

# THE ARCHITECTS' JOURNAL



## Standard contents

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

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Details of Planning, Construction,

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Wanted and Vacant

No. 3286]

[Vol. 127

THE ARCHITECTURAL PRESS

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Registered as a Newspaper.

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

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
ILA	Institute of Landscape Architects, 2, Guilford Place, W.C.1. Holborn 0281
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand, W.C.2. Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1. Museum 7179
IQS	Institute of Quantity Surveyors. 98, Gloucester Place, W.1. Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3. Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1. Abbey 6172
ISE	Institute of Structural Engineers. 11, Upper Belgrave Street, S.W.1. Sloane 7128
LDA	Lead Development Association. 18, Adam Street, W.C.2. Whitehall 4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3891
LSPC	Lead Sheet and Pipe Council. Eagle House, Jermyn Street, S.W.1. Whitehall 7264/4175
MAFF	Ministry of Agriculture, Fisheries and Food. Whitehall Place, S.W.1. Trafalgar 7711
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1. Mayfair 9400
MOH	Ministry of Health. 23, Savile Row, W.1. Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1. Whitehall 4300
MOLNS	Ministry of Labour and National Service. 8, St. James' Square, S.W.1. Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, W.C.2. Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1. Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1. Reliance 7611
NAMMC	Natural Asphalt Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1. Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1. Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1. Welbeck 0619
NCBMP	National Council of Building Material Producers, 10, Storey's Gate, S.W.1. Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry. 21, John Adam Street, Adelphi, W.C.2. Trafalgar 3927
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1. Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4. Macaulay 4451
NFHS	National Federation of Housing Societies. 12, Suffolk St., S.W.1. Whitehall 1693
NHBRG	National House Builders Registration Council. 58, Portland Place, W.1. Langham 0064/5
NPL	National Physical Laboratory. Head Office, Teddington. Molesey 1380
NRDB	Natural Rubber Development Board. Market Buildings, Mark Lane, E.C.3. Mansion House 9383
NSAS	National Smoke Abatement Society. Palace Chambers. Bridge Street, S.W.1. Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1. Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1. Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1. Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh. Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1. Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George Street, S.W.1. Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 5, Old Palace Yard, S.W.1. Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1. Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2. Trafalgar 2366
RSH	Royal Society of Health. 90, Buckingham Palace Road, S.W.1. Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19. Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1. Victoria 2186
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1. Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3. Mansion House 3921
SIA	Society of Industrial Artists. 7, Woburn Square, London, W.C.1. Langham 1984/5
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1. Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1. Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2. Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4. City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1. Victoria 8815
TF	Timber Trades Federation. 75, Cannon Street, E.C.4. City 5040
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1. Whitehall 4341
ZDA	Zinc Development Association. 34, Berkeley Square, W.1. Grosvenor 6636

# NEW

# COLORAZZO

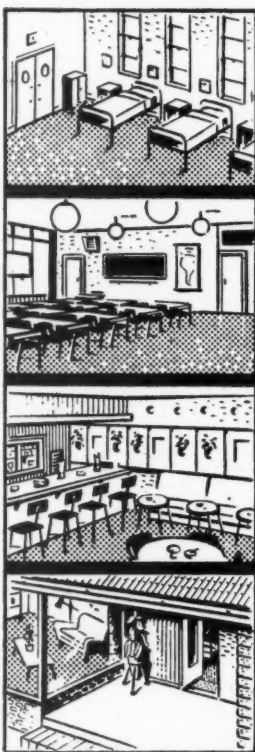
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- \* Does not require polishing. Simply clean with a damp cloth.
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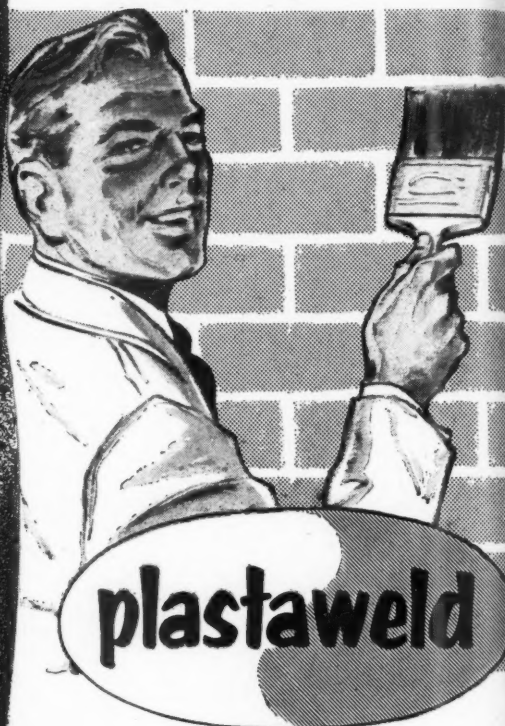
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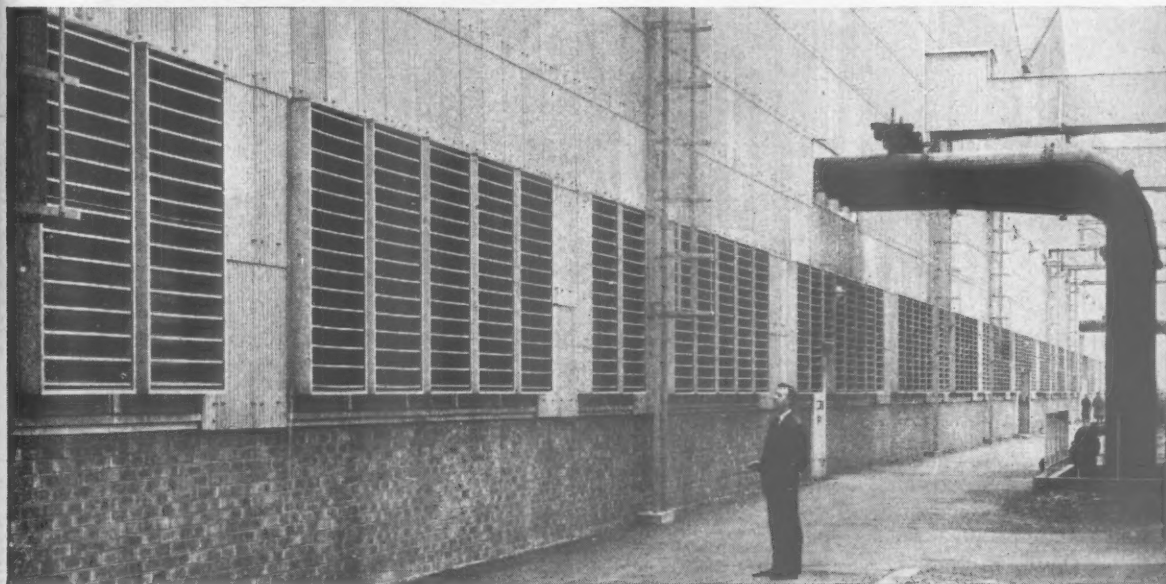
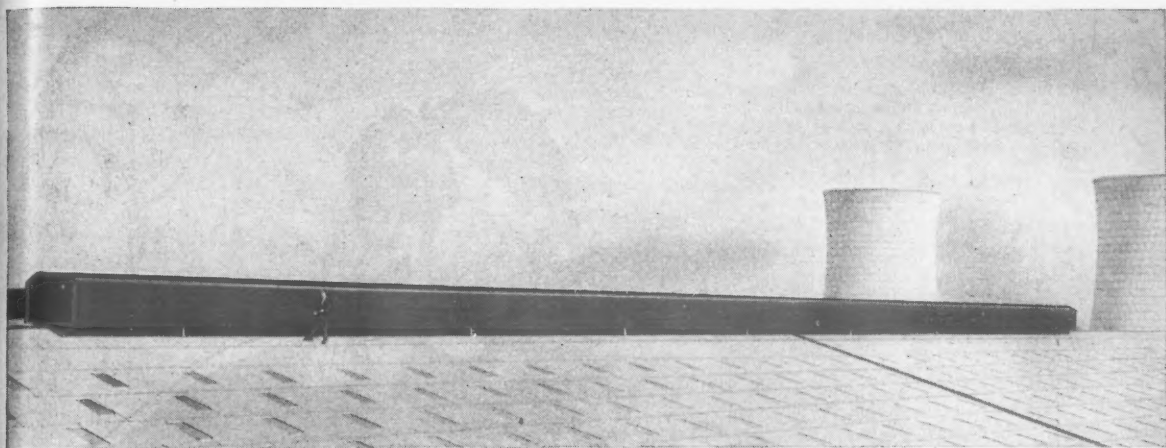
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## For Ventilation— The United Kingdom Atomic Energy Authority selected COLT

To meet the exacting requirements of the U.K. Atomic Energy Authority. Here was a challenge to Colt! Asked to design a ventilation scheme for Building C.200 at the Capenhurst establishment, Colt technicians planned and subsequently installed a system that fulfilled—in every way—the Authority's most stringent specifications.

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G 1157



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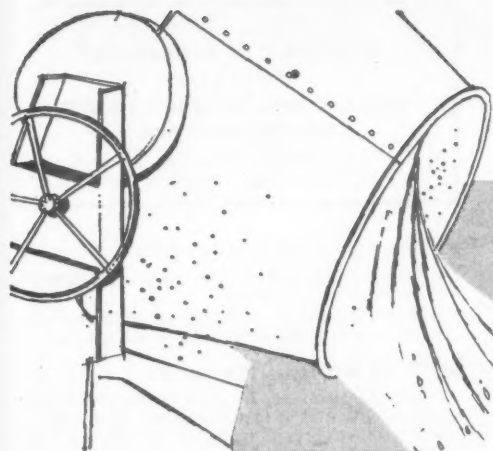
Gable House, Rickmansworth, Herts. Rickmansworth 2268

Berkeley House, Hagley Road, Birmingham, 16

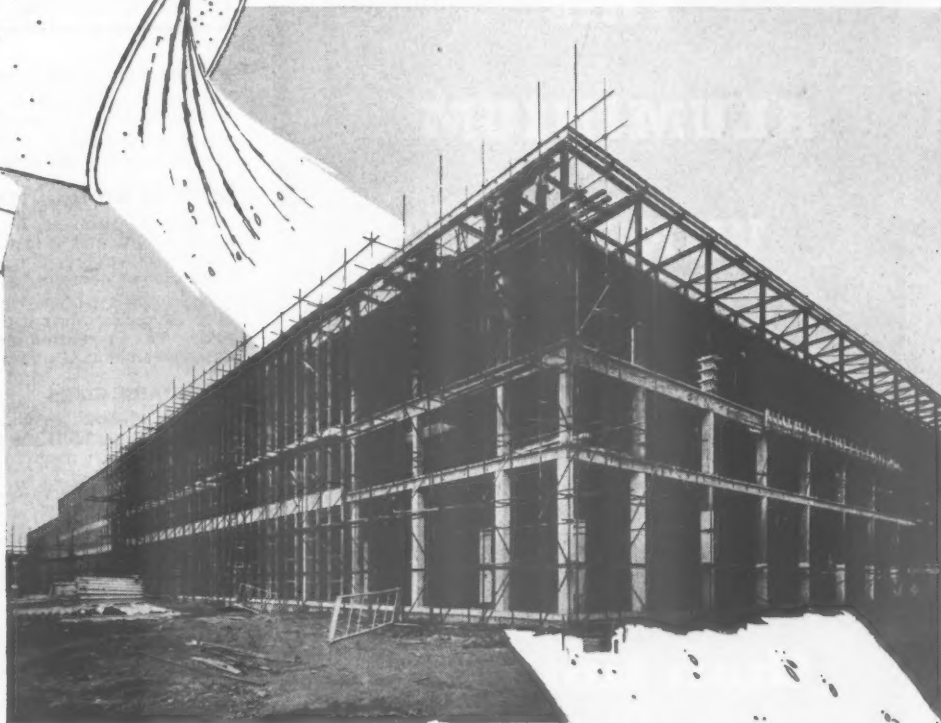
Carlton House, Blythswood Square, Glasgow, C.2

and at Manchester and Leicester





By courtesy of H. J. Heinz Co. Ltd.  
Architects: J. Douglas Matthews & Partners  
Partner in charge, M. Ryan, A.R.I.B.A. Dip. A.A.  
Main Contractors: A. Monk & Company Limited

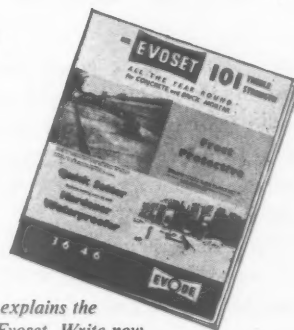


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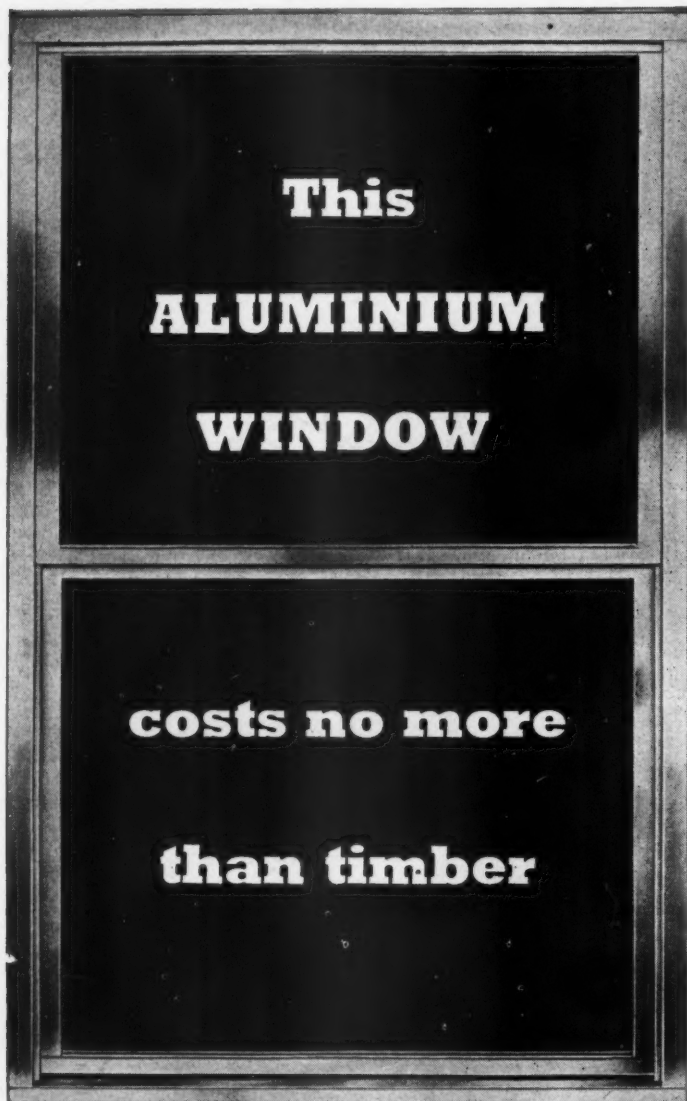
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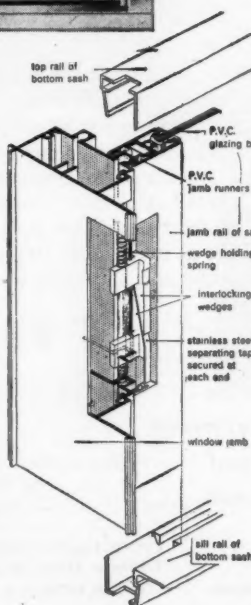
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LONDON OFFICE: 1, VICTORIA STREET, S.W.1. Telephone: ABBey 4622/3.



## NEW DESIGN -NEW LOW COST

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This low price is possible mainly because of the new suspension system. There are no weights, cords or pulleys and no bulky jamb sections to accommodate them. A much slimmer sash jamb houses the compact "interlocking wedge" suspension device with a consequent saving in aluminium.



See the  
**ALOMEGA WINDOW**  
at the New  
**WILLIAMS & WILLIAMS  
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ADJOINING WILLIAMS HOUSE

### SAVES YOU SITE COSTS, TOO

Painting is unnecessary. No glazing—the window is despatched ready glazed.

Building-in consists simply of plugging the masonry reveals and screwing the window in.

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The only maintenance likely to be needed is glass replacement. And then all that has to be done is unscrew one sash rail, slide out the broken pane and slide in a new one.

The window has been bench-tested to a life of over 200 years' normal use with no appreciable wear. The suspension mechanism is completely enclosed and out of sight.

### STANDARD SIZES

Alomega windows are available for inspection at any Williams & Williams Area Office or merchant stockist, and are made in the following standard sizes:

Type 14, 3' 8½" x 1' 2½"  
Type 34, 3' 8½" x 2' 8½"  
Type 15, 4' 8½" x 1' 2½"  
Type 35, 4' 8½" x 2' 8½"  
Type 16, 5' 8½" x 1' 2½"  
Type 36, 5' 8½" x 2' 8½"

Type 24, 3' 8½" x 1' 11½"  
Type 44, 3' 8½" x 3' 5½"  
Type 25, 4' 8½" x 1' 11½"  
Type 45, 4' 8½" x 3' 5½"  
Type 26, 5' 8½" x 1' 11½"  
Type 46, 5' 8½" x 3' 5½"

### PURPOSE-MADE SIZES

Little more than pro rata prices are charged for purpose-made sizes—the maximum being 19' perimeter. There will naturally be a certain delay in supply.

### NO SASHCORDS NO WEIGHTS How the Alomega Suspension System works

The two interlocking wedges are contained in a channel extruded in the sash jamb. They are pushed against each other by springs sufficiently tightly to bind them in the channel so that they carry the weight of the sash. When the sash is moved the wedge assembly tends to move with it, but is held back by lugs protruding from the wedges which engage in slots cut in the fixed jamb of the window. The lugs are given a small amount of vertical play in the slots, and these are so placed that, whichever way the sash is moved, the hinder wedge (relative to direction of travel) is stopped first. The effect of this is a fractional separation of the wedges permitting free movement of the sash for as long as pressure is applied to it. As soon as the pressure is removed the two retaining springs push the wedges together once again, binding them firmly in the channel and locking the sash in its new position.



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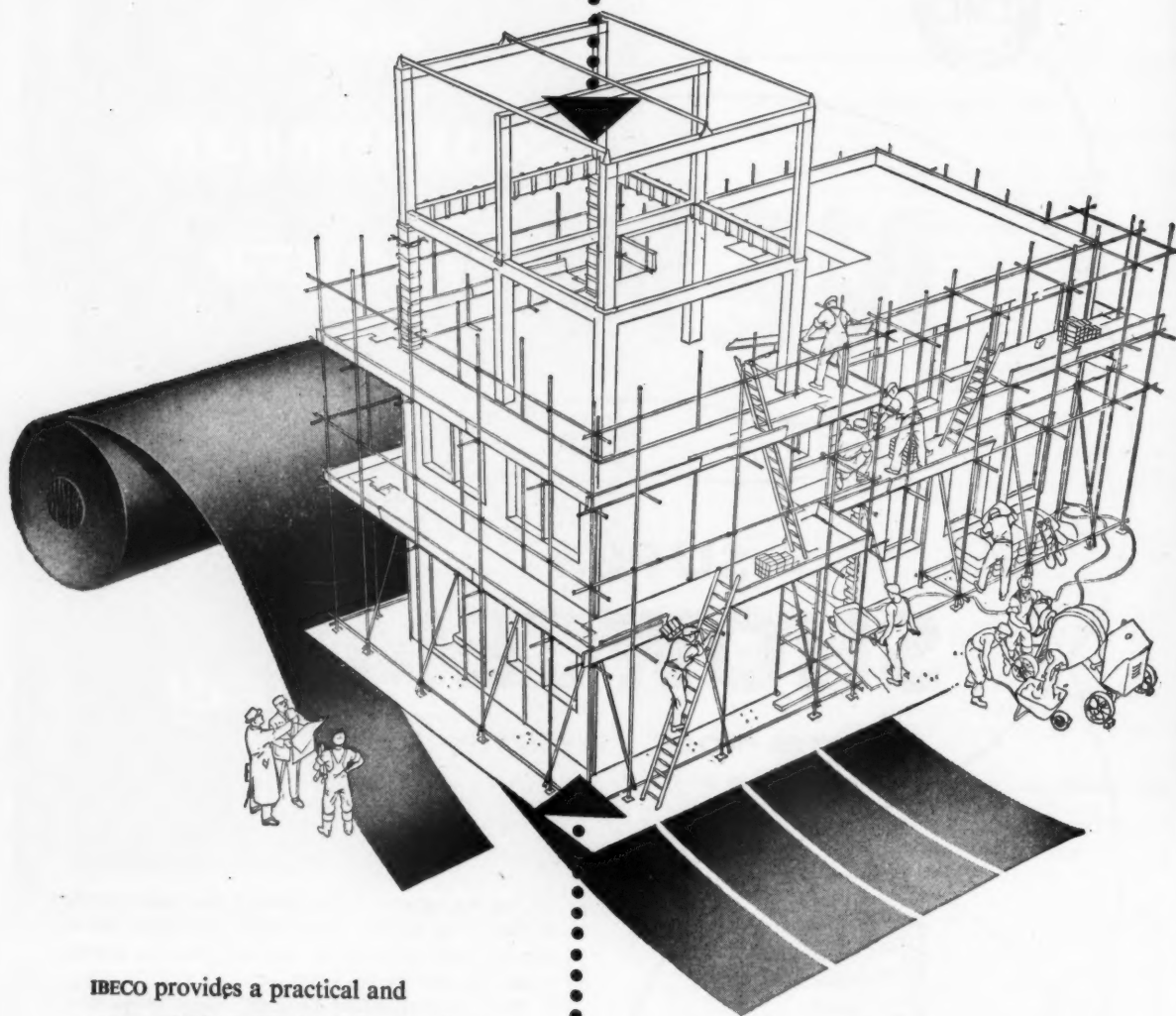
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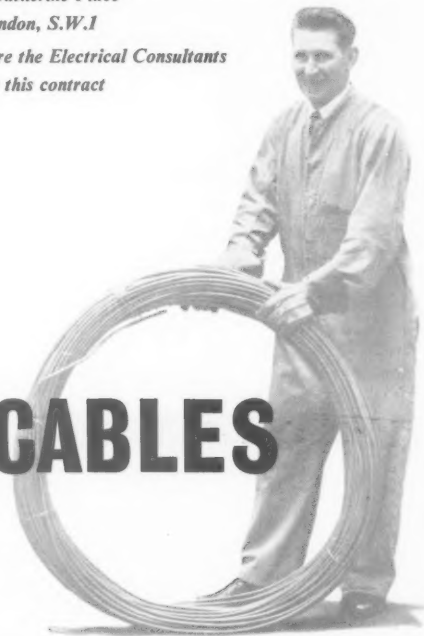
BICC M.I. Cables were installed throughout the B.E.A. Air Terminal in Cromwell Road, London.

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**BICC** **M.I.** **CABLES**

*BARLOW, LESLIE & COOMBS*  
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# Durable



*★In many countries it is officially required that Sanitary Appliances be made of Vitreous China. Many British architects, doctors, and Public Health Authorities would like to see similar legislation in Britain and so, not unnaturally, would the makers of "Standard" Sanitary Appliances.*





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The clean, fresh beauty of "Standard" Sanitary Appliances made of Vitreous China is a joy to behold. A brilliant, practical beauty. A modern beauty that has been achieved by years of planning, styling, shaping and re-shaping. And below the surface there is the beauty of a superb craftsmanship. Inside and out, this Vitreous China ware is really beautiful.

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Fired at a much higher temperature than ordinary ware, Vitreous China is a dense and non-absorbent material which remains steadfastly hygienic.\* And it does not depend on its glaze to make it watertight. It is non-porous and non-crazing. Germs cannot lodge and breed in it. "Standard" Sanitary Ware made of Vitreous China guarantees hygiene for the lifetime of whatever building it serves.

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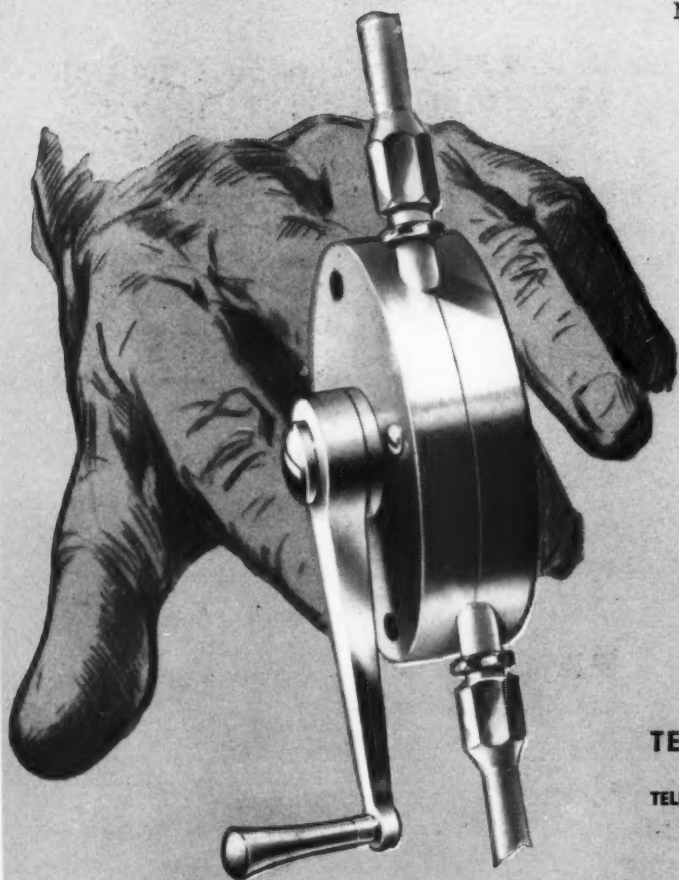
Easy, smooth operation

# *Teleflex*

*window and ventilator  
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## High efficiency

Whilst aluminium foil is a poor radiator, it is a very good reflector of heat. When an airspace (itself a good thermal insulator) of not less than 0.75 inches across is faced with aluminium foil it becomes three times as effective. In hot weather radiation of solar heat is greatly reduced, and in cold weather, heat losses are brought to a minimum.

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Foil used for thermal insulation is usually between .00035 and .00078 in gauge, and because of its light weight makes for most economical thermal insulation productions.

## FISHER'S FOILS

specialise in the production of aluminium foil for thermal insulation



*By courtesy of ARDOR INSULATION CO. LTD.*

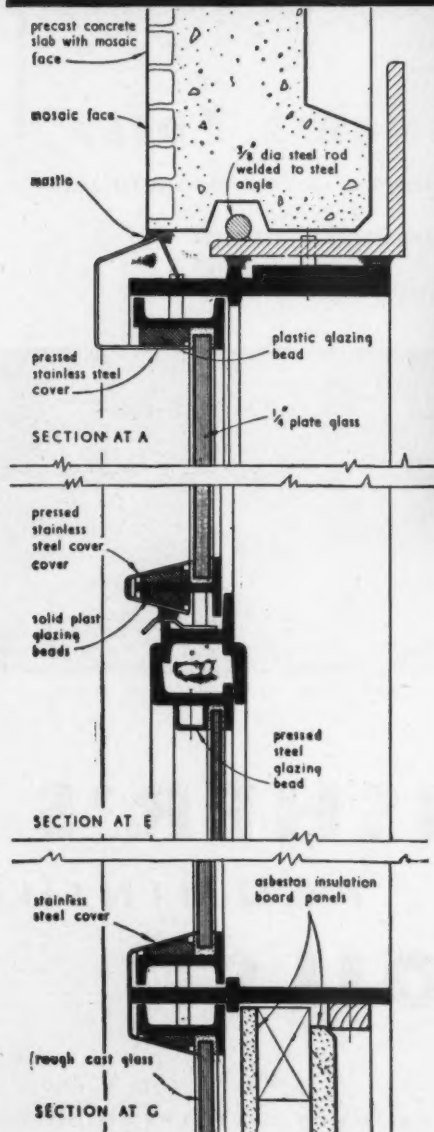
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Holoform Curtain Walling can be manufactured to meet special requirements both those based on modular co-ordination and to special sizes. The Window Wall for Messrs. Bowater's new Office Block at Northfleet is constructed to suit a 3' 4" grid, modular construction being used both horizontally and vertically. The external face of all members is covered with stainless steel.

## MORRIS SINGER

THE MORRIS SINGER COMPANY LIMITED

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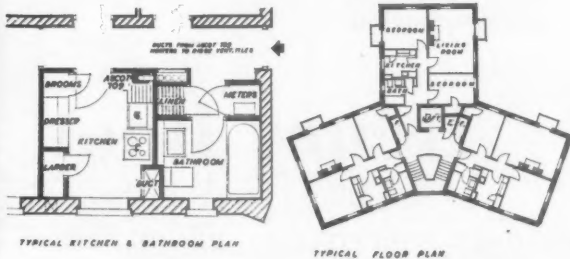
Chulsa Estate, Beckenham: View of Block 3 from the South.

## ASCOT IN NEW HOUSING (6)

Beckenham Borough Council's Chulsa Estate in Crystal Palace Park Road, Beckenham, comprises 172 flats and maisonettes in 13 blocks. Ascot multipoint instantaneous gas water heaters were chosen to give a comprehensive hot water service to each of these since the flexibility and compactness of Ascot installa-

tions enabled the architects to make the best possible use of the space available for the Estate.

In some blocks, Ascot 715 "balanced flue" multipoints were installed: the planning and load-bearing requirements of the "star blocks", one of which is depicted above, were, however, found to be better served by the installation of Ascot 709 multipoints, each with an asbestos flue carried up into the roof-space and terminating at the ridge with a vent tile.



### RESPONSIBLE AUTHORITIES

J. Dove, A.M.I.C.E., M.I.Mun.E.  
(Borough Engineer & Surveyor)

James and Bywaters,  
5 Bloomsbury Street, W.C.1  
(Architects)

S. G. and A. Agombar,  
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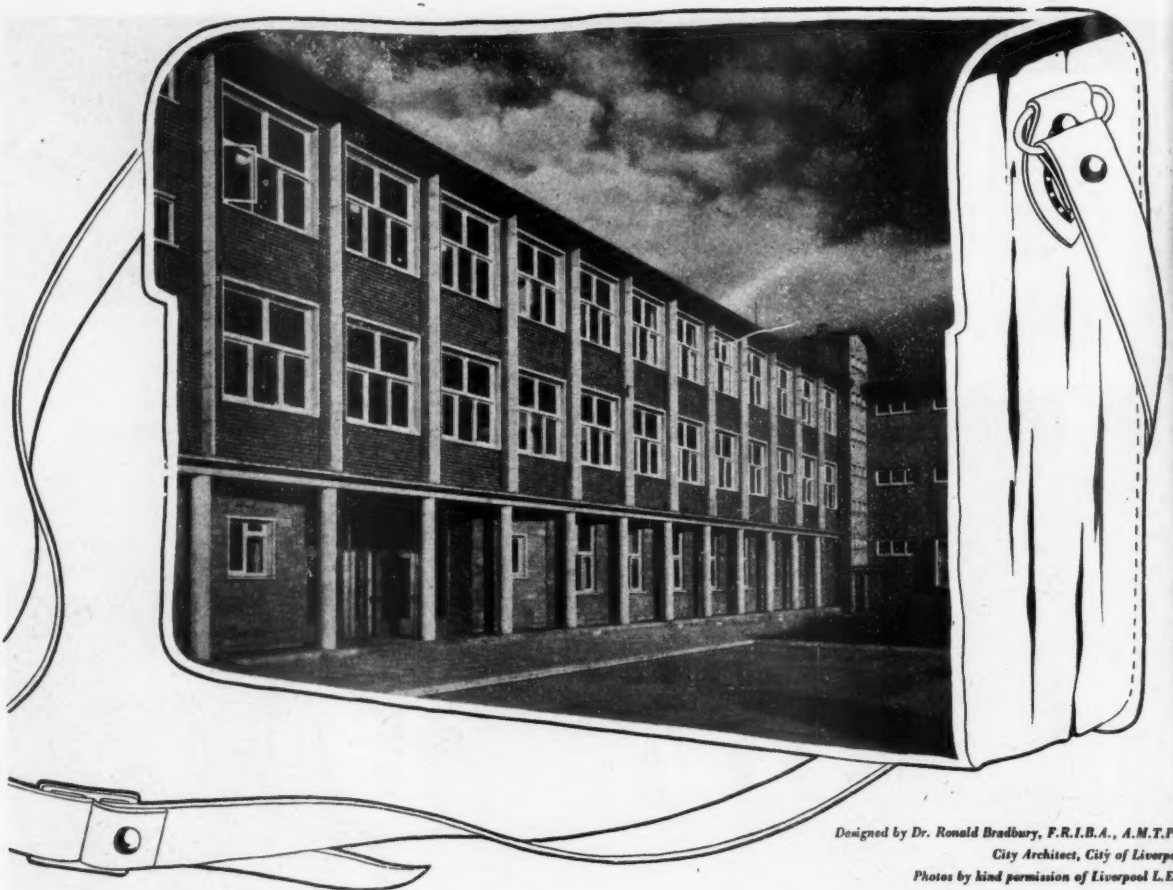


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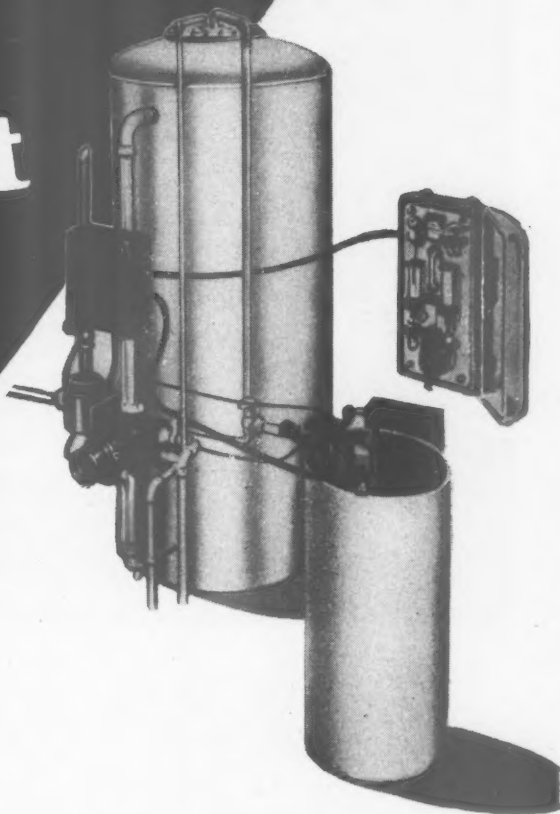
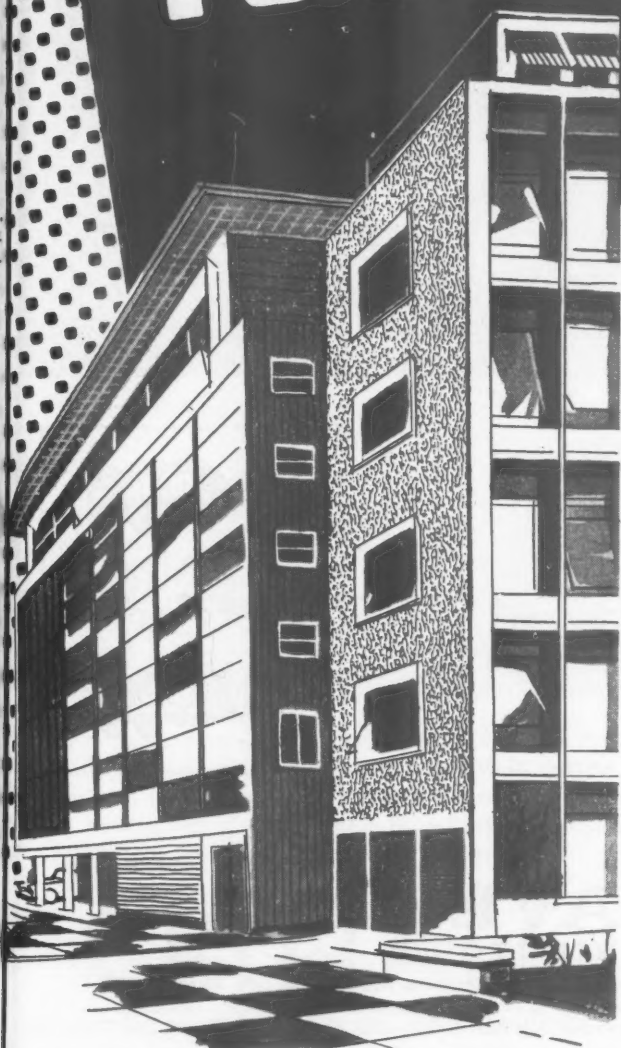
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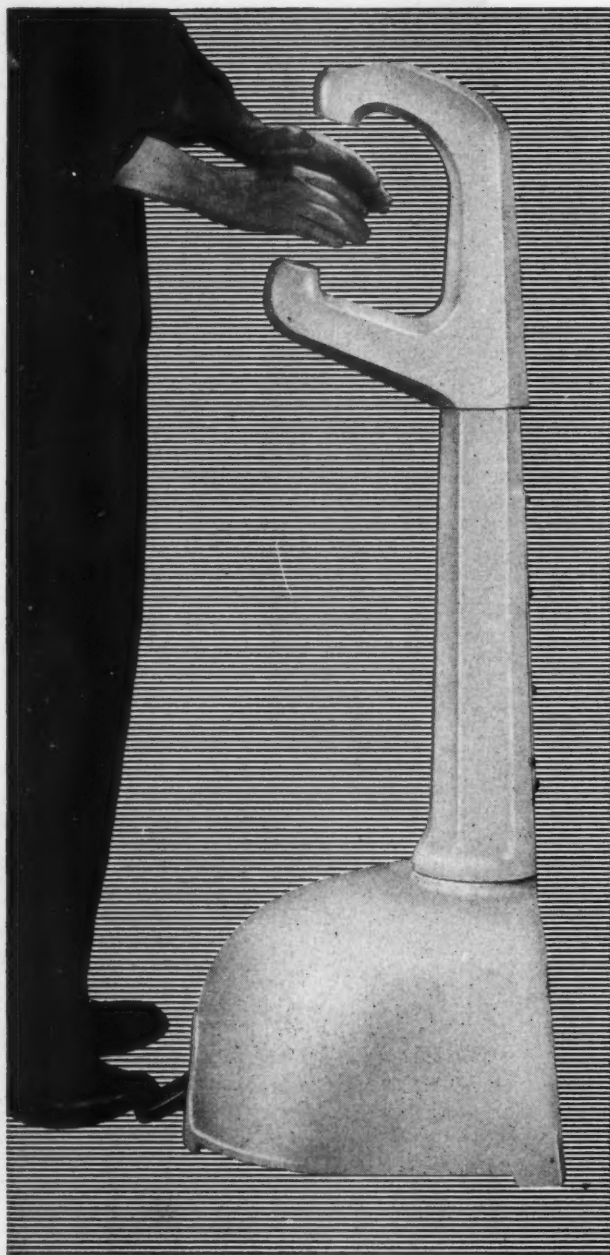


