THE ARCHITECTS' JOURNAL

standard contents

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

No. 3137] [VOL. 121

THE ARCHITECTURAL PRESS

9, 11 *and* 13, *Queen Anne's Gate, Westminster, S.W.*1 *'Phone : Whitehall* 0611

Price 1*s.* 0*d.*

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 Ie one week, Ig to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square.	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. Drayton House, Gordon Street, W.C.1.	Euston 2450
ILA	Institute of Landscape Architects. 12, Gower Street, W.C.1.	Museum 1783
I of Arb	Institute of Arbitrators. 35/37, Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197/5176
IQS	Institute of Quantity Surveyors, 98, Gloucester Place, W.1.	Welbeck 1859
IR	Institute of Refrigeration. Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128
LDA	Lead Development Association. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3891
LSPC	Lead Sheet and Pipe Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264/4175
MARS	Modern Architectural Research Group (English Branch of CIAM). Secretary : Trevor Dannatt, 6, Fitzroy Square, W.1.	Euston 7171
MOA	Ministry of Agriculture and Fisheries. 55, Whitehall, S.W.1.	Whitehall 3400
MOE	Ministry of Education. Curzon Street House, Curzon Street, W.1.	Mayfair 9400
MOH	Ministry of Health. 23, Savile Row, W.1.	Regent 8411
MOHLG	Ministry of Housing and Local Government. Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service. 8, St. James' Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council. 94/98, Petty France, S.W.1.	Abbey 1010
NAS	National Association of Shopfitters. 9, Victoria Street, S.W.1.	Abbey 4813
NBR	National Buildings Record. 31, Chester Terrace, Regent's Park, N.W.1.	Welbeck 0619
NCBMP	National Council of Building Material Producers. 10 Storey's Gate, S.W.1.	Abbey5111
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives. Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4451
NFHS	National Federation of Housing Societies. 13, Suffolk St., S.W.1.	Whitehall 1693
NHBRC	National House Builders Registration Council. 82, New Cavendish Street, W.1.	Langham 4341
NPL	National Physical Laboratory. Head Office, Teddington.	Molesey 1380
NSA	National Sawmilling Association. 15, New Bridge Street, E.C.4.	City 1476
NSAS	National Smoke Abatement Society. Chandos House, Buckingham Gate, S.W.1.	Abbey 1359
NT	National Trust for Places of Historic Interest or Natural Beauty. 42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association. 94, Petty France, S.W.1.	Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland. 15, Rutland Square, Edinburgh.	Fountainbridge 7631
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
RICS	Royal Institution of Chartered Surveyors. 12, Great George St., S.W.1.	Whitehall 5322/9242
RFAC	Royal Fine Art Commission. 22A, Queen Anne's Gate, S.W.1.	Whitehall 3935
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Trafalgar 2366
RSI	Royal Sanitary Institute. 90, Buckingham Palace Road, S.W.1.	Sloane 5134
RIB	Rural Industries Bureau. 35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
SBPM	Society of British Paint Manufacturers. Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SCR	Society for Cultural Relations with the USSR. 14, Kensington Square, London, W.8.	Western 1571
SE	Society of Engineers. 17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association. 30, Cornhill, London, E.C.3.	Mansion House 3921
SIA	Structural Insulation Association. 32, Queen Anne Street, W.1.	Langham 7616
SNHTPC	Scottish National Housing. Town Planning Council. Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association. 21, College Hill, E.C.4.	City 4771
TPI	Town Planning Institute. 18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation. 75, Cannon Street, E.C.4.	City 5051
WDC	War Damage Commission. 6, Carlton House Terrace, S.W.1.	Whitehall 4341
ZDA	Zinc Development Association. Lincoln House, Turl Street, Oxford.	Oxford 47988

this
itting
nd is
ators

hool
.A.,
tect

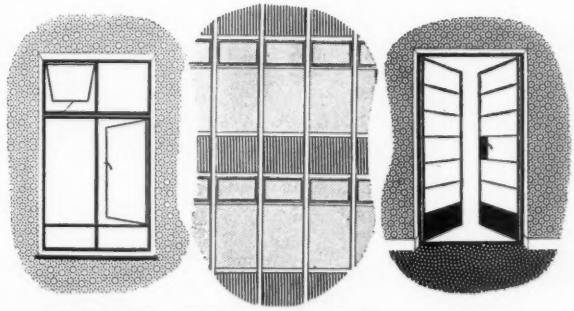
83
.J./la

John Goodger looks far ahead

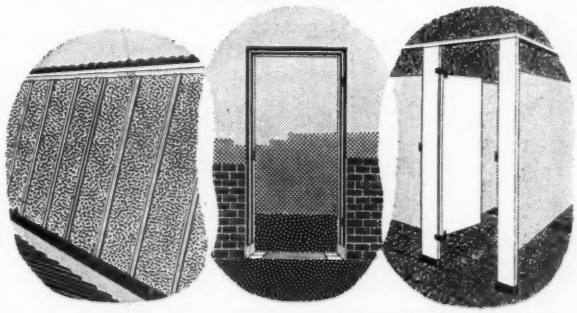
"If I'm to spend my life supplying windows" reasons John Goodger, Williams & Williams area manager of the Eastern Counties "I'd better know all about them". So, acquiring a derelict stable, he puts in—with his own hands—metal windows, door frames and Aluminex patent glazing and, in doing so, makes himself a lovely home. "If I'm to give proper service in this vast area" he goes on "I must get around faster." His speedometer appears permanently fixed at 60 m.p.h. In short, here's a young man whose life is his job, who thinks further than the day after tomorrow, and who has his own service team of draughtsmen, estimators and fixers as a result. A useful chap to have at your call!

*MR. J. E. F. GOODGER, WILLIAMS & WILLIAMS LTD.
43 Fore Street, Hertford (3969)

Other offices at: Belfast (23762). Birmingham (Shirley 3064). Bristol (38907). Bromley (Ravensbourne 6274). Cardiff (27092). Crawley (2200). Glasgow (Douglas 0003). Leeds (21208). Liverpool (Central 0325). London (Sloane 0323). Maidstone (51750). Manchester (Blackfriars 9591). Newcastle-upon-Tyne (21353). Nottingham (52131). Reading (50291). Sheffield (51594). Southampton (26252).

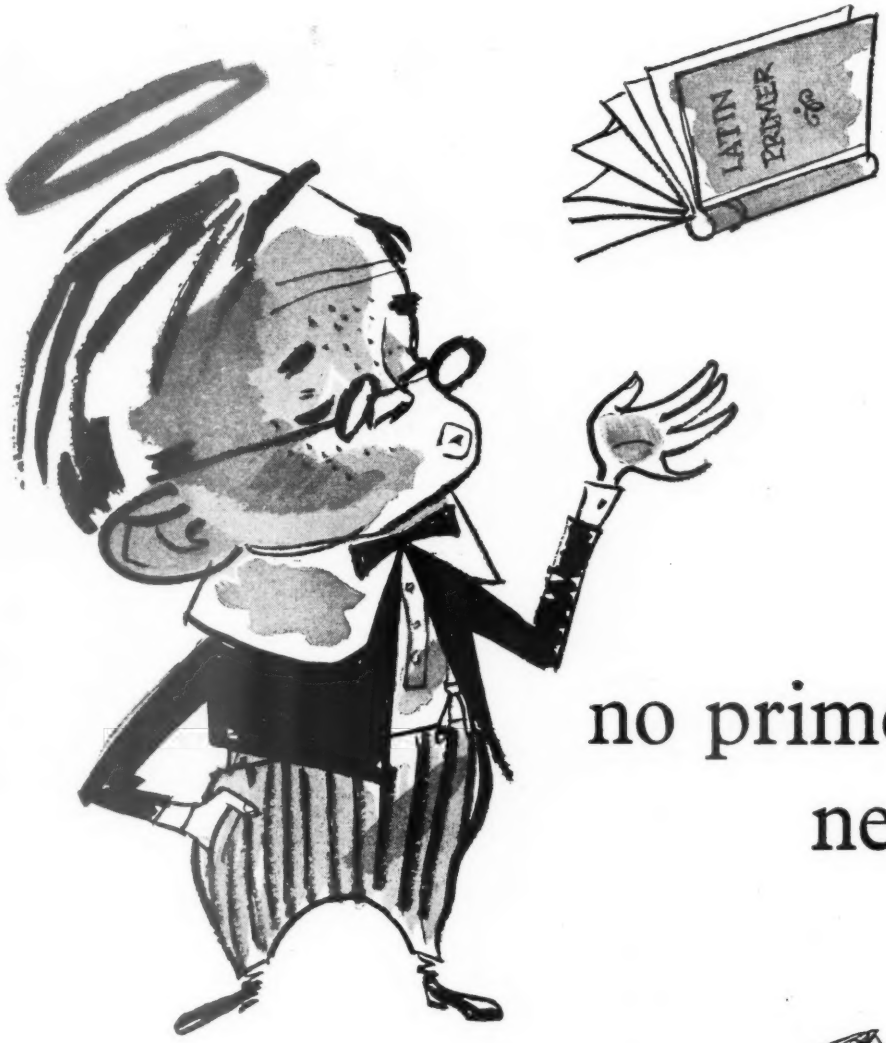


METAL WINDOWS WALLSPAN CURTAIN WALLING DOORS



ALUMINEX METAL DOOR FRAMES ROFTEN TOILET CUBICLES

METAL WINDOWS WILLIAMS & WILLIAMS *Member of the Metal Window Association*



no primer needed

evodyne chlorinated rubber paint needs no primer on surfaces of low porosity such as asbestos, cement and concrete; it is acid-resistant impermeable unaffected by alkalis and corrosive gases.

EVODE LIMITED • GLOVER STREET • STAFFORD

Telephone: 1590/1/2 *Telegrams: Evode, Stafford*

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

EVODYNE
CHLORINATED RUBBER
PAINTS

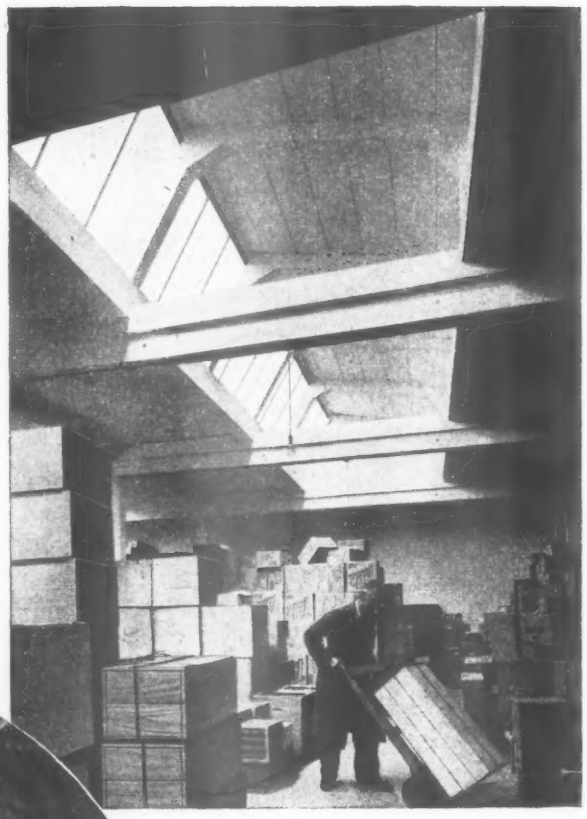
Light to be good must be tamed

Good lighting in a factory pays handsome dividends in better work and higher morale. But natural light needs controlling; irritating glare and hampering shadows must be done away with.

These illustrations show three methods of Orlit roofing, each suitable for particular lighting conditions.

Roofing however is only one aspect of the Orlit System. Complete factories, single or multi-storey, of practically any design can be erected by Orlit—with the economies, in time and direct cost, which result from the factory production of basic structural units.

The Orlit Technical Folder, illustrating various types of buildings, will be sent on request.



Above **MONITOR ROOF CONSTRUCTION** *Food Depot at Fulham for Messrs. Alfred Button & Sons Ltd. Architects: Messrs. E. Norman Bailey & Partners.*

Left **PITCHED ROOF SHEDDING CONSTRUCTION** *Factory Extension for Telehoist Works, Cheltenham.*

Below **NORTH LIGHT ROOF CONSTRUCTION** *For International Aeradio Limited. Architects: Messrs. Dodge & Reid.*

ORLIT SYSTEM
OF REINFORCED CONCRETE

Area Licensees:
TARSLAG LTD. Tees Bridge, Stockton-on-Tees. Tel: 6355
ORLIT (Lancs.) LTD. 3 Brown St. Manchester Tel: Blackfriars 0718
THE SCOTTISH CONSTRUCTION CO. LTD. Sighthill Industrial Estate, Edinburgh 2. Tel: Craiglockhart 2287

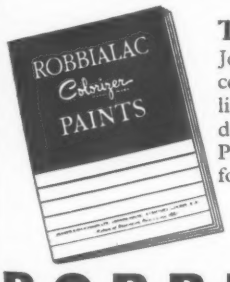
MCN 158

ORLIT LTD · COLNBROOK BY-PASS · COLNBROOK · SLOUGH · BUCKS. *Tel: Colnbrook 351*

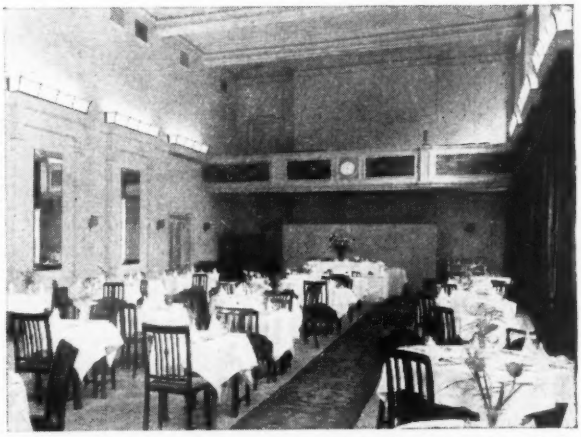
"The tone gradations are *exactly* right"

Obtaining subtle gradations of hue has always been difficult in dealing with monochromatic renderings—in fact it has been well nigh impossible. Some decorative schemes require, for example, the ceiling in one shade, the wall in another and the woodwork in yet another. To such problems Robbialac Colorizer Paints in 999 colours are the answer. Each colour is available in a large number of gradations . . . whatever the tone, Colorizer can give it, quickly and simply.

Robbialac Colorizer Paints offer a choice of 999 colours in Super Gloss Enamel, Eggshell Enamel and Suede Finish—each with a matching undercoat. There is also Robbialac Plastic Emulsion Paint in 99 pastel shades.



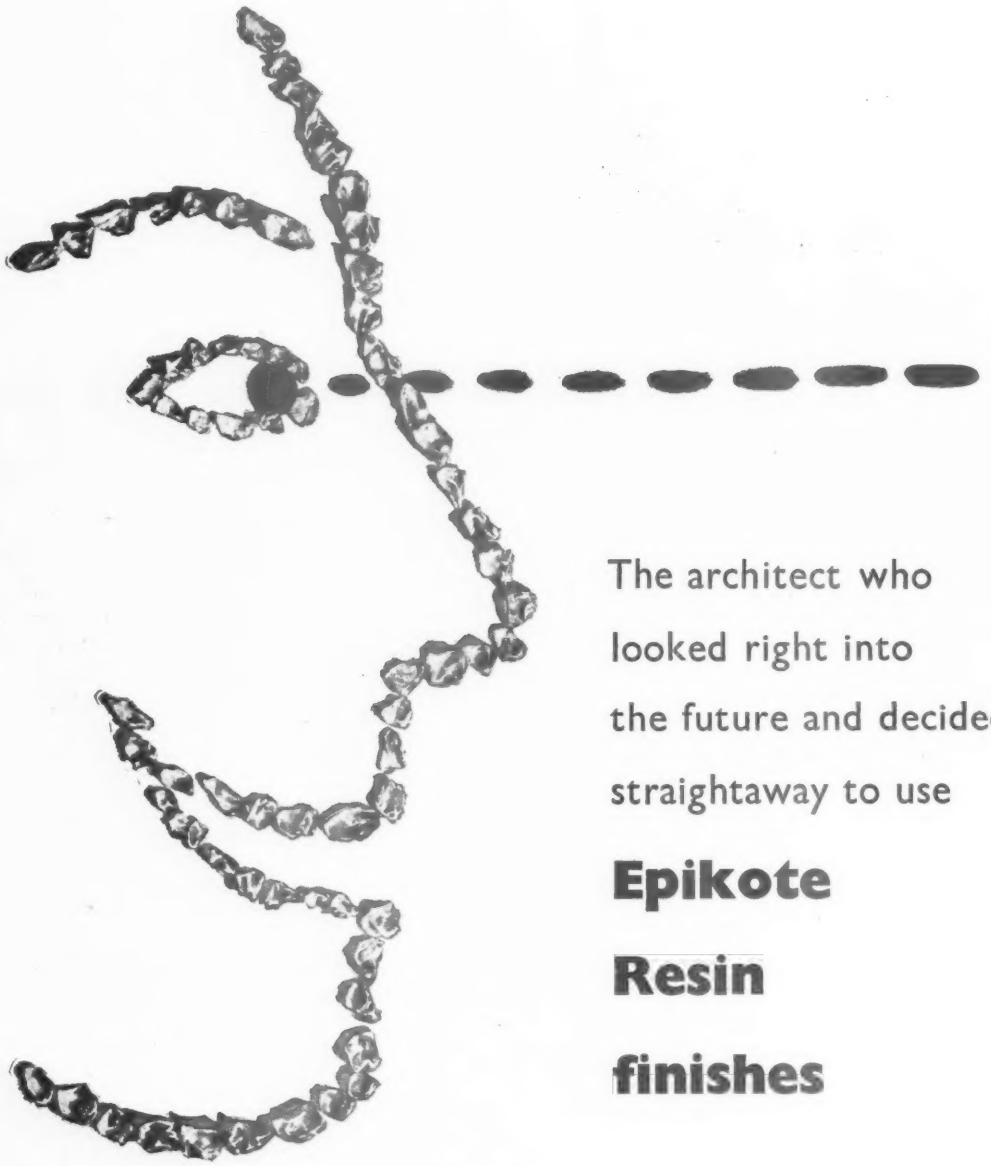
The Architectural Bureau of Jenson & Nicholson Ltd. offers Architects a complete colour advisory service and will liaise with executives and contractors if desired. A brochure on Robbialac Colorizer Paints and their possibilities, especially written for Architects, is available on request.



Robbialac Colorizer Paints were used in the decoration of the dining room of the Grand Hotel, Manchester, shown here. Architects have unlimited scope in creating attractive colour schemes, safe in the knowledge that Colorizer will ensure their ideas being correctly interpreted.

ROBBIALAC Colorizer TRADE MARK **PAINTS**

JENSON & NICHOLSON LTD., DEPT. A.J.4. 36 ST. JAMES' ST., LONDON, S.W.1. HYDe Park 6060



The architect who looked right into the future and decided straightaway to use

Epikote Resin finishes

★ Leading paint manufacturers are in a position to supply.

