THE ARCHITECTS' JOURNAL

No. 3224] [Vol. 124

THE ARCHITECTURAL PRESS

11 and 13, *Queen Anne's Gate, Westminster, S.W.1.* *'Phone: Whitehall 0611*

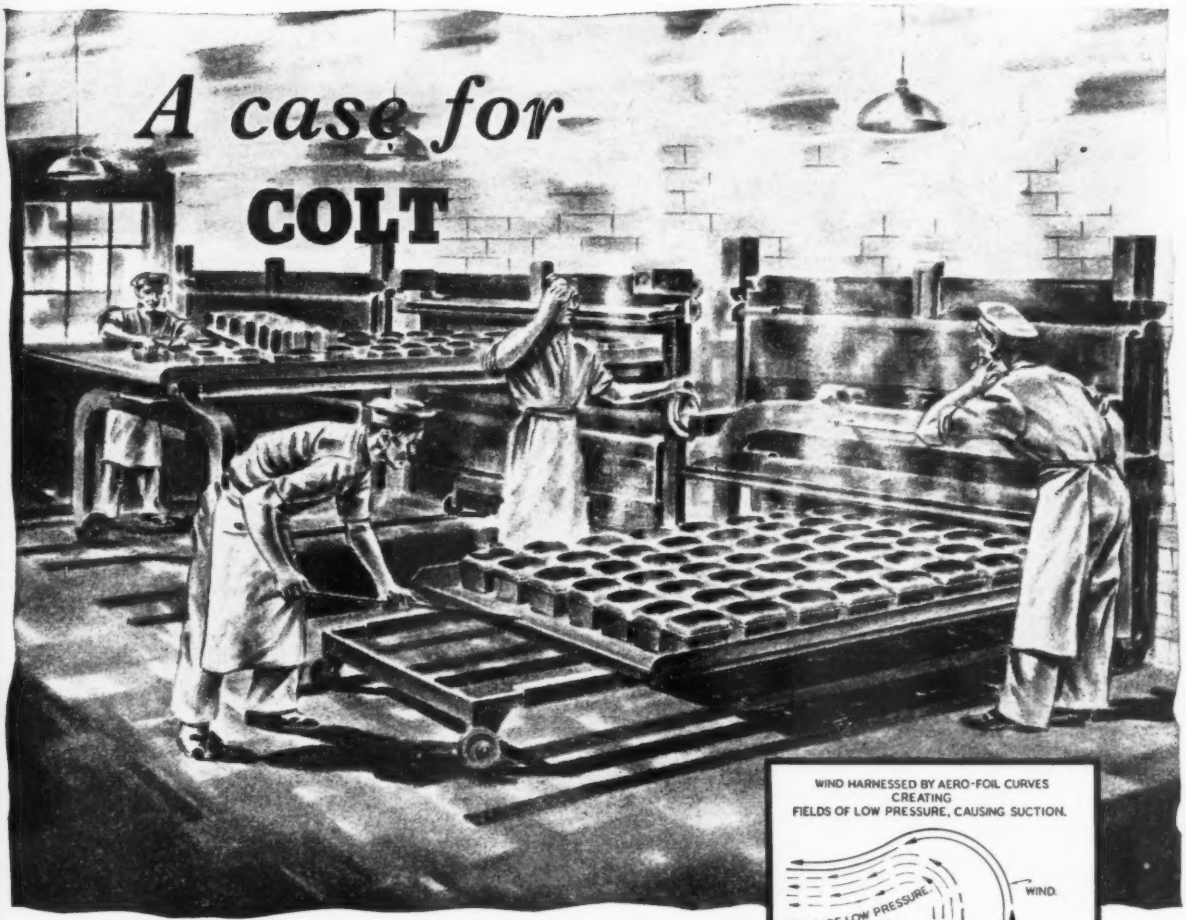
Price 1s. 0d.

Registered as a Newspaper.

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

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, C2.	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 2246
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. Kendals Hall, Radlett, Herts.	Radlett 5616
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

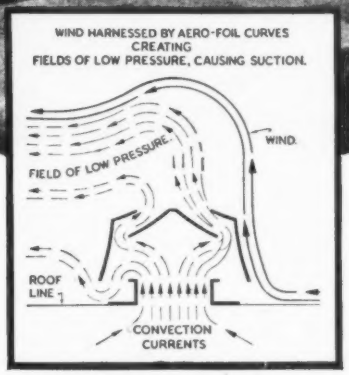
Problem No. 6 Condensation and excessive heat.



Condensation is a familiar problem to all connected with the baking industry. Apart from causing discomfort and a loss of efficiency amongst personnel, condensation results in damage to paintwork and the building fabric; it also encourages the germination of undesirable mould growth. However, with Colt *Natural* Ventilation, condensation can be prevented at the same time as excessive heat is removed, providing, in the first place that moisture gains have been accurately measured.

A complete ventilation survey including a site visit and fully detailed report is provided without obligation or charge by the Colt Technical Advisory Service. Our wide experience gained in the ventilation of all types of buildings for over 9000 major industrial and commercial organisations is at your disposal.

Whatever your problem, be it heat, fumes, smoke, steam, or condensation, Colt can cure it.



Above is a sectional view of the Colt SR type ventilator often used in bakeries. Without any of the disadvantages of noise, wear and tear, maintenance or running costs, one of these ventilators can provide continuous positive extract at a rate of 400,000 cubic feet per hour.

COLT

Send for Free Manual on Colt Ventilation to Dept. L6/12a

VENTILATION

COLT VENTILATION LTD · SURBITON · SURREY

TELEPHONE: ELMBRIDGE 6511 (10 lines)

U.S.A. Subsidiary: Colt Ventilation of America Inc., Los Angeles.

Branches at: Birmingham, Bradford, Bridgend (Glam.), Bristol, Coventry, Dublin, Edinburgh, Glasgow, Liverpool, London, Manchester, Newcastle-upon-Tyne, Sheffield, and Warwick.

Agents in: Australia, Belgian Congo, Canada, Cyprus, India, Indonesia, Madagascar, Malaya, Mauritius, New Zealand, Pakistan, Portugal, North and South Rhodesia, and South Africa.

G. 357

Expanded Metal Lathing

the basis of all good plasterwork

Expanded Metal lathing is extremely adaptable. It can be formed easily for all kinds of surfaces such as flat, arched, domed and vaulted ceilings as well as for partitions, internal linings, external cladding and steelwork encasement.

Each mesh in Expanded Metal lathing forms a key to grip the plaster and the lathing also acts as a reinforcement imparting strong resistance to cracking.

The " Expamet " Lathing Service provides the design, the working drawings, technical advice, and the supply and fixing of the lathing on a sub-contract basis. Please write or telephone for full information.

'BB' Expanded Metal lathing in sheets 9′ x 2′ are always kept in stock.

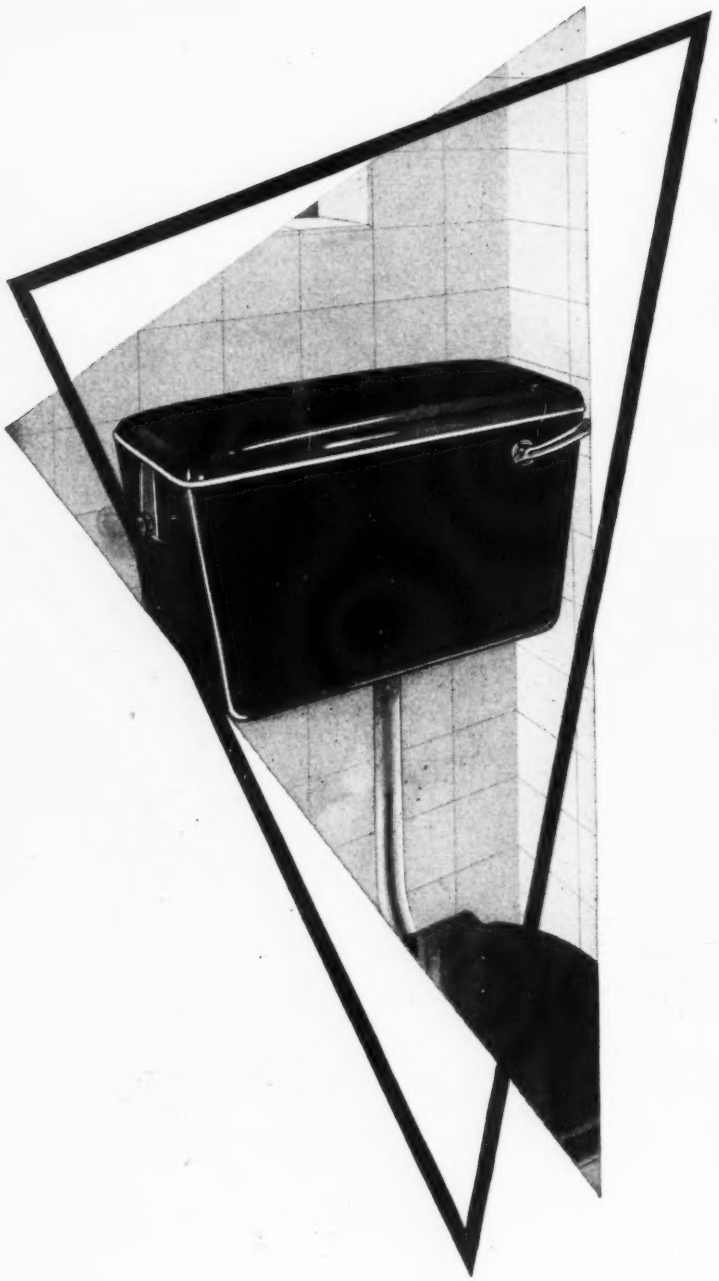
Expamet

Expanded Metal Products

THE EXPANDED METAL COMPANY LIMITED

2 Burwood House, Caxton St., London, S.W.1
Tel. ABBey 7766
Works: West Hartlepool

Also at : ABERDEEN · BELFAST · BIRMINGHAM · CARDIFF
DUBLIN · EXETER · LEEDS · MANCHESTER · PETERBOROUGH



The most fitting fitting

In contemporary building, with its trend towards functional design and streamlined efficiency, a most fitting fitting for the toilet is the Lawley 'Britannia' plastic flushing cistern. Smoothly silent in action, unobtrusively pleasing in appearance, this new plastic cistern is ultra-modern, ultra-hygienic, ultra-efficient. A touch of the hand is sufficient for smooth, silent action — first time and *every* time. Seventy-five years' specialised experience backs every Lawley cistern — when you specify Lawley, you know it's as good as it looks!

Our illustrated folder gives details of four Lawley models in plastic, to suit all water regulations. We shall be pleased to forward copies on request.

Lawley

BRITANNIA

One of the oldest and largest cistern makers in the world.

W. & J. LAWLEY LTD., BRITANNIA WORKS, SAMS LANE, WEST BROMWICH

M-W

SETTINGS BY HEAL'S OF LONDON

THE CIRCULAIR

the portable electric convector

You can carry the inexpensive Circulair convector from room to room with ease. Ideal for small rooms, landings and during cold spells. Low running costs—rated at 1 kW.

Make the heating contemporary too with MEMVAIR electric convectors

THE NEATEST, easiest way to provide heating in home, shop or office is with Memvair electric convectors. They're handsome yet unobtrusive—as heating equipment should be. They distribute heat evenly throughout the room. They need no installation except to plug into the nearest point. And they're completely safe even with young children.

Check on these further plus points :

- Substantial construction.
- Very small floor area.
- Smooth unbroken surfaces for easy cleaning.
- Attractive finish in bronze.
- Appearance enhanced by internal illumination when in use.
- With or without thermostat control.
- Made in 3 ratings : 1 kW, 1½ kW and 2 kW.

Send for MEM Convector booklet

MEM

Switch, fuse and motor control gear, electric fires and localised lighting equipment

MIDLAND ELECTRIC MANUFACTURING CO LTD • TYSELEY • BIRMINGHAM 11 • Branches: London and Manchester

WALPAMUR QUALITY PAINTS

Architects : S. Elden Minns & Son, 453 Glossop Road, Sheffield 10

Quiet tones of grey, ivory and blue form the basis of the decorative scheme specified by the Interior Design Department of The Walpamur Company Limited for the modern church of St. Columba, Crosspool, Sheffield. The beams and side walls are in Ivory Walpamur, the pews in a Special Grey Gloss Finish and all other woodwork in Natural Oak. The Nave ceiling is in Sunlight Yellow Walpamur (inspiring on the most cheerless day) and contrasts with the Altar curtains of blue brocade.

The Dual Purpose Hall with ceiling in Arctic Blue Walpamur and Ivory walls, is separated from the Nave by folding screens finished in Paris Grey and Ivory Duradio.

All decorative materials used in this church were supplied by H. L. Green & Co. Ltd., 15/17 Charles Street, Sheffield 1.

BY APPOINTMENT
TO HER MAJESTY THE QUEEN
MANUFACTURERS OF PAINT

THE WALPAMUR COMPANY LIMITED

DARWEN & LONDON

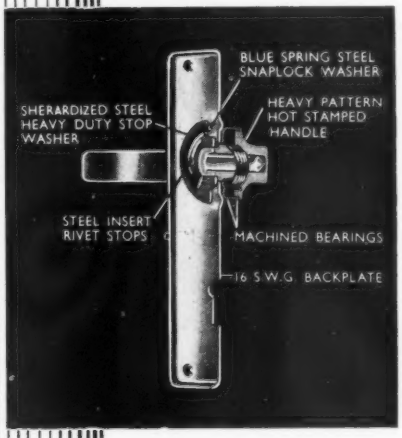
Paints, Enamels and Varnishes for every conceivable need

W554

A Name to THIS HANDLE!

The SNAPLOCK Reversible Lever Handle

Here is a new lever lock set that is proving a big seller, for in design and construction it incorporates many special features. The set can be taken to pieces for cleaning and examination and can be easily reassembled, whilst reversing the handle for right or left hand use is only a matter of seconds. Made from the very best materials, all parts are standardised and machined to gauged limits to ensure perfect movement. The sets are produced in two sizes—for mortice 6 in. × 1¾ in. and for latch 3 in. × 1¾ in. Both are offered in a complete range of finishes on brass, gunmetal and aluminium bases.



LILLY

B. LILLY & SONS LTD · BALTIMORE RD · BIRMINGHAM 22B

Telephone: GREAT BARR 1761/2

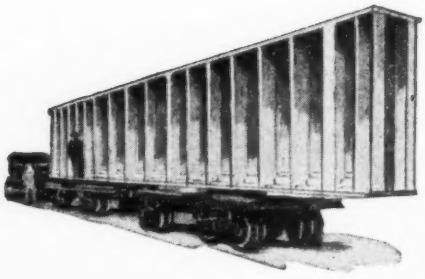
LANDMARKS IN STEEL

Architects and Surveyors: Harry S. Fairhurst & Son, 55 Brown Street, Manchester, 2.

STEELWORK *for Commerce*

SHIP CANAL HOUSE, MANCHESTER

This fine building is the nerve centre of the great inland waterway, The Manchester Ship Canal and is also the home of The Manchester Chamber of Commerce. Big business is built on solid foundations and once again it's Steelwork by:



EDWARD WOOD & CO LTD

Registered Office & Works: **MANCHESTER, 17**
Telephone: TRAfford Park 2341 (10 lines)

London Office: 68 Victoria Street, S.W.1. Telephone: VICtoria 1331/2. *Technical Offices: Birmingham, Nottingham*

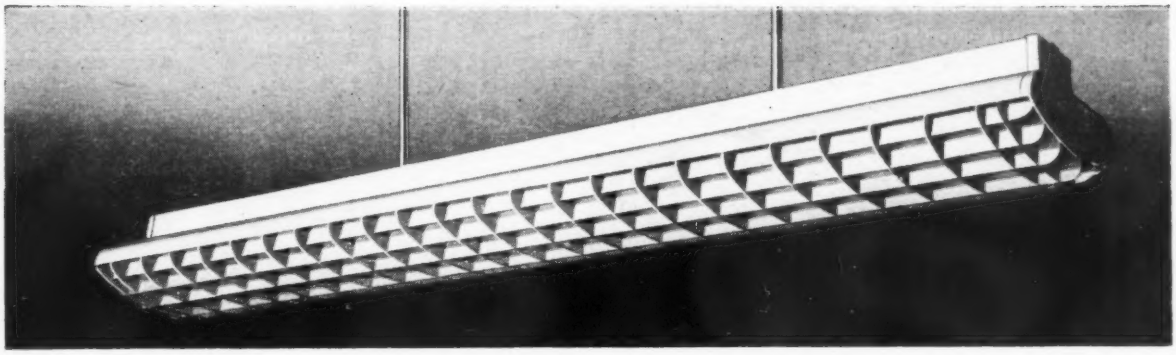
dm WD51

Falk's fluorescent fittings are constructed with scrupulous workmanship to high standards of modern design.

'CLYDE'

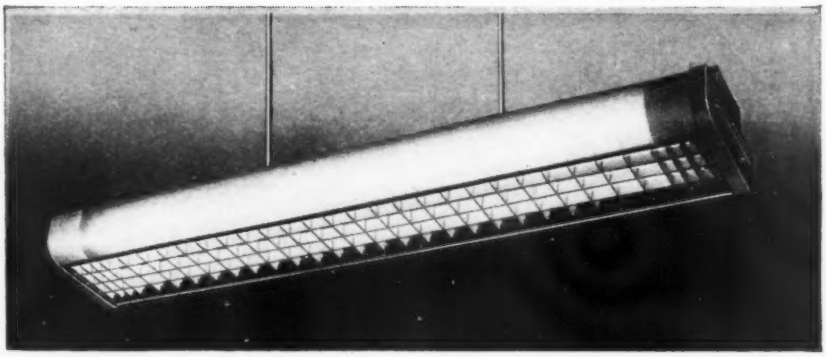
Combining simplicity with high efficiency, this fitting is easy to install and maintain; for direct ceiling mounting, chain or conduit suspension, for one or two lamps.

from the range of lighting fittings by FALKS



'BOURNE'

An outstanding range of fittings, designed to give a high degree of illumination in a modern interior. Finished in white stove-enamel, the Bourne series may be fitted direct to the ceiling, or suspended by chain or conduit.



'CHERWELL'

This series is suitable for large installations where appearance and efficiency must go together. All visible metalwork is finished in stove-enamelled bronze and reflecting surfaces in stove-enamelled white.

FALKS
FALK, STADELMANN & CO. LTD.

LIGHTING ENGINEERS AND MANUFACTURERS OF LIGHTING FITTINGS FOR ALL INDUSTRIAL, COMMERCIAL AND DECORATIVE PURPOSES.

91 Farringdon Road, London, E.C.1, and Branches. London Showrooms: 20/22 Mount Street, Park Lane, W.1
Telephone : HOLborn 7654 Telephone : MAYfair 5671 2

AP 89.779

An exceptionally attractive new Staff Restaurant

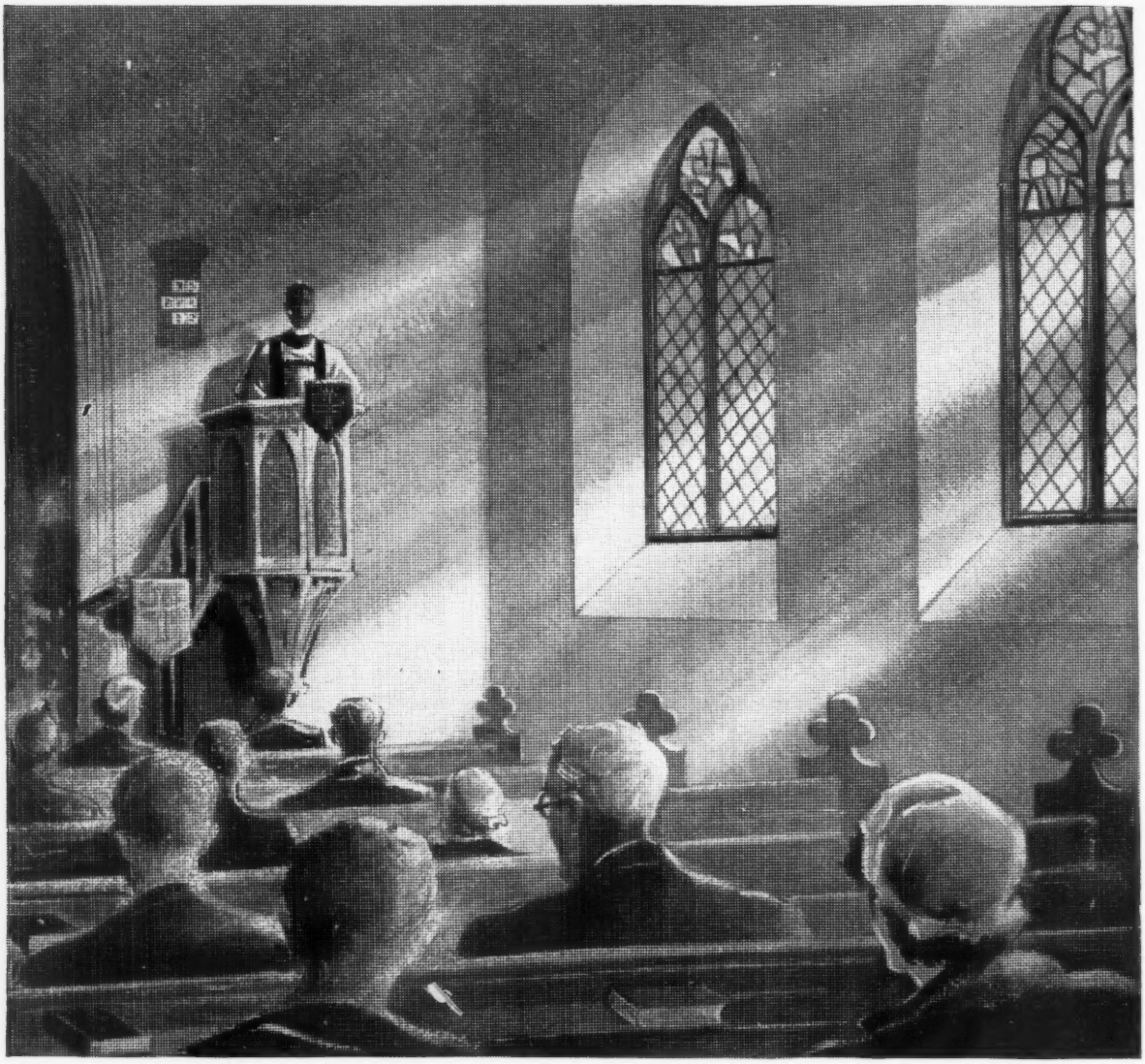
featuring Rydura

GEORGE WIMPEY & CO. LTD. the well known building and civil engineering contractors, have recently completed this splendid new Staff Restaurant at Hammersmith Grove. The unit as a whole consists of a restaurant and cafeteria, both served from one well-equipped kitchen, and a snack bar.

As will be seen from these illustrations of the snack bar and restaurant, RYDURA 'Romanic' design has been used extensively — as a wall decoration for the snack bar, and as a covering for the Beresford and Hicks chairs. RYDURA 'Innsigns' is seen as a wall decoration for the restaurant, running the whole length of this room. The effect is one of comfort and good taste.

RYDURA is now in extensive use in a wide variety of applications for home furnishing, hospitals, hotels, schools, restaurants, shops, ships, etc. Important features of RYDURA include: exclusive 'PROFILM' finish : choice of attractive contemporary designs : wide range of colours : can be cleaned with a damp cloth : durable : virtually unstainable : economical prices.

For full details of RYDURA, *and also of* RYJACK *(the hygienic and durable modern upholstery fabric made from natural fibre), please write to:*
RYJACK PRODUCTIONS LIMITED (Prop. The Calico Printers' Association Ltd.) Dept. A . J . , 89 Oxford Street, Manchester, 1



AT PEACE WITHIN . . .

In our minds we all carry a picture like this one. It signifies a place of peace and quiet such as we long for in everyday life. Modern day living is cursed by noise, it is a destroyer of life to be ranked as a major concern. In industry, commerce and in every building project, John Dale are fighting this problem with all their technical and scientific resources. It is the battle of acoustics. John Dale offers a comprehensive Acoustical Advice Service to help you in your fight against noise. Research Laboratory · Mobile Survey Unit · Analyses and Reports · Designing · Installation · The problem of noise needs a scientific approach today. We offer you this Service and ask you to consult us before taking any firm decisions in matters concerning acoustics.

Leaflets on various treatments are available on request

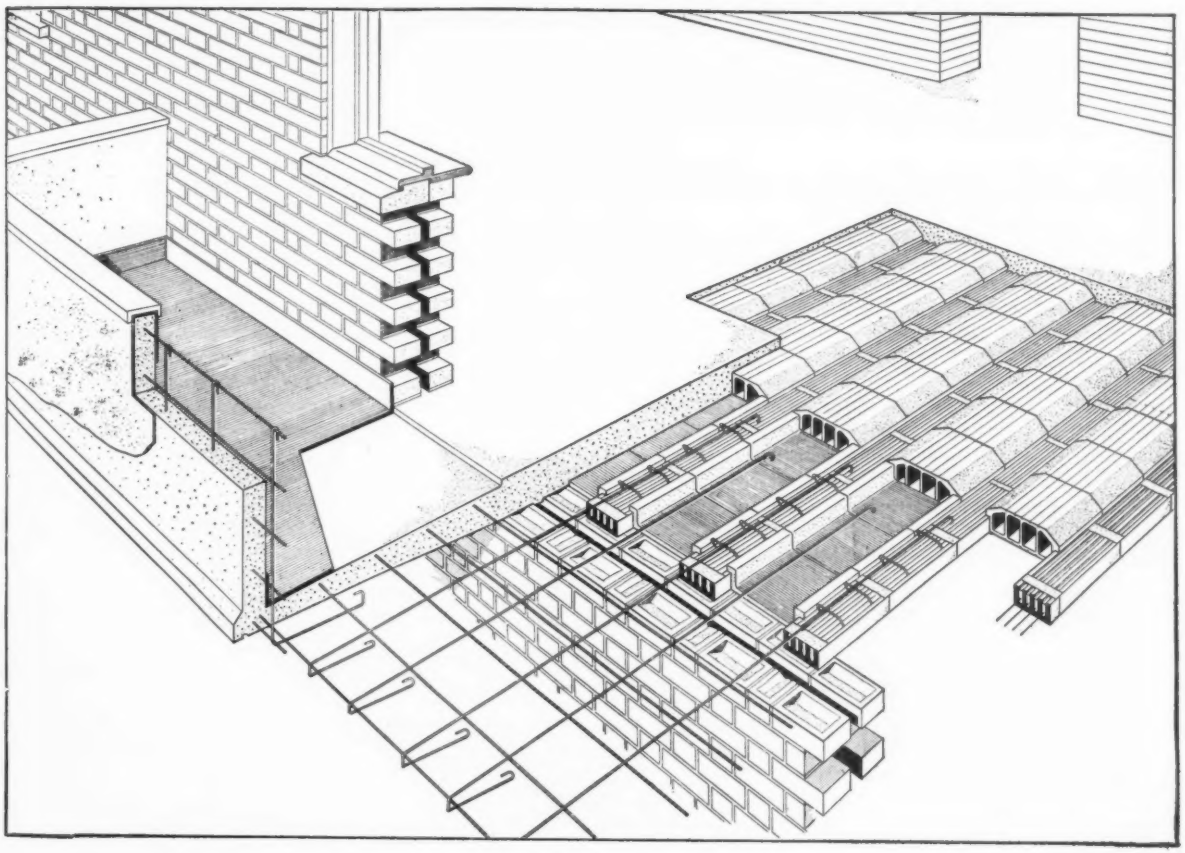
JOHN DALE

ACOUSTICS DIVISION

DHB 2561

JOHN DALE LIMITED · NEW SOUTHGATE · LONDON N.11. Telephone: ENTerprise 1272

Stahlton PRESTRESSED FLOORS AND ROOFS



1. ALL THE ADVANTAGES OF HOLLOW TILE CONSTRUCTION
2. PRESTRESSING ALLOWS FOR LENGTHY SPANS
3. COMPOSITE CONSTRUCTION WITH NO UPWARD CAMBER
4. SIMPLY FIXED BY GENERAL CONTRACTORS
5. LIGHT, EASILY HANDLED UNITS ARE SPEEDILY ERECTED
6. CLAY OR CONCRETE UNITS HAVE KEYED SOFFITS READY FOR PLASTER

Greatly increased production permits speedy deliveries

Fully illustrated particulars on request from:—

COSTAIN CONCRETE CO. LTD.
HEAD OFFICE: DUNCAN HOUSE, DOLPHIN SQUARE
LONDON, S.W.1. TELEPHONE: VICTORIA 3172/4

or from factories at:—

London & Southern Counties. Costain Concrete Company Limited, Stahlton Lane, Southend Arterial Road, Childerditch, Nr. Brentwood, Essex. Telephone: Herongate 317

Lancs. Yorks. & Midlands. R. Costain & Sons (Liverpool) Ltd., Barlows Lane, Liverpool 9. Telephone: Aintree 4141/5

Scotland & Northern Counties. Costain Concrete Company Ltd., Coltness Factory, Newmains, Lanarkshire. Telephone: Wishaw 880

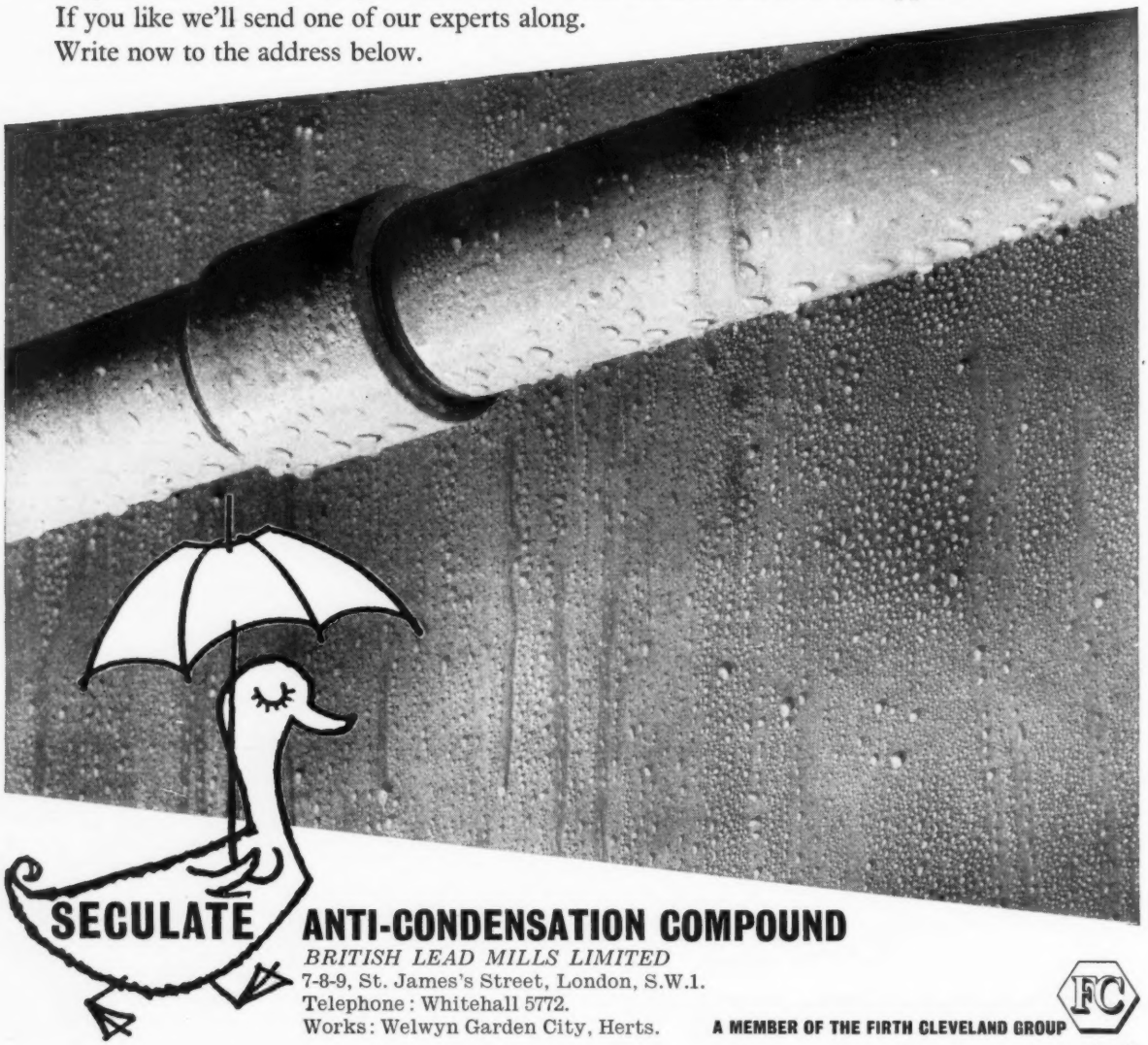
Wales & West Country. Costain Concrete Company Ltd., Cowbridge Road, Bridgend, Glam. Telephone: Bridgend 961

AP260-46

CONDENSATION CONQUERED AT LAST

SECULATE ANTI-CONDENSATION COMPOUND

Never before has there been anything like Seculate. Seculate does much more than old-fashioned anti-condensation paints. It not only sets up a thermo-insulating barrier between the atmosphere and the protected surface, but it also absorbs moisture. Seculate can be applied to any required thickness on metal, stone, brick, plaster, concrete, wood, etc. It is durable and washable! If you have a condensation problem, drop us a line. We'll send you more details about Seculate and how it is applied. If you like we'll send one of our experts along.
Write now to the address below.



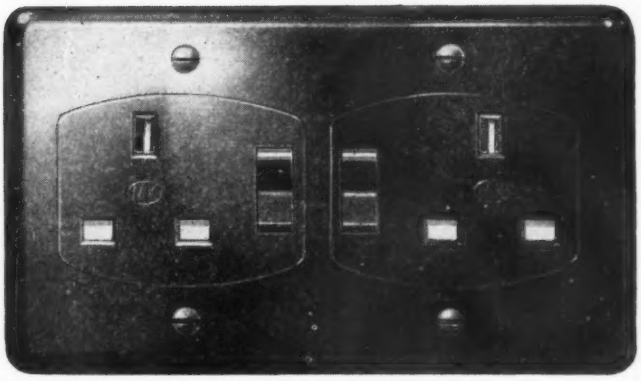
ANTI-CONDENSATION COMPOUND

BRITISH LEAD MILLS LIMITED
7-8-9, St. James's Street, London, S.W.1.
Telephone: Whitehall 5772.
Works: Welwyn Garden City, Herts.

