

# THE ARCHITECTS' JOURNAL



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

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square.	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100 Park Street, Grosvenor Square, W.1.	Mayfair 7086
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb	Institute of Arbitrators. Hastings House, 10, Norfolk Street, Strand W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197
IQS	Institute of Quantity Surveyors, 98, Gloucester Place, W.1.	Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 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. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
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
MARS	Modern Architectural Research Group (English Branch of CIAM). Trevor Dannatt, A.R.I.B.A., 71, Blandford Street, W.1.	Secretary : Welbeck 4713
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 Asphalte 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
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington.	Molesley 1380
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 St., 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.	Holborn 2646
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Temple Bar 5006
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	City 4771
TDA	Timber Development Association. 21, College Hill, E.C.4.	Victoria 8815
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	City 5040
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4.	Whitehall 4341
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Grosvenor 6636
ZDA	Zinc Development Association. 34, Berkeley Square, W.1.	

## standard contents

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

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Societies and Institutions

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Information Centre

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Working Details

Questions and Answers

Prices

The Industry

## CURRENT BUILDINGS

Major Buildings described :

Details of Planning, Construction, Finishes and Costs

Buildings in the News

Building Costs Analysed

Architectural Appointments  
Wanted and Vacant

No. 3178]

[Vol. 123

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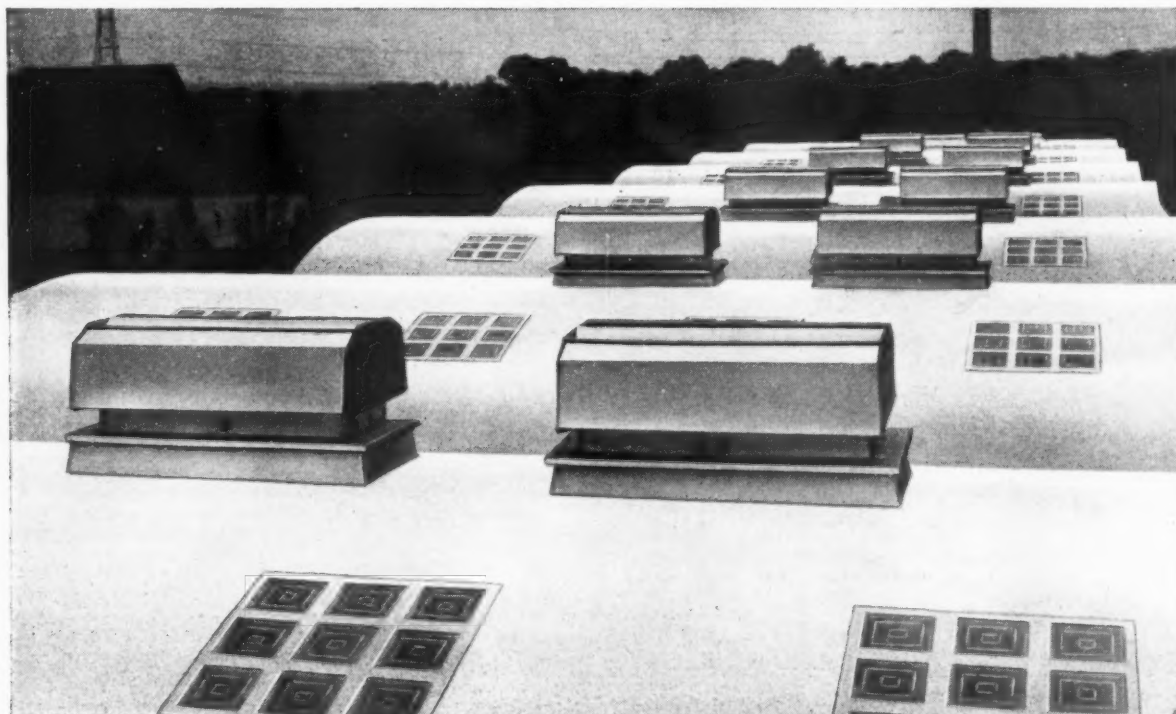




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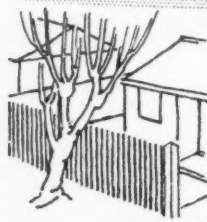
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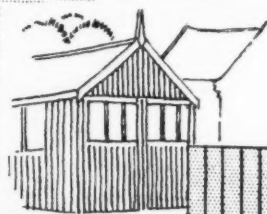
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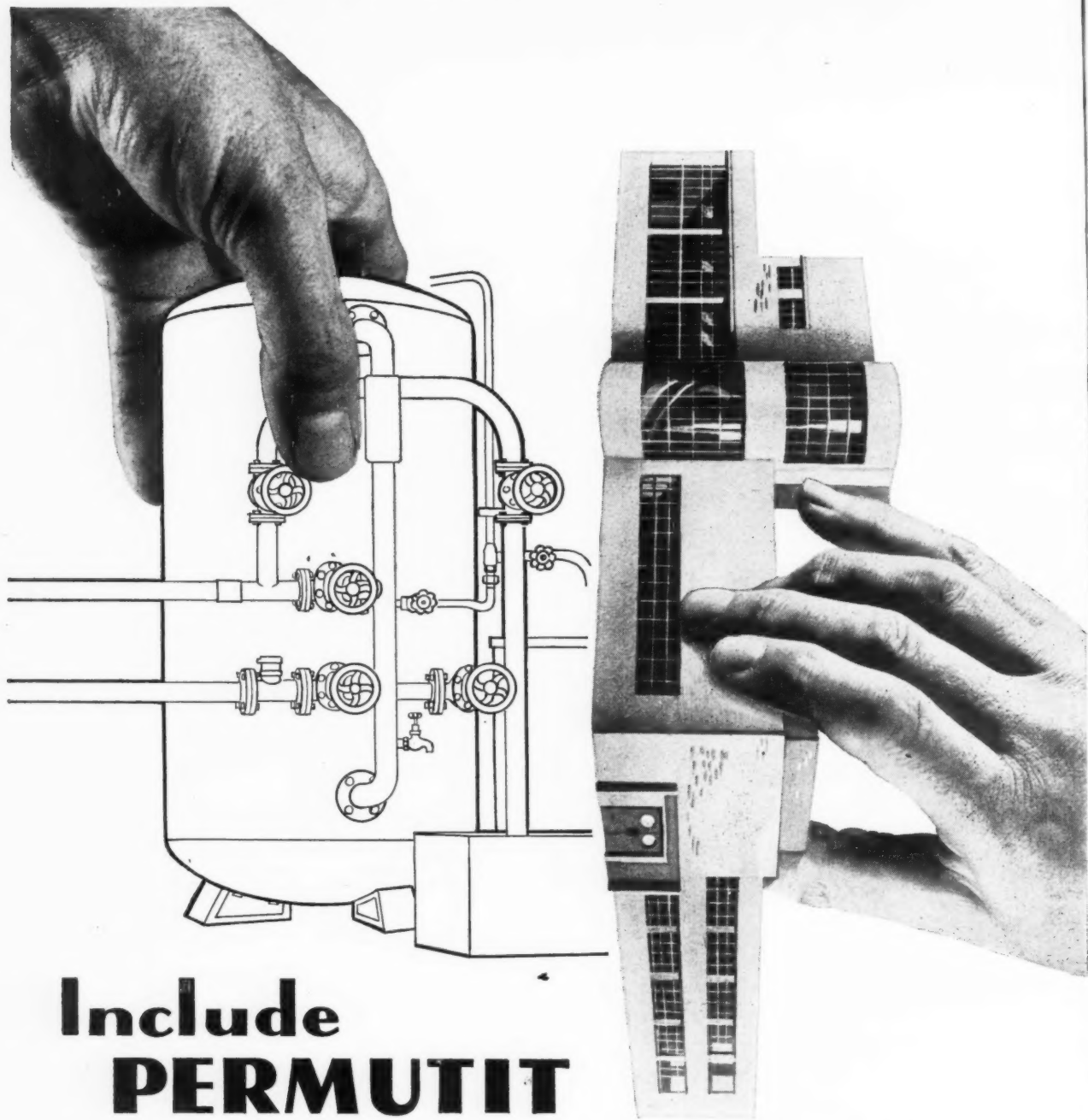


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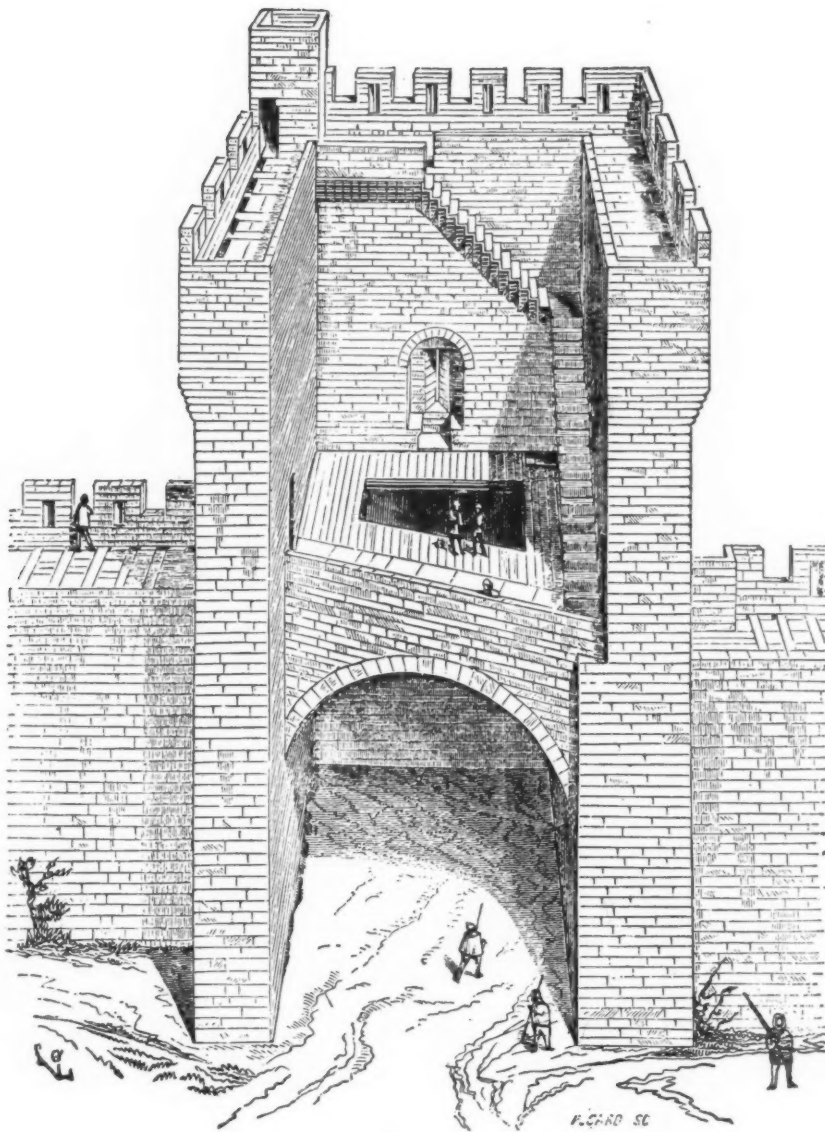
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## *The Walls of Avignon*



During the thirteenth and fourteenth centuries, the city of Avignon was protected by a massive curtain wall. This view of the ramparts from the city side shows one of the flanking towers with its steep narrow steps and a machicolation\* which pierced the floor at the first storey. The system of defence resulted in a violent contrast between immense fortifications and a narrow and deliberately inconvenient means of access to them.

*\*opening permitting the defenders to hurl stones down on to their assailants.*

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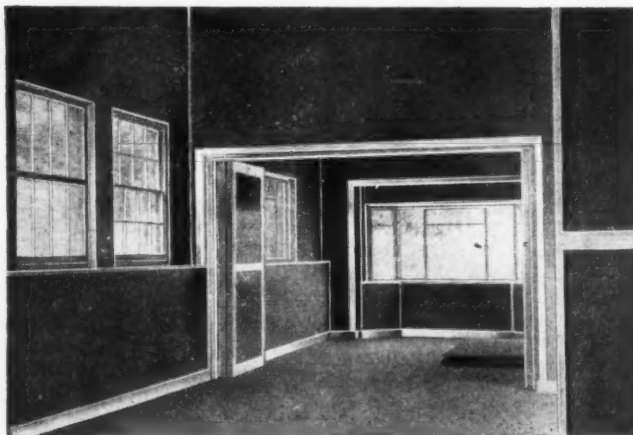
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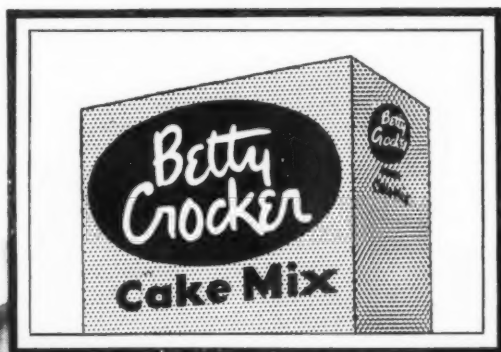
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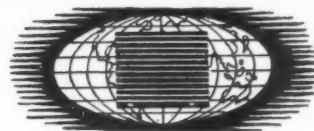
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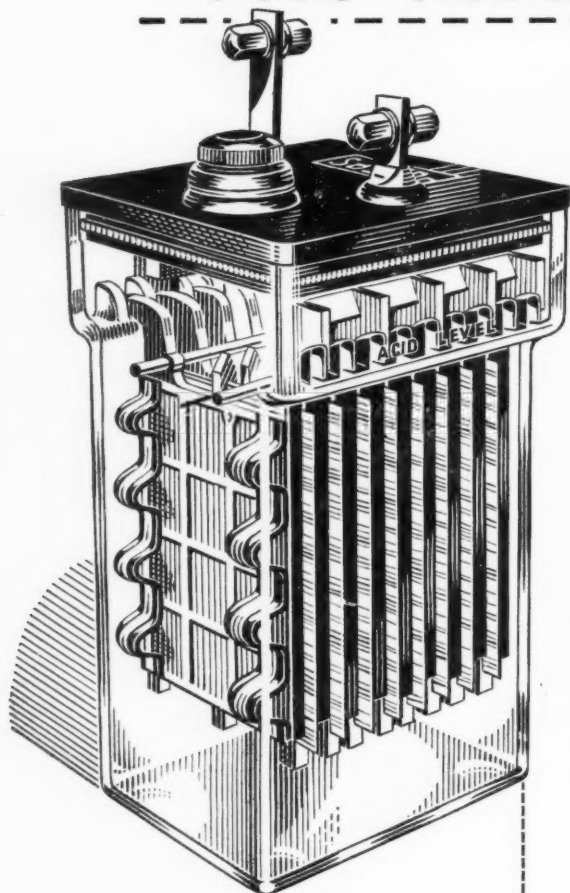
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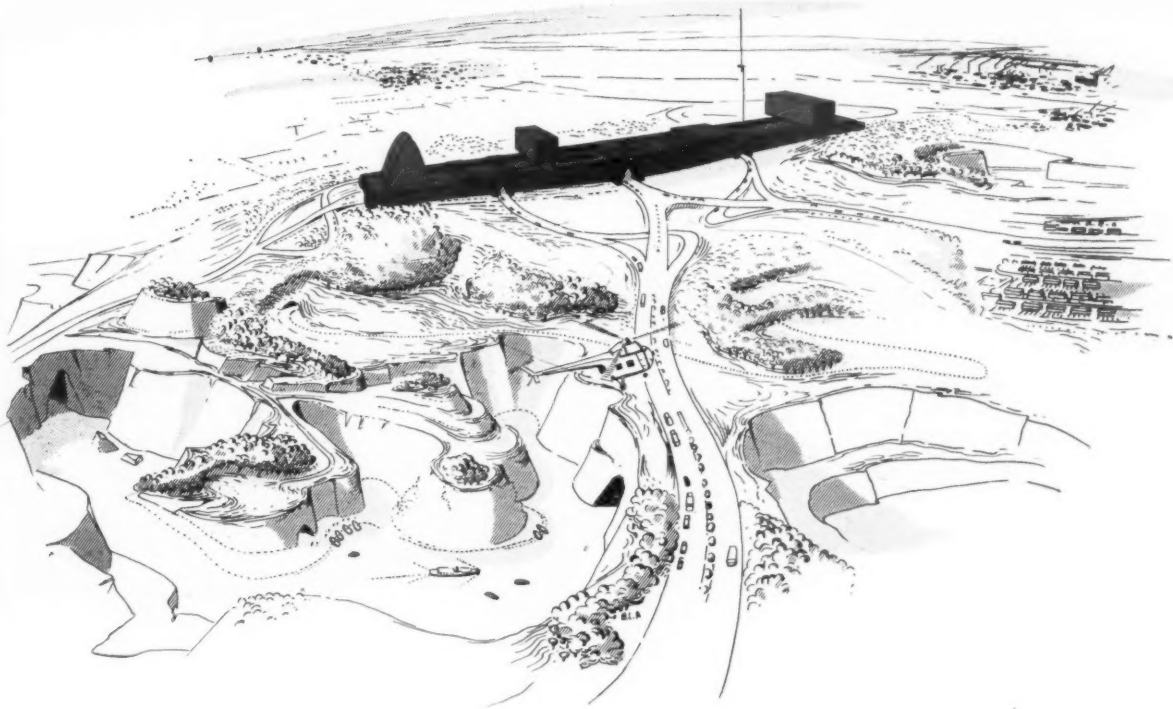
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## THE HIGH MARKET PROJECT

*by the Glass Age Development Committee*

This is an imaginary project designed under the direction of a committee of architects and engineers, convened by Pilkington Brothers Limited, called the Glass Age Development Committee which consists of G. A. Jellicoe, F.R.I.B.A., Edward D. Mills, F.R.I.B.A., and Ove Arup & Partners. The Committee was invited to suggest solutions to future problems of town and country planning, and its first project, the Soho area in London was published in advertisements between October 1954 and April 1955, and a large scale model of it was shown on Pilkington's stand at the Building Trades Exhibition in November 1955.

This second project has been designed by Gordon and Eleanor Michell, A/A.R.I.B.A. Although it is wholly imaginary and intended only to show the sort of development that might take place before the year 2000 A.D., it could be carried out now. A preliminary survey of the project and the chief proposals are given on the two pages that follow. Full details of the scheme will be published in the form of advertisements during 1956.

*Issued by*

### THE OBJECT

To create a large-scale shopping centre which could serve, and supplement the shopping facilities of, a group of cities and towns in the Midlands.

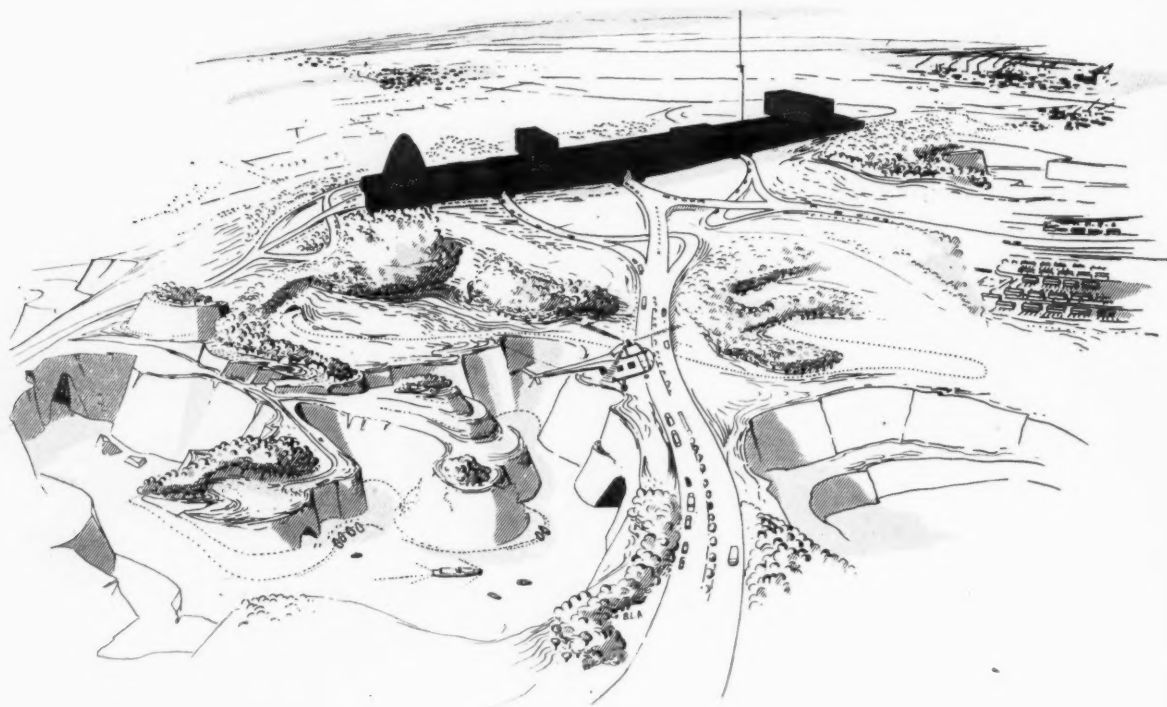
### THE LOCALITY

Located in the Black Country area, it is called "High Market" because it would occupy a commanding site on high ground. Its relationship to the surrounding country is shown in the view above, its actual position is marked in blue on the map.



PILKINGTON BROTHERS LIMITED

## *The Glass Age Development Committee*



### **THE HIGH MARKET 1**

#### *Preliminary Survey*

The "High Market" could supplement existing shopping facilities for the populations of Birmingham, Wolverhampton, West Bromwich, Dudley, Walsall, Smethwick, Oldbury, and the adjacent areas. It is sited on a piece of high ground, namely Turner's Hill and Darby's Hill, and would be visible to the whole of the surrounding country. "High Market" would be an out of town shopping centre of the American country market type, which people could visit once or twice a week, to find a large range of goods. Shops in cities of the area could have branches there.

This is a logical economic solution to existing congestion and would ease the pressure of traffic in the cities, and restore leisure and pleasure to shopping.

All the proposals made for such a project are practical possibilities; the techniques and materials for executing them exist now. Their detailed application to the "High Market" project will be published in further reports.

#### *The Proposals*

"High Market"—if it was ever built—would be 2,000 feet long and 400 feet wide, stretching north and south from the crest of one hill to the crest of the other with the general shopping level on top; the service floor at hilltop level, with two levels below this for parking 3,500 cars. It would consist of a unified building, containing 1,000,000 square feet of shopping space, with ample service facilities, and accommodation for a great variety of types and sizes of shops. An intimate human scale for shopping would thus be created and preserved.

Access would be provided by road and rail (perhaps supplemented by the adoption of some monorail system), and by helicopter. The immediate surroundings would be landscaped, making use of the existing quarries, spoil heaps and canals. The quarries are shown in the foreground of the view above. A general view of the scheme is shown on the opposite page.

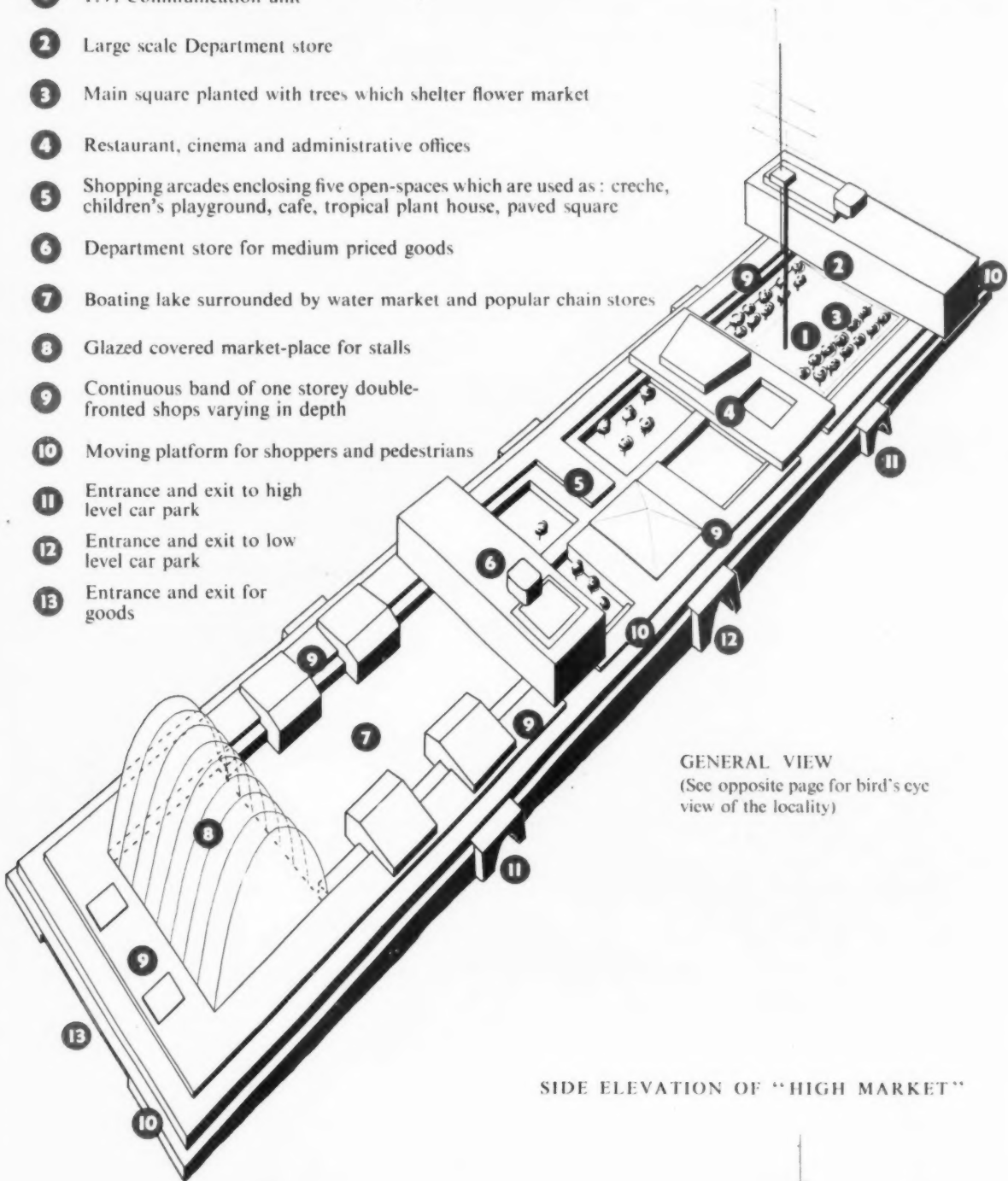
PILKINGTON BROTHERS





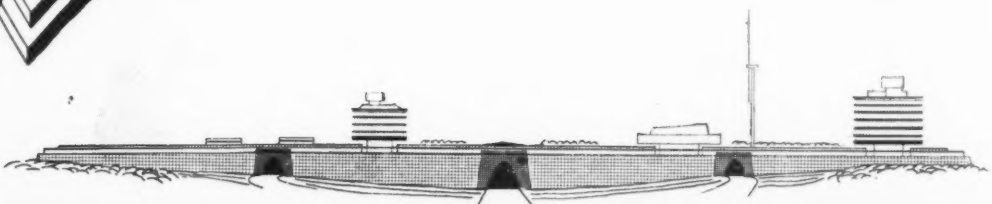


- 1 T.V. Communication unit
- 2 Large scale Department store
- 3 Main square planted with trees which shelter flower market
- 4 Restaurant, cinema and administrative offices
- 5 Shopping arcades enclosing five open-spaces which are used as : creche, children's playground, cafe, tropical plant house, paved square
- 6 Department store for medium priced goods
- 7 Boating lake surrounded by water market and popular chain stores
- 8 Glazed covered market-place for stalls
- 9 Continuous band of one storey double-fronted shops varying in depth
- 10 Moving platform for shoppers and pedestrians
- 11 Entrance and exit to high level car park
- 12 Entrance and exit to low level car park
- 13 Entrance and exit for goods



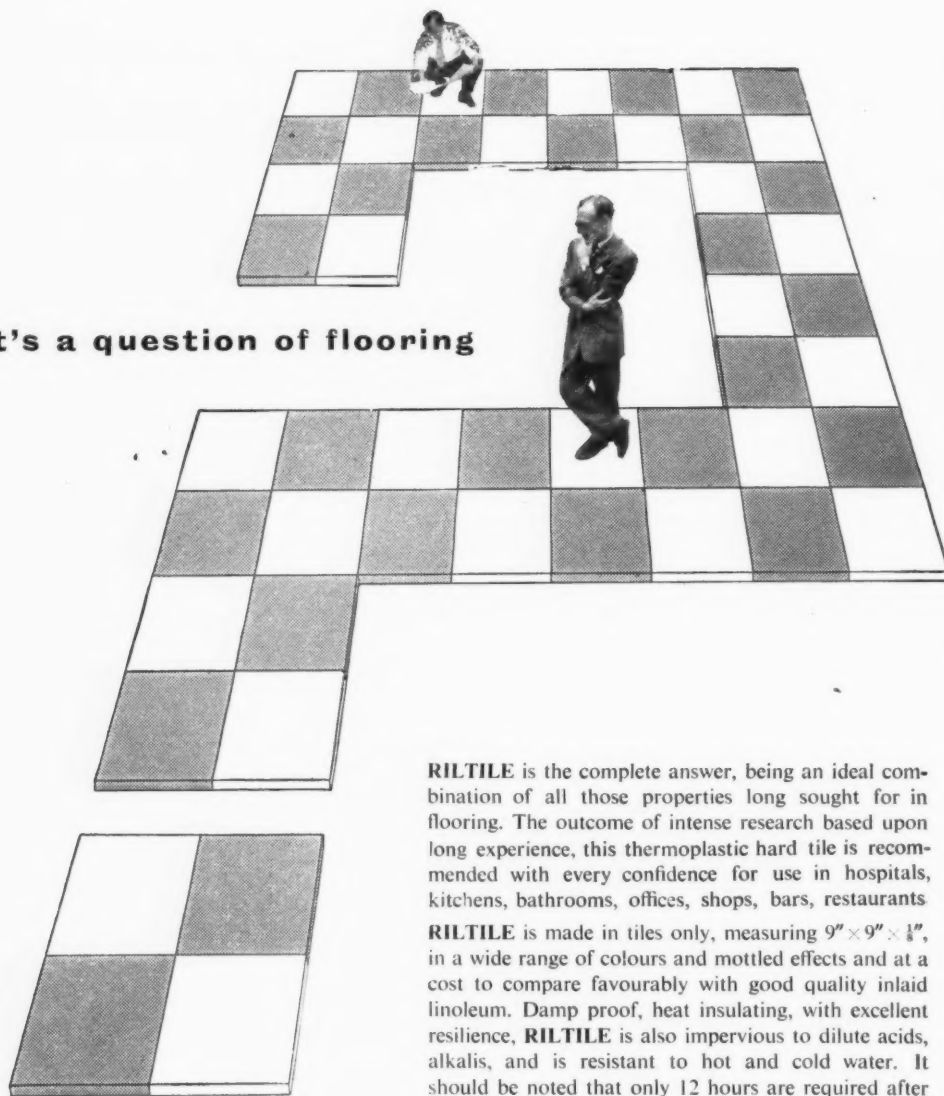
GENERAL VIEW  
(See opposite page for bird's eye view of the locality)

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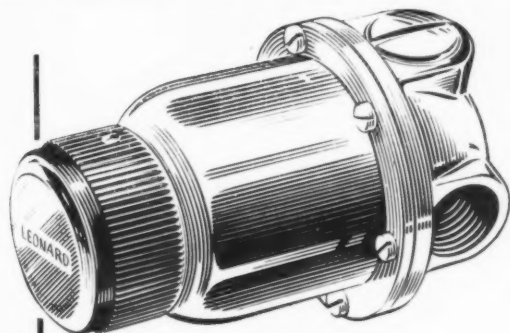


## How it is done in Zürich *... a hospital washroom*

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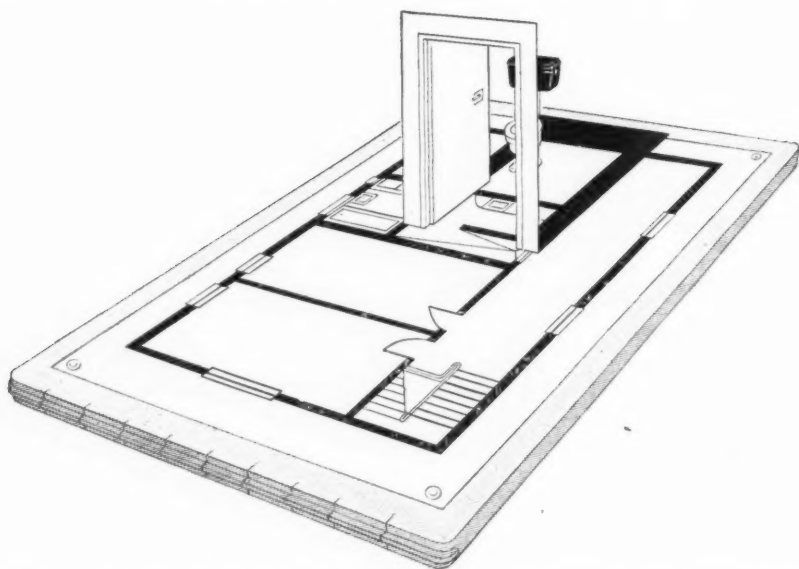
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*Lawley*

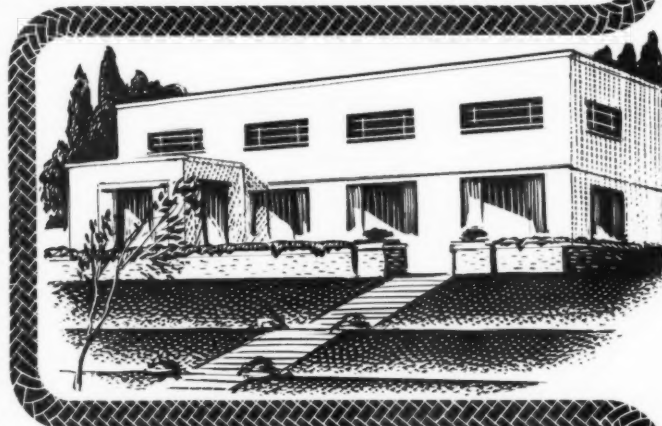
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Manufacturers of Cables for internal maintenance wiring, electric fans, soldering irons, etc.

