# THE ARCHITECTS' JOURNAL



*standard contents*

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



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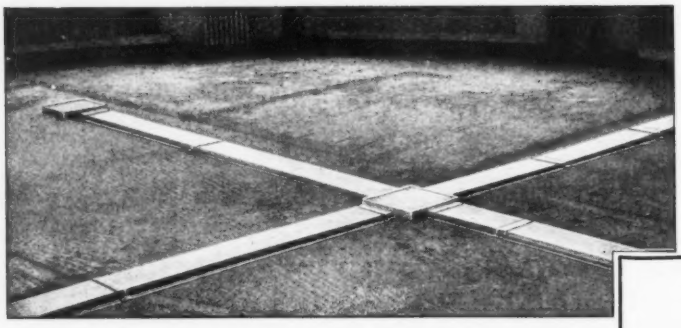
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

| | | |
|---|---|---|
| AA | Architectural Association, 34/6, Bedford Square, W.C.1. | Museum 0974 |
| AAI | Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhampstead, Herts. | |
| ABS | Architects' Benevolent Society. 66, Portland Place, W.1. | Langham 5721 |
| ABT | Association of Building Technicians. 1, Ashley Place, S.W.1. | Victoria 0447-8 |
| ACGB | Arts Council of Great Britain. 4, St. James' Square, S.W.1. | Whitehall 9737 |
| ADA | Aluminium Development Association. 33, Grosvenor Street, W.1. | Mayfair 7501/8 |
| ARCUK | Architects' Registration Council. 78, Wimpole Street, W.1. | Welbeck 2915 |
| BAE | Board of Architectural Education. 66, Portland Place, W.1. | Langham 5721 |
| BATC | Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1. | Reliance 7611, Ext. 1706 |
| BC | Building Centre. 26, Store Street, Tottenham Court Road, W.C.1. | Museum 5400 |
| BCC | British Colour Council. 13, Portman Square, W.1. | Welbeck 4185 |
| BCCF | British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5. | Ealing 9621 |
| BCIRA | British Cast Iron Research Association. Alvechurch, Birmingham. | Redditch 716 |
| BDA | British Door Association. 10, The Boltons, S.W.10. | Fremantle 8494 |
| BEDA | British Electrical Development Association. 2, Savoy Hill, W.C.2. | Temple Bar 9434 |
| BIA | British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2 | Glasgow Central 2891 |
| BID | Building Industries Distributors. 52, High Holborn, W.C.1. | Chancery 7772 |
| BINC | Building Industries National Council. 11, Weymouth Street, W.1. | Langham 2785 |
| BOT | Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1. | Trafalgar 8855 |
| BRS | Building Research Station. Bucknalls Lane, Watford | Garston 4040 |
| BSA | Building Societies Association. 14, Park Street, W.1. | Mayfair 0515 |
| BSI | British Standards Institution. British Standards House, 2, Park St., W.1. | Mayfair 9000 |
| BTE | Building Trades Exhibition. 32, Millbank, S.W.1. | Tate Gallery 8134 |
| CABAS | City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon. | Newport 65491 |
| CAS | County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester. | Chichester 3001 |
| CCA | Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1. | Belgravia 6661 |
| CCP | Council for Codes of Practice. Lambeth Bridge House, S.E.1. | Reliance 7611 Ext. 1284 |
| CDA | Copper Development Association. 55, South Audley Street, W.1. | Grosvenor 8811 |
| CIAM | Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland | |
| COID | Council of Industrial Design. 28, Haymarket, S.W.1. | Trafalgar 8000 |
| CPRE | Council for the Preservation of Rural England. 4, Hobart Place, S.W.1. | Sloane 4280 |
| CUC | Coal Utilization Council. 3, Upper Belgrave Street, S.W.1. | Sloane 9116 |
| CVE | Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1. | Reading 72255 |
| DGW | Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1. | Reliance 7611 |
| DIA | Design and Industries Association. 13, Suffolk Street, S.W.1. | Whitehall 0540 |
| DPT | Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1. | Trafalgar 8855 |
| EJMA | English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1. | Regent 4448 |
| EPNS | English Place-Name Society. 7, Selwyn Gardens, Cambridge. | |
| FAS | Faculty of Architects and Surveyors. 68, Gloucester Place, W.1. | Welbeck 9966 |
| FASS | Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1. | Abbey 7232 |
| FBBDO | Fibre Building Board Development Organization, Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7. | Kensington 4577 |
| FBI | Federation of British Industries. 21, Tothill Street, S.W.1. | Whitehall 6711 |
| FC | Forestry Commission. 25, Savile Row, W.1. | Regent 0221 |
| FCMI | Federation of Coated Macadam Industries. 37, Chester Square, S.W.1. | Sloane 1002 |
| FDMA | The Flush Door Manufacturers Association Ltd., Trowell, Nottingham. | Ilkeston 623 |
| FLD | Friends of the Lake District. Pennington House, nr. Ulverston, Lancs. | Ulverston 201 |
| FMB | Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1. | Chancery 7583 |
| FPC | The Federation of Painting Contractors, St. Stephen's House, S.W.1. | Whitehall 3902 |
| FRHB | Federation of Registered House Builders. 82, New Cavendish Street, W.1. | Langham 4341 |
| GPDA | Gypsum Plasterboard Development Association, 11, Ironmonger Lane, E.C.2. | Monarch 8888 |
| GC | Gas Council. 1, Grosvenor Place, S.W.1. | Sloane 4554 |
| GG | Georgian Group. 2, Chester Street, S.W.1. | Belgravia 3081 |
| HC | Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1. | Whitehall 2881 |
| IAAS | Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1. | Belgravia 3755 |
| ICA | Institute of Contemporary Arts. 17–18, Dover Street, Piccadilly, W.1. | Grosvenor 6186 |
| ICE | Institution of Civil Engineers. 1, Great George Street, S.W.1. | Whitehall 4577 |
| IEE | Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2. | Temple Bar 7676 |
| IES | Illuminating Engineering Society. 32, Victoria Street, S.W.1. | Abbey 5215 |
| IGE | Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1. | Sloane 8266 |



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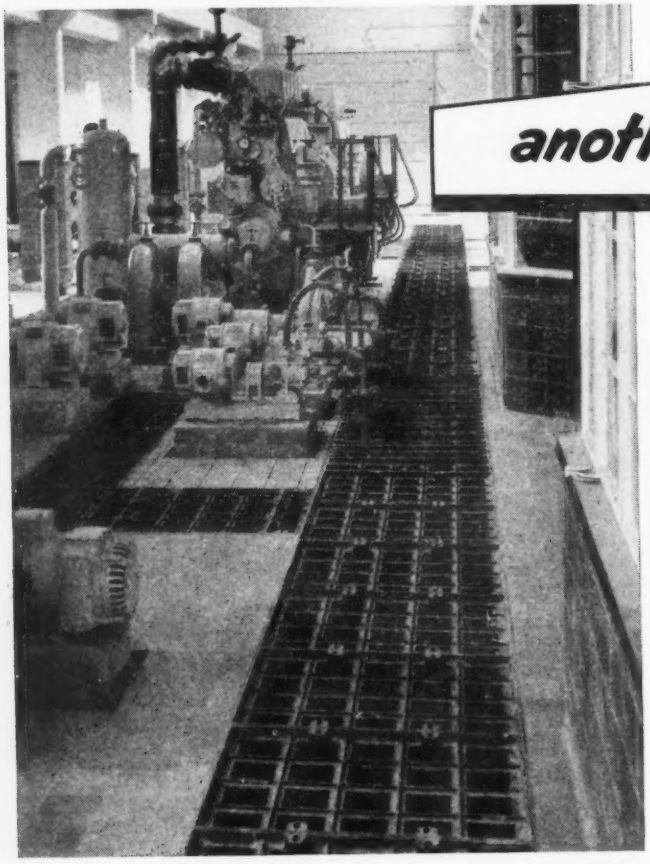

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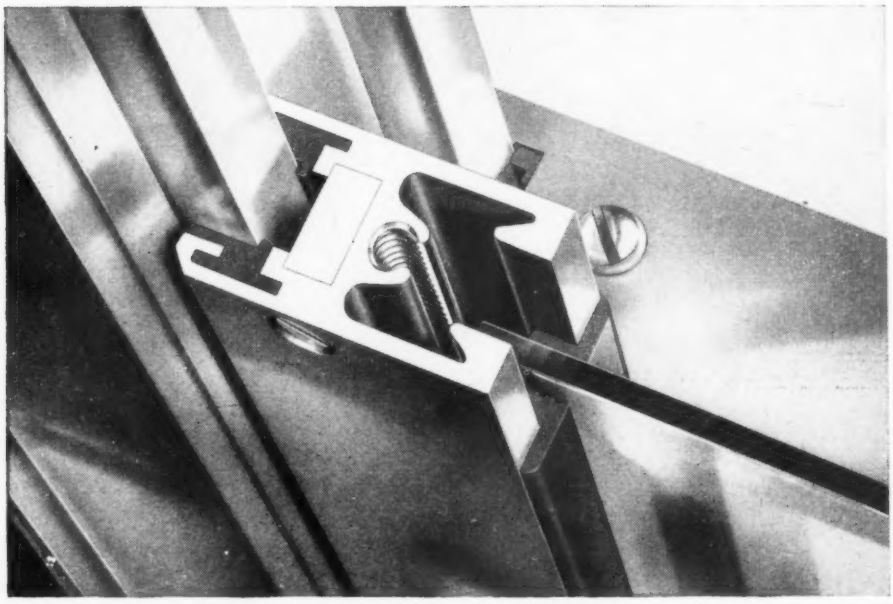

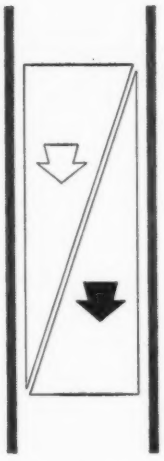

*Pressure on top wedge (white arrow) binds wedges together in channel, locks device in position. Pressure on bottom wedge (black arrow) permits free downward movement. The converse is true for upward movement. This is the principle on which the 'Alomega' suspension works. The wedges are accommodated in the jambs of the moving sash, and the whole mechanism is completely enclosed.*

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| | |
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| TYPE 34, 3′ 8⅜″ x 2′ 8½″ | TYPE 44, 3′ 8⅜″ x 3′ 5½″ |
| TYPE 15, 4′ 8⅜″ x 1′ 2½″ | TYPE 25, 4′ 8⅜″ x 1′ 11½″ |
| TYPE 35, 4′ 8⅜″ x 2′ 8½″ | TYPE 45, 4′ 8⅜″ x 3′ 5½″ |
| TYPE 16, 5′ 8⅜″ x 1′ 2½″ | TYPE 26, 5′ 8⅜″ x 1′ 11½″ |
| TYPE 36, 5′ 8⅜″ x 2′ 8½″ | TYPE 46, 5′ 8⅜″ x 3′ 5½″ |

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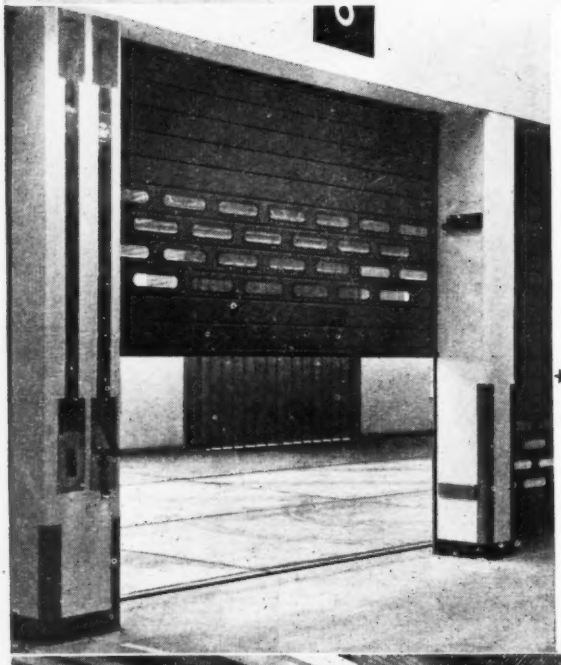

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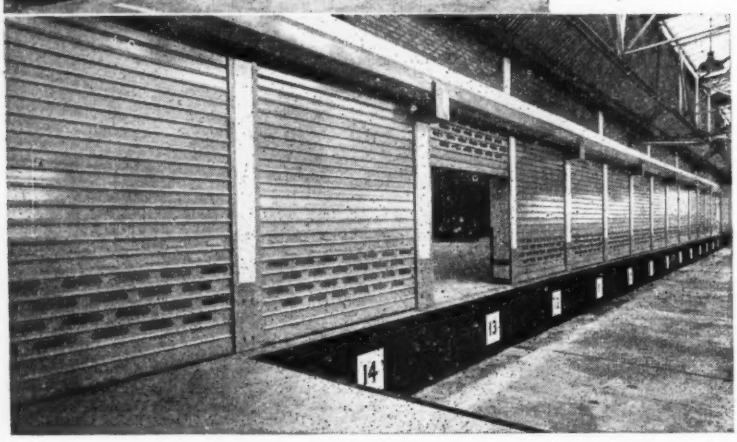


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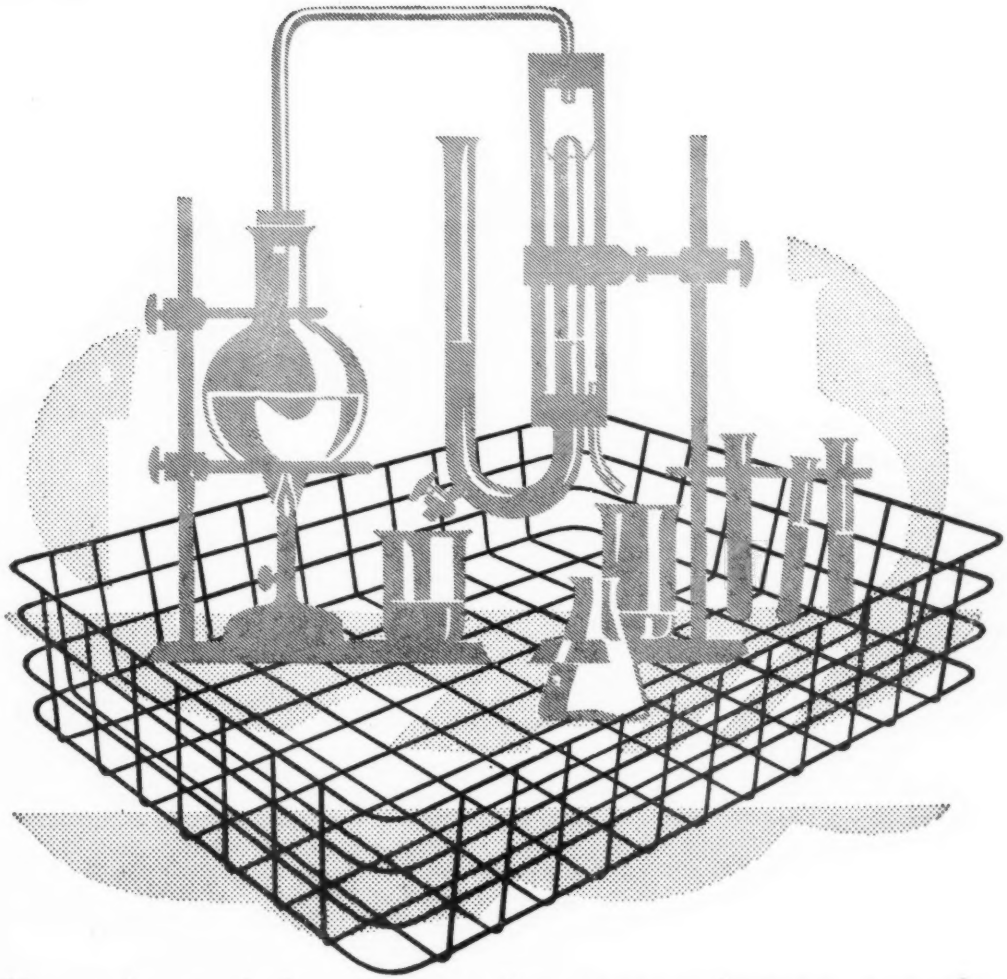

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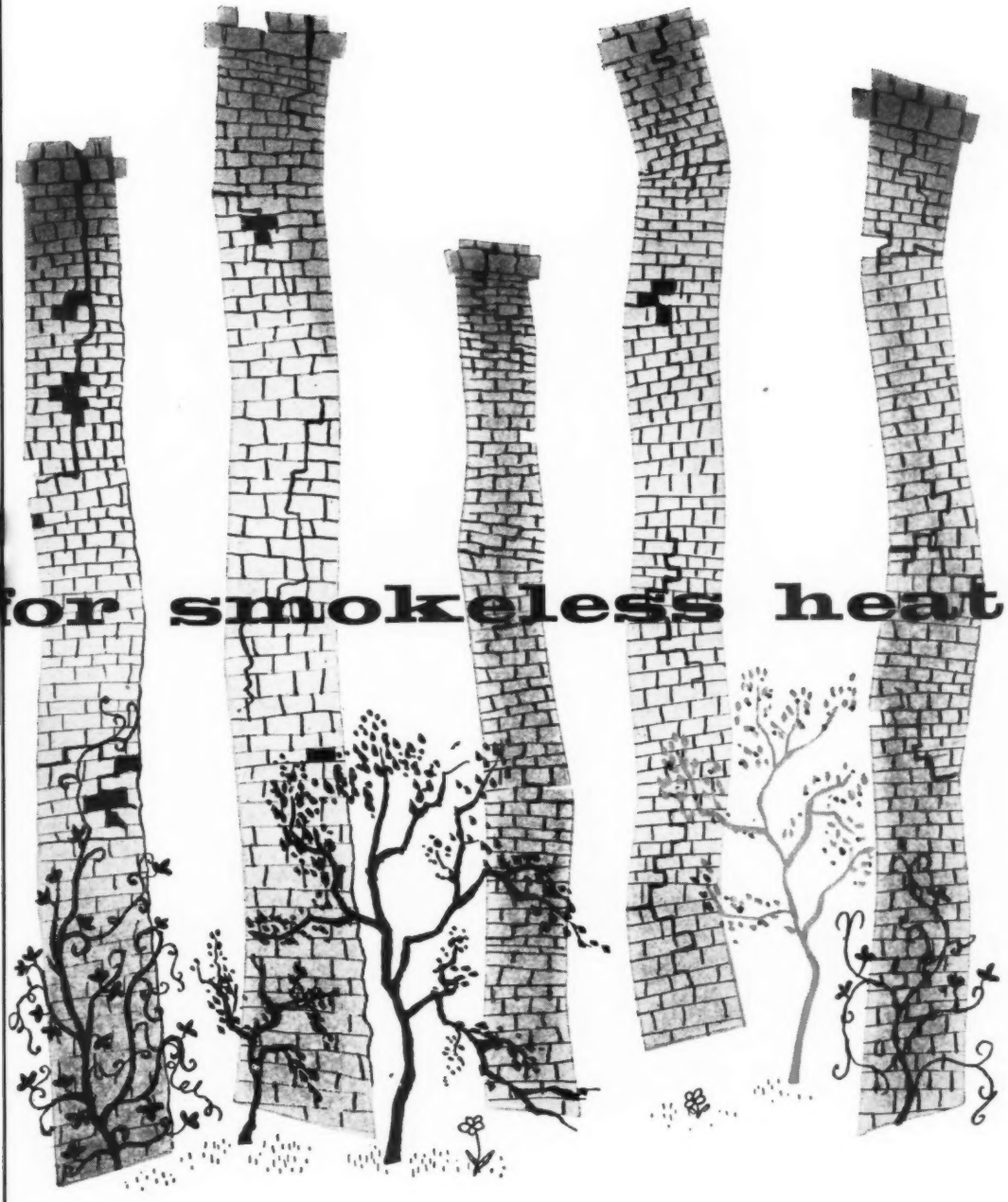

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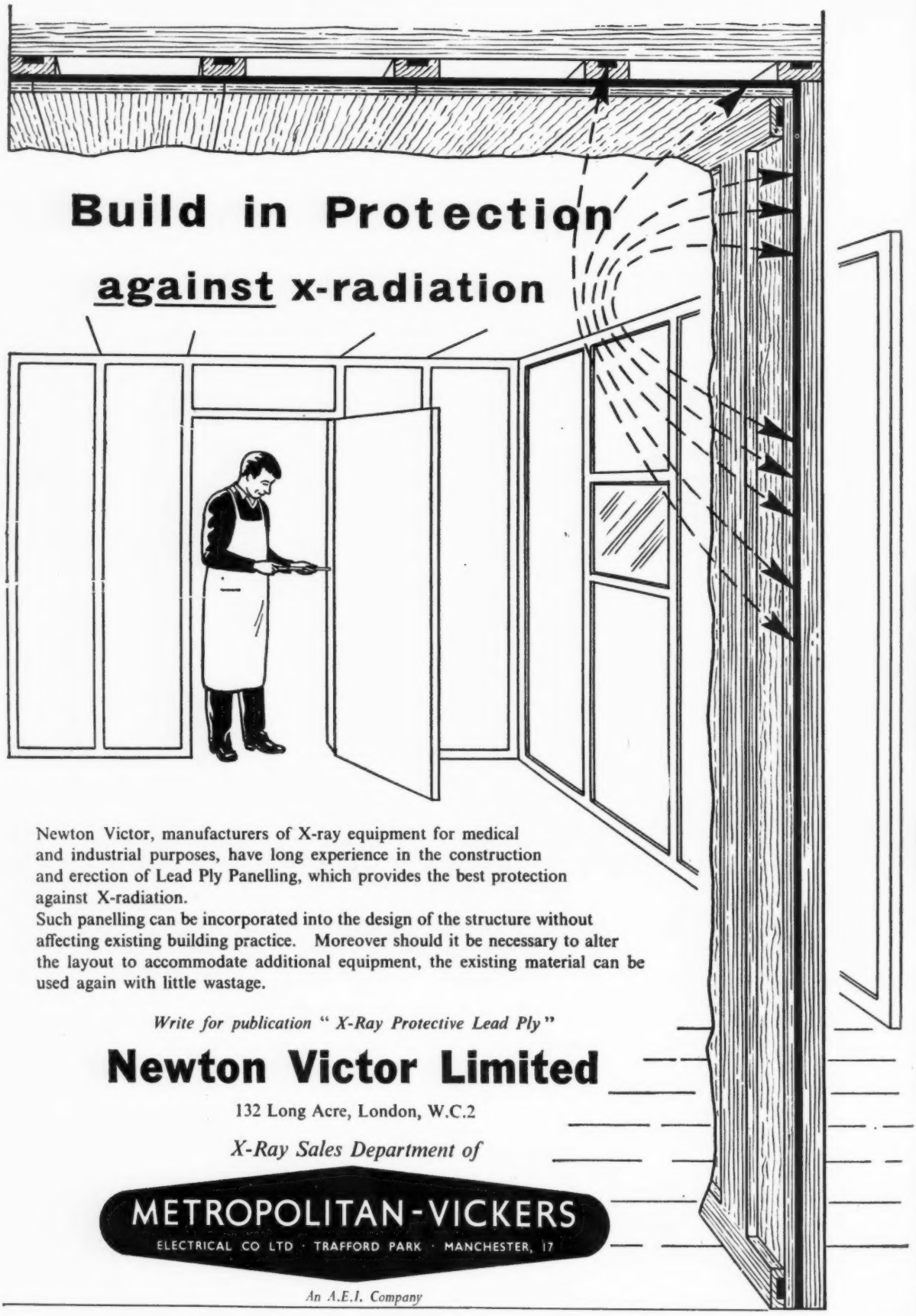

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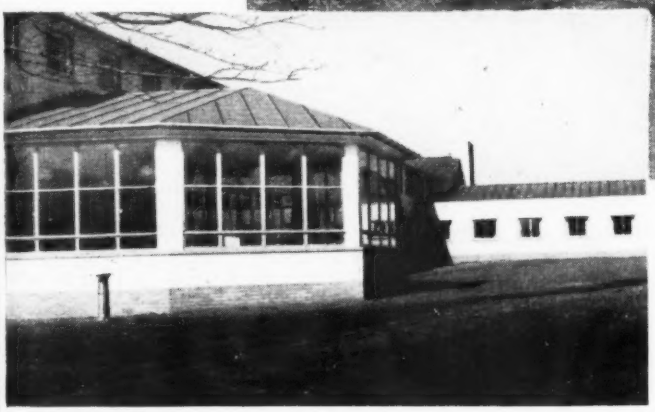

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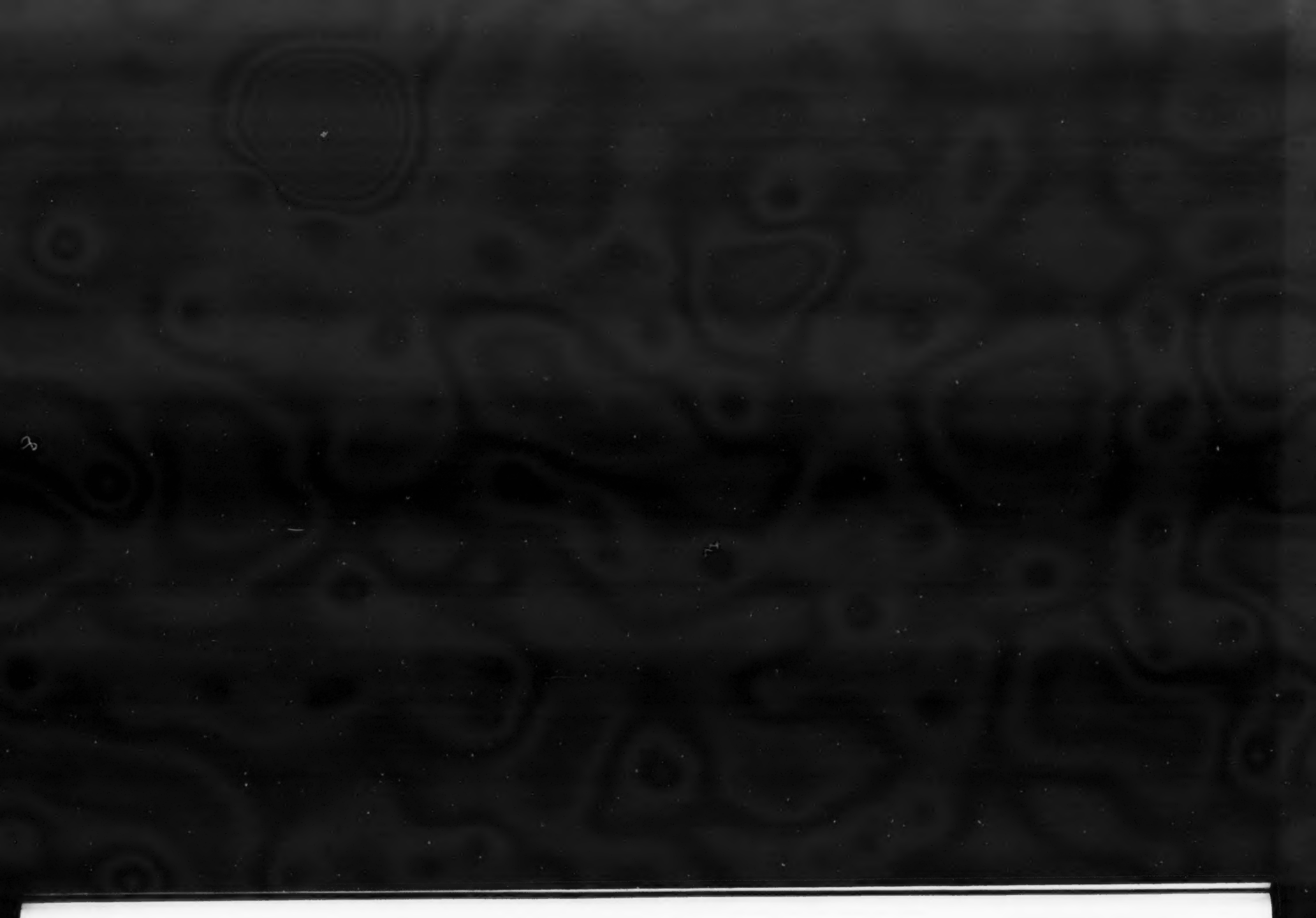

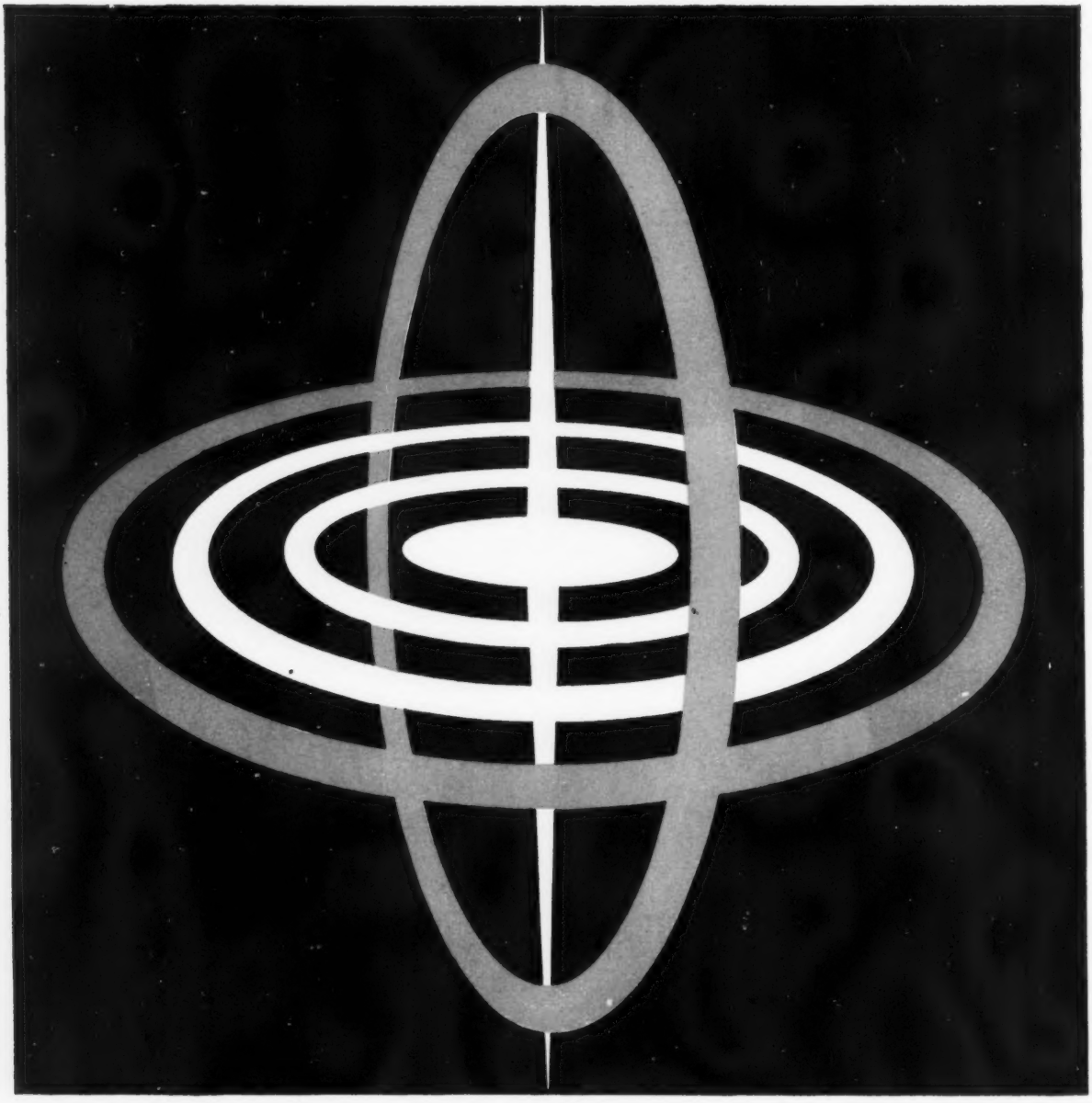

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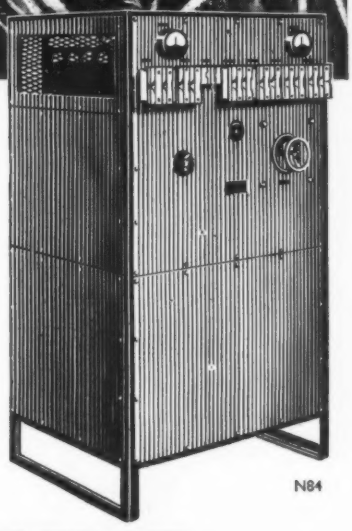


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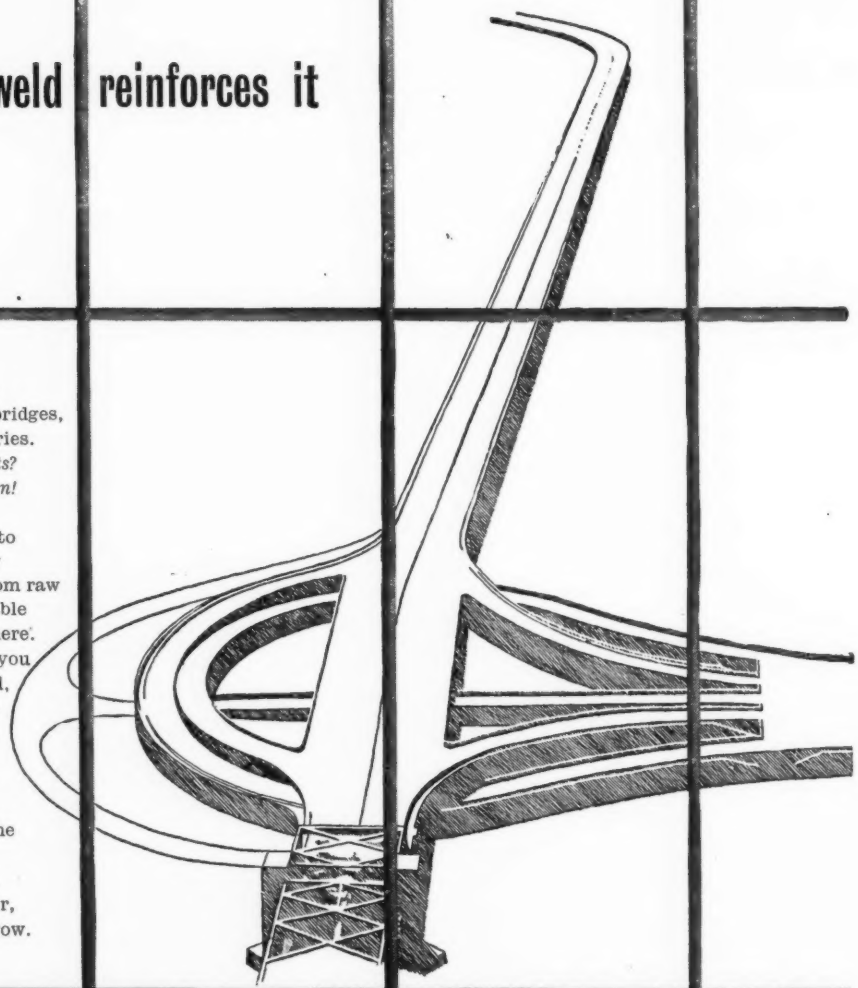

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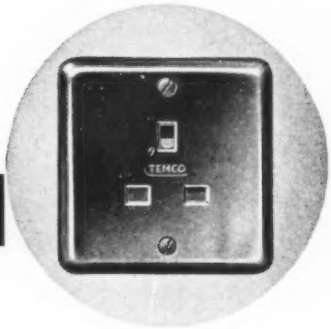


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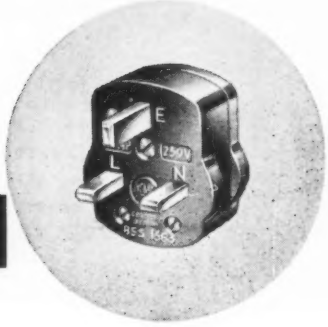

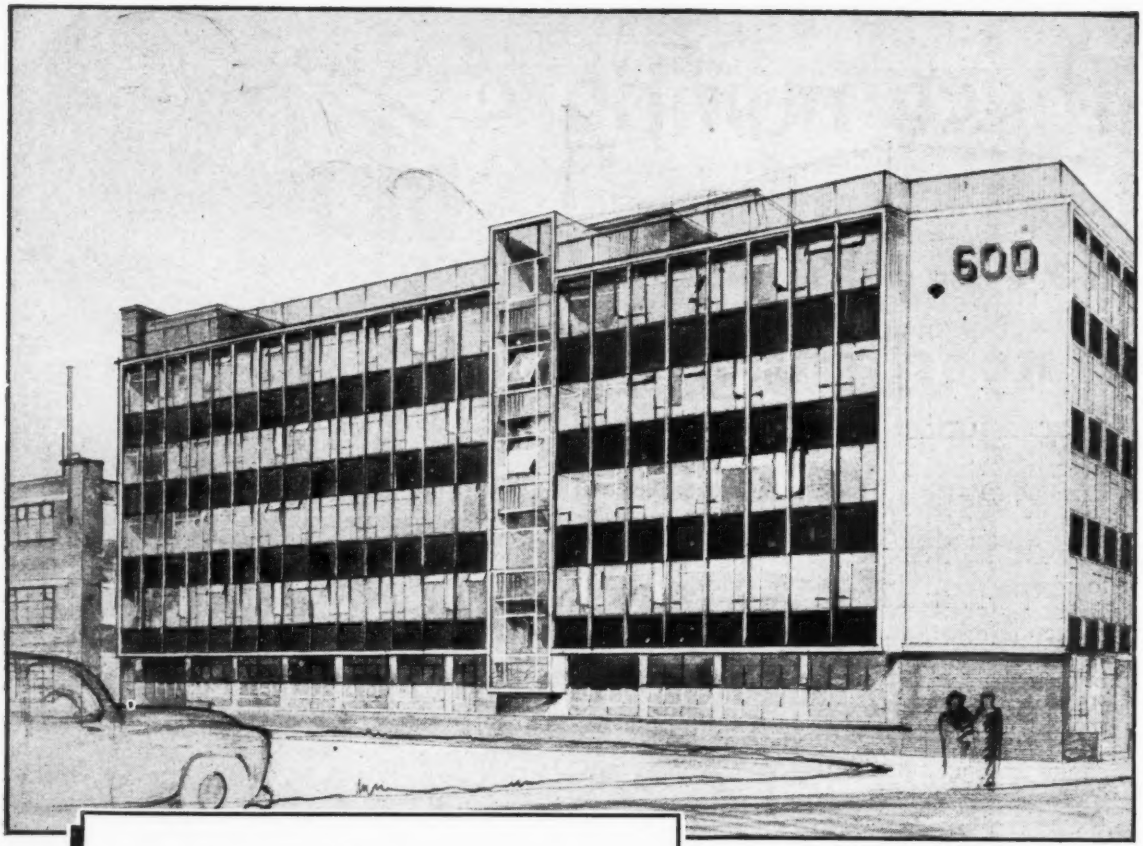


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*South Wales Office* **Bute Street, Cardiff Telephone: Cardiff 28786**
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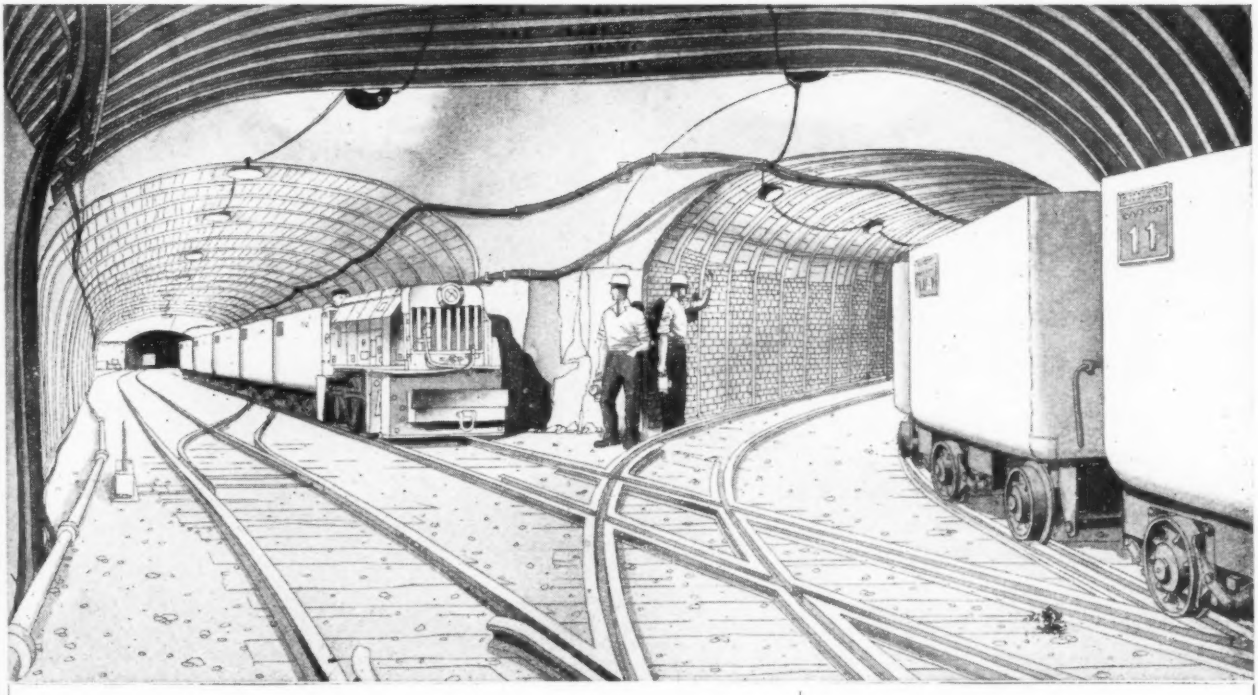
# HOT GALVANIZING PREVENTS RUST

ASK ANY MINER ABOUT RUST—he knows its dangers on shaft-cages, underground railways and mine cars. He also knows that hot galvanizing is the surest means of preventing rust. In fact, wherever steel is used . . . in factories and on railways, on ships and on farms . . . there is no substitute for hot galvanizing. The tenacity and durability of *hot* galvanizing ensure lasting protection with minimum maintenance.

### *Protection in depth*

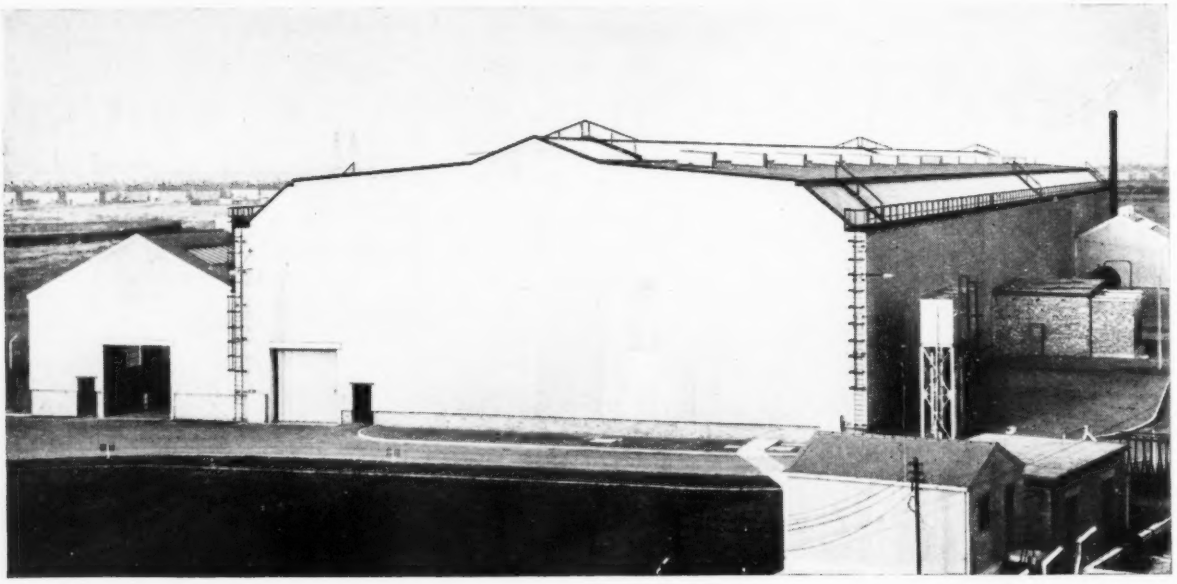
Hot galvanizing gives defence in depth. The firmly alloyed zinc keeps out rust—tightly sealing crevices and seams. And if the coating *does* get damaged the steel still won't be attacked because the zinc protects it sacrificially. Hot galvanizing *saves* steel—by eliminating the need for large corrosion allowances and the replacement of rusted parts. Hot galvanizing resists normal atmospheric conditions *twenty times better than steel.*



## Hot Dip Galvanizers Association

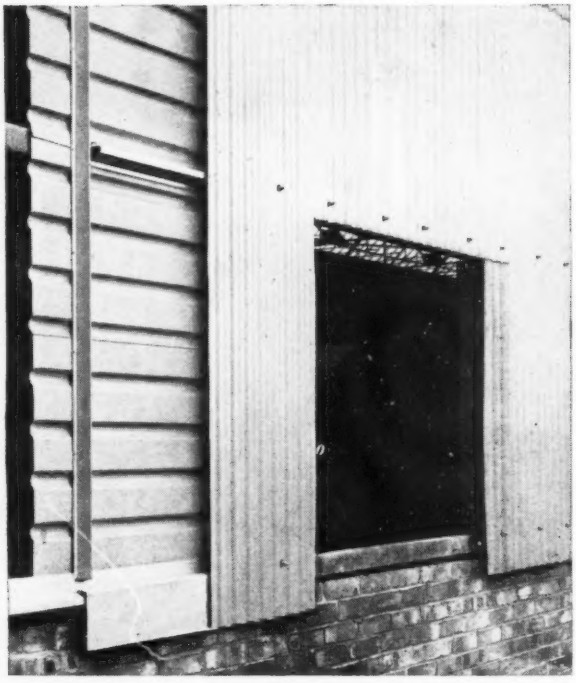
*The Hot Dip Galvanizers Association, a non-trading body, welcomes enquiries. Write to 34 Berkeley Square, London, W.1. Tel. Grosvenor 6636*

*Member of the Zinc Development Association*



# British Aluminium for Factory Cladding

This aluminium extrusion factory at Latchford Locks is walled and roofed, appropriately enough, in aluminium sheeting. The walls are comprised of inner and outer corrugated aluminium skins, spaced 2″ apart, and fixed to a conventional steel framework, to the Dialindre system designed, developed and erected by Freeman, Morrison Ltd., and the roof is D. Anderson & Son Ltd. Aluminium 'E' decking.



