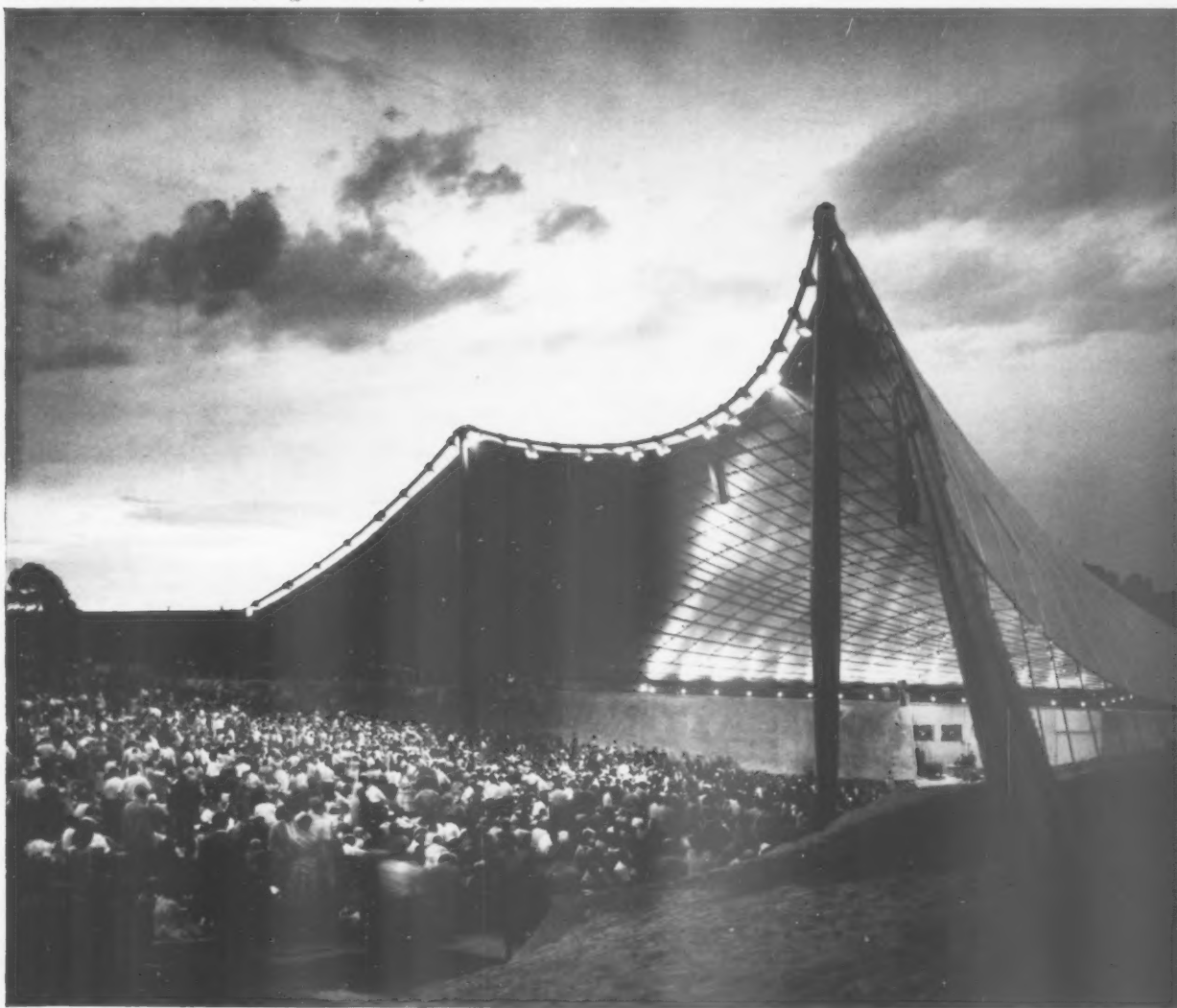
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ROOF: MUSIC BOWL IN MELBOURNE

*Yuncken. Freeman Brothers, Griffiths and Simpson, architects*

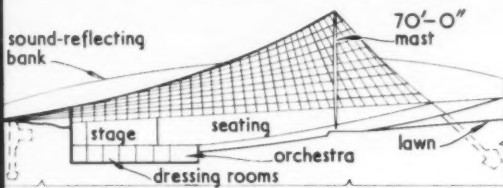


*The form of this roof was chosen not to provide shelter but to deflect the sound of traffic. The two masts are of steel cased in glass fibre and have ball-and-socket joints at the foot to permit movement. The main cable supporting the roof is 568 ft. long and weighs 40 tons. The roof covering is of  $\frac{1}{2}$ -in. plywood in 25-ft. by 7-ft. sheets, faced with satin aluminium. These are bolted to the secondary, transverse cables, polythene and nylon washers being used in the joints to damp sound caused by movement of the structure. The building was relatively cheap: the total cost being about £A200,000 (i.e. £160,000).*

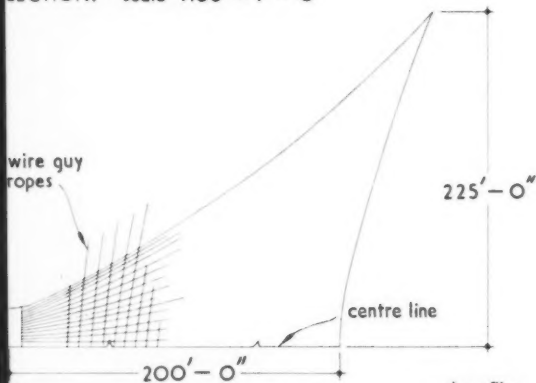
working detail

ROOF: MUSIC BOWL IN MELBOURNE

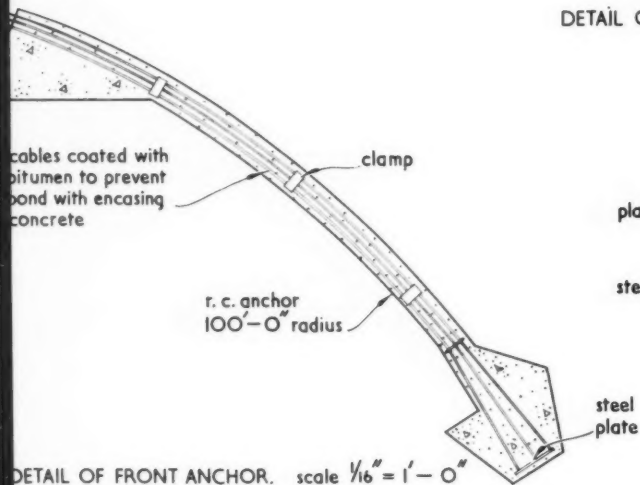
Yuncken, Freeman Brothers, Griffiths and Simpson, architects



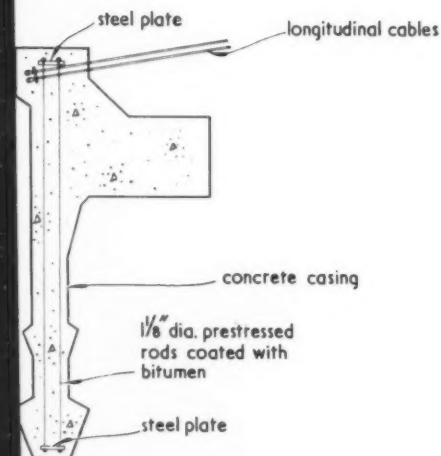
SECTION. scale  $\frac{1}{100}'' = 1' - 0''$



PLAN. scale  $\frac{1}{100}'' = 1' - 0''$

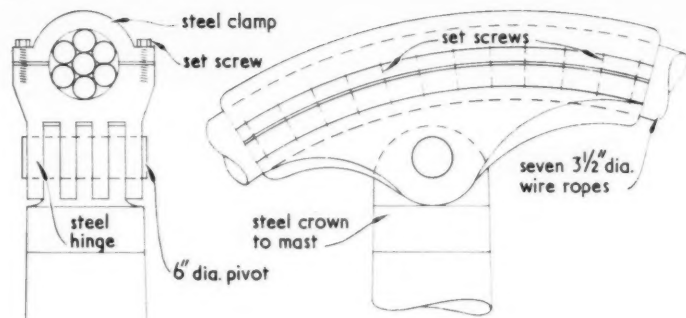


DETAIL OF FRONT ANCHOR. scale  $\frac{1}{16}'' = 1' - 0''$

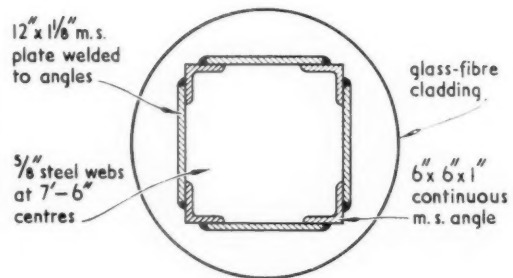


DETAIL OF REAR ANCHOR. scale  $\frac{1}{16}'' = 1' - 0''$

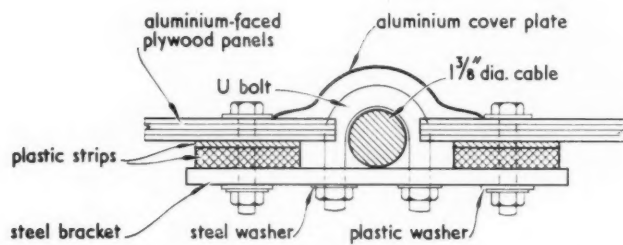
ROOFS AND CEILINGS: 55



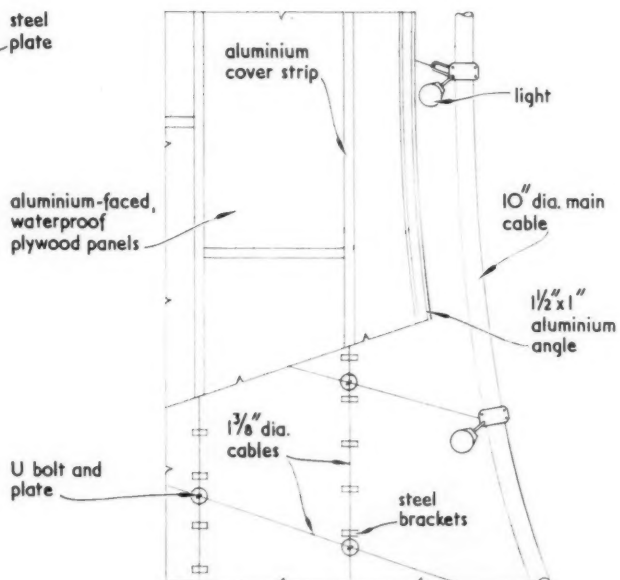
DETAIL OF MAST HEAD. scale  $\frac{1}{2}'' = 1' - 0''$



DETAIL OF MAST HEAD. PLAN OF MAST. scale  $\frac{1}{2}'' = 1' - 0''$



DETAIL OF COVER PANEL FIXING. scale  $\frac{1}{4}$  full size



DETAIL PLAN OF ROOF. scale  $\frac{1}{8}'' = 1' - 0''$

working detail

WALLS AND PARTITIONS: 81

WALL: FLATS IN GENEVA

*P. Bussat and J. M. Lamunière, architects (material supplied by Dariush Borbor)*