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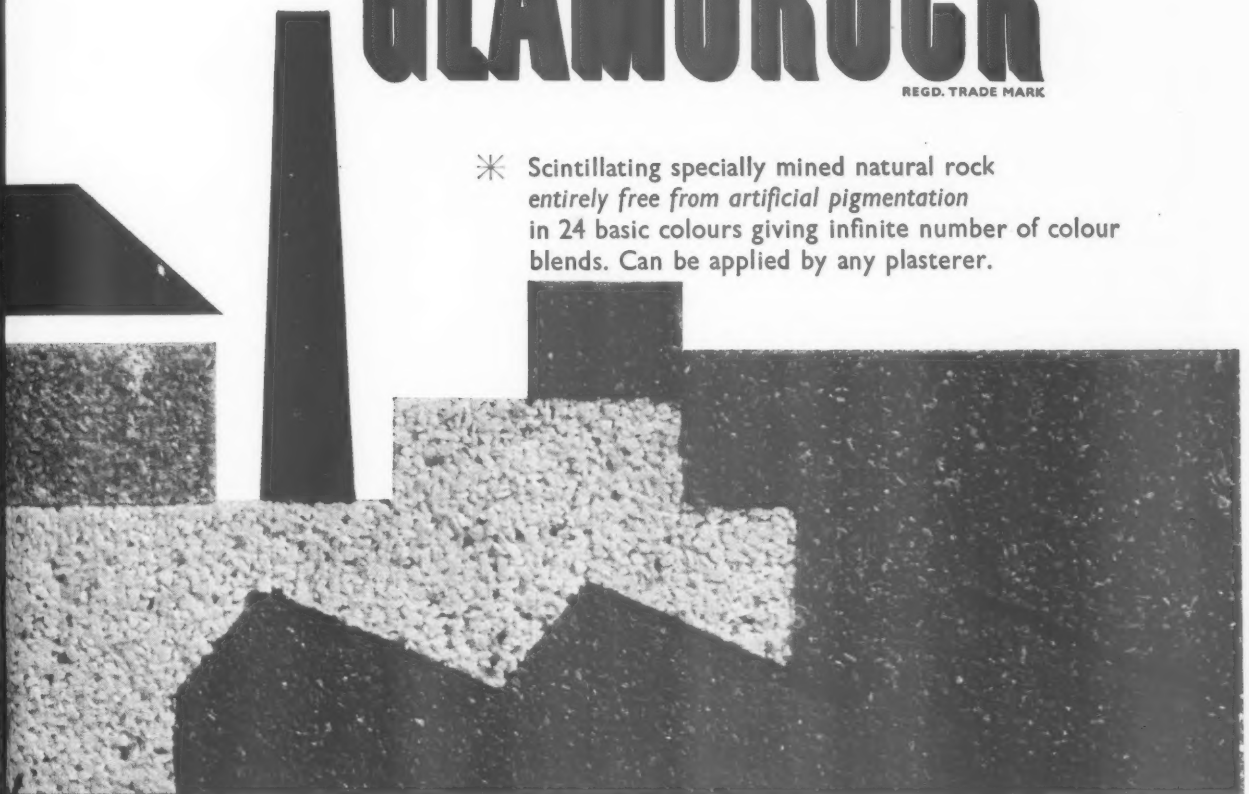
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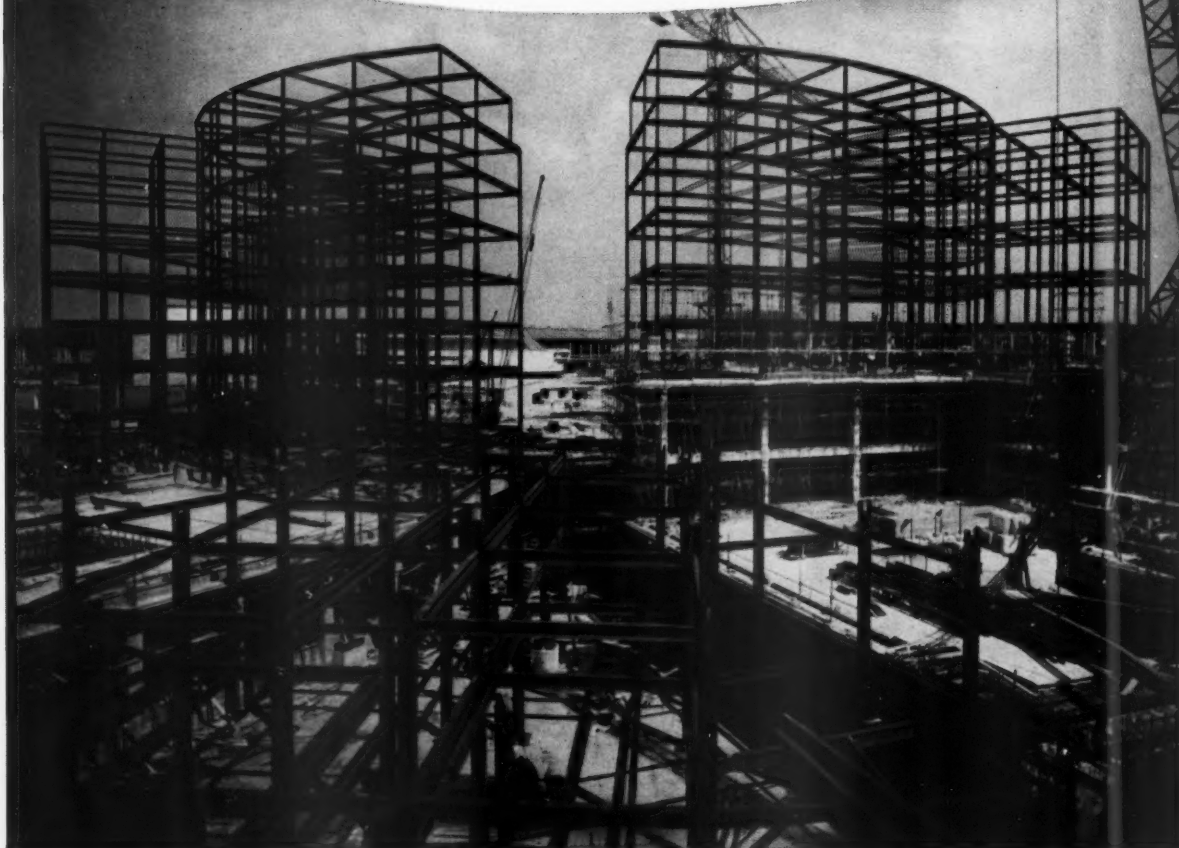
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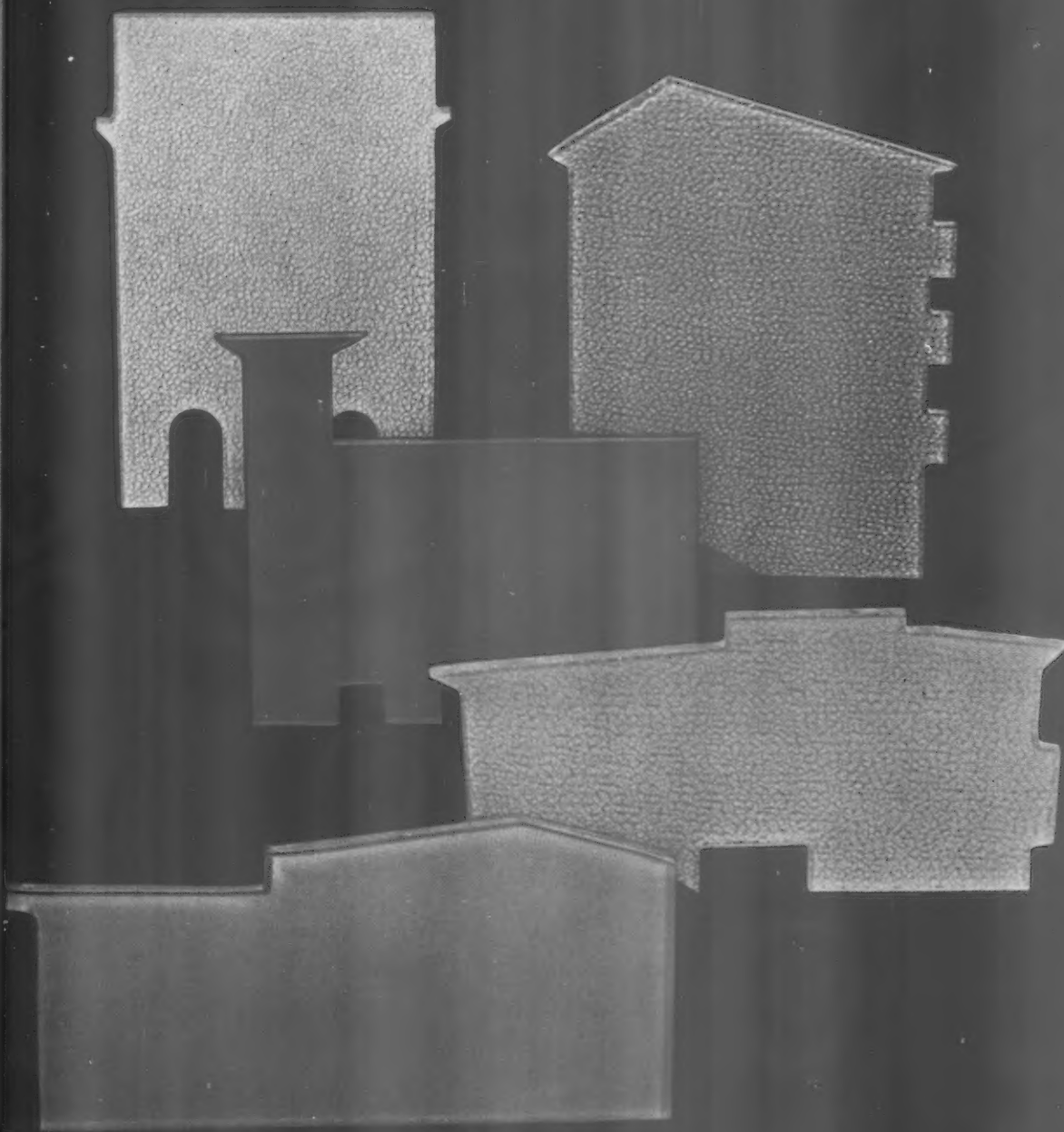
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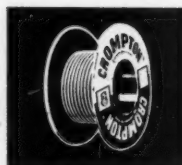
Given the elasticity and weight of the balls, the resilience of the cushion, the rolling friction of the cloth, it must be possible for a billiards player to calculate exactly where and how hard to strike the cue ball. But you never see him doing sums. Somehow his knowledge is instinctive, the result of much experience.

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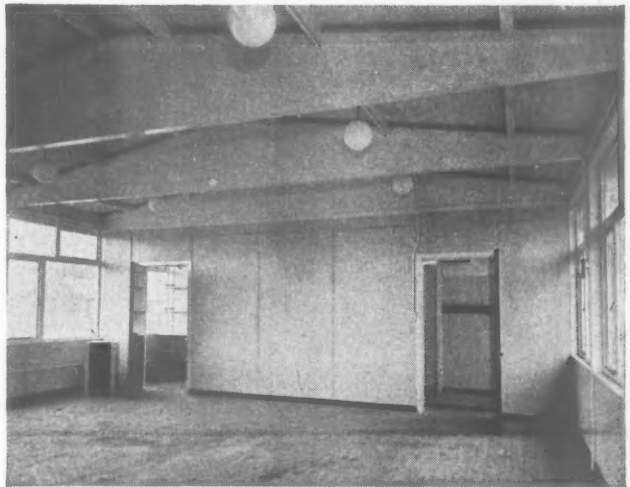
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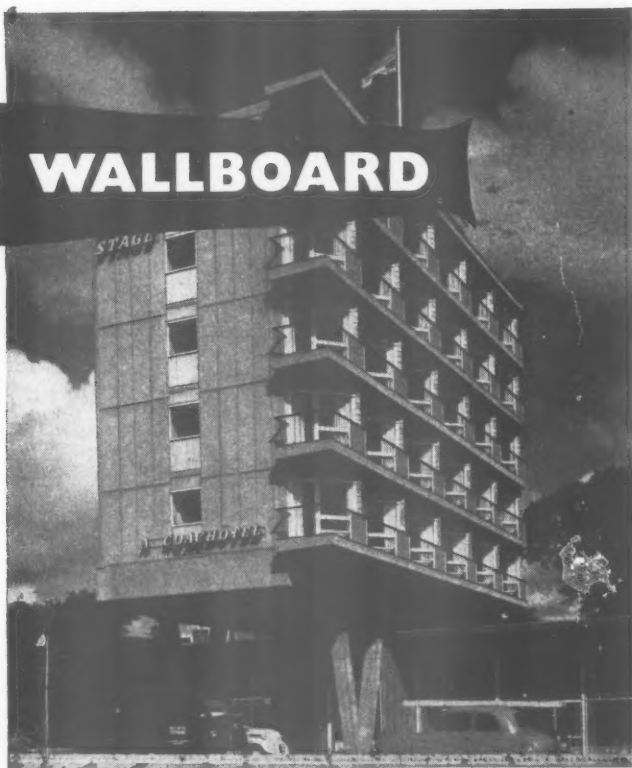
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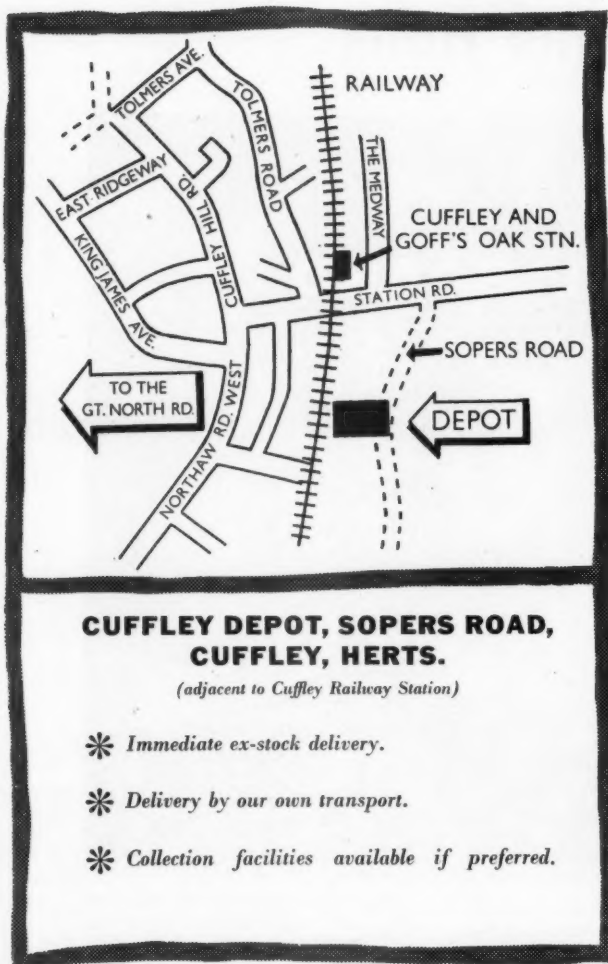
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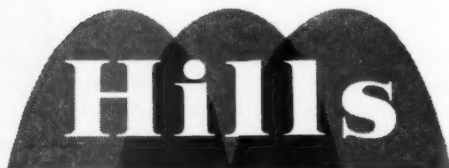
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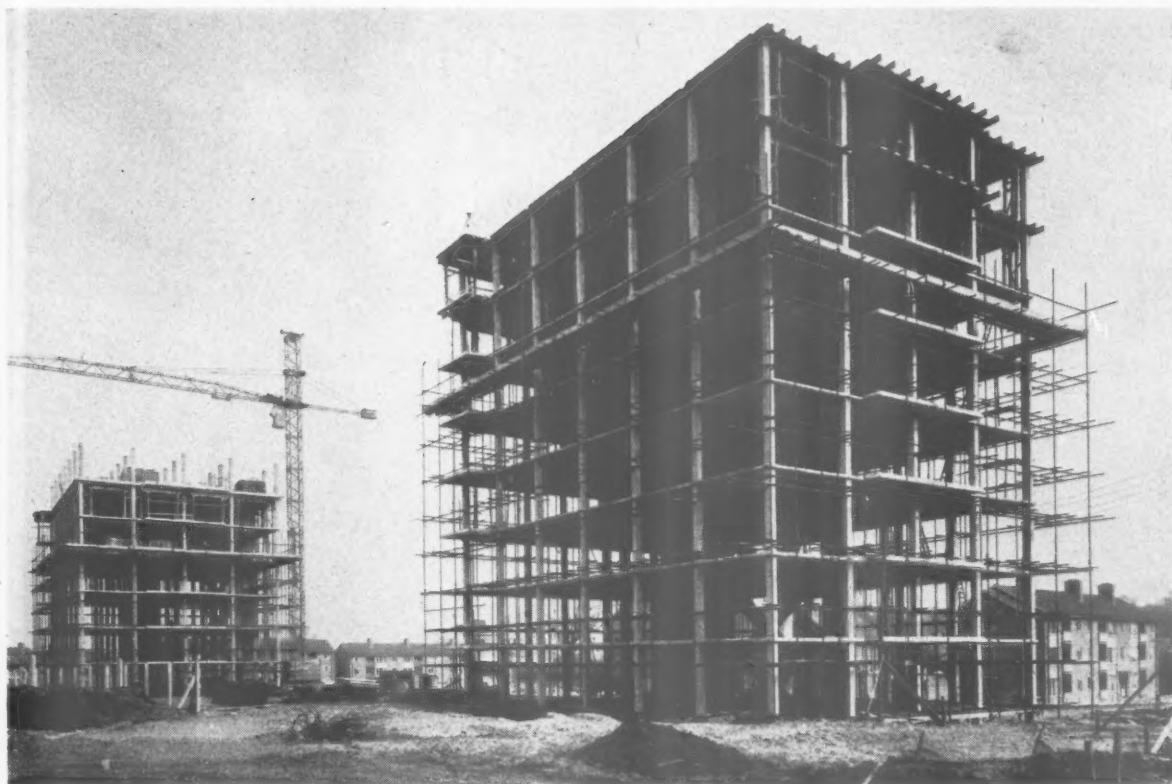
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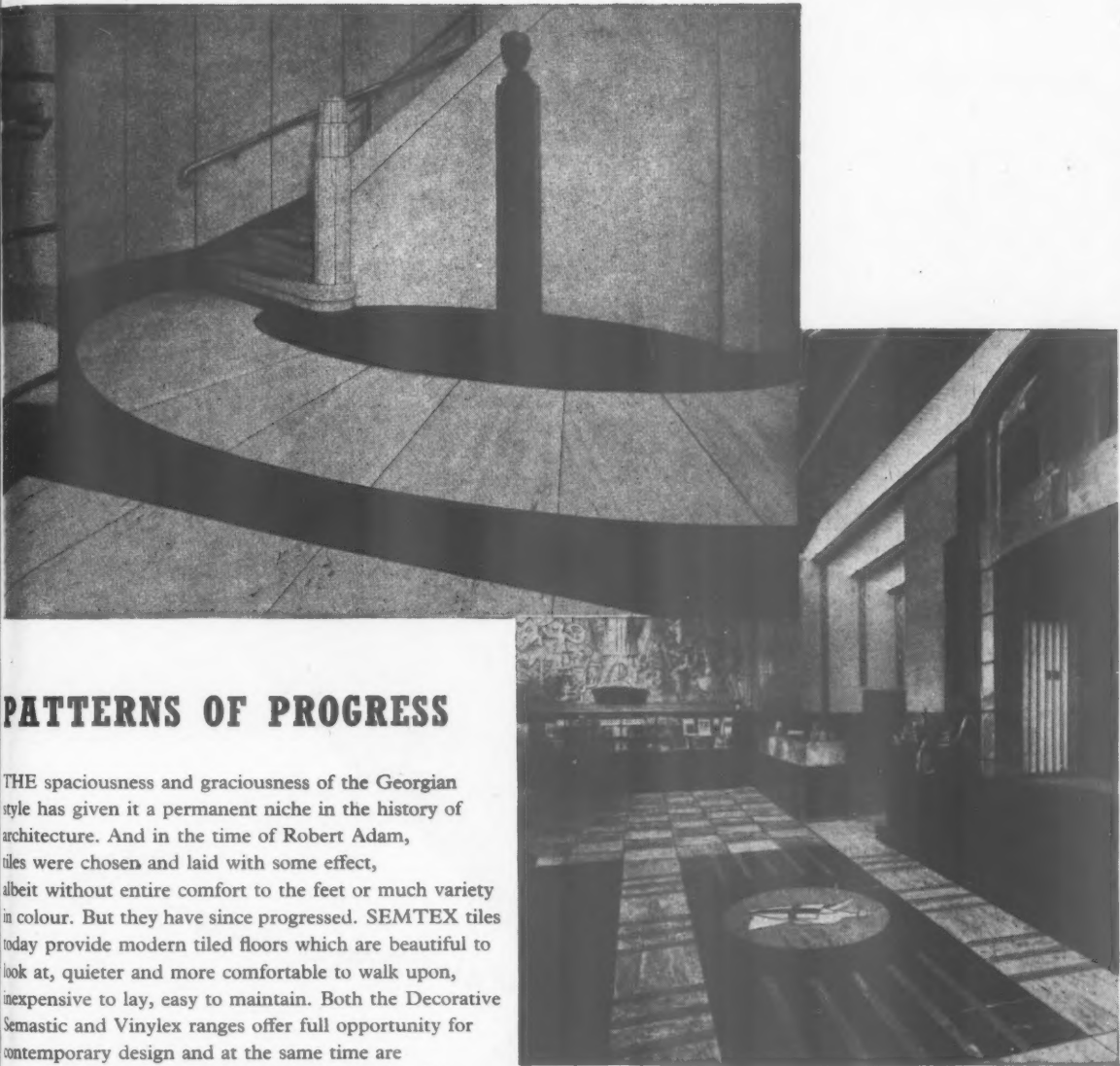


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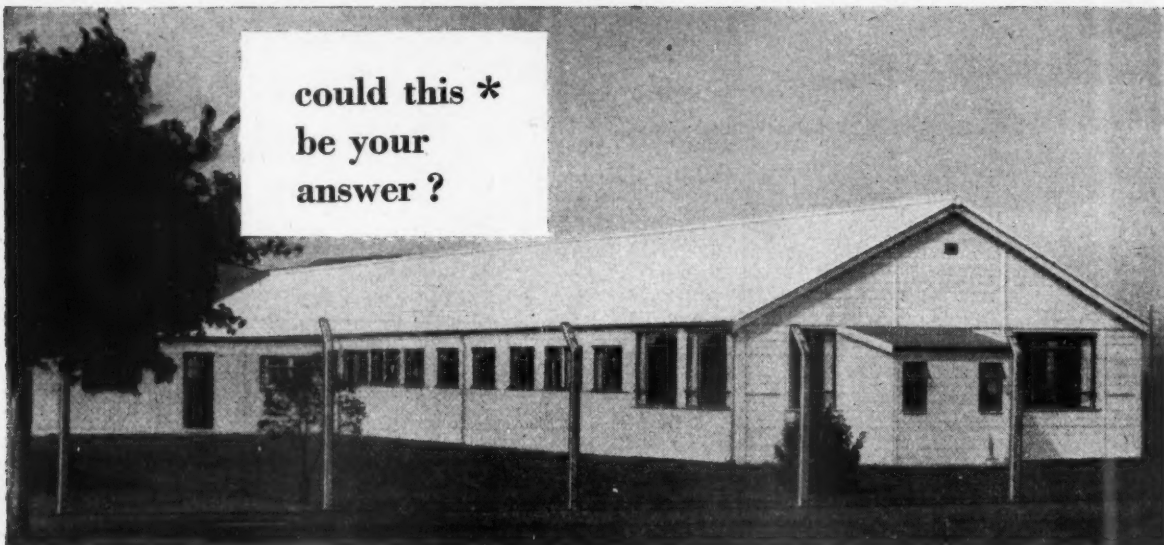
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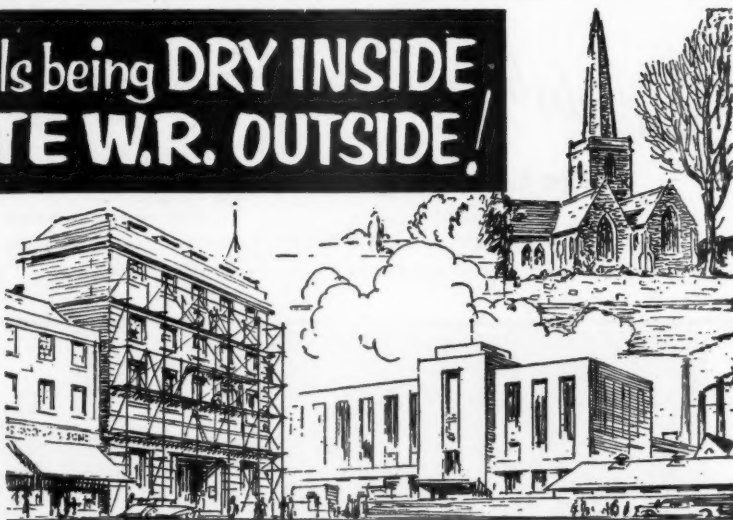
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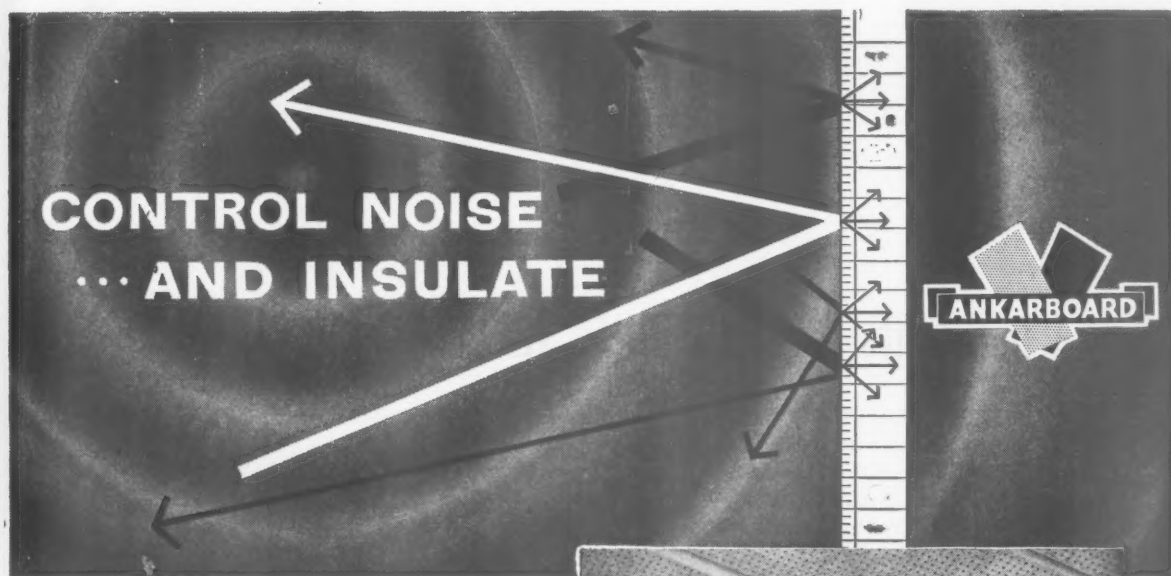
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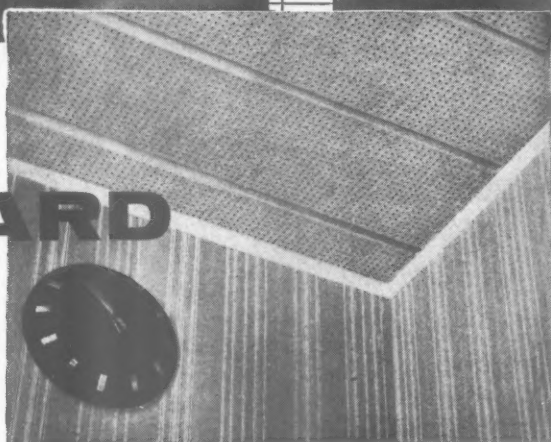


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## in the interest of NATIONAL HEALTH ...

BRITISH PLASTER BOARD have successfully combined the traditional building material GYPSUM PLASTER with modern factory techniques to reduce site labour and the water content. The completed building is warm and dry at once.

**you should use DRY CONSTRUCTION**

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The modern dry interior wall and lining to external walls. No wet work. Competitive in cost. Simple to erect. Highly adaptable.

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The original Plasterboard for walls and Ceilings. Fire-resisting. Low in cost (less than 6d. per sq. ft.). Specially prepared for immediate decoration. No drying out. Also available in water-resisting quality for use where condensation is a problem.

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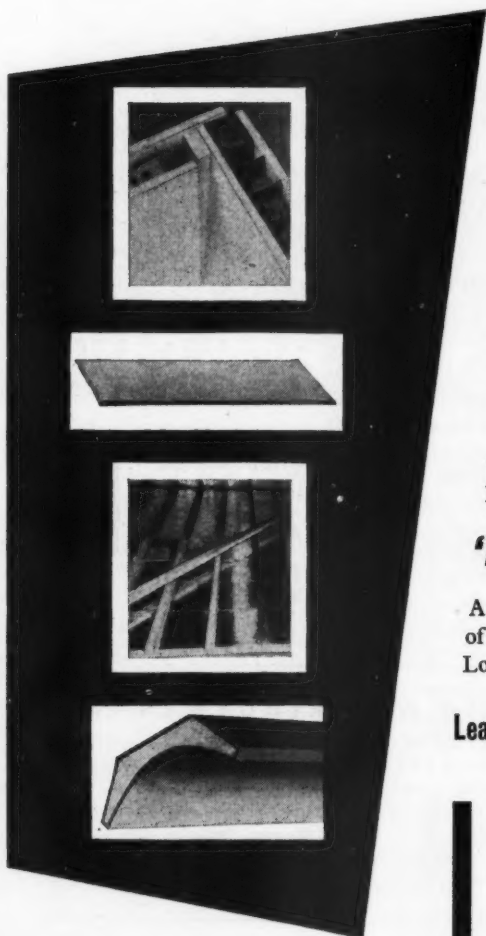
Discuss your problems with  
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THE

**BRITISH PLASTER BOARD**

(Manufacturing) LTD

BATH HOUSE, 82 PICCADILLY, LONDON, W.1. TELEPHONE: GROSVENOR 8311.  
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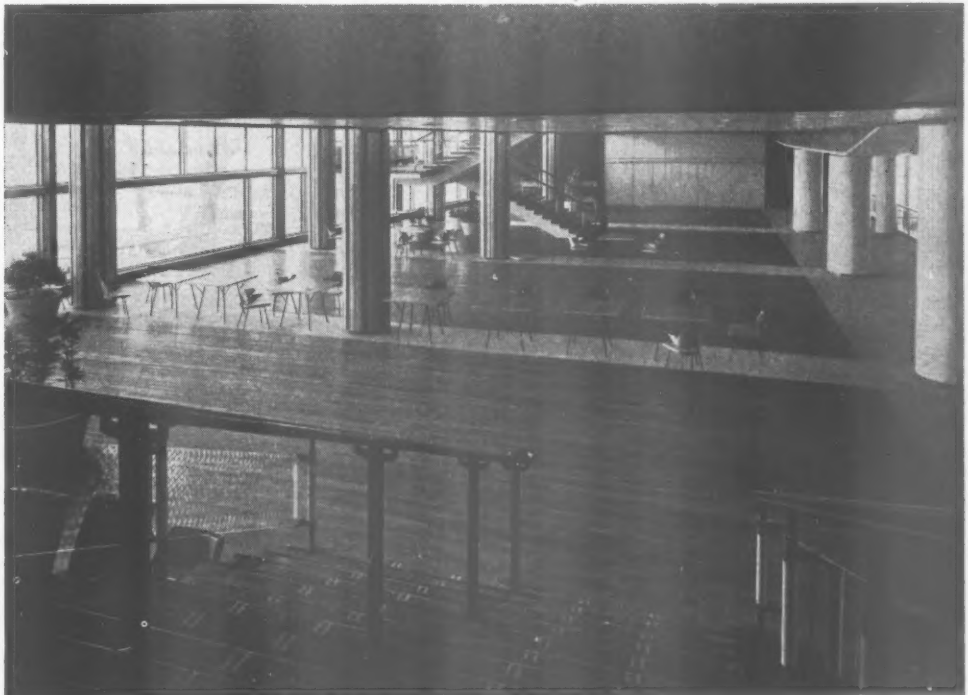


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*The work was initially  
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Send for this outline of  
the service offered by  
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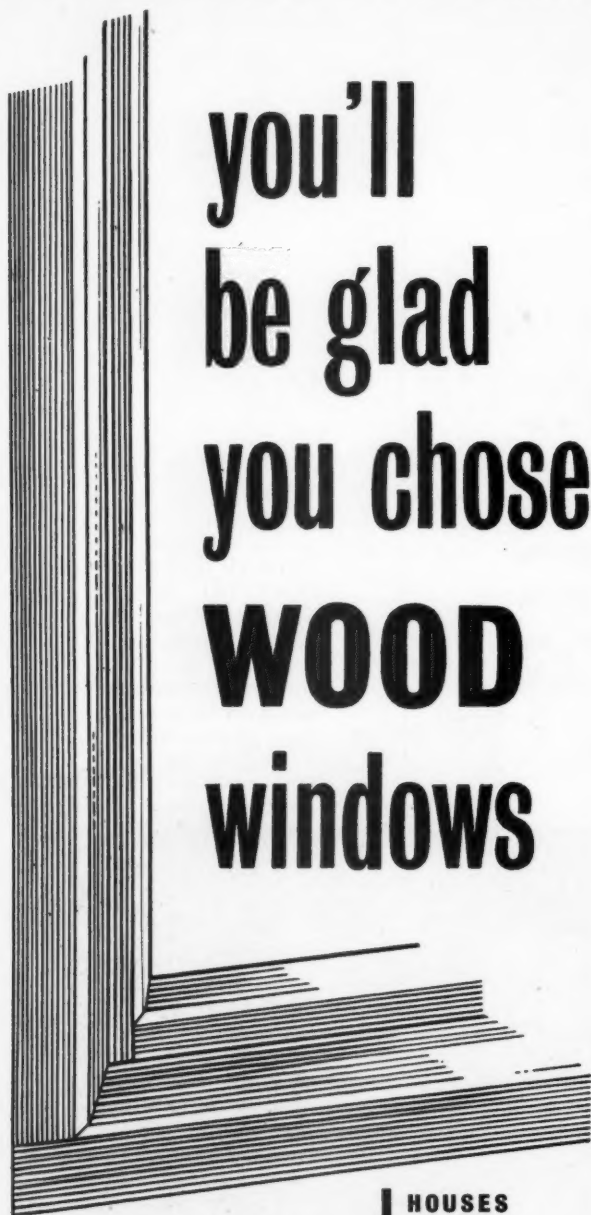
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you'll  
be glad  
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**WOOD**  
windows

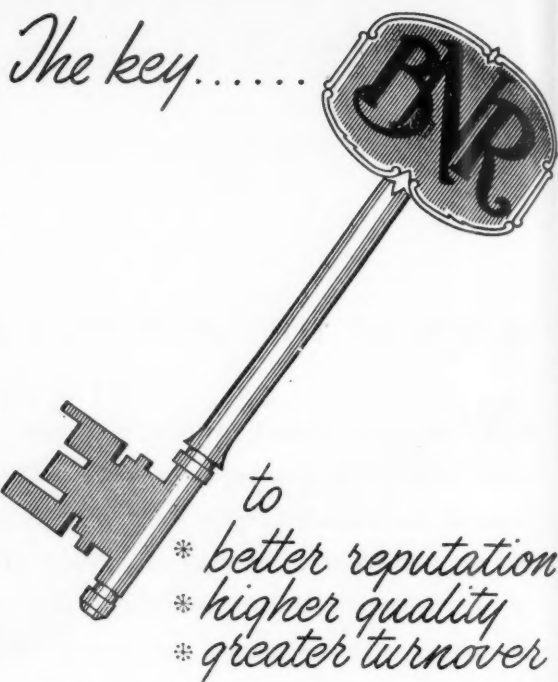
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BN R4

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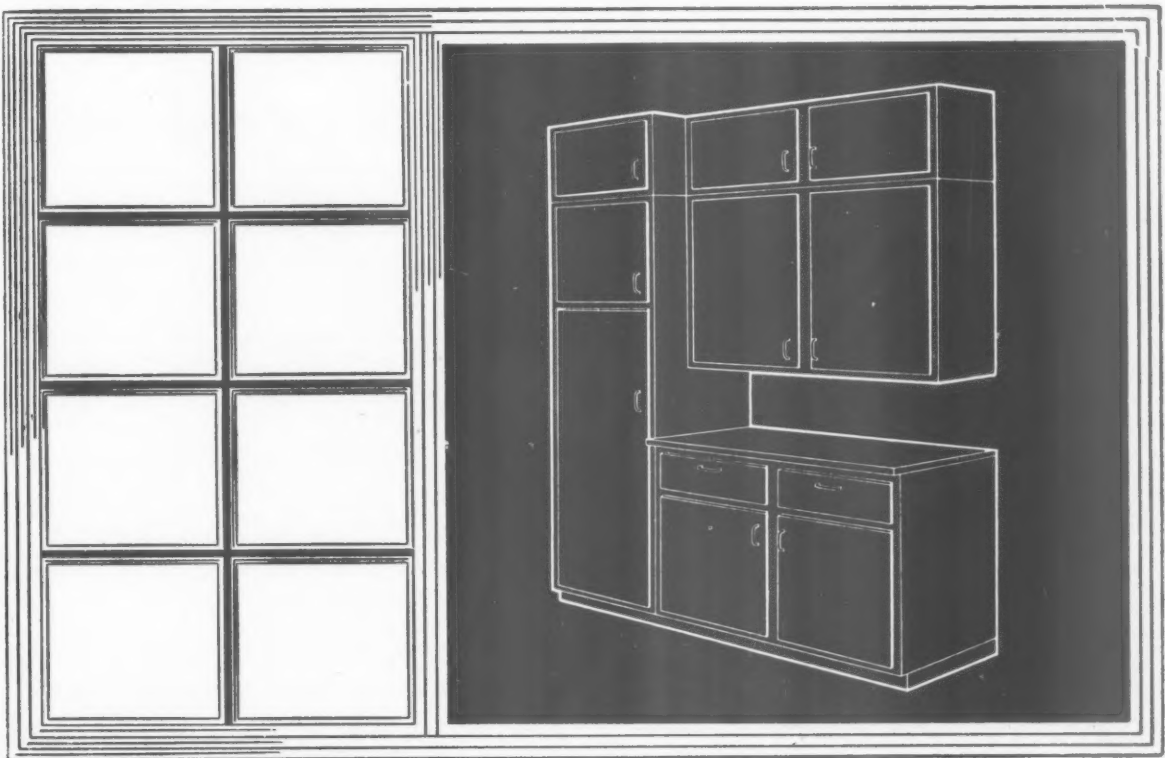
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WOODWORK**

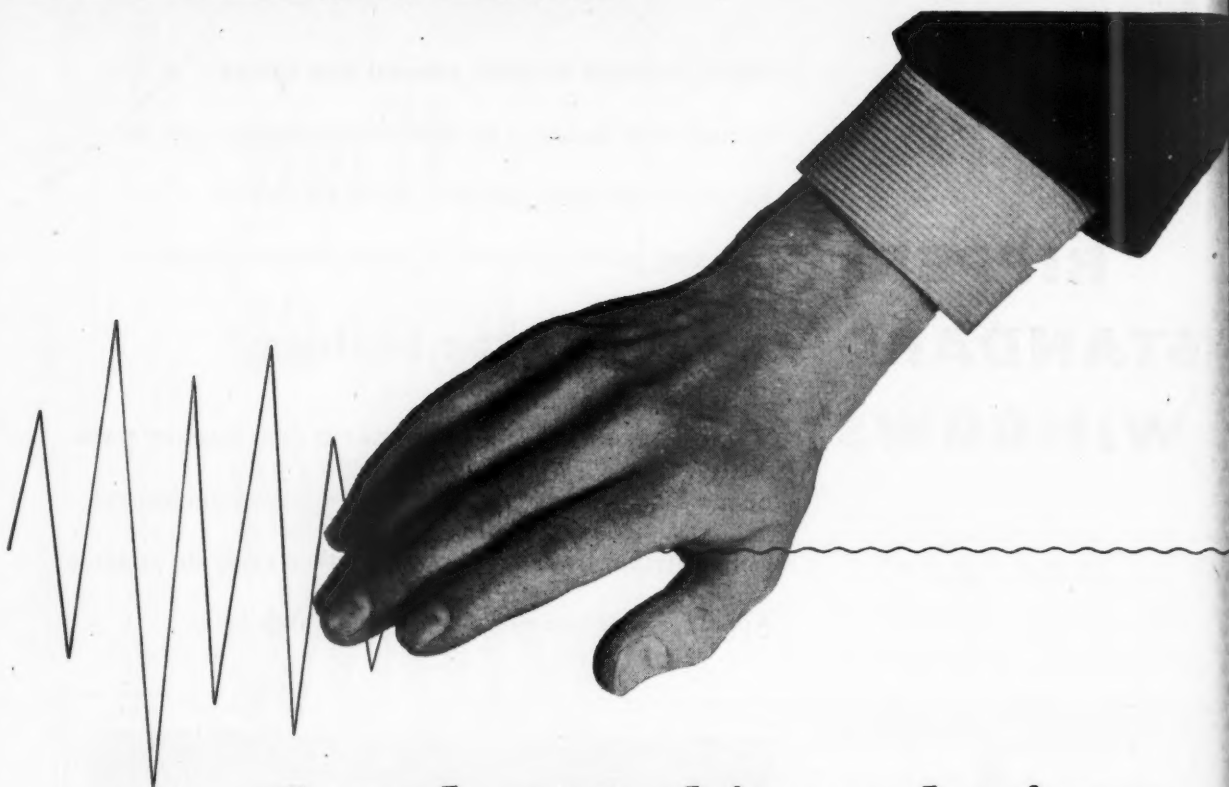
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**RIPPERS LIMITED**

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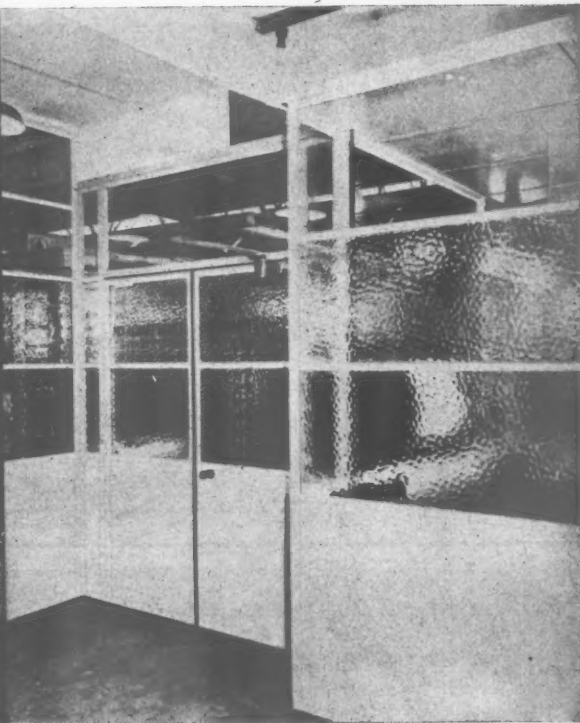




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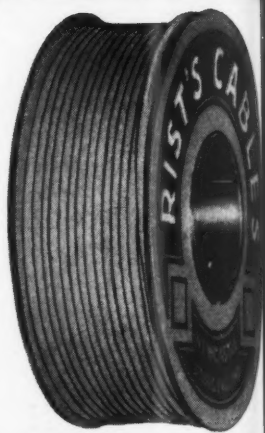
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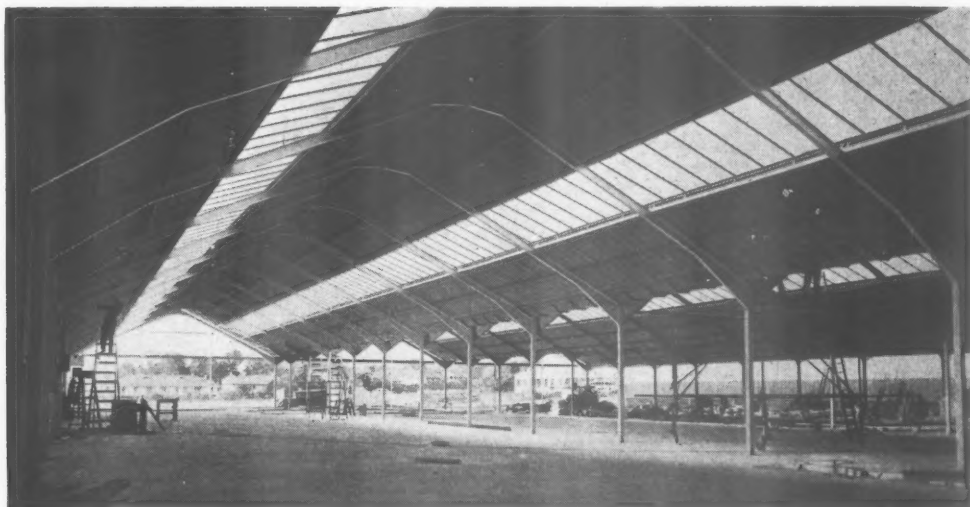
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**5d<sup>\*</sup>**  
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**double**  
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GPA.1



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*giving both hot and cold*

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*halves the hot water*

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**WALKER, CROSWELLER & CO. LTD., CHELTENHAM**

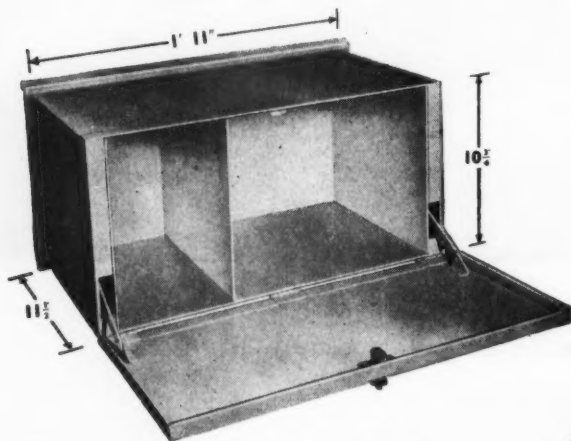
Telephone: CHELTENHAM 56317

*Here's what every housewife wants*



No need for the milkman to leave the milk on the doorstep. He lifts the flap—in go the bottles—and away he goes on his round. And if the housewife doesn't want her usual two bottles, she leaves a note in the compartment where it cannot be overlooked.