*Close-up of the Freeman, Morrison Ltd. Dialindre system of wall construction.*

**The BRITISH ALUMINIUM Co Ltd**

NORFOLK HOUSE ST JAMES'S SQUARE LONDON SW1

AP25

# Complete FIRE-FIGHTING EFFICIENCY without handwheels or surface piping!

**THE NORSEN RECESS-TYPE AUTOMATIC HOSE REEL**

*This reel can be housed flush with the wall face and is capable of swinging through a full 180° (Nicholson Patent).*

*It can be mounted to swing from either side of the recess—a great advantage when positioned at the ends of corridors or narrow passages.*

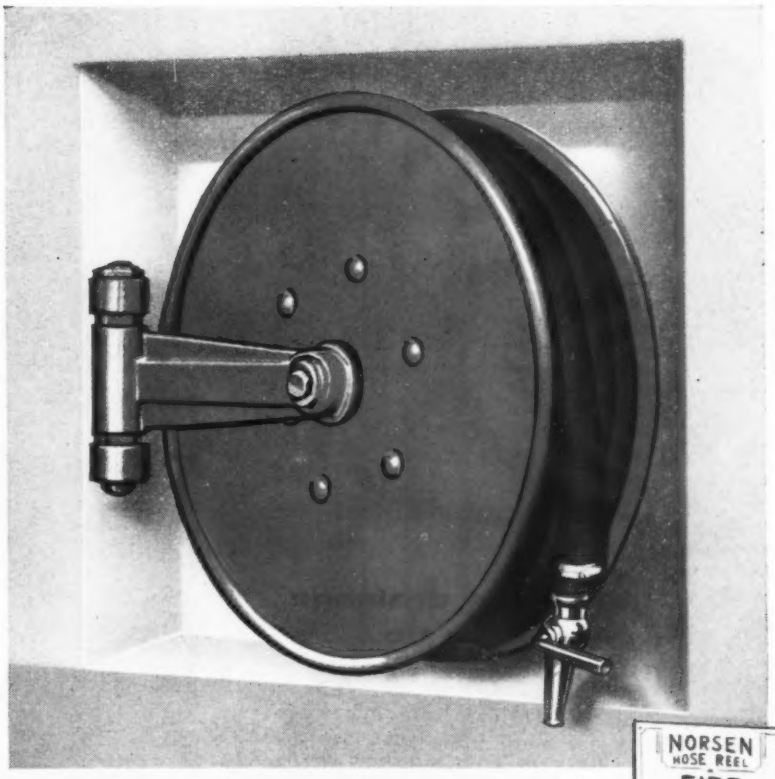
*When the reel is recessed no obstruction is caused. If required, a door, decorated to conform with the general scheme, can be fitted to conceal the reel.*

WALL-TYPE AND EXTERNAL SWINGING-TYPE REELS ARE ALSO AVAILABLE

★ ★ ★

**AUXILIARY PUMPS**

*In cases where there is not sufficient water pressure, an auxiliary pump (operated by a special flame-proof switch incorporated in the reel) can be provided.*




# NORSEN

## FIRE HOSE REELS

Automatic (NICHOLSON'S PATENTS)

**INSTANT FOOL-PROOF ACTION**
**"ON-THE-SPOT" CONTROL**
**COMPLETE DEPENDABILITY**
**SIMPLICITY OF OPERATION**
**MINIMUM WATER DAMAGE**
**NO COMPLICATED INSTRUCTIONS**
**NO SURFACE PIPING**
**NO HANDWHEELS**
**NO INTERFERENCE WITH DECORATION**

Outstanding in both appearance and performance, NORSEN Automatic Fire Hose Reels are meeting with widespread approval from Architects. In the event of fire the NORSEN AUTOMATIC HOSE REEL comes into operation INSTANTLY. The unreeling of a pre-determined length of hose (usually about 10 feet 6 inches) automatically operates the valve inside the reel and in a matter of seconds full water pressure is at the nozzle under the operator's control.

*BY APPOINTMENT SUPPLIERS OF FIRE-FIGHTING EQUIPMENT TO THE LATE KING GEORGE VI.*

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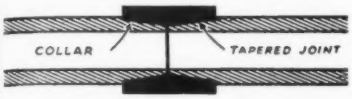
## Smooth bore and clean joints

Key Pitch Fibre pipes have precision-machined taper joints which require no mortar or compounds. Combined with their smooth bore, this means a high flow factor, with no problems of root growth.




## No cracking through settlement

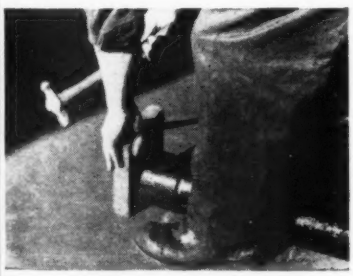
The resilience of pitch fibre pipes ensures that no cracking occurs under normal conditions of earth settlement. This also means that bedding concrete is unnecessary.

## Resistant to corrosion

Key pipes are vacuum-impregnated with pitch and are non-porous and resistant to normal effluent corrosives throughout their thickness.

## Maximum loan period

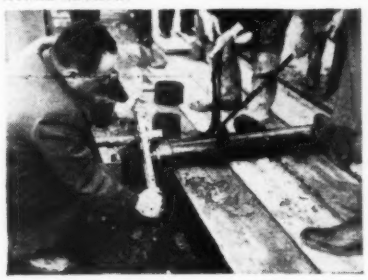
The 30-year loan period applies to all Key Drain pipes. Pitch fibre pipes have been used with notable success in the United States for over 50 years.



*A piece of heavy timber is placed against the coupling and a length knocked home.*

*The precision-machined taper joints require no mortar or jointing compounds.*

*Short lengths of pipe can be cut with a coarse toothed handsaw.*



*A special hand lathe is used for cutting joints on short lengths.*

## SPEEDING THE JOB—CUTTING THE COST

500 feet an hour is a modest rate for laying Key pipes. The simple system of jointing also ensures that the pipe can be laid in all weathers. Because there is no cement to dry out, the completed drain can be tested immediately and the trench back-filled without delay. When contracts must be carried out to a tight schedule these advantages are well worth bearing in mind. On a cost plus labour basis, pitch fibre pipes are cheaper per installed foot run than other drainage systems.

THOROUGHLY TESTED AND APPROVED

### British Standard

Key pipes exceed the requirements of BS 2760/56 for Pitch-impregnated Fibre Drain and Sewer Pipes. This standard was approved by the Bituminous Products Industry Standards Committee consisting of representatives of Government departments and professional bodies, including the following:

**Royal Institute of British Architects**
**Ministry of Housing & Local Government**
**Ministry of Works**
**Institution of Civil Engineers**
**Royal Institute of Chartered Surveyors**
**D.S.I.R.— Building Research Station**
**Institution of Public Health Engineers**
**London County Council**

### Ministry of Health Model Bye Laws

Pitch fibre pipes are deemed to comply with M.O.H. Bye Law requirements.

### Building Research Station Report

Key pipes were tested by this body and given a favourable report.

### Other approving bodies

Federation Civil Engineering Contractors.

National Federation of Building Trade Employers.

Royal Society for the Promotion of Health.

### Many local authorities have installed KEY pipes

### Test Results

Key pipes have been subjected to detailed physical tests.

Also specify **KEY** Underfloor Ducting and cable Conduits

# KEY PITCH FIBRE PIPES

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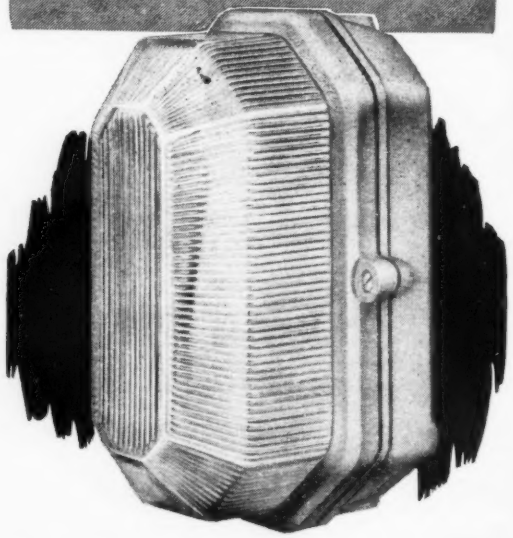

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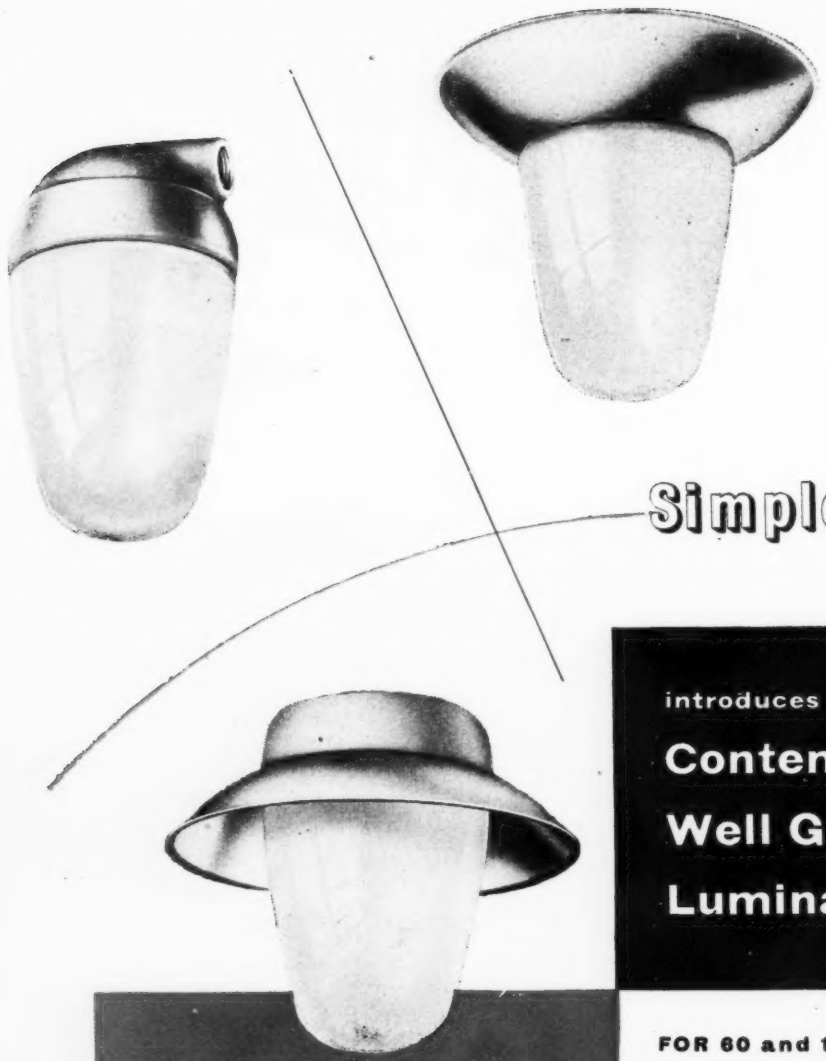
*Telephone : Trafford Park 1801 (3 lines)*
*London Office: 34 Victoria St., S.W.1. Tel: ABBey 4072 and 1356*



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Simplex Electric Co Ltd Blythe Bridge Staffs

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where the architects called for WINCILATE
like this Heinz building at Cardiff by
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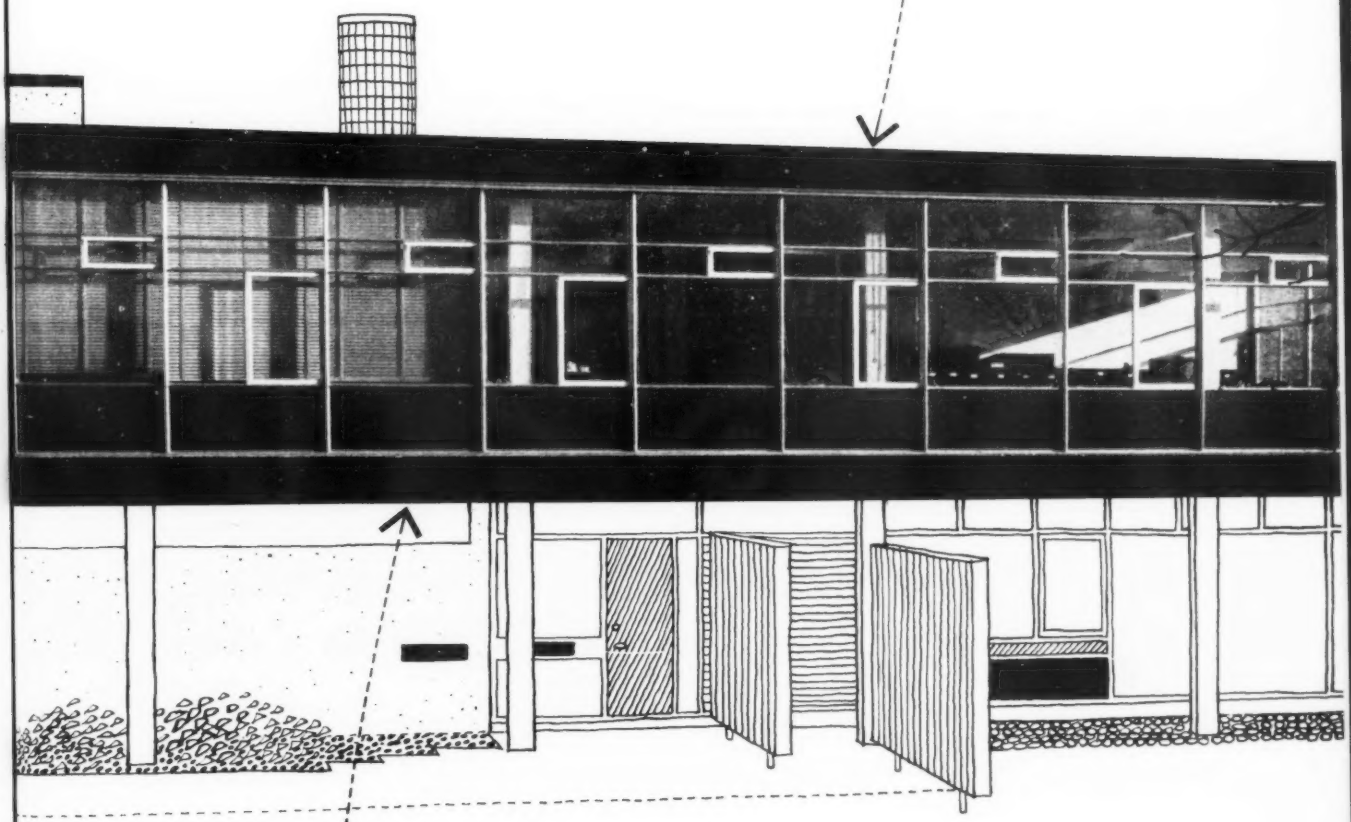

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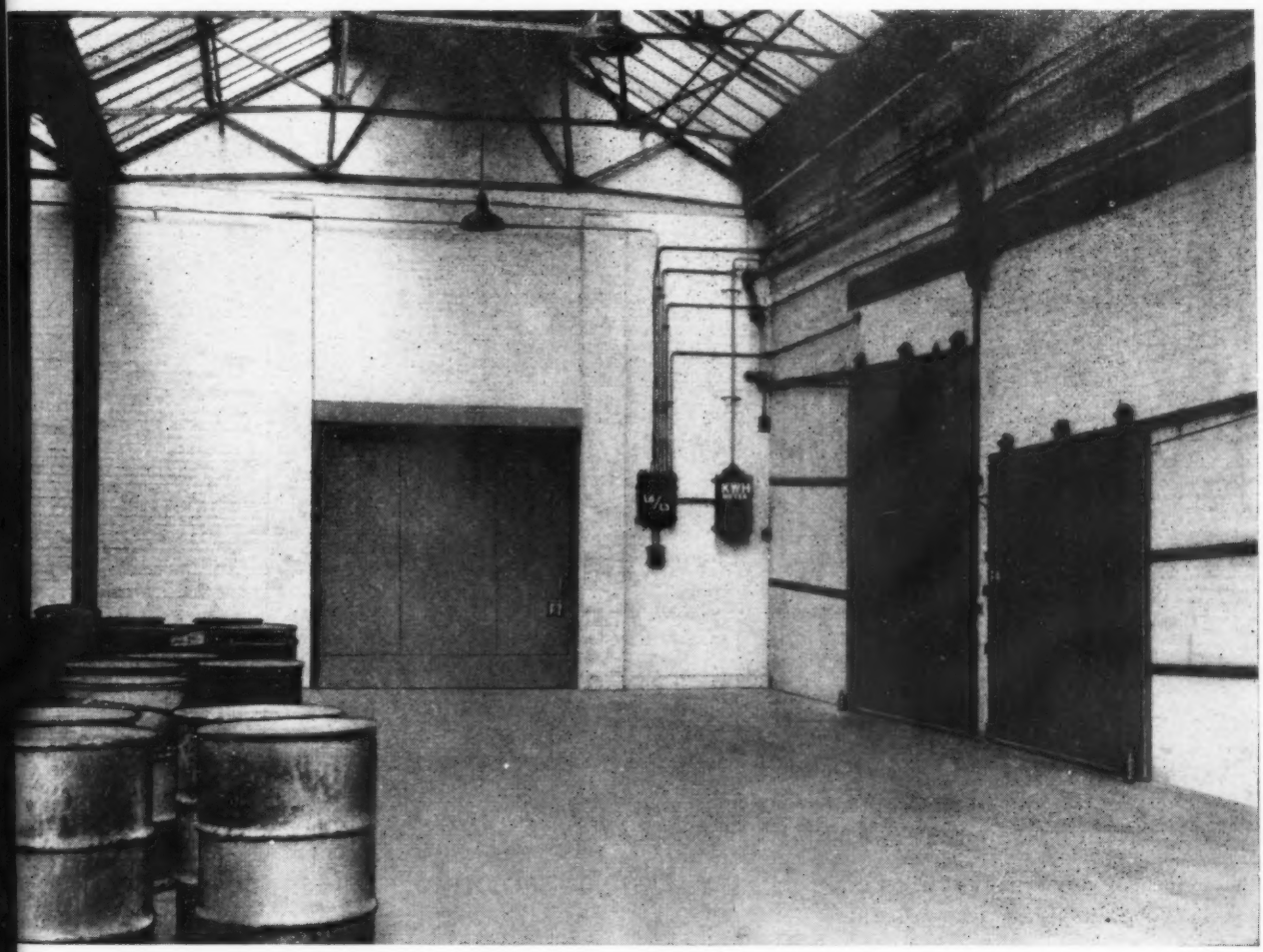

Automatic sliding composite fire doors at a reclaimed-rubber works in the North of England.

696

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Telephone: COLlyhurst 2321. Telegrams: Sprinkler, Manchester.

*Architect: S. C. Clark, F.R.I.B.A.*

# UTILE—the U-word for the U-wood

The panelling in the recently completed bar of Charrington's "Red Lion", Watling Street, E.C., is in solid Utile, a West African hardwood. (The counter, seen through our empty glass—thanks, we don't mind if we do—is Utile and Sycamore).

Utile is a close relation of the more familiar Sapele. If you're a Lifeman, you may like to know that its botanical name is *Entandrophragma utile;* if you want to be up-to-date on your finishes you really *need* to know about this and the other West African hardwoods.

## vital facts on Utile

Colour: Varies from a lightish to a dark brown.
Strength: Equivalent to Mahogany but harder.
Weight: About 40 lb./cu. ft.
Resistance to decay: Good.
Texture: Fairly close.
Workability: Good. Takes a high polish.
Principal uses: Interior decoration. Panelling. Shopfitting. Furniture-making. Flooring. Boat-building.

Other West African hardwoods include:

| | |
|---|---|
| DAHOMA | MAHOGANY |
| DANTA | MANSONIA |
| EDINAM | MAKORE |
| GUAREA | OBECHE |
| IDIGBO | SAPELE |

**UTILE**

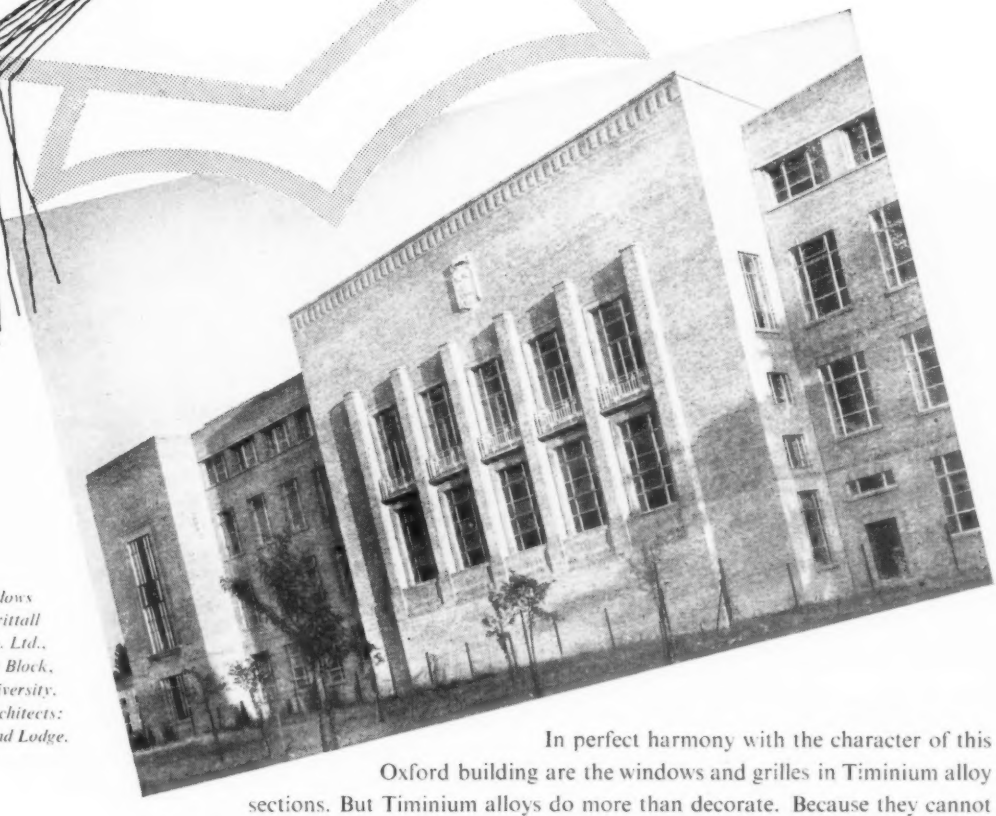
Gliksten

THE FOREMOST NAME IN TIMBER

*For information on West African and other hardwoods consult* **J. GLIKSTEN & SON LIMITED**

Carpenters Road, London, E.15. Telephone: AMHerst 3300. Liverpool Office: 87 Lord Street. Telephone: Central 7576

# Timinium
## right in the front



*Timinium alloy windows and grilles by Crittall Manufacturing Co. Ltd., in the Physiology Block, Oxford University. Architects: Lanchester and Lodge.*

In perfect harmony with the character of this Oxford building are the windows and grilles in Timinium alloy sections. But Timinium alloys do more than decorate. Because they cannot warp or rust and are so resistant to atmospheric corrosion, they save substantially on upkeep costs: they need no protective painting and next to no maintenance. Their excellent weathering, long life and attractive appearance commend them in an increasing number of applications to progressively-minded architects—and economy-minded clients.

*The Development Department of T I Aluminium Ltd., offers an advisory service covering all aspects of aluminium usage. Architects and builders are freely invited to make use of it.*

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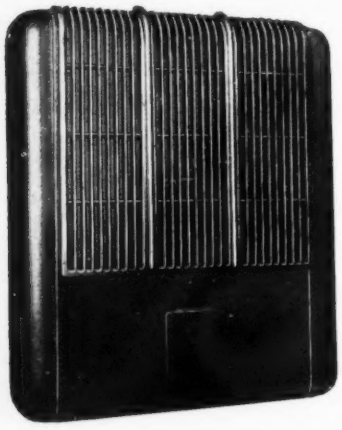

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- Combines maximum safety with maximum efficiency.
- Simple to install and maintain.
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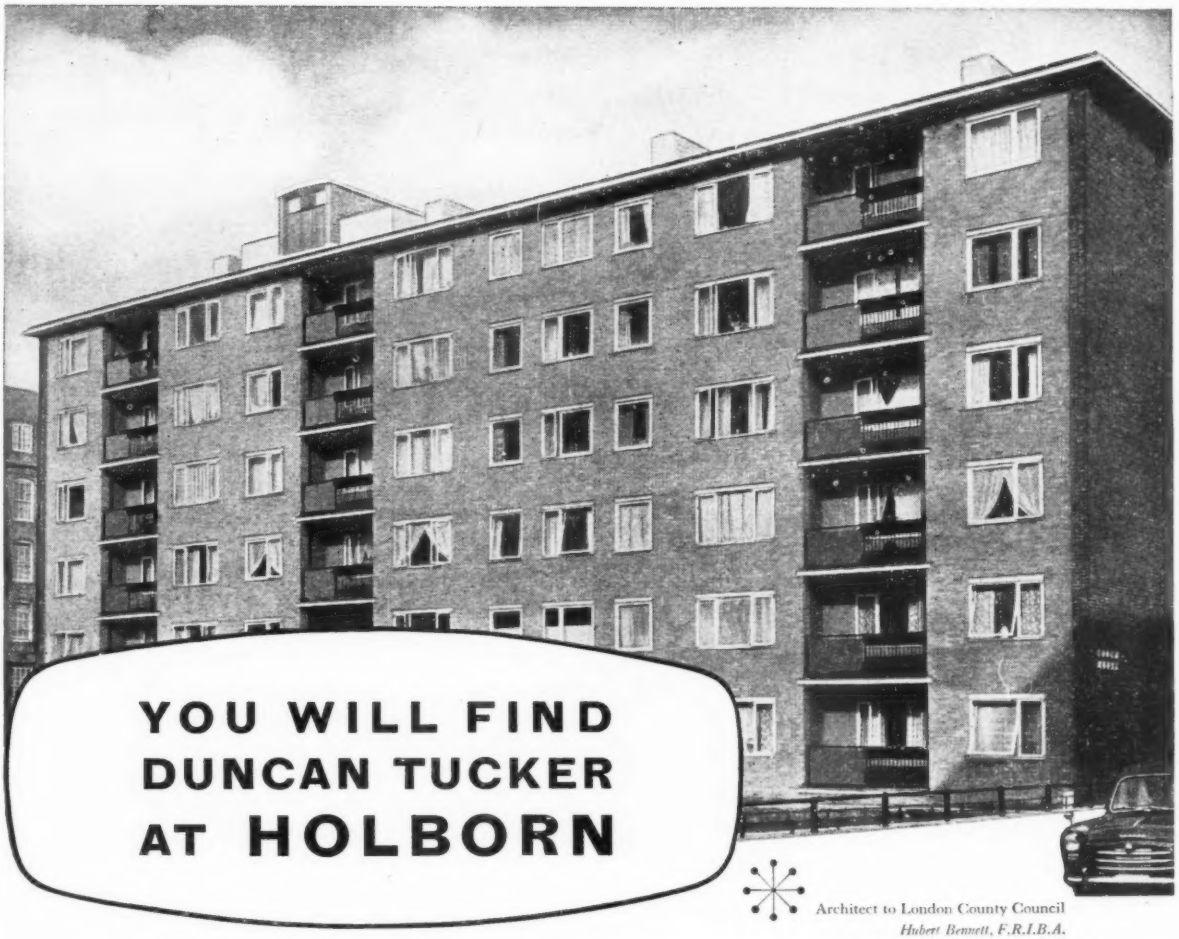

# YOU WILL FIND DUNCAN TUCKER AT HOLBORN

Architect to London County Council
*Hubert Bennett, F.R.I.B.A.*

Builders : *Token Construction Company Ltd.*
*68, Mount Street, London, W.1*

And in a variety of ways. For instance, at the Bourne Estate, Holborn — built to the specification of the London County Council — the special pivot windows, external doors, doorframes, linings, skirtings, architraves, mouldings and kitchen units *are all Duncan Tucker*— including the special teak and sapele mahogany doors.

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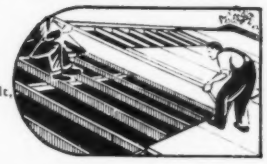
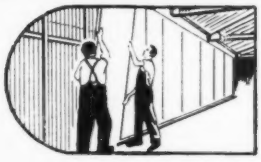
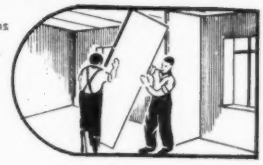


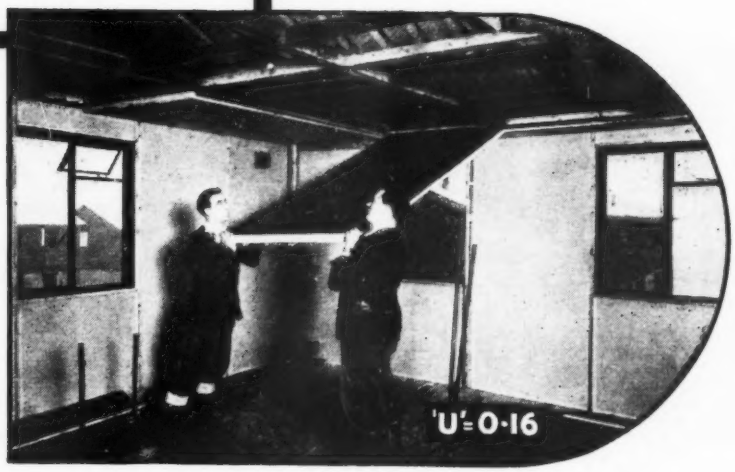
## WALL-LININGS



## PARTITIONING

- ★ Factory Screens
- ★ Divisions, etc.
- ★ Permanent or temporary
- ★ Glazed or unglazed



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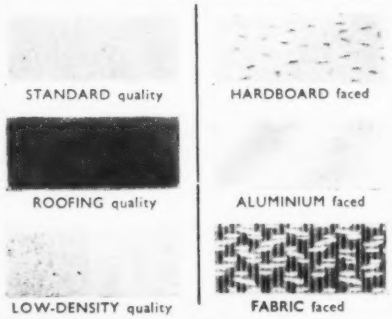


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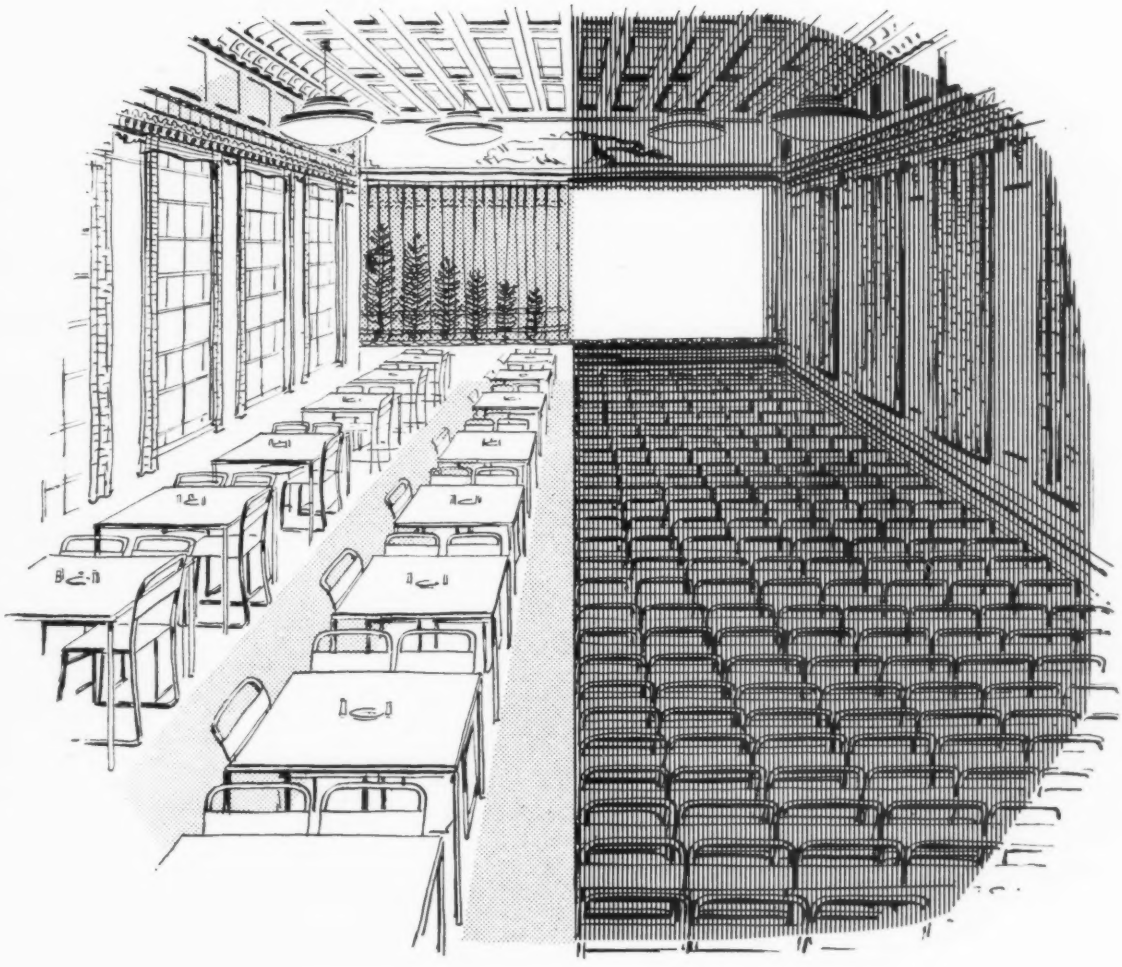
# Canteen *to* Concert Hall



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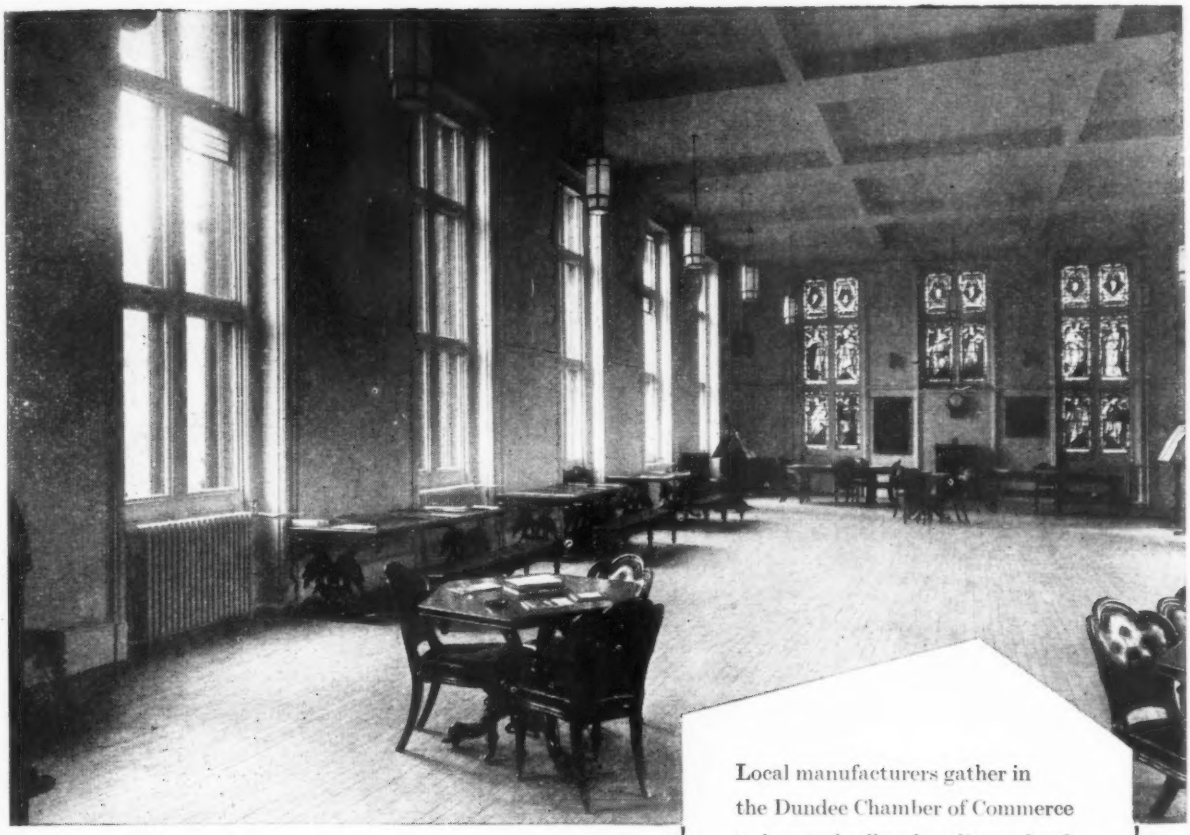

# Once again, heating by Crane

Local manufacturers gather in the Dundee Chamber of Commerce to buy and sell and to discuss local trade problems. As jute and flax are the staple industries in this area it is not surprising that the Reading Room illustrated has become an unofficial 'Jute and Flax Market'. This handsome room, together with a suite of offices on the top floor, is kept at a comfortable temperature by a complete Crane central heating system. This installation comprises some 60 Pall Mall Radiators, all taken off an oil-burning Crane No. 310 'L' Whitehall Sectional Heating Boiler, rated at 706,000 B.T.U's per hour.