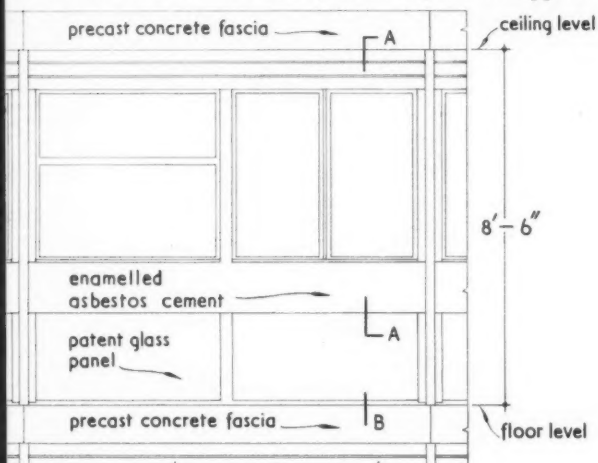
*The light timber-framed infill panels of this facade incorporate both perimeter heating pipes and external blinds. Note the combined sill and fascia in precast concrete and the use of an aluminium extrusion for the sill of the inward-opening double-glazed wood windows.*

working detail

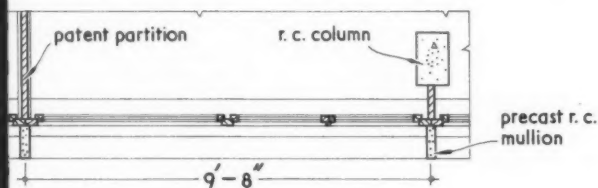
WALL: FLATS IN GENEVA

P. Bussat and J. M. Lamunière, architects (material supplied by Dariush Borbor)

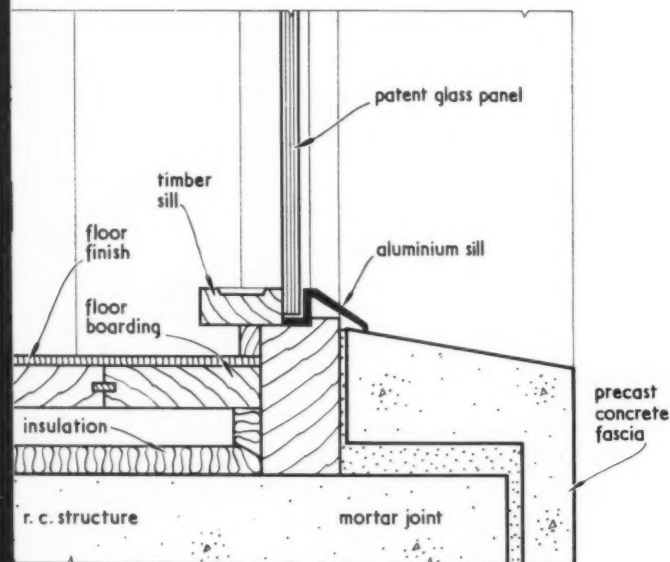
WALLS AND PARTITIONS: 81



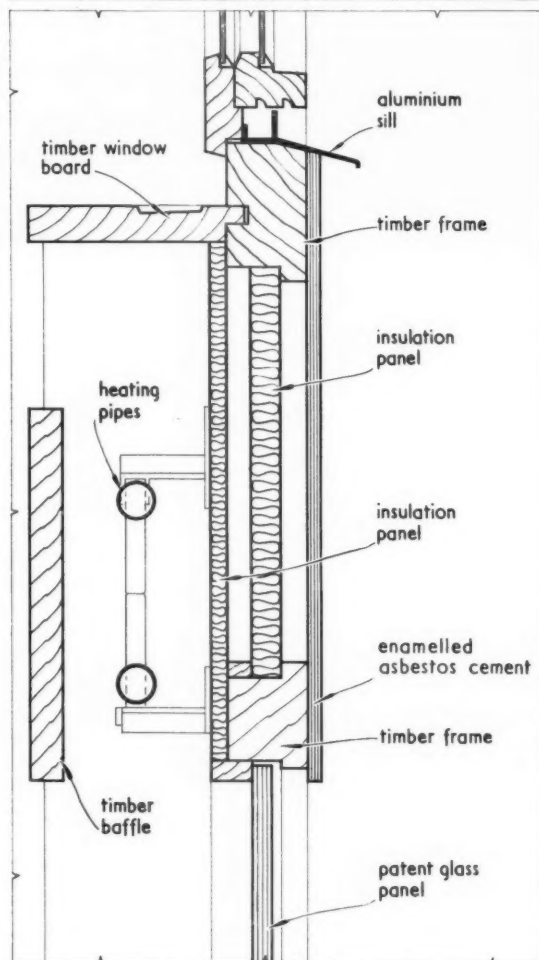
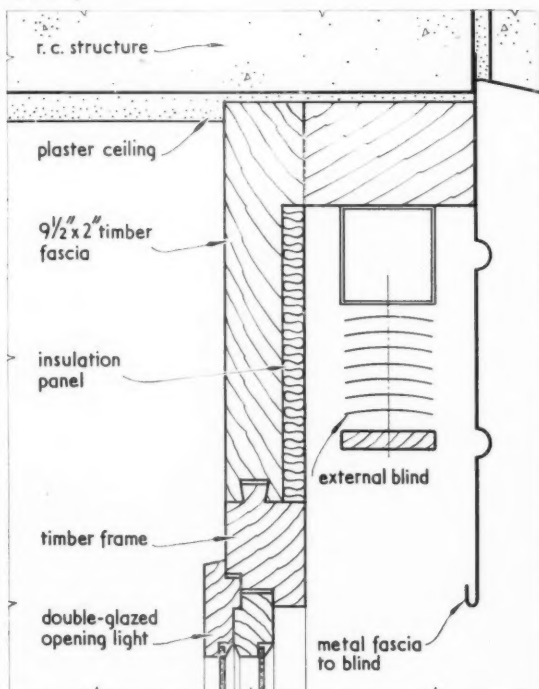
ELEVATION. scale  $\frac{1}{4}" = 1' - 0"$



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



SECTION AT B. scale  $\frac{1}{4}$  full size



SECTION A-A.

note: figured dimensions in feet and inches are approximate



# Buttresses of Power



**GIORRA DAM**  
PERTSHIRE

*Authority : North of Scotland Hydro-Electric Board.*

*Consulting Engineers : James Williamson & Partners.*

*Civil Engineers : Edmund Nuttall, Sons & Co. (London) Ltd.*

Soon the waters of Loch Giorra, held back by these massive buttresses, will provide electric power in the Killin section of the Breadalbane Power Scheme. The cement for this project is being provided by the Clyde Portland Cement Company Ltd., the Scottish subsidiary of the Tunnel Portland Cement Company Ltd. When large undertakings are planned the high quality of Tunnel Cements, backed by excellent delivery service and first-class technical, advisory and laboratory facilities, ensure that work goes forward smoothly.

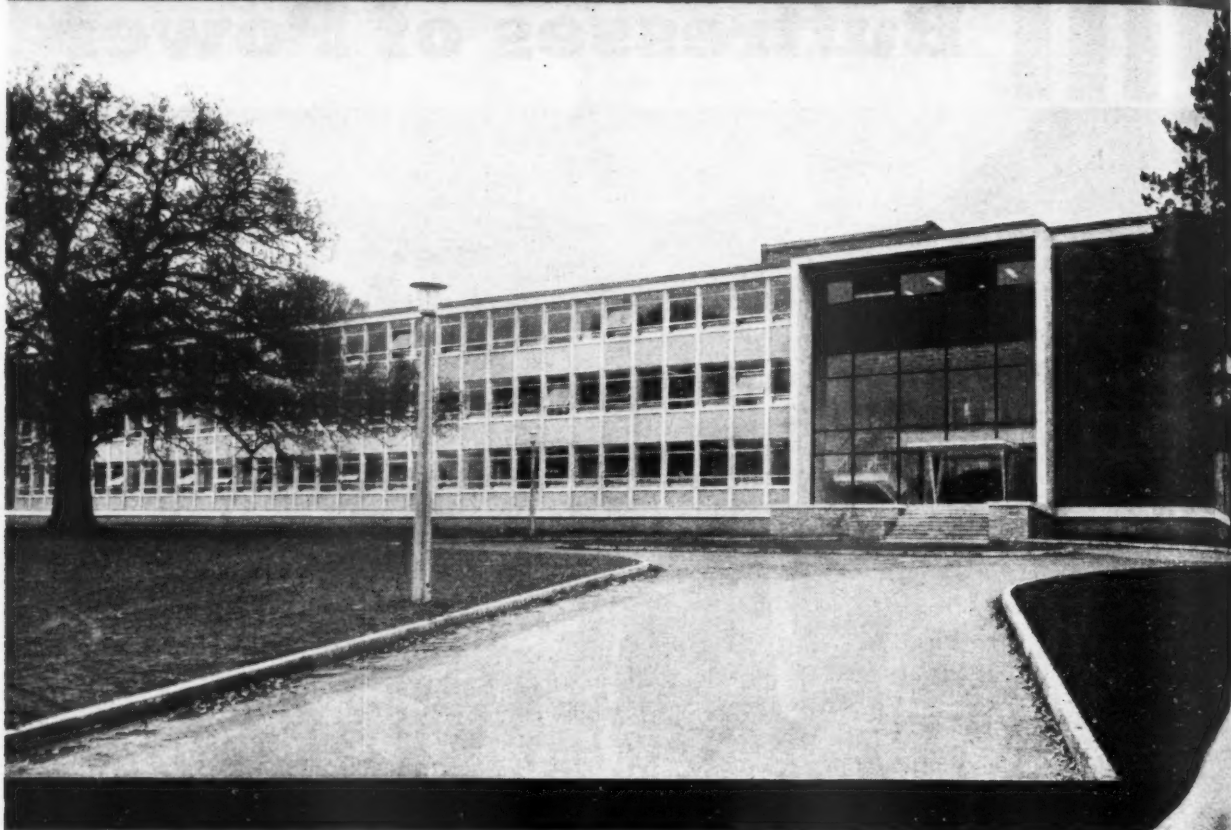


## TUNNEL PORTLAND CEMENT

THE TUNNEL PORTLAND CEMENT COMPANY LIMITED, 105 Piccadilly, London, W.1. GROsvenor 4100

CVS-18

## SOMETHING'S CHANGING THE FACE OF BRITAIN!



Nielsen House, Headquarters of the A. C. Nielsen Co. Ltd.