Write now for further details.

BRITAIN'S LARGEST MAKERS OF THERMOPLASTIC CABLES

**RISTS WIRES & CABLES LTD.**

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Photo: Courtesy of Messrs. Lewis of Westminster, 95-97 Regent Street, W.1.

# Silence

## can increase sales!

The price of silence is not great. But silence can be golden, for it can make a shop's sales graph curve the right way. And by silence we mean a lack of background noise—unwanted noise—which can be disturbing to customers and staff.

This is what Acousti-Celotex Tiles do. They reduce noise to a comfortable level—mop it

up as blotting-paper does ink. They are inexpensive and easy to install without interrupting normal business. They require no maintenance and can be re-painted repeatedly without impairing their efficiency. Acousti-Celotex Tiles have been installed in shops all over the world. If you have a problem we will be glad to give you expert advice, without obligation.

### ACOUSTI-CELOTEX

SOUND ABSORBING TILES

ANOTHER  
CELOTEX CANE FIBRE  
PRODUCT

★ Distributors for London, Southern Counties, Wales,  
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MADE IN GREAT BRITAIN BY CELOTEX LIMITED, N. CIRCULAR RD., STONEBRIDGE PARK, LONDON, N.W.10. TELEPHONE: ELCAR 5717 (10 LINES)

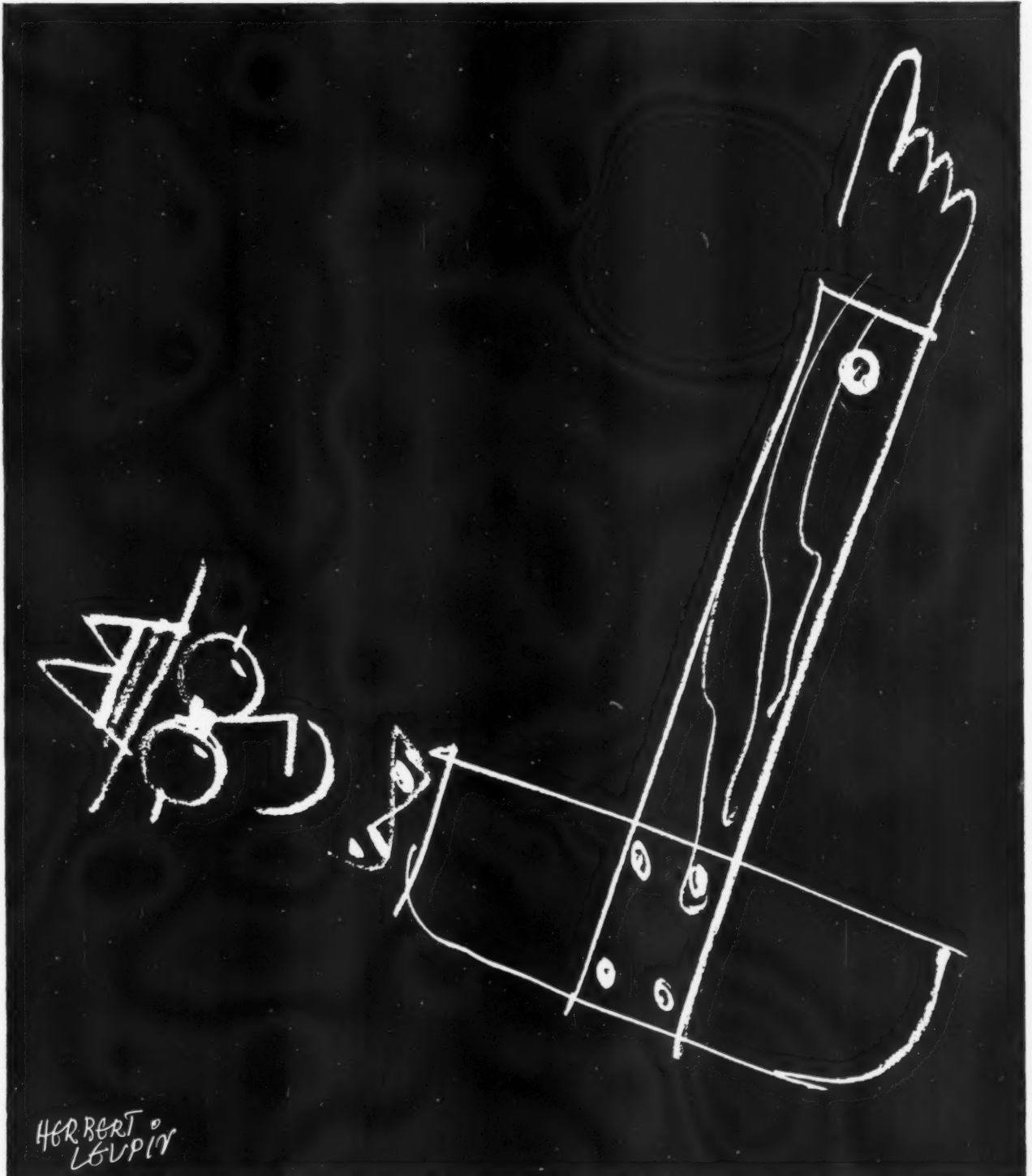




... say plan

... say build

... say **Metal Windows** – *Rustproofed*



ISSUED BY THE METAL WINDOW ASSOCIATION, BURWOOD HOUSE, CAXTON<sup>C</sup> STREET, LONDON, S.W.1.

## TRENDS IN TIMBER CONSTRUCTION

### *Distinction and Simplicity in* **COMMERCIAL**

Timber construction affords the fullest scope for originality and style in design—a vital consideration in planning commercial premises, where general appearance is likely to influence customers and visitors. Canadian timbers from British Columbia, with their warm tones and fine textures, create an atmosphere of charm and hospitality. They can be made to reflect the character and purpose of the business—yet allow the strictest economy in construction and maintenance. Then again, timber buildings will harmonise with other structures in a shopping centre or residential district.



The natural beauty of wood bestows grace and relieves severity of line. A suburban estate agent's office with living quarters on the upper floor indicates an effective treatment.

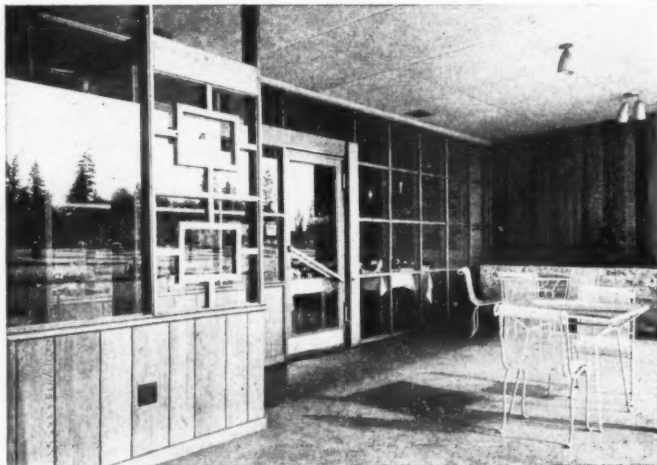
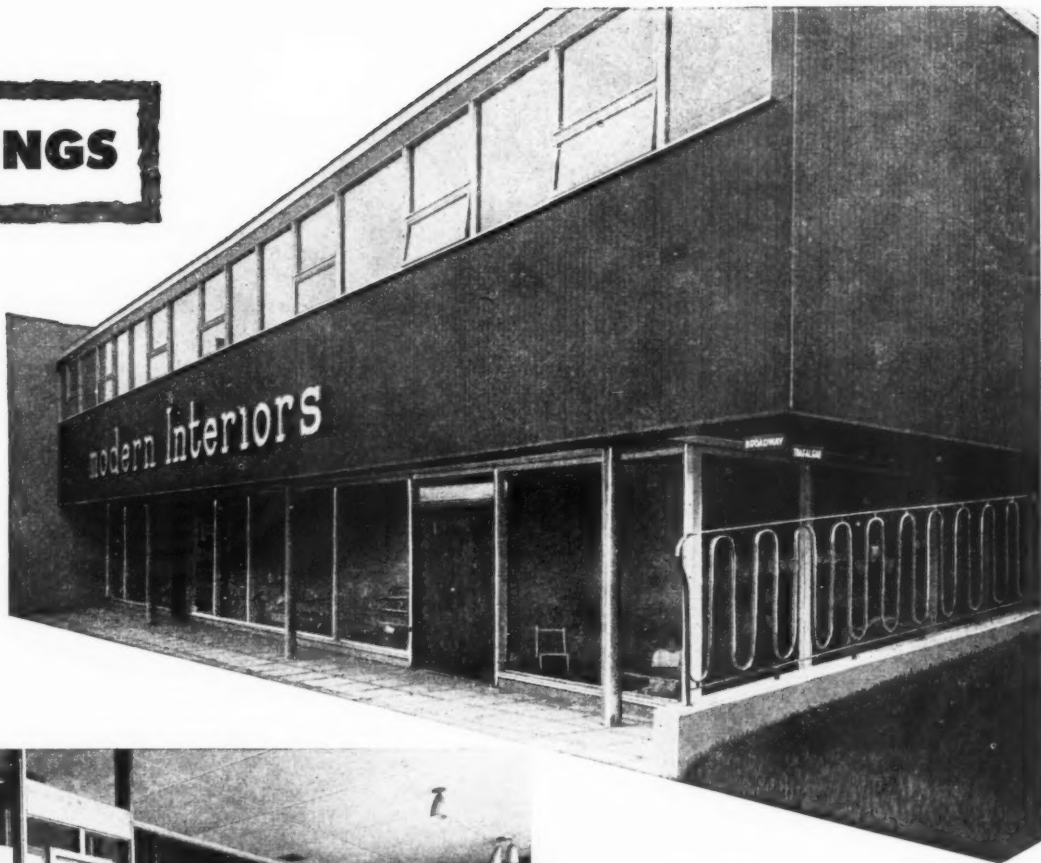


Speed in erection added to economy of labour and materials renders timber an ideal medium for the fabric of small commercial premises.

This imposing office building, with its own car park nearby, has an air of spaciousness and dignity unknown in crowded city centres. It illustrates, too, timber's virile contribution to commercial architecture.



# BUILDINGS



Modern panelling, relying for its appeal on the interesting grain and quiet harmonies of wood, extends a friendly welcome to patrons of this shopping-centre restaurant.

Simplicity of design, enhanced by the warmth and texture of wood, creates an inviting exterior for a suburban furniture store.



FREE—18 page illustrated booklet "Trends in Timber Construction"—a comprehensive, pictorial study of timber's wide range of uses in present day structures of all types. Write for:—

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**CANADIAN TIMBER**  
FROM BRITISH COLUMBIA  
*High Quality Timber Produced by Members*  
**BRITISH COLUMBIA LUMBER  
MANUFACTURERS ASSOCIATION**

Ad. No. 1



Offices for National Dock Labour Board.

Architect: Frederick Gibberd, C.B.E., F.R.I.B.A., A.M.T.P.I.

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The most successful building operations today are the fruits of collaboration — the closest possible partnership of owner, architect and a widely experienced firm of builders and contractors. *Wates* are such a firm.

*Wates* believe in pre-planning, the scrupulous examination of all possible means of achieving the client's aims with maximum economy and at maximum speed. And the final drawings are those which crystallize optimum solutions to every aspect of the building problem. The *Wates* method invests the owner with complete control of costs: he gets his building at a price within his budget, and he gets it on time.

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These services are offered either on a fixed fee basis or at a fixed inclusive price.

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*Wates Offer:*

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*Efficient and highly economical building to precise programmes.*

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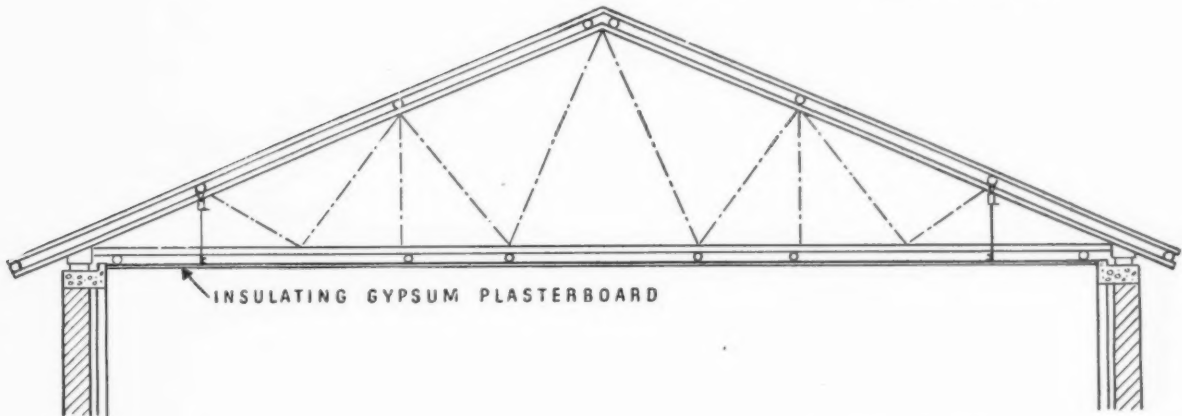
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Example: Job No. IC.907

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### SUSPENDED CEILING

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Contract Cost (erected)	16/6d. per sq. yd.
'U' value (roof only)	1.4
'U' value (roof and ceiling lining)	0.25
Flame Spread Rating	Class 1 (B.S.476)



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IMPERIAL CHEMICAL INDUSTRIES LIMITED, MILLBANK, LONDON, S.W.1 Victoria 4444  
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**Insist on a cable  
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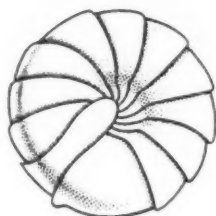
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*The*

ONISCOMORPHA

*gets round*

*to it*



*GLOMERIDESMUS MARMOREUS, a variety of millipede ONISCOMORPHA which curls into a rigid ring when threatened by danger.*

...and quickly assumes an all round defensive shape. Its articulated mobile home overlaps at each segment to form tough laminations resisting the hazards of nature. "Homo sapiens" now knows that the great strength of SISALKRAFT is due to a combination of lamination and scientific reinforcement, including the water-repellent power of bitumen - which all adds up to a building and sarking paper of outstanding merit.

Then there is SISALATION Reflective Insulation, which has all the virtues of SISALKRAFT, plus bright aluminium foil on one or both sides, for highly effective *thermal* insulation.



*The Supreme* BUILDING PAPER

Estd. 1857

**J.H. SANKEY & SON. LTD.**

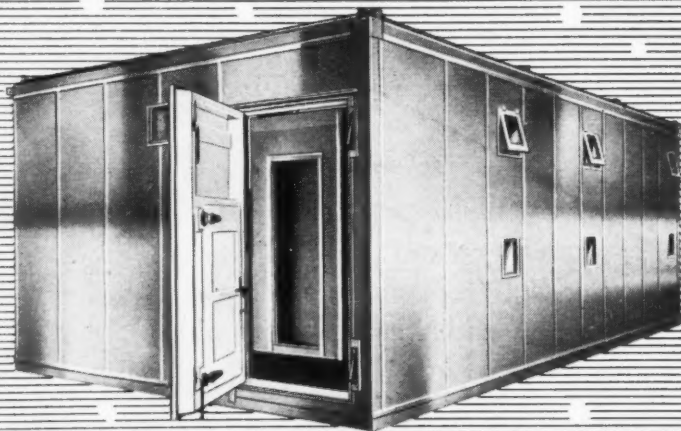
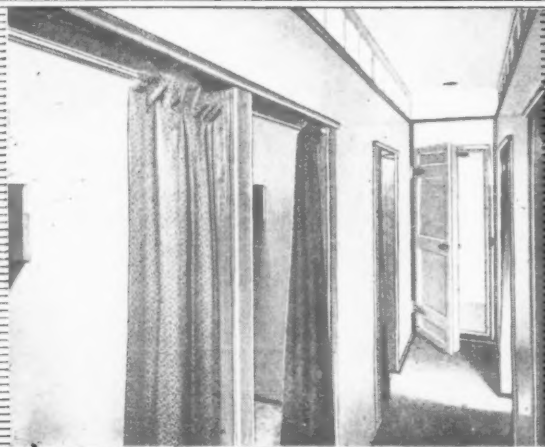
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# an island of warmth



# in the antarctic cold

AT MAWSON, in the depths of the Antarctic, with the normal outdoor temperature -30 F., the living hut used by the Australian National Research Expedition stands as a centre of warmth in a wilderness of cold . . . the temperature is 60 F.

The outside of the hut, which measures 26' x 16' x 10', is made of aluminium, while internally it is lined with Asbestolux, and 4" Onazote\* sandwiched in between. 120 m.p.h. gales are frequent, yet the strength of the hut is unaffected, and its temperate climate remains constant, despite the bitter cold.

\*Manufactured by the Expanded Rubber Company Limited



Throughout the world, and wherever extremes of temperature are encountered, Asbestolux—the *non-combustible* asbestos insulation board—is being installed in more and more important applications overseas, and helping to raise the volume of the export trade. This is one of the reasons why immediate delivery is still not always possible, despite increased production.

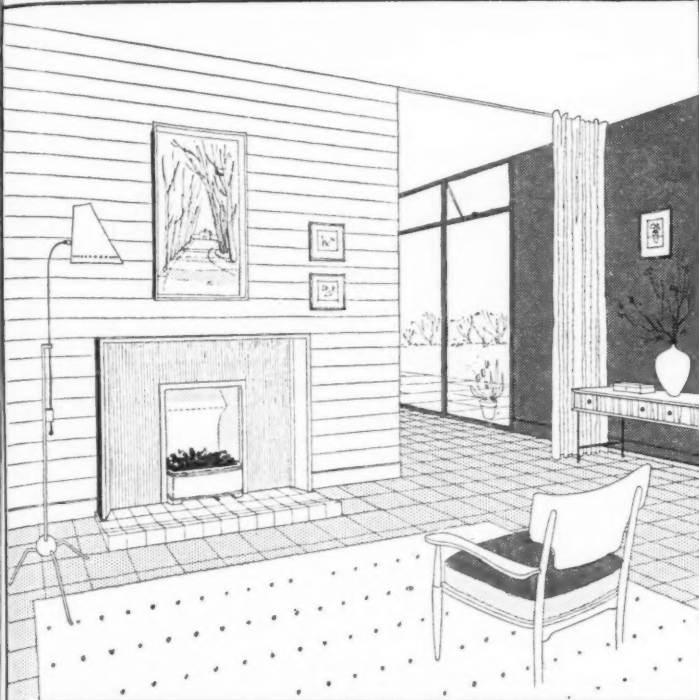
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**NON-COMBUSTIBLE**

ASBESTOS INSULATION BOARD

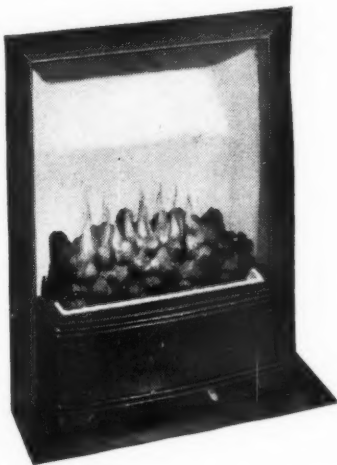
THE CAPE ASBESTOS COMPANY LTD. 114-116 Park Street, London W.1. Tel: GROsvenor 6022

and at Floor D, National Buildings, St. Mary's Parsonage, MANCHESTER 3. Tel: Deansgate 6016. Eagle Buildings, 217 Bothwell Street, GLASGOW C2. Tel: Central 2175. 246a Corporation Street, BIRMINGHAM 4. Tel: Central 8168.



## The LEXHAM Fire

Continuous-burning, simple and elegantly-styled for  
16 and 18 in. fireplaces.

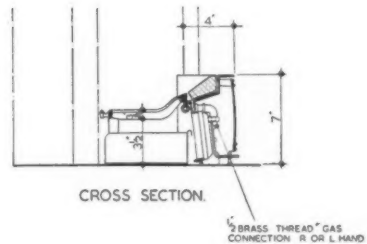


For further details of the Lexham Fire write to  
the Housing Division of:—

### NOTES

Particular care has been taken with the design of the Lexham to make it suitable for the elegant living room — period or contemporary.

The simple front completely screens the draught control to the fire, which is foot-operated by a lever at hearth level (illustrated bottom, right). The Lexham has all the usual advantages of a continuous-burning fire: it will burn for 10 hours without attention on any smokeless fuel, it is labour-saving and economical to run.

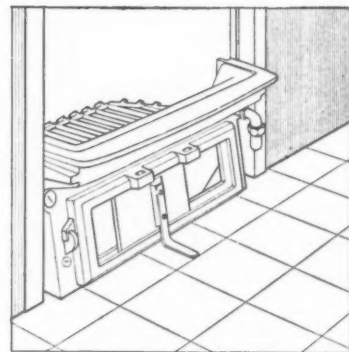


### SPACE HEATING CAPACITY

16 in. model	...	...	...	1,750 cu. ft.
18 in. model	...	...	...	2,000 cu. ft.

### FINISH


The screen front can be finished in stoved matt black enamel, Alisheen vitreous enamel or Dull Chromium.



## ALLIED IRONFOUNDERS LTD

Makers of cookers, boilers, fires and baths  
28 Brook Street, London, W.1.





THE ARCHITECTS' JOURNAL for January 26, 1956


## CRITTALL PROJECTED WINDOWS

This illustration shows WITHAM TEMPLARS SCHOOL (*designed for the Essex County Council by H. Conolly, F.R.I.B.A. County Architect*) in which are installed CRITTALL PROJECTED WINDOWS. For many years projected windows have been purpose-made by Crittall. Now they are also being manufactured in a range of standard sizes POSITIVELY RUSTPROOFED by the hot-dip galvanizing process.

If you should ever visit the Crittall factory at Braintree (and you would be very welcome) you would observe many products which have never featured in a Crittall catalogue—and some that never will. For Crittalls look upon it as an important part of their work in windows to be experimenting with the new and improving the old. The Crittall projected windows are a case in point. Before reaching the stage of development shown in the recently published leaflet 172, you may be sure that they have passed every critical test of quality and performance as a product worthy of the Crittall organisation.

# CRITTALL

THE CRITTALL MANUFACTURING CO. LTD · BRAINTREE · ESSEX

Branches and Depots throughout the country  Members of the Metal Window Association

crw61



# Announcing Sound-conditioning

by

## **HERMESEAL**

- ★ **NEW** materials manufactured of Swiss pressed wood fibre in rilled (as illustrated), perforated and plain tiles and panels.
- ★ **NEW** and decorative designs for individual installations.
- ★ **NEW** and contrasting colour finishes.
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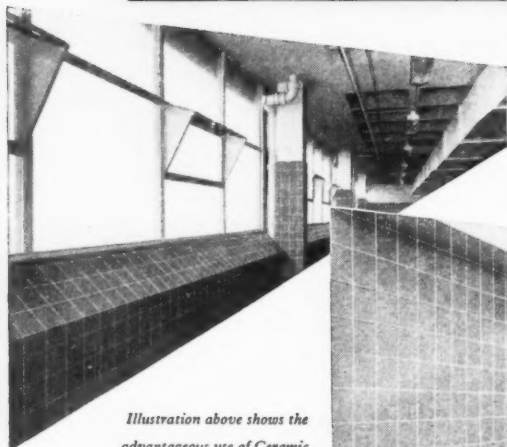
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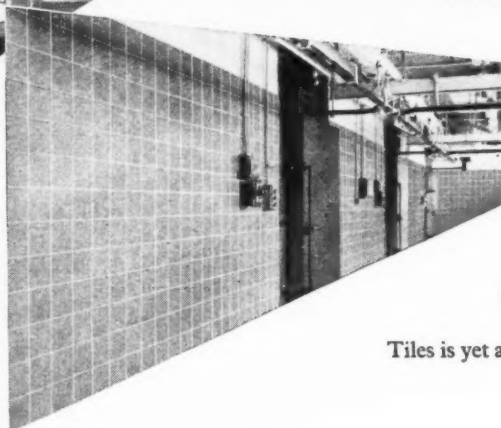
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Telephone : GROsvenor 4324 (5 lines). Branches throughout the country.





*Illustration above shows the advantageous use of Ceramic Tiles for window sills and ledges.*



*Illustration on right shows Ceramic wall tiling round the exteriors of the meat refrigeration chambers.*



## CHOOSE CERAMIC TILES

Hygiene and an easily cleaned surface were uppermost in Wall's mind when planning their new sausage factory at Godley, Cheshire. That they chose Ceramic Tiles is yet another tribute to the surface, proven by the tests of time.

# Ceramic

<b>T</b>	<b>I</b>	<b>L</b>	<b>E</b>	<b>S</b>
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*Chance*  
\* \* \* \* GLASS

## **festival**

*Festival brings to glazing an effect of brilliance and liveliness. The obscuration factor is considerable and makes the pattern ideal for office partitions and windows for which a high degree of privacy is desirable, and for lighting fittings. The design, which contains no dust-traps, is such that adjacent panes do not need to be matched.*

## **technical details**

Light transmission .....	82 per cent
Thickness .....	$\frac{1}{8}$ in. (26 oz./sq. ft.)
Maximum size .....	100 in. x 48 in.

**PILKINGTON BROTHERS LIMITED**

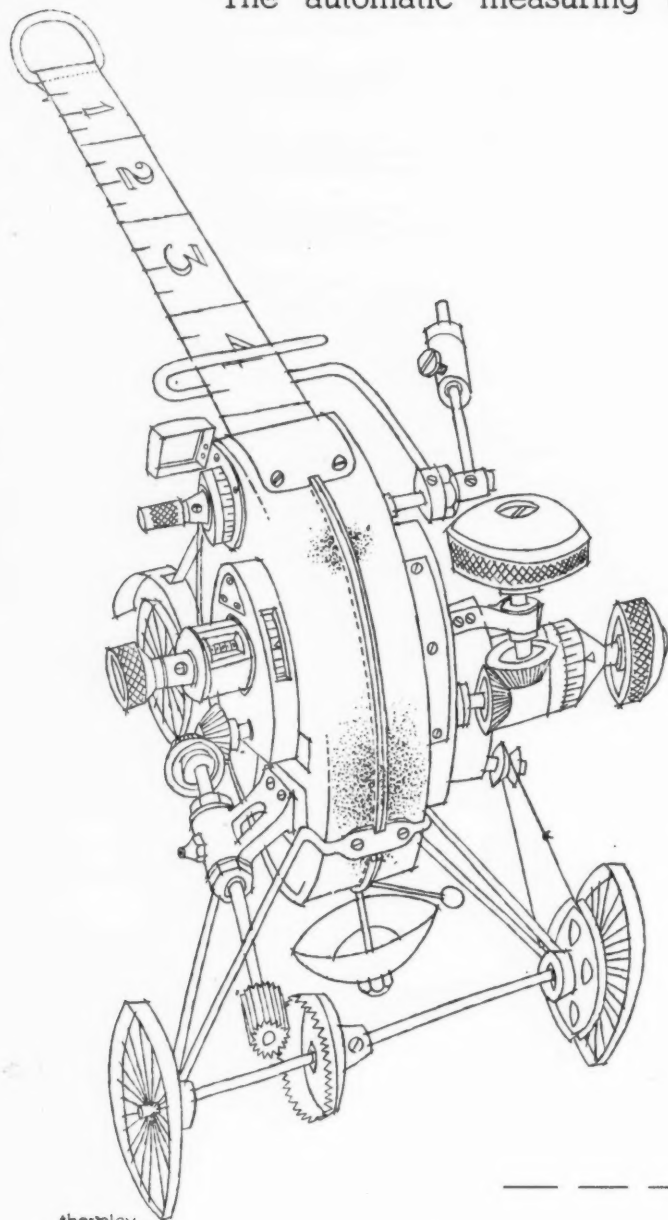


For further information on the use of glass in building consult  
the Technical Sales and Service Department, St. Helens, Lancs. (Telephone: St. Helens 4001),  
or Selwyn House, Cleveland Row, St. James's, London, S.W.1. (Telephone: Whitehall 5672-6)

Supplies are available through the usual trade channels.



## The automatic measuring tape



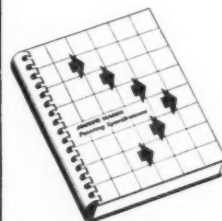
thornley

• MASOPAR Alkyd Enamels • MASOTEX Emulsion Paints

We understand that this piece of precision equipment is invaluable to the Architect in the field. The container is placed on the ground and the tape grasped firmly. A gentle pull and the container runs merrily away emitting a musical note at each yard. When the tape has reached the required distance, a flick of the wrist operates the reverse tumbler and the container returns to the operator. Scales on the side give total distance covered, vertical movement and drift. Production will be for overseas markets only.

## + service TOOLS / FOR ARCHITECTS

Two very practical "tools" supplied to architects by Joseph Mason are in book form — "The Architects' Special Colour Range" and "Joseph Mason Painting Specifications". These unique volumes are characteristic of Joseph Mason's comprehensive service. Our Technical staff will assist with Initial Planning, Building Inspection, Advice on Site, and Recommended Specifications.



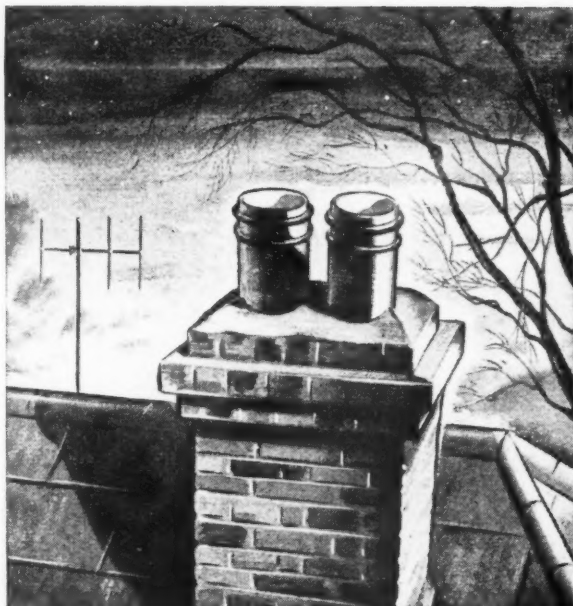
Established architects are invited to apply on their official letter-headings for either of the above books.