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DESIGNED & INSTALLED
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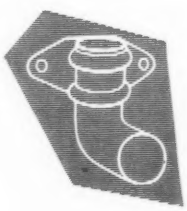

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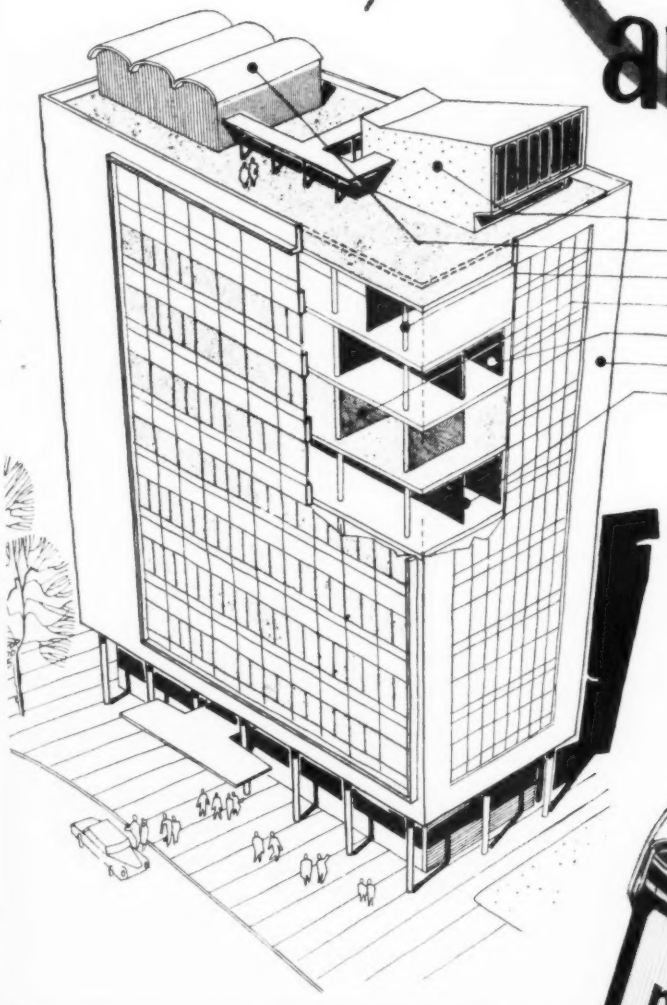

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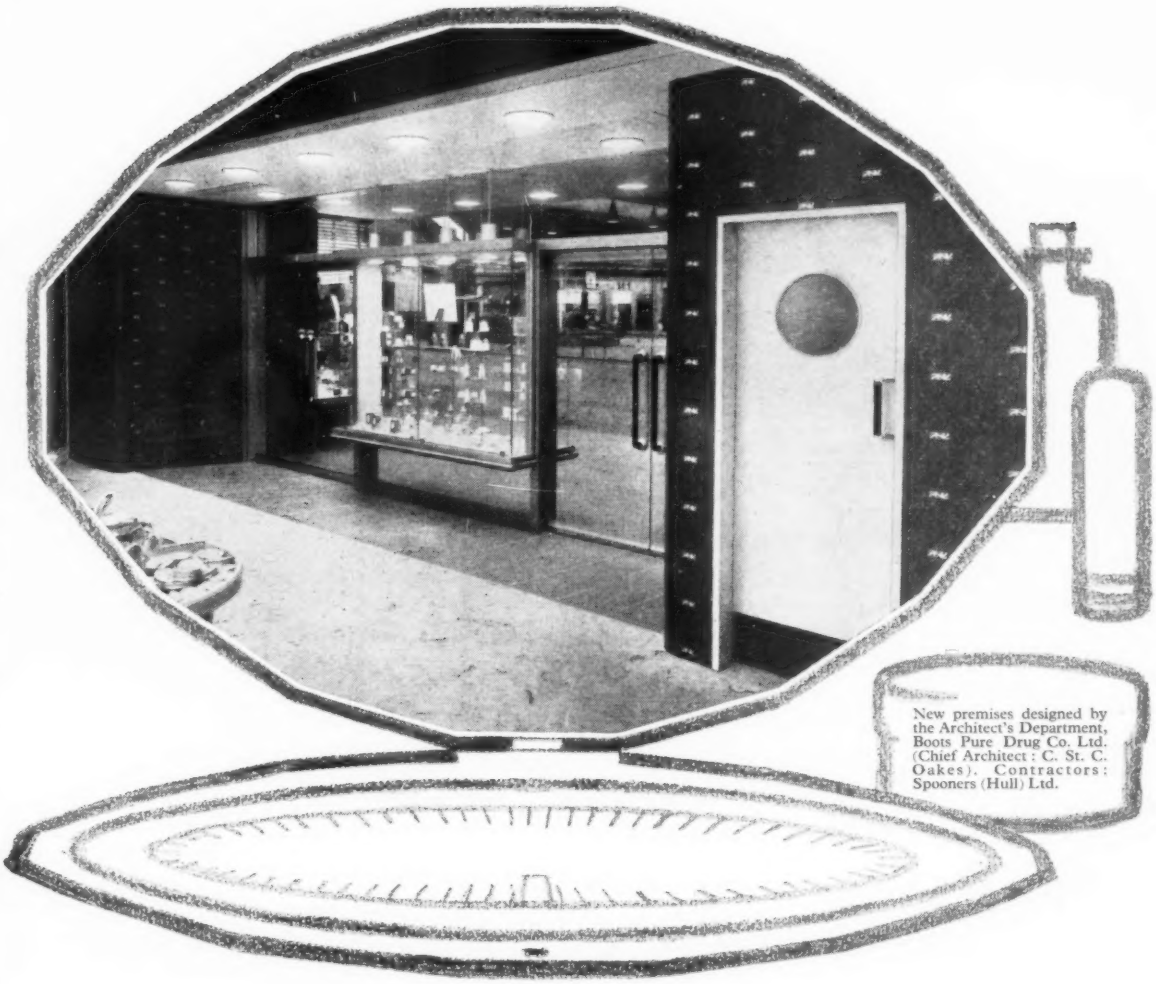

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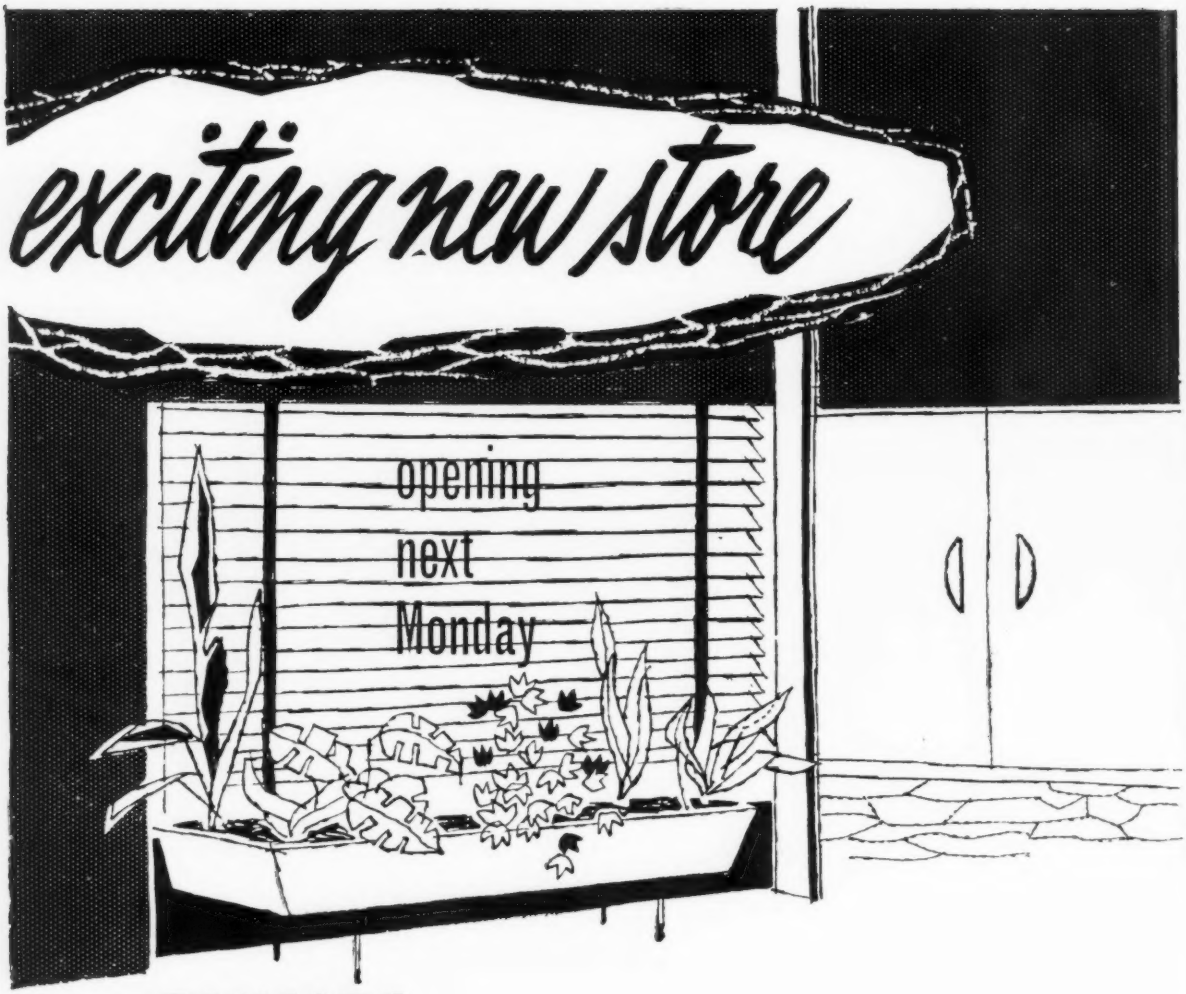


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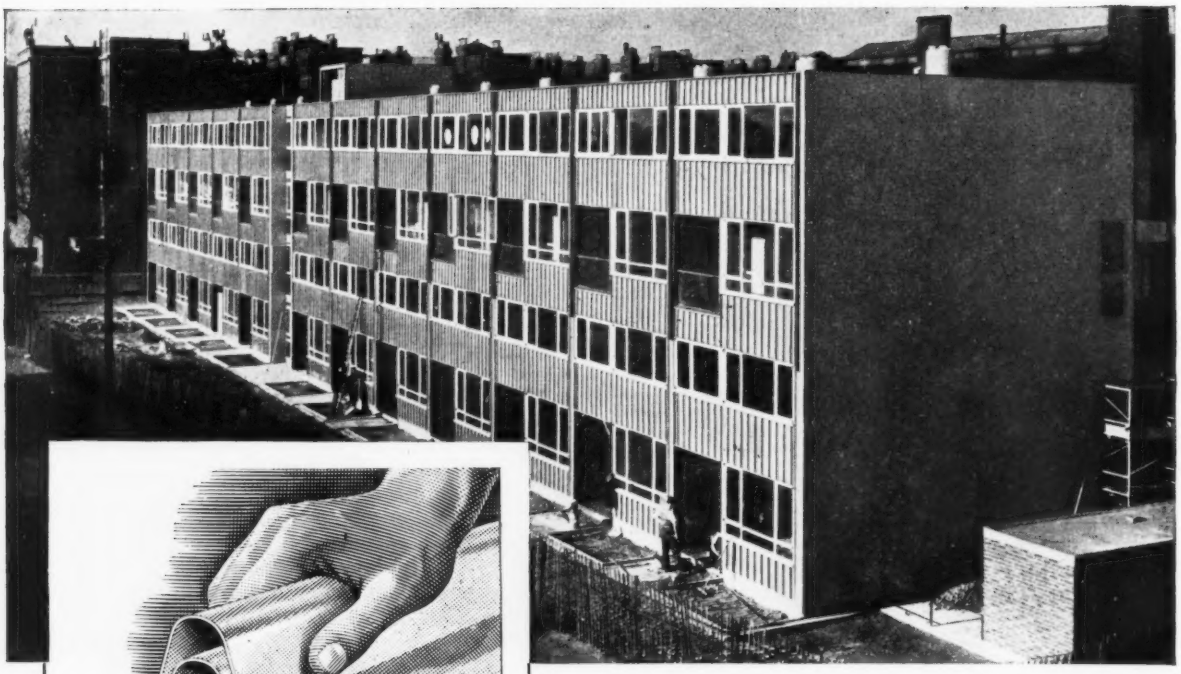



*One of a number of blocks of maisonettes at the L.C.C. housing development, Picton Street, Camberwell, S.E.5. Architect to L.C.C.: Hubert Bennett, F.R.I.B.A. Contractors: John Laing and Son Limited. Snaprib used here has grey "pyluminised" finish.*

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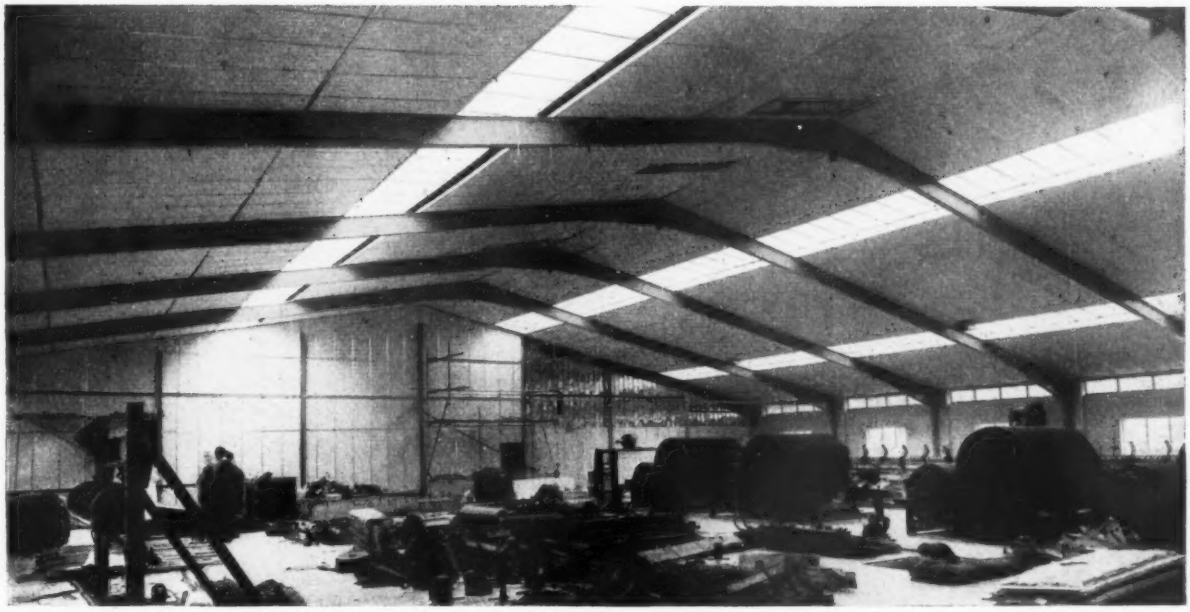
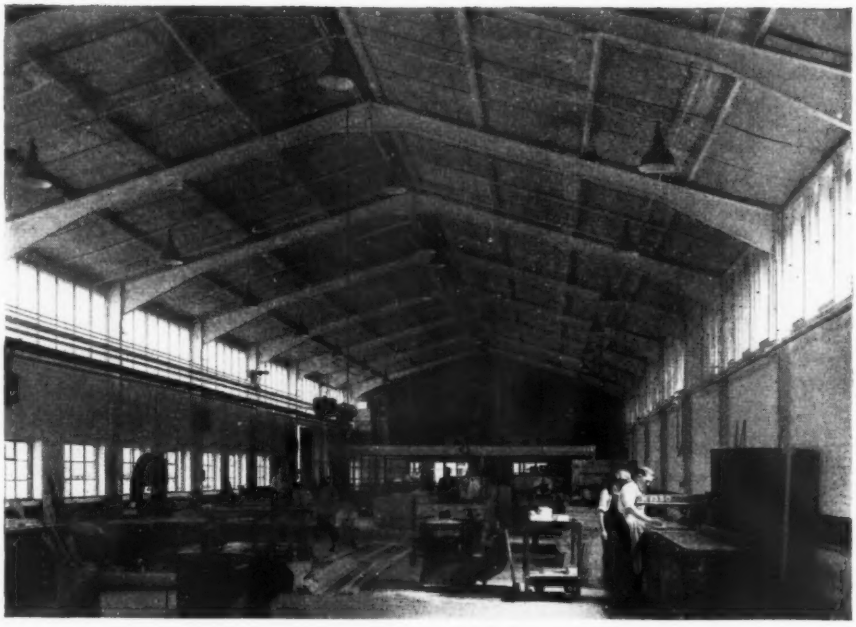


Spinning Mill Witney Span 112 ft. 6 ins. Pitch 11½° Architects : Fielding Dodd & Stevens Oxford.



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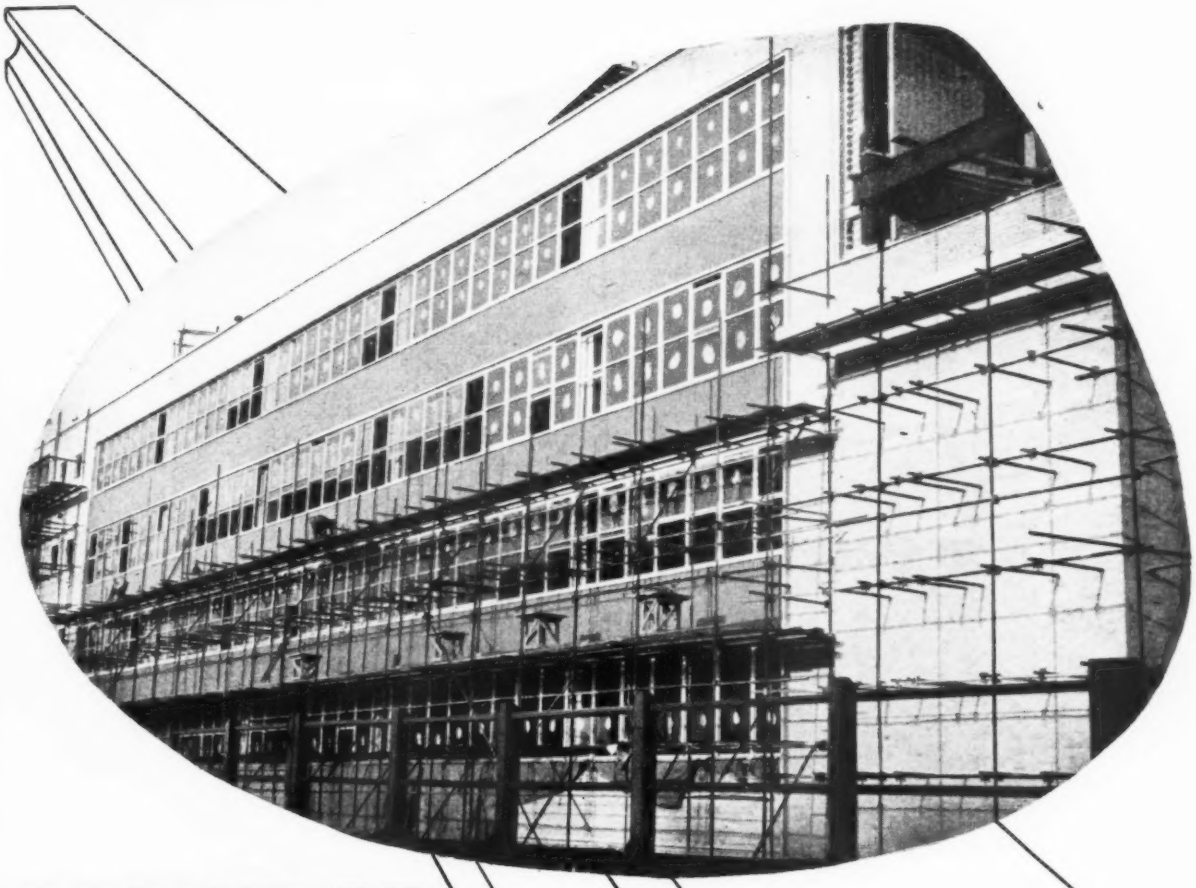

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New Warehouse, Island Street, designed by Architects Dept. Boots Pure Drug Co., Ltd. Nottingham. *Chief Architect:* C. St. C. Oakes, M.B.E., F.R.I.B.A. *Deputy Architect:* C. Knight Adams, L.R.I.B.A. *Architect in Charge of Work:* P. H. Rose, A.R.I.B.A. *Executive Architect:* L. O. Woodward, L.R.I.B.A. *Quantity Surveyor:* Gleeds (Nottingham). *Contractors:* W. J. Simms Sons & Cooke Ltd.

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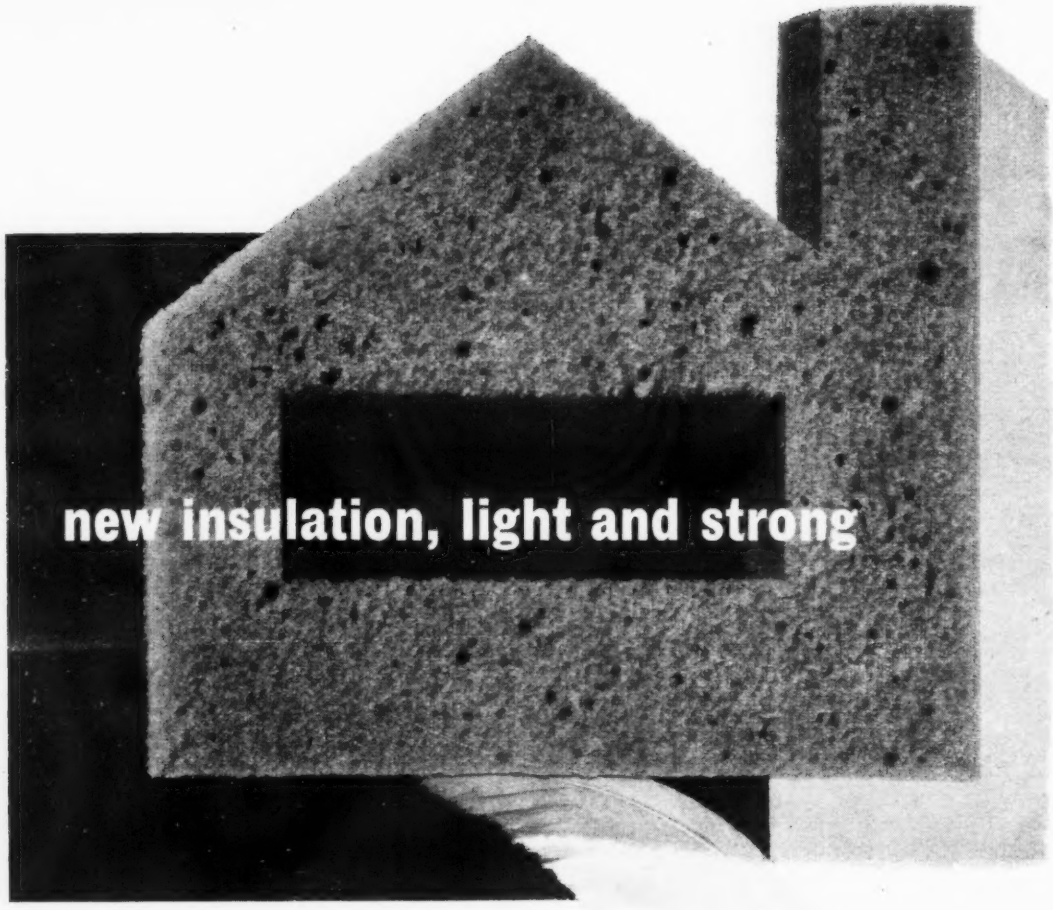


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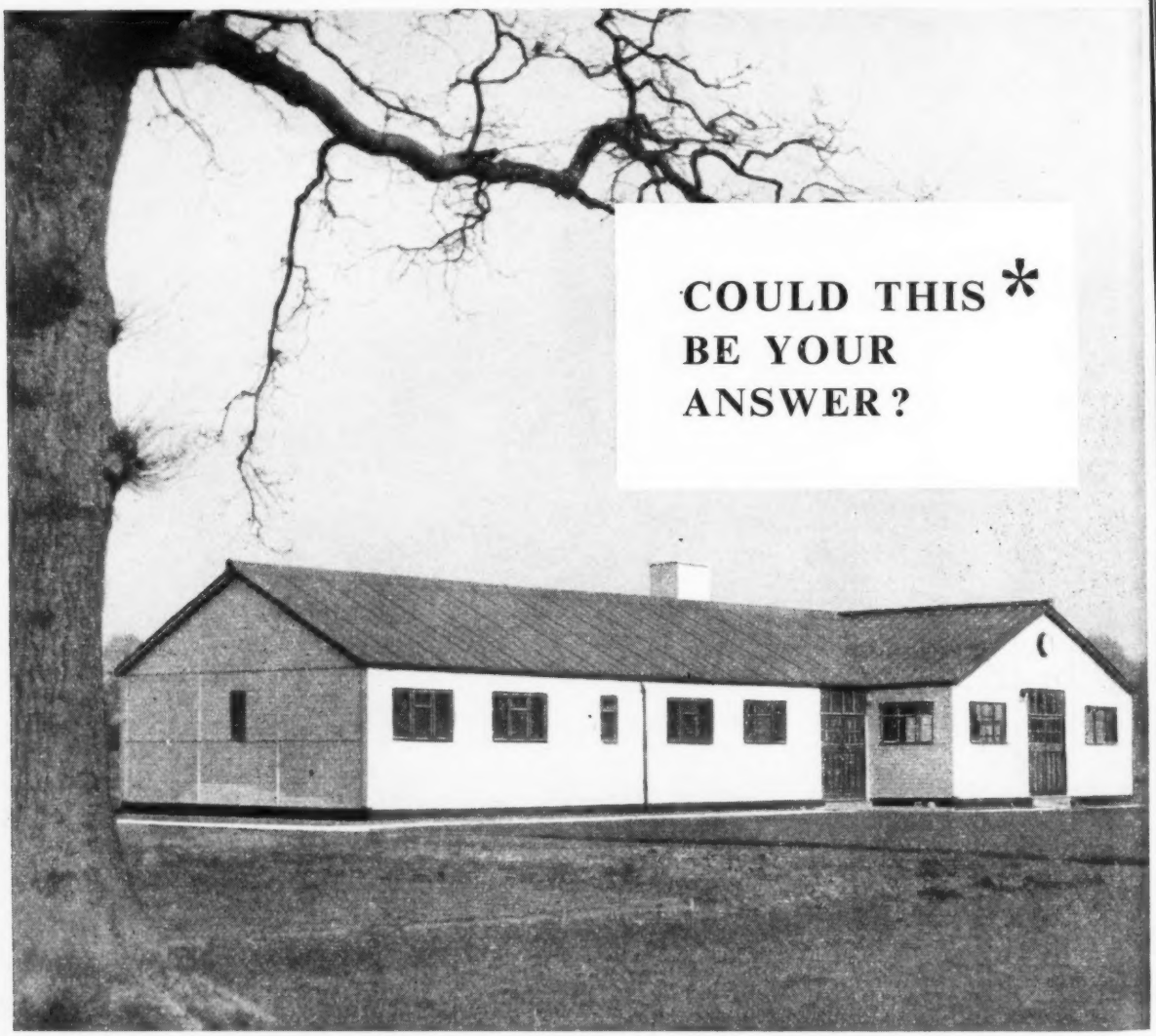


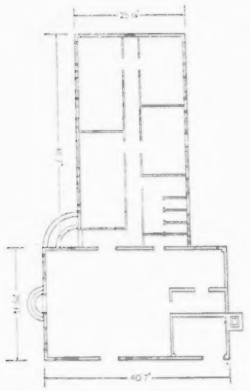

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The photograph, by courtesy of the Westminster Medical School, is of the Pavilion at their Sports Ground, Cobham, Surrey. It comprises two buildings, 48ft. by 25ft. and 40ft. by 25ft., joined at right angles with a hipped roof and containing changing rooms, clubroom, kitchen, etc.

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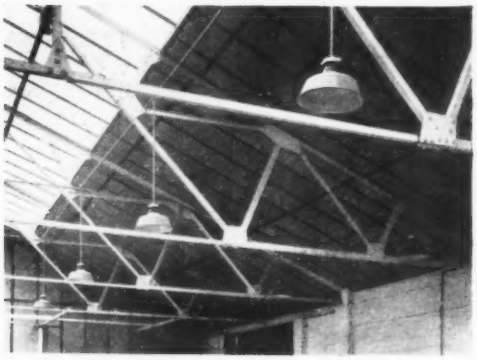

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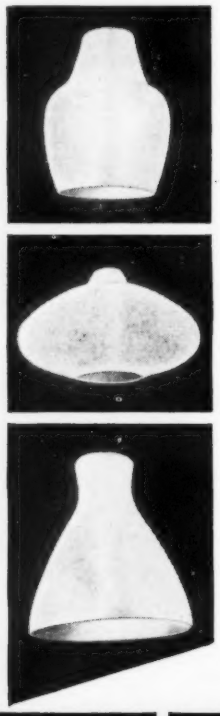

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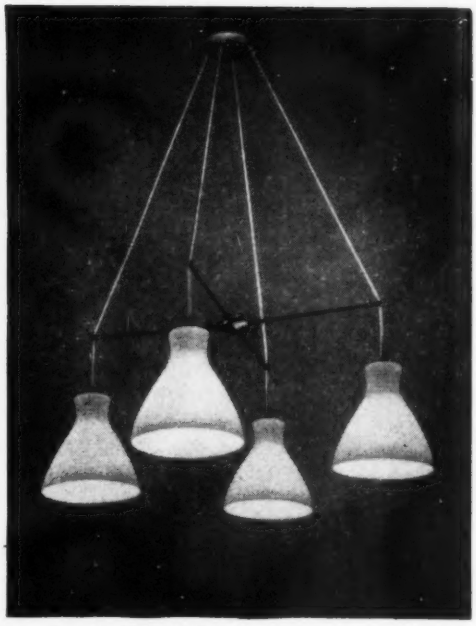
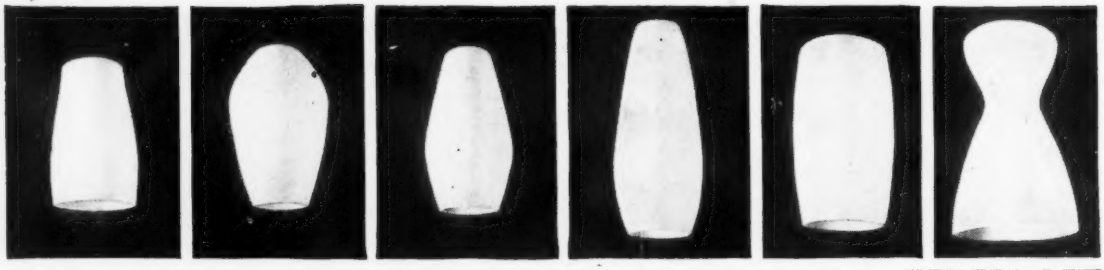
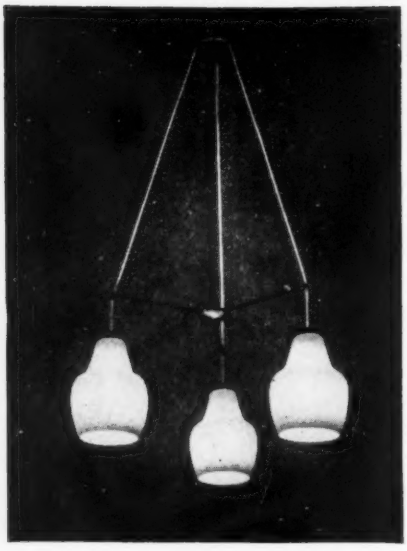


## BRITISH DESIGN





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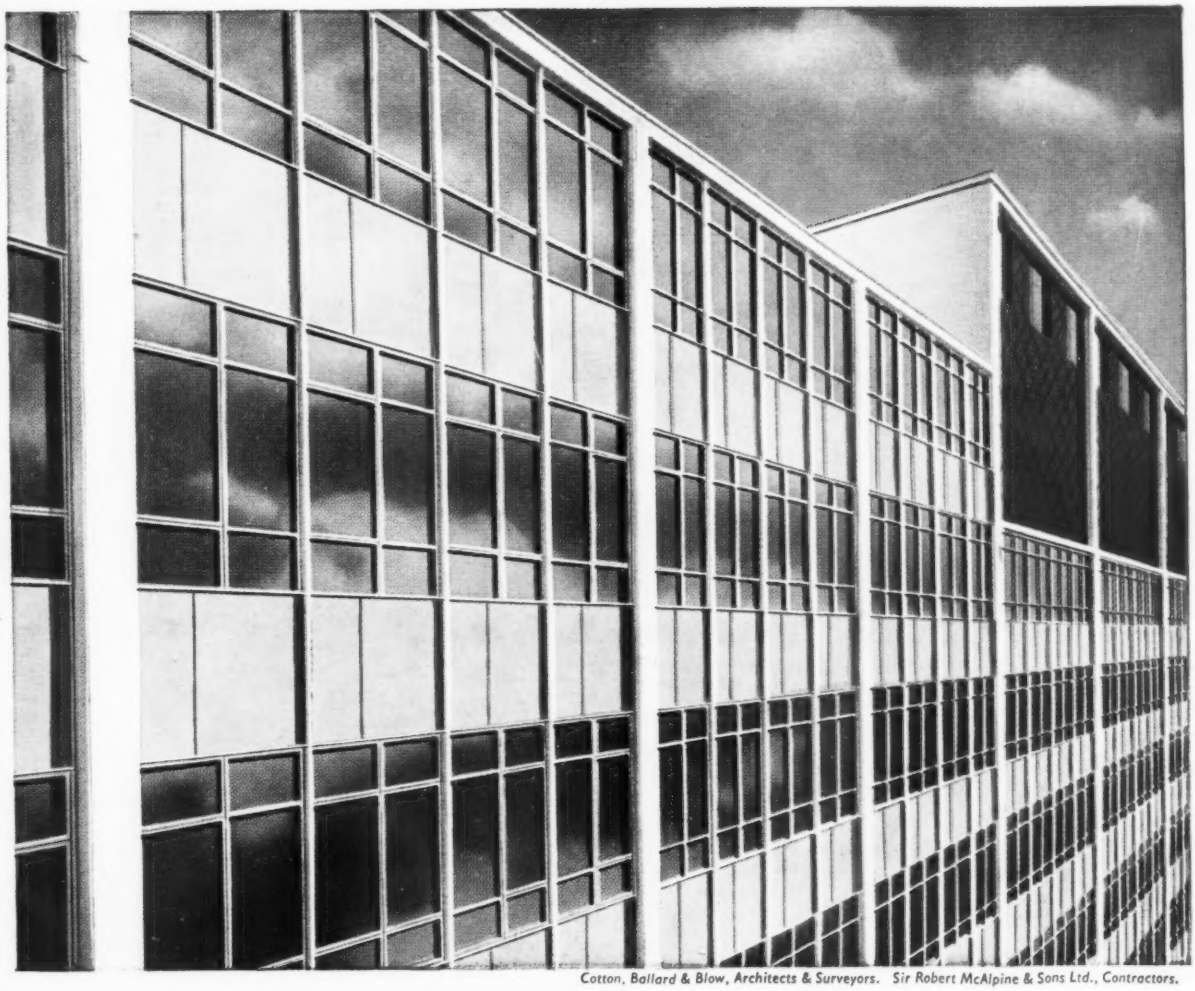

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# HOLOPLAST CURTAIN WALLING

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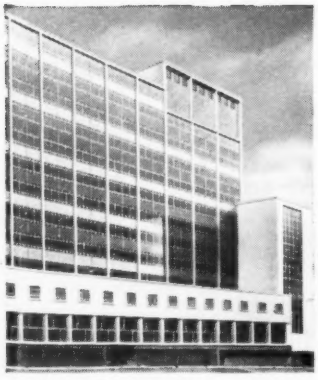

*A view of the 'Big Top' as it will appear when completed showing the extensive use of Holoplast Curtain Walling.*

The advent of steel or reinforced concrete framing has changed traditional architectural design. Exterior walls no longer have to carry the weight of floors and roofing. This has led inevitably to the wide adoption of the curtain walling system, with its great saving in time and site labour. The Holoplast Curtain Walling System leads in this field. The exclusive 'interlocking mullion' design entirely overcomes thermal movement problems and prevents moisture penetration. All infill materials are designed for the job and supplied with it.

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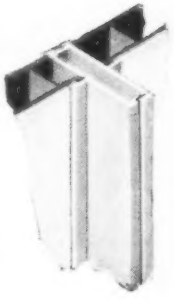

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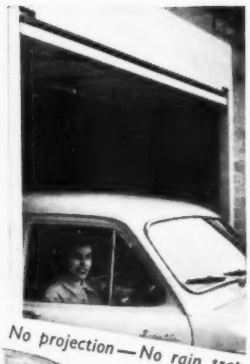

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THE ARCHITECTS' JOURNAL

No. 3247 Vol. 125 May 23, 1957

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NOT QUITE ARCHITECTURE


Gentlemen in England who were, as the Bard puts it, abed, on the night of May 20/21, 1927, may not remember that, as they dozed, an elementary space-frame was engaged in an Atlantic crossing that makes the present square-rigged exploits of Cap'n Villiers and his Pilgrim Great—(to the power of six)—Grandsons look like a Christmas charade. But all through that night, and most of the two adjoining days, at a cautious sixteen-hundred rpm, a draughty ninety mph, and about two thousand feet of altitude, the Ryan monoplane *Spirit of St. Louis*, with Charles A. Lindbergh at the controls, was *en route* from Roosevelt Field to Le Bourget.

*

The flight is remembered mostly as the first Atlantic solo, but what, in retrospect, really carved Lindbergh's niche in the Hall of Fame was the fact that he arrived, not in a heap of bent components at some map-reference among the mangel-wurzels, but in one piece at his named destination—he had flown successfully from a metropolitan airport in one hemisphere, to a metropolitan airport in the other, and the world took a turn for the smaller.

*

You may well wonder how it is that Hollywood has been able to let this four-

# *HELL'S ANGELS, 1957*

The hell of Surrey's Subtopian sprawl has now been recorded from a new angle by the Architectural Press. Ian Nairn, the author of the *Architectural Review's* "Outrage" and "Counter-Attack," is a qualified pilot and has recently been experimenting, together with W. J. Toomey (right), a staff photographer. Some of their first trial results are reproduced here. Above right is new housing to the south of Reigate, showing the land waste in verges and in the huge pocket at the road intersection in the centre. (Note how any areas of agricultural land are left becalmed and useless behind the sprawl.) The other aerial photograph shows Godstone (ringed around)—a well-known Surrey picture-village on the Eastbourne road. This new far-from-picture-book Godstone, taking up several times as much land, is in the centre of the picture, and there is another similar estate north of the old village. Air photographs, which can show at a glance what might take an article to describe, will be appearing from time to time in both the JOURNAL and the *Review*.

star All-American epic of derring-do, free-enterprise and do-it-yourself gather dust for thirty years, but not to fret, *The Spirit of St. Louis* has been well worth waiting for, and had it been done sooner you probably wouldn't have had it directed by Billy Wilder, photographed by the great Tom Tutwiler in Cinema-Scope and Warnercolor, and played with considerable subtlety by James Stewart in a worn wind-helmet and a sideways hair-do. It's too good to miss, so don't get too bemused, bothered and bewildered by the fanfares for *Around the World in Todd-AO*, see *The Spirit* too.

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There's another compelling reason for architects to see it anyhow. If all the ploy-boys at the ICA were laid end-to-end you would have eighty and a bit yards of firm conviction that Charles Eames was the art-director for this film. Actually he wasn't, but he did have a hand in it for all that, and has left his thumb-prints all over it. Sequence after sequence could be no one else but him: coloured balloons ascending *en masse* into the sky, Paris by night like an electronic action-painting, coloured search-lights playing over the glass doors of a hangar, and, above all, the whole section of the film where the *Spirit* is being built.

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You'd need a Doric capital for a head not to be sent right out of this world by these sequences, and a real square abacus on top not to understand why. These highly-coloured images of men working wood, metal and cloth with hand tools and power-tools, running-up space frames and assembling prefabricated elements, painting and texturing surfaces —all these are a Hollywood capsule of the current ideal of the first-year, Bauhaus-type, preliminary course in advanced architecture-schools everywhere.

*

And they represent air-frame construction techniques that were a decade or more old even when Lindbergh's backers commissioned Ryan to build the kite. It's not a very flattering reflection on the progress of architectural thought, that, while aeronautics has pushed on to the point where a loving mum can now entrust a school-age child to the care of a jet-propelled, stressed-skin projectile at a metropolitan airport in one hemisphere and confidently expect to have her offspring delivered in one piece to a metropolitan airport in the other, the education of the architect should still be back where it was when Moholy-Nagy first institutionalised the Bauhaus method in 1924. There seems to be room for some jet-propelled re-thinking somewhere.

REYNER BANHAM

# The Editors

## EXPERT EVIDENCE

IT is good to find that the absence of the President and the Secretary of the RIBA overseas has not stemmed the recent flow of information on Council matters—indeed, rather increased it. Last week two important statements were released. The first was from the cost research committee and is referred to separately below. The second was a memorandum of evidence on the position of architects in the Air Ministry Directorate-General of Works. It was prepared at the request of a committee, under the chairmanship of Sir Phillip Warter, which is now engaged in reviewing the organization of the Air Ministry Directorate-General of Works. The memorandum appears on page 765, and presents a most depressing picture of mal-administration. It is stated that £25m. a year is the value of the AMDGW's building programme. This is the equivalent of about half the nation's annual school building programme. Unfortunately there is little evidence that this huge volume of work is of any architectural merit whatsoever. Certainly the description of the organization and administration of the AMDGW's design office makes it seem extremely unlikely that the Air Ministry is getting the best service out of its professional staff.

The memorandum emphasizes the need to give proper status and responsibility to the architectural staff by means of a separate department under a chief architect. This should be palpably obvious to every member of the architectural profession, but it is depressing to learn that these pockets of reactionary, inefficient, architectural and building administration still remain. This memorandum is encouraging evidence of the influence of Richard Sheppard's *ad hoc* committee and of the work of the new secretary of professional relations, Gordon Ricketts. It shows the RIBA fighting on behalf of its members in a most persuasive and encouraging manner. We hope that the RIBA's advice will be accepted and acted upon, and that the RIBA will continue to direct its attention to other spheres where architectural services are abused—one such sphere, we have been given to understand, is the War Office.

## RIBA COST RESEARCH COMMITTEE

This quiet but important committee has issued a note on its work so far*. It believes that many architects feel themselves under-equipped to control building economics during design; that in the absence of a proved and accepted method architects must rely on their own or their quantity surveyor's experience —and that there is evidence that "even a great deal of experience is not always enough." They announce that their first job is to study methods "by which architects can control costs in the design stage," but add rather sorrowfully, that they had only one reply to an invitation (in the *RIBA Journal*) to members to contribute experience.

* See page 768.

An impartial study of this kind is sorely needed. But how should the committee set about it? Clearly it is difficult for them to undertake the kind of fundamental research at the laboratory level that requires a full time staff—in any case this is properly the job of BRS. But they are able to make recommendations and provide guidance to rank and file architects more freely and pertinently than a government department can do (RIBA Council willing). Without information they cannot provide guidance so their real problem is: how to get this information?

This is our suggestion: The committee should invite architects who are willing to act as " guinea pigs " to conduct experiments with limited objectives. For example: six architects might each carry out a selected project using elemental or operational drawings; another six would be asked to try the MOE method of cost planning and so forth. The committee would channel the necessary guidance and information to the architects taking part and as each scheme progressed, information would be fed back to the cost research committee for them to collate, examine, draw conclusions from and publish—together with their recommendations. Under the impartial umbrella of the RIBA this research at the operational level would provide immensely useful guidance to the profession as a whole and (who knows) the RICS cost research panel might be sufficiently deflected from their blinkered path to collaborate.

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BRITISH DRAUGHTSMANSHIP

The exhibition of British architectural draughtsmanship at the Building Centre is a very mixed bag indeed. Some of its contents have been caught out-of-season, for although the exhibits are said to be examples from the 18th century onwards, they include drawings by I. Jones, C. Wren and the brutal 17th century Smithson. As a show it is just the right size: 100 drawings are displayed in the well-lit exhibition hall with its fine early r.c. roof. But its quality is varied and its purpose is obscure. Architectural draughtsmanship serves so many masters under so many disguises that unless such a show is to be no more than interesting it should have some sort of theme. Some of the drawings, such as those by Wren, Chambers and Norman Shaw, are honest " working sketches." But many drawings were intended merely for reproduction, and others were done by architects on their holidays abroad. Some were clearly intended to explain buildings to clients; others—in the category of Cyril Fairey's " wet-Sunday - afternoon " charmers—were executed to sell the buildings to philistine committees.

*

However, there are *some* surprises. There is a Gothic meeting house by Pugin; some disappointing work by Robert Adam and Sir Albert Richardson, and a scheme for Strand development, by Raffles Davison, which shows us that worse things could have happened to London than we have seen in the last half-century.

ITALIAN-TYPE EXHIBITIONS

The Olivetti exhibition at the ICA turned out to be something of a frost after all. Instead of the expected blinding insight into the way the best-integrated design-policy in Europe operates, one found a grossly-under-captioned anthology of familiar posters and photographs, without a designer's name, a date or a reason why. That sort of information will, however, appear in Georgina Masson's article in next month's *Architectural Review*.

*

An Italian affair that you might take note of for pleasure and profit (of a sort) is the exhibition *Between Space and Earth*, at the Marlborough galleries. *Spazialismo* is another one of those smart new words for smart not-so-new kinds of painting, but this show is less pretentious than some, and a good deal easier on the eye than most. The pundits have mostly praised Birolli and Crippa, but architectural fancy will probably run toward two Triennale veterans: Capogrossi with his repeated-gimmick patterns and Fontana (who is the *cape* of the *spazialisti*) with his flecks and spots of pigment flicked across dark, glowing backgrounds—rather like some of those ceilings by him that are always turning up in Italian magazines.

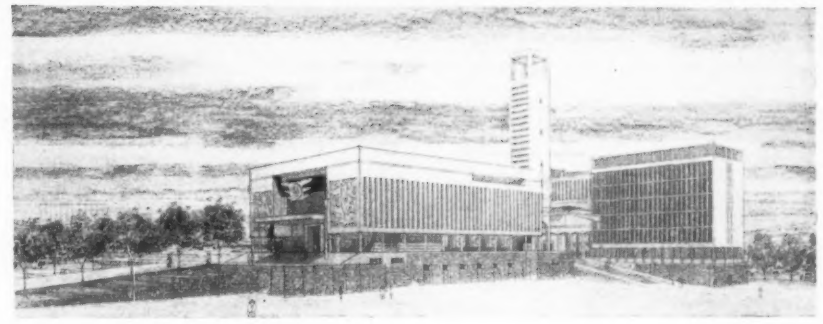
COMPETITION MUDDLE

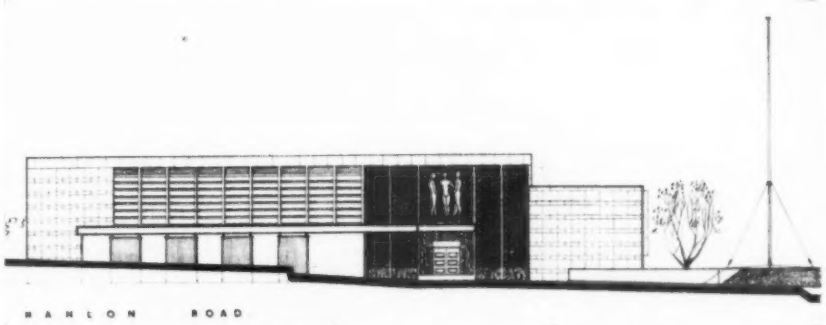
There is a story of muddle and disappointment behind the new design for the Parliament Building in Kampala, Uganda, illustrated on the next page. Readers will remember that this building was the subject of a competition won by Edward D. Mills and Partners. (See JOURNAL for May 8 and 15, 1956.)

*

The new design by Geoffrey Bodgener, of Peatfield and Bodgener (in association with Edward D. Mills and Partners), has nothing in common with the old one, although Mr. Bodgener, who was once with Edward D. Mills and Partners, had a good deal to do with the winning design. Both the

site and the requirements of the Uganda Government have been changed. The Government (and particularly the African members) did not, in fact, want the kind of design preferred by the assessor, H. Thornley Dyer, the Kenya Town Planning Adviser. For example, although the assessor ruled out any tower or prominent feature, the Africans wanted a building of monumental quality. Then again, the winning design would have cost about £160,000 to build, but the new design will cost about £600,000—and ultimately (with additions) nearly £1 million. It is good news that Edward D. Mills and Partners, the prize-winners, are at least to be associated with the new design by Mr. Bodgener (who now practises in Uganda). But a lot of people are going to feel justly annoyed to think that they worked so hard to design, in competition, a building which the clients had not, apparently, made up their minds about.






*Top: the new design, by Geoffrey Bodgener, for the Parliament Building in Kampala, Uganda. Below it is the first prize-winning design in a competition for this building which was assessed last year. The winning design was prepared by Edward D. Mills and Partners for whom Geoffrey Bodgener was working at that time. See note on this page.*

ALBERT BRIDGE

Many people will be sad at the LCC's announcement that the replacement of Albert Bridge is to take place soon, because it has its own Victorian charm and is a familiar and well-loved element in the Chelsea scene. But more important than mourning its loss (which presumably is unavoidable) is making sure that it is replaced worthily.

*

Three obvious points arise: first, the bridge itself: the names of the engineers have been announced, but not the architects. Is the LCC architects' department to look after this side of it? If so there will be no complaints, but it would be reassuring to know. The other two points concern the impact of the bridge on its surroundings. It is quite essential that the present pedestrian walk under the bridge approach should be retained; otherwise we shall get the appalling position there is at Chelsea Bridge, where the pedestrian walking along by the river has to fight his way across the traffic using the bridge.