A MEMBER OF THE FIRTH CLEVELAND GROUP

CRC 7 SC

List No. 2947
Flush Pattern

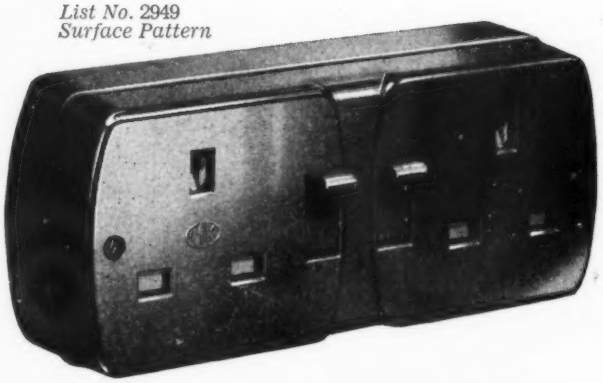


NEW...twin 13 amp. switchsocket-outlets

More people are asking for more sockets in more homes. Twin units make it easy to fit extra outlets at low cost. These new MK designs have switch control on both sockets.

The new range includes surface and flush all-insulated patterns as well as surface metalclad and flush metal units. The flush patterns have the same fixing-centres as the MK twin unswitched sockets. The two outlets are interconnected so that only one set of terminals is needed — a great saving on installation time. Specify these twin units for all positions where more than one appliance is likely to be used at the same time — for example, in the living-room at either side of the fireplace; in the kitchen above a worktop; in the bedroom beside the bed. MK twin units double the efficiency of every installation.

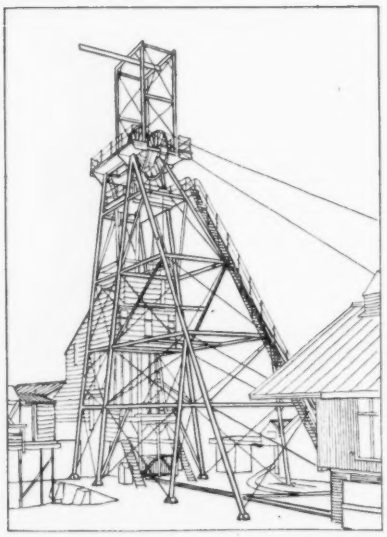
List No. 2949
Surface Pattern



MK . . . the mark of progress

M. K. Electric Limited, Wakefield Street, London N.18 Edmonton 5151
MK130DHB

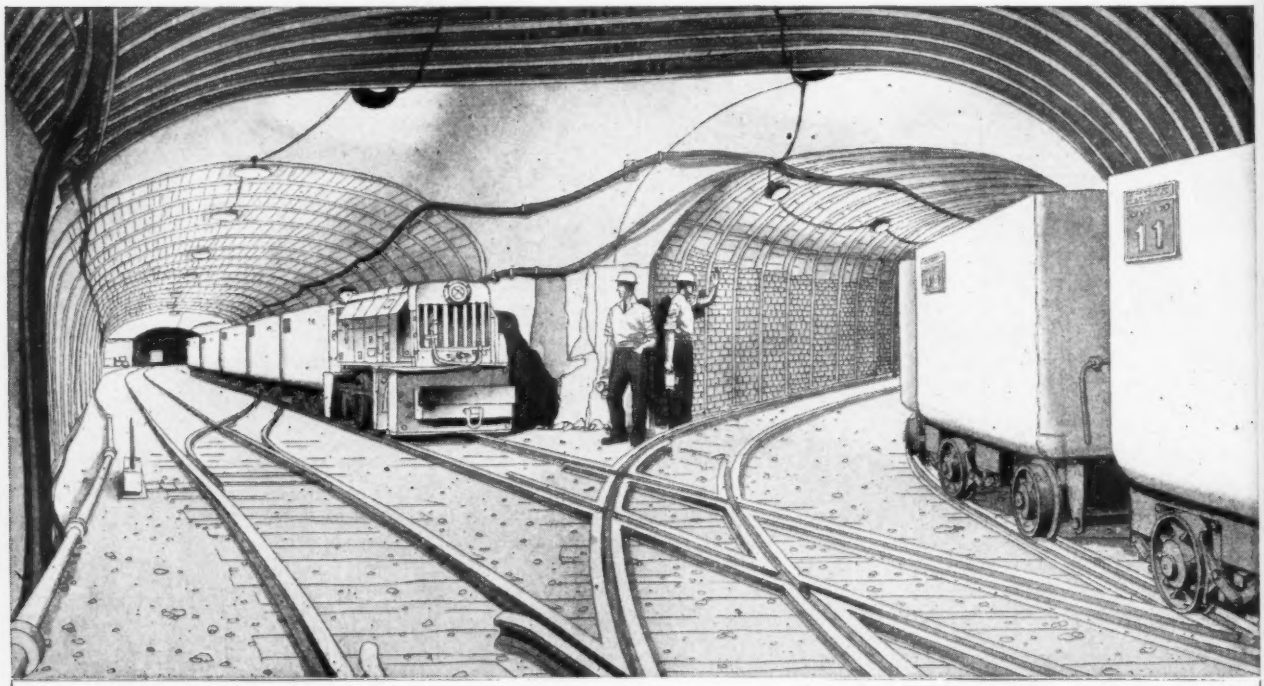
HOT GALVANIZING PREVENTS RUST



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

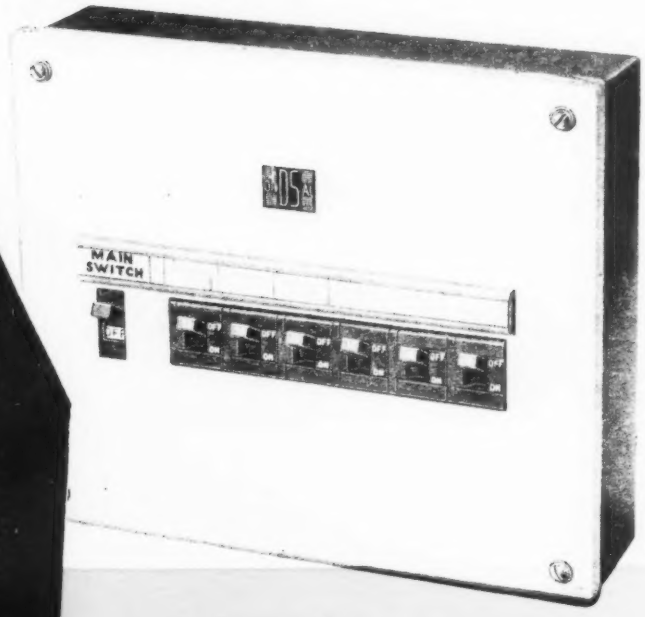
Hot galvanizing gives defence in depth. The firmly alloyed zinc keeps out rust—tightly sealing crevices and seams. And if the coating *does* get damaged the steel still won't be attacked because the zinc protects it sacrificially. Hot galvanizing *saves* steel—by eliminating the need for large corrosion 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



ANOTHER
DORMAN
DEVELOPMENT

LOADMASTER

miniature circuit breakers in

DOMESTIC CONSUMER UNITS

NOW AVAILABLE

Loadmaster—you just press a switch !

This new development sets the standard for electrical circuit protection in the home. No more the old familiar cry—which fuse has blown? —where is the fuse wire? All that is necessary is a quick glance at the *Loadmaster* consumer units to see which breaker has tripped to the "*off*" position. Simply switch "*on*" and the circuit is immediately reinstated. No anxious moments, no danger *AND* no long delays without *light* or *power*. The little extra cost is quickly repaid in time saved and convenience. In installations where fault levels are high (exceeding 1,000 amps.) flexible conductors smaller than 23/.0076 should not be used.

Consider these *Loadmaster* ADVANTAGES:—

- *Eliminates replacement or rewiring of blown fuses.*
- *Clear indication of "blown" circuit.*
- *Trip free action prevents closing of circuit if fault persists.*
- *Units are factory sealed for absolute safety and housed in attractive cream enamelled steel cases.*
- *Supplied with incoming 60 amp. D.P. Slow Break Switch. Outgoing circuits controlled by "Loadmaster" Miniature Circuit Breakers. Outgoing circuit ratings (5, 15 or 30 amps.) to be specified when ordering.*

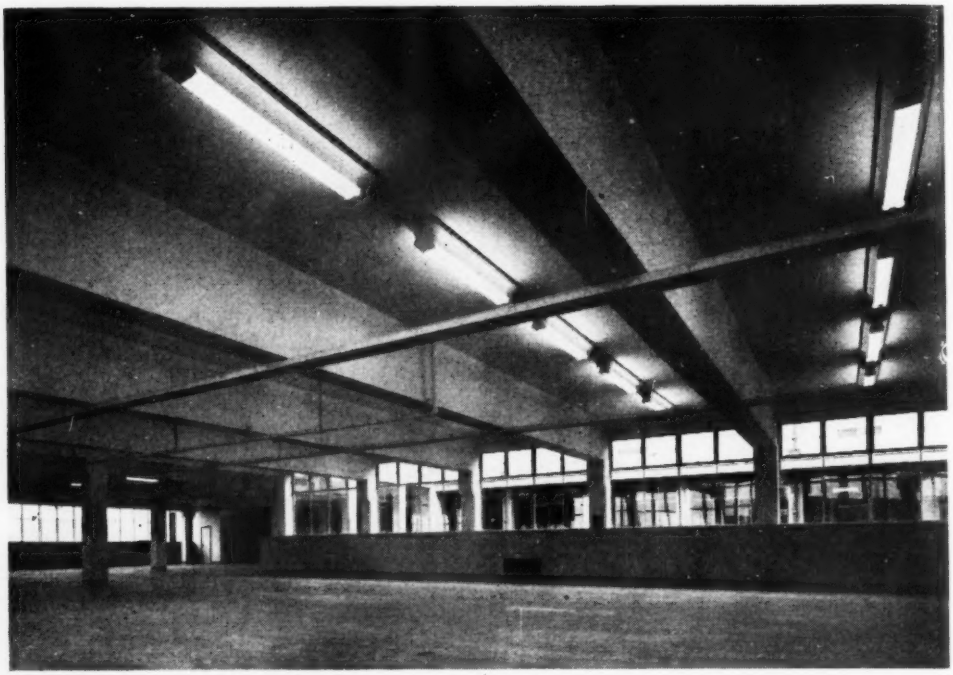
Write to M.C.B. Division for full details about this outstanding new development

DORMAN & SMITH LTD.

THE WORLD'S BEST L.T. SWITCHGEAR

MANCHESTER 5

Also at: London, Glasgow, Birmingham, Newcastle, Cardiff, Bradford, Belfast, Dublin.



Pyrok was used for fireproofing the structural steelwork at the factory extension of Messrs. Beechams Pharmaceuticals Limited, St. Helens.

Work was executed by Decorators (Liverpool) Ltd., Pyrok Licensee Department. Architects: Messrs. Quiggin & Gee, 11 Old Hall Street, Liverpool, 3.

Pyrok has special properties of fire protection which comply with the high standards required by the Model Bye-laws.

PYROK for Fire Protection

Pyrok is a Vermiculite-cement surfacing applied by continuous spray, setting rapidly and adhering strongly to structural steelwork, concrete, stone, brick and fibre-board. Pyrok gives complete protection to structural steelwork and does not permit oxidization beneath its surface. Particularly effective against sulphurous fumes, Pyrok protects steelwork against fire and has in addition remarkable acoustic, insulating and anti-condensation properties.

anti-corrosion

anti-condensation

acoustical

continuous Vermiculite surfacing

fire-resisting

BRITISH & FOREIGN PATENTS

Contracts are undertaken by Licensees in all parts of the U.K. and in countries abroad. We shall be glad to supply further information on request.

PYROK LIMITED 401-404 Montrose Avenue Trading Estate Slough Bucks *Tel: Slough 24061-5 'Grams: Pyrokad Slough*

Licensees U.K. C. & T. (Pyrok Contracts) Ltd., London N.W.2. Bristol 4 and Gateshead 8, Pyrok Contracts (Midlands) Ltd., Birmingham. Decorators (Liverpool), Ltd., Liverpool 3. Orthostyle Ltd., Scunthorpe Lincs. AP280/402

ASIA INSURANCE BUILDING

Singapore

Architect :— Mr. Ng Keng Siang, F.R.I.B.A.
Contractor :— E. J. Tan Engineering Co. Ltd., Singapore.

The restricted choice of colours has long posed a major problem in the age-old art of paint-colour decoration. That Robbialac Colorizer Paints offer an almost limitless freedom in the selection of tints and shades is one of the reasons why these famous Paints are continually being used in bringing added distinction to contemporary buildings throughout the world.

The Architectural Bureau

of Jenson & Nicholson Ltd. offers a complete colour advisory service to Architects and will, if desired, co-operate with executives and contractors. A brochure on Robbialac Colorizer Paints and their possibilities, especially written for Architects, is available on request.

ROBBIALAC Colorizer TRADE MARK **PAINTS**

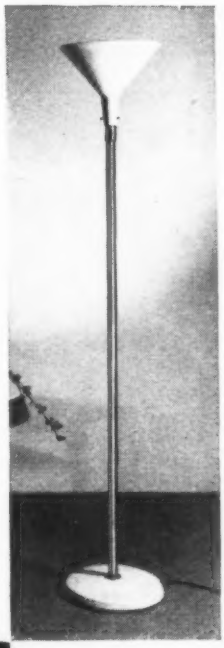
JENSON & NICHOLSON LTD., DEPT. A.J.12, 36 ST. JAMES'S STREET, LONDON, S.W.1. HYDE PARK 6060

Additions to the current range of Troughton & Young fittings are now complete to supplement the existing designs in the Mondolite, Versalite, and Ultralux ranges.

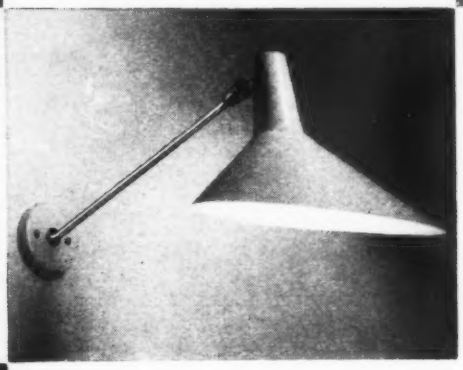
Many of these new fittings, in pendant, bracket, table lamp and floor standard form, have been designed with new materials and the emphasis is on colour, simplicity of design, and interchangeability of units to provide a variety of alternative assemblies.

The majority of these fittings have already been approved by the Council of Industrial Design for "Design Review", and an attractive display of the new units has been added to the Lighting Centre at Knightsbridge and our Liverpool showroom.

An illustrated folder of these new fittings Ref. No. TYL/11 is available on request.



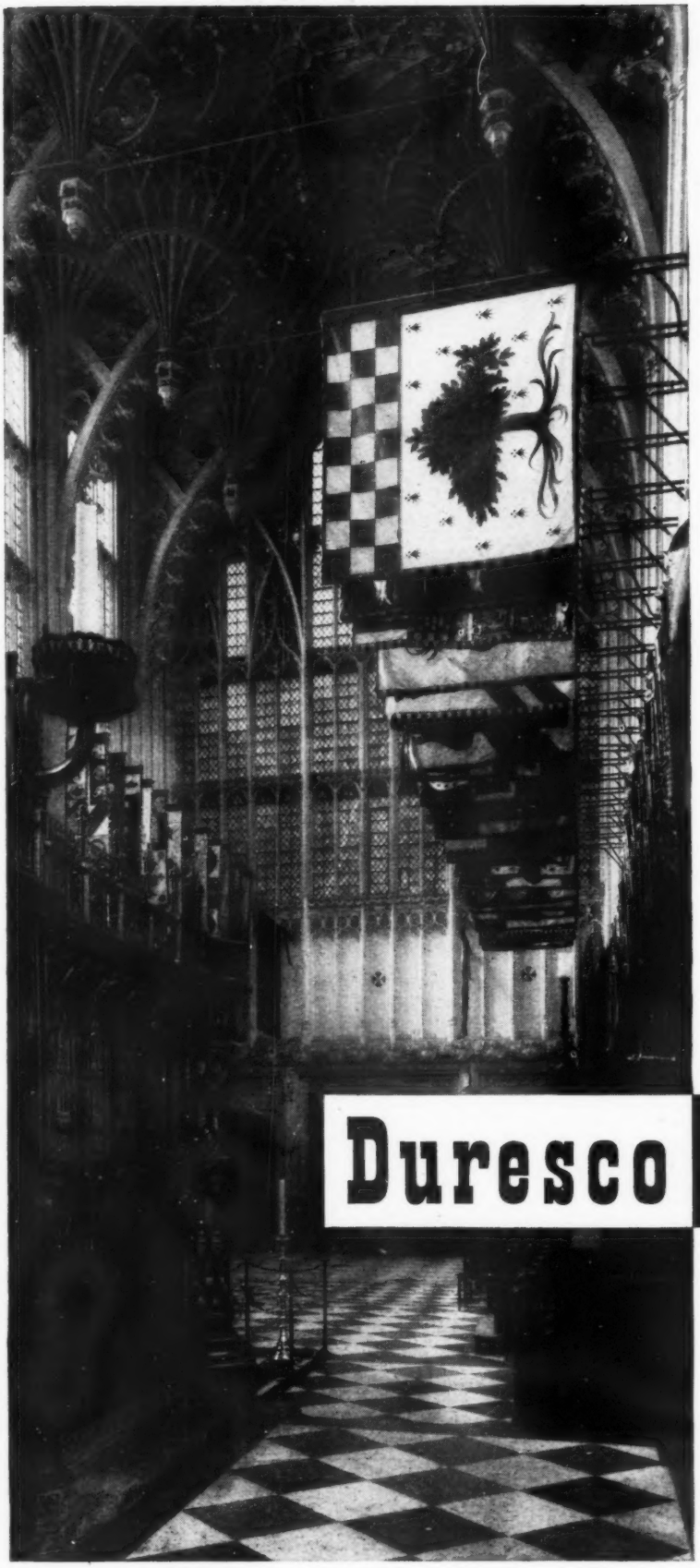
new range of lighting fittings...



TROUGHTON & YOUNG

TROUGHTON & YOUNG (LIGHTING) LTD.,
143 Knightsbridge, London, S.W.1 'Phone: KENsington 3444
Also at 46, Rodney Street, Liverpool, 1.

RFW.12.



Henry VII's Chapel, Westminster Abbey.

There are Colours and colours, just as there is Service and service.

A reputation for high quality takes time and skill and patience to earn. Eighty years of concentration on the exacting needs of architects and professional decorators account as much as anything for the enviable reputation of Duresco colours.

It takes service to sustain a reputation, which is why the prime qualification of a Duresco representative is a real knowledge of paint. All Duresco representatives *know* paint.

You can depend on that.

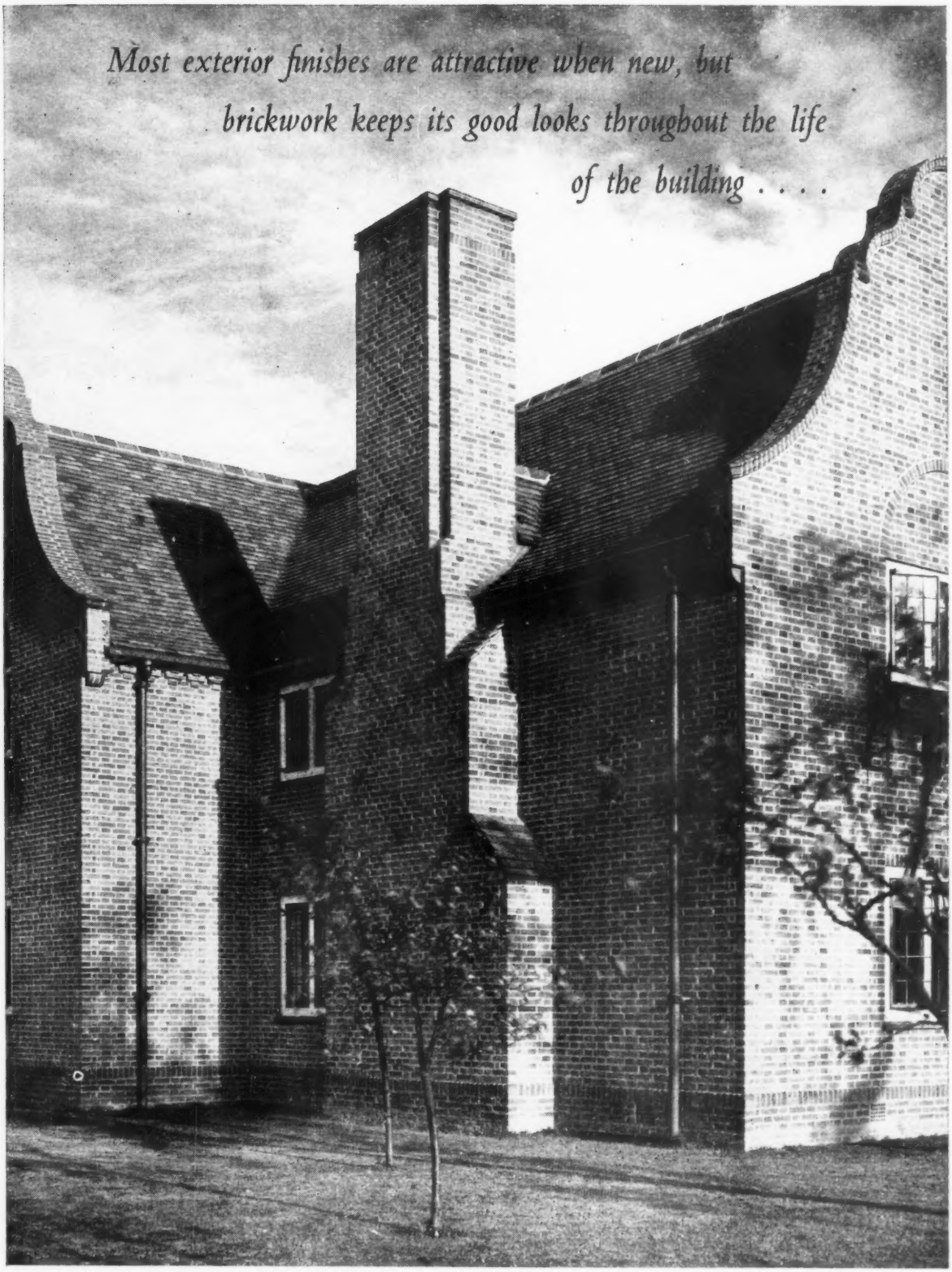
Duresco Products

"THE INVENTORS OF WATER PAINT"

For full details of our superb range of decorative materials, please write or telephone to:-

The Technical Advisory Service,
DURESCO PRODUCTS LTD.

LONDON: Charlton, S.E.7. GREenwich 0034/5/6
MANCHESTER: 65 Great Ducie St., DEAnsgate 3161



FAIRHOLME ESTATE, BEDFONT, MIDDLESEX. Architect: T. Cecil Howitt, D.S.O., O.B.E., F.R.I.B.A.

For freedom from Maintenance **BUILD IN BRICK**

Issued by the National Federation of Clay Industries, Drayton House, London, W.C.1.

"UNDULITE"*

has been tested by the D.S.I.R. and Fire Offices' Committee Joint Fire Research Organisation...

(Report F.R.O.S.I. 527)

as a result of which the London County Council is prepared to consider the use of these resin-bonded glass fibre corrugated sheets under by-law 1.13 of the London Building (Constructional) By-Laws, 1952, and any approval which may be given will be subject, inter alia to the following conditions:—

(1) That the area of any panel of the roof covered with such material shall not exceed in any one part 30 sq. feet.

(2) That every part of the roof not covered with such material shall be covered with incombustible material.

(3) That the distance between any two adjacent panels of such material

(i) measured along the roof and parallel to the eaves, shall be not less than the width of the panels.

(ii) measured up the slope of the roof, shall not be less than the length of the panels.

(4) That no part of any such panel shall be at a less distance from the ridge or eaves of the roof than the length of that panel.

(5) That the horizontal joint between every such sheet and any adjoining roof sheet shall be sealed with a layer of soft asbestos wick weather seal, not less than 1 inch wide.

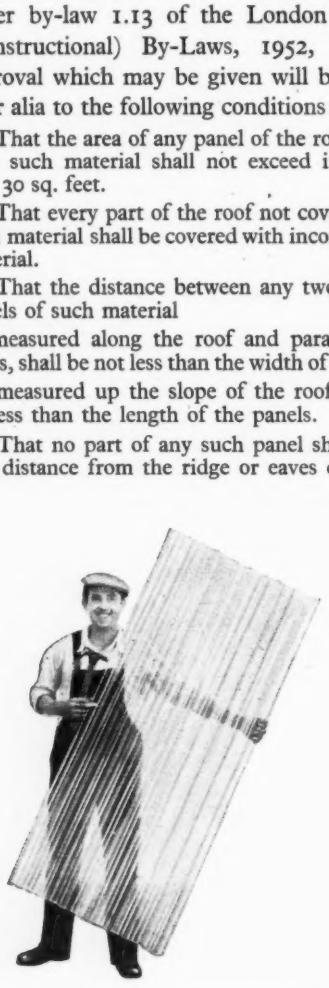
(6) That the vertical joint between every such sheet and any adjoining roof sheet shall be seam bolted with bolts at not more than 15 inch centres.

(7) That the weight of the glass fibre mat used in the production of every such sheet shall be not less than 2 ozs. per square foot.

(8) That every such sheet shall be clearly die-stamped, so as to be readily identifiable, with the following identification mark "F.R.O.S.I. No. 527".

Every sheet so identified will withstand the conditions of test F.R.O.S.I. No. 527.

Application is necessary to the Council in each specific case. In other parts of the country where restrictions are at present in force on the use of such materials, application should be made to the appropriate authority.



"UNDULITE" *is a translucent corrugated plastic sheeting, reinforced with fibreglass, which is an ideal medium for the inexpensive daylighting of all types of buildings. Send for free samples now.*

"UNDULITE"

made by Ashdowns

* *Registered trade mark.*

ASHDOWNS LIMITED, ECCLESTON WORKS, ST. HELENS, LANCS. TELEPHONE: ST. HELENS 3206
LONDON OFFICE: 29-30 ST. JAMES'S STREET, LONDON, S.W.1. TELEPHONE: WHITEHALL 6002

Ashdowns Limited is a subsidiary of Pilkington Brothers Ltd.

Here's a flooring that takes some beating

Tough, hard-wearing Phenco flooring wears and wears and never looses its gay, colourful appeal. Marching, stamping, scuffling feet; spilt food and liquids; damp and dirt—Phenco was made to accept hazards like these as part of its everyday life. Non-slip, warm, fire-resistant and easy-to-clean, it is the ideal flooring for homes, hospitals, schools, laboratories, offices and many other premises. You can specify Phenco in any of 30 attractive colours, plain or 'marbled'.

Phenco flooring is supplied in 12in square tiles, or in rolls 8 yards and 12 yards by 36in. Write for descriptive literature.

PHENCO FLEXIBLE VINYL PLASTIC FLOORING

Manufactured by PHOENIX RUBBER CO. LTD., 91 BISHOPSGATE, LONDON, E.C.2
Phone: London Wall 3564 and 1622. *Manchester Office: 472 Royal Exchange Building, Manchester, 2. Bristol Office: 39 Broad St., Bristol, 1*
OA/3159

G.E.C. specifies BITUMETAL

Architects: G.E.C., WEMBLEY.

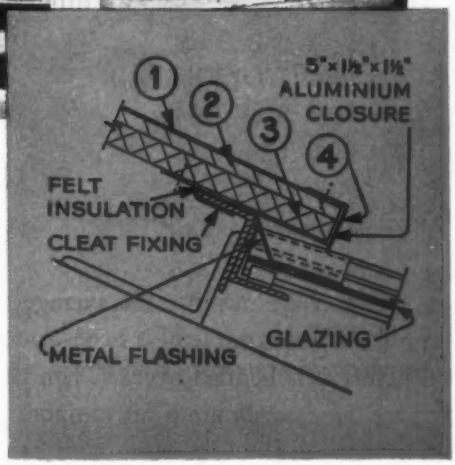
Vast enterprises have risen to pre-eminence through insistant concentration on one theme—" only the best is good enough."

It is natural therefore that The General Electric Co., Ltd., should choose the leaders in the field of roof covering to roof their new building at Ipswich.

" BITUMETAL " offers many advantages to Architects and Engineers. It combines in one unit, roof plus insulation plus ceiling—is thoroughly draught and dustproof and of neat and attractive appearance.

Briggs' Advisory Service is ready to save your time—By Preparing complete working drawings—To provide Roofing Technicians to advise in the planning stage — To supervise contracts from inception to completion.

Ask our nearest Area Office for more information.



1. Briggs 3 Layer Roofing with Green Mineral Cap Sheet.
2. ½" Insulation Board.
3. " BITUMETAL " Aluminium Deck (corrosion free).
4. Briggs' Welted Roofing Drip.

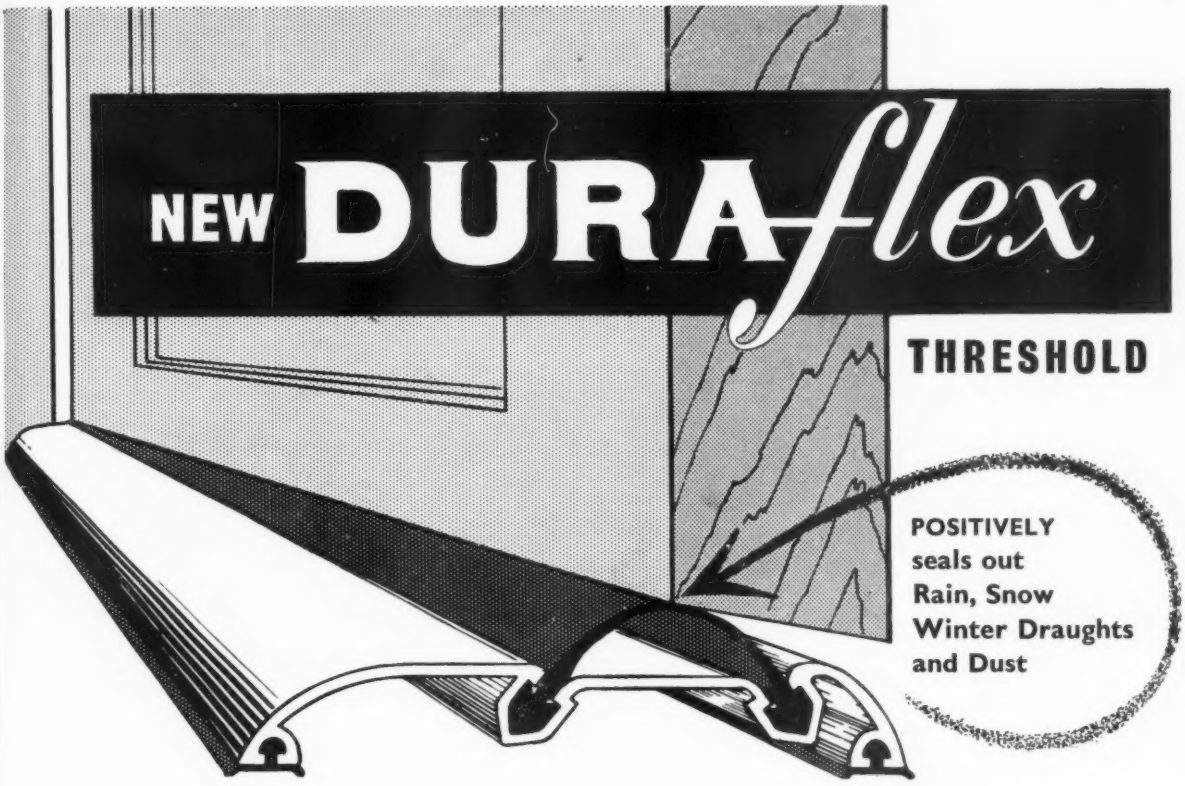
Bright reflective ceiling.

No maintenance.

WILLIAM BRIGGS & SONS LTD.

VAUXHALL GROVE, LONDON S.W.8. REGD. OFFICE: DUNDEE

OFFICES AND DEPOTS ALSO AT ABERDEEN · BELFAST · DUBLIN · BRISTOL EDINBURGH · GLASGOW · LEICESTER · LIVERPOOL · NORWICH



GREATEST THRESHOLD— ADVANCE IN 25 YEARS

DURAflex keeps draughts OUT, warmth IN

Any heating system you install will use *less* fuel if you also fit DURAflex thresholds to the doors of the home.

DURAflex is already America's most popular threshold. Only DURAflex gives a totally new 3-way seal; flexible vinyl plastic is arched in a sturdy aluminium base to provide "spring action" against the bottom of the door, thus providing a tight, effective seal. Vinyl strips along the bottom of the threshold prevent water seepage. Modern... practical... attractive—DURAflex is Britain's finest threshold. DURAflex is just what builders have been waiting for—installed in less than half the time needed for ordinary thresholds, it reduces labour costs. No costly return calls to replace dried-out caulking putty and damaged hook-clips. DURAflex pleases the householder, too. Not only does it reduce his heating bills, it also positively increases the warmth in his home and does so without any heavy installation costs.

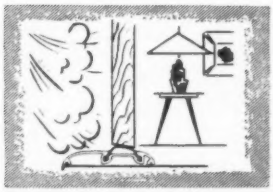
Serial No ★ 2498
BRITISH
GOOD HOUSEKEEPING INSTITUTE
GUARANTEES
REFUND OF MONEY OR REPLACEMENT IF NOT IN CONFORMITY WITH THE INSTITUTE'S STANDARDS

INDEPENDENT LABORATORY TESTS* PROVE THE RUGGEDNESS OF DURAflex THRESHOLDS: OVER 215,000 DOOR OPENINGS AND CLOSINGS WITH NO VISIBLE SIGNS OF WEAR ON THE ESPECIALLY COMPOUNDED VINYL PLASTIC.

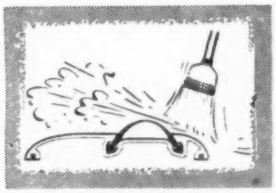
*South Florida Test Service

Architects are invited to write for full specification details to:
The Technical Advice Department, Adams & Benson (Dalbukirk) Ltd., DURAflex Division, Oldbury Road, Albion, West Bromwich, Staffs.

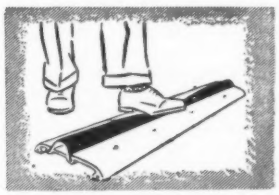
ONLY DURAflex HAS ALL THESE ADVANTAGES



Does away with winter draughts—keeps out rain, snow, dust and insects.