# joseph mason paints

JOSEPH MASON AND COMPANY LIMITED DERBY

MANUFACTURERS OF VERY GOOD PAINTS SINCE 1800

## Smoke Abatement



### \* **CLEAN AIR?** *by all means—and* **GLOWING WARMTH TOO!**

**T**HE CLEAN AIR BILL is likely to become law fairly soon. But this legislation is, in fact, only a national endorsement of the smoke abatement plans of enlightened public authorities all over the country.

Our cities *have* to be made more livable-in during the winter months. At the same time, the British people must have their traditional open fires with their welcoming glow and friendly warmth.

More and more people have discovered that Flavel smokeless fuel fires are the solution to both these problems and many thousands of Flavel grates have been specified for new public development schemes.

Further reasons for this widespread official confidence in Flavel fires are that they provide constant warmth (controllable over a wide temperature range) and burn for hours on end without being touched, yet, with all these advantages, they are so cleverly designed that they actually *save* precious fuel. Heat is delivered at near-floor level so that the whole room is warmed and practically no heat is wasted.

\* \* \*

#### **TWO MODELS**

The two models available at once for quantity delivery are the 'Newbold' and 'Flavel Seymour'. Both are modestly priced and available in a range of varied and gleaming colours. They are styled to harmonise either with contemporary interior decoration or with more conventional schemes. Heavy-duty fire bars

are a Flavel feature ensuring long service and the long-burning attachment of the 'Flavel Seymour' can be dropped to form a convenient shelf and to expose the lower part of the fire. Both models can be supplied with gas ignition if required. Insulation in the well of these grates is obtained by an air pocket thereby avoiding the use of fire bricks which, in replacement, can prove very costly.

*\*The 'NEWBOLD' and 'Flavel SEYMOUR' burn best on smokeless fuel but they can use any solid fuel.*

\* \* \*

#### **SMOKELESS SINCE 1920's**

Flavels (who pioneered smokeless grates in the 1920's) also manufacture a full range of built-in, labour-saving appliances details and prices of which will be sent on request — or your Flavel stockist will gladly give you further information.

SIDNEY FLAVEL & COMPANY LIMITED · LEAMINGTON SPA

## See a **FLAVEL** first

Telephones : (Sales) 3091 and 100 · Telegrams : FLAVELS





**.... ANY BUSINESS—** small, medium or large to the highest pitch of efficiency.

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effects instant contact with his staff, anywhere at office or factory.

B.H.O.T. provide all facilities related to smooth and efficient intercommunication,

on rent-maintenance basis or outright purchase.

Write for full and detailed information.

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**HOME & OFFICE TELEPHONE**

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**ESTABLISHED 1890**



**WOOD—nature's best building material**

# CANADIAN White Pine...

—a light-in-weight creamy white wood used extensively  
where long life is of greater importance than high strength

## TYPICAL USES

Windows and doors, household fittings,  
cabinet-work, and general carpentry  
Shipbuilding and boat building, en-  
gineering works, house construction,  
household appliances  
Patterns, drawing boards and artists'  
supplies  
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Wood flour (used for manufacture of  
linoleum etc.)

## SPECIAL ADVANTAGES

Uniform in texture, works well under  
tools  
Seasons easily, low shrinkage  
Takes stains, paints and varnishes ex-  
ceptionally well  
Good nail-holding properties, does not  
tend to split or splinter  
Exported as deals, boards, sidings, deal  
ends—and as waney and square timbers  
for special purposes

## FOR FURTHER INFORMATION

concerning Canadian woods contact The  
Commercial Counsellor (Timber), Canada  
House, Trafalgar Square, London, S.W.1.

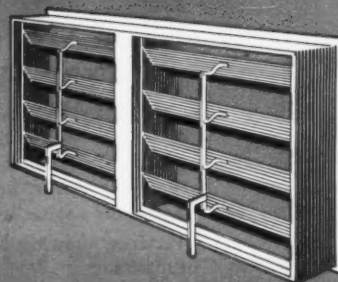
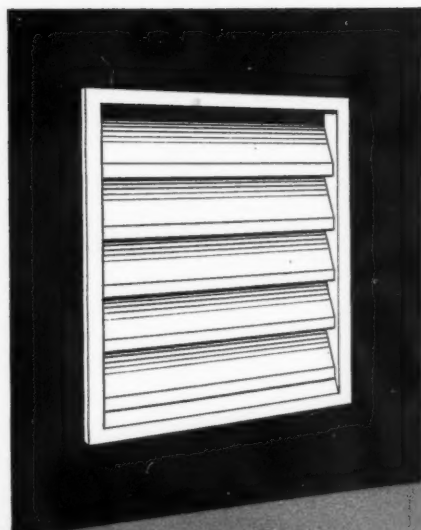


TIM 5

Reproduced here is figure of Canadian White Pine

This advertisement is one of a series featuring Canadian Douglas Fir, Spruce, Red Pine,  
Pacific Coast Hemlock, and Western Red Cedar

# BUILDINGS MUST B-R-E-A-T-H-E

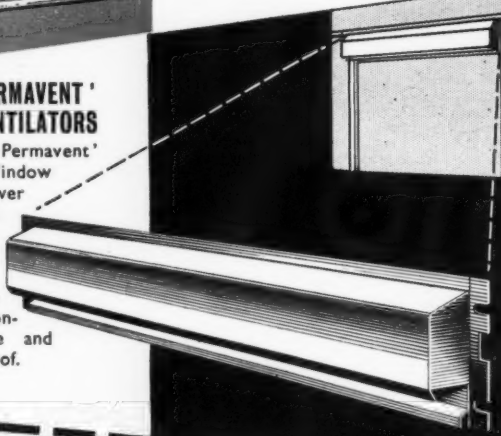


## 'PERMAVENT' LARGER LIGHT

A steel-framed window PLUS ventilation through weather-resisting multi-louvered panels backed by insect-proof screens. The fresh-air solution for pantries, sculleries, stores, garages, farms, dairies, etc. They are made in heavy gauge hot-dipped galvanized steel and are supplied in six standard sizes and two types — with single or double louvered panels.

## 'PERMAVENT' WINDOW VENTILATORS

Greenwood's range of 'Permavent' Patent Horizontal Window Ventilators is the answer to ventilation problems in houses, flats and schools, etc. Designed for all metal or timber windows (or doors) the units are of all steel construction, unobtrusive and thoroughly weatherproof.



## LOUVRE VENTILATORS

The above are two examples of Greenwood's fixed and movable heavy duty multi-louvered ventilators. Greenwood's extensive range, which include heavy and light duty ventilators in all sizes in steel or aluminium, are designed for all requirements of modern housing and industry. With mullions to form multi-bank panels the heavy duty ventilators can be specified for the largest contemporary industrial premises.

Whatever may be your particular ventilating problem, consult Greenwood's — the specialists in all forms of ventilation for industry and housing. Fully descriptive leaflets and technical information are available on request.



# Greenwood-Airvac *ventilation*

GREENWOOD'S AND AIRVAC VENTILATING COMPANY LTD

Designers and Manufacturers of Ventilating Equipment for Buildings, Vehicles and Ships

BEACON HOUSE, KINGSWAY, LONDON, W.C.2. CHAncery 8135/6/7. "Airvac", London



## OLD ROADSIDE HOTEL SOLVES HOT WATER PROBLEM



*The Cotswold Gateway Hotel  
at Burford, Glos.*

## SADIA WATER HEATERS



**CUT DOWN RUNNING COSTS**  
**GIVE VALUABLE ADDITIONAL SPACE**  
**MAKE POSSIBLE DRAUGHT BEER TRADE**

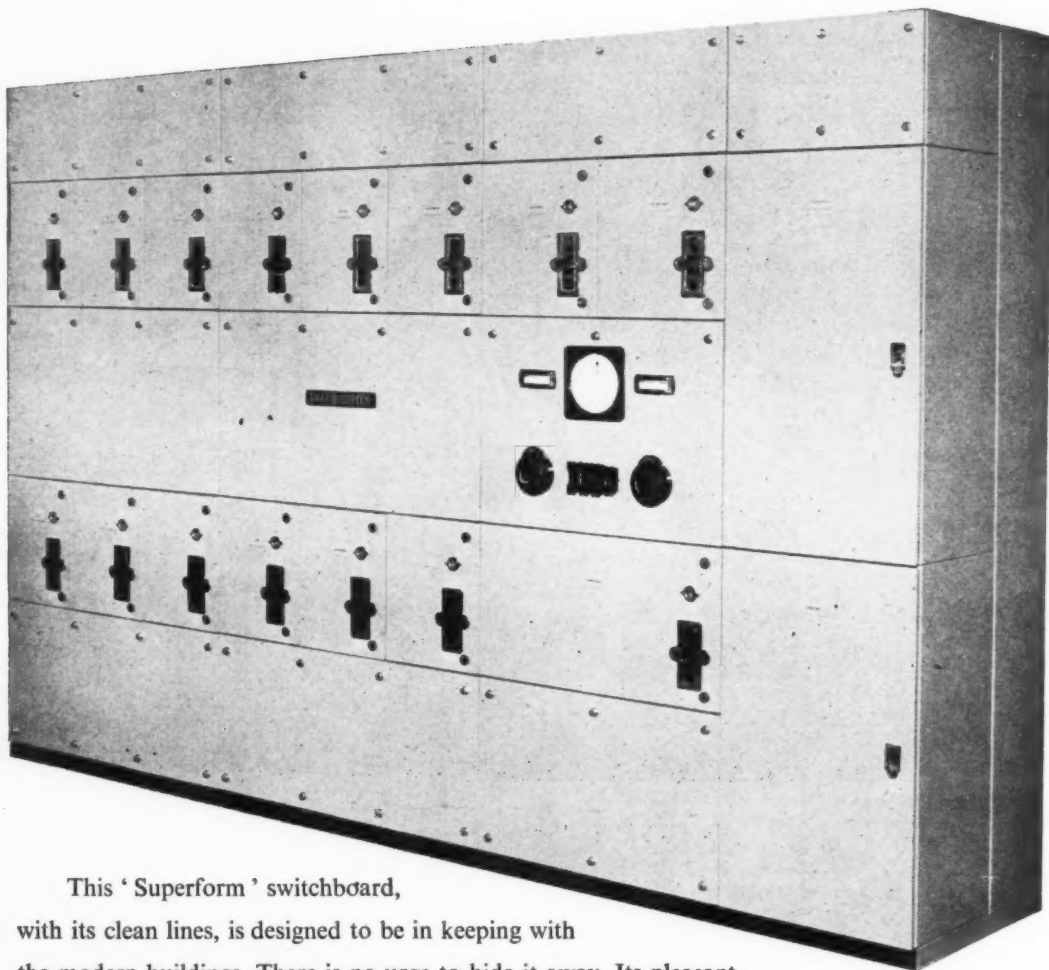
Messrs Hunt, Edmunds & Co Ltd, the Banbury brewers, are carrying out extensive modernisation of their several properties in the Cotswolds. The latest to be completed is the beautiful old Cotswold Gateway Hotel at Burford, on the main London/Cheltenham Road (A.40), owned by Wayside Inns Ltd (a subsidiary of Hunt, Edmunds & Co Ltd). The alterations were planned by Hunt, Edmunds' architectural staff, and here too as on other occasions Sadia Water Heaters of various capacity were installed. Before this, hot water was supplied by solid fuel boilers which, together with the coal, were housed in the two main cellars. These cellars are now used for stocking beer in barrels and this makes possible a profitable retail trade in draught beer. But more important is the fact that there is now *ample* and *constant* piping hot water for guests' rooms and bathrooms, for the manager's flat and for use in the bar, kitchen, pantry and everywhere else. Wayside Inns Ltd. find that this simple, dependable and cleaner SADIA way provides a substantial saving in staff and running costs.



**SAFE · CLEAN · ECONOMICAL**

*Aidas Electric Ltd, Sadia Works,  
Rowdell Road, Northolt, Middx.  
Telephone: WAXlow 2355*

# Not made to Hide and Seek



This 'Superform' switchboard, with its clean lines, is designed to be in keeping with the modern buildings. There is no urge to hide it away. Its pleasant appearance invites installation in whatever position is desirable for convenience and accessibility. The smooth contour enables it to be kept clean easily.

## 'ENGLISH ELECTRIC' fusegear

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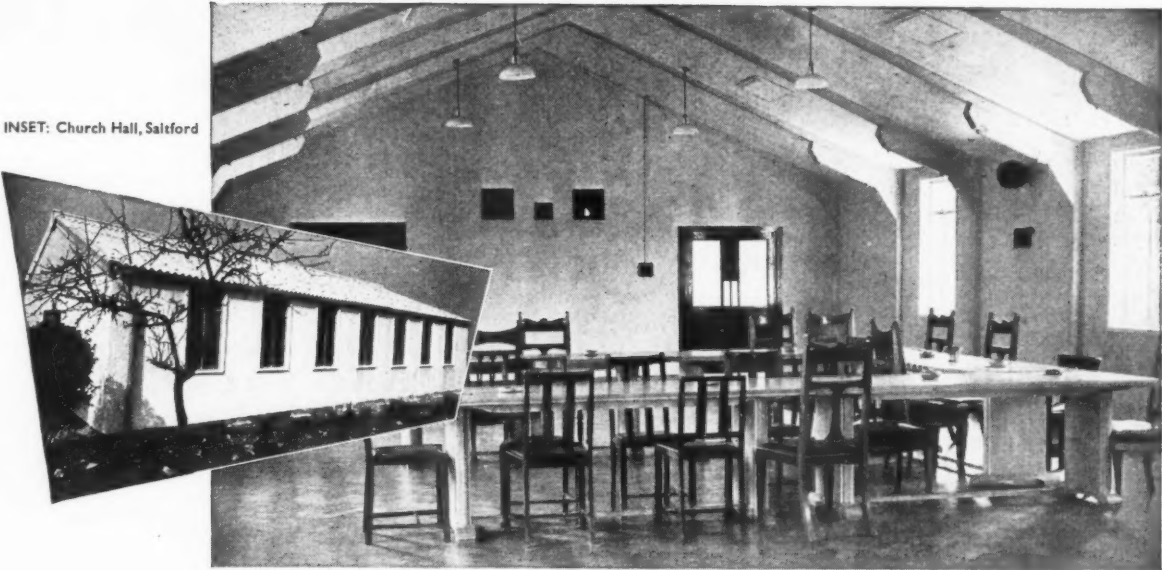
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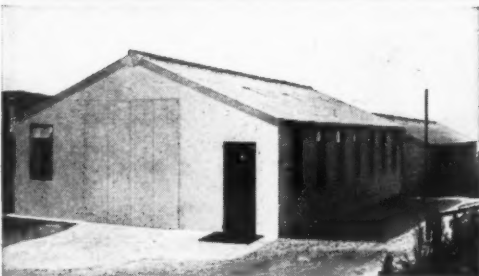
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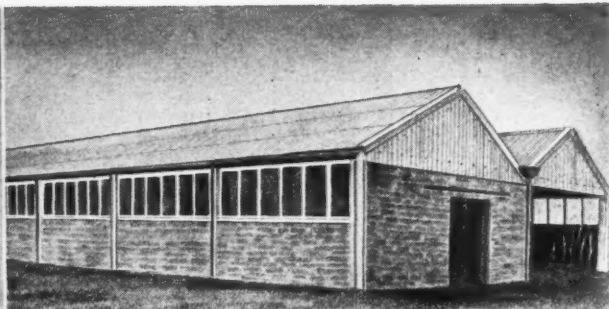
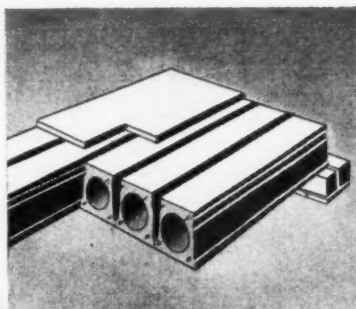
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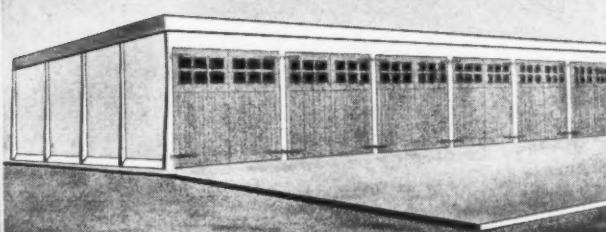
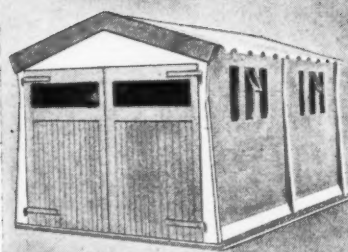
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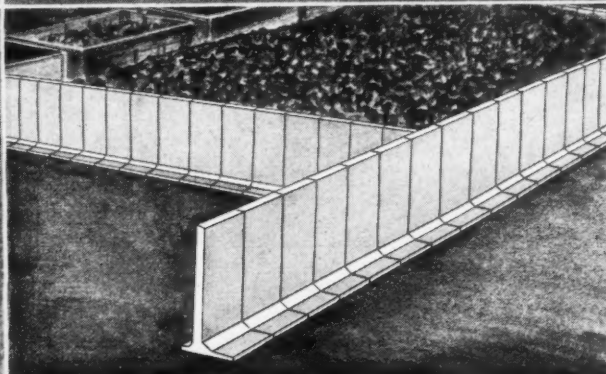
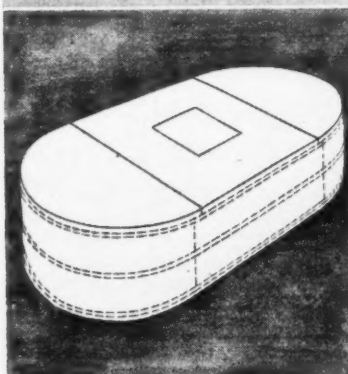
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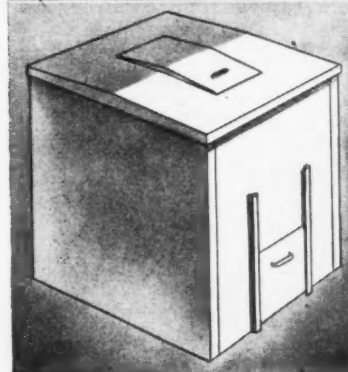
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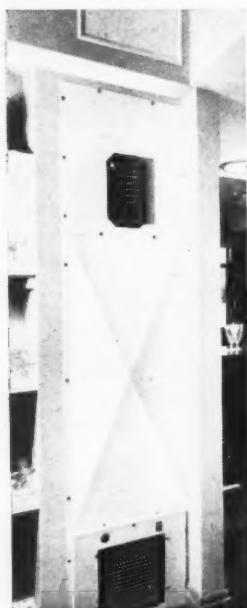
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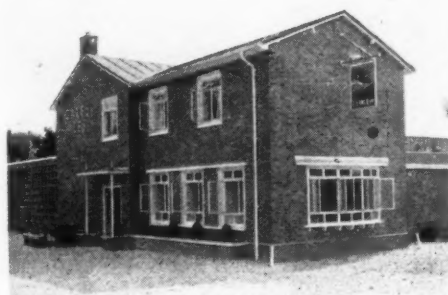
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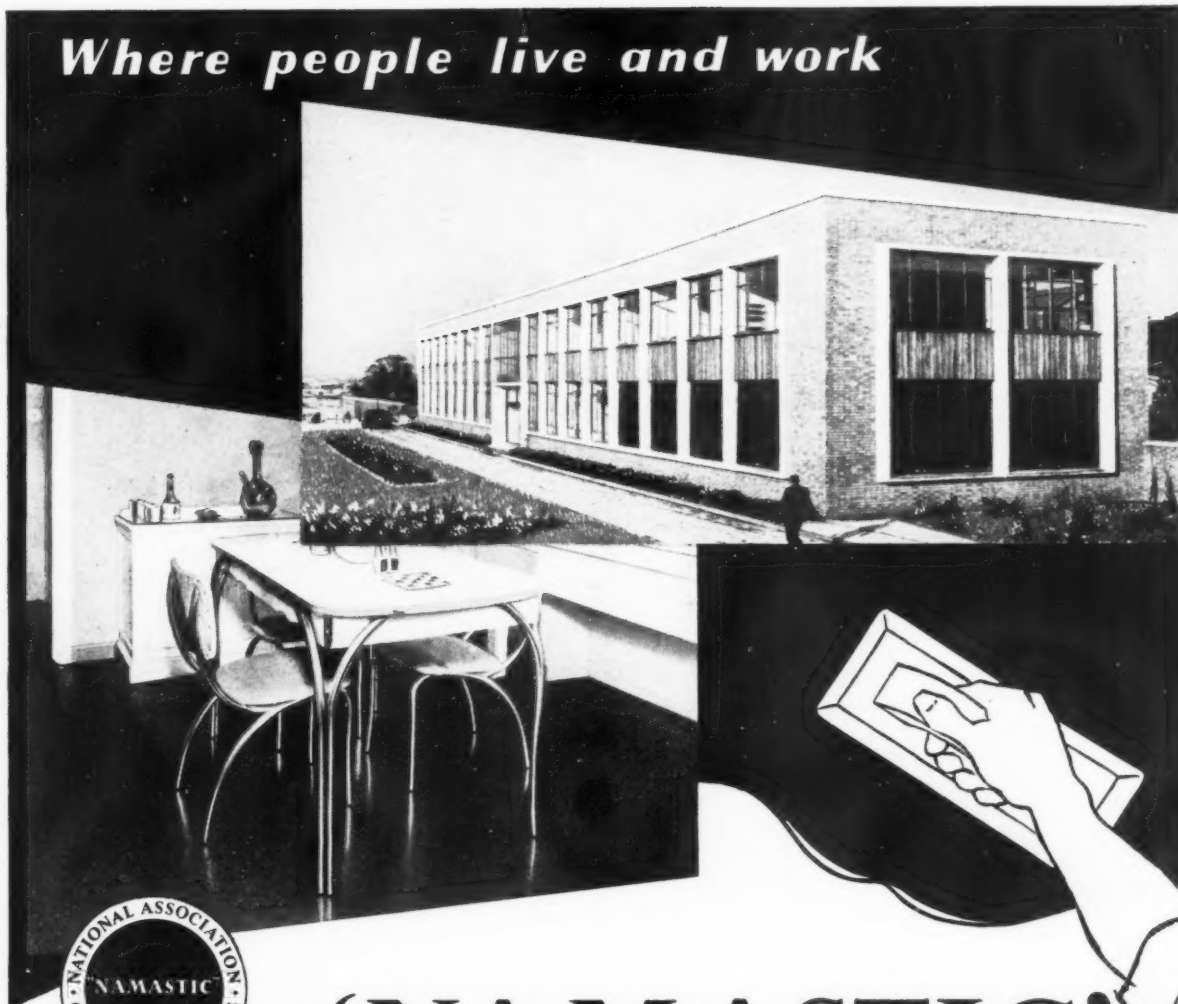
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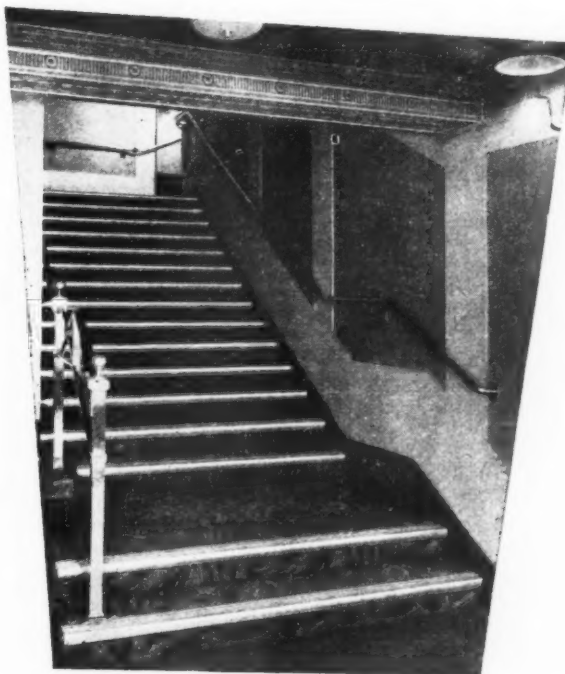
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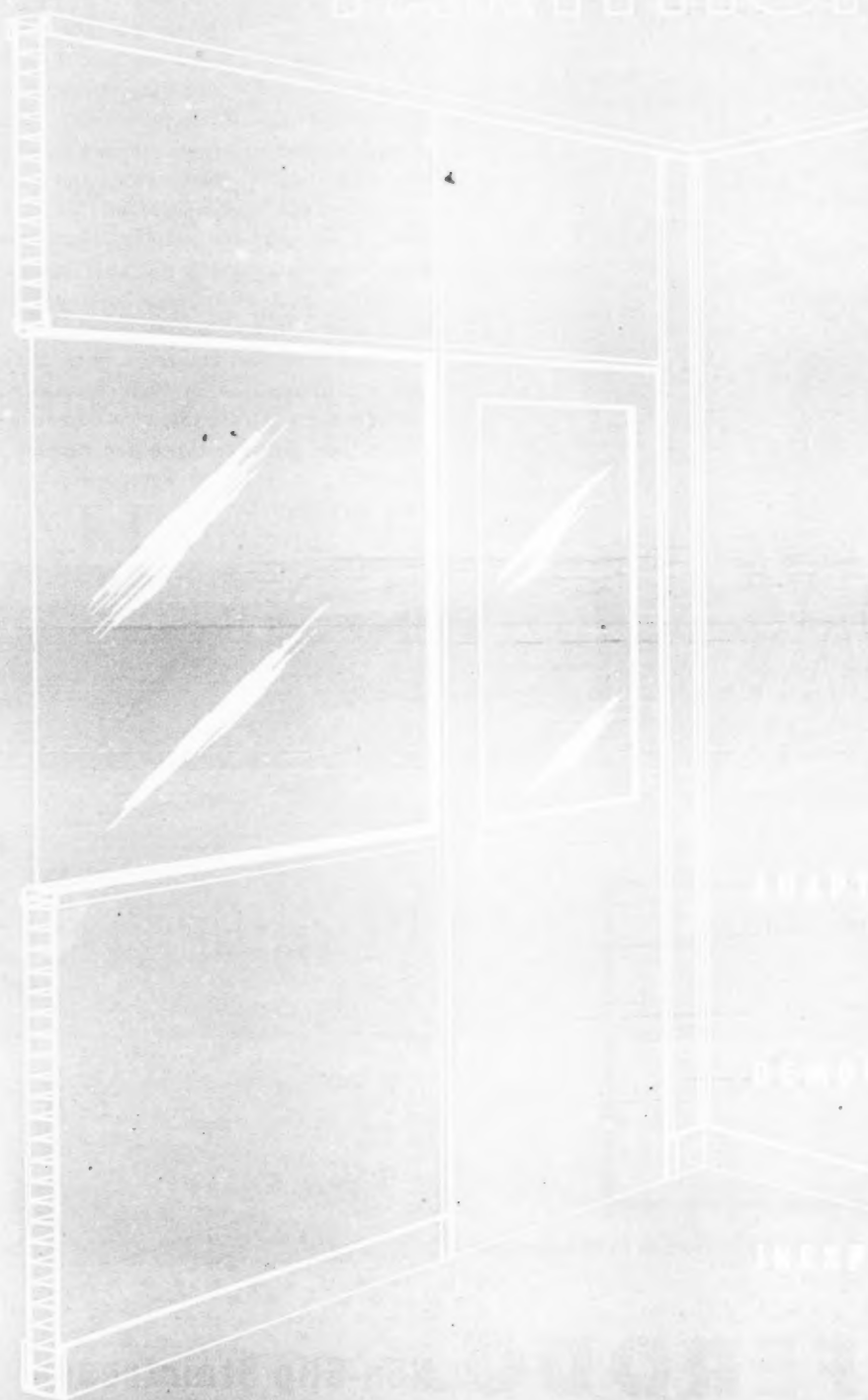
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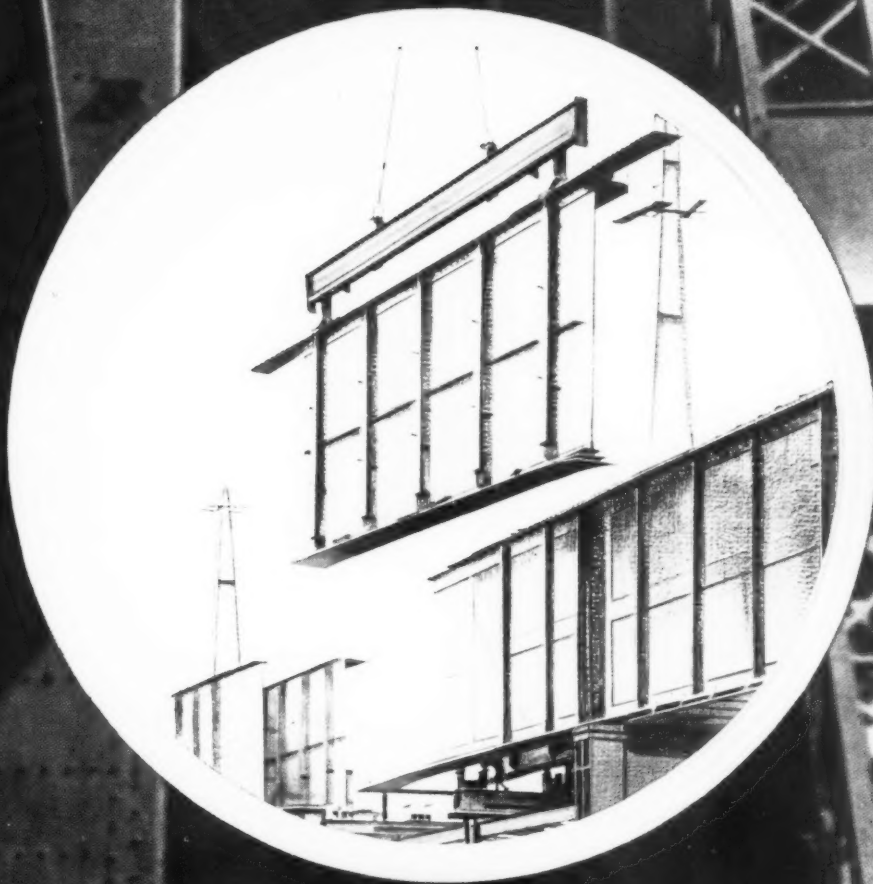
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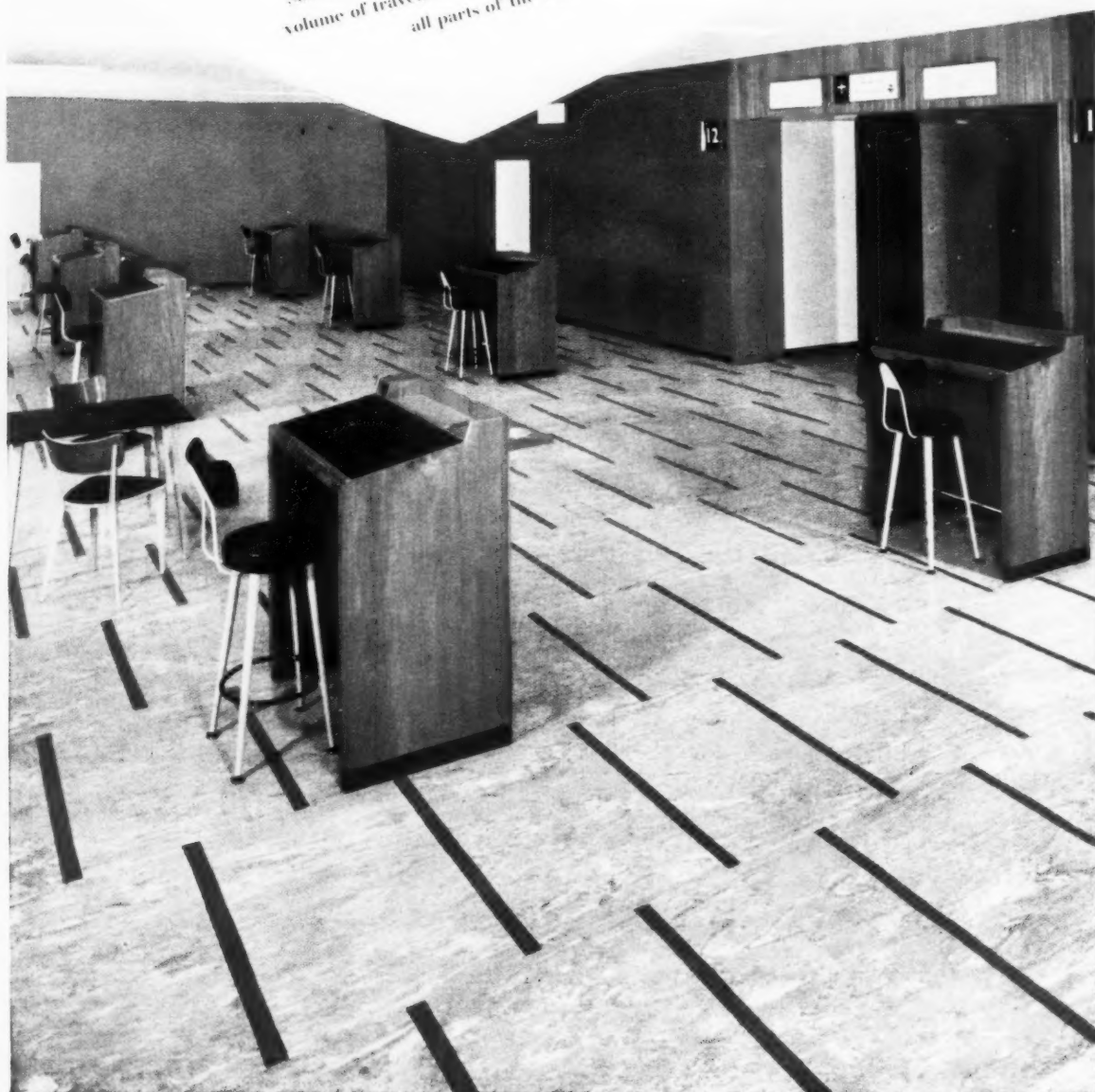
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No. 3178 January 26, 1956 VOL. 123

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#### DARTMOOR DATA

Some people might, at first glance, be dismayed by the contents of a little book called *Dartmoor: Building in the National Park*. (There are even buildings in it by Lutyens and Professor Richardson: what can the publishers be thinking of?) ASTRAGAL can reassure the no-nonsense modernists: this book is not directed at the local chapter of architects, but at everyone who wants to pop in a plan to the planners, from Moretonhampstead to Tavistock: a different thing altogether.\*

It is the first book to propound that what in fact is wanted, quickly, is

\* Architectural Press, for the Devon County Council. 5s.

not the maximum attainable, but the minimum standard demanded by the landscape. Good buildings will get built anyway: it's the bad ones that need improving.