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Our Standard Shades are manufactured  
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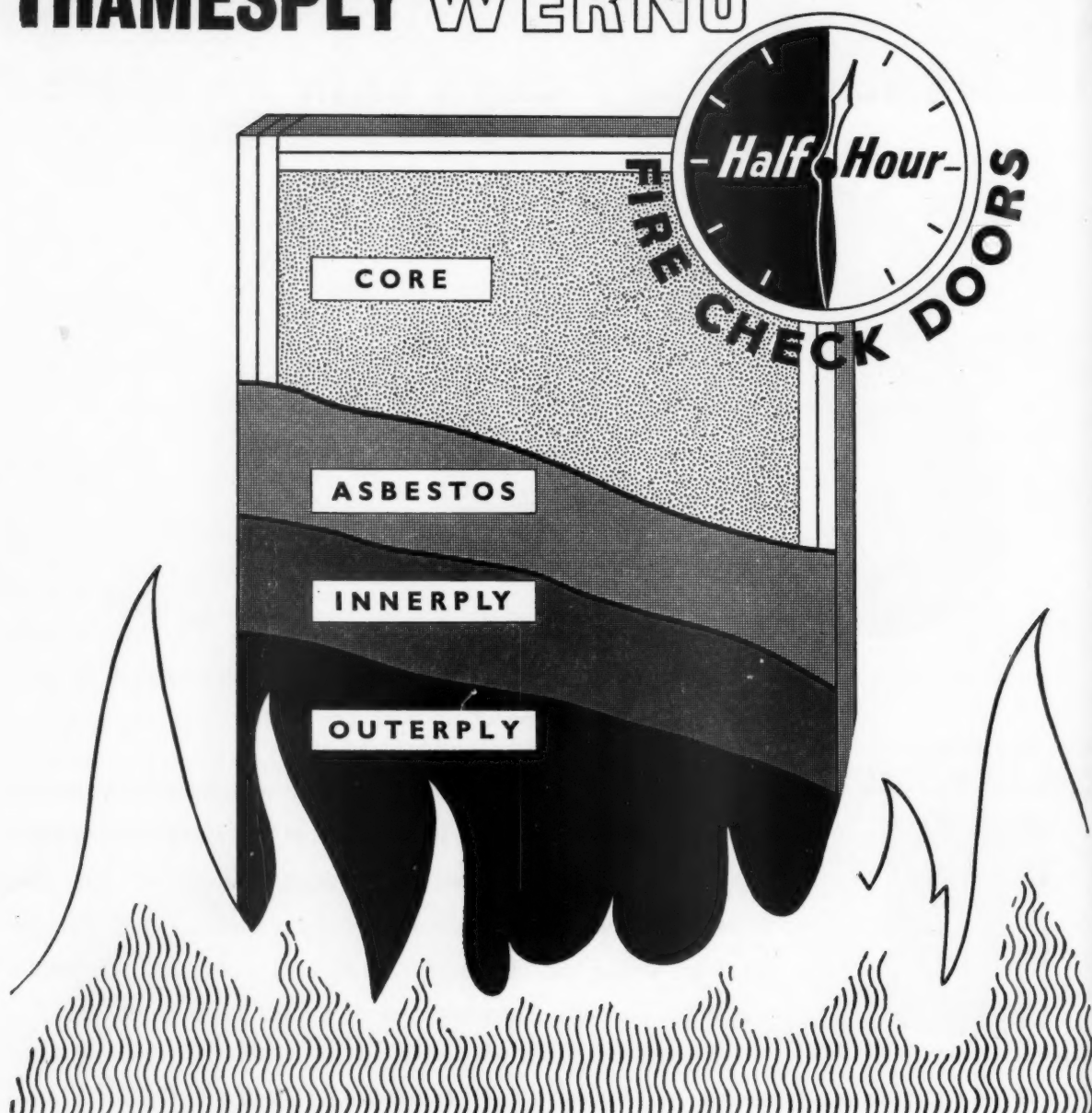
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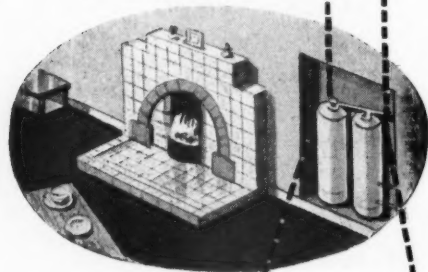
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*For asphalte work  
consult the  
biggest man  
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*Engert's for Asphalte*

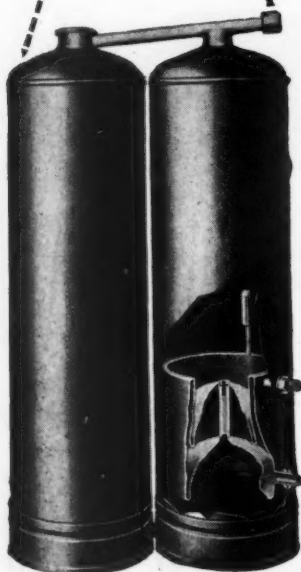
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NON-SLIP and in COLOUR TOO !**

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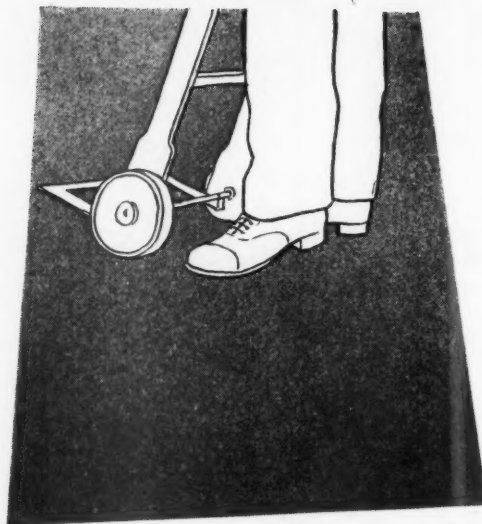
*Here, indeed, is a  
picture of  
a happy man!  
Free from the nervous  
irritant of NOISE, he is  
relaxed, alert, and on top  
of the world—reaping  
untold benefits from the  
forethought which  
prompted him to take  
his Acoustical problems  
to*

**JOHN DALE**

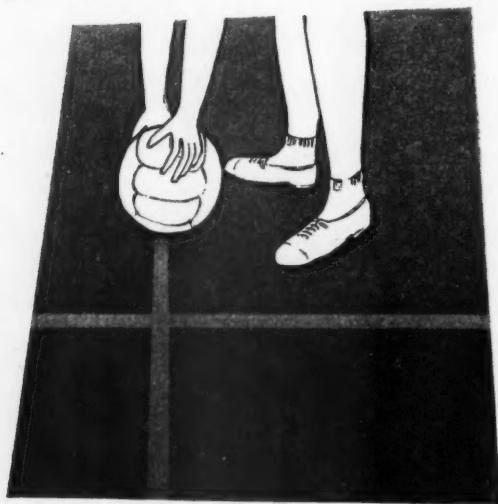
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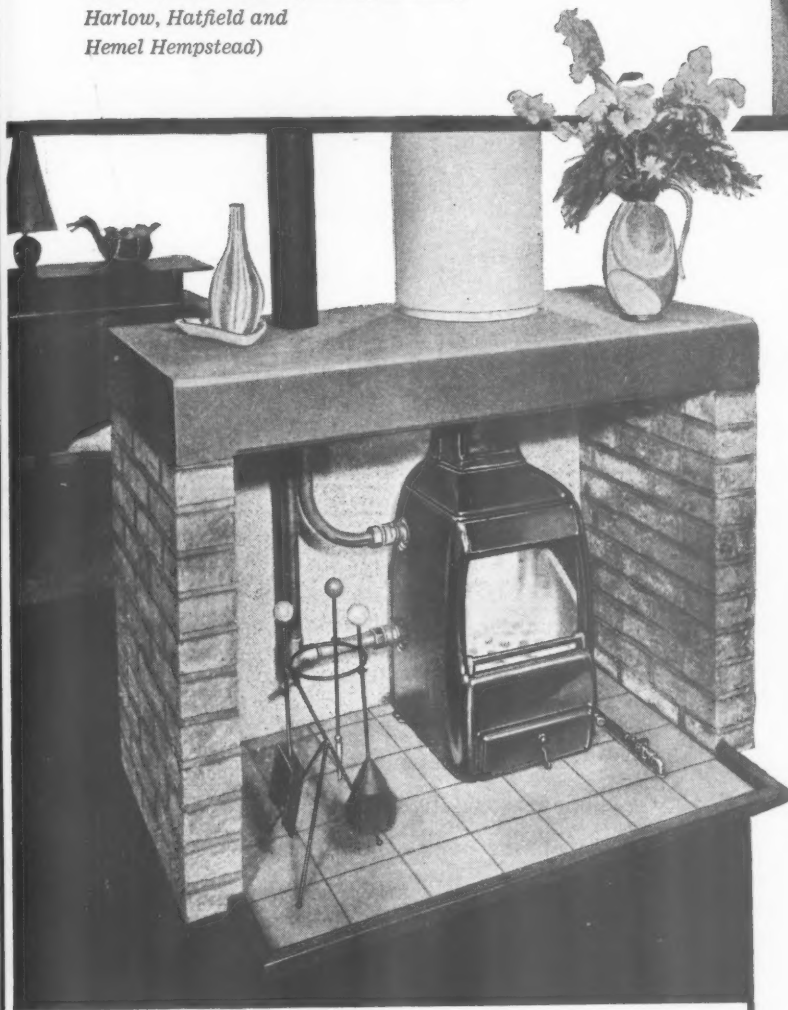
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Furnishings by Times Furnishing Co. Ltd.



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PIONEERS OF SMOKE REDUCTION

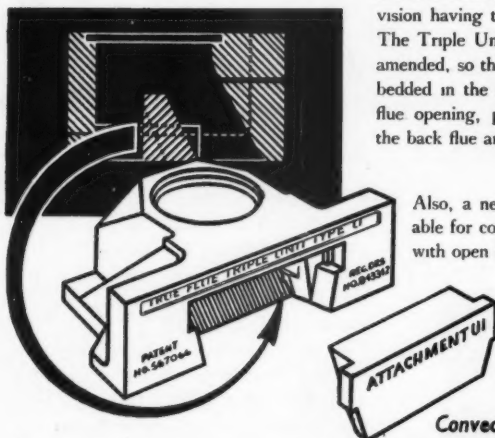
Technical Information Sheet available from: RADIATION GROUP SALES LTD., PARK FOUNDRY, BELPER, NR. DERBY.

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**TRUE FLUE TRIPLE UNITS**  
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*for back boiler flues*

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. . . is briefed with facts and proceeds with the confidence born of experience.

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**J. LYONS & CO. LTD.,**

**INDUSTRIAL CANTEENS  
 ADVISORY  
 SERVICE**

**CADBY HALL, LONDON, W.14.**

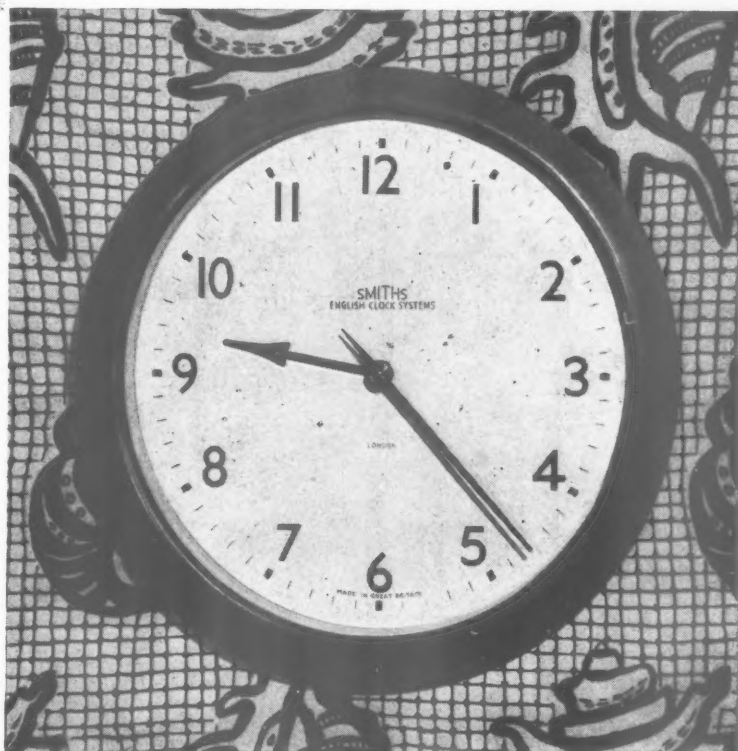
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## new service for the ARCHITECT & DESIGNER

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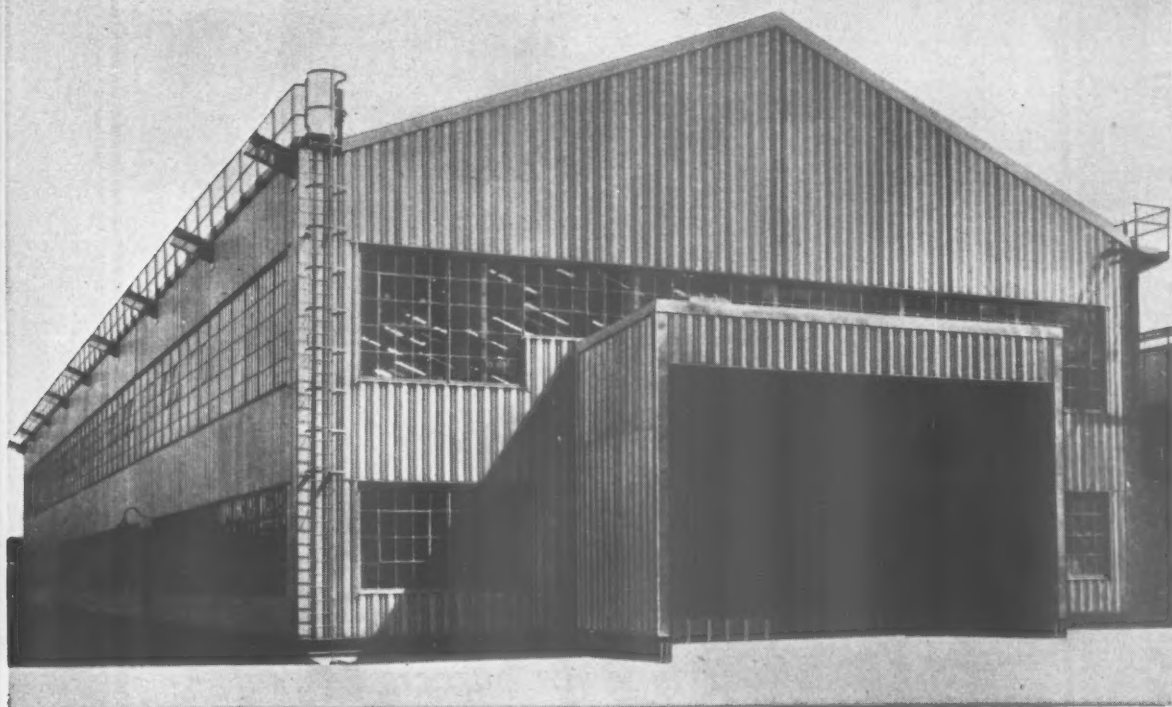


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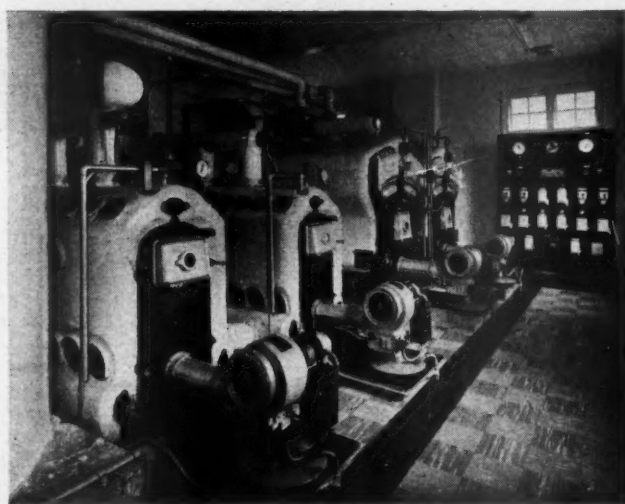
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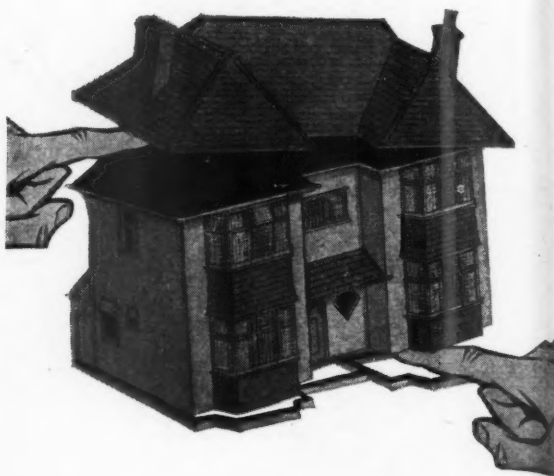
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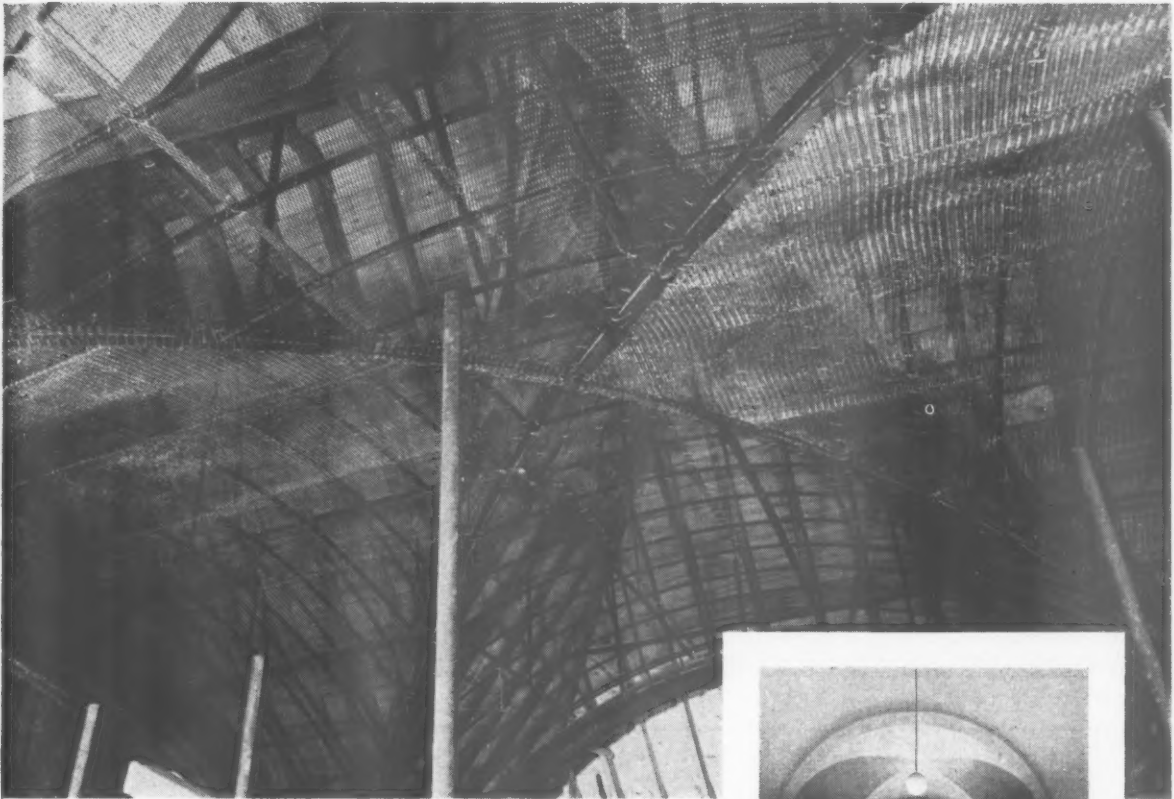
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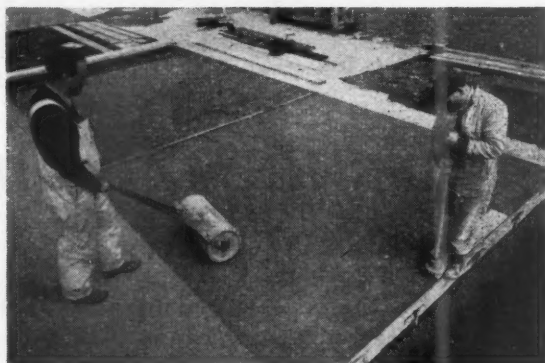
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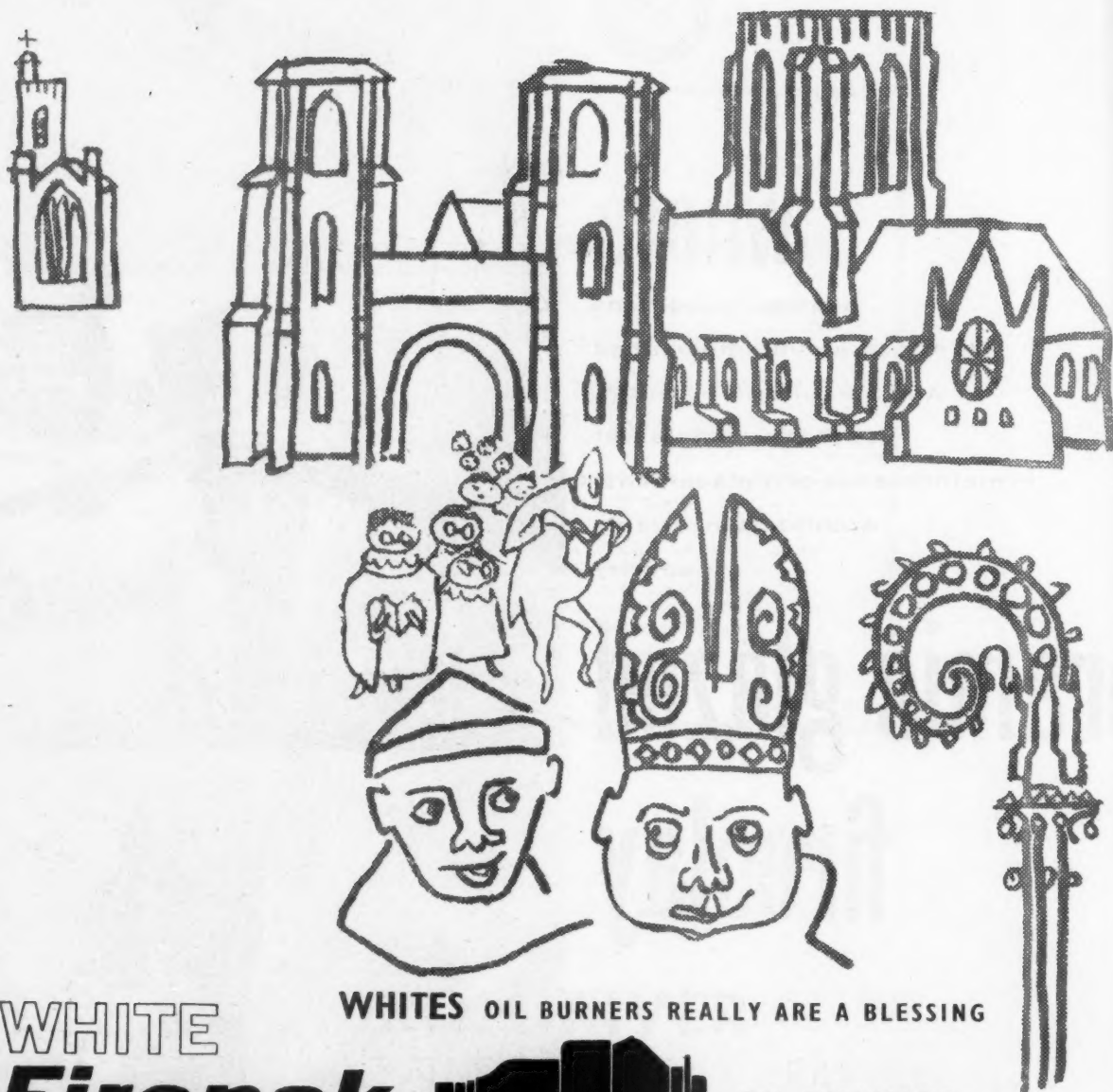
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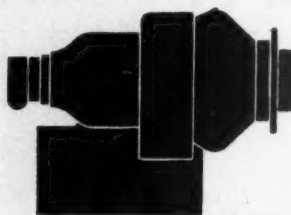
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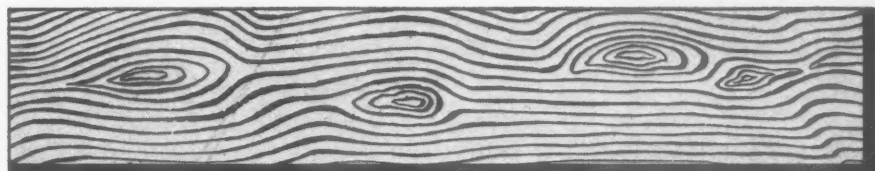


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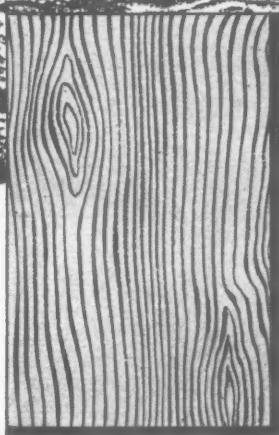
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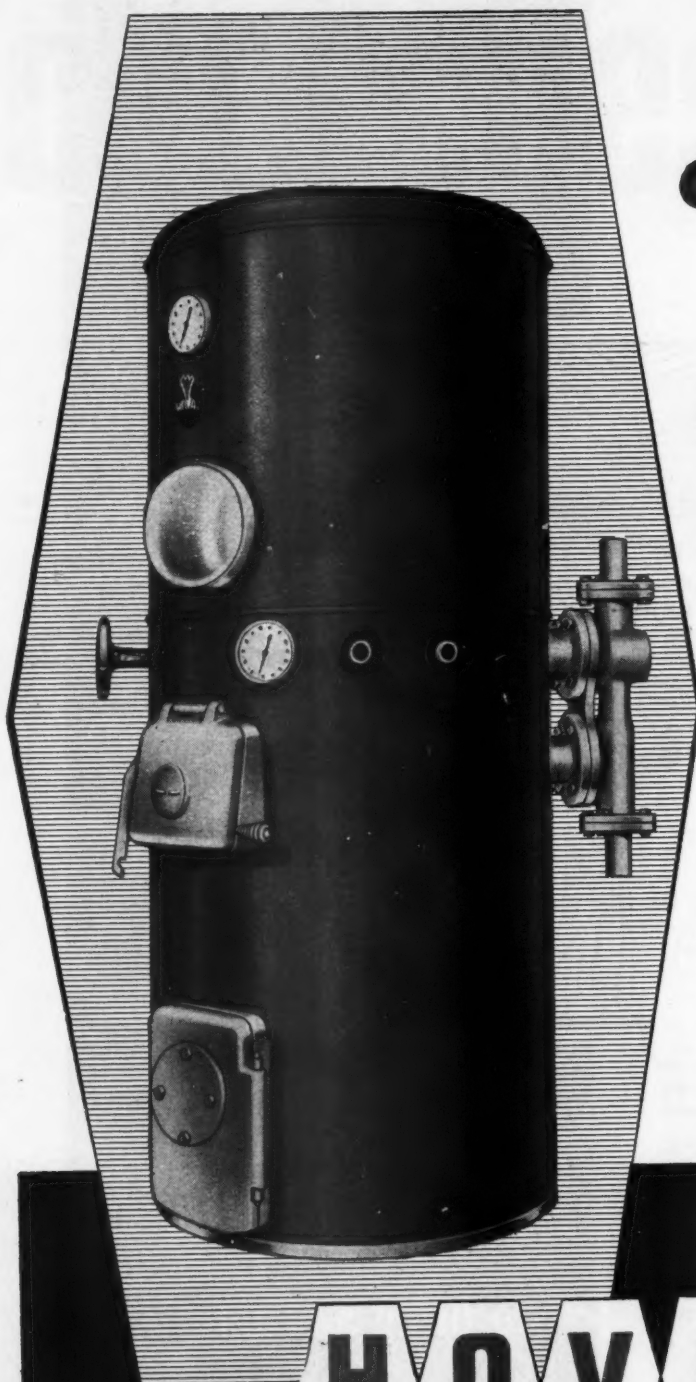


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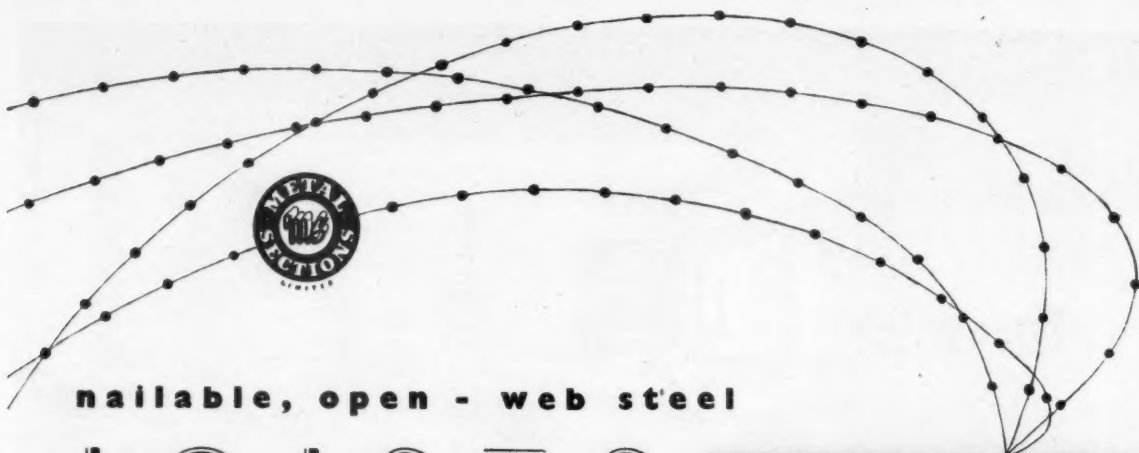
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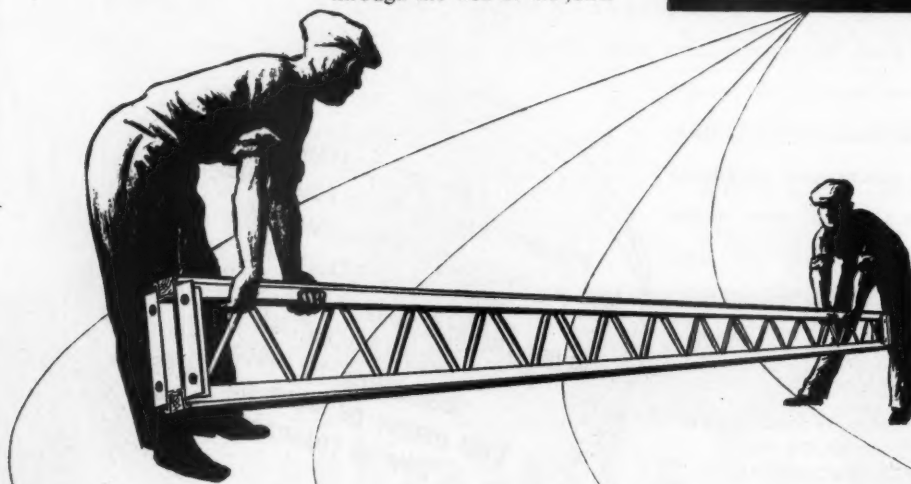
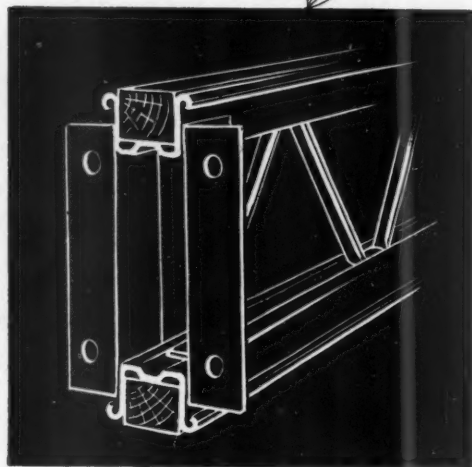


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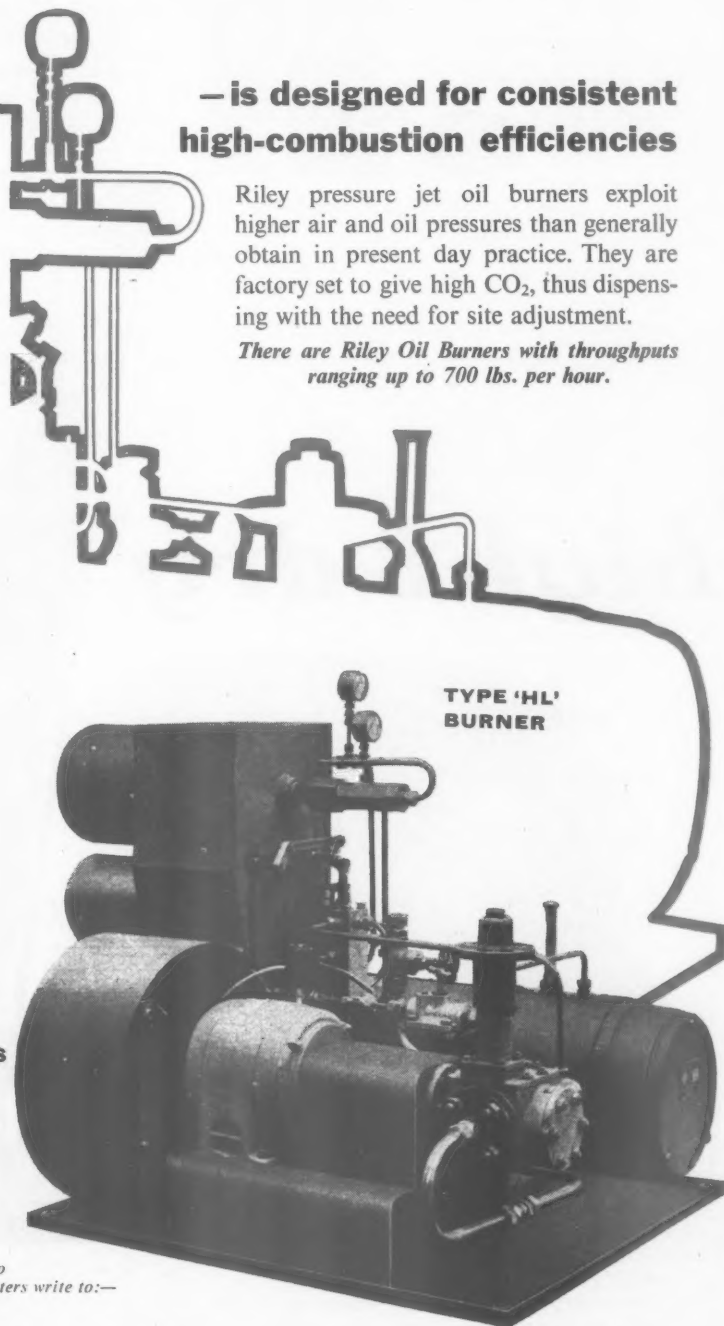
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### NOT QUITE ARCHITECTURE

## TOP POP BOFFIN

While there is *obviously* no truth in the scabrous allegation that the top men of English architecture couldn't design a thing without Mr. S\*muelly or Mr. \*rup to guide their hands, there is plenty of substance in the supposition that a whole generation of English pop vocalists owe their very existence to the back-room boys of the recording business. Not, square reader, the barflies of the brain-washing industry, whose carelessly hidden persuaders have caused so much unnecessary stir of late, but the *real* manipulators, the dedicated tech-men, the tape-trimmers, the input-balancers, the arrangers, conductors, the unperturbed musicians who can play any sequence of dots—even those across the top of a soup-packet—at sight.

And particularly the arrangers, composers and conductors, without whom the other lads would have nothing to play, feed through echo-chambers, or design arty record-sleeves for (which last would deprive the technical editor of one of our contemporaries of some pocket money). When you get composer-arranger-conductor under one hat, as in the case of Frank Cordell (who never wears a hat) you have the sort of person without whom an industry would collapse.

He probably comes nearer, in his command of the whole process from conception to consumption, to the ideal of an *Uomo Universale* than anyone currently in the architecture caper, and his technical know-how commands such diverse feats as wringing extra-galactic harmonies from combinations of instruments that must have been drawn from a hat, to the almost impossible achievement of teaching a gnat-brained blonde TV-chirper to come in on the right beat, not once, but every chorus.

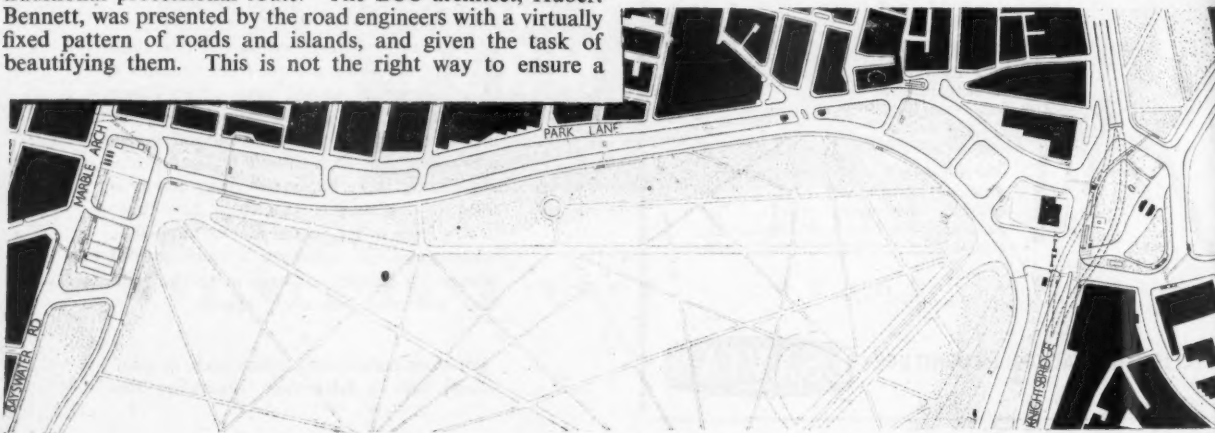
For these reasons and others such, he commands also a back-room reputation that



## *The Hyde Park Roundabout*

The creation of the great new squares at Hyde Park Corner and Marble Arch is as important in our day as the creation of Trafalgar Square in its time. But what was then conceived primarily in terms of architecture and townscape is today conceived primarily as traffic engineering, complicated in each case by the decision to preserve unchanged a traditional processional route. The LCC architect, Hubert Bennett, was presented by the road engineers with a virtually fixed pattern of roads and islands, and given the task of beautifying them. This is not the right way to ensure a

completely successful design. How far Mr. Bennett and his colleagues have succeeded we attempt to assess on pages 278-279. The greatly enlarged Hyde Park Corner roundabout is shown above. Below is a plan of the complete Hyde Park Corner-Marble Arch Improvement Scheme.



verges on the legendary. Musicians skip prior engagements to perform on his sessions, disc-jockeys urge you to listen to the arrangement and forget what vocalist it is supposed to support, and Banham, who enjoys few things more than watching a technician of the Moss/Ulanova class in action, made a point of insinuating himself into a species of washed-out Odeon in a back garden in St. Johns Wood for a pop-music event of some importance: the recording of an LP simply of Cordell arrangements, to appear, for once, over his own name.

The scene was striking; a long narrow character with a long head inclined to one side—not unlike an up-ended hi-fi pick-up arm—conducting from the hips and elbows, but without histrionics, an *ad-hoc* gathering whose performance proved them to be musicians, but whose appearance suggested a random sample of TV dons, Everton supporters, espresso-machine operators, civil servants, bookies' runners, and men whose shavers had fused. The noise, as it battered the ear in the studio, seemed all cockeyed and out of mix, like a cake where the fruit has sunk. But there were eleven microphones on the job, some practically inside the instruments, and behind the control-room window was Cordell's "clerk of works," the balance man, co-ordinating eleven inputs to form, on tape, a noise that had never existed on earth, but was what had been intended right from the start.

All the same, it was difficult to connect in one's mind these blasts of Zeta-hot sound, these tinklings in mighty voids, these smoochy murmurings, with the orderly scene of traditional-type instrumentalists solidly seated at their music desks under a space-frame of microphone booms. But where one could stretch one's mind to encompass this, it emphasized once more the demand put on the creative technician today, who needs, still, to command all the traditional knowledge of his art, and yet to be able to project his mind forward, past the moment of recording, through a sequence of technical processes that he may not be able to control, but that he must understand, if he is to have command of the ultimate product.

No. Let's not distress ourselves, creative technicians who are prevented by a busted code of practice and beat-up educational systems, from doing the same in our own field. Let's just wait for the record (provisional title, *The Melody Lingers On*) listen to it, and turn sickly green with envy at those who really can see a job right through to the end without being denounced by ARCUK.

REYNER BANHAM

## The Editors

### THE RIBA'S CONTRIBUTION TO INFLATION

HOW much profit should the RIBA, as a professional body, make from conducting its examinations? How much notice should the RIBA give to its student members of increases in examination fees? The questions might well be the subject of discussion by members following the decision of the Royal Institute to raise examination fees from January *this year*, as announced in last week's JOURNAL.

It is true that examination fees have not risen since before the war, and if the RIBA were losing money in conducting its exams, it would be fair and right to adjust the fees accordingly. But to increase them merely because they have not gone up in price like everything else is merely to add deliberately to the general inflationary trend which we all deplore.

The RIBA announced that at present 13 per cent. of its income comes from entrance and examination fees, and approximately one-third of this covers the cost of conducting exams, and awarding prizes. The remaining two-thirds is treated as normal income. This seems a doubtful policy, as there is bound to be a tendency to hope for a high intake into the schools and into the profession not because there is a national demand for more architects but merely because the Royal Institute depends upon the revenue derived from it.

In any event, it is distressing to see the poorest section of the profession having to bear such heavy increases. It should be noted that students qualifying externally this year will have to pay an admission fee of £10 10s. 0d. and a first subscription of £7 17s. 6d. A total of £18 7s. 6d. to be found before he has had a chance to earn a penny.