Maintains a perfect seal even if door warps—eliminates need for make-shift weather stripping.



Makes housecleaning easy—dirt sweeps right over it! Flexible vinyl arch flattens under foot! Reversible for inswinging or outswinging doors.

Co-operative Society, Belfast. The engineering services were executed under the direct control of the Chief Engineer, Co-operative Wholesale Society Limited, Manchester, 4.

Co-operative Society, Belfast. The engineering services were executed under the direct control of the Chief Engineer, Co-operative Wholesale Society Limited, Manchester, 4.

FU

AI

V

AJ

THE ARCHITECTS' JOURNAL

No. 3224 Vol. 124 December 13, 1956

9-13 Queen Anne's Gate, London, S.W.1. Tel. WHI 0611.

Subscription rates: by post in the U.K. or abroad, £2 10s. 0d. per annum. Single copies, 1s.; post free 1s. 3d. Special numbers are included in Subscriptions; single copies, 2s.; post free, 2s. 3d. Back numbers more than 12 months old (when available), double price. Half-yearly volumes can be bound complete with index in cloth cases for 30s.; carriage 1s. extra.

NOT QUITE ARCHITECTURE

AT THE RIBA CRICKET DINNER

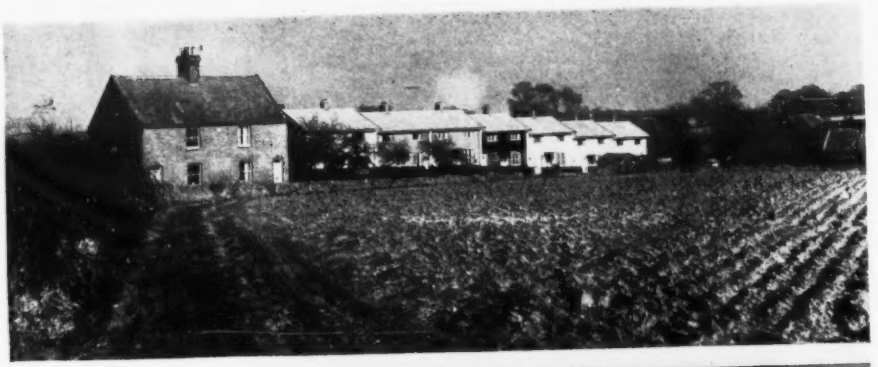
"The Vitruvians?" Gontran Goulden said, looking round the rapt concourse. "The Palladians? They're such old names, these. Why not simply—the Corboosers?" Loud applause for this divining sally, and merited. The new PAA is one of those big, amiable, expansive fellows who manage to keep a soft spot going for the game that brought misery down upon them in summer after summer of compulsory boyhood.

*

"First," he recalled poignantly, "one had to get over the hardness of the ball." The hardness of the ball combined with its high rate of velocity had made the impact hard to bear. Then his smile lost much of its tautness. Cricket had its easier side. "Do you remember?" he jollied us, not without nostalgia, "do you remember those grass-stalks that were such good eating in the outfield? The tall ones with fleshy nodules at the joints?" And then a most evocative touch, "Passing the time with these, praying that a catch would never be sent up in your direction and wondering if you could work up to the next nodule before the next ball was bowled?" Did we remember? It is cricketers' tic. We were practically reaching for those familiar, satisfying grass-stalks. We reached instead for our cigarettes.

*

In thanking this distinguished speaker for proposing the toast to the Club Roger Norton had to point out that the distin-



Counter-Attack

The December issue of the *Architectural Review*, called " Counter-Attack," is a sequel to " Outrage " —the issue that introduced a new word, subtopia, into the language. " Outrage " made us feel that the British landscape was lost: " Counter-Attack " shows how it can be saved. It states that visual planning can be achieved in four stages. First, the type of environment should be identified. (Above: an example of the " perfect " town, which " lives by enclosure." Top right: housing which " augments the village pattern." Above right: " wild " landscape which, unlike " country," must not be interrupted.) Second: "clutter must be removed." (Note how it spoils the town, extreme left, and the wild landscape, left.) Third: cut out " dead ground." Fourth: camouflage the mess you cannot get rid of in any other way. These points are thoroughly discussed and illustrated and, in addition, there are articles on housing policy and planning machinery which will be discussed in next week's JOURNAL. See also ASTRAGAL'S note on page 848. (The " perfect " town is Amsterdam. The augmented village is Hales, Norfolk (architects: Tayler and Green). The wild landscapes are at Glencoe. The cluttered town is Oxford.)

guished speaker had hardly mentioned the Club. "In case this is because he knows so very little about us may I be forgiven if I . . .?" He was forgiven. The names of John Wheeler, Dick Fairbairn, Douglas Taylor, Basil Smyth, Sidney Caulfield and Peter Adams were brought out on a seemly note of exaltation without sonority in the Captain's brief history of the Club.

*

These were the men who had made it. As each name received acknowledgement its possessor, if present, stared fixedly at the tablecloth as if he hadn't heard it. It all began in 1946. The only match arranged was twice rained off. In 1947 three were played and the Club hadn't looked back ever since. The membership now numbered over forty and there were six regular annual fixtures. In ten years they had won rather more matches than they had lost and for a young club this wasn't bad, the Captain thought. The press were thanked for taking an interest in the matches and the AJ in particular for its "controversial reports that have not only brought new members into the Club but have also encouraged publicity-minded principals to give their assistants time off to play for the Club."

*

John Seward, toasting guests, indulged in some Mancunian high jinks. He orated on the subject of his personal cost analysis for last season's CCC game. Miles travelled 834, runs scored 2, cost per run scored 42s. 2d., cost per pint consumed 18s. 6d. Failure was entirely attributed to poor site conditions, an eliptical ball, a blind umpire and putrid luck.

*

I have since received a threatening letter from this redoubtable Free Forester. On no account is his speech to be blue-pencilled where it refers to a certain pressman "who after a very good time at the dinner last year issued forth into Bedford Square and thence to Russell Square, where before an admiring audience he gave a performance that could only be described as an unfortunate marriage of the talents of Mme. Galena Ulanova and Mr. Elvis Presly." Why should Mr. Seward fear the blue pencil here? We publish the extract in full and with pleasure. The incident is apocryphal.

*

Readers, please turn to the news section this week for a serious report of the Club elections which took place at the annual general meeting just before this excellent dinner.

ROBIN MUDIE

The Editors

THEY LEAD THEIR ARMIES FROM BEHIND

THE need for architectural students to be taught leadership was one of AA president Gontran Goulden's principal points in his recent inaugural address. But a profession well versed in the qualities of leadership is not enough. The profession itself should be given leadership. A proportion of this can come from the Royal Institute, and a certain amount can come from enlightened clients, but the bulk of it should come from the Government. The two main political parties do not seem to realise this, and neither, by and large, does the civil service. This may be due to the fact that when the present senior civil servants started their careers central government was but a pale shadow of what it is today. As for the political parties, they seem more concerned with power than with policy, and least of all with leadership.

Why, it may be asked, should the government exercise leadership towards architects in particular? To which we would reply that, if engineers and planners are included with architects, the three professions control, or at least fumble with, the bulk of this country's fixed investment. And that seems a very good reason for the setting of a very high standard by central government. It is no good trying to put the clocks back. This country's natural resources have been so abused, and the stock of buildings, roads, railways and other services so casually and wastefully assembled that it is obvious to all but the stupidest tory that this country has to have *planned* development. But are we getting the quality of planning and the quality of building which we should have? It is all too obvious that, whether we see Britain in terms of subtopia or subsistence or credit balance, the answer is that we are not.

At this point it is usually possible to say something polite about our schools ("the best in the world") and the MOE'S good example or about LCC housing ("so much better than USA municipal housing"). But we are sick and tired of deriving comfort from these overworked sources. What we want to hear is that housing, offices, laboratories, roads, factories, are progressively getting cheaper—or at least not becoming more expensive—and being more quickly built *without* lowering standards or even just simply being better designed and built. And we want to be convinced that there exists somewhere a Ministry of Planning who can show that a planned policy of moving industry and labour, and of siting oil refineries, atomic power stations, power cables, motorways and so on is paying dividends in terms of greater efficiency and greater amenity. The public rows that blow up over virtually every major building project would lose half their force if Ministries could show blighted areas regained, amenities restored and a positive gain to the nation's economy.

A few week's ago an architect planner reviewed the MOHLG's annual report in the JOURNAL and deplored the fact that the report in no way indicated that the Ministry was engaged in

any intelligent research, development or study in order to be able to produce a progressive planning policy. Without that fundamental work it can give the professions little real leadership. This week, on page 852, a reviewer comments on the MOW, as seen by a former Permanent Secretary, Sir Harold Emmerson. Virtually the same complaint can be made. Here is a Ministry putting up and servicing a great variety of buildings. But its contribution to the building industry in terms of improved standards, economy, or technique are (and it's sad and hard to say it) negligible. And without that contribution how can it give the leadership which the industry —and particularly the architect—needs?

COUNTER-ATTACK

The immense amount of attention the *Review's* "Outrage" issue received included a debate in the House of Commons. During the debate the Parliamentary Secretary to the Minister of Housing & Local Government said he thought the *Review* ought to follow it up with another issue of a more positive kind. That is exactly what the *Review* has now done.

*

The December issue is called "Counter-attack," and it shows the people who are made angry about the subtopian rash that is covering the whole country what they should do about it. Ordinary people, by and large, can only act indirectly—by making their views felt, raising their voices in protest and supporting whoever is trying to do the right thing. Architects and planners can act more directly; they are the specialists by whom the authorities responsible are—or should be—guided, and "Counter-attack" at last provides them with a set of rules to go by.

*

It also illustrates good examples of design, where the *Review* has been able to locate them at home or abroad, which it uses in order to show how the disappearing difference between town and country could be re-established.

*

In addition to this casebook, there are Gordon Cullen's telling cautionary drawings and there is Peter Shepheard on trees; but perhaps most useful of all to architects is the study W. Manthorpe has made of all the regulations, by-laws, codes of practice and prejudices that make good planning (especially in housing layouts and the like) almost impossible. Such a study has never been done before and badly needed doing.

*

"Outrage" made a tremendous impact and, among other things, added a new word—Subtopia—to the language. If "Counter-attack" has the same impact it will do more: it will start the move forward from words to deeds.

BIG BEN AWARD

Ben Nicholson—probably the English artist whose works are most coveted by architects—has won the first ten-thousand-dollar international Guggenheim Award. Quite apart from the fact that it could not have happened—as they say—to a nicer person, this success story has two interesting morals. The award is a polite snub to the profession of art-criticism in England, for the English local selection-jury (no names, no backbiting) only sent Nicholson's picture forward to the final as a kind of hedge to their main bet, which was one of those loud Brutalist breakfast-scapes by young John Bratby, but wasn't (one hears) even short-listed by the final jury.

*

The award is also a feather in the cap of the British Council, who have continually expressed their faith in Ben Nicholson as one of the men who matter on an international plane, by showing his works at major international exhibitions here, there and everywhere, and have been heavily criticised above and below stairs for doing so. Quite apart from the fact that they are now proven right, their efforts are also to some extent responsible for the outcome, in persuading foreign critics to take Ben Nicholson's work seriously.

TRANSPORT TREASURES

An excellent exhibition of "Transport Treasures" now on view at the Shareholders' Room, Euston Station, was prepared by Christian Barman and designed by Sheila Stratton and Peter Miller. The exhibits here will be changed from time to time; at the moment they consist mainly of badges, handbills and crockery, together with a few ships—a reminder that before the Transport Commission's time canals were not merely argued about.

*

What a pity it is that there is still no news of a permanent transport museum. The old Nine Elms station was considered at one time, as you may remember, but it is really suitable only for a railway museum. As room has to be found for buses (horse-powered and otherwise), as well as a lot of other relics, it seems to me that the best place for a museum is the old engine shops of the L.B. & S.C. at Brighton, which are due to be closed before long.

SPECTATOR IN THE CITY

Once in a while such weekly journals as the *New Statesman* and *Time and Tide* go in for architecture, do an article or two and then drop the idea. There are a number of reasons for this sad little story: (*a*) architecture in England is not a popular subject (this

is largely the fault of the profession which dislikes criticism—always a popular practice); (*b*) it is extremely difficult for one practising architect to criticise another's work publicly—which limits the field, and (*c*) these journals do not use illustrated matter, and architecture is difficult to explain without illustration.

*

But when a journal does attempt such a thing it deserves all the praise and support we can give it. ASTRAGAL is, therefore, happy to give the *Spectator* a backslap for the stimulating and outspoken article in its "City of London" section of November 30 on new office blocks in the City. The article is headed ". . . And The Usual Offices" and is by John Wood. Mr. Wood's main thesis is that there are bad and better buildings going up in the City and that the better ones cost no more than the bad ones. He asks "who gains by bad architecture?" It is a question we have all been asking ourselves for a long time. We hope to see more articles of the like in the *Spectator*.

*

Incidentally, John Betjeman is doing a good job in the *Spectator* these days in his "City and Suburban" column. When he is not reporting amusingly on his travels on nearly-disused branch railways he is bringing to light many scandalous stories about the fate of buildings of historic or architectural interest.

OXFORD DISENCHANTED

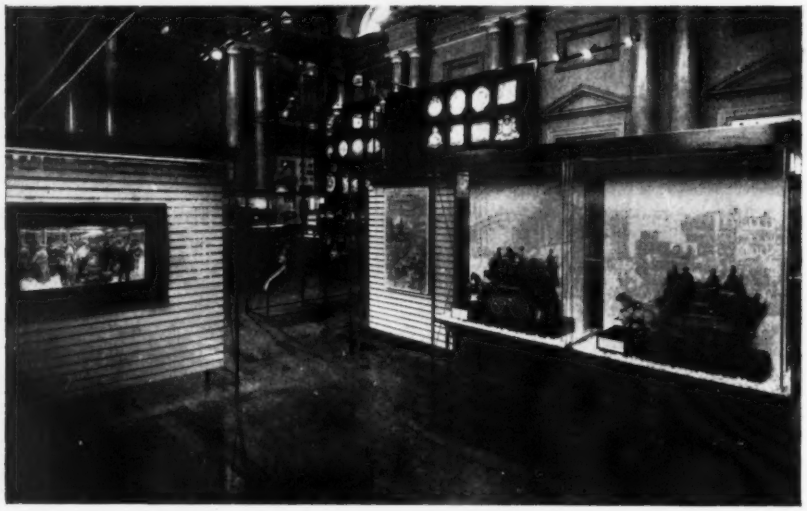
A new book on Oxford* is the combined work of the "foremost English photographer of architecture and a fashionable philosophy don at Balliol": whether hopes are raised by such a conjunction is a personal matter. But one nevertheless expects more than what is given. The photographs, which cover the ground superficially, are almost without exception undramatic and give no idea of the townscape, the microcosmoi, which transform a walk through Oxford, in and out of college gardens and quadrangles, into such an enchanted experience. The tunnel-like passages that link so many open or not-so-open spaces are so characteristic that the topography of Alice in Wonderland, if not Freudian (which the townscape of Oxford colleges may be), was probably suggested to Lewis Carroll by his daily surroundings.

*

To dull illustrations is added a biased text. Queen's is "braggadocio" and "arrogant"—this is not said in derogation, which makes it the more absurd—the Examination Schools by T. G. Jackson are "hideous," the original Jacobean gables are "unfortunate," Butterfield's Balliol chapel is a "pink obscenity," and so on. It is a relief that the author concedes "it would be

* *A Portrait of Oxford.* By A. F. Kersting and Marcus Dick. Batsford. 30s.

The poorly-designed notice boards at London Airport have surprised and dismayed many visitors. But these notices are only temporary, and will be replaced by permanent ones designed by the architect, Frederick Gibberd, when exact needs have been discovered. The restaurant decor (bottom pictures) seems unlikely to be changed. The architects and authorities at Ministry level assumed a high standard of catering in the design stage and although it is said that objection has been taken to Forte's handling of notices, bar layout, etc., no changes have been made.



"Transport Treasures," the exhibition at the Shareholders Room, Euston Station, which ASTRAGAL *refers to on the previous page. The exhibition was prepared by Christian Barman, and designed by architects Sheila Stratton and Peter Miller.*

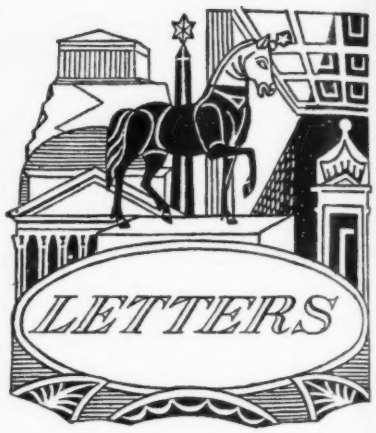
frivolous to dismiss Keble chapel"; it would indeed. Magdalen cloisters "cannot compare with those at New College"—period. Why can't they? Both are illustrated and tell their own story. Surely, as a point of accuracy, the cloisters and bell tower of New College are not late seventeenth-century, as the caption says. To hark back to the lack of interrelation, it seems more than a shame to relegate St. Mary's Church, as an extra, to a page at the end facing St. Anne's and Nuffield College. But it is foolish to whip a dead horse. The book will do perfectly well as a Christmas present to Aunt Edna and that is probably what the publishers—who, be it noted, also published Christopher Hobhouse's near-masterpiece on Oxford—had in mind.

ASTRAGAL

DIARY

Architectural Treasures of Czechoslovakia. Exhibition at the RIBA, 66, Portland Place, W.1. Monday to Friday 10 a.m.—7 p.m., Saturday 10 a.m.—5 p.m. Admission free.
DECEMBER 14 TO 28 (closed 25 and 26)

English Furniture Design of the Eighteenth Century. Talk by Peter Ward-Jackson. At the Victoria and Albert Museum Lecture Theatre. Admission free. 6.15 p.m.
DECEMBER 19



H. G. C. Spencely, F.R.I.B.A.

Eleven Nottingham Architects

Michael Young,
of the Institute of Community Studies

P. A. Denison

"A Student"

But Once A Year

SIR,—Now that the present-giving season is getting near, may I suggest that every principal architect counts the number of new jobs which have come into his office since last Christmas, multiplies that number by his own factor (10s. ?, 20s. ? or more ?) and sends the proceeds to the Architects' Benevolent Society for the benefit of others less fortunate than himself ?

If we could make such presents habitual, the headaches and heartaches of the Architects' Benevolent Society would become considerably reduced.

London H. G. C. SPENCELY.

RIBA Journal: An "Expensive Wrapper"

SIR,—We, the undersigned, would like to endorse the views expressed by your correspondents of November 29 with regard to the RIBA increased subscription.

We agree that there should be lower rates for members who reside some distance from the "Club" in London, and already feel they receive little more for their subscription than a "Who's Where" and an expensive wrapper for the BRS Digest. In addition, there should be some differentiation between rates for the masses of struggling young architects, as distinct from the successful few, who can afford the new rates.

We also note that the president and secretary of the RIBA are to go on a world tour. Why, and who pays ?

J. C. ALLEN (A), B. H. BATES (A), D. BESTWICK (A), I. CAMERON (A), A. CLAYTON (A), G. H. COWLISHAW (L), J. D. M. GAMMANS (A), J. H. HALMAN (A), T. O. HAUNCH (A), D. R. M. MASON (A), P. H. ROBERTS (A).

City Engineer's Dept., Nottingham.

"You Young Editors . . . ."

SIR,—I was shocked to read the editorial statement in your issue of November 22. There you say: "the local authority should not heed unduly the desires of the present

middle-aged or elderly generations of slum-dwellers who have reached an age at which they are likely to be intolerant of change anyway." I assume that you must all be young editors, and therefore tolerant of change; but have you, therefore, to be so inconsiderate (one might say, heartless) about older people? I wonder how many middle-aged and old slum-dwellers you have visited and how well you know their point of view?

It has been the job of myself and my colleagues to visit many of them in the last two years in the course of a social enquiry. Some of these people regard slum-clearance as a sentence of death. Many are opposed to it. They want to stay in their own homes, provided only that repairs and improvements are done. And if they do have to move, they want to be rehoused as near as possible to their families and to the neighbours they know.

At present those whose houses are demolished are quite often evacuated to one part of London, and their children to another. The result is loneliness and the destruction of community. If middle-aged and old people want to prevent these horrors, why should you disregard their wishes? The callousness displayed in your remarks has been far too often expressed in post-war design and administration.

MICHAEL YOUNG.

London.

Trade Literature

SIR,—I was sorry to find that your recent survey on the handling of trade literature included the following recommendation, "Send a protest card to the manufacturer if the sizes do not conform to BSS 1311, 1955, for which template can be drawn on the wall."

The British Standard recommends that trade literature should be either 11 in. × 8½ in. or 8½ in. × 5½ in. with a tolerance of plus or minus $\frac{1}{16}$-in. Some of your correspondents have gone so far as to recommend that non-standard literature should either be torn up or returned to the manufacturer. In my view this attitude is both ill-considered and uninformed. My reasons for this are as follows.

It is sometimes extremely uneconomical to use the British Standard size of 11 in. × 8½ in., particularly when bleeding off (*i.e.* running colour to the edge of the page without the use of a white border) extra costs can be heavy. This is because British Standard recommendation makes no allowance for trimming required under these circumstances and in order to produce a properly trimmed publication it is necessary to cut from an uneconomical size sheet. I can instance a case where a 70-page catalogue with a printing of 3,000 copies cost an extra £150 to produce in the British Standards size. There are, in fact, times when it is quite impossible to print leaflets to this standard. As for instance when using a high quality coated paper to assist in good reproduction of photographs. The fact that standard sheet sizes of certain qualities of paper do not conform to multiples of British Standard recommendations can make the preparation of some publications very difficult if the British Standard size has to be reproduced and in such cases the cost is often prohibitive.

Perhaps, however, use of this British Standard falls down worst of all when applied to the production of data sheets. Properly produced, a manufacturer's data sheet can be amongst the most valuable of all types of trade literature. It is conceivable that the size of the data sheet will depend upon the type of product to which it refers. In many cases foolscap-size sheets will be the most convenient. It is essential that data sheets be kept up to date and there are occasions when such sheets will first be produced by a duplicating system such as a Roneo or Rotaprint. These systems are based on foolscap (13 in. × 8 in.) or quarto (10 in. × 8 in.) size sheets and there will be times when a properly printed data sheet will follow from an earlier sheet that has been produced on a duplicating machine. To change to the British Standard size for all data sheets would be yet another unnecessary and undesirable inconvenience. I would also suggest that there are times when it is desirable that details on a data sheet be produced to full size or, to a scale which can be traced off the data sheet on to the drawing board. One wonders whether the use of the British Standard size will always be convenient in producing data sheets which are gridded up to a 4 in. module grid. I do not feel that the use of 4 in. increments in modular co-ordinated design, will be greatly assisted by the British Standard for technical literature. I have found from experience that unwavering adherance to this standard under all circumstances produces literature that is hampered by unsatisfactory design requirements, and in my view it should not be used except when convenience demands its use.

I feel that the editors of the JOURNAL should be amongst the first to support these views, in view of the sizes of the data sheets in that JOURNAL, and no doubt the producers of Specifile sheets will also be in agreement. It seems to be a definite fact that many of these widely used data sheets do not conform to British Standard recommendations, and there seems to be no reason why an analysis of trade literature should exclude the reproduction of data sheets.

The production of good trade literature is of very real importance and deserves the attention that the JOURNAL is directing to the subject. It is to be hoped that your readers will not be induced to support recommendations that do not fully take into account the requirements of the producer of the literature as well as the reader.

P. A. DENISON.

London.

Mr. Ritter Is Right

SIR,—My congratulations to Paul Ritter on his first-class article on Architectural Education. He has succeeded in hitting a very large nail very firmly on the head.

I am gratified to find that, amongst many other radical truths, he has come down heavily against part-time staff, an attitude which I have not seen expressed before. While I find his tale of his own experience of a "good architect" rather an extreme case, it does underline one regrettable aspect of this system.

Architectural staffs should be made up of men (and women) who have one aim in life, namely to put architecture across to their students. Why part-time professional practice should be of any criterion in this I fail to see. In my experience it only succeeds in conveying (probably unjustifiably) an impression that teaching is regarded as a lucrative side line, and in widening the already vast gulf between student and staff.

There is a great deal to be done towards convincing us of our staff's out-and-out sincerity and making them more approachable, at any time, and on any subject.

A STUDENT.

The AJ Research Board Fellowships

The AJ Research Board Fellowships — If you want to apply for one of the two £1,000 Fellowships which are being offered by the AJ Research Board you must act quickly. The last date for the receipt of applications is December 15. Full particulars appear in an advertisement on page 120, in the AJ for December 6.

Canterbury's chief architect and planning officer is now John L. Berbiers (aged 35), who has a starting salary of £1,350.

Key Points in Planning was the title of the recent TCPA Conference at County Hall, London. Most planners have their own ideas about what the key points should be, but those selected for discussion at the conference—The "Redevelopment of the Centres of Expanded Towns," "Green Belts" and "Housing Densities"—are all of major importance to planning in Britain today. They are also topics on which the Association might be expected to hold decided views, and the main speakers, Henry Wells, Lord Chorley and Sir Frederick Osborn, made the most of their chance to put these across to the delegates. It remains to be seen how far they succeeded. Some delegates, mostly Councillors and local government planning officers, seemed doubtful about the application of some of the principles to their own local conditions. But the views of the TCPA, however controversial, are always of interest to planners and architects, and many of the points raised will be examined in a future article in the JOURNAL.

Forty cricketing architects are members of the RIBA Cricket Club. The following officers were elected at the recent AGM. They are: P. W. Adams (president); T. E. Scott, S. B. Caulfield, C. D. Spragg, Douglas Taylor, R. R. Fairbairn, and Basil Smyth (vice-presidents); C. A. R. Norton (captain); D. L. Robinson (vice-secretary and captain); J. G. Batty (treasurer); G. Fyson and R. Case (ordinary members). R. R. Fairbairn has retired from the committee after serving on it from its inception in 1947.

H. Myles Wright, Lever Professor of Civic Design, Liverpool University, will discuss on Wednesday, December 19, in the Third Programme's "Prospect" series, a new approach to the double problem of congestion within the big cities and haphazard new building development around their edges. His talk follows those by three previous speakers in this series, Sir Patrick Abercrombie, Christopher Tunnard and Conrad Andren, who all put forward points in connection with urban planning.

We were wrong to describe Basil Ward as Professor of Architecture, Royal College of Art, in our issue for November 29. He has not been Professor of Architecture since 1953. He was Lethaby Professor of Architecture for the three-year period of the Chair from 1953 until this year, and he is no longer connected with teaching at the College.

WHAT IS MOW?

What is the Ministry of Works? Sir Harold Emmerson, who has written a book about it, considers it an organization with a high standard of taste—subject to the disciplines of the public services. This is one of the points that a correspondent considers in a review of the book, printed below.

The present Minister of Works is a member of the Cabinet. Of course, previously he was the Government's Chief Whip. But, in taking up this latest volume* in the new Whitehall Series on the Ministry of Works, one tends to ask whether there is not a case, on grounds of policy rather than of personality, for having a department of this kind represented in the highest council of state.

A careful study of thirteen of the fifteen chapters in the book reveals no compulsive reason why the Minister of Works is, or need be, a member of the Cabinet. Certainly neither the past history nor the present size of the department are sufficient warrant, though both these points are of interest.

The middle history of the Office of Works (seventeenth to early nineteenth centuries) was professionally distinguished by the services of people such as Denham, Gibbons, Vanbrugh, Hawksmoor, Chambers, Smirke, Soane and Nash. The introduction of parliamentary control and the spread of Gladstonian administrative doctrines seem to have brought this to a stop—probably by abolishing the sinecures which many of the appointments undoubtedly were. From about 1850 until, it may be said without disrespect, today, the absence of outstanding architectural talent has been cloaked by the tradition of anonymity in the public service.

But if there are no great names, there are certainly great numbers. The *Economist's* description of the "Ministry of Too Many Works"† and its enunciation of Parkinson's first and second laws (the first on the inevitable growth of the Civil Service and the second on the structure of Cabinets) are necessary background reading on this point. The fact is that the Ministry employs 13,330 non-industrial civil servants, 6,750 of them in professional grades, and 16,000 industrial staff. This is a lot of men, and one may wonder what they do. The thirteen chapters already mentioned catalogue an extraordinary range of activities which a reviewer can only attempt to grapple with by severe simplification.

Broadly speaking, the Ministry of Works is the nation's estate agent-cum-clerk of works, on the one hand, and the Government's building contractor, on the other. In its first rôle it variously owns, leases, requisitions, subsidizes, repairs, services and/or administers most of the nation's property and land; government offices and opencast mines; British embassies and public statues; the Houses of Parliament and Trafalgar Square; public post offices and royal palaces; national museums and ordnance factories; the Old Bailey and Brompton Cemetery; and miscellaneous castles, mansions and monuments; anything, it would seem, from Stonehenge to Calder Hall.

In its other capacity the Ministry designs and erects new buildings for the public service at home and abroad. Throughout Sir Harold Emmerson's book it is difficult to disentangle the cost of new works from that of maintenance of existing ones, but we know from the Fifth Report of the Select Committee on Estimates (1955-56) that the value of new work carried out each year varies between £25m. and £35m. (with maintenance expenditure currently at about £15m. a year). This is a big enough volume of work to allow fairly powerful ideas about building costs, design, construction and site organization to be tested, developed and demonstrated. What evidence is there that this has been achieved or even attempted? A passage on page 81 reads:—

> "There is ample scope for creative ability and artistic discrimination in many fields, while [the Ministry's] more mundane responsibilities for the housing of the apparatus of Civil Government keep its feet on the ground. It is the Ministry's constant aim to use the knowledge with which this dual experience has endowed it so as to maintain a high standard of artistic taste while being subject to the disciplines of the public service."

The references to artistic discrimination and taste are perplexing. If anything is clear about the buildings which the Ministry designs it is their lack of commitment to any coherent pattern of values. Only a rather wobbly eclecticism can account for the mixture of office block anonymous, South Bankism, Post Office Queen Anne and Embassy Georgian. But the absence of any discernible æsthetic is perhaps less important than the inquisitive outsider's inability to discover just what value the taxpayer is getting for his money. Nowhere in the book is any reference made to the unit cost of a particular building, or to the comparative cost of different types of building or to the distribution of space (plan analyses) of stock types of building. Two passages deal with standards (pages 31-32 and 45-46 for Government office buildings and overseas diplomatic and consular buildings, respectively), but neither contains a single figure or quantitative measurement. Visual inspection is enough to decide whether the Ministry "maintains a high standard of artistic taste." But some hard figures are needed even to begin to translate from Whitehallese what "being subject to the disciplines of the public service" means in terms of physical standards and value for money.

Fascinating though these issues are, however, they are not matters of high state. Cabinets do not split because the air conditioning in the House of Commons is not working or because the cost per square foot of the latest block of Whitehall offices is too high. Should the Minister and the Ministry therefore properly lie on the periphery of affairs?

In the two remaining chapters of the book —X and XI—something like a problem, and thus a responsibility, fundamental to the national economic well-being is disclosed. One in every ten male adults in civil employment is engaged in the building and civil engineering industries—over 1,000,000 operatives in all, without counting those employed in the building materials industries. A passage on page 98 aptly remarks:

> ". . . these industries stand in a special economic relation to industry as a whole and to the economic life of the country. They account for about half the fixed investment, on which in turn depends the future efficiency of industry and transport. The more efficient the building industry the more building the country can afford."

Any Government must have something it can call a policy with regard to matters of this kind. What are the essential elements in such a policy? One brand of policy will turn on the need to control all building investment in a totally planned economy. Starting with a licensing system it may well fetch up with a nationalized building industry. The present Government obviously do not favour this line, and the present volume, written by civil servants, obviously could not discuss it rationally if they did. The clear alternative to such a policy—presumably the one we are at present experiencing—is unbridled investment in a totally free economy, checked, when too headstrong, by the halter of credit restriction and dear money. This sort of policy, in fact, consists in not having a policy. Thus the building industry and the size of its programme are seen as, to quote, "a sensitive barometer of the trend of economic affairs." This suggests that they follow and reflect rather than precede and shape economic events such as inflation or unemployment. Similarly, the Ministry's two main functions of "assessing the load of work" (page 99) and arranging "machinery for consulting industry" (page 101) are mainly retrospective. Both are, of course, necessary, though in practice we could probably do with less committee bumbledom, however Regional, Consultative or Joint, and could certainly do with better statistics of the load on the industry (the present categories of *repairs and maintenance, new housing* and *non-housing* are too crude to guide anybody to any useful conclusion except surprise that the industry divides into these three categories in the proportion it is said to do). But is it enough simply to collect market intelligence and run a network of consultative committees? Even under the policy of free enterprise, somebody, somewhere, should be asking, and not merely answering questions.

Does the building industry really need and can the economy really afford one million building operatives? Would not 250,000 of them be better used helping out on the balance of payments front? Why is such a transfer regarded as unrealistic when present productive efficiency (productivity and not output) is probably 20 to 25 per cent. below the pre-war level? Can we justify a structure in the industry which results in 60 per cent. of firms having less than 100 men each and 30 per cent. less than 20 men each? What effective room is there in such a structure for an increase in training and education, mechanization and research, fundamental or applied (page 108 notes, passively and without comment, that "at least 1,000 full-time workers with special professional and technical qualifications and experience" are recorded as being engaged on research; this is ·001 per cent. of the industry's operative strength)?

These are only a few of the most obvious questions one would expect a Minister of Works to ask. Answers which go to the root of these problems could effect a very broad segment of the total economy. If they were asked and answered it is entirely reasonable to set the Ministry, not on the edge of things, but at the centre with its Minister a member of the Cabinet. But are they even asked? Perhaps it is unfair to expect this particular book to venture on to this ground. It is about the Ministry of Works and not the Minister of Works' policies. But most people will want to read it not because they are mildly interested in how the Ministry of Works works, but because they are deeply interested in the welfare of the building industry and the part it ought to play in the country's economic—and social—life.

For those, however, who are interested in the Ministry of Works itself, and want to know how what the *Economist* called "the Government's main repository of building expertize" is organized and works, the charts on pages 164 and 165 are worth studying. The fact is that there are really two Ministries—one administrative, the other technical and professional. How effectively are they integrated? How far is there an identity of purpose and values? We know that the administrative divisions live in Lambeth Bridge House and the professional divisions on the other side of the river. There is a lurking suspicion that more than the Thames divides them.