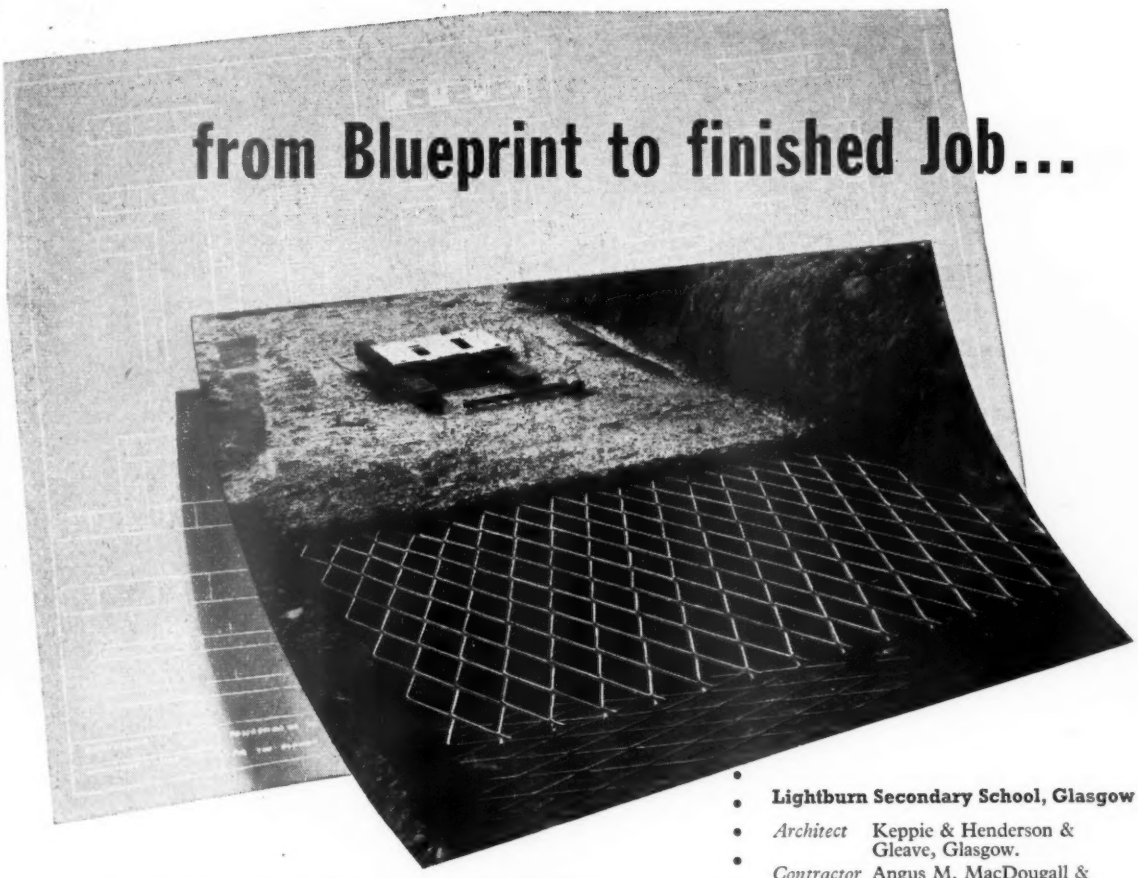
Epikote Resin finishes should be used wherever exceptional toughness, adhesion, flexibility and resistance to corrosion are called for.

SHELL CHEMICALS LIMITED (DISTRIBUTORS) 105-109 Strand, London, W.C.2. *Tel: Temple Bar 4455*

"EPIKOTE" *is a Registered Trade Mark*

Ep. 1

from Blueprint to finished Job...



A COMPLETE CONCRETE REINFORCEMENT SERVICE

THE large range of "Expamet" Reinforcements provide a wide choice to suit all types of concrete construction. There are more than 100 standard variations and weights in "Expamet" Reinforcements from under 2 lb. to over 30 lb. per square yard.

EXPANDED STEEL AND WELDED FABRIC

"Expamet" Expanded Steel Sheet Reinforcement; "Expamet" Welded Fabric; Super "Ribmet" and other specialist materials can be adapted to meet reinforcement problems of all kinds, from solid slab decking and hollow floors, to light shell construction such as barrel vault and dome roofs. They are just as effective reinforcing concrete in precast units as in sea defence works.

"Expamet" can be of assistance to you. Write or telephone, we shall be pleased to advise in the choice and use of "Expamet" Reinforcements for any job you have in mind.

5-PART CONCRETE REINFORCEMENT SERVICE

1. Design with Economy. 2. Preparation of working drawings. 3. Supply of Reinforcements (Expanded Steel), (Welded Fabric), (Super Ribmet). 4. Delivery on schedule. 5. Technical advice and Literature.

Lightburn Secondary School, Glasgow

Architect Keppie & Henderson & Gleave, Glasgow.
Contractor Angus M. MacDougall & Co., Ltd., Glasgow.

Photo shows stanchion foundations to main class block. The reinforcement is 4½" mesh expanded steel of which 1,800 yds. super were used. The same material was used for reinforcing ground paving (12,000 yds.) flooring and roofing (16,000 yds.). Casings to beams and columns were reinforced with 6,500 yds. of 1½" mesh expanded steel. Designs for all these applications were supplied as part of our service.

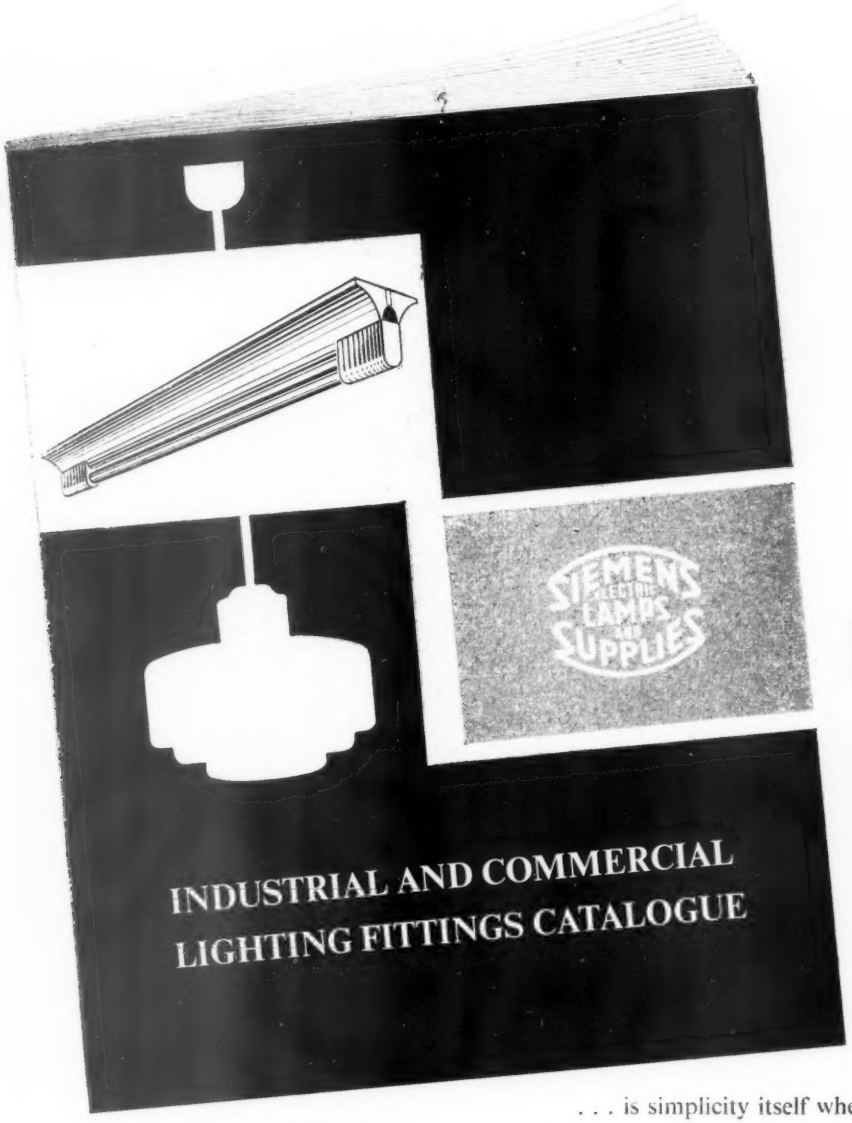
Expamet

CONCRETE REINFORCEMENT SERVICE

THE EXPANDED METAL COMPANY LIMITED

63b, Burwood House, Caxton St., London, S.W.1. ***Tel: ABBey 3933***
P.O. Box 14, Stranton Works, West Hartlepool. *Tel : Hartlepools 2194*

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



Fitting-out your lamps...

. . . is simplicity itself when done with the aid of Siemens lighting fittings catalogue. There are no lighting problems, Fluorescent, Tungsten or Floodlighting, Industrial or Commercial, that cannot be solved by reference to these pages. Every fitting fully maintains the Siemens reputation for sound construction and efficiency in operation.

Anything you order from this catalogue will be supplied promptly. Send now for a free copy of Siemens fully-illustrated Industrial and Commercial Lighting Fittings Catalogue.

Sales Promotion Department (AJ/1)
SIEMENS ELECTRIC LAMPS & SUPPLIES LIMITED
38-39 Upper Thames Street, London, E.C.4

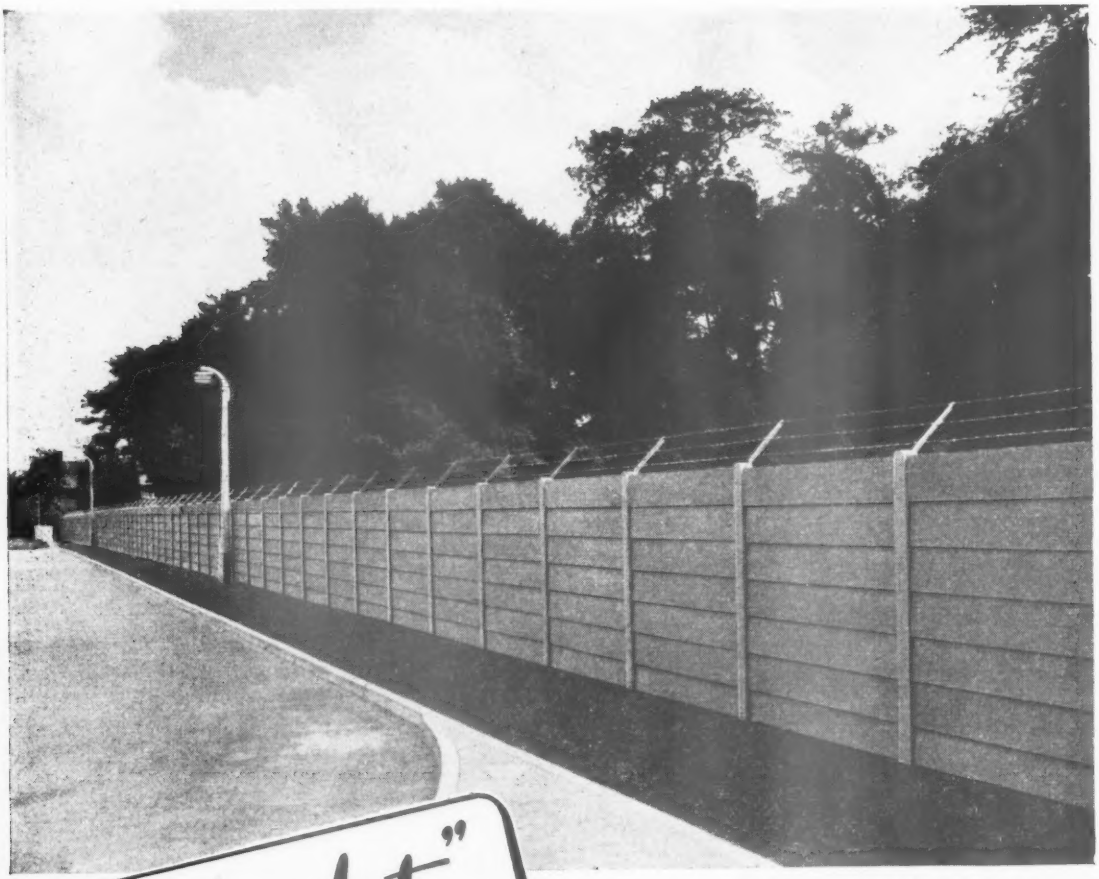
Please send me without obligation a free copy of the 'Industrial and Commercial Lighting Fittings' Catalogue.

Name .....

Address .....

(BLOCK CAPITALS) .....

SIEMENS ELECTRIC LAMPS AND SUPPLIES



"Winslot" Fencing at Queen Mary's Hospital, Roehampton. Erected to the order of the Ministry of Works for the Ministry of Health.

"Winslot" REGD. DESIGN UNIT FENCE

The following LICENSEES have works operating to supply "Winslot" fencing to all areas in England, Wales and Northern Ireland at economical rates.

BERKSHIRE: COWLEY CONCRETE CO. LTD.
DEVON: DEVON CONCRETE WORKS LTD.
LANCASHIRE: WETTERN BROTHERS (MANCHESTER) LTD.
NORTHUMBERLAND: WETTERN BROTHERS LTD.
NOTTINGHAM: WETTERN BROTHERS (NOTTINGHAM) LTD.
WORCESTER: PARKFIELD CONCRETE PRODUCTS CO. LTD.
NORTHERN IRELAND: WORKMAN LTD.

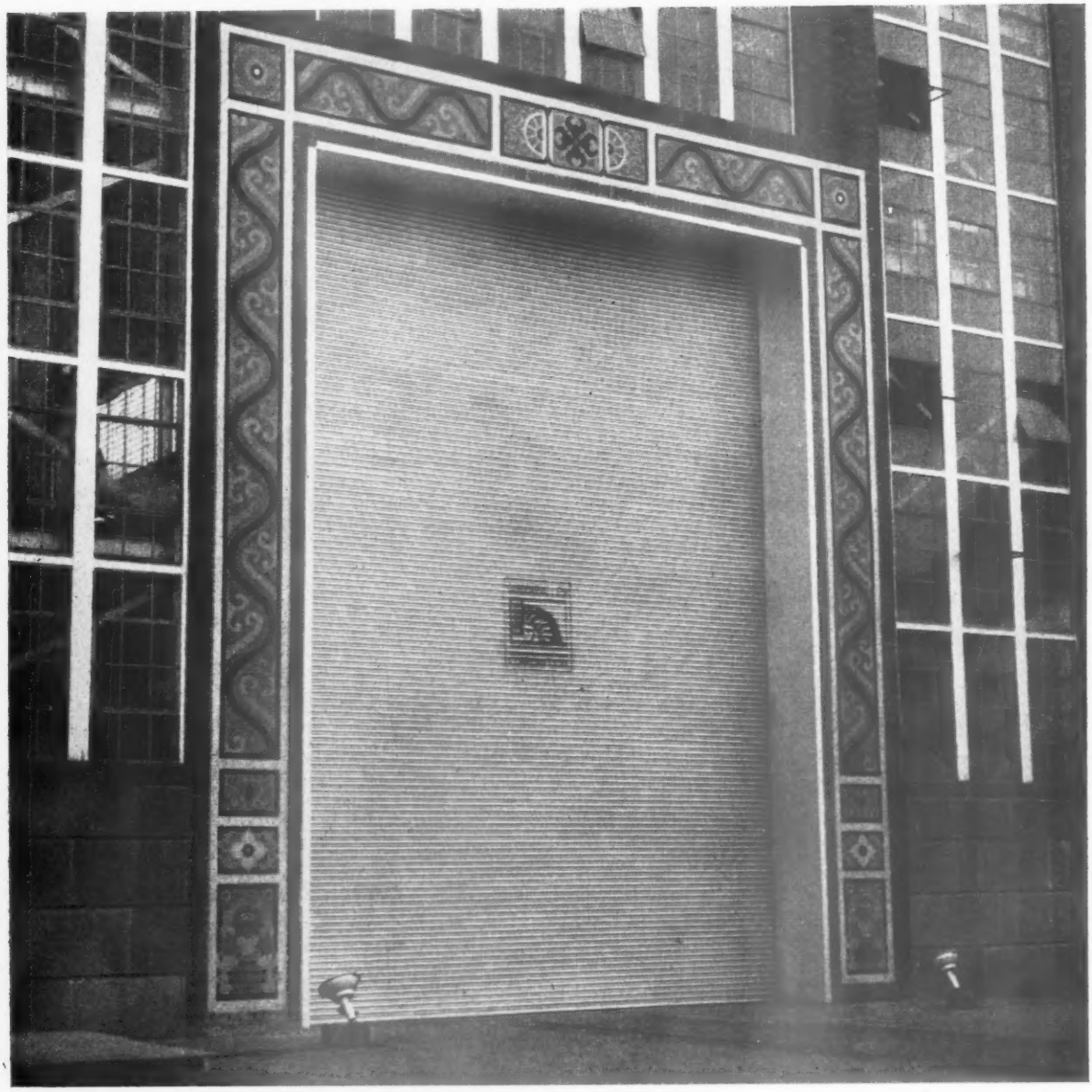
...for all sites where **PERMANENT FENCING** is required

"Winslot" is the ideal PERMANENT Fence for industrial and municipal sites. It is manufactured by a new method to give a consistent quality finish. Reinforcement of all units is perfectly covered by means of patent bar spacers. **Units are cast in a sepia shade of colour which produces a mature and pleasing appearance.** Available in heights from 1ft. 8in. to 12ft. with or without trellis. It incurs no subsequent upkeep costs and on this basis is competitive with timber fencing.

Enquiries invited for supply and erection. Send for "Winslot" illustrated Specification Folder.

METROPOLITAN CONCRETE WORKS LIMITED
IMBER COURT, EAST MOLESEY, SURREY. **Telephone: EMBerbrook 2211/2**
Proprietors of "Winslot" Registered Designs

THE FIRST COST IS THE LAST COST - WITH "WINSLOT"



All over the world . . . .

. . . . Mather and Platt Steel Rolling Shutters solve the problem of providing large openings with a neat robust covering which can be operated quickly and easily. The electrically operated shutter illustrated was supplied recently for Bokaro Power Station, near Calcutta, and is thirty feet high, and twenty two feet wide.

Mather & Platt Ltd.

Steel Rolling Shutters

Write for descriptive literature to :—

MATHER & PLATT LTD.
Park Works · Manchester, 10

516

Courtesy: Scottish Industries Exhibition.

Ceiling and Lighting combine to form the *new*

LUMENATED CEILING

Courtesy: Dolcis Ltd.

The Lumenated Ceiling offers the following advantages:

- *Ideal for showrooms, shops, offices, foyers and similar applications*
- *An excellent method of modernising old, high ceilinged premises*
- *In new buildings, structural ceiling requires no special finish—it is hidden*
- *Easy access to lighting fittings*
- *Durable, dust-repellent, easy to clean and maintain*
- *Non-inflammable*
- *Air conditioning and acoustic systems easily incorporated*

Our Advisory Service is available at all times to produce recommendations for every type of installation.

Full technical data and specifications are available on request to our London office.

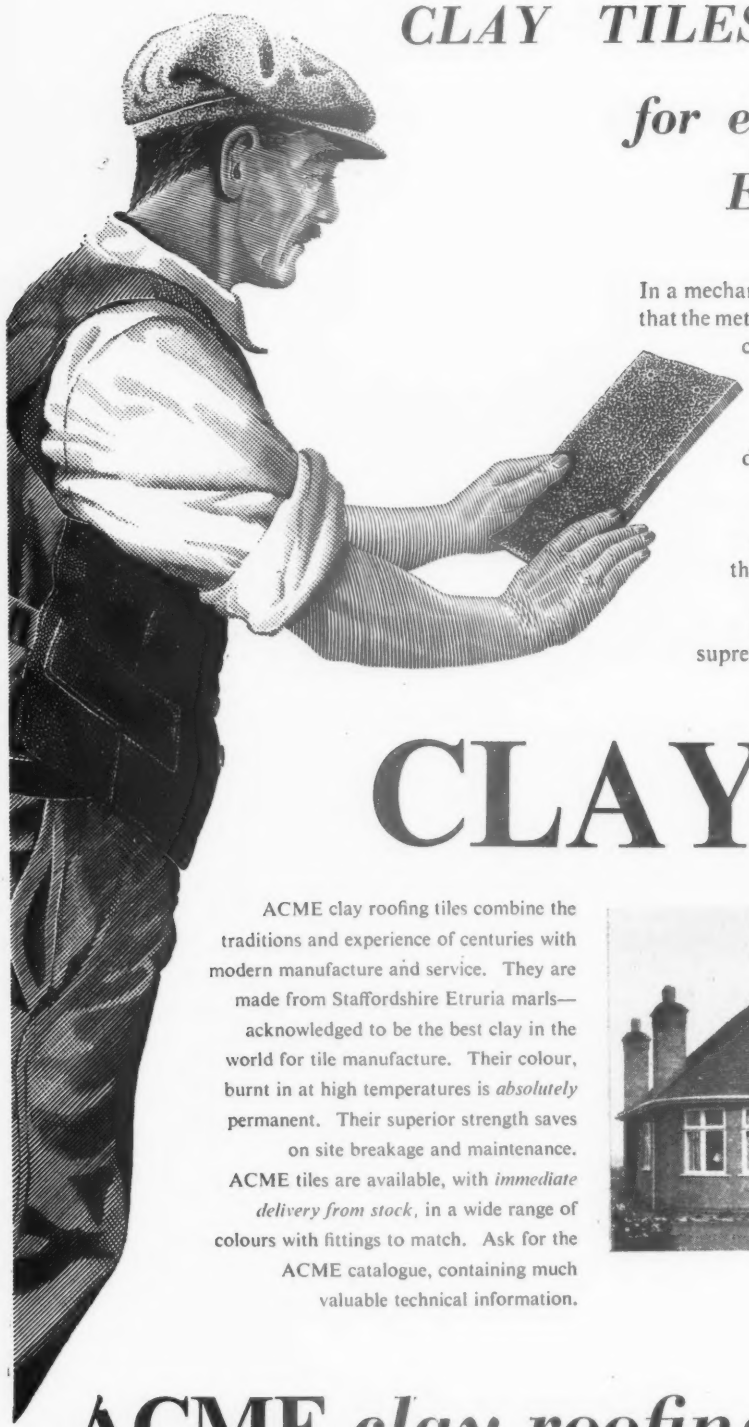
Here at last is an entirely new lighting technique in keeping with contemporary design, and present-day emphasis on good lighting. With the LUMENATED CEILING, there is no glare, no shadow and no 'high spots'. A pleasant, even light of correct intensity is diffused from the entire ceiling area. For showrooms and shops, it overcomes the usual 'mirror' effect of the front window. No light fittings are visible and the ceiling is attractive whether the light is on or not.