*

Lastly, I hope the road engineers won't be allowed to construct one of those enormous (and often unnecessary) roundabouts they are so fond of at the bridge-head, which would explode into the middle of Cheyne Walk, involve the destruction of the Pier Hotel as well as the charming crescent of early Victorian houses on the opposite corner, and ruin the scale of the whole area.

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Is there any chance, I wonder, of the LCC making the designs for the bridge and its approaches public at an early stage, so that Londoners can see what is being done in their name?

POP IN ARK

My reception of no. 18 of the Royal College's magazine, *Ark*, has been vulgarly described as a little crisp. I have no difficulty in making a softer approach to no. 19, which is just out. What makes this issue so smart is that it has been relentlessly designed up (or possibly down) to the main theme of its contents—what we are learning to call Pop-Art, and allied forms of Americana. The issue is full of dream-cars and drool-kitchens, Elvis Presley, *Harpers Bazaar* and what (as the saying goes) have you. In the middle of all this are two articles—one on traditional wagon-building techniques (mostly) and one on Hawksmoor's London churches which look like visitors from another world. How did they get in? Are they a concession to fuddy-duddies on the staff side at RCA, or were they included for what one can only call "serious relief"?

PENGUIN ON PICTURES

Eric de Maré's *Photography** is very good indeed. As the author says, it is written for the amateur "not only tyro but lover." It deals with the history and purpose of the art of photography, the use of the camera and its accessories, and—for those who venture further—techniques and processing. There is also a section on colour.

*

Some of you may disagree with Mr. de Maré's ideas on composition (he covers himself with a quotation from Ruskin), and you may wish there were more illustrations. But you could hardly wish for better value for money these days.

ASTRAGAL

* Penguin Books Ltd. 6s.

# LETTERS

*Sir Gordon Russell,* Director of the COID

## We Did It With Our Eyes Open

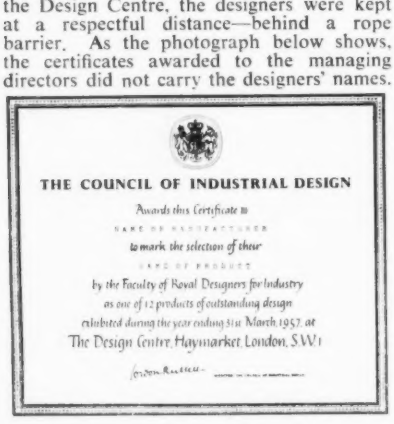
SIR,—Kenneth J. Robinson's sarcastic column headed "No Definite Article" (AJ: May 16) misses the whole point of the "Designs of the Year" display and presentation, namely, the impressing on manufacturers of the importance and rewards of good design. Surely of all people, architects ought to be aware of the value of a good client. Without manufacturers' enthusiasm for design, designers for industry would have a pretty thin time. The ceremony, therefore, was planned primarily as an occasion for complimenting the manufacturer on his success in co-ordinating a team of experts, of which the designer is one. The Council of Industrial Design took this decision with its eyes open and in full confidence that most designers are well aware of the many services the Council has rendered their profession.

Had Mr. Robinson spent more time on commenting on the 12 designs chosen his article might have been worth reading.

GORDON RUSSELL.

London.

Editors' note: The author of the article Sir Gordon Russell refers to, pointed out that the designers of the COID's "12 outstanding designs of the year" were given little recognition for their work at the presentation ceremony on May 10. Certificates were presented only to managing directors of the firms who carried out the designs. And while the presentations were being made by the Duke of Edinburgh at the Design Centre, the designers were kept at a respectful distance—behind a rope barrier. As the photograph below shows, the certificates awarded to the managing directors did not carry the designers' names.


THE COUNCIL OF INDUSTRIAL DESIGN

Awards this Certificate to

NAME OF MANUFACTURER

to mark the selection of their

NAME OF PRODUCT

by the Faculty of Royal Designers for Industry as one of 12 products of outstanding design exhibited during the year ending 31st March 1957 at The Design Centre, Haymarket, London, S.W.1

Gordon Russell

## Choose Your Leaders

*The following letters were written in response to an invitation we published in the* JOURNAL *two weeks ago. We promised to publish letters from architects who had been privately nominated for the RIBA Council, on the issues they thought the Council should be dealing with.*

MAX LOCK, F.R.I.B.A., writes: The following are the measures I should like to see the RIBA promote:—

1. Closer co-operation between the architectural profession and the building industry, especially in the field of speculative housing.

2. (*a*) Education of the general public's standard of architectural taste and the encouragement of a concern for civic design. (*b*) Publishing a manual on private housing and civic design housing. (*c*) Most important of all, talks to school children. (*d*) Critical talks on television.

3. Transferring of the architectural responsibilities now in the hands of borough engineers and surveyors to architects and the raising of the scale of salaries of architectural officials to that commensurate with their responsibilties.

4. Measures to facilitate legislation for a commission to insist that all building plans deposited for Town Planning Approval should be prepared by qualified architects.

5. Closer synthesis in technical training between architects, engineers and the building trade.

6. The strengthening of ties between the RIBA and (*a*) the provincial architects, (*b*) the non British architects and architectural associations, and (*c*) architectural bodies in the Commonwealth and Colonies.

C. H. SIMMONS, A.R.I.B.A., writes: I have been asked by the County Architects' Society to seek nomination in the associateship class of the forthcoming RIBA Council Elections. My own career has been more concerned with the salaried architect and I would thus, if elected, be able to represent salaried architects and their counterparts in private practice with a full knowledge of the problems involved.

I consider that the RIBA must prove the fallacy of the old view that an architect cannot, at the same time, be both an artist, an astute man of science and of business. This way lies everything—his status in society, his remuneration, his gifts to following generations, and his service to his own.

I have always worked for the smooth co-ordination of the technical building team, that is the architect, surveyor, engineer and contractor. I am convinced that the team's leadership must always rest with the architect if the quality of buildings, sound planning and good standards of design are to be achieved. In other words, the architect should be the "king pin," but the building and contracting side will only look to the architect as such if, in fact, the architect proves to them that he is master in every way of the design, technique, organization, science, and business.

Building design and technique is now so complex as to require more than one master-mind, and office structure should not be built on architect plus assistants but on architect among architects.

I feel quite sure that the RIBA are aware of the tremendous problems that lie ahead of our profession and have shown they are alive to these in the formation of their *ad hoc* committee and the surveys they are carrying out in the profession. The information they will gain as a result of these investigations will, I am sure, place the Institute in a position when it may assume direct leadership of the profession and in this, and in all matters allied to this, I would give my wholehearted support.

C. H. BINGHAM POWELL, A.R.I.B.A., writes: Should the RIBA wish to divide itself vertically so as to form sections of architects who specialize, as doctors do? It is already divided horizontally into two distinct classes: a major class, who want it to organize its own trade union, and a minor class, who (like the Council) want no change (or Nalgo). There has gradually been forming a sort of new architectural proletariat who are indifferent to the RIBA and who might resign from it during a future slump. At the general meeting last year most people spoke against the increase of the yearly subscription, although its real value is less now than it was in 1939. Nevertheless, we should be glad to pay more to the Institute in order to defend our prestige and our standing against both bureaucracy and other organizations; the latter increase in size, take away from us our work, and then employ us as servants.

This new situation evidently arose too fast for the Council to reform itself.

The staff work faithfully and the secretary would do excellently for a club, but, if he were also an architect, would he think that his duties were light enough to allow him to travel round the world?

THURSTON WILLIAMS, A.R.I.B.A., writes: The salaried assistant is today deeply concerned at the present standard of his status and salary. These have improved little since the RIBA Annual General Meeting of 1955, when dissatisfaction was expressed so conclusively.

It should be a primary task of the RIBA Council in the coming year to work out means by which these standards may be improved. Every effort should be made to draw up proposals that can be discussed before the AGM of 1958. In addition to the research now being carried out by the *ad hoc* committee there appear to be two major issues that require particular attention at an early date—the relationship between the RIBA and the trade unions representing architects, and the representation of assistants in private practice.

The RIBA can best carry out this task if salaried assistants are fully represented on the Council. It is clearly not in the interest of the profession as a whole to have so large a section of dissatisfied members; those most closely affected should also be in a position to assist in rectifying this situation.

HARRY JUDSON, A.R.I.B.A., writes: *Representation of Salaried Architects.* The RIBA occupies a unique and unchallengeable position. It is, or should be, the watchdog of the profession. The fault is that it does not bark often enough. Two years ago it made prompt and effective pronouncements against the formation of both a salaried architects' trade union and a private practitioners' organization, but it has done nothing since then to meet the grievances of either groups. Compare this year's report of the *ad hoc* committee (AJ: May 2, 1957) with last year's report, and with the report of the Salaried and Official Architects' Committee the year before that. There is evidently so much reluctance to take any positive action that progress appears to be backwards. The limitations of the Royal Charter do not excuse such dilatoriness. There is much that can and must be done, within the present constitution, if we are to keep abreast of other professions.

*Allied Societies.* There is need for a review of the functions and areas of allied societies which should be prepared to become more closely integrated with RIBA headquarters.

*Voting.* Every year only about a quarter of the members use their votes. This year there are three additional seats open to associates, provided they get the most votes. I would appeal to all members to give careful thought to the selection of their representatives and, if they can afford the stamp, to make sure that their votes are posted.

CORRECTION: Owing to a printer's error in last week's JOURNAL, the letter from a council-nominated member, Anthony Pott, appeared under "Anthony Pitt."


## RIBA

### *RAF Architects Should be Officers*

The Air Ministry, which is responsible for £25m. of building work each year, arranges its programme in such a way that it hopes for the best in professional performance while inviting the worst.

That is a conclusion reached by the RIBA, which has prepared a memorandum of evidence (at the invitation of the Warter Committee) on the "position of architects in the Air Ministry Directorate-General of Works."

The RIBA's memorandum says that there is no reason "why building should not be largely separated from civil engineering works, and accorded the kind of treatment which has become standard practice in many other well-ordered public bodies."

The memorandum points out that although the AMDGW uses consultant architects "when the volume or complexity of work is too great for internal resources," its Designs Office employs many architects "too well qualified to be draughtsmen, yet too circumscribed in their authority and independence to be properly effective as architects." These qualified architects work to descriptions of sites they never see, receive their briefing via Works Planning and see their plans altered, without notice, by non-architects. They have no chance of seeing or supervizing their work on site. In fact, the architects (rated as draughtsmen) are NCO's under the orders of commissioned officers who are not architects.

The RIBA memorandum recommends the transfer of registered architects to the class of professional officers, with corresponding career prospects. "Implicit in the transfer would be the establishment of a chief architect as an independent head of department with direct access to the RAF and responsible only to the Director-General of Works."

The memorandum is discussed in a leading article on page 761.

### *Four Bronze Medals*

The RIBA's London Architecture Bronze Medal for 1956 has been awarded to Chamberlin, Powell & Son for their Bousfield Primary School in South Kensington.

In Manchester the Bronze Medal for 1951-1955 has been awarded to Cruickshank & Seward for Renold House, Wythenshawe.

In south-eastern England the Bronze Medal for 1954-1956 has been awarded to R. W. Paine & Partners for David Greig's shop in Canterbury.

In South Wales the Bronze Medal for 1947-1955 has been awarded to T. Alwyn Lloyd & Gordon for the sports pavilion at Cardiff for the University College of South Wales and Monmouthshire.

In Wessex, the Bronze Medal for 1954-1956 has been awarded to T. W. Snailum for Walcot House, Dover House and Laundry, Snow Hill.

## HISTORIANS

### *New Society Formed*

A Society of Architectural Historians is to have its inaugural general meeting at the York Institute of Architectural Study, which is to be its headquarters, on June 1. The purpose of the Society will be to provide a forum for the discussion and dissemination of ideas related to the history of architecture. This will be accomplished by the publication annually of a bound volume of original papers on architectural history and allied subjects, by the occasional publication of letters, diaries and drawings of architects, and monographs on individual architects, which would not normally be published by commercial publishing houses, and by the holding of an annual conference for the presentation of papers.

Membership will be open to any person interested in the history of architecture. Anyone interested is invited to write to the acting secretary, Frank I. Jenkins, at the School of Architecture, University of Manchester, Manchester 13.

## ELEMENTAL BILLS

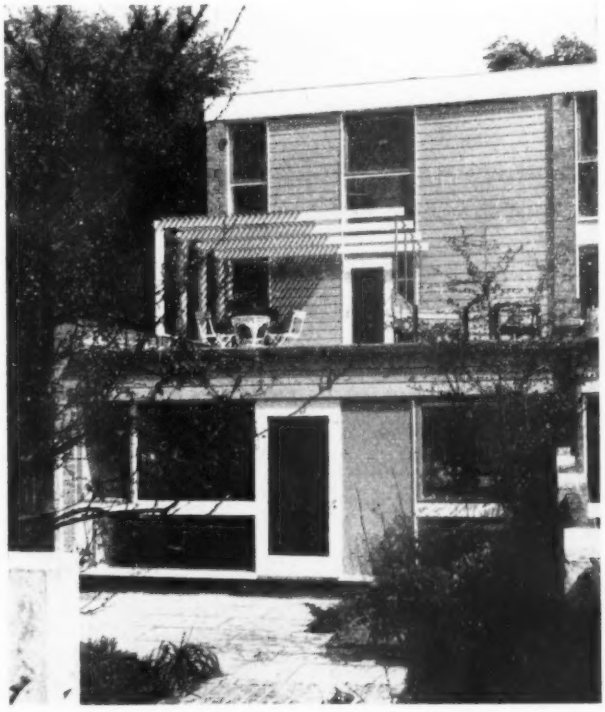
### *AJ Lecture-discussions*

The subject of the third of the lecture-discussions being held jointly by the AJ and the Regent Street Polytechnic School of Architecture was Elemental Bills of Quantities. There were two speakers at this event, on March 14, Clifford Nott, chief quantity surveyor to the Herts CC and Ivan Tomlin, general manager, Howard Farrow Ltd., a former AJ Guest Editor. Peter Trench, managing director of Bovis Ltd. was the controversial but truly impartial chairman.

*Clifford Nott* said that the first elemental bill was prepared, at the instigation of an architect, for a fully prefabricated school in 1952. It was divided into some 30 or 40 sections, corresponding to the operational phases of the work. It soon occurred to the Herts. staff that the cost analyses of schools required by the MOE could more easily be provided if all bills were set out in elemental form. This change then revealed that the main value of the elemental bill of quantities was that it gave the builder a clearer picture of a project. Mr. Nott said that since that time some 40 elemental bills had been prepared—20 by his own staff and about the same number by outside private surveyors, that these represented about £3½ million worth of work and that he had not prepared a reduction bill for over 18 months.

Herts CC, he said, used "functional" elements suited to their architects' method of cost planning: *e.g.* external walls would include windows, doors, finishings and decorations. These 18 elements were also the basis of the office-filing system for drawings and information. Mr. Nott then dealt with what he called "widespread misconceptions about the elemental bill of quantities"—mainly that it required many more pages and took more time to prepare than a trade bill. He suggested that the extra time taken for builders to estimate was, or would be, rewarded by more sensitive pricing and the reduction of "risk" pricing of "unknowns." If builders preferred to price by trades, a trade index could be provided, the elemental breakdown showing the estimator where items were in the building. Mr. Nott concluded by telling his audience that the use of cost planning and the elemental bill of quantities in his department had engendered very close co-operation between the architects and surveyors.

*Ivan Tomlin* began by reminding the audience that the bill was becoming an ever more important document, that tendering costs were considerable and that the time for tendering was usually insufficient. He then



*This house, one of a terrace built by Span Developments at Blackheath to the design of Eric Lyons, has been chosen by* House and Garden *as its* 1957 *House of Ideas. Details of the house and its furnishings can be seen in the June issue of* House and Garden *and in the magazine's exhibition at the Tea Centre (22 Regent Street, W.1) which opens on Tuesday next.*

gave a vivid account of the work of preparing a tender—emphasizing the need for full information to ensure an accurate price. He said that in the context of this work, the elemental bill would take longer to price, but would enable more accurate pricing by allowing different rates for the same kind of work in different parts of the building and showing the estimator where items were in the building. The elemental bill could simplify the preparation of materials-ordering schedules; it could help in the checking of sub-contractors' work, and in the preparation of interim valuations and because quantities were split up, bonussing and costing could be done by stages. These advantages were considerably improved if the contract was negotiated—when the builder could help in deciding the form of the bill. Mr. Tomlin suggested that the elemental bill might mean higher prices for some kinds of building, but possibly lower prices for straightforward types of construction. Listing the disadvantages, he mentioned the longer time for tendering—especially in obtaining sub-contractors' quotations. He described the trade bill as "not an ideal tool" and suggested that further experiment should be made with the elemental bill to see what advantages it could yield.

A valuable, and surprisingly unheated discussion followed. In his final remarks, the chairman Peter Trench thanked the speakers and said he "hoped that Ivan Tomlin's account of estimating work had 'gone home'." Builders, he said, needed more help at the planning stage—"complete drawings most of all." He said that estimating should be brought to a real science—by being based on work values. This, he said, was the only way to get the right price for a building.

*Note: we intend to publish part of the texts of all lectures and discussions. If you want extra copies, you should apply for them now.*

# HARLOW NEW TOWN

## *Thriving 10-year-old Community*

Those who fear they are about to die should go to Harlow. For, according to Mr. B. H. Harvey the general manager, nobody is expected to die in the new town for another 30 years. Almost a generation will pass before there is enough business to attract an undertaker, but the shops that specialize in layettes are doing a roaring trade. Even the death rate from accidents should be low in a town which has largely segregated its motor from its cycle and pedestrian traffic, and does not require a single set of traffic lights.

Harlow New Town celebrated its 10th birthday last week, and a very lusty ten-year-old it is. Nearly 9,000 houses and flats have been built, the population has reached 36,000 (or nearly half the ultimate population of 80,000), 62 factories have been built and another 11 are building, and 50,000 sq. ft. of office space have been let, and the town already makes a profit of £50,000 a year. Not many people ten years ago really believed that so much could be achieved in so short a time. But the visitor to Harlow today is impressed, not by statistics, but by the growing maturity of the earlier parts of the town, and by the vigour of its life, which has received an immense impetus from the opening of its central shopping centre in the stimulating atmosphere provided by its Market Square. A glance at the local newspaper (24 pages) reveals the full measure of the transition from plan to town: here are all the goings-on of a fair-sized town: elections to the (recently formed) Urban District Council, drama group activities, some hooliganism, a monster petition against the H-bomb (aim, 10,000 signatures), and lots of court cases. Most of these are motorists who park in the roads without lights, because, in the early stages, the Development Corporation grossly underestimated the number of garages that would be needed, and an over-zealous Chief Constable in Essex insists on prosecuting.

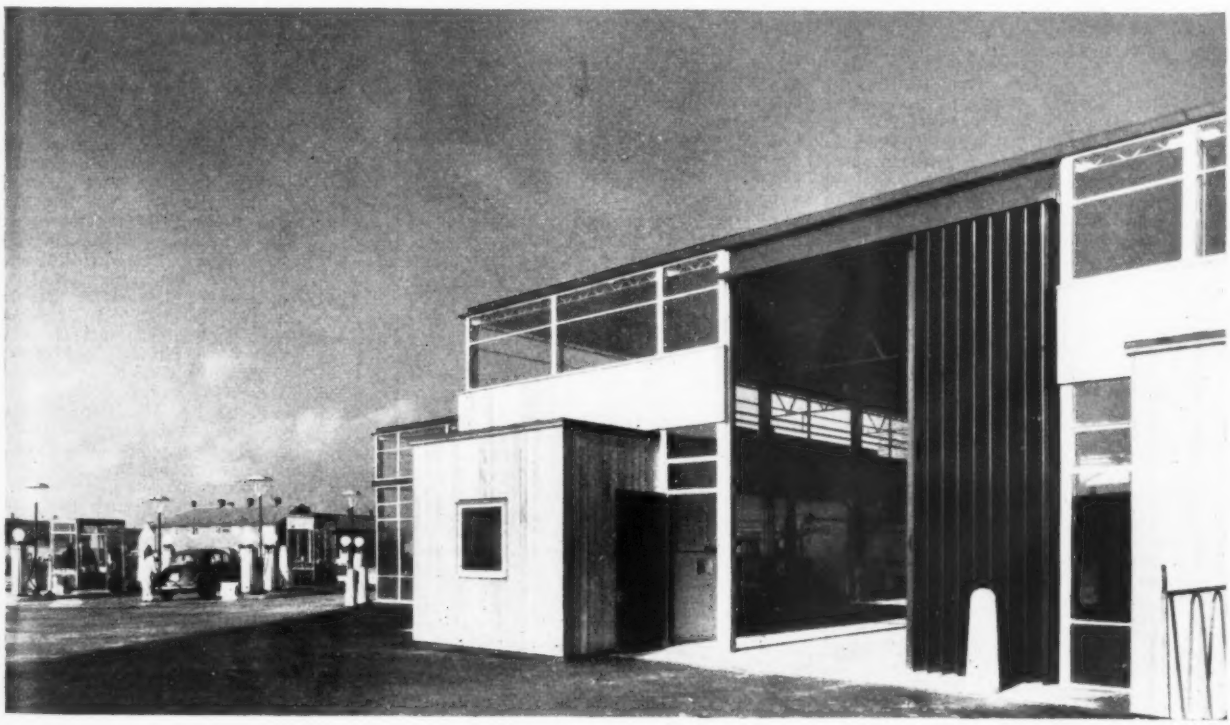
For the benefit of the press Frederick Gibberd, the chief architect planner, gave a racy lantern slide talk last Tuesday which illustrated not only the town, but the fact that ten years at Harlow have done nothing to diminish his enthusiasm for the architectural and planning concepts it embodies. Mr. Gibberd is obviously sensitive to the charge that in Harlow he has been creating subtopia. Until recently, Harlow has been all suburbs and no centre, and what town, asks Mr. Gibberd, is judged solely by its suburbs? One may argue that Harlow is extravagant of land, but the superficial impression of vast areas of unused space are misleading: half of the town, after all, has still to be built, and a substantial part of the green wedges running into the town will continue to be cultivated as farmland. The system of separate cycle tracks connecting all parts of the town,

*Hugh's Tower, the new 12-storey point block marking one of the entrances to the town centre: a cycle and pedestrian way run through the three-storey block on the left and pass under the motor road to the town centre; architect planner, Frederick Gibberd; executive architect, Victor Hamnett.*

*Harlow Market Square, showing the platform at first floor level, which gives access to the shops on the upper level, and to the rear of the offices above the shops on the right; architects, Harlow Design Group. (Photograph by courtesy of the Harlow Development Corporation.)*

taking short cuts under the main motor roads and using very often old lanes or cart tracks, seems to be an immense success. The fact remains, of course, that over 80 per cent of the housing consists of two-storey houses with gardens, but Mr. Gibberd has no doubts that in a town with a third of the population aged 15 or under, and a fifth of it under 5, this is right. He was asked whether, if he were to start again, he would build at the same or a higher density. He replied that, as an architect, he would find it more amusing to design a city like Bath on a four-storey scale, raising the density up to 100 to the acre: but this would mean shoving people into accommodation they did not like, and which was more expensive to provide. More flats will be built as the families grow up, and Mr. Gibberd thought that the density could comfortably be raised from 55 to 60 to the acre, and possibly to 70 as more couples without children want flats.

*New service station for Kennings Ltd., at Harlow, designed by Maxwell Gregory in association with Ramsay, Murray, White and Ward, with Denis A. Birchett as consultant architect. The designs were based upon the modular system for the construction of service stations, consisting of simply framed buildings with curtain walling, developed by the Shell-Mex and B.P. architectural division with Hills (West Bromwich) Ltd.*



But he is quite unrepentant in his opposition to high densities at Harlow, and expressed a strong conviction that his plan for the town centre in particular was going to provide a new experience in urban living: reminding us of something we had almost forgotten unless we went to Venice—what a town centre could be like. He praised the Development Corporation for having none of "those awful type plans," and for assigning groups of 150 to 400 houses to different architects, who were told "you can do as you like—except that the vertical garden city is out, because we are not nuts."

The conflict between the needs of commerce and the needs of architecture in the shopping centre had been solved, he thought, by the very sharp line of demarcation drawn at the first floor level. Below it the shops are treated as an "eye-level parade," and the shopkeepers are allowed to do almost as they like with their shop fronts to give a lively display (with the proviso that the people next door don't object too strongly). Above the shops, advertising is very carefully controlled, or not allowed at all.

Harlow's future is inevitably full of problems, largely connected with the inevitable continued expansion of the population. Sites for 4,000 houses are being reserved for the second generation, but it is questionable whether this is going to be sufficient. For the architectural and other staff there is another problem: building will begin to tail off in three years, and come almost to a stop by 1965. Inevitably there is a strong temptation for staff to leave in good time, and officials of the corporation think it would greatly help them to retain staff to complete the job if it was known that at the end other new towns were to be started, to which they could be transferred with all their experience.

## COSTS

# *Progress of the RIBA Cost Committee*

*The RIBA's Cost Research Committee have issued the following note on their work. We comment on this in the editorial on page* 761.

The 1956 British Architects' Conference in Norwich had "Architectural Economics" for its main subject. Prompted by the Conference discussions, and by the need to have a positive form of liaison with a Committee of the RICS who had been set up to undertake a study of building costs, the Institute decided to form its own Cost Research Committee. The Committee have now been functioning for several months and it was thought timely to say something about its work.

The proceedings of the Norwich Conference covered a wide field. Underlying most of the contributions was the assumption that the architect's contribution to economical building is made in design; using this word in a broad sense to mean the process of finding a solution to a particular building problem which is appropriate visually, functionally, technically and economically.

The Committee share this view and another which also underlay many contributions at the Conference: that many architects feel themselves to be under-equipped in conditions today to give proper weight to the economic factor during the process of designing. By training, an architect is equipped to weigh and balance the claims of plan and mass, proportion and function, structure and convenience and so on; but in the absence of a proved and accepted method of watching and checking the effect on the cost of the building of all the decisions made while designing, an architect must rely on his experience and on that of his quantity surveyor. There is some evidence that even a great deal of experience is not always enough.

The Committee think that this gap in the profession's technique is a serious one which affects nearly all buildings; and that this weakness in estimating and cost control is one of the most frequent causes of complaint from clients. There is an economic factor affecting design of most buildings; only some have to be economical in the usual sense of "low cost," though these form an increasing proportion of the total number. When there are no limits of cost imposed on the architect, even by his own preliminary estimate, it is his duty to spare his client unnecessary expenditure and to provide value for what is spent by a proper distribution of expenditure on the different parts of the building.

Therefore the Committee decided to make their *first job* the study of methods by which the architect can bring considerations of cost into the process of designing on an equal footing with the other factors. Individual architects, partnerships and departments who were known to be interested in this problem and to have tried out their ideas, were invited to help the Committee by putting their ideas and experience before it. This they have done generously in writing or orally, and the Committee are most grateful to, amongst others, J. Carter (A), an assistant editor of the *Architects' Journal* J. L. Womersley (A), city architect of Sheffield, J. C. Eastwick-Field (A) and J. C. Stillman (A), J. Wilkinson (A) of Grenfell Baines & Hargreaves, and A. E. Towler, ARICS, all of whom have made helpful and instructive contributions to the work of the Committee.

The Committee were disappointed at the response to their invitation in the RIBA Journal of February 1957, to members to contribute their experience on this subject to the Committee's work. Only one reply was received, a valuable one from the architect's department of a local authority. Nevertheless, the Committee believe that an interest in this subject is rapidly growing in the profession, and that there are many members who could usefully contribute their experience in this field to the Committee's knowledge. The invitation to contribute is still open. Despite this lack of encouragement, the Committee intend to continue this investigation before undertaking other work.

The Committee have had friendly and useful contacts with both the Cost Research Panel and the Sub-Committee on Elemental Bills of Quantities of the Quantity Surveyors' Committee of the Royal Institution of Chartered Surveyors; and they will later consider by what permanent method liaison can be established.

## "DISGRACEFUL"?

# *Architect Who Was Also Estate Agent*

The Queen's Bench Divisional Court on Wednesday (May 15)—the Lord Chief Justice (Lord Goddard), Mr. Justice Hilbery and Mr. Justice Devlin—heard an appeal by Thomas Hughes, an architect and a Fellow of the Royal Institution of Chartered Surveyors, of Boreham Wood, Herts., against a decision of the Architects' Registration Council of the United Kingdom disqualifying him from practising as an architect for two years. The Council found that Mr. Hughes was guilty of "disgraceful conduct" in that, knowing that the whole of the profession of architects were against the carrying on of business by an architect as a house agent, Mr. Hughes, who had practised as an architect, chartered surveyor, estate agent and valuer, nevertheless refused to comply with the Council's prohibition against any architect permitting the business of auctioneer or house agent to form part of his business.

Gerald Gardiner, Q.C., for Mr. Hughes, said that the 1931 Architects' (Registration) Act provided for the establishment of an Architects' Registration Council of the United Kingdom. Anyone could register as an architect under the Act, even if completely unqualified, provided that the council were satisfied that he had been practising as an architect. There was provision for a discipline committee, and the council might remove from the register the name of any person convicted of a criminal offence or conduct disgraceful to him in his capacity as an architect. Mr. Hughes had served articles with a firm of architects, surveyors, land and estate agents between 1919 and 1922, and subsequently practised, and had registered under the 1931 Act.

In 1936 a Code of Professional Conduct for Registered Architects was published by the Council. In included a rule that a registered architect must not permit the business of auctioneering or house agency to form part of his business, but no action was to be taken where such a business was carried on at the time of registration. New entrants were to be controlled. In 1937 the Royal Institution of Chartered Surveyors withdrew its opposition to the new Architects' Registration Bill on the Council's undertaking that members of the Institution would be entitled to go on doing whatever they were then doing. The result was the 1938 Act, by which a person must not call himself an architect unless he was registered.

"That Act having been passed," said Mr. Gardiner, "the Council decided that as from January 1, 1956, no architect would be permitted to carry on business as an auctioneer or house agent. That decision was in 1949." Questioned by Lord Goddard Mr. Gardiner said he challenged the right of the Council to make such a prohibition. A letter from the RICS made it clear that in their view an association between the businesses of architect and auctioneer or estate agent could not of itself be "disgraceful conduct," although it might well be that discretion was required in such an association.

In a letter to the Council Mr. Hughes said he had been practising as a house, land and estate agent, and it would be impossible to carry on a worthwhile business if he gave up that side of his activities. He would rather resign from registration than be expelled because of so-called "disgraceful conduct."

The Council, said Mr. Gardiner, had agreed that Mr. Hughes was an honourable and exemplary man. The discipline committee wished to make it clear that they did not mean "disgraceful" in the proper sense of the word, but "disgraceful" to his activities as an architect. Mr. Gardiner submitted that the Council had no power to make imperative rules and regulations. Neither the 1931 Act nor the 1938 Act contained any disqualification for practising as a surveyor or estate agent. Nothing that Mr. Hughes had done was "disgraceful" in his capacity as an architect. The Council had fallen into the error of thinking that the word "disgraceful" had a technical meaning in the Act. The Council had purported to make peremptory rules saying that certain things were prohibited, but if the right to make such rules was not within their statutory powers, the discipline committee, who considered they were enforcing those rules, were out of order.

For the Council, B. J. M. McKenna, Q.C., submitted that it was wrong to say that "disgraceful conduct" in the present case meant conduct which would be disgraceful to anybody. "What the court has got to do is to see whether the conduct complained of, though innocuous in someone else, is,

if done by this man in this profession, conduct which his colleagues can rightly consider disgraceful." Mr. McKenna said he did not contend that the professional code in question had the force of law—but he did not concede that the council had no power under the Act to publish a code for the guidance of registered architects.

Lord Goddard: What strikes me as so difficult in this case is how can a thing be conduct as to which there is no objection up to a certain date and then from that date become unprofessional conduct?

Mr. McKenna said the council, in 1936, formed the view that it was undesirable in the interests of the profession that the two occupations of architect and estate agent should be combined. They gave a period of grace before putting that view into effect. The discipline committee had found that the code properly reflected the professional standard, which was a reasonable standard, and that Mr. Hughes had deliberately chosen to flout that standard and was guilty of disgraceful conduct.

It was quite wrong to say that letters from the council to the RICS comprised an undertaking that architects would be allowed to combine the activities of house agents. No mention of "house agents" was made anywhere in those letters. Estate agents' businesses were essentially advertising businesses, whereas the architects' profession set itself against advertising, and might feel it undesirable that an architect should attract custom by putting out advertisements as an estate agent.

Lord Goddard said: "You have not got the power to suspend under the Act—you have only the power to deprive a man of his livelihood. This is a terrible penalty, and apparently the only one you can impose. I cannot think Parliament, in using the words 'disgraceful conduct,' meant something like this." He could well understand that it was not considered desirable for a gentleman to combine the practice of architect and estate agent, but he could not shut out the fact that, being both, Mr. Hughes was entitled to register and did so. "I don't know whether I can say that because the Council now thinks he ought to stop, that is disgraceful conduct justifying them taking his livelihood." This was a very important case, and it would be better to put the judgment into writing. Judgment was reserved.

# DIARY

*RICS Annual General Meeting.* Report of the Council for the session 1956-1957. At the RICS, 12, Great George Street, S.W.1. 5 p.m.

MAY 27

*Art and the State.* Talk by Rene Varin (Cultural Counsellor, the French Embassy). At the AA, 34, Bedford Square, W.C.1. 9 p.m.

MAY 29

*A Passion for Places.* Talk by Lionel Brett. At Overseas House, St. James's Street, S.W.1. Those wishing to attend should notify the secretary, DIA, 13, Suffolk Street, S.W.1. 12.30 p.m.

JUNE 6

*Cost Control in Building.* Course at Regent Street Poly. School of Architecture, in collaboration with AJ. 4, *Cost Planning I*, by G. Grenfell Baines, A.R.I.B.A., A.M.T.P.I. (May 28). 5, *Cost Planning II*, by John Wilkinson, A.R.I.B.A., and Arnold Towler, A.R.I.C.S. (June 4). 6, *Symposium*, with all speakers (June 18). All lectures start at 6.30 p.m. and will be held at the Portland Hall, Polytechnic Extension, Little Tichfield Street, W.1.

*Specialization is not good for an architect, says Richard Llewelyn Davies, in this article reproduced from the April issue of the* Architectural Record. *"Architects, to develop their most important gift—the power of creative design—need a variety of experience." Mr. Davies goes on to discuss methods by which specialist knowledge is, and should be, obtained and made available to the architect so that "each architect's achievement is limited only by his own creative power and not . . . by an inadequate basis of knowledge."*

# DEEPER KNOWLEDGE: BETTER DESIGN

*by Richard Llewelyn Davies**

Many architecturally distinguished buildings are a poor fit with the lives and needs of the people who use them. If you visit these buildings some years after they have been completed you rarely find them being used as the architect had envisaged. They have generally been altered, often disfiguringly, to make them fit with life. There are very few modern buildings with that flavour of simple, inevitable rightness and appropriateness which is characteristic, not of merely individual masterpieces, but of a great range of buildings of other periods.

Our current failure to master the knowledge we need comes out again in the tendency amongst some architects to write off whole fields of building as being too complicated to give any scope for creative design. I have heard it said that good architecture is impossible in hospital work, because the complex requirements of hospital function make a straitjacket from which no creative designer can escape. Even if this view is rejected in principle (as I am sure it must be), it remains true that most hospital design—and equally the design of other buildings with a complex social purpose—is uninspired at its best. Most of these buildings look, in fact, as though their designers *had* been defeated by the difficulties.

The problem is most acute in countries such as the United States and England, where progress has been most rapid and turbulent. In countries like Sweden where change has followed a much slower and steadier tempo, and where the violent convulsions of the industrial revolution were damped, architecture has been more successful in keeping step. In Sweden the architectural profession has had more time to rethink its philosophy and adapt its training, and it has not slipped so far behind. The visitor to Sweden from England or the United States cannot fail to be impressed by the high general standard of design, and the pervading good sense and appropriateness of current architecture. There is nothing in Sweden comparable with Le Corbusier's chapel at Ronchamp or the Mies van der Rohe apartment blocks in Chicago, but I don't think this is any criticism. Dramatic masterpieces occur rarely, they are the work of inspired individuals and are just as likely to occur in a country where the general standard of design is high as in a country where the general standard is low. (There has in fact been at least one example in Sweden, the Stockholm Crematorium by Asplund.)

The life and work of Alvar Aalto is an illustration of our present crisis. Aalto is an architect who is profoundly interested in achieving that overall rightness—that inevitability—which is the mark of an all-round mastery, and which is so conspicuously lacking in most modern work. Aalto worked in the United States; he taught at M.I.T., and had as much private work as he cared to accept. He tried, in the hostel building he designed for M.I.T. students, to break away from the dominant pattern of city architecture, which he saw as rather narrow and mechanistic. He tried to design a building which would reflect not only the dynamism of American technique, but also the human and social needs of a group of students, a building in which every room would have an individual character instead of being No. 877 on the eighth floor. He failed, but it was a glorious failure. For himself, Aalto solved the problem by giving up his M.I.T. appointment, leaving the United States, and returning permanently to Finland. He went back in order to escape from what he felt to be the insuperable difficulty of doing creative work under the complex pressures acting on the architect in the United States. He returned deliberately to a simpler, less advanced society where he felt he could master the problems of design, and produce work which would satisfy himself. In this he has succeeded triumphantly as can be seen in his most recent buildings. Aalto's personal solution is of course no answer for us, who work in rapidly advancing and changing countries. We must face, and try to solve, the problem of knowledge.

### A New Kind of Architect

The problem which we have to solve is a new one for which there is no precedent in the history of architecture. In order to understand it it is necessary for us to look back a little and see how we have come to our present position and to our present attitudes.

It is only comparatively recently that the sum of knowledge has become too great for the individual architect to master the whole of it. Palladio's famous treatise* contains pretty well the whole of the knowledge needed for practice in his day. Even as late as 1880, Gwilt was able to put most of the necessary knowledge into one large volume.† The Renaissance ideal of the architect was *Uomo Universale*—the Universal Man—with the whole of contemporary knowledge and culture in his head. The lives of men such as Alberti and Leonardo da Vinci show that this was no empty ideal. They really mastered the total range of knowledge and made triumphant use of it. Christopher Wren, a distinguished scientist as well as an architect, was

* Director, Division of Architectural Studies, The Nuffield Foundation, London.

* Andrea Palladio. *Architect.* 2nd. English Edition, London, 1738.

† J. Gwilt. *Encyclopaedia of Architecture.* London, *circa* 1880.

also a Universal Man in the Renaissance sense. He was perhaps the last, but the ideal remained valid and attainable until the beginning of the nineteenth century.

The leaders of architectural thought around the end of the nineteenth century were the French architects, centred round the Ecole des Beaux Arts. They saw that a dramatic expansion was taking place in the range of knowledge needed for architecture. On one hand, building structure, with the coming of steel and reinforced concrete, was becoming the field of specialist engineers. On the other, social change was throwing up a demand for many new types of building for which there was no historical precedent. They could not see that the flood of new knowledge could inspire and free architecture; they feared it as a menace. They met the threat by retreating into a very narrow professionalism. They redefined the role of the architect in such a way as to exclude, or make unimportant, areas of knowledge which had previously been thought necessary. They introduced the concept of the architect's *programme*. Previously there had been no need for a programme, that is a written schedule or instructions from the client to the architect.

From the Renaissance to the end of the eighteenth century the architect remained close to contemporary culture, and shared with his clients an unconscious, automatic understanding of the functional needs he had to meet in his design. He did not need a programme before designing a church or a villa; he knew perfectly what such buildings had to do. The Beaux Arts concept of the programme absolved architects from the need to study building function, and excluded at one blow a considerable range of knowledge.

At the same time the Beaux Arts teachers began to codify and catalogue *elements* of building.* They built up a limited vocabulary of forms which could be assembled in various ways to meet the requirements of any programme. By this means they hoped to keep engineering in what they believed to be its proper place—a technical service to the architect. The architect selected an appropriate form and the engineer was then called in to construct it. On this basis, engineering has no role as a contributor to design, and it followed that there was no need for the architect to understand the relationship of engineering knowledge to building form.

Thus architecture was reduced to the manipulation of a number of *elements*, in accordance with the rules of composition, to satisfy a programme. The very technique of teaching at the Beaux Arts reflects this philosophy. When the programme for a design subject was given out at the studios, each student was required to make an *esquisse* (a quick sketch) of the solution. For this he was only allowed one day, during which he was not allowed to discuss the problem with his fellow students. Often he was shut up in a special cubicle. In subsequent work on the development of the project he had to remain within the boundary set by his first esquisse, or his design was disqualified. This method of teaching dramatically symbolizes the Beaux Arts concept of the architect: operating in isolation from life, within the narrow limits of a programme written by others, and using a closed vocabulary of forms.*

Few will nowaday defend the theories of the French Beaux Arts or its methods of teaching but, more than is often realized, its spirit marches on. Many architects acquire in the course of their training a rather isolationist picture of their own role: they tend to feel that qualification as an architect endows a man with a special power and that he can design any building, providing he is given a clear cut programme. The programme never is clear-cut, and for this he is apt to blame his client, whereas in fact the difficulty is a much bigger one, a general failure of communication between our profession and the society it serves.

The modern movement in architecture had, as its central objective, the re-establishment of this communication. It has only partially succeeded, and our problem today is to carry forward the work, begun by Gropius and others, into areas which they did not reach. Gropius, at the Bauhaus, was especially concerned to bring architecture into touch with industrial production. He, also, was probably the first to see the need to link up with the social sciences, in order to get back to some understanding of the pattern of life, which architecture has to express and heighten. Le Corbusier in his first book tells architects to open their eyes to the impact of engineering on form—apparent everywhere in ships, cars and airplanes—but invisible to the French architects still working for their Beaux Arts catalogues.†

Unfortunately the early impetus, the drive to reintegrate architecture with life through its related professions and sciences, has not been kept up. Instead the forms used by the great pioneers, forms often highly experimental, and appropriate only in their context, have been copied and reproduced, while the ideas behind them have, to a great extent, been forgotten.

Their buildings were the prototypes for a new architecture; they often had to base design on guesswork. Gropius, for his experimental house at Weissenhof in 1927, had to imagine a prefabrication industry, and forecast its effect on design. Le Corbusier was guessing at the social and economic patterns likely to control city life when he planned the apartment block at Marseilles. Thus the work of the pioneers can be seen as an imaginative projection of modern architecture. They have shown that design must spring from the realities of building need and building method, and have given us some inspired examples. But we have to expand and consolidate our knowledge before we can effectively put into practice what they preach.

### Function is Little Understood

Before discussing how we should go about the task of consolidating our knowledge we must review the field we have to cover. It is convenient to divide it into two halves; one concerned with the *means* of building, i.e. structure, materials and technique; and the other with the *needs*, i.e. functional and physical requirements. Both were seen as of equal importance when the modern movement began thirty years ago, but our achievement has been all on one side. We have made real progress in integrating design with construction, but very little in integrating it with function.

Within the field concerned with the means of building, structural theory stands out as a subject in which a dramatic advance has taken place. This advance is the result of research made by engineers, working within their own profession. But architects have been quick to pick up each new development and exploit it architecturally. We have succeeded in building into our teaching some understanding of the relationship between form and structure. We have assisted the engineers by giving them opportunities for demonstration and experiment with new techniques. This pattern of co-operation between the two professions has been one of the most fruitful developments of recent years, and much of what is best in modern architecture stems from it.

We have been so successful on this side and, comparatively, so unsuccessful on others, that we have come to lean too heavily upon structure as an inspiration for design. The eagerness of architects to seize and exploit the newest engineering development, such as shell concrete or the space frame, exposes the poverty of our knowledge in other, equally important aspects of architecture.

Knowledge of building materials and methods, both old and new, has expanded immensely in recent years. Most countries now have substantial establishments for building research, where chemists, physicists and engineers investigate the properties and performance of materials. Their work covers an immense range, from the chemistry of cement to performance tests on walls, roofs or complete buildings. A great mass of valuable, scientific material pours out from research centres every year. Architects are aware of the importance of this new knowledge, and of the need to absorb it into thinking and practice. But we have found it very difficult to do so, because of the bulky and indigestible form in which it reaches us. There is one important point to be remembered: most of this new, scientific knowledge is not an addition to our total stock; it is a replacement. It replaces the old rule-of-thumb principles of building construction, derived from trial and error and accumulated experience. Once we have accepted this we shall be better able to absorb the new knowledge, which implies the substitution of card-indexes and scientific abstracts for the craftsman's know-how.