\*

There is even a clear-cut inducement as well: "one of the objects of this booklet is to help intending developers to submit plans which are likely to obtain the most favourable consideration from the planning authority." That's getting down to the heart of the matter.

\*

The layout and typography are first class, and there are some beautiful photographs of undiscovered Devon: Drewsteignton, for example, with a tiny, windblown, cob-and-thatch square and a granite church filling up one end of it. There is also a superbly bleak hotel at Princetown in which ASTRAGAL can imagine warders sitting back on foggy January evenings and talking about the one that got away.

\*

And talking about the one that got away, is Dartmoor to be the only National Park to make a break into this kind of publishing field? Will other national parks please copy!

#### GROPING WITH GROPIUS

The RIBA's Gold Medal handout on Gropius was peppered with the work of gremlins. The wrong dates were given for two of his books, and for his Total Theatre project. He was given credit for only one Adler car-body, instead of several, and for a locomotive instead of a railcar (this is not hair-splitting, for there is plenty of work

for an architect or body-stylist on a railcar, but for a locomotive you just have to be a locomotive engineer). Most curious of all is the statement that the Fagus factory at Alfeld was Gropius's first commission; it was, in fact, only his first commission after leaving Behren's office—a rather different matter.

#### A HIGHER STANDARD

How nice to be nice to the *Evening Standard*. But before I perform this remarkable act, let me just say that this newspaper was mistaken in its recent campaign against tree-felling in the Mall. Thinning-out here is undoubtedly in the best interests of arboriculture and will produce a finer avenue in the long run. After that tiny brickbat, a large bouquet—for the excellent leader which appeared on the eve of the New Barbican inquiry at Guildhall. It described clearly the issues involved and ended thus: "The advocates of the New Barbican plan believe that civic deportation is not the answer. They argue that it is far better, and less wasteful of valuable space, to enable people to live near their work. They see the London of the future as a complex of self-contained communities such as the New Barbican, eliminating the hours spent daily on travel. Whatever the weaknesses of the New Barbican scheme in detail, the vision behind it should command respect."

\*

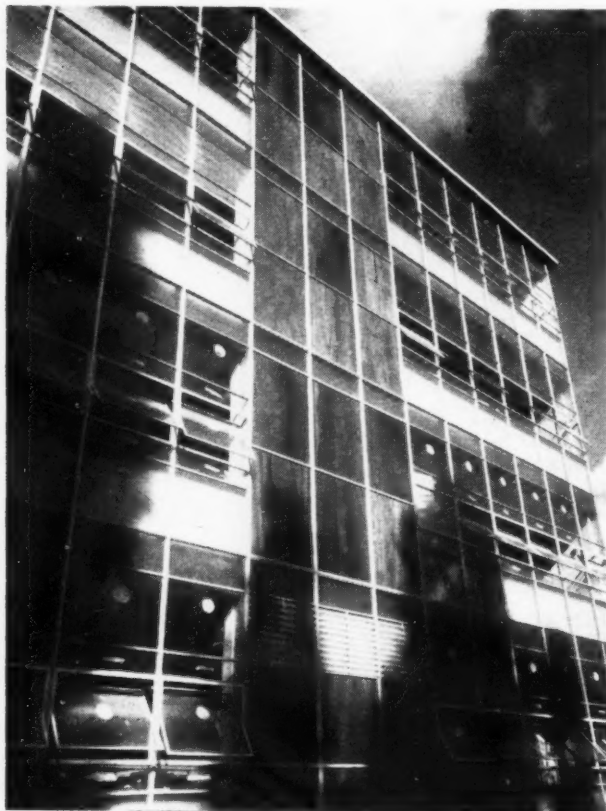
Splendid!—even though the *Standard*, which would never discuss pictures or music without mentioning the painter or composer, omitted the names of the Barbican architects, Messrs. Kadleigh, Horsbrugh & Whitfield.



# WINDOGRID

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## BRISTOL BC?

One of ASTRAGAL'S spies hears that a group of Bristol architects are discussing the possibility for their city of a Building Centre on the lines of the London one. The Wessex Federal Society of Architects is circulating members to discover whether they would use it or not. This is an excellent idea. The London BC has proved its value abundantly since its establishment in 1931—not only as a technical information centre but as a place for meetings and organized discussion. For the architect it would mean one visit (or telephone call) instead of a dozen circular letters to firms for a technical enquiry.

The difficulty is that architects (or builders) might prefer to travel up to London for the obviously more comprehensive "shop window" that the London centre can offer (combining the visit with a London jaunt). Perhaps a regional centre should concentrate on local firms and local problems: for instance Bristol is "sand starved" and has to use (often effectively) black mortar and rendering.

Even if the displays and samples had to be limited, a Bristol centre could provide a comprehensive information service, and—if premises could be found—a much-needed non-party meeting place. Press on, Bristol—and why not ask the builders if *they* are interested?

## WHOLESALE IMPROVEMENTS

A sign of rather better times in 1956 is offered by a recent publication entitled *Colour and Pattern in your Home*.\* Wipe that yawn off your face, oversophisticated Third-programme-type reader, this is a rather special kind of different. It is an attempt to introduce something more than mere manual dexterity and copying the Joneses into Do-It-Yourself interior decorating, and it aims to do so not by large and generalized exhortations to do better, but by setting forward reasonable examples of what can be done with paint, paper and the average room, and beaming those examples at one of the opinion-forming sections of the mass-market—the Co-op.



ASTRAGAL commends the Devon CC this week (page 123) for their admirable guide to building on Dartmoor. Two of the excellent illustrations are: above, Drewsteignton, a cob and thatch village dominated by a granite church, indicating the proximity to the Moor; below, the slate-hung inn at Princetown. The photograph, left, which is not from the book, shows the taste in Godwottery of some local inhabitants—displayed for sale on the road-side.



\*Published by COID and Co-operative Union Ltd., Stanford Hall, Loughborough.



## Building in a National Park

The advice for those about to build on Dartmoor is: "don't." Advice which, it is gratifying to report, is being followed by the Air Ministry, who last week abandoned its proposal to erect a 360-ft. high navigational aid mast at Great Links Tor, Dartmoor. Dartmoor is one of those few remaining parts of England which is largely wild. It should remain so. However, the existing farms have to be repaired and perhaps rebuilt, as do the villages on the perimeter. For those who have to build in or around the National Park, the Dartmoor National Park Planning Committee have written an excellent booklet (*Dartmoor: Building in the National Park*, published for the Devon C.C. by The Architectural Press, price 5s.) which gives very

sound advice. While, however, there are plenty of examples all over the countryside of what to avoid in architectural style, it has obviously not been found easy to give examples of what to emulate. The council houses at Bovey Tracey, left, are shown as an example of regional style being preserved by using granite for the "massive porches" which are traditional in Devon. But in other details these houses are not typical of the moor. They may obey the letter, but not the spirit of the local vernacular. What Devon architects must discover is a contemporary style and technique which emphasizes the characteristics of Dartmoor, and has the instinctive feeling for this bleak landscape shown by the traditional building in this area.



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The booklet, which costs a shilling, is a joint effort of CoID and the Co-operative Union, and with a printing-order of more than a hundred thousand copies it sounds as if somebody means business. It also sounds as if the Co-op, which has a dismal record in furnishings south of the Border (the Scottish Co-op has done admirable work in recent years) has woken up at last, and realized that popular taste in interior decoration is decidedly on the move. The examples of interiors shown in the booklet, for instance are more or



less Festival-type—that is, a bare five-year time-lag, not the twenty-five year drag of the days before the Telly and reading two illustrated magazines a week revolutionized the visual education of the citizen.

#### WILLIAM MORRIS SOCIETY

The William Morris Society, which inaugurated itself some time ago with a public meeting, has now had its first members' meeting to transact business and discuss plans. Cockerell, Pevsner, Betjeman, Floud, Stanley Morrison, and many other distinguished names are now associated with the Society, and a strong committee has been formed with the original founding committee as its nucleus. Apart from its more obvious functions—lectures, etc.—the Society faces the formidable fact that the Longman stock of Morris's works was destroyed by bombing and that Morris's designs have never really been collected in book form. Publication, therefore, is a primary concern of the Society. It needs more members, in spite of a good start, and it needs a grant from a big trust if it is to set out upon a course comparable with that of, say, the Makluyt or Wren Society. ASTRAGAL wishes the Morris Society good fortune. The secretary is Graeme Shankland, 35, Christchurch Hill, NW 3.

ASTRAGAL

**THE PRINTING TRADE DISPUTE.** *The Editors very much regret that owing to the dispute in the printing trade, which has led to the practices of working to rule and limiting overtime among members of the London Typographical Society, there are fewer editorial pages than usual in this issue of the JOURNAL. They also regret that it may be necessary to restrict the size of issues while the dispute continues, and that the new-style JOURNAL—which many subscribers will have heard about—cannot be produced until the dispute is settled.*

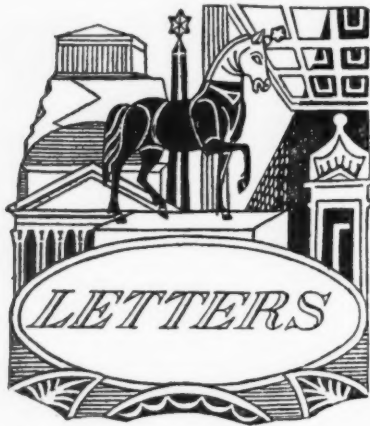
## The Editors

### NEW STATESMAN'S OLD ARGUMENT

**I**S the architect's creative interest incompatible with his professional responsibility in the control of costs?

One of this week's correspondents—see John Norgate's letter on page 128—raises this question in criticising ASTRAGAL's comments on the "New Statesman" article (see AJ, January 12). He quotes the "N.S." author (a client) "... the architect deals in the bespoke . . . and has a perfect right to seize on his little patron and use him for his little creation . . ." and suggests that this is how architects think of themselves. We know that architects add to the cost of houses—but they add to their quality also. But is it the architect's role in society to be the purveyor of a luxury product—of a "special kind of appearance" (at extra cost)?

In the aristocratic society of the Renaissance it undoubtedly was so. His purpose was to provide impressive buildings for rich patrons—with whom he consorted on equal terms. He was not concerned with humbler buildings nor—unlike his historical predecessor, the master mason—with building methods. Control of economics or technique was not essential to the purpose he served. This notion of the architect's role continued through the 19th century, and implied that the newly developing techniques, structural engineering and the factory production of components, were not under his control. It was only in the present century that we began to realise the disaster of this loss of control—and to make strenuous efforts to regain it. Since this realization the architect has sought to use his creative talents, not in artistic isolation, but in the co-ordination of increasingly diverse and complex skills. But the old notion of the architect still survives in our thinking, in our continued technical isolation from the industry, and in the absence of cost from our training (as John Norgate points out). We need acceptance of a new notion of architecture—one that includes economic and technical as well as spatial and aesthetic skill, so that creative interest and professional responsibility no longer appear to conflict.



John Norgate  
Kenneth R. Pitman, General Secretary,  
Council of the Guild of Surveyors

## Costs And The Architect

SIR,—ASTRAGAL suggests (AJ: January 12) that the *New Statesman* contributor, who suffered at the hands of a young architect should not expect a "tailor made" house for £2,500, but—if this is true—how on earth was he to know? The architect told him that costing was a quantity surveyor's job, so he could fairly conclude that he should have gone to a quantity surveyor for advice in the first place, especially when the first estimates came in (if I have understood him) at £1,500 above his original budget!

The main question of his article was surely this: should architects be able to tell their clients, at the start, what their money will buy? The N.S. contributor, who was encouraged by the RIBA hand-out to believe that architects have this ability, and who had to pay £200 in fees to discover that they (apparently) have not, is described by ASTRAGAL as "naïve and unconstructive"! I should have thought it was the young architect who was naïve and unconstructive not to explain to his client a bit sooner that (according to ASTRAGAL) "architecture" begins at the £4,000 mark.

In the event, the poor client retires hurt into the arms of a builder, confirmed in his belief that "The builder is still the quantity producer in his trade. The architect deals in the bespoke" . . . and has . . . "a perfect right to seize on his little patron and use him for his little creation . . . letting creative interest override professional responsibility" (I quote from the *New Statesman*). This seems to be a widely accepted notion of the architect, among laymen and builders. And the absence of any form of cost study from architectural education, suggests that the architects agree with it too. Are we happy about this? Are we all convinced that "creative interest" is incompatible with "professional responsibility"—that is—with control of costs? Your Guest Editors don't seem to think so.

ASTRAGAL suggests that with its "hackneyed story" the *New Statesman* is "taking up the cudgel where the popular press put it down." I am not quite sure what this means, but it suggests that there is public dissatisfaction with the way architects handle things; a suggestion that is supported by the emergence of organizations offering the client a complete service—design, construction and even finance. And they boast that they can work to a cost limit. The fact that they don't produce "architecture" (?) fits all too neatly into the widely accepted notion that architecture is a special kind of appearance that you pay extra for. Where does the public get this

notion from? From the architects themselves, where else? It may be that the public has a distorted version, but is it not time we stopped crying how misunderstood we are, how little freedom we have, how mean our clients are?

If we want them to listen to our aesthetic aims, I think we must establish their confidence in our ability to control costs. If we persist in our abdication of this vital role—they may go elsewhere for guidance.

JOHN NORGATE.

London.

## Precision Site Surveying

SIR,—I observe in the AJ of January 12 that, following a letter from Mr. Gordon Tomalin on this subject, you invite comments. It is not my intention to present observations on the questions listed, but to advise that the Council of the Guild of Surveyors, has for many years past, recognised the importance of this work in this age of prefabrication. Many lectures on the subject have been presented.

I feel it may be of interest, not only to architects, but to other related professions, and, indeed, the industry, to learn that the Guild will be holding an exhibition of this type of work in the near future.

The object of the Council is to bring to the notice of interested people the varying methods which have been developed through the years, in the hope that a useful service may arise.

I will be pleased to furnish to you full particulars of the exhibition in due course.

KENNETH R. PITMAN.

London.

# NEWS

## RIBA

### Standard Literature

The RIBA Council recently approved a recommendation of its Science Committee that manufacturers should be urged to consider the desirability of producing their trade and technical literature to the standard size specified in B.S.S. 1131:1955. In order to give wide publicity to the advantage of this step it was agreed to publish an article on the subject by Gontran Goulden in the *RIBA Journal* and to make available copies of it to the architectural and advertising Press. It was also agreed to draw the attention of the principal associations of advertising practitioners to the matter and to enlist the support of members in a campaign to bring to the attention of manufacturers the advantages of the British Standard.

### Planning Delays

The RIBA Council recently considered a report from the Town and Country Planning and Housing Committee about delays in securing planning approval. On their recommendation it was agreed to prepare a note for publication in the *RIBA Journal*, drawing attention to the advantage to be secured by consulting planning officers informally at an early stage in a project. It was agreed that where there was any doubt of the likelihood of approval, application should be made for approval in principle before proceeding with detailed designs. It was also agreed to make representations to the Ministry of Housing and Local Government on the importance of speeding up the procedure for securing various approvals by providing for the simultaneous consideration by the various bodies concerned of applications for planning consent.

## Appointments

The RIBA Council has made the following appointments:

(a) Conference to consider foundation of a National Theatre Museum: RIBA Representative. Richard Leacock.

(b) The Museums Association: RIBA Representatives on Standing Joint Committee. A. G. Sheppard Fidler and J. B. Bickerdike.

(c) Institute of Fuel: Organizing Committee for Study of Domestic Heating in the United Kingdom: RIBA Representative. George Fairweather.

(d) Joint Committee on Materials and their Testing: RIBA Representative. Professor W. N. Thomas.

(e) RIBA Representative on BSI Committees: B/76 Thermo plastic flooring tiles and PLC/9 Plastic Tubing. A. P. Cooksey, in place of H. E. D. Adamson.

(f) RIBA Architecture Bronze Medal: The York and East Yorkshire Architectural Society: RIBA Representative to serve on Jury to consider the Award. Professor W. B. Edwards, President of the Northern Architectural Association.

## Town Planning Distinction

The RIBA Award for Distinction in Town Planning has been conferred on Johnson Blackett and Hugh Wilson.

## AUSTRIA

### Lectures at Arts Council

Dr. Ernst Buschbeck will give two illustrated lectures in February at the Arts Council headquarters, 4, St. James's Square, S.W.1. The first, on February 8 at 7.30 p.m., will be on *Baroque Austria*. On the following night, at the same time, Dr. Buschbeck, who was Director of the Austrian National Art Collections from 1946 to 1954, will talk about *Viennese Art and Architecture of the Ringstrasse Period*. Tickets, price 4s. (students 2s.), can be obtained from the secretary of the Anglo-Austrian Society, 139, Kensington High Street, W.8.

## LETHABY

### Talk at V and A

Basil Ward, Lethaby Professor at the Royal College of Art, will give the sixth of his series of lectures on *W. R. Lethaby and His Times* on Monday, March 19 at 5 p.m., in the lecture theatre of the V and A Museum, South Kensington.

## ISE

### Research Scholarship

The Institution of Structural Engineers accepted, in 1954, an offer by the Aluminium Development Association of a research scholarship to the value of £400 a year to enable the holder to undertake research on some aspect of the application of aluminium alloys to structures.

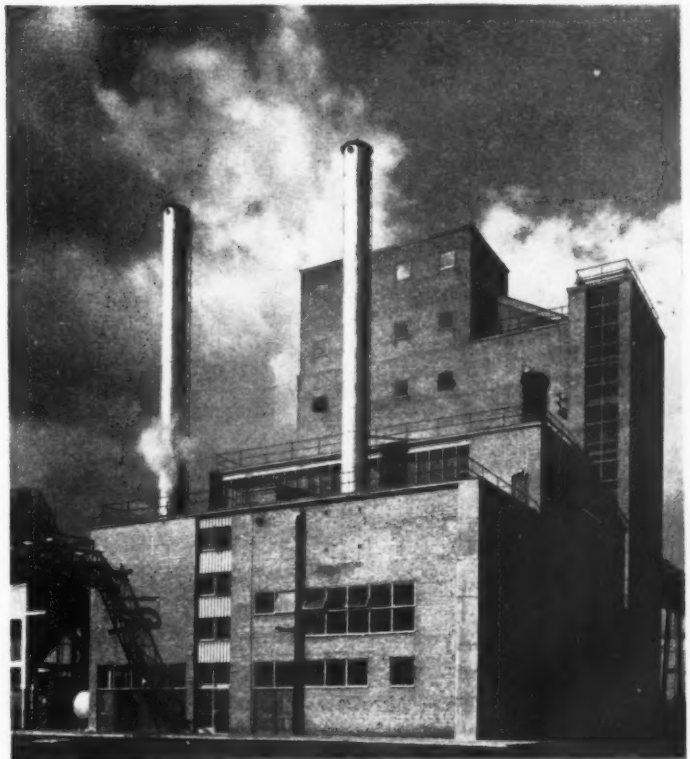
The scholarship is awarded in alternate years for a two-year period, and the first holder is nearing the end of his tenure of the scholarship. It is the intention of the Institution to make the next award of this scholarship in 1956 with a view to the successful applicant commencing his investigations at the beginning of the University Session in October next.

Entries for the scholarship to be awarded this year close on March 31. The scholarship is administered by the Institution and further particulars, together with forms of entry, should be obtained from the Secretary of the Institution of Structural Engineers, 11, Upper Belgrave Street, S.W.1.

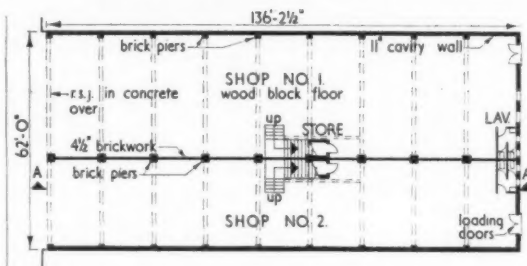


**Boiler House, London, E.3**

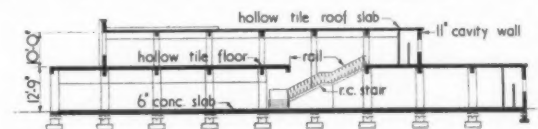
The Watertube Boiler House at the Bromley Gas Works, Leonard Street, Bromley-by-Bow, was designed for the North Thames Gas Board by Elie Mayorcas (assistants, Hugh Clamp and G. F. Goodwin). The building accommodates three chain-grate boilers and ancillary plant, providing steam for the works. The installation is entirely mechanical with an instrument and control panel for each boiler, with gauges for steam, water, air, waste gas pressure, temperature, etc. In addition to the main boiler room, accommodation includes switch and transformer rooms, pump room, lavatories, locker and mess rooms for day and night staff. A steel frame was found to be the most satisfactory form of construction in view of the exceptionally heavy loads. External walling is mainly of 9-in. brickwork. The cost was £72,732, and cost per sq. ft., £4 10s. 9½d., of which nearly half is for the steel frame. The general contractors were J. & R. Rooff, Ltd.

**BUILDINGS IN THE NEWS****Shops at Slough**

The block of two shops seen left, at 181, High Street, Slough, were designed by Carl Fisher to provide an area of 13,400 sq. ft. of retail trading space on two floors. The first floor facade has been set back to comply with future road widening proposals. As will be seen from the cost analysis below, the shops have been built for a very low figure, which the



Ground floor plan [Scale: 1/4" = 1' 0"]



Section A-A

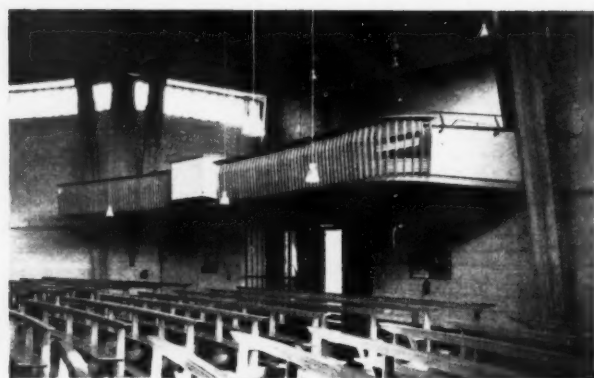
architect attributes to the following: 1. the site was ideal, being flat and having good access from front and rear, 2. the building is of economic design and construction, 3. the strip foundations are only 12-in. width generally, due to soil with excellent bearing pressure, 4. finishes are very simple, 5. careful consideration given to the number of trades employed. Quantity surveyor, Leslie G. Dight. General contractors, Bovis Ltd.

**COST ANALYSIS**

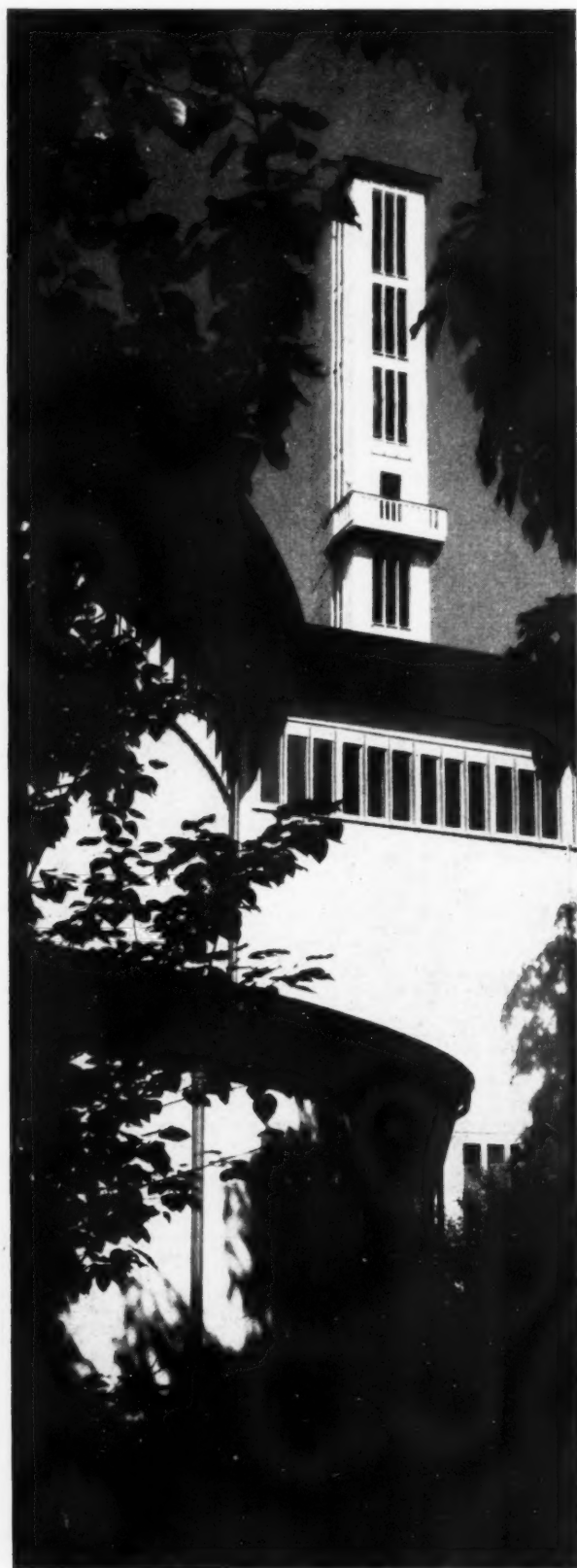
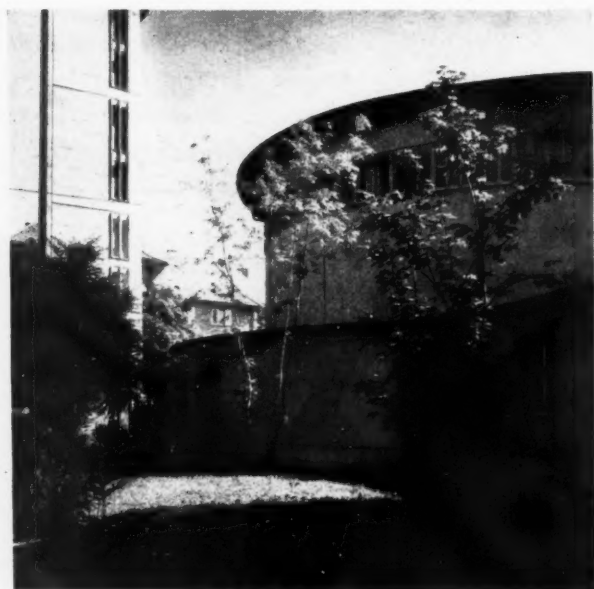
Total ground floor area of superstructure		8,252 f.s.	Element	Cost/sq. ft.	Element	Cost/sq. ft.
Total floor area (excluding basement)		13,400 f.s.		s. d.		s. d.
Tender date	April, 1954		Preliminaries and insurances	1 1/2	Wall finishes	9
Installations and finishings	£7,050		Contingencies	5 1/2	Ironmongery	0 1/2
Tender cost of foundations	£2,267		Work below ground floor level	3 2 1/2	Plumbing (external)	0 1/2
Tender cost of works on site	£112		External walls and facings	2 11 1/2	Plumbing (internal)	7 1/2
Gross total cost	£20,895		Internal load bearing walls	5 1/2	Sanitary fittings	2 1/2
Cost per foot super of floor area	31s. 2 1/2d.		Internal partitions	4 1/2	Gas installation	4 1/2
Cost per foot cube	1s. 10 1/2d.		Upper floor construction and staircase	4 3	Electric installation	1 3 1/2
			Roof	7 6	Heating installation (hot water only)	0 1/2
			Floor finishes	4 6 1/2	Drainage	6 1/2
Difference between tender cost and final cost	£2,100		Windows and doors (external)	6 1/2	Glazing	0 1/2
Reasons: Additional cost of foundations due to striking old wells, additional site works and increased cost of labour and materials.			Doors (internal)	1 1/2	Decoration	9 1/2
			Ceiling finishes	8 1/2		

BUILDINGS IN THE NEWS

The Church of S. FELIX and S. REGULA, Hardstrasse, Zurich

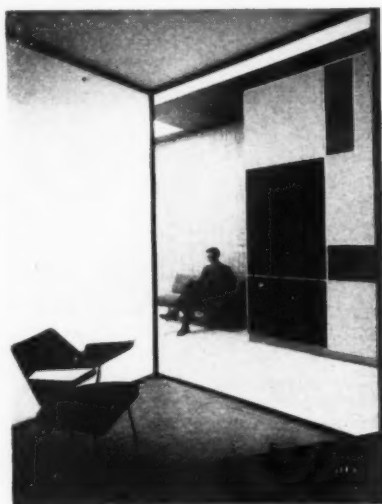


*The Roman Catholic Church of S. Felix and S. Regula in Hardstrasse, Zurich, was designed by Fritz Metyger. The plan is oval shaped with the altar, seen in the top photograph, and the main entrance, above, centrally placed on the two long sides. The campanile, right and below, is free-standing.*



# Showrooms in Piccadilly

When called upon to design a showroom for Messrs. Henly Ltd., 86/9, Piccadilly, W.1, the architects, W. S. Hattrell and Partners (assistant John King) decided that colour should be toned down in the showrooms to avoid conflicting with the cars, and used more particularly in the reception and office areas. Having resolved the



problem of colour distribution, formal problems were tackled by contrasting the shapes of the cars with the taut rectangularity in architectural forms. Left is one of the offices made up from a steel framed partition with white-acid-etched and  $\frac{1}{4}$  in. glass walls. The carpet is off white. Across the passage is an abstract wall pattern, gloss painted on a wood panel and the wall beyond is covered with paper. In the showroom above, the main wall is painted black, and the plaster jaguar motif picked out in white. Opal acrylic sheet laylight pierces the navy blue ceiling and the floor is made of terrazzo panels with brass dividing strips. The main contractors were Harry Neal Ltd.