Architects: Howard Crane & Partners, London & Birmingham

## More colour, greater protection

*for new buildings and conversions all over the country.*

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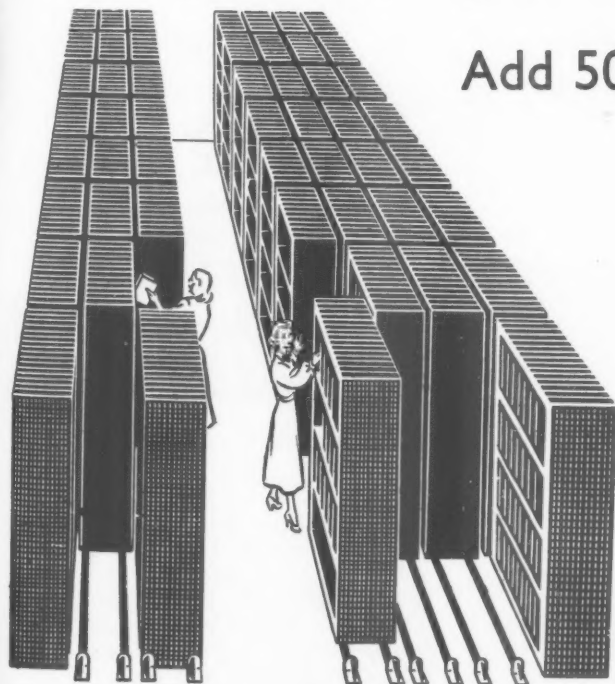
# STATION AT HADLEY WOOD, HERTS FOR BR EASTERN REGION



*The new station at Hadley Wood with a view of one of the three new tunnels in the background. These both form part of an extensive scheme by the Eastern Region of British Railways to widen the main line between Doncaster and London. Architect for the station was H. H. Powell, architect to the Eastern Region and the tunnels are to a design by H. D. Morgan of Sir William Halcrow and Partners.*

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## OFFICES AT LUDGATE HILL, LONDON, E.C.4

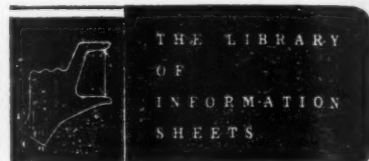


*A further scheme for private development in the City of London is proposed by Mappin & Webb who already have considerable property interests. The proposal is for a block of offices and shops. There is to be about 200,000 sq. ft. of office space and the shops will be in three parades fronting onto Ludgate Hill, The Old Bailey and the new route 11. A car park for 120 cars is also to be provided. Work is expected to start almost immediately and the whole project will take some two years to complete at a cost of £2,000,000. The architect for the building is Theo. H. Birks.*

## Announcements

Leslie Olorenshaw, a member of the executive board of the Taylor Woodrow Group of building and civil engineering companies, has been appointed a member of the parent board of Taylor Woodrow Ltd.

Arens Controls Ltd. have now moved all their offices and works departments to Trowers Way, Holmethorpe, Redhill, Surrey (telephone Redhill 5511/4).



### 24.L3. REFERENCE BACK

Readers are asked to note the following revisions and to amend their Sheets accordingly. Reverse of Sheet, heading "Types and Sizes," sub-heading "Circular," amend 3rd and 4th entries to 4 ft. 0 in. to 8 ft. 0 in. dia., and 9 ft. 0 in. to 14 ft. 0 in. in dia.; sub-heading "Square," amend sizes to 2 ft. 0 in. to 5 ft. 0 in. square; sub-heading "Rectangular," amend sizes to 3 ft. 0 in. by 2 ft. 6 in., 4 ft. 0 in. by 2 ft. 6 in., 4 ft. 0 in. by 3 ft. 0 in., 5 ft. 0 in. by 3 ft. 6 in., 6 ft. 0 in. by 4 ft. 0 in., 7 ft. 0 in. by 4 ft. 6 in. and 8 ft. 0 in. by 4 ft. 0 in.

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The Roderic Hill Building, Imperial College, London. Architects: Norman & Dawbarn

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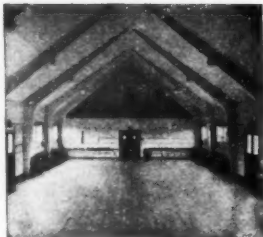
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MAIN ILLUSTRATION. Offices at Filton (reproduced by kind permission of the Bristol Aeroplane Co., Ltd.)

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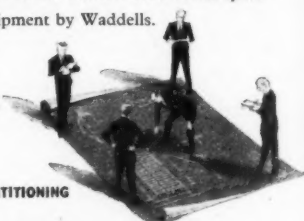
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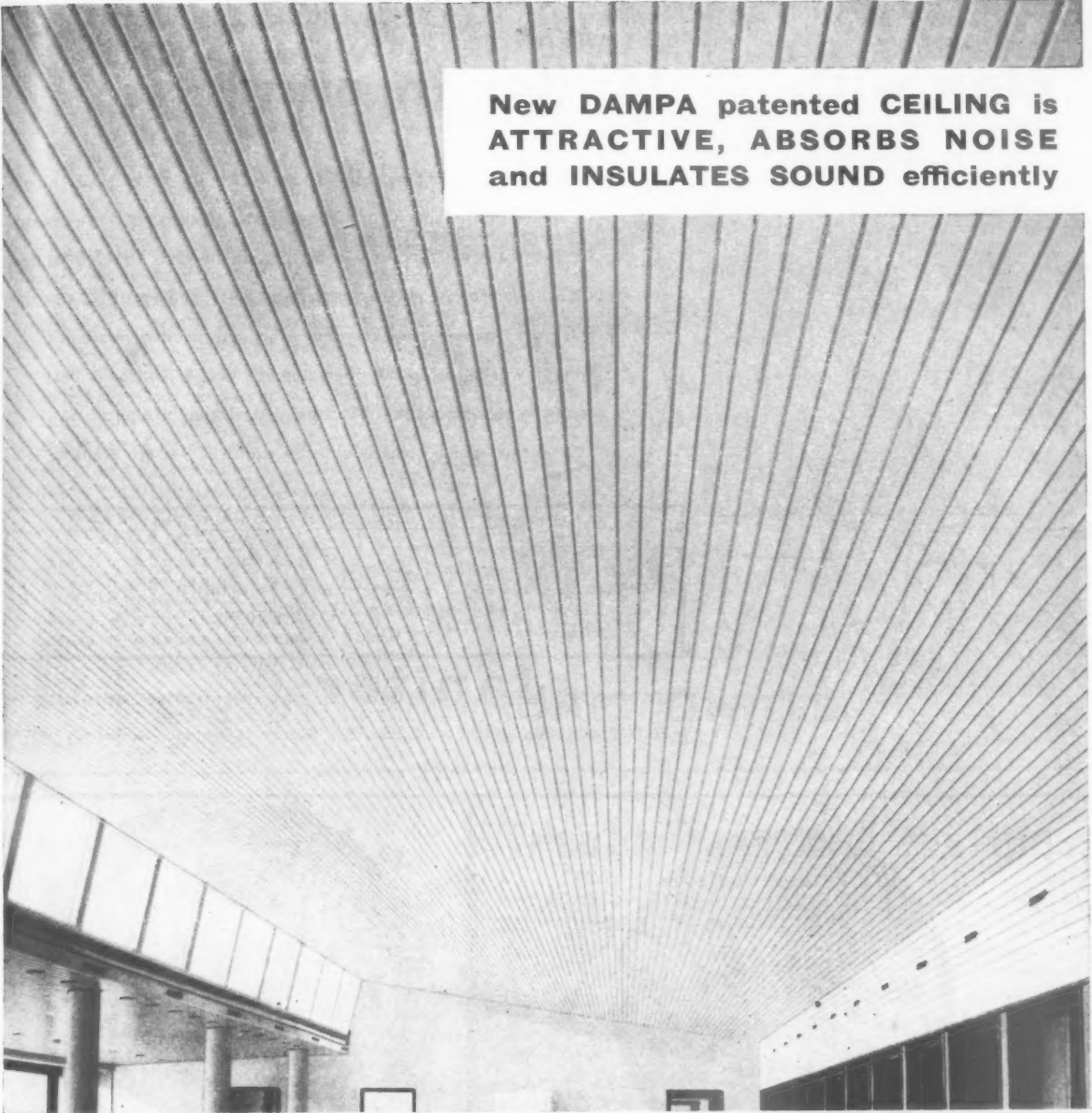
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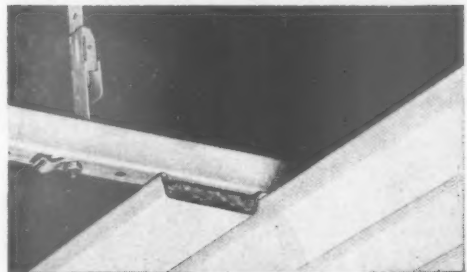
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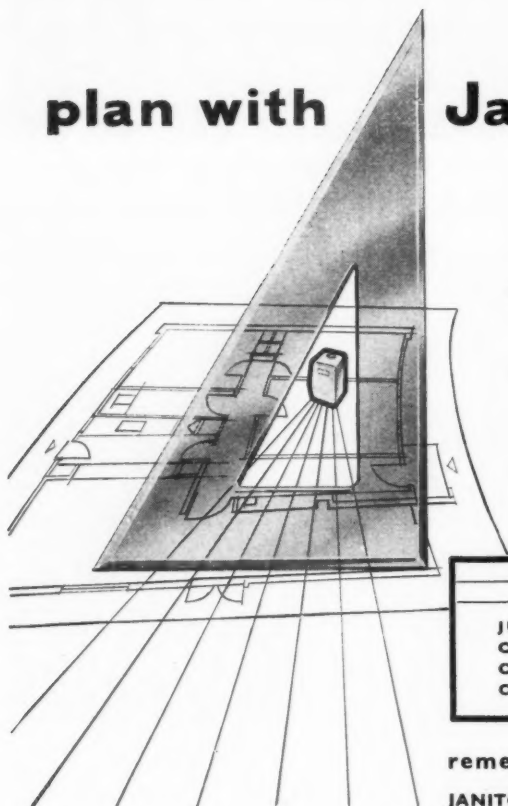
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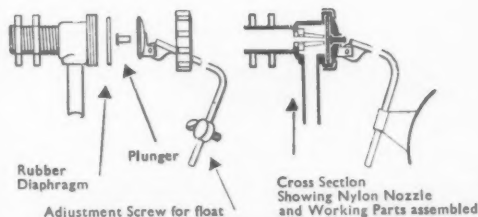
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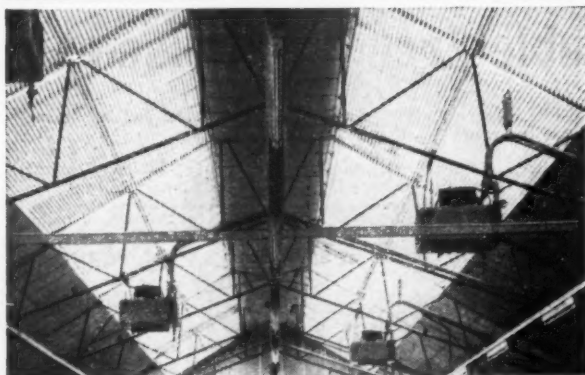
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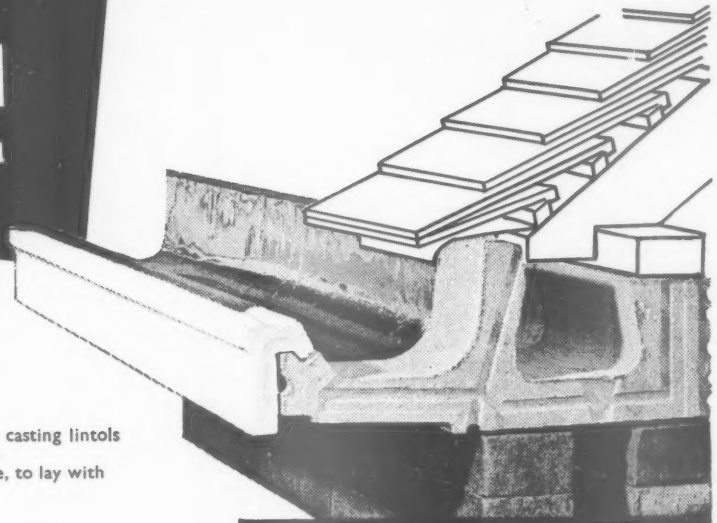
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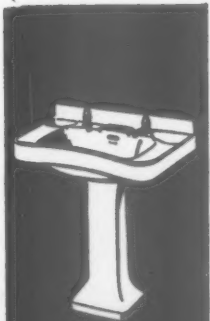
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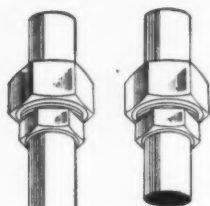