### SOMETHING FOR NOTHING

The offer of the Dolphin Development and Management Company to provide Pembrokeshire County Council with a free planning survey and report of the Milford Haven area raises some novel and difficult problems. Nobody likes to look a gift horse in the mouth, and Pembrokeshire County Council Planning Committee is understandably eager to accept the offer. The company is a subsidiary of Richard Costain Ltd., and its chairman is Sir Richard Costain, since 1950 chairman of Harlow Development Corporation. Frederick Gibberd is to advise the company, so that Pembrokeshire would get the benefit of the free advice of an eminent architect-planner and of a builder with years of experience in new town design and construction. In Pembrokeshire, where the County Council considers itself unable to afford the planning staff required to cope both with a new development plan and with the flood of applications from speculators and would-be developers, the Minister has ignored the proposal made by this JOURNAL and by the *Manchester Guardian* to set up a public development corporation modelled on the new towns. As



industrialization is drifting into chaos it is better to have a planning survey and report by the Dolphin Company than none at all.

But what if every big building company were to include free planning advice, surveys and reports in their "all-in" service? It is obvious that no company gives free advice without the expectation of being able to develop a substantial area for its own profit. In Pembrokeshire the company has accepted safeguards: it has promised not to buy or build on any land before the report has been submitted. But the conflict of interest is clear. The survey and report are being paid for by the company. Their professional advisers must consider, primarily, the interests of their clients, which obviously require the inclusion in the plan of certain areas suitable for large-scale development by them. While we can have confidence in Sir Richard Costain and Frederick Gibberd, we are alarmed at the prospect of weak and financially embarrassed authorities accepting the offer of a free planning service from companies financially interested in the development of their areas. Planning authorities should appoint their own consultants or full-time staff, who should in turn, be responsible only to them; and where, as in Milford Haven, industrialization suddenly invades a small authority the Government has a duty in the national interest to assist the authority to obtain all the finance and the powers that it needs to cope with the situation.



#### PASSBUCK TO PIMLICO

The RIBA has just acted promptly and wisely in starting a campaign against the LCC's proposals to delegate responsibilities to metropolitan boroughs. The Council's proposals

are contained in a General Powers Bill, and the powers to be delegated would be some of those allowed under the London Building Act and the Town and Country Planning Act. So far as the Building Act is concerned, the LCC only wants to delegate its responsibilities in the making of decisions about dangerous structures. But if the Bill became an Act, there would be nothing to stop the Council from delegating more powers later on.

Apparently the intention is that the large boroughs would have more powers than the smaller ones. The whole business would probably give the architect a very lively time. He would never be quite sure what borough administered which part of the Act, and he would probably find that each one interpreted it in a different way. ASTRAGAL is not looking forward to making an elaborate approach to, say, Mr. Spigott, the borough surveyor at Pimlico, and then finding that for part of the application he must cross the river and see Mr. Bresummer at County Hall.

#### GUILT-EDGED INVESTMENT?

One aspect of the RIBA's financial

crisis seems to have been overlooked by a lot of people. It is slightly alarming that the Institute invested the bulk of the money it needed for extending its headquarters in stocks that fluctuate in value; a fall in the value of investments is not, after all, an unusual event. So far we don't know the figures for the Institute's huge loss.

\*

Why didn't the RIBA follow its own good example? In 1956 it lent £15,000 to the borough of Reading, and naturally there has been no loss on this loan. It is hard to understand why the whole of the building fund was not put on short-term loan, to be available as required. Let us hope the RIBA will now pull up its socks and put our money in them—or in something equally secure.

#### TIGHT LITTLE ISLAND

You will have seen in your newspapers that Hubert Bennett, the Architect to the LCC, has been working on the proposals for the Marble Arch and Hyde Park Corner road. This was the sort of job that is given, by tradition, to an architect—the cleaning-up of somebody else's work. Mr. Bennett did it very competently, but ASTRAGAL can't help wondering why traffic islands of over three acres, which are removed from normal pedestrian circulation, are not built on. Is there any reason why the islands should not be inhabited?

\*

Another point. These road proposals, however prettified they may be, will be carried out at the expense of the Royal Parks. Before anything is done to whittle away the finest city parks in the world, can someone begin to compensate the Londoner for his loss? Perhaps the LCC should push ahead a little more vigorously with its own park proposals.

#### RAPE OF THE BELT

This business of preserving or creating open space in the city becomes even more urgent as more and more excuses are found for messing up the country around London. The latest horror story from the Green Belt tells of the fourteen-year plan to dump rubbish over a delightfully undulating valley near Brentwood, in Essex. Three years ago the UDC rejected the idea

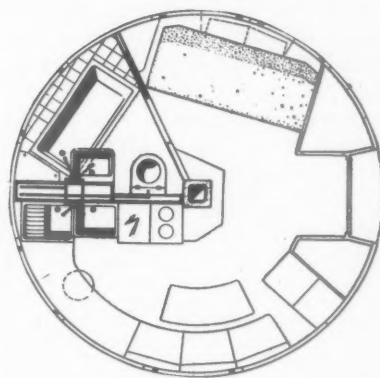
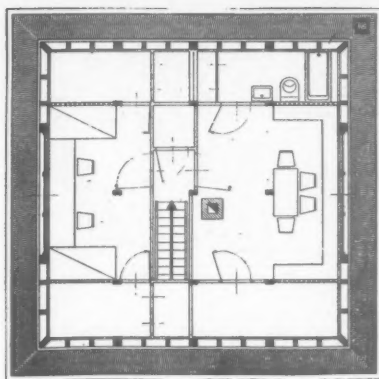
of using six acres of the valley as a rubbish tip, but they have now agreed that a private refuse disposal contractor may have 37 acres for the dumping of six-foot layers of refuse, divided by 9-in. layers of top soil.

\*

There is, of course, a protest campaign. But objectors have been told that there will be no "odours" because rubbish on "controlled dumps" must be covered within 24 hours. They have pointed out that apart from losing the valley and gaining the danger of smells, they have other reasons to complain. There is, they say, the possibility that water further down the valley will be polluted. And the rural road which leads to the valley will have a daily stream of at least 100 cumbersome, heavily-loaded rubbish lorries.

\*

Brentwood's protest committee is taking representatives of the CPRE to see the site of the dump on Saturday afternoon. They are also urging local people to protest to the Essex County Council, which is said to be backing the scheme. ASTRAGAL hopes the council will not share the official view of E. A. Dallas, Brentwood's chief engineer, who thinks the valley "lends itself" very well to the dumping of rubbish. When he was asked if it were not a particularly beautiful spot, Mr. Dallas replied, "If you call grassland beautiful."



Two houses which are to be shown at the Daily Mail Ideal Home Exhibition (opening on March 3). Both were designed by Dr. Johann Ludovici. The top plan shows the accommodation contained in the roof of the house illustrated beside it. People who cannot afford the whole house may buy the roof unit first and have it placed on the ground. When they become more prosperous it can be hoisted on to a ground floor. The round house is fourteen feet in diameter and weighs a ton. It was designed to be conveyed by helicopter or river raft to remote regions of the Belgian Congo. Germans have been buying it as a week-end retreat for about £425.

The other double bill was at the ICA—the opening of an exhibition of what we must, apparently, learn to call "mainstream abstractionism" by Roger Hilton, and of constructions by Anthony Hill. The Hiltons will not, one feels, set Dover Street on fire; nor will the Hills, but they do at least have a certain professional interest for architects. They were being described behind their creator's back as "Tin Pasmores," but they are, in fact, decorative arrangements of sheets of plastic, metal, and lengths of extruded metal sections. If Hill can make works of art out of these standard elements, why do so many architects complain that they can't make architecture out of them?

ONWARD CHRISTIAN BARMAN

The SIA's annual Design Oration was

given the other day by Christian Barman, an idealist who has remained an idealist even after more than three decades of practical experience. ASTRAGAL gave an attentive ear to the Oration, which was a statement of the credo of the man who helped to put a good face on a public corporation (London Transport) before many corporations knew this was possible. But your columnist made a few mental reservations. For example, how true is it that while reason plays the greater part in the conception and design of capital goods, emotion plays the greater part in the design of consumer goods? Mr. Barman kept on emphasizing that capital goods set a standard that consumer products should emulate. But if you extend the definition of capital goods to include commercial buildings—well, just extend it, and be grateful

#### GALLERY GAME

Last week the gallery-goers had a double bill of double bills. At the Marlborough Gallery, Professor Douglas Cooper was simultaneously opening an important exhibition of works by Juan Gris, the Cubist most likely to succeed with architects, and introducing Daniel-Henri Kahnweiler. Gris looked purposeful, orderly and sumptuous; Kahnweiler looked like a short, benign demon king, and not at all like an important pioneer of the modern movement. Yet that is what he is; for, by gambling on very long futures and buying Cubist pictures at a time when nobody wanted them, in the nineteen-hundreds, he probably altered the course of modern painting, and now, fifty years later, he is still Picasso's sole dealer.

that quite a lot of our consumer goods don't emulate them.

"YOU'VE GOT TO HAVE SOMETHING IN THE BANK, FRANK"

If you are blushing hotly and feeling slightly ashamed at that mention of one of our profession's weaknesses, let me remind you of a Trust that has been set up with the intention of improving us. It is the Yerbury Foundation, which has been formed to obtain funds so that the Architectural Association can promote more post-graduate study and research and help to integrate the training of architects and building technicians. The Trust is not being administered by the AA's elected council, but by a body of independent and eminent trustees. How it is administered does not really matter. What we all want is to see something done quickly about the good ideas that have been talked about interminably over the last few years.

\*

In the meantime, please contribute, unless you can persuade your richer clients to do so.

#### TIMES OUT OF JOINT DEPARTMENT

Talking of money, how would you like to earn ID 200 p.m.? If you are a top person you may have applied for this Boobo prize already. And if you don't know what all this is about, read the following advertisement from the top paper's public appointments column.

#### NOTICE.

Vacancy exists at the MUTASARRIFIYAH OF BAGHDAD LIWA—LOCAL ADMINISTRATION, for qualified FOREIGN ARCHITECT. Salary, I.D.200 p.m.

Applicants should be graduates of higher colleges. They apply to this Mutasarrifiyah accompanied with the following certificates:—

1. College certificates.
2. Certificate of good conduct.
3. Non-conviction certificate.
4. Census book.
5. Two photos.

Applications are acceptable up to the end of February, 1958.

Mutasarrif of Baghdad Liwa, Chairman of the General Liwa, Council, Baghdad, Iraq.

Boobo.

By the way, it was my topmost delight the other day to scan some back numbers of *The Times*. I emerged wondering how an architect reader would get anywhere near the top if he took a tip from this newspaper and referred both to Hugh Casson and Lucienne Day as "Mr."

ASTRAGAL



Christopher Gotch, A.R.I.B.A.

W. W. J. Trollope, L.R.I.B.A.

Mrs. Alex Richardson

"504"

Jeremy S. Dodd, A.R.I.B.A.

John Basing

Rowena Ramsey

#### Architectural Assistants

SIR.—The size and structure of architect's offices are so varied as to make it almost impossible to suggest a method whereby architectural draughtsmen might be incorporated so as to apply universally. So much depends upon the degree of participation in actual design by the principal or the partners.

However, engineers seem to employ a system in which only qualified staff handle design and site supervision while the draughtsmen perform the labour of turning calculations and forms into working drawings.

It is appreciated that architects' work involves many details requiring a certain amount of design which precludes such a clear dividing line as that attainable in engineering.

Still, I feel sure that with the advent of prefabrication techniques based upon wider modular planning much of the incidental design in details may be reduced into a more standardized form, applicable to more than just a single project.

Architectural practices appear to have assumed the following patterns of structure:

1. Several Partners with a few additional associates, and assistants.

2. One Principal with several associates, and assistants.

3. One or two Principals with a small number of assistants.

In all cases it is becoming more and more obvious that unless the assistant is a very senior one, and this is unlikely in the last instance, he is unlikely to find himself entrusted with a project from start to finish for a number of reasons. First, the partners or associates will want to handle the client, the design and the supervision; secondly, assistants must always be on the move, resulting in broken continuity; and thirdly, the experience of assistants is often insufficient on the matter of costs.

Some large practices already follow the American system of a design office as distinct from the working drawing office.

Surely, the aim of the schools should be to

train men who, upon qualification, should be capable of taking posts as senior architects (comparable to the house physician in a hospital) in charge of a group of draughtsmen possessing a different qualification that excludes design, professional practice and site supervision, but emphasizes building techniques in detail, specification and draughtsmanship.

At a wild guess I suggest that for every senior architect there might be three or four draughtsmen. Failed students who persevere to eventual qualification often make the better architects; while those who give up invariably leave architecture for an allied pursuit.

There are many people who have no great desire to shoulder responsibility but on qualifying as architects feel the humiliation of watching their contemporaries, more forceful and luckier than they, reach principal status. These could be spared demoralization and fulfil a most useful purpose by the creation of a different lesser qualification.

CHRISTOPHER GOTCH.

London.

#### Recaste the Profession

SIR.—If the Editors will permit I should like to comment on their reply to the letters of Mr. Gotch and myself. As the solicitor needs his clerk so the architect needs his assistant. If the solicitor and his clerk were both termed solicitors the prestige of both would suffer. By architect's assistant I do not mean a mere draughtsman, I mean an assistant. Obviously such an assistant would need to take a course similar to the architect but it should not be necessary for him to pass the same finals to achieve recognition of his accomplishments.

What work would the architect's assistant undertake? He would stand in the same respect of the architect as the solicitor's clerk does of a solicitor. How many would be required? Shall we say roughly as many as there are architects? Under such a system the term architect would have a real meaning and I dare venture that the whole profession would be much happier and much more highly regarded. And/or why not analyse the qualifications of an Architect and have a parallel to the principle of the General Certificate of Examination?

W. W. J. TROLLOPE.

London.

#### Can Architects Cure Subtopia?

SIR.—The question should be: How can architects fail to cure Subtopia? Obviously no architect would ever defile his drawing-board with anything which might result in Subtopian building. Surely everybody knows that all architects refuse to have any truck with cheap-development corporations or fast-profit tycoons. (Each architect knowing that every other architect will refuse to soil his reputation, by stooping to collect from shoddy projects.)

This high state of grace is, in part, made possible because there are no firms calling themselves Architects, which are in fact backed and run by non-architects who might think only in terms of "business"—as sometimes happens in other countries. For instance: No qualified architect would lend his name and status (in the guise of "Limited Partnership") to make things legal for, say, a firm of speculative-building promoters who (quite understandably) might prefer to be known as Architects.

So you see, dear ASTRAGAL, all that horrible building just got there on its own; like the telegraph wires, crops of pylons (very profitable, the latter, if it happens to be your land) and the alarming street furniture; and so on, and so on *ad nauseam*.



Yes, by all means "Wake up at the back, there!" Just supposing, merely for the horror of it—horror being all the rage these days—that the foregoing were but an illusion. Imagine the situation if, deep down in their hearts, the majority of architects did not really care.

(MRS.) ALEX RICHARDSON.

Chippenham.

## Examination Conditions

SIR,—Supplementing Paul Ritter's condemnation of the working conditions under which external students are examined in design (AJ January 30), I would draw your attention to the appalling difficulties under which candidates sitting in the 2nd floor committee room had to labour. Conditions were, if anything, worse than those experienced by Mr. Ritter, for he obviously had some light. The candidates in the above mentioned room worked through most of the day in almost stygian darkness, and when electric lights were at last put on, the illumination proved to be at a much lower level than the erstwhile "morality" lights of the earlier cinema days. As one not-so-young in years, and furthermore, suffering a defect in eyesight, my own plight was not enviable. After a while a candidate went outside, unplugged an ineffective standard-lamp dully illuminating the upper corridor, and ran leads into two lamp-standards within the room, wasting further time, which had already been decimated by the disgusting lighting conditions under which everyone in the room had been working, and failing. The matter should have the attention of the examining body now; the drawing parts of the exams are a terrific race already, not a test of knowledge; please do not make it a handicap.

504.

London.

## Elevational Control

SIR,—The important letter from Peter Moro (AJ, February 6) puts the case against elevational control very well. While the defence is looking round for something with which to counter-attack, all who are against elevational control should combine for a powerful campaign now. This must include nearly all architects and, I hope, some town planners, and should include all who call themselves artists or lovers of freedom.

Why now? One must consider the political situation; the Conservatives who decry all planning at election times are the most likely to throw out a provision (which is manifestly bad) in a pre-election period when they may hope to gain a number of votes for their pains. The average spec. builder will not change his allegiance. Those who hate all modern architecture are unlikely to turn to socialism either.

When the Labour Party's turn comes, architects can clamour for improvement to the control over erring borough councils by legislation, and the elimination of the engineer/surveyor as guiding hand.

Architectural magazines, popular ones as well as pure art and literary ones, must be used as well as the daily press, to build up a pressure for the public to want its house designed by architect, in any style—even a new one!

JEREMY S. DODD.

London.

SIR,—Peter Moro wants to know what is the case for aesthetic control. The answer is quite simple and it has nothing to do with aesthetics.

If a local councillor or a planning office objects to any proposed development for reasons which are not covered by zoning, density, angles of light, control of advertisements, ribbon development, obnoxious trades, by-laws, building acts, factory acts, or any other rule, regulation or law, the meaning of which can be determined by the courts, then that officiating authority can only enforce his personal prejudice, taste, or spleen by virtue of a clause which allows him to refuse development because he does not like the look of the applicant's face (or the face of his building—it is quite immaterial).

Without that clause imaginative comprehensive positive planning would be impossible since the town planner would have to stick to the letter of the law like the rest of us. We could in fact obstruct him by withholding any information that could not be adequately shown on a 1/500 block plan.

JOHN BASING.

London.

## Frozen Music

SIR,—I write to you, to draw your attention to an article written by Mr. David Heal in the December number of the *Architectural Association Journal* in which he says:

"Finally I would like to lay the ghost of 'Architecture is frozen Music' and to clarify its derivation which is misquoted in the ARCHITECTS' JOURNAL reprint of Max Lock's introduction. The source is from one of Goethe's 'Conversations with Eckermann' of March 23, 1829, and the sentiment is reiterated by Goethe's close friend Frederic von Schiller, who in his *Philosophie der Kunst* wrote, 'Architecture is Music in space, as it were a frozen music.' A third version has been provided in 1807 by Madame de Staël who wrote that, 'The sight of such a monument is like a continuous and stationary Music.'

Before putting in print that something was misquoted in your JOURNAL he should have been sure of his facts.

It was not Frederich von Schiller (the poet) who wrote *Philosophie der Kunst* it was Frederich von Schelling. This book in which von Schelling speaks (page 576) of "Architecture in general is frozen music" was published in Munich in 1807, therefore it was before Goethe said to Eckermann on March 23, 1829 *Die Baukunst ist eine erstarrte Musik*. Madame de Staël did say *La vue d'un tel monument est comme une musique continuelle et fixée* in *Corinne*, livre iv, chap. 3—the date 1807 may not be correct, but, as she died in 1817 she said it before Goethe.

The idea originally came from Marcus Vitruvius Pollio temp. Julius Caesar, as he said again and again that an architect must understand music:

(From Harleian MSS. 2767, Vol. I, translated by Frank Granger.)

"An Architect should be a man of letters, a skilful draughtsman and acquainted with music" (p. 9).

"An Architect must know music that he may have acquired the acoustic and mathematical relations and be able to carry out rightly the adjustment of balistæ, catapultæ and scorpiones, etc." (p. 13)

ROWENA W. RAMSEY.

London.

## A LETTER FROM NEW ZEALAND

A disaster hardly less than the destruction of the City of London with Nazi bombs is recorded in the October 10, 1957 issue of the AJ—the reconstruction of the City to date with neo-Georgian or Lessor-type office blocks. The Canaletto print on my

wall showing Wren's City of orchestrated spires arising from decent warehouses, all lapping, as it were, against the sculptured rock of St. Paul's, shows what an architectural opportunity in the post-war decade was allowed to fall into hands that, with too few exceptions, can only be described as unworthy. While it goes without saying that the re-planning of the City of London should have been made the responsibility of the expert planning advice that was luckily available, and that the virtual disregard of that advice is a disaster all on its own, it is the individual character of the buildings shown in the October 10, 1957 AJ that is most depressing.

And whose fault basically is it for all this? The City property owners (apart from the by-laws) as was suggested in the Editorial of the same issue. Surely this is a rather impractical and romantic attitude to adopt?

Unquestionably for me the fault lies in the lack of unity in the younger profession who are all followers and executants of contemporary design, but almost all striving for individual effect of an abstract or formal kind and almost none convinced of the basic necessity for winning public approval for the kind of buildings they want the public to live or work in. In other words, they are socially isolated from the society for which they are designing, with the result that the more conservative and wealthy elements of the community (who are the ones to build office blocks in the City) have little confidence in modern architecture. In particular the fault lies with the extreme "clever contemporary" boys, the so-called "new Brutalists" or followers of similar aberrations who are in reality designing for themselves and those initiated into their visual language by overheated publicity in the architectural press—and for nobody else. Can it be wondered at that the conservative, wealthy building owners of such development as is required in the City react violently against contemporary idiom as it appears to them in Britain—and instead insist on "something dignified" for their insurance or banking block?—which inevitably means atrocious neo-Georgian?

We have a neo-Georgian City so far because our younger architects lost the job by default.

If the wealthy client in Britain is faced by choice with either neo-Georgian on the one hand or the clever-contemporary of the "anarcho-aesthete-cubist" school on the other from which to choose the form of his new building, he will almost certainly choose neo-Georgian, or else that misbegotten post-war offspring of neo-Georgian, the Lessor-type block. And how ill-served he and the public are by any of these. To blame the building owner himself is to miss the point altogether—which is that unless the architect has the answer, nobody has.

In those happy architectural countries where the architect is most successful, respected and called upon to assume great responsibility for the shape of large-scale development, and where he is at pains to identify himself socially and therefore sympathetically and visually with the public at large, it is interesting to note that the expression "new-Brutalism" merely brings a polite and faint smile, and we find the instance of a prominent Scandinavian architect slyly referring to himself in the British architectural press as a "neo-sentimentalist." The deep social fragmentation of which the British architect is something of a victim and whereby he continues to design exclusively for his own social group also explains why it is rare to find in Britain, in complete contrast with Denmark or Sweden for example, buildings which are modern, functional, unquestionably contemporary in construction and character, yet dignified, not "clever," and accessible in every way to popular imagination.

It is surely not too painful a duty for



younger British architects to look at the lesson of Scandinavia again, *not* in the first post-war sense of pinching details and *not* with the intention of learning from the actual building forms themselves in a literal sense—but to study rather the inevitable *appropriateness* of Scandinavian buildings. It is that quality of social confidence and un-selfconsciousness that Scandinavian architects seem to imbue their buildings with, and it is a quality that arises partly from their deep knowledge of and respect for their national forms and techniques. It is not too late for young British architects to put their feet on the ground, and, to borrow an expression of Oliver Cox, "abandon the academic fog for the sunlight of direct contact with the people for whom they are designing" and to invite such universal trust of their abilities as would prevent repetition of the neo-Georgian City disaster. The aggressive and out-of-place qualities of some of our new buildings are hardly less disturbing now than they were in the 30's.

What on earth, for example, is Italian peasant housing doing in East Anglia? Yet the photos of Rushbrooke village housing, as described by Bill Howell in the September 19, '57 AJ indicate this quite arbitrary imposition of a building form surely in keeping with the Mediterranean but hardly with Suffolk. I was not surprised to read, however, the ultra-visual standpoint of Howell's description (the house-by-house analysis, utterly preoccupied with purely geometrical or formal considerations of an architectural language not wholly accessible to the profession, let alone the community at large) or his anxiety over the fasci-board on the eaves side of the roof. This detail, and also the alternative with the fasci-board omitted, are ancient details that can, of course, be seen in several counties as well as in Scotland—but a stupendous disregard for national vernacular is presumably part of the training for a new-Brutalist or an anarcho-aesthete.

Allowing for Reyner's Banhaming, the amusing and extremely bright article in the September 19, '57 AJ by Reyner Banham referring to Rushbrooke housing and criticizing Bill Howell's description of it was profoundly true and correct. What is wanted in East Anglia is housing *appropriate* to the people and conditions of East Anglia and the only way that can be achieved is for the architects to descend a little from their essentially academic ivory tower, forget a little about "crispness," "formal clarity," "stylistic inconsistencies," "purity of the blocks," etc., and show a little regard and warmth toward those very "Rural Operatives" of Reyner Banham's who are to occupy the houses. Could I warmly recommend a tractor-driving holiday with the R.O.'s themselves as a certain cure for any feeling of condescension toward the inhabitants?

As I remember them at the AA, for the extreme *avant-garde* of the contemporary movement, the great thing is to satisfy subjective and individual wishes of a formal and visual nature rather than the objective requirements of a community. The dragon's teeth have been sown and have come up as a lot of neo-Georgian or Lessor-type office blocks, acres of Outrage or spec-builders' suburbia, or isolated examples of "clever-contemporary"—all because the modern architect does not care to seek for universal confidence in his work. This does not include the small volume of good British contemporary work as done by a handful of private offices and some public ones such as part of the LCC Housing Division.

How different is so much of our post-war development from what was advocated by the '54 President of the AA, Peter Shephard, in his Presidential address, the Importance of Being Serious—and how very much worse. And one consequence has been

the loss of the City of London development so far to atrocious neo-Georgianism and heavy-handed lumpiness largely by default of the *avant-garde* of the contemporary movement, too self-consciously and aggressively concerned with being "Brutalist" or wearing some other stylistic hat than with seriously accepting the post-war challenge of construction for a particular community in a particular landscape, at a particular time.

ROBIN ROCKEL.



## RICS

### Questionnaire on Building Costs

The RICS Cost Research Panel has received 153 replies to the questionnaire it sent out last year to architects, surveyors, local authorities, and builders. The replies, summarized at length in the February issue of the *Chartered Surveyor*, yield few surprises. We give below our own brief account of the opinion that has been gathered. The questionnaire referred to low- and multi-storey housing development, and was part of the Panel's investigation into the costs of multi-storey dwellings.

#### Cost limits

Most people would prefer clients to set a cost limit for them to work to. This would avoid rejection of tenders and extra work in revising designs and prices, and would ensure that the client received "value for money." Eighty-five per cent. thought that the MOHLG should provide cost guidance and 75 per cent. that the publishing of a ceiling price for housing would be "beneficial"—it would enable architects to arrive at "a realistic design" and avoid "pruning tenders when it was too late to do anything about the superstructure." The cost limit might be linked to accommodation requirements.

#### Cost investigation

Architects and local authorities were in the main satisfied that "sufficient attention is paid to finding the most economic type and design of dwelling." Surveyors thought that investigation could go further, but many mentioned the lack of time and information and the fact that surveyors are generally called in after the major decisions have been taken. Ninety per cent. of those who reported that investigations were made into alternatives, said that the efforts were reflected in tender prices—provided the bill of quantities makes clear what has been done. But estimators are cautious of new methods or materials.

## Specialists' work

In general, architects prefer to nominate specialists whereas surveyors prefer to measure in the bill for the general contractor to obtain tenders. Both agreed that the relative standing of the main and sub-contractor affected the choice of method. Prime cost sums range from 20 to 40 per cent. of the tender amount, but the greater the number of storeys the higher the percentage. For each local authority the range was fairly narrow. There are indications that specialist prices obtained by builders suggest that competition between specialist firms is not always adequate.

## Drawings and tendering

There was concern that lack of complete drawings at tender stage has an adverse effect on tender prices and that details prepared during the contract involve amendments to the design. Seventy-eight per cent. of architects and surveyors put lack of preparation down to the client's haste and indecision. Local authorities were less dissatisfied on this point. The majority considered that more time for tendering would bring no advantage, but inquiries for tender ought to be spread more evenly throughout the year. They tend to concentrate in the spring and the financial year makes an "artificial seasonal increase."

## The Bill of Quantities

Ninety-five per cent. of surveyors thought that the present form of the bill was "ideal." Critics found it too complex and suggested that the Standard Method of Measurement was "too pettifogging" and in some respects out of date. Many supported the inclusion of small scale drawings in the bill for tendering. Contractors complain of the surveyors' inability to describe work that is not in accordance with the SMM. This often causes high tenders and contract disputes.

## Variations

The most significant cause is lack of pre-contract planning. Better preparation should be coupled with "full education of the client."

The Cost Research Panel announce that a series of papers will appear in forthcoming issues of the *Chartered Surveyor*, based on information the Panel has collected. The papers have been prepared with the help of the MOW, MOHLG, Service Departments, BRS and private architects and surveyors. They will form the background to the Panel's report to the Minister of Housing.

## RIBA

### Council Meeting

The following appointments of RIBA representatives were made:

*The Architects' Registration Council for 1958/59:* Harold Anderson, D. H. Beaty-Pownall, J. B. Brandt, J. E. A. Brownrigg, L. A. Chackett, Thomas S. Cordiner, Dr. F. F. C. Curtis, R. E. Enthoven, S. Vincent Goodman, R. D. Hammett, J. Kenneth Hicks, Leonard C. Howitt, R. J. Hurst, H. L. Kelly, Cecil Kennard, A. H. Ley, H. Martin Lidbetter, Howard V. Lobb, E. D. Lyons, S. W. Milburn, E. D. Mills, T. E. North, J. T. W. Peat, F. B. Pooley, F. L. Preston, W. A. Rutter, R. H. Uren, A. Neville Ward, David B. Waterhouse.

*The Admission Committee:* L. A. Chackett, H. Martin Lidbetter, E. D. Lyons, J. T. W. Peat.

*Delegates at 5th Congress of the International Union of Architects, Moscow, July 20-28, 1958:* Professor Robert H. Matthew and Arthur G. Ling.

*National Joint Committee on Materials Handling:* Eric H. Firmin (in place of E. D. Jefferiss Mathews, resigned).

*London Building Acts Appeal Tribunal:* Frank Scarlett (in place of Sydney Tatchell, resigned), Charles Woodward re-appointed as deputy.

**Board of Building Education:** D. H. Beatty-Pownall in place of R. E. Enthoven, whose term of office has expired.

**BSI Ironmongery Industry Standards Committee:** H. J. G. Stantiali.

**Hon. A.R.I.B.A.'s:** Sir John Cockcroft and William Ogden Hart, Clerk of the LCC, have accepted the Council's nomination for election as Honorary Associates.

**London County Council (General Powers) Bill, 1957:** The LCC (General Powers) Bill, submitted to Parliament this month, was studied by the Committee on By-laws and Building Regulations, who made recommendations to the Council on various aspects of the proposed delegation of powers to Metropolitan Boroughs. Arising from these recommendations, the Council gave approval to the submission to the House of Lords of a petition in opposition to the Bill; the RIBA's case being that with the development in new materials and techniques in a continuous campaign to reduce the cost of building, it is essential that the system of consents should be administered uniformly by the minimum number of different authorities and by those with full experience.

**Membership:** Eighty-eight members were elected as Associates, and 148 Probationers were elected as Students. Applications for election approved were: two Honorary Associates, one Fellow, 55 Associates, 10 Associates (overseas candidates). The application of Frank Ralph Priest for reinstatement as a Licentiate was approved.

**Obituary:** We regret to announce the deaths of John Donald Mills, a past President of the Dundee Institute of Architects; Frank Woodward, who was for many years Secretary to the Architectural Science Board and Technical Assistant Editor of the *RIBA Journal*; and a past member of the RIBA Council; and Frederick Evelyn Openshaw, a past Chairman of the Oxfordshire Society of Architects.

## Change of Address

At the end of February the telephone number will be changed to Langham 5533. On February 21 the staff of the *RIBA Journal* will leave their temporary quarters at 78, Wimpole Street, which they have occupied during the rebuilding operations at headquarters, to return to the offices on the third floor of 66, Portland Place, which they previously occupied. The staff of the ABS also return to the RIBA on the same day.

## SCHOOL CUTS

### Teachers' Statement

The Executive of the National Union of Teachers has deplored the further serious educational economies urged on local authorities by the Government in its recently issued Circular No. 334 on Educational Expenditure, and called on the Government both to withdraw the circular and to restore the cuts in the school building programme. A statement says:

Even before the authorities had received the Ministry's new economy circular, 31 secondary modern schools had had to be cut from the 1958/9 building programme for rural areas, and in minor works, the authorities as a whole had had to cut their expenditure to £11.2 million (as compared with £14 million for 1957/8) and to spread it over 15 months instead of a year. This has particularly affected plans to improve sanitary conditions (which in some schools are still of the most primitive kind), to effect improvements in heating and lighting and to provide the extra classroom accommodation needed to cope with overcrowded classes.

Some authorities have suffered more than

others, but all have had substantial cuts. In the worst cases minor works appear to have been slashed by 50 per cent or more. Lancashire, for example, has had its programme for 1958/9 cut by the Ministry of Education from £539,000 (a figure which included the value of work which had to be carried forward from the previous year owing to the three months' moratorium) to £160,000, and this has led to deferment of every project concerned with sanitary accommodation and the whole of the programme for additional classrooms.

The Union is of the opinion that the success of any programme of development in higher education, such as the Government's declared programme for expansion of technical education, depends ultimately on adequate provision and development in the primary and secondary stages of education. What the National Union of Teachers is now asking is that the Government should show the same sense of urgency and desire for development in the field of primary and secondary education, as it claims to feel for development in technical education.

## MOHLG

### 301,090 Houses in 1957

The number of houses completed in Great Britain in 1957 was 301,090, of which 126,455 were built by private builders, and 174,635 by public authorities (165,910 by local authorities, 2,018 by housing associations and 6,707 by Government departments). The number of houses under construction fell from 256,808 at September 30 to 240,243 at December 31, 1957. There was a fall of 10,765 in houses under construction by local authorities, and of 4,838 by private builders.

## COID

### "Designs of the Year"

Following the successful precedent in 1957, the Council of Industrial Design announces that the "Designs of the Year" awards are to become an annual event and a regular feature of The Design Centre's programme. The announcement of the chosen products and their display in The Design Centre will take place on May 8, 1958, when the Duke of Edinburgh will again visit the Centre and present certificates to the manufacturers and designers of the 20 products. The selection panel appointed by the Council of Industrial Design has this year recommended that 20 outstanding designs be chosen, as against 12 last year, in order to widen the coverage of industries and prices. Only goods actually exhibited in The Design Centre during the calendar year 1957 will be eligible.

### New Promotion Officer

Kenneth J. Robinson has been appointed Promotion Officer to the Council of Industrial design in succession to Mr. Morris J. Brown, who left the COID at the end of December. Mr. Robinson has, for the last nine years, been with the Architectural Press where he was Chief Assistant Editor of *THE ARCHITECTS' JOURNAL*. In his new post he will deal with home and overseas promotion and advertising.

## LIVERPOOL

### Reilly Dinner Club Reunion

All old students of the Liverpool School up to the time of the late Sir Charles Reilly's retirement, are invited to support the Reilly Dinner Club Reunion at the Adelphi Hotel, Liverpool, on April 26, 1958.

## TECHNICAL TEACHERS

### Recruitment Campaign

The three colleges in Bolton, Huddersfield and London engaged in the training of full-time teachers of technical and commercial subjects have launched a campaign to recruit suitable candidates for admission to training next September. Bolton and Huddersfield both invite people between 25 and 45, trained in building management, surveying, structural engineering or architecture, and possessing appropriate qualifications (including A.R.I.B.A.) to apply. "Substantial" grants are available, free of income tax, with free tuition, board and lodging. The course is for one year, from September, 1958, to June, 1959.

## TDA

### Advice on Timber

From Friday, February 14, the Regional Office of the Timber Development Association at 8, St. George's Place, Brighton, will be closed and transferred to the Head Office of the Association. Advice on timber and timber construction will now be dealt with by the Regional Officer and the Technical staff in London and requests for information should be directed to the Regional Officer at 21, College Hill, London, E.C.4. Telephone No.: City 4771.

## NUT

### Designers for Exhibition

The National Union of Teachers, organizers of the National Education and Careers Exhibition (May-June, 1959), announce that the exhibition designer, Eric Lyons, will have as his collaborator Hulme Chadwick.

## CORRECTION

We regret that in the *JOURNAL* of February 6 the name of Mr. Denis Harper, F.R.I.B.A., A.M.T.P.I., Professor of Building at the Manchester College of Science and Technology, was spelt wrongly and his qualifications incorrectly given.

## DIARY

**Spanish Castles.** Exhibition of photographs at the RIBA, 66, Portland Place, W.1. Monday to Friday 10 a.m.—7 p.m.; Saturday 10 a.m.—5 p.m. Admission free.

UNTIL FEBRUARY 28

**The Development of Standardized Components for a Local Authority Building Programme.** Paper by W. D. Lacey, of the Nottingham County Architect's Department. Modular Society public meeting at the RSA, John Adam Street, W.C.2. 7.30 p.m.

FEBRUARY 24

**The Future Ownership and Administration of New Towns.** Talk by Mrs. E. Layton. Chairman: Sir Parker Morris. At the HC, 13, Suffolk Street, S.W.1. 6 p.m.

FEBRUARY 25

(Not on February 26, as stated in last week's AJ)

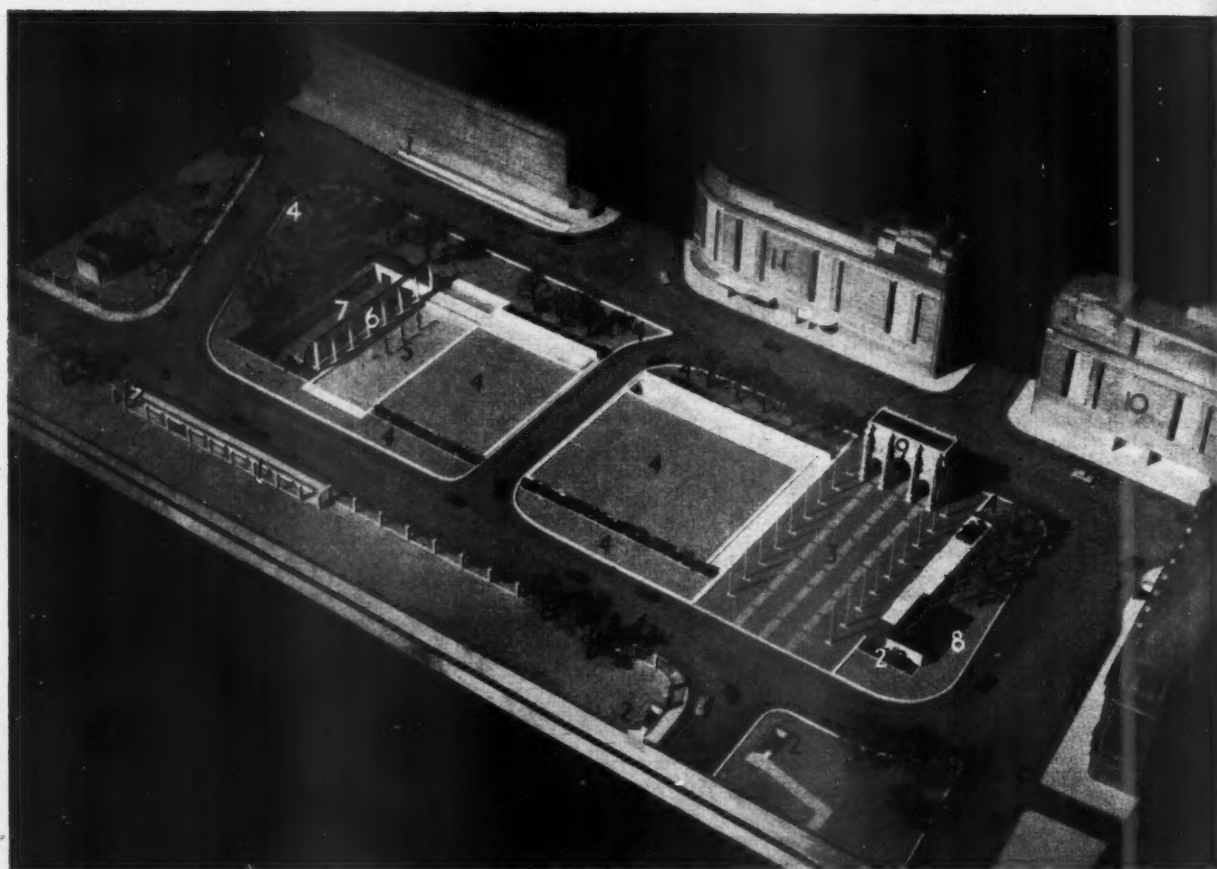
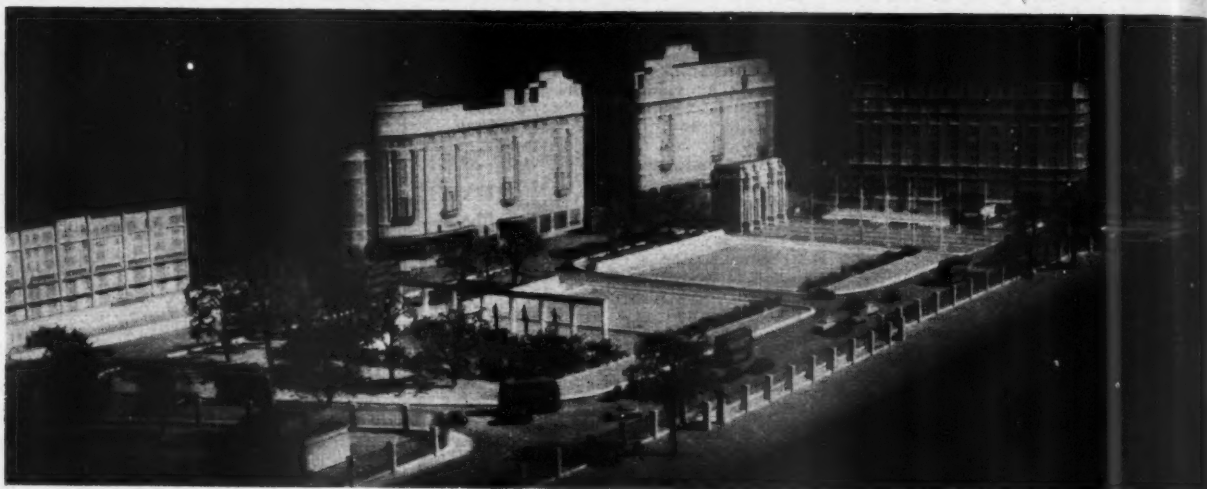
**Victorian Architecture.** Talk by John Betjeman. At the Geffrye Museum, Kingsland Road, E.2. 7 p.m. Applications to the Secretary, DIA, 13, Suffolk Street, S.W.1.

FEBRUARY 25

**The Architect's Role in Society.** Talk by Sir John Wolfenden. At the RIBA, 66, Portland Place, W.1. 6 p.m.

MARCH 4

# LCC PROPOSALS FOR THE IMPROVEMENT OF HYDE PARK



1. Ramps. 2. Staircases. 3. Processional way. 4. Grass areas. 5. Pool and fountains. 6. Screen. 7. Sunken way. 8. Equipment store. 9. Marble Arch. 10. Cumberland Hotel. 11. Odeon Cinema.