Structure, materials and methods are aspects of traditional building. Beside them we must now put production engineering. Factory produced components are slowly but steadily displacing sitework, and the impact of this change on architecture is already marked. Aalto found that in the United States he could not get doors and windows in special sizes except at prohibitive cost, and felt this to be an intolerable infringement of his freedom as a designer. On the other hand, close co-operation between architects and industry, as in the recent English programme of prefabricated schools, results in new and exciting forms, perhaps even a new aesthe-

* J. Guadet. *Elements et Theorie de L'Architecture*. Paris, *circa* 1880.

* An interesting parallel can be drawn between Beaux Arts theories of architecture and theories of classical ballet and cookery, developed at about the same date. In ballet, a limited number of movements, perfected for all time, could be assembled only according to certain rules. Similarly Escoffier reduced cookery to a very short repertoire of basic flavours and sauces, each of exquisite perfection, and gave rules for combining them into the various dishes of classical cuisine.

† Le Corbusier. *Vers Une Architecture*. Paris, 1924.

tic.* We cannot stop the drive towards factory production, nor evade the issues it raises for architecture. It will be negative and restrictive in effect if we stand aside, but positive and creative if we understand it and co-operate with it. If we are to do so we must include knowledge of the potentialities and limitations of production engineering as part of our job.

The study of structure, building materials and methods is energetically pursued by engineers, scientists and builders, and our main problem is to make sure we have effective means of communication and collaboration with our professional colleagues. When we turn to the other major field of knowledge, which deals with building needs, the picture is very different. We lack knowledge about the functioning of most forms of human organization, and there is little to go on in planning buildings, except of the very simplest type. It is almost impossible to find a modern building where real architectural inspiration has been derived from an understanding of its social purpose. There is one significant exception, the private house, built for a client whose pattern of life is similar to that of his architect. Here the architect really understands the requirements, and can achieve creative expression, within the limits of his skill. The main difficulty is that it is nobody's special job to study the functional requirements of building design. The social sciences are those most nearly concerned. Housing and city planning are already recognized fields for social study, and considerable advances have been made in these subjects by joint teams of architects and social scientists. Within the last few years we have begun to apply sociological methods to other types of buildings, and the statistician, and the methods-study engineer, and others are contributing to our picture of what goes on in buildings. But we are still far from having the knowledge we need.

There is special need for more historical study of building design in relation to use. Our social patterns change more rapidly than we can pull down and re-erect our buildings, and quite a few of today's patterns of living and working reflect yesterday's architecture. Very often our clients, quite unconsciously specify their requirement for a new building in terms of an old one. They find it hard to free their thinking from habit and attitudes conditioned by an existing architectural environment. The historian can help us to break out of this vicious circle, which blocks both social and architectural progress.

Apart from the study of function, we must now include the scientific description of physical environment as a branch of architectural knowledge. This covers a whole range of subjects including lighting, heating, ventilation, acoustics and colour. It is the province of engineers, physicists, physiologists and psychologists, and has been one of the principal growing points in the last five years. Of the various branches of knowledge bearing on architecture, this is one of the most fertile and stimulating. It is increasingly giving us the means to measure, and discuss quantitatively, aspects of design which formerly lay entirely in the subjective field. The volume of knowledge is already considerable, and is increasing rapidly, but it is absolutely vital for architects to understand the principles involved.

* R. Llewelyn Davies and Weeks. *The Hertfordshire Achievement*. Architectural Review, London, June, 1952.

**Specialist or Architect ?**

One reaction to the problem set to our profession by the mass of knowledge has been an increased tendency towards specialization. Too often it is assumed that before long all architects must become specialists, each in a particular field of building. We should then have school architects, hospital architects, factory architects, rather than general-practice architects. The demand for more efficient building has already forced many architects into some measure of specialization, and there are today many firms in the United States and in other countries which have specialized on one or other type of building. The very large firms, though doing a variety of work are as a rule highly specialized internally. Specialist firms build up a private fund of knowledge and experience and usually turn out a more efficient job in their own field than can be had from a general practitioner. One or two have done outstanding work and contributed to knowledge in their field.

While specialization in some form, or at least some differentiation of role between different kinds of architects may well be essential, it will be disastrous if we follow the path to specialization to the point where each architect is concerned only with a particular type of building. It would be disastrous for two reasons. First because architects, to develop their most important gift—the power of creative design—need a variety of experience. For the architect, detailed knowledge is a good servant, indeed an essential one, but a very dangerous master. There is plenty of evidence that architects who are engaged too long in solving the same design problem over and over again lose their imaginative spring, and become stultified. Any picture of the future of our profession which does not allow the majority of architects to remain general practitioners is therefore very black. What we want is *specialist knowledge* freely available, not *specialized men*.

The second reason why mass specialization is not the answer is that it would not ensure that the knowledge we are going to need becomes available. Specialized practice is out of date as a means for advancing knowledge. This task has now been taken over in almost every profession, by organized research. It is no longer feasible for the man engaged in daily practice to find the time, the money, or the contacts with other sciences and professions that are necessary to make an effective extension of the boundaries of knowledge. Again, such discoveries and developments as are achieved within the framework of individual practice are not necessarily passed on for the benefit of others. Indeed there is some economic incentive to treat them as trade secrets. Specialization by all or most architects is therefore a dangerous path. We shall find ourselves forced down it under the pressure of demand for more efficient building unless we can find, and put into practice, an alternative solution.

There are alternative solutions. Other professions beside our own have had to face this problem, particularly medicine. In medicine, by the beginning of the seventeenth century, developments in knowledge and techniques were already leading to a certain measure of specialization. Peter Chamberlen and his family, inventors of the obstetrical forceps, were perhaps the first professional specialists in history.*

The problem for medicine has been to reconcile specialization needed in the interests of progress, with the equal need to maintain an all-round approach to the care of a sick human being. While this dilemma has not yet been solved, a general pattern has appeared which goes some way to solve it, and has analogies for architecture. The essence of this pattern is a division of role between the great majority of the profession, who are engaged in practice, and a small minority, who are engaged principally in research. Those in practice are not all highly specialized, indeed many of them are engaged in general practice. Research is the role of the highly specialized man, and his task is to operate on the frontier of knowledge. The results of his work are fed back to the practising members of the profession through publications, conferences, and postgraduate teaching.

Similar patterns can be seen in professions other than medicine. For example, in structural engineering, theoretical advances are today mostly made by highly specialized workers, in universities or other research institutions. The practising engineer keeps himself up to date in very much the same way as the doctor, by reading and postgraduate courses.

While there is some time lag in the dissemination of knowledge, on the whole it has been found possible for the practising doctor or engineer to be kept sufficiently well-informed; and the standard of practice advances reasonably close behind research. It is worth noting that what was a highly specialized technique yesterday is very often a common-place of practice today, and that some previously essential knowledge becomes out of date. Thus, although the total volume of knowledge has expanded vastly, the stock needed by the man in practice may not be so much larger now than it was in the past. The vital thing is that his knowledge should not stagnate. It should be moving on, in step with the expanding horizon of knowledge. Some pattern of this sort is essential for any profession which intends to keep abreast of its responsibilities. The pattern for architecture will not be the same as that for any other profession. It must, however, provide for organized, specialized research, developing and expanding our knowledge, and for the effective communication of this knowledge to the practising architect, both during his training and afterwards.

**Pattern for Advancement**

In fact the new pattern is already visible. There are already many significant achievements, and some lessons for the future.

Perhaps the most important development is the emergence of a new concept : research focused on a particular kind of building, such as schools, laboratories or hospitals. This approach contrasts with the earlier concept of research into subjects such as brickwork, or ventilation, applying to all types of building. The older approach is typical of building re-

* In accordance with the craft attitude of the time, the Chamberlen family kept their invention secret. When called in to assist at a birth, they insisted that the patient should be covered with a voluminous black cloth. Carrying a large bag, which clanked mysteriously, a member of the family disappeared under the cloth and in due course the baby was safely delivered. The secret of the forceps was thus maintained, for nearly one hundred years.

***I knew it when it was a tree . . .***

**Tree Sir? Palm Court—second on the left**
No, son—I'm looking at that ceiling.
When it was felled in the forest they shouted 'Timber'!
**It won't fall down now, will it, Sir?**
Not likely, son. It's been through the Bowater Mill—went in as wood, came out as Acoustic Board. It's strong, silent and handsome—and it's fixed up so it will *never* fall down, with Bowaters' Concealed Fixing. These days, for Acoustic Board, Insulation Board, Hardboard and Decorative Boards, everyone's paging Bowaters.

# Bowater Board

Building Boards Division, Bowaters Sales Company Limited, Bowater House, Stratton Street, London, W.1. MAYfair 8080
CRC31P

search, as opposed to architectural research, and can often be carried on within the bounds of one scientific discipline. Research into a building-type, on the other hand, essentially involves a multi-disciplinary approach.

Pioneer work has already shown how fruitful research of this sort can be. One example has been the work of the schools development team set up by the British Ministry of Education. In a few years this team has revolutionized school design in England, fostering a new and much more human approach to school planning, and stimulating industry to develop flexible, architecturally acceptable, forms of prefabrication. It has also effected a reduction in the cost of school building in England, at a time when building costs were rising sharply. Most important of all, it has succeeded in spreading its knowledge amongst architects, so that school design, formerly the preserve of a few specialist firms, is now open to the whole profession.

Very similar achievements have been made in the United States by the group which studies hospital design under the Department of Health, Education and Welfare in Washington. It has built up an impressive body of knowledge on hospital design, and its publications are used all over the world as reference material by hospital planners.

These teams are both government sponsored. It is a measure of the failure of the normal machinery of architectural practice that governments have felt the need to set up and maintain expensive research teams. They have only done so because they found that buildings of acceptable standard would not otherwise be forthcoming. But direct government sponsorship is in some ways an unsatisfactory background for research. There is inevitably some tendency for research conclusions to be confused with administrative decisions, taken partly on politico-economic grounds. Sometimes the iron hand of financial control is felt to lurk inside the velvet glove of scientific advice. It is therefore all the more remarkable that these teams have been so successful in winning the confidence of architects. Both have published excellent bulletins, and the English team has gone further; it has designed and erected several prototype schools. These demonstration buildings have proved a first-rate form of communication with practising architects. As a profession we are poor readers, but we have a built-in capacity to learn from actual buildings. Most architects will cheerfully travel hundreds of miles to see a new building, but will resent spending ten minutes on looking up published data.

Both these teams had an operational task; they had to meet deadlines if they were to do their job. They were mainly composed of architects, assisted and advised by committees or consultants from other professions. While they looked critically at design and construction, they were not staffed to look very critically at function. They accepted a digest of the best current practice, in education or medicine, as a basis for design.

Valuable as this work has been, we also need more fundamental studies, which will enable us to look further ahead. Buildings designed around today's functional patterns may well be out of date before they are finished. The natural place for fundamental studies is a research institution or a university department. As yet there is very little genuine research within our schools of architecture, but there are significant beginnings, both in the United States and in Great Britain.

Meanwhile, the Nuffield Foundation has established in London a Division for Architectural Studies, expressly to promote fundamental work on architectural problems. The Nuffield teams have assumed that function and design must be studied simultaneously. This has meant a fully multi-disciplinary approach. One team, which studied hospitals included a doctor, a nurse, a medical historian, an accountant, statistician, and sociologists, as well as architects, and each profession had equal status in the team. Each team member contributed in two ways—by professional research within his own discipline, and as part of the whole group. The result of focusing intense study from many angles on a single problem—as, for example, the out-patient clinic—was to open up completely new architectural possibilities. New forms of human organization, new attitudes and methods of work emerged simultaneously with new design concepts. The conclusions of the study were therefore revolutionary.* They are now undergoing practical test in many new experimental hospital buildings, designed by the research team. Other Nuffield teams are engaged in the study of scientific laboratories† and of farm buildings, by the same method of all-round attack.

The publications of the Nuffield teams are as much concerned with methods of study as with actual results. Until very recently most bodies engaged in architectural research have published their conclusions without any account of how they were reached. This prevents critical discussion, and makes it difficult to apply the conclusions with any confidence under changed circumstances. Methods are often more important than results, and much of the Nuffield work is directed to discovering techniques whereby architects and their clients can work out their own needs, rather than to finding supposedly ideal solutions.

These three examples are not isolated cases; they are the highlights of a general development, in the United States, Great Britain, and many other countries. The work at the Nuffield Foundation is giving us new knowledge, particularly about use and function, where it is most lacking. Existing knowledge is being organized and packaged, in a form particularly useful to architects, by other teams. This rearrangement of existing material arises almost automatically from the focusing of research on to a particular building type, and is showing us how to absorb and master the valuable but hitherto intractable data produced by building science.

We can now consider how this new pattern is likely to affect the structure of our profession, our training and our practice. We must expect to see a certain division of role amongst architects. With proper access to knowledge developed and organized by research, the great majority of the profession can avoid excessive specialization. But we shall also need a limited number of architects to man our research organizations. These will be men who are prepared to specialize, and to devote themselves to an activity which has a smaller proportion of actual, creative design than falls to the majority of their colleagues. Their satisfaction must come from the fact that their work is advancing the subject of architecture. Experience in multi-disciplinary teams has already shown us how important it is that these men should remain architects first and foremost. They have to learn a great deal about other subjects, but they must not become a sort of hybrid, half-physicist, or half-sociologist. If this happens, their value to the team largely disappears.

It is therefore very important that architects working in research should have as much opportunity as possible to engage in design. This need is partly met by the experimental, prototype buildings, which are now an accepted part of most research projects. It is also desirable that they should do some consultant work, in association with practising architects. This has the very healthy result of bringing the research worker into direct contact with a practical design problem, to which he has to make a contribution on the basis of his special knowledge.

We shall need a certain change of emphasis in the training of the architectural student. This must now have the object of giving him a broad grasp of the whole field of knowledge, and of teaching him those attitudes and methods of work, already developed in the sciences, whereby the details of a subject can be fairly quickly learnt, so long as its essential principles have been understood. In practice, this will mean a broadening in undergraduate courses. This will be much easier to achieve if research architects can be brought into the schools of architecture. These are the men whose work will extend our boundaries of knowledge, and it is vital that they should contribute to teaching. Here again, we may have something to learn by looking at the structure of the medical profession, which has managed to adjust its system of rewards so as to bring together advanced research, consulting practice, and teaching. Many of the best men in medicine are engaged in teaching, because in the teaching hospitals they have facilities for research, and can establish themselves as consultants.

We shall not need very many research architects, but we must develop some system for selecting and training them. We have little or no advanced postgraduate training in architecture today, comparable with that in other professions. (Most of our postgraduate courses are merely an additional year on top of the normal undergraduate course.) The Nuffield Unit of London is experimenting in advanced postgraduate training, by the establishment of two-year fellowships, attached to research projects in progress.

These new developments in research, teaching, and the communication of knowledge have the same ultimate aim: to give the individual architect more power, and more freedom in design. As our knowledge becomes more complete, better organized, and easier to get at, so it will become more possible for the architect to see his design problems from all round. Then, he will be able to draw inspiration from a total view, and not from an isolated aspect only.

Our aim should be that each architect's achievement is limited only by his own creative power, and not, as so often today, by an inadequate basis of knowledge

* *Studies in the Functions and Design of Hospitals*. Oxford University Press. London and New York, 1955.

† R. Llewelyn Davies. *Design of Research Laboratories*. Journal of the Royal Institute of Chemistry. 13th January, 1957

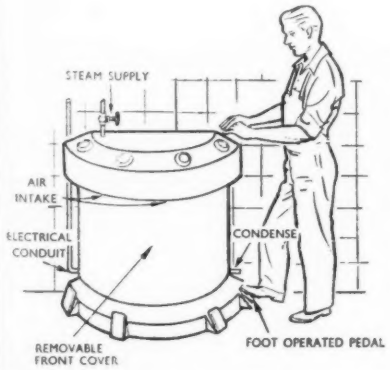
technical section

## THE INDUSTRY

*This week Brian Grant describes a hot-air jet for drying hands, a new vitreous china washbasin, a plastic emulsion paint for thermoplastic tiles, a range of kitchen units, an adjustable door closer and a fibrous wadding.*

### DRYING HANDS

Hot air jets, generally heated electrically, are quite usual in washrooms of all kinds, and are now made so that faces can be dried as well as hands. A new type, known as the Air Towel has now been produced for use in factories, hospitals and similar institutions. The standard model is semicircular on plan, and has four hot air outlets, the heat being supplied by a steam coil. Foot pedals control the individual outlets and one four-nozzle unit can serve 8 wash basins. (*The Spiral Tube & Components Co., Ltd., Osmaston Park Rd., Derby*)




*The Air Towel drying machine in action.*

### VITREOUS CHINA WASHBASIN

The new ideal Devonian vitreous china washbasin is made in two sizes to BS 1188. The two standard sizes are 22 by 16 and 25 by 18 inches and they are available in white or five colours. Chromium plated legs or enamelled bracket mountings are produced, and there is also a pedestal version. (*Ideal Boilers and Radiators Ltd., Ideal Works, Hull*)

### FLOOR FINISHES

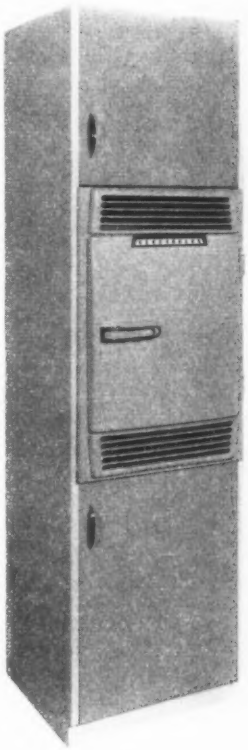
Bourne Tileseal is a new plastic emulsion for the treatment of thermoplastic tiles, rubber or linoleum. It does not affect the existing floor colour, and is dirt resistant, easily cleaned, and proof against marking by black rubber. Only one coat is necessary, and this gives an eggshell finish which takes only about 20 minutes to dry. Covering capacity is about 200 sq. yds. per gallon. No special maintenance is required beyond normal daily sweeping, and spill marks can be removed with warm water. The floor can be re-treated when necessary by scrubbing it with a detergent and applying another coat. Price is 23s. a gallon in 5-gallon drums. (*Floor Treatments Ltd., Wycombe House, Amersham Hill, High Wycombe, Bucks.*)

### KITCHEN EQUIPMENT

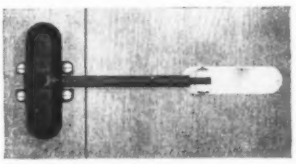
A recent leaflet from Hygena Cabinets shows a full range of sink units, cupboards and base units with Formica tops in a range of colours. The units conform to BS sizes, but there are a few intermediate sizes as well, and also some sloping wall units with sliding glass doors, some of which are made with small sliding storage bins underneath. There are also models designed to take the Electrolux M.170 refrigerator, having a capacity of about 1¾ cubic feet. An 81-in. high unit with storage cupboards top and bottom and with space for the refrigerator in the centre costs £13 12s. 6d. and a 42-in. wide floor unit with a drawer and cupboard under, and refrigerator either on the right or left is £16 10s. Neither of these prices, of course, includes the refrigerator. (*Hygena Cabinets Liverpool Ltd., Kirkby, Industrial Estate, Liverpool.*)

### ADJUSTABLE DOOR CLOSER

The illustration on the right shows a small adjustable door closer which sells for only 17s. 6d. The twin rollers are made of plastic and do not mark light or polished surfaces. (*G. & W. Field Ltd., 44 Theobalds Rd., London, W.C.*1.)



*Above, a Hygena kitchen cabinet containing an Electrolux M.170 refrigerator. Below, the adjustable door closer by G. & W. Field Ltd.*



### HEAT AND SOUND INSULATION

A new fibrous wadding, known as Fibroceta, developed by Courtaulds from acetate staple, is now being produced by a number of different manufacturers, and is recommended as a filling or padding, or as a heat and sound insulator. The material can be made in a wide range of densities, thick-

technical section

nesses and widths and is suitable for use as a filling between different materials which can be welded by radio frequency methods. Apart from its use by the furniture industry as a filling, it can also be useful as a lightweight heat insulator for aircraft or for refrigerators, as it does not bed down under vibration. It is also rot-resistant and vermin-proof, and water- and fire-resistant grades are also produced. (*Courtaulds Ltd., 16, St Martin's-le-Grand, London, E.C.*1.)

# 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.*

## 7.58 practice
### BUILDING BYELAWS

*Building Byelaws Pocket Book.* Edgar Lucas. (George Newnes Ltd. 12s. 6d).

This book sets down in comprehensible terms what the Model Byelaws mean (but *not* what the *London* Byelaws mean) and then describes in text and drawings how the requirements can be supplied, usually by reference to Codes of Practice or to official references, such as MOW Memorandum No. 4 on timber sizes. Mention is made of the frost precautions laid down in BS. CP. 99 (though this subject has not yet found its way into the Byelaws) but no mention is made either of single-stack plumbing, though this is now apparently universally permitted, or of the various modifications to good drainage practice resulting from the research of Croft and Wise. A useful pocket reference, but could be more critical.

**CLASSIFICATION FOR TECHNICAL ARTICLES AND INFORMATION CENTRE**

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

## 19.207 construction: details
### WOODEN DOORS

*Doors and Windows, including Frames and Linings. Part I, Wooden Doors.* BS.CP. 151: Part 1:1957. (BSI. 10s.)

If the main purpose of Codes of Practice is to lay down satisfactory minimum standards of construction and performance, it is high time that a Code was published on wooden doors and windows. The first part of such a Code has now appeared, and its scope is very wide, covering most types of door and methods of opening, and including such functional requirements as draughtproofing and thermal insulation. Unfortunately the information available at the present time is so meagre that the text cannot do justice to the list of contents. The Code states, for example, that "there is no reliable information regarding the relative strengths of mortise-and-tenon and dowel joints used in the framing of doors." This is a fairly simple piece of research which should have been carried out years ago.

There are several important places where a more analytical treatment would have avoided confusion; the classification of door types for instance, is a rather conventional affair reminiscent of trade textbooks. It is accompanied by a very poor illustration entitled "Examples of door types—*with characteristic treatments*." Why should a single-panel door have a raised panel and bolection mouldings? It would be better to make one point at a time. Again, the illustration showing "typical door frames and linings" shows all the clutter (some of it aesthetically very poor) of detailing evolved for a method of building which is now only one of many. The accompanying text does not tell one *why* architraves are necessary with frames adjacent to plastered walls, let alone whether they may be dispensed with when plaster does not form part of the construction.

There are one or two straightforward mistakes. Centre-folding doors, for example, should *not* have each leaf suspended from the track, but every alternative leaf: otherwise operation would become almost impossible.

There is, however, much good advice in this Code, but one must hope that research on the subject will soon speed up so that it may be revised as quickly as possible to give specific and reliable information.

## 24.204 lighting
### FACTORY LIGHTING

*The Lighting of Standard Factories on a Trading Estate.* J. S. McCulloch. (*Transactions of the Illuminating Engineering Society, No. 2, 1957.*)

This is one of a series of papers which was given at last year's IES Conference at Harrogate. The author first gives a brief review of the development of the standard factories evolved by the North Eastern Trading Estates Limited and then, using the standard factory unit of 24,000 sq. ft. floor area, estimates comparative costs for four different lighting systems:

1. 300-watt tungsten lamps in industrial dispersive reflectors, average general level of illumination about 19 lm/ft².
2. 80-watt warm-white fluorescent lamps in enamelled metal trough reflectors suspended from a V.R.I. cable and conduit system—level of illumination about 18 lm/ft².
3. the same lighting units on a trunking system which provided additional space for small power wiring.
4. 240-watt triple cold-cathode fluorescent lamps (warm-white) in enamelled metal troughs, using a conduit system—level of illumination of 17 lm/ft².

A comparison is given between the costs of the four systems for one-, two- or three-shift working. With the cost of electricity assumed in the paper it is concluded that the tungsten lighting installation has the cheapest annual charge (*i.e.* electric current plus capital costs plus lamps but not cleaning and maintenance) up to 475 burning hours per annum on single shift working, after which the hot-cathode installation is the cheapest. The cold-cathode fluorescent installation is found to be more than 30 per cent. higher in cost than that of an ordinary fluorescent lamp installation giving the same lumen output. One advantage of the former is the lack of lamp failures once the installation has settled down, the "hotch-potch" pattern of unlit lamps often seen on a large hot-cathode installation being absent. In the discussion following the presentation of the paper, however, one delegate had pointed out that the useful life of the cold-cathode fluorescent lamp was well in excess of the 15,000 hours quoted, which would, of course, make the comparison with hot-cathode lamps more favourable.

The cost of the installation with trunking is found to be about 7 per cent. more than that of the conventional conduit system, but as it could provide accommodation for small power wiring it might well be that in a machine shop containings rows of machine tools the saving on separate power wiring would exceed this and the system would then be worthwhile on overall costs.

## 24.205 lighting
### ARTIFICIAL LIGHTING

*Planned Artificial Lighting.* John W. T. Walsh. (Odhams. 25s.)

The trouble, an architect complained recently, with lighting engineers is that they always do precisely what you tell them to do. This remark is symptomatic of the lack of understanding that can exist between these two professions, and the dreadful mistakes that can occur as a result. Lighting engineers, it seems, need to know more about the architectural sig-

# 'Look . . . No beams'

The Plate System provides a concrete frame without beams. This is not done by making them into walls, or by the use of heavy, deep floors, or of drop panels with flare-heads to the columns; but simply by designing the beams away.
The Plate System is at its best with a regular grid, yet it is often the only reasonable solution when columns are irregularly placed. The Plate System does not compress an architect's work within the framework of a stereotyped plan nor does it attempt to do his work for him. It is more than a system of design, for combined with careful planning and the use of cranes and precast components it has become a system of construction. It is cheap in cost but not in appearance. With good organisation it can be built very rapidly.
The outstanding application of the Plate System is for flats and offices; and recent developments have widened its scope to industrial work.

# q.e.d. Truscon

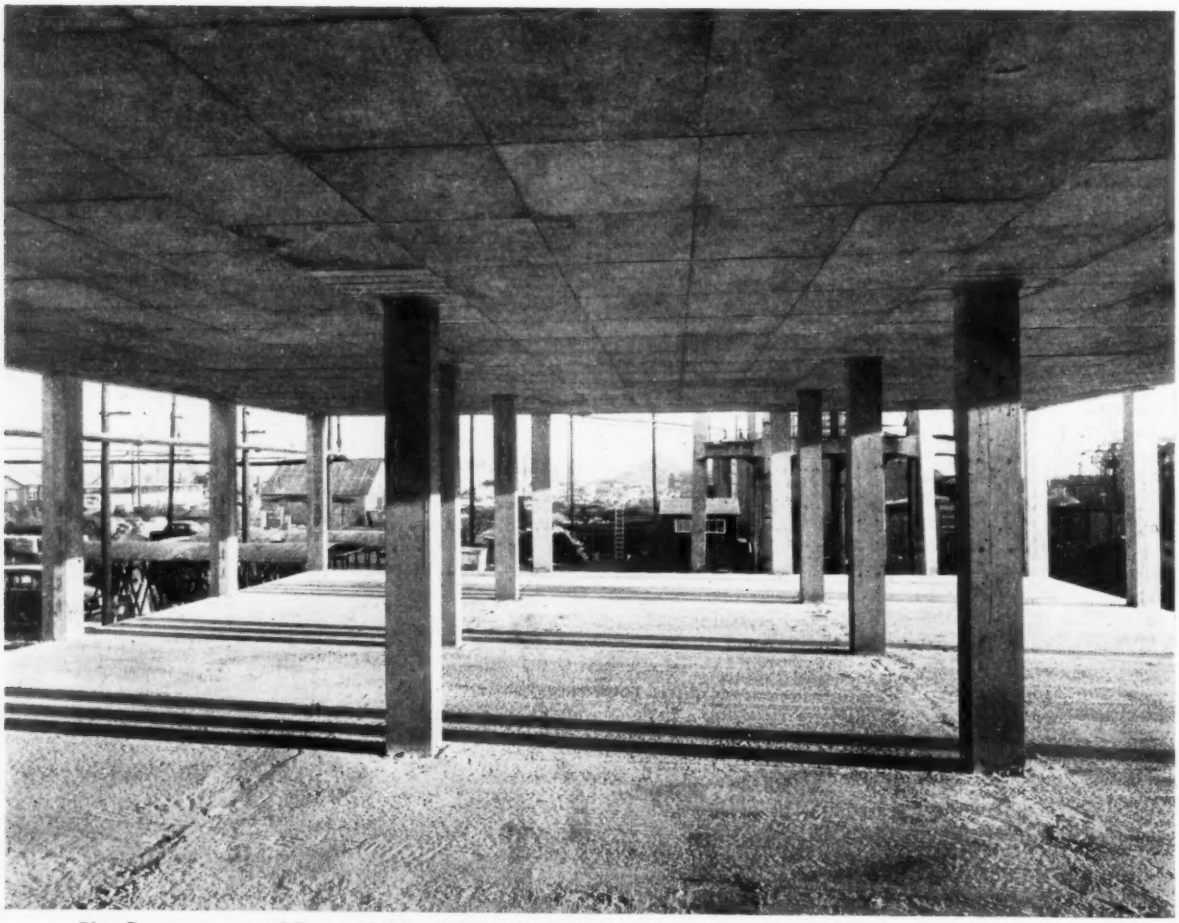


*Plate System structure of Canteen & Office Building, Larkfield, Kent, for Albert E. Reed & Company Limited.*

The Trussed Concrete Steel Company Limited, 35-41 Lower Marsh, London, S.E.1
Telephone: WATerloo 6922

technical section

nificance of the installations they design, and perhaps what is more important, architects generally need a more thorough grasp of the principles of lighting. One of the difficulties, however, is that at present there is really no suitable and up-to-date reference book for architects on artificial lighting. Any new publication that seems likely to help make good this deficiency is therefore welcomed sympathetically, particularly in this case when the author, Dr. Walsh, is such a well-known and respected lighting engineer.

He has divided his book into three main sections, the first dealing with the requirements in terms of good and comfortable vision, the second with the means of achieving them in terms of sources and fittings, and the third with the method of design itself. There is a fourth and subsidiary section dealing with special lighting problems and other matters which do not fit directly into the main pattern of the book. Throughout Dr. Walsh has achieved, within his terms of reference, a lucid and precise attack upon the subject.

The book has not been aimed specifically at architects, however, and from this point of view, he goes slightly too deeply into some of the technical aspects, whilst giving scant attention to other matters which are of particular interest to the profession. The principles, for example, upon which so-called "decorative" fittings may be chosen are not adequately discussed, and the relationship between lighting and colour has been mishandled. For instance, the connecting link between the BS. 2660 range, Munsell value and reflection factor has been missed. In the section on design the worked-out examples are rather unrealistic because insufficient attention has been paid to the question of costs. In the classroom example, for instance, a fluorescent installation has been chosen although in practice the increased capital cost this would involve is not normally justified by the saving in current, unless the room is occupied in the evenings for night classes. Perhaps the most serious weakness, from the architect's point of view, is the fact that throughout the author has avoided committing himself to an open discussion of the less rational aspects of design, that is to say, at the very point where architectural interest is keenest, and where the subject seems most capable of further and fruitful development. One cannot help thinking that Dr. Walsh secretly looks upon artificial lighting as an illegitimate and delinquent offspring of classical physics, needing stern discipline, with no time off for free expression.

Under all these circumstances this book is not a self-sufficient guide for architects on the subject, despite its title. Nevertheless it is a basically sound and well-balanced reference work on the theoretical and technical aspects of artificial lighting, and as such may well prove useful in both office and school library.



# 6 PLANNING: SOCIAL AND RECREATIONAL

## commonsense in garden design

The principle that basic changes in our economy require corresponding changes in our buildings has long been accepted by architects and clients alike; and though the technique of discovering exactly what these changes should be is not so sure as we could wish, we have the impression that some progress has been made. Few architects, however, seem to recognize the fact that the same principle must govern the design of spaces between buildings, and fewer still know what they should do about it. This week, therefore, the distinguished landscape architect Brenda Colvin describes the main physical changes to be sought: among other matters the reduction of the kitchen garden to its logical dimensions, the acceptance of rough with close mown grass, and the reduction of the more unpopular chores such as grass edging, weeding and hoeing.

The subject of discussion at a recent meeting of the Royal Horticultural Society was "Garden Design in relation to Economical Maintenance." Much of the discussion devolved on the detailed treatment—and especially the planting—of the small private garden, but it was recognized that before we come down to those details, there are far wider issues to be faced. The problem of economy of maintenance is to be met in regard to all open space and grounds of every size. Every garden owner is aware of the need for economy, but probably very few realize how far careful layout and good design can promote this objective, and how uneconomical some of the older gardens were. Many of the modern trends in garden design arise out of the need for economy: skilfully handled, the appearance of the garden need not suffer—indeed, the general simplification is all to the good.

### The man per acre ratio

In larger gardens, the broad issues must first be dealt with. Before the days of mechanization it was usually considered that in order to keep such gardens looking their best, the labour required was about one man to

technical section

every acre. Today, with the use of mechanical cultivators, mowers, clippers, etc., and of selective weed killers, each man is expected to handle about three times as much ground; and, provided the layout is correctly adapted, and modern methods are properly followed, the result is good though perhaps not quite so meticulously neat as in the past. In the case of sports grounds and parks, where plain turf occupies most of the space, the acreage per man can be doubled or trebled again.

The under-staffed garden deteriorates so quickly and so completely that the assurance of adequate labour is essential to the success of any project. Many beautiful old estates of the past have been lost to posterity largely because their grounds were unmanageable. Under the prevailing tendency of high wages and income tax, few can survive without serious readjustment and adaptation to meet existing conditions. In every case, large or small, the man-per-acre ratio is an all-important factor in the treatment of the plan. Even the owner-gardener needs to adjust his ground plan and his method of planting to the time at his disposal.

In the case of large projects it is often wise to begin with a plan defining broadly the use of various areas, whether for lawn, flower garden, orchard, vegetables, sport, woodland, pasture, etc. From such a plan the kind of maintenance and machinery needed can be assessed and the cost of labour estimated, and adjustments can be made to suit the anticipated budget. This plan would also show the basic needs for roads, paths and circulation generally, and give an indication of the amount of shed and storage requirements.

**The size of a kitchen garden**

Landscape reports on a property are sometimes required by a client before purchase, with a view to the possibility of remodelling the grounds to suit present-day conditions. A realistic approach in such cases may be the means of preserving an area of landscape beauty otherwise doomed to destruction. The size of the ornamental ground and that of the fruit and vegetable gardens may be extravagant, at least in their existing form, and other uses for part of the area may have to be found. Two wars have taught us that the old kitchen gardens are extravagant. The standard allotment plot of 300 sq. yds. is capable, under modern cropping systems, of supplying the basic vegetables for a family of four people. So this supplies a minimum standard, and if, in order to allow for luxury vegetables and fruit such as asparagus, seakale, strawberries and so on, we multiply the area two or three times, we still have far smaller kitchen gardens than used to be thought necessary. The rest, unless sales of produce are in view, is waste of labour.

While discussing this aspect of the matter, the possibility of economic returns cannot be overlooked. Surplus ground may be suitable for the production of some special crop such as Christmas trees or basket willow, or for grazing, afforestation or market gardening. On well-organized estates the sale of produce may cover wages for both productive and ornamental areas and may often be the means of preserving the full beauty of old gardens. The balance between the two types of use must be well adjusted, and the landscape treatment very carefully considered to prevent the intrusion of jarring notes into the picture, and to ensure pleasing relationships between the old and the new, particularly if market gardening is the choice.

Afforestation of surplus space may be the means of increasing the landscape beauty of a wider area than the actual property concerned, but yields economic returns only when the area is really large. Even in the small garden, however, light ornamental woodland is a good way of using odd spaces not needed for other special purposes. Once the trees are established, very little labour is needed to maintain the shady ground beneath. In the critical years of growth, however, the trees need careful attention.

The neatness of the garden proper can be charmingly contrasted with the natural woodland floor, and the boundaries can often be happily screened among the trees.

**Siting the service core**

Of all labour-saving systems in the garden, none is more important than the correct siting of the service area and the careful grouping together of sheds, greenhouses and storage space generally. This group of functional necessities bears the same sort of relationship to the rest of the grounds as the kitchen, pantry and larder bear to the house. Perhaps if we called it the "hub of the garden" we should come to treat this important group with more proper respect. At present, in many gardens the greenhouse is in one corner, the rubbish heap in another and the sheds scattered around like the spokes of the wheel rather than forming a hub. Far more hours are wasted walking from one to another than was ever lost between kitchen and dining room.

This "hub" must be easily accessible from the public road, yet should be centrally placed in regard to other parts of the garden. It presents special difficulties of design because, though central, it is not in itself a beautiful feature and usually needs to be well screened by planting. Greenhouses need full light and the screening must not shade them. The essentials of the group are sheds, greenhouses and frames, hard surface areas and ash standing ground, various bins, and a place for rubbish heap and bonfire.

Sheds are needed for the accommodation of all tools, appliances and machinery, with dry space for fertilizers and other chemicals, and also room for canes, peasticks, garden nets, etc.; cupboards for seeds and catalogues should be provided, and a good work bench and potting bench with bins under them for pots and various potting soils. Frostproof storage sheds for fruit and winter vegetables are needed also. Outside bins should be provided for the storage of leaves, grass mowings, manure and other composting materials alongside the compost bins themselves.

Greenhouses and frames should normally face south,

# HOTELS ARCHITECT

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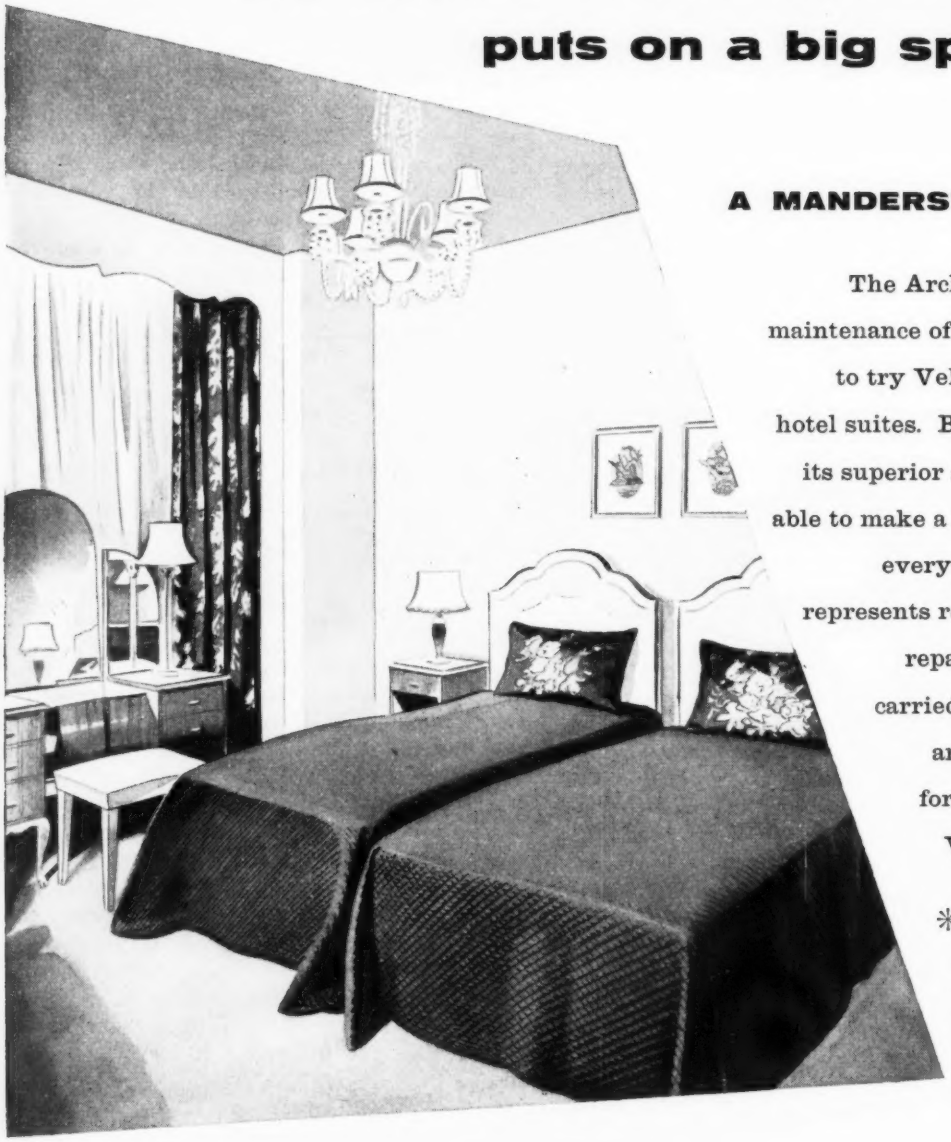

### A MANDERS' CASE HISTORY

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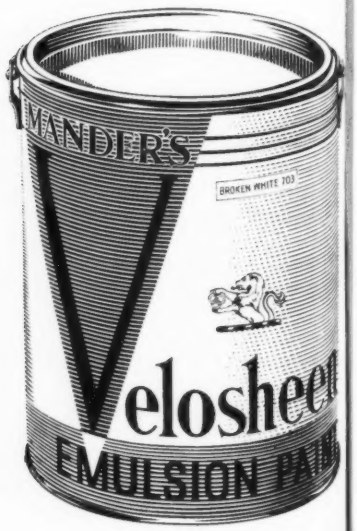


**MANDER BROTHERS LTD., (DEPT. E5), WOLVERHAMPTON**

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technical section

though a small north-facing glasshouse is useful for certain types of plants. All the sheds may well face north. A standing ground with ash floor is needed near the greenhouse for chrysanthemums and other pot plants in summer. Ample space for loading and unloading goods is required.

Access to and from the various parts of the garden must be direct and well adapted to the appliances to be used. Spraying equipment, automatic scythes and mowing machines, trollies or barrows, and the various cultivators must be able to pass easily through gates, and none of this equipment likes climbing steps. We have all heard of houses being built without the staircase—in the garden the more frequent mistake is a lawn laid on terraces approachable only by steps and inaccessible to the barrow and mower: or internal courtyards which can be reached only by walking over the best parquet floor. However small a courtyard, roof garden (or even window box) may be, it will need regular attention and watering. There will be fresh soil and compost, plants to be brought in, and dead wood, plants and rubbish to be removed. In the case of lawns, the mower and barrow must be used at regular intervals, and these simple necessities must be allowed for in the design. It is surprising how often they are overlooked, especially and regrettably, by the architectural profession!

*Mown grass contrasted with rough grass and bulbs at Sutton Courtenay Manor, Berkshire.*

**The changing economy of turf**

Neat, close-mown turf, though lovely to look at, and the perfect setting both for architectural features and for flowers, shrubs and trees, takes much time and attention if it is to be kept in really first-class order. Selective weed killers can be sprayed on and this has eased the problem considerably. Wherever turf is used it should be in simple shapes for straightforward mowing, unbroken by elaborate beds. It should be remembered, too, that if turf is extended right up to a building, wall or step, there will be a strip a few inches wide which the mower cannot deal with, and which is awkward to cut by shears. For the sake of neatness and easy upkeep, mowing stones may be laid against the wall or riser half an inch below turf level so that the mower can run over these without damage. These may be of a width to match steps or coping of adjacent masonry, or, if required to be quite inconspicuous, they may be as narrow as 4 in. when they will serve their purpose equally well while scarcely being seen. Alternatively, a narrow border planted with neat dwarf evergreen plants will serve the same purpose and at the same time provide root run for wall climbers if these are wanted. Contrary to general belief, a north wall provides no difficulties for this treatment.

A very charming and delightful way of reducing labour on the grass is the use of rough grass in association with the close mown turf of lawn and grass paths. The mechanical scythe has in fact presented the garden with a further element of design, and whereas until quite recently rough grass was regarded as merely a rather undesirable way of saving labour, it can now become one of the best features of the garden. The lawn proper, and all turf paths must be mown once or twice a week through the growing period, say about 40 times in a season, whereas three mowings will be enough to keep the rough grass areas in order; and the mechanical scythes are very efficient and fast. The contrast of texture between rough and smooth mown grass is lovely at any time of year, and can be increased and made more striking if we plant early spring bulbs in the rough. The shape of the lawn and turf paths becomes all important, and the lines of demarcation between the two should be pleasing in themselves. The rough grass can extend beyond the lawn to the boundaries wherever these come, and its shape, less noticeable than that of the smooth turf, is unimportant: it can merge into woodland or disappear under a hedge. If planted with bulbs, they should be grouped, according to variety and colour, and broad effects are particularly telling. Haphazard mixtures of "naturalizing bulbs" such as are often obtainable cheaply at the end of the planting season spoil the effect, but a carefully planned mixture of very dwarf-growing plants including certain anemone species, primroses and cowslips in their full colour range, make a delightful Botticelli carpet, and are particularly good where it is desirable to start scything rather early.