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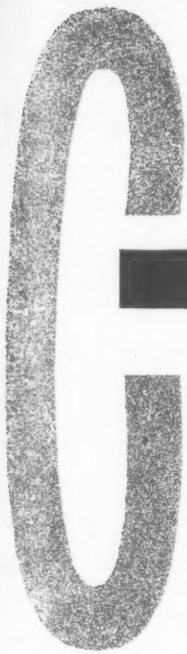
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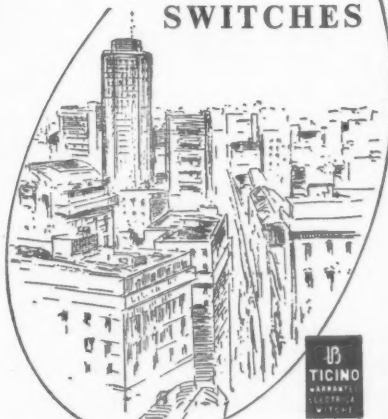
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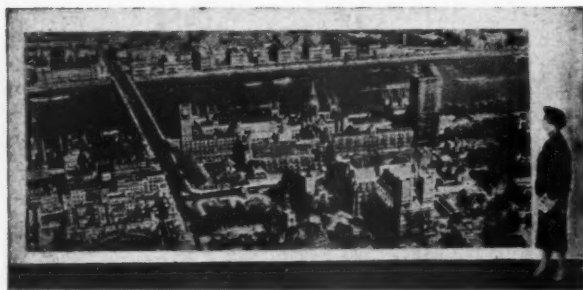
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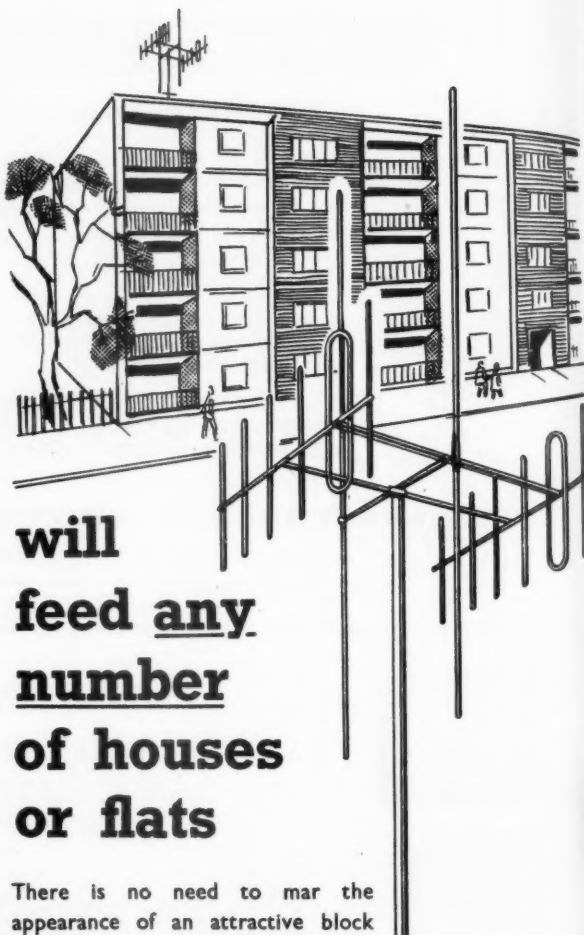
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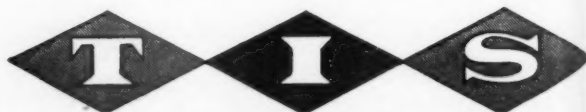


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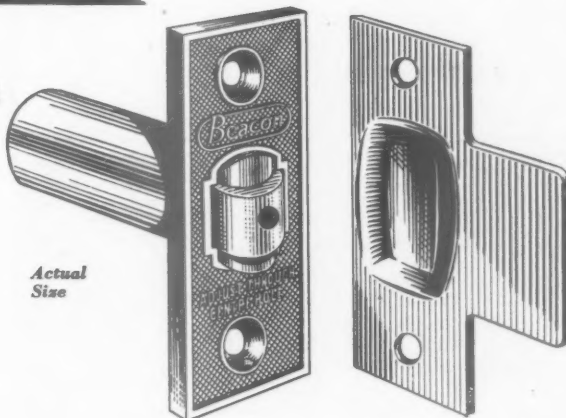
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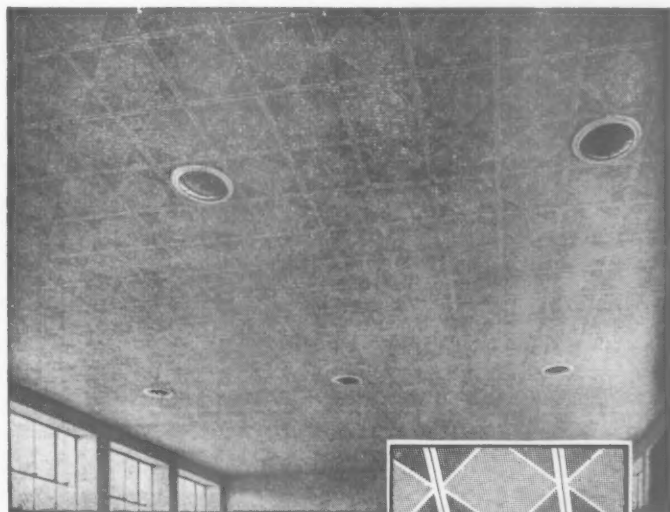
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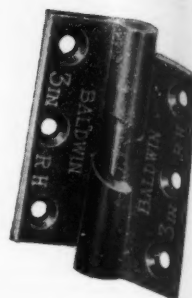
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or from the Solicitors:

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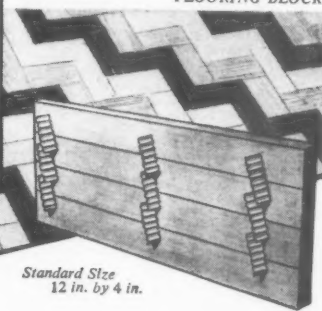


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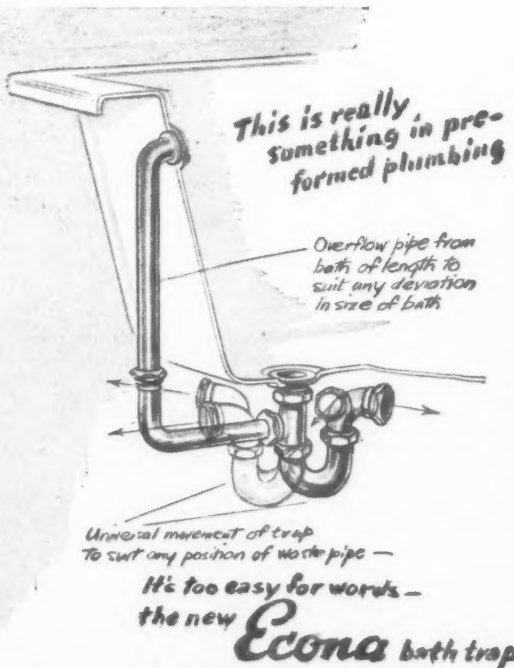
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## CLASSIFIED ADVERTISEMENTS

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

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

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. for each additional week) and payment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

## Public and Official Announcements

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

## HEMEL HEMPSTEAD DEVELOPMENT CORPORATION

Applications are invited for the following vacancies in the Chief Architect's Department:  
SENIOR PLANNING OFFICER: £934-£1,273. Vacancy No. 154.

Duties include liaison with other planning authorities on matters affecting revised Master Plan, planning applications, etc. Experience in planning office essential. Short-term post which might be attractive to senior man approaching retiring age.

SENIOR ASSISTANT ARCHITECT: £934-£1,273. Vacancy No. 155.

To take charge of small team responsible for housing, neighbourhood centre, etc., development. ARCHITECTURAL ASSISTANTS: Vacancy No. 156.

In grades with salaries ranging from £265-£939, according to age, qualifications and experience. Junior posts available for architectural students not yet qualified, and for those who have qualified and wish to gain practical experience.

Conditions of service similar to those in Local Government. Housing may be provided.

Applications, endorsed with appropriate vacancy number, giving age, education, qualifications and experience and names of two business referees to General Manager, Westbrook Hay, Hemel Hempstead. 4368

## THE UNITED NEWCASTLE UPON TYNE HOSPITALS

Applications are invited for the appointment of an ASSISTANT ARCHITECT in the Staff Architect's Department of the above Group of Hospitals.

The salary scale: £730 (2) × £25 (2) × £30 (2) × £35 (2) × £40 (1)-£1,055 p.a.

The commencing salary will be fixed within the Grade by reference to relevant experience and to age.

The successful applicant will assist in the preparation of a Master Plan of future building development for the Royal Victoria Infirmary, Newcastle, and he will also be required to carry out under the supervision of the Staff Architect certain building schemes for which the department is responsible.

Applicants must be Registered Architects and Associate members of the R.I.B.A., with a sound knowledge of the planning and construction of public buildings. Experience in hospital building work would be of advantage.

Applications, stating age, qualifications, past and present appointments, present salary and details of experience and training, together with the names of three referees (two of whom should be architects), should be forwarded to the House Governor & Secretary, Royal Victoria Infirmary, Newcastle upon Tyne, by not later than 30th June, 1959. 4386

## CITY AND COUNTY OF BRISTOL ARCHITECTS' COMMITTEE

Applications invited for following permanent staff appointments:—

(a) SENIOR QUANTITY SURVEYORS—Special Scale (£750 × £40-£1,030 p.a.—subject to National award). Applicants must be suitably qualified (by examination) and have had experience in taking off quantities, site measurement, interim certificates and final accounts.

(b) SENIOR ASSISTANT ARCHITECTS—Special Scale (£750 × £40-£1,030 p.a.—subject to National award).

(c) ASSISTANT ARCHITECTS—Grade A.P.T. II (£765-£980 p.a.).

(d) ASSISTANT ARCHITECTS—Grade A.P.T. I (£610-£765 p.a.).

Architectural appointments will be appropriate to professional experience and qualifications, but applicants for (b) must have passed Parts 1 & 2 of the final examination of the R.I.B.A., and have had experience in design, construction and contract administration, preferably with a large local authority.

Housing accommodation available if necessary at an economic rent. Five-day week.

Details and application forms (returnable by 15th June) from City Architect, Council House, Bristol. 1. 4487

KENT COUNTY COUNCIL  
ASSISTANT COUNTY ARCHITECT required at a salary within the range £1,790 to £2,280 a year, according to qualifications and experience. Candidates must be Fellows or Associates of the Royal Institute of British Architects and have had wide experience in the practice of architecture.

Further details and forms of application obtainable from the County Architect, Springfield, Maidstone, to whom applications must be returned by not later than the 19th June, 1959. 4604

COUNTY BOROUGH OF WEST HAM  
Applications invited for appointment of DEPUTY BOROUGH ARCHITECT AND PLANNING OFFICER (salary: £1,776 15s. 4d. by three annual increments to £2,000 p.a. incl. and £190 car allowance).