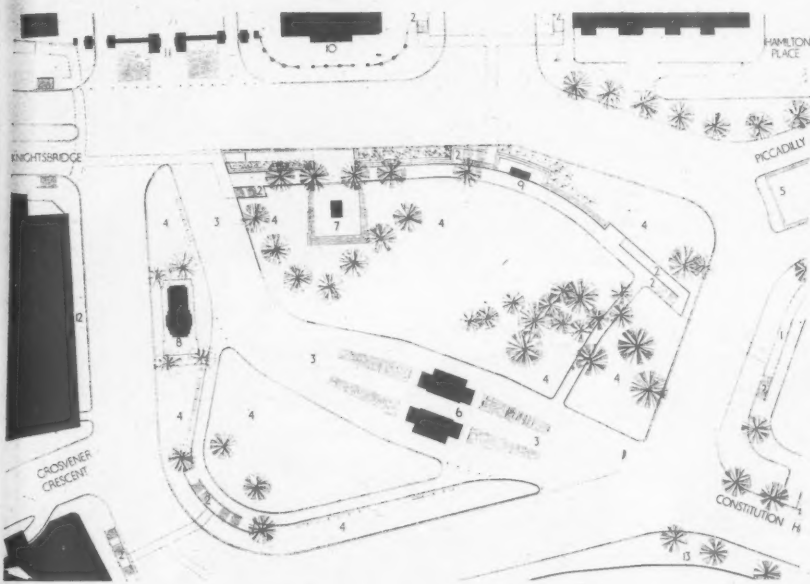
Marble Arch is a far more populous centre than Hyde Park Corner, not the least famous of its attractions being Speakers' Corner. The layout of Marble Arch, seen in the two photographs of the model above and top, is the more formal of the two. The design has clearly been dominated by the provision of a broad processional way flanked by banners through Marble Arch, from which the central island is seen as a grass lawn terminating in a pool with fountains and sculpture, and a stone screen. Unfortunately the unity

of the island is destroyed by a slip road, insisted on by the road engineers, through which a stream of traffic will pour through the centre of the lawn. There are several subways, with both ramps and steps, to enable pedestrians to pass either into the park or the central island. To avoid too long a north-south subway an area at the west end of the island has been excavated to form a sunken court, through which the pedestrians will pass, and from which they can reach the island by steps. A paved walk, passing under



## CORNER AND MARBLE ARCH

the slip road by a subway, runs along the north side of the island. From this walk, lined by seats and a retaining wall, there will be a pleasant view southwards over the island and towards the park. It seems doubtful whether the lawns will survive unlimited public access; if the public is told to keep off the grass (adopted, by the way, for cheapness) the island will not be such an agreeable concourse, although the fountains, the seats and the access by subways should save it from the deadness of Parliament Square. The models, significantly, show neither traffic signs nor lamp posts; it is to be hoped that the architect will be allowed to exercise firm control over them. At Hyde Park Corner the surrender by the Queen of a part of Green Park and of Buckingham Palace gardens has made it possible to create a roundabout with a central island of more than 3 acres, including a number of established trees. The architect's aim, which is in our view the correct one, has been to continue the parkland between Green Park and Hyde Park. He intends to do so by creating a large



KEY: 1. Ramps. 2. Staircases. 3. Processional Way. 4. Grass areas. 5. Four-lane vehicular tunnel approach. 6. Wellington Arch. 7. Wellington Monument. 8. Artillery Memorial. 9. Machine Gun Corps Memorial (re-sited). 10. Apsley House. 11. Decimus Burton screen. 12. St. George's Hospital. 13. Buckingham Palace Gardens.

central grassed island. Paths will connect the various points where pedestrians will enter and leave the island, and the remainder of the island will be grassed. The planting of more trees would do even more to create the effect of parkland. The realisation of the architects' aim is made extremely difficult by the decision (taken first, it is understood by King George VI) that the Wellington Arch must not be moved. At present the Arch provides a formal entrance to Constitution Hill and the Palace precinct. With the enlargement of Hyde Park Corner it is left high and dry, like a stranded whale, in the central island. In its present position it is merely an obstacle. As the Arch is not wide enough for a carriage with outriders to pass through, the outriders have to pass outside it, and this necessitates a road no less than 90 ft. in width at the Arch, cutting a macadamised swathe through the island, and largely destroying the parklike effect that the architect has sought to achieve. It is not too late for second thoughts on this question; and we wonder whether Her Majesty's advisers have explained to her that the processional route would be no worse, and probably rather better, if the Wellington Arch were moved to the new entrance to Constitution Hill, and the processional route passed round instead of through the central island at Hyde Park Corner.

## BOOK REVIEWS

*White on Perspective*

When I was an insignificant first-year student of art-history, fresh (but fresh) from the Provinces, I used to watch with awe the big-timers in third year as they stalked to their custom-reserved seats in the lecture-room at the Courtauld Institute, and none with greater awe than John White, already haloed with prospective success, and already known, behind his back, as "Old Perspective." The publication of *The Birth and Rebirth of Pictorial Space*\* is the proof of his success, but, although he has actually written the book, the subject is one that belongs to a whole generation of Courtauld students who, for terms together, had perspective with every meal and took it home with them in the evenings.

The lay reader, coming to this book cold, obviously will not dispose of the same sophisticated appreciation of its subtleties as we did, but let it be said here and now that the first layman to tackle my own copy pronounced it readable and comprehensible, if fairly stiff going, and well worth the trouble. What you will find in it when you come to read it, is a chronicle of the recovery of orderly methods of dealing with the representation of space in pictures, a narrative that is pursued from the middle-and-late Middle Ages through to the early Renaissance in Italy, with some side-glances at France and Ancient Greece. The main theme is a fascinating study of slow, inter-related advances in refinement of vision, technical competence and aesthetic mastery, from Giotto's calm and penny-plain certainties, to Leonardo's nervous and sophisticated impotency. The architect who reads it will be impressed by the changed attitude to buildings that goes with this development. Before the establishment of the rules of renaissance perspective, a building was something to manipulate at will—an interior was three screens like flats in a theatre, or it might be seen as simply a collection of bits and pieces whose presence in the picture was justifiable merely by their functions (a throne, an altar, a rood screen), while an exterior could be treated almost as a transparent skeleton so that the figures within it could be seen outside, and one almost gets the impression that late mediæval life was lived largely in garden pavilions and Gothic chapels with everything left out but the piers and the vault-work. But, come the Renaissance, all that was altered, and the first pictures painted according to a rigorously-constructed perspective, were exterior views of the buildings around Florentine piazzas, rendered by an architect in all their architectural solidity. Change of technique, change of aesthetic, change of vision; and because it deals in this way with connections between vision, technique and aesthetics, the book is bound to strike analogies in the mind of architectural readers, at a time when our pundits worry so hard about what is happening to aesthetics with vision and technique in turmoil.

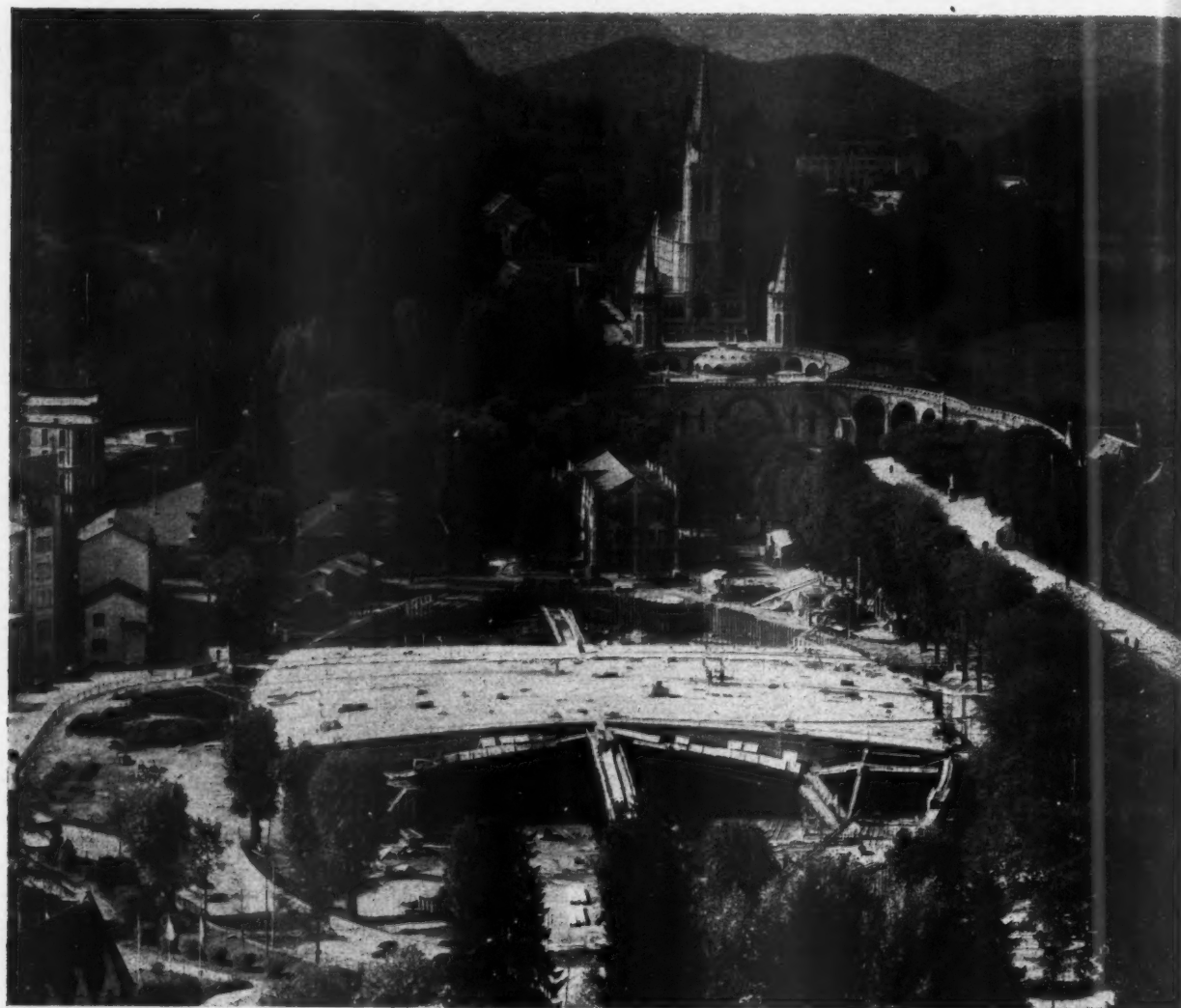
But there is an analogy further: if you are personally convinced that, say, the Modulor, or the Plastic Theory, or Geodesic structure, or some such, is the unique and ultimate resolution of our visual-technical-aesthetic dilemma, reflect on the fact that the pictorial device that convinced the whole of thinking Europe as the resolution of the problem of space-representation—the so-called Scientific or Central Perspective—ignores most of the facts involved and applies only to the most special of special cases, that of a static observer with only one eye, who stares fixedly at one single point on the canvas.

Continued on page 281

\*Faber and Faber, 63s.



## AN UNDERGROUND BASILICA FOR TWENTY THOUSAND



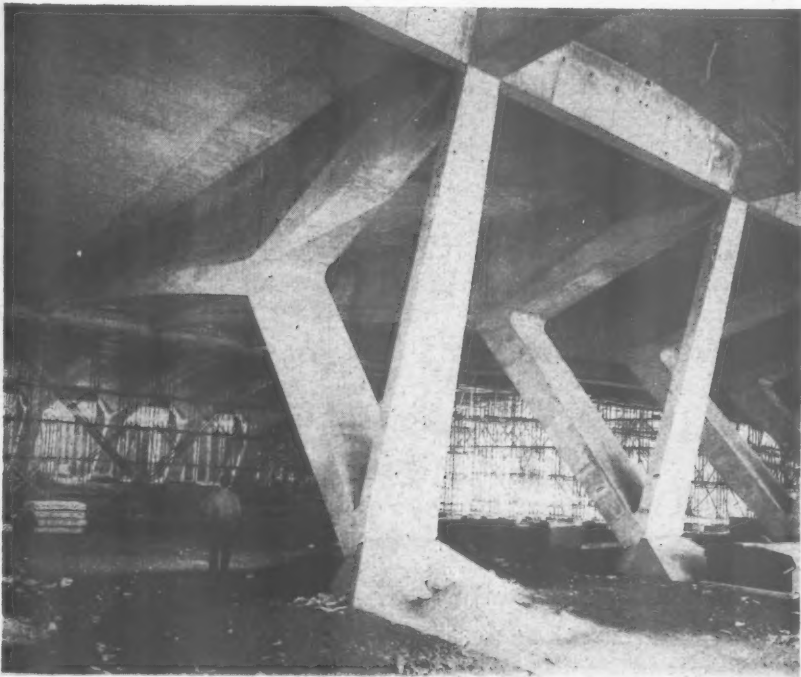
This year is the centenary of the apparitions at Lourdes; seven million pilgrims are expected during the year. The capacity of the present Basilica and of the Crypt of the Holy Rosary together is only three to four thousand, barely a third of the strength of a normal pilgrimage. A new Basilica was decided upon; the clients, Société des Amis de Lourdes, required that it should shelter 20,000 and, in order not to dwarf the present ensemble of buildings and not to change completely the character of the site, it was decided to construct the new Basilica underground and to cover its roof with lawns. The scheme of the architect, Pierre Vago, for the Basilica is the simplest possible expression of the conception of a church as a shelter for an altar. It is oval in plan, 201m. long by 87m. broad by 10m. high and is furnished only with a central high altar, consisting of a block of stone on a shallow flight of steps, and a small side altar set back in a recess in the periphery. The roof and the earth above it are supported by a series of prestressed concrete

ribs (opposite page, top) spanning a maximum of 60m.; their outside supports define an aisle passing right around the periphery (opposite page, bottom). These ribs are everywhere normal to this periphery; the unbalanced thrusts caused by the broken line at the centre are carried by a transverse prestressed rib along the major axis. The structure is left undecorated. Liturgical significance has been read into the oval shape; it is the shape which frames the image of Christ in majesty, that of a grain of wheat and of the fish sign of the catacombs. Time was a vital factor in the scheme. The architect called in the consulting engineer, Eugene Freyssinet, in May 1956; the contractors, Entreprises Campenon Bernard, began work on the site on September 1, 1956. Completion was required in time for the consecration of the Basilica on March 25, 1958. The site is a difficult one and has set many civil engineering problems. In the first place, a service bridge had to be built across the Gave de Pau which runs alongside

## PILGRIMS AT LOURDES



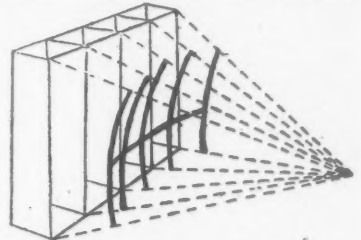
to bring in materials and plant; the only existing access road was already impossibly congested. In the second place the ground is bad and the bed of the Gave de Pau is several metres above the floor of the Basilica; major problems of de-watering were met. Some weeks have passed since these photographs were taken and it looks as though the job will be finished well ahead of schedule.



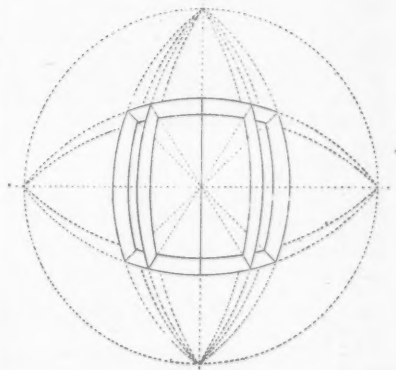
## White on perspective continued from page 279

The abstractions that have to be accepted, the philosophical attitudes that have to be struck, before one can receive anything so blinkered and paralysed as "real" or "true"—these are not the author's direct concern, though no Courtauld product who had sat at the feet of Blunt or Wilde could leave them out entirely. What do concern him are the various attempts to render the system foolproof, not by putting back what has been left out, but by rendering more absolute the little that is left in—dare one draw an analogy here with modular co-ordination? This is the part of the book most likely to disappoint a readership as mathematically painstaking and geometrically sophisticated as architects can be, and something had better be said about it.

Many Renaissance perspectivists, and notably Leonardo da Vinci, were distressed by the discrepancies between a statistical



Above, diagram of a simple perspective projection on a spherical surface; below, the same projection mis-projected on a flat surface (from: *The Birth and Rebirth of Pictorial Space*).



record of what the observer actually observes (in the way of diminution with distance, etc.) and what the theory of central perspective requires him to put down on canvas in order to create an effective illusion of what he has observed. In fact, given the static monocular observer, the geometry of central perspective is absolutely unattainable, and makes everything the right size for illusionistic purposes, irrespective of the kind of surface on which it is projected, flat, cylindrical, wavy, or what-have-you (without it Baroque ceiling painting would have been impossible). This fact will be known here as Compton's Postulate, in honour of the common-room disputant who most resolutely insisted on it.

However, it happens, as Leonardo seems to have noticed (and John White seems to have been the first person to twig it), that if you project your perspective on the inside of a sphere, the difference between statistic and illusion disappears. The top half of John White's figure 8 shows this correctly, but the bottom half—and here we come to Compton's Objection—shows this projection reprojected on to a flat sur-

Continued on page 282

## White on Perspective continued from page 281

face in a manner that is neither illusionistically workable nor statistically accurate, and simply looks like "barrel distortion" in photography.

Since most architects are trained perspectivists, this lack of rigour in exposition, coupled with an inflationary reference to Einstein's curved infinity, may cause them to under-rate the value and importance of the book, particularly if they have no countervailing knowledge of art-historical techniques. Let me assure them that John White is almost without peer among his contemporaries at the dates-and-attributions business, and the strictly historical parts—which are the parts that matter—are as reliable as they are fascinating.

The Whittian achievement, globally viewed, is to have replaced our old, unreliable picture of perspective as something invented out of the blue by Paolo Uccello, with a far more interesting and humanly probable view of perspective as something to which three centuries of mural art contributed, finally codified and demonstrated by an architect, Brunelleschi. The precise subjects and viewpoints of Brunelleschi's two pioneer paintings in central perspective can be reconstructed from the documents, so John White accordingly reconstructs them, and adds various other useful observations on the subject, but doesn't explain (and it was not in his brief as an historian to do so) why it should have been an architect who perfected this mode of vision that reduces architecture from a volumetric and topological experience to a mere pretty peep-show. Perhaps some architect would care to step forward and offer a guess—only, like everybody else who proposes to say anything on the subject from now on, he will have to have read White on Perspective first.

REYNER BANHAM

## Guide to American Spec Housing

This book\* is basically a step-by-step guide for the layman to speculative housing of the American brand. The epidemics of tract-housing, the transatlantic equivalent of ribbon development and consequent Subtopia, are roundly dismissed, followed by a methodical analysis of the modern building business.

The reader is shown the sociological and economic reasons for the growth of speculative housing, and for the decline of the custom-built job. He is shown the ways in which site choice and layout can sell a property. He is shown how the American contractors can landscape and plan a whole community.

But the wealth of the book lies in its later dogmatic sections on planning, plan analysis and solution, garden and lot treatment, internal equipment, heating, air conditioning and finance. Several permutations of plan are explored whilst the usual high standard of American detailing is shown to advantage by the many excellent photographs.

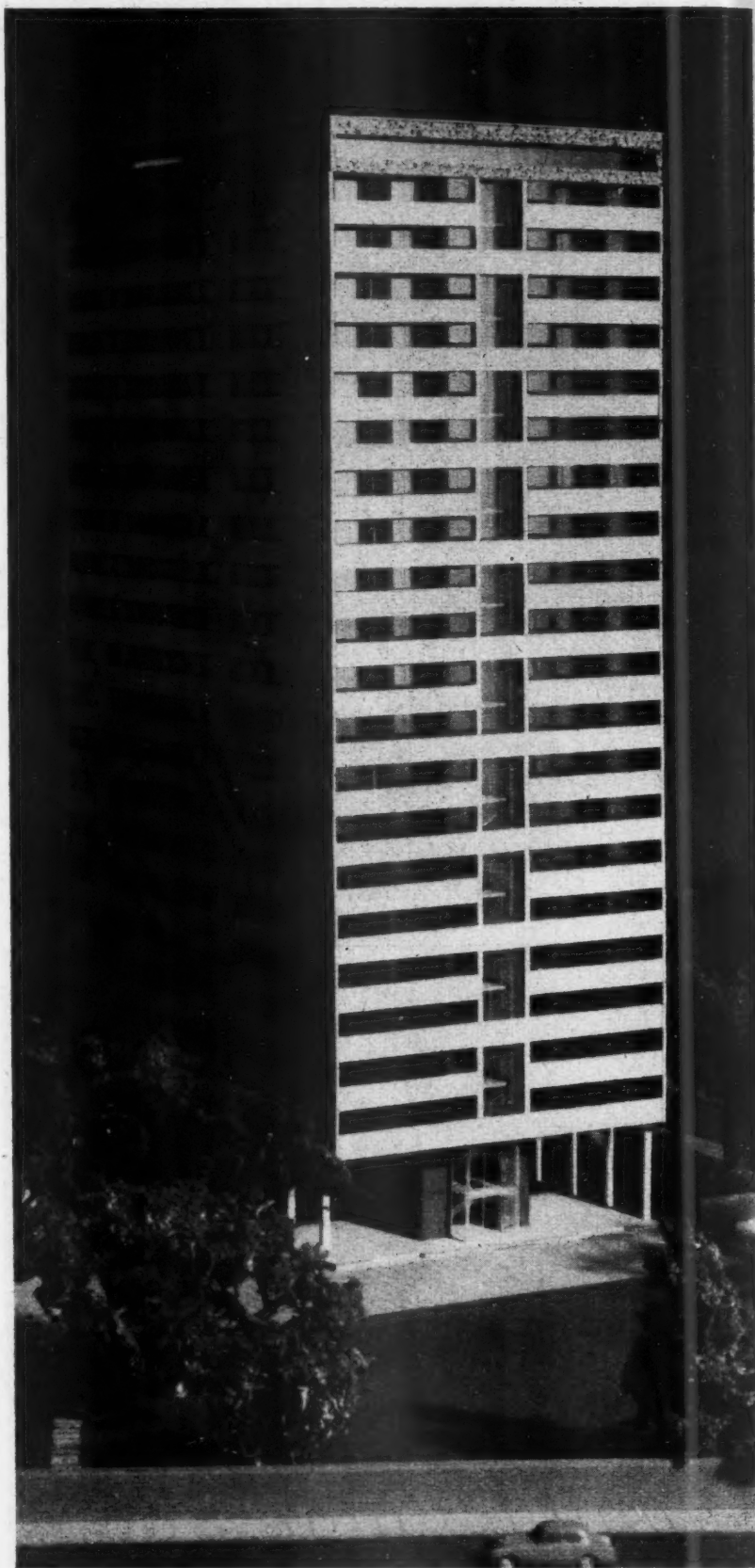
The lack of coloured photographs is rather disappointing and descriptive text to the photographs would be an advantage. The variable quality of the line drawings scattered amongst the text add to the general restlessness of the production.

But here is a sincere championship of an admirable cause: the improvement of our pattern of living by the improvement of the house in which we live.

JOHN TAYLOR

\**Builders' Homes for Better Living*. By A. Quincy Jones and Frederick Emmons. John L. Chapman—Associate. Reinhold. (Chapman and Hall 72s.)

## PROPOSED POINT BLOCK IN HIDE PL



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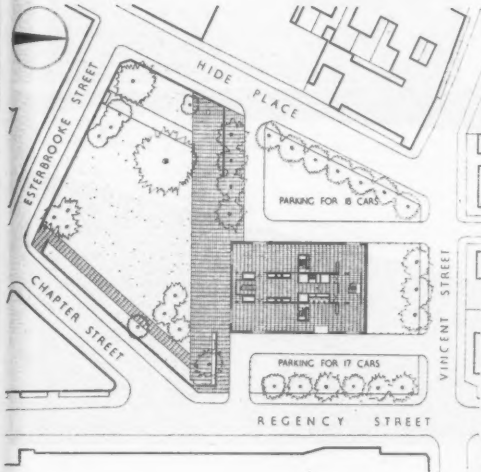
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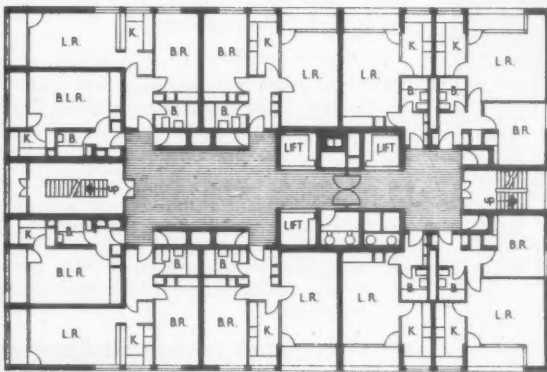


## DE PLACE, WESTMINSTER, LONDON, S.W.1

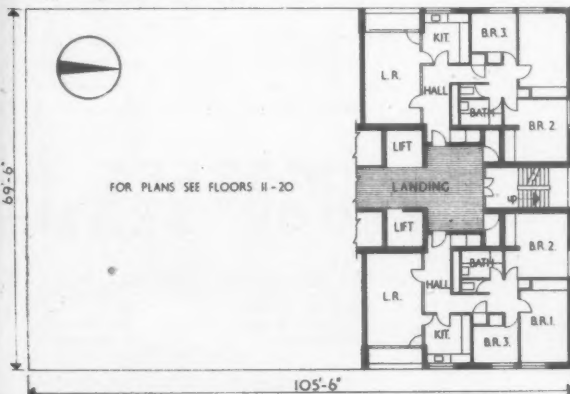
This project for a 23-storey block of flats (seen opposite from the south-west and, right, from the west) has been designed by Stillman and Eastwick Field for Westminster City Council (director of housing, E. J. Edwards). The associate in charge is Ralph Smorczewski. The architects were asked to provide housing at a density of 200 persons



Site plan



Typical plan, floors 11-20

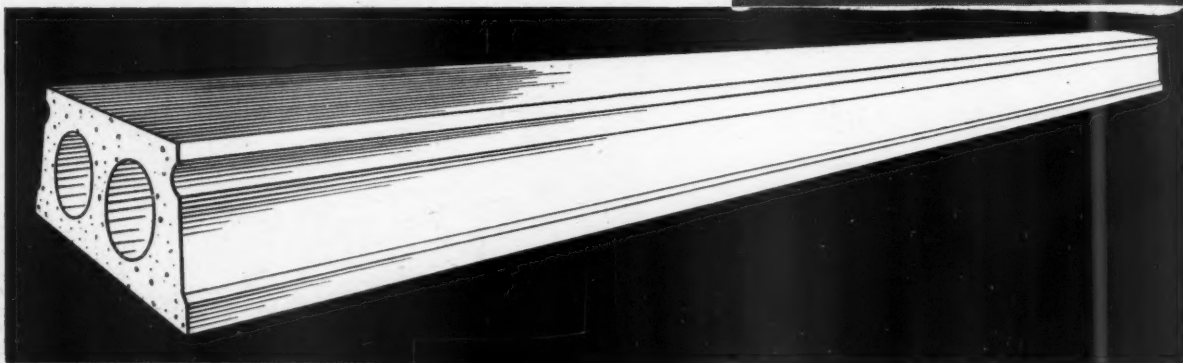
Typical plan, floors 1-10 [Scale:  $\frac{1}{4}$ " = 1' 0"]

per acre, with accommodation in roughly the following proportions: 1-room flats, 40 per cent.; 2-room flats, 50 per cent.; 4-room flats, 10 per cent. A boiler house and a laundry were also required. A percentage of elderly people will be housed, but no flats are allotted exclusively to them. The single tall block is put forward after an investigation of various other possibilities as the only solution which would leave a considerable area of the site open for the enjoyment of tenants and also give a more interesting prospect from the flats than a view of the surrounding buildings. Accommodation for 330 people has been found on a site of 1.55 acres. The lower ten floors each contain two 4-room, four 2-room and two 1-room flats; the upper ten floors, six 2-room, and four 1-room flats. Four flats on each floor face south, the remainder being orientated either east or west. Access is arranged internally. The top floor, besides housing tanks, lift motors and ventilating plant for internal bathrooms, has a covered shelter which it is hoped will be converted into a club-room. The design is at present awaiting planning approval.



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# CRITICISM

## *The architect replies*

Last week we published a critical article by J. M. Richards on the Law Courts at Slough, designed by F. B. Pooley, County Architect of Buckinghamshire. Below we print the architect's replies to the points raised by Mr. Richards. The building was completely illustrated and analysed in the AJ for December 26, 1957.

I find informed criticism of this kind very helpful; for, after having spent some three years living with a job, it is difficult to look objectively at one's own work. When criticism is mature and skilful and, if I might say so, free from fashion, it is helpful not only to the architect, but also to the local policy-makers who can do so much for architecture.

It is for these reasons that I have welcomed this series of articles and believe them to be a great help to the profession.

The points which Mr. Richards raised occupied our

*The rear of the law courts, with the magistrates' entrance on the right and the county courts in the background. On the left is the police station.*



attention very much at the time the buildings were designed, and I should like to deal with them one by one.

A lot of thought was put into the question of whether or not the brick should be changed between the Police Station and the Law Courts buildings. There was a good deal of opinion in the Department that it would be a good thing to have a change in the colour of the brick; democracy, however, prevailed, and I had my own way. In my view this is the one element which unifies the two buildings. However closely two architects work together, their detailing is bound to differ and the same brick helped to overcome this difficulty. In order to prevent monotony, an arbitrary change of materials was made here and there, notably on the gable walls of the Magistrates' Court building. I am confident that the decision to use the same brick throughout was right, but upon reflection, it might have been wiser to omit the arbitrary change of material and so achieve an even greater degree of unity.

On the question of planning, I believed it was essential to have natural top lighting to get the right type of atmosphere for each Court. There were also obvious advantages in planning small rooms around the Courts to act as sound buffers. On earlier sketch schemes which were prepared showing Courts on two floors it was apparent that two-storey development was uneconomical because of the varying heights of rooms and wasteful circulation. The long corridor dividing the two County Courts was a specific requirement of the client which I found difficult to understand, but is apparently soundly based on experience. I do, however, accept the comment that more open space would have been an aesthetic and functional asset to the scheme.

So far as private entrances for judges and magistrates were concerned, we came to the conclusion that the time when judges and magistrates arrive at Courts in chauffeur-driven vehicles is passing, and in this great levelling-out age, even professional judges arrive in self-driven cars and, I would have thought, having pulled up their socks and tucked in their shirts after parking their cars, would prefer to pop in the back entrance of the building. Nevertheless, Mr. Richards's criticism on this point is shared by other responsible people and, whilst I feel my analytical approach is correct, if I had the opportunity of tackling the problem again, I would attempt to handle it in such a way as to meet this valid point of view.

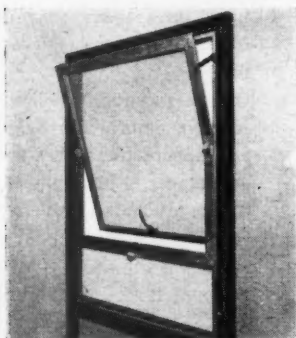
So far as the atmosphere of the Juvenile Court is concerned, Mr. Richards's point is obviously in line with enlightened thinking on Juvenile Court design. I agree with him that this particular room could have been more informal, and that some window lighting would be an advantage. The rather rigid atmosphere of the room is not helped by the formal layout of the furniture which I had always envisaged would have been of a more informal nature. However, it might be of interest to know that already some members of the Bench feel that an even more formal and dignified treatment of the room would be a good thing and would help to impress some of their more versatile young clients.

# HOPE'S

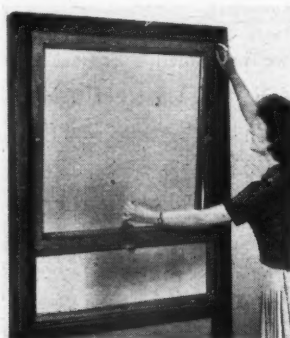
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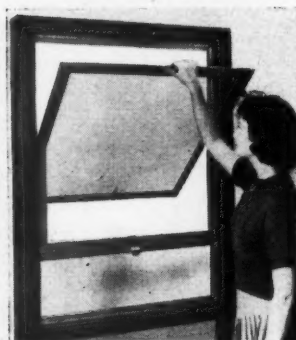
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## THE INDUSTRY

From the industry this week Brian Grant describes a plastic handrailing, a radiator coupling, a nylon sink and draining board, a gas fire, curtain wall infilling, carved lettering and fixing insulation.

**Marleyrail in a larger size**

Marleyrail plastic handrailing is now being produced in a larger size to fit over a core rail 2 in. by  $\frac{3}{4}$  in. instead of the previous maximum width of  $1\frac{1}{2}$  in. The new rail allows ample width on the underside of the core for uprights of up to  $1\frac{1}{2}$  in. The minimum curve to which the new Marleyrail can be fitted is a flat 180-degree bend on the inner face of the core. The rail is made of a high stability vinyl plastic and is fixed with infra-red heat, the section contracting to give a permanent grip on the steel or wood core. The illustration shows the small and large sections, and Marleys supply and fix the smaller for about 10s. a foot, including bends and wreathings, the larger size costing about 15s. Available colours are red, grey, green, black, blue, pewter and bronze. (*The Marley Tile Co. Ltd., Sevenoaks, Kent.*)

**Coupling panel radiators**

There is nowadays very little new in long lengths of pressed steel panel radiator, and runs of 25 ft. or more are quite common, while 40 ft. has been exceeded from time to time. The difficulty with these long runs is transport and handling on the site, and Gulf radiators have now produced a new type of coupling which makes it possible to use radiators in manageable lengths and join them on the site to give the appearance of a single long radiator. Skirting board heating, which can be carried out with Gulf's new 11-in. panel, often means running the radiators round two or more walls of the room, and an unbroken line can be maintained by using prefabricated corner sections coupled to the longer wall lengths.

The illustration shows the back view of a coupling at an internal corner, the gap between the two sections being filled with a narrow dummy section. (*Gulf Radiators Ltd., 229, Regent Street, London, W.1.*)

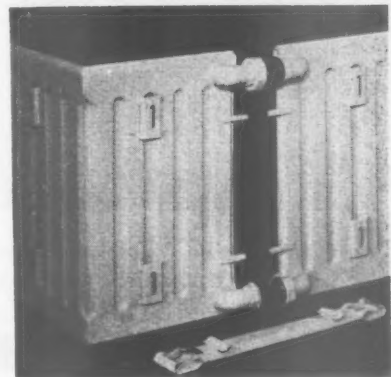
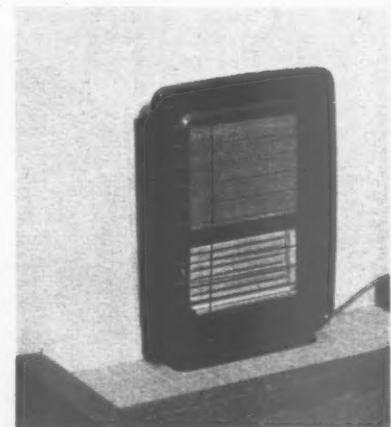
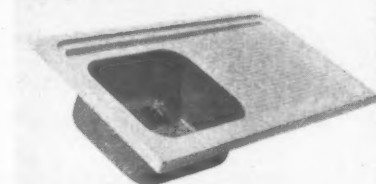
**New sink in nylon**

The illustration on the right shows a new nylon sink and draining board which will be available from the beginning of March. Nylon is springy enough not to damage crockery, and also reasonably silent when compared with vitreous enamel or stainless steel. It is unaffected by boiling water, but should not be washed with gritty materials. The sink bowl and drainer are mounted on a wooden underframe for easy fixing to standard cabinets, and measure 42 by 21 in. with the drainer either on the right or left. Standard colours are white, cream, blue and green, and the sink and the draining board can be either in the same or in different colours. Price is £16 10s. (*The Nylon Sink Co. Ltd., 46, Doughty Street, London, W.C.1.*)

**Transportable gas fire**

R. & A. Main have just introduced a new transportable gas fire known as the Romany, which costs £15 14s. 5d. including purchase tax. The fire provides both radiant and convected heat and the makers claim an efficiency of over 60 per cent. The fire is connected by the usual flexible hose to a bayonet-type gas socket and tap, but should not be used anywhere in the room like a flueless heater. Gas consumption is 25 cu. ft. an hour, and the heater must be stood in a fireplace so that the combustion products can pass up the flue. The heat exchanger has been designed with a very low heat capacity and begins to deliver warmed air within about a minute of lighting the fire. (*R. & A. Main Ltd., 48, Grosvenor Gardens, London, S.W.1.*)

Right, top to bottom: small and large sections of the Marley rail plastic railing; a nylon sink and draining board; a transportable gas convector fire and the back view of the Gulf Radiator coupling, showing an internal corner.







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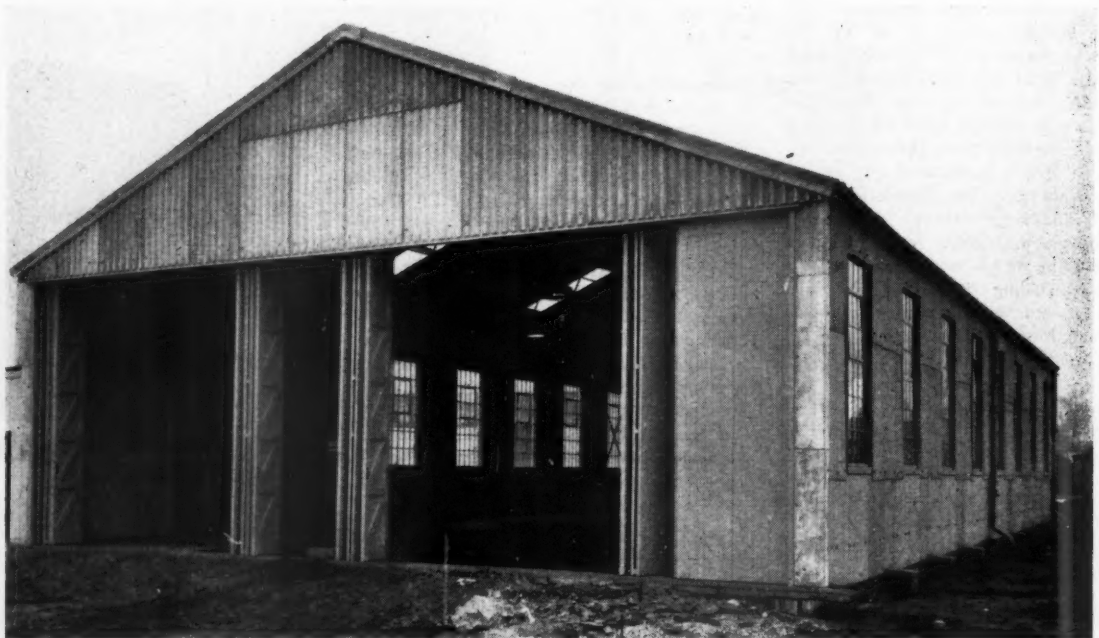
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Review

## technical section

Four examples of  
lettering incised in  
grey slate, by  
Ralph Beyer.  
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## Panel infillings

The Mallite range of curtain wall infilling panels provides various combinations of materials which can be chosen to meet the performance requirements of almost any type of building. The panels are intended for fixing into the various proprietary curtain walling frames with a suitable sealing mastic, and are produced with different materials as facings, core and backing. Facing materials may be either aluminium (plain, ribbed or stucco finish), vitreous enamelled steel, in the full range of Munsell colours, cut to size before enamelling and with the ground coat applied to both sides and all edges, or wood veneer bonded to aluminium sheet, the veneered panel face being finished with a weatherproof lacquer. Core material is either 1 in. cork, fibre-board in various thicknesses, or amosite asbestos, while the recommended backing materials are resin-bonded weather and boil-proof plywood, aluminium, sheet steel or hardboard. Whatever materials are used the recommended maximum size of panel is 24 sq. ft., maximum dimensions being 10 ft. by 4 ft. for all materials except vitreous enamelled steel and stucco aluminium, where the maximum length is limited to 8 ft. With all the facing materials the U factor of the panels varies between 0.2 and 0.6, the lower figure being given by the 1-in. cork core, the higher with ½-in. asbestos. (William Mallinson & Sons Ltd., 130-150, Hackney Road, London, E.2.)

## Incised lettering

Ralph Beyer, the sculptor who cut the letters *ar* in stone for the front cover of the July, 1955, issue of *The Architectural Review*, has adapted a number of type

faces for carving in grey slate. Samples of the first six alphabets are illustrated here (the letters are incised, although in the photographs, by an optical illusion, some appear raised).

The letters are intended for use as house names, fascias, etc., either on slate panels which may be fixed to the building or carried out *in situ* on slate facing. The basic cost per letter, ranging from 3 in. to 8 in. in height, is from 6s. 6d. to 19s. The cost of polished slate, where supplied, is additional and amounts to 30s. per sq. ft. for a ½-in. thickness. (Ralph Beyer, c/o Artists Management Association, 11, Dacre Street, London, S.W.1.)

## Fixing insulation

With Mr. Nabarro's thermal insulation Act demanding thermal insulation of industrial buildings from the end of this year (or before if the Minister thinks fit), it may be assumed that many acres of insulating material are going to need fixing, and for this reason a revised code of practice for lightweight metal fixing systems should prove useful. Many of the suppliers of insulating boards have fixing systems of their own, but nearly all are based on a grid of tee sections and angles in steel or aluminium, and the same method has been followed in the standard recently issued by the Metal Fixing Association. The next essential step, of course, is for the Minister to announce the standard of insulation which is to be required. In the meantime it would not be a bad idea to provide oneself with a copy of this new code and the list of members who have agreed to work it. (*The Metal Fixing Association for Building Insulation*, 32, Queen Anne Street, London, W.1.)

## CLASSIFICATION FOR TECHNICAL ARTICLES AND INFORMATION CENTRE

1 Sociology. 2 Planning: General. 3 Planning: Regional & National. 4 Planning: Urban & Rural. 5 Planning: Public Utilities. 6 Planning: Social & Recreational. 7 Practice. 8 Surveying & Specification. 9 Design: General. 10 Design: Building Types. 11 Materials: General. 12 Materials: Metal. 13 Materials: Timber. 14 Materials: Concrete. 15 Materials: Applied Finishes & Treatments. 16 Materials: Miscellaneous. 17 Construction: General. 18 Construction: Theory. 19 Construction: Details. 20 Construction: Complete Structures. 21 Construction: Miscellaneous. 22 Sound Insulation & Acoustics. 23 Heating & Ventilation. 24 Lighting. 25 Water Supply & Sanitation. 26 Services & Equipment: Miscellaneous. 27 Furniture & Fittings. 28 Miscellaneous.