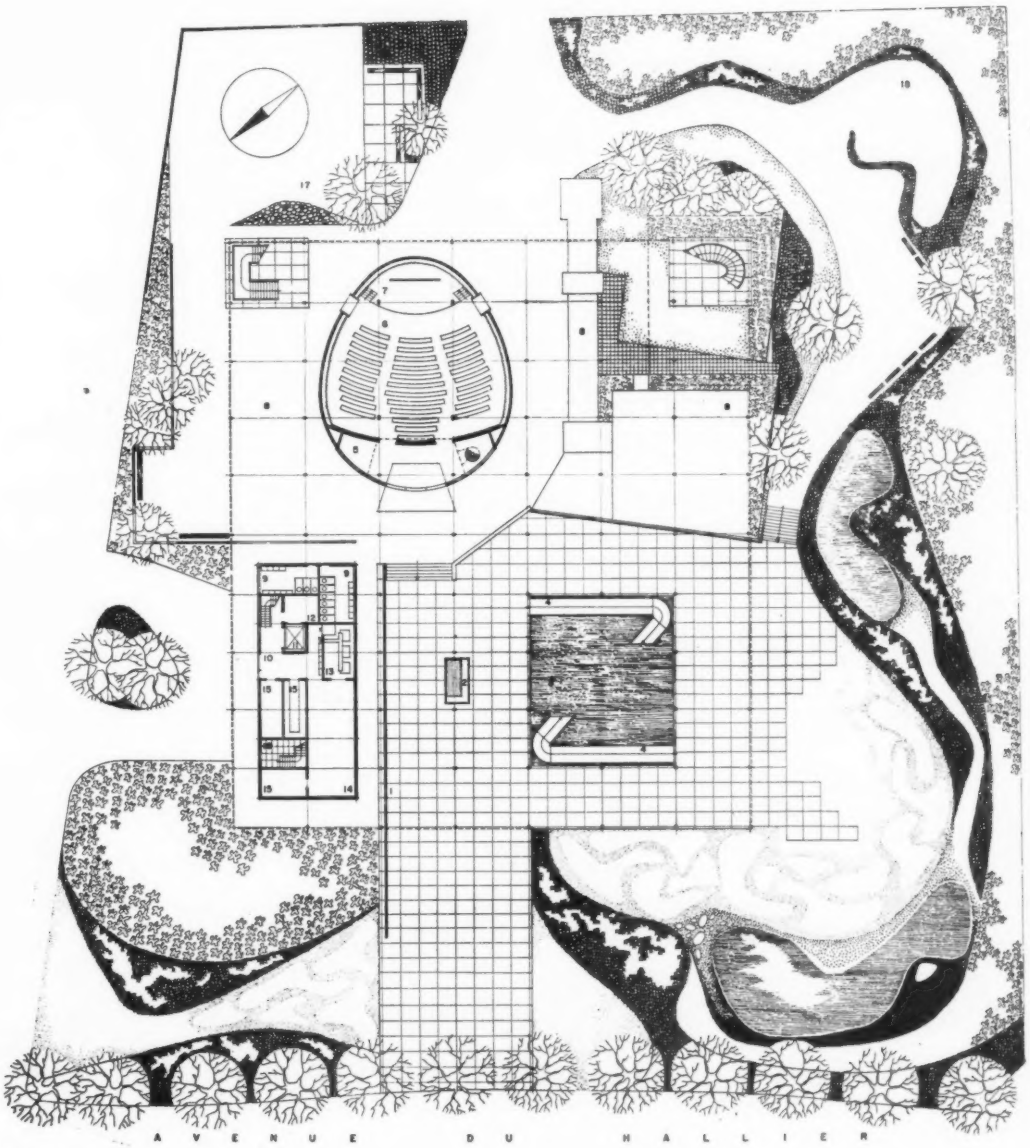
*The Ministry of Works, by Sir Harold Emmerson. George Allen & Unwin, Ltd. 15s.

†Reprinted in AJ of September 13, 1956.

CANADIAN EXHIBITION BUILDING FOR 1958 BRUSSELS FAIR

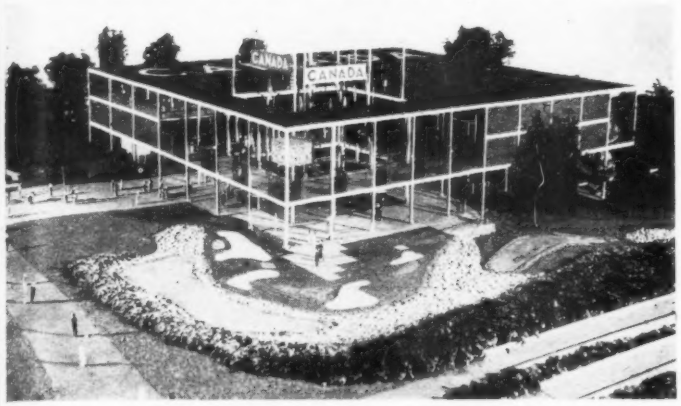
In addition to 40,000 sq. ft. of exhibition space, this building houses a cinema, dining facilities for about 300 persons, administrative offices, a small art gallery, a library and a tower bearing "Canada" signs. Because the Belgian Government wants all traces of building and site development to be removed six months after the close of the Fair, a bolted steel frame was chosen for the structure, with only the outer line of steel welded for precision in detailing. A module was determined on the

Ground floor
1. Mural wall
2. Information kiosk
3. Water court
4. Ramp
5. Foyer
6. Cinema
7. Stage
8. Exhibition space
9. Wash rooms
10. Goods receiving room
11. Elevator
12. Machine room
13. Transformer vault
14. Workshop
15. Storage
16. Office entrance
17. Playground
18. Rest area



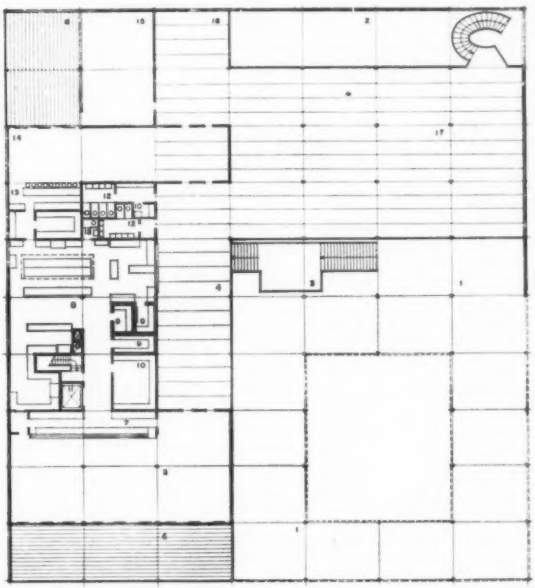
Ground floor plan [Approx. scale: $\frac{1}{16}$" = 1' 0"]

CANADIAN EXHIBITION BUILDING continued



basis of the economical use of steel and the fact that most exhibits occur in multiples of 500 sq. ft. The cinema, requiring substantial roof spans, worked well within the module chosen. As a lot of people will pass through the building each day, careful separation of the various sections was necessary to minimize congestion. It was discovered that the rate of fall of the site was almost exactly that required for a sloping cinema floor. Because of this, as well as for "modular considerations," the cinema is placed on the ground level. The office building forms a separate unit, accessible from the grounds and the main building is elevated 17 ft. The main exhibition space is located on the first floor of the building proper, with additional exhibition space, cafeteria, library and art gallery on the second level. As a visual link seemed necessary to call the visitors' attention to the existence of other important elements on the second level, the upper floor was floated within the envelope as a mezzanine, the promenade becoming two storeys high. Only where maximum light control is needed is the cladding opaque. The architect, C. B. Greenberg, tried to find cladding which would be light in weight and yet retain a large scale. A two-inch-thick panel of paper honeycomb, faced on both sides with masonite, allows for the full floor-to-floor span of 12 ft. This is set in reinforced, conventional aluminium curtain-wall members. A laminated floor decking 2 in. × 4 in. timbers on edge, the under side exposed and stained, allowed for a decorative use of Canadian woods. The floor covering is, in most cases, linoleum. The exposed steel frame is white, the masonite panels blue, coloured glass is used extensively. Window and door frames and stair rails are anodized aluminium.

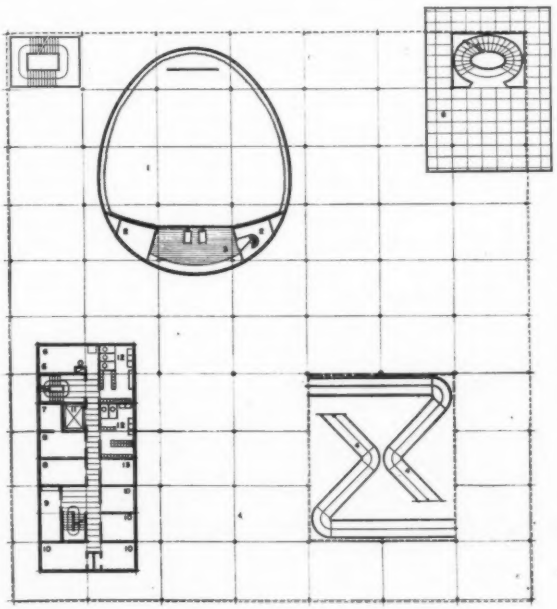
KEY—*Second floor*
1. Upper part of promenade
2. Upper part of exhibition space
3. Observation landing
4. Circulation area
5. Cafeteria
6. Terrace
7. Cafeteria servery
8. Kitchen
9. Cold storage
10. Storage
11. Elevator
12. Wash rooms
13. Bar
14. Cocktail lounge
15. Library
16. Art gallery
17. Exhibition space



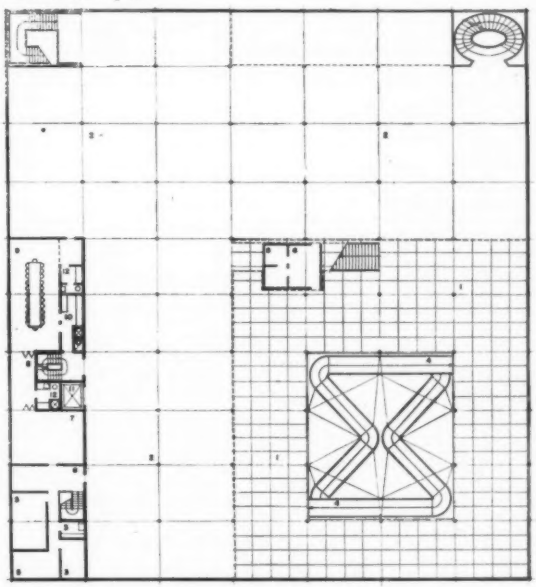
Second floor plan

First floor
1. Promenade
2. Exhibition space
3. Storage
4. Ramp
5. Office
6. Waiting room
7. Commissioner's office
8. Ante room
9. Dining room
10. Servery
11. Elevator
12. Wash rooms

Mezzanine floor
1. Upper part of cinema
2. Upper part of foyer
3. Projection room
4. Ramp
5. Observation platform
6. Boiler room
7. Storage
8. Staff lounge
9. Switchboard
10. Office
11. Elevator
12. Wash rooms
13. First aid room



Mezzanine floor plan



First floor plan

Photograph by Australian News and Information Bureau

Through William Mallinson & Sons (Australasia) Pty. Ltd., we have supplied selected Tasmanian Oak hardwood, and plywood including "Plasply" concrete shuttering, for the following:

Main Stadium "Plasply" concrete shuttering.
All plywood for doors and interior fittings, e.g. bars, etc.
Specially selected Tasmanian Oak strips for dressing room ceilings.
Contractor: E. A. Watts Pty. Ltd.

Olympic Swimming Pool "Plasply" concrete shuttering for various parts of the construction.
Architects: John & Phyllis Murphy, Borland & McIntyre
Contractors: Macdougall & Ireland

Boxing and Fencing Rings "Plasply" was supplied for the mats for these rings.
Public Works Dept. & T. S. Gill Pty. Ltd., Melbourne

William Mallinson and Sons Ltd.

TIMBER AND VENEER MERCHANTS

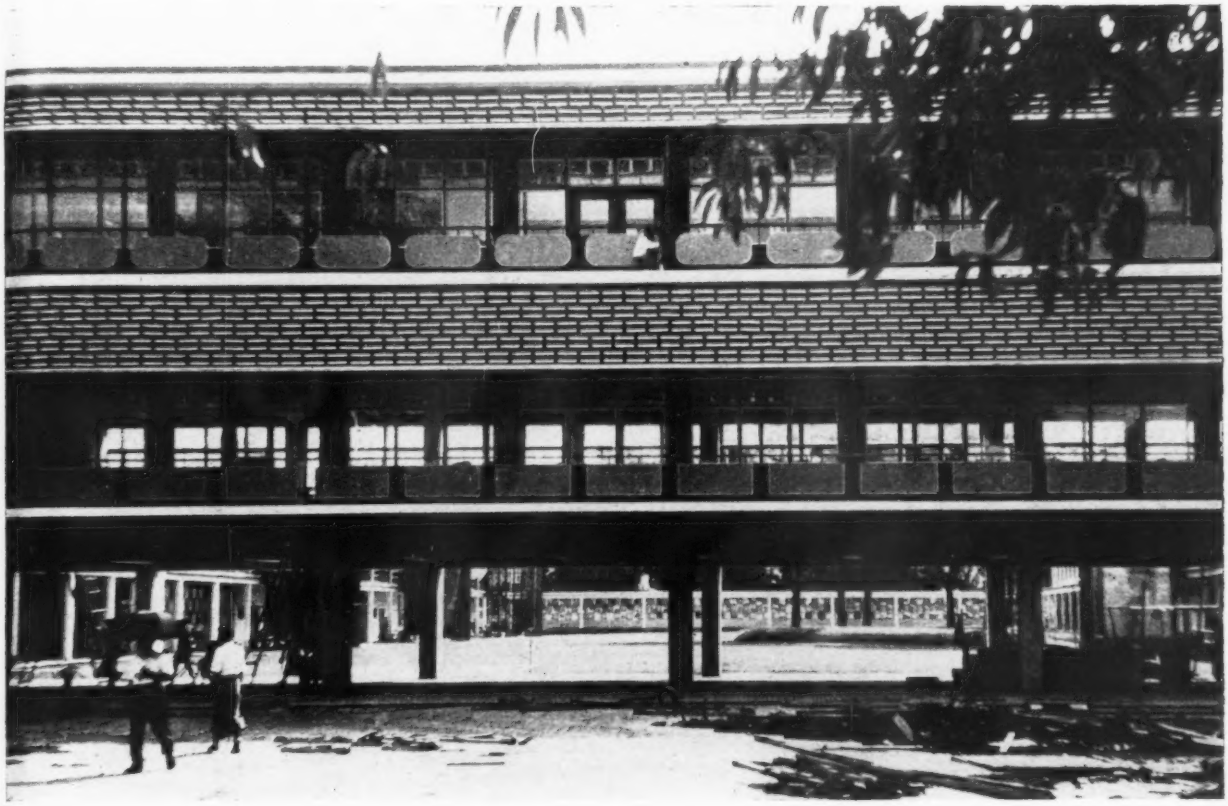
MANUFACTURERS OF PLYWOOD, ARMOURPLY, PANELS, COMPOSITE PARTITIONING AND INSULATING BOARDS

130-150 HACKNEY ROAD
LONDON, E.2

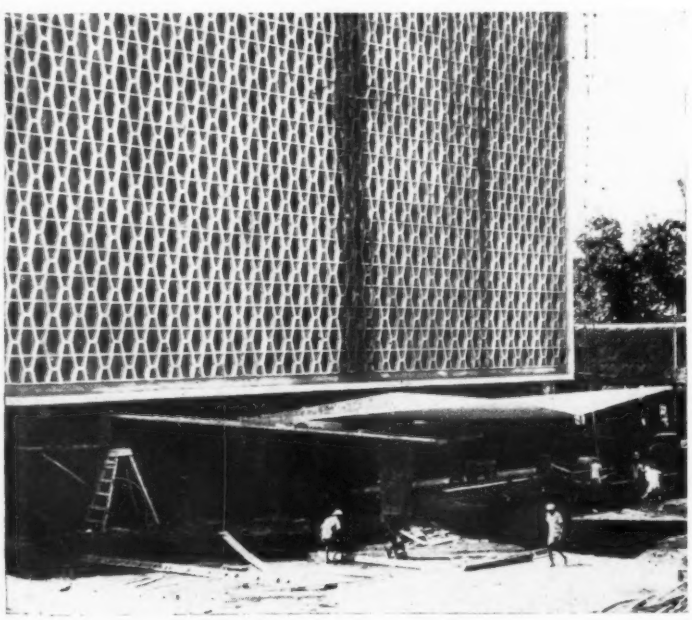
Telephone: Shoreditch 7654 (10 lines)

Telegrams: "Almoner" London

ENGINEERING COLLEGE AT RANGOON UNIVERSITY



The Engineering College at the University of Rangoon which was officially opened on November 22, is part of a £2,500,000 scheme for buildings for higher education. The architects were Raglan Squire and Partners (architects-in-charge, R. B. Roberts and B. C. Adams). The College is on a 12½-acre site about seven miles outside the city and has accommodation for about 1,000 students. So far nine buildings have been completed, consisting of three laboratory and classroom blocks, two lecture theatres, a heavy engineering block, assembly hall, a five-storey administrative block (below), and a mechanical engineering block (above). The administration building contains a library for 35,000 volumes, common room, dean's room, board room and offices. The construction is of reinforced concrete with a reticulated grille as a facing to each facade above first floor level. This grille consists of 3,000 precast hexagonal concrete units, each weighing 3 cwt., fabricated on the site. The interstices are filled in with coloured glass ply based on traditional folk patterns of the Shan States of Northern Burma. Permanent cross-ventilation is provided by smaller unglazed openings. The mechanical engineering building is constructed in traditional methods, using Burmese labour and materials. The assembly hall (Ove Arup and Partners, consulting engineers), which was illustrated by a model photograph in the JOURNAL *for May 5, 1955, has a "turtle-shell" roof of laminated Burma teak, 150 ft. long and 90 ft. maximum width. It is hoped to illustrate this scheme more fully in a later issue of the* JOURNAL. *The general contractors are Taylor Woodrow Construction Ltd.*



technical section

INFORMATION CENTRE

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

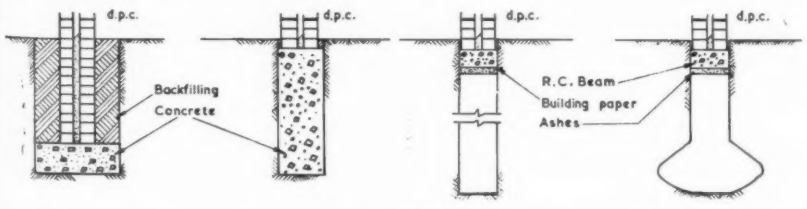
13.135 materials: timber
GLUES

The Efficiency of Adhesives for Wood. FPR Bulletin No. 38. (HMSO. 2s. 6d.)
This Bulletin gives as an interim report the results of tests on the durability of adhesives for plywood and general joinery, which have been going on during the last five years or more. Plywood panels and test units for joinery glues have been exposed to various conditions both in this country and Nigeria. The results show in detail the behaviour of many different glues, but it must be said that unless the reader has some knowledge of the subject and the terminology it is rather difficult to follow. Some photographs are included however and these certainly help the reader to visualise the work being done.
For architects the main interest is in the table given under the title "The Assessment of Durability," summarising the results for both plywood and assembly glues. Briefly, this shows that *phenolic* and *resorcinol* glues maintained sound joints under all conditions, including full exposure to weather in England and Nigeria; *melamine formaldehyde, fortified urea formaldehyde* and *urea formaldehyde* failed in full exposure, showed marked degrade in open sheds, but were sound in fresh water and in heated rooms; and *casein* and *animal* glues failed in all conditions except in heated rooms.
Point is made in the Bulletin that the efficiency of an adhesive is the measurement of success of the adhesive under its conditions of service. For instance, animal glue is as efficient as phenolic when used internally, but not in an exposed position.
Incidentally, the alternate use of the words "adhesive" and "glue" may give the impression that there is some distinction between them, but in fact, the author considers the words synonymous. He makes use of both words simply to make the English less monotonous.

19.201 construction: details
HOUSE FOUNDATIONS

House foundations on shrinkable clays: some production and economic aspects. W. S. Forbes and R. C. Sansome. (The Municipal Journal. 21.9.56)
This paper, written by two BRS engineers, is in fact the first release of research carried out by that body on this most important subject. It deals with four types of foundation for load-bearing walls, illustrated below: the traditional strip, the narrow concrete strip, straight bored piles and under-reamed piles. Some relative costs are given which show the three non-traditional types to be about equal, and somewhat cheaper than the traditional strip; the latter, however, was the only one *not* carried out in the experiment in question, its cost being calculated on assumptions made from conditions on the site.

Four types of foundation for load-bearing walls. See note 'House Foundations.'



23.222 heating: ventilation
DOMESTIC HEATING

A Field Comparison of the Coal and Coke Consumptions of an Inset Open Fire with Large Back-Boiler. E. Danter. (Jnl. Institute of Fuel. July 1956)
Describes an experiment carried out in eight occupied houses on the BRS site at Abbots Langley, to compare the consumptions of a modern inset open fire when burning coal and coke respectively. The open fires had large back-boilers providing domestic hot water and serving two small radiators. It was found that, reckoned in terms of the thermal content of the fuel, the consumption of coal was about 25 per cent. higher than that of coke: in terms of weight, this implies a consumption 20 per cent. higher with coal than with coke. The result is of obvious importance in the efficient use of fuel and will also assist in the development of smokeless zones.

23.223 heating and ventilation
DOMESTIC HEATING

A Field Comparison of the Coal Consumption of the Stool-Bottom Grate and the Improved Open Fire. E. Danter. (Jnl. Institute of Fuel. July 1956)
The result of this experiment was given in the BRS report for 1953; the present paper relates in greater detail the design of the experiment and the statistical analysis of the results obtained. The main result of the investigation was that no appreciable fuel saving was effected by the use of the newer appliance when burning coal. The inset fire was of course designed primarily for burning coke, but it had been claimed that the improved control of combustion could produce some economy even when burning coal. The economy possible when coke is used is indicated in the other paper by the author noted above. It would appear that if coal is to be used for open fires with the maximum economy, the free-standing types recently developed must be adopted—these have the added advantage of built-in dampers to reduce the flow of room air into the fire.

technical section

24 LIGHTING
calculation of factory lighting

On comparatively small jobs it is not aways possible for the architect to call in an independent lighting consultant, and he may not wish to accept the design services offered by lighting contractors. For this reason we have asked J. B. Harris, A.M.I.E.E., F.I.E.S., to show how to calculate a lighting installation for a machine workshop of approximately 20,000 sq. ft. using eight different types of lamp and fitting. His article concludes with a table giving the total annual cost of each scheme.

When planning the general lighting of an interior it is usual practice to use the Lumen Method. The mathematical calculations for this are based upon the adoption of an average illumination for the whole area. One formula takes care of all the variable characteristics likely to be encountered*.

$$E = \frac{L \times K \times D \times N}{A}$$

where E = Average service illumination over working plan in foot candles.
L = Light output (average throughout life) per lamp in lumens.
K = Coefficient of Utilisation.
D-= Dust Factor.
N-= Number of lighting fittings.
A = Area of working plane in sq. ft.

Average service illumination : the Schedule of Recommended Values of Illumination (IES Code for Light-

* Where quantities of smoke or steam are released as part of the factory process it may be necessary to make an additional allowance known as the "absorption factor". In these circumstances specialist advice should certainly be sought.

A factory of approximately the same size and type as the example discussed in this article. The lighting solution used is fluorescent on continuous trunking.

You'd do well to specify Perstorp Panels

BECAUSE

their more than usually wide colour range gives excellent scope for original decorative schemes. Add to this their remarkably tough, long-lasting qualities and you have the ideal surfacing for all types of interiors—domestic, commercial and industrial. Yet the cost is no higher than that of comparable products. Clients are particularly pleased with the superior finish—an elegant compromise between matt and gloss. Cutting and trimming are readily done on site. Installation is speedy and simple. Altogether you'll find Perstorp Panels' durability and beauty a most economical proposition.

CANTEENS—*Super-hard Perstorp Panels take kicks and blows* without damage. *For years the smiling surface stays smooth and bright. Immense savings on cleaning, maintenance costs. Illustrated: Perstorp Panels at the Town Hall, The Hague.*

SHOPS—*Hygienic Perstorp Panels have a rock-hard surface through which dirt and germs cannot penetrate. Will not crack or chip.* Always *smart and business-like.*

KITCHENS—*Fadeproof colours brighten the kitchen. Easily-cleaned Perstorp Panels eliminate housework drudgery. Resist steam, boiling water, hot utensils. For all working surfaces.*

CHEMISTS—*Perstorp Panels are proof against many chemicals. Stains vanish at the touch of a damp cloth. Unharmed by dilute acids, most alkaline solutions and temperatures above that of boiling water.*

ORIGINAL PERSTORP PANEL MADE IN SWEDEN FOR LONG LASTING BEAUTY

PERSTORP PANELS

Made in Sweden and sold throughout the world by

SKANSKA ATTIKFABRIKEN AB · PERSTORP (SWEDEN)

The leading plastic laminate manufacturers of Scandinavia for over 30 years

LOOK FOR THIS LABEL! YOUR GUARANTEE OF HIGH QUALITY

WRITE FOR FURTHER INFORMATION

New colour-illustrated folders describing the use of Perstorp Panels for specific purposes are now available. *Please indicate your interest by the identifying reference and address your request to your nearest Perstorp Agent.*

Em117E HOMES AND INTERIORS
Em118E CAFES AND RESTAURANTS
Em119E SHOPS AND STORES
Em120E MODERN FURNITURE DESIGN

C. F. ANDERSON & SON LTD · Harris Wharf · Graham St · London · N.1. *Tel: CLErkenwell 4582*

GEO. E. GRAY LTD · Joinant House · Eastern Avenue · Ilford · Essex *Tel: VAlentine 2211*

HEATON TABB & CO. LTD · 55 Bold Street · Liverpool 1 · *Tel: Royal 3457*

RUDDERS & PAYNES LTD · Chester Street · Aston · Birmingham, 6. *Tel: Aston Cross 3071*

A. J. WARES LTD · King Street · South Shields · *Tel: South Shields 2380*

technical section

ing in Buildings) gives the average values for general service illumination for a large variety of uses.

The actual value of illumination obtained initially will be greater than the figure inserted in the formula owing to allowance having been made for the ageing of lamps and accumulation of dust on reflecting surfaces, in factors L and D. With normal conditions of service and assuming cleaning of equipment at economic intervals, this initial value will be 1·25 to 1·3 times recommended value. It is, of course, the responsibility of the management to ensure that the illumination does not fall below the recommended value through lack of servicing.

Light output per lamp: this is an average value which allows for lamp ageing since for all lamps there is a gradual drop in output during the "burning" life. The data for various lamps are usually available in British Standards Specifications and are sometimes published in manufacturers' catalogues.

Coefficient of utilisation: this is the ratio between the light flux received on the working plane and that emitted by the actual lamps. The efficiency of the lighting equipment, its height above working plane, its light distribution, the size and proportions of the room and the reflection factors of room surfaces all contribute to this figure. Standard data tables have been prepared for the various classes of fitting, but it is advisable to consult manufacturers wherever possible.

Dust factor: this allows for the effect of depreciation in the light-reflecting and transmission qualities of surfaces, of both the lighting fitting and the room itself, through the gradual accumulation of dust. For normal atmospheric conditions it may be taken as 0·8.

Number of fittings: this will depend on their allowable spacing, which differs for each type of fitting and the mounting height. The matter will be dealt with in detail later.

Area of working plane: for a general lighting scheme, in which machinery or benches may be repositioned, the whole area of the interior at working level is considered in the calculations.

Choice of light source

Electric lamps vary according to type in respect of luminous efficiency, electrical consumption, shape, size, life, and colour rendering properties. For small and medium-size industrial lighting installations, in which mounting heights are fairly low, the choice would include tungsten, fluorescent and colour-modified mercury vapour discharge lamps. The latter take the form of blended mercury/tungsten lamps or mercury/fluorescent lamps. Colour-modification is necessary where distorted colour appearance is unacceptable. Although the spectral quality of the emitted light need not be as that required for accurate colour matching, psychologically it is preferable that it should blend with daylight. In this respect tubular fluorescent lamps are to be recommended. Those designated White and New Warm White have the highest luminous efficiency, while Daylight and Natural have a colour rendering more akin to natural daylight.

Choice of fitting

Optical characteristics: luminaires for industrial interiors are usually of either the direct or semi-direct type, the latter being preferable as it reduces the contrast of brightness between fitting and ceiling. Protection against direct glare can be obtained by limiting the angle of direct light. For high-brightness lamps, the cut-off angle is between 20 deg. and 30 deg. below the horizontal on all axes, Fig. 1; for low-brightness sources such as fluorescent lamps the cut-off angle is usually applied on one axis only, Fig. 2. Alternatively the fittings themselves may consist of translucent enclosures, Fig. 3, giving greater diffusion and reducing surface brightness. The luminous efficiency of the fitting should be high, demanding good optical design and the use of satisfactory light-controlling materials.

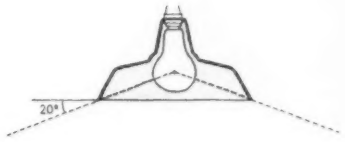


Fig. 1

Fig. 2

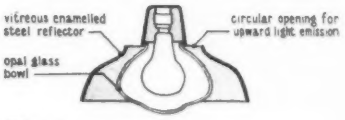


Fig. 3

Mechanical design: fittings should be so designed as to facilitate lamp replacement, cleaning, and wiring inspection. For example, components such as visors and louvres should be capable of being detached or hinged down. Regular cleaning will be encouraged if the reflector or diffuser or even the complete unit can easily be taken down and replaced by a clean one. The possibility of a breakdown of fluorescent lamp control gear should not be overlooked, and here again removal of the whole unit facilitates examination on a test bench.

technical section

Generally, fittings should be of robust construction and metals and finishes suitable for the atmosphere concerned ; rustproofing processes, for instance, should be applied to steels before stove enamelling.

Electrical design : the wiring up of fittings and their connection to the electricity supply must be such that they can be easily and safely carried out on the site. If there is a possibility of the lampholder and conductors becoming very hot, asbestos roved cables should be used. Electrical requirements are dealt with in British Standard Specifications and IEE Regulations.

Appearance : it should not be assumed that the appearance of fittings can be disregarded because they are installed in a factory.

Positioning of fittings

The theoretical uniformity of illumination assumed in the formula is not, of course, obtainable in practice. To achieve conditions as uniform as possible, fittings should be so placed that distribution fields overlap to give a ratio of maximum to minimum illumination not greater than 1·5 to 1. To design within this limit it is necessary to avoid exceeding a maximum ratio between the spacing of the fittings and their height above the working plane. This *spacing/height ratio* will vary according to the light distribution curve of the fitting concerned. In practice it normally lies between 1 : 1 and 1½ : 1. If a ratio greater than that recommended is used, there will be a noticeable lack of uniformity and the lighting will become "localized."

In a factory, structural features such as beams, roof trusses and columns will often dictate the spacing of fittings and consequently influence mounting heights. If fittings are arranged in rectangular formation, it often happens that, in order to accommodate the required number, there will be a difference between lateral and longitudinal spacing. The ratio between the two spacings should not then exceed 1½ : 1. Also, if benches are placed next to walls, the distance between the walls and the nearest line of fittings should not exceed one-third of the normal spacing (as opposed to one-half, which usually results naturally with standard-bay structures).

As soon as the number of fittings has been determined, application of the formula will give the light output from each lamp. Alternatively it may happen that fittings can be positioned anywhere, and by choosing a type and rating of lamp, the formula can then be used for calculating the number of fittings required. These are then arranged, within the spacing/height ratio limitation, to suit the area concerned.

Initial and running costs

The overall cost of a lighting scheme, which should consider both initial and running expenses, will quite obviously vary according to the number, quality and type of luminaires installed. It is not possible to lay down a hard and fast rule about the most economical type and size of industrial lamp or fitting, because too many variable factors are involved. Each case should be considered according to its own conditions, taking into account the following :

Type and proprietary brand of fitting.
Trade discounts available.
Number of " burning " hours per annum.
Labour costs of cleaning and lamp replacement.
Cost of electricity.

The electricity tariffs in particular vary widely throughout the country, often incorporating standing charges based on the magnitude of the installed load or on the value of the maximum demand.

As a guide to the possible solution of the lighting problem of a medium-size factory, it is proposed to consider here a number of alternatives for a particular case.

EXAMPLE OF A LIGHTING PROBLEM

The interior is a machine shop measuring 120 ft. by 160 ft., and the ceiling height is 16 ft. The roof structure includes trusses spaced at 10 ft. centres, the bottom of the trusses being set at a height of 14 ft. Reflection factors of ceiling and walls (finished in light matt paints) are 70 per cent. and 50 per cent. respectively. The height of the working plane is 3 ft. The visual task is that associated with fairly small bench- and machine-work. That work is carried out on a horizontal plane and does not involve accurate colour matching.

Solutions

General : the IES Code gives the average service illumination for the task as 20 foot candles. The atmospheric conditions are such that with cleaning taking place at regular intervals, a dust factor of 0·8 may be assumed.

Scheme 1 : this is based on the use of general purpose tungsten filament lamps housed in standard (open) dispersive vitreous enamelled steel reflectors, Fig. 4. Reference to data tables shows that under the given conditions a Coefficient of Utilization of 0·64 may be used in the lumen formula. The lateral trusses provide a good means of carrying horizontal runs of conduit from which the fittings can be suspended ; assume, therefore, that the longitudinal spacing of the fittings is 10 ft. If we assume that for a uniform layout the

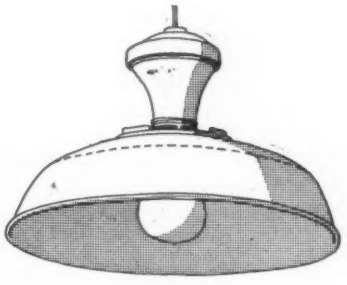


Fig. 4

technical section

longitudinal spacing is also 10 ft., then the total number of fittings is

$$\frac{160}{10} \times \frac{120}{10} = 192$$

Applying the formula we have

$$L = \frac{A \times E}{K \times D \times N}$$

$$= \frac{160 \times 120 \times 20}{0{\cdot}64 \times 0{\cdot}8 \times 192}$$

$$= 3{,}900 \text{ lumens.}$$

The tungsten lamp having the closest light output to this value is a 300-watt lamp, which emits 4,430 lumens and, if used, an illumination of about 23 foot candles would result.