LUMENATED CEILINGS LIMITED

LONDON OFFICE: 4 LLOYDS AVENUE, E.C.3. TEL: ROYAL 1927

HEAD OFFICE: THERMOTANK LTD., HELEN STREET, GLASGOW

L.4



CLAY TILES —

for eight centuries England's roof . . .

In a mechanical world it is refreshing to realise that the method of manufacture of Hand-made clay tiles has changed little over the centuries, each tile being moulded individually and shaped by hand alone. Competition demands a more modest alternative and the machine-made tile provides the answer. Hand-made or machine-made, you can be sure that centuries hence the tiles will still be doing their job, handsomely, steadfastly. There's nothing more supremely *reliable* than a clay tiled roof.

CLAY lasts

ACME clay roofing tiles combine the traditions and experience of centuries with modern manufacture and service. They are made from Staffordshire Etruria marls—acknowledged to be the best clay in the world for tile manufacture. Their colour, burnt in at high temperatures is *absolutely* permanent. Their superior strength saves on site breakage and maintenance. ACME tiles are available, with *immediate delivery from stock*, in a wide range of colours with fittings to match. Ask for the ACME catalogue, containing much valuable technical information.

A private bungalow—Fishpool, nr. Mansfield, Notts.
Architect—W. Richardson Whyte, L.R.I.B.A., Mansfield.

ACME *clay roofing tiles*

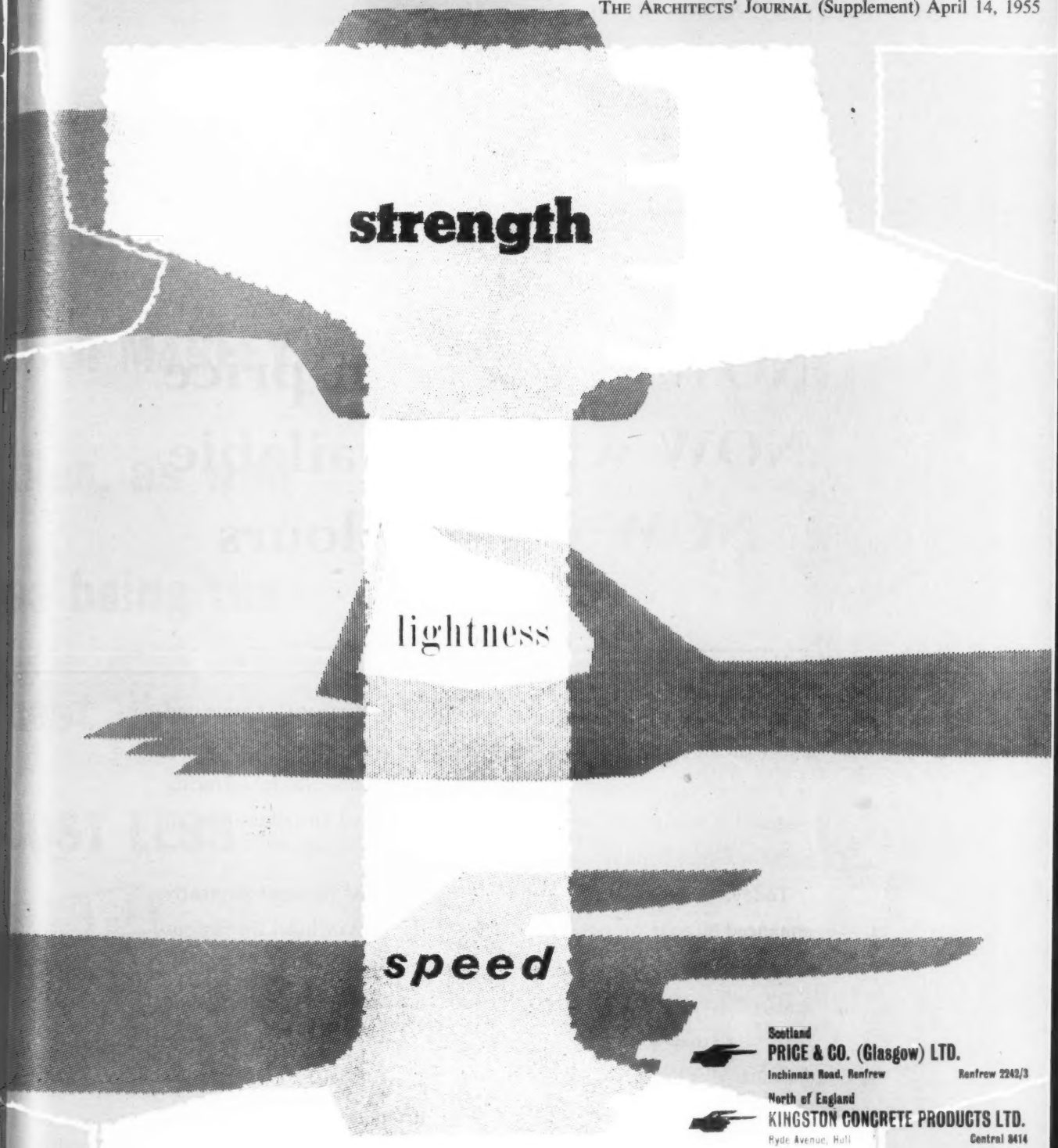
DOWNING'S *range of roofing tiles includes* :—

ACME M.M. ROOFING TILES
ACME SANDSTORM ROOFING TILES
ACME HAND-MADE SANDFACED & ACME REDFLOOR QUARRIES.

G. H. DOWNING & Co. Ltd. (Dept. C1), Box No. 3, BRAMPTON HILL, NEWCASTLE-UNDER-LYME, Staffs.
Telephone : Newcastle-under-Lyme 65381

L.G.B.

THE



RAPID
PRECAST FLOORS

Scotland
PRICE & CO. (Glasgow) LTD.
Inchinnan Road, Renfrew — Renfrew 2242/3

North of England
KINGSTON CONCRETE PRODUCTS LTD.
Ryde Avenue, Hull — Central 8414

South Wales
WOOLAWAY CONSTRUCTIONS LTD.
Lanelay Works, Pontyclun, Glam. — Pontyclun 356

West Midlands Hants & Sussex
TARMAC LTD., "VINCULUM" DEPT.
Ettingshall, Wolverhampton — Bilston 41101

East Midlands
JOHN ELLIS & SONS LTD.
21 New Walk, Leicester — Leicester 56662

West of England
RAPID FLOORS (WESSEX) LTD.
17 George Street, Bath — Bath 3534

THE RAPID FLOOR COMPANY LIMITED, AFRICA HOUSE, KINGSWAY, LONDON, W.C.2. PHONE: HOLBORN 3274

So

flo

wi

til

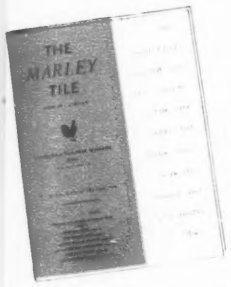
as

be

CO

Solid ground floors, covered with MARLEY tiles, as well as being the best . . .

COST LESS



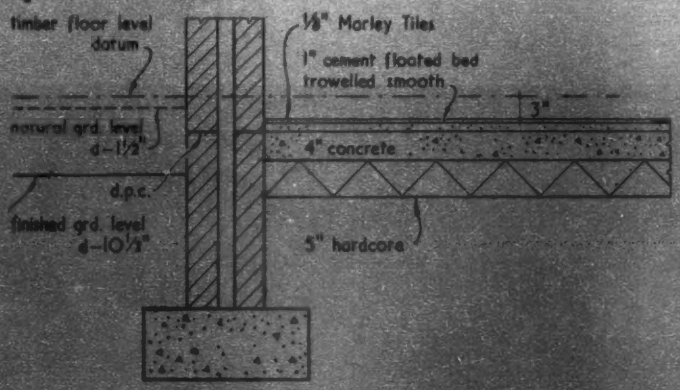
The illustrations on the right summarise the detailed information on two of the fourteen examples of flooring costs given in the Marley publication FF.2.

In Scotland the comparative costs vary in certain details and a special booklet FF.3 is available for Scottish Builders.

EXAMPLE A For Normal Type of Site

38 yds. sup. Excavate, remove and deposit @ 1/1d.	2	1	2	5 ft. run Form pipe chase @ 1/-		5	0
4 yds. cube Excavate to reduce to levels @ 4/9d.		19	0	31 yds. sup. 1" screed @ 4/10d.	7	9	10
4 yds. cube Remove and spread surplus @ 5/- ...	1	0	0	31 yds. sup. ½" Marley Floor Tiles @ 11/3½d. ...	17	10	1
31 yds. sup. Hardcore and blinding @ 3/10d.	5	18	10	6 ft. run Galvanised steel bar as step @ 1/10½d. ...		11	3
31 yds. sup. Concrete bed 4" thick @ 5/10d.	9	0	10				

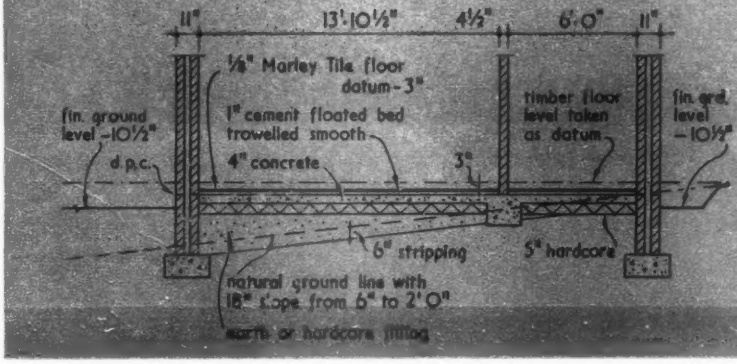
Total for Example A £44 16 0



EXAMPLE C2 For Sloping Site (18" crossfall from front to rear)

38 yds. sup. Excavate, remove and deposit @ 1/1d.	2	1	2	31 yds. sup. 1" screed @ 4/10d.	7	9	10
9½ yds. cube Filling to make up level @ 4/9d. ...	2	3	11	31 yds. sup. ½" Marley Floor Tiles @ 11/3½d. ...	17	10	1
31 yds. sup. Hardcore and blinding @ 3/10d. ...	5	18	10	6 ft. run Galvanised steel bar as step @ 1/10½d. ...		11	3
31 yds. sup. Concrete bed 4" thick @ 5/10d.	9	0	10		45	0	11
5 ft. run Form pipe chase @ 1/-		5	0	DEDUCT 9½ yds. cube Remove surplus @ 5/- ...	2	6	3

Total for Example C2 £42 14 8



SOLID FLOORS CUT COSTS

at their Barrington (Cambs.), South Ferriby (Lincs.) and Lewes works

EASTWOODS SALES LTD., Eastwood House, City Road, London, E.C.1. · 29 St. Sepulchre Gate, Doncaster. Tel: 49256 · Southerham, Lewes. Tel: Lewes 500

SPECIFY EASTWOODS CEMENT:

WELLINGTON BRAND · *EASTWOODS HUMBER BRAND* · *G. & B. BRAND* · *DUROCRETE RAPID HARDENING CEMENTS*

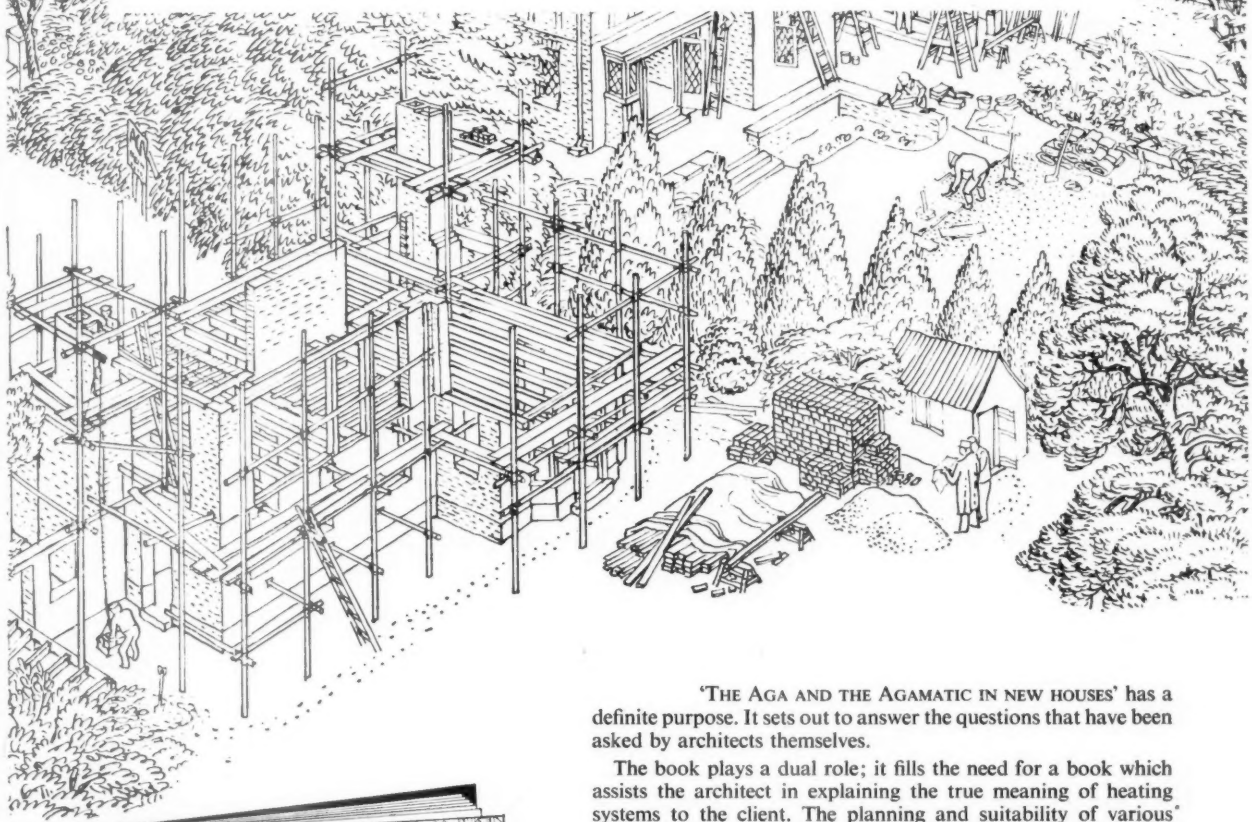
EASTWOODS LIMITED

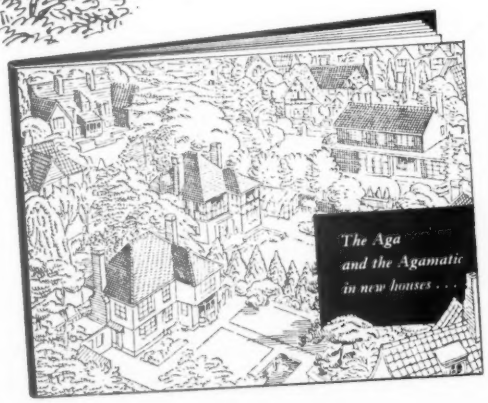
Head Office: Eastwood House, City Road, London, E.C.1. Telephone: CLErkenwell 2040

EA/10

A review of an important New Reference Book on Heating in New Houses

An explanation of the modern trend in installations for cooking, hot water, central and room heating from the clients and architects' points of view.





'THE AGA AND THE AGAMATIC IN NEW HOUSES' has a definite purpose. It sets out to answer the questions that have been asked by architects themselves.

The book plays a dual role; it fills the need for a book which assists the architect in explaining the true meaning of heating systems to the client. The planning and suitability of various installations in relation to the type of property involved is explained by diagrams, details and photographs of existing work.

The second role of the book is that of a reference book: it lays out all the data which an architect needs to know—with particular emphasis on cost. There are a number of details from which working drawings can be prepared.

Copies of 'The Aga and the Agamatic in new houses' are available on request.

Please write for a copy to

AGA HEAT LIMITED

Orchard House, Orchard Street, London, W.1

The words 'Aga' and 'Agamatic' are registered trade marks of Aga Heat Ltd. Proprietors: Allied Ironfounders Ltd., makers of cookers, boilers and fires

FINE BUILDINGS . . .

Everywhere these days you can see really fine buildings—attractively designed and really well-built. Such a building is illustrated below:
Aberconway House, Wisley.
Hostel & Restaurant for the Royal Horticultural Society.

Architects:
Sydney Tatchell, Son & Partners,
Fleet Street, E.C.4.

Contractors:
R. Holford & Co. Ltd., Guildford.

. . . and, of course, with FINLOCK GUTTERS—chosen from the viewpoint of efficiency, attractive appearance and economy. Modern architects specify FINLOCK—there are so many reasons for doing so.

GUARANTEED GUTTER LININGS

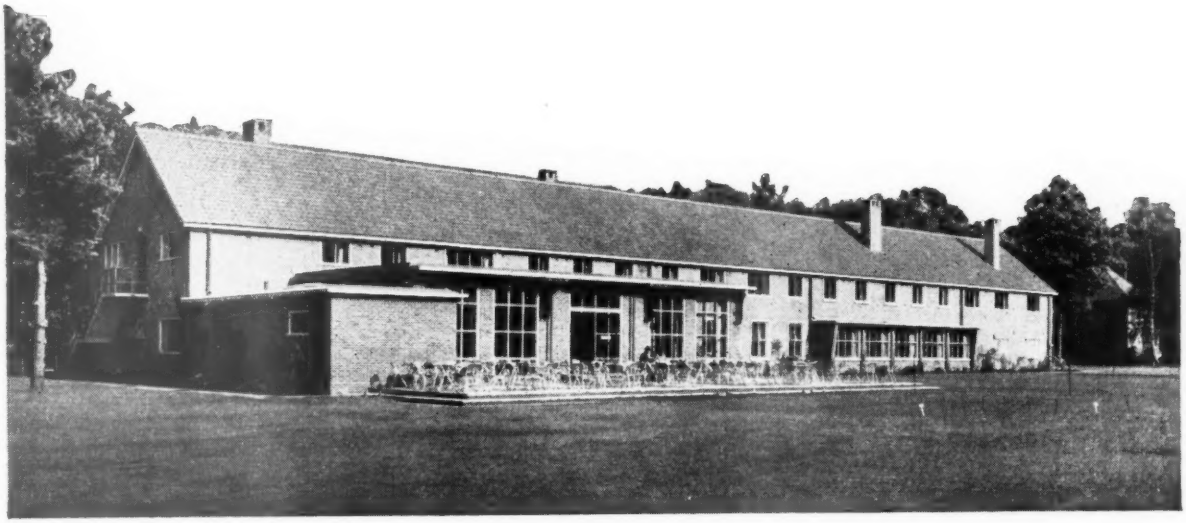
We can now promptly undertake this work on your site. Thus users can have a guaranteed gutter lining. Write for details.

ESTIMATING

We take off quantities and are completely responsible for seeing that correct goods arrive on site at stated time.

DELIVERIES

Our transport covers the British Isles with a 24-hour service.