Flowering trees grouped on the rough grass should be chosen in relation to the flowers under them (or *vice versa*). They may be planned to flower together or consecutively to extend the spring effect. For example, the wild cherries usually bloom at the same time as the blue anemone appenina, but this association would involve postponing the first cut until rather late in the season. By using anemone blanda which comes a month or more earlier, we could scythe for the first time early in May, which is sometimes desirable for the sake of neatness.

Fruit trees can be used just as well as ornamental types in such positions. In other words, the orchard can become the Botticelli garden in spring. Whatever trees are used, their spacing should be adjusted to the

technical section

*Labour-saving ground cover provided by heaths in the Royal Horticultural Society's garden at Wisley.*

width of the scythe wherever grass is grown under them. This point is also worth noting in regard to mown paths, whose width should be a multiple of that of mower blades, to avoid overlapping and waste of mowing time.

In large gardens several different types of mower are usually needed. But where only one mower is kept, it should be of a type which can cut both long and short grass. The small garden owner sometimes returns after a holiday to find that his lawn has outgrown the capacity of an ordinary mower and needs skilled scything before the latter can again be used. Few of us can handle a scythe, so the machines with horizontal rotary blades which can be adapted to any length of cut are a boon in such cases. They also make it possible to include some rough grass as a permanent feature of the design, however small the garden.

The use of chemical sprays to reduce the rate of growth of grass is at an experimental stage and may develop to become of practical use in gardens. At present we use selective weed killers to exterminate lawn weeds and moss; seeing pictures of Japanese gardens in which moss has been used as a substitute for grass, one wonders if the process should not be reversed, and whether a grass eradicator would not be worth trying, especially in our high rainfall districts of the west. Thus mowing would be completely eliminated.

Scientific developments may still bring great changes in garden maintenance which will have unforeseen effects on design.

**Reduction of grass edging**

Grass edging is one of the more tiresome chores in any garden. It can be reduced to a minimum by simplicity of design, avoiding all beds cut in the lawn, and confining the planting as far as possible to borders between paths and wall or boundaries. If borders are to be set off by grass, an edging of stone or brick, say about 18 in. wide, though more costly than plain turf edge, is a great help when it comes to the care of the grass and plants. It looks delightful and plants growing along the edge can be allowed to sprawl over the stone without damage to turf. As in the case of mowing stones referred to earlier, such edgings, and indeed all paving, should be laid just below turf level to allow the mower to run over it.

**Paving**

Higher outlay may help to keep maintenance costs down as might be expected in many ways, particularly in the choice of material and method of laying paving and walls. The larger the stones and the fewer the open joints, the less trouble we shall have with weeds. Paving laid on cement or concrete is more trouble-free than if laid on sand or ashes, but joints pointed flush with the surface look too urban for most country gardens, and can be rubbed down to give a better appearance.

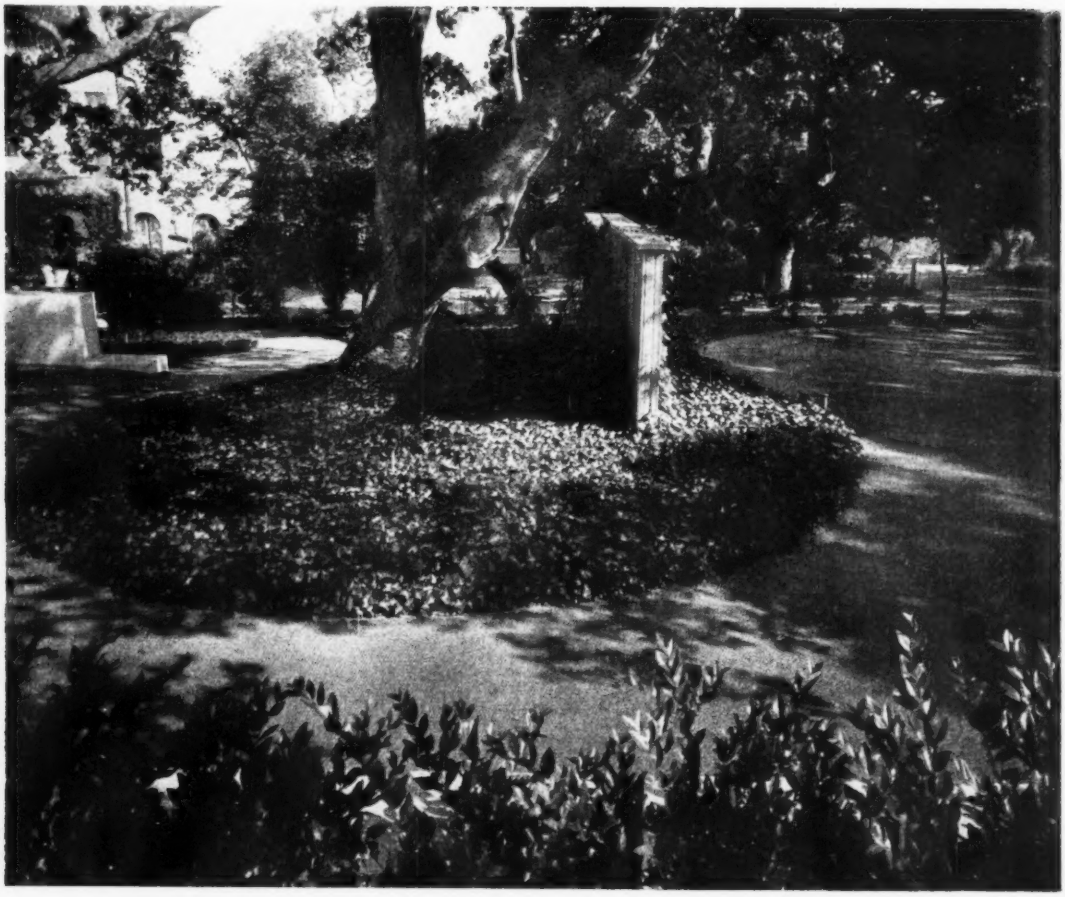
Gravel paths are less costly in construction than paved paths but not so labour saving. In any case, they require a firm edge of brick or other hard material, and owing to this, and to their camber they look wrong if made too narrow, whereas narrow paved paths, edging grass, look very well. A path material having all the virtues of good appearance, low cost and hard wearing surface is still to be found; he who invents one will deserve the thanks of all garden owners and designers. The substitutes for turf, such as camomile and heather, dear to gardening journalists are, it is to be feared, a snare and delusion. In valley areas, however, where the ground does not dry out too much, and where turf of a bowling green quality is not required, it has been found possible to grow turf on top of unwashed gravel or "hoggin." This gives a grass path of hard wearing capacity capable of carrying all the ordinary garden appliances and even an occasional tractor or cart.

Hedge clipping, and the care of topiary, or "green sculpture" have been eased by the invention of mechanical hedge clippers, but there is room for improvement in the development of these appliances. Many gardeners still prefer shears. In the meantime it is well to use for hedges, plants which do not make too rapid growth, and to allow ample width, so that a light trimming occasionally is all that is needed. Many of the shrub roses and certain Berberis species will fulfil the need if a close trimmed hedge is not essential.

**Reduction of hoeing and weeding**

Dry walls and rock gardens are non-labour-saving: weeds entrench themselves among the stones and give perennial battle to the gardener. The plants for which such places are provided can be given an equally good cool root-run in a more contemporary idiom if we forego the naturalistic appearance of the setting. But for the sake of real economy of labour, most of the old favourites must be eliminated in favour of really good ground cover, such as pinks, heaths, dwarf juniper, evergreen iberis, dwarf berberis and other dense foliaged species.

technical section



*Ivy used to give ground cover in a garden in California designed by Thomas D. Church. (Reproduced from "Gardens Are For People," Reinhold Press.)*

It is possible—at least in theory—to plant such dense ground cover in all beds and borders, and thus to eliminate hoeing and weeding altogether. The system is demonstrated in the most extreme form in a garden laid out by Thomas Church in California, for clients whose fingers must be anything but green. He gave them a wholly green and grey garden, with paving in dappled sunlight under trees, where all the beds and borders are planted with ivy alone. The effect is unusual and charming in its own way, and above all well suited to owners who do not want to be bothered with gardening but who want a garden as a peaceful place of repose. Even so there must be a good deal of clipping to be done.

With a little more variety of material it would be possible to introduce some very fine sculptural effects and to get a wealth of textural interest in the planting, but it is true that most of the best ground cover plants are subdued in colour, and the average English man or woman has not the austerity of taste needed for their appreciation, though in fact the range of colour variation in good ground cover plants is rich and subtle.

We can perhaps strike a happy balance somewhere between such austerity and the "riot of colour" which enslaves us, by making the basic planting mainly of foliage plants for ground cover, and by introducing colourful groups for special seasonal effect at intervals. Thus each colour group may appear as a gem set in a framework of interesting foliage tones. The colour groups must at least be of tidy growth, not requiring staking and having respectable foliage up till, and if possible, after, flowering. So we should be limited, even by this system, to plants such as iris, dwarf chrysanthemums, bulbs, and many roses and lilies, but the range would be very varied and the choice wide. Among many good ground cover plants perhaps the best for open positions in acid or neutral soils are the heaths. Excellent plants for alkaline soils and shady positions include hellebores, epimediums, japanese anemones, spurges, violets, primulas in variety and some of the dwarf viburnums. For sunny positions, in alkaline soils, lavender, certain veronicas and junipers will keep the ground in good order with little trouble to the owner-gardener. It must be realized, however, that the ground cover system is for the owner-gardener above all. Professional gardeners, up to the present, like to have the plants well spaced out with plenty of bare soil between. The profession is weaned from the spade but not as yet from the hoe, and the planting designer must plan accordingly.

building illustrated

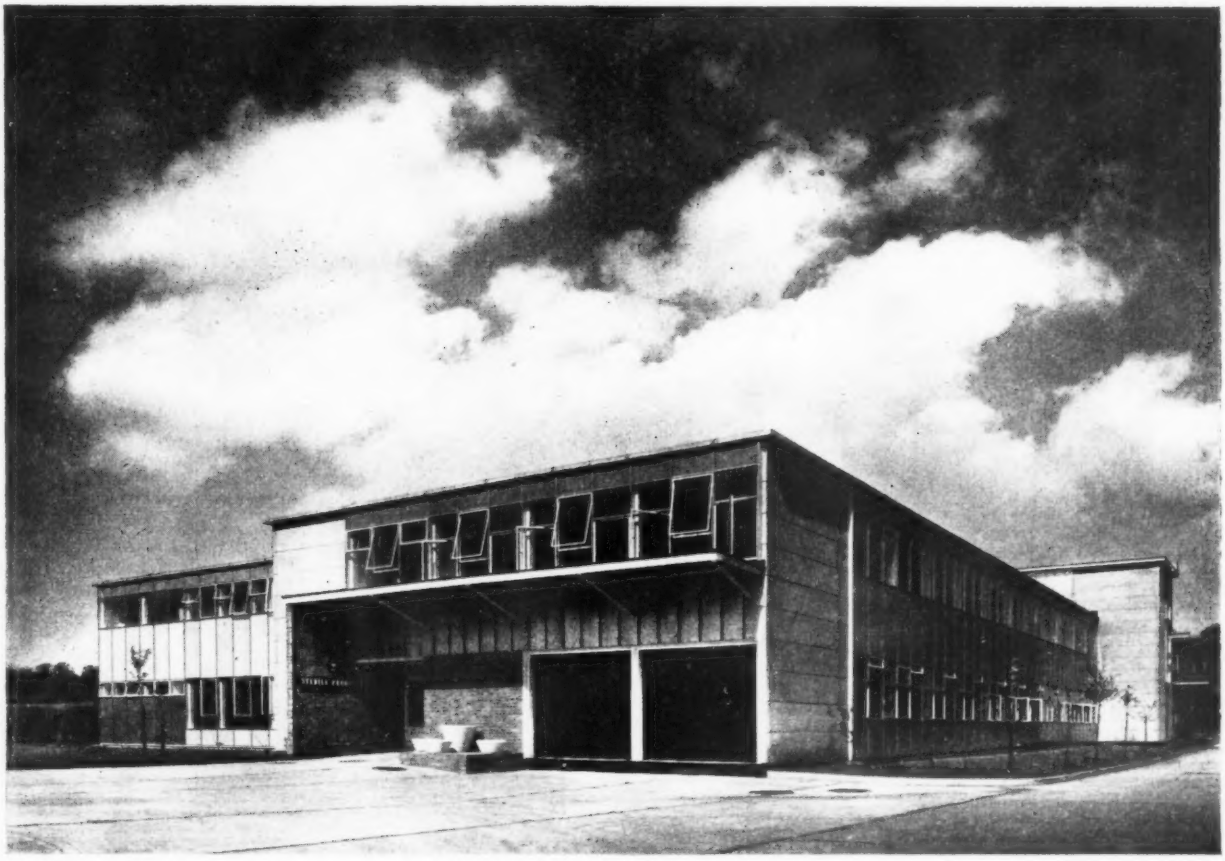
*Factory at Ware, Herts.*

# FACTORY

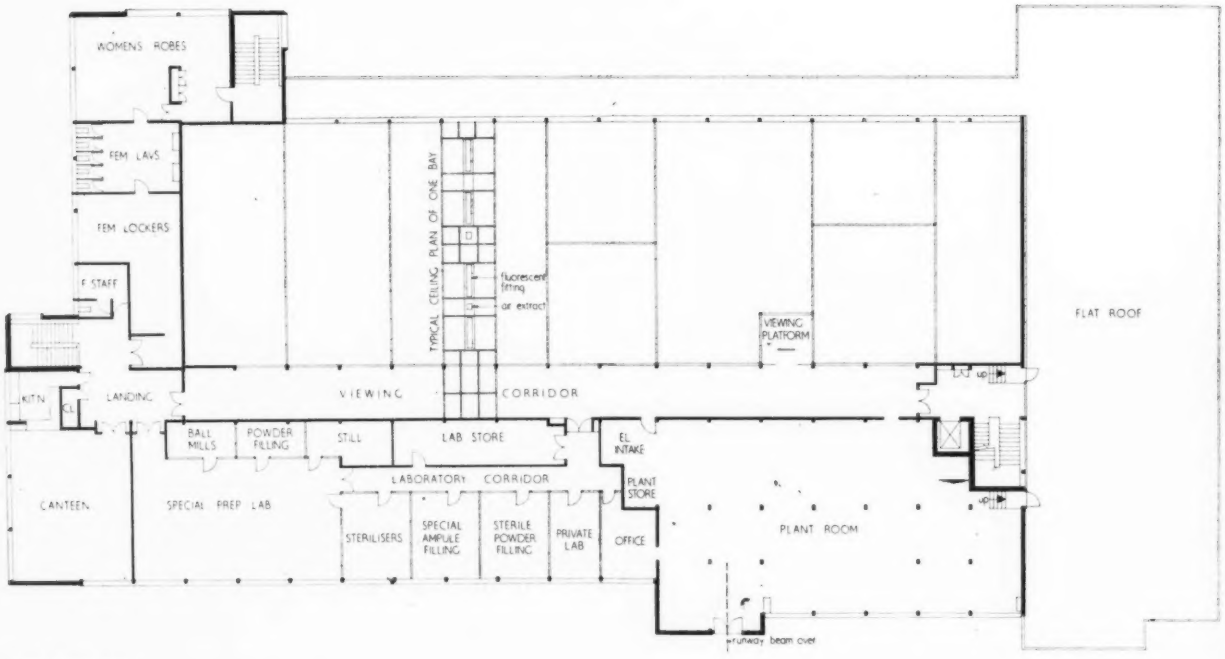
for ALLEN and HANBURYS LTD., Sterile Products Block, in HARRIS'S LANE, WARE, HERTS designed by PETER DUNHAM, WIDDUP and HARRISON; quantity surveyors OSWALD E. PARRATT heating, ventilation and electrical consultants G. H. BUCKLE and PARTNERS

The production of pharmaceutical goods in this building, an extension to an existing factory, calls for an extremely hygienic environment. At the same time considerable flexibility is needed to allow for possible future changes in the processes. These requirements have led to special problems of planning, detailing and the arrangement of services, and in solving them the architects have used a prefabricated structural system.

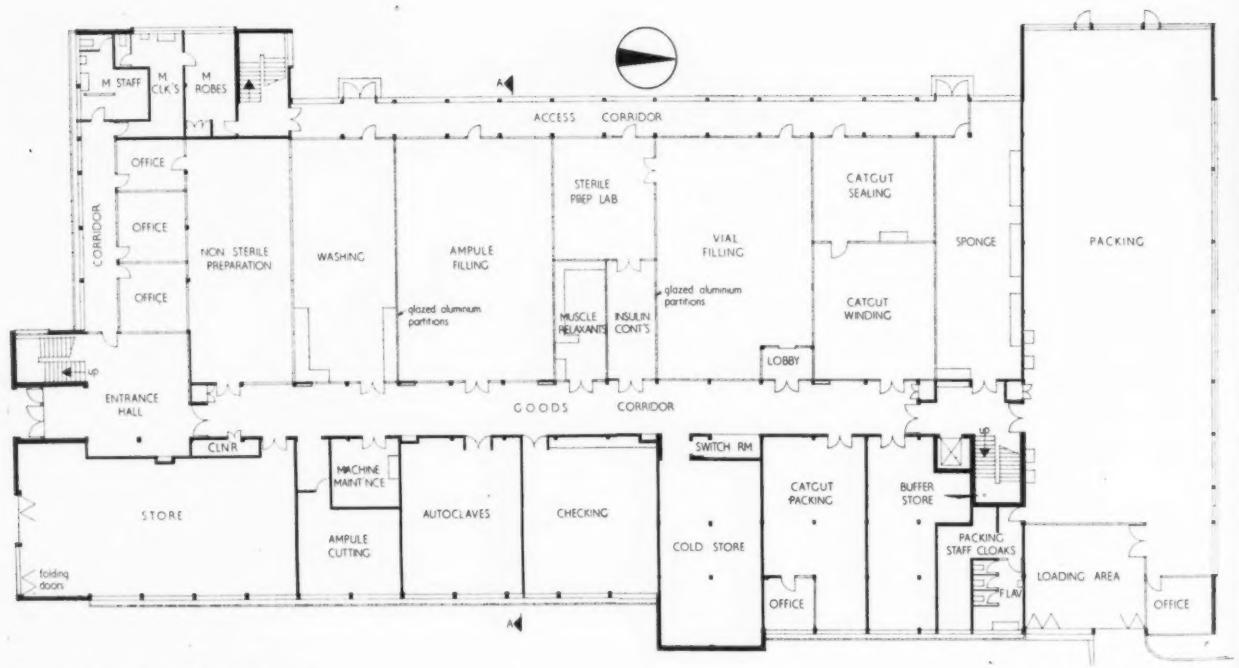
*Viewpoint* 1: *the building from the south-east.*



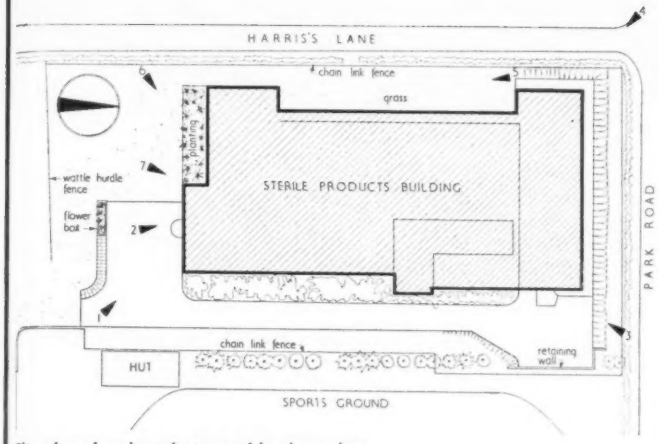
**building illustrated**




First floor plan




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




Site plan showing photographic viewpoints

*Viewpoint 2: the main entrance for visitors and personnel on the south side.*

## analysis

### CLIENT'S BRIEF : his stated requirements

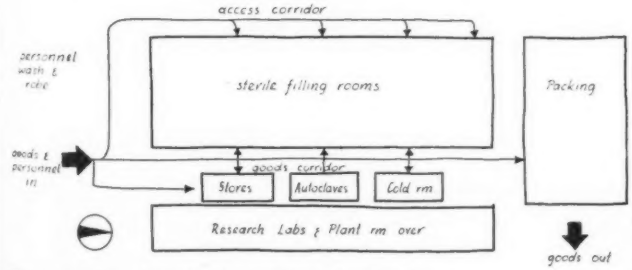
A separate block within an existing factory area to be reserved for sterile products, i.e., the production and filling of highly specialized pharmaceutical products under aseptic conditions requiring a high standard of cleanliness including complete air conditioning and an almost " operating theatre " standard of finish in some of the filling rooms. Services such as electricity, gas, nitrogen, oxygen, compressed air and vacuum to be available to various machines and equipment in some of the filling rooms, but as research and development necessitated different techniques, the arrangement of these services and rooms were to be such as to allow reasonable flexibility. The rooms used for producing goods by aseptic techniques where the products were not subsequently to be sterilized were to be accessible only through special robing rooms where the operatives are gowned, masked and carry out a procedure of shoe changing which involves sliding over a wide bench. Ancillary rooms for autoclaving, checking, cold and general storage, packing, etc., were also required. It was desired that supervisors, important visitors and foreign customers should be able to watch the processes without going through the robing procedure mentioned above. As air conditioning was essential for most of the building and artificial light was required for some of the processes, outside glazing was not essential, but it was desired that the operatives should not have any " shut-in " feeling and if possible should be given a view to the outside. The character of the building had to indicate the nature of the work carried on and also encourage the staff and operatives to maintain the high standard of cleanliness required.

### SITE : topography, surroundings, access, planting

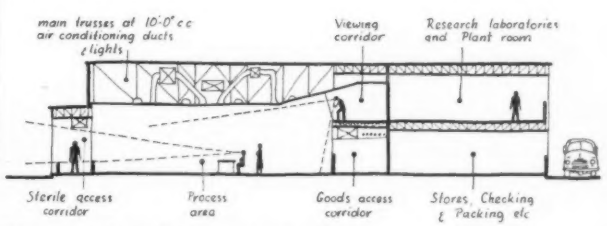
Slope of about 5-ft. north to south The site is on the edge of a factory area, with housing on the north, a factory sports ground on the east, an existing factory area on the south, and open country on the west.
Access from south-east only through existing factory area. There was no planting at start except poplars on east boundary. Planting now being carried out.

### PLAN : general appreciation and relation of units

Large area of sterile rooms with semi-permanent partitions. Plan flexible enough to allow for change in individual sterile room sizes if necessary, should research develop new materials or production methods. Bulk of work necessitates artificial light and complete air conditioning, therefore no need for outside wall to this area but clients thought that operatives should " see out." Operatives' access to sterile rooms only through robing rooms. Cold store, checking and autoclaving rooms from central corridor and viewing corridor allowing supervisors and visitors to watch work in progress on first floor with research laboratory and canteen.




Diagrammatic plan, showing relationship of units




Diagrammatic section on west-east axis

## analysis

### MAIN CONSTRUCTION: general appreciation

Light steel structure with stanchions and beams on 3-ft. 4-in. planning grid, perimeter stanchions at 10-ft. centres, special beams span 46 ft. 8 in. over sterile rooms and are deep enough to contain all air conditioning ductwork, special recessed light fittings and walkways to give access to damper controls on ducts, etc.

| cost per sq. ft. | s | d |
|---|---|---|
| preliminaries and insurances | 1 | 9 |
| contingencies | 1 | 2½ |

### STRUCTURAL ELEMENTS

**Work below ground floor level** — 3 10½

Concrete pads under stanchion bases. Reason: sandy gravel sub-soil with pockets of silt. Average depth of foundations, 5 ft.

**External walls and facings**

Glazed curtain wall with infilling units of painted aluminium panel inner skin, and wired roughcast glass outer skin, with sealed air space between. — 3 11¾

Solid wall: pre-cast concrete slabs faced with white spar. — 11¼

Reasons: prefabricated system of construction and walling chosen because of labour shortage in the area.

**Frame or load bearing element** — 13 7½

Light steel galvanized stanchions and beams on 3-ft. 4-in. planning grid

| *Beam spans* | *Column grid* |
|---|---|
| 46 ft. 8 in. and 30 ft. | Perimeter columns, 10-ft. centres |

**Upper floor construction and staircases** — 2 4¾

First floor generally, pre-cast concrete slabs spanning between 3-ft. 4-in. beams finished terrazzo tiles.
Plant room: 6-in. in situ reinforced concrete, granolithic finish.
Reason: to receive extra loads in the plant room.

**Staircases**

Height: floor to floor = 10 ft. Width between landings = 4 ft.
Pre-cast concrete treads on cranked steel stringers, terrazzo finish with non-slip nosing.
3 staircases 4-ft. wide with total rise of 40 ft.

**Roof construction** — 4 0½

2½-in. or 3-in. wood wool slabs spanning between 3-ft. 4 in. beams screed and 3-layer felt.

**Roof lights** — 1

First floor: Cloakrooms pressed steel upstands with wired glass.
6 roof lights with total area of 54 sq. ft.

**Windows and external doors** — 7½

Galvanized steel, painted.

**External doors**

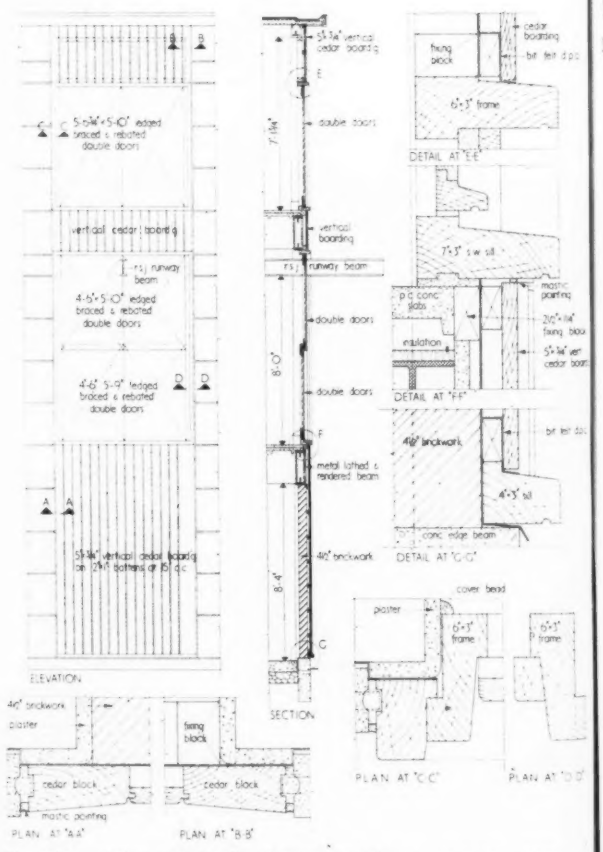
Main and exit doors, glazed pressed steel, painted.
Store and packing, folding doors, painted.

**Glazing** — 0¼

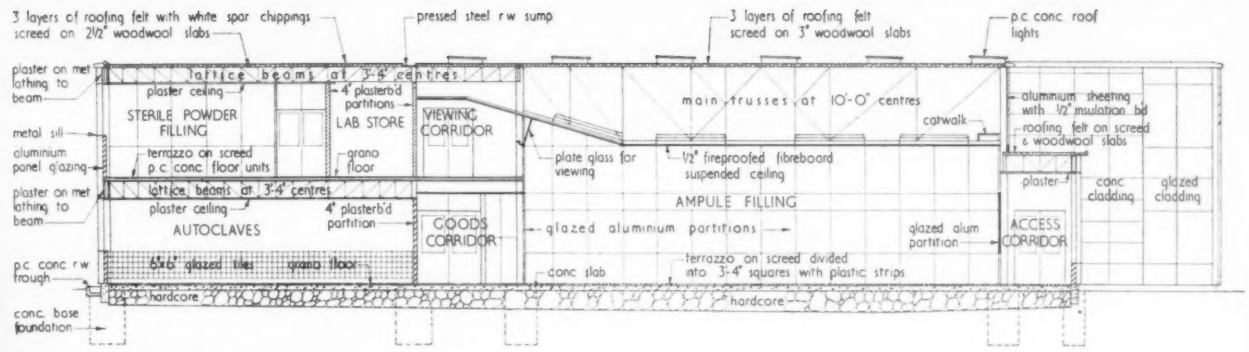
32-oz. and plate glass. Reasons: air conditioned portion does not require opening lights.

## building illustrated

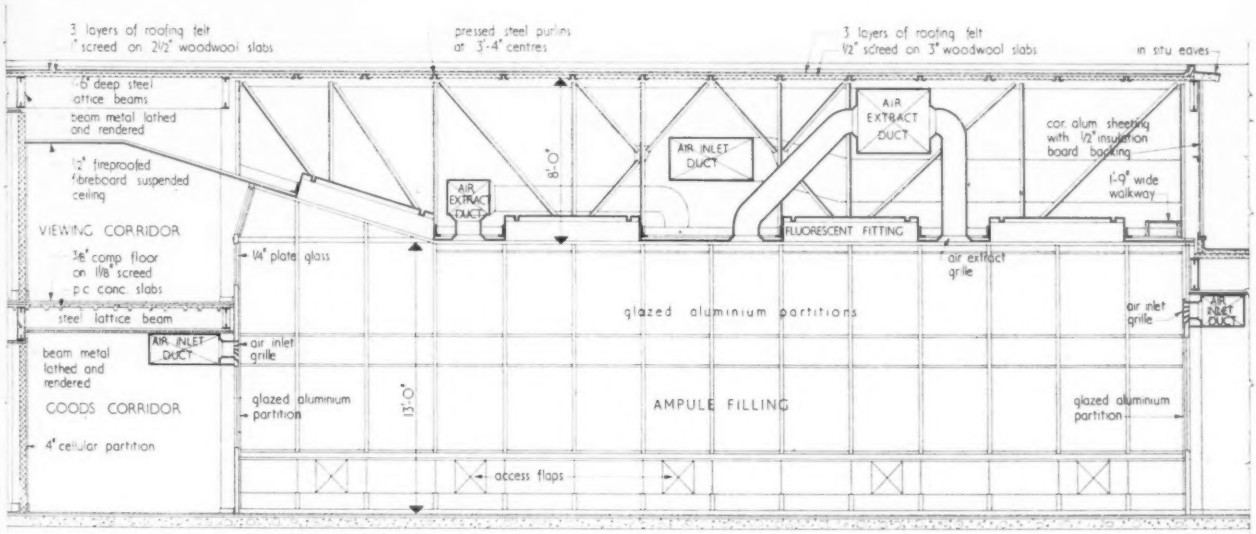
*Viewpoint 3 (above): the north end of the building, from the east. On the ground floor are stores and other ancillary rooms, and above them on the first floor a suite of special process laboratories and the mechanical plant room. There is an access door with a gantry for the handling of equipment into the plant room, above which is housing on the roof for tanks and the air intakes of the ventilation system. At the north end of the building is a single-storey block for the wrapping and packaging of finished products. At the east end of this is a loading bay opening out on to the service road which runs along the east side of the building.*



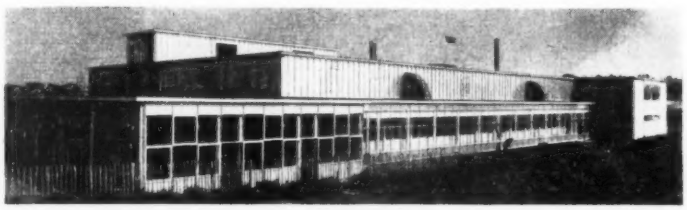

Elevation, section and details of gantry panel [Scale: ⅛" & 1½" = 1' 0"]

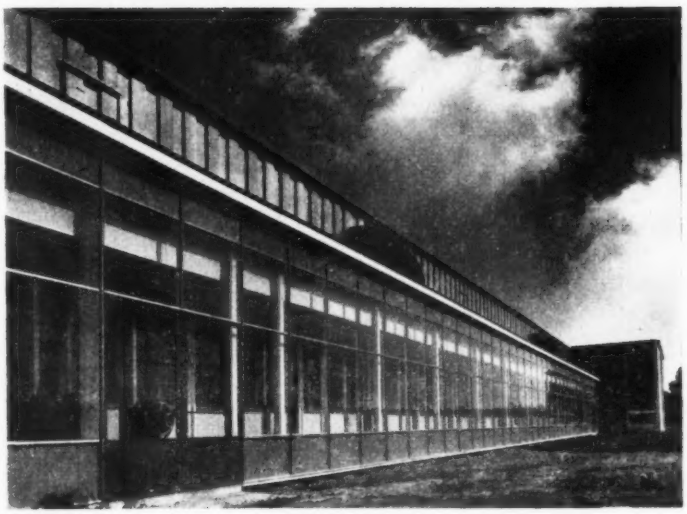



Section A-A [Scale: $\frac{1}{16}$" = 1'0"]




Detail section on section line A-A [Scale: $\frac{1}{8}$" = 1'0"]

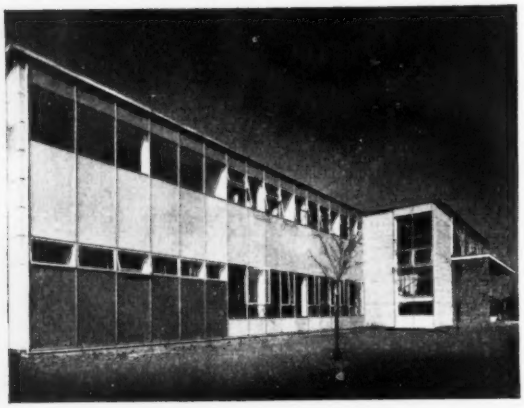




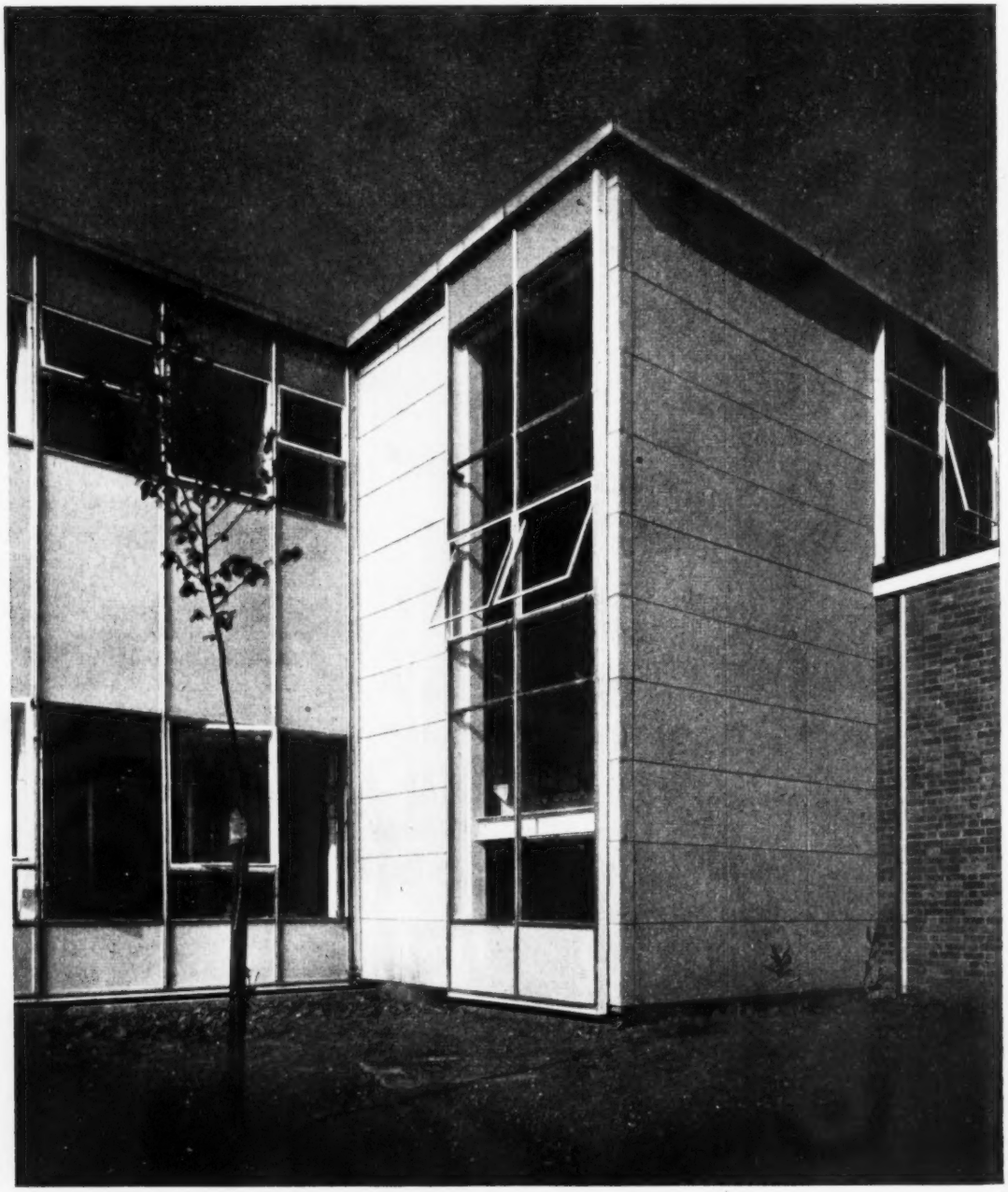
*Viewpoint 4 (left): the artificially-lit single-storey process area on the west side of the main circulation spine, from the north-west. The same roof level is carried across the building (see section above), but the ceiling level is lowered to give sufficient headroom for walkway access to the ventilation ducts.*

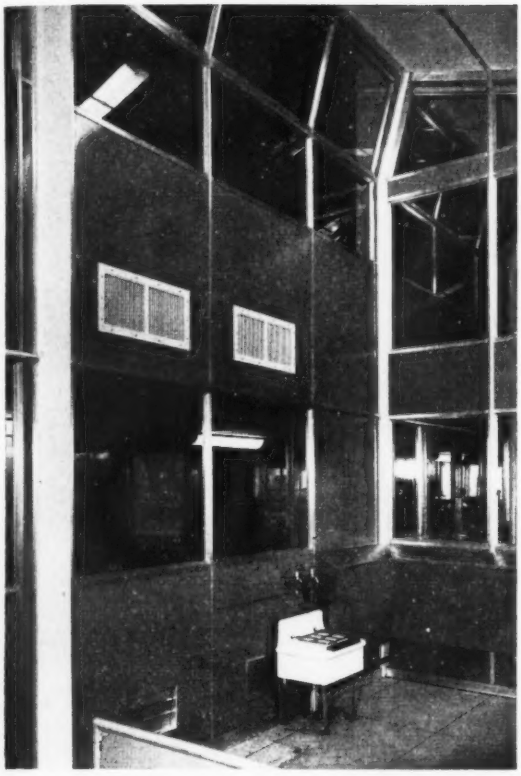
*Viewpoint 5 (left, below): the "sterile" corridor used exclusively by personnel as the means of access to those sections of the process area which are also sterile from the robing rooms at the south-west corner of the building, where they wash and then dress in sterilized robes, caps, gloves and face-masks. The robing room for men is on the ground floor, and that for women above it on the first, with a sterile staircase leading down into the access corridor. By means of such planning there is a complete separation of sterile and non-sterile sections of the process area which are manned and operated quite independently. In addition, by having the sterile corridor running the full length of the west side of the process area, any part of it can be separated off at short notice and used for sterile production. This external corridor has been glazed on both sides to allow views out of the building from the process area, even though it is basically artificially lit. At sketch design stage it was conceived as a totally enclosed space, because some of the products might be damaged by sunlight or strong daylight. Having, however, inspected such structures in North America the clients decided that view windows were very desirable, in order to make rather difficult working conditions as pleasant as possible.*

**building illustrated**

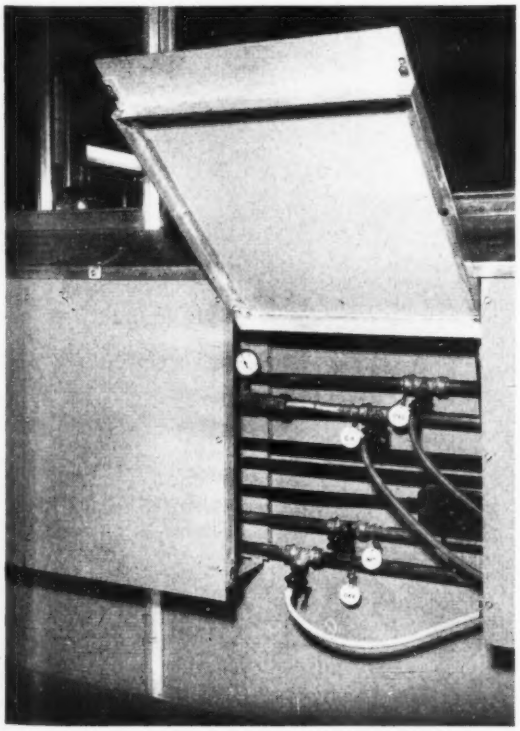


*Viewpoint 6 (left): the south elevation. On the first floor the robing rooms extend along this side of the building. Since the number of men employed is relatively small, there is additional space on the ground floor between the men's cloaks and the main entrance hall for a small suite of offices. Because of the shortage of skilled building labour in the area, the architects decided to use a prefabricated structural steel system on a 3-ft. 4-in. planning grid. This is clad externally with white spar finished precast concrete slabs and patent glazing. Viewpoint 7 (below): close-up of exterior of main entrance staircase. The infilling panels in the glazing are formed of dished aluminium sheet inner skin and Georgian wired roughcast glass outer skin, with a hermetically sealed air space between. The aluminium has been painted yellow at the eaves, white for spandrels between windows.*





*Above: in order to allow complete flexibility the process area has been divided up by aluminium framed sectional partitions which are partially glazed and infilled with enamelled hardboard. Below, detail showing how services are carried through the process area in ducts running along the partitions at low level. Access panels at intervals allow the services to be tapped off as required. This partition duct will be illustrated as a Working Detail in a later issue of the* JOURNAL.



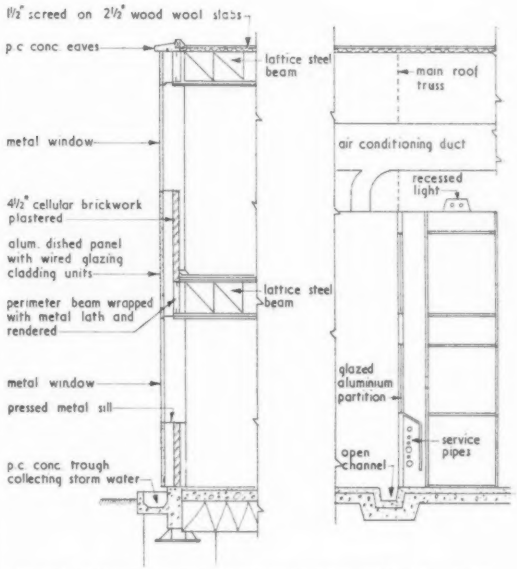
## analysis

s d

## PARTITIONING

**Internal partitions and screens** 6 2¾
All solid partitioning; prefabricated, honeycombed plaster, 4-ft. wide slabs, painted.

**Screens**
Partitions between sterile filling rooms: aluminium patent partitioning with verticals on 3-ft. 4-in. planning grid, glazed above 3 ft. 6 in. with opaque panels of enamelled hardboard. Reason: flexibility required for future alterations of partitions between filling rooms desirable.




Typical wall section and partition section [Scale: ½" = 1' 0"]

**W.c. doors and partitions**
Cloakroom: aluminium sheet, painted.

**Internal doors** 4
Timber: fire resistant where necessary, flush painted.
40 single doors and 30 double doors.

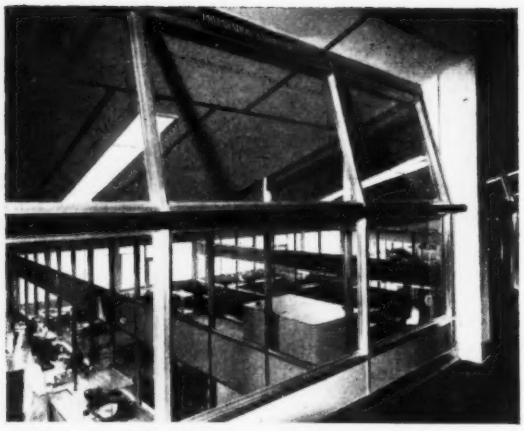
**Ironmongery to internal doors** 10¾
Anodized aluminium: door closers and door holders to most doors

## FINISHINGS

**Floor finishes** 3 7¾
Ground floor: sterile rooms in situ terrazzo.
1st floor laboratories and cloakrooms: terrazzo tiles.
Ground floor non-sterile rooms: cement based composition spread floor, polished.
1st floor non-sterile rooms; cement based composition spread floor.