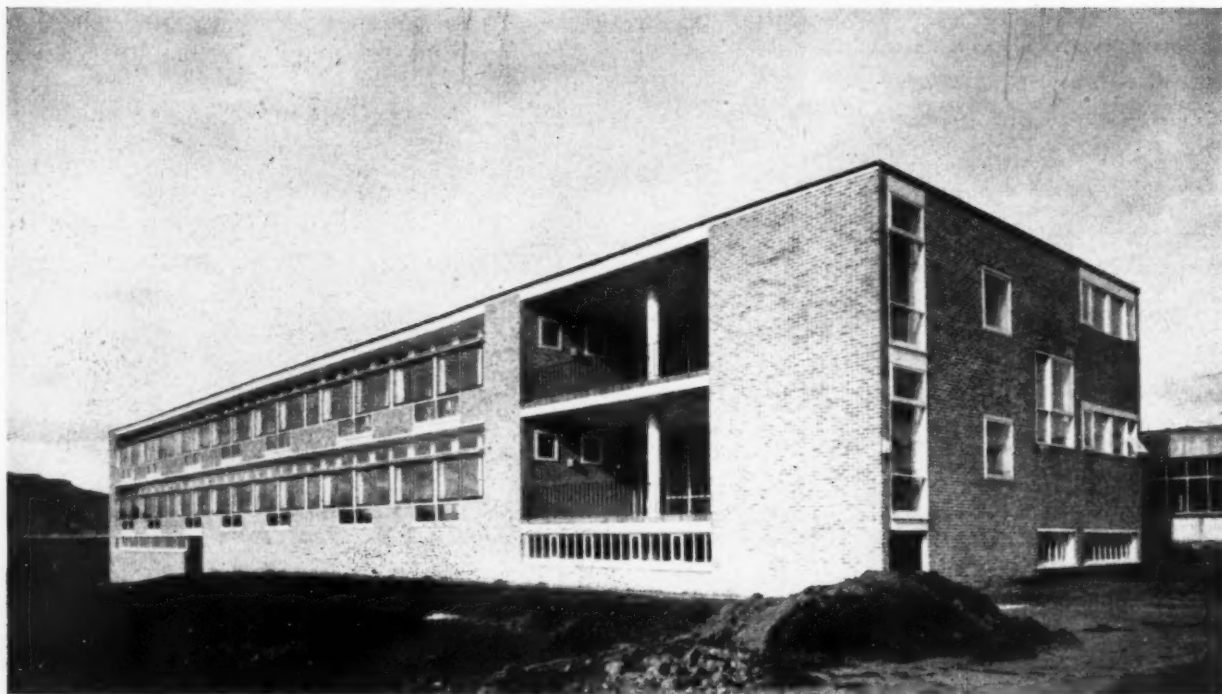


## Workshops for School at Buckingham

The metal and wood-working shops for Stowe School shown above were designed by the Architects Co-partnership and consist of two north-lit shops divided by a row of offices, stores, cloak-

rooms and display space. The roof is built on pre-cast concrete trusses and purlins and the unglazed parts of the roof are covered with bituminous felt on reinforced wood-wool slabs.

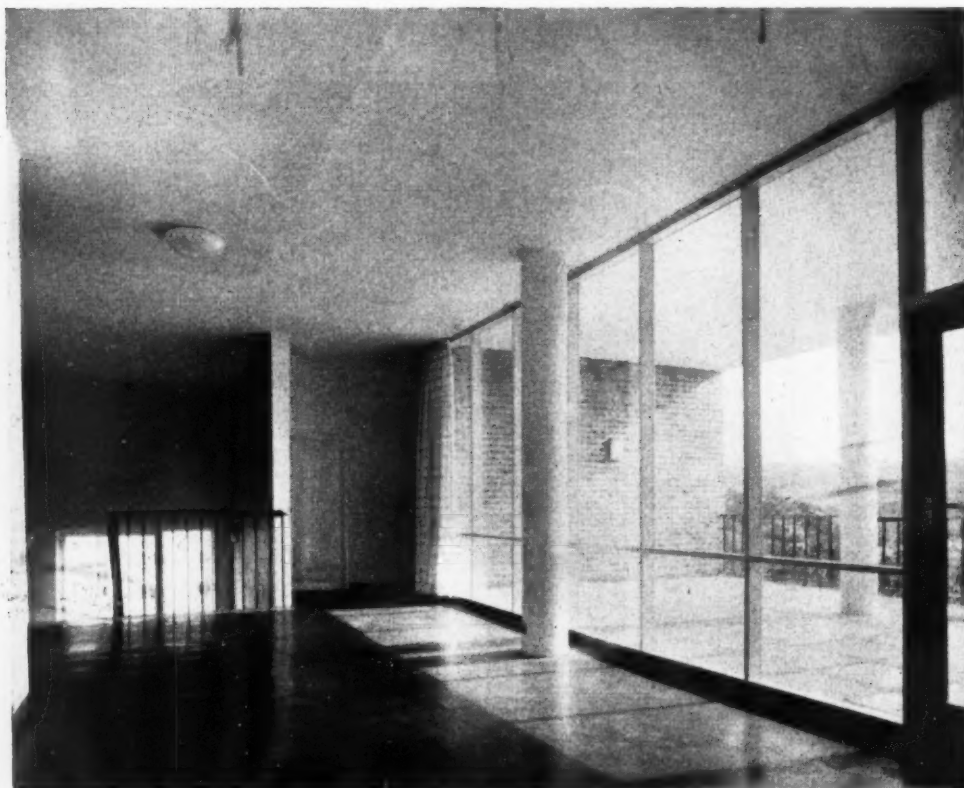
NEW WARD BLOCK AT GREENOCK, SCOTLAND



*The experimental ward block attached to Larkfield Hospital, Greenock, was designed by R. Llewelyn Davies, Director of the Division for Architectural Studies, Nuffield Foundation, executive architect, Forbes Murison, Chief Architect, Western Regional Hospitals Board (Scotland). The consulting engineers, struc-*

*tural, were Ove Arup and Partners; heating and mechanical, Barlow, Leslie and Partners and quantity surveyor, William Ward. The block, which was occupied recently, will be illustrated in detail in a later issue of the JOURNAL. The photograph above shows the south and east facades and left is the first floor*

*hall and loggia. The block contains 64 beds and the structure consists of 6-in. r.c. cross walls at 20 ft. centres, supporting flat r.c. roof and floor slabs. External cavity walls are carried on floor slabs. Experiments in team nursing and case-assignment are being carried out in the wards. The planning and equipment of the wards are the result of research conducted by the Nuffield Investigation into Functions and Design of Hospitals, who have recently published their report. There was no general contractor.*





## HOUSE

in ALDERS ROAD, REIGATE, SURREY

designed by JOHN R. STAMMERS

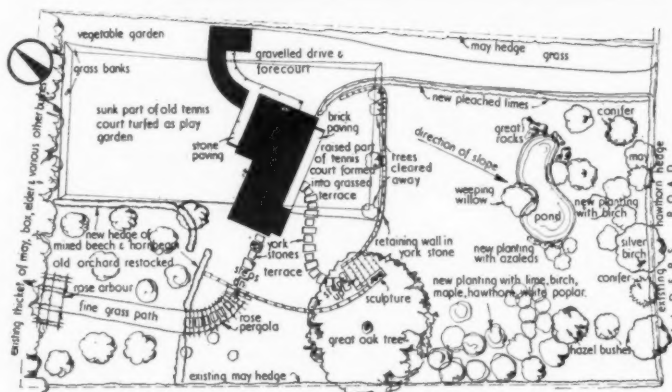
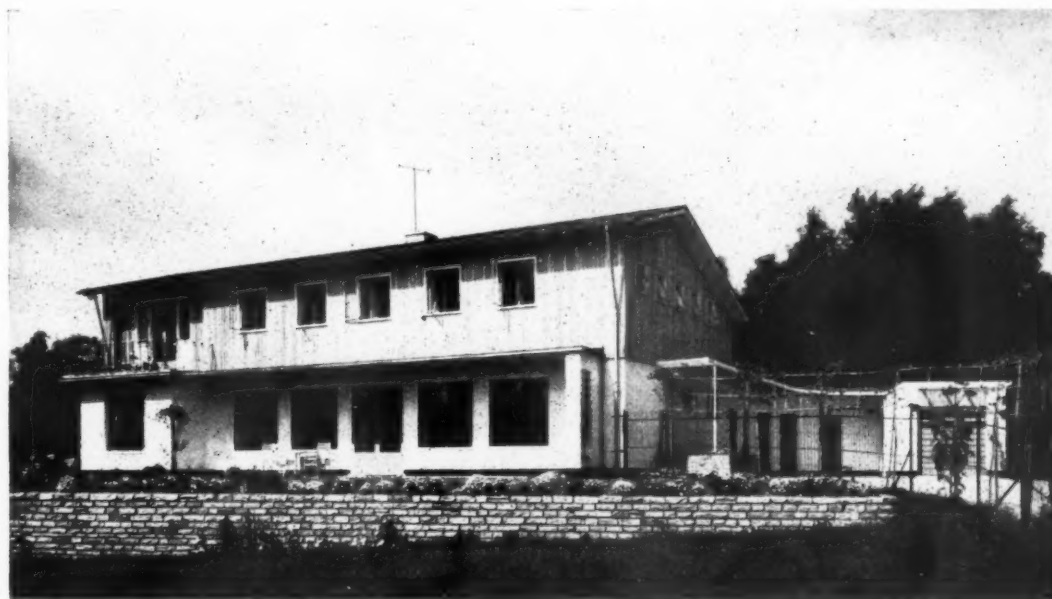
quantity surveyor, FREDERICK SAUNDERS



House and outbuildings from the orchard.

The client for this house in Reigate required accommodation for himself, his wife, four sons and a resident maid on a site of one acre, which contained an existing large oak tree and a hard tennis court as its main features. The architect was also responsible for the garden layout. On the ground floor of the house electric floor heating is used.

House and garden terrace from the south-east.



Site plan

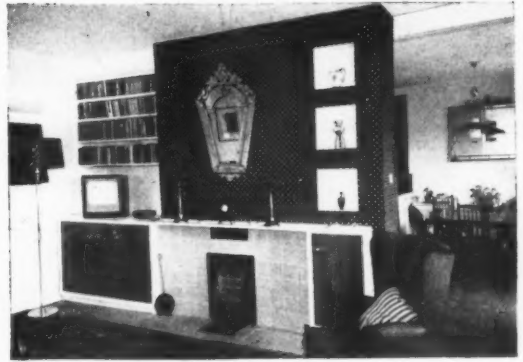
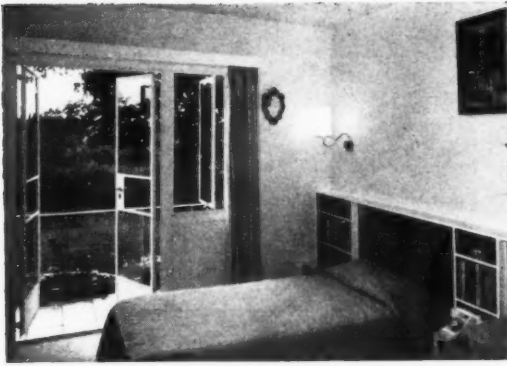
The client did not wish to retain the tennis court and considerations of aspect and the shadow cast by the oak tree led to the siting of the house on the tennis court. Whereas the house is tilted at an angle to the site boundary to face almost due south, the garage is parallel to the east boundary of the site and linked to the house by outbuildings, seen on the right, above and on the left in the top photograph. The garden was designed with three principal considerations in view: (a) to make maximum use of existing site features, (b) to eliminate as far as possible expensive maintenance and (c) to allow the client's six dogs the freedom of the garden and access to the house, while separating them from the front and back doors of the house. This requirement is achieved by fencing off the drive from the garden by game-proof hurdles of thin rod, inside which has been planted a row of pleached lime trees. The south part of the tennis court, in front of the house, was

Ground and first floor plans [Scale:  $\frac{3}{8}$ " = 1' 0"]

already banked up and has now been enlarged by excavation from the house and shaped as a terrace, with a stone retaining wall. After time for settlement this terrace will be turfed, with some areas of paving. The part of the tennis court to the north of the house has been turned into a flat lawn for children's games. In place of an old duck pond in the lower part of the garden a larger pond has been formed and stocked with lilies, irises and grasses. In the north-west corner of the site an existing orchard has been restocked and hedged round with beech and horn beam and linked by a rose pergola to a path leading to a french window in the playroom (on the left in the photograph below). The ground floor external walls are of 11-in. cavity brickwork, using secondhand stocks, painted white externally with a black plinth. The first floor walls consist of two skins of clinker blocks with an external facing of western red cedar weatherboarding. The ground floor is concrete, with a waterproof membrane and screed. Floor finishes are quarry tiles in hall and cloakroom, wood blocks in the study and maid's room, carpet laid

direct on screed in the living room, softwood boards on joists on the first floor, cork tiles in bathrooms, and thermoplastic tiles elsewhere. The roof covering is 26-gauge copper on softwood boarding and a glass fibre blanket laid over the ceiling joists. Outhouse roofs and canopy are of 3 layer felt on cement skimmed wood-wool slabs. Ground floor windows are mostly sliding plate glass on ball bearing tracks and standard metal casements are used elsewhere. The house contains numerous built-in fittings. In the four boys' bedrooms are fittings combining chest of drawers, cupboard and desk and there are fitted cupboards in bedroom 6 (top left, on opposite page). The wide steps flanking the staircase, centre, opposite, are designed for the display of sculpture. The living room open fire (top, right), is a continuous-burning convector type and is relied upon for warmth in the carpeted area of the living room, where under-floor heating panels are not installed, as can be seen from the heating layout plan. The electric floor heating system consists of cables embedded in screed with access panels and thermostat control in each room.

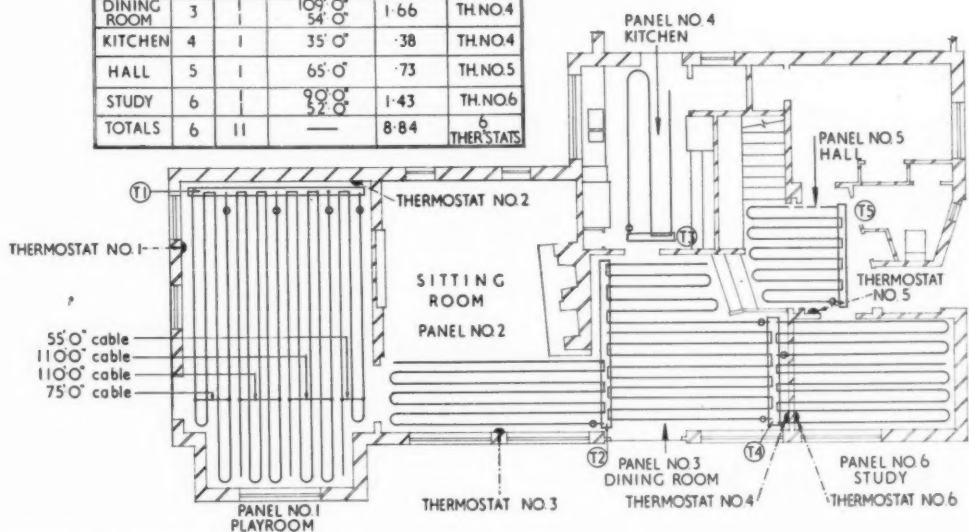




Expanded metal is fixed over conduits before screeding to spread heat more evenly. The system is wired separately from other power and light circuits so that it can be clock-controlled for off-peak operation. At present the concession in this area for off-peak operation is less favourable than the ordinary domestic two-part tariff, but it is hoped that a more favourable rate may come into force later. At present rates the annual operating cost of this system is estimated at about £52, but as the house has not yet been in occupation for 12 months the accuracy of this estimate cannot be judged, also it would be impossible to separate the cost of the floor heating, as the domestic hot water is supplied by an industrial-type electric storage heater and there are electric fires in the bedrooms and an electric cooker, all current being run through the same meter. Installation costs for the floor heating were as follows: electrical equipment, £155, trough access covers, £42, electrical contractors work, £34, expanded metal, £27, giving a total of £258. The estimated annual current consumption is 12,500 units, with a total loading of 7 kW. The area of the house, excluding outbuildings, is 2,500 sq. ft. The contract price was £9,624 including central heating, outbuildings, drive and gates, but excluding garden works. The garden contract was £1,075. The house was built in 7 months. The general contractors were H. Bacon & Son Ltd. For sub-contractors see page 156.

#### HOUSE AT REIGATE, SURREY

LOCATION	PANEL NO.	NO. OF CABLES	CABLE LENGTHS INSTALLED	PANEL LOAD, KW	CONTROL
PLAY ROOM	1	4	75' 0" : 107' 0" 107' 0" : 55' 0"	3.54	TH. NO. 1 TH. NO. 2
SITTING ROOM	2	1	109' 0"	1.1	TH. NO. 3
DINING ROOM	3	1	109' 0" 54' 0"	1.66	TH. NO. 4
KITCHEN	4	1	35' 0"	.38	TH. NO. 4
HALL	5	1	65' 0"	.73	TH. NO. 5
STUDY	6	1	90' 0" 52' 0"	1.43	TH. NO. 6
TOTALS	6	11	—	8.84	6 THER. STATS.



Ground floor plan showing heating layout (Scale:  $\frac{1}{4}$ " = 1' 0")

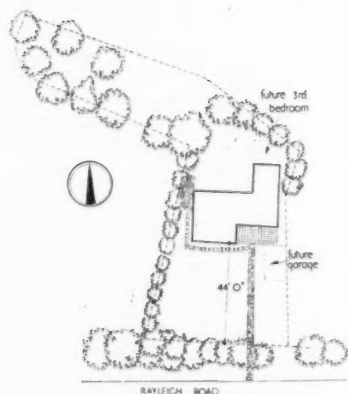
## HOUSE

in RAYLEIGH ROAD, HUTTON, ESSEX

designed by G. R. BINNS

The single-storey house illustrated on this page and opposite has been designed by an architectural student for his own occupation. Certain difficulty was encountered in obtaining town planning permission from the local authority, and when this was finally granted, a condition was added that an adequate screen of trees be maintained to shield the building from the view of nearby properties, "in view of the contemporary design submitted." Similar prejudice prevented the architect from raising a mortgage easily.

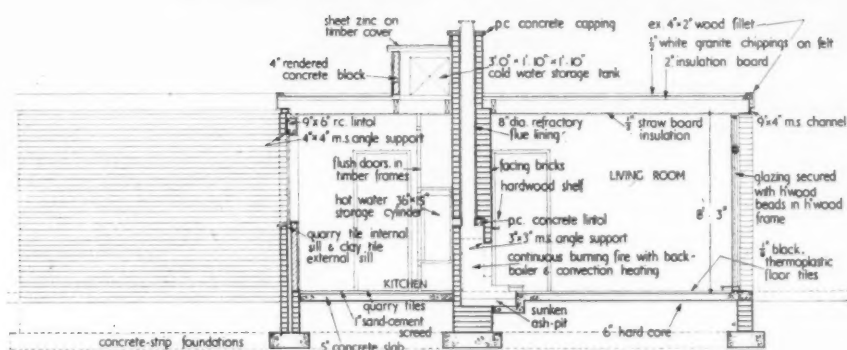
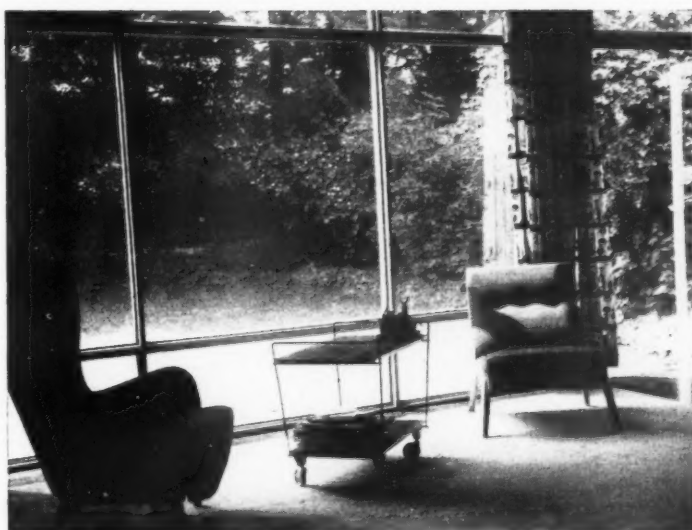
The house from the south-east.



Site plan

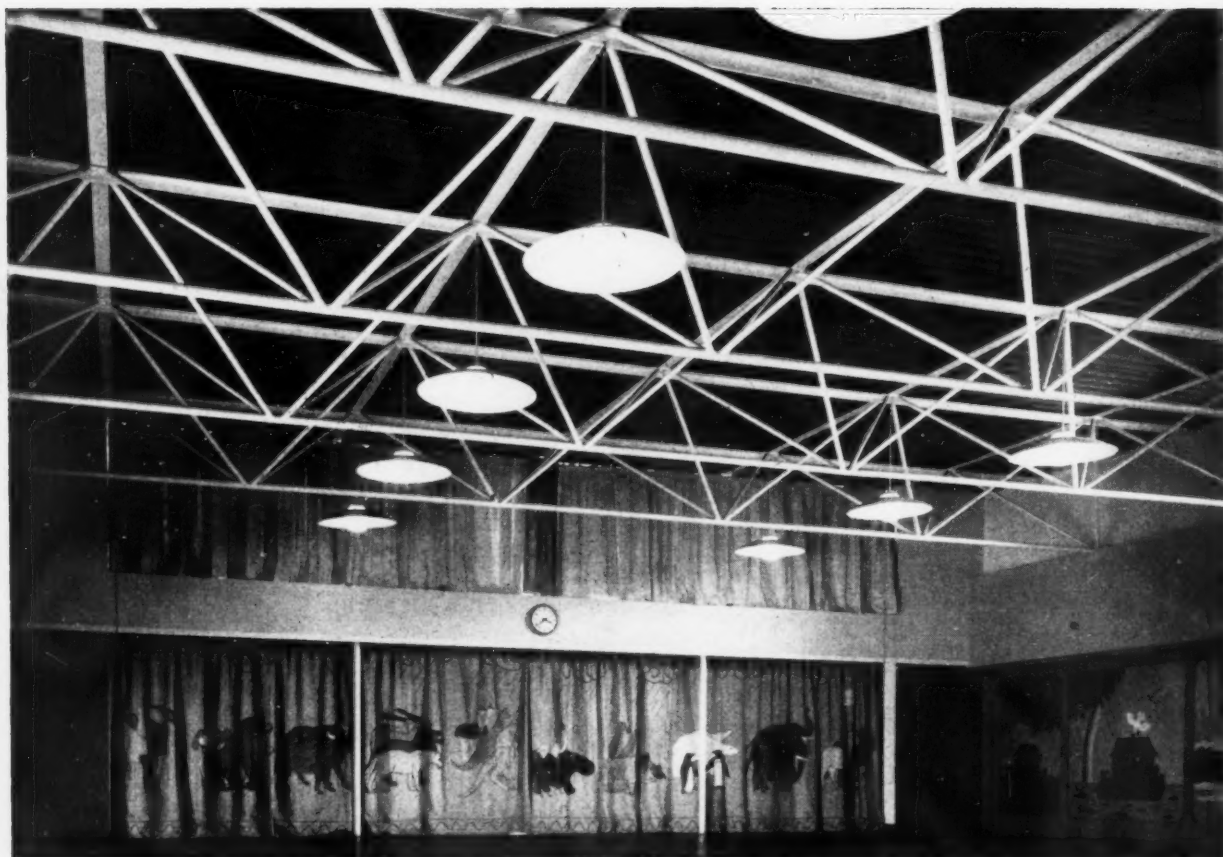
The site is "L"-shaped, with a road frontage to the south, bordered by trees and surrounding land, which is also thickly wooded. The house was sited at the corner of the "L" to give the maximum area of garden to the south and to divide the two arms of the "L" into separate areas. As trees and foliage form a natural screen from the road, full advantage was taken of the south aspect in the provision of a fully glazed wall to the living room seen in the photograph above. On the opposite page: top, dining room and kitchen windows on the north facade. The living room (centre photograph, opposite), dining recess and kitchen are grouped round a central fireplace to form the living area of the house, with a link, consisting of entrance lobby, bathroom and w.c., to the bedroom wing. There is provision for a third bedroom at the north-east corner of the house and a garage and workshop will be added to the south of the bedroom wing. The external walls are of 4½-in. brick outer skin, 2-in. cavity and 4-in. breeze block inner skin, plastered. The bricks are multi-coloured concrete, and 3-in. and 4-in. breeze blocks are used for internal partitions.



Section A-A [Scale:  $\frac{1}{4}" = 1' 0"$ ]

Floors are of 5-in. concrete with 1-in. screed and black thermoplastic tiles throughout, except for the kitchen floor, which is finished in red quarry tiles. The roof consists of 8-in. by 2-in. and 8-in. by 1½-in. joists with 2-in. straw-board and three-layer bituminous felt. Ceilings are of insulation board, papered. Windows are standard metal, except on the south elevation, where glazing has natural hardwood frames. These wood frames are detailed to take double glazing, although only the outer sheets of glass have been fixed so far. Internal joinery is of painted softwood. Heating to the living area is by a sunk ashpit-type convector fire with back boiler and under-floor air supply. The hot water storage cylinder, with immersion heater, is in the

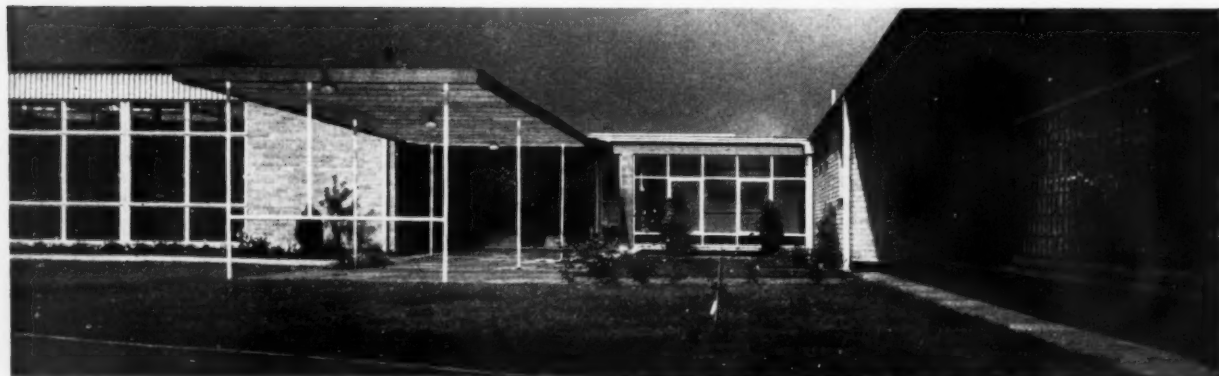
airing cupboard in the kitchen directly behind the fireplace. Bedrooms are heated by electric fires. The house has a floor area of 740 sq. ft. and the design was prepared in consultation with the general contractor, to keep the cost within the predetermined limit of £1,500. The contract price was fixed at £1,450 (39s. 2d. per sq. ft.) with £50 allowed for extras. The cost of the site was £500. The contract figure was achieved by the use of the traditional building techniques with which the contractor was familiar and by the choice of the cheapest possible finishes of a reasonable standard. Paths and pavings were not included in the contract. The general contractors were W. D. Crabb & Sons Ltd. For sub-contractors, see page 156.



# BUILDINGS IN THE NEWS continued

## School at Louth, Lincolnshire

*The junior school illustrated on this page, in Lacey Gardens, Louth, was designed for the Education Committee, Lincolnshire, parts of Lindsey, County Council, by Denis Clarke Hall, architect-in-charge, H. S. Scorer, quantity surveyors, Davis, Belfield and Everest. This is a two-form entry school for 320 pupils and within the cost limits in force when it was built it was possible to provide an extra classroom, making nine in all. The entrance hall, left, is used as an extension to the assembly hall, above, and divided from it by curtains, designed by Gerald Holton. Below, the main entrance, with dining room windows on the left and a glass brick wall to a cloakroom on the right. The tubular steel roof trusses in the assembly hall support aluminium roof decking. The total cost on tender of building and site works was £49,541, with a nett cost per place of £140 (when the cost per place limit in force was £146). The number of sq. ft. per place is 52.*









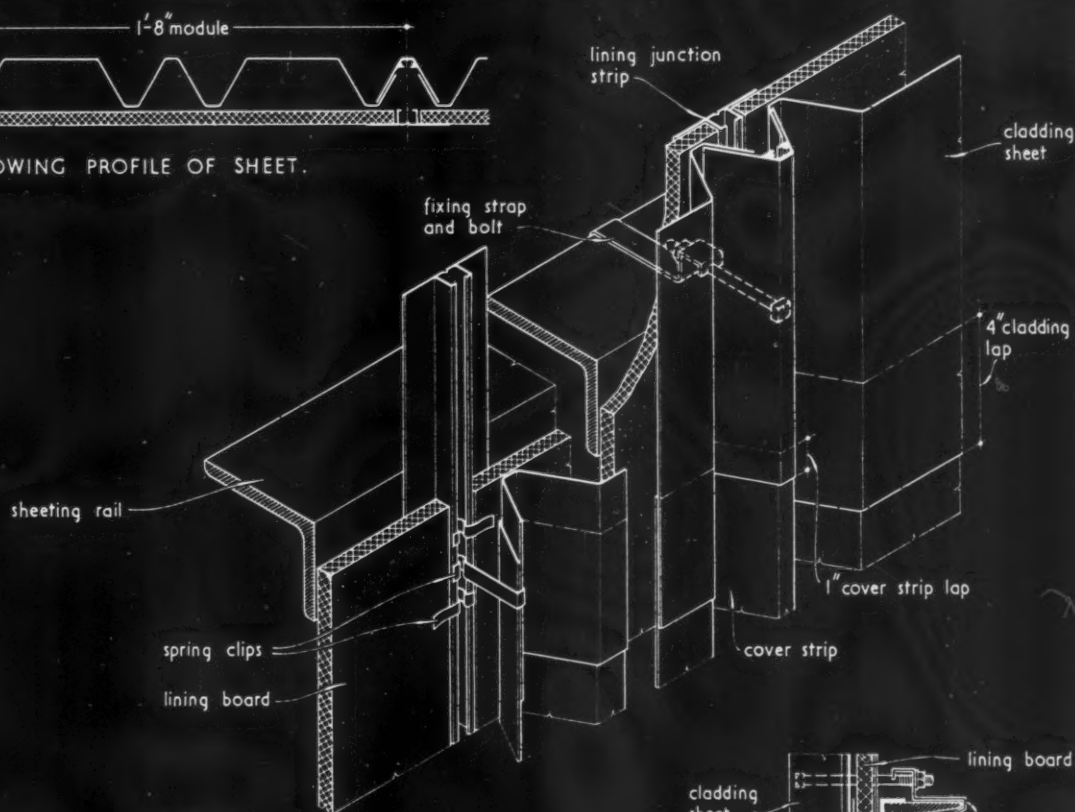
## SHEET MATERIALS | METAL | APPLICATIONS

15.Q1

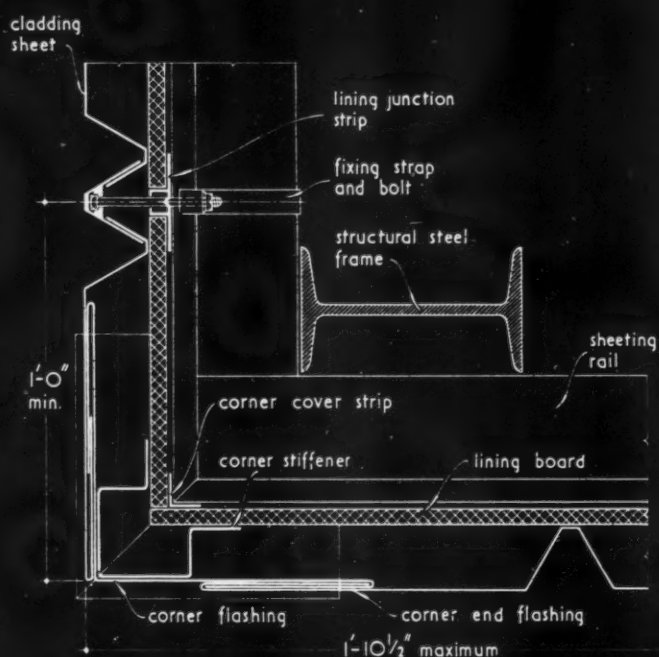
The Architects' Journal Library of Information Sheets 555. Editor: Cotterell Butler, A.R.I.B.A.