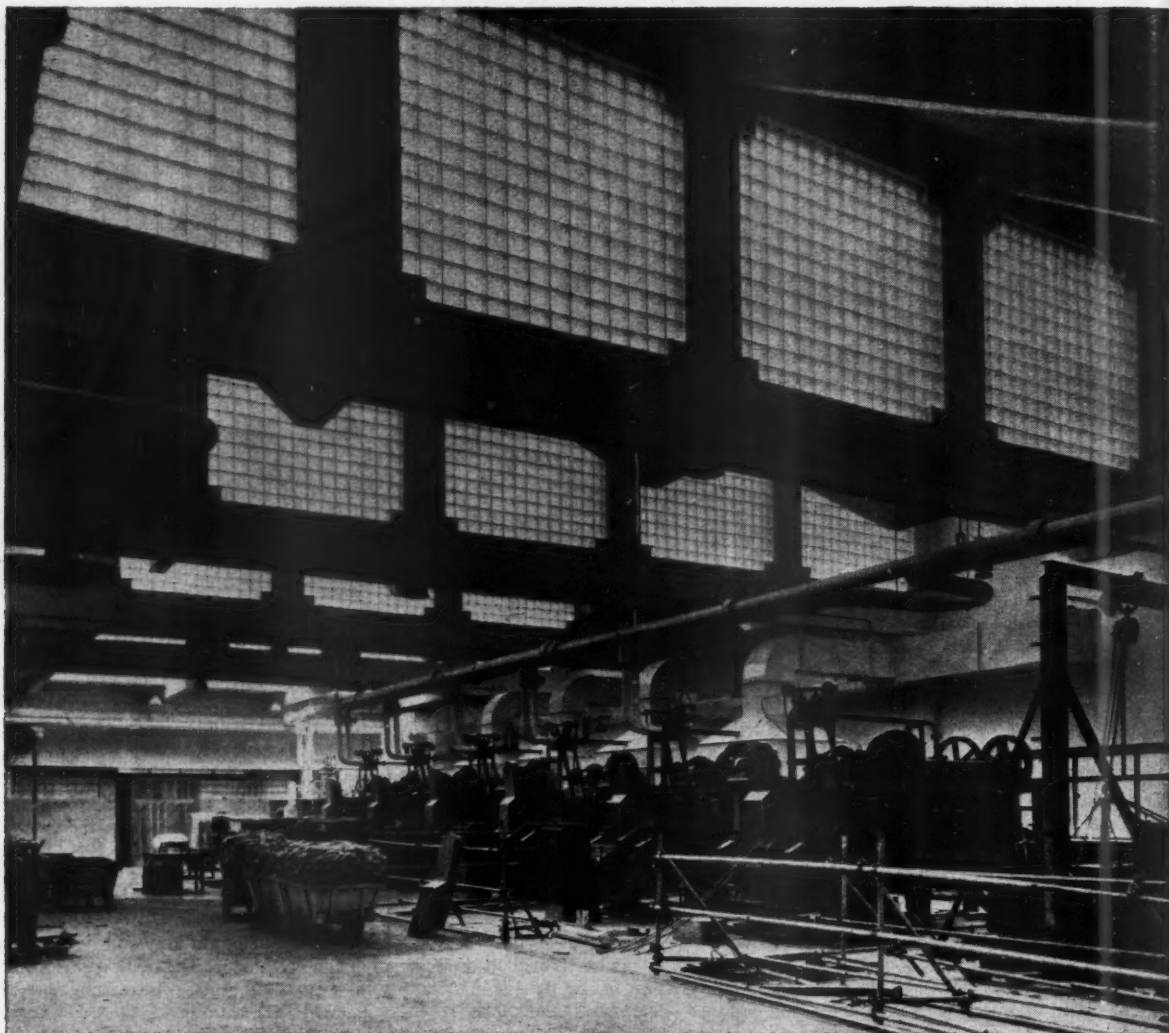
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## 10.163 design: building types

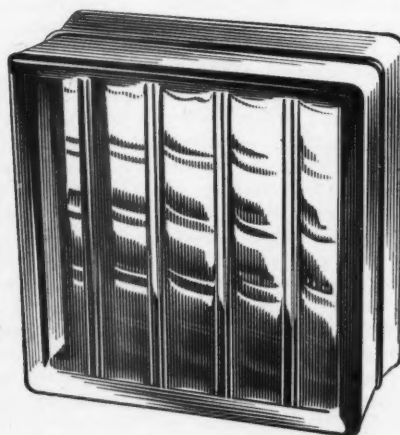
## CATHOLIC CHURCHES

*Contemporary Church Art*. Anton Henze and Theodor Filthaut. (Sheed & Ward, 35s.)

This book, which is about the design and furnishing of Catholic churches, is of interest, deriving as it does from the German-speaking world. Since about 1930 Switzerland and Germany have led the movement in the Catholic church for reforming church design to bring it in line both with changing views on Catholic liturgy and with modern building technique. The book is divided into three parts. It begins with a long essay by Anton Henze, a professor of Art History in Munster, which sets out to give an historical justification for using "modern architecture" in church building. This part is only interesting if you feel that such a justification is necessary. Next comes a second, shorter, essay by the theologian Theodor Filthaut, explaining what changes should be made. Though the non-Catholic architect will have difficulty with some of the biblical allusion, this is perhaps the clearest explanation of this subject to be had in the English language. It gives the theological justification for changing the physical relationship between priest and people, for the wide squareish plan, for getting the pulpit back to the sanctuary and for many other changes. As such it will be a useful resource in discussions with English Catholic parish clergy for whom, it must be remembered, these matters are not even a live issue. The book finishes with annotated plans and photographs. The subjects of these are mostly German (though, oddly enough, the experimental Sarreland churches are not included). This section is disappointing: the examples are not always well chosen and the information is too meagre; but at least it is evidence of the confidence which serious German architects and craftsmen enjoy with their ecclesiastical patrons.



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## technical section

12.66 materials: metals  
COPPER ROOFING

"Economy" Copper Roofing. CDA Publication No. 53 (CDA. Free.)

"Economy" copper roofing is a new technique, pioneered in Switzerland, which enables copper to be laid in lengths of up to 36 ft. as against the 7 ft. used in traditional practice. This virtually eliminates crossfall drips which, Swiss contractors claim, gives savings of up to 30 per cent. The method involves the use of "expansion cleats" which, though firmly tacked down to the roof, enable the roof covering to slide, and the inclusion of a 1/4-in. expansion gap at the base of each seam. It also involves, at present, the use of a slightly harder metal, i.e. "1/4-hard temper copper."

This handbook must be read in conjunction with the earlier *Copper Flashings and Weatherings* (Publication No. 42) but though illustrated with admirable drawings is not as clear as it might be, due to insufficient correlation between text and drawing. It also includes a chapter on artificial patination. This points out that ways of achieving this fall into two categories, one using electrolytic and the other chemical means; and describes two recent chemical processes. Since, however, the preamble says that neither electrolytic nor chemical methods "can be applied to copper roofs with any assurance of success" the busy architect may feel that he can skip this chapter.

16.128 materials: miscellaneous  
STONE

*Stones of Britain*, by B. C. G. Shore. (Leonard Hill. 66s.)

This beautifully produced book, illustrated by over 150 of the author's own photographs, presents the accumulated knowledge of a lifetime spent in the study of building stones. Whilst all aspects of the subject are discussed, the emphasis of the book is upon the care of stonework in Ancient Buildings; and it is primarily intended for all those who have to deal with valuable masonry. The first part of the book portrays the origin and chemical background of the natural rock types, with a digression into the architectural influence of communications as exemplified by the Roman roads. Stonework maintenance techniques are then described and illustrated in detail, with sections on the different mortar types and renderings, and on the physics of stonework decay. There is a full description of the author's technique of plastic "dentistry" repair, and of his pioneer experiences in the use of binding agents such as ethyl silicate. Methods of combating damp—"the grand vehicle of the causes of decay"—are fully investigated, and include the insertion into walling of high capillary evaporation tubes, and the use of the various stone "preservatives" and waterproofing agents. The final sections deal with the heating of valuable buildings and with the selection of stone for new buildings and sculpture.

17.112 construction: general  
FIRE RESISTANCE

*Fire: Materials and Structures*. BRS Digest 106. (HMSO. 3d.)

This Digest (which is compiled jointly by BRS and Joint Fire Research Organisation) outlines the basis of our fire protection regulations. It gives an interesting table on the performance of boards under fire test in a fully lined room, which showed that a number of combustible materials which had their "spread of flame" classification raised from Class 4 to Class 1 by a surface treatment gave a much inferior performance to those which were inherently incombustible. Pointing out that the only comprehensive recommendations concerning flame spread characteristics are those given in MOE Building Bulletin No. 7 (*Fire and the Design of Schools*), the Digest suggests that the recommendations given there should be applied to other building types.

After discussing the general problem of fireproofing of roofs, the Digest concludes by considering the use of the concept of "fire load" as a means of determining the degree of fire-resistance to be required in the structure. The point is made, however, that this last may be reduced if a building is small and lends itself to easy fire fighting. Though the Digest gives the fire loads (in B.Th.U./sq. ft.) which rank as "low," "moderate" or "high," it does not give the data the architect needs to calculate a fire load; nor does it give the criteria for reducing the standard of fire resistance. This is a pity because architects have the impression that the requirements of fire officers are very variable and that architects are too much at their mercy.

18.195 construction: theory  
REINFORCED CONCRETE DESIGN

*The Structural use of Reinforced Concrete in Buildings*. B.S.C.P. 114 (1957). (BSI. 10s.) This new Code, which revises the 1948 Code of Practice, follows the general pattern of the 1948 version but has been subjected to considerable revision in its detail mostly to the advantage of the designer.

The 1948 Code recommended basic stresses of 1,000 p.s.i. for concrete and 18,000 p.s.i. for steel with a modular ratio of 15. The main revision in the 1957 Code is an increase to 20,000 p.s.i. for steel. In the control of concrete quality the transverse works strength is introduced as an alternative to the cube test. Permissible compressive stresses may be increased by an age factor varying from 1.0 at 28 days to 1.24 at 12 months provided the design load is not applied for the period appropriate to the age factor taken. This concession will probably be used for the lower storey columns of multi-storey buildings. The lower columns of a ten-storey building are unlikely to have applied the design load for 12 months and if reinforced with 4 per cent. reinforcement the 1.24 factor would give extra carrying capacity of about 14 per cent. Increased stresses are permitted in cold-

worked reinforcement, the 27,000 p.s.i. tensile stress to 30,000 p.s.i. and the 20,000 p.s.i. compressive stress to 23,000 p.s.i. One of the reductions in the Code is in permissible increases for wind stresses where only 25 per cent. is permitted instead of 33 1/3 per cent. This is in line with the structural steelwork codes.

In the design of beams and slabs new tables are given for bending moments in continuous members and for thicknesses of members related to widths and depths. The object here is to avoid too whippy members particularly with the introduction of ultimate load design. This method of design is the great innovation in the new Code and relates to rectangular beams with and without compression reinforcement, flanged beams and members subjected to bending moment and direct thrust. It will generally lead to smaller members but not necessarily more economical ones, in the case of T-beams there will be no advantage at all but at the supports of continuous beams some compression reinforcement can be cut out. The flat slab design has been revised to bring it into line with the American Code and as well as the empirical method recommendations are given for panels which are outside the ratio of spans allowed in the empirical design.

The new Code is generally good, it is unfortunate that it is marred by two small items. One, the price at 10s. is too much for the young designer draughtsman to pay and every young architect should have a personal copy. Two, the change of symbols is quite unnecessary and all the more irritating because no opinion was asked on this change in the draft version.

25.130 water supply and sanitation  
SOIL AND WASTE PIPES

*Drainage Pipework in Dwellings*. A. F. E. Wise (HMSO. 10s. 6d.)

This is a text book which dots the i's and crosses the t's of the important research work on the design of the single-stack system carried out in recent years by the author and J. Croft. Most of the information it contains is available elsewhere, though not in so much detail. Though Mr. Wise expresses the view that it would be better for architects to "use two or three bathroom layouts that allow a very simple and efficient pipe system," the main part of the book is a careful consideration of all the common arrangements of those awkward quads; bath, washbasin, w.c. and sink; and to show how precisely to design a layout for each using the fittings now on the market. One chapter gives the approximate savings which ought to accrue from using the single stack instead of the "simplified one pipe." These are not always spectacular: for a two-storey house, for instance, they are only £2-£3, which goes to show that some at least of the attraction of single stack lies in its inherent simplicity.

One very useful section deals with the plumbing of tall buildings. Here we must necessarily depend on American evidence and quotations are given from the American





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For the prevention of rising dampness in the floors of the above hostel, the County Architect specified the inclusion of 4% of 'PUDLO' Brand waterproofer to the cement in a 1.2.4. mix. The finishing screed 1" to 1½" thick was finished with various patent floor tiles.

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## technical section

National Plumbing Code. This Code has a system of "weighting" appliances by what are called "fixture units." A wash-basin is 1 fixture unit, a w.c. with flushing valve 8 fixture units and other appliances fall in between. The number of "fixture units" is then used to determine the diameter of the stack and vent pipe, the slope of the drain and the maximum length of the vent pipe; for the Americans do not use "single stack," preferring "simplified one pipe," but with smaller diameters in the soil and waste pipe than ours. Until we have evidence of our own it would seem reasonable to use their system for very tall buildings. The Americans have also found it wise to run a separate stack for sinks equipped with food waste grinders and have experienced more trouble than ourselves with detergent foam. This problem is worse where there is a separate waste pipe: in one 22-storey building in America detergent foam backed up through traps in the seventh floor! This is essentially a tall building problem and the solution suggested is that for buildings of over 5 storeys the diameter of bend and drain on a single stack should be increased from 4 in. to 6 in. and that the bottom 10 ft. of 2 in. waste pipes should be increased to 3 in. In all, this book is essential for the office library: it will tell virtually all you want to know provided you are prepared to take the trouble to absorb it.

26.130 services equipment: miscellaneous

## CONVERSION TO SMOKELESS FUELS

*Clean Air for You. (Solid Smokeless Fuels Federation, 74, Grosvenor Street, W.1. Free.)*

After discussing the financial provisions of the Clean Air Act, this booklet describes seven replacements of existing grates by smokeless equivalents and gives the approximate cost of each. These replacements vary from putting in a bottom grate with firebars  $\frac{1}{2}$  in. apart which costs a few shillings, to the replacement of a coal-fired range which works out at something over £50. This is useful information, though some of it is queered and made generally inapposite to the good architect as it assumes replacement includes that hallmark of a local authority conversion, a tiled surround.

27.21 furniture and fittings

## LETTER PLATES

*Letter Plates. BS.2911:1957. (BSI. 3s.)*

This Standard is mainly concerned with dimensions of the opening and the stiffness of the spring governing the flap. The opening is fixed at 8 in. by  $1\frac{1}{2}$  in. with a tolerance  $+\frac{1}{8}$  in.  $-0$  in. The fixing is to allow for a maximum door thickness of  $2\frac{1}{2}$  in. and to be adjustable for any lesser thickness. An appendix inspired by the GPO recommends that letter plates should not be less than 2 ft. 6 in. or more than 4 ft. 9 in. from the ground, 3 ft. 6 in. being the ideal height.

## 22 SOUND INSULATION AND ACOUSTICS

## the present position of sound insulation in buildings

On December 19 last, H. J. Purkis of BRS gave a lecture with the above title to the Acoustics Group of the Physical Society. We print below a report of this lecture by our Specialist Editor (13) for Sound Insulation and Acoustics. In his report our Specialist Editor points out the uselessness of sound absorbent materials as insulators but their value for reducing the level of sound to be transmitted, the special nuisance of the slammed door, "coincidence effect" in lightweight partitions and the difficulty of finding solutions to acoustic problems in lightweight structures which will be within the power of building operatives to carry out.

This lecture surveyed the present knowledge on sound insulation in buildings, and contained a great deal of material valuable to the practising architect. The first demonstration effectively showed the fallacy of attempting to use sound absorbent materials, such as rock wool, as sound *insulators*. This reminded the writer of the all too frequent occasions on which he has had to correct this erroneous thinking. It is still by no means universally realized that in general it is a matter of preventing direct air paths and having *mass* which improves sound insulation. This is the basis of the so-called "mass law" which is not merely a piece of scientific by-play, but a really practical guide to building insulation design.

## The Use of Sound Absorbents

For this demonstration two boxes were used alternatively to cover a loudspeaker emitting speech. The first box was constructed of 1-in. thick glass wool, a sound absorbent material, and gave a sound reduction of about 6 dB. The second box was also 1-in. thick but constructed of timber and gave a sound reduction of about 20 dB. It was explained that it had been necessary to put some sound absorbent material inside the timber box to prevent the reverberant sound level from rising to a much higher level than when the absorbent box was over the loudspeaker. This detail was useful in demonstrating what part

22 Sound insulation and acoustics. The present position of sound insulation in building



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# technical section

absorbents can play in sound insulation. If a room is very highly reverberant (*i.e.*, contains very little sound absorbent) then it may be well worth introducing some absorbent treatment, not only to lower the noise level for any occupants but also because the *effective*

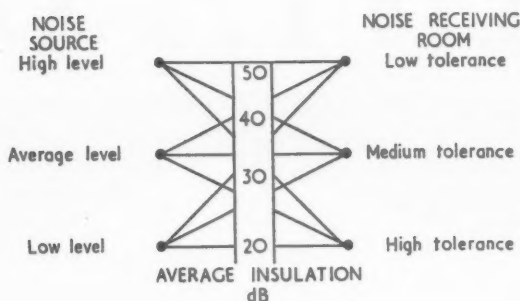


Fig. 1, nomogram for assessing sound insulation requirements.

insulation of the walls will be increased because there is less sound for them to transmit—and not because their actual insulation has been altered. Incidentally, this is equally true whether the absorbents are placed on the walls whose insulation it is desired to improve or to any other surface of the room.

However, in normal furnished living rooms there is already a fairly large amount of sound absorption present—averaging about 100-150 sq. ft./sabins\* according to a large number of BRS measurements. Now in order to obtain any substantial lowering of the noise levels in such a room it would be necessary to introduce an additional quantity of absorbent of at least this amount.

## Anti-noise planning

By separating noisy areas from those requiring quiet we can often avoid the need for highly insulating structures and their attendant high cost. Another important planning measure is to arrange for quietly closing doors. The lecturer quoted BRS experience of noise measurements made in a hospital where the most frequent single source of noise (and probably the most serious nuisance) was the slamming of doors.

Every room has to be thought of as both a noise source and a noise tolerator, and from this study some assessment can usually be made of the desirable performance of the dividing partitions, floors, etc., as

sound insulators. For example, rooms rated as major noise sources placed next to rooms of low noise tolerance demand dividing structures providing the highest possible sound insulation, say, 50 dB or more. Conversely, there are other occasions where a partition of only 20 dB insulation, which is obtainable from even the lightest form of structure, is adequate. A nomogram illustrating this point is given in Fig. 1.

The next part of the lecture dealt with the subject of insulation measurement and was, perhaps, not of great interest to architects except that the reasons for the adoption by BRS of a grading system for definition of insulation of dwellings were clearly explained, as was the reasoning behind the present BRS recommendation to use 9-in. solid party walls for houses in preference, or as an equally satisfactory alternative to, 11-in. cavity ones. A useful point which emerged was that differences in average insulation of 5 dB are probably the least which have any practical significance; for example, when structures are compared by a social survey technique.

## Lightweight partitions

The closing part of the lecture dealt with the prospects of further research on improved sound insulation. Following the general trend in building technique, this work concentrates round the problem of getting better insulation from lighter weight structures. The mass law ignores any variation of insulation which may result from variation in stiffness. For thinner walls, stiffness cannot be ignored because of what is known as the "coincidence effect"; that is, coincidence between the length of free bending waves in a wall and the length of a sound wave of a certain frequency falling upon it. When this condition occurs, the insulation at that particular frequency falls, to zero in theory, and to a low value in practice; and even though this low value does not extend over a large part of the frequency range it must obviously have an adverse effect on the average insulation. This is particularly so if the coincidence frequency occurs in the middle of the sound insulation range, as it apparently may do in, for example, a 2-in. thick concrete wall.

Few architects will disagree that what we must look for are essentially simple solutions for increasing insulation of lightweight partitions. It may be possible to build in the laboratory, or at least under controlled conditions, a partition giving especially good insulation, but if this depends on an exact specification of materials or an exact positioning of components or method of fixing, then it is unlikely that the desired results will be obtained on a practical building site. It is essentially a simple solution, where mistakes cannot occur, which we must look for.

\*Sabin: a unit of absorption. 1 sq. ft.-sabin is the equivalent of 1 sq. ft. of perfectly absorptive surface.



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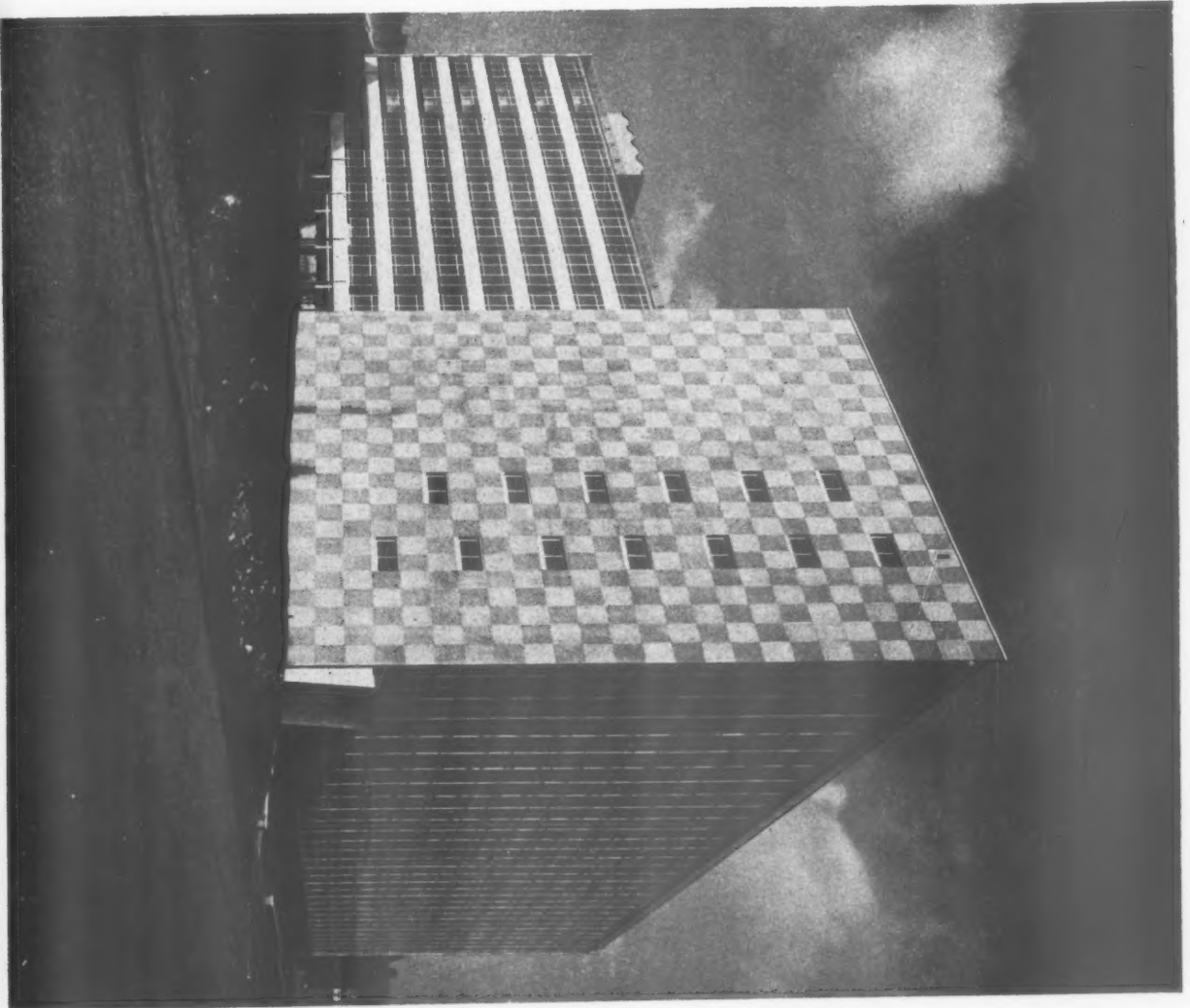
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## building illustrated

### FLATTED FACTORIES

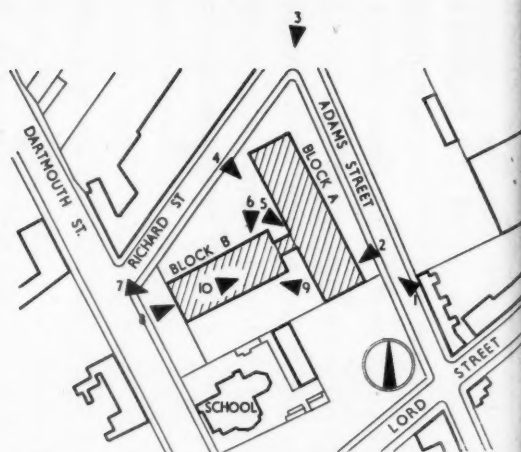
in DARTMOUTH STREET, BIRMINGHAM, for the CORPORATION of the CITY OF BIRMINGHAM; designed by PHILIP SKELCHER and PARTNERS, assistant JOHN L. PORTER, in association with A. G. SHEPPARD FIDLER, city architect; consultants (structural) W. V. ZINN and ASSOCIATES; quantity surveyors L. C. WAKEMAN and PARTNERS

The social desirability of the factory estate is debatable, but where land values are low it has been the only and obvious large scale answer in post-war development. Birmingham, as well as many other large cities, contains large areas of sub-standard factory properties, lacking in many amenities, but housing a great variety of activities. Comprehensive redevelopment schemes in central areas with scarce land and therefore high value, have necessitated another approach to the problem. The building illustrated here is a flatted factory containing workspaces of various sizes for 46 tenants who will share a reasonable standard of communal amenities for an average annual rent of 5s. 6d. per square foot. This is the first flatted factory to be analysed in the JOURNAL, and is the first building of its kind to be completed in this country.



Viewpoint: x: the building from the south-east.

## building illustrated



Site plan showing photographic viewpoints

The plan of the building is like a letter T with the central circulation core at the intersection. At the three extremities emergency stairs are provided, which also serve as subsidiary entrances. Viewpoint 2 (above) gives a detail of entrance No. 3 off Adams Street. Punching a hole through a curtain wall is a classical problem in modern dress, architectural papers are full of buildings which failed to solve this problem and, alas, here is yet another. A familiar canopy detail enshrines a collection of materials and a door sadly out of scale with its surroundings. Viewpoint 3 (below): curtain walling used in the grand manner.

The vast areas of repetitive simple units give a good sense of scale, lightness and cleanliness to the building, adding sparkle to the dreary environment. Handled in this big way, it is at its most economical, and makes sense because it is a fair expression of a truly simple building. This elevation reminds one of the excitement of not so long ago, before this new technique went to the "cliché monger." In this photograph the early morning sun reflects from the north-east elevation of block A. The brick stack on the short return elevation contains an emergency stair with exit.



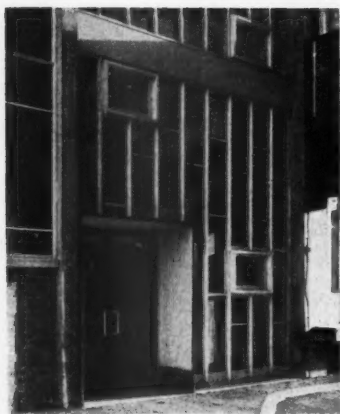


*Viewpoint 4: intersection of the two eight-storey blocks is by means of a linkway providing 12 ft. headroom below for the passage of firefighting vehicles to the enclosed yard behind. The vertical feature with the curved concrete roof over contains the main staircase and passenger lift, and at lower ground floor, the main entrance, which is not easy to find, in spite of the signs around the building and the architectural emphasis placed upon*

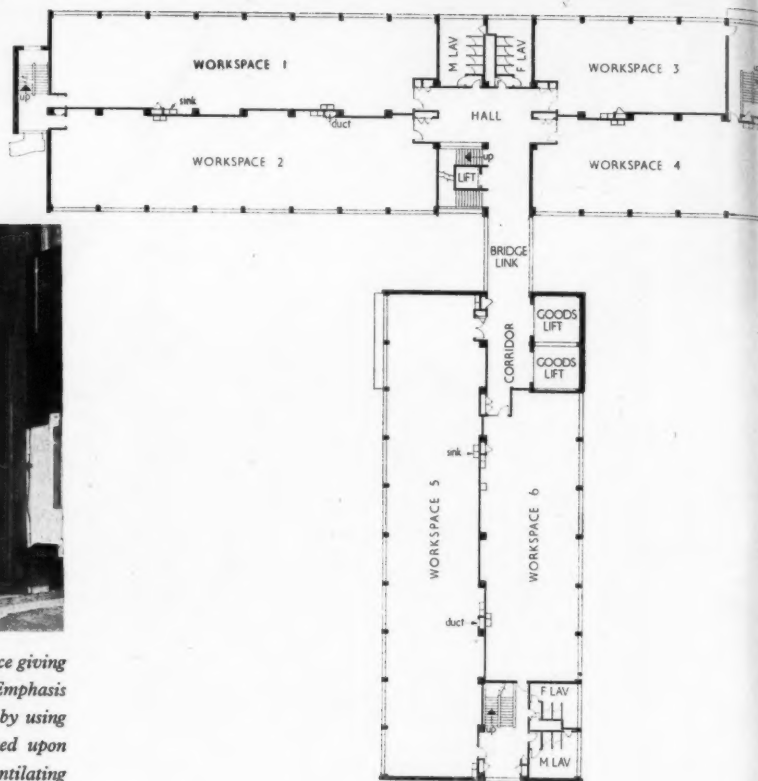
*it. Curtain walling is of galvanized steel painted three coats, with obscured coloured (non-wired) glass as a spandrel panel (maroon for the block on the left, bright yellow for the block on the right). Panels below windows for the linkway are 11-in. cavity brickwork. Presumably only light vans with a small turning circle will be making deliveries or collecting goods from the loading bay under the link.*



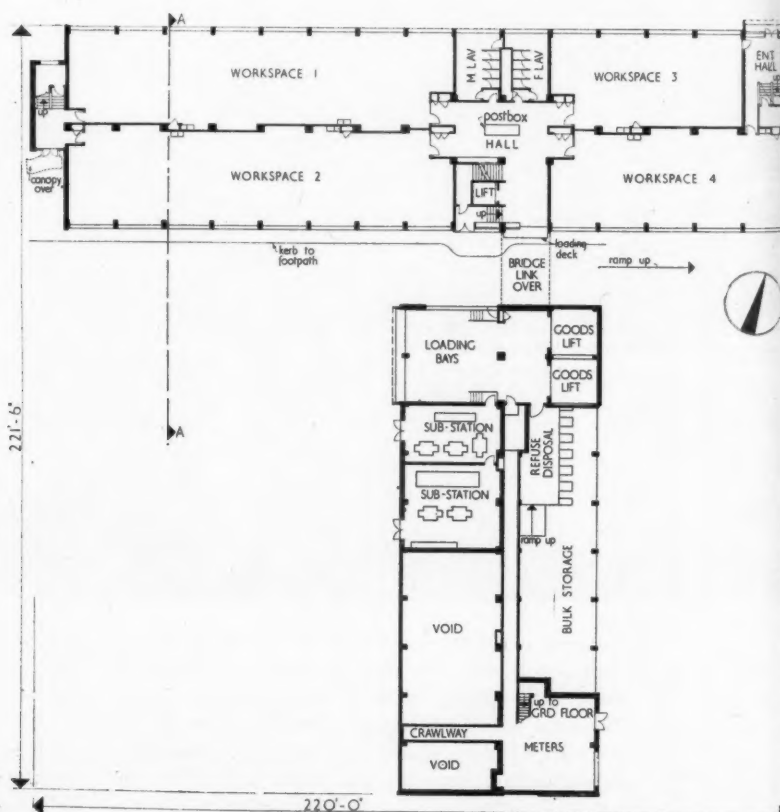
building illustrated



Viewpoint 5: detail of the entrance giving access to the hallway in block A. Emphasis is placed upon the staircase well by using a different type of window based upon a Detroit bar section with ventilating lights contained in a heavy hollow rectangular steel section. Steel doors are set in a canopy made of sheet steel faced with fluted aluminium.



Typical upper floor plan



Lower ground floor plan  
[Scale:  $\frac{1}{8}'' = 1' 0''$ ]

# analysis

## CLIENT'S BRIEF

The client's brief reflected the lack of knowledge of the requirements of this type of building. The architects were asked to provide 40 to 50 workspaces, each capable of being separately let to suitable tenants. The building was to provide the maximum accommodation at the minimum outlay and to provide a reasonable standard of amenity. The size and relationships of the units, circulation for people and materials, structural considerations, etc., were all decisions which had to be made by the architects in the absence of any real knowledge of requirements, and at the same time it had to be remembered that tenancies would be liable to constant change. The building is in many respects experimental.

## SITE

The site of approximately 51,000 sq. ft. has a fall of about 10 ft. from south to north and contained ruined cellars to about 70 sub-standard houses. It is fairly close to the city centre in the Duddleston and Nechells area, surrounded by old two-storey domestic and industrial property. In the vicinity new multi-storey blocks of domestic flats are being built. Vehicular access is confined to Richard Street on the north, with pedestrian access from Dartmouth Street, Adams Street or Richard Street. Previous to the scheme there was no planting on the site and no provision has been made for any in the future.

## PLAN

The building is of two blocks at right angles to each other, connected by a short link giving a plan shaped like a letter T. Pedestrian and goods lifts, staircases and lavatory accommodation are located at or near the junction of the blocks. The building is eight storeys high with four workspaces per floor in block A and two workspaces on each of seven floors in block B, with sub-stations, meter rooms, stores and loading bay on the lower ground floor. Additional staircases with pedestrian entrances are provided at the extremities of the building with additional lavatories off the Dartmouth Street staircase. Each block has a central spine wall so that all workspaces have one long wall of glazing. Workspaces are provided as follows: 8 of 1,453 sq. ft., 8 of 1,868 sq. ft., 8 of 2,979 sq. ft., 8 of 3,005 sq. ft., 7 of 2,272 sq. ft. and 7 of 3,825 sq. ft., giving a total lettable area of 117,124 sq. ft. Each unit is provided with its own supply of water, gas, electricity and telephones, and provision is made on the top two floors for the installation of extract plant if required.

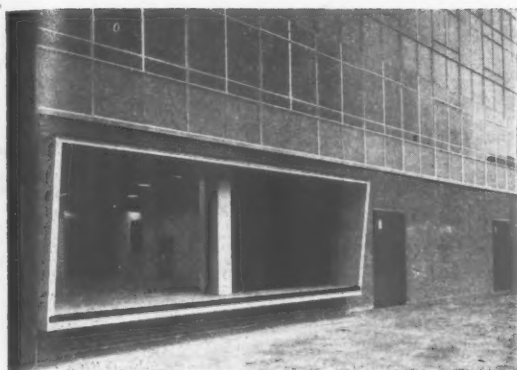
## MAIN CONSTRUCTION

Reinforced concrete column pads carrying r.c. frame, floors, roofs and stairs, and some internal walls all cast *in situ*. Internal partitions are fairfaced brickwork. Externally the building is clad with curtain walling, precast exposed aggregate concrete blocks or brickwork.

	cost per sq. ft.	s	d
preliminaries and insurances	3	1	1
contingencies	1	6	

## STRUCTURAL ELEMENTS

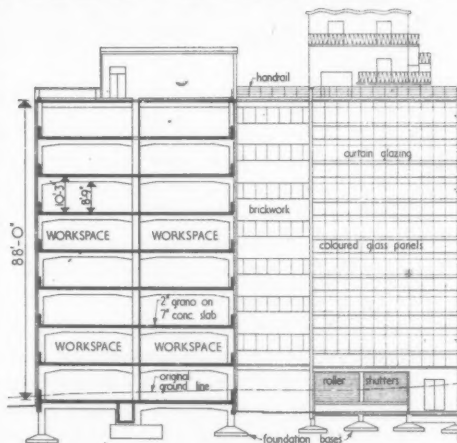
**Work below ground floor level** 3 6 1/2  
Heavily reinforced independent concrete bases to columns on 3-in. blinding concrete. Mix 1:1:2, maximum size 1 1/2 in. sq. and at depths varying from 16 ft. to 6 ft. below ground level. Bases are cast in shuttering and are pyramid shaped on top, \*



Viewpoint 6: Detail of the loading bay on the lower ground floor of block B. The bay serves directly to the two goods lifts. Doors to the right are to M.E.B. sub-stations. The canopy is of in-situ reinforced concrete and the top is a continuation of the downstand beam of the concrete floor above. The brick skin above and below is 4 1/2-in. thick and the continuous pre-cast concrete sill under the curtain walling is held back to the structure with copper ties. Bricks are sand-faced, multi-coloured and a darkish brown in colour. The loading bay is equipped with two power-operated steel roller shutters.



Viewpoint 7: a general view of the building from Dartmouth Street. Flank walls are clad with pre-cast concrete blocks with two different colours of exposed aggregate finish. Each block, approximate size 2 ft. 6 in. x 3 ft. 6 in. x 3 in., is held back to the building with two copper ties which are grouted in. Edge panels are specials with a change in direction of 90 degrees to meet the curtain walling on the centre line of the last column.



Section A-A and part west elevation of block B  
[Scale: 1/4" = 1' 0"]

## analysis

unless forming base to crawl-duct. Crawl-ducts run beneath the centre of each block and have 6-in. r.c. walls and floors.

Lower ground floor slabs, 7½-in. r.c. No D.P.M. The site was covered with rubble to depths between 6 ft. and 14 ft., with silt, sand or hard clay underneath. Load bearing capacity was taken at 3 tons per sq. ft.

## External walls and facings

(a) Galvanised steel curtain walling on all long elevations of both blocks fixed back to 9-in. brickwork under-sill panels or to concrete edgebeams with expanding bolts. Finish, 3 coats alkylid paint with 32-oz. or ⅝-in. thick drawn sheet clear glass above sill and fixed from inside. Below sill, obscured non-wired glass with applied colour on inner face, fixed from outside. Galvanised steel composite windows for staircases and to glazed link. Finished as above. Curtain walling is used because of the ease with which it can be cleaned and retain its sparkle in a heavy industrial atmosphere.

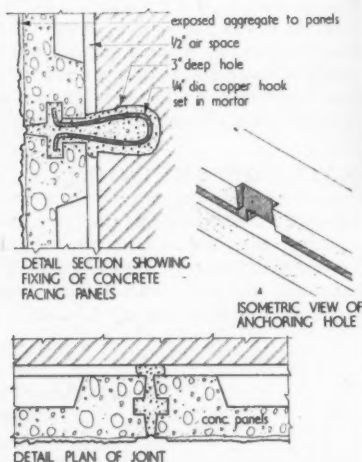
$$\text{Ratio: } \frac{\text{windows area}}{\text{floor area}} = \frac{0.241}{1}$$

Glazing is 70 per cent. of external cladding area. (b) Precast concrete cladding blocks, size approx. 2 ft. 6 in. × 3 ft. 7 in. × 3 in. thick with centre dishing. Placed on short end walls of both blocks and fixed back with two copper ties per block. The finish is of two different kinds of exposed aggregate. Precast concrete is 22 per cent. of external cladding area.

(c) 2½-in. sandfaced multi-coloured brickwork, 11-in. cavity or 9-in. solid brickwork to stairway, link and below sill behind curtain wall, and as plinth up to sill for lower ground floor. Pointed as work proceeds. Brickwork is 8 per cent. of external cladding area.

Combined cost of (b) and (c) 2 0½

$$\text{Ratio: } \frac{\text{solid wall}}{\text{floor area}} = \frac{1.16}{1}$$



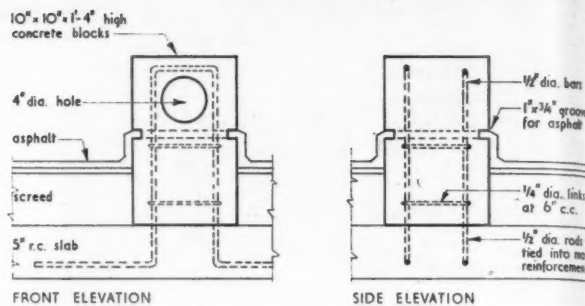
Detail plan, section and isometric sketch of fixing to ext. precast concrete cladding slabs (Scale: 1½" = 1' 0")

## Frame

In-situ r.c. columns and beams generally. Columns up to 4th floor in 1 : 1 : 2, elsewhere 1 : 2 : 4. m.s. reinforcement throughout.

6 2½

## building illustrated



Detail sections, precast anchor blocks in flat roof (Scale: ¾" = 1' 0")



Viewpoint 8 (above left): subsidiary entrance No. 4 has a better sense of scale as the recession containing the whole entrance is the important element. The flower boxes which occur at every window to the staircase contain decoration in the form of sheet steel shaped to resemble flowers about 1½ times life size, and painted bright blues, yellows and reds with green leaves. Regardless of one's opinion of the place of applied decoration in modern architecture the purely horticultural effect on a cold blustery winter's day was most surprising. Viewpoint 9 (above right): the arcade under block B opens on to an enclosed yard contained by the whole building. The covered space will be used for refuse disposal. Refuse will be placed in large standard containers resting on a concrete base from which they will be removed by a fork lift truck and deposited on a special vehicle, owned by the Birmingham Corporation.

## building illustrated

Viewpoint 10 (below): there are three penthouses on the roof. The one on the left houses the access stair, motor room for the passenger lift and 5,000 gallon water storage tank. The structure on the right houses motors for the goods lifts, one of which serves roof level. A further structure (not seen in this photograph) houses another access stair and 4,000 gallon water tank. The concrete blocks with the holes through them are precast with reinforcement cast into the roof slab and are anchor blocks through which steel poles are placed to carry cradles for window cleaning. The main roof is finished with  $\frac{3}{4}$ -in. natural asphalt on  $\frac{1}{2}$ -in. insulation board on screed to falls. Roofs to penthouses are 5-in. in-situ concrete slabs with  $\frac{1}{2}$ -in. screed and three layers bituminous roofing felt.