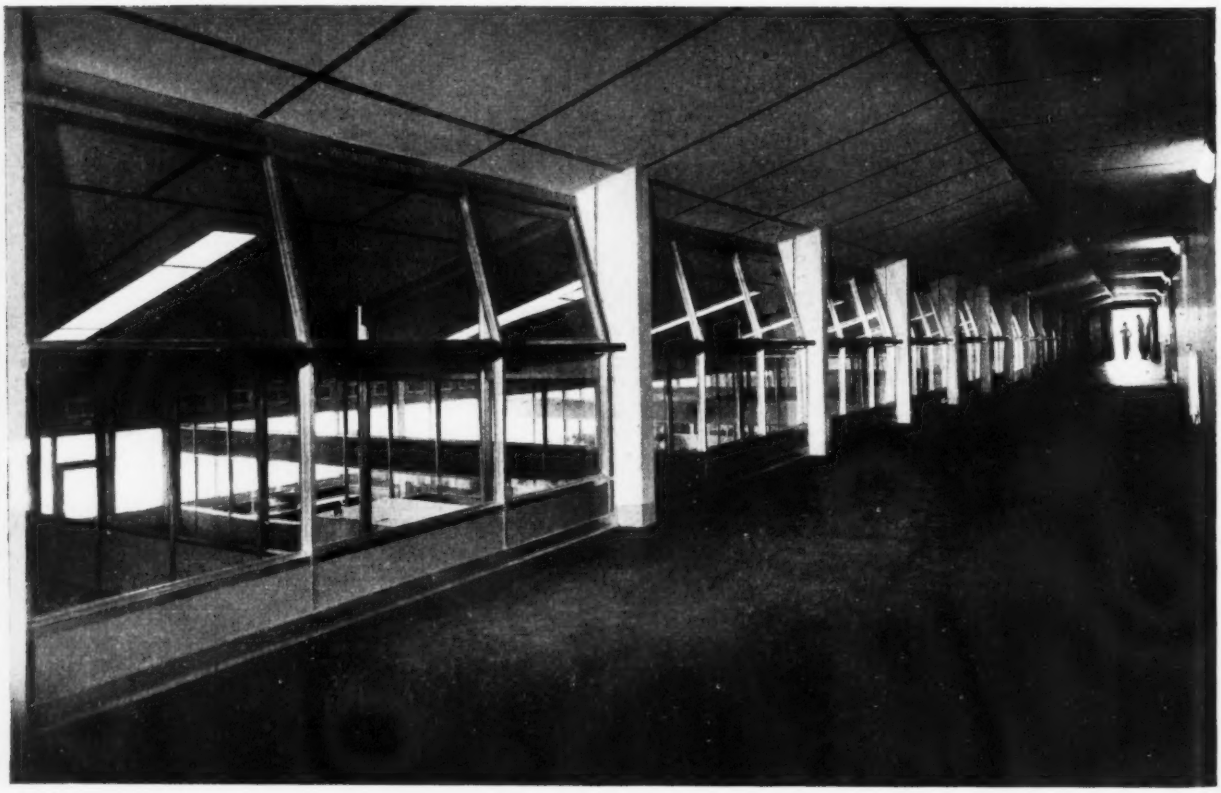
**Wall finishes**
Most wall finishes are those of the glazed partitions.
The prefabricated plaster partitions are painted with emulsion paint. Cost included in ceiling finishes

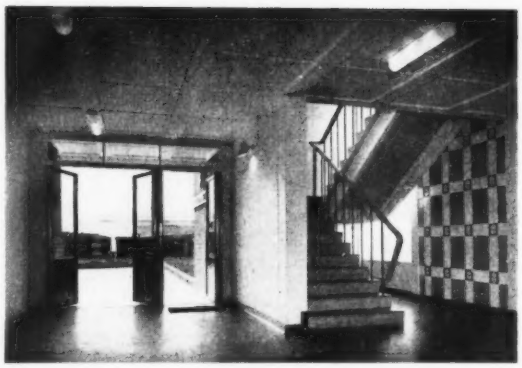
**building illustrated**



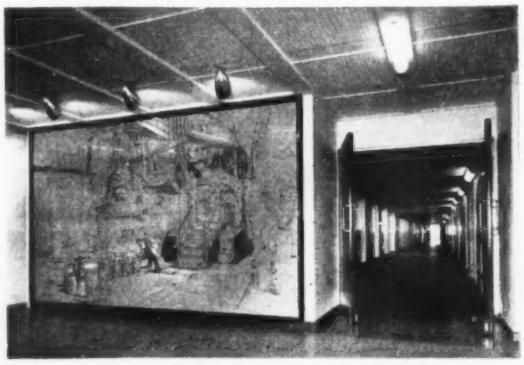
*On the first floor, at the head of the main staircase, is a small landing off which is the women's cloaks and robing room (below). Access to the robing area is exclusively across a wide bench upon*

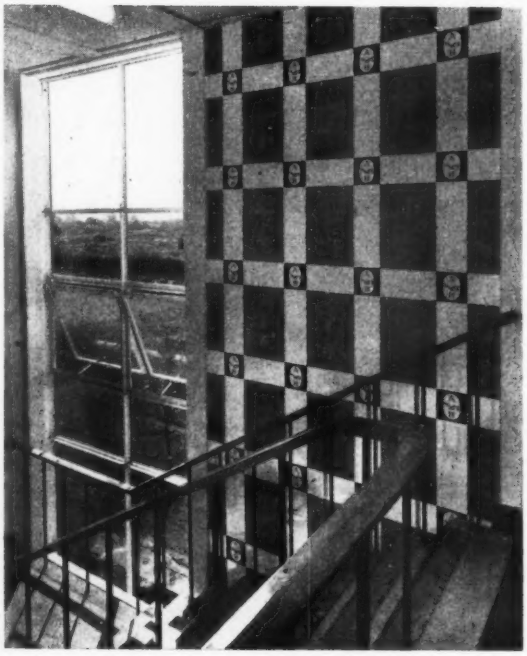
*which personnel sit to remove their footwear, and then swing round to put on special shoes on the "sterile" side. By this means no dirt is carried into the sterile parts of the building by footwear. Opening off the same lobby is a small canteen (top left) used for serving tea-breaks, the midday meal being supplied in the main factory canteen. The main first floor corridor (below) is glazed on the left-hand side to give a clear view (centre left) of the process area for the benefit of visitors and for general supervision, without the need to submit to the robing procedure.*





*Inside the entrance hall (above) is the main staircase to the first floor, and facing the external doors is a large photomural (below), printed on plastic sheeting, of a pastel by an unknown artist of the interior of the clients' original factory, which was opened early in the eighteenth century. In order to compensate as far as possible for hard finishes, such as the terrazzo floor of the entrance hall, so as to reduce the general noise level, ceilings in most ancillary spaces and circulation areas are lined with perforated plaster panels. To the right of the photomural are double doors opening on to the main ground floor corridor, with the process area on the left. The main staircase leads up to the first floor past a panel of decorative tiles (bottom).*





## analysis

| | s | d |
|---|---|---|
| **Ceiling finishes**<br>Filling rooms and corridors: ½-in. fire resistant insulation board, emulsion painted.<br>All other rooms: prefabricated plaster units spanning between 3-ft. 4-in. beams, some with decorative pattern. Reasons: to give necessary insulation from whole roof space. | 2 | 11½ |

**Decorations** 1 3½

| *Paint type* | *ref.* | | *Colour scheme* |
|---|---|---|---|
| Gloss enamel on partitions and doors | 7.5Y 9/6<br>7.5Y 8/10<br>N.8—grey | Yellow | Strong colours (blue yellow, grey, green) used on solid panels of partitions, benches and machines in main working areas. Ceiling is white and floor light grey/buff terrazzo |
| Emulsion paint on plaster and ceilings | 7.5BG 6/2<br>5.0B 7/4<br>10.0BG 5/4 | Blues | |
| Services painted BSS colours | 7.5G 3/4<br>7.5R /12 | Green | |

## FITTINGS

**Cloak rooms** 2 6½
Lockable wire hanging baskets for operatives outside clothes with special shoe racks under the " slide-over " benches in robing rooms.

**Kitchen equipment**
Existing factory canteen provides mid-day meals and is equipped with refrigerator and tea and coffee making machines.

## SERVICES

**Plumbing: external** 3½
No external plumbing on face of building. External drains in cast iron pipes. To existing drainage system within factory area.
The following services are provided throughout the building and are available under special housings on the cross partitions dividing the sterile filling rooms: electricity 3-phase, electricity single-phase, gas, nitrogen, oxygen, compressed air, vacuum and steam.

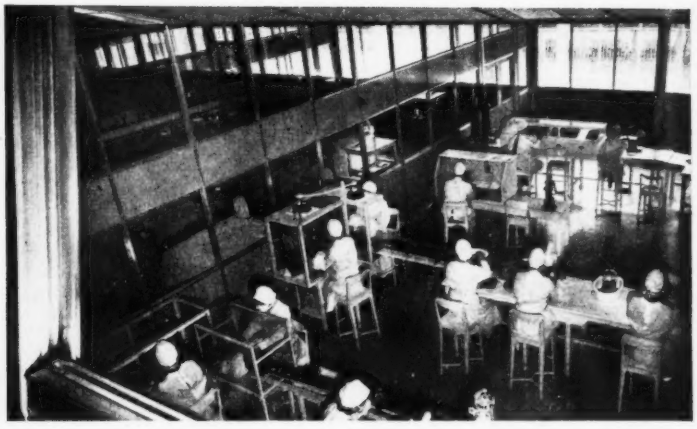
**Rain water disposal**
Internal: 6-in. cast-iron pipes, to soakpits.

**Plumbing internal: waste disposal and cold water installation** 2 11
Filling rooms: 6-in. wide open channels to falls in terrazzo floors; reason: to allow flexibility in positioning machines.
Other wastes: normal.

**Sanitary fittings** 6½
W.C.'s and washbasins, with wash fountains in robing rooms, all in salt glazed ware.

**Heating installation** 5 9½
Sterile rooms heated exclusively by ducted and cleaned warm air (see " ventilation system " on page 591)
Non-sterile rooms are heated by low pressure hot water radiators from a steam-heated calorifier in the plant room. The packing hall is heated by steam unit heaters.

**building illustrated**



*The process area has been divided off initially for three main types of activity, laboratory work (above left) and sterile process (above right), both seen in these views from the first floor corridor, and for non-sterile processes (below) where the products can be sterilized after placing in ampules or other containers, and where therefore precautions do not have to be quite so stringent. Personnel enter these latter sections from the central corridor, and not by the external "sterile" one on the west side of the process area. The whole of the process area is artificially lit by specially designed recessed fluorescent fittings which are set flush with the insulation board ceiling. The warmed and purified air is discharged into the process area from ducts running at the sides over the central and "sterile" corridors and is extracted through the ceiling. The "sterile" corridor itself and the robing rooms are also mechanically ventilated. Positive pressure is maintained throughout to prevent any leakage in of unpurified air. Colour has been introduced into the process area by painting the hardboard of the partitions yellow and blue. The ceiling has been painted white and the terrazzo floor is a light yellowish grey.*

*The first floor corridor also gives access to a small suite of special process laboratories which is mechanically ventilated and equipped in a similar manner to the main process area.*

*The plant room, which is also on the first floor, houses the mechanical ventilation equipment, calorifiers and the water softener, and space has been left for further plant as required. The plant room was placed on the first floor because it was originally intended that the air should be purified by being passed through a carbon filter bed resting above the ceiling of the process area. This method was dropped, however, during the contract in favour of cleaning by electrostatic precipitation.*

## analysis

| | s | d |
|---|---|---|
| Wall type: glazed cladding. | | |
| " U " values: | | |
| Roof type: 2½-in. and 3-in. wood wool slabs. | | |
| " U " values: 0·18 approximately. | | |
| Air temperatures throughout the building at significant points are read in plant room by means of an electrically-operated multipoint indicating thermometer. In addition, continuous records are taken of temperatures in the flow ducts, sterile rooms and externally; reason: such close control is necessary to avoid possible damage to products through over-heating. | | |
| **Boiler type** | | |
| Existing oil-fired boiler in previously built part of factory premises was installed with sufficient capacity for this new building. | | |
| **Ventilation system** | 11 | 11¼ |
| It was originally intended that air should be purified by being forced through a carbon filter bed which was to be located on the roof but this was abandoned half-way through the contract in favour of an electrostatic precipitation system. The air supplied to the sterile rooms passes through three filters: 1, a bottle brush type filter, 2, an electrostatic precipitator, 3, a high efficiency paper filter at the duct terminals. The air finally delivered to the rooms is of 99·5 per cent. sterility. The rate of air change in the rooms varies between 5 and 20 dependent on the heat liberation from the machines. The rooms are maintained at a positive pressure to prevent the ingress of untreated air. The air is heated by means of a steam heater battery and the supplied air temperature of 75 is maintained by an automatic modulating valve. | | |
| **Hot water installation** | | |
| Separate 250-gallon steam calorifiers supplied from main factory boilerhouse, with pumped circulation to fittings. Cost included in heating installation. | | |
| **Drainage** | 2 | 1 |
| Separate soil waste system into existing soil drains within the factory area. Mostly internal under building and in cast iron with bolted connections under double sealed bolted covers. | | |
| **Drain types** | | |
| Some drainage in sterile rooms is to open floor channel formed in in situ terrazzo. | | |
| Cold store with cork insulation | 2 | 3½ |
| Thermal and sound insulation required in filling rooms | 1 | 2½ |
| **Cold water installation** | 3 | 6 |
| Sectional steel tanks of 750 gallons capacity store water from clients own borehole. Supply is treated by softener at rate of up to 5 gallons per minute. Fire hydrant only is supplied from mains to provide adequate pressure. | | |
| **Gas installation** | | 6¾ |
| Supply from meter on ground floor to production areas and laboratories in m.s. pipes. Cost includes compressed air, vacuum, nitrogen and oxygen services. | | |
| **Electrical installation: source and fitting type** | 9 | 7¾ |
| Lights for sterile filling rooms specially made recessed dust-tight double 80-watt fluorescent to ceiling level; 20 lumens per sq. ft., even distribution. | | |

**analysis**

| | s | d |
|---|---|---|
| **Wiring and switching types**<br>Conduit and VRI cable, flush switches, concealed to avoid dust ledges. | | |
| **Power supply type**<br>3-phase and single-phase, sub-mains to fuseboards from main cubicle type switchboard. Cost included in electrical installation. | | |
| **Lifts**<br>Goods and passenger lift; 5 cwts. 80 ft. per minute. Access from goods corridor to first floor corridor serving research laboratories. | | 8½ |
| **Paved areas** | 3 | 2 |
| **total cost per sq. ft. floor area** | 91 | 6½ |

## SPECIAL ACOUSTICAL TREATMENT

Nil, except coffered and perforated acoustic plaster panels to some corridors and non-sterile rooms giving slight absorption. Absorption would have been desirable in main filling rooms owing to the clattering of glass vials in machines, but was not practicable because absorptive materials would not give the degree of sterility required.

## FIRE

Building divided into four sections with partition wall and doors giving required fire resistance. All stanchions to two-storey portion cased with pre-formed plaster to give 2 hours resistance. Fourteen 1-in. diameter rubber hoses from separate mains supply and automatic fire alarm system with connection back to works fire brigade. Access for Brigade from perimeter road, Access to roof space from both inside and outside building. Panic type door bolts to exit doors along west personnel access corridor and from packing hall. Similar doors from plant room and first floor corridor to roof.

## TIME SCHEDULE

| *Drawings (final)* | *Tender date* | *Contract signed* |
|---|---|---|
| August, 1954—December, 1954 | February, 1955 | March, 1955 |
| *Work commenced* | *Work completed* | *Type of contract* |
| April, 1955 | December, 1956 | RIBA standard |

Sketch designs started in January, 1954. Main sub-contractors for structure were approached in August, 1954 and sub-contractors for partitioning which had to involve complex services layout were also appointed previous to main contract being issued.

## RATIOS

$$\frac{\text{Area of enclosing walls}}{\text{Total floor area}} = \frac{0{\cdot}6552}{1}$$

$$\frac{\text{Area of windows (including external doors)}}{\text{Total floor area}} = \frac{0{\cdot}1552}{1}$$

$$\frac{\text{Area of solid wall}}{\text{Total floor area}} = \frac{0{\cdot}2985}{1} \qquad \frac{\text{Total roof area}}{\text{Total floor area}} = \frac{0{\cdot}7314}{1}$$

## COST SUMMARY

| | |
|---|---|
| Total ground floor area | 22,650 sq. ft. |
| Total floor area | 33,490 ,, |
| Tender date | February, 1955 |
| Price of work above ground floor level | £141,155 |
| Price of foundations | £6,651 |
| Price of external works | £5,494 |
| Gross total price | £153,300 |
| Price per sq. ft. of floor area (prices based on tender) | £4 11s. 6½d. |

## COST COMMENTS

The block has been built within an existing factory, which meant savings on certain elements; for example—drainage. Runs are taken into the existing mains. In "fittings" the use of an existing kitchen avoids the provision of all but a few kitchen fittings, and in "heating" the full capital cost of the hot-water installation is avoided by taking a supply from the main boiler house. The standard of hygiene required has affected the majority of the elements and in particular finishings and internal partitions, the cost of which includes decorations. The main bulk of the cost per ft. super is, however, to be found in the following three elements: Frame 13s. 7½d., Heating and ventilation 17s. 9d. and Electrics 9s. 7¼d.

The cost of the steel frame must be weighed against its flexibility, speed of erection and the demands on local labour. In addition the roof element which it carries (ratio 0·73) is relatively inexpensive at a unit rate of 4s. 0½d.

$\frac{}{0{\cdot}73}$ = 5s. 6d. per ft. super.

The electrical installation includes not only a high standard of lighting but also the cost of dust-tight fittings. Of the total cost of 9s. 6½d. per ft. super, 41·5% has gone into services, 40·5% into structural elements and the balance of 18% into the remaining elements. One point to conclude: the price for external walling appears to represent only the outer skin.

## CONTRACTORS

*Clerk of works:* C. W. Pindard. *Foremen:* A. H. Porter and W. Nurse. *General Contractors:* Kerridge (Cambridge) Ltd. *Sub-contractors—Steelwork, prefabricated flooring, external cladding, prefabricated plaster partitions and ceilings:* Hills (West Bromwich) Ltd. *Heating, air conditioning and mechanical services:* Matthew Hall & Co. Ltd. *Aluminium unit partitioning:* Unilock Partitions Ltd. *Electric wiring:* The Phoenix Electrical Co. (London) Ltd. *External mains:* A. G. Manly & Co. Ltd. *Roofing:* Wm. Briggs & Sons Ltd. *Terrazzo flooring:* The Standard Pavements Co. Ltd. *Patent flooring:* Semtex Ltd. *Ceilings:* Wm. Brown & Co. (Ipswich) Ltd. *Electric light fittings:* Courtenay Pope Electrical Ltd. and Crompton Parkinson Ltd. and S.L.F. Ltd. *Door furniture:* Comyn Ching (London) Ltd. *Telephones, loudspeakers and bells:* Telephone Rentals Ltd. *Sanitary fittings:* B. Finch & Co. Ltd. *Folding doors:* Roller Shutters Ltd. *Staircase balustrades:* Borough Engineering Works Ltd. *Fire alarm system:* Associated Fire Alarms Ltd. *Joinery:* Kerridge (Cambridge) Ltd. *Laboratory furniture:* Grundy Equipment Ltd. *Cloakroom fittings:* James Seiber Equipment Co. Ltd. *Lifts:* Evans Lifts Ltd. *Signs:* H. H. Brown & Sons. *Water softening plant:* The Permutit Co. Ltd. *Paint:* Imperial Chemical Industries. *Special hand-painted tiles:* Bryon & Co. Ltd. *Canteen furniture:* Pel Ltd. *Sun blinds:* J. Avery & Co. Ltd. *Photo-mural:* Warerite Ltd.

working detail



## ACOUSTIC SCREEN: CITY HALL, COPENHAGEN

*Poul Ernst Hoff and Bennet Windlage, architects*

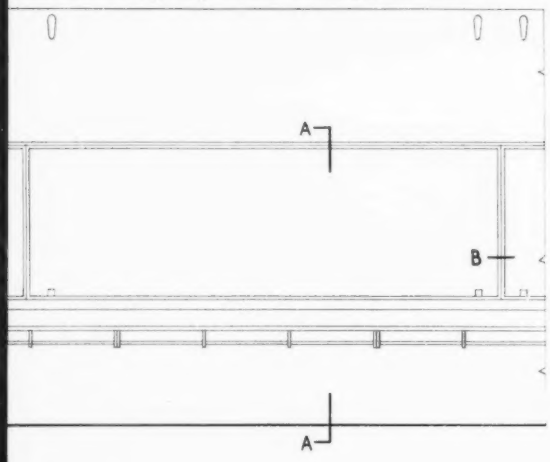
*The screen separates the press gallery from the council chamber in Copenhagen's City Hall. There are three screens in all, operated from an adjoining room by an elaborate system of pulleys. Each screen is raised and lowered by four $\frac{3}{16}$-in. wires, grouped in pairs. When a screen is to be raised two fixing blocks suspended on wires are lowered from the ceiling and are engaged by hand in the two countersunk holders near the bottom corners of the screen. The screen is then raised until it is almost flush with the sloping ceiling. The screens are faced on the council chamber side with oiled reeded teak boarding to match the other walls of the room, and on the press gallery side with plywood painted dark green.*

working detail

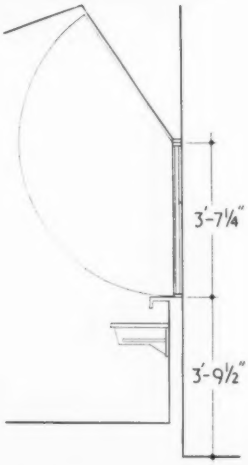


# ACOUSTIC SCREEN: CITY HALL, COPENHAGEN

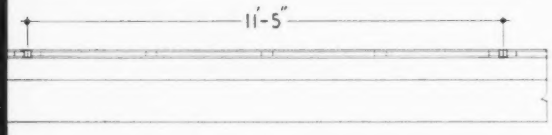
*Povl Ernst Hoff and Bennet Windlage, architects*




ELEVATION




SECTION.




PLAN. scale ¼" = 1'-0"




DETAIL AT B.

SECTION A–A. scale ¼" full size

note: figured dimensions in feet and inches are approximate

working detail



## BENCH STERILIZER: HOSPITAL IN LONDON, S.E.1

*W. G. Holford and L. G. Creed, architects*

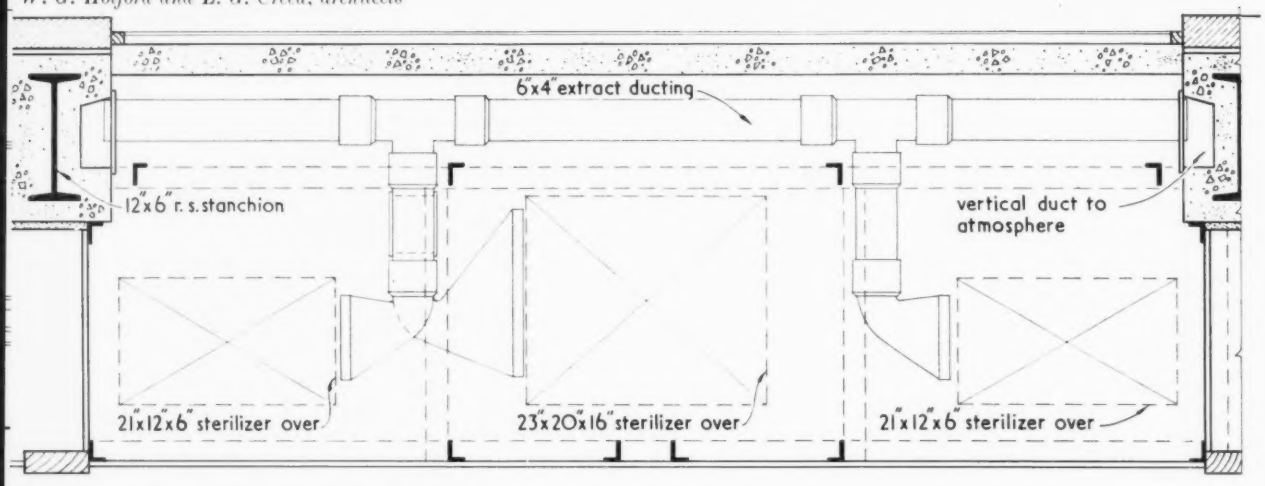
*This is a good example of how complex equipment can be organised into a neat architectural setting. The sterilizers (or autoclaves, as they are commonly called) are steam heated but, to guard against failure while an operation is going on, alternative emergency gas heating had to be provided. This required flues (which are accommodated in the solid piers) and required also quick access behind the panels. This was obtained by quick hand-release turnbuckles with bayonet-type fixing in the lower panels (one of which has been removed in the photograph). The panels themselves are of asbestos cement with stove-enamelled finish (matt black) and with stainless steel edging. The round discs in the corners of the upper panels are chromium-plated brass covers to key-operated bayonet-type fixings.*

working detail

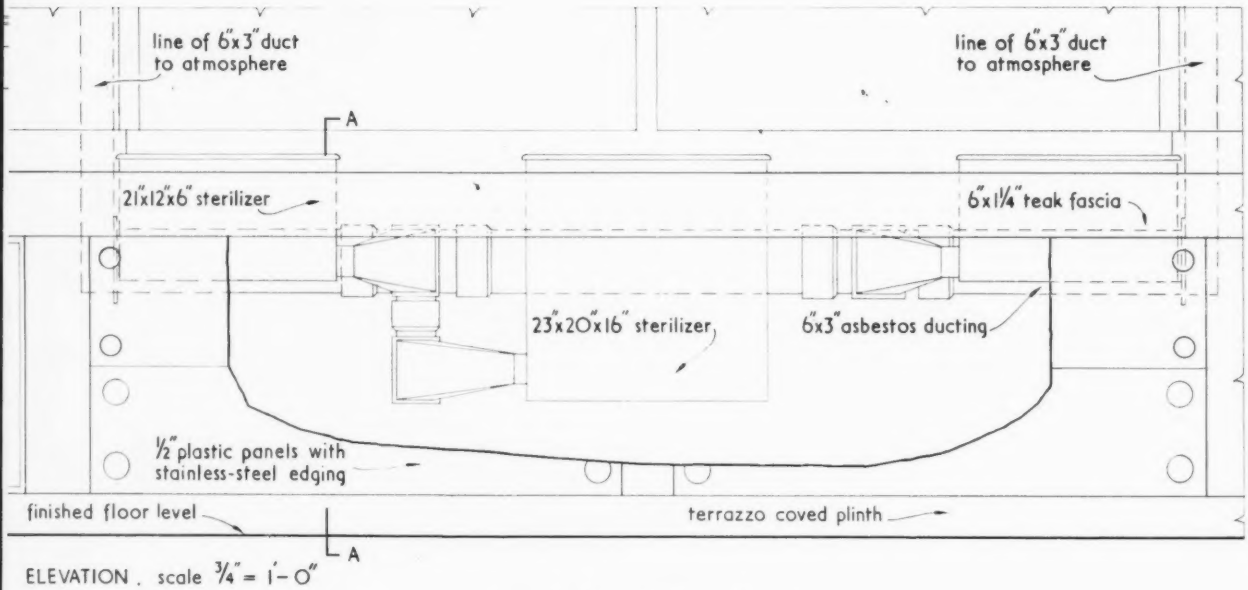


# BENCH STERILIZER: HOSPITAL IN LONDON, S.E.1

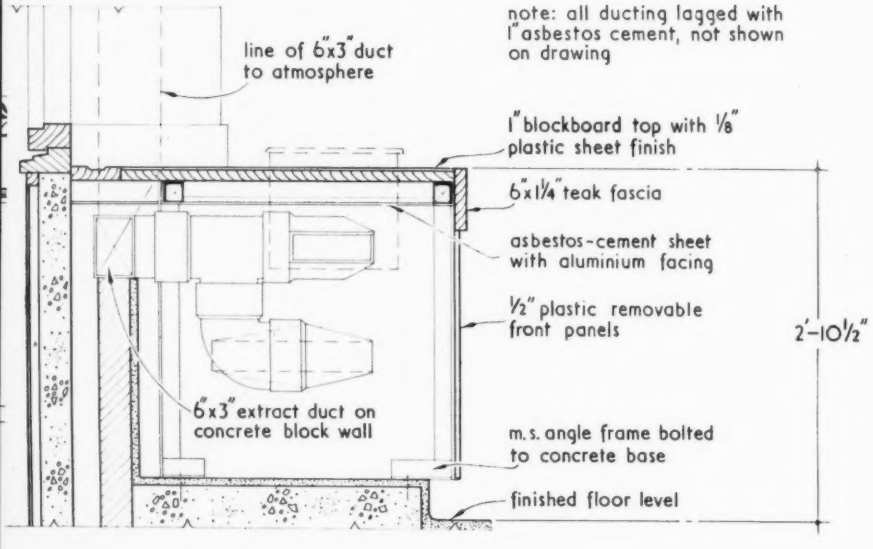
*W. G. Holford and L. G. Creed, architects*



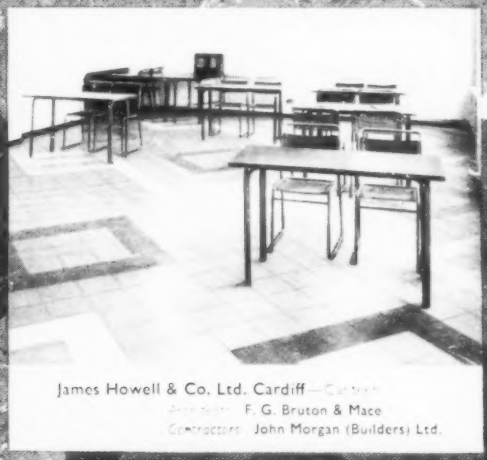

PLAN BELOW BENCH TOP. scale 3/4" = 1'-0"




ELEVATION. scale 3/4" = 1'-0"




SECTION A-A. scale 3/4" = 1'-0"



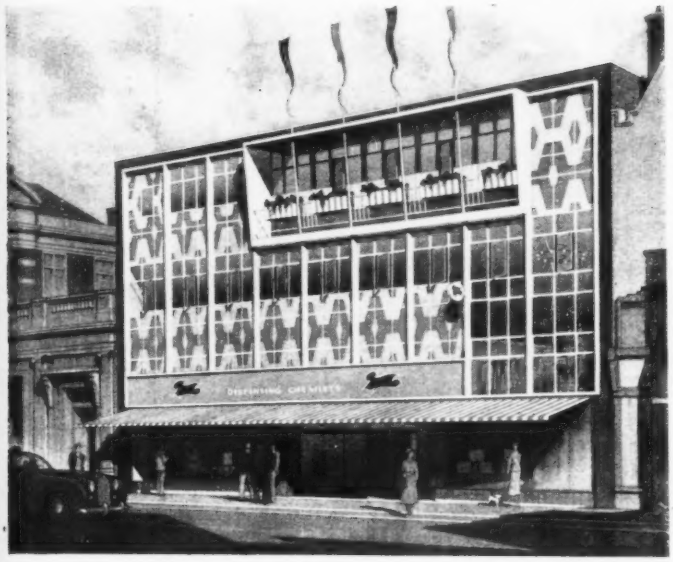
James Howell & Co. Ltd. Cardiff—
Architects: F. G. Bruton & Mace
Contractors: John Morgan (Builders) Ltd.

# Show *floorthought* with MARLEY tiles

M C

*On A*
*summ*
*by C*
*W.1,*
*and*
*Navy*

# MORE BUILDINGS AT THE ROYAL ACADEMY




*On May 9 we published a selection of pictures from the Royal Academy's summer exhibition. Here are three more. Above: shop premises at Lewisham, by Colin St. C. Oakes. Above right: cinema and flats in Curzon Street, W.1, on the site of the present Curzon cinema, by Sir John Burnet, Tait and Partners. Right: offices, Brewer's Quay, for the General Steam Navigation Company, Ltd., by Brian O'Rorke.*

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# Announcements

## PROFESSIONAL

Geoffrey J. Cash, A.R.I.B.A., has commenced practice at 3, Wards End, Halifax, where he will be pleased to receive trade catalogues, etc.

Raglan Squire (F) & Partners are continuing to retain the consultancy services of William Whitfield, A.R.I.B.A., who has now commenced partnership with Sergei Kadleigh, A.R.I.B.A., under the name of Kadleigh and Whitfield.

## TRADE

H. Newsum Sons & Co. Ltd., of Gainsborough, Lincoln and London announce that A. R. F. McGahan, A.M.I.C.E., A.R.I.B.A., A.M.I.P.H.E., M.R.S.H., Chartered Civil Engineer, is taking charge of their Structural Engineering Department.

# Corrections

In the cost analysis for the laboratories at Welwyn Garden City, designed by D. Jefferiss Mathews, illustrated in the JOURNAL for April 25, 1957, cost per sq. yd. of coloured granolithic flooring and grey granolithic were given as 191s. and 167s. respectively. These figures should have read 19s. 1d. and 16s. 7d. respectively.

In the AJ for May 9, on page 700, it was stated that D. H. Lanham of Uxbridge had received an honourable mention by Professor R. Gardner-Medwin in the Paisley Technical College Competition. This should have been attributed to E. A. Barber of Barking as well as Mr. Lanham. On the same page there was a spelling mistake in the name of the firm Hammett and Norton, who were also commended entrants in the same competition.


*Architects: Thomas Mitchell & Partners*

**A thousand dinners a day off CATESBYS lino**

In Maidenhead's new super-market a thousand shoppers a day buy their groceries off Catesbys lino. No wonder! For this is an easy and pleasant way to shop—but one that creates special problems of flooring. This is where Catesbys come in with their unsurpassed experience of lino and lino laying—sixty years of it! Next time you think of lino think of Catesbys to do it for you.

**Catesbys** LINOLEUM CONTRACTS

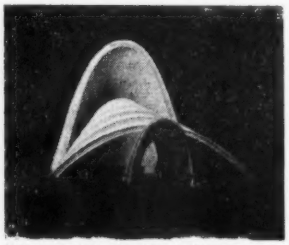
TOTTENHAM COURT ROAD · LONDON W.1 · MUSEUM 7777

## AMERICA

A *personnage* assembled from scraps of American advertisements and spitting ticker-tape on the cover of the May ARCHITECTURAL REVIEW will announce the theme of a special issue on **Machine Made America,** compiled, explained and assessed by the REVIEW's executive editor, Ian McCallum, whose previous foray into the American scene caused raised eyebrows and raised voices when its results appeared in print as a special issue of the REVIEW under the title *Man Made America,* this new survey, based on a study of architecture rather than the wider scene of land- and townscape, will scrutinise the aesthetics and the technics of the curtain wall as an example of what happens to one of the cherished dreams of the Modern Movement when it finally becomes commercially practicable, and becomes part of the available *syntax* of architecture. After this it will survey the diverse, original stimulating and experimental work of individuals and individualists from Coast to Coast, a body of work that is the *genetrix* of architectonic ideas without which the industrial contribution may prove sterile and short-lived.

**Machine Made America** will conclude by attempting to fit both industrialist and individualist into the *matrix* of the wider scene of world architectural development in this century and of American culture in the age of mass-production.

*The Seagram Building, New York.*



*Concrete shell church by J. Johansen.*



## COUNTER ATTACK GROTESQUE OLIVETTI

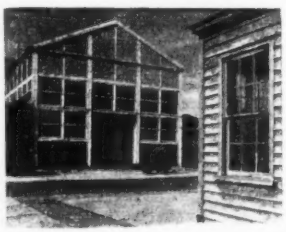
Ian Nairn, of *Outrage* fame, will contribute a first essay on the aims and objectives of the newly-formed **Counter-Attack Bureau,** to the June issue of the ARCHITECTURAL REVIEW, and make proposals for positive anti-Outrage policies for the threatened suburban village-centres of Ewell, Colnbrook and Huyton. Two widely diverse Italian subjects to be discussed in the same issue will be the grotesque statuary and architecture of the Orsini garden at **Bomarzo,** considered iconographically by Dr. S. Lang, and the impressive and intelligent record of patronage in architecture, the arts, and design, of **Adriano Olivetti,** considered biographically by Georgina Masson. New buildings in this issue will be as different in type and place as the **Golden Lane** development by Chamberlin, Powell and Bon, and the **Museum at Accra** by Drake and Lasdun; the old buildings of the month will be **Baimes House,** Hackney; a forgotten, but representative piece of artisan mannerism which will be described and discussed by Priscilla Metcalf, and those in **Halifax Street,** Sydenham, another threatened area that comes within *Counter-Attack's* purview. *Skill* features of the month include a broad survey of food-preparation equipment, and in *Miscellany* Robert Melville contributes, as usual, his column of off-beat opinions on the world of art-galleries and exhibitions.

*Subtopian Mess at Colnbrook.*

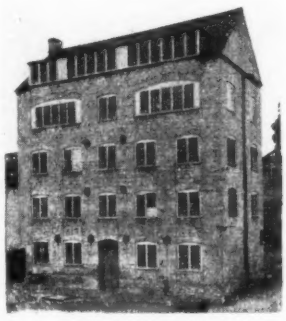
*Golden Lane, by Chamberlin, Powell and Bon.*

## EARLY INDUSTRIAL

Mills, docks and harbours, warehouses, fences and gates, railways and canals—all bear witness to the theme of July's special issue of the REVIEW, *The Functional Tradition,* compiled and edited by J. M. Richards. In our present need to consolidate the results of the technical revolution that has overwhelmed architecture in this century, we need the discipline of an unconscious vernacular, a simple way of doing things simply, and we have no better guide for this than the monuments of the functional tradition that dot the country from end to end, even in the most remote and rural areas. The tradition is not limited to any material—with its wooden water-mills, its brick warehouses, its iron framed naval boatsheds, its stonework by canal and railway—it had the adaptability we admire in the great masters of today, fitting together material, function and form, but into an unselfconscious unity. Most architects know of the great tradition's existence, have seen one or two textbook examples illustrated, have discovered one or two favourites of their own, but in *The Functional Tradition* they will find for the first time a systematic analysis of the nature and value of the tradition, supported by the results of an extended photographic campaign by Eric de Maré, which has rescued many unknown and forgotten buildings from undeserved obscurity, and also set on record for the first time the little known architecture of the warehouses, rope walks and other buildings in the dockyards of the Royal Navy.



*Sheerness Naval Dockyard: cast iron frame extension,* 1858



*Bentley's piano factory, Nailsworth, near Stroud.*

# 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

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

NATAL PROVINCIAL ADMINISTRATION
VACANCIES FOR TOWN PLANNING OFFICERS, ON CONTRACT

Applications are invited for appointment as Town Planning Officer on contract for 5 years, if married, or for 3 years, if single, in the Town and Regional Planning Commission, Pietermaritzburg, Natal, South Africa, with salary on the scale £570×£30—£810×£42—£1020 or the scale of £1080×£60—£1260, depending upon qualifications and previous appropriate experience.

2. In addition to basic salary, a temporary cost of living allowance is payable to married men only, at the prescribed Public Service rates. The present rate is £234 per annum but is subject to the regulations governing the payment of the allowance.

3. Candidates must possess a recognized diploma in town planning gained as a post-graduate qualification after obtaining a recognized university degree in civil engineering, architecture or land surveying, and preference will be given to those with some experience of town and/or regional planning practice. Candidates who are in possession of other town planning qualifications may also be taken into consideration. Appropriate post-graduate experience will be taken into consideration in determining the commencing salary on the following basis:—

| | |
|---|---|
| Nil | £570 |
| One year | £630 |
| Two years | £690 |
| Three years | £750 |
| Four years | £810 |
| Five years | £1080 |
| Six years | £1140 |
| Seven years | £1200 |
| Eight years | £1260 |

(Candidates with at least five years' experience will be considered for appointment as Town Planning Officer, Grade III, on contract).

4. Transport for the successful applicant and his wife and children, if any, will be paid from his place of residence in the United Kingdom to Pietermaritzburg. He will also be paid an allowance at a rate equivalent to the basic salary payable in respect of the period necessarily occupied in travelling from his place of residence to the place in the Union of South Africa where he is required to assume duty. Upon completion of the prescribed contract period his return passage to the United Kingdom, if so desired, will be paid.

5. Applications should be addressed to the Immigration Attaché, South Africa House, Trafalgar Square, London, W.C.2, from whom the appropriate application forms as well as further detailed information can be obtained. 6282

BOROUGH OF RHONDDA

Applications are invited for the appointment of ASSISTANT ARCHITECT in the Department of the Borough Housing Architect, at a salary in accordance with the National Joint Council Scales for Engineering, Surveying and Architectural Assistants (£707 5s. 0d. to £861 0s. 0d. per annum).

Applicants should hold as a minimum qualification the R.I.B.A. Intermediate Examination with suitable practical experience in an Architectural Office.

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

Applications on forms to be obtained from Mr. C. Gingell, A.R.I.B.A., A.R.I.C.S., 13, Ystrad Road, Pentre, Rhondda, accompanied by two recent testimonials, are to be sent to the undersigned in plain envelopes endorsed "Assistant Architect," so as to arrive not later than Monday, 3rd June, 1957.

D. J. JONES,
*Town Clerk.*

Municipal Offices,
Pentre, Rhondda.
May 14, 1957. 6295

ARCHITECTURAL ASSISTANTS with three years' training, experience in Architect's Office, of Intermediate R.I.B.A. standard and with a keen interest in Historic Architecture required by Ministry of Works Historic Buildings and Ancient Monuments Drawing Offices, London. Applicants must have surveying experience and a sound knowledge of construction. Work involves Surveying and Preservation of Ancient Monument and Historic Buildings.

Pay between £500 and £790 per annum, according to age and experience. Five-day week, 3½ weeks annual leave. Prospects of promotion and permanency.

State age, qualifications and experience to Chief Architect, Ministry of Works (D), Room 439, Abell House, London, S.W.1. 6255

CITY OF WORCESTER
CITY ENGINEER AND SURVEYOR'S DEPARTMENT
APPOINTMENT OF BUILDING MAINTENANCE SURVEYOR

Applications are invited for this appointment on the staff of the City Engineer & Surveyor within Grade A.P.T. II (salary £609 17s. 6d. × £20 10s. 0d. to £691 17s. 6d.).

Candidates should have a good knowledge of building works and should be capable of preparing reports, estimates and specifications and of supervising all types of building maintenance and minor building works.

The post is superannuable and the successful candidate will be required to pass a medical examination.

Housing accommodation will be made available if required and a contribution towards the payment of removal expenses will also be made where reasonably incurred.

Further particulars of this appointment may be obtained from the City Engineer and Surveyor, 22, Bridge Street, Worcester, to whom all applications should be made stating age, experience, and present appointment, together with the names of two referees. Applications are to be delivered to the City Engineer and Surveyor not later than 4th June, 1957.

BERTRAM WEBSTER,
*Town Clerk.*

Guildhall,
Worcester. 6296

METROPOLITAN BOROUGH OF CAMBERWELL
ASSISTANT ARCHITECT
BOROUGH ARCHITECT'S DEPARTMENT

Salary in one of the A.P.T. Grades ranging from Grade A.P.T. III to Grade A.P.T. VII according to qualifications and experience (salary range £686—£1,260). The work of the department includes design and construction of public buildings, housing estates, including multi-storey construction. Application form from Town Clerk, Town Hall, Camberwell, S.E.5. Closing date Wednesday, 5th June, 1957. 6337

BOROUGH OF FARNWORTH
ARCHITECTURAL ASSISTANT

Applications are invited for the appointment of Architectural Assistant in the Borough Engineers' Department, at a salary within the Special Grade for Architectural Assistants (£707 5s. 0d. to £861 per annum).

The appointment is permanent and subject to the provisions of the Local Government Superannuation Act, 1937, the National Joint Council Scheme of Conditions of Service, the passing of a medical examination and to one month's notice on either side.

Applications, on forms to be obtained from the undersigned, to be returned to me not later than 7th June, 1957.

THOMAS HITCHEN,
*Town Clerk.*

Town Hall,
Farnworth, Lancs. 6336

ISLE OF WIGHT COUNTY COUNCIL

Applications are invited for the following established appointments in the County Architect's Department:—

(*a*) HEATING ENGINEER—Grade VI A.P.T., salary £902—£1,107. Candidates should hold the A.M.I.H. and V.E. or equivalent and be capable of supervising the working of existing and of designing all new major installations (experience in connection with electrical installations would be an advantage). Travelling allowance on Council's scale payable for use of car.