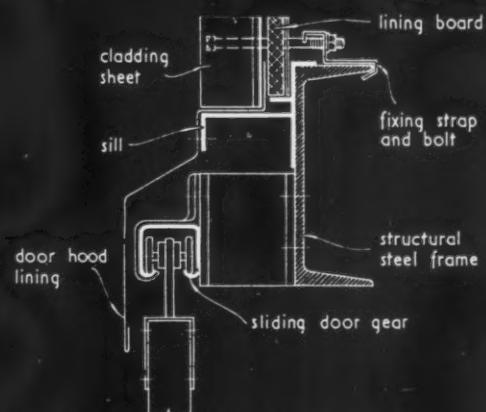
SECTION SHOWING PROFILE OF SHEET.



GENERAL ASSEMBLY OF COMPONENT PARTS.



TREATMENT OF CLADDING AT CORNER AND JAMB OF SLIDING DOOR.



DETAIL AT HEAD OF SLIDING DOOR.

KYNALOK SECRET-FIX ALUMINIUM-ALLOY CLADDING: WALLS.

Manufacturer: Imperial Chemical Industries Limited, Metals Division.

## 15.Q1 · KYNALOK SECRET-FIX · ALUMINIUM-ALLOY CLADDING: WALLS

This Sheet deals with Kynalok Secret-fix aluminium-alloy cladding for walls. Cladding for roofs is dealt with on Sheet 15.Q2.

The system employs a method of concealed fixing whereby the cladding sheets are not pierced and, in consequence, all movement due to thermal variations is accommodated without affecting the weather seal. Provision is made for insulation or other lining board to be erected at the same time as the cladding and retained by fixings common to both.

### Material

The cladding sheets, flashings and extruded sections are made from selected Kynal aluminium alloys which are light and strong, and offer excellent resistance to corrosion.

### Sizes

The system is based on a 1 ft. 8 in. module, and sheets are available in full module and  $\frac{1}{2}$ -module width in 20 and 22 s.w.g. and in lengths up to 16 ft. 0 in. Extruded cover-strip and lining junction-strip sections are available in lengths up to 21 ft. 0 in.

### Construction

The profile of the sheets is as shown in the drawing on the face of the Sheet. Adjacent cladding sheets are held at their edges by an extruded aluminium-alloy cover strip into the underside of which the heads of the fixing bolts are fitted. The bolts are secured to the sheeting rails by special fixing straps; fixing straps are available for use with angle, channel or tubular sheeting rails. The cover strips are at 1 ft. 8 in. centres, and the cladding should be supported at 10 ft. 0 in. maximum centres. An end lap of 4 in. between sheets is recommended. The drawings show the treatment at corners and at head and jambs of a sliding door assembly. Windows and patent glazing are readily accommodated in the cladding. As the cladding is not pierced by the fixings, the system may be dismantled and reassembled as required.

**Lining:** Lining boards are temporarily held in position by spring clips until such time as the cover strip is applied and the fixing bolts tightened. One type clips into the extruded lining junction strip: the second type holds down the edges of the cladding sheets. Both types of clip should be located at approximately 3 ft. 0 in. centres.

### Thermal Insulation

The profile of the sheets creates an almost continuous 2-in. airspace between the aluminium cladding and the lining boards. Calculations based on the thermal properties of insulation board, a closed airspace and the high reflectivity and low emissivity values

of aluminium give a thermal transmittance (U) value of 0.171 B.t.u./ft.<sup>2</sup> h deg. F. with still air both sides and 0.238 B.t.u./ft.<sup>2</sup> h deg. F. with 15 m.p.h. air flow outside and still air inside. These values are lower than those for an 11-in. unventilated cavity wall.

### Fittings

The following components are available in aluminium alloy for use with the cladding sheets—flashings for corners, verges and openings; corner stiffeners; sills; sill junction pieces; corner sill junction piece.

### Further Information

The manufacturer maintains a technical advisory department available to answer questions dealing with this subject. The Kynalok system is erected under licence by approved contractors whose names are obtainable from I.C.I. Sales Offices at:

Belfast:	Imperial House, Donegal Square East. Telephone: Belfast 27741.
Birmingham 2:	11, Bennetts Hill. Telephone: Midland 7101.
Bradford 1:	Britannia House, Hall Ings (P.O. Box 100). Telephone: Bradford 29530.
Bristol 8:	Trafalgar, The Promenade, Clifton Down. Telephone: Bristol 38981.
Cardiff:	National Provincial Bank Buildings, Bute Street, Docks. Telephone: Cardiff 22731.
Glasgow, C.2:	4, Blythswood Square. Telephone: Douglas 7020.
London, W.1:	Gloucester House, 149, Park Lane. Telephone: Grosvenor 4010.
Manchester 2:	Temple Chambers, 33, Brazennose Street. Telephone: Deansgate 2466.
Newcastle-upon-Tyne 2:	21, Claremont Place. Telephone: Newcastle 22681.

Compiled from information supplied by:

**Imperial Chemical Industries Limited, Metals Division.**  
Address: P.O. Box 216, Kynoch Works, Witton, Birmingham 6.  
Telephone: Birchfields 4848.  
Telegrams: Icimetel, Telex, Birmingham.



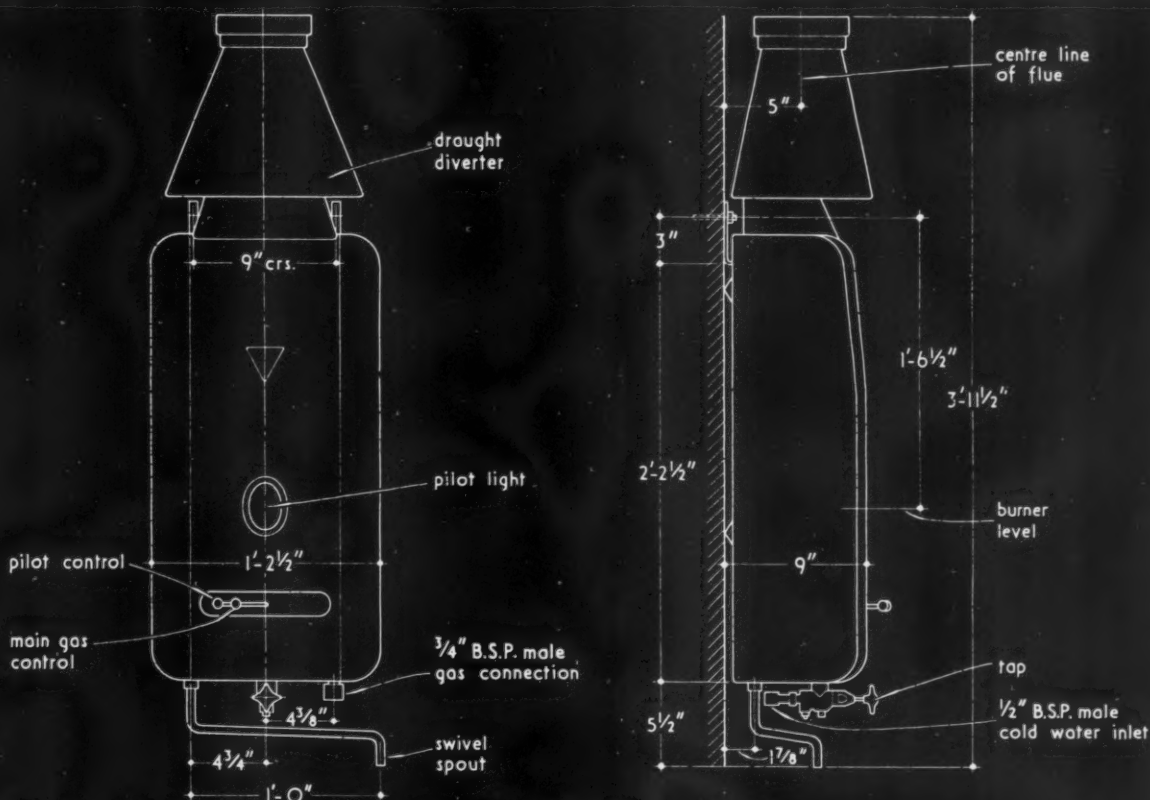




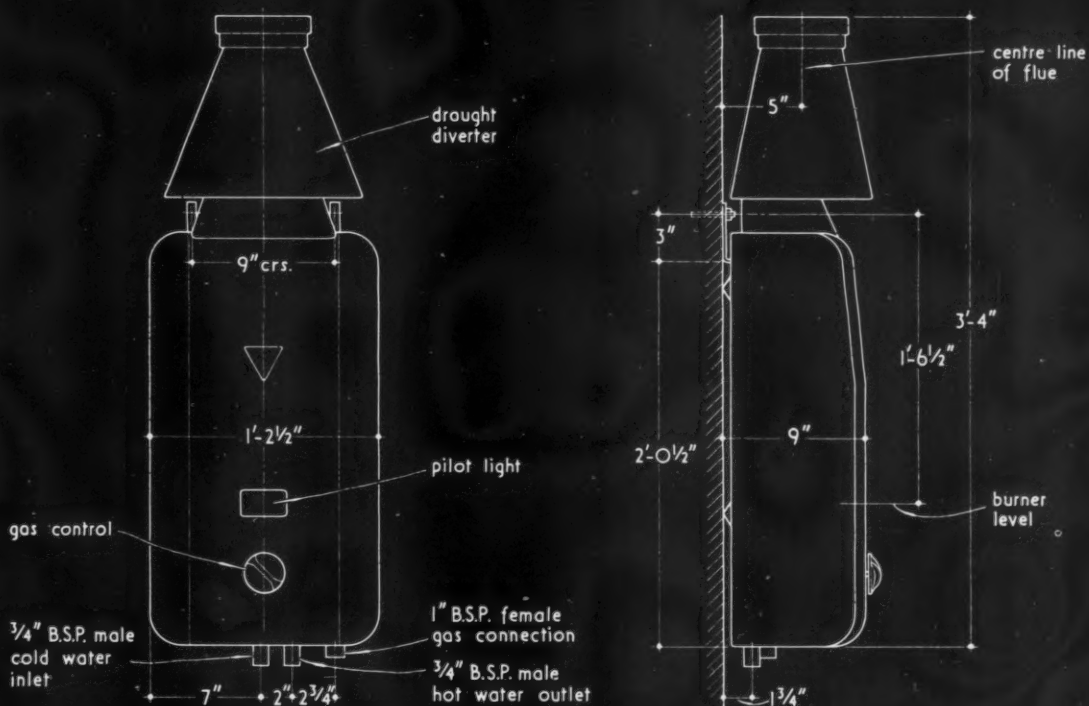
## WATER HEATING UNITS | GAS

32.C20

The Architects' Journal Library of Information Sheets 556. Editor: Cotterell Butler, A.R.I.B.A.



TYPE SG. 32/1 LARGE SINGLE POINT HEATER WITH SWIVEL SPOUT  
providing hot water supply to both and adjacent basin, or large sink, etc.



TYPE 709 AND 709B MULTI-POINT HEATERS  
providing hot water supply to bath, basin and kitchen sink, or three cloakroom basins, etc.

## 32.C20 ASCOT INSTANTANEOUS GAS WATER HEATERS

This Sheet supersedes Sheet 32.C20 published 6.3.52.

**Type SG. 32/1:** This heater is designed to provide a single point hot water supply to a bath by means of a swivel spout outlet which can also serve an adjacent bathroom basin.

**Type SG. 32/1** is an open-outlet pressure operated heater and must on no account be connected to any restriction in the form of taps, valves, piping or fittings other than those recommended by the manufacturer. (See subsequent Sheets in this series).

**Types 709 and 709B:** Heater type 709 is designed preferably to be supplied with water from a tank; 709B is essentially for mains water supply and has been designed to contend with varying water pressures. The heaters provide multi-point hot water supply to the hot taps at bath, basin and kitchen sink. One heater will serve three cloakroom basins in schools, offices, etc., and also two showers or a Quickspray Wash Fountain. Where a solid fuel boiler is installed, the heater may be connected as an alternative hot water system immediately available for use when the boiler supply is not required. (See subsequent Sheets in this series.)

### Characteristics

**Output:** 3.25 gal./min. raised through 40° F., or  
2.5 gal./min. raised through 50° F., or  
1.25 gal./min. raised through 100° F.

**Input:** 1,625 B.Th.U./min.  
or 3.25 cu. ft./min. of 500 C.V. gas.

### Components

**Automatic valve:** Prevents gas passing to the burner unless a predetermined minimum flow of water is flowing through the heater. The type 709B also incorporates a water governor and five-position temperature selector. With this heater constant water flow is provided irrespective of water pressure fluctuation.

**Heating body:** Coil-cooled combustion chamber and two-stage finned type heat exchanger.

**Burner:** 709, 709B, SG32/1—Thin flame type made of stainless steel, incorporating pilot safety device.

**Main gas and pilot controls:** These are interlocking on all types. The SG. 32/1 is fitted with a lever type main gas control and the 709 and 709B are fitted with a rotary type control.

**Draught diverter:** Integral with the heater, with socket for 5-in. internal diameter flue.

**Hot tap and outlet spout:** Fitted to type SG. 32/1 heater. Chromium plated swivel spout; standard 12 in., non-standard at extra cost 18 in. and 24 in. (where these are not of sufficient length the manufacturer should be consulted).

### Finish

White or cream vitreous enamel.

### Installation

**Position:** Grouting bolts and hanging brackets are supplied. To facilitate regulation and maintenance, the heater should be fixed so that the burner level is approximately 4 ft. 9 in. from the floor and in such a position that an adequate intake of air is assured.

With types 709 and 709B, the heater should be installed as closely as possible to the most frequently used draw-off tap (normally at the kitchen sink) taking into consideration the necessity for an efficient flue installation.

### Gas

**Connection:** SG. 32/1— $\frac{3}{4}$ -in. tapered B.S.P. male thread.

709 and 709B—1-in. tapered B.S.P. female thread.

**Supply pipe:** Up to 15 ft. from the meter— $\frac{3}{4}$  in. int. dia.  
15-30 ft. from the meter—1 in. int. dia.  
Over 30 ft. from the meter—1 $\frac{1}{4}$  in. int. dia.

**Meter:** Rated capacity to be 200 cu. ft. per hour minimum in addition to requirements for all other gas appliances.

**Stop cock:** Must be fitted in the supply line close to the heater to facilitate maintenance.

### Water

**Tank supply:** Type SG. 32/1—Minimum head required 8-10 ft. measured vertically from the level of the water in the tank to the spout outlet.

Type 709—Minimum head required 10 ft. measured vertically from the level of the water in the tank to the highest draw-off point.

**Mains supply:** Permission must be obtained from the Water Authority.

Types SG. 32/1 and 709—Although tank supply is preferable, these heaters may be connected to the mains; the minimum pressure required is 4 $\frac{1}{2}$  lb./sq. in.

Type 709B—Minimum pressure required, 15 lb./sq. in.

**Connection:** Type SG. 32/1— $\frac{1}{2}$ -in. tapered B.S.P. male thread.

Types 709 and 709B— $\frac{1}{2}$ -in. tapered B.S.P. male thread.

**Supply pipe:** Mains— $\frac{1}{2}$  in. to  $\frac{3}{4}$  in.

Tank— $\frac{3}{4}$  in. to 1 in. dependent on the head of water and length of run.

A stop cock (of pattern approved by Water Authority) must be fitted in the cold water supply close to the heater.

### Flue

A flue is required; this should be 5 in. internal diameter asbestos-cement.

For detailed information on the design of flues, see subsequent Sheets in this series.

Compiled from information supplied by:

Ascot Gas Water Heaters Ltd.

**Head Office and Works:** 255, North Circular Road, Neasden, London, N.W.10.

**Telephone:** Willesden 1234.

**Telegrams:** Gascot, Phone, London.

### Branch Offices and

**Service Depots:** Belfast, Birmingham, Bournemouth and Glasgow.

**Service Depots:** Bristol, Cambridge, Manchester, Oxford, Southampton, Stoke-on-Trent and Jersey.



**School at Royston, Herts.**

*The Secondary School, Garden Walk, Royston, was designed by Richard Sheppard and Partners, in collaboration with C. H. Aslin, County Architect; architect-in-charge, Stephen Gardiner, who also designed the mural in the entrance hall, seen in the photograph below. Above, left to right, south facade of classroom wing, main entrance and the library and administrative wing. Right, the main staircase, leading to the first floor library and classrooms. This is a two-form entry school for 360 pupils on a 17-acre site, which contains existing playing fields. As this is a rural district there are only five classrooms of the normal kind, besides woodwork, metalwork, light craft, art and music rooms and in addition, there is accommodation for teaching biology, science and domestic science and there are piggeries, greenhouses and a Dutch barn. The construction generally consists of a r.c. frame, with infilling panels of glass or brick. The library wing is constructed of brick load-bearing cross walls. The consulting electrical engineers were A. F. Myers & Partners and the general contractors, M. & F. O. Foster & Co. Ltd.*



## TECHNICAL SECTION

The crowded and entertaining evening symposium on drawing office technique which took place at the RIBA on January 17 showed a profession which was at sixes and sevens on how to put pen (or pencil) to paper, but was at least deeply concerned about it. As a speaker pointed out, a change in drawing office technique is the natural outcome of a change in building technique, for how you draw should flow from what you have to draw and what the receivers of your drawing want to know. Of the proposals put forward by the main speakers those of Henry Elder attracted the most attention as they alone showed a fundamental attack on the problem. Henry Elder proposed the division of the subject matter by trades, the inclusion of the specification with the drawings and the reduction of the size of drawings so that they can be bound with the quantities. Time alone can tell whether proposals of this kind can be rigorously adhered to, but they are naturally attractive to the serious architect. By compelling him to think in terms of the separate trades they impose a discipline upon him which must reduce errors and omissions. Further, by thus forcing him to participate, as it were, in the act of building, they bring him face to face with the workings of building economy which as we know are one of the sources of good design.

This week's  
special article

### 1 SOCIOLOGY the popularity of district heating

The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year.

*District heating, which was so much in the news during the first post-war years has not figured in public discussion for some time. The chief reason for this is probably that those responsible for housing estates have been waiting to see how the post-war schemes have fared. This week we print a report by John Madge, A.R.I.B.A., of BRS, who has been conducting a report into the popularity of five of these schemes. While pointing out that the average running cost to the tenants was in every case greater than what they would expect using conventional heating, Mr. Madge suggests that the future of district heating in this country depends in the first place on the general acceptance of a higher standard of heating, and in the second place on an accurate fulfilment of householders' expectations. He also discusses the need for some metering device which will enable householders to control their expenditure.*

District heating is in Great Britain a generic term for any scheme by which heat is supplied from a central boiler-house to a number of buildings. In this sense the first district heating scheme in Britain was in Manchester, for in that town a central generating station was used in 1911 to supply heat and hot water to several large industrial and warehouse premises and to places of amusement. The next completed scheme,

which was on a Dundee municipal housing estate, came into operation in 1920. After the completion in 1922 of the Second Dundee Scheme there was very little development of District Heating between the wars. When, therefore, the question arose after the last war as to whether or not district heating schemes should be promoted in Great Britain, the proposals made had to be based primarily on experience abroad.



The Ministry of Fuel and Power accordingly arranged for a mission on District Heating to visit the United States early in 1947. In an exhaustive report the Mission concluded that, at least under American climatic and economic conditions, district heating was a well established and generally accepted form of space and water heating. Most of the earlier schemes had been applied to the heating of commercial centres of large cities, but more recently new residential areas comprising houses and flats built for letting were very frequently district heated. A high proportion of recent local authority low-cost housing projects had incorporated district heating designed to maintain the houses throughout at 70 deg. F. and to supply unlimited hot water. Primary distribution was normally by steam.

The mission collected clear evidence that district heating in the U.S.A. resulted in economy of fuel and that where the schemes were well designed the economy was substantial. The managements of American housing estates commonly undertake to provide a heated house, and the majority of administrators and managers of housing estates who had experience of district heating, were found to be strongly in favour of this method of fulfilling their obligations. Other evidence was collected by the Heating and Ventilation (Reconstruction) Committee of the Building Research Board. This showed that until 1941 district heating was developing in the U.S.S.R. even more rapidly than in the U.S.A. A primary object appeared to be the use of low-grade fuels, and the distribution of the heat generated was facilitated by the characteristically large scale of Russian blocks of offices and flats.

Elsewhere in Europe, district heating had been developed, extensively in Germany and to a lesser extent in France, Czechoslovakia, Switzerland, Sweden and Denmark.

In all these countries there was found to have been a steady shift of emphasis away from straight thermal schemes which rely on special boilers used solely for heating, and towards thermal-electric schemes which, at the cost of somewhat less efficient generation of electricity, supply waste hot water at a temperature high enough to be usable for space and water heating. This arrangement considerably increases the overall efficiency of the plant. In Europe thermal-electric schemes are often associated with heat accumulators which allow the less efficient back-pressure turbines to be used intermittently during periods of peak demand for electricity. An adequate reserve of hot water is maintained in this way.

As a result of this generally favourable evidence the prospects for promoting district heating for housing estates in Great Britain, at least on an experimental scale, appeared to be bright. The Inter-departmental Committee on Domestic Heating set up early in 1946 a special sub-committee on District Heating and charged it with responsibility for the technical assessment of local authorities' district heating projects. This sub-committee provisionally approved a number of schemes submitted by local authorities in England, Wales and Scotland, and a proportion of these have now been



Above: the heat exchange tower and pump houses at Pimlico. (architects, Powell and Moya).

built with certain subsequent modifications in plan and reductions in scale.

Experience has thus accumulated on the technical feasibility of district heating schemes in the British Isles. These schemes have been designed primarily for the supply of heating and hot water to dwellings. By the end of 1952 many of the dwellings so heated had been occupied for some time, and it was decided that by then it would be possible to ascertain with some reliability the reactions of tenants on the different schemes to their experiences of this novel and, to Britons, unfamiliar form of domestic heating.

The field work described in the present paper was accordingly carried out with the object of determining the experiences and eliciting the views on district heating of a representative sample of tenants on each of the major schemes carried out in England since the last war.

#### THE SCHEMES SURVEYED

Of the eleven district heating schemes approved by the sub-committee, five are in England and it was decided to confine the study to these five. They are located at

Dagenham, Salisbury, Swindon, Urmston and at Churchill Gardens, Westminster. There are thus two in country towns, two on the edges of conurbations and one in a central London area.

There are some material differences between these five schemes both in their technical aspects and in what they set out to provide. The most distinctive scheme is that at Pimlico. This is a small-scale example of a thermal-electric installation. The source of heat is the Battersea Power Station, which has been provided with two auxiliary back-pressure turbo-alternators deliberately designed to extract less heat from the steam than the most electrically efficient modern generators, with the result that the exhaust steam is discharged at a temperature high enough to be used for space and water heating. This is passed through a calorifier and the secondary circulating water is raised to 200° F. This water is pumped under the Thames into the 138 ft. high heat accumulator tower which is a feature of the Churchill Gardens site, and from thence is distributed to the flats and to various other buildings including the Dolphin Square block of flats. The main hot water supply is

metered and is drawn only intermittently as required to maintain the store in the heat accumulator, payment varying according to the amount taken. In general, supply is maintained by bringing these auxiliary generators into operation during the daily periods of peak electrical demand, but the accumulator has sufficient capacity to meet several days' demand.

The Churchill Gardens flats are built to a good standard of heat insulation, and the design temperatures in the flats (at 30° F. outside temperature) are 65° F. for the living rooms and 60° F. for the kitchens, bedrooms and bathrooms. The relatively dense layout and the careful insulation of the heating system result in a total transmission loss at peak demand which is claimed to be less than 4 per cent.

The other four schemes are similar to each other in principle. Each relies on a special boiler house, though in the case of Dagenham this is supplemented by the waste heat from a destructor plant. The estates themselves are in no way abnormal, possessing a fairly dispersed layout and consisting of dwellings of reasonably orthodox design. Semi-detached houses and short terraces predominate, but at Dagenham and Urms-ton there are flats in three and four storeys. Each estate (except for that at Salisbury) has a number of substations each containing a large calorifier by means of which the boiler heat is transferred to two different sub-distribution systems, one for space heating and the other for central hot water. These pipes are laid underground in ducts and the distances are such that considerable heat losses are incurred, though these could be greatly

reduced by improving the quality of the insulation.

The design temperatures in the different schemes were varied according to the wishes of the local authorities. Some details are given in Table I which shows a variation between 62° F. and 68° F. for the living rooms and between 52° F. and 60° F. for the bedrooms. As a result of these differences the maximum design load per dwelling ranges on different schemes between 10,400 BTU/hr. and 24,500 BTU/hr.

In most cases there was a clear intention that the tenants should supplement central heating by using additional heating devices. There are, however, various restrictions on choice of supplementary heating. Two schemes, for example, provide no flues and electric fires are therefore required. On another scheme only smokeless fuels are permitted, so that although flues are provided the only solid fuel normally burned is coke. The other two schemes include provision for ordinary open fires, but one of these is not piped for gas.

#### RUNNING COSTS

Not unconnected with the varying standards on the five schemes, though not perhaps as closely linked as might be expected, heating costs also vary considerably. This is partly reflected in the fairly large range of charges on different estates for the district heating of similar accommodation. For example the weekly heating charge for a three-bedroom house ranged at the end of 1952 from about 10/- on one estate to about 15/- on another. A more realistic comparison may perhaps be made by comparing the total costs on

fuel incurred by the tenants in the five samples. The information on fuel expenditure collected for the purposes of this survey does in fact reveal a very considerable variation between the schemes in the average combined expenditure on fuel. Moreover, even on the more economical schemes the average expenditure on fuel incurred by the tenant of a district heated dwelling is considerably higher than that of the tenant of a house with orthodox heating. Table 2 suggests an excess expenditure on district heated estates of between £10 and £20 a year.

It so happened that the design and construction of these district heating projects, which all date from 1946 and 1947, coincided with a phase of steeply rising costs. In theory, capital expenditure designed to reduce future running costs is favoured by a rise in the general level of costs, but in practice this has been offset not only by the effects of the fact that the original estimates of costs and charges were too low, but also of the fact that several upward revisions of charges have been necessitated since the houses were occupied. Furthermore, the need for retrenchment has led to the substantial pruning of some schemes; as a result, the early installation work, being designed for the full original schemes, was on a larger scale than was required for the curtailment schemes but the cost of it has nevertheless had to be shared between the reduced number of tenants, and this has also to some extent falsified the original estimates.

No attempt has been made in this article to assess the technical efficiencies of the vari-

Table I, showing extent, design performance of each scheme, the weekly charges to tenants and the available forms of supplementary heat.

	Scheme A	Scheme B	Scheme C	Scheme D	Scheme E
Dwellings connected at December 1, 1952 .. .. .	414	570	486	674	400
Other buildings connected at December 1, 1952 .. .. .	1 school + green-houses	Community centre	1 School	1 school, 2 sub-stations with laundry, shops	None
Combined maximum demand for dwellings, -x 10 <sup>6</sup> BTU/hr.	10 approx.	14 approx.	11.8	14.2	20 approx.
" " " whole scheme, -x 10 <sup>6</sup> BTU/hr.	15.6	—	13.1	16.7	20 approx.
Design temperature—Living room, deg. F. .. .. .	62	65	62	68	68
Kitchen .. .. .	58	60	58	58	50
Hall .. .. .	55	—	50	No heating	50
Bedrooms .. .. .	52	55-60	52	52	54
Hours of supply of space heating .. .. .	17 hrs.	17½ hrs.	16-17 hrs.	16½ hrs.	6 a.m.-10.30 p.m.
Temperature of domestic hot water supply, deg. F. .. .. .	140-145	130-135	155	150	140
Hours of supply .. .. .	24 hrs.	24 hrs.	24 hrs.	17 hrs.	6 a.m.-10.30 p.m.
Maximum design load per dwelling, -x 10 <sup>3</sup> BTU/hr. .. .. .	18 approx.	24.5	14.2	10.4	—
Weekly charges to tenants at December 1, 1952:					
4 Bedroom { Flats .. .. .	—	12/7	12/6	—	basic charge of
Houses .. .. .	10/6	—	per dwelling	11/8	10/-
3 Bedroom { Flats .. .. .	—	11/1	irrespective	10/-	5/-
Houses .. .. .	10/0	—	of size	11/4	plus
2 Bedroom { Flats and Maisonettes .. .. .	8/-	9/5	—	9/9	1/- per
Houses .. .. .	8/9	—	—	9/9	100 sq. ft.
1 Bedroom Flats .. .. .	7/-	7/9	—	—	—
Old People's Bungalows .. .. .	—	—	—	—	(14/- average)
Bed-sitting room Flats .. .. .	—	4/3	—	—	—
Supplementary heating in living room:					
Any solid fuel .. .. .	—	—	*	—	—
Smokeless fuels .. .. .	—	—	—	—	*
Electricity .. .. .	*	*	*	*	*
Gas .. .. .	*	—	—	—	*

TABLE 2

A Comparison Between District Heated Houses and a General Sample of Post-war Local Authority Houses

Total amount spent in 12-month period May 1, 1952—April 30, 1953	Scheme A (85)	Scheme B (89)	Scheme C (93)	Scheme D (83)	Scheme E (89)	All Schemes (439)	Conventional heating (684)
Mean expenditure per household							
On District Heating	£25	£25	£33	£28	£37	£29	—
On Electricity, Gas and Solid Fuel	£16	£17	£17	£14	£14	£16	£30*
Total	£41	£42	£50	£42	£51	£45	£30*

(Figures in brackets indicate number of cases)

\*Estimated from social survey report on national enquiry conducted in previous year.

ous schemes, except in so far as information was sought on the extent to which the heating and hot water services were regarded as satisfactory by those using them. Inefficiencies such as bad stoking, heat losses in transmission, and water leakage, would not necessarily be apparent by reason of interrupted or inadequate services but might affect satisfaction indirectly by increasing the costs of operation.

Costs have probably also been affected adversely in some schemes by the wasteful use of the district heating services. Suitable meters to the high standard of accuracy required by British law for gas and electricity meters are technically difficult to devise; only in Swindon was any system of metering individual dwellings adopted and that was restricted to the hot water supply; in the other schemes there was no direct incentive to economy and some tenants have undoubtedly been extravagant in their use of the services, particularly of hot water.

#### THE SURVEY AND ITS FINDINGS

With the generous help of the five Local Authorities a statistically representative sample of 100 householders with at least one year's experience of district heating

were drawn from each estate, making a total sample of 500, and these were interviewed during the winter of 1952-3. Each informant was asked if she would allow us to approach her electricity and gas supplier and her fuel merchant so that we could compile details of her total expenditure on fuel. In the great majority of instances full co-operation was offered both by the householders and by the suppliers.

The interviews followed a fixed schedule of questions, covering the composition, social class and income of the household, asking about heating habits, whether additional heating appliances had been bought or used, and including five questions with a direct bearing on the extent to which the informants had come to like district heating and to think it worth while.

The answers to these five questions were analysed in order to ascertain how satisfied individuals were with district heating on the five estates. The questions asked and the answers given are summarized on this basis in Fig. 1. It will be seen that in the case of each question the answers from the five schemes are placed in the same order and that, with minor discrepancies, the order of popularity of the schemes is in-

dicated consistently by all five questions analysed. It will also be noticed that the differences in popularity revealed are rather striking. For example, in reply to the question "If you count savings in your other fuel bills, do you feel that district heating is worth what it costs you," 83% said "Yes" in the most popular scheme while only 19% said "Yes" in the least popular scheme. Whatever the precise meaning and significance of these percentages, there can remain little doubt that the consensus of opinion was favourable to district heating in two or three places and unfavourable in at least one.

It is clearly important to try to account for this rather definite result. An authority embarking on a district heating scheme has some control both over the details of the installation and over the choice of tenants, so it is a practical question to enquire whether it is possible to predict that the outcome of some decisions will be more successful than that of others.