Below: general view of a typical workspace on one of the upper floors. There are six different sizes from 1,500 to 3,800 sq. ft. The

architect has considerable experience of factory building and this was a help in deciding the size of the individual units. There was no research among local industrialists to see if any lead could be gained from possible users about the type and size of accommodation, and so the architect made several trips to Rotterdam to look over similar projects being built there. The building gives little scope for flexibility, any partition erected in a workspace must be by the tenants' approval; there is no scheme for landlord partitioning if smaller spaces are required. Should this happen, there will be the added expense of re-metering services, which are at present organised on a complete workspace basis. It would also appear that, should a workspace in Block A need to be divided, an internal corridor will have to be made, to enable goods to be brought in and to give staff access to lavatories. On grounds of economy there is no provision to combat structure-borne sound between units horizontally or vertically, and no sound-absorbent surfaces are provided in workspaces. Machinery will be held in place by adhesives, no fixings being allowed into structural elements. Heating is by thermostatically controlled fan blowers which give a  $30^{\circ}$  rise and can be easily controlled by each tenant. Colours of the end and side walls and the ceiling are very light blues, yellows, pinks and browns, with structural work in light grey. The outer face and sides of the perimeter columns are painted black so that they do not read externally. Beams are haunched 9 in. at both ends, to provide greater headroom in the centre of the workspace. The type of tenant will be limited, and will be chosen for the type of work produced; the noisy, the smelly process, and all heavy impact machinery will be excluded, although extract plant for spraying processes can be installed on the top two floors to discharge at roof level.





## building illustrated



Above: detail of a workspace. Artificial lighting is provided to supply 10 lumens per sq. ft. 3 ft. above floor level. Power is not distributed about the workspaces as tenants will have their own requirements. To facilitate distribution of conduit, holes have been left through beams at ceiling level. Floor finish to all workspaces is plain trowel-finished granolithic. The wall below the sill is 9-in. brickwork, topped with a metal sill, which was seen to be collecting a certain amount of condensation. Below, left: from the main entrance doors in the background, this small area leads up to the hallway on the lower ground floor of block A. To the

left of the column, just off the picture, is the roller shutter to the loading bay serving the four workspaces on this floor. The building is not yet in use, but there seems to be a possibility of a clash between packing cases and visitors. Walls and staircases are fairface concrete; floor, semi-vitreous clay tiles. Below right: the passenger lift, which carries 1,500 lb. at 150 ft. per minute. The surround is in bright yellow ceramic tiles with a white pattern, lift doors are polished, finely fluted aluminium. Walls to the lift well are in 6-in. concrete finished fair-face and painted. Floor finish is plain granolithic with a painted skirting.



Beam  
14 ft.  
28 ft.  
17 ft.  
19 ft.  
23 ft.  
23 ft.

Design  
Roofs  
Upper

Lower  
ground  
Staircase

All ex  
R.C. c  
supply  
more  
reduc

Upper  
R.C. s  
fairface  
Plywood  
shutter  
clean

Staircase  
Height  
landing  
end of  
R.C. m  
Finish  
reads  
tile in  
and p  
No. c  
Width  
Rise  
Total

Roof  
(a) R  
block  
ceme  
felt a  
slab p  
(b) R  
profil  
housi  
sand  
roofi  
Total

Exter  
Exter  
press  
alkyd  
to he  
area  
and l  
with  
Steel  
and f

Ratio

## analysis

s d

Beam spans	Column grid	Area
14 ft.	14 ft. × 14 ft.	Goods lift
28 ft.	14 ft. × 28 ft.	Workspaces
17 ft. 9 in.	14 ft. × 17 ft. 9 in.	Central hallway
19 ft. 1½ in.	14 ft. × 19 ft. 1½ in.	Block A
23 ft. 6 in.	Independent	Linkway
23 ft. 9¾ in.	10 ft. × 23 ft. 9¾ in.	Stairtower of block A

Design superloads in lb. sq. ft.:

Roofs	30
Upper floors	224 on slabs 168 on beams and columns

Lower ground floor	280 on slabs
Staircases	224 on beams and columns 100 on treads

All exclusive of finishes.

R.c. chosen because structural steel was in short supply. Main beams are haunched at ends to give more headroom in centre of workspace. Columns reduce in size with height.

## Upper floor construction

R.c. slabs 7-in. thick all cast *in situ* and finished fairfaced, on all floors.

Plywood panels in large sections were used as shuttering and the worst of irregularities were cleaned off when the shuttering was struck.

## Staircases

Height from floor to floor: 11 ft. Width between landings: 8 ft. 4 in. Four staircases, one at each end of the blocks and one at the intersection.

R.c. risers and carriage beams all cast *in situ*.

Finished with coloured granolithic 1½-in. thick on treads with stepped margins on sides. Non-slip tile inset on tread. Soffit of carriage left fairfaced and painted with emulsion.

No. of staircases: 4.

Widths: 4 ft. 5 in., 3 ft. 9 in., 3 ft. 7 in., 3 ft. 6½ in.

Rise per flight: 5 ft. 6 in.

Total rise: 322 ft.

## Roof construction

(a) R.c. cast *in-situ* slab, 5-in. thick to roofs of blocks A and B. Finished with 2-in. to 5-in. cement/sand screed with ½-in. insulation board, felt and ¾-in. natural rock asphalt. Underside of slab painted.

(b) R.c. cast *in-situ* slab 5-in. thick with curved profile over tank rooms, passenger and goods lift housings and stores. Finished with ½-in. cement/sand screed and three layers bituminous felt roofing.

Total areas: (a) 18,721 sq. ft.; (b) 2,129 sq. ft.

## External doors

External doors to all entrances in galvanised pressed steel sections, finished with three coats alkyd paint. Used because these doors are subject to heavy wear and rough usage. Doors to refuse area and meter rooms are framed, ledged, braced and battened, or solid core flush type, all finished with three coats alkyd paint.

Steel roller shutters to loading bays are galvanised and finished with three coats alkyd paint.

external door area 0.417

Ratio:  $\frac{\text{floor area}}{\text{external door area}} = \frac{1}{0.417}$

s d

## PARTITIONS

## Internal partitions

4½-in. or 9-in. brickwork finished fairface and painted two coats emulsion. Used because of its cheapness, toughness and ability to take heavy fixings.

## W.c. doors and partitions

Rustproofed steel partitions at 2-ft. 9-in. c/c with 6-ft. 6-in. steel door hung 6 in. clear of the floor. Finished three coats gloss oil paint. Used because of robustness and ease of maintenance.

## Internal doors

(a) At entrances to all workspaces, 6 ft. 6 in. × 3 ft. 2 in. pairs or single, solid core flush gaboon faced, finished three coats gloss oil.

(b) At entrances to lavatories, 6 ft. 6 in. × 2 ft. 5½ in. single doors as for type (a), but with small obscured glazed panel.

(c) As access to coal ducts, 6 ft. × 2 ft. 9 in. × 1½ in. single or pairs, solid core flush type with ⅝-in. asbestos cement sheet backing as fireproofing.

No. of single doors: 187.

No. of double doors: 50.

## Ironmongery to internal doors

Lever furniture, floor springs, D handles and dead locks all in heavy, good quality BMA because experience has shown tough wearing qualities are important for this element in this type of building.

## FINISHINGS

## Floor finishes

2-in. plain granolithic with trowelled finish to all workspaces and corridors. 137,092 sq. ft. at 11s. 7d. per sq. yd.

Coloured granolithic with non-slip tile nosings on all staircases, 4,022 sq. ft.

at 9s. 9d. per sq. yd.

White polished terrazzo in all lavatories, 5,673 sq. ft. No price available.

Semi-vitreous clay tiles on sand cement bed, 558 sq. ft.—55s. per sq. yd.

## Wall finishes

Sprayed cement-type paint finish applied direct to fairface brickwork up to dado height in lavatories, giving high gloss finish, durable and cheap.

Ceramic tiles on cement-sand bed to walls surrounding passenger lift doors, used to give decorative, hard-wearing finish.

Pre-cast concrete exposed aggregate blocks with smooth finish in entrance to block B.

Elsewhere, fairface brickwork or concrete.

## Ceilings

Plaster on metal lathing to ceilings of linkway, finished with emulsion paint.

Elsewhere, fairfaced concrete with largest irregularities rubbed down and finished with emulsion paint.

## Decorations

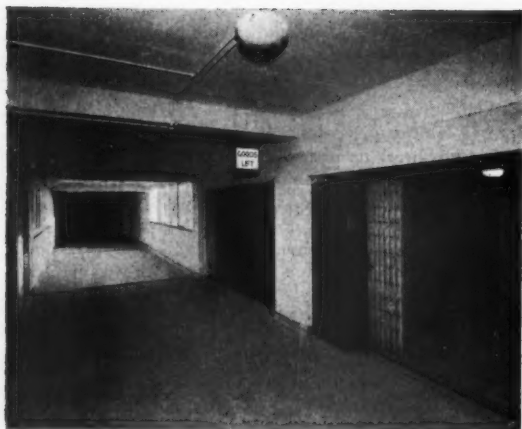
Gloss oil paint on doors and door frames, balustrading and windows. Emulsion paint on walls, ceilings, columns, beams, etc.

Colour in workspaces has been limited to pastel

## building illustrated



Detail of an emergency escape stair, which also serves as a subsidiary entrance. The door on the right hand side of the landing leads directly into a workspace. The whole of the staircase is reinforced concrete left fair-faced and the result is a strong, clean structure which combines not too happily with the diagonal m.s. balustrading. The finish to the treads is a red granolithic with a non-slip tile nosing.



Two 7,000-lb. goods lifts are provided, which are served direct from the loading bay on the lower ground floor of B block. The lifts discharge on each floor into this hallway with, to the left of the picture, the linkway which serves through to the workspaces in block A. The structure of the linkway is independent and rests upon the other two blocks with expansion joints at either end.

## analysis

shades, very light blues, yellows and pinks on walls and ceilings, with a standard light grey throughout on beams and columns unless behind windows, when columns are painted black on the outer and side edges.

Stronger colours, maroons, deep greens, reds and sage greens are used on doors and entrance lobbies to workspaces and in lavatories.

All door frames and windows, white.

## FITTINGS

## Letter box

Letter box fitting with separate individually locking boxes in central hallway of block A, obviating necessity for postal deliveries to each workspace. Softwood framed, plywood faced, finished with gloss oil paint and carried on m.s. supports.

## SERVICES

## Plumbing, external

Cost includes rainwater disposal.

22 gauge aluminium as flashing around all external parapet walls, edges of curved roofs, etc. Natural mill finish left unpainted. R.w. collected in channels formed in asphalt roof in which bellmouths are set, connected with 6-in. dia. c.i. vertical pipes passing down the pipe ducts into the crawlways and thence by salt glazed stoneware into reverse action interceptor on the building side of the manholes. Surface water from areas about the building passes into the same system.

## Plumbing, internal

Waste disposal from wash basins through preformed waste range having trap at one end and thence to vertical c.i. stack in pipe duct. Waste from w.c. collected in preformed ventilated galvanised steel ranges with separate anti-siphonage stack pipe. Wastes from industrial sinks are trapped under fitting and taken straight into vertical stack. All vertical waste pipes connected to horizontal pipes in crawlways.

## Cold water installation

Enters through 4-in. c.i. feed pipe to meter chamber under block A. 4-in. copper pipe in crawlduct and vertical duct to block A lavatories, when pipe reduces to 3-in. and two branches are formed, one as rising main to lavatories and one to feed 5,000 gal. main water tank. Similar process for lavatories at the end of block B. Capacity of tank over block B 4,000 gal.

## Sanitary fittings

	Number
W.c.'s, in vitreous china, each with own w.w.p., concealed behind 4½-in. brick wall with remote control handle.	92
Wash hand basins in white vitreous china	105
Industrial sinks in white fireclay in all workspaces.	98
Urinal stalls in white fireclay	15
Sanitary incinerators, vitreous enamel on c.i. in female lavatories.	15
Cleaners' sinks in white fireclay	

## analysis

## Heating installation

(Cost included under electrical installation). Heating for workspaces is by 3-kW. fan blower type electrical heaters, individually thermostatically controlled. Heaters are dispersed at high level on columns and walls and the system is designed to give a 30° rise in temperature when freezing outside. Other systems of heating were considered but discarded in favour of this system, which has extremely low installation costs and gives great ease of control for individual tenants. No heating is provided in corridors, but lavatories are provided with tubular electrical heaters, designed to give a rise of 15° when 32° outside.

## Hot water installation

Hot water is provided to hand basins in lavatories only. Water is heated by 5-kW. immersion heaters in 30-gallon cylinders, one for each pair of lavatories on every floor. This localized system gives a very short pipe run and is efficient. Cost of immersion heaters included under electrical installation.

## Drains

Separate system. F.w. and s.w. drains in building in horizontal and vertical ducts all in c.i. carried on m.s. stanchion brackets. Outside building runs change to s.g.s.w., cased if near surface. Only two manholes were required, high level connection into Richard Street combined sewer and low level connection to Adams Street combined sewer.

## Gas installation

Gas in c.i. pipes enters from Dartmouth Street into 9,000 cu. ft. meter housed in lower ground floor of block B.

Red through 6-in. c.i. pipes in crawlways to three 6-in. to 4-in. vertical risers. Supply to each workspace averages 200 cu. ft. per hour.

## Electrical installation

(Cost includes heating installation)

Vitreous enamel dispersive reflectors with 200 watt tungsten lamps to give 10 lumens per sq. ft. 3 ft. above floor level to all workspaces. Number of fittings, 1,369.

White opal glass saucer domes with 150 watt tungsten lamps to give 2-3 lumens per sq. ft. in corridors, loading bays, etc. Number of fittings, 223.

White opal glass spheres with 100 or 60 watt lamps to give 2-3 lumens per sq. ft. in lavatories, ducts, etc. Number of fittings, 222.

**Wiring and switching types:** v.i.r. cables in heavy-gauge screwed welded conduit. All wiring is surface and to facilitate conduit runs, holes are provided in main transverse beams at ceiling level. Switchboards and fuseboards are industrial medium weight range for circuits up to 500 volts. Lighting switches are 5 or 15 amp. cast metal type with metal dollies.

The whole installation is divided into and metered for separate systems for each tenant, with a separate system for the communal areas.

**Power supply type:** main cables pass from sub-station on lower ground floor of block B along ducts to serve three electrical cupboards situated at the entrances to each pair of workspaces on each floor.

Supply runs in trunking to each workspace terminating in control panel and meter. Power supply of 200 amp. provided for each space.

Individual power plugs are not provided in work-

spaces as tenants will need particular requirements. In communal areas 13-amp. power plug provided on each floor. Power supply of 150 amp. provided for lift motors and 30 amp. for roller shutters.

## Lifts

Two goods lifts situated at the intersection of the two main blocks, car sizes 12 ft. 6 in. deep × 10 ft. wide × 10 ft. high, will carry 45 persons or 7,000 lb. at 70/80 ft. per minute. Lift motor rooms immediately over shaft. One of these lifts serves up to roof level.

Passenger lift in block A, car size 5 ft. deep × 4 ft. wide × 7 ft. high, will carry 10 persons or 1,500 lb. at 150 ft. per minute.

## Fire alarm system and dry risers

Three dry risers provided at the extremities of the blocks, near the escape stairs. Fire alarm installation in accordance with Code of Practice 327,404/402,501 (1951) for the manual alarm and similar to the Fire Offices Committee Class A installation for the automatic installation. Sprinklers were highly recommended by the fire brigade, but as the building is constructed of fire resisting materials and the types of occupancy will be limited to low risks, the expense was not justified.

## Storage building and refuse disposal area

Storage space below ground floors. Tenants take their own refuse to the basement and deposit it in large containers, which rest upon raised concrete stoolings to enable a fork-lift truck to deposit full container on special vehicles (owned by Birmingham Corporation).

## Paved areas

Car parks and main pedestrian access all round the building, 2½-in. tarmacadam base with 1-in. topping, all on 6-in. consolidated hardcore. Will take heavy wear and is easily maintained.

Pedestrian access around three emergency exits 2-in. thick hexagonal concrete paving slabs in lime mortar on 4-in. concrete, with an edging of cobblestones bedded in cement mortar.

## Sundries

Lettering, signs and notice boards, lightning conductors, testing materials, progress photographs, pavement crossings and horticultural work.

£358,162

Total cost per sq. ft. of floor area:  $\frac{£358,162}{161,065 \text{ sq. ft.}} = 44 \text{ 6}\frac{1}{2}$

## FIRE PRECAUTIONS

**Structural:** 9-in. solid brickwork up to 3 ft. high at all floor levels behind curtain glazing. Duct and lift shafts of solid construction, duct doors fireproofed with asbestos cement sheeting.

**Planning:** Linkway connecting blocks A and B is 12 ft. high above road, so that fire fighting machine with turntable can get through to enclosed yard, which is large enough to permit full coverage by apparatus. Emergency staircases are provided at the extremity of the buildings, one staircase in each block giving on to the roof. Normal size escape ladder is just long enough to enable people to be taken off at any point around the building.



## analysis

## TIME SCHEDULE

Drawings: begun October 1, 1954.  
 Tender date: March 12, 1955.  
 Contract signed: November 7, 1955.  
 Work begun: August 22, 1955.  
 Work completed: December, 1957.  
 Type of contract: City of Birmingham.  
 Comments: Original programme 21 months to completion, but owing to delays in obtaining m.s. reinforcement and extra work due to existing basements, etc., non-completion of sub-contractors and additional work ordered towards the end of the contract, completion was delayed by seven months.

## COST SUMMARY

Total ground floor area: 14,913 sq. ft.  
 Total floor area (excluding basement): 157,859 sq. ft.  
 Storey heights basement: 17 ft. (one section); 10 ft. (meter rooms); 5 ft. and 6 ft. (crawlways).  
 Total floor area: 161,065 sq. ft.  
 Tender date: March 12, 1955.  
 Price of work above ground floor level: £319,504 5s. 6d.  
 Price of foundations and basement: £28,630 12s. 0d.  
 Price of ancillary buildings: £3,000.  
 Price of external works: £7,027 0s. 9d.  
 Gross total price: £358,161 18s. 2d.  
 Price per sq. ft. floor area: £2 4s. 5½d.  
 Cost analysis based on tender figure.

## COST COMMENTS

The client's brief provided a rather nebulous ideal of maximum area at minimum cost. The equation of total money available

— = Cost per sq. ft. floor area  
 area required  
 can always be applied when there is only one unknown, but in this case the unknown was the standard of amenity, described as "reasonable." Examination of previous cost analyses of factories or even office block tenancies, which are the nearest comparative building type, show that this building has been provided at a minimum of capital outlay. Certain requirements are fairly expensive in themselves, for example:

- (a) Lavatory accommodation on each floor.
- (b) Lifts, both passenger and goods.
- (c) Services which are individually metered to each tenancy, and which are necessary as part of the tenancy scheme.

The architects have planned the structure by using a concrete frame (a) for structural and infilling members and (b) as a self-finish hard wearing surface with minimum outlay in applied finishings apart from decorations. This solution has considerably reduced costs. The two relatively expensive areas for wall and floor finishes in the stair wells and lavatories are refreshing among otherwise austere and sombre finishes to the production areas. Individual electric heaters simplify the heating installation problem, although running costs to the tenants may be higher than with a central heating system.

Tenancy running costs, however, do not appear as part of the original brief although the computation of rentals is important from the client's viewpoint.

The application of curtain walling to this type of building at a unit cost of 24s. 6d. per square foot of walling, is the architectural luxury in an otherwise economical building but perhaps this is the glitter to catch the prospective client.

## SITE LABOUR AND EQUIPMENT

*Labour:* Site agent, general foreman, resident engineer, gangers.

*Equipment:* reduced level dig by 22 R.B. concrete etc., to sub-structure transported by Monorail. Ground floor to roof; job centred on a Buildmaster 360 tower crane. Consultant engineer agreed on concrete joints to suit use of crane.

Two erection positions were necessary, first on the south side of block B, serving all of block B and half of block A. Second position on west side of block A. Concrete mixer 21/14 Diesel. Bulk cement storage in Portasillo. Dalliscraper feeding into junior swing batcher.

*Sub-letting:* plumbing, decorating and painting, steel bar bending and fixing, scaffolding. All work which can be more efficiently handled by specialists and because there is a lack of operatives for this type of work.

*Job management:* progress chart prepared by site agent, minor alterations made by architect. Job was shaped around tower crane. System of bonus with individual gangs concentrating on same type of work, i.e. one gang for columns and beams, one gang for floor slabs, etc., which allowed for full use and repetition of formwork and economy of labour.

## CONTRACTORS

*General contractor:* Wilson Lovatt and Sons Ltd. *Sub-contractors:* Asphalt roof and roofing felt: Neuchatel Asphalt Co. Ltd. *Precast concrete cladding units and artificial stone:* Tarmac Ltd. *Bricks:* The Titford Brick Co. Ltd.; London Brick Co. Ltd.; Blockleys Ltd. *Slate sills:* The Broughton Moor Green Slate Quarries Ltd. *Water closet partitions:* H. Hope & Sons Ltd. *Glass, curtain glazing and composite windows/doors and window furniture:* Crittall Manufacturing Co. Ltd. *Structural steel bars:* The Whitehead Iron & Steel Co. Ltd. *Fixed by P. W. Westwood. Internal glazing and mirrors:* Pearce and Cutler Ltd. *Granolithic flooring (and fixing stairreads):* Stuarts Granolithic Co. Ltd. *Preformed expansion material for precast concrete slabs:* Expandite Ltd. *Mastic jointing to precast concrete slabs:* Mann-Reddington Ltd. *Gas fitting:* West Midlands Gas Board. *Electric wiring and heating:* Electrical Installations Ltd. *Electric fixtures:* General Electric Co. Ltd. *Stairreads (inserts):* The Adamite Co. Ltd. *Metal balustrades and handrails:* Bigwood Bros. *Metal balustrades and handrails and artificial flowers:* Tudor Reproductions Ltd. *Water storage tanks:* Horseley Bridge and Thomas Piggott Ltd. *Plumbing and dry rising fire mains:* David F. Wiseman & Sons Ltd. *Galvanized preformed steel trunking for foul water drainage:* Econa Modern Building Products Ltd. *Door furniture:* James Gibbons Ltd. *Telephones:* GPO Telephones. *Lightning conductors:* A. W. Elliott (Steeplejacks) & Co. Ltd. *Internal doors:* Glikstein Doors. *Roller shutters:* Roller Shutters Ltd. *Sanitary fittings:* Doultons; The Griffin Foundry *Automatic fire alarm:* J. H. Boardley Ltd. *Roof screeds and plaster:* W. J. Hulst. *Terrazzo paving and tiling:* Venetian Flooring Co. Ltd. *Wall tiling:* Bryon & Co. Ltd. *Maintenance cradle, etc.:* Scaffolding (Great Britain) Ltd. *Artificial stone hexagonal paving slabs:* The Empire Stone Co. Ltd. *Letter box fitting:* Planit Home Woodworkers Ltd. *Lifts:* Otis Elevator Co. Ltd. *Lift surrounds (goods lifts):* Charles Wade & Co. Ltd. *Signs:* Gowshall Ltd.; Ward & Co. Ltd. *Paint:* Mander Brothers Ltd.; Inertol Co. Ltd. *Synthetic wall finish:* Prodorite Ltd. *Painting:* G. and C. Whittle Ltd.

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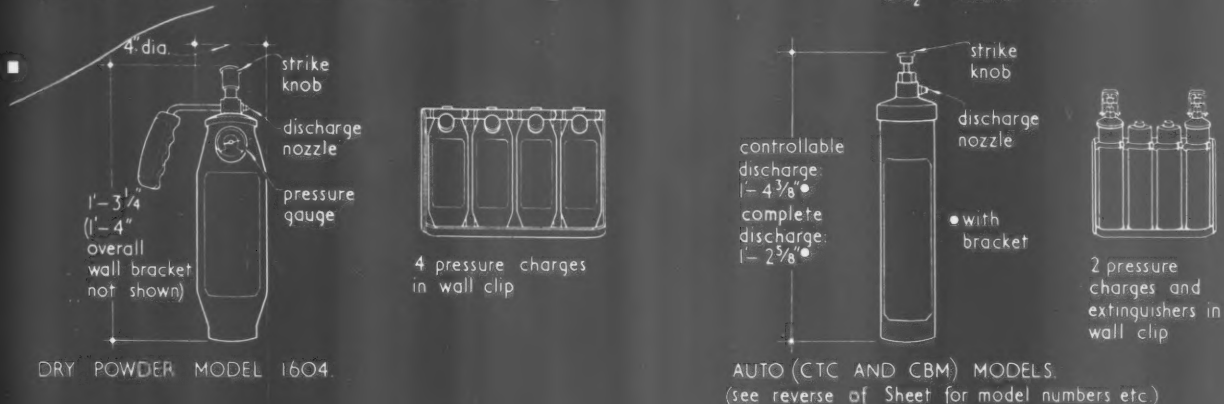
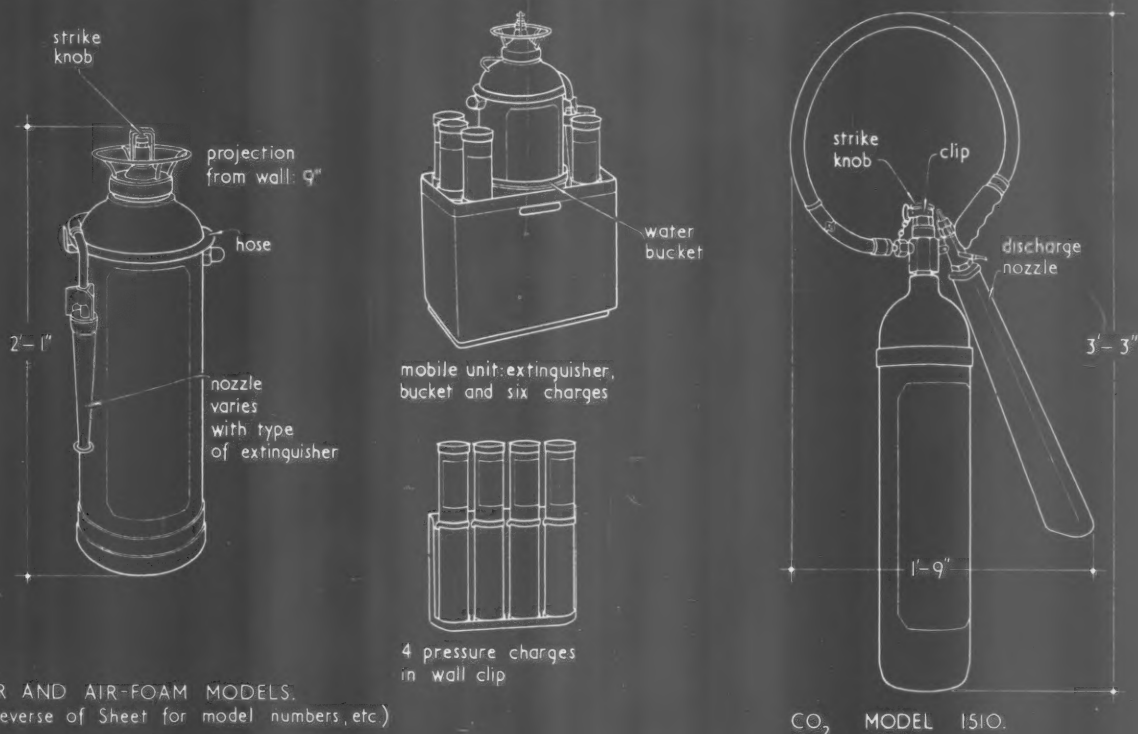
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# FIRE PROTECTION | UNIT EQUIPMENT

The Architects' Journal Library of Information Sheets 659. Editor: Cotterell Butler, A.R.I.B.A.

36.B2  
36.B2



	class A	class B	class C	extra-hazardous B and C risks	limited indoor B and C risks	indoor and outdoor B and C risks
type of fire risk	wood, paper, textiles, other carbonaceous materials.	inflammable liquids e.g. petrol, oils, paraffin, white spirit, paints, lacquers, varnishes, enamels, greases, fats, tar.	motor vehicles; minor electrical equipment; small quantities of petrol.	spirits, alcohols, organic solvents, motors, switchgear, television, radar, other electrical equipment; welding equipment.	spirits, alcohols, organic solvents in medium quantities, medium-sized electrical equipment.	inflammable liquids of all kinds including spirits, alcohols, organic solvents; all electrical equipment.
type of extinguisher	water	air foam	carbon tetrachloride	chlorobromo-methane	CO <sub>2</sub>	dry powder
contents	water expelled by CO <sub>2</sub> or in operation mixed with 'wet water' concentrate	water expelled by CO <sub>2</sub> , mixed in operation with air foam concentrate.	carbon tetrachloride mixed with CO <sub>2</sub> held under constant pressure.	chlorobromo-methane mixed with CO <sub>2</sub> held under constant pressure.	pure carbon dioxide held under constant pressure.	non-toxic dry powder mixed with CO <sub>2</sub> held under constant pressure.
capacity	2 gallons	16 gal. air foam	1 quart	1 quart	10lb. liquid CO <sub>2</sub>	4 lb.

## SELECTION OF EXTINGUISHER.



## 36.B2 · NU-SWIFT · FIRE EXTINGUISHERS

This Sheet describes Nu-Swift fire extinguishers and shows the type of fire risk which each is designed to combat. The classification of fires (A, B and C) used on the Sheet was adopted by the manufacturer from the National Fire Protection Association of Boston, Massachusetts.

**General**

The most common type of fire risk for which the architect may be called upon to make provision is the Class A risk existing in blocks of flats, offices, shops, schools, private dwellings and some industrial premises. Where special hazards exist, as in garages, cinemas, factories and warehouses, the local fire prevention officer should be consulted. The table on the face of the Sheet enables the type of Nu-Swift extinguisher for any particular risk to be selected. The extinguishers are pressure-operated and always ready for immediate use. The pressure charges do not leak, evaporate or cause corrosion.

**Types**

The water and air-foam models are similar in appearance and size (2-gallon), as shown in the drawing on the face of the Sheet, but are distinctively coloured for identification. Both models can be recharged in 30 seconds with drop-in pressure charges.

*Universal (Royal Navy) Models 1301, 1308, etc.:* These are water models. To operate, it is necessary to push over the safety guard and strike the knob at the top of the extinguisher. The released carbon dioxide causes a jet of water to be expelled rapidly through the hose. Alternatively, a "wet water" charge may be used: this contains a concentrate which increases the cooling and penetrating qualities of plain water. The jet can be changed to a spray if required by means of a push button in the nozzle. The containers are finished in red.

*Air-Foam Models 1400, 1408, etc.:* Operated in the same way as the water models, the pressure of the released carbon dioxide ruptures a plastic bag containing liquid concentrate which mixes with the water. The solution is forced rapidly through the hose and emerges from the nozzle as air foam. The containers are finished in blue.

*Auto (Carbon tetrachloride) Models 1000, 1003, 1104, etc.:*

*Auto (Chlorobromomethane) Models 2000, 2003, 2104, etc.:*

These extinguishers create, by means of an atomised spray, a heavier-than-air gas which dilutes the surrounding air and prevents the fire from acquiring the oxygen necessary for continued combustion. The carbon tetrachloride models are finished in black and the chlorobromomethane models in metallic blue and black.

*Carbon Dioxide Model 1510:* This extinguisher expels pure carbon dioxide which is non-toxic and dilutes the air surrounding the fire as previously described. The container is finished in blue and black.

A two-wheeled trolley is available, if required, for carrying the extinguisher.

*Dry Powder Model 1604:* The drawing on the upper left face of the Sheet shows a dry powder model

specially for dealing with fires involving volatile liquids, gases or electrical equipment.

When the knob at the top of the extinguisher is struck, the pressure charge of finely-ground powder mixed with carbon dioxide is released and rapidly expelled through the nozzle. This is a total-discharge model: once the seal has been broken the discharge cannot be cut off. The container is finished in blue and black.

Spare pressure charges are available for all the extinguishers described, except Model 1510 which must be returned to the manufacturer for recharging.

**Installation**

The water and air-foam extinguishers may be fitted on wall hooks, or left standing on the floor, preferably near exits and on landings. These models should not be placed in unheated outhouses as the water is liable to freeze. Wall clips to take two or four spare pressure charges are available. The water and air-foam models are obtainable as a mobile unit, as shown in the sketch on the face of the Sheet, comprising extinguisher, six charges and a bucket for water. If possible, low-level water taps in lavatories, etc., which may be used for refilling, should allow a clearance of 2 ft. 2 in. Carbon tetrachloride, chlorobromomethane and dry powder extinguishers are always supplied with wall brackets.

**Fire Regulations**

Models 1301, 1400, 1003, 2003 and 1604 are approved by the F.O.C. and these comply with British Standard Specifications where these exist. Where no British Standard exists special F.O.C. approval has been accorded in some cases.

For normal class A risks at least two 2-gallon water type extinguishers must be installed on each floor or one to every 250 sq. yd., whichever number is the greater.

**Further Information**

In addition to the extinguishers described on this Sheet, the manufacturer produces hose-reels, which are a very effective provision for Class A fires.

Under Section 20 of the London Building Acts (Amendment) Act, 1939, the installation of hose-reels is often required, by the London Fire Brigade acting for the L.C.C., in certain cases. The Nu-Swift hose-reel conforms to the requirements of the F.O.C. provided that the length of hose does not exceed 75 ft.

Compiled from information supplied by:

**Nu-Swift Limited**

Address: Elland, Yorkshire.

Telephone: Elland 2852.

London Office: 25, Piccadilly, London, W.1.

Telephone: Regent 5724.

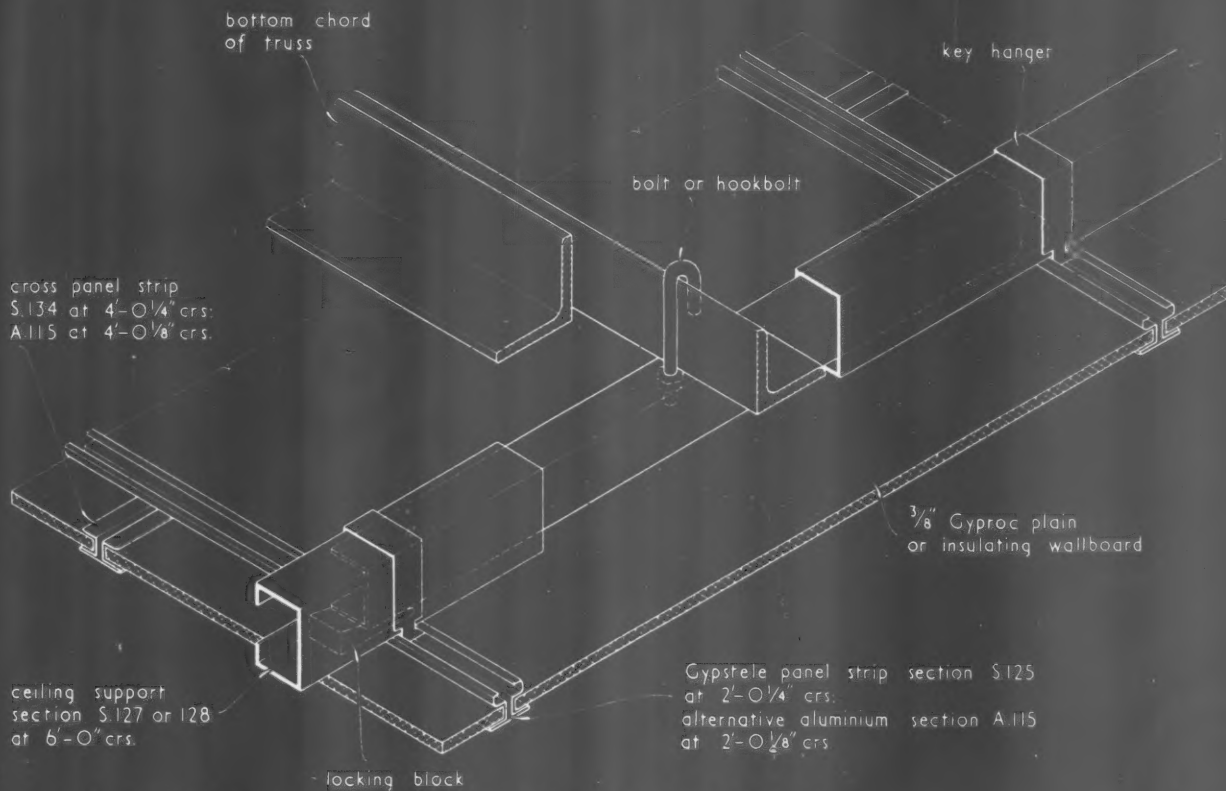




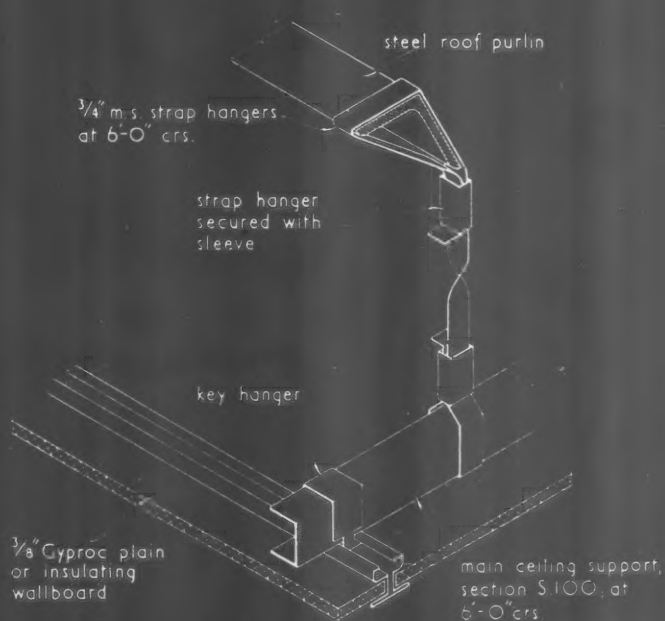
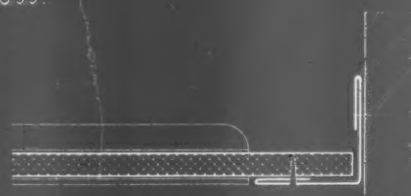
# CEILINGS | PLASTER BOARD

22.EI

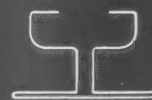
The Architects' Journal Library of Information Sheets 660. Editor: Cotterell Butler, A.R.I.B.A.



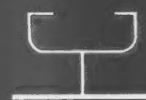
ISOMETRIC VIEW OF SUSPENSION FROM BOTTOM CHORD OF TRUSS.

ISOMETRIC VIEW OF SUSPENSION  
FROM STEEL ROOF PURLINS.

DETAIL OF FINISH AT WALL.

S.125  
steel sections

S.134

A.114  
aluminium sections

A.115

ALTERNATIVE MAIN AND CROSS  
PANEL STRIPS.



## 22.E1 · GYPSTELE · SUSPENDED CEILINGS

This Sheet deals with Gypstele suspended ceilings and supersedes Sheet 22.E1 published 4.3.48. Sheet 22.E2 describes the ceiling fixed direct to structural roof members.

### Construction

The ceiling consists of  $\frac{3}{4}$ -in. panels of Gyproc wallboard (plain or insulating) supported in either mild steel or aluminium-alloy sections. The main ceiling supports are steel channel sections hook-bolted to the roof truss, as shown in the drawings on the upper face of the Sheet, or strapped to the purlins: a summary of methods for attaching strap hangers to structural roof or floor members is shown on Sheet 26.J3. The I sections in which the boards are held are in turn attached to the channel sections by the key hanger. The drawings at the lower right show the alternative main and cross I sections.

**Ceiling panels:** Gyproc wallboard consists of a gypsum plaster core encased in strong millboard and conforms to the requirements of BS.1230 *Gypsum Plasterboard*. Gyproc insulating wallboard is the same material with polished aluminium foil applied to one surface. Tests at the Building Research Station reveal that the boards may be considered inert for all practical purposes. They do not therefore require site-conditioning but can be erected immediately. Where abnormally humid conditions are anticipated, as in laundries, kitchens, etc., primed Gyproc is recommended.

### Size

The boards are 4 ft. 0 in. by 2 ft. 0 in. by  $\frac{3}{4}$  in. thick.

### Weight

The ceiling, including main ceiling supports, weighs approximately 2 $\frac{1}{2}$  lb. (steel framing) or 2 $\frac{1}{4}$  lb. (aluminium framing) per sq. ft.

### Thermal Insulation

The thermal conductivity ( $k$  value) of Gyproc wallboard panels is 1.1 B.t.u. in./ft.<sup>2</sup> h deg. F. Where Gyproc insulating wallboard is used with the aluminium foil facing a cavity of  $\frac{3}{4}$  in. minimum depth, a thermal conductance ( $C$  value) of 0.42 B.t.u./ft.<sup>2</sup> h deg. F. is obtained for board and air space combined. The following table gives the thermal transmittance ( $U$ ) values obtained with typical Gypstele ceilings sus-

pended in each case below a corrugated asbestos-cement roof:

Construction	B.t.u./ft. <sup>2</sup> h deg. F.
(a) Gypstele ceiling (Gyproc insulating wallboard panels) with air space	0.32
(b) Gypstele ceiling (plain Gyproc wallboard panels) with air space and 1-in. glass or mineral wool	0.17

### Fire Resistance

Gyproc wallboard has an incombustible core and is rated Class I in surface spread of flame tests carried out in accordance with the requirements of BS. 476 *Fire Tests on Building Materials and Structures*.

### Finish

The Gyproc panels have an ivory-coloured surface which may be left undecorated, but it may be painted or distempered in accordance with the specification given by the manufacturer of the selected medium. All steel components are sherardised.

### Trade Mark

This is a proprietary system manufactured under the registered trade mark Gypstele.

Compiled from information supplied by:

### Gyproc Products Ltd.

Head Office: Singlewell Road, Gravesend, Kent.  
Telephone: Gravesend 4251-4.  
Telegrams: Gyproc, Gravesend.