(*b*) SENIOR ASSISTANT ARCHITECT—Salary within range A.P.T. V-VI (£814 17s. 6d.—£1,107). Candidates should hold the A.R.I.B.A. or equivalent and preferably have had considerable experience in the planning, design and construction of schools and other local authority work.

(*c*) ARCHITECTURAL ASSISTANT—Grade III A.P.T. (£656—£784 2s. 6d.). Candidates should be good draughtsmen, capable of preparing plans, details and specifications for general architectural work and possess as a minimum the R.I.B.A. Intermediate or equivalent.

Application forms, obtainable from the Clerk of the County Council, County Hall, Newport, I.W., must be returned not later than the 10th June, 1957. 6303

GLOUCESTERSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

(A). DIVISIONAL ARCHITECT, Grade "A" (£1,210×£55—£1,320). Applicants should be associated members of R.I.B.A. and have wide experience in projects usually dealt with by a County Council. The successful candidate will be in charge of a Division of the County and will be responsible for all work carried out in that Division.

(B). ARCHITECTURAL ASSISTANTS (Qualifying Class) in A.P.T. Grade II (£609 17s. 6d.—£691 17s. 6d.) III (£656—£784 2s. 6d.). Special (£707 5s.—£861), or IV (£727 15s.—£907 2s. 6d.) according to qualifications. Applicants for Grades II and III must have passed Intermediate Examination of R.I.B.A. and for Special and Grade IV the Final Examination.

N.J.C. Service Conditions, Superannuation, Medical Examination.

Apply giving age, present position, salary and date of appointment, previous appointments, names and addresses of two persons for reference to County Architect, Shire Hall, Gloucester, by 8th June, 1957.

GUY H. DAVIS,
*Clerk of the County Council.* 6335

CITY OF SHEFFIELD EDUCATION COMMITTEE
COLLEGE OF COMMERCE AND TECHNOLOGY

Required for September, 1957, in the Department of Building:—

(*a*) LECTURER in General Building and Quantity Surveying subjects in the full-time and advanced courses.

(*b*) LECTURER in Mathematics and Science subjects in the full-time (Sandwich) courses in Building and Civil Engineering, and advanced part-time courses.

(*c*) ASSISTANT (Grade B) to teach Plastering and Craft ancillary subjects.

Candidates should possess for post (*a*) Membership of the Royal Institution of British Architects, the Royal Institution of Chartered Surveyors or the Institute of Builders, with practical experience; for (*b*) good academic or professional qualifications and industrial experience; for (*c*) City and Guilds Full Technological Certificate in Plasterers' Work and good industrial experience.

Salaries in accordance with the Burnham Technical Scales (for Lecturers £1,200 × £30—£1,350; for Assistants (Grade B) £650 × £25—£1,025).

Forms of application may be obtained with further particulars from the undersigned (s.a.e.) at P.O. Box 67, Sheffield, to whom they should be returned as soon as possible.

STANLEY MOFFETT,
*Director of Education.* 6299

MIDLANDS ELECTRICITY BOARD

Fourth Assistant Engineer (Assistant Building Superintendent) required in the Birmingham & District Sub-Area.

Applicants should have had an extensive experience in the supervision of all building maintenance and constructional work, principally associated with Offices, Showrooms, Depots and Substations. A full apprenticeship should have been served in the Building Trade and a knowledge of labour conditions and prices of materials is essential.

Salary £815/£860 per annum (N.J.B. Grade M.13) Superannuable.

Apply by letter, within fourteen days, stating age, experience, salary and present position to Emil Braathen, Sub-Area Manager, Midlands Electricity Board, 14, Dale End, Birmingham, 4.

A. STEPHENS,
*Secretary.* 6334

COUNTY BOROUGH OF SOUTHEND-ON-SEA
BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the undermentioned posts of:—

SENIOR ASSISTANT ARCHITECT, Grade A.P.T. VI, £902 × £41—£1,107.

ASSISTANT ARCHITECT, Grade A.P.T. IV, £727 15s. 0d. by annual increments of £35 17s. 6d. to £907 2s. 6d. per annum.

ARCHITECTURAL ASSISTANT, Salary Scale rising to a maximum of £691 17s. 6d. per annum.

ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. IV, £727 15s. 0d. by annual increments of £35 17s. 6d. to £907 2s. 6d. per annum.

ASSISTANT QUANTITY SURVEYOR, Special Classes Grade, £707 5s. 0d. by annual increments of £30 15s. 0d. to £861 0s. 0d. per annum.

Candidates must be suitably qualified and experienced.

The appointments will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service so far as adopted by the Council. Medical examination.

Applications, stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, forthwith.

Canvassing will disqualify. Any candidate who is related to member or officer of the Council is required to disclose the fact.

ARCHIBALD GLEN,
*Town Clerk.* 6300

DENBIGHSHIRE EDUCATION AUTHORITY
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of a TEMPORARY CLERK OF WORKS to supervise the PROPOSED CONVERSION TO A BILATERAL SCHOOL OF THE GRAMMAR SCHOOL, LLANGOLLEN. The salary will be up to a maximum of £16 per week, depending upon the experience of the successful candidate. Applicants must have had considerable experience in the erection of reinforced concrete framed buildings. Subject to satisfactory service and to one month's notice on either side, the appointment will be for the duration of the above works (approximately two years). The successful applicant will be required to reside in the Llangollen area.

Applications, giving age, qualifications and particulars of present and previous appointments, accompanied by copies of three recent testimonials, should be sent to me by 14th June, 1957.

W. E. BUFTON,
*Clerk of the County Council*

County Offices, Ruthin. 6347

KENT COUNTY COUNCIL

Applications are invited for appointment of an ASSISTANT ARCHITECT at a salary within the scale £814—£994 a year. Candidates must be Associates of the Royal Institute of British Architects and have had good experience in the design and construction of modern buildings. Application forms from the County Architect, Springfield, Maidstone. Closing date 6th June, 1957. 6339

**BOROUGH OF HESTON AND ISLEWORTH**

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

(*a*) SENIOR ARCHITECTURAL ASSISTANT (Grade A.P.T. V—£814 17s. 6d.—£944 5s. per annum).

(*b*) SENIOR ARCHITECTURAL ASSISTANT (Grade A.P.T. IV—£727 15s.—£907 2s. 6d. per annum).

(*c*) ARCHITECTURAL DRAUGHTSMAN (Grade A.P.T. I-II—£543 5s.—£691 17s. 6d. per annum).

London weighting is payable in addition.

Applicants for (*a*) and (*b*) must have had good experience in architectural design and building work under construction, applicants for (*a*) must have passed the examination for the Associateship R.I.B.A. or hold a University degree or diploma in architecture accepted by that Institute, and preference will be given to applicants for (*b*) who are similarly qualified.

Applicants for (*c*) should be capable and expeditious draughtsmen with architectural experience.

The Council is unable to assist with housing accommodation.

Applications are to be submitted by 3rd June, 1957, on forms to be obtained from and returned to the Borough Engineer and Surveyor, 88, Lampton Road, Hounslow.

D. MATHIESON,
*Town Clerk.*

Town Hall,
Hounslow. 6220

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**BOROUGH OF OLDBURY**
**BOROUGH SURVEYOR'S DEPARTMENT**
**ARCHITECTS' SECTION**

Applications are invited for the following appointments in the Architects' Section of the Borough Surveyor's Department:—

(*a*) CHIEF QUANTITY SURVEYOR, Grade A.P.T. V (£814 7s. 6d.—£994 5s.).

(*b*) ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. III (£656—£784 2s. 6d.).

Candidates for appointment (*a*) should be qualified Quantity Surveyors with a practical knowledge of building contract procedure and experience in the preparation of estimates, bills of quantities, valuations for interim certificates and settling final accounts for all types of local authority building contracts.

Candidates for appointment (*b*) should have reached Intermediate standard of the Royal Institute of Chartered Surveyors, with practical experience in the preparation of bills of quantities and the settlement of builders' accounts.

The appointments will be superannuable, subject to the National Conditions of Service and to the selected candidates 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 Friday, 7th June, 1957.

Housing accommodation may be considered if desired.

KENNETH PEARCE,
*Town Clerk.*

Municipal Buildings,
Oldbury,
Nr. Birmingham.
10th May, 1957 6287

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**CITY OF CANTERBURY**

Applications are invited for the following temporary appointments:—

(*a*) ASSISTANT ARCHITECT, Special Grade (£707 5s.—£861).

(*b*) ARCHITECTURAL ASSISTANTS, Grade A.P.T. II (£609 17s 6d.—£691 17s. 6d.).

Applicants for appointment (*a*) must have passed Parts I and II of the R.I.B.A. final examination or the equivalent and be competent designers on contemporary work.

Applicants for appointment (*b*) must have passed the R.I.B.A. Intermediate examination.

The successful candidates will be engaged on the design and erection of a new Technical College.

The commencing salary for all positions will be fixed within the Grades according to ability and experience.

Applications, together with the names of two referees, must reach the City Architect & Planning Officer, Mr. J. L. Berbiers, A.R.I.B.A., A.M.T.P.I., not later than Saturday, 1st June, 1957.

Canvassing will disqualify.

J. BOYLE,
*Town Clerk.*

Municipal Buildings,
Canterbury. 6250

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**BOROUGH OF WALTHAMSTOW**
**BOROUGH ARCHITECT, ENGINEER AND SURVEYOR'S DEPARTMENT**
**SENIOR ASSISTANT ARCHITECT**

Applications are invited for the above appointment in the Department (F. G. Southgate, A.R.I.B.A., M.I.Mun.E., A.M.T.P.I., Borough Architect, Engineer & Surveyor).

The salary for the post will be in accordance with A.P.T. Grade V (£844 17s. 6d.—£1,024 5s. 0d., inclusive of London Weighting), with the commencing salary according to experience.

Applicants must be Registered Architects and have had experience of large housing schemes.

Applications with the names of two persons for reference should be received by the undersigned not later than noon on Saturday, 1st June, 1957, endorsed "Senior Assistant Architect."

G. A. BLAKELEY,
*Town Clerk.*

Town Hall,
Walthamstow, E.17.
May 8, 1957. 6313

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**BOROUGH OF BRENTFORD AND CHISWICK**
**APPOINTMENT OF ASSISTANT ARCHITECT**

Applications are invited for the above appointment at a salary in accordance with Grade APT II (£609.17.6 to £691.17.6) plus London Weighting allowance, the commencing salary dependent upon experience. The post offers excellent opportunities for gaining architectural training and experience.

Form of application, which is to be returned not later than Monday, 3rd June, 1957, can be obtained from the Borough Engineer, Town Hall, W.4.

W. F. J. CHURCH,
*Town Clerk.*

Town Hall,
Chiswick, W.4. 6343

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**COUNTY BOROUGH OF WALSALL**
**PUBLIC WORKS DEPT.**

Applications are invited for the appointment of ASSISTANT ARCHITECT, Special Grade, at a commencing salary of £707 5s. 0d. rising by annual increments to a maximum of £861 0s. 0d.

Applicants must have passed the final examination of the Royal Institute of British Architects. The post is superannuated and the person appointed will be required to pass a medical examination.

Applications, giving the names of two persons to whom reference may be made, and stating age, present position, salary, qualifications and details of experience should be submitted to the undersigned not later than Friday, 31st May, 1957.

M. E. HABERSHON,
*Borough Engineer and Surveyor.*

Council House,
Walsall.
May 13th, 1957. 6319

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**CENTRAL ELECTRICITY AUTHORITY**
**EAST MIDLANDS DIVISION**

SECTION LEADERS (CIVIL) (Two required), GENERATION CONSTRUCTION DEPARTMENT, DIVISIONAL HEADQUARTERS. VACANCY NO. 78/57/AJ.

*Vacancy 'A.'* Applicants should have experience with design and detailing of steel structures associated with large buildings and should be capable of taking charge of a Section dealing with buildings associated with Power Station and ancillary equipment.

*Vacancy 'B.'* Applicants should be capable of taking charge of a section associated with design and detailing of reinforced concrete structures and heavy foundations and general civil work associated with Power Station construction.

Salary will be in accordance with Grade 3 (£925—£1,025 per annum) of Schedule D of the National Joint Board Agreement.

Closing date for receipt of applications: 7th June, 1957.

SENIOR DRAUGHTSMAN (CIVIL), GENERATION (CONSTRUCTION) DEPARTMENT. VACANCY NO. 74/57/AJ.

Candidates should have experience in the preparation of detail drawings and in the design of one or more of the following subjects:—

Reinforced concrete structures.
Piled and slab foundations for heavy components.
Cable subways and bridges and culverts.

The salary will be in accordance with Grade 5 (£700—£800 per annum) of Schedule D of the National Joint Board Agreement.

The positions will be pensionable within the terms and conditions of the Central Electricity Authority and Area Boards (Staff) Superannuation Scheme.

Applications should be submitted on the official form AE6/ACT which may be obtained from the Divisional Establishments Officer, Central Electricity Authority, East Midlands Division, P.O. Box 25, Barker Gate, Nottingham. Please quote Vacancy Number.

L. F. JEFFREY,
*Divisional Controller.*
6375

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**NATIONAL COAL BOARD—**
**NORTH WESTERN DIVISION**

Applications are invited for the following posts in the Divisional Architect's Branch:—

(*a*) ARCHITECTURAL ASSISTANT GRADE 1. Applicants should preferably have passed the Intermediate Examination of the R.I.B.A., should have recent office experience and be capable of preparing sketch plans and working drawings.

Salary according to qualifications and experience within the scale £625×£25—£750 per annum.

(*b*) ARCHITECTURAL ASSISTANT GRADE II. Applicants who should preferably be working for the R.I.B.A. Intermediate Examination, should have experience in the preparation under supervision of working drawings. A good standard of draughtsmanship is required.

Salary according to qualifications and experience within the scale £520×£20 to £615 per annum.

(*c*) QUANTITY SURVEYOR'S ASSISTANTS GRADE II (2 required). Applicants should have experience in a Quantity Surveyor's Office and be capable of working up dimensions, abstracting, checking accounts, and taking site measurements under supervision.

Salary according to qualifications and experience within the scale £520×£20 to £615 per annum.

Applications giving full details of age, education, qualifications, experience and present post and salary to the Divisional Chief Staff Officer, 40 Portland Street, Manchester 1, to be received not later than the 30th May, 1957. 6344

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**LANCASHIRE COUNTY COUNCIL**
**SECTIONAL PLANNING OFFICER, A.P.T. Grade V/VI (£814 17s. 6d.—£1,107 per annum) and PLANNING ASSISTANT, A.P.T. Grade IV/V (£727 15s. 0d.—£994 5s. 0d.), required at the Divisional Planning Office, MANCHESTER.**

Candidates should possess a recognised qualification in architecture, civil engineering, surveying and/or planning. Experience in Town Map preparation and a sound knowledge of the day-to-day work of a planning office are essential.

Applications, stating appointment applied for, giving age, qualifications, present appointment, experience, etc., and two referees to the County Planning Officer, East Cliff County Offices, Preston, by 5th June, 1957. 6356

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**LONDON ELECTRICITY BOARD**
**ARCHITECTURAL ASSISTANT**

Applications are invited for the above position in the Construction Branch of the Chief Engineer's Department in Central London.

Applicants should be studying for or have passed the Intermediate examination of the R.I.B.A., be capable draughtsmen and have had several years' experience in an Architect's office.

Conditions of service are in accordance with the National Joint Board agreement. Salary, Schedule 'D,' Grade 5—£735 to £840 per annum, inclusive of London Allowance.

Application forms obtainable from Personnel Officer, 46, New Broad St., London, E.C.2. Please quote ref.—PER/2336/A. 6345

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**LANCASHIRE COUNTY COUNCIL**

ASSISTANT required in Architectural Section of the County Planning Department, Headquarters, at Preston. Salary, special scale (£707.5s.0d.—£861.0s.0d.).

Duties include the design of housing layouts and central area redevelopment schemes and the preparation of working drawings for houses, flats and shops.

Applicants should be qualified architects, planning experience is 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 5th June, 1957. 6342

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NATIONAL COAL BOARD—Vacancy exists for an ARCHITECTURAL ASSISTANT at West Ayr Area Headquarters in Ayr. Applicants should be studying for or have passed the Intermediate R.I.B.A. Examination, be capable of preparing sketch plans, working drawings in detail, and have had three years' subsequent practical experience or equivalent. The salary for the post will be Grade II—£520×£20 to £615 or Grade I—£625×£25 to £750, with extension to £900 in exceptional circumstances. The points of entry will depend on qualifications and experience. Applications stating age, education, qualifications, experience, present post and salary to Area Staff Manager, "Westfield," Ayr, within 7 days. 6338

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**EASINGTON RURAL DISTRICT COUNCIL**
**ARCHITECTURAL ASSISTANT**
**GRADE A.P.T.IV. £727 15s. 0d.—£907 2s. 6d.**

Applications are invited for the above appointment.

Applicants must have had previous Municipal experience, have been trained in the office of a Municipal Engineer, Architect or Surveyor, be experienced in Municipal Housing and General Architectural work, and have the qualifications specified by the National Conditions of Service.

The Council have proposals for redeveloping ten small townships between 5,000 and 12,000 inhabitants as a complementary scheme for the new town of Peterlee, and a major scheme for modernising 2,500 houses.

The appointment is subject to the National Scheme of Conditions of Service and the Local Government Superannuation Acts. The successful applicant will be required to undergo a medical examination.

If required, housing accommodation will be provided.

Form of Application, to be obtained on receipt of a stamped addressed foolscap envelope, must be returned accompanied by copies of two recent testimonials, to reach the undersigned not later than TUESDAY, 11th JUNE, 1957.

T. AGAR,
*Clerk of the Council.*

Council Offices,
Easington,
Co. Durham. 6346

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**BOROUGH OF ROYAL LEAMINGTON SPA**
**APPOINTMENT OF TEMPORARY CLERK OF WORKS**

Applications are invited from men of good experience for the above post, which is the control of domestic work consisting of flats and houses.

The duration of the contract will be approximately 18 months and the salary will be £700—£750 p.a. according to experience.

Applications giving details of experience and accompanied by testimonials to the Council's Architects:—C. F. Redgrave & L. A. Clarke, A/F.R.I.B.A., 6, The Quadrant, Coventry. 6316

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**LONDON COUNTY COUNCIL**
**ARCHITECT'S DEPARTMENT**

Selections for appointment are now being made from students at architectural schools who will take their final examinations this summer. Starting salary up to £676. Vacancies also for ARCHITECTS of experience at starting salaries up to £1,036. Full programme of houses, flats, schools and many other interesting buildings.

Application forms and full particulars from the Architect (Ref. AR/EK24/572), The County Hall, S.E.1. (895) 6290

RUTLAND COUNTY COUNCIL
APPOINTMENT OF ARCHITECTURAL ASSISTANT

GRADE II—Salary £609.17.6/£691.17.6

Applications are invited for this post which is subject to the Local Government Superannuation Acts 1937 to 1953 and the National Scheme of Conditions of Service.

Applicants must have passed the R.I.B.A. Intermediate examination or its equivalent at one of the recognized schools of architecture, and worked in an architectural office for one year.

Particulars of age, experience, and qualifications, with the names of two referees, should be sent to T. Brian Kennedy, A.R.I.B.A., M.T.P.I., County Architect and Planning Officer, County Offices, Oakham, not later than 3rd June, 1957.

A. BOND,
*Clerk of the County Council.*

County Offices,
Oakham. 6341

WEST SUSSEX COUNTY COUNCIL

Applications are invited for the undermentioned appointment:—

TECHNICAL ASSISTANT (Architectural)

In the County Planning Department, County Hall, Chichester. Salary—Special Grade £707 5s. to £861 0s, 0d, per annum. Applicants must be qualified architects.

Further details, application forms and conditions of service may be obtained from Mr. John G. Jefferson, County Planning Officer, County Hall, Chichester, to whom applications should be returned by Monday, the 3rd June, 1957. 6357

CANNOCK URBAN DISTRICT COUNCIL
(Population 41,730)
QUANTITY SURVEYOR

Applications are invited for the above-named appointment in the Architect's Department. Preference will be given to the holder of a recognized qualification.

Salary A.P.T. V (£814 17s. 6d. to £994 5s. 0d.) or VI (£902 to £1,107 per annum), commencing point to be fixed according to qualifications and experience.

Housing accommodation available for successful married applicant, if required.

Applications giving particulars of age, present and previous appointments, training and experience, with not more than three referees, must reach the undersigned (from whom further particulars are available) by 4th June, 1957.

H. C. ALLEN,
*Clerk of the Council.*

Council House,
The Green,
Cannock, Staffs.
13th May, 1957. 6304

UNIVERSITY OF HULL

Applications are invited for the post of ASSISTANT CLERK OF WORKS. Duties will include new construction and maintenance. Salary on the scale £650 × £25—£750. Pension scheme. Further particulars from the Registrar to whom applications should be sent not later than 29th June, 1957. 6301

THE SOUTH WALES ELECTRICITY BOARD require an ARCHITECTURAL DRAUGHTSMAN at the Head Office of the Board, St. Mellons, Cardiff.

Salary: Schedule D, Grade 6 (£560/£680) of the N.J.B. Schedule.

Applications stating age, present position and salary, qualifications, experience and three referees should be addressed to the Secretary (Establishments Section), to arrive by 3rd June, 1957.

R. G. WILLIAMS,
*Secretary.*

St. Mellons,
Cardiff. 6298

## Architectural Appointments Vacant

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

TREHEARNE & NORMAN, PRESTON & PARTNERS have vacancies for SENIOR and JUNIOR ASSISTANTS. Salaries according to experience and qualifications.—Apply 83, Kingsway, W.C.2 (HOL. 4071). 5908

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

APPLICATIONS are invited for the following appointments:—(*a*) SENIOR ASSISTANT ARCHITECTS with experience of work on commercial and industrial projects (salary range £820 to £975 per annum). (*b*) ASSISTANT ARCHITECTS capable of preparing working drawings from preliminary details (Salary range £560 to £820 per annum). There is a five-day week in operation and both appointments offer prospects of upgrading. Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester 4. 6023

ARCHITECTURAL ASSISTANT required in private practice in Cotswold rural area. Exceptionally varied work, capable of surveys, working drawings, details, specifications. Car driver. Accommodation available. Practical experience more important than qualifications. State full particulars of experience, salary required, status.—Box 6056.

KEEN JUNIOR ASSISTANT required in London office. Should be good draughtsman with sound knowledge of building construction. Box 5951.

TWO ARCHITECTURAL ASSISTANTS required, one Senior as group leader, and Junior of Intermediate A.R.I.B.A. or A.R.I.C.S. standard, to be engaged on varied and interesting projects throughout Southern England. Superannuation scheme in operation. Salaries by arrangement, according to age and experience.—Apply Cotton, Ballard & Blow, 5, Baker Street, W.1. WELbeck 3364/7. 6080

SENIOR ASSISTANT urgently required in busy West End office. The appointment offered is a responsible one which requires experience, ability, and a thorough knowledge in commercial design and construction. Please state qualifications and salary required. Holidays by arrangement.—Box 6045.

LARGE London commercial office requires ASSISTANTS, with experience of commercial work.—Box 5924.

WELL KNOWN Home Counties Chartered Architects, with large and varied practice, require a capable experienced ASSISTANT for Drawing Office, salary by arrangement. Box 5859.

COURTNEY, POPE LTD. require SHOP-FITTING DRAUGHTSMEN. Write, giving details of experience and salary required to: Amhurst Park Works, London, N.15. 5704

ARCHITECTURAL ASSISTANT, of Intermediate standard, required in busy London office. Must be good draughtsman, with thorough knowledge of construction.

JUNIOR ASSISTANT, with some Drawing Office experience, also required. Might suit young man having just completed his National Service.

Applications to be in writing, stating age, experience, and salary required.—Box 6247.

ARCHITECTS' ASSISTANT required—minimum intermediate standard—salary £12 to £15 according to ability. Apply Kenneth Lindy, Joseph Hill & Partners, 24, St. Mary Axe, London, E.C.3—telephone, Avenue 5629 or 4430. 6348

JUNIOR ARCHITECTS' ASSISTANT required—must hold G.C.E. and be willing to study. Commencing salary £4. Apply Kenneth Lindy, Joseph Hill & Partners, 24, St. Mary Axe, London, E.C.3—telephone, Avenue 5629 or 4430. 6349

SENIOR ASSISTANT required for responsible post in Architects' Department of Company designing and developing timber buildings. Applicant must be a competent draughtsman with sound knowledge of construction and should have experience in planning and designing. W.1 Office. 5-day week. Excellent prospects. Permanent and pensionable post after satisfactory probationary period. Write giving details of age, experience and salary required. Box 6353.

DRAUGHTSMAN age 20-30. Required for interesting design and development work in Architects' Department of Company designing and developing timber buildings. W.1 Office. 5-day week. Excellent prospects, permanent and pensionable post after probationary period. Write giving full details, experience and salary required. Box 6354.

ARMSTRONG & MACMANUS require experienced and capable ASSISTANT for interesting work. Salary according to ability. Full particulars to 28, Gloucester Place, W.1. 6363

TWO ARCHITECTURAL ASSISTANTS required in varied practice in Buckinghamshire, 30 miles from London. One at Final R.I.B.A. and one at Intermediate R.I.B.A., also QUANTITY SURVEYOR at intermediate standard. Five-day week. Salaries according to age and experience. House available. Please write giving full particulars to Box 6362.

ARCHITECT'S ASSISTANTS required in expanding office in South Kensington. Ample opportunity offered for all-round experience and running of contracts. 5-day week and salaries commensurate with experience. Write, stating age, experience and salary required, to Box 6361.

FRY, DREW, DRAKE & LASDUN have vacancies for experienced, qualified ASSISTANTS in their London office. Write with details of training, qualifications, experience, etc., to Secretary, 63, Gloucester Place, W.1. 6360

JACK E. DALLING, L.R.I.B.A., requires an ASSISTANT of up to Intermediate standard, with 3-4 years' office experience. 5-day week, holiday arrangements respected. Apply, giving details of experience, age and salary required, to 53 St. Martin's Lane, W.C.2. Covent Garden 2942. 6355

ASSISTANT required for Office with varied Contracts. Good experience and Prospects. State age, experience and salary required to Norman Sinclair, Denmark House, Ealing, W.13. EAL. 7072. 6358

GOLLINS, MELVIN, WARD & PARTNERS have vacancies for JUNIOR and INTERMEDIATE GRADE STAFF. 5-day week—quarterly bonuses. Pension scheme. Telephone WELbeck 9991. 6351

ASSISTANT ARCHITECT. Co-operative Wholesale Society, Ltd., invite applications for the position of Assistant Architect. Must be capable of preparing working drawings from preliminary details. The post is superannuable, subject to medical examination. 5-day week in operation. Applications, giving details of age, experience and salary required, to—W. J. Reed, F.R.I.B.A., Chief Architect, C.W.S. Ltd., 99, Leman Street, London, E.1. 6350

ASSISTANT Inter R.I.B.A. standard wanted in small but varied private practice. Summer hoiday by arrangement. Write details and salary required to Cyril P. Griggs, A.R.I.B.A., 102, Sandgate Road, Folkestone, Kent. 6333

LONDON Architects require DRAUGHTSMEN with two or three years' experience. Luncheon vouchers provided. Five-day week. Reply stating salary to Box 6378.

ARCHITECT'S ASSISTANTS with good general experience required for west London office.—Hammond Harvey, RIV. 8848. 6377

ARCHITECTURAL ASSISTANT required in busy London Office with varied practice. Good salary and prospects for suitable applicant. Five-day week. Write, giving particulars of age, qualifications, experience, etc., to Box 851 c/o 7, Coptic Street, W.C.1. 6376

ARCHITECTURAL ASSISTANT required by old-established firm in Gray's Inn. Intermediate Standard. Varied work, responsibility and prospects. Holiday arrangements honoured. Commencing salary £600 a year.—Box 6372.

QUALIFIED Architectural Assistants required with experience of contemporary office buildings, to take charge of large contracts. West End office, five-day week. Salary £900/£1,000 p.a. plus luncheon vouchers. Holidays by arrangement Please telephone LAN 7236 for appointment. 6371

SOUTH LONDON. Qualified ARCHITECTURAL ASSISTANT required, salary £800 to £1,000. Experience in the design and construction of flats an advantage. Co-partnership firm with opportunities for keen man. Apply in writing with full details of experience to Co-operative Planning Ltd., 73b South Side, Clapham Common, S.W.4. 6359

ARCHITECTURAL ASSISTANTS, Junior and Senior, required for varied and interesting practice. Excellent prospects. Holiday arrangements met.—Box 6368.

QUALIFIED Architect with at least five years' office experience required in Epsom office. Knowledge of either schools or building in West Africa desirable but not essential.—Frank Rutter, F.R.I.B.A., 7, St. Martin's Avenue, Epsom. (Epsom 5231.) 6367

JUNIOR and Senior ARCHITECTURAL ASSISTANTS required with imagination and experience for contemporary commercial work in London. Holidays honoured this year.—C. H. Elsom, 10, Lower Grosvenor Place, S.W.1. VIC 4304. 6366

W. H. WATKINS, Gray & Partners require ASSISTANTS up to Final Standard for interesting hospital work, pension scheme in operation.—Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 6365

A NEW RESEARCH LABORATORY
SIEMENS EDISON SWAN RESEARCH LABORATORY
SIEMENS-EDISWAN LIMITED

ARCHITECTURAL ASSISTANT of Intermediate standard and contemporary outlook, required for work on Research Laboratories and Industrial Buildings.

Please write, in the first instance, quoting ref. A/3, giving full details of experience and salary required to: Architect's Department, Siemens Edison Swan Research Laboratory, c/o The Edison Swan Electric Co., Ltd., Cosmos Works, Brimsdown, Enfield Middlesex. 6302

GEORGE WIMPEY AND CO. LTD.

THE Architects' Department seek experienced Senior and Intermediate ARCHITECTURAL STAFF with ability to apply their knowledge to new construction techniques covering Multi-storey Flats, Houses, Offices and Industrial Buildings for contracts in the U.K. and Overseas.

Appointments on a permanent basis, with a 5-day week, at Head Office, Hammersmith.

Salaries according to qualifications and experience and, subject to satisfactory service, there is a Pension Scheme available.

Written applications, giving full particulars, to E. V. Collins, A.R.I.B.A., Chief Architect, 27, Hammersmith Grove, London, W.6. 6315

TOWN PLANNERS WANTED
CITY OF REGINA

VACANCIES occur in the office of the Director of Planning for the above post. Salary range $4,914—$6,272, Starting salary dependent on experience.

Qualifications and Experience:

Applicants should be qualified Architects, preferably with a planning qualification and some years of planning experience in a Planning Office. The work involved is of an interesting nature and comprises: subdivision design; neighbourhood planning; major urban renewal; comprehensive housing survey and preparation of overall plan for the entire area. Applicants are expected to have superior design ability and be able to direct and supervise work under their appropriate section as well as being actively engaged on draughting work.

The office of the Planning Department is in the process of reorganization and the above Post offers splendid opportunities for technical personnel desirous of enlarging experience in all phases of planning work.

Apply by Airmail to Director of Personnel, City of Regina, Saskatchewan Canada. 6324

CANADA
COMMUNITY PLANNING ADVISER
(Applied Sciences)
Required by
Community Planning Branch
Saskatchewan Dept. of Municipal Affairs, Regina
REQUIREMENTS: Preferably some experience in community planning and University graduation in community planning, Civil Engineering or Architecture. If graduation is in Civil Engineering or Architecture, preferably supplemented by courses in Community Planning. Salary range $364—$459.
Apply giving brief details to Dept. D.O.M.A., Canadian Department of Labour, 61, Green Street, London, W.1. 6325

ARCHITECTURAL ASSISTANT of Intermediate standard, required in office having numerous interesting industrial and commercial projects in hand. Five-day week. Excellent opportunity for suitable candidate. Apply in writing giving full particulars of experience, age and salary required, to J. Alfred Harper & Son, 63, Temple Row, Birmingham, 2. 6291

ASSISTANT of Intermediate standard required for varied and interesting work with considerable opportunity to gain experience. Apply stating age, experience and salary required: George Bains & Syborn, A.R.I.B.A., 121, Victoria Street, Westminster, S.W.1. 6292

J. M. AUSTIN-SMITH & PARTNERS require an ASSISTANT, qualified or unqualified, for interesting and varied work with opportunities for taking responsibility and supervising work in progress. Salary will be according to age, and length and type of experience. Apply by telephone, Regent 6183, or to 29, Sackville Street, London, W.1. 6294

ARCHITECTS' Co-Partnership require ASSISTANTS for working drawings and detailed design. Salary according to experience. Write 44, Charlotte Street, London, W.1, or telephone Langham 5791. 6297

ARCHITECTURAL ASSISTANT of about Intermediate standard with experience of housing schemes and office routine, required for Essex practice 12 miles from London. Applications should state age, experience and salary required and should be made by letter to Tooley & Foster, Midland Bank Chambers, Buckhurst Hill, Essex. 6306

TWO ARCHITECTURAL ASSISTANTS required, about Intermediate standard with office experience, capable working drawings, busy practice. Apply A. J. Ardin, A.R.I.B.A., 129, Mount Street, London, W.1. 6307

SHREWSBURY. ARCHITECTURAL ASSISTANT (Intermediate standard) required. Practical knowledge of building construction essential. Good prospects for the right man. Excellent offices, work in pleasant area. Comfortable two-bedroom flat with river view available if required. Applications to: R. & D. Hall, Bowdler's House, Town Walls, Shrewsbury. 6308

WELL-KNOWN Architects require ASSISTANTS between Intermediate and final standard in their London Office. Interesting projects. Box 6321.

LEADING Firm of Building Surveyors (City) require JUNIOR ARCHITECTURAL DRAUGHTSMAN, age 22/27. Must be well educated and keen to progress in profession. Box 6314.

ARCHITECTURAL ASSISTANT required. Intermediate standard, for work on varied projects including Churches, Industrial Buildings, Private Dwellings, Estate Development, Agricultural Buildings, etc., in Bedfordshire and surrounding counties. Apply with details of experience, qualifications and salary required, etc., to Box 6317.

SENIOR ARCHITECTURAL ASSISTANT required. Experience in Licensed premises, including interior decoration, an advantage. Apply in writing to Secretary, Benskin's Watford Brewery Ltd., P.O. Box 105, Watford, Herts. 6320

ARCHITECTURAL ASSISTANT wanted in small office off Bond Street. Interesting work. Standard preferred towards Final or recently qualified. Salary by arrangement. Box 6330.

RONALD WARD & PARTNERS require ARCHITECTURAL ASSISTANTS with contemporary outlook and willing to use own initiative. Salary range £600 to £850. Congenial working conditions. Apply 29, Chesham Place, Belgrave Square, S.W.1. Telephone Belgravia 3361. 6322

QUALIFIED ASSISTANT with practical experience required for small busy varied practice. Holiday arranged. Salary £750 to £950. Flat can be arranged if necessary. A. Victor Farrier, A.R.I.B.A., 7, Thornton Hill, Wimbledon, S.W.19. 6323

LIVERPOOL SCHOOL GRADUATE A.R.I.B.A. to assist develop designs for University building; three months to one year agreement; £650—£850, according to experience. Apply: Professor R. Gardner Medwin, 6, Bluecoat Chambers, Liverpool, 1. 6328

ARCHITECTURAL ASSISTANT required for the London head office of a major oil company. Should be of Final standard and have passed the Intermediate examination of the R.I.B.A. Candidates should have experience of contemporary design and be capable of working independently. A high standard of presentation is required. Good salary. Pension and life assurance scheme; generous sickness benefits; free luncheon vouchers; Social Club. Write giving full details of experience, age and salary required to Box 6327, quoting ref. AA/84.

WESTWOOD, SONS & PARTNERS require SENIOR ASSISTANT with experience of interior design, preferably in connection with shops. Apply in writing to 21, Suffolk Street, S.W.1. 6329

ARCHITECT requires JUNIOR ASSISTANT previous experience not essential.—Phone Sloane 0639. 6370

ARCHITECT'S ASSISTANT required in the Chief Architect's office of a large multiple retail firm with offices in London. Five-day week, pension scheme, dining room available for use of staff. Applicants should state age, qualifications, experience and salary required. Box 6332.

ARCHITECTURAL ASSISTANT required in private practice in central London, capable of surveys, working drawings, details, etc. Exceptionally varied work. Salary £600 p.a. Apply stating age, experience, etc.—Box 6331.

RAMSEY, MURRAY, WHITE & WARD require recently qualified ASSISTANTS, with two to five years' practical experience, to work on interesting industrial and office buildings. Salary by arrangement.—Apply 32, Wigmore Street, W.1. 5929

SENIOR ARCHITECTURAL ASSISTANT required in Architect's Department of London Brewery Company. Must be good draughtsman. Write stating age, experience, salary required. Box 6156.

TWO ARCHITECTURAL ASSISTANTS required in London Office for Hospital, School and Office building work. Intermediate standard or higher. Good salary, depending on experience. R. N. Wakelin, Campbell Jones & Sons, 9, Dowgate Hill, E.C.4. 6157

ARCHITECTURAL ASSISTANT wanted for responsible position in small busy West End Office. At least Intermediate standard, with ability in design and working drawings. Holiday arrangements respected.—Reply, stating age, qualifications and salary required, to Box 6236.

CHARLES B. PEARSON & SON require, both at their Lancaster and Manchester offices, SENIOR QUALIFIED ASSISTANTS, with experience, to be engaged on interesting Hospital and Civic Schemes. Please state salary required. —Application in the first instance to be made to 18, Dalton Square, Lancaster. 6239

ARCHITECTURAL ASSISTANTS required. Write stating experience. Yorke, Rosenberg and Mardall, 2, Hyde Park Place, W.2. 6311

ASSISTANT ARCHITECTS required for busy practice in North London, with interesting and varied work. Suit young Architects recently qualified, or Assistants approaching Finals. Initiative encouraged and successful applicants expected to accept responsibility. Commencing salary within range £750—£800 per annum, according to ability.—Write, giving age, training, experience, and qualifications, to Box 6240, or telephone for appointment SHO. 3383.

CITY Architects require SENIOR and JUNIOR ASSISTANTS for interesting work in London and Home Counties.—Write, stating age, experience, and salary required, to Box 6241.

INTERMEDIATE ASSISTANT required, to run smaller jobs under minimum supervision. Contemporary office and pleasant working conditions. 5-day week. Good prospects for hard worker with initiative. Salary £650—£750 p.a.—Apply Morris de Metz, F.R.I.B.A. CITy 4086. 6227

ARCHITECTURAL ASSISTANT required immediately for busy commercial, factory and hospital practice. Applicants should be recently qualified or approaching R.I.B.A. Final. —Apply in writing, stating age, experience, and qualifications, to W. H. Watkins, Gray and Partners, 1, Clare Street, Bristol, 1. 6210

ONE ASSISTANT of Final standard required for work of general domestic character. Living accommodation available.—Apply, giving details of education, experience and salary, to Edwards & Webster, Chartered Architects, 10, St. Mary Street, Chippenham, Wilts. 6209

SLIDING DOOR GEAR.
E. HILL ALDAM & CO., LTD., London, S.W.18, require DRAUGHTSMEN, to detail door gear installations. Previous door gear experience not essential.—Apply Britannic Works, Haslemere Avenue, Earlsfield, S.W.18. 6274

ARCHITECTURAL ASSISTANT with experience required for Design and Contractors Office, Manchester area. Intermediate or Final standard. Interesting work of industrial and commercial nature. Salary: £800—£850. Apply Box 6132.

ASSISTANTS required, to take charge of large contracts. West End office, 5-day week. Salary £900—£1,000.—Box 6208.

ADAMS, HOLDEN & PEARSON require ARCHITECTURAL ASSISTANTS. Write giving particulars of experience and salary required to 38, Gordon Square, W.C.1. 6177

QUALIFIED CHIEF ASSISTANT required, thoroughly experienced in provincial town practice. Salary £800 to £1,000.—F. J. Lenton & Partners, Stamford. 6226

CHIEF ARCHITECTURAL ASSISTANT required for Architects' Department of London Firm of Architects and Surveyors. Holiday arranged.—Write, stating age, experience, and salary required, to Box 6221.

HASKER & HALL, L./F.R.I.B.A., require ARCHITECTURAL ASSISTANT, with 4 to 5 years' office experience.—Write or telephone, giving full particulars, including age and salary, to 13, Welbeck Street, W.1 (Welbeck 0061). 5824

ASSISTANT, Intermediate standard, required, busy West End office. State age, experience, and salary required.—Box 6046.

## Architectural Appointments Wanted

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

ARCHITECT (32), married, public school, school trained, A.R.I.B.A., 1953, requires partnership (or position leading to one in agreed period) in London or provinces. Limited capital. Unlimited energy and ambition.—Box 5865.

L.R.I.B.A. working as Quantity Surveyor with extensive experience following general architectural practice. Trained originally in art. Appointed Art Instructor. Professional class Illustrator. Requires full or part time situation in some special branch where unusual qualifications could be utilized. Box 6318.

ASSOCIATE (28), school trained, experienced in pre-fab. and general practice, seeks position, preferably in East Anglia. Responsibility and travel welcomed. Box 6310.

## Other Appointments Vacant

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

THE WALPAMUR COMPANY will shortly have vacancies in their London and Bristol Interior Design Studios. Candidates must be experienced in perspective watercolour rendering and trained in Interior Design.—Write in confidence to The Manager, Interior Design Department, The Walpamur Co., Ltd., Darwen. 6249

CENTRAL ELECTRICITY AUTHORITY
EASTERN DIVISION

APPLICATIONS are invited for the following appointment in the Generation (Construction) Department:—

2ND ASSISTANT ENGINEER (RESIDENT CIVIL ENGINEER). Salary Class AX/DX, Grade 2, £1,015—£1,230 per annum.

The successful applicant will be required to supervise Civil Engineering and Building Works in connection with new Generating Stations and must have had experience in this class of work. The location of such work will be at sites within the Eastern Division area but in the first instance at South Denes (Great Yarmouth), Norfolk.

Applications stating age, qualifications, previous experience and present position to the Controller, Central Electricity Authority, Eastern Division, Northmet House, Southgate, N.14, by 1st June, 1957.

W. N. C. CLINCH, *Controller.*
6340

ARCHITECT or ENGINEER required by Concrete Limited to act as full-time SALES REPRESENTATIVE in the Birmingham area. Requirements: Professional qualifications and sound knowledge of modern building construction, to be able to discuss with architects and engineers the best use of advertiser's services and product; good education and social background; pleasant personality; willingness to work hard and use initiative. Age about 30.

Only architects or engineers are invited to reply. Applications will be confidential.

Potential earnings are unusually attractive, comprising an adequate salary, commission, expenses, car, life assurance and pension, and participation in the Company's Share Bonus Scheme.

Applications should give detailed information of education, training, experience and hobbies, enclosing recent photograph or snapshot (returnable), to CONCRETE LIMITED, 16 Northumberland Avenue, London, W.C.2. Mark envelope "A" in top left-hand corner. 6374

SECRETARY/SHORTHAND TYPIST required in West End office. 5-day week. Excellent canteen. Good salary. 'Phone: Mr. A. Holloway, MUS. 4080. 6352

BUILDING INSPECTOR required with office in E.C.1. Knowledge of maintenance of small building works essential, knowledge of London Building Acts desirable. Must be able to drive car. Commencing salary £728 p.a. Box 6369.

RHODESIAN CHARTERED SURVEYORS, require two ASSISTANT QUANTITY SURVEYORS with about 4 years' experience. 3 years' contract initially. Passage paid. Salary £750 p.a. Apply to O.T.S., 5 Welldon Crescent, Harrow, Middlesex, quoting reference AJ.97/7. 6373

REPRESENTATIVES required for Brick Manufacturers and Factors in (1) East Sussex, (2) North-East Hants, West Surrey and Berkshire. Knowledge of the trade essential also ownership of car. W. T. Lamb & Sons, Ltd., 35, New Bridge Street, E.C.4. 6326

## Services Offered

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

GOOD LETTERING is essential for Commemorative Wall Tablets, Foundation Stones, etc. Designs prepared and estimates given for the finished work in any suitable material. Renowned as a Centre for Lettering since 1934. Sculptured Memorials, 67, Ebury Street, S.W.1. 9176

ARCHITECTURAL, Reinforced Concrete and Steel design and detailing work required. Over 30 Assistants available. MUS 8753. 5145

QUALIFIED ENGINEER, with design and contracting experience in drainage, offers his services to the profession. Prepared to vet any scheme—no savings—no fees.—Box 5185.

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