The more economical solution would be to use fewer fittings by increasing the spacing in one direction. By adopting an 11 ft. by 10 ft. spacing we obtain 176 fittings. These will give an average illumination of

$$\frac{176}{192} \times 23 = 21 \text{ foot candles.}$$

The trusses being 14 ft. above floor level, the fittings when suspended from these positions could have their lamp centres about 8 ft. above the working plane. Under these conditions the spacing/height ratio does not exceed 1½ (the maximum for this type of fitting) and the uniformity of illumination will be satisfactory. In order to avoid the "tunnel" effect which happens when light is emitted in the lower hemisphere only, some manufacturers market fittings of the standard dispersive type having a small upward lighting component. Easy removal of the reflector facilitates cleaning.

Scheme 2: instead of steel reflectors, use can be made of the reflecting properties of prismatic glass. Fittings of this type, obtainable as standard commercial items, may have open or enclosed reflectors and are supplied complete with a cast metal canopy for conduit or chain suspension, Fig. 5. Their great advantage is that 75 per cent. of the light output is directed towards the working plane, and 25 per cent. reaches the ceiling and upper walls. Fittings can be supplied in clear or blue-tinted glass, the latter offering improved colour quality due to absorption of some of the excess red radiation of the tungsten filament lamp. For an enclosed dust-tight fitting, consisting of a reflector and a detachable diffusing cover glass, the Coefficient of Utilization is approximately the same as for Scheme 1. Thus, using 300-watt tungsten filament lamps, 176 fittings would be required, giving an illumination of approximately 21 foot candles.

Scheme 3: tungsten filament lamps up to 500-watt rating may be housed in dustproof industrial lighting fittings, consisting of a dome-shaped perspex enclosure attached to a diecast, corrosion-resistant, aluminium lampholder canopy, Fig. 6. The perspex reflector and

Fig. 6

visor can be supplied in various grades of opal, but for normal mounting heights the reflector is of grade 028 and the dished cover is of pinspot patterned design. This type of fitting is highly efficient and gives reasonable ceiling illumination for the avoidance of disturbing brightness contrast. The Coefficient of Utilization is of the order of 0·7 and using 160-300-watt fittings it is calculated that the resulting illumination is

$$\frac{4{,}430 \times 0{\cdot}7 \times 0{\cdot}8 \times 160}{160 \times 120} = 21 \text{ foot candles.}$$

On this basis the longitudinal spacing of 10 ft. will result in a lateral spacing of

$$\frac{120}{10} = 12 \text{ ft.}$$

Scheme 4: the mercury/tungsten lamp, available in five wattage ratings, represents a colour-corrected discharge source, the construction and operation of which does not involve the use of external auxiliary control gear. The lamps can be used in normal type industrial fittings, Fig. 7, but take a short time after switching on to reach their full light emission.

Fig. 5

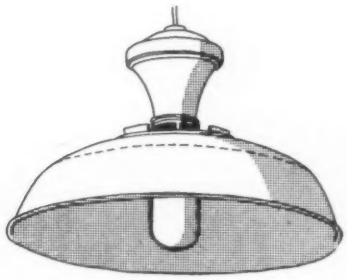


Fig. 7

	LAMP DETAILS					LIGHTING FITTING DETAILS									
Scheme No.	*Type*	*Rating (watts)*	*Average light output through life (lumens)*	*Rated life (hours)*	*List price*	*Type*	*Electrical load per fitting, including control gear losses if any (watts)*	*Total number of fittings*	*Total electrical load of scheme (watts)*	*List price*	**Total initial cost of fittings**	**Annual cost of electricity consumed, based on 2000 burning hours per annum and charge of 1.3d. per unit**	**Annual cost of lamps**	**Annual capital charge on fittings (depreciation based on "write off" of 10% p.a.)**	**Total annual cost of lighting scheme**
					£ s. d.					£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	Tungsten filament	300	4,430	1,000	7 6	Open dispersive reflectors, vitreous enamelled steel. Designed for upward light emission. Reflector removable for cleaning	300	176	52,800	4 6 0	756 16 0	572 0 0	132 0 0	75 14 0	779 14 0
2	Tungsten filament	300	4,430	1,000	7 6	Enclosed prismatic glass reflectors	300	176	52,800	5 3 0	906 8 0	572 0 0	132 0 0	90 13 0	794 13 0
3	Tungsten filament	300	4,430	1,000	7 6	Enclosed Perspex reflector diffuser	300	176	48,000	7 0 0	1,120 0 0	520 0 0	120 0 0	112 0 0	752 0 0
4	Mercury tungsten	250	3,500	3,000	2 16 0	Open dispersive reflector as Scheme 1	250	224	56,000	4 6 0	963 4 0	606 0 0	418 0 0	96 6 0	1,120 6 0
5	Mercury fluorescent	125	3,900	4,000	2 19 0	Open dispersive reflector as Scheme 1	137	192	26,304	10 16 0 (complete with control gear)	2 073 12 0	285 0 0	287 0 0	207 7 0	779 7 0
6	Hot cathode tubular fluorescent "white" or "warm white"	80	4,160	5,000	16 7	Trough reflector, stove enamelled steel. Designed with slots for upward light emission. Complete reflector removable for cleaning	100	192	19,200	9 10 0 (complete with "quick start" control gear)	1,824 0 0	208 0 0	63 8 0	182 8 0	453 16 0
7	Hot cathode tubular fluorescent "white" or "warm white"	125	7,000	5,000	1 5 0	Trough reflector. Details as for Scheme 6	150	110	16,500	15 0 0 (complete with "quick start" control gear)	1,650 0 0	179 0 0	55 0 0	165 0 0	399 0 0
8	Cold cathode "white" fluorescent tubing. Two 9 ft. 6 in. tubes	160	5,600	15,000	4 0 0 (for two tubes)	Trough reflector (10 ft. long) stove enamelled steel	192	140	26,880	28 0 0 (complete with control gear)	3,920 0 0	291 0 0	74 14 0	392 0 0	757 14 0

Table comparing the total annual cost of the eight alternative schemes discussed in the article.

technical section

Assume the use of the 250-watt rating, as its light output of 3,500 lumens is nearest to that of the 300-watt tungsten filament lamp. If a fitting of the standard dispersive reflector type is employed, the Coefficient of Utilization would be of the order of 0·64. Then the number of fittings required is

$$\frac{160 \times 120 \times 20}{0{\cdot}64 \times 0{\cdot}8 \times 3{,}500} = 214.$$

A 10 ft. spacing longitudinally would result in a line of 16 fittings. The number installed laterally, therefore, would be $\frac{214}{16} = 13{\cdot}4$, or 14 to the next whole number. The lateral spacing using 14 fittings would be $\frac{120}{14} = 9$ ft. and the total number of fittings becomes $16 \times 14 = 224$. The illumination would be of the order of $\frac{224}{214} \times 20 = 21$ foot candles.

Scheme 5: mercury/fluorescent lamps, which exist in 80, 125, 250 and 400-watt ratings, have a high luminous efficiency and an acceptable colour appearance and rendering. They are used in normal industrial

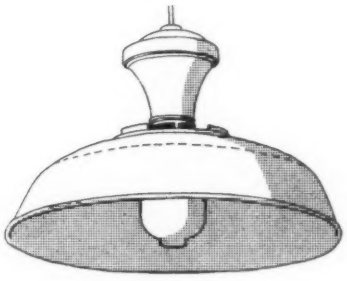


Fig. 8

reflectors, Fig. 8, but accommodation, usually remote, must be found for the control gear: a choke and condenser. Time to reach full light emission is about six minutes.

Assume the use of the 250-watt size, which has a light output of 3,900 lumens, and a standard dispersive reflector. Again assuming a Coefficient of Utilization of 0·64, then the number of fittings required is

$$\frac{160 \times 120 \times 20}{0{\cdot}64 \times 0{\cdot}8 \times 3{,}900} = 192.$$

These would be arranged symmetrically in the area with a 10 ft. spacing in each direction.

Scheme 6: tubular fluorescent lamps of the hot cathode type possess many characteristics which are of special advantage in industrial interiors. The range of lamps available is ever-increasing, but the most popular size is the 5 ft. 80-watt rating. The efficiency of light production varies with the fluorescent powder used.

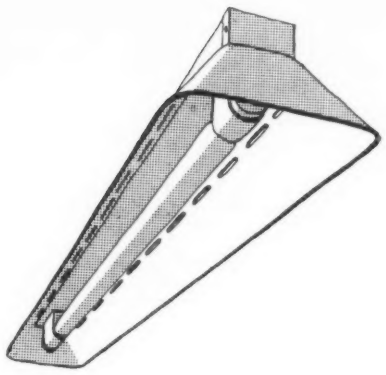


Fig. 9

Fittings, usually of the trough reflector type, Fig. 9, are available in steel (stove or vitreous enamelled), white opal perspex, and white p.v.c. If the reflecting material is opaque, slots are cut to enable light to reach the ceiling. The lateral cut-off angle of the reflector is about 20 deg. below the horizontal. If there are long lines of fittings in constant view, distracting glare may result. This may be avoided by fitting laterally placed parallel louvres beneath the lamp to give a longitudinal cut-off angle of 20 deg.

Assume the use of White or New Warm White 5 ft. 80-watt fluorescent lamps having a light output of 4,160 lumens. If these lamps are housed in steel trough reflectors, stove enamelled white, the Coefficient of Utilization may be taken as 0·64. Then the number of fittings required is

$$\frac{160 \times 120 \times 20}{4{,}160 \times 0{\cdot}64 \times 0{\cdot}8} = 180.$$

A longitudinal spacing of 10 ft. results in a line of 16 fittings and this would mean the use of $\frac{180}{16} = 11{\cdot}2$ fittings along the width of the area. If we use 12 fittings laterally, at a 10 ft. spacing, the total number installed would be $16 \times 12 = 192$. The average illumination, therefore, becomes $\frac{192 \times 20}{180} = 21$ foot candles. The fittings could be suspended at two points by means of conduit or chain drops. Alternatively, they could be mounted on a continuous channel using a proprietary trunking system.

Scheme 7: the recently introduced 8 ft. 125-watt hot cathode tubular fluorescent lamp has interesting possibilities, and has been used in double and triple formation in high bays. Due to its length it may present difficulties in handling, but provided spring-loaded lampholders are used, replacing of lamps need only be a one-man job. There is no objection to the use of one-lamp units in factories of medium size, and standard trough reflectors of the slotted type,

technical section

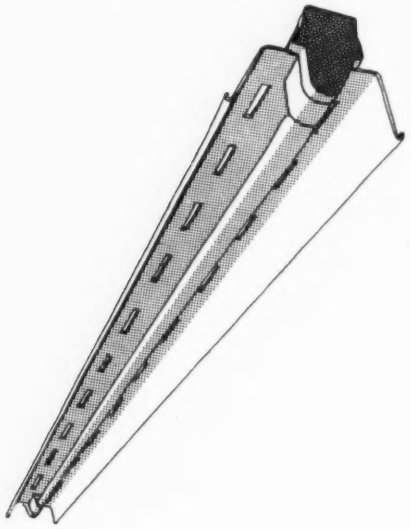


Fig. 10

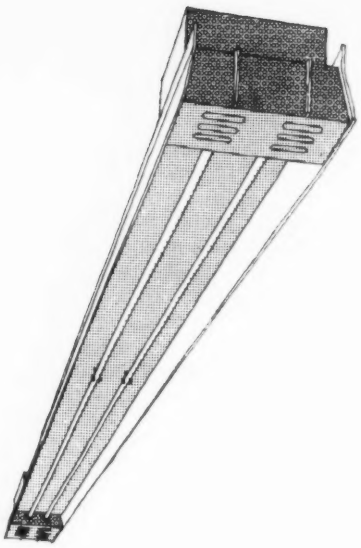


Fig. 11

Fig. 10, can be purchased commercially. Using a White lamp which has a light output of 7,000 lumens, we will assume a Coefficient of Utilization of 0·64. The number of fittings required is

$$\frac{160 \times 120 \times 20}{7{,}000 \times 0{\cdot}64 \times 0{\cdot}8} = 107.$$

The fittings would be arranged in lines parallel to the long axis of the building and a trunking system of wiring and suspension would be the most practicable. If the fittings are spaced along the trunking at 15 ft. centres, the number per line is $\frac{160}{15} = 11$ (approx.).

This means a row of $\frac{107}{11} = 10$ across the width of the building. The lateral spacing is therefore $\frac{120}{10} = 12$ ft., and the total quantity of fittings is $10 \times 11 = 110$.

Scheme 8: cold cathode fluorescent tubing, although somewhat lower in luminous efficiency and higher in capital cost than hot cathode lamps, has the great advantage of a longer life. It is often installed, therefore, where there is difficulty of access to fittings. The control gear consists of a step-up transformer, which produces the high voltage necessary for initiating and maintaining the discharge, and a power factor condenser. The lamps themselves can be specially fabricated to suit individual length and shape requirements, but standard 9 ft. 6 in. straight tubes are usually employed in industrial lighting schemes. The colour range matches that of hot cathode fluorescent lamps.

Assume that a twin 80-watt tube industrial trough fitting with enclosed control gear is used, Fig. 11, the Coefficient of Utilization being taken as 0·64.

The total light output of the two tubes is about 5,600 lumens, and so the number of fittings required is

$$\frac{160 \times 120 \times 20}{5{,}600 \times 0{\cdot}64 \times 0{\cdot}8} = 134.$$

A suitable spacing longitudinally would be 11 ft., which results in an almost continuous line of 14 fittings. A lateral spacing of 12 ft. would give $\frac{120}{12} = 10$ fittings. The total number of fittings is $14 \times 10 = 140$ and the illumination becomes $\frac{140 \times 20}{134} = 21$ foot candles.

COST GUIDE

The chart on page 862 has been designed to compare the total annual cost of these alternative lighting schemes. Certain assumptions have been made and these should be borne in mind when examining the final results. In order not to complicate the calculations, wiring and fixing costs together with those of maintenance and cleaning have been omitted. The lighting fittings have been selected as typical examples from the standard ranges of reputable manufacturers. In the case of those for use with hot cathode fluorescent lamps, they include for control gear of the quick- or instant-start variety.

Under the stated conditions the hot cathode fluorescent lamp schemes are cheapest. The cold cathode fluorescent tube scheme compares quite favourably with the mercury/fluorescent and tungsten lamp schemes.

If the architect approaches the problem on these lines and includes estimated costs of fixing and wiring, he will be able to decide on the cheapest and most suitable scheme for his own particular building.

building illustrated

TERMINAL BUILDING

at LONDON AIRPORT, MIDDLESEX; designed by FREDERICK GIBBERD; partner-in-charge R. J. DOUBLE
associate partner J. W. GRIMES; responsibility for construction, Director-General of Works, Air Ministry;
consulting engineers (structural) SIR WILLIAM HALCROW and PARTNERS; (heating and ventilating) G. H. BUCKLE and PARTNERS
(electrical) EWBANK and PARTNERS; quantity surveyors FRANKLIN and ANDREWS

The Queen's Building forms the eastern apex of the terminal area. The control tower and the passenger handling building were illustrated in the JOURNAL for April 21, 1955. This building was designed for crew control and amenities, with operational and air lines offices, and also for public access from the main entrance to the roof terraces, restaurants and exhibition hall. Off the entrance hall are a lecture room, news cinema and post offices. The architect has been unable to obtain the client's permission to have a cost analysis published for this building.

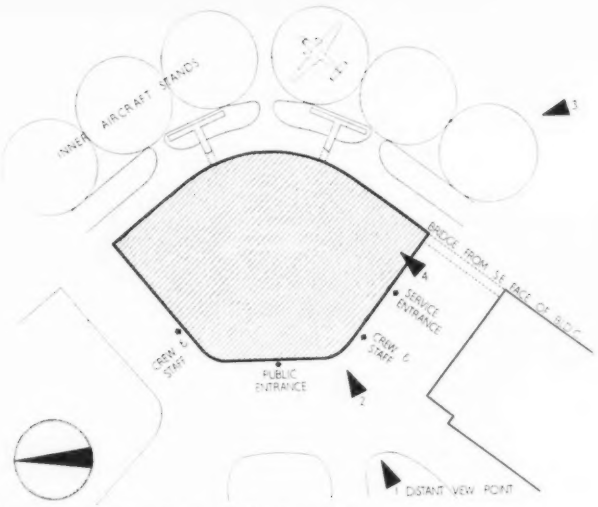
Viewpoint 1: the Queen's Building from the roof of the control tower.

building illustrated

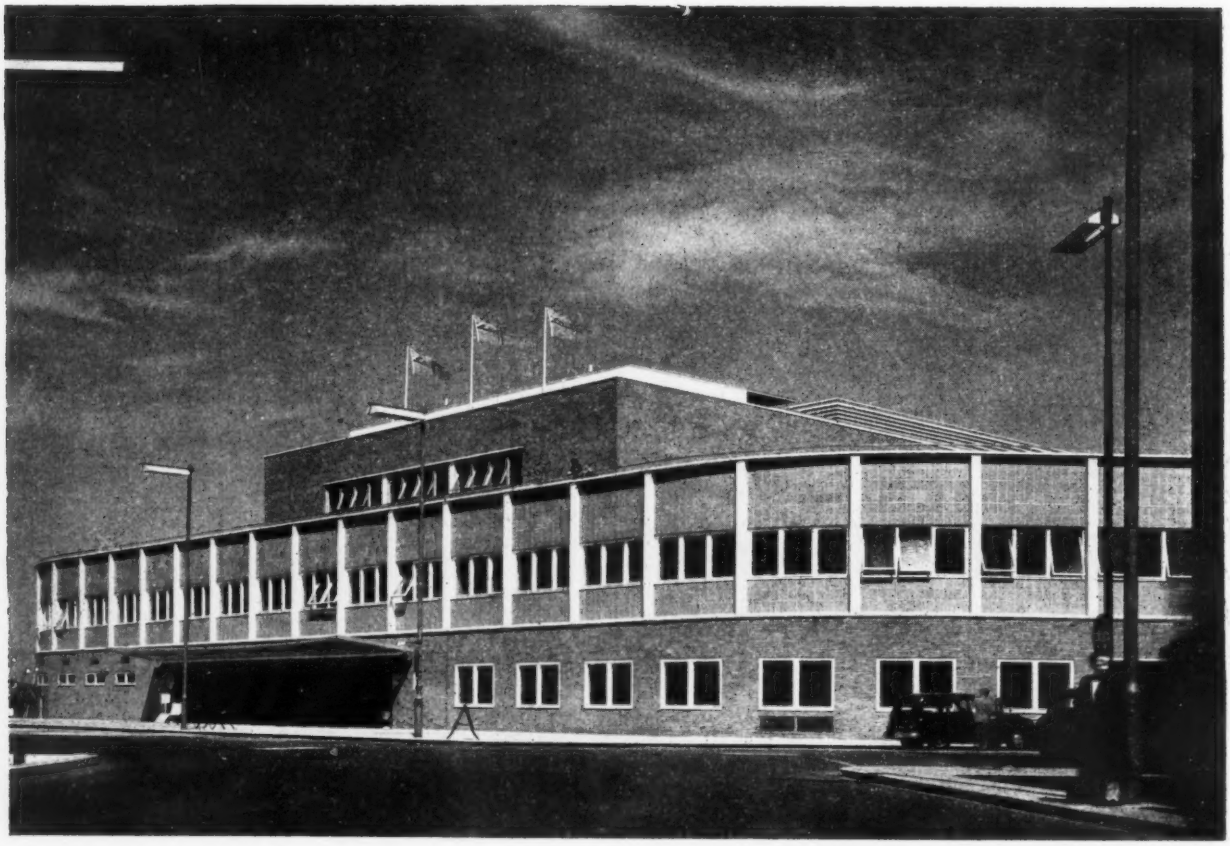
TERMINAL BUILDING

at LONDON AIRPORT

designed by FREDERICK GIBBERD



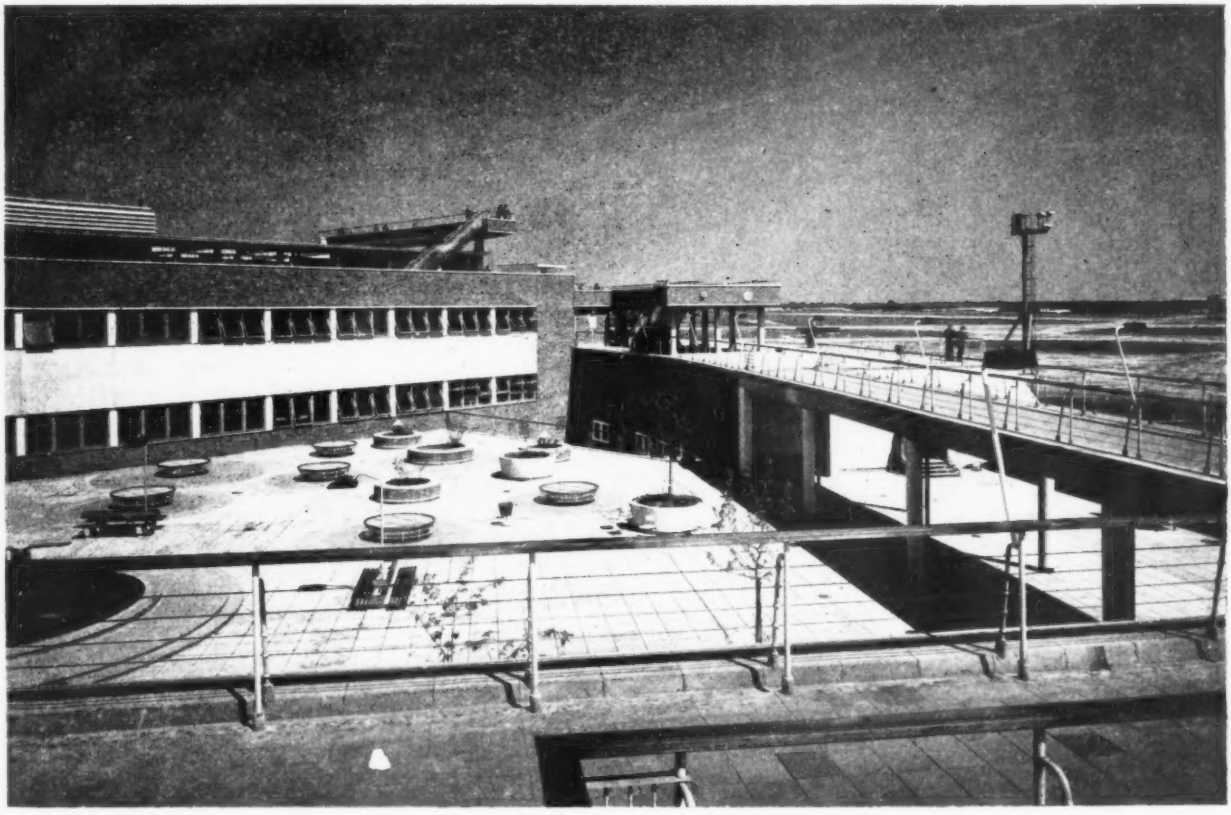
Key plan showing photographic viewpoints



Viewpoint 2: the main entrance. The brick facings and faience tiling continue the character of the terminal area. Natural stone paving has been used below the entrance canopy, and this is contrasted with strips of Derbydene limestone. The canopy over the entrance doors was illustrated as a Working Detail in the JOURNAL for May 31, 1956, and the doors were similarly illustrated on June 21, 1956.

building illustrated

Above (viewpoint 3): this photograph, taken from the inner aircraft stands, shows the projecting windows of the grill room, which on the right become the windows of the private dining rooms and the spectators' snack bar. On the left is the tubular steel bridge and below it the airside gallery, connected to the passenger-handling building. Beneath the bridge is the service area, from which a subway leads to goods lifts for the kitchen. Below (viewpoint 4): this photograph, taken from the bridge connecting the Queen's Building and the passenger-handling building, shows the centre block rising to the third floor terrace, with a public viewing platform above. The bottom row of windows are those of the kitchen servery and crew dining rooms and the upper row are the kitchen windows. The dome lights with wire protective covering in the foreground give natural light to the ground floor offices and are integrated with circular plant tubs and a pool to form a roof garden. The plan shapes of the roof gardens can be appreciated from the upper terraces. The mushroom lights over tubs give a decorative effect at night. The wire strand balustrade permits an excellent view of parked aircraft. For a detail plan of this roof garden, see page 873.

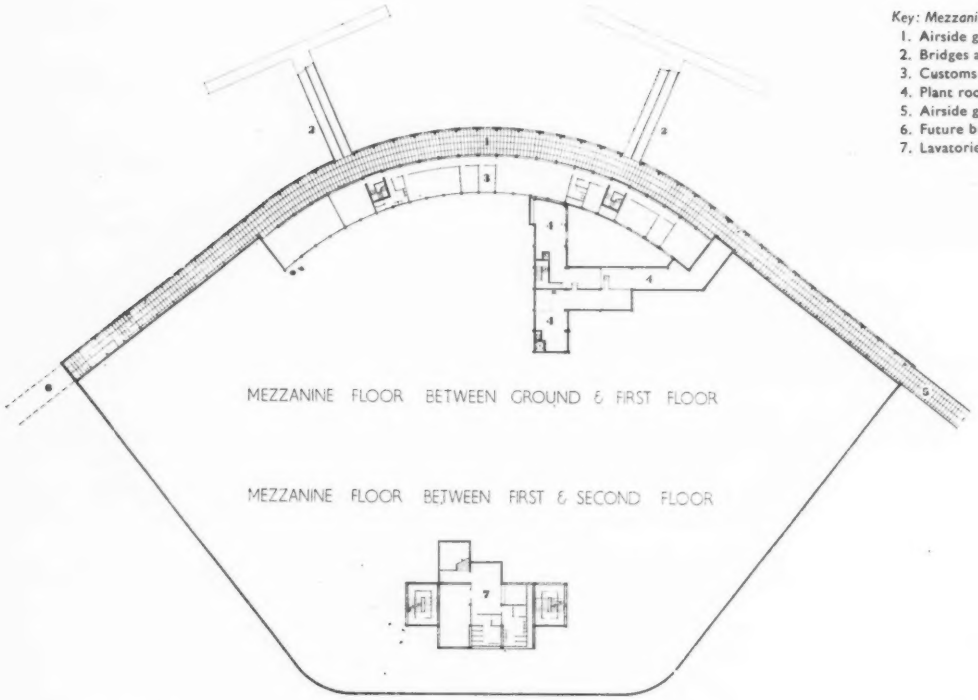


building illustrated

TERMINAL BUILDING

at LONDON AIRPORT

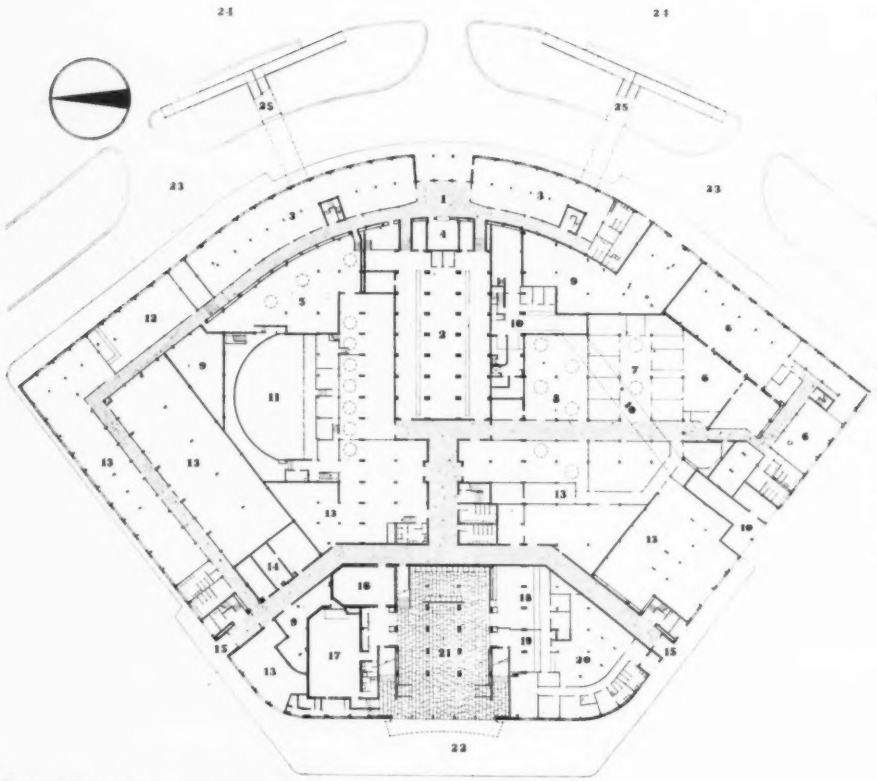
designed by FREDERICK GIBBERD



Key: Mezzanine floors

1. Airside gallery
2. Bridges and ramps to aircraft stands
3. Customs offices
4. Plant room
5. Airside gallery bridge to S.E. Face Building
6. Future bridge to N.E. Face Building
7. Lavatories and cloakrooms

Mezzanine floor plan



Key: ground floor

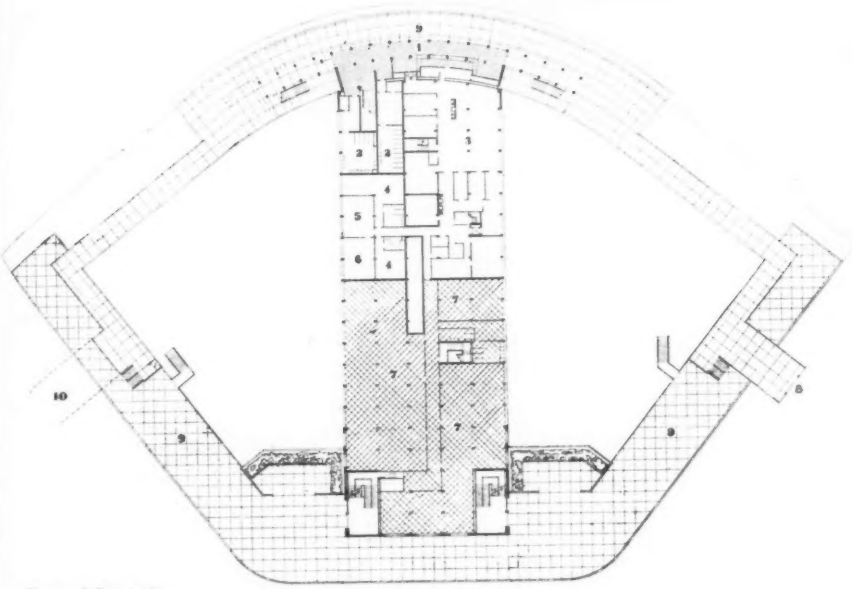
1. Crew entrance hall
2. Crew customs examination hall
3. Customs offices
4. Check point
5. Aircraft load control
6. Meteorological forecasting
7. Meteorological briefing
8. Navigational and signals briefing
9. Plant room
10. Kitchen service area and connecting subway
11. BEAC operational control
12. BOAC operational control
13. Airlines offices
14. GPO plant room
15. Crew and staff entrances
16. Lecture room
17. News cinema
18. Public post office
19. Staff post office
20. Sorting office
21. Public crush hall
22. Forecourt
23. Apron circulation
24. Inner aircraft
25. Bridge and ramp from mezzanine floor to aircraft standings

Ground floor plan [Scale: $\frac{1}{16}$" = 1' 0"

building illustrated

Key: second floor
1. Spectators' snack bar
2. Lavatories
3. Kitchen
4. Kitchen staff cloakroom
5. Kitchen staff dining room
6. Kitchen staff common room
7. Airlines offices
8. Spectators' bridge to S.E. Face Building
9. Spectators' roof terraces
10. Future bridge to N.E. Face Building

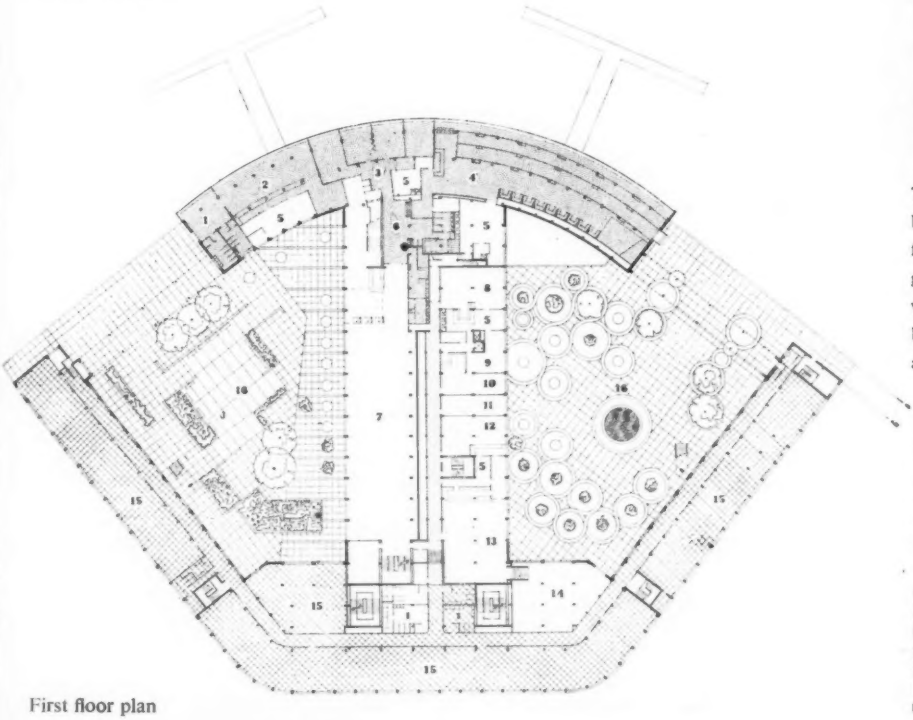
Left: a view of the public post office off the main entrance, which has been designed to allow for further developmen of the central area. The wall beyond the louvred glass screen is lime green, 10Y 5/6, and this contrasts with the mahogany column facings. The floor is finished in light grey terrazzo with ebonite dividing strips and the ceiling is white. The wall on the left of the entrance is matt black, the furniture combines to achieve a pleasing effect. This scheme was the result of close association between the GPO and the architects. The counter was illustrated as a Working Detail in the JOURNAL for July 19, 1956.



Second floor plan

The news cinema, seating 168, has a central suspended matt black ceiling, with anaemostats blowing down conditioned air which is then extracted from below the screen. Side walls are grey archrome 44, the seating blue, and diffused lighting from the ceiling creates a spacious effect.