The interview material and information from other sources makes it possible to test some of the possible relationships. Surprisingly enough, many of the more commonsense theories are not borne out by the data. For instance, there is no significant connection on any of the schemes between the satisfaction with district heating expressed by individual tenants and their family income or their social class; in other words, it is impossible to choose potentially satisfied tenants on the basis of these factors. Again, there is little evidence that on any given estate individual tenants who spend most are resentful of the fact. This is not altogether surprising, for those who spend most may well be those who because they have young children or for some other reason, desire a higher than normal standard in space heating, and may particularly appreciate the constant supply of hot water. A rather different picture is, however, presented by a comparison between estates. It is prob-

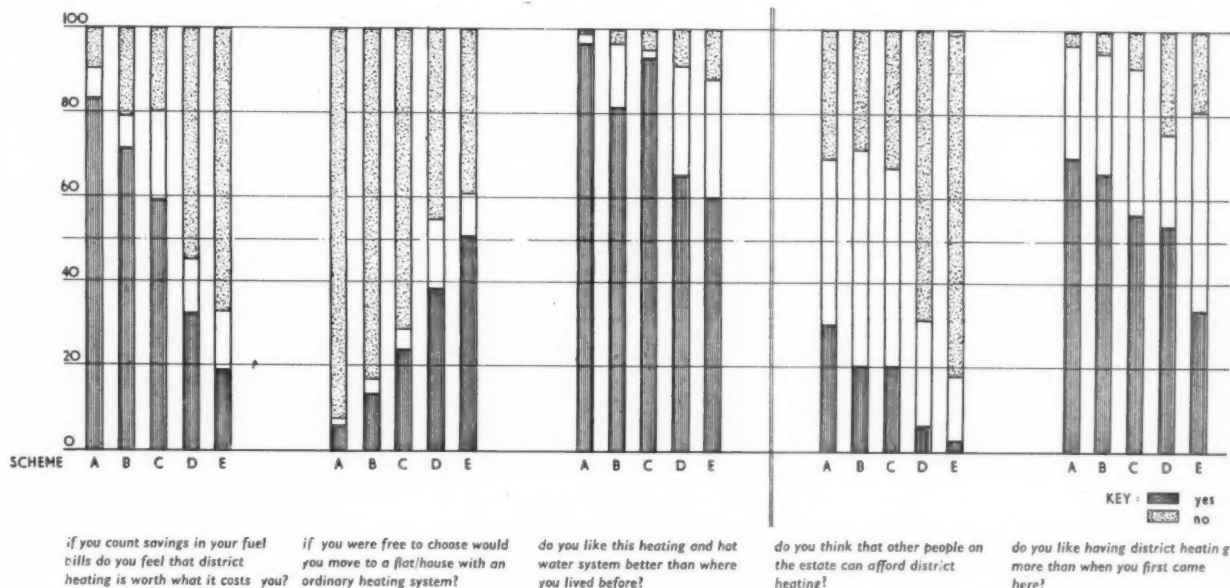


Fig. 1. Answers to questionnaires indicating the popularity of district heating.



ably no coincidence that the best liked scheme is the one which on average costs tenants least in fuel, and that the least liked scheme is the one which on average costs tenants most in fuel; this agrees well with the fact that the percentage of informants mentioning cost as a disadvantage of district heating is only 3 per cent. on the former, popular, scheme and as much as 49 per cent. on the latter, unpopular, scheme.

As far as hot water is concerned, the previous experience of tenants is shown to be relevant. The proportion of those who previously had no piped hot-water supply varies from 63 per cent. on the most popular scheme to 27 per cent. on the least popular scheme. This suggests very plausibly that some of the satisfaction with district heating can be attributed to the backwardness of the tenants' previous housing conditions. The question arises as to whether satisfaction is directly related to the efficiency or suit-

ability of the particular installation. This question is not easy to answer, particularly in view of the big differences in what the separate installations were designed to provide. It can however be argued with some support that the most liked scheme owed its popularity to an inspired forecast of the most acceptable balance between the service provided and its cost, whereas those who planned the less popular schemes made a less successful estimate of what was wanted. It certainly seems that a flexible arrangement, allowing some freedom to the tenant, was the most acceptable, and it is probably relevant that the most favoured scheme makes provision for coal fires, while the least favoured are flueless or at least smokeless.

On the question of efficiency, it is inevitable that there should be some variations in the adequacy of the heating service to different individual dwellings. Apart from variations

in exposure, some houses are naturally better placed than others in relation to pipe runs. Even isolated faults in the fit of doors or windows can materially affect the temperature attained. Short of an elaborate series of temperature measurements it is not possible to say with finality whether satisfaction is closely related to the temperatures attained. Thermographs were, however, installed in the living rooms of selected dwellings on two estates, the addresses being drawn from those households that had shown themselves to be particularly pleased and particularly displeased with district heating. The results for a typical April week (Fig. 2) show only a loose connection between the temperature attained and general satisfaction with district heating.

Similarly, in view of distribution hazards, it might be expected that some parts of each estate might run cooler than others, but examination shows that the relatively satisfied and dissatisfied tenants on each estate are fairly evenly distributed; this again does not support the theory of a close connection between heat efficiency and satisfaction.

Finally, the answers to another question asked in the interviews show that those living on the least popular scheme actually registered fewer complaints than average about the standards of space and water heating provided.

#### CONCLUSION

It is a common experience among administrators that no absolute standard of provision can be relied upon to satisfy people. What seems to be much more important is that there should, as far as limits of cost permit, be no disparity between what is provided and what is expected.

A public authority which makes itself responsible for the satisfaction of some universal need such as that of housing is bound to fall short of complete success in making its provision fit the expectations of all those for whom they are designed. Any additions to the list of things provided, such as the assumption of direct responsibility for heating, increases the possibility of complaints. This possibility can be reduced in either or both of two ways. In the first place there may be a more sensitive alignment of the provision with the needs, and this depends on local knowledge and sound interpretation of expectations in terms of material provision. Secondly, the expectations may themselves be modified in an appropriate direction, and this requires the presence on the spot of someone with social understanding and skill who has the capacity and the authority to clarify and meet local social needs.

The five installations included in the survey were found to be remarkably different in a number of ways, which might be expected to affect the satisfaction of tenants. The main differences, which form the background to the present inquiry, can be summarized in the following terms:

(a) Big variations in design temperature, e.g., between 62° F. and 68° F. for the living room. The former temperature clearly requires supplementary heat in cold weather.

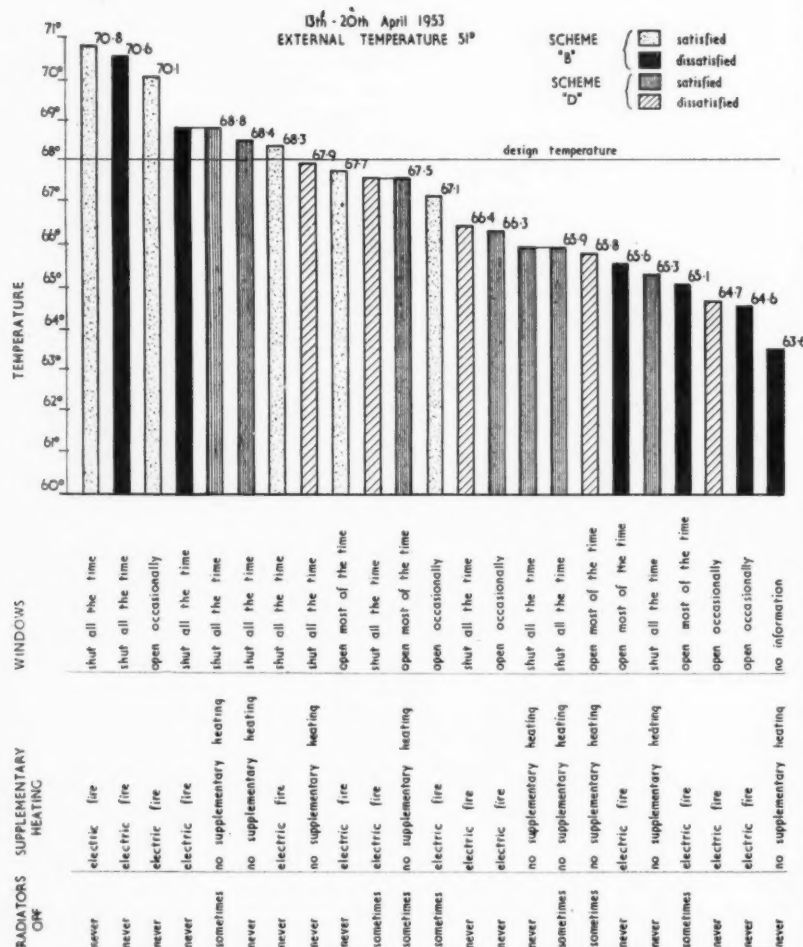


Fig. 2. Table relating satisfaction expressed by tenants with living room temperature. When the organizers of the survey had received tenants reactions to schemes B and D they placed thermographs in living rooms of 23 tenants drawn from the most and the least satisfied. The table records the average room temperatures during one week when the average outside temperature was 51° F., the notation shows whether the tenant was satisfied or not and against each reading is recorded the steps the tenant took to make himself comfortable. Though the four tenants with lowest room temperatures were all dissatisfied the relation between satisfaction and room temperature is not close enough for it to be said that heating performance alone determines user reaction.



(b) Variations in the availability of alternative appliances.

(c) Associated differences in cost to the tenant, both in terms of district heating charge and in terms of total expenditure on gas, electricity and solid fuel.

(d) Differences in the kinds of area, in the receptivity of the inhabitants and in the administration of the separate schemes.

In the light of these differences and of the other evidence from the survey, it is possible to put down certain conclusions. These can be summarized under the headings of cost, flexibility and management.

**Cost:** The records show that, whatever the arrangements made by Local Authorities the cost of heating to tenants or district-heated estates is consistently higher than that to occupants of dwellings heated by orthodox means. The average additional cost of the higher standard is between 4s. and 8s. a week, and there has been a similar additional consumption of fuels.

While the present inquiry did not include a comparison of the technical efficiency of the five schemes, enough is known to suggest that there is in some schemes scope for technical improvement. It would at present, however, seem unsafe to predict that, using existing fuels, the cost to the tenant of an adequately warmed district-heated dwelling is ever likely to be as low as the cost of the customary partial heating of an English home.

It is probable that in the initial thinking about the adoption of district heating in these islands too little attention was paid to the rather low heating standards normally accepted here. British households do not expect heating throughout their homes and consequently the amount that they expect to have to spend on heating is less than that in other countries. Attitudes like this do not rapidly change.

**Flexibility:** While all tenants can turn off their heat, they save none of their own money by doing so. Again, while all tenants pay heating charges throughout the year they enjoy space heating only during the official heating season and then only within specified hours.

The interviews record much criticism of these two facts. It is widely felt to be unfair and inconvenient that the tenant should have so little control over fuel expenditure and over the incidence and duration of heating.

The provision for economical supplementary heating overcomes some objections. In the most successful schemes, the central heating temperatures are relatively low and the fireplace remains an essential part of the heating system.

Still better would be some reliable method of measuring the heat and hot water taken in by each tenant, so that each could satisfy himself that he paid only for what he got. Acceptable heat meters have been developed, largely in Scandinavia, and are there installed as a matter of course in large centrally-heated schemes. Their use in Great Britain, the possibilities of which are being actively explored, might do much to reconcile tenants to the economics of district heating and might also induce substantial economies.

**Management:** Irrespective of technical refinements, it seems clear that exceptional care is required in administering a district-heated estate. Some families will remain too poor or too financially insecure to benefit, and other families may have perfectly valid reasons for rejecting district heating. Many difficulties might be overcome if it were possible for any tenant to choose a home heated by traditional means, or to opt out of a district-heating scheme if it were proved by personal experience to be unsuitable.

The original Cinematograph Act of 1909 was framed at a time when all film was highly inflammable: but from about 1925 the cinema industry began to turn over to "slow-burning films" with a cellulose acetate base and when, shortly afterwards, all new films were made of this material, uncertainty arose about whether the Act of 1909, with its "inflammable film," still applied.

The trouble, of course, is that every now and then a manager will want to show an old film "classic" and this will be on inflammable material. For this reason the new Cinematograph Act of 1952 enacted that the regulations were still applicable to slow-burning film but granted an important list of exemptions. It was followed up by the publication of the Cinematograph (Safety) Regulations, 1955, which is the most important document governing cinema design at the present time; while this in turn was amplified by a memorandum of Recommendations on Safety in Cinemas (HMSO 1s.) and a circular (No. 150, HMSO, 6d.) both issued by the Home Office.

This book gathers these sources together, printing them in the main text and separately in an appendix, and discusses such issues as exits, seating, the special protection to be given to projection and rewinding rooms and general and safety lighting in full detail and in the way an architect would wish; that is, with frequent reference to such parallel sources as Post War Building Study

There will still remain problems even for those tenants who like the amenity. An example is the objection raised by many tenants on all the schemes studied, who resented paying all the year round for heating enjoyed only in the winter months. It is probably essential on financial grounds to spread the charge, but experience in other fields suggests that different methods of encouraging this kind of saving can vary considerably in their painlessness.

It is to be expected that future national policy on district heating will depend primarily on broad economic considerations, but if the promotion of district heating should be adjudged to be economically desirable it would still be necessary to determine whether, and under what conditions, it would be acceptable to those directly affected. There is still much to be learnt on how best to introduce changes. Enough is known, however, to reinforce the view that expectations, though fluid, are not arbitrary or erratic. If consideration of national policy should favour the introduction of district heating, in the long run the question may be not whether it is popular or unpopular, but how a popular form can be evolved and for what sort of tenant it should be adopted. Given the need, there is no reason to suppose that a taste for district heating is more unlikely to occur than a taste for television or for any other of yesterday's luxuries.

#### ACKNOWLEDGMENT

Grateful acknowledgment is due to the 500 tenants, to the gas and electricity supply undertakings and the fuel merchants, and to the local authorities whose co-operation made the Survey possible. Miss C. M. Yeo was responsible for the fieldwork and for much of the analysis. This article appears by permission of the Director of Building Research.

No. 20 on the Fire Grading of Buildings and the various British Standard Specifications and Codes of Practice.

On the question of the scope of legislation it is interesting to note that a "cinematograph exhibition" is defined as "an exhibition of moving pictures produced on a screen by means which include the projection of light," for this switching of emphasis from the film to the light source was made to include public exhibitions of television. Another point of interest is the fact that the large number of cases of falling plaster ceilings recorded since the war have led the authorities to insist on the regular inspection of ceilings (at least once every five years). The Home Office recommendations list the defects to be looked for and add a suggested form for the certificate to be issued.

This is a very useful book which no architect who has to do with cinemas can afford to be without.

14.79 materials: concrete

#### CONCRETE BONDING

*Bonding New Concretes to Old. BRS Digest No. 82. (HMSO, Nov., 1955. 3d.)*

Very brief note on main points in bonding new concretes to old concretes of varying ages, including the laying of granolithic floors.

## INFORMATION CENTRE

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

10.140 design: building types  
CINEMAS

*The Cinematograph Regulations, 1955. Leslie Knopp. (The Cinema Press Ltd. 21s.)* This is an authoritative book written by a man who has played an important part in the revision of the Home Office Safety Regulations which collates and comments on all the statutory regulations and Home Office memoranda which bear on the design of cinemas and places where public cinema shows are given.

Readers requiring up-to-date information on building products and services may complete and post this form to the Architects' Journal, 9, 11 and 13, Queen Anne's Gate, S.W.1

### ENQUIRY FORM

I am interested in the following advertisements appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers names please.)

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Please ask manufacturers to send further particulars to:—

NAME .....

PROFESSION or TRADE .....

ADDRESS.....

26.1.56

## Buildings Illustrated

House in Alders Road, Reigate, Surrey. (Pages 133-135.) Architect, John R. Stammers, B.A., A.R.I.B.A. Quantity Surveyor, Frederic Saunders. General Contractors, H. Bacon & Son Ltd. Sub-contractors and suppliers: copper roofing, Frederick Braby & Co. Ltd.; felt roofing, D. Anderson & Son Ltd.; electrical installation, W. G. Neale & Son; wood block and cork tile flooring, Hollis Bros. Ltd.; thermoplastic tiles, Marley Tile Co. Ltd.; second-hand stock bricks, Willment Bros. Ltd.; foundation bricks, Uxbridge Flint Brick Co. Ltd.; sliding windows, P. G. Allday & Co. Ltd.; metal door frames, Henry Hope & Sons Ltd.; standard windows, Mellows & Co. Ltd.; weatherboarding, Joseph Sandell & Co. Ltd.; sanitary fittings, John Bolding & Sons Ltd., Stainless Steel Sink Co. Ltd.; electrical heating, Panelec Ltd.; flush doors and kitchen cabinets, Jayanbee Joinery Ltd.; garage door, Westland Engineers Ltd.; special tiles, Purbeck Decorative Tile Co. Ltd.; wallpapers, Cole & Son (Wallpapers) Ltd., Arthur Sanderson & Sons Ltd., John Line & Sons Ltd.; paint, The Walpamur Co. Ltd., Imperial Chemical Industries Ltd., Cement Marketing Co. Ltd.; lighting fittings, Merchant Adventurers of London Ltd., Troughton & Young Ltd., and General Electric Co. Ltd.; garden contractors, Mechanised Gardening Ltd.

House in Rayleigh Road, Hutton, Essex. (Pages 136-137.) Designer, G. R. Binns. General Contractors, W. D. Crabb & Sons

Ltd. Sub-contractors: roofing, Permanite Ltd.; facing bricks, Dunbrik Ltd.; floor tiles, Marley Tile Co. Ltd.; convector fire, Allied Ironfounders Ltd.; sanitary fittings, Adamsez Ltd.; ironmongery, Alfred G. Roberts Ltd.

## Announcements

The partnership between Harry Cherrington, C. R. Allen Smart, K. V. Norrish and Michael Stainton, practising as architects as Cherrington & Stainton, at 2, Priory Street, Dudley, and 2, Augustus Road, Birmingham, has been dissolved by mutual consent. Harry Cherrington and C. R. Allen Smart, F.R.I.B.A., will practise at 2, Priory Street, Dudley, as Cherrington & Smart, and K. V. Norrish, A.R.I.B.A., and Michael S. Stainton will practise as Norrish & Stainton, at 2, Augustus Road, Birmingham.

Audrey M. Bowyer, A.R.I.B.A., and Denis R. Gosby, A.R.I.B.A., have entered into partnership and will practise at High Street, West Malling, Kent. (Tel.: West Malling 2214.) They will be pleased to receive trade catalogues, etc.

Owing to the death of Quentin Reeves, the London practice of H. Q. A. Reeves, Consulting Engineer, will continue from January 1, 1956, as J. E. Greatorex & Partners, Consulting Heating and Ventilating Engineers. The address remains 15, Berners Street, W.1. (Tel.: LAngham 1089-1080.)

### CORRECTION

In the JOURNAL of December 22, the store for Marks & Spencer illustrated on page 828 was stated to have been designed by James A. Monro. We learn from Lewis & Hickey, of London, that this is incorrect, and that they are the architects for this store.

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## CLASSIFIED ADVERTISEMENTS

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

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

## Public and Official Announcements

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

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is excepted from the provisions of the Notification of Vacancies Order, 1952.

BOROUGH OF MANSFIELD  
APPOINTMENT OF THIRD ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment in the Borough Engineer and Surveyor's Department. The salary will be in accordance with the special grade for qualified assistants (£650-£775) of the National Joint Council's Scale and the following conditions:—

1. N.J.C. Conditions of Service.
  2. Local Government Superannuation Acts, for which purpose the selected candidate will be required to pass a medical examination.
  3. Residence within the Borough.
- Applicants should have passed the Final Examination of the R.I.B.A. or equivalent examination.

A house on service tenancy agreement is available.

Applications, stating age, qualifications, present appointment and salary, previous appointments and experience, together with the names and addresses of not more than three referees, should be sent to the Borough Engineer and Surveyor, Care Bank, Mansfield, and should be endorsed "Third Architectural Assistant." The closing date is Tuesday, 31st January, 1956.

A. C. SHEPHERD,  
Town Clerk.  
8058

COUNTY BOROUGH OF BARNSELY  
BOROUGH ENGINEER AND SURVEYOR'S  
DEPARTMENT

## APPOINTMENT OF ARCHITECTURAL STAFF

Applications are invited for the following appointments:—

(a) ARCHITECTURAL ASSISTANT, the salary to be A.P.T. I (£530-£610) or A.P.T. II (£595-£675) or Special Grade (£690-£840) according to qualifications and experience as laid down in the N.J.C. Scheme for Special Classes of Officers (Architectural Assistants). The point of entry in any one of these grades may be fixed above the minimum.

(b) ASSISTANT ARCHITECT, A.P.T. III (£640-£765).

Previous experience in the design of public buildings and municipal housing will be an advantage.

The Council have a large number of varied and interesting schemes in hand and the posts offer excellent opportunities for gaining wide architectural experience.

The appointments will be subject to (i) the Scheme of Conditions of Service for A.P.T.C. Staff; (ii) any other general conditions of employment in operation within the Corporation from time to time; (iii) one month's notice on either side and (iv) to the Local Government Superannuation Acts for which purpose the successful candidates will be required to pass a medical examination.

Housing accommodation will be provided if necessary and 50 per cent. of removal transport expenses will be paid in approved cases.

Applications, stating age, present and previous appointments with dates, qualifications, experience, etc., together with the names of two persons for reference, should be addressed to the Borough Engineer, Town Hall, Barnsley, to reach him not later than Friday, 3rd February, 1956.

Canvassing will disqualify.

A. E. GILFILLAN,  
Town Clerk.  
Town Hall,  
Barnsley,  
January, 1956. 9047

LONDON COUNTY COUNCIL  
ARCHITECTS' DEPARTMENT

Vacancy for ASSISTANT SENIOR ARCHITECT in the Building Regulation Division (£1,350 to £1,620).

The Division consists of about 100 professional and technical staff examining applications under the London Building Acts and analogous legislation with regard to compliance with the Council's constructional and fire-grading standards, including means of escape in case of fire.

Candidates should be A.R.I.B.A. or A.R.I.C.S., have knowledge of statutory control, possess organising ability and qualities of leadership, and be capable of the critical examination and improvement of statutory standards.

Application form, returnable by 31st January, from the Architect (AR/EA/SA/1), County Hall, S.E.1. (7) 9076

## LINDSEY (LINCOLNSHIRE) COUNTY COUNCIL

ONE ASSISTANT ARCHITECT, Grade A.P.T. V (£795-£970), to take charge of major project, must be A.R.I.B.A. or Registered Architect.

FOUR SENIOR ASSISTANTS, Grade A.P.T. IV (£710-£885). Candidates should have had good architectural training and experience in design and construction. Must be A.R.I.B.A. or Registered Architect, or A.R.I.B.A. Special Grade (£690-£840). Majority of the work in connection with large new Schools, but opportunity of obtaining varied experience on other types of County buildings.

TWO ARCHITECTURAL ASSISTANTS, Grade A.P.T. II (£595-£675) Inter-R.I.B.A.  
ONE ELECTRICAL ENGINEERING ASSISTANT, Grade A.P.T. II (£595-£675), should be capable of preparing drawings in connection with Electrical Installations in Schools. Preference given to holder of the Higher National Certificate. In special circumstances consideration will be given to starting salary not more than two steps up the grade.

N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any member or Senior Officer of the Council.

Applications, giving age, qualifications, experience, present salary, and the names of at least two persons to whom reference can be made, to be sent to the undersigned not later than Thursday, 2nd February, 1956.

A. RONALD CLARK, A.R.I.B.A., A.M.T.P.I.,  
County Offices,  
Lincoln. 9029

## BOROUGH OF LEYTON

(Non-County Borough in County of Essex.

Population 103,200. R.V. £784,100.)

Applications are invited for the following permanent appointment at a salary in accordance with the National Scales indicated:—

GENERAL ARCHITECTURAL ASSISTANT, A.P.T. Grade III-IV (£630-£855 per annum—at present under review).

The above salary is inclusive of London weighting (£30) which is reduced according to scale where the age of the successful applicant is less than 26 years. The commencing salary will be fixed at a point in the scale according to the qualifications and experience of the successful candidate.

Candidates must be Registered Architects and should have good experience in design, construction and erection of public buildings. The successful candidate will be primarily engaged on the completion of a project for a Central Library.

HOUSING ACCOMMODATION MAY BE MADE AVAILABLE, IF REQUIRED.

Alternate Saturday mornings are free of duty and canteen facilities are available in the Town Hall.

Details of the above appointment and form of application may be obtained from Mr. H. D. Peake, M.Sc.(Eng.), Borough Engineer and Surveyor, Town Hall, Leyton, E.10, to whom they should be returned not later than Monday, 6th February, 1956.

D. J. OSBORNE,  
Town Clerk.  
Town Hall,  
Leyton, E.10. 9056

CAMBRIDGESHIRE COUNTY COUNCIL  
COUNTY ARCHITECT.

Applications are invited for the appointment of County Architect for the Administrative County of Cambridgeshire. Candidates should be Chartered Architects and have had wide experience with a local authority. Salary £2,265, rising by two increments of £100 and one of £55 to £2,520.

Application forms and terms and conditions of appointment may be obtained from the undersigned, to whom applications should be forwarded not later than the 18th February, 1956.

CHARLES PHYTHIAN,  
Clerk of the County Council.  
Shire Hall, Cambridge. 9090

CITY AND COUNTY OF BRISTOL  
CITY ARCHITECT'S DEPARTMENT.

Applications invited for appointments on staff of City Architect's department in undermentioned grades.

- ASSISTANT ARCHITECTS
- (a) A.P.T.V. (£795 - £970 p.a.)
  - (b) A.P.T.III. (£640 - £765 p.a.)
  - (c) or Special Scale (£690 - £840 p.a.)
  - (d) A.P.T.II. (£595 - £675 p.a.)
  - (e) A.P.T.I. (£530 - £610 p.a.)
- QUANTITY SURVEYORS
- (f) A.P.T.IV. (£710 - £885 p.a.)
  - (g) A.P.T.III. (£640 - £765 p.a.)
  - (h) or Special Scale (£690 - £840 p.a.)

Starting grade will be appropriate to professional experience and qualifications, but for Grade A.P.T.V. experience in multi-storey construction will be an advantage.

Housing accommodation available, if necessary, at an economic rent.

Further particulars and application forms obtainable from me. Applicants must state post for which they are applying. Completed application forms to be received by 6th February.

J. NELSON MEREDITH, F.R.I.B.A.,  
City Architect.

The Council House,  
College Green,  
Bristol, 1.  
16th January, 1956. 9121

CITY OF SALFORD  
CITY ENGINEER AND SURVEYOR'S  
DEPARTMENT

Applications are invited from persons having appropriate qualifications and experience for the undermentioned posts in the office of the City Engineer and Surveyor (G. A. McWilliam, B.Sc., A.M.I.C.E., A.R.I.C.S., M.I.Mun.E.).

- (a) ASSISTANT ENGINEER  
Grade A.P.T. IV (£710-£885)
- (b) ENGINEERING ASSISTANTS (two)  
Grade A.P.T. III (£640-£810)
- (c) ENGINEERING ASSISTANT  
Grade A.P.T. II (£595-£675)
- (d) JUNIOR ENGINEERING ASSISTANT  
Grade A.P.T. I (£530-£610)
- (e) TOWN PLANNING ASSISTANT  
Grade A.P.T. IV (£710-£885)
- (f) TECHNICAL ASSISTANT  
Grade A.P.T. III (£640-£765)
- (g) ARCHITECTURAL ASSISTANTS (three)  
Grade A.P.T. IV (£710-£885)
- (h) JUNIOR ARCHITECTURAL ASSISTANTS (two)  
Grade A.P.T. I (£530-£610)
- (i) ASSISTANT QUANTITY SURVEYORS (two)  
Grade A.P.T. IV (£710-£885)
- (j) ASSISTANT QUANTITY SURVEYOR (temporary)  
Grade A.P.T. III (£640-£765)

Applicants for posts in Grade A.P.T. IV should hold at least the minimum qualifications appropriate to the post as set out in the National Scheme of Conditions of Service. Facilities for professional training are given to holders of junior posts and the work of the Department affords experience in a wide variety of municipal engineering and building projects. Applicants for post (f) should be qualified to undertake schemes for the conversion and adaptation of existing premises for use as hostels for children or aged persons.

Appointments will be subject to the provisions of the Local Government Superannuation Acts, the National Scheme of Conditions of Service and the passing of a medical examination.

Applications, stating age, qualifications, and details of experience, together with the names of two referees, should be sent to the City Engineer and Surveyor, Town Hall, Salford 3, Lancs., to arrive not later than Friday, 3rd February, 1956. Applicants must indicate by reference letter and designation the post for which they are applying.

R. RIBBLESDALE THORNTON,  
Town Clerk.  
Town Hall,  
Salford, 3, Lancs. 8074

LINDSEY COUNTY COUNCIL  
PLANNING ASSISTANTS.

(1) A.P.T. III (£640-£765) if passed whole of T.P.I. Intermediate, or Special Grade (£690-£840) if passed whole of T.P.I. Final, and with at least 5 years' experience. Preference to candidates from county planning departments with experience on development plan preparation, particularly town maps. Essential user's car allowance.

(2) A.P.T. I (£530-£610). Preference to candidates who are expert draughtsmen and have been trained in planning, architects, or engineers' departments.

Superannuation and N.J.C. Service conditions. Apply, with particulars of age, training, qualifications and experience, and two referees, to R. L. Stirling, County Planning Officer, The Castle, Lincoln, before 3rd February, 1956. Canvassing will disqualify, and relationship to any member or senior officer of the Council to be disclosed in application. 9088

AUSTRALIA-UNIVERSITY OF ADELAIDE.  
CHAIR OF ARCHITECTURE.

The University invites applications for the newly established CHAIR OF ARCHITECTURE.

Duties: The Professor will be Head of the Department of Architecture in the University, and will be responsible to the Council for its work.

Salary: £A2,800 a year, with superannuation provision on the F.S.S.U. basis.

General: Potential candidates are invited to seek from the undersigned or from the Secretary of the Association of Universities of the British Commonwealth, 36, Gordon Square, London, W.C.1, a statement for the general information of candidates. Candidates in Great Britain may also borrow from the Secretary of the A.U.B.C. a coloured film showing the University and the city and surroundings of Adelaide.

Terms of appointment: The general conditions of appointment are the same as for other Professors in the University. Details will be supplied on request to the undersigned or to the Secretary, A.U.B.C.

Applications: Applications, in duplicate, giving particulars of age, academic qualifications, experience and war service (if any), and accompanied by a recent photograph, a medical certificate of health, a list of publications, and the names and addresses of three referees of whom confidential enquiries may be made, should reach the undersigned not later than 15th February, 1956.

Enquiries are invited and further information will be supplied on request. The University Calendar may be consulted in the Library of any University which is a member of A.U.B.C.

V. E. EDGELOE,  
Registrar.  
University of Adelaide, Adelaide,  
South Australia. 9077



## CITY OF LIVERPOOL.

ARCHITECTURAL AND HOUSING DEPT.  
Applications are invited for the under-mentioned appointments, viz.:-

- (1) ASSISTANT ARCHITECTS. Salary £710-£885 per annum (A.P.T. IV).  
(2) ASSISTANT ARCHITECTS. Salary £690-£840 per annum (N.J.C. Scale).  
(3) ARCHITECTURAL ASSISTANTS. Salary £530-£675 per annum (A.P.T. I, II).  
Commencing salary in accordance with qualifications and experience.

Applicants for (1) and (2) must possess the Final Examination of the R.I.B.A. or its equivalent, whilst those for (3) will not of necessity be required to have the Intermediate R.I.B.A.

Vacancies exist in the sections dealing with General Architecture (public buildings), Housing and Redevelopment, and give opportunities for a wide range of architectural experience.

(4) ASSISTANT STRUCTURAL ENGINEERS. Salary £710-£885 per annum (A.P.T. IV). Applicants should possess the A.M.I.Struct.E. or Higher National Certificate in Civil Engineering or equivalent qualification.

Application forms, obtainable from the City Architect and Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2, must be returned to him not later than 3rd February, 1956.

The appointments are superannuable and subject to the Standing Orders of the City Council. Canvassing disqualified.

THOMAS ALKER.