Applicants must be experienced in Redevelopment of Urban Areas, including High Density Housing, Town Planning Administration, and management of large Building Contracts. Successful applicant must be prepared to accept a high degree of responsibility for a large and varied programme.

Details, together with application form, which should be returned by 16th June, 1959, from the Borough Architect & Planning Officer, Thomas E. North, O.B.E., F.R.I.B.A., Dist.T.P., M.T.P.I., 70, West Ham Lane, Stratford, E.15.

G. E. SMITH, Town Clerk.

West Ham Town Hall, Stratford, E.15. 4603

## SCHOOL OF ARCHITECTURE, UNIVERSITY OF CAMBRIDGE

NUFFIELD RESEARCH ASSISTANTS  
Applications are invited for two posts in connection with research on problems of urban reconstruction. Appointments are for a period of three years, subject to satisfactory work in the first year, at a salary of £800-£1,000 p.a. according to qualifications and experience.

Full details are available from the Secretary, School of Architecture, 1, Scrope Terrace, Cambridge. 4449

SOUTHAMPTON COUNTY BOROUGH COUNCIL requires under N.J.C. conditions of service: ASSISTANT QUANTITY SURVEYOR, salary within Special Grade (£750-£1,030 p.a.).

Applicants must be Chartered Quantity Surveyors, preferably with experience in municipal housing, including multi-storey flats and shopping centres.

The salary scale is subject to adjustment in accordance with the new N.J.C. increase.

Apply on application forms obtainable from the Borough Engineer and Surveyor, Civic Centre, Southampton, by not later than Monday, 15th June, 1959. 4348

CENTRAL MORTGAGE AND HOUSING CORPORATION (The Crown Corporation which administers the National Housing Act of Canada) requires experienced TOWN PLANNERS in the Architectural and Planning Division, at Head Office in Ottawa, for work in connection with housing and planning activities across the country.

Applicants should be corporate members of the Town Planning Institute and possess a university degree or equivalent in architecture or engineering. Experience in physical planning is essential. Special consideration will be given to those who have experience in the New Towns, the London County Council or a progressive office working on good housing.

Applicants selected for interview will be advised of starting salaries, and these are commensurate on qualifications and experience. Salaries are reviewed annually and advancement is based on merit.

Travel assistance grants to help defray the cost of moving to Canada will be given on the following scale:

Married ... .. \$500.  
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Applications, stating age, marital status, qualifications and details of experience, together with the names and addresses of three referees, are to be addressed to Supervisor, Personnel Department, Central Mortgage and Housing Corporation, Head Office, Ottawa, Ontario. 4511

## UNIVERSITY OF DURHAM KING'S COLLEGE, NEWCASTLE UPON TYNE, 1

DEPARTMENT OF ARCHITECTURE

The Council of King's College propose to appoint a Lecturer in Architecture whose duties shall commence on 1st October, 1959.

The commencing salary will be determined at an appropriate point on the scale £900 × £50-£1,350 × £75-£1,650 according to the qualifications and experience of the successful applicant. Family allowance and F.S.S.U.

Further particulars may be obtained from the Registrar of King's College, to whom applications (12 copies) together with the names and addresses of three referees, should be addressed so as to reach him not later than 30th June, 1959. 4566

## BOROUGH OF BASINGSTOKE BOROUGH ARCHITECT'S DEPARTMENT

A rapidly expanding town offers interesting work for a SENIOR ARCHITECTURAL ASSISTANT who has passed the R.I.B.A. Final. Salary range £750 × £40-£1,030 according to experience. House or Flat available. N.J.C. conditions; post pensionable; medical examination.

Applications, giving details of age, training, experience, etc., and two referees, to Borough Architect, Municipal Buildings, Basingstoke, by 19th June, 1959. 4418

## NOTTINGHAMSHIRE COUNTY COUNCIL APPOINTMENT OF ASSISTANT ARCHITECTS

Applications are invited from students who have passed the Final examination of the R.I.B.A. or the Diploma examination of a recognised School or from qualified Architects, to work on the County Council's major building programmes. These programmes are handled by four groups of approximately eight Architects per group, under a Group Leader. All the Architects in the group carry out in turn the design, organisation and supervision of projects as Job Architects through all stages of the job from sketch plan to completion.

As part of carrying out the County Council's building programme, the office has a policy of continuous development in planning and construction, on which all Architects take part from time to time. In the planning of new buildings, research into the detailed requirements is carried out jointly with the client department. Time is allowed for this research as part of the sketch plan period. On construction, the office is committed to the design, development and control of component prefabrication for all major types of building. The responsibilities of the department also include design of furniture and equipment for all types of County Council buildings.

The posts are within the A.P.T. Special Scale (range £785-£1,070). Commencing salary according to ability and experience, starting dates by agreement.

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

A. R. DAVIS, Clerk of the County Council. 4611

## RADNORSHIRE COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the undermentioned permanent appointments in the County Architect's Department:—

(a) QUALIFIED ARCHITECTURAL ASSISTANT (must be A.R.I.B.A.). Salary in accordance with Special Grade for qualified assistants having at least five years' experience (i.e. £750 × £40-£1,030 per annum). Should be experienced in contemporary school architecture.

(b) QUALIFIED QUANTITY SURVEYOR (must be A.R.I.C.S.). Special Grade £750 × £40-£1,030 per annum. Required for preparation of Bills of Quantities, Estimates and Schemes and Direct Labour Costing.

The appointments 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, etc., Services.

Applications stating age, qualifications and experience with the names of two referees must be received by the undersigned not later than 20th June, 1959.

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

County Hall, Llandrindod Wells, Radnorshire. 4568

## 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 the A.P.T. Special Scale, £750-£1,030 (revised scale awaiting approval by Council).

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 20th June, 1959.

H. D. A. ROBERTSON, Town Clerk. 4569

## BOROUGH OF STAFFORD APPOINTMENT OF SENIOR ASSISTANT ARCHITECT

Applications are invited for the above vacancy on the Council's permanent staff. The position ranks next to that of Chief Assistant Architect in the Borough Surveyor's Department and carries with it a salary in accordance with the Special Grade, viz., £750 × £40 to £1,030, at present under review. The commencing salary will be fixed at a point commensurate with the experience and qualifications of the successful applicant.

A number of interesting capital projects have been approved in principle by the Council, including a new burial ground and crematorium; large-scale additions to the public library and museum; a new sports pavilion and a large scale programme of municipal housing which continues to be an important aspect of the needs of this growing town.

Applications, with copies of two recent testimonials, should be addressed to Mr. T. H. Higson, B.Sc.A.M.I.C.E., Borough Surveyor, Mount Street, Stafford, to be received by him not later than Thursday, June 11th, 1959.

Housing accommodation will be provided by the Council if required and assistance given with removal expenses.

T. BROUGHTON NOWELL, Town Clerk.

Borough Hall, Stafford. 22nd May, 1959. 4571

**LANCASHIRE COUNTY COUNCIL**  
Applications are invited from qualified ARCHITECTS of initiative, keen on design and modern constructional methods, for a large and varied programme.  
Permanent posts in A.P.T. Grade V (£1,220-£1,379). Starting point according to experience. Previous applicants should not re-apply.  
Application forms from the County Architect, P.O. Box 26, County Hall, Preston, reference 14/51.

**CITY OF MANCHESTER**  
**APPOINTMENT OF ASSISTANT CITY PLANNING OFFICER**  
Applications are invited for this appointment in the City Surveyor and Engineer's Department at a salary within J.N.C. Scale "G" (£1,990-£2,290). Candidates must be appropriately qualified by examination and must have had considerable experience in the planning and development work of a local authority.  
The person appointed will be responsible to the City Surveyor for the control of the Planning and Development Section of the Department and the duties will include redevelopment and new development work (including overspill), general development and the location and design of major highways. Housing accommodation and removal expenses.  
Forms of application may be obtained from the Town Clerk and must be returned to him at the Town Hall, Manchester, 2, in an envelope endorsed "Assistant City Planning Officer" not later than 29th June, 1959. 4570

**EASTERN ELECTRICITY BOARD**  
**NORTHMET SUB-AREA**  
Sub-Area Headquarters 103/59.B.  
**ARCHITECTURAL ASSISTANT (Ref. 860)**  
Candidates should have had experience in the preparation of drawings for building and civil engineering work for offices, service centres, workshops, etc., and should be capable of carrying out site surveying and supervising etc.  
Salary: N.J.B. Schedule D, Grade 5 (£790-£890) plus London Allowance.  
The successful candidate will be required to contribute to a superannuation scheme and may be required to undergo a medical examination.  
Apply by letter to the Manager, Northmet, Sub-Area, Eastern Electricity Board, Northmet House, Southgate, London, N.14, by 15th June, 1959. 4586

**KENT COUNTY COUNCIL** require, in connection with the Council's extensive building programme, **QUANTITY SURVEYORS** and **ASSISTANTS** with experience in the preparation of estimates, bills of quantities and final accounts for building projects. Salaries within scales £785-£1,070 or £610-£755 a year. Candidates for appointment to the higher scale should have passed the Final Examination of the Royal Institution of Chartered Surveyors (Quantity Surveying Section) and be familiar with recent developments in cost analysis and cost planning. Other candidates should have passed the Intermediate Examination of the Institution. Further details and application forms from the County Architect, Springfield, Maidstone. Closing date 24th June, 1959. 4583

**CITY OF SHEFFIELD**  
**CITY ARCHITECT'S DEPARTMENT**  
Applications are invited for the following appointments on the Staff of the City Architect, Mr. J. L. Womersley.  
(a) **GROUP LEADER ARCHITECT**, J.N.C. Scale "B" (£1,315-£1,465).  
(b) **GROUP LEADER ARCHITECTS**, J.N.C. Scale "A" (£1,215-£1,399).  
(c) **ASSISTANT ARCHITECTS**, Grade S.C. (£785-£1,070).

Architects with enthusiasm and determination are invited to help rebuild this industrial hill town.  
The above vacancies are for work in connection with large scale schemes of redevelopment and new development on which building work will commence early in 1960. There are excellent prospects of further work on interesting schemes of urban renewal and new developments.  
Commencing salaries within the above grades according to qualifications and experience.

Applications stating post applied for, age, education and training, qualifications, present and past appointments (with dates and salaries), experience and the names of two persons to whom reference may be made should reach me not later than Tuesday, 16th June, 1959.

**JOHN HEYS,**  
Town Clerk.  
Town Hall, Sheffield, 1. 4582

**THE CORPORATION OF DUNDEE**  
**CITY ARCHITECT'S DEPARTMENT**  
Applications are invited from persons under 45 years of age, who hold the qualification of Associate Member of the Royal Institute of British Architects, for a number of appointments in the City Architect's Department.  
The salary will be within the range £760-£1,040 per annum with placing according to age, experience and qualifications.  
Successful applicants will require to pass satisfactorily a medical examination for entry to the Superannuation Scheme. Housing accommodation may be made available if required.  
Applications, giving full information of training, experience, qualifications and present position, together with the names of two professional referees, should be lodged with the Town Clerk, City Chambers, Dundee, not later than 18th June, 1959. 4591

**LAGOS EXECUTIVE DEVELOPMENT BOARD**  
**STAFF VACANCIES**

Applications are invited from qualified and experienced candidates for the following appointments:

(i) **QUANTITY SURVEYOR**  
Salary: £2,000 per annum inclusive of inducement allowance. Qualifications/experience: Candidates must be Associate Members of the Royal Institute of Chartered Surveyors (Quantity Surveyors' Section) with wide experience in large-scale housing development.