The platform in the lecture room is backed with veneered panels and the fibrous plaste suspended ceiling gives good audibility. The ceiling and rear wall are lined with perforated matt black metal trays which are sound-absorbent.

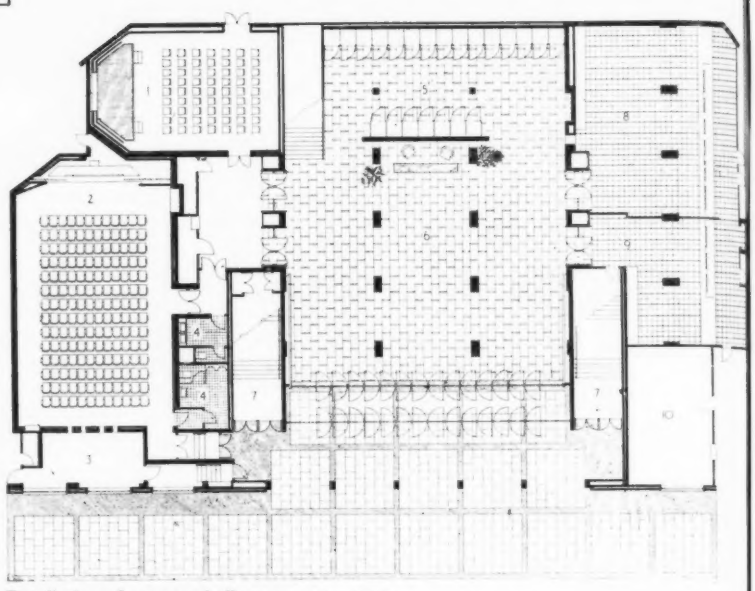


First floor plan

ey: first floor
1. Lavatories
2. Spectators
3. Private dining room suite
4. Grill room
5. Servery
6. Grill room foyer and lavatories
7. Exhibition hall
8. Crew dining room
9. Captain's dining room
10. Captain's lounge
11. Female crew lounge
12. Staff snack bar
13. Crew snack bar
14. Crew lounge
15. Airlines offices
16. Roof garden

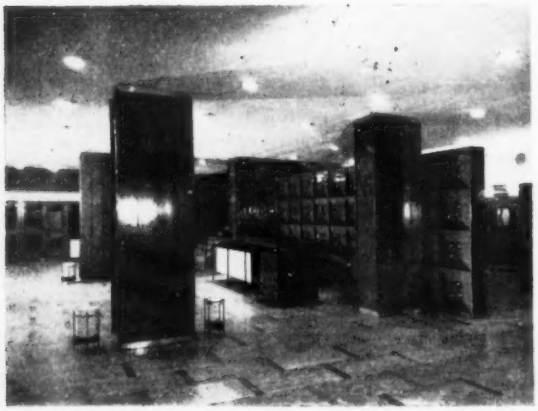
building illustrated

Below: view across the public crush hall, with the cinema and lecture room doors on the left. Beyond this hall are the stairs to the exhibition hall. The decorative tiled wall on the right screens a row of telephone booths. The maroon and black tiles with white dots were designed by Peggy Angus. The hall is floored with Derbydene limestone, and Levanto Rosso marble covers the walls. The acoustic tile ceiling is painted white. The north roof garden can be seen through the windows on the right side of the exhibition hall (below right). The ticket boxes in the foreground admit the public to the roof area, which stretches to the end of the passenger-handling building. The stairs at the end of the hall lead to lavatories and cloakrooms on an upper mezzanine level. The floor is terrazzo, with white Sicilian chips set in grey, and plain cross strips combine with cross beams to break the length of the hall visually. The dark recesses on the left are faced with a yellow green woven material with a gold metallic thread. The ventilation duct over the windows on the right was illustrated as a Working Detail in the JOURNAL for June 21, 1956.

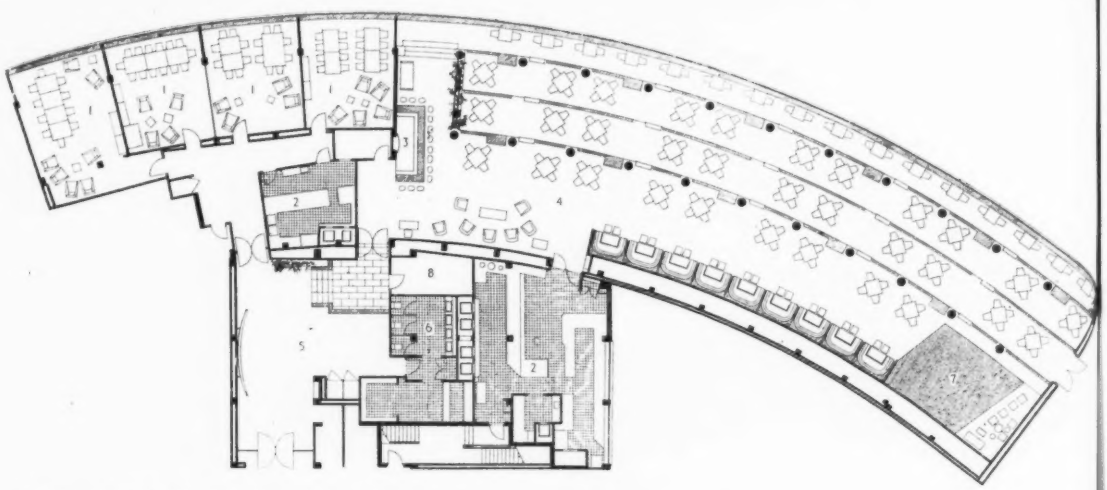


Detail plan of entrance hall [Scale: $\frac{1}{32}$" = 1' 0"]

Key: Entrance hall
1. Lecture room
2. News cinema
3. Projection room
4. Lavatories
5. Telephone boxes
6. Public crush hall
7. Escape stairs from roof
8. Public post office
9. Staff post office
10. Telegraph room



Key: Grill room
1. Private dining room
2. Servery
3. Bar
4. Grill room
5. Foyer
6. Lavatory
7. Band platform
8. Store



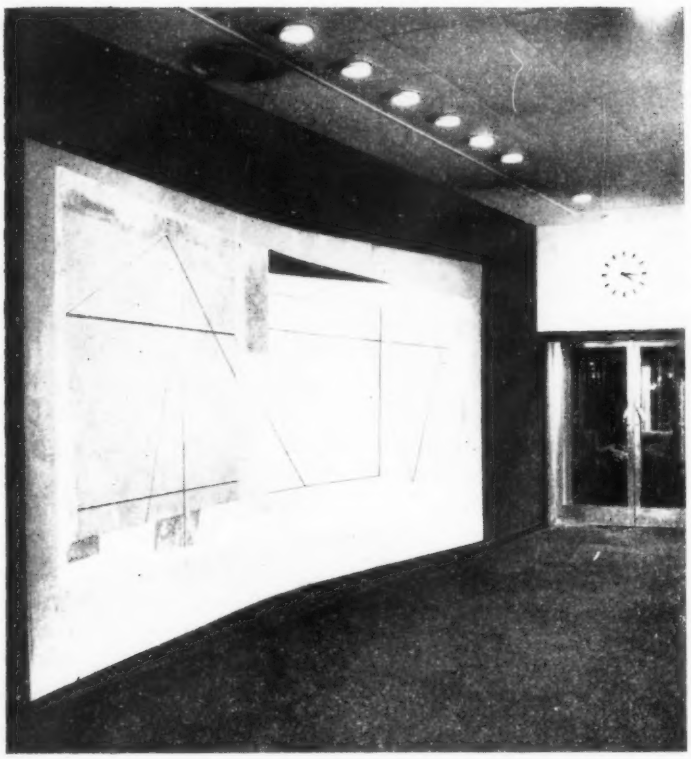
Detail plan of grill room [Scale: $\frac{1}{32}$" = 1' 0"]

building illustrated

TERMINAL BUILDING

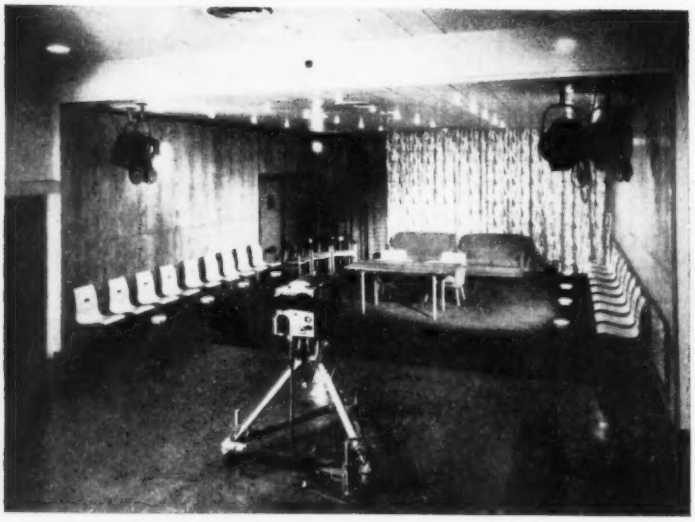
at LONDON AIRPORT

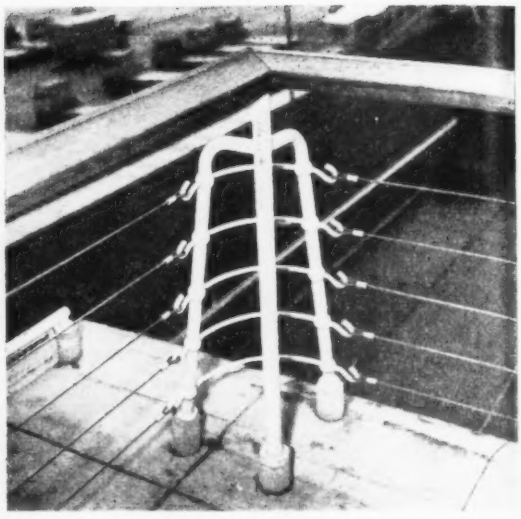
designed by FREDERICK GIBBERD



Above: the entrance to the grill room, with the mural painting by Ben Nicholson set on the north wall of the foyer. The grill room (below), seating 200, has stepped levels to give each row of tables a superb view of the aircraft stands and runways. Wall-papered screens and "U"-shaped seating divide the rear wall into dining recesses, while to the right of the entrance in the distance is a cocktail lounge. The specially-designed black carpet with yellow spots, and the midnight blue sloping ceiling provides a rich background. The grill room windows were illustrated as a Working Detail in the JOURNAL for August 30, 1956. The projecting glazing carries round the first floor level to the spectators' snack bar (below), which has a buff-flecked, thermoplastic-tile floor and a midnight blue ceiling. Access for cleaning the upper section of the anti-sun glazing is by means of a ladder hooked over the terrace rail, while the lower section of the ¼-in. polished plate glass is cleaned from below. The roof areas of this building allow for an attendance of 10,000 spectators.

building illustrated



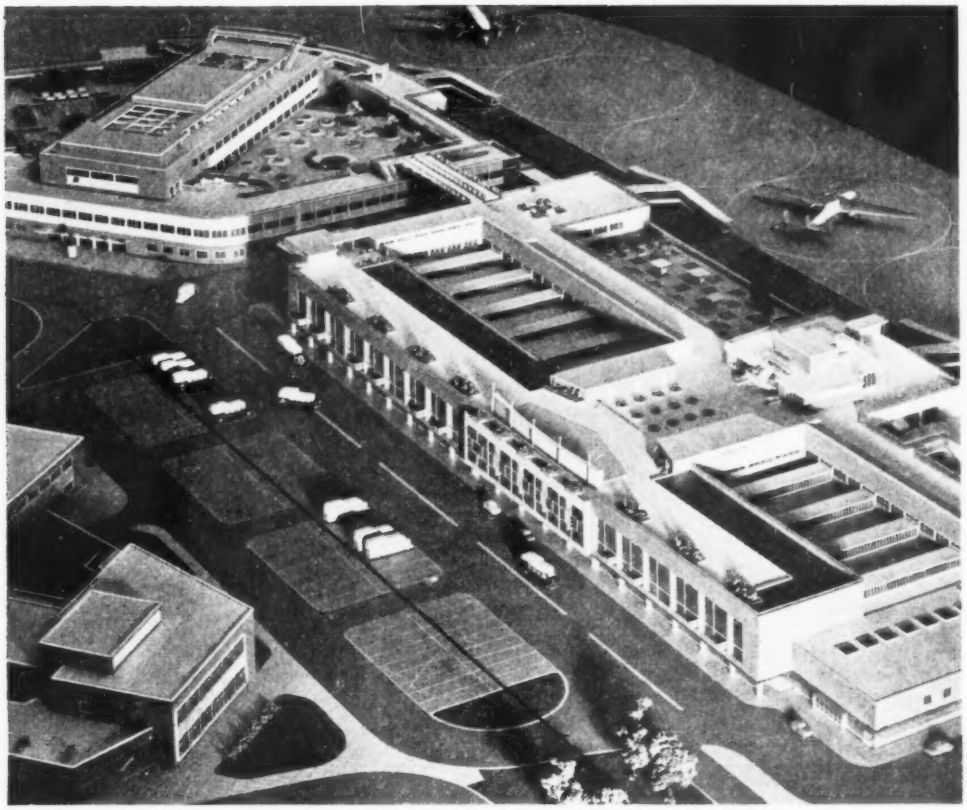


Above left: the Press conference room on the ground floor is for the interviewing of personalities arriving or leaving. Six separate curtains on the rear wall allow for adjustment in the character of sets. The floor is blue-carpeted and cork-tiled, while the walls are veneered ash on $\frac{3}{16}$-in. ply and special batten spacing. Above right: galvanized steel wire ropes are threaded through $1\frac{1}{2}$-in. diameter M.S. tubular posts and are tightened by turn buckles at end posts. The balustrade is surmounted by a splayed ex 6-in. × 3-in. hardwood handrail. The posts are painted white and the handrail oiled. Different levels of the building have different colour schemes, but corridors (below) have grey Munsell N.8 (archrome 47) or terra cotta (5R 3/12) walls and black-flecked, thermoplastic-tile floors. Ends of corridors are picked out in contrasting colours and the individual doors are painted yellow Munsell 2.5 GY 8/10.

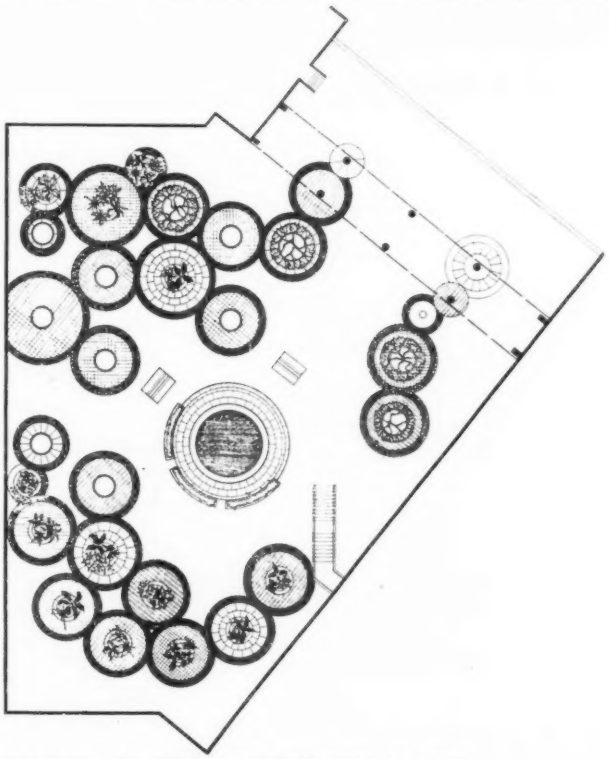
analysis

TERMINAL BUILDING

at LONDON AIRPORT
designed by FREDERICK GIBBERD



Above: model of the terminal area from the south-west. The Queen's Building is in the background, left. In the left foreground is the control tower, and on the right is the passenger handling building.



Detail plan of roof garden, South side [Scale: 1/8" = 1' 0"]

CLIENTS' BRIEF: their stated requirements

A building was required provide all technica and recreational facilities for aircraft crews, with control rooms and offices for the major airline corporations. The needs of the spectator public were to be combined with these functions.

SITE: topography, surroundings, access and planting

A perfectly flat site on the east face of the diamond forming the Central Terminal area of London Airport. Access to this area is by a tunnel from the Bath Road under the runways. The site was cleared of all planting.

PLAN: general appreciation and relation of units

The outline of the building had been previously established by the client when the terminal area was laid out. The building had to provide entirely separate circulation at various levels both for crews and public. The whole plan is interconnected without independent units, though the building was divided into blocks for planning and construction.

analysis

MAIN CONSTRUCTION: general appreciation

This is a steel-framed building, cased in concrete, with reinforced-concrete foundations between block stanchion bases to support the 11-in. cavity-brick walls. Normal beam spans are 12 ft. and 18 ft., and floor-to-floor heights are 13 ft. 6 in. and 18 ft. 10 in., with false ceilings for duct work and fittings. Public roof areas are paved in waterproof concrete tiles and rainwater disposal is by means of gullies and internal downpipes. In order to speed construction the foundation, drainage and steelwork contracts were let separately.

STRUCTURAL ELEMENTS

Work below ground floor level: foundation type, basement	*Location*	*Materials*	*Finish*	*Reasons and comments*
Concrete-block stanchion cases, with reinforced-concrete foundations to carry the load from facing brickwork	Throughout	Concrete mass and reinforced concrete		Economical construction. The sub-soil was found to be good load-bearing gravel at approximately 5 ft.

External walls and facings	*Location*	*Materials*	*Finish*	*Reasons and comments*
11-in. brick-cavity wall with facing bricks	Ground to first floor on three sides, also airside and centre block	Facing brickwork		Brick was used for its British character and low maintenance cost
Reinforced-concrete wall with faience tiling	Panels to first floor on three sides	Faience tiling		

Frame or load bearing element	*Location*	*Materials*	*Beam spans*	*Column grid*	*Reasons and comments*
Steel frame	All parts	Steel-encased in concrete	12 ft. and 18 ft.	12 ft.	Steelwork was used because of speed of erection and enables contract to be let ahead of building work

Upper floor construction	*Location*	*Materials*	*Finish*	*Reasons and comments*
Precast units. Reinforced concrete slabs to special sections	Throughout	Precast units	Upper part to receive screed. Lower part fair faced in certain parts, scored for plastering in others	Speed of erection, no interference with other operations being precast off site

Staircases	*Location*	*Materials*	*Finish*	*Reasons and comments*
Main staircase	Main entrance hall	Reinforced-concrete construction	Terrazzo	
Escape staircases	Throughout	Reinforced-concrete construction	Granolithic	

Height: floor to floor = 13 ft. 6 in. and 18 ft.

Roof construction	*Location*	*Materials*	*Finish*	*Reasons and comments*
Flat construction with precast reinforced-concrete units	Throughout	Precast units	Three-layer felt with marble chippings Waterproof paving with concrete coloured tiles and other patterned roof paving	Precasting reduces site work and interference, speeds erection, designed to carry the loads of spectators and to form roof gardens and terraces

Roof lights	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Single-storey parts of building	Dome lights with special protective metal covering		Used to give light to central single-storey parts of building

Windows	*Location*	*Materials*	*Finish*	*Reasons and comments*
Carda double-glazed windows	All offices	Hardwood pivot type	Painted	Double-glazed for sound insulation
	Grill room and snack bars	Metal	Painted, rust-proofed	Special studio type window to airside for view of sky

External doors	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Main entrance	Aluminium-framed armour plate glass		
	Sub-entrances	Teak	Polished and varnished	

Glazing	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Throughout	¼-in. plate glass		Sound insulation and size of windows
	Throughout	¼-in. rough cast to w.c. etc.		
	Throughout	Cross reeded to internal parts		Cross-reeded used as obscured glass

analysis

PARTITIONING

Internal partitions	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Various parts	9-in. and 4½-in. brick	Plastered	To minimize risk of cracking with a framed structure
		4-in. hollow clay blocks	Plastered	
		2-in. steel removable partitions	Stove-enamelled	Removable partitions in offices for flexibility

W.C. Doors and partitions	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Throughout	1¾-in. flush	Painted	Easily kept clean and possible to fix fittings

Internal doors	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Throughout	1¾-in. flush	Painted	Most doors were glazed to give light to corridors
		2-in. timber framed with glazed upper panel	Some double doors polished	

Ironmongery to internal doors	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Throughout	Silver bronze	Self finish	Ironmongery handles specially designed by architect

FINISHINGS

Floor finishes	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Crew customs hall	Wood block	Sealed and polished	Hard wearing
	Offices	⅛-in. thermoplastic tile	Polished	Economical
	Exhibition hall	Special terrazzo tile	Normal polish	Hard wearing
	Teleprinter rooms	Cork tile	Sealed and polished	Sound-absorbing
	Grill room and dining rooms	Carpet		

Wall finishes	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Generally	Plastered	Emulsion paint	For decorative schemes
	Public areas	Veneered plywood, wallpaper, fabric, marble and tiling	Wax polished	

Ceiling finishes	*Location*	*Materials*	*Finish*	*Reasons and comments*
	General offices	Fibreboard	Fire-resisting treatment	Entirely removable, concealed fixing
	Public areas	Fibrous paint plaster	Emulsion paint	Special features
	Public areas	Perforated aluminium panels	Special paint	Heated and removable
	Public areas	Acoustic tiles	Emulsion paint	Special acoustically-treated rooms

Decorations	*Location*	*Paint types*	*Munsell or other reference*	*Reasons and comments*
	Plastered walls	Emulsion paint		All colour schemes worked out with furnishing schemes. Very large range of Munsell colours used, many specially mixed for architect
	Fibreboard ceilings	Emulsion paint		
	Joinery and metal work	Oil paint		
	Hardwood joinery and metal work	Wax polish		

FITTINGS

Kitchen equipment	*Location*	*Materials*	*Finish*	*Reasons and comments*
Main kitchen	2nd floor	Stainless steel	Stove-enamelled	The kitchens and serveries were fully equipped with all required items
Serveries	1st floor			

SERVICES

Rainwater disposal	*Location*	*Materials*	*Finish*	*Reasons and comments*
Rainwater pipes from special roof gullies	Throughout	Cast iron	Painted	All rainwater pipes within building

Plumbing, internal: waste disposal	*Location*	*Materials*	*Finish*	*Reasons and comments*
	Throughout	Copper Yorkshire fittings	Painted in parts	

analysis

Hot water storage	*Location*	*Materials*	*Capacity*	*Reasons and comments*
Vertical calorifiers	Ground floor plant	Galvanized steel		HPHW supplied from central boiler house

Cold water storage	*Location*	*Materials*	*Capacity*	*Reasons and comments*
Large tanks	Roof level	Sectional steel		

Plumbing: sanitary fittings	*Location*	*Materials*	*Finish*	*Reasons and comments*
	All lavatory units	Vitreous china w.c. basins, fireclay urinal stalls, sinks and showers	White glazed, chromium fittings	Standard filling used

Heating installation heat exchanger type	*Location*	*Materials*	*Air change rate*	*Reasons and comments*
Low-pressure hot water converted from HP in horizontal calorifier from boiler house off site	Throughout. Calorifier in ground floor plant room	65°	Generally 6 per hour. 18 in air conditioned grill room and cinema	

Boiler type and capacity	*Location*	*Heat load and fuel type*	*Stoking method*	*Reasons and comments*
HPHW economy-type boilers	Central boiler house	Oil fired	Automatic oil feed	Economy

Water heater type	*Location*	*Fuel type*	*Stoking method*	*Reasons and comments*
Vertical calorifiers	Ground floor plant room	HPHW from central boiler house	As for boilers	

Drainage: type of system	*Location*	*Materials*	*Finish*	*Reasons and comments*
Separate system	Throughout	Cast iron down to ground floor. Stoneware in concrete under building		All drains below ground floor level were constructed with separate foundation contract

Drain types	*Location*	*Materials*	*Finish*	*Reasons and comments*
One-pipe system	Throughout	Cast iron verticals, copper waste branches	Painted	

Kitchen ventilation	*Location*	*Materials*	*Finish*	*Reasons and comments*
Main kitchen	2nd floor	Aluminium with wired glass hoods	Self finish	Hoods were provided over all items giving off steam
Serveries	1st floor			

Electrical installation: source and fitting type	*Location*	*Illumination level*	*Quality*	*Reasons and comments*
Recessed fitting in false ceiling	Public crush hall, grill room, snack bars, airside gallery	3- to 5-ft. candles		
Bracket fitting and recessed ceiling fitting	Exhibition hall, lecture room	Basic 10-ft. candles		
Recessed fluorescent, with egg-crate diffusers	Offices	Offices generally, 12- to 15-ft. candles, BEAC offices without natural lighting, 25-ft. candles		

Natural lighting	*Location*	*Materials*	*Reasons and comments*
	Offices	Carda windows, hardwood, pivot type	Double glazed for sound insulation
	Grill room and snack bars	Metal	Special studio type windows to airside for view of sky
	Roof lighting to single-storey segments	Dome lights with special protective metal covering	Dome lights to give natural light to central one-storey parts of building

Wiring and switching types	*Location*	*Materials*	*Reasons and comments*
Steel conduit system. Standard switch gear	Main switch gear in basement		

Power supply type	*Location*	*How distributed*	*Reasons and comments*
440 a.c.	As above		

analysis

Lifts	*Location*	*Capacity and speed*	*Motor room position*	*Reasons and comments*
Goods lift	Kitchen area		Ground floor adjacent to lift	All required for operation o. kitchen and service to restaurants, snack bar, etc. It was decided that passenger lifts for crews and public would not be installed on grounds of economy
Hoists	Kitchen area		Above lift shaft	
Food hoists	Kitchen area			

Paved areas	*Location*	*Materials*	*Reasons and comments*
Perimeter of building	Ground level	2-in. paving slabs with limestone insets in front of building	
Roof gardens	All roof levels	Various materials, concrete tiles, brick tiles, cobbles, etc.	

THERMAL INSULATION

Type	*Location*	*U-value*	*Reasons and comments*
11-in. cavity brickwork	Office section	Normal values	
Carda double windows	Office section		
Light weight screeds, felt roof covering, marble chippings	All roofs		

SPECIAL ACOUSTICAL TREATMENT

Sound absorption material	*Location*	*Absorption coefficient*	*Reasons and comments*
Fibreboard ceilings	Offices		Treatment is in accordance with requirement. Special treatments in teleprinter rooms
Acoustic fibreboard tiles and metal trays on ceilings. Cork floors	Various public parts including lecture hall and news cinema		

Sound insulation	*Location*	*Insulation standard*	*Reasons and comments*
Windows, double glazing Carda	All offices	High	Fibreboard ceilings helped to reduce sound between floors
11-in. cavity walls	Various parts		

FIRE

Structural precautions	*Grade of protection, apparatus*	*Sprinklers*	*Reasons and comments*
All steelwork encased in concrete	Airport special standard		Hose reels and extinguishers placed at points to serve all parts of building
Fire check doors to various sections			

Planning precautions	*Access for fighting*	*Means of escape*	*Reasons and comments*
	Normal	Specially-planned throughout to escape staircase from roofs for spectators	

REFUSE DISPOSAL

Method	*Type of refuse*	*Waste recovery*	*Reasons and comments*
Large container system	Normal. Office and public building	Collected by local council	

TIME SCHEDULE

Drawings	*Tender date*	*Contract signed*	*Work commenced*	*Work completed*	*Type of contract*
Commenced 1952	Foundations and steel, 1952 Building December, 1953	Building January, 1954	Immediately	Open April, 1956, completion all parts, August, 1956	Air Ministry special contract

RATIOS

Area of enclosing walls / Total floor area	=	0·3255 / 1	Area of windows (including external doors) / Total floor area	=	0·0945 / 1
Area of solid wall / Total floor area	=	0·2305 / 1	Total roof area / Total floor area	=	0·488 / 1

analysis

COST ANALYSIS

The architects were unable to obtain the permission of their clients to disclose the costs. This also applied when the control tower and passenger handling building were illustrated in the JOURNAL. The architect tells us that the building was economical in cost, and that the large quantity of materials used, together with the prestige value, resulted in keen tendering throughout.

SITE ORGANIZATION

Site labour and equipment: Site organization—agents, section foreman, trades foreman, site engineers, quantity surveyors, time keepers, cashiers, first-aid and shorthand-typist. Site equipment—concrete mixers, mortar pans, hoists, compressors, kongo hammers, concrete vibrators, swing circular saws and paint spraying machines.

Sub-letting: Painting, plastering and glazing—normal practice for a large job.

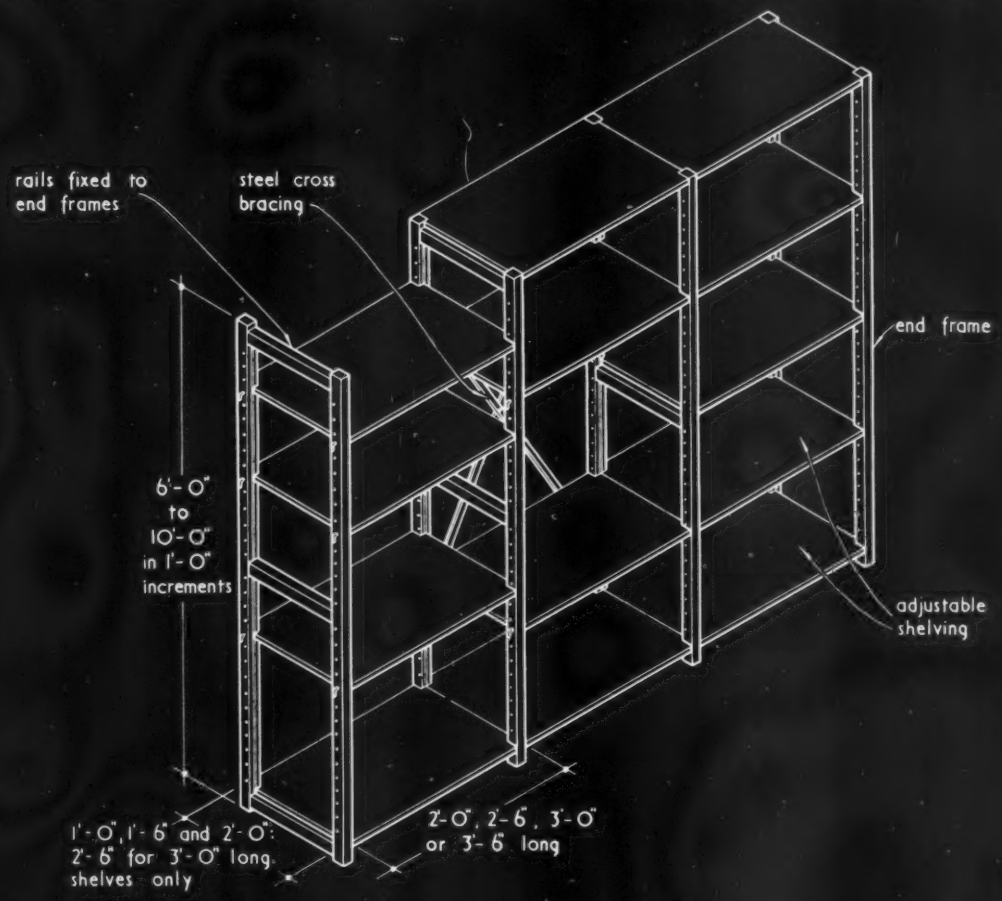
Job management: Main progress chart broken down into various operations, weekly progress charts between site and head office giving estimated progress and actual progress. A director was in charge of contract (T. Freakley) and a senior surveyor based at head office, making daily site visits. Head office departments gave service to the site: plant, buying, engineering, invoice, etc.

CONTRACTORS

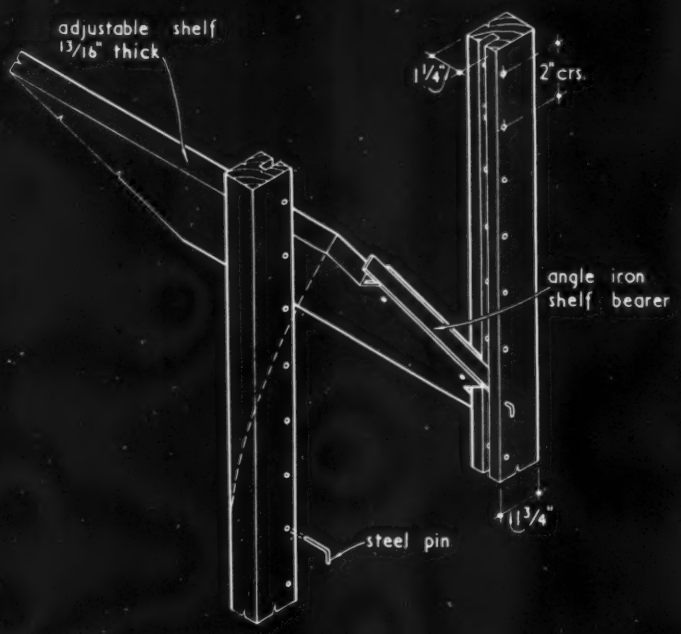
Building work: Taylor Woodrow Ltd. *Steelwork:* Redpath, Brown & Co. Ltd. *Foundations:* Taylor Woodrow Construction Ltd. *Furnishing:* MOW. *Sub-contractors—Painting:* Messrs. J. & B. Abbott Ltd. *Metal windows and cladding to bridges and ramps:* Aygee Ltd. *Removable metal partitions:* Ayrshire Dockyard Co. Ltd. *Terrazzo pavings and partitions, etc.:* Art Pavements & Decorations Ltd. *Special joinery:* D. Burkle & Son Ltd. *Heating, ventilating and plumbing:* Z. D. Berry & Sons Ltd. *Mild steel walkways:* Bookham Engineering Co. Ltd. *Spherical dome lights:* British Challenge Glazing Co. *Joinery:* Builders Supply Co. (Hayes) Ltd. *Commemorative panel:* Ralph Beyer. *Safe and strong room door:* Chatwood Safe & Engineering Co. Ltd. *Precast concrete floors and roofs:* Concrete Ltd. *Precast granolithic treads and landings, artificial stone facing slabs:* Cooper, Wettern & Co. Ltd. *Tiling to screen wall in crush hall:* Carter & Co. (London) Ltd. *Fibreboard suspended ceilings, acoustic tile suspended ceilings and wall linings:* John Dale Ltd. *Fireproof panels:* Durasteel Ltd. *Sheet Metal hopper screens:* W. H. Earley Ltd. *Flag poles, royal dais and canvas awnings for royal visit:* John Edgington & Co. Ltd. *Expanded metal suspended ceilings:* Expanded Metal Co. Ltd. *Special joinery:* Eustace & Partners Ltd. *Electrical installation:* Electrical Installations Ltd. *Fibrous plaster work:* David Esdale & Co. Ltd. *Kitchen equipment:* Falkirk Iron Co. Ltd. *Asphalt:* Faldo Asphalt Co. Ltd. *Sanitary fittings:* J. S. & F. Folkard (London) Ltd. *Composition block flooring:* Granwood Flooring Co. Ltd. *Ironmongery—special handrails and balustrading:* James Gibbons Ltd. *Entrance canopy—external handrails and balustrades:* Grundy Arnatt Ltd. *Double glazed carda windows:* Holcon Ltd. *Perspex nameplates:* Hill Bros. (Service) Ltd. *Mirrors:* James Clark & Eaton Ltd. *Telephone ducting:* Key Engineering Co. Ltd. *Glass roof lights:* J. A. King & Co. Ltd. *Pneumatic Tube System:* Lamson Engineering Co. Ltd. *Lifts:* Marryat & Scott Ltd. *Grill room dining booths:* Mines & West Ltd. *Handrails and balustrades:* Light Steelwork (1925) Ltd. *Built-up felt roofing, waterproof paving:* Permanite Ltd. *Faience wall tiling:* Parkinsons (Wall Tiling) Ltd. *Insulation of concrete floors and brick walls:* Expanded Rubber Co. Ltd. *Glazed faience exterior tiling:* S.G.B. (Dudley) Ltd. *Roller shutters:* Shutter Contractors Ltd. *External plumbing:* J. H. Shouksmith & Sons Ltd. *Cork tile pavings and thermoplastic tile pavings:* Semtex Ltd. *Sprayed asbestos finish:* Turners Asbestos Co. Ltd. *Stone pavings and marble linings:* Nine Elms Stone Masonry Works. *Metal windows—patent glazing:* Williams & Williams Ltd. *Metal louvred ventilators:* Frederick Braby & Co. Ltd. *Holoplast partitions:* Denny, Mott & Dickson Ltd. *Linoleum floor covering:* Inlaid Rubolin Flooring Ltd. *Flush doors:* Leaderflush Ltd. *Bronze skirtings and neckings:* H. H. Martyn & Co. Ltd. *Plastering:* Alan Milne Ltd. *Grill room and dining rooms—special joinery:* Geo Parnall & Co. Ltd. *Terrazzo and limestone paving:* A. Quiligotti & Co. Ltd. *Signwriting:* Regina Studios Ltd. *Facing bricks:* J. H. Sankey & Sons Ltd.