### Contracts

Department: Lacey Green, Aylesbury, Bucks.  
Telephone: Princes Risborough 581/2.  
Telegrams: Gyproc, Princes Risborough.  
Glasgow Office: Gyproc Wharf, Shieldhall, Glasgow, S.W.1.  
Telephone: Govan 2141-3.  
Telegram: Gyproc, Glasgow.  
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working detail

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*A feature of this range of partitions is the use of a hardwood frame in conjunction with terrazzo partition slabs. The framing and slabs were assembled before the screed and tiling were laid, were trued by an adjustable baseplate and secured with daubs of strong cement mortar. The doors are on screw-type rising-butt hinges, which give a smoother self-closing movement than skew rising butts. (The doors in the photograph have been jammed open.) The door closes against a compressible rubber stop concealed against the rebate and are fitted with a hat and coat hook with a rubber buffer to avoid marking the partition.*

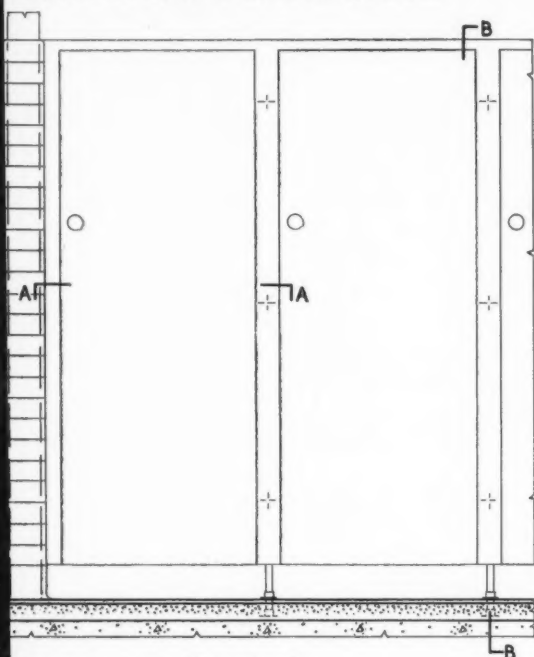
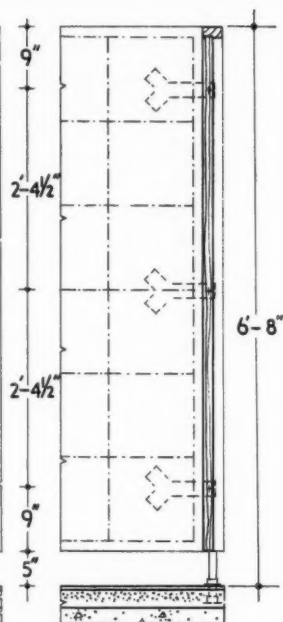


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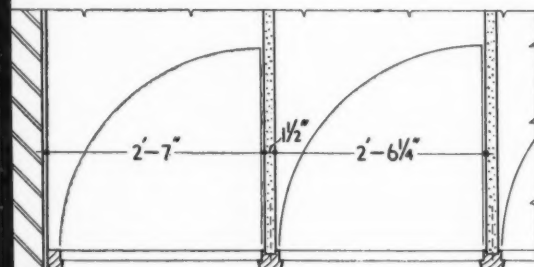
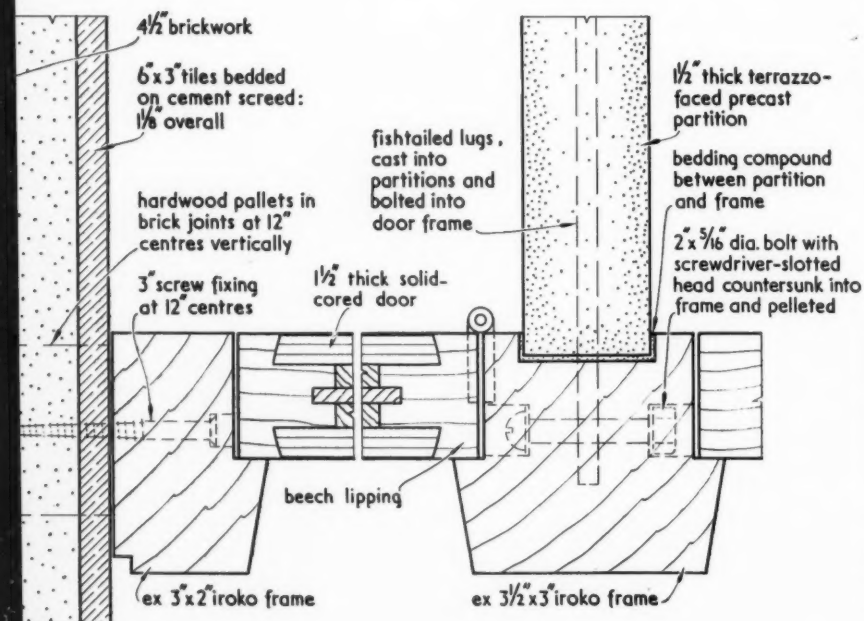
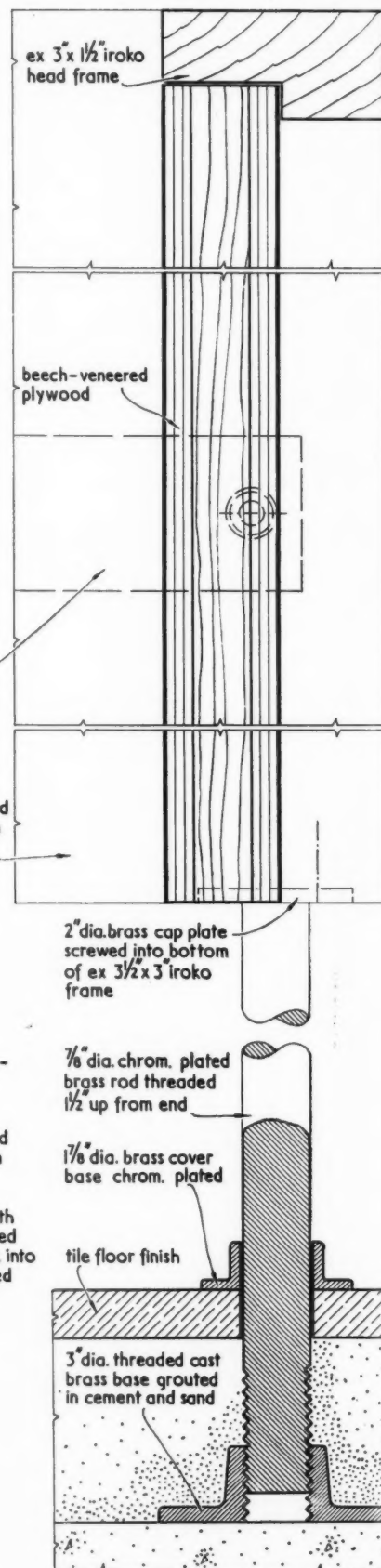
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ELEVATION. scale  $\frac{1}{2}'' = 1' - 0''$ 

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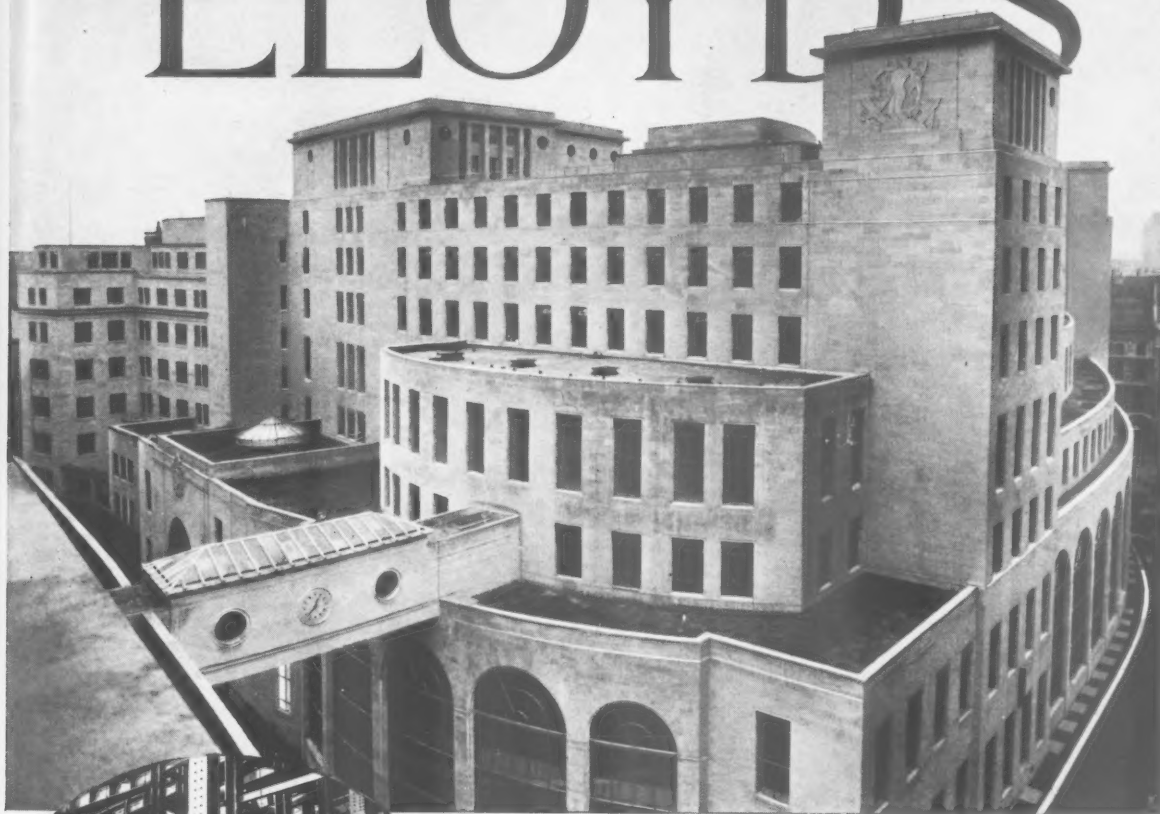
precast partition with  
terrazzo finish, reinforced  
with  $\frac{1}{4}''$  dia. rods in both  
directions at 12" centres

PLAN. scale  $\frac{1}{2}'' = 1' - 0''$ PLAN AT A-A. scale  $\frac{1}{2}$  full sizeSECTION B-B. scale  $\frac{1}{2}$  full size





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# IMPROVEMENTS TO THE 'SWAN AND MITRE,' BROMLEY, KENT



The "Swan and Mitre," well-known to motorists flashing through Bromley High Street on their way to Dover, has been undergoing a major internal operation at the hand of Ind Coope & Allsopp's Architect's Department, under the direction of V. H. Wakefield. The original pub, an attractive, white, seventeenth century building, contained public rooms with very low ceilings and a "pubby" character worth developing, while the public bar was contained in an adjoining single-storey building, probably rebuilt during the last century, a nondescript room, high ceilinged and

cheerless, and now completely remodelled (below). This has now been provided with a false ceiling of parana pine boarding over about two-thirds of its area and the free-standing fireplace has a hood of the same material over a tiled base. Bar fittings, doors and the slatted seating are iroko combined with parana pine, and the walls have been decorated with a variety of materials, dark green leathercloth, canvas-backed veneers, "Moorish" mirrors and a black and white "newsprint" wallpaper. In the main building, the Mitre Bar (p. 304) has been slightly enlarged to remove a bottleneck round the centre of the



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An alphabetical index covering Information Centre items and special articles published in the Technical Section during the twelve months ended December 31, 1957, is being prepared. Readers who wish to have a copy—it is free of charge—should complete the form below and post it to the Technical Editor, THE ARCHITECTS' JOURNAL, not later than March 3, 1958. This form will not be acknowledged.

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AJ 20.2.58

## IMPROVEMENTS TO THE 'SWAN AND MITRE' continued



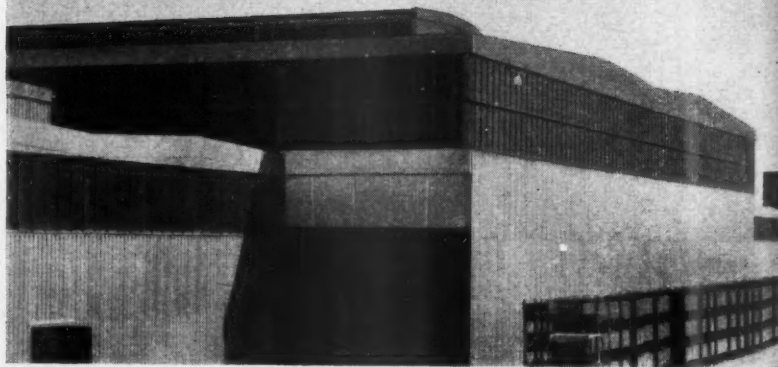
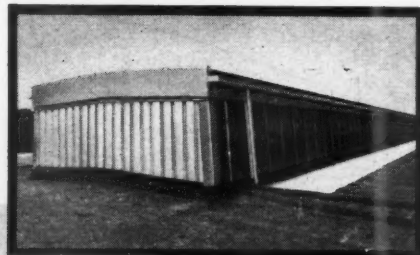
counter without destroying its original character, retaining the carved screen with brilliant-cut mirrors, "Moorish" mirrors and "bedstead" seats, which came originally from the old Gaiety Theatre restaurant. Here decorations have been kept subdued, the ceiling colour being carefully matched to its old nicotine-stained appearance, while lights, brass and mirrors provide the necessary sparkle.

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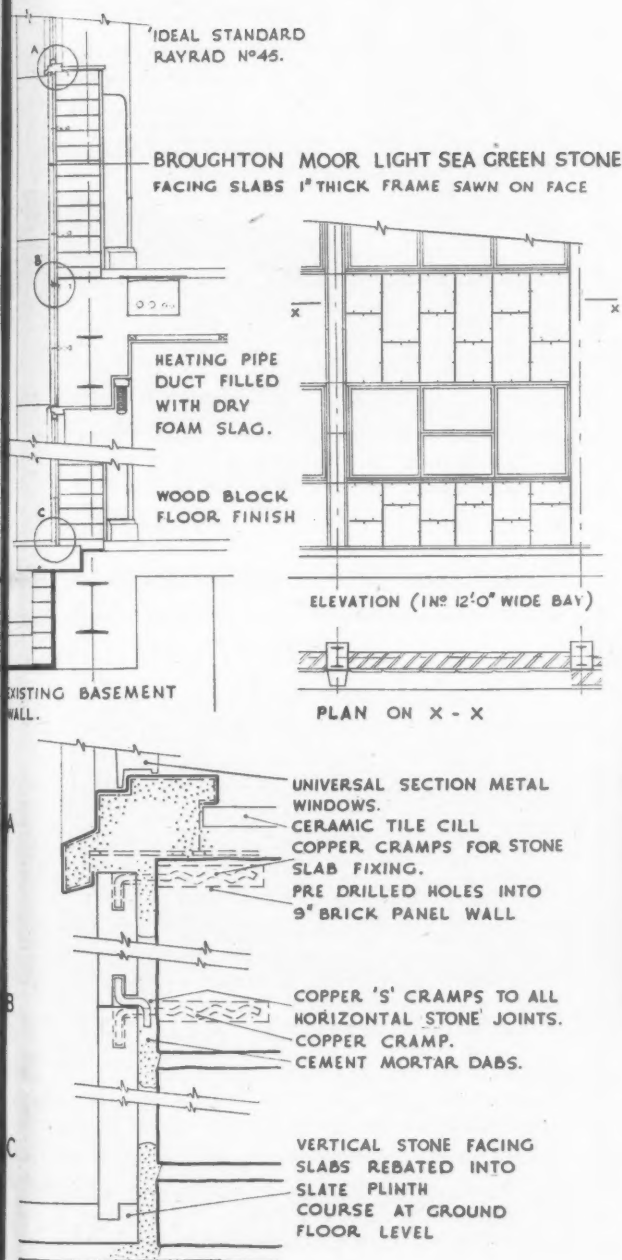
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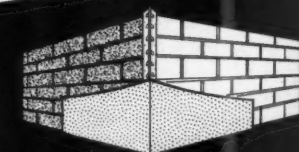
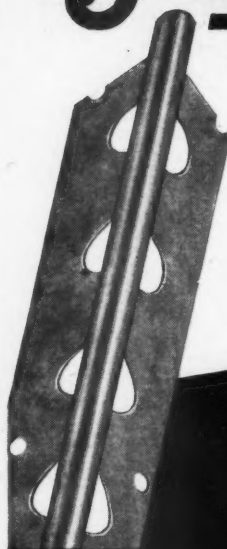
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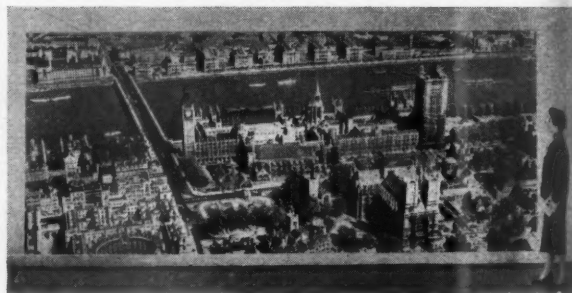


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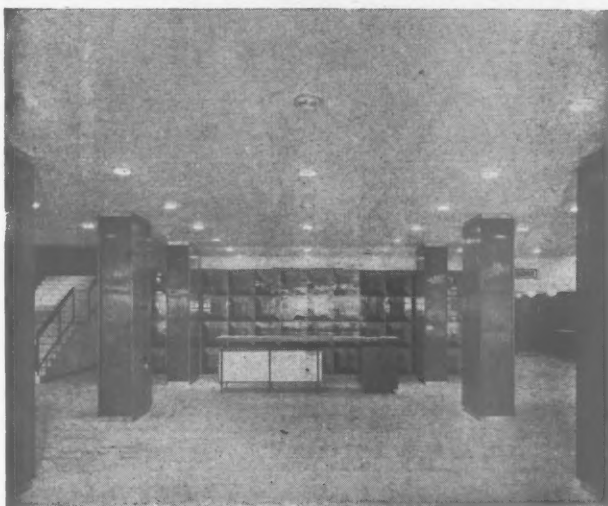
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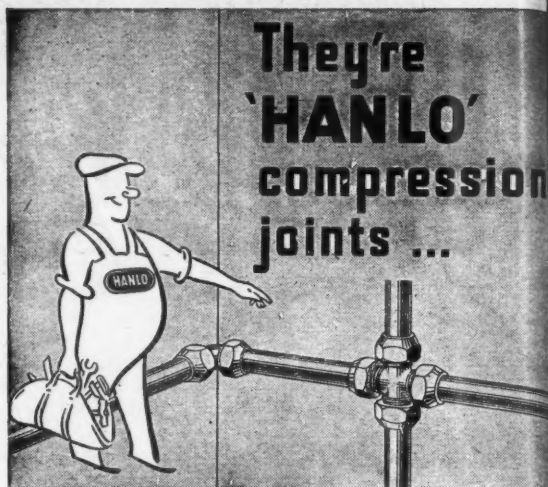
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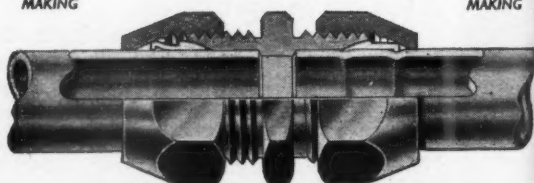
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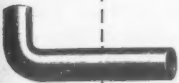
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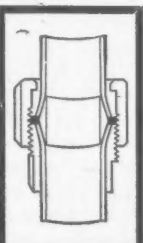
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*February Architectural Review*

The variety and scope of the buildings illustrated, and subjects discussed, in the February issue will be catholic, even for the Review. *Three Churches* around Coventry by Basil Spence will show what the imaginative use of a modicum of rationalisation can do even for a church building programme; the spectacular *Teatro*



Church at Bell Green, Coventry, by Basil Spence & Partners.

*de los Insurgentes*, designed by Alejandro Prieto exhibits Latin-American design at its most exuberant and effective; while Erno Goldfinger's precise *Office block in Albemarle Street* is the



Office, Albemarle Street, W.1 by Erno Goldfinger.

kind of building our cities sorely need. Historical studies will re-examine aspects of eighteenth-century architecture: *Bishop Berkeley's* contributions to architectural theory will be the subject of an article by Marcus Whiffen, while a sheaf of papers on *Robert Adam* by various hands will include some unknown Clérissieu drawings from Russia. Gordon Cullen will complete his set of townscape studies for Bristol University with an analysis of *Trowbridge*, and Jacqueline Tyrwhitt will examine the planning of *Fatehpur Sikri*, the ideal city of Akbar the Great, somewhat in the manner of Sir Hugh Casson's memorable studies of Peking. In *Skill*, John Sharp will complete his survey of methods and materials in *Architectural Lettering*.

**Milford Haven  
Lamp-Standards  
Achthamar**

*March Architectural Review*

The impending ruination—or transfiguration — of Pembroke-shire, by the proposed industrialisation of the Milford Haven area, will be the subject of an important *Counter-Attack* article by Ian Nairn in the March issue of the Review, while another *Outrage* problem of a more wide-spread (though no less acute) interest, will be surveyed by Peter Witworth—the design of street-lighting standards—in a special article in *Skill*. Among buildings of interest to be described and illustrated, the most outstanding will be two industrial groups; further additions to the distinguished work already done for the *Technicolor Laboratories* by Gooday and Noble, and a complete set of *Pithead Buildings in Fifeshire* by Egon Riss, who has captured

something of that sense of technological drama that has been missing from so much recent English industrial building. In complete contrast will be a *Week-end House* on the seashore at West Wittering by Wells Coates



Rothes Colliery, by Egon Riss.

and Michael Lyell. A travelogue by three recent voyagers in Turkey will document and illustrate the extraordinary sculptured church at *Achthamar*, and two historical articles will explore the frontier between architecture and technology in the early nineteenth century, W. J. Sparrow writing on the ingenious and



Carvings at Achthamar.

adventurous *Count Rumford*, inventor, man of action, and landscape architect, and Mary Eldridge examining the impact of plate glass in ever-larger sheets upon the design of urban *Shop-Fronts*.

**Costs  
European Churches  
Office Blocks**

*April, Architectural Review*

**Correction**  
In this column last week the house at Cowes should have been attributed to James Stirling and James Cowan.

Two contrasting and controversial subjects will be tackled in important articles in the April Review: John Carter will discuss *Cost Analysis*, and its implications for architectural education and the management of design; and Peter Hammond will suggest a drastic overhaul of current attitudes to *Church Architecture*, and especially the need for a rational analysis of liturgical functions. New office blocks at Newport Pagnell, by Gordon and Ursula Bowyer, and Birmingham, by J. A. Madin, will



Church at Dusseldorf by W. Xongeter.

be described and illustrated. Other buildings to be illustrated include a remarkable small house on the Isle of Wight, designed by James Stirling, and James Cowan. The reputation of a pioneer Edwardian modernist, *Lamond of Dundee*, will be rescued from



House near Cowes, by James Stirling and James Cowan

undeserved obscurity by M. D. Walker, and in *Tridon*, or the shipwright Reyner Banham will discuss an unexpected anticipation of mid-century architecture in an academic text of the Twenties. Regular departments such as *Exhibitions*, the *Counter-Attack Bureau* and reviews of important *Books* will continue, and an important new monthly feature will appear for the first time—an *Interior Design* supplement, covering recent and forthcoming developments in the field of "inside architecture".

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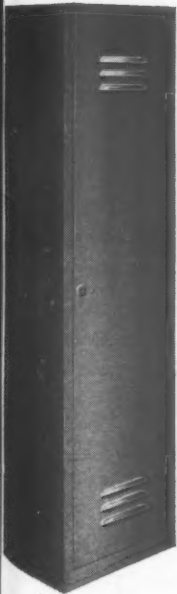
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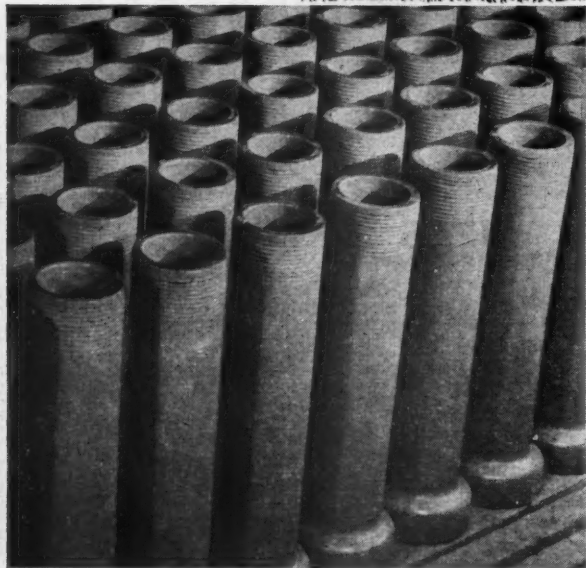
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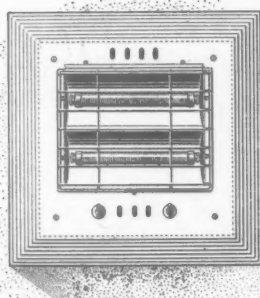
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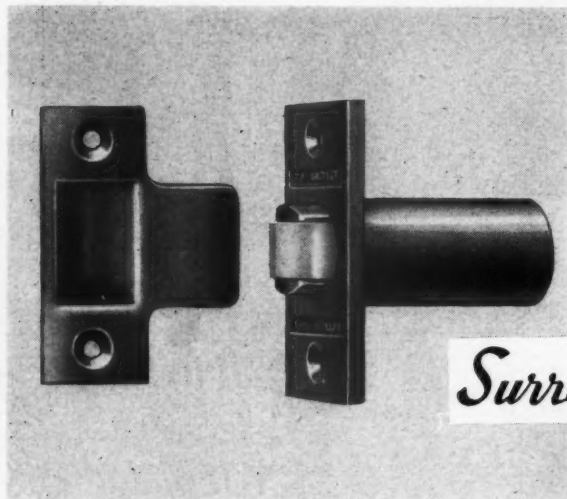
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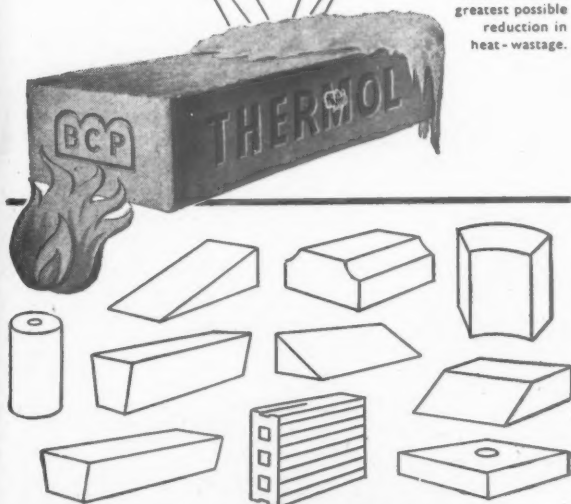
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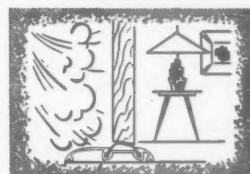
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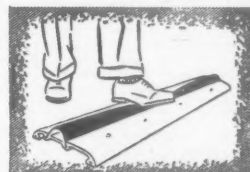
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Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

## Public and Official Announcements

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**QUANTITY SURVEYING ASSISTANTS** required by Air Ministry Works Directorate in London and Provinces. Grade and commencing salary based on not less than three or five years' previous experience under Quantity Surveyor or Building Contractor. Approved full time study will count towards five years period. Normally technical qualifications in Builders quantities or building, e.g. C. & G. final or O.N.C. or proof to equivalent standard. Duties include abstracting and billing, site measurement and preparation of estimates. Commencing salary and grading according to age, qualifications and experience on salary ranges £545 at age 25 rising to £745 or £956 at age 35 rising to £870. Salaries somewhat lower in Provinces. Five-day week, three weeks' leave a year. Appointments carry liability for service anywhere U.K. or overseas. Applicants normally should be natural born British subjects. Write stating age, qualifications and previous appointments including type of work done, to Manager, Professional and Executive Register, Ministry of Labour and National Service, Atlantic House, Harrington Street, E.C.4, quoting PE.105/745. No original testimonials should be sent. Only applicants selected for interview will be advised. Opportunities may occur for competing for pensionable posts: promotion prospects. 8423

**LONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT**  
Vacancies for (1) ARCHITECTS, Grade III, starting salary up to £1,090 a year. (2) ARCHITECTURAL ASSISTANTS, starting salary up to £860.

Full and interesting programme of houses, flats, schools and general buildings.  
Application form and full particulars from the Architect (AR/EK/5/58), The County Hall, S.E.1. (203) 8741

**CORPORATION OF LONDON CITY PLANNING DEPT. (CIVIC DESIGN SECTION)**  
require JUNIOR ASSISTANT (male or female), 28 yrs., rising to £9 4s. per week, for general drawing office duties, primarily filing drawings, but including stencil lettering, tracing, etc.  
Applications with details of experience, present position, age and references, to City Planning Officer, Guildhall, E.C.2, within 14 days. 8722

**SURREY COUNTY COUNCIL**  
Applications invited for appointment of ASSISTANT ARCHITECT, Special Grade, £750-£1,030 p.a., plus £30 p.a. London allowance. Must be A.R.I.B.A.  
Full details, present salary and three copy testimonials, to County Architect, County Hall, Kingston, as soon as possible. 8785

**STATES OF GUERNSEY PUBLIC WORKS DEPARTMENT**  
Applications are invited for the permanent and pensionable post of ARCHITECTURAL ASSISTANT at a salary of £835 per annum, rising by three annual increments to £940.

Applicants must be Associate Members of the Royal Institute of British Architects, and capable of preparing working and detailed drawings and specifications and supervising work.  
Particulars of pension arrangements are obtainable on application.

Applications, stating age, qualifications, experience, present and previous appointments and salary, together with copies of two recent testimonials, should be delivered to the States Supervisor, States Office, Guernsey, Channel Islands, not later than Monday, 3rd March, 1958. 8752

**GOVERNMENT OF QATAR ASSISTANT ARCHITECT STATE ENGINEER'S OFFICE**

The Government of Qatar in the Persian Gulf has a vacancy for an Assistant Architect in the State Engineer's Office. Duties will be to assist the Government Architect in the design of many architectural projects associated with the rapidly expanding capital of Doha. Applicants should be qualified Architects (Associates of Royal Institute of British Architects or other internationally recognised body) having good general experience of the design of private and public buildings and being rapid and competent draughtsmen. Salary starting at Rs.1,775 per Arabic month (equivalent to £1,696 per annum) with annual increments of Rs.75 per month for three years and then of Rs.100 per month up to a maximum salary of Rs.2,300 per month. Contract offered is for five years subject to six months probationary period. Gratuity payable on completion of contract. Leave: 6 days for each month of duty taken annually. Free passages, furnished accommodation, fuel, light, water and medical treatment. Duty car allowance. No income tax.

For further details apply in writing only to: C. Tennant Sons & Co. Ltd., 4, Copthall Avenue, London, E.C.2. 8767

## SHEFFIELD REGIONAL HOSPITAL BOARD

Applications are invited for the following posts on the Board's Architectural Staff:—  
**ASSISTANT ARCHITECTS.** Candidates must be Registered Architects and have passed the requisite examinations. Salary according to age and experience within scale £700-£1,015.

**ARCHITECTURAL ASSISTANT.** Candidates should have passed the Intermediate Examination of the R.I.B.A. or an examination giving exemption therefrom. Salary according to age and experience within scale £525-£730.

**DRAUGHTSMAN.** For general drawing office duties, including tracing. Candidates must have had suitable training, including three years' technical experience in architectural, surveying or engineering drawing. Salary £425 (at age 21 or over) rising to £635.

The appointments are subject to the Whitley Council terms and conditions of service, to the National Health Service (Superannuation) Regulations, and to one month's notice on either side. Applications, together with the names of three referees, should be sent to the Secretary to the Board, Fulwood House, Old Fulwood Road, Sheffield, 10, by 28th February, 1958. 8766

## CITY OF BIRMINGHAM

### CITY ARCHITECT'S DEPARTMENT

Applications are invited from suitably qualified persons for the permanent and superannuable post of **LANDSCAPE ARCHITECT, Grade A.P.T. IV (£1,025-£1,175).**

The commencing salary within the scale will be according to capabilities and experience.

The successful applicant will be concerned with the landscape design of central redevelopment areas, suburban Housing schemes, Civic Centre Development, Educational and other Civic Buildings.

Five-day week. Medical examination. Applications, stating age, present position and salary, qualifications, experience and two referees to the undersigned by 14th March, 1958.

A. G. SHEPPARD FIDLER, City Architect. 8765  
Civic Centre, Birmingham, 1.

**BRITISH OVERSEAS AIRWAYS CORPORATION** invite applications for the post of **ARCHITECTURAL ASSISTANT** in the office of the Civil Engineer at London Airport. Preference given to candidates over 25 years of age with following qualifications and experience:

Associate of the R.I.B.A.; experience in the design of industrial buildings, offices and shop fitting work; competence in rapid sketch planning and estimating with experience of overseas work. Applicants should be prepared to go abroad for short periods with appropriate allowances. Commencing salary in the range £832 10s. 0d. to £1,085 0s. 0d. in accordance with qualifications and experience.

Attractive pension, staff insurance and leave facilities. Write giving full particulars to Recruitment Manager, B.O.A.C., London Airport, Hounslow. 8816

## BOROUGH OF HARROW APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the above-mentioned appointment in the Department of the Borough Engineer and Surveyor, at a salary in accordance with A.P.T. Grade II (£725-£845 per annum, plus London "Weighting"). Candidates should have passed the R.I.B.A. Intermediate Examination.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, the passing of a Medical Examination and the National Joint Council's Scheme of Conditions of Service.

The Council are unable to offer housing accommodation.  
Forms of application may be obtained from me to whom they should be returned not later than Saturday, 8th March 1958.

DAVID PRITCHARD, Town Clerk. 8817  
Town Clerk's Department, Harrow Weald Lodge, Harrow, Middlesex.

## CITY AND ROYAL BURGH OF DUNFERMLINE

**BURGH ARCHITECT'S DEPARTMENT.** Applications are invited for the post of **ASSISTANT ARCHITECT** on salary scale A.P. VII (£920-£1,000) with placing according to age, qualifications and experience. The post is superannuable, and subject to medical examination.

Applicants should be Associate Members of the Royal Institute of British Architects, and must have had, since qualification, at least three years' local authority experience.

Applications, stating age, experience, qualifications and details of present appointment, together with copies of two recent testimonials should be addressed to Leonard Howarth, Burgh Architect, 6 Abbot Street, Dunfermline, not later than 28th February, 1958.

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

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

J. DOUGLAS, Town Clerk. 8815  
City Chambers, Dunfermline, 13th February, 1958.

## LONDON COUNTY COUNCIL

**BRIXTON SCHOOL OF BUILDING.** Part-time Day LECTURERS and STUDIO MASTERS required for Intermediate and Final classes in Architecture and Surveying in the following subjects: Building Construction, Sanitation and Hygiene, Quantities, Architectural Model-making, Architectural Design. Applicants for design appointments must offer an appropriate lecture subject in addition. Apply to Principal, Ferndale Road, S.W.4. (234) 8818

## LONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT

Applications are invited for the position of **ASSISTANT ARCHITECT** General Division, salary scale £1,500-£1,800. The officer appointed will be deputy to the Senior Architect in charge of a Division controlling a staff of over 150 and responsible for a programme of work which includes industrial and office buildings, fire stations, homes for aged, health buildings, children's homes, town development housing schemes, Crystal Palace and Royal Festival Hall extension.

Further particulars and application form, returnable by 10th March, 1958, from Architect (AR/EK/8/58), The County Hall, S.E.1. (250) 8819

## CANADA

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 activities across the country.

Applicants should possess a university degree or equivalent in architecture or engineering with experience in physical planning. 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.

The starting salary will be from \$4,800 to \$5,100 per annum, depending 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.  
Single \$200.  
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. 8820

**METROPOLITAN BOROUGH OF HAMPSTEAD ARCHITECTURAL ASSISTANT** (established) required in Housing Architect's Department. Salary within special scale £750-£1,030 plus London weighting. No housing provided. Applicants will be required to prepare and control large and small contracts with minimum supervision. Applications from qualified Architects giving experience, previous appointments and names of three referees to Town Clerk, (A.J.), Town Hall, Haverstock Hill, N.W.3, by 4th March, 1958. 8804

## NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

**ASSISTANT ARCHITECT** required—good experience of design and construction necessary, preferably in hospital work. Applicants must be Associate Members of the R.I.B.A.

Salary Scale £700 × £225 (3) × £30 (1) × £35 (6) —£1,015 plus £20-£50 London weighting. Commencing salary above minimum may be paid according to relevant practical experience appropriate to the post. Whitley Council conditions, superannuable.

Apply, stating age, qualification (with date) and experience, with names of two referees, to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 3rd March. 8813

## BOROUGH OF COLNE

### ARCHITECTURAL ASSISTANT

Applications are invited for this whole-time appointment in the Borough Engineer and Surveyor's Department. Salary within A.P.T. II (£725-£845); commencing according to qualifications and experience. Medical examination. Applicants must be experienced in preparation of plans, specifications and quantities, with particular reference to housing development, and have had a thorough training in design and building construction. Previous municipal experience not essential. Preference to holders of recognised examination qualifications. Applications endorsed "Architectural Assistant," stating age, qualifications, experience, and names of two referees, to be delivered to me by 1st March. Canvassing disqualified.

T. RUTTER, Town Clerk. 8812

**CIVIL SERVICE. QUANTITY SURVEYORS AND ASSISTANT QUANTITY SURVEYORS** required by Admiralty, War Office, Air Ministry and Ministry of Works occasionally overseas by War Office. Although unestablished, these posts have long-term possibilities. London salaries for those suitably qualified and experienced over 25 years of age, range from £805 to £1,650 per annum. Vacancies also exist for Quantity Surveying Assistants and others having some experience in Quantity Surveying at salaries ranging from £350 per annum upwards. Write quoting reference J.Q.S. to Room 453, M.L.N.S., Technical and Scientific Register (J), 26 King Street, London, S.W.1. 8806

# COUNTY BOROUGH OF SOUTHAMPTON BOROUGH ARCHITECTS' DEPARTMENT

Applications are invited for the following permanent positions:—

(a) SENIOR ASSISTANT PLANNING OFFICER Grade A.P.T. IV (£1,025—£1,175). Candidates should be members of the R.I.B.A. and T.P.I., preferably experienced in the redevelopment of central urban areas.

(b) ASSISTANT PLANNING OFFICER, Special Grade (£750—£1,030).

(c) PLANNING ASSISTANT (Landscape), Grade II (£725—£845). Applicants should possess a qualification in Landscape Architecture; experience in design and supervision of planting schemes an advantage.

Candidates should state their housing needs. Application forms from the Borough Architect, Civic Centre, Southampton. Closing date 12th March, 1958. 8809

## COUNTY BOROUGH OF BURNLEY

Applications are invited for the following appointments in the Borough Engineer and Surveyor's Department:—

ARCHITECTURAL ASSISTANT Grade I (£575—£725).

Applicants should have completed professional training and be suitably qualified.

MAINTENANCE ASSISTANT Misc. Div. Grade V (£590—£670).

Applicants should have a sound knowledge of building construction in all trades and be experienced in the repair and maintenance of buildings. Practical knowledge of builders' quantities would be an advantage.

Forms of application may be obtained from the Borough Engineer, 22/24, Nicholas Street, Burnley, and should be returned to him not later than Saturday, the 1st March, 1958.

C. V. THORNLEY,  
Town Clerk. 8806

## CHESTERFIELD RURAL DISTRICT COUNCIL

invite applications for the appointment of ASSISTANT ARCHITECT.

The salary offered is A.P.T. I (£575—£725) and applicants should have passed the Intermediate Examination of the Royal Institution of British Architects.

The Council are prepared to assist with housing accommodation.

Application forms may be obtained from the Council's Engineer, Mr. J. B. Wikeley, M.Eng., M.I.C.E., M.I.Mun.E., Barrister at Law, Rural Council House, Saltergate, Chesterfield, and they should be returned to the Clerk of the Council by not later than 10 a.m. on 10th March, 1958.

H. O. HAWKINS,  
Clerk of the Council. 8810

## HORNCHURCH URBAN DISTRICT COUNCIL APPOINTMENT OF ARCHITECTURAL ASSISTANT

Grade A.P.T. II (£725—£845)

Applications are invited for the appointment of an Architectural Assistant, Grade A.P.T. II (£725—£845).

The appointment is subject to the provisions of the Superannuation Acts, 1937-53, the National Scheme of Conditions of Service, a satisfactory medical examination and termination by one month's notice on either side.

Housing accommodation will be provided if required.

Forms of application may be obtained from the undersigned and returned completed not later than Saturday, the 1st March, 1958.

P. L. COX,  
Clerk of the Council. 8807

Council Offices,  
Billet Lane,  
Hornchurch, Essex.

8807

## SHEFFIELD REGIONAL HOSPITAL BOARD

Applications are invited for the following posts on the Board's Architectural Staff:—

ASSISTANT ARCHITECTS. Candidates must be Registered Architects and have passed the requisite examinations. Salary according to age and experience within scale £700—£1,015.

ARCHITECTURAL ASSISTANT. Candidates should have passed the Intermediate Examination of the R.I.B.A. or an examination giving exemption therefrom. Salary according to age and experience within scale £525—£730.

DRAUGHTSMAN. For general drawing office duties, including tracing. Candidates must have had suitable training, including three years' technical experience in architectural, surveying or engineering drawing. Salary £425 (at age 21 or over), rising to £635.

The appointments are subject to the Whitley Council terms and conditions of service, to the National Health Service (Superannuation) Regulations, and to one month's notice on either side. Applications, together with the names of three referees, should be sent to the Secretary to the Board, Fulwood House, Old Fulwood Road, Sheffield, 10, by 28th February, 1958. 8761

## LEEDS REGIONAL HOSPITAL BOARD

Applications are invited for appointment of CLERK OF WORKS (temporary) at a salary of £12 19s. 6d. per week, to supervise building contracts in the Region.

Applications giving full details of previous experience and date when available to commence duties, together with the names and addresses of three referees, to the Secretary, Park Parade, Harrogate, by 24th February, 1958. 8768

## ZETLAND COUNTY COUNCIL

Applications are invited for the post of COUNTY ARCHITECT from candidates of wide experience. Salary £1,207 10s. rising by annual increments to £1,425 15s. per annum and the appointment is superannuable. Housing accommodation available, if required.

Written applications, stating age, qualifications, experience, past and present appointments, and enclosing references or the names of at least two referees, should be lodged with the undersigned by 15th March, 1958. Canvassing in any form will disqualify.

JOHN N. SINCLAIR,  
County Clerk.

Lerwick,  
11th February, 1958. 8811

## COUNTY COUNCIL OF ESSEX

COUNTY PLANNING DEPARTMENT

Applications are invited for the post of AREA PLANNING OFFICER J.N.C. Scale "D" (£1,405—£1,625) in the East Central Area Office at Chelmsford.

Candidates must be Corporate Members of the Town Planning Institute and should also be qualified Architects or possess other additional recognised professional qualification. They should have had considerable and wide experience in the Planning of both urban and rural areas and be experienced in the administration of an office and the control of staff.

Medical examination; superannuation; canvassing disqualifies.

Application forms from County Planning Adviser, Broomfield Place, Broomfield, Chelmsford, returnable by 27th February, 1958. 8808

## Architectural Appointments Vacant

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

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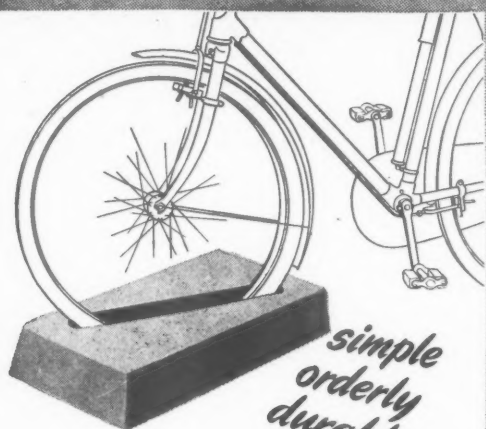
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