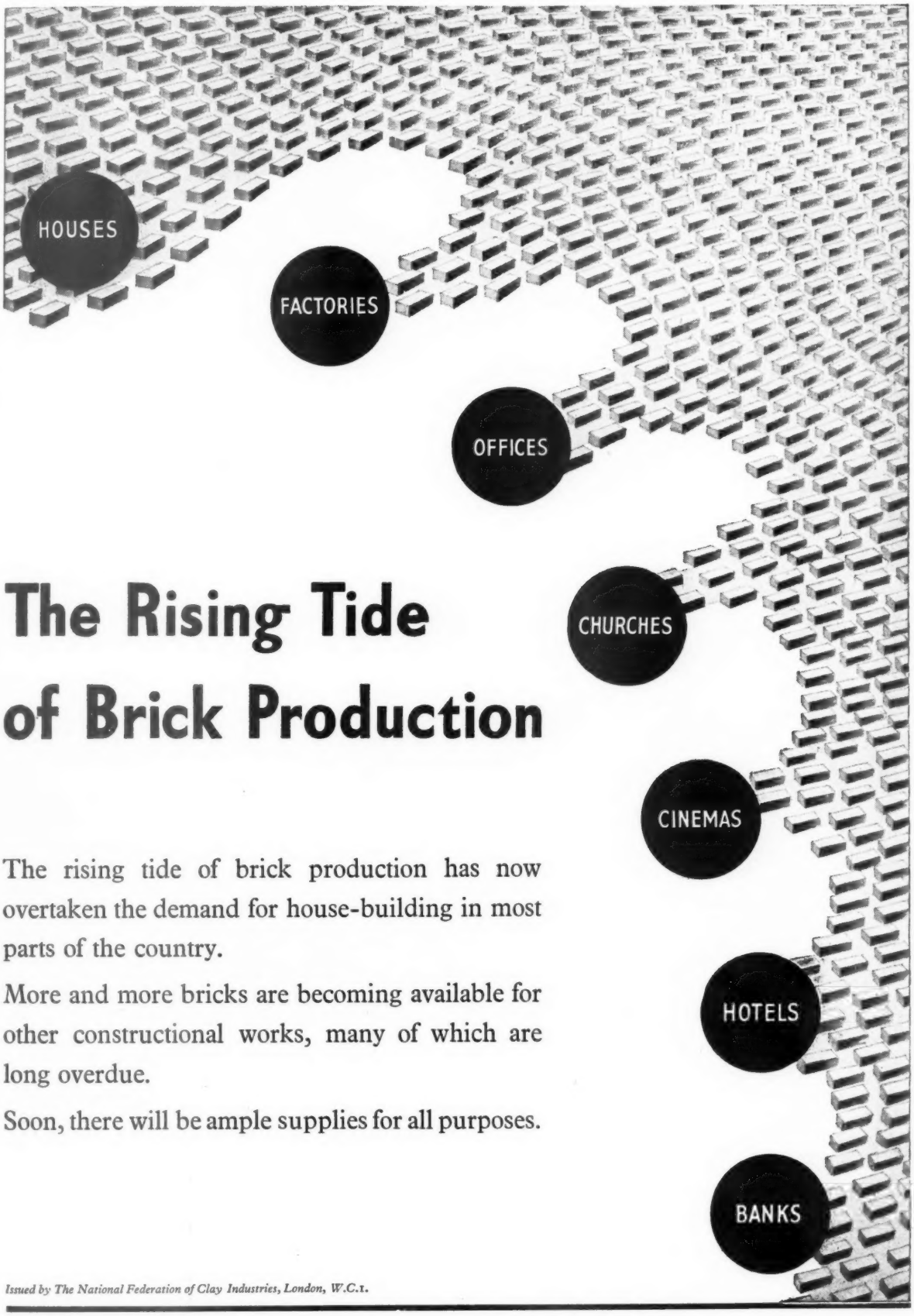


FINLOCK GUTTERS LTD.

Head Office: FINLOCK HOUSE, 25 FRANT ROAD, TUNBRIDGE WELLS, KENT
Telephone: Tunbridge Wells 3396/9

We deliver to all parts of England, Scotland, Wales and N. Ireland.

DHB/FG 2046



The Rising Tide of Brick Production

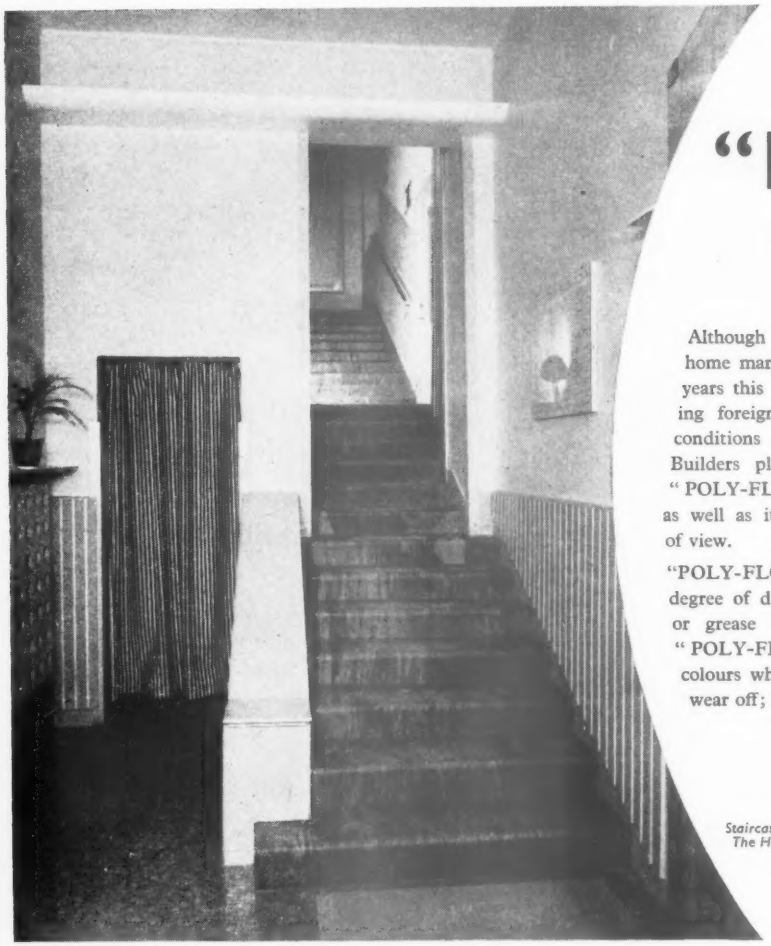
The rising tide of brick production has now overtaken the demand for house-building in most parts of the country.

More and more bricks are becoming available for other constructional works, many of which are long overdue.

Soon, there will be ample supplies for all purposes.

Issued by The National Federation of Clay Industries, London, W.C.1.

You can lay it down for certain —



Staircase in
The Hotel Istria, Trieste.

"POLY-FLOR"
will fit the job

Although it has only recently become available to the home market, "POLY-FLOR" is not new. For many years this remarkable vinyl floor covering has been earning foreign currency and meeting the most exacting conditions in many overseas countries. Architects and Builders planning for long-term service can recommend "POLY-FLOR" with absolute confidence in its stability as well as its ability to "fit the job" from every point of view.

"POLY-FLOR" is a true vinyl material possessing a high degree of dimensional stability; it is not affected by oil or grease and does not easily support combustion. "POLY-FLOR" is produced in 22 attractive marbled colours which permeate the whole thickness and cannot wear off; it lays flat, stays flat, will not curl or crack.

Specify

the modern flooring for lasting wear for Schools, Hospitals, Hotels, Cinemas, Laboratories, Banks and commercial premises of every kind.

"POLY-FLOR" REGD. *vinyl floor covering*

NOTE THESE ADVANTAGES.

★ "POLY-FLOR" withstands extreme climatic conditions.

★ "POLY-FLOR" will not support combustion.

★ "POLY-FLOR" is easily wiped clean and polished to any required degree.

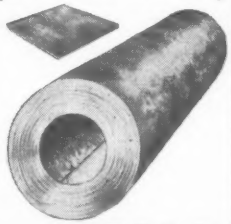
★ "POLY-FLOR" is produced in 22 marbled colours, permanent and throughout the depth. The pattern will not wear away.

★ "POLY-FLOR" is not affected by oil, grease, or other substances likely to affect the surface of many other floorings.

★ "POLY-FLOR" can be laid on any even floor; it is fairly resilient and non-slip.

★ "POLY-FLOR" is supplied in 15-yard lengths and 5 feet wide and precision die-cut tiles.

TILES
(precision die-cut)



and **ROLLS**

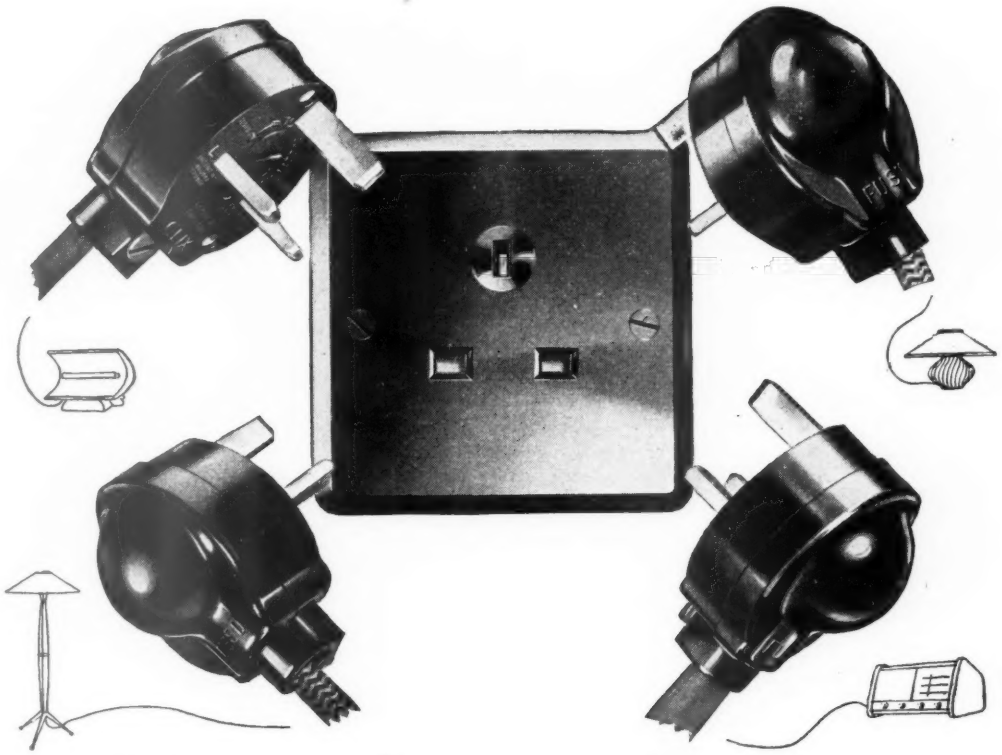
Informative folder and shade card sent on request to: —

Sole Manufacturers:

JAMES HALSTEAD LIMITED

(Dept. 2), CROW OAK WORKS, WHITEFIELD, MANCHESTER.

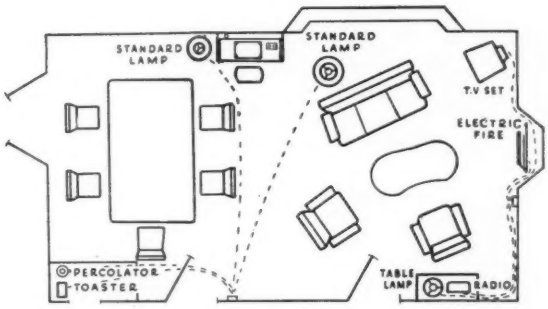
(Phone: Whitefield 2251-4)



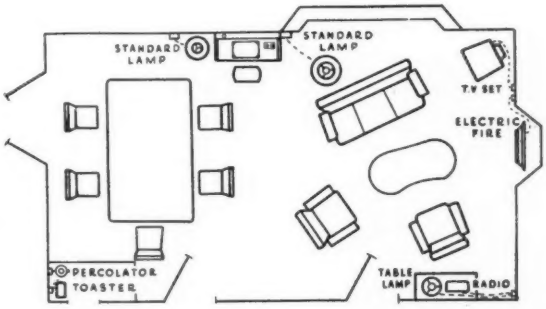
4 into 1 *won't* go...

...so be generous when specifying the number of Socket Outlets for each room.

THE Windsor range of Ediswan Wiring Accessories includes all types of 13 amp. Socket Outlets, Switch Socket Outlets and rectangular pin fused Plugs required for normal installations—quality Accessories at competitive prices. Remember also that Ediswan manufacture a Plug which can be re-fused in 15 seconds.



Insufficient socket outlets wrongly placed. Note the long trailing flexibles running dangerously across doorways and "traffic ways".



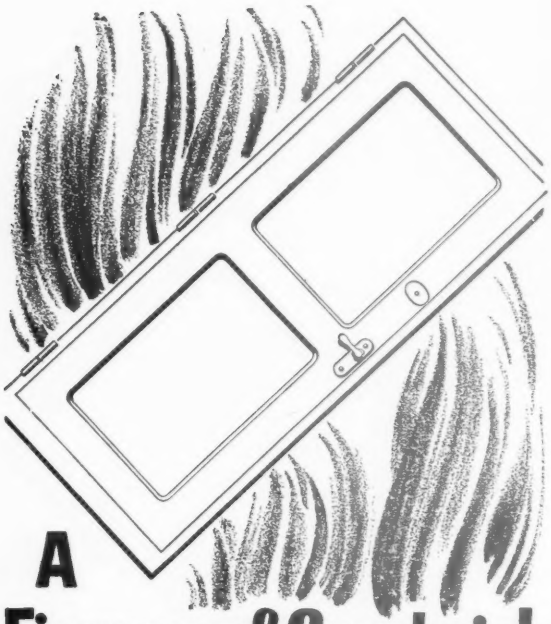
Correct arrangement of socket outlets. Long flexibles and inconvenient adaptors are avoided.

EDISWAN

ELECTRIC WIRING ACCESSORIES

THE EDISON SWAN ELECTRIC CO. LIMITED
155 Charing Cross Rd., London, W.C.2 and Branches
Telephone: GERrard 8660
Member of the A.E.I. Group of Companies.

E.37



A Fireproof Sandwich

Instead of bread and ham, use pressed steel plates and *Askieselos sandwiched between them and you have a Dreadnought Fireproof Door. It looks as like a good wooden door as makes no difference. You have probably seen these doors in London and Provincial Art Galleries, Government Offices, Banks and other buildings, and didn't know they were fireproof. The Fire Offices Committee and L.C.C. give them official approval.

★ "Askieselos" is one of the finest fire-resisting materials known to modern science. It is held in place by double channel steel frames rigidly secured by patent process.

DREADNOUGHT
FIREPROOF DOORS (1930) LTD.

26, VICTORIA ST., WESTMINSTER, S.W.1

CAMBRIDGE UNIVERSITY LIBRARY—Cement Glazed 1932

IT must be capable of passing all the tests which the expert may wish to make before recommending it. It must satisfy the consumer's taste in colour, harmony and design. In all respects GLAZEMENT measures up to this specification. It is very durable, economical to apply, has a wide colour range, and can be applied in a variety of attractive designs. It is easily maintained—a simple wash down keeps it clean and fresh. Its continuous unbroken surface offers no cracks or joints to harbour dirt or germs.

In Cambridge University Library, where GLAZEMENT was applied 22 years ago no renovation or retreatment has yet been found necessary. GLAZEMENT is as good as a wall finish can be.

Our GLAZEMENT Brochure, giving full information, will be sent free on demand.

GLAZEMENT
CEMENT GLAZE WALL FINISHES

ROBB'S CEMENT ENAMEL FINISHES LTD.
245 VAUXHALL BRIDGE ROAD, LONDON, S.W.1.
Telephones: TATe Gallery 0091/2. *Telegrams:* Glazement Souwest London.

THE BUILDING CENTRE 26 STORE STREET W.C.1

SEE OUR EXHIBIT

SCOTLAND:
W. C. Simpson & Son Ltd.,
30-42 Haymarket, Surrey Place,
Edinburgh. *Edinburgh* 62006.

NORTHERN IRELAND:
Concrete Industries Ltd.,
107a Shore Road, Belfast.
Belfast 76681.

EXTERIOR · INTERIOR

The thermal insulation of Celotex and the fire resistance of asbestos

Combine in

CELOTEX F.R.I. BOARD

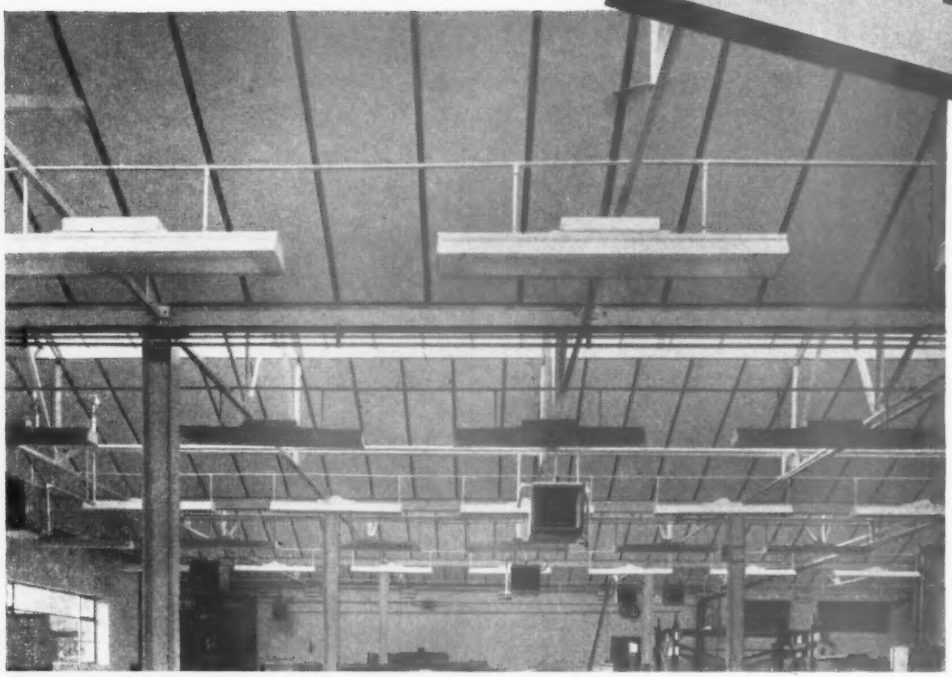


Photo: Courtesy of Nuswift Ltd.

Now you can have both the high efficiency of Celotex cane fibre insulation and the fire resistance of asbestos. They have been combined with great success in Celotex F.R.I. Board. It consists of a core of strong durable Celotex cane fibre insulation sheathed on both sides with asbestos felt. It is as easy to handle and to decorate as normal Celotex insulation—and it is just as economical! Use Celotex F.R.I. Board for wall, roof and ceiling linings and partitions. Samples and further details of this all-British Celotex product will be gladly sent on request.

In the B.S. 476 Surface Spread-of-Flame Test, Celotex Fire Resistant Insulating Board — Rated Class I — showed no spread of flame whatsoever!

- ECONOMICAL PRICE
- EASY TO USE
- EASY TO DECORATE

Another Economical CELOTEX product

• MADE IN GREAT BRITAIN WITH ALL-BRITISH MATERIALS BY

CELOTEX LIMITED · STONEBRIDGE PARK · LONDON, N.W.10 Telephone: ELGar 5717 (10 lines)

Klingdecor surfacing has come to stay
Good for a lifetime — without renovation

Having passed all tests (with fadeproof colours), Klingdecor plastic surfacing is winning enthusiasts daily. Klingdecor is heat resistant, acid resisting and tough; tough enough to withstand the wear-and-tear of industrial canteens, chemical laboratories and fourth form classrooms. Klingdecor is decorative—tastefully so. In homes, hospitals, hotels and restaurants, this multi-coloured, many-patterned surfacing will not age and is cleaned in seconds with a sponge.

Without renovation, Klingdecor serves for a lifetime; is fully cigarette proof; and cannot harbour germs or grime. Although more heat resisting than any other plastic surface, it actually costs less.

For walls, doors, shelves, bathroom panelling, bar tops, working surfaces, etc.

KLINGDECOR

Regd. Trade Mark

Another KLINGER Product

Manufactured by Richard Klinger Ltd., Klingerit Works, Sidcup, Kent.

THE SURFACE BEAUTIFUL

Send for literature to: KLINGDECOR DEPT. Horton Bridge Rd., West Drayton, Middx.

Phone: West Drayton 3036/7/8, 3560 & 3255

Leading Architects consult

INDUSTRIAL ENGINEERING LTD.

SPECIALISTS IN THE RECONSTRUCTION, SHEETING AND GLAZING OF ALL TYPES OF INDUSTRIAL ROOFS—INCLUDING WATERPROOFING BY THE MASTICON PROCESS

Industrial Engineering Ltd. have more than 30 years specialised experience in the maintenance, reconstruction and waterproofing, by the Masticon process, of industrial roofing, gutters and glazing. This practical experience is backed by a country-wide organisation, the services of which are at your command at all times.

Wherever your works are situated, a permanent staff of skilled labour is available immediately. Consultations with Technical Advisory Departments and District Representatives, inspection of roofs, a complete report, a specification of the work considered necessary, and estimates are available *without charge or obligation.*

Write for Brochure giving full details

INDUSTRIAL ENGINEERING LTD. · HEAD OFFICE: MELLIER HOUSE · ALBEMARLE STREET · LONDON, W.1 · Phone: HYDE PARK 1411

BRANCHES IN ALL PRINCIPAL INDUSTRIAL CENTRES

SPECIALISTS IN JOINERY

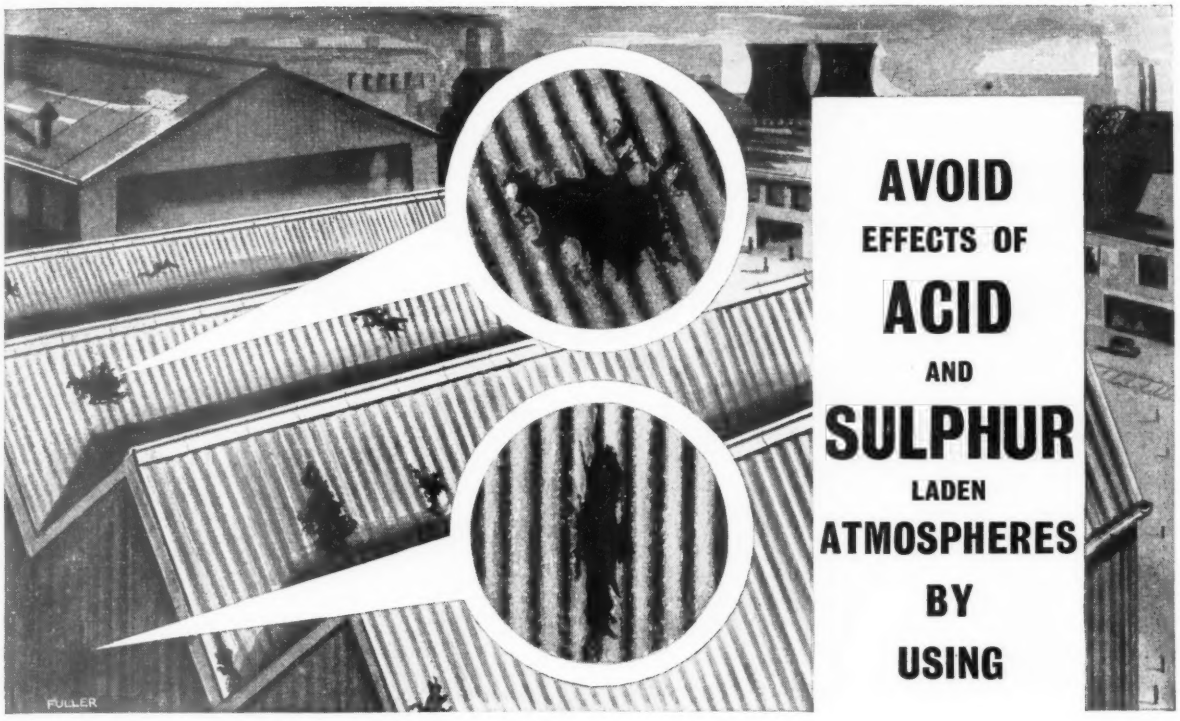
Superficially, there is a great gap between the leisurely work of the craftsman and the product of the modern machine. But the gap can be bridged and the virtues of both made complementary to one another. This we do in the Joinery Department of Boulton & Paul. Its success is reflected in the competitive price, the quick delivery and the high quality of all our joinery. We will gladly send you our catalogue on request.

when the joinery is by BOULTON AND PAUL

. . . it's a first class job

NORWICH · LONDON · BIRMINGHAM

CRC 17J



AVOID EFFECTS OF ACID AND SULPHUR LADEN ATMOSPHERES BY USING

'CORROPLAST'

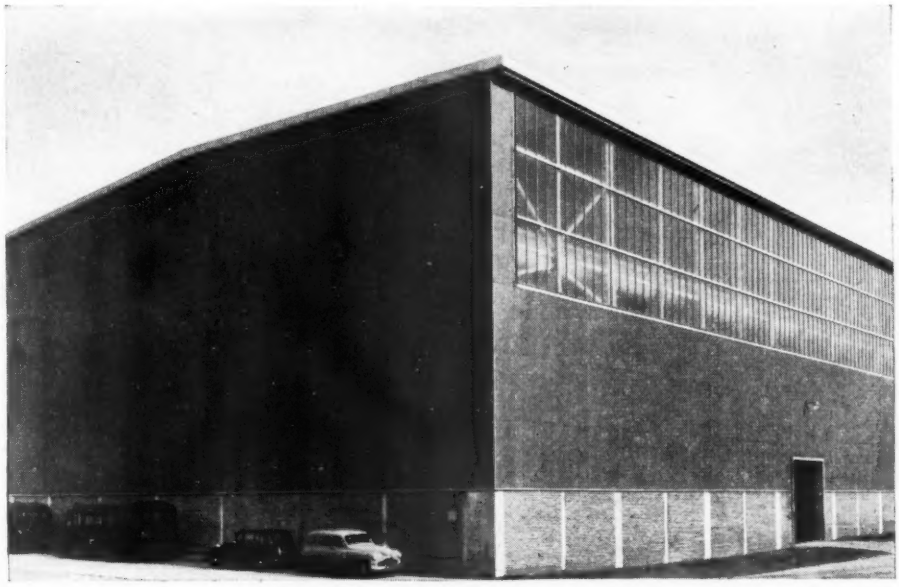
LAMINATED CORRUGATED SHEETING

PERMANENT, ATTRACTIVE AND ECONOMICAL IN USE

OTHER HOLOPLAST PRODUCTS INCLUDE :
HOLOPLAST CAVITIED PANELS AND DECORPLAST.

Manufactured by ***HOLOPLAST LTD*** *Sales Office: 116 VICTORIA STREET, LONDON, S.W.1*
Tele: VICtoria 9354 7 and 9981 Head Office and Works: New Hythe, Near Maidstone, Kent.

'CORROPLAST' is impervious to severe conditions of air pollution and temperature changes.

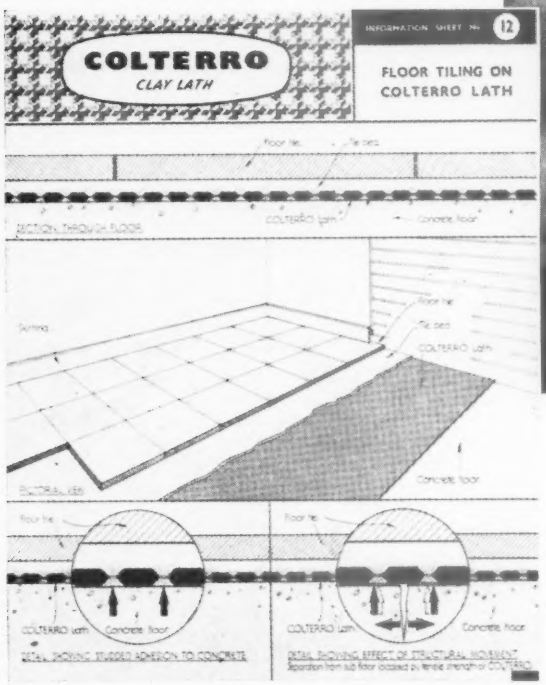


One of the Reel Store extensions at Bowaters Lloyd Pulp & Paper Mills Limited, Kemsley Mill, Sittingbourne.

ARCHITECTS :
MESSRS.
FARMER & DARK, F/F.R.I.B.A.

FOR THE FIRST TIME

. . . flooring Contractors can have sufficient confidence in a method of laying terrazzo tiles to give a **Guarantee that the finished floor will not crack.**



QUIL-LATH Flooring being laid at Messrs. Lewis's, Ranelagh St., Liverpool

Architects : G. de C. Fraser, Son & Gearey, A./A.R.I.B.A.
Specialist Flooring Contractor : A. Quiligotti & Co. Ltd.

Only Colterro Lath will give him this confidence as it consolidates and reinforces the tile bed and allows a spotted adhesion to the sub-floor. This eliminates transference of structural cracks and excessive shrinkage of the bed itself.

We shall be glad to send you further details.

COLTERRO
CLAY LATH

W. H. COLT (LONDON) LTD., SURBITON, SURREY. Telephone: ELMbridge 6511-5

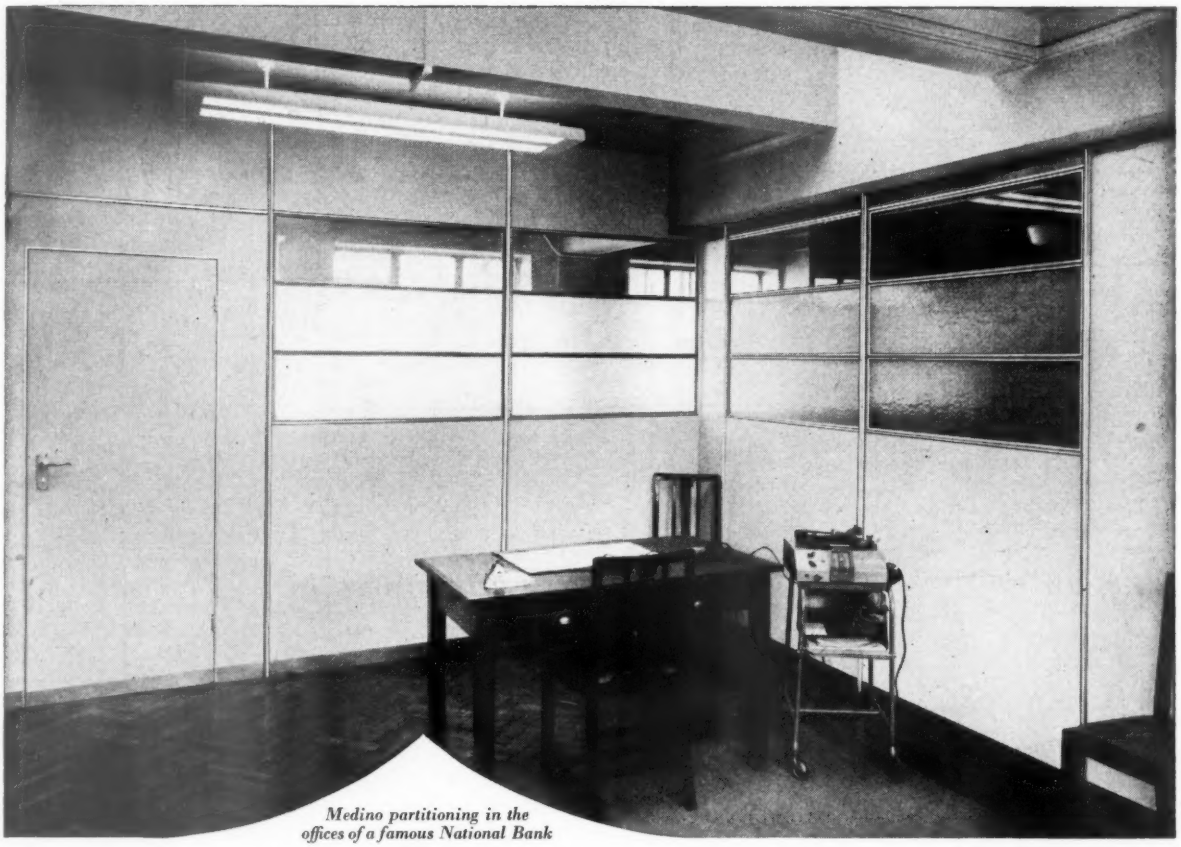
STOCKISTS AND DISTRIBUTORS:

W. S. WILKIN LTD., ABBEY RD., BARROW-IN-FURNESS, LANCS.

A. QUILIGOTTI & CO. LTD., MILTON STREET, PLYMOUTH GROVE, MANCHESTER, 13

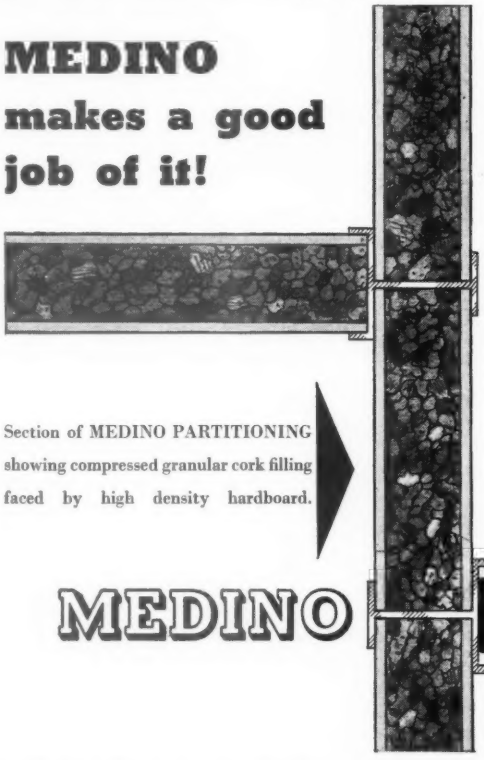
ROWEBB LTD., 113 DOUGLAS STREET, GLASGOW, C.2.

J. M. & J. BARTLETT LTD., 3-4 HIGHAM PLACE, NEWCASTLE-UPON-TYNE, 2.



Medino partitioning in the offices of a famous National Bank

MEDINO makes a good job of it!



Section of MEDINO PARTITIONING showing compressed granular cork filling faced by high density hardboard.

Sturdy, soundproof, easily erected MEDINO PARTITIONING makes up into sub-divisions of almost any size or complexity. Assembled with the aid of special aluminium extruded accessories. MEDINO can be found in factories and offices, schools and hospitals, public buildings of every kind. Note its special features:

MEDINO INSULATION Compressed—and bonded—granulated cork filling means defence against heat, cold and sound, equal to that of a 4½" brick wall.

MEDINO ADAPTABILITY For simple or complex partitioning. Special aluminium extrusions with 1-piece rubber strips simplify glazing. Double glazing is also available.

MEDINO RIGIDITY Extra-strong hardboard which encloses the cork filling—yet 1 sq. ft. of 1 3/16" MEDINO weighs only 2½ lb.

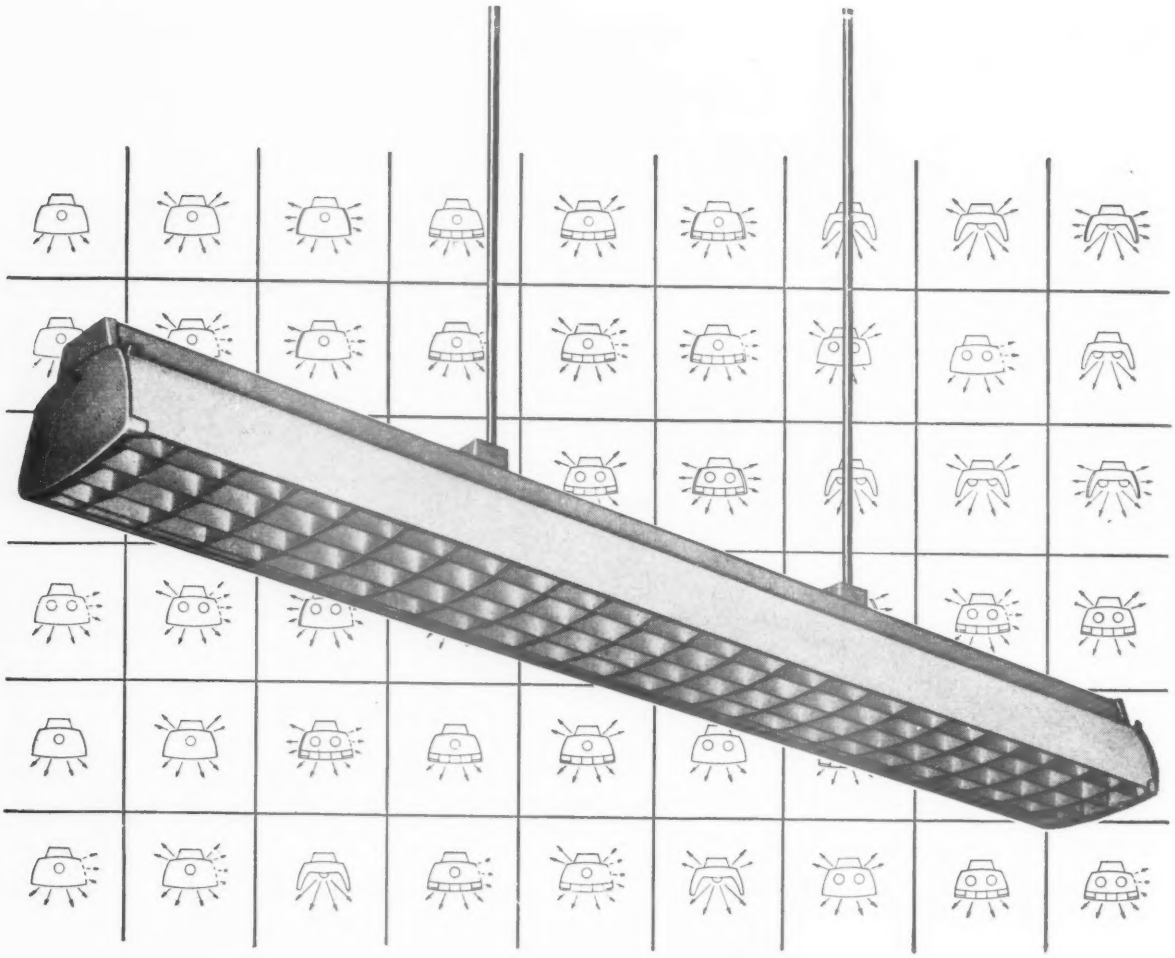
MEDINO GOOD LOOKS Has a 2-sided protective surface of SaR-ReZ Plastic, in a range of colours matt-finished and easily cleaned. Or with decorative veneer facing.

MEDINO PARTITIONING

SARO

SARO LAMINATED WOOD PRODUCTS LIMITED

EAST COWES, ISLE OF WIGHT. *TELEPHONE:* COWES 704-8. *LONDON OFFICE:* 45 PARLIAMENT STREET, S.W.1. *TELEPHONE:* TRA. 6291



One to fifty-four fittings

Here is something entirely new in industrial lighting. The Crompton 'New-Range' fittings have been designed to fill the long-felt wants of fluorescent lighting users and incorporate many improvements and innovations that have been suggested to us by the users themselves. They offer a means whereby no less than FIFTY-FOUR different fittings may be speedily built up from one foundation unit, so that every contingency can be met. The 'New-Range' fittings are silent in operation and incorporate the famous Crompton visible starter, or snap-start gear. Reflectors are finished in 'Permawhite', vitreous enamel or 'Perspex'.

Write now for full informative literature or call in the advice of one of our industrial lighting experts.

BY APPOINTMENT MANUFACTURERS OF ELECTRIC LAMPS TO THE LATE KING GEORGE VI

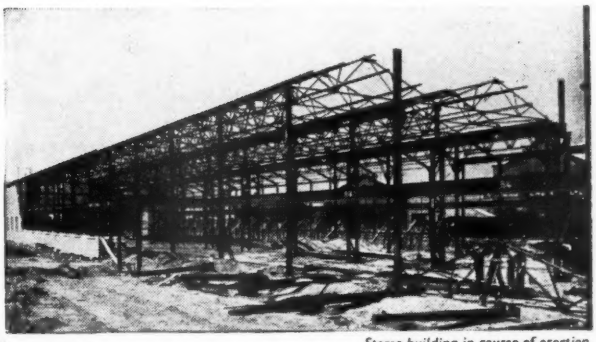
Crompton 'NEW-RANGE'

The lighting fittings you helped to design

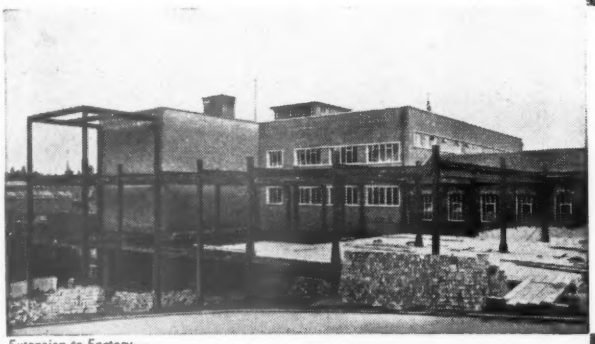
ELECTRICAL EQUIPMENT

CROMPTON PARKINSON LTD., CROMPTON HOUSE, ALDWYCH, LONDON, W.C.2. Tel: Chancery 3333

Single or...



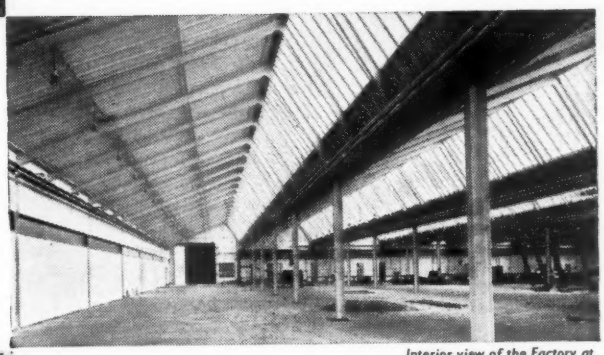
Stores building in course of erection for National Gas & Oil Engines Limited.



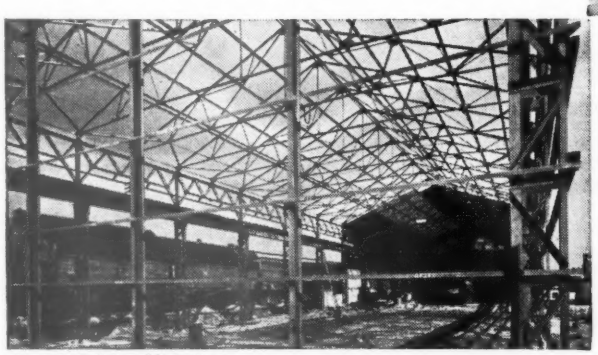
Extension to Factory—
Messrs. F. E. Fox & Son Limited, Batley. Biscuit Manufacturers.
Architects: Smith & Curry, Heckmondwike.

Multi-storey

Welded or...



Interior view of the Factory at Barnsley, Messrs. Brook Motors Ltd.



New Stores Building of Birlec Ltd., Furnace Manufacturers, Erdington, Birmingham.

Riveted

STRUCTURAL STEELWORK BY

AUSTINS

TRADE MARK VULCAN
ESTABLISHED 1850

JAMES AUSTIN & SONS (Dewsbury) LTD · THORNHILL IRON & STEEL WORKS · DEWSBURY

Telephone: 1750 (7 lines) · Telegrams: Austins, Dewsbury

an example ..

of the adaptability
of BROADS TRUCAST DUCT COVERS
specially designed for use in:
POWER STATIONS, HOSPITALS, SCHOOLS,
KITCHENS, LABORATORIES,
BOILER HOUSES, ETC.

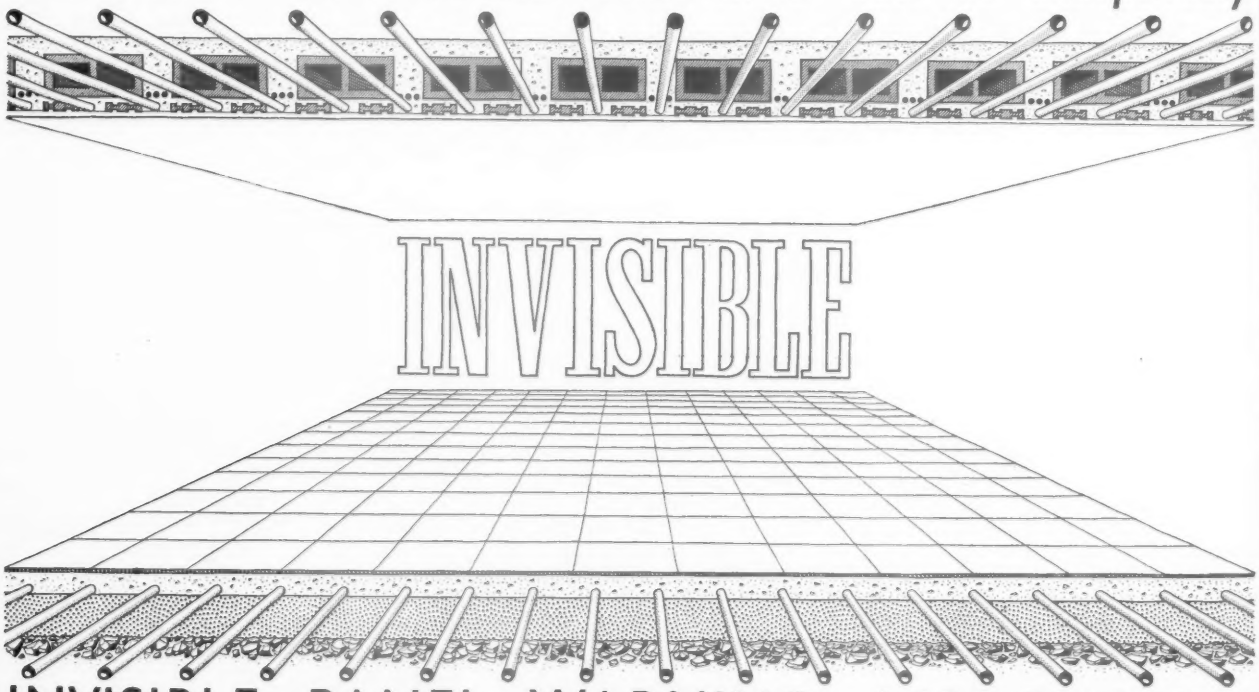
★ Technical Staff are available to visit site to check final details and offer advice on layouts. Liaison is also maintained during installation. Full details submitted on application.

TRUCAST
CONTINUOUS
DUCT & ACCESS COVERS

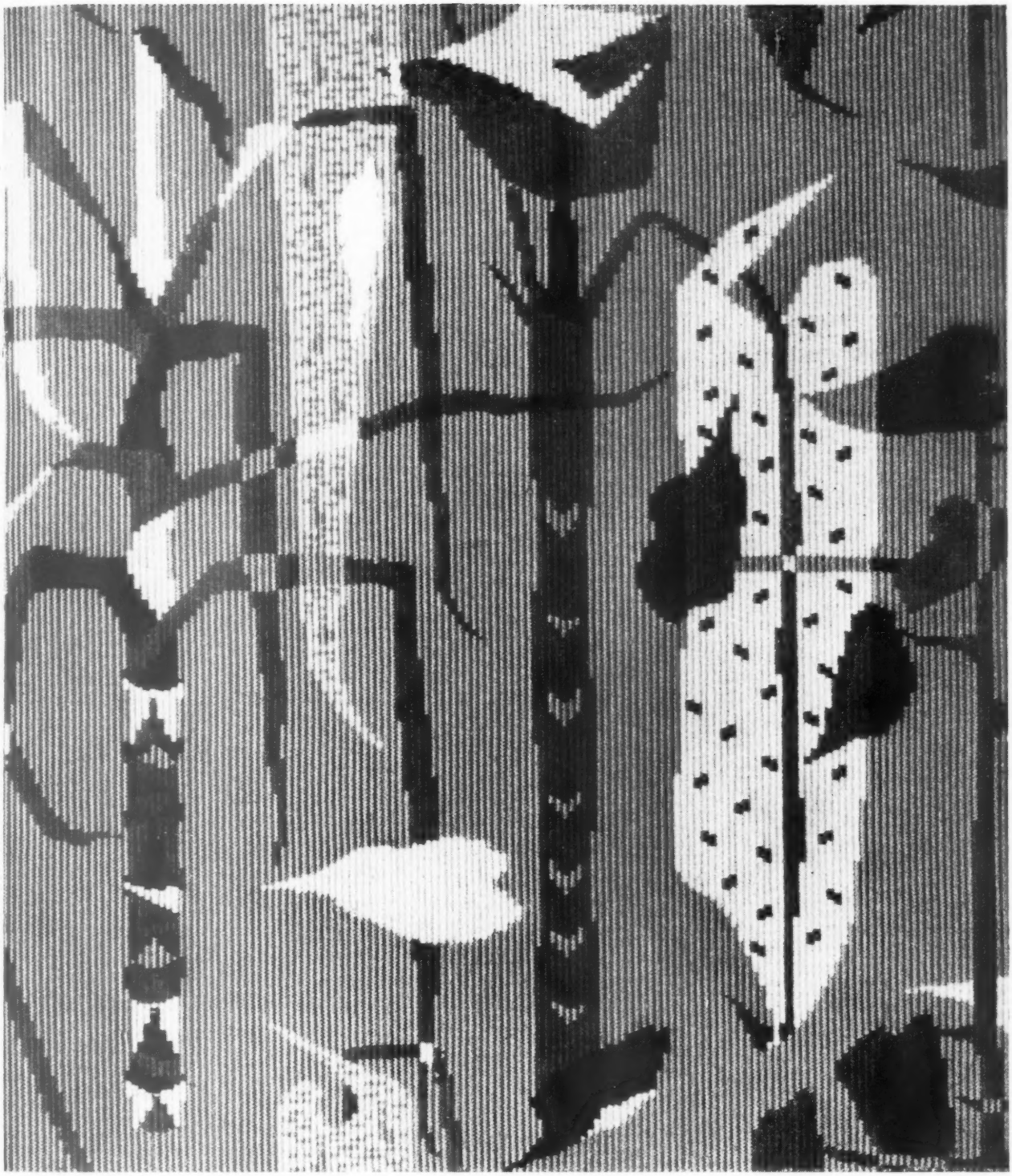
BROADS
MANUFACTURING CO. LTD. 4 SOUTH WHARF, PADDINGTON, LONDON, W.2 • Tel: PAD 7061 (20 lines)

DETAILED BROCHURE SENT ON REQUEST

A reminder that PANEL WARMING can be completely



INVISIBLE PANEL WARMING ASSOCIATION
GRAND BUILDINGS, TRAFALGAR SQUARE, LONDON, W.C.2
Write for information on floor and ceiling heating



REPLIN machine woven tapestry is made on the same principle as the Gobelin tapestries. The designs are actually woven into the fabric, giving it a smooth, all-worsted surface. Replin is hard-wearing resistant to fire and easy to clean.

The material illustrated was designed by Mr. E. C. Leach, Decorative Architect and Chief Furnishing Superintendent to the Cunard Steam-Ship Company, for R.M.S. Saxonia.

Replin

British Replin Ltd., 2, South Audley Street, London, W.1. Telephone: Grosvenor 6692.

A Floor of Cork is a joy for ever!

Cork has many advantages, apart from its rich, natural beauty. It is quiet, warm and comfortable underfoot; with the minimum of attention Armstrong Cork Tile floors will last a lifetime. Cork harmonises well, both with traditional and contemporary schemes of decoration and furniture. Above all, cork makes an economical flooring surprisingly low in first cost.

Samples, descriptive literature and quotations gladly sent on request.

CORK FOR WALLS: Yes!—Cork can be laid vertically, to form walls and dados of permanent beauty. And to aid soundproofing, with good thermal properties.

• • •

Sizes: 12" x 12", 36" x 12", 36" x 6", 9" x 9", 6" x 6". Special sizes cut to order up to maximum of 36" x 12". Thicknesses: 3/16" square edge or bevelled edge. 5/16" tongued and grooved or square edge. Shades: Light, Medium, Dark. Coved Skirting: 5/16" thick, in lengths of 36", 4" high, ¼" radius cove.

ARMSTRONG'S *Cork Tile* FLOORS

ARMSTRONG CORK CO. LTD., Flooring Department, Bush House, Aldwych, London, W.C.2. *Tel: COVent Garden 1101.*

the exceptional in creative flooring !

Coved skirtings, preformed in Granwood, facilitate cleanliness, protects the walls and frame a colourful hardwearing floor by Granwood.

(Granwood Flooring Co. Ltd. is a member of British Steel Constructions Group of Companies).

Please write for fully illustrated leaflet

*** GRANWOOD FLOORING CO LTD**

RIDDINGS · DERBY *Telephone :* Leabrooks 341/2/3 *Telegrams :* Granflor, Alfreton

London and Registered Office : 9 CLARGES STREET, W.1 *Telephone :* GROsvenor 5469 (2 lines) BPC

!

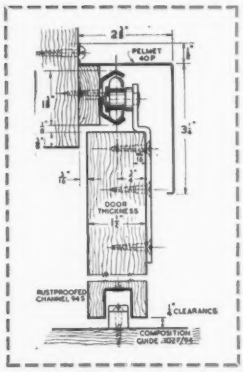
D

ton

BPC

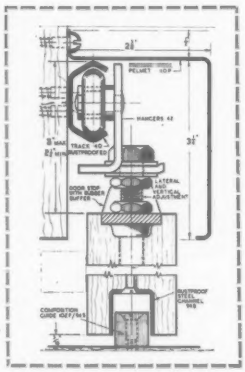
These five new winners by Henderson

will increase the demand for our *Sliding Door Gear*



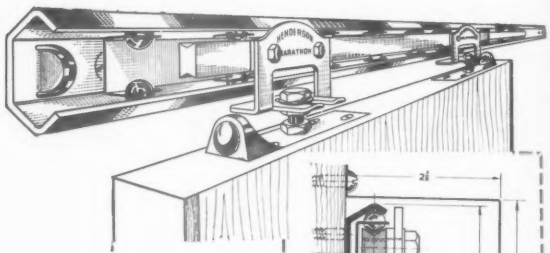
"HANDY" SETS

Where a large number of sets are required at low cost, or an efficient runner is required for the odd door—the cycle shed, greenhouse, poultry house, etc., these runners are the ideal line to keep in stock.



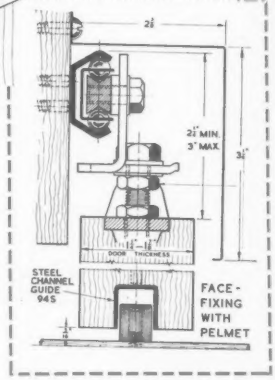
"LOBBY" HOUSING SETS

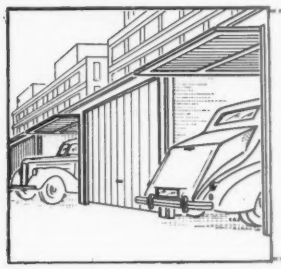
These sets may be used for light domestic purposes and doors of up to 50 lb. They are simple to erect, the vital parts are rust-proofed and the bearings self-lubricating.

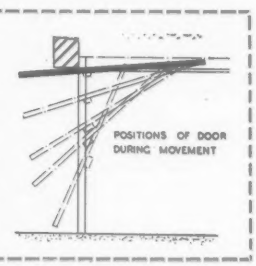


"MARATHON" BALL RACE RUNNERS

These precision made and beautifully finished runners cater for any door up to 150 lb. Standard sets are available to suit practically any requirement. Ideal for Houses, Railway Carriages, Coaches, Ships, etc.

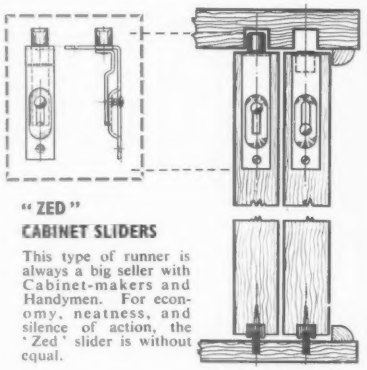






"TANGENT" OVERHEAD DOOR GEAR

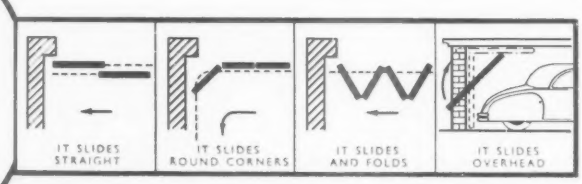
This design is used where a one-piece garage door is preferred to the sliding or folding types. Counter-balance is by springs (S.O.) or weights (W.O.). In either form, these sets are reliable, have a sturdy durability and light, easy action.



"ZED" CABINET SLIDERS

This type of runner is always a big seller with Cabinet-makers and Handymen. For economy, neatness, and silence of action, the 'Zed' slider is without equal.

Application to double passing doors.



PLEASE NOTE OUR NEW FACTORY ADDRESS.

Send for 4 new Folders.

Henderson SLIDING DOOR GEAR

P. C. HENDERSON LIMITED, TANGENT WORKS, HAROLD HILL, ROMFORD, ESSEX.

AP205-1185

AJ

THE ARCHITECTS' JOURNAL

9, 11 & 13, Queen Anne's Gate, Westminster, London, S.W.1 Whitehall 0611

No. 3137 April 14, 1955 VOL. 121

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 25s. 0d.; carriage 1s. extra.

GREAT EASTON PRAISE

John Murray Easton may not be among the greatest of the recipients of the Royal Gold Medal—he would not claim to be—but he is almost certainly one of the nicest and most liked. If he has any detractors, which is doubtful, they were nowhere near 66 Portland Place last week when, standing on tiptoe, he had the Royal Gold Medal clasped round his neck by President C. H. Aslin.

*

It is quite a time since ASTRAGAL heard so many self-deprecatingly polished speakers (both fellow-architects and representatives of his clients) extolling an architect's virtues. The praise fell from modest Easton's back like water off a duck, but, as he himself admitted, everyone needs it, and it no doubt did the architects in the audience good by proxy.

*

J. Murray Easton's dry wit was the perfect antidote to the praise. He pointed out that there was no architect assessor to the Royal Horticultural Hall competition—or he would never have won it; that "clients are most important," and that one was "a corset to (his) blousily imaginative figure." Basil Spence, who was one of the many distinguished speakers, gave us Easton's own description of the profession: "Architects are like pears; for a long time they are green and hard . . . then they are ripe, and then they are rotten." Not exactly a phrase to be careless with.

THE SWEDES STILL LEAD . . .

For some years now it has been fashionable for you faithless architects and industrial designers to curl the lip a little at Scandinavian work. However, now that even Italian influences are beginning to pall, perhaps readers, and particularly designers and makers of furniture, will be able to benefit from a short article which appeared in the first issue for 1955 of the Swedish publication *Form*. This shows that although Sweden may have lost a little of its lead in design, it is still ahead in matters of commercial integrity. But let *Form* speak for itself in the neat little English summary which it provides:

> The prospective furniture buyer often finds himself wanting more information on his contemplated purchase than the shop assistant can readily supply. He may be grateful for aesthetical advice and this is usually available, but in respect of quality the seller may at times be as ignorant as the customer. The answer to the problem is, of course, informative labelling.
> A start has been made in Sweden with tables; next on the list are chairs of various kinds, beds and cupboards and cabinets. In respect of tables data are given regarding resistance of the top to heat, water and alcohol, various measurements and type of wood used. Many important details, such as resistance to warping, etc., are not yet given, but it is hoped that the problems involved will soon be solved and that such items too can be included, so as to give the customer a complete idea of what he is buying.

*

It is also proposed to give the furniture some physical endurance tests, and an illustration in *Form* shows a rocking device calculated, it would seem, to loosen the joints of a chair in no time. The manufacturers will be expected to supply the information, but the Swedish Society of Industrial Design will ensure the accuracy of the labels by means of spot checks.

*

Even if the COID were prepared to institute efficiency tests on the articles they approve, how many British furniture manufacturers would be prepared to risk their products, and their reputations, in such a manner?

. . . WITHOUT FRIGHT OF HEIGHT

A recent visitor to Sweden has given me a piece of news that increases still further my sense of frustration over our City Corporation's rebuilding policy—or lack of policy. Apparently in the centre of Stockholm, alongside the Concert Hall, some acres of nineteenth-century development have been cleared and are now being excavated for comprehensive redevelopment with 15-storey point-blocks of offices.

*

The area is in many ways comparable to the Aldersgate-Barbican area, but while we fiddle around and discuss the mere possibility of developing the area as a whole, as though no-one had ever done such a thing before, and timidly shy away from anything so bold as tall

This device, which is a trellis for plants in the summer and a piece of partly-mobile sculpture in the winter, was commissioned by an architect, designed by a sculptor and executed by plumbers. ASTRAGAL *writes about it below under the heading, "Childwall Decorations".*

point blocks, the Swedes go ahead with comprehensive planning and high buildings as a matter of course.

*

And equally as a matter of course they put the design in the hands of one man and choose their leading modern architect, Sven Markelius for the job. While Stockholm is creating for itself a new asset, we are creating, in the City of London, building developments which will be obsolete before they are finished and which will lower the whole quality of the City.

EXHIBITING ARCHITECTURE

There is talk of a big architectural exhibition to be organized later this year by the Arts Council. Opinion must wait until more details are available, but that the Arts Council should be taking an interest in architecture—an art they have hitherto almost wholly neglected—is in any case to be welcomed.

*

They do not need to be warned, I imagine, of the difficulties of presenting architecture to the public so as really to arouse interest—difficulties that have not been overcome since the MARS exhibition of 1938. However successfully these are overcome, I hope it will not be forgotten that the *idea* of such an exhibition was put forward by the *Architecture Club* at a couple of meetings last year. The Club itself has a long history of successfully interpreting architecture to the public, though not the resources to stage exhibitions on its own.

CHILDWALL DECORATIONS

Co-operation between sculptor and architect takes on a new form at Childwall Hall County College, Liverpool, just completed by the city architect Ronald Bradbury. He commissioned the Manchester sculptor Mitzi Cunliffe to design a trellis (see picture above) for climbing plants, which would also serve the purpose of decorating the wall during the non-blooming time of year.

*

It is 21 ft. long and was executed by the plumbers, who worked on the job from the sculptor's rough free-hand drawings, which made it much cheaper than a similar work would have been if fabricated by the sculptor. It is made of standard pieces of metal, brightly enamelled, and parts of it swing in the breeze.

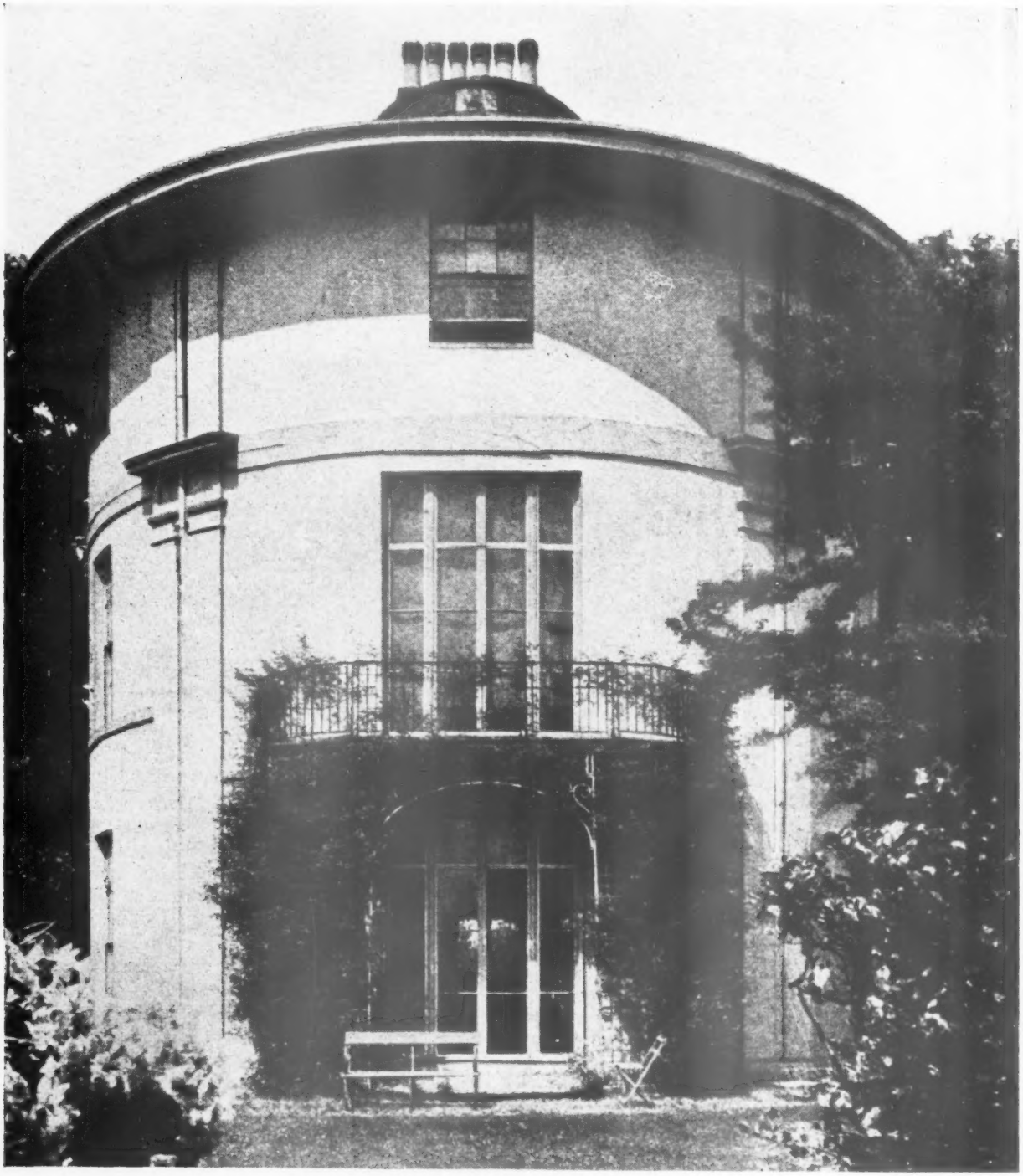
HOW'S YOUR VOCABULARY?

A good astringent to set you up for the post-Easter return to desk and drawing board, and to keep you arguing through those long light summer evenings, as you huddle around the smoking slate in your fireplace, is an explosive little opuscule from America entitled, quite simply, *Architecturally Speaking.** One or two exasperated people have lately told me that the words architects use badly need straightening and cleaning, and this is what the author, Eugene Raskin of Columbia University, has set out to do.

*

His method is taken over from General Semantics, so that ploy-word users can also use the book to swot up a nice method which explodes nearly all word-

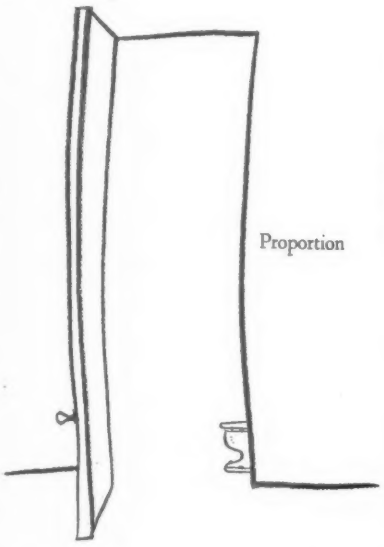
* *Architecturally Speaking.* By E. Ruskin. Chapman and Hall, 28s.



Highly Desirable Residence

When Professor Nikolaus Pevsner prepared his book on Essex (in the Penguin Buildings of England series) he remarked that the Round House, Havering-Atte-Bower, was uncared for. But now there is good news for those who have seen this charming Regency villa in its recent sad state, and better news still for any architect who is looking for somewhere unusual to live. The oval Round House is being offered for sale at a moderate price by its present owner, E. Heap, who lives nearby (at The Hall, Havering-Atte-Bower, Essex). Mr. Heap is looking for the right sort of owner for his property—and the Round House, which has been an army " glasshouse " and a furniture depository in the last fifteen years, certainly deserves an owner who will restore its dignity.

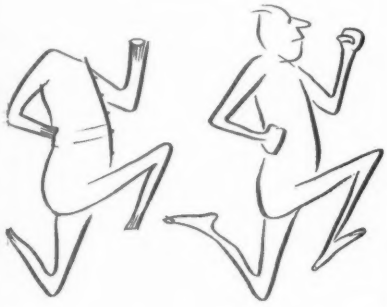
ploys, and Raskin takes some of our more effective thought-preventers, like Style, Scale, Originality, Proportion, and so forth, and gives them a good hard shake to see just what is in them.



Proportion

The results are sometimes rather heavy-handed, and sometimes the author nods to the extent of using

Functionalism



words like "eternal" without even blushing, but at its best the book—illustrated by R. Osborn (examples above)—is really salutary. Samples:

The young advanced modern who uses nothing but the latest clichés, is just as "traditional" as his despised elder whose office files are stocked with Ionic façades by the yard.

A nice sidelight there on American office organization.

Take the term *architecture* itself . . . X will say it means "The art and science of building" . . . Y prefers Sir Henry Wotton's phrase "Firmness, Commodity and Delight." Since each of these would describe Marilyn Monroe just as aptly as the Parthenon, the phrase is not much help. . . .

The more you think about that one the better it gets.

ASTRAGAL

POINTS FROM THIS ISSUE

The Editors

CRACKS IN THE FABRIC

IT is to be hoped that the societies of private practising architects which have been formed in Stoke-on-Trent and Plymouth (see page 392 of the JOURNAL of March 24), and now proposed for London (see pages 494 and 495), will soon find themselves redundant and die natural deaths. This may sound churlish and intolerant, but if the members of these societies are really setting out to look after the interests of principals in private practice it would be very much better if they directed their energies into the channels already formed for handling them: the allied societies, the AA and the RIBA, rather than dissipate them in yet more talking-shops.

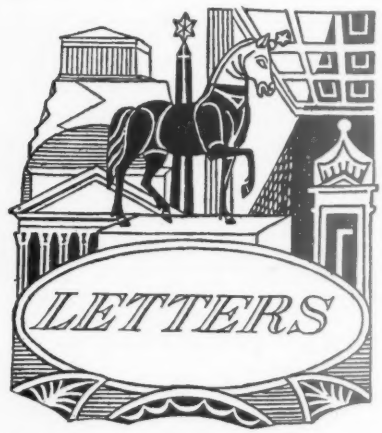
From the comfortable and superior loftiness of 66, Portland Place, these little gangs must appear, at the best, merely laughable, at the worst as irritating as a fly in mid-winter. They are, perhaps, in part at least, merely the inevitable ganging-up reaction of private principals against the proposed trade union which has not, in fact, come about. But the fly of mid-winter, if unswatted, is the precursor of the multitudes of summer. It is the RIBA's and the allied societies' job, we suggest, to see the formation of these lesser groups as the result of their own omissions, and they should exterminate them—not by anything so painful as swatting (if they could catch them) but by removing the source of these lesser societies nourishment, which is ignorance and frustration.

The eight matters which the proposed London Society is to consider come largely into two categories: First, alarm at the increase of work which is going into the hands of salaried architects—that is architects employed by local and central government, industrial and commercial firms and contracting firms. Second, questions of fees, staff shortages, and the decline of the competition scheme. The latter category of subjects is eminently worthy of study and no doubt occupies a good many committee-hours at the RIBA and among the allied societies. That any architects should feel compelled to go to the length of forming an extra society to discuss them suggests—provided the architects are not merely inveterate pamphleteers and gang-addicts—that there are inadequacies in existing private (as apart from public) relations within the profession. It is a common fault throughout the profession's societies, and nowhere worse than at the RIBA, that the rank and file have little or no idea of the issues discussed by the Council, and no knowledge of the often perfectly valid reasons why certain steps cannot be taken.

On the question of the first category of subjects: the work

going into the hands of salaried architects, there is much which can be said, and much which has already been said in the JOURNAL. Let it suffice here to say that it is an obvious economic advantage for all concerns, public or private, which have a long-term building programme, to appoint and stick to their own architects. There is nothing to stop private architects being appointed. The reason a salaried appointment is always made is largely, of course, because the employers feel certain of a more efficient and a cheaper service. On both points private architects have largely themselves to blame: their past record provides the evidence of efficiency, and they created the position of cheap fully qualified, *permanent* assistant architect. Truly they are hoist by their own petard.

The answer to these issues is, of course, unity. Unity as a profession, whether public or private. Unity will only come about through knowledge—detailed knowledge, of the profession, by the profession, and recognition of the status of the architect both amongst his fellow-professionals as well as in the eyes of the public. With the achievement of knowledge these little splinter-groups, these well-intentioned flies in the ointment, will curl up and die. But if the RIBA and the allied societies do not move fast, they will be thoroughly fly-blown by some not too distant summer.



G. S. Pester, F.R.I.B.A.
L. H. Lockley
G. W. Blackwood
S. H. Statham, A.R.I.B.A. and David Steven, L.R.I.B.A.
Henry F. Hepworth, A.R.I.B.A.

It Comes To Us All—More Or Less

SIR,—I always regret, when reading the letters sent in to your JOURNAL, to hear of one architect attacking another, and Ian Hampson's letter I felt only added to the confusion of public opinion which comes about when architects indulge in this practice.

Stabilization of creative ability contemporary with the time of conception is a condition which comes to all architects in a more or less varying degree, and the work produced when such a condition takes hold must inevitably show the year of coming to rest.

Perhaps Mr. Hampson in 1975 may find his work being discussed as a product of 1955.

May I presume to advise in the following terms:—

To Mr. Hampson:—Surely a little moderation when attacking a fellow architect in the press would have achieved whatever result you desired and at the same time shown consideration for the profession.

To the author of the hall:—A little more divorcement from past glories may have had sufficient tonic effect on the design, if only to have avoided annoying Mr. Hampson.

G. S. PESTER.

Blackpool.

Don't Lead the Young Into Error

SIR,—Might I draw your attention to an error in your note in the first column of page 392 of your last issue? The release of information regarding the details of building cost is a matter for the contractor's consent, not the architect's.

I think you should make this clear to avoid leading some of your younger and possibly comparatively inexperienced readers into error.

L. H. LOCKLEY.

Surrey.

Another Nail In The Engineers' coffin ?

SIR,—The proposed (fortunately rejected) Conference Centre at Brighton is surely yet another good reason—if such be needed—for taking the architectural work of local authorities out of the hands of their engineers and surveyors.

G. W. BLACKWOOD.

Kent.

A London Society ?

SIR,—We have noted, with interest, the two letters in your issue of March 24 regarding the problems facing the architect in private practice.

For some while we have been giving much thought to these problems and we enclose, for your information, a copy of a letter which we have addressed to a number of our friends and colleagues in the London area.*

You will appreciate that at present there is no common meeting ground on which the architect in private practice can meet and discuss the many problems which face him today and therefore the Society which we have suggested would be mainly for that purpose and would not be an attempt to add one more Institute, Guild, etc., to the many already in existence.

S. H. STATHAM, DAVID STEVEN.

21, Brunswick Square, W.C.1.

**The following is the letter which S. H. Statham and David Steven have sent to colleagues.* (*See pages* 493 *and* 495.)

You may have read in the professional press that in Stoke-on-Trent and Plymouth, panels or societies of private practising architects have been formed to safeguard the interests of private architects in those cities.

In general, the aims are to safeguard and promote the interests of architects and in particular those of the private practitioner and these groups have expressed a desire to co-operate with similar groups in other parts of the country.

To this end and because we believe there is a real need for an organization to look after the particular interests of the private architect, we have been asked by a number of architects to undertake the initial steps to form a London Society of Private Practising Architects.

We are not proposing to form another Institute to cover the profession as a whole: the two existing organizations exclusively catering for architects, namely, the RIBA and the Institute of Registered Architects should, we consider, be able to deal with general professional problems. The Society we are proposing would, we hope, function with the active co-operation of both Institutes.

We are strongly of the opinion that in view of the very large post-war increase in the number of official and salaried architects, the interests of the private architect are receding into the background. There has, indeed, been considerable publicity given to the problems of the official and salaried architect in recent times but little has been said about those which confront the private architect.

It is clear from the announcements in the professional press that the interests of both the official and salaried architects are now going to be more vigorously pursued and we very much fear that the interests of the private practising architect will be submerged unless a society or group is formed actively to press his case.

We fully appreciate all that our Institutes are doing to assist our brother architects in salaried and official employment but we feel that an organization to act for private architects should be formed immediately to safeguard their interests.

We are convinced that a London society should be formed on similar lines to those in Plymouth and Stoke and we sincerely trust that you will give this matter your serious consideration for we are certain that private architects muct have a bond of unity. You will see that, attached to this letter, is a list of matters which in our opinion call for urgent consideration. This list is, of course, not exhaustive and we should be pleased to have any further suggestions which you consider should be discussed by the proposed Society. [List on opposite page.—ED.]

We hope you will bring this to the notice of your partners and that you will complete

the appended slip and forward it to David Steven indicating your willingness to consider joining the proposed Society, membership of which would be limited to principals in private practice.

Liverpool Church House Competition

SIR,—Whatever may be said of the merits or otherwise of the winning design in the Liverpool Church House competition—and probably enough has already been written in the Press regarding the architectural style and choice of facing material—there should in my opinion have been no second thoughts as to the rightness in clearing away the remains of the old Church builiding including the tower.

This tower which, if my information is correct, is not Victorian, having been designed in 1811 and erected some 10 years later, can surely not be claimed to be of special merit or of great beauty. Seen from the Bold Street approach it appears as a sombre shape brooding darkly over its surroundings, whilst from Renshaw Street which also converges on this tower, its significance is completely nullified by the vast mass of the Cathedral tower, which is visible almost directly behind it. The tower impresses one as being anachronistic; it could be dispensed with at no great loss to the City of Liverpool, and any sentimental associations must have considerably diminished during the period which has elapsed since the Church was bombed.

A word might be said regarding the hanging of the drawings in the exhibition room, as regardless of how "deplorable" the general standard of the drawings may have been, their preparation must have involved their authors in many hours of concentrated effort, and would appear to merit more careful handling than the many fingerprints, creasings and tears would seem to indicate.

HENRY F. HEPWORTH.

Hants.

PRIVATE ARCHITECTS

London Society Proposed

Two architects, S. H. Statham and David Steven, have sent a letter to colleagues and friends in the London area proposing that a London Society of Private Architects should be formed. Their letter is printed on the opposite page.

The following are matters which the proposed Society would consider:—

(1) That an effort be made to persuade the Architects' Registration Council to alter the Code of Practice in such a manner to restrict architects who are employed as salaried officials by either local authorities, county councils, ministries or other national bodies, taking on private work which should, under normal circumstances, be carried out by architects who are in private practice;

(2) To bring to the notice of the public the ever increasing intrusion into the field of private practice by the architects' department of the ministries, county councils. local government, etc. This in particular applies to the LCC, whose architects' department is carrying out more and more work which was previously done by private architects often as the result of open architectural competitions, or by architects known to be capable of carrying out the work to whom the commissions were allocated;

(3) To also bring to the notice of the public in general and the larger industrial and commercial firms in the country, the diminishing amount of work which will very soon become available to the private practising architect due to the current practice of the majority of the large industrial and commercial concerns in setting up their own architectural departments;

(4) To bring to the notice of the public and to the Architects' Registration Council in particular, the dangerous and unprofessional method of advertising which is now being employed by many of the large firms of contractors who openly advertise architectural facilities for patent forms of construction, types of buildings, etc.;

(5) To bring to the notice of the public and the institutes the growing concern of the profession in the decline of the competition system upon which many well-established firms were founded;

(6) To press for a revision of the scale of fees for state-aided housing schemes;

(7) To offer guidance and assistance to members of the society in the assessment and collection of their fees;

(8) To examine the possibility of controlling the number of persons who become qualified as registered architects, to consider the post-war staff problems of the private architect, in particular the shortage of senior assistants and to assist in staff matters generally.

[See leading article on page 493.]

CITY OF LONDON

City Architect to be Appointed

The Common Council of the City of London Corporation has been asked by its Officers' and Clerks' Committee to appoint a City Architect at a salary of between £3,250 and £3,500 a year. His main work in the immediate future would be to control aesthetics and design of new buildings in the City. He would also establish liaison with other planning officials.

He would control the architectural services now performed by several Corporation departments. The eleven architects now employed on this work by the Corporation are largely under the control of members of other professions.

Since 1949, the City Corporation has spent over £90,000 on architects' fees.

The report of the City Corporation's Officers' and Clerks' Committee says the City Architect should take over most of this type of work for the Corporation.

At the meeting of the Common Council at which the appointment of a City Architect was approved, Deputy Newcome Wright criticised the powers which would be granted to him. "I think it is highly undesirable that we should appoint a man to veto other people's plans," he said. Douglas Young said that he approved of the proposal so long as the architect would not act as an architect.

Mr. Wright said: "I have yet to meet three architects who would agree on what was a beautiful building.

"The result of such an appointment might be a type of municipal architecture which the City might regret.

"It is grossly unfair to private architects that all City buildings are getting into the hands of municipal architects."

He needed to be an artist and an architect, a barrister and an organiser, said Mr. Wright. "We are asking too much of one man."

C. R. Whittington said that they were proposing to employ a man who would say "This is good," or "This is bad," to eminent architects. He would also have to stand up to Ministries, the County Council and the Fine Arts Commission.

The proposed salary (£3,250 to £3,500) would not be sufficient to attract a man of this calibre.

Captain Instone said if the proposal had been brought in five years ago the City would have been saved money, criticism, and he would have been saved from making many speeches.

The criticism had been caused through no fault of the City Planning Office but was a fault of policy. "Nobody rejoices as much as I do at the idea of co-ordinating the whole set-up."

H. J. E. Stinson, Chairman of the Officers' and Clerks' Committee, in introducing the report, said something had to be done to co-ordinate the eleven architects employed by the Corporation. It was something by which they could meet criticisms of their Town Planning Committee. They had now come to a position where the appointment of a City architect was essential.

The present set-up was wasteful and inefficient. They had no architect who could represent the Corporation with reference to the LCC and in consultation with very eminent firms of architects who submitted plans to the Town Planning Department.

Of the £90,000 spent on architects' fees in the last six years, £38,000 was paid to Sir Giles Gilbert Scott: the appointment would make a considerable saving.

Paul Paget said that he thought the salary was good enough and suggested that Mr. Whittington had underrated the attraction of an appointment of this kind.

NUFFIELD

Research Fellowship

The Nuffield Foundation is inviting applications for a fellowship tenable for two years at the Foundation's Division for Architectural Studies, in London. The

(*Continued on page* 500)

DIARY

Lighting and the Architect. Exhibition by the British Thomson-Houston Co. Ltd. At Crown House, Aldwych, W.C.1. 9.30 a.m.-5.30 p.m.

FROM APRIL 19 TO SEPTEMBER

A New Town Comes to Life. Talk by L. E. White, Liaison Officer, Harlow. At the HC, 13, Suffolk Street, S.W.1. 6 p.m.

APRIL 19

Willing Does It and *Bride and Prejudice.* Two films at the BC, 26, Store Street, W.C.1. 12.45 p.m. APRIL 20

Building Industry in Denmark. Talk by three Danish surveyors, Aage Christensen, Erling Fredericksen and Bjorn Bindsley. At the RICS, 12, Great George Street, S.W.1. 6 p.m. Admission by ticket only.

APRIL 20

COST ANALYSIS:

We print below a selection of the letters we have had from architects and quantity surveyors since our Guest Editors wrote their first series of costs articles. The letters refer particularly to the article on "Cost Analysis," published on February 24. They illustrate the division between the two professions: while architects are in need of systematic cost guidance at the design stage, and thus welcome the method of providing it that we described, the quantity surveyors seem to imply that the guidance at present provided cannot be improved upon.

THE GUEST EDITORS WRITE: *We are grateful for the consideration the quantity surveyors have given to our proposals and for the criticism offered. But it is disappointing that their attention is mainly given to what appear to them to be insuperable problems in cost analysis and not to the architects need which it essays to fill. The quantity surveying profession has frequently (and rightly) urged that its advice should be sought at an early stage in building projects, but the guidance it has usually given has not been sufficiently detailed or systematic for the architect's needs. The surveyors see their main contribution as one that comes* after *the vital constructional decisions have been made, whereas we believe it should come* when *they are being made. It seems illogical that the records of building costs—priced bills and final accounts—should pile up in professional offices without the information they contain being used to guide the design of projected works. Cost analysis is a more useful method of examining these costs and of indicating where variations take place, and which parts of the building would repay detailed cost investigation. There are problems in developing this method of analysis but none which cannot be solved by careful study. These problems must surely be weighed against the benefits the method might yield before they are dismissed as being too difficult. In these days, when the boundaries of human knowledge are being extended to undreamed of limits, it is surprising that quantity surveyors should be more or less satisfied with their existing methods and should appear reluctant to invest in the study of a subject in which they are considered expert. We have made some comments which are attached to individual letters, but there are certain questions raised in more than one letter which call for elucidation here:* AVERAGE COSTS: *Both E. R. Parrinder and R. D. Harris have taken it that a number of cost analyses should give an average and thus a "yardstick" price for an element or group of elements. This was not suggested, nor do we think that architects and quantity surveyors would be thoughtless enough to study or use an element cost blindly or in isolation. As Mr. Harris says, "no one but a lunatic . . ."*

letters from architects

SIR: I have read your article published in the JOURNAL of February 24. I entirely agree with the objects of cost analysis and shall be very happy to co-operate with you in any way I can.

If cost analysis is to be applied to a job it is essential, as you are aware, that it should be applied at the design stage. This means that the results which you wish to publish could not be quickly achieved.

RICHARD SHEPPARD, F.R.I.B.A.

SIR: After reading your article on cost analysis in the JOURNAL for February 24 I would like to wish you every success in forming a costs library. It would be a great step forward in building knowledge and professional efficiency. It is so true of present practice that when savings have to be made in building costs the scheme has usually advanced beyond the stage when major changes in construction can be made.

I look forward with interest to further articles on this subject.

RAYMOND G. TURNER, A.R.I.B.A.

SIR: School architects have been keenly aware for some years past of the need to have accurate knowledge of the costs of all the constituents of their jobs, and to use this knowledge in selecting or rejecting materials or methods of construction. Otherwise, they would not have been able to keep building under the ceiling prices of Ministry of Education, in the face of the rise in costs since 1950.

To them at least, cost analysis has come to stay. And there seems every reason to use the same sort of procedure for all other types of buildings, since accurate knowledge of costs tends to improve efficiency. The first, and perhaps best, place to try and reduce overall building costs is undoubtedly on the architect's drawing board.

Of course, it is possible to overdo this kind of analysis and waste a good deal of time. It is no sort of substitute for architectural ability, or hard thinking. But, in conjunction with these, it is of immense value to our clients and ourselves.

H. CONOLLY, F.R.I.B.A.

COMMENT: *We would draw the attention of our quantity surveyor correspondents to Mr. Conolly's last sentence, for we agree with his belief that the cost knowledge yielded by analysis must not be separate from other abilities used in constructional design.*

SIR: I read with great interest your suggestions for a published cost library, based on analyses of work carried out in various parts of the country. Recent experience of mine has shown quite clearly the need for such information being readily available, because it does give some basis for providing quickly an estimate of the cost of building which is likely to be more accurate than the usual method of cubing or basing estimates, on an "all-in" price per square foot.

Clients usually commence their discussions about building projects with four important

(*Continued on page* 498)

READERS COMMENTS

would do so. Architects and quantity surveyors are not lunatics and would surely realize that element costs yield their proper significance when considered as part of all *the technical information about a building or an element. For instance, a price per square foot floor area of "works below ground floor level" would be seen as expressive of all the factors affecting the element (e.g., the site conditions, the constructional method, the bearing pressure, the water table, the specification and so on . . .) all of which should be known to the architect or quantity surveyor using the analysis of which the element formed part. Clearly, in the planning of projected works the most fruitful analyses will be those prepared in the same office, of buildings well known to both architect and quantity surveyor.*

EXTRAVAGANCES : *Some of our quantity surveyor correspondents appear to have assumed that cost analysis is a method of reducing costs as much as possible or of highlighting particular extravagances. It is intended as a method of discovering the distribution of cost in a building so that an architect may be guided to make the best use of the money available when designing another building of the same type. Whether he aims at cheapness or extravagance is up to him and to his client, but he can only direct his aim with the aid of cost analysis. We think that the quantity surveyor correspondents have laid too much stress on the detection of extravagances. While cost analysis must be in the nature of a post-mortem and may not be able to affect very greatly the cost of the particular building for which it was made, the quantity surveyor correspondents may have overlooked the assistance it can give to architects when designing a job and before it reaches the approximate estimating stage. Mr. Every suggests that extravagances are apparent to an experienced surveyor from the bill, but at this stage it may be too late to make any but superficial changes in the constructional design, and whether they can or not is largely irrelevant. What is needed is a method of guiding the design so that unwanted extravagances or other expenditure are avoided* before *the bills of quantities are prepared and tenders received. This we think cost analysis can help to do.*

RELEASE OF COST INFORMATION: *Whether a builder and his client would be willing to allow an analysis to be prepared from the priced bill is, of course, a matter for their discretion. It should be noted that the analysis does not reveal the pricing rates used. We are confident that a majority will allow analyses to be made and published—witness those that have appeared in the* JOURNAL *so far, from both private and public clients. The more people who contribute in this way, the greater benefit will accrue to the building industry and to the public in general.*

COST LIBRARY : *We welcome the support for this proposal in some of the letters printed below. For this library to be of value it is desirable that for each type of building the set of elements used should be as nearly as possible the same. The description and technical information for each element should be as full as possible so that the proper inferences may be drawn from element costs. In the case of the buildings shown in the* JOURNAL'S *new form of presentation, an attempt is being made to meet these requirements.*

letters from quantity surveyors

SIR: No one is likely to disagree with your Guest Editors that architects, quantity surveyors and builders could all benefit from a greater knowledge of comparative costs of building. I wonder, however, whether I am alone in feeling disappointed that the panacea should turn out to be a method of cost analysis by elements.

Everyone knows that costs per foot cube or per foot super are very approximate, but the danger of the elements method is that it has a superficial appearance of accuracy. I believe that this appearance is deceptive and that comparisons similar to those which the Guest Editors suggest may be highly misleading for the following reasons:

1. Unless all the analyses are prepared by the same persons there are bound to be differences of opinion is ascribing items to particular elements. For example, it would be interesting to know how the cost of the curtain walling to one block of Barnet School was divided between "external walls and facings" and "windows."

2. The cost, per sq. ft. floor area, of foundations and roofs will obviously vary with the number of storeys: e.g., the roof of a two-storey buildings will cost about half that of a single-storey building of the same total floor area. This factor probably accounts for the very different roof costs of schools A, B, and C (AJ: February 24: page 263). Doubts should be cast on the suggestion that "on School A reductions should be on roof . . ."

3. Site conditions will affect the elements of "work below ground floor level" and "playgrounds and paved areas." It is doubtful whether school A ought to be advised to spend more on playgrounds, as the higher costs for schools B and C may be due solely to sloping sites.

4. The different blocks of a building may vary, as at Barnet, in height, in constructions and accommodation; it will be impracticable, unless bills of quantities are to be made much longer for the blocks to be separately analysed, but without separate analyses it will be impossible to "compare the costs of different types of element."

5. Prices often vary widely for purely local reasons.

6. The analyses will rapidly become out of date because of fluctuations in the rates of labour and materials. I suppose it is possible that a building statistician, if such a person exists, might be able to take all these difficulties into account and extract valuable general information from the analyses of a very large number of similar buildings, such as schools, where the clients' requirements in accommodation and cost are rigidly standardized. But I do suggest that it would be highly dangerous for an individual architect, quantity surveyor or builder to make assumptions either from a single published example or from the average of a number of examples. After all, the Guest Editors themselves say "anyone who attempts to estimate on the basis of an *average* cost is almost bound to get an unreliable answer." Moreover, the difficulties and dangers would obviously be

(*Continued on page* 499)

architects continued

aspects clearly in mind at the outset:

(1) The amount of money which is to be spent.

(2) The amount of accommodation required.

(3) An idea of what the building might look like.

(4) A date for completion.

These items are in most cases visualised separately and the notion that they are in any sense interdependent is, at its best, vague. As I see it, the architect's first task is to indicate to his client the prevailing factors which will necessitate some revision of his first thoughts about the project, when each of these headings is considered in relation to the others.

If we take cost first, we usually find that more accommodation is asked for than can be obtained for the sum mentioned, under any circumstances.

Before a single sketch is made it will be necessary to produce reliable evidence relating cost to the amount of accommodation to be provided. If an energetic endeavour is to be made to provide the accommodation, without drastic reduction, while at the same time keeping capital expenditure within bounds, it becomes apparent that the utmost economy must be exercised. It will be necessary to show how this will, of necessity, influence not only the way in which the contract is conducted, but also the layout of the structure and, in the end, the appearance of the building. A successful building requires, in addition to a good building team, a good client—and it should be possible to regard him as an important consultant whose co-operation is as vital as that of the remainder of the team. Many of Basildon-Jones's difficulties stem from his comparative isolation, not only from his consultants, but also from his client.

It may be of interest to your readers if I quote a recent experience in which, as a small firm of architects, we were required to design a factory providing some 11,000 square feet of accommodation for occupation to commence within eight months. This was a tall order, particularly if one took into account work on hand, the fact that no increase in staff was possible, and the demands which were then (1954) being made on the building industry as a whole. There were good reasons why this time could not be extended, and while it is true that often insufficient time is allowed for preparation, we must recognise that a sense of urgency provides a certain stimulus. It is perhaps questionable whether the normal preliminaries take too long under the conditions which affect so many contracts to-day.

We considered it necessary to dispense with many of the usual formalities, if time was to be found to give proper consideration to the design of the building. The project became the subject of a negotiated contract, and there was not time in which to arrive at a fixed contract sum. It is evident that the estimate of cost became of vital importance. Numerous enquiries were made, without success, in an endeavour to find reliable records of the cost of similar buildings. Finally approximate quantities were taken off and in the light of such information as was then available, including statements of cost per square foot for similar accommodation published in your JOURNAL, it was certainly not on the high side. Subsequent co-operation was of such a high degree that there were often times when architects, structural engineering consultants, heating consultants, contractor and client were clustered round drawing boards together. Because of the great demand in the industry for materials, it was also necessary to call in sub-contractors immediately to ensure supplies of patent glazing, roof decking, steel work, automatic heating controls, etc. While it is not possible to outline the project in detail, the fact remains that the target date was achieved, despite some of the worst building weather we have had for years. It now appears that the final cost will almost certainly be some 10 per cent below the original estimate, and the contractor will show a good profit. We think that the results could be even better and it is reasonable, therefore, to ask—why can't we do this more often?

"Provincial Builder" in his letter published in your issue of March 3, rightly suggests that it is necessary to create high morale on the site, but while not wishing, at this point, to elaborate on this, or to disagree with the remainder of his suggestions, it is only part of the story. His observations tend to infer that the blame for high costs and inefficiency lies chiefly with the architect. There is no doubt some justification for this, but let us consider the morale of the architect himself, when he must often find that even after most careful drawings and instructions have been issued, disastrous failures occur on the site because of the inability of many operatives to read drawings and to interpret instructions. In this context the problem of education looms large. How much of the trouble stems from the fact that the different parties involved in putting up buildings never meet, in the fullest sense, until such education as they receive is considered to be complete?

R. TOWNING HILL, A.R.I.B.A.

COMMENT: *The problem Mr. Hill describes—that of finding and presenting to the client a workable relationship between the four aspects he lists, is one that cost analysis could help to solve. It can be used to establish "target" costs for the various elements which would be particularly important in negotiated contracts, and in direct dealings with sub-contractors. We would like to know what form of contract was used, what was the contractors incentive and why there was no q.s. in the team round the drawing board?*

SIR: We have read with interest the article in your JOURNAL for February 24 regarding the method of analysing the cost of a building in accordance with its functional parts. The basis of the cost analysis would appear to be in accordance with the Ministry of Education Building Bulletin No. 4, and, following the recent publication of an analysis of school building in the East Riding, we attempted to arrange for the cost of two of our schools, one of which is now under construction, to be analysed in a similar way.

The matter was discussed at some length with our quantity surveyors and the first difficulty that arose was the question of obtaining the permission of the authority concerned as the quantity surveyors were employed direct by them.

It was proposed to so draft the bills of quantities as to be able to obtain the cost of each element in the building without the need for further abstracting. The disadvantages of this arrangement, however, are numerous, *e.g.*

1. The main function of the bill of quantities, *i.e.*, to provide a concise basis for quick tendering is, to some extent, sacrificed.

2. The preparation of the bills on the new basis would involve considerably more time.

3. The document would be increased in size with a proportionate increase in the cost of typing.

4. The time allowed for tendering would have to be increased to allow for the contractor to collect and bill the items for his sub-trades and obtain prices, also to allow the estimator to price and check the increased number of items in the bill.

5. The present day costs of tendering represent a severe burden on contractors generally and it was felt that such costs should not be increased without due justification.

6. The co-operation of local builders is a matter for conjecture.

It will be appreciated that items 2 and 3 above are matters directly involving the employer as they involve increased costs in the preparation of the bills.

Items 5 and 6 represent a further obstacle and whilst our quantity surveyors were ready and willing to co-operate the agreement of the authority and the builders could not be guaranteed.

Reluctantly, therefore, we abandoned the project. It would seem that as the difficulties are largely a matter of costs and administration, some thought should be given to the suggestion that either the RIBA or the Building Research Station, in conjunction with private architects, should take this matter up in the interest of the profession and the building trade as a whole—particularly now, when largely unforeseen rising costs are causing us considerable anxiety. Certainly the additional administration and cost involved renders the project almost impossible for the private architect or quantity surveyor, but the value of the analysis is undoubted, both in the design and the "post-mortem" stage.

WILLINK AND DOD, F.R.I.B.A.

COMMENT: *The difficulties and possibilities of elemental bills have been investigated to some extent, and such bills have been used on a limited number of contracts. We hope to describe the system and report its findings so far, in a later article. We agree whole-heartedly with Messrs. Willink and Dod's suggestion that official bodies and BRS should take up the matter.*

quantity surveyors continued

multiplied on buildings such as hospitals, laboratories, factories or even pubs where the clients' requirements would be far from standardized and the nature of the elements infinitely variable.

The Guest Editors ask whether quantity surveyors would be willing to do the analyses. They may, I suggest, do so reluctantly unless they are convinced that the practical information likely to be yielded will justify the not inconsiderable effort. Only hypothetical examples were given in the article on cost analysis and the assumptions made from them were not, in my opinion, very convincing. It is difficult to see how the analyses can be used in *planning*, because the cost of the various elements, per foot super of the floor area, will not be known until they have been measured in detail and tenders obtained; by that time it would be too late to make such radical alterations as were suggested for the three schools.

The MOE have now had at least four years' experience of the analysis by elements system and it would be very interesting if they could, through the Guest Editors, be persuaded to give your readers definite examples of the way in which the results have been applied.

E. R. PARRINDER, F.R.I.C.S.

COMMENT: *We do not understand Mr. Parrinder's ". . . superficial appearance of accuracy . . . ." Given an accurate bill or final account and an adequate description of what comprises each element there can surely be no deception. The problem of ascribing items to elements is essentially a question of establishing an agreed definition for each element in each type of building, a problem in no way intrinsically difficult and perhaps in some ways similar to that which gave rise to the Standard Method of Measurement. For schools, definitions have already been made and schools are very far from being rigidly standardised buildings. We do not think that these are the only definitions; indeed each office could adopt its own set of definitions, except that the interchange of information between offices would then become much more difficult.*

On point 2 in Mr. Parrinder's letter, neither of schools A and C were entirely single storey ("upper floors and staircases" were shown in the list of elements) so the difference in foundation and roof costs cannot be explained as he suggests. The purpose in giving these analyses was to show how the cost of elements can vary within a given total, a thing rarely apparent from the bills or from the usual methods of comparing costs. It was intended to demonstrate in principle a more analytical method of studying costs. An explanation of the difference in cost of any one element would follow on an examination of the specification and related factors which of course were not described in the three fictitious examples given. In his last sentence here Mr. Parrinder is quoting out of context, for the suggestion was preceded by ". . . a cost analysis would show where reductions could most beneficially be made . . ." and was followed by ". . . it might . . . be too late to make changes in the structural elements."

Point 3: Mr. Parrinder seems to asume here that the object of cost analysis is to provide the cheapest building possible. This is not so. If in school A the architect had managed to provide services