FURNITURE AND FITTINGS | TIMBER | SHELVING

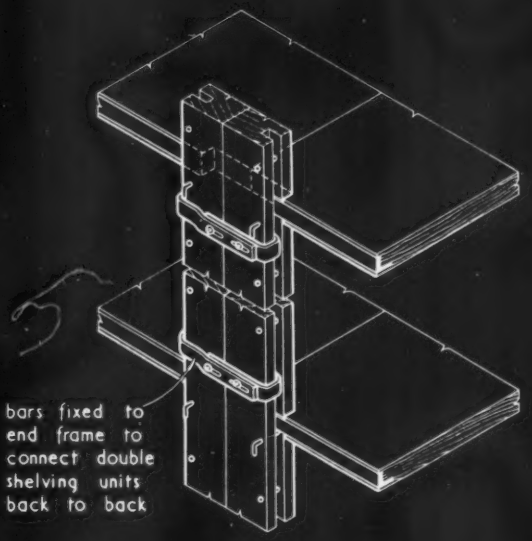
The Architects' Journal Library of Information Sheets 597 Editor: Cotterell Butler, A.R.I.B.A.



ISOMETRIC SKETCH OF TYPICAL SHELVING ASSEMBLY.



DETAIL OF ADJUSTABLE SHELF FIXING.



DETAIL OF CONNECTING BARS.

·LUNDIA· PREFABRICATED INDUSTRIAL TIMBER SHELVING.

Manufacturer: Remploy Ltd.

42.C7 ·LUNDIA· PREFABRICATED INDUSTRIAL TIMBER SHELVING

This Sheet describes Lundia industrial shelving which is available in prefabricated units for building up to form an installation of any size. The design of fixings is simple and the positions of all shelves are adjustable.

Construction

End frames: Manufactured from clear hemlock, these consist of $1\frac{1}{4}$ in. by $1\frac{3}{4}$ in. corner posts grooved to take the shelf bearers with $1\frac{1}{4}$ in. by $1\frac{3}{4}$ in. fixed rails at top, bottom and intermediately (one intermediate rail for units up to 8 ft. 0 in. high and two for units over 8 ft. 0 in.). There are holes at 2-in. centres in the corner posts for shelf adjustment

Cross braces: These are in $\frac{1}{2}$ in. by $\frac{3}{16}$ in. steel and one pair is required for a single bay. Where there are a number of bays, braces should be used on alternate bays for heavy loads and less frequently for lighter loads.

Shelves: The shelves are manufactured from selected Scandinavian softwood, kiln-dried to a standard moisture content of 12 per cent. They are $\frac{13}{16}$ in. thick with $\frac{5}{8}$ in. by $\frac{5}{8}$ in. by $\frac{1}{2}$ in. angle iron bearers inserted in the ends, as shown in the detail on the lower face of the Sheet.

Steel pins: Where the flange of the angle bearer projects into the groove in the corner post it is supported on a loose mild steel pin pushed through the holes in the post.

Connecting bars: The mild steel connecting bars are used as shown in the drawing on the lower face of the Sheet to connect ranges of shelving back to back. One pair of bars is used at top and bottom of the corner posts at every 9 ft. 0 in. approximately on a run of shelving.

Sizes

End frames are available 6 ft. 0 in., 7 ft. 0 in., 8 ft. 0 in., 9 ft. 0 in. and 10 ft. 0 in. high by 1 ft. 0 in., 1 ft. 6 in., 2 ft. 0 in. and 2 ft. 6 in. deep. Shelves are 2 ft. 0 in., 2 ft. 6 in., 3 ft. 0 in. and 3 ft. 6 in. wide by 1 ft. 0 in., 1 ft. 6 in. and 2 ft. 0 in. deep. Shelves 2 ft. 6 in. deep are also available in 3 ft. 0 in. width only.

Fixing

It is usual to fit top and bottom shelves first, but not essential.

Finish

The wood is left white and smooth on all surfaces: any loose or dead knots in the shelves are removed and the holes plugged. All metal parts are cellulose-dipped.

Applications

Each shelf will carry a working load of 500 lb. Owing to the ease with which the shelving can be assembled, installations may be rearranged or extended to meet the requirements of any layout.

Compiled from information supplied by:

Remploy Limited.

Address : 25-28 Buckingham Gate, London, S.W.1.
Telephone : Victoria 6621.

46.Z ALPHABETICAL INDEX TO DEC. 13, 1956 (A-FR)

working detail

STAIRCASES: 26

STAIRCASE: TOWN HALL AT RØDOVRE, DENMARK

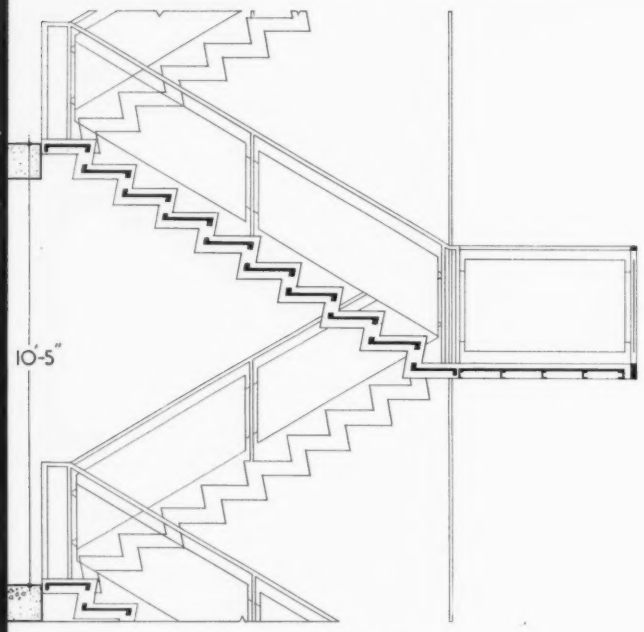
Arne Jacobsen, architect (*material supplied by Michael Sadler*)

Apart from the plastic infill on the treads and the glass balustrade, this is an all-steel staircase. The use of this material has enabled the strings (which are 2-in. thick solid mild steel) to repeat the cranked pattern of the steps. The stair is, in effect, a tour de force *of welding, for virtually all the steel-to-steel joints have been effected by this method. The half-landings are suspended from joists in the roof by three 1-in. diameter suspension rods.*

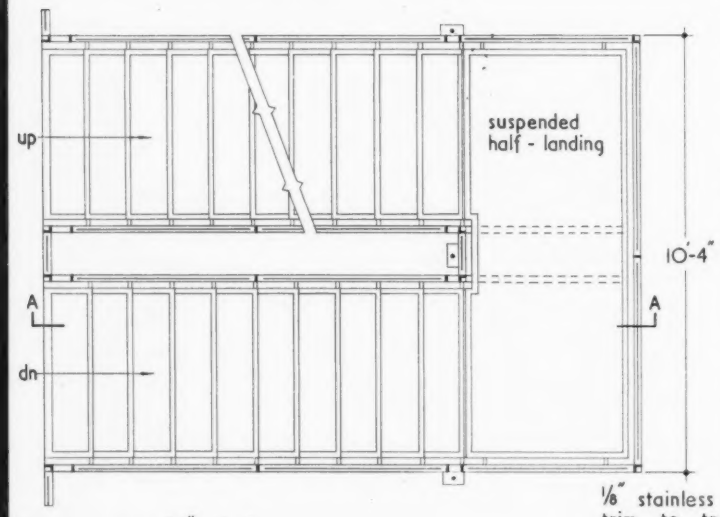
working detail

STAIRCASE: TOWN HALL AT RODOVRE, DENMARK

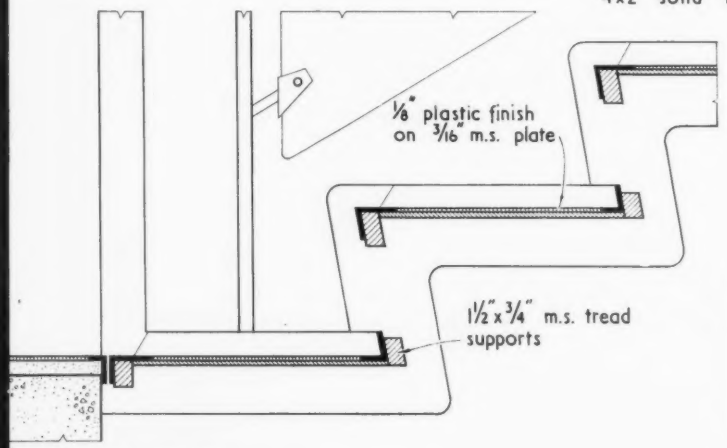
Arne Jacobsen, architect (*material supplied by Michael Sadler*)



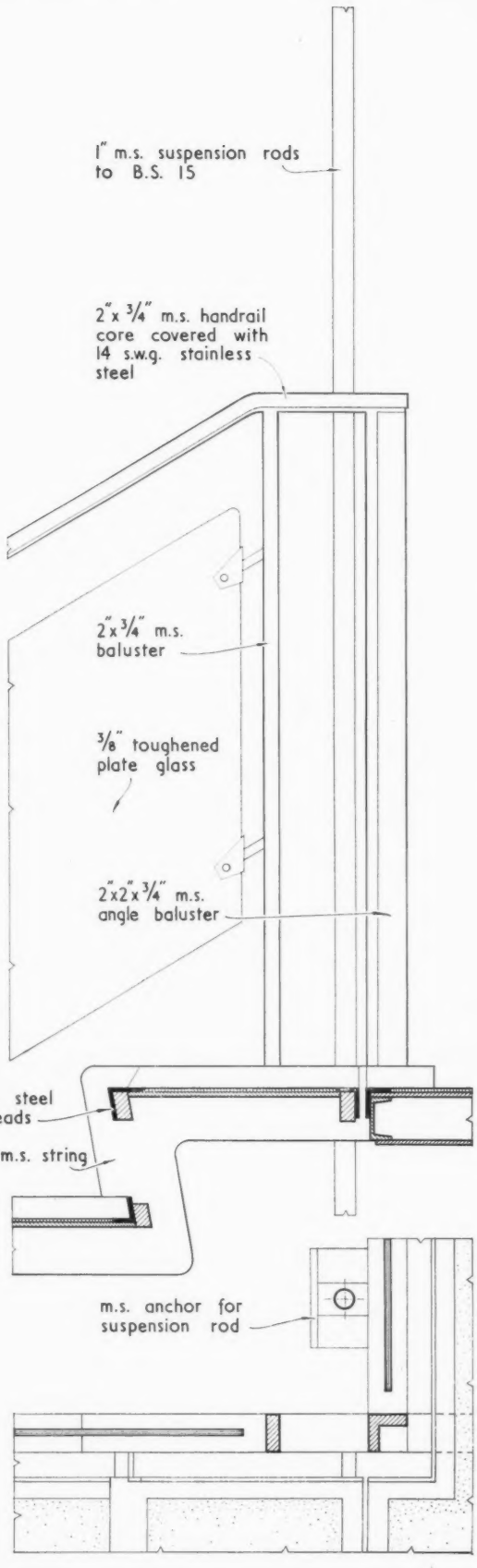
SECTION A-A. scale 1/4" = 1'-0"



PLAN. scale 1/4" = 1'-0"



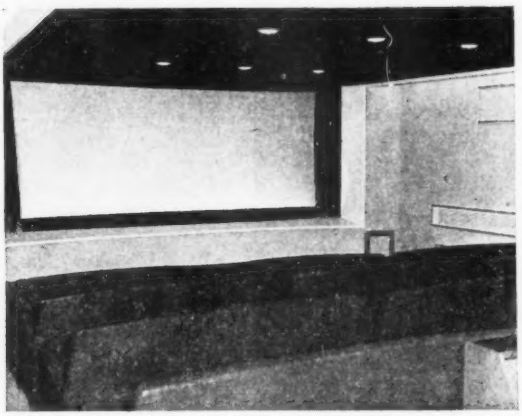
DETAIL OF TREADS.
scale 1 1/2" = 1'-0"



PLAN.

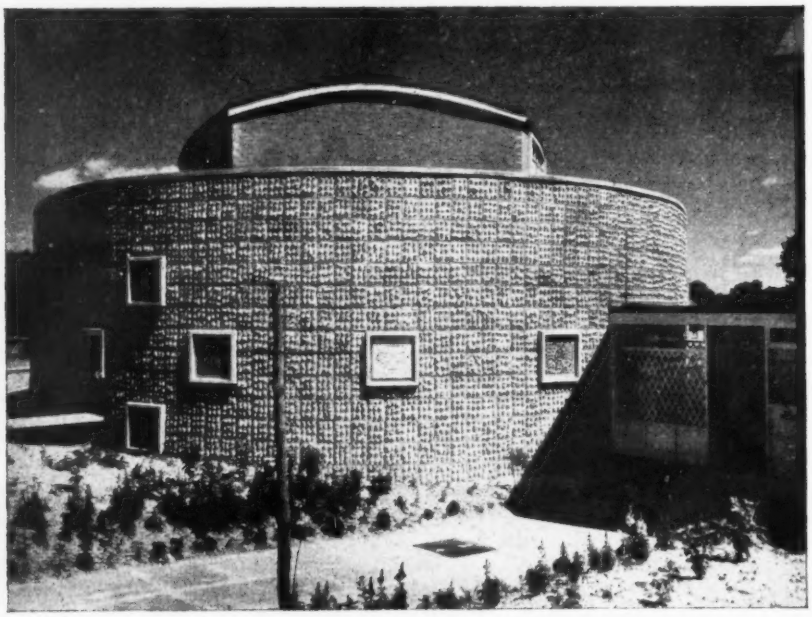
note: figured dimensions in feet and inches are approximate

PREVIEW THEATRE, AUDLEY SQUARE, LONDON W.1



The preview theatre at 3 Audley Square, London, W.1, was designed for Warwick Film Productions Ltd. by John D. Morgan and David C. Branch. The projection desk (above right) is set at the back of the theatre. This desk contains devices for controlling the film being shown and permits take-over from the projection room. The film speed may be slowed down or stopped. The volume of sound may be controlled and a film footage counter indicates the amount of film shown. A device also incorporated, unique to this country, permits the film to be reversed. The desk is fitted with concealed lighting, telephones and pull-out writing tops at each end. It is built in mahogany with an inset matt black plastic top to prevent reflection from the screen, apart from which, the inside is painted dead white. The screen (above left) can take a cinemascope picture size of 15 ft. 6 in. by 6 ft. high. The proscenium opening is framed in fibrous plaster, which is continued back into the theatre, forming the false ceiling. The ceiling is finished in asbestos spray and the joinery is in polished mahogany.

CHURCH AT REIGATE, SURREY



St. Peter's Church and Church Hall, Dovers Green, Reigate, Surrey, designed by E. F. Starling, is seen from the south-west, above. The Southwark diocese required a small church centre to seat up to 200, with a curate's house, linked with the church (right, above). The architect chose a circular plan and flints for external facing, as a contrast to the uniform rectangular brick houses on the surrounding estate.

Announcements

PROFESSIONAL

S. G. Howitt, L.R.I.B.A., has recently opened in private practice at 75, Queen's Road, Bristol, 8 (telephone Bristol 21318). He has taken into partnership J. C. Hector, A.R.I.B.A., and they will practice under the name of Howitt & Hector.

Stanley G. Soper, F.R.I.B.A., has moved to 39-41, High Street, Bromley, Kent (telephone Ravensbourne 2901).

Bernard M. Feilden, A.R.I.B.A., A.A.DIPL. (Hons.), associate David Mawson, A.R.I.B.A., has moved to 71a, The Close, Norwich (telephone Norwich 28828).

TRADE

Evode Ltd., announce that they have moved their headquarters to Common Road, Stafford, where their major production will be carried out. The new telephone number is Stafford 2241. Their premises in Glover Street, Stafford, will now be devoted entirely to the expansion of production facilities, to cope with the steadily-increasing demand for the products of the Evode Paints Division. The move will not affect the London Sales Office, which remains at 1, Victoria Street, London, S.W.1.

British Insulated Callender's Cables Ltd. announce that they have moved their Tunbridge Wells office to Water Lane, Maidstone (telephone Maidstone 51113). They also announce that the telephone number of their Swansea office has been changed to Swansea 52094.

DOVER DESIGN
Door Furniture

A design to enhance the contemporary interior. The Dover range includes mortice locksets and latchsets and mortice furniture with lever handles or knobs. Standard finishes — chromium-plated, Im. B.M.A. or Florentine Bronze, special finishes available on request.

"It come orf in me 'and, mum..."

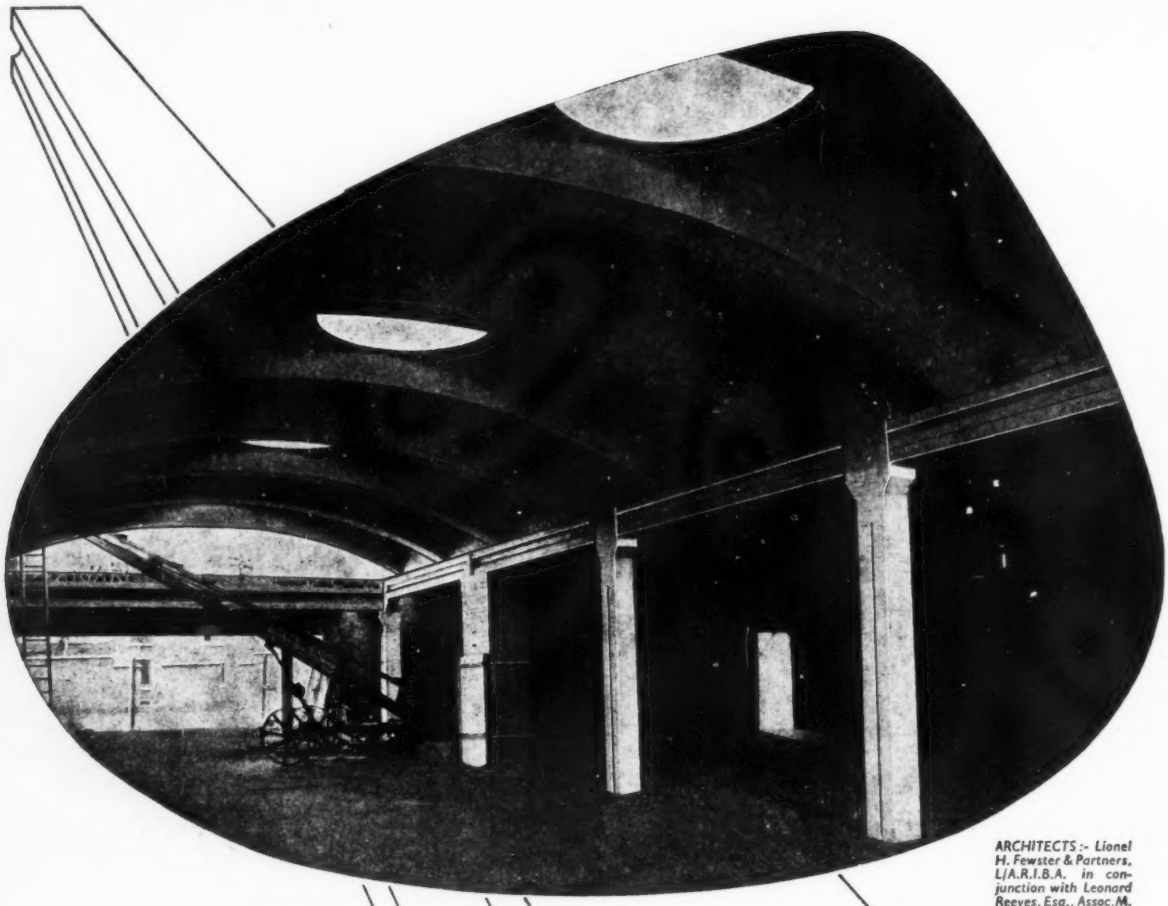
Our sympathy's entirely with you, Mrs. B. There are some people who cheerfully spend a small fortune on redecorating, yet positively seem to enjoy living with antiquated locks and door furniture, cracked and stained finger plates, rusty postal knockers, and so on. But the more enlightened 'furnish' their doors as well — refitting with elegant and enduring Yale door furniture chosen from an impressive range of designs and finishes. The Dover design is an example.

Where there's a door there's a need for YALE

REGISTERED TRADE MARK

DOOR FURNITURE
MASTER KEYED SUITES
DOOR CLOSERS
LOCKS

The Yale & Towne Manufacturing Company · British Lock & Hardware Division · Willenhall · Staffs · England



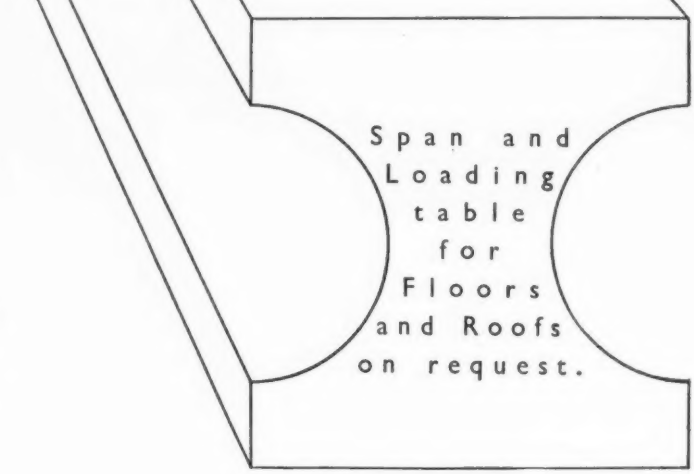
ARCHITECTS :- Lionel H. Fewster & Partners, L/A.R.I.B.A. in conjunction with Leonard Reeves, Esq., Assoc.M. Inst. C.E., F.R.I.C.S.

CONTRACTORS :- Holland & Hannen and Cubitts Ltd., Liverpool.

PIERHEAD

PRESTRESSED CONCRETE

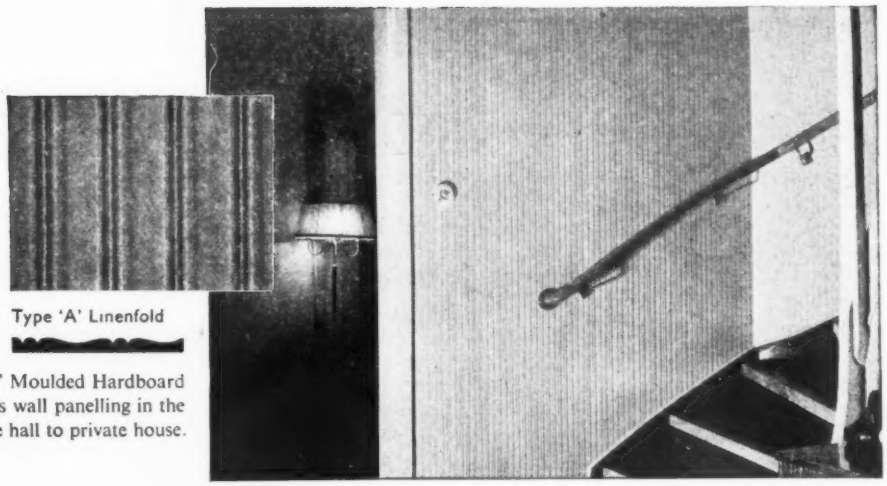
Pierhead Ltd. supplied their X 3½", X 7" and I 10" Floor Units, 90 Pretensioned Main Beams and all Precast Concrete including the Arch-ribbed beams illustrated to this contract for New Shops Development, Crewe, Cheshire.



PIERHEAD LIMITED

SPEKE BOULEVARD,
LIVERPOOL, 12.
TEL: HUNTS CROSS 1311
GRAMS: CONSPEKE, LIVERPOOL

FAGGS LANE,
FELTHAM, MIDDLESEX.
TEL: FELTHAM 3031

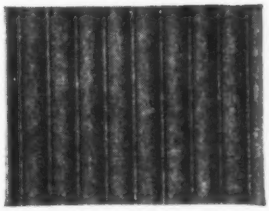


Type 'A' Linenfold

Type 'A' Moulded Hardboard used as wall panelling in the entrance hall to private house.

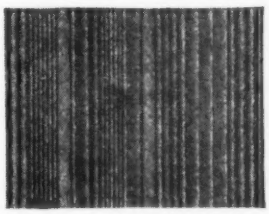
material benefits

The many "material benefits" of LW Swedish Hardboard have been greatly increased by the introduction of Moulded Board. Supplied in standard 4′ x 9′ sheets, $\frac{1}{8}$″ thick, the six distinctive designs and ease of fitting give LW Board a versatility ideally suited for home modernisation, hotel bars, shops, foyers, exhibitions and partitions. Both the normal and oil tempered quality are equally effective either in their rich natural colours, or painted. To cover unsightly walls, for the speedy erection of large areas or as the basis of attractive design, LW Moulded Hardboards are the obvious answer. Send to-day for full details.

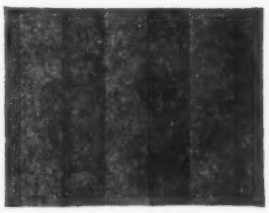


Type 'B' Reed & Bead

Type 'A' Hardboard used in the Lounge Bar of the Llanrumney Hall Hotel, Cardiff. Owners: Wm. Hancock & Co. Ltd. Architect: G. L. H. Rogers, L.R.I.B.A.

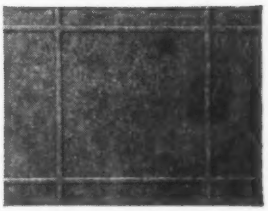


Type 'C' Striated



Type 'D' Slatted

Type 'E' Close Slatted

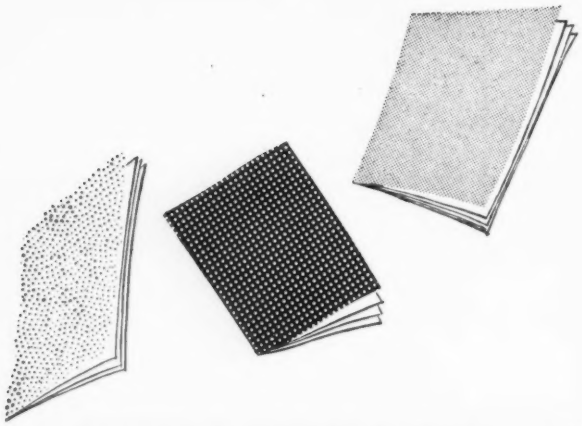


Type 'F' Tiled (4″ Tiles)

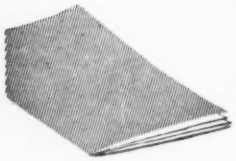
LW BOARD

MOULDED HARDBOARDS

Manufactured by: MESSRS. LJUSNE-WOXNA A.B. LJUSNE · SWEDEN
Sole Agents for U.K. (excluding N. Ireland)
Messrs. Martin Olsson & Sons Ltd. · Melbourne House · Aldwych · London W.C.2



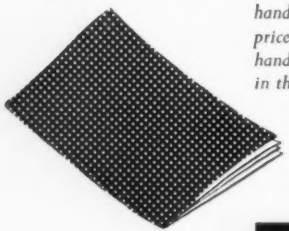
Smokeless Coke . . . For Smokeless Heat



Anticipating the Nation's demand for clean air, the Area Gas Boards work unremittingly to make constant quality coke both easy to light and to keep alight.
From them specialised information booklets* are yours for the asking, as is the expert advice of their Coke Departments.

- ★ **Coke-fired Central Heating Plant**
- ★ Coke-fired Small Steam Raising Plant
- ★ Coke-fired Semi-producer Furnace for Drying and Process Heating Plant
- ★ Coke-fired Grass Drying Plant
- ★ Coke-fired Glasshouse Heating and Soil Warming Equipment
- ★ **Coke-fired Domestic Appliances and their application**

The Gas Council's comprehensive official handbook, 'Coke Burning Appliances', price 12/6, should be in the hands of all concerned with fuel service in the modern home.

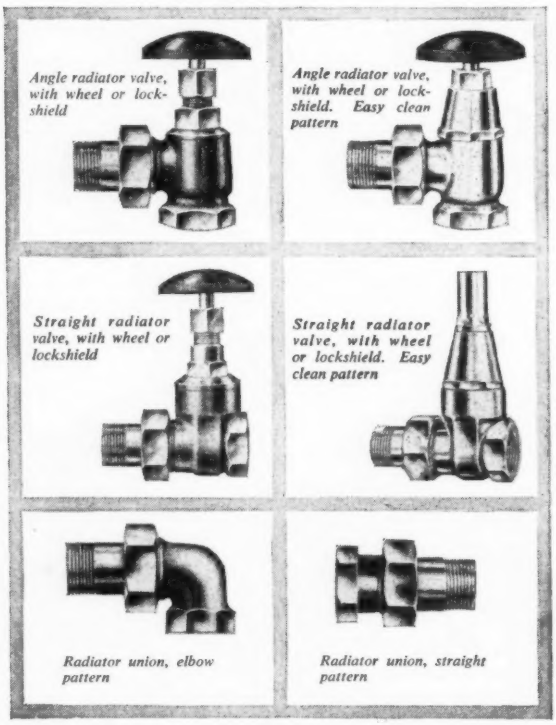


THE GAS COUNCIL

COKE DEPARTMENT
1 Grosvenor Place,
London, S.W.1

Peglers Limited
Quality Radiator fittings

Where else will you find such care taken over even the smallest and most straightforward of fittings as at Peglers Limited? You can depend on our top quality forgings, plating executed with vigilant care, and hydraulic testing for each unit. Our EC patterns make any gland maintenance quick and easy and without disturbing the shield or wheel.



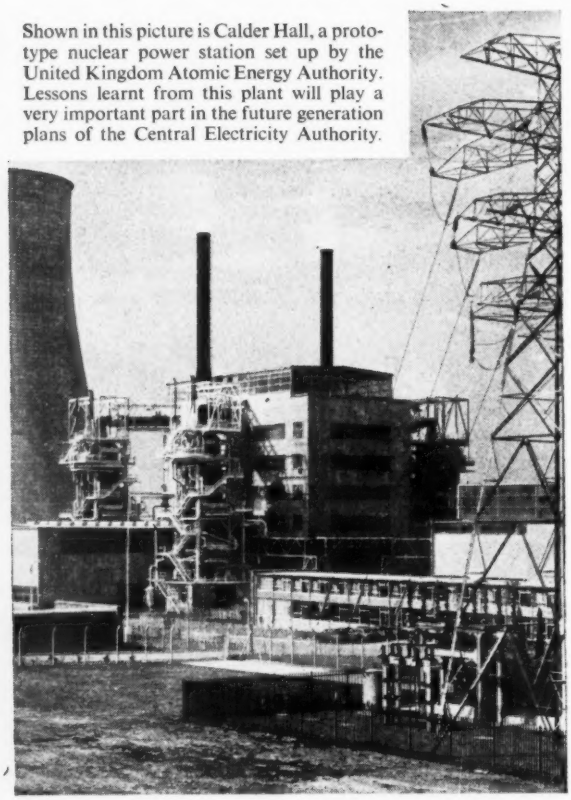
All available in sizes ½" to 1¼" in brass or chromium plated finish.

Peglers Limited
The name is the guarantee

BELMONT WORKS · DONCASTER
London Office and Warehouse:
PRESTEX HOUSE · MARSHALSEA ROAD · S.E.1
WP17

Electricity from Nuclear Energy

Shown in this picture is Calder Hall, a prototype nuclear power station set up by the United Kingdom Atomic Energy Authority. Lessons learnt from this plant will play a very important part in the future generation plans of the Central Electricity Authority.



The growing need for power

Britain today is making an all-out drive for increased production, and as the pace quickens, so does the demand for power. In 1955, about one-fifth of the national coal output was used to generate electricity. The demand for power doubles every ten years and by 1965, 40 per cent of the estimated national coal output that year will be needed to keep up with the demand. Nuclear energy will do much to make up the difference between the need for electric power and the supply of home-produced coal.

Work will be started on the first two nuclear power stations in 1957, and by 1965 a total of 12 nuclear power stations, employing both gas- and liquid-cooled reactors, will be supplying current to the Grid. The rapid developments of the past 18 months have shown that the potential capacity of the earlier stations will be practically double the original estimate; this means that by 1965 we should be getting from nuclear power alone electricity equal to 10 to 12 million tons of coal.