Town Clerk.  
Municipal Buildings, L'pool, 2 (J.4195). 9099

## BOROUGH OF OLDBURY.

## BOROUGH SURVEYOR'S DEPARTMENT—ARCHITECTURAL SECTION.

Applications are invited for the appointment of one ASSISTANT ARCHITECT, Grade A.P.T.V (£750-£900), in the Architectural Section of the Borough Surveyor's Department.

Applicants for the appointment should preferably be Associate Members of the R.I.B.A.

The architect appointed will be required to work primarily on the design and construction of Municipal houses, maisonettes and multi-storey flats, and previous experience of this type of work is desirable.

The appointment will be superannuable, subject to the National Conditions of Service and to the selected candidate passing a medical examination.

Applications, giving particulars of age, qualifications and experience and the names of two referees, should be delivered to the undersigned not later than Saturday, 4th February, 1956.

Housing accommodation will be made available to married applicants if required.

KENNETH PEARCE.

Town Clerk.  
Municipal Buildings,  
Oldbury,  
Birmingham.  
13th January, 1956. 9122

## CITY OF PORTSMOUTH

## CITY DEVELOPMENT DEPARTMENT

Applications are invited for the following appointments:-

- (a) DEVELOPMENT ASSISTANT, Grade IV, £710-£885.  
(b) GENERAL ASSISTANT, Grade I, £530-£610.

The work of the Department includes the administration of the City Development Plan, the guidance of Urban Development, Housing Layout, Redevelopment of war damaged and sub-standard housing areas, the accommodation of overspill, and the location of Industry.

Applications stating age, present position, qualifications and experience, together with names of two referees, must be delivered to the undersigned, marked "City Development Appointment" not later than Monday, 13th February, 1956.

V. BLANCHARD.

Town Clerk.  
City Council Chambers,  
Portsmouth. 9043

CAIRO UNIVERSITY.  
FACULTY OF ENGINEERING,  
GIZA, EGYPT.

Applications are invited for two posts of ASSISTANT PROFESSOR of:

- (1) Architectural Design.  
(2) Architectural Construction—Working Drawings and Building Construction.

at the Architectural Department, Faculty of Engineering, Cairo University, Egypt.

Minimum requirements:

- (1) Candidates must possess the highest degree in Architecture awarded by a recognised University or Institute.  
(2) Candidates should have adequate practical experience and have published important contributions.  
(3) Candidates should be capable of delivering lectures in English.

Appointment shall be by contract for two calendar years, renewable thereafter for 5 years if desired. Salary offered from £E720 to £E1,080 basic, plus £E350 expatriation allowance and £E75 high cost-of-living allowance per annum. Higher basic salaries may be considered in cases of outstanding qualifications.

Full particulars of age, academic qualifications, architectural and teaching experience, recent scientific and architectural publications and contributions, should reach the Dean of the Faculty by registered mail before 1st March, 1956. 9057

## I.A.A.S.

## FORTHCOMING EXAMINATIONS.

The Incorporated Association of Architects and Surveyors will hold the following examinations during the week beginning 4th June, 1956.

Quantity Surveyors' Section:

Intermediate grade.

Final grade (Parts I and II).

Direct Final grade.

Building Surveyors' Section (including

Municipal):

Intermediate grade.

Final grade (Parts I and II).

Direct Final grade.

Land Surveyors' Section:

Intermediate grade.

Final grade.

Direct Final grade.

Fire Surveyors' Section:

Direct Associate grade (Parts I and II).

The examinations will be held in London, and at selected provincial centres. Applications from candidates for permission to sit, made on the prescribed form, must be received not later than Monday, 12th March, 1956.

Full information on application to the General Secretary, I.A.A.S., 29, Belgrave Square, London, S.W.1. 9072

## LONDON ELECTRICITY BOARD

## CHIEF ENGINEER'S DEPARTMENT

ARCHITECTURAL DRAUGHTSMEN required in Architect's Section in Central London. Applicants should be neat draughtsmen and preferably have had several years' experience in an Architect's office.

STRUCTURAL DRAUGHTSMAN required in Construction Branch in Central London. Applicants should have a knowledge of building construction requirements and some experience in detailing reinforced concrete or steel structures.

These posts are graded under Schedule "D" of the National Joint Board agreement as Grade 6—£535 lds. od. to £661 lds. od. per annum, inclusive of London allowance.

Application forms obtainable from Personnel Officer, 46/7 New Broad Street, London, E.C.2. Please quote reference PER/N/2002/3/A. 9079

## BOROUGH OF WILLESDEN.

## BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following permanent appointments on the 1956 Revised A.P.T. Scales:

(a) ASSISTANT ARCHITECT, Grade A.P.T. VI (£880-£1,440).

Applicants must be A.R.I.B.A., and will be required to take charge of work regarding a Comprehensive Redevelopment Area in the Borough. Planning experience is desirable.

(b) ASSISTANT ARCHITECTS (three posts), Grade A.P.T. V (£795-£1,350).

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

(c) ARCHITECTURAL ASSISTANT, Grade A.P.T. III/IV (£640-£1,250-£885).

Applicants must be Student R.I.B.A., and will be required to work on an existing Redevelopment Scheme.

(d) ARCHITECTURAL ASSISTANTS (two posts), Grade A.P.T. III (£640-£1,250-£765).

Applicants must be Students of the R.I.B.A., and will be engaged on various schemes to be carried out by the Department.

London weighting is payable in addition to the above.

The Council is unable to assist with housing accommodation.

Forms of application and conditions of appointment may be obtained from the Borough Engineer and Surveyor, Town Hall, Dyne Road, Kilburn, N.W.6. Applications are to be returned to the undersigned not later than 9 a.m. on Monday, 13th February, 1956.

When writing for application forms candidates must state for which appointment they wish to apply.

R. S. FORSTER.

Town Clerk.  
Town Hall, N.W.6.  
January, 1956. 9112

## COUNTY BOROUGH OF EAST HAM.

## THREE ARCHITECTURAL ASSISTANTS

(A.P.T. V).

Applications are invited for the above appointments in the Housing Department at salaries in accordance with Grade A.P.T. V (£750-£1,350), plus London weighting. This salary is under review.

The Department has an extensive and interesting programme of mixed development of houses, flats and shops, and the redevelopment of slums, including multi-storey flats.

Further details and forms of application (returnable by 9th February, 1956) from the Town Clerk, Town Hall, East Ham, E.6. 9065

## BRACKNELL DEVELOPMENT

## CORPORATION.

Applications are invited from Corporate Members of the R.I.B.A. for the post of ASSISTANT ARCHITECT, Grade IV. Salary £710-£840 (6) x £10 (1)-£960.

Superannuation schemes, medical examination, Housing available in due course. Apply by 7th February, 1956, giving age, education and qualifications; experience and appointments held (with dates and salaries), and names of two referees to the General Manager (A.A.), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 9107

## CITY AND COUNTY OF NEWCASTLE UPON

## TYNE.

## APPOINTMENT OF CHIEF ASSISTANT

## ARCHITECT (HOUSING).

The Housing Committee of the Corporation invite applications for the above position in the City Architect's Department, at a salary in accordance with Scale B (£1,092 lds. per annum, rising by annual increments to a maximum of £1,307 lds.).

Applicants must be Members of the Royal Institute of British Architects, and should have received a sound architectural training, preferably at a recognised School of Architecture. The Officer appointed will be responsible under the direction of the City Architect for the control of work undertaken by the Housing Section of the Department (other than the work of Slum Clearance and Redevelopment), and should have had extensive practical experience of the administration of large Building Contracts and the control of staff.

Forms of Application, together with further particulars of the appointment, may be obtained upon application to George Kenyon, Dip.Arch., A.R.I.B.A., Dip.T.P., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1. Closing date for receipt of completed applications, first post Tuesday, 7th February, 1956.

JOHN ATKINSON.

Town Clerk.  
Town Hall, Newcastle upon Tyne, 1.  
18th January, 1956. 9110

## BOROUGH OF BARNES.

Applications are invited for two temporary ARCHITECTURAL ASSISTANTS:—(i) Special Grade (£710-£1,350-£860), (ii) Grade II (£615-£720-£695).

Candidates should be good draughtsmen and have had experience in the preparation of plans and details.

Applications, giving the names of two persons to whom reference can be made, should be sent to the undersigned not later than Saturday, 11th February, 1956.

W. H. SHEPHERD, A.M.I.C.E., F.R.I.C.S.,

M.I.Mun.E., A.M.T.P.I.,

Borough Engineer and Surveyor.  
Municipal Offices, Sheen Lane, S.W.14.  
13th January, 1956. 9090

## COUNTY BOROUGH OF BURY.

Applications invited from suitably qualified persons for position of ARCHITECTURAL ASSISTANT, Borough Engineer's Department. Special Grade (£690-£840).

Applications, stating age, details of training, qualifications and experience, together with the names and addresses of two referees, must reach me not later than 4th February.

EDWARD S. SMITH.

Town Clerk.  
Town Hall, Bury.  
16th January, 1956. 9095

CORPORATION OF LONDON.  
CITY PLANNING DEPARTMENT.  
CIVIC DESIGN SECTION.

require  
SENIOR PLANNING ASSISTANT.

Salary between £985 lds. and £1,155.

The position calls for an up-to-date approach to planning, and the successful applicant will lead the work of technical staff engaged in preparation of large and detail schemes in three dimensions and colour; and assist in routine work.

Application, stating age, qualifications and experience, to City Planning Officer, 55-61, Moorgate, London, E.C.2, by 9th February. 9075

## COUNTY OF CORNWALL.

## COUNTY PLANNING DEPARTMENT.

Applications are invited for the following appointments in the County Planning Department:-

(a) ASSISTANT PLANNING OFFICER

(ARCHITECT), Headquarters, Truro. Salary on

Grade A.P.T. V (£795-£970).

(b) ASSISTANT AREA PLANNING OFFICER,

Western Area, Penzance. Salary on Grade

A.P.T. IV (£710-£885).

The initial salary in each case will be according to qualifications and experience.

For post (a) candidates must be Associates of the Royal Institute of British Architects, and preference will be given to those who are also Associate Members of the Town Planning Institute. Full details of the appointment can be obtained from the County Planning Officer.

For post (b) candidates must be Associate Members of the Town Planning Institute, and preference will be given to applicants with other technical qualifications. The successful candidate will be engaged on work mainly concerned with development control.

The customary service conditions of the Local Government Service will apply, and the successful candidates will be required to provide a car for official travelling, for which the appropriate mileage allowance will be paid.

Applications, together with the names and addresses of three referees, should be addressed to the County Planning Officer, County Hall, Truro, and received not later than 11th February, 1956.

E. T. VERGER.

Clerk of the County Council.  
County Hall, Truro.  
12th January, 1956. 9058



**LANCASHIRE COUNTY COUNCIL.**  
**PLANNING ASSISTANT** required at Manchester within £690 to £885, dependent on qualifications and experience. Applicants should possess a qualification in architecture, surveying, engineering or town planning; planning experience desirable, but not essential. Applications, giving age, qualifications, present appointment, experience, etc., and two referees, to County Planning Officer, East Cliff County Offices, Preston, by 6th February, 1956. 9105

### Tenders Invited

6 lines or under, 12s. 6d.; each additional line, 2s.

**COUNTY COUNCIL OF MIDDLESEX.**  
**SECOND-HAND Hall Mark 1036 (1943) Plan**  
 A Printing Machine is offered for sale by tender. Forms of tender obtainable from Chief Supplies Officer, 245, Acton Lane, London, N.W.10, to be returned in envelopes provided to the undersigned by 12 noon on 3rd March, 1956. The Council does not bind itself to accept the highest or any tender and no allowance will be made for tenders.  
**KENNETH GOODACRE,**  
 Clerk of the County Council.  
 Guildhall, Westminster, S.W.1. 9100

### Architectural Appointments Vacant

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

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she or the employment is exempted from the provisions of the Notification of Vacancies Order, 1952.

**THE LONDON HOSPITAL, Whitechapel, E.1.**  
 requires **SENIOR ARCHITECT**. Salary £250-£950 p.a. Applications, stating age, experience, etc., to the House Governor. 7059

**ASSISTANT ARCHITECT and ARCHITECTURAL ASSISTANTS** required in City office for work on important modern buildings. Sound knowledge of construction essential. Very good salaries paid to successful applicants. Write or telephone, Campbell Jones & Sons, 9, Dowgate Hill, E.C.4 (Central 7748). 8054

**ARCHITECTURAL ASSISTANT** required of Inter. Standard. First class Draughtsmanship essential, with office experience, mainly for domestic schemes, in small busy practice. Please apply in writing, stating salary and full particulars, Box 8050.

**NORMAN & DAWBARN** require **ARCHITECTURAL DRAUGHTSMEN** to prepare working drawings on major projects in London. Professional qualifications are not required but applicants should have had not less than five years' experience in an architectural drawing office. Accurate draughtsmanship and sound knowledge of building construction and detailing are essential. Applications in writing only to 5, Gower Street, London, W.C.1. 6058

**ASSISTANT** required. Varied country practice in Bedfordshire. Intermediate standard. Able to drive car. Apply in writing. Salary by arrangement. Levitt, Commerce House, Biggleswade. 9004

**W. H. WATKINS, GRAY, F.R.I.B.A., & PARTNERS** require experienced **ASSISTANTS** for large project in London commencing shortly. Pension scheme in operation. Reply, giving full particulars and salary required, to 57, Catherine Place, London, S.W.1. 8062

**SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS** required immediately for varied practice. Apply E. M. Galloway, Dip.Arch., A.R.I.B.A., 10, Portland Street, Southampton. 'Phone 22170. 9003

**TAYLOR & YOUNG, Manchester**, require two **ARCHITECTURAL ASSISTANTS** interested in good class work; salary by arrangement, according to experience. Apply in writing to 195, Oxford Road, Manchester, 13. 8099

**MANCHESTER REGIONAL HOSPITAL BOARD** invite applications for the posts of (a) **ARCHITECTURAL ASSISTANT**, and (b) **QUANTITY SURVEYING ASSISTANT** in the Architectural Department of the Board's Headquarters in Cheetham Road, Manchester, 8, at a salary according to qualifications and experience of either (i) £480, rising to £670 a year, with provision for a commencing salary not exceeding £560, or (ii) £640, rising to £930 a year. National Health Service conditions and superannuation. Applications, stating age, qualifications and experience, and names and addresses of not more than three referees, to be sent to the Secretary of the Board. 8061

**ARCHITECTURAL ASSISTANT** required for responsible post in busy varied practice, must be willing to travel. Details of experience, salary required, please to J. D. & R. Y. Telfow, F.A.R.I.B.A., M.A.M.T.P.I., 1, The Friary, Lichfield. 8057

**NORMAN & DAWBARN** require **ARCHITECTURAL ASSISTANTS** at or above R.I.B.A. Intermediate standard with not less than 3 years continuous office experience. Salaries will be in accordance with age, training, length and type of experience. An interesting and varied programme of work is available. Apply by telephone or letter to 5, Gower Street, London, W.1. Langham 5341. 7087

**ARCHITECTURAL ASSISTANTS** required for office in St. Albans, Hertfordshire, Intermediate or Final Standard, for work on School, Commercial and Industrial Projects. Write, giving brief details of experience and salary required, to Box 7053.

**ARCHITECTURAL ASSISTANT** required by firm in Home Counties. General practice. Apply, stating experience and salary, to Manning & Steel, F.R.I.B.A., 3, George Street West, Luton, Beds. 8026

**ARCHITECTURAL ASSISTANT** required, qualified, with experience of running contracts. Write full particulars to T. Mitchell & Partners, 20, Bedford Square, W.C.1. 4992

**SENIOR ASSISTANT ARCHITECTS and INTERMEDIATE ASSISTANTS** required in busy West End Office. Senior Assistants should be capable of taking complete charge of jobs. Practice is varied and includes Housing Schemes, Office Blocks, Private Houses and miscellaneous schemes. Write, stating training, experience and salary required, or telephone for appointment to Thomas Sibthorp, F.R.I.B.A., A.R.I.C.S., A.M.T.P.I., 10, Manchester Square, W.1. Welbeck 9247 and 0783. 7080

**SENIOR and JUNIOR ASSISTANTS** required for large schemes of contemporary nature. Excellent opportunities to suitable applicants. Five-day week. Please write, giving full particulars of experience and salary required, to Johns, Slater & Haward, F.A.R.I.B.A., 32, Foundation Street, Ipswich. 8069

**ARCHITECTURAL ASSISTANT** required in Architect's Department of London Brewery Company. Must be good draughtsman. Write, stating age, experience, salary required. Box 8071.

**ARCHITECTURAL ASSISTANTS** required, with about 4 to 5 years' office experience. Write or telephone, giving full particulars, including age and salary, to Harker & Hall, Architects, 13, Welbeck Street, W.1 (WELbeck 0061). 9009

**ARCHITECTURAL ASSISTANTS**, Intermediate or up to Final standard, required as soon as possible at Welwyn Garden City. Varied work and congenial office conditions. Apply in writing, giving full details of age and experience, to Chas. W. Fox, F.R.I.B.A., 22, Parkway. 8081

**ARCHITECTURAL ASSISTANT** required, of Intermediate standard, in a varied and interesting country practice. Apply to Trepass Harley-Smith & Steel, A.R.I.B.A., A.M.T.P.I., 1, Church Street, Warwick (Tel.: War. 19), stating age, experience, etc. 8082

**WATES, LTD.**, have vacancies in their Architect's Department for **ASSISTANTS**, experienced in the detailing of houses, multi-storey flats, and commercial buildings. Permanent and progressive posts, good pay, 5-day week, pension scheme, and exceptionally comfortable working conditions in new office. Write, stating age, education, qualifications and experience, to the Architect, Wates, Ltd., 1258/60, London Road, Norbury, S.W.16. 9018

**ARCHITECT** requires, **CHIEF, SENIOR and JUNIOR ASSISTANTS**. Interesting work on flats, shops, schools, etc. Apply Roff Marsh, F.R.I.B.A., M.T.P.I., 125, London Road, Chelmsford. 9021

**GEORGE WIMPEY & CO. LTD.**  
 The Architects' Department seek architectural staff enthusiastic to apply their knowledge in new construction techniques covering Houses, Multi-Storey Flats, Offices, Schools and Industrial Buildings for contracts in the U.K. and Overseas. Appointments range from **ARCHITECTS** to **DRAUGHTSMEN**, with special interest to those of ability, recognising the value of the designer and technician as an integral part of the production team.  
 Appointments are on a permanent basis, with a 5-day week, at Head Office, Hammersmith.  
 For applicants interested in work in the Midlands our Regional Office at Birmingham has appointments to offer for Architectural Staff on a similar basis (excepting 5-day week).  
 Salaries will be according to qualifications and experience, and, subject to satisfactory service, there is a Pension Scheme for those wishing to make a career with the firm.  
 Applicants should write, giving brief particulars, to E. V. Collins, A.R.I.B.A., Chief Architect, George Wimpey & Co., Ltd., 27, Hammersmith Grove, London, W.6. 9013

**KATZ & VAUGHAN**  
 Assistant Required  
 'phone AMB. 7291 9054

**ARCHITECTURAL ASSISTANTS and DRAUGHTSMEN** required to work in Wimbledon office and in Central London. Commencing salary £600-£750 p.a., according to age and experience. Five-day week, pension scheme, luncheon vouchers. Telephone LIB. 1189 for appointment. The Coniston Company, Eagle House, High Street, Wimbledon, S.W.19. 9051

**MALE or female ASSISTANTS**-Inter. standard-required immediately by London Architect. Some office experience necessary. £550-£600 per annum. Work mainly commercial. Ring GERRARD 1857. 9006

**INTERMEDIATE standard ASSISTANT** required in busy Exeter office. Box 9048.

**ARCHITECTURAL ASSISTANTS** required immediately by a large Industrial Concern in the Midlands. Applications must be of R.I.B.A. Intermediate standard, preferably with experience on industrial projects. Salary by arrangement. Apply with all particulars to Box 9049.

**ARCHITECTURAL ASSISTANTS** required, Inter. and Final standard. Please apply in writing, stating age, experience and salary required, to Frederick Gibberd, 8, Percy Street, London, W.1. 9039

**ARCHITECTURAL ASSISTANTS** required immediately for interesting and varied works. Reply giving full particulars, Deacon & Laing, 9 St. Paul's Square, Bedford. Telephone 5413. 8073

**ARCHITECTS' ASSISTANT**, with ability and experience, Inter. Standard, required at once for busy office. Apply, stating age, experience and salary required, to: Quick & Lee, Chartered Architects, 116, Dale End, Birmingham, 4. 7095

**ARCHITECT'S Department** of a large multiple retail concern with offices in London require **SENIOR ARCHITECTURAL ASSISTANTS**. There is a pension scheme, and a five-day week is in operation. Dining room available for the use of staff. Applicant should write, giving particulars of age, experience and salary required, Box 8021.

**ASSISTANT ARCHITECT** with experience required for Manchester office. R.I.B.A. qualification desirable. Interesting post with wide range of work for man of initiative and capacity. Please give details of education, experience and salary required, to Harry S. Fairhurst & Son, Chancery Chambers, 55 Brown Street, Manchester, 2. 8019

**ASSISTANT ARCHITECT and ARCHITECTURAL ASSISTANT** required for Newcastle office of major oil company. The work is in connection with large-scale development of service stations, involving the design of new and re-modelling of existing stations. The Assistant Architect should be preferably R.I.B.A. capable of supervising staff and controlling work through all stages of development. Current driving licence essential. Architectural Assistant-Intermediate standard R.I.B.A., capable of handling jobs with minimum supervision. The work involves high standard of presentation, and understanding of contemporary design. Five-day week; good pension and life assurance scheme; sickness benefits and free luncheon vouchers; Social Club. Write, giving full details, stating age, experience and salary required, to Box 6085, quoting ref. Y5942.

**ERIC LYONS** requires **SENIOR ASSISTANT**. Write brief details to Mill House, Bridge Road, Hampton Court, Surrey. 9097

**ARCHITECT**, qualified, required by Scottish Special Housing Association Limited. Salary scale, £615 x £30-£915 with placing for age on entry up to £795 at age 31. The post is superannuable under the Local Government Superannuation Acts. Application forms, with full particulars can be obtained from the Secretary, 15-21 Palmerston Place, Edinburgh, 12. 9071

**ARCHITECTURAL ASSISTANTS** with imaginative and initiative required by Brighton office to London practice. Applicants should have progressive ideas and at least two years' experience after completion of training. Congenial working conditions; five-day week; Staff pension scheme. Salary by arrangement. Apply Box 9101.

**JOHN H. D. MADIN, Dip.Arch.Birm., A.R.I.B.A.**, Chartered Architect, 83/85, Hagley Road, Edgbaston, Birmingham, 16, requires a **SENIOR ASSISTANT** capable of taking responsibility for complete contracts, also an **INTERMEDIATE ASSISTANT** for interesting work. 9093

**BUCKINGHAMSHIRE** firm of Architects within 30 miles of London, with a varied practice, require **QUALIFIED ARCHITECTURAL ASSISTANTS**. Five-day week. Salary according to age and experience. Please write, giving full details, to Box 9086.

**BUCKINGHAMSHIRE** firm of Architects within 30 miles of London with a varied practice, require **QUALIFIED QUANTITY SURVEYORS**. Five-day week. Salary according to age and experience. Please write, giving full particulars, to Box 9087.

**ARCHITECTURAL ASSISTANTS** required for either St. Albans or London Office. Good salaries for suitable applicants. Write to Box 9089.

**ARCHITECTURAL ASSISTANT (R.I.B.A. Intermediate or equivalent standard)** interested in contemporary design, required in small West End Office of Architect dealing with design of chain shops. Box 9066.

**ARCHITECTURAL ASSISTANT**. £600 to £800 per annum offered for Assistant to take part in development and remodelling of petrol filling stations, garages and workshops, etc., for the Sheffield branch office of a major oil company. Must be capable of working independently and be prepared to accept responsibility. Should be of Intermediate standard, R.I.B.A. Work will involve original design, site visits and high standard of presentation. Good pension and life assurance scheme; sickness benefits; free luncheon vouchers; social club. Write, giving full details, stating age, experience and salary required, to Box 9074, quoting ref. AA4.

**ARCHITECTURAL ASSISTANTS** required immediately. A.R.I.B.A. and Intermediate qualifications. Write, giving full particulars and when available, Wood & Kendrick & Williams, 57 Colmore Row, Birmingham, 3. 7040

**ARCHITECTURAL ASSISTANTS** required. Intermediate standard. Variety of work. Salary according to experience. Apply Eric G. V. Hives, L.R.I.B.A., 3, Cork Street, Reading. 9069

**ARCHITECT** with varied practice in Bristol requires competent **ASSISTANTS**. Intermediate and Final standards. Applications, with full particulars, to Box 9065.

**ARCHITECTURAL ASSISTANTS** of Final or Intermediate R.I.B.A. standard required by **CADBURY BROTHERS LTD.** to work on a varied and interesting programme. Experience in Industrial and Commercial Building Design desirable. Five-day week, attractive working conditions and amenities, pension scheme. Provision of housing accommodation will be considered for suitable applicants. Salary according to qualifications and experience. Write, stating age, qualifications and experience, to Chief Architect, Cadbury Brothers Ltd., Bournville, Birmingham. 9061

**HASTIE, WINCH & KELLY** require **ARCHITECTURAL ASSISTANT**, able to take charge of medium-sized jobs, including Churches, Hostels, Factories, etc. Telephone for an appointment. WEL 8863, or write with particulars to 1 Bentinck Street, W.1. 6043

**SENIOR ARCHITECTURAL ASSISTANT** required by United Dairies Ltd. Applicants to state age and experience in the preparation of surveys, sketch plans and working drawings, and be able to supervise work in progress. Apply in writing, stating qualifications and salary required, to Chief Architect, United Dairies Ltd., 31 St. Petersburgh Place, W.2. 9060

**ASSISTANT ARCHITECT** and **ARCHITECTURAL ASSISTANT** required for the Bristol Branch Office of a major oil company. Work is in connection with large-scale development of service stations, involving design of new and re-modelling of existing stations. The Assistant Architect should preferably be A.R.I.B.A., capable of supervising staff and controlling work through all stages of development. Must hold current driving licence. Architectural Assistant, Intermediate Standard R.I.B.A., capable of handling jobs with minimum of supervision. The work will involve a high standard of presentation, and understanding of contemporary design. Good pension and life assurance scheme; sickness benefits and free luncheon vouchers. Social club. Write, giving full details, stating age, experience and salary required, to Box 9073, quoting ref. AAI.

**ARCHITECTS** with large London practice, require qualified **ARCHITECT** who combines a knowledge of construction with a high standard of draughtsmanship to work on office buildings or allied projects. Box 9079.

**LONDON** Consultants require **ARCHITECTURAL ASSISTANTS** for design work on Atomic Power Stations. The vacancies offer great opportunities and scope for the right applicants, who should be qualified or have reached Final Standard for A.R.I.B.A. Staff Pension Scheme. Please apply in confidence to Box 353, Glovers Advertising Ltd., 351, Oxford Street, London, W.1. 9078

**YOUNG ARCHITECTURAL DRAUGHTSMAN** required by London firm. Must have had experience in Architect's office, preferably on commercial buildings. Commencing salary about £400 per annum. -Apply Box 9114.

**KENSINGTON, SENIOR AND JUNIOR ASSISTANTS**, contemporary minded but sympathetic to traditional work, required for small friendly office to assist with interesting City buildings. Temporary positions. Salary ranges £400-£500 and £700-£800. Box 9111.

**FEMALE ASSISTANT** required for small temporary office in West End, minimum requirement intermediate with some experience. Salary proportionate to qualification. Phone Gerrard 6781. 9108

**ARCHITECTURAL ASSISTANTS** required in busy West End office engaged on commercial work. Able to prepare sketch schemes and working drawings. Ability to prepare perspectives an advantage but not essential. Five-day week, luncheon vouchers, etc. Reply stating age, experience, salary required, to Box 9106.

**NORTHERN RHODESIA**. Old established progressive firm of Architects requires **ASSISTANT ARCHITECTS** and **ARCHITECTURAL ASSISTANTS**. Applicants may be required to serve in Kitwe, Ndola, Lusaka or Livingstone. Salary according to qualifications and experience. Further information regarding the appointments may be obtained on application to the High Commissioner for Northern Rhodesia, Northern Rhodesia House, 57 Haymarket, London, or to the Secretary, R.I.B.A. Final applications, giving full details of training and experience to be sent Air Mail to Lallemand & Williams, Chartered Architects, Box 275, Ndola, Northern Rhodesia. 9104

**ARCHITECTURAL ASSISTANT**, Intermediate standard, required by large Midlands Brewery Company. Please reply, giving full details of qualifications, age, experience and salary required, to Box 9103.

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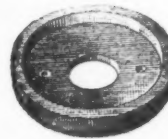
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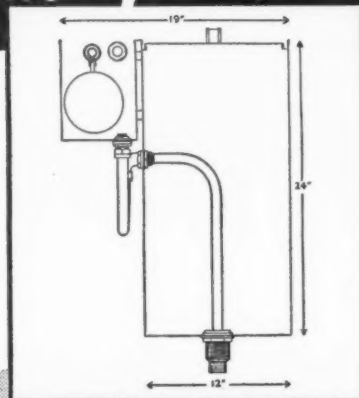
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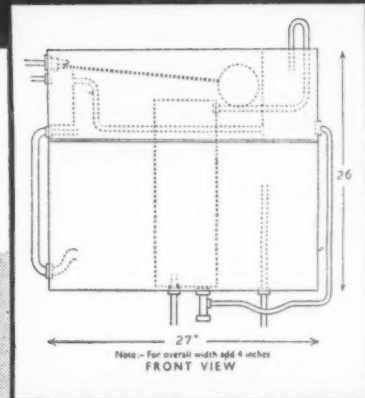
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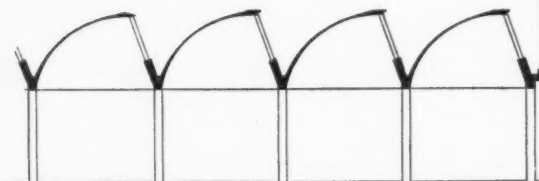
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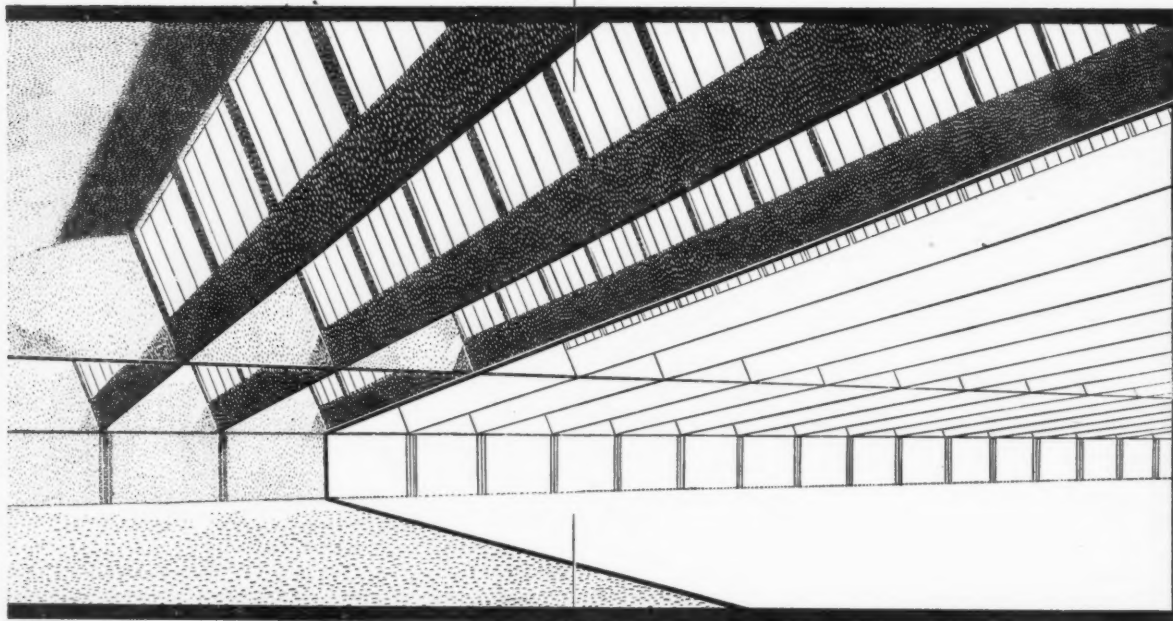


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