(ii) **ENGINEER**  
Salary: £1,500 per annum inclusive of inducement allowance and rising subject to satisfactory service by increments of £100 to a maximum of £1,700 per annum inclusive. Qualifications/experience: Applicants must have passed their Final examination of the Institution of Municipal Engineers or the Institution of Civil Engineers, and have good experience in the design and supervision of general municipal engineering works.

2. Conditions of service, full details of which are available on request, provide for free passages, provident fund facilities, children's allowances, car allowance, assisted car purchase scheme, and generous leave on full salary. The Board also make available on reasonable rental, housing accommodation with basic furniture.

3. Applications giving full details of candidates' age, education, professional qualification and experience, appointments held, together with names of two referees, should be sent in duplicate, one copy being addressed to the Commissioner for Nigeria in the United Kingdom, Nigeria House, 9, Northumberland Avenue, London, W.C.2, and marked "L.E.D.B."; and one copy by air mail to the undersigned. Interviews will be arranged if necessary in London as well as in Lagos and applications must be received at the Nigeria House not later than Friday, 12th June, 1959.

**J. W. HENDERSON,**  
Chief Executive Officer.  
Lagos Executive Development Board,  
P.O. Box 907,  
Lagos,  
Nigeria. 4581

**BEDLINGTONSHIRE URBAN DISTRICT**  
**COUNCIL**

(a) Appointment of **TWO ENGINEERING ASSISTANTS**.  
(b) Appointment of **ARCHITECTURAL ASSISTANT**.

Applications are invited for the above appointments in the Engineer and Surveyor's Department, at a salary in accordance with A.P.T. Grade 1, £510-£765.

Applicants must have had training in a Municipal Engineers Office and be a student member of one of the appropriate Institutions, be a competent draughtsman and capable of carrying out surveys for engineering and building works.

The appointments are superannuable and subject to the National Scheme of Conditions of Service, and a satisfactory medical examination. The successful candidate will have an opportunity of obtaining varied experience including highways, housing development and main drainage.

Applications, giving full details of age, training and experience, together with the names of two referees, must be delivered to the undersigned not later than Friday, 12th June, 1959. Housing accommodation will be considered.

**F. S. FORSTER,**  
Clerk to the District Council.  
Council Offices,  
Bedlington,  
Northumberland. 4510

**PLYMOUTH COLLEGE OF ART AND CRAFTS**

Principal: ALFRED FORREST, A.R.C.A., A.T.D.  
Applications are invited for the post of **LECTURER** in the School of Architecture conducting full-time and part-time courses leading to the Intermediate and Final R.I.B.A. Examinations.

Application forms and further particulars may be obtained from the Clerk to the Governors, Education Offices, Plymouth, to whom they should be returned not later than 10th June, 1959. 4516

**NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD**

Applications are invited for the following posts:

**ASSISTANT BUILDING SURVEYOR (Ref. 730).**  
Applicants must be Associate members of R.I.C.S. and capable of preparing working drawings and specifications for alteration works, site surveying and levelling, etc.  
Salary scale: £730 x £25 (2) x £30 (2) x £35 (5) x £40 (1) -£1,055, plus £20-£50 London weighting.  
**SURVEYING ASSISTANT (Ref. 731).**  
Applicants must have passed the Intermediate Examination of the R.I.C.S. (I.I.B.).  
Salary scale: £545 (age 21 or over) x £20 (3) x £25 (4) x £30 (2) -£765, plus £20-£30 London weighting.

The work is varied and interesting and entails preparation of surveys, working drawings and specifications under supervision, of works of a minor character. The Board operates a scheme of financial assistance to students studying for professional examinations.

Starting salaries in both grades may be above minimum having regard to relevant practical experience. Whitley Council conditions. Superannuable.

Apply, stating age, qualifications (with dates) and experience, together with the names and addresses of two referees to: Secretary, North West Metropolitan Regional Hospital Board, 40, Eastbourne Terrace, London, W.2, by 17th June, quoting appropriate reference. 4577

**BANFF COUNTY COUNCIL**

Applications are invited for the following posts in the County Architect and Planning Officer's Department.

(a) **CHIEF ASSISTANT ARCHITECT**, £1,025 x £50-£1,205.  
(b) **CHIEF PLANNING ASSISTANT**, £1,025 x £50-£1,205.

The posts are superannuable and applicants must be corporate members of R.I.B.A. and T.P.I. respectively. Consideration may be given to housing if required.

Full particulars of age, qualifications and experience, etc., together with three recent testimonials to be submitted by 26th June, 1959, to M. Wilson, A.R.I.B.A., County Architect and Planning Officer, 13, Cluny Square, Buckie. 4603

**BUCKS COUNTY COUNCIL**

Applications are invited for the appointment of an **ASSISTANT ARCHITECT** in the County Architect's Department on the Architect's Special Scale, £785-£1,070 p.a.

The appointment is superannuable and subject to medical examination.

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 13th June, 1959.

**F. B. POOLEY,**  
County Architect.  
County Offices,  
Aylesbury. 4684

**LONDON COUNTY COUNCIL**

**QUALIFYING EXAMINATION FOR THE OFFICE OF DISTRICT SURVEYOR**

An examination for certificates of proficiency to perform the duties of District Surveyor will be conducted in London in the week commencing 12th October, 1959. The minimum age limit for candidates is 25.

Possession of this certificate is necessary for appointment to positions as District Surveyor (Salary scales £1,650 to £2,750 a year) or as Assistant District Surveyor (Salary scale £1,245 to £1,482 10s. a year, plus allowance £59 a year). Apply to The Architect to the Council (AR/ED/RWF), County Hall, Westminster Bridge, S.E.1, for application forms and further particulars. (657) 4638

**BUILDING SURVEYORS**

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 £860 with starting rates according to qualifications and experience. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council, L.C.C. (AR/EK/28/59), County Hall S.E.1. (541.) 4336

**DEPARTMENT OF HEALTH FOR SCOTLAND**

The Architectural Division which covers work on housing, hospitals, schools, local authority buildings, agricultural colleges and State institutions includes development work, has vacancy in Edinburgh for an **ASSISTANT ARCHITECT** (non-pensionable post). Salary range £805-£1,260. Write Establishment Officer, Department of Health for Scotland, Room 30, St. Andrew's House, Edinburgh, 1, for application form. Closing date Friday, 19th June, 1959. 4510

**QUANTITY SURVEYORS FOR COST-PLANNING**

Architect's Department, L.C.C. requires qualified Quantity Surveyors (A.R.I.C.S.), for preliminary estimating and cost-planning in carrying out of large and varied building programme.

Salaries (Grade II) - £1,037 10s. to £1,305. Vacancies also for candidates with good general quantity surveying experience suitable to be trained in estimating and cost-planning work.

Salaries (Grade III) - £815 to £1,090.

**TECHNICAL ASSISTANT** up to £860.

Starting point according to qualifications and experience. Holiday arrangements respected.

Salaries under review.  
Application form returnable by 27th May, and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council, AR/EK/47/59, County Hall, S.E.1. (1034). 4573

**NORTHERN IRELAND HOUSING TRUST**

The Trust invites applications for the following posts:

(a) **SENIOR ASSISTANT ARCHITECT, GRADE II** - Scale £1,049-£1,158. Candidates must be Associate Members of the Royal Institute of British Architects.

(b) **ARCHITECTURAL ASSISTANTS.**

(c) **ENGINEERING ASSISTANTS.**

The salary for (b) and (c) will be on scales ranging from £584-£873. Placing will be in accordance with qualifications and experience.

The persons appointed will be required to participate in a contributory superannuation scheme which allows for the reciprocal transfer of benefits in Local Government Schemes in suitable cases.

Assistance in obtaining housing accommodation may be given in suitable circumstances to the successful candidates.

Please apply, not later than 12th June, 1959, giving full details of age, education, qualifications and experience, including present post and salary, to the General Manager, Northern Ireland Housing Trust, 13, Hope Street, Belfast. 4574



**BRITISH TRANSPORT COMMISSION**  
OFFICE OF THE ARCHITECT  
SENIOR ASSISTANT ARCHITECT. Salary  
range: £1,200-£1,420 p.a. Experience in archi-  
tectural practice; design ability, with practical  
approach to office routine. A.R.I.B.A. essential.  
Superannuation scheme; certain travel facili-  
ties; medical examination. Write stating age,  
qualifications and experience to Director of Estab-  
lishment, British Transport Commission, 222,  
Marylebone Road, London, N.W.1, within 14 days.  
S.A.E. for acknowledgment. 4547

**BIRMINGHAM REGIONAL HOSPITAL BOARD**  
ARCHITECTURAL ASSISTANTS required.  
Salary scale £545-£765 p.a. Point of entry  
according to experience. Intermediate R.I.B.A.  
essential. Superannuable. Apply, naming two  
referees, to Secretary, R.H.B., 10, Augustus Road,  
Birmingham, 15, by 18th June. 4460

**LONDON COUNTY COUNCIL**  
ARCHITECTURAL ASSISTANTS required up  
to £860 (at present under review). Full and  
interesting programme of houses, flats, schools  
and general buildings. Application form and  
particulars from Hubert Bennett, F.R.I.B.A.,  
Architect to Council, AR/EK/43/59, County Hall,  
S.E.1. (923). 4056

**KUMASI COLLEGE OF TECHNOLOGY,**  
KUMASI, GHANA  
Require temporary ARCHITECTURAL STAFF  
at their London Office for about nine months to  
prepare contract drawings for a large building  
programme in Ghana; salary range from £80 to  
£120 per month according to experience. Applica-  
tions are invited from qualified architects and  
architectural assistants. Further details may be  
obtained from the London Office of Kumasi  
College of Technology, 29, Tavistock Square, Lon-  
don, W.C.2, to whom applications should be sent  
as soon as possible. 4593

**CORBY DEVELOPMENT CORPORATION**  
ASSISTANT ARCHITECT  
ARCHITECTURAL ASSISTANT  
Applications are invited for an appointment as  
an Assistant Architect within Grade V of the  
Whitley Council Scales for New Towns Staff  
(£544-£1,029) and another appointment as an  
Architectural Assistant within Grade A.P.T. IV  
(£475-£939). The commencing point within these  
scales will depend upon experience and qualifica-  
tions.

The appointments will be subject to Super-  
annuation under the Local Government Scheme.  
Housing is available and assistance will be given  
with removal expenses.  
Applications, stating age, education, training,  
qualifications, experience, present and past  
appointments and salary, together with the  
names of two referees must reach the undersigned  
by the 12th June, 1959.

R. F. BROOKS GRUNDY,  
General Manager,  
Corby Development Corporation,  
Spencer House,  
Corby,  
Northants. 4519

**COUNTY BOROUGH OF WALLASEY**  
ASSISTANT, GRADE A.P.T. IV  
£1,065 x £55 x £50 to £1,220  
Applications are invited for the above appoint-  
ment in the Borough Surveyor's Department at a  
salary within the above Grade.  
Applicants must have experience in a Planning,  
Architectural or Municipal Engineer's Office.  
Full particulars and Form of Application, which  
must be returned by Monday, 15th June, 1959,  
may be obtained from the Borough Surveyor,  
Town Hall, Wallasey.

A. G. HARRISON,  
Town Clerk. 4476

**SOUTH CAMBRIDGESHIRE RURAL**  
DISTRICT COUNCIL  
ASSISTANT ARCHITECT  
Applications are invited for the above appoint-  
ment in the Department of the Architect and  
Surveyor.  
Salary: A.P.T. II (£765-£880) or Special Grade  
(£785-£1,070) according to qualifications and expe-  
rience.  
Housing accommodation available if required.  
Application, with usual particulars and names  
of two referees, to reach the undersigned not later  
than 12th June, 1959.

F. H. M. SARGENT,  
Clerk of the Council.  
County Hall,  
Hobson Street,  
Cambridge. 4528

**COUNTY BOROUGH OF TYNEMOUTH**  
BOROUGH SURVEYOR'S DEPARTMENT  
Applications are invited for the undermentioned  
posts in the above department:  
1. ASSISTANT ARCHITECT, Special Scale,  
£750-£1,030. Point of entry to be according to  
qualifications and experience.  
2. JUNIOR ASSISTANT ARCHITECT, Grade I,  
£610-£765.  
Application forms, together with Conditions of  
Appointment, can be obtained from D. M. O'Herriliv, Esq., O.B.E., B.Sc.(Eng.), M.I.C.E.,  
16, Northumberland Square, North Shields, to  
whom they should be returned by the 20th June,  
1959.

In the case of appointment No. 1, the Corpora-  
tion may be prepared to assist in the provision  
of housing accommodation.  
F. G. EGNER,  
Town Clerk. 4539

# CITY OF LIVERPOOL ARCHITECTURAL AND HOUSING DEPARTMENT APPOINTMENT OF ARCHITECTS

Vacancies for Architects exist in the following  
grades:—

Scale A—£1,255 to £1,390 per annum.  
A.P.T. V—£1,220 to £1,375 per annum.

N.J.C.—Commencing salary within Scale (pre-  
sent maximum £1,030, subject to review) with  
prospects of promotion to A.P.T. IV.  
These vacancies exist in the respective sections,  
all of which offer a wide variety of opportunity  
and scope for personal initiative and are con-  
cerned respectively with:—

(a) General architectural work including educa-  
tional buildings.  
(b) Housing, including multi-storey projects.  
(c) Civic redevelopment and slum clearance  
projects.

Applicants, who should be Associates of the  
R.I.B.A., or hold equivalent qualifications, should  
indicate on their applications not only the grading  
of the post for which they wish to apply, but  
any preference for appointment to one of the  
three sections.

Application forms, returnable by 30th June,  
1959, from the City Architect and Director of  
Housing, Blackburn Chambers, Dale Street,  
Liverpool, 2.

The appointments are superannuable and subject  
to the Standing Orders of the City Council. Can-  
vassing disqualifies.

THOMAS ALKER,  
Town Clerk. 4544

**LONDON COUNTY COUNCIL**  
PARKS DEPARTMENT  
ARCHITECTURAL ASSISTANTS. Good draughts-  
men with experience of preparation of working  
drawings and specifications and supervision of  
contract work. Up to £850 (under review). Apply  
Chief Officer, Parks Department (A1/A), County  
Hall, S.E.1 (WATERLOO 5000, Ext. 8076). (1146)  
4500

**BOROUGH OF PRESTWICH**  
BOROUGH ENGINEER'S DEPARTMENT  
APPOINTMENT OF ARCHITECTURAL  
ASSISTANT

Applications are invited for the position of  
Architectural Assistant, at a salary in accordance  
with "Special Classes" (£785-£1,070 per annum).  
Applicants should hold suitable qualifications  
and have had experience in housing and public  
buildings. Preference will be given to applicants  
who have passed the Final examination of the  
R.I.B.A.

Applications stating age, qualifications, expe-  
rience, etc., together with the names of two  
persons to whom reference may be made should  
be received by the undersigned not later than  
21st June, 1959.

C. A. CROSS,  
Town Clerk. 4540

**BRITISH RAILWAYS**  
LONDON MIDLAND REGION  
ASSISTANT ARCHITECTS

Required in the Regional Architect's Office,  
Euston, to work on projects connected with the  
Railway Modernisation Plan. Must be Associates  
of the R.I.B.A. or have Intermediate and several  
years' experience. Applicants must have a keen  
interest in contemporary design and a knowledge  
of modern structural technique. In addition to  
normal work posts are vacant in the Research  
and Development Group and applicants for these  
should have experience in the development of pre-  
fabricated structures and industrial design.  
Salary range £835-£903 per annum. Prospects  
of promotion for entrants showing outstanding  
ability and responsibility. Residential and other  
travel concessions available. Apply stating age,  
experience and qualifications to:—  
W. R. HEADLEY, A.R.I.B.A., A.A.Dipl.,  
Architect.

Chief Civil Engineer's Office,  
British Railways (London Midland Region),  
5a, Euston Grove, London, N.W.1. 4551

**THE NIGERIAN RAILWAY CORPORATION**  
Invites applications for the following post:—  
ASSISTANT ARCHITECT

Duties and Qualifications: Candidates should  
be Associated Members of the Royal Institute of  
British Architects and have had several years'  
experience covering public buildings, factories,  
workshops, offices and housing, including layouts  
for same, specifications and supervision of junior  
staff.

Salary: In scale £1,100 x £50 per annum to £1,900  
(inclusive of Overseas Pay) per annum. Starting  
salary according to qualifications and experience.  
Appointments are on contract with a gratuity  
payable on completion of contract at the rate  
of £18 6s. 8d. to £31 13s. 4d. for each completed  
month of service.

Tours: 15 months in Nigeria followed by 15  
weeks' leave on full pay.

Quarters: Partly furnished quarters are pro-  
vided at low rental.

Allowances: There are attractive family, travel-  
ling, transport and other allowances.

Send postcard before 23rd June, 1959, mention-  
ing the post and this paper for further par-  
ticulars and application form to:—  
The London Representative,  
Nigerian Railway Corporation,  
Nigeria House, 9, Northumberland Avenue,  
London, W.C.2. 4560

**THE SOUTH WALES ELECTRICITY BOARD**  
SENIOR ARCHITECTURAL DRAUGHTSMAN  
Our Architectural Section does a large, varied  
and interesting range of work.  
It is situated in a locality which is rural, yet  
only five miles from the City of Cardiff.

To help maintain our standards in serving over  
600,000 consumers, we need a Senior Architectural  
Draftsman who has obtained or is studying  
for membership of the R.I.B.A.

The salary will be £790/£890 and applications  
will be considered at St. Mellons, Cardiff, will  
receive careful and prompt consideration.

(Closing date for application, Saturday, 20th  
June, 1959. Envelopes should be marked "Senior  
Architectural Draftsman-46/59".) 4561

**NORTHUMBERLAND COUNTY COUNCIL**  
SENIOR ASSISTANT ARCHITECT required on  
A.P.T. Grade IV (£1,065-£1,220).

Membership of R.I.B.A. essential; membership  
of T.P.I. desirable. Application forms and further  
information from County Planning Officer, County  
Hall, Newcastle upon Tyne, 1.

Closing date: 15th June, 1959. 4572

**GOVERNMENT OF JAMAICA**  
CHIEF ARCHITECT, PUBLIC WORKS  
DEPARTMENT

Contract appointment for three years. Salary  
£2,100 a year. Gratuity 20 per cent. of salary.

Candidates must be A.R.I.B.A. with knowledge  
and experience of reinforced concrete, building  
construction methods in the field specifications and  
contracts, and preferably special knowledge of  
tropical architecture. Write Director of Recruit-  
ment, Colonial Office, London, S.W.1, giving age,  
qualifications and experience quoting BCD 112/32  
018. 4555

## Architectural Appointments Vacant

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

ASSISTANT capable of running medium sized  
contracts under supervision wanted immedi-  
ately. Salary £950-£1,000. Stanley R. Nevill  
& Partners, 34 Smith Square, Westminster.  
Abbey 3971. 4474

REQUIRED in Oxford office of W. H. Watkins,  
Gray & Partners, ASSISTANT to work on  
advanced Technical Laboratory. Apply in writing  
to 57, Catherine Place, S.W.1, or ring for appoint-  
ment Vic 761. 3955

RONALD WARD & PARTNERS require  
ARCHITECTURAL ASSISTANTS with con-  
siderable outlook and willing to use own  
initiative. Congenial working conditions. Five-day  
week. Apply, 29, Chesham Place, Belgrave Square,  
S.W.1. Telephone Belgrave 3361. 3995

JACK GODFREY-GILBERT, F.R.I.B.A., re-  
quires an ASSISTANT not necessarily  
qualified but willing and able to take respon-  
sibility. Good prospects and permanent position  
in small but very busy private practice with  
branch office shortly starting on South Coast.  
Please apply in writing with full particulars to:  
3, The Broadway, Wimbledon, S.W.19. 4379

BURLES & NEWTON require an ARCHI-  
TECTURAL ASSISTANT between Inter-  
mediate and Final standard. The appointment  
offers opportunity for experience and initiative  
on a wide range of projects, including schools,  
churches, housing and commercial buildings.  
Write or telephone for appointment to 25, Bedford  
Row, W.C.1. CHA. 9538. 4376

ARCHITECT'S Office with modern approach to  
design requires ASSISTANTS of Inter-  
mediate and Final standard, London or Reading,  
for interesting and varied work. Write Box 4374. 4376

FARMER & DARK have vacancies for SENIOR  
and ASSISTANT ARCHITECTS for a  
variety of projects in the U.K. and Overseas.  
Write with full particulars and salary required  
to Farmer & Dark, Romney House, Tufton Street,  
Westminster, S.W.1. 4379

ARMSTRONG & MACMANUS require  
JUNIOR ASSISTANTS to assist small  
team on interesting and varied work. Telephone  
WELbeck 2273 for appointment. 4370

OUR SENIOR ASSISTANT ARCHITECTS  
required to lead groups working on Central  
area redevelopment schemes—must have consider-  
able experience. Salary £1,000-£1,250. Details to  
Covell & Matthews, 34 Sackville Street, W.1.  
REGENT 2291. 4363

W. J. SIMMS SONS & COOKE LTD.  
require the services of an ASSISTANT  
in their architectural department. Applicants  
must have had wide experience in General Build-  
ing Construction. Consideration will be given to  
applicants in the age group from 35 to 55 years  
of age. Apply to the Staff Architect, W. J.  
Simms Sons & Cooke Ltd., Haydn Road, Shel-  
wood, Nottingham. 4364

ARCHITECTS' CO-PARTNERSHIP require  
ARCHITECT with experience, preferably  
qualified, to run a job; also ASSISTANT for  
working drawings and detailed design. Please  
write, stating age, experience, salary desired to  
44, Charlotte St., W.1, or 'phone Langham 6791.  
4169

RILEY & GLANFIELD require male ASSIS-  
TANT of Intermediate standard. Work:  
Church, industrial, housing and public homes.  
Some general office experience is necessary. Tel.  
CHA 7328. 4265



**SEVERAL** Senior and Intermediate ARCHITECTURAL ASSISTANTS are required for commercial projects including Hotel, Theatre and extensive development schemes of offices and light industry, etc., in London Architect's office. Holiday arrangements will be recognized. Five-day week. Salary according to experience. Telephone City 8811. 4151

**ASSISTANTS and DRAUGHTSMEN** required, West End Practice, varied work. Apply in writing, giving full particulars, to G. A. Crockett, 10, Adelaide Street, London, W.C.2. 4157

**EXPERIENCED ARCHITECTURAL ASSISTANTS** required, one Qualified and one of at least Intermediate standard, for Branch Office, Birmingham, engaged on a varied and interesting programme of Commercial projects. The positions are pensionable and a five-day week is in operation. Applications, giving full particulars, to G. S. Hay, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester, 4. 4307

**ARCHITECTURAL ASSISTANT**, London. Final standard. Industrial and commercial. Progressive and interesting. Salary according to experience and ability. Box 4329.

**ARCHITECTURAL ASSISTANT**, Intermediate standard. Busy London office. Good prospects. Box 4330.

**ARCHITECTURAL ASSISTANT**, Intermediate. Final standard. General practice. Good prospects. Particulars to: F. W. Paterson & Jones, F.R.I.B.A., 28, Waterloo Street, Weston-super-Mare. 4513

**ARCHITECT'S ASSISTANT** required in Birmingham Office of Multiple Stores. Applicant must be competent to prepare schemes, working drawings and Specifications and to carry out surveys and supervision, largely on their own initiative. Five-day week; Superannuation Scheme. Please send particulars of experience, salary required, etc., to Box 4508.

**CLIFFORD TEE & GALE** require ARCHITECTURAL ASSISTANTS, Intermediate standard, with previous office experience, for industrial and commercial work in the Birmingham area. Five-day week. Apply to R. G. Cox Esq., F.R.I.B.A., 43, Frederick Road, Birmingham 15, Edgbaston 3676. 4506

**ASSISTANT ARCHITECTS** of Intermediate and Final standard required for Buckinghamshire office. The work is varied and interesting with scope for initiative and responsibility. Please state age, experience and salary required. Box 4224.

**F. W. WOOLWORTH & CO. LTD.**, Architect's Department, Kensington District Office. Applications are invited for the following appointment:

**ARCHITECTURAL ASSISTANT** of Intermediate R.I.B.A. Standard, capable of carrying out surveys, preparing sketch schemes, working drawings and details.

The appointment is pensionable, five-day week. Dining room facilities. Application stating age, experience, qualifications and salary, to District Architect, F. W. Woolworth & Co. Ltd., 26/40, Kensington High Street, London, W.8. 4425

**VICTORIA, S.W.1.** Clifford Tee & Gale, F.R.I.B.A., require experienced ARCHITECTURAL ASSISTANT. Must be able draughtsman, prepared to work with a team on laboratory project in Surrey. Five-day week. Holiday commitments will be met. Bonus additional to salary. Please apply by letter to Mr. S. H. Fisk, A.R.I.B.A., 5, Buckingham Palace Gardens, S.W.1. 4442

**INTERMEDIATE** standard ASSISTANT with experience of industrial work required for Architects' London (City) Office. Salary by arrangement. Write Box 4355.

**INTERMEDIATE/FINAL ASSISTANT** required with three or four years' experience, in busy expanding West End office. Excellent opportunities for taking responsibility. Please write stating age, experience and salary required. Box 4468.

**SENIOR ARCHITECTURAL ASSISTANT** of Final R.I.B.A. standard or equivalent required for carrying out surveys and reports, preparing sketch schemes, working drawings and details and to be capable of running and supervising various sized works. Pensionable appointment. Five-day week. Write stating qualifications, experience, age and salary required to District Architect, F. W. Woolworth & Co. Ltd., Metropolitan District Office, 311, Oxford Street, London, W.1. 4443

**ROWNTREE & CO. LTD.** have a vacancy in their Architects' Department for an ARCHITECTURAL ASSISTANT. Applications are invited from men of Final R.I.B.A. standard, who are preferably under 30 years of age and have experience and knowledge of factory construction and alteration. Please write for further details and application form to The Staff Officer (Men), Rowntree & Co. Ltd., The Cocoa Works, York. 4447

**SOUTH KENSINGTON Architects' Office** require experienced Intermediate ASSISTANT with good ability in design. Apply: R. Mountford Pigott & Partners. KENSINGTON 1242. 4448

**ARCHITECTURAL ASSISTANT** required, approaching or at Intermediate stage, with office experience; one day per week for studies. Write with details of education and experience, D. Plaskett Marshall, 59, Gordon Square, London, W.C.1. 4453

**ARCHITECTURAL ASSISTANTS**, Final and Intermediate, required by progressive firm of Birmingham Architects. Work involves preparation of designs, working drawings, site supervision, etc., on numerous types of work. Salary by arrangement. Box 4406.

**SENIOR ASSISTANT** required for Bournemouth Architect's office, Final or near Final standard. Age not material, state experience and salary required. Box 4414.

**JUNIOR ASSISTANT** required for Bournemouth Architect's office. State age, experience and salary required. Must be ex National service. Box 4415.

**ARCHITECTURAL ASSISTANT** required, preferably qualified, for small but busy Architect's office in S.W. London. Commercial and Domestic. Experience and salary, please, to Box 4419.

**CLIFFORD CULPIN**, 39, Doughty Street, W.C.1, requires at once a senior man to take responsibility throughout all stages of important projects. Starting salary £950-£1,150 according to experience. Holiday this year. Phone or write for appointment CHA 5395. 4421

**INTERMEDIATE ARCHITECTURAL ASSISTANTS** required for expanding practice in Dartford. Good prospects. Apply stating age, experience and salary required to Box 4470.

**J. BRIAN COOPER, F.R.I.B.A.** requires J. additional staff for his London Office, one to Final standard and one Intermediate standard for interesting new building schemes throughout the country. Apply in writing giving full details to 30 St. George Street, Hanover Square, London, W.1. 4396

**ARCHITECTURAL ASSISTANT** of Intermediate standard required for interesting new building schemes throughout the country. Apply in writing giving full details to J. Brian Cooper, F.R.I.B.A., 38, Highfield Road, Edgbaston, Birmingham, 15. 4395

**ARCHITECTURAL ASSISTANTS** required, all groups, including R.I.B.A. Final standard, for progressive practice covering commercial, industrial and domestic work. Please write stating age, experience, qualifications, salary required, Edward Narracott & Partner, F.A.R.I.B.A., 48, Torwood Street, Torquay. 4394

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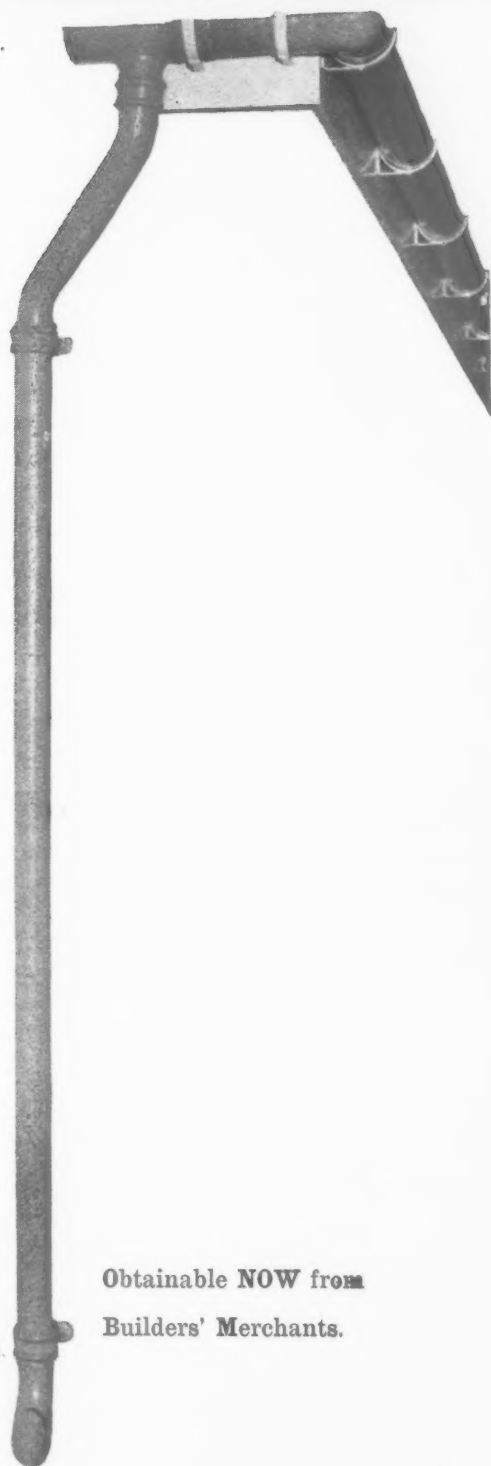
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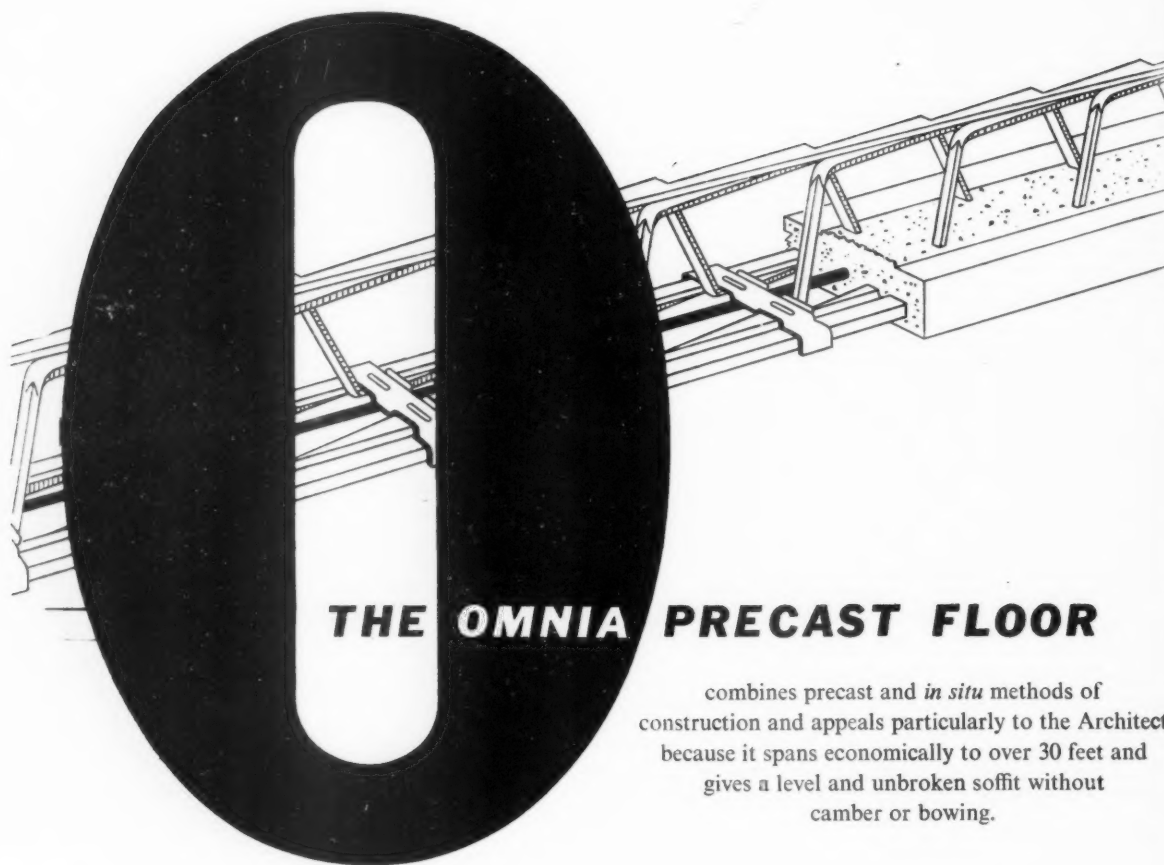
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