As the demand for electricity grows, nuclear energy will become more and more important in supplying the power upon which the economic future of the country so largely depends.

CEA

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

BOROUGH OF HARROW
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT

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

(*a*) ASSISTANT, Grade A.P.T. II/III (£609 17s. 6d. to £784 2s. 6d. per annum, plus London "weighting"), and

(*b*) QUANTITY SURVEYING ASSISTANT, Grade A.P.T. II (£609 17s. 6d. to £691 17s. 6d. per annum, plus London "weighting").

The appointments are subject to the provisions of the Local Government Superannuation Acts; the passing of a medical examination, and to the National Joint Council's Scheme of Conditions of Service.

The Council are unable to provide housing accommodation for the successful candidates.

Canvassing will be a disqualification.

Forms of Application may be obtained from me, to whom they should be returned not later than Friday, 21st December, 1956.

D. H. PRITCHARD,
Town Clerk.

Town Clerk's Office, Harrow Weald Lodge, Harrow, Middlesex. 4702

BOROUGH OF HESTON AND ISLEWORTH

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

(*a*) SENIOR PLANNING ASSISTANT.
Salary in accordance with A.P.T. Grade III (£656×£25 12s. 6d.—£784 2s. 6d., plus London weighting).

(*b*) PLANNING ASSISTANT.
Salary in accordance with A.P.T. Grade II (£609 17s. 6d.×£20 10s.—£691 17s. 6d., plus London weighting).

Applicants for (*a*) must have passed and applicants for (*b*) should have passed the Intermediate Examination of the Town Planning Institute or other equivalent, and have had experience in the town planning department of a Local Authority.

(*c*) DRAUGHTSMAN.
Salary in accordance with Grade A.P.T. II (£609 17s. 6d.×£20 10s.—£691 17s. 6d., plus London weighting).

Applicants must be capable and expeditious draughtsmen, and town planning experience will be an advantage.

The Council is unable to assist the successful candidates with housing accommodation.

Applications are to be submitted by 22nd December, 1956, 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. 4672

URBAN DISTRICT COUNCIL OF EAST BARNET

Applications are invited for the following permanent appointments:—

(*a*) ASSISTANT ARCHITECT, Grade A.P.T. III (£656 to £784 2s. 6d. per annum).

(*b*) ARCHITECTURAL ASSISTANT, Grade A.P.T. II (£609 17s. 6d. to £691 17s. 6d. per annum).

The above salaries will be increased by London weighting of £20 to £30 per annum, according to age.

Housing accommodation will be provided for appointment (*a*) if necessary.

Conditions of Appointment and Forms of Application, returnable by the 29th December, 1956, may be obtained from the Engineer and Surveyor, Town Hall, Station Road, New Barnet, Hertfordshire. 4694

THE CORPORATION OF GLASGOW
ARCHITECTURAL AND PLANNING DEPARTMENT
ASSISTANT ARCHITECTS
ASSISTANT PLANNERS
ASSISTANT QUANTITY SURVEYORS

Vacancies exist for a number of Assistants as above and for Architectural Assistants. Minimum qualification, Intermediate Examination of the appropriate professional body. Salary scale £580—£1,100 per annum, with placing according to age, experience and qualifications.

Form of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1. 4745

PART-TIME TEACHER required for BUILDING CONSTRUCTION and CONSTRUCTIONAL DESIGN to lecture on Thursdays, 9 a.m. to 1 p.m. and 2 p.m. to 5 p.m. to Intermediate R.I.B.A. students. Please apply by letter to the Responsible Lecturer, School of Art and Architecture, Mid-Essex Technical College, Market Road, Chelmsford. 4744

UNIVERSITY GRANTS COMMITTEE: ARCHITECT. The Civil Service Commissioners invite applications from registered Architects for this permanent post. Interviews in London in mid January. Candidates must be at least 35 on 1st May, 1956, and either F.R.I.B.A. or A.R.I.B.A. They must have recent experience in the design of public buildings, preferably educational; possess a sound knowledge of modern methods of building construction, pre-fabrication and new materials, and be capable of assessing the relative merits and economics of new design ideas. Salary scale £2,000—£2,300 per annum. Women's scale somewhat lower but being improved under equal pay scheme.

The Committee are responsible for grants towards the cost of new university buildings. The officer appointed will advise the Committee on the planning and building of all types of university buildings including libraries, laboratories and other buildings for teaching and research as well as halls of residence, refectories and other amenities for staff and students; and will collate past and current experience in the planning and designing of university buildings with a view to assisting university authorities in submitting individual projects for the Committee's approval.

Further particulars and application forms from the Civil Service Commission, Scientific Branch, 30, Old Burlington Street, London, W.1, quoting No. S. 4648/57/7. Application forms should be returned by 3rd January, 1957. 4741

BRACKNELL DEVELOPMENT CORPORATION

Applications are invited from Corporate members of the R.I.B.A. for the post of SENIOR ARCHITECT, A.P.T. Grade X, salary £1,295 × £55(4)—£1,515.

Applicants should have considerable experience in the design and supervision of large housing contracts.

Superannuation schemes. Medical examination. Housing available in due course. Apply by 31st December, 1956, giving age, education and qualifications; experience and appointments held (with dates and salaries) and two referees, to General Manager, Bracknell Development Corporation, Farley Hall, Bracknell, Berkshire. 4739

HARLOW U.D.C.
require
GENERAL ENGINEERING ASSISTANT.

Salary Special Grade (£690 × £30—£840 per annum) of the N.J.C. Conditions of Service. Candidates must have passed final examination of a recognised Institution and have previous experience of Municipal work. Duties will include normal engineering projects of a local authority with a population of 32,000 increasing to an ultimate of 80,000 population. The post is superannuable, housing accommodation will be available and reasonable travelling expenses will be paid.

Applications giving names of two referees to be made to the Engineer and Surveyor, Netteswell Hall, Harlow, by 27th December, 1956. 4740

WARWICKSHIRE COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

(*a*) SENIOR ASSISTANT ARCHITECTS, Grade A.P.T. V (£814 17s. 6d.—£994 5s.). Applicants must be competent designers having a knowledge of modern methods of construction and be capable of handling large building projects from sketch plan stage to completion.

(*b*) ARCHITECTS, Grade A.P.T. IV (£727 15s.—£907 2s. 6d.). Applicants must be competent designers having a good knowledge of construction and be capable of handling medium-sized contracts.

(*c*) ASSISTANT ARCHITECTS, scale £707 5s.—£861. The successful applicants will work in teams on large projects but opportunity will be given to men with enthusiasm and ability to design and carry out smaller projects under the group architect.

The commencing salaries can be within the grades according to the ability and experience. The appointments are on the established staff and all are subject to the Scheme and Conditions of Service of the National Joint Council for Local Authorities and the Local Government Superannuation Acts, 1937-1953. Successful candidates will be required to pass a medical examination.

The Council is unable to offer successful candidates housing accommodation.

Applications are to be on forms which can be obtained from G. R. Barnsley, F.R.I.B.A., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall, Warwick. 4747

CORBY DEVELOPMENT CORPORATION
ASSISTANT ARCHITECTS

Applications are invited for two appointments on the staff of the Chief Architect at salaries within the grade £710 × £35—£885.

During the next few years the New Town of Corby will offer exceptional variety of experience in the design and construction of houses, flats, shops and factories.

Appointments are subject to superannuation under the Local Government Scheme, for which medical examination will be required.

Housing is available.

Applications stating age, education, training, qualifications, experience, present and past appointments and salaries, together with the names of two referees must reach the undersigned by Monday, 31st December, 1956.

R. F. BROOKS GRUNDY,
General Manager.

Spencer House, Corby, Northants. 4720

BUCKS COUNTY COUNCIL

Applications are invited for the appointment of an ASSISTANT ARCHITECT in the County Architect's Department. Salary A.P.T. Grade VII (£999—£1,230 p.a.).

The appointment is superannuable and subject to medical examination.

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

Applications, on prescribed forms, must be returned by 21st December, 1956.

F. B. POOLEY,
County Architect.

County Offices, Aylesbury. 4685

METROPOLITAN BOROUGH OF BATTERSEA
BOROUGH ENGINEER AND SURVEYORS DEPARTMENT

Applications are invited for the following permanent appointments:—

(*a*) ASSISTANT BUILDING SURVEYOR (two) Grade A.P.T. IV (£727 15s.—£907 2s. 6d.).

(*b*) ASSISTANT BUILDING SURVEYOR, Grade A.P.T. II (£609 17s. 6d.—£691 17s. 6d.).

(*c*) ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. I (£543 5s.—£625 5s.).

(*d*) JUNIOR ASSISTANT QUANTITY SURVEYOR Q/GENERAL (£184 10s.—£656).

(*e*) JUNIOR ASSISTANT BUILDING SURVEYOR Q/GENERAL (£184 10s.—£656).

London weighting is payable in addition: Under 21 years—£10 p.a.; 21 and under 26—£20 p.a.; 26 and over—£30 p.a.

Applicants for posts (*a*) should have experience in surveys and preparation of reports and drawings. Preference will be given to Corporate Members of the Royal Institution of Chartered Surveyors (Building Sub-division).

Appointments (*d*) and (*e*) offer facilities for training to applicants of school leaving age who are desirous of entering the surveying profession.

Previous experience in local government will be an advantage for posts (*a*) and (*b*) but is not essential.

The point of entry within the grades may be fixed above the minimum.

Application forms from the Borough Engineer and Surveyor, Town Hall, S.W.11. Closing date 1st January, 1957. 4729

NATIONAL COAL BOARD
NORTH EASTERN DIVISION

Applications are invited for the following appointments in the Department of the Divisional Chief Architect at Conisbrough, Nr. Doncaster:—

ARCHITECT, Grade II. Salary Scale: £700 × £30—£1,000 per annum. Qualifications: A.R.I.B.A.

ARCHITECTURAL ASSISTANT, Grade I. Salary Scale: £625 × £25—£750 and up to £900 per annum in certain circumstances. Qualifications: Preferably Intermediate R.I.B.A. or considerable practical experience.

ARCHITECTURAL ASSISTANTS, Grade II. Salary Scale: £520 × £20—£615 per annum. Qualifications: Preferably Intermediate R.I.B.A. or studying for such examination.

JUNIOR ARCHITECTURAL ASSISTANTS. Salary Scale: According to age—£4 5s. per week at 18 to £8 15s. per week at 25. Qualifications: G.C.E. in 5 subjects, including English, Mathematics and Art.

QUANTITY SURVEYORS, Grade II. Salary Scale: £700 × £30—£1,000 per annum. Qualifications: A.R.I.C.S.

QUANTITY SURVEYING ASSISTANT Grade I. Salary Scale: £625 × £25—£750 and up to £900 per annum in certain circumstances. Qualifications: Preferably Intermediate R.I.C.S. or considerable practical experience.

QUANTITY SURVEYING ASSISTANT, Grade II. Salary Scale: £520 × £20—£615 per annum). Qualifications: Preferably Intermediate R.I.C.S. or studying for such examination.

JUNIOR QUANTITY SURVEYING ASSISTANT. Salary Scale: According to age—£4 5s. per week at 18 to £8 15s. per week at 25. Qualifications: G.C.E. in 5 subjects including English, Mathematics, History or Geography.

Full details and application forms obtainable from Hugh Smith, F.R.I.B.A., Divisional Chief Architect, National Coal Board, P.O. Box No. 4, Denaby, Nr. Doncaster. 4715

CITY OF NOTTINGHAM
CITY ENGINEER'S DEPARTMENT

(i) ASSISTANT QUANTITY SURVEYOR, A.P.T. V (£814—£994 p.a.).

(ii) ASSISTANT ARCHITECT, A.P.T. IV (£727—£907 p.a.).

(iii) CLERK OF WORKS, Miscellaneous VI (£620—£686 p.a.).

Applications are invited for the above positions in the City Engineer's Department.

Applicants for (i) should be Associates of the R.I.C.S., or have extensive professional experience. The person appointed will be required to be responsible for all the quantity surveying work on individual major contracts.

Applicants for (ii) should be Associates of the R.I.B.A., capable of taking charge of the design and construction of individual projects.

Applicants for (iii) should have been trained as tradesmen, and experienced in the maintenance of buildings.

In each case, commencing salary will depend upon qualifications and experience.

Assistance with housing may be given.

Forms of application are to be obtained by writing to R. M. Finch, O.B.E., M.I.C.E., Guildhall, Nottingham, indicating which post is applied for, and should be returned not later than 27th December, 1956. 4712

SURREY COUNTY COUNCIL

Applications invited for appointment of ARCHITECTURAL ASSISTANT GRADE I-III, minimum £530, maximum £765 p.a. plus London Allowance. Must be of good general training. Salary range of appointment and commencing salary will depend on experience and qualifications.

Full details, present salary and 3 copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 4750

THE UNIVERSITY OF SHEFFIELD

Applications are invited for the CHAIR of ARCHITECTURE which will become vacant at the end of September, 1957, by the retirement of Professor S. Welsh. Salary £2,300 a year, with F.S.S.U. provision and family allowance. Further particulars should be obtained from the Registrar, The University, Sheffield, 10, to whom applications (20 copies, one only from overseas candidates) should be sent by 2nd February, 1957. 4725

THE CORPORATION OF GLASGOW
ARCHITECTURAL AND PLANNING DEPARTMENT

Applications are invited for the post of SENIOR INSPECTOR OF WORKS from suitably qualified persons who have a first-class wide experience in the supervision of large scale building projects and who possess a sound technical knowledge combined with administrative and organisational ability.

Salary scale £1,250—£1,350 per annum.

The appointment will be superannuable, subject to medical examination.

Particulars of appointment and form of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1.

Candidates who submitted an application in response to a previous advertisement need not renew application.

A. G. JURY,
City Architect and Planning Officer.
4723

CITY AND ROYAL BURGH OF EDINBURGH
CITY ARCHITECT'S DEPARTMENT

Vacancies exist for the following positions :—

SENIOR ASSISTANT ARCHITECTS. Salary £900 × £30 to £1,050 to act as Group Leaders in charge of a number of Assistant Architects. Must be qualified by examination and have had experience of handling building contracts.

SENIOR ASSISTANT ARCHITECTS. Salary £710 to £925. Must be qualified by examination and have had a good general experience.

ASSISTANT ARCHITECTS. Salary £550 to £870. For salaries above £700 per annum applicants must be qualified by examination otherwise must have passed Intermediate Examination and must be continuing their studies towards attaining the full qualification.

In the foregoing appointments placing may be made according to experience.

Applications giving full details and the names of two referees should be sent to A. Steele, City Architect, City Chambers, Edinburgh 1, not later than 4th January, 1957. 4751

STAFFORDSHIRE COUNTY COUNCIL
EDUCATION ARCHITECT'S DEPARTMENT

SENIOR ASSISTANT ARCHITECTS and ASSISTANT ARCHITECTS: Applications are invited from suitably qualified and experienced architects. Salary to be determined on the A.P.T. Grades according to qualifications and experience.

JUNIOR ASSISTANT ARCHITECTS: Vacancies exist for Junior Assistants with experience in an Architect's Office. Salary according to age and experience.

The Department has a large programme of varied and interesting work and is contained in modern offices situate in a pleasant part of the town. Lodging allowance possible for married applicants maintaining a home outside the County. Forms of application from: The County Education Architect, Green Hall, Lichfield Road, Stafford. Closing date 27th December.

T. H. EVANS,
Clerk of the County Council.
4757

NORTHAMPTON
BOROUGH ARCHITECT'S DEPARTMENT

SENIOR ASSISTANT ARCHITECTS (two posts) A.P.T. VI (£902—£1,107).

The successful applicants will be required to take charge of Groups working on interesting new projects in the Education and Housing Sections respectively. Full details and application forms, returnable by 31st December, from Borough Architect, Guildhall, Northampton.

C. E. VIVIAN ROWE,
Town Clerk.
4746

Architectural Appointments Vacant

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

ARCHITECTURAL ASSISTANTS required. State salary, age, experience, etc. Harvey & Scott, 2, Lynedoch Place, Glasgow, C.3. 4278

ARCHITECTURAL ASSISTANT required: qualified or Intermediate stage. Must have good experience, and considerable capacity for work.—Write, stating salary required, to David Carr & Stuart Matthew, 14, Lynedoch Place, Edinburgh. 4343

ARCHITECTURAL ASSISTANT required, with about four to five years' office experience. Write or telephone giving full particulars, including age and salary, to Hasker & Hall, Architects, 13 Welbeck Street, W.1. (WELbeck 0061). 4561

ASSISTANTS required in West End Office. Good draughtsman, about Intermediate standard, and with previous drawing office experience preferred.—Box 4598.

INDUSTRIAL Designer requires ASSISTANT Experience in Engineering and Furniture Design welcome. 1st class draughtsmanship essential. State salary.—Box 4596.

ARCHITECTURAL ASSISTANTS required. London and Home Counties. Salaries £500 to £750.—Box 4576.

POST-INTERMEDIATE ASSISTANT required, in large London Office with widely varied practice. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, London, W.C.1. Telephone HOLborn 7082. 3152

ALERT, practical, ARCHITECTURAL ASSISTANT required. Intermediate standard. Private Architects' Croydon office.—Write, giving particulars of experience, age, and salary required.—Box 4607.

ARCHITECTURAL ASSISTANTS and DRAUGHTSMEN required in the Architect's Department of Allied Bakeries, Ltd. Applicants should possess a sound knowledge of design and construction of industrial buildings. Pension and Life Assurance schemes in operation. 5-day week and lunching facilities. Salaries between £800 and £1,100 p.a., depending on ability and experience.—Full details to Chief Architect, Allied Bakeries, Ltd., 17, Camden Road, London, N.W.1. 4583

CLERK OF WORKS.—Two Clerks of Works required for important Hospital project in the Middle East for major Oil Company. Clerks of Works must be fully experienced: one at least must have experience of engineering services. Salary to be not less than £1,200 p.a., with good cost-of-living allowance, accommodation and amenities. The contract will be for a period of two years. First-class air passages will be paid.—Box 4587.

GODFREY BONSACK LTD., interior decorators and builders, require the services of a YOUNG ARCHITECT with some experience, who is interested in designing (for home and industry), as full-time assistant to Godfrey Bonsack. Please write with full particulars to 25, Davies Street, London, W.1. 4691

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

SHOPFITTING DRAUGHTSMAN required, experienced in shop equipment and modernisation of interiors.

The position calls for the preparation of layouts and perspectives with a modern approach to store fitting problems.

The post is pensionable, subject to medical examination and there is a five-day week in operation.

Applications giving age, details of previous experience and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester 4. 3056

CENTRAL ELECTRICITY AUTHORITY
EASTERN DIVISION

APPLICATIONS are invited for the following Superannuable post in the Generation (Construction) Department.

RESIDENT CIVIL ENGINEER

Salary in accordance with N.J.B. Agreement £1,015—£1,230 per annum.

The commencing salary will depend upon experience and qualifications.

The successful applicant will be required to supervise Civil Engineering and Building Works in connection with the construction of new Generating Stations situated in East Anglia, and must have had experience in this class of work.

Applications giving age, details of qualifications and experience to the Controller, Central Electricity Authority, Eastern Division, Northmet House, Southgate, N.14, to arrive by 22nd December, 1956.

W. N. C. CLINCH,
Controller.
4698

ARCHITECTURAL ASSISTANT, Intermediate standard, required by City firm. Salary £750—£900.—Box 4639.

TRING Architects require SENIOR AND JUNIOR ASSISTANTS for work on contemporary schools, Churches and design of prefabricated forms of construction. Write to: WOODROFFE, BUCHANAN & COULTER, 41, HIGH STREET, TRING, HERTS., or Telephone No. TRING 2083 for an appointment. 4700

THE Zoological Society of London requires ARCHITECTURAL ASSISTANTS for extensive re-building work. Applications stating experience and salary required to the Architects' Department, Regent's Park, N.W.1. 4675

VERNER REES, LAURENCE & MITCHELL require SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS to work on Educational Schemes. Apply—51, Queen Caroline Street, W.6. RIVerside 5905. 4689

ARCHITECT ASSISTANT required in small private office in Victoria area. Applicants must be Intermediate standard and have had at least 3 years' office experience.—Please apply, giving full details of training and experience, and state salary required, Box 4735.

ARCHITECT, with small City office, requires responsible ASSISTANT. Salary £650—£750 per annum.—Ring Central 8484 or write Box 4742.

ARCHITECTURAL ASSISTANT required, minimum standard Intermediate or part Final, and at least 3 years' office experience.—Write details of age, experience, and salary required, to C. W. Sully, A.R.I.B.A., Granada Theatres, Ltd., 123, Regent Street, London, W.1. 4748

CITY Architect requires SENIOR ASSISTANT Capable of complete control substantial industrial and commercial projects. Salary £900—£1,100.—Box 4760

JUNIOR ARCHITECTURAL ASSISTANT required by City firm. Minimum 3 years' drawing office experience (not domestic). Work of interesting character, with good scope. Salary £450—£550.—Box 4738.

SECRETARY for Architect's Department of St. Thomas's Hospital, S.E.1. Typing and experience of office routine essential; shorthand an advantage. Work is concerned with reconstruction of the hospital. Salary according to age, on Whitley scales, A.2: at 21, £335, rising to £530. Canteen facilities.—Apply Personnel Officer. 4736

ARCHITECTURAL ASSISTANCE required for Bishop's Stortford office, up to Intermediate standard.—Apply by letter, stating age, experience, and salary required, to Gerald Lacoste, F.R.I.B.A., 30, South Street, Bishop's Stortford. 4714

NOTTINGHAM.—ARCHITECTURAL ASSISTANT required with contemporary outlook for varied practice. Salary range £500—£700 per annum.—Michael F. H. Moss, Newcastle Chambers, Angel Row, Nottingham. 4713

A.R.I.B.A. required for office in West Africa. Must be single, keen, not afraid of responsibility and hard work, and capable of getting on with Africans. Passages paid, accommodation and transport provided, liberal local and home leave, salary by arrangement. Possibility of partnership in expanding practice in Gold Coast and Nigeria after two years' satisfactory service. Interviews in London. Previous tropical experience not essential, but some practical office and site experience since qualifying desirable. Arthur Lindsay, A.R.I.B.A., Accra.—Box 4721.

ARCHITECTURAL ASSISTANTS, up to Final and Intermediate standard, required for design work on home and tropical buildings. Salary according to experience.—Apply E. J. D. Mansfield, A.R.I.B.A., Sir William Halcrow & Partners, Stanhope House, 47, Park Lane, London, W.1. 4719

MESSRS. JOSEPH, F./F.R.I.B.A., 10, Lowndes Square, S.W.1—Sloane 2178—require an ASSISTANT, of Intermediate standard. Salary up to £750 per annum, according to experience. 4718

SENIOR ARCHITECTURAL ASSISTANT MUST belong to the Modern School of Design. Write, stating experience, age, and salary required. Accommodation available for suitable applicant.—Box 4724.

BUILDING MATERIAL SPECIALISTS FOR WEST AFRICAN MERCHANTS

LEADING British Company., established throughout Nigeria, Gold Coast, Sierra Leone, invite applications from men, aged 23/32, for the Building Materials Section of their business in both Home Buying Office and in West Africa. In addition to a sound practical knowledge of this trade, applicants must have organising and selling ability, and be able to take a leading part in implementing plans for rapid development. The positions offer exceptional opportunity and scope for men of the right type. Commencing salary according to age, experience and ability. In respect of Overseas applications first class sea/air passage—free furnished quarters—full pay on leave after tour of approximately 18/20 months, pension scheme. Applications must state full details education, experience of the Building Materials Trade (degrees/diplomas), domestic status, National Service.—Write in confidence, stating whether Home or Overseas position is required, and mark letters "BM," to Box 4726.

ARCHITECTS, Eastbourne, require an ASSISTANT for surveys, working drawings, and details.—Reply, stating age, experience, and salary, to Box 4727.

ARCHITECTURAL ASSISTANTS (Senior and Junior), with experience, required for small office in Kensington. Salary £400—£850, according to experience.—Box 4737.

ASSISTANTS required in medium sized busy office. Capable of taking complete charge of contracts under general supervision. General practice, including Housing Schemes, Office Blocks, Factories, etc.—Apply in writing only, stating age, qualifications, experience, and salary required, to Thomas Sibthorp, F.R.I.B.A., A.R.I.C.S., A.M.T.P.I., 10, Manchester Square, W.1. 4730

ARCHITECTURAL ASSISTANT required, with some experience. Approximate Intermediate standard. Good salary paid to capable man. Retirement gratuity scheme. 5-day week.—Eley & Rickcord, Architects, 83, Powis Street, S.E.18. Woolwich 0346. 4728

ALBRIGHT & WILSON, LTD., Chemical Manufacturers, have vacancies in their Central Engineering Department. The department is responsible for the design, erection, and commissioning of the company's new plant in the United Kingdom.

The vacancies are as follows:—

1. A CIVIL ENGINEER, to be responsible to the Chief Civil Engineer for aspects of projects referred to above. A degree or equivalent qualification is necessary, and some experience of the design of industrial plant would be an advantage.

2. AN ARCHITECTURAL DRAUGHTSMAN. He would be responsible for preparing drawings appertaining to the civil engineering aspects of new plant design. He should have several years' experience of this type of work.

Both posts are permanent, and carry membership of the company's non-contributory life and superannuation scheme. Assistance with house purchase may be available.

Applications should be sent to the Staff Officer, Ref. 339, Albright & Wilson, Ltd., P.O. Box 3, Oldbury, Birmingham, stating briefly the post applied for, and age, qualifications and experience. 4722

SENIOR and ASSISTANT ARCHITECTS required as team to work on hospital projects in Ethiopia. Particulars from J. Seymour Harris & Partners, 4, Greenfield Crescent, Birmingham, 15. 4752

Architectural Appointments Wanted

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

EXPERIENCED ARCHITECTURAL ASSISTANT of Final R.I.B.A. standard seeks part-time or week-end jobs. For design, working drawing and details. Apply Box 4663.

ARCHITECT, 48, seeks senior position. Now abroad and available on about three months' notice. Particulars on application to Box 4705.

CHARTERED ARCHITECT, Associate (age 44), 20 years' varied experience, seeks West Country Partnership or senior position leading shortly thereto. Specialised hospital knowledge. Interviewed London, December 23rd—January 3rd. 4743

DIP. ARCH. (24), awaiting election A.R.I.B.A., 18 months' post graduate experience, requires position with opportunity for advancement in office with contemporary outlook, South Coast or Channel Isles. Assistance in obtaining housing accommodation for self and wife would be appreciated. 4711

ADVERTISER, architecturally trained, car owner, requires position offering some outdoor work connected with building or building products. Derbyshire area or South. 4788

ARCH. ASST. (Asian), 4 years' experience, about Intermediate standard, wishes to work under Architect personally in small intimate office, London.—Box 4755.

A.R.I.B.A., Dip. Arch. (32), 8 years' experience in offices in Yorkshire and London, requires position in North-West. Car owner. 4755

DIP. ARCH., A.R.I.B.A. (38), seeks progressive responsible position in London or South-East. Experienced in handling contracts and office management. Own car.—Box 4754.

Services Offered

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

THE SITE SURVEY COMPANY,
Blackheath, S.E.3. Tel.: LEE Green 7444-5.
Fully equipped to undertake urgent Engineering and Architectural surveys in any part of the country and abroad. Specialists in ½ in. scale detailed surveys for extensive city development areas.

NAMEPLATES, PLAQUES, CRESTS, etc., in bronze, brass and plastic, quotations and lay-outs submitted.—Abbey Craftsmen, Ltd., 78, Osnaburgh Street, London, N.W.1. Euston 5722. 4165

ARCHITECTURAL. Reinforced Concrete and Steel Design and Detailing required—only buildings over £10,000. Large staff available. MUSeum 8753. 3223

SITE Surveys and Surveys of Buildings prepared at short notice anywhere in Britain. MUSeum 8753. 3103

SURVEYS OF BUILDINGS, detailed drawings prepared, also land surveys by chain or theodolite, levelling, etc. LIV. 1839. 1739

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. 9170

EXPERIENCED DESIGNER, with original outlook offers free lance services for preparation of Interior Schemes from initial sketches to final details.—John Carter, 38D, Upper Montague Street, London, W.1. PADdington 2702. 4450

NAMEPLATES AND SIGNS, Bronze, Brass and Plastics. Church Metalwork. Quick delivery.—Austin, Luce & Company, 19, College Road, Harrow, Middlesex. Tel.: Harrow 3839. 1174

"DON" ARCHITECTURAL MODEL MAKERS. We offer the highest grade work with speed and reliability.—Please 'phone Erith 3843 or Hastings 1366. 1673

WELL-ESTABLISHED firm of South West Architects with London office, offer to act for London Architects who are at present carrying out Contracts in the South-West and whose supervisory activities may be curtailed by coming petrol restrictions. Factories, public buildings, offices, schools, chain stores, public houses, etc. Box 4677.

FREE Lance available. Free to assist with Drawings, Specifications, all types Survey, Levelling, Quantities, etc. Qualified. WIM. 5808. 4710

ASSISTANT in control of contracts seeks part-time work, evenings and week-ends. 20-30 hours per week. Anything undertaken.—Box 4733.

ARCHITECT, A.R.I.B.A., F.S.A., & Partner offers Assistance to others whilst developing own practice. 20 years' experience. Own office, London. 4709

GENERAL ARCHITECTURAL SERVICES and/or part-time Assistance offered by Architect with well-equipped office near Marble Arch.—Box 4717.

Foreign Agency

WELL-ESTABLISHED Antwerp Company, calling on all Architects in Belgium, seeks sole rights for suitable lines, e.g., Technical Products and Equipment, Accessories, etc.—Box 4732.

For Sale and Wanted

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

SECTIONAL BUILDINGS, timber, timber and asbestos. 10 ft. to 24 ft. spans. A few secondhand buildings available. Enquiries invited for Site Huts, Temporary Offices, Club Rooms, Church Halls, etc. Free catalogue. Universal Supplies (Belvedere), Ltd., Crabtree Manorway, Belvedere, Kent (Erith 2948). 3275

THEODOLITE required. State age, type, condition, and price required.—John Knox (Bristol), Ltd., Winterstoke Road, Bristol, 3. 4753

Miscellaneous

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

A. J. BINNS, LTD., Specialists in the supply and fixing of all types of Fencing, Gates and Cloakroom Equipment. Harvest Works 96/107, St. Paul's Road, N.1. Canonbury 2061

THE NEOCOKE openable Boiler Stove is specially made, and can be tailored to your requirements. Ratings up to 45,000 B.T.U. London Warming Co. Ltd., 2, Percy Street, London, W.1. 4662

DESIGNED by Lionel Brett, new detached contemporary House in Guildford. 3 bedrooms, fitted wardrobes. Open plan living space. Separate light lounge. Oak and beech flooring on ground floor. Central heating throughout. Garage. Garden. Glorious views. £5,500, freehold.—Owner: Mrs. Isaacs, 142, Norbiton Hall, Kingston, Surrey. KIN. 6746. 4716

BELFAST ROOFS up to 100 ft. clear span designed; supplied and erected complete.—Normans (Wolverhampton), Ltd., 31, Queen Street, Wolverhampton. Specialists for 50 years. 4731

NEW OFFICE available immediately. All services, excellent address. Telephone Chancery 8452. 4749

Educational Announcements

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

R.I.B.A. Inter. and Final EXAMS. TUITION BY POST.—C. W. BOX, F.R.I.B.A., 115, Gower Street, W.C.1. Tel.: EUS. 3906. 1942

WELL qualified LECTURER will coach Students in Design. Personal or postal tuition.—Write Box 4036.

R.I.B.A. and T.P.I. EXAMS.—Stuart Stanley (Ex. Tutor Sch. of Arch., Lon. Univ.), and G. A. Crockett, M.A./B.A., F./F.R.I.B.A., M./A.M.T.P.I. (Prof. Sir Patrick Abercrombie in assn.), prepare Students by correspondence, 10, Adelaide Street, Strand, W.C.2. TEM 1603/4.

FIRST FOLD HERE

AJ enquiry service

If you require catalogues and further information on building products and services referred to in the advertisements appearing in this issue of the Architects' Journal please mark with a tick the relevant names given in the index to advertisers overleaf. Then detach this page, write in block letters, or type, your name, profession or trade and address in the space overleaf, fold the page so that the post-paid address is on the outside and despatch. We will ensure that your request reaches the advertisers concerned.

FOLD HERE

Postage will be paid by Licensee

No Postage Stamp necessary if posted in Great Britain or Northern Ireland

BUSINESS REPLY FOLDER
Licence No. S.W. 1761

THE ARCHITECTS' JOURNAL

9-13 Queen Anne's Gate

London, S.W.1.

FOLD HERE

TUCK IN THIS END

Alphabetical index to advertisers

For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Education, Legal Notices, Miscellaneous Property and Land Sales, see 84, 85, 86, 87, 88, 89, 90.

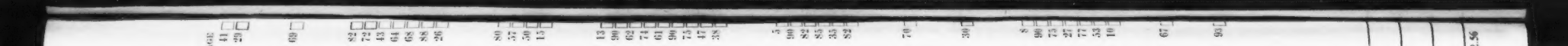
Write in block letters, or type, your name, profession and address below, and fold so that the post-paid address is on the outside.

NAME_____

PROFESSION_____

ADDRESS_____

13.12.56



ALSO

- WIN
  ANI
  OPE
- 'X-I
- LOC
- DOC
- CAS
- SPRI

"VICT
by all

ROB

Scheme in Progress

Easton and Robertson, Chartered Architects

12-storey Office Building in the City of London

This modern office building has a floor area of 242,000 square feet and a large area for car parking. Because of its important position near to St. Paul's and the Guildhall, special attention has been given to its structural form and architectural treatment. The building is at the corner of Wood Street and Gresham Street and consists of a two-storey lower block with the main structure rising twelve storeys. An attractive feature of the main elevations is the introduction of colour by use of precast panels with granite chippings giving a red-grey appearance.

LAING

JOHN LAING AND SON LIMITED · GREAT BRITAIN, CANADA, UNION OF SOUTH AFRICA, RHODESIA

Printed in Great Britain for the Proprietors of "THE ARCHITECTS' JOURNAL" (The Architectural Press Ltd.), 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, by HARRISON & SONS LTD., by Appointment to Her Majesty The Queen, Printers, London, Hayes (Middx.), and High Wycombe. Editorial illustrations engraved by THE ENGRAVERS' GUILD LTD., Windsor House, 23/26, Cursitor Street, London, E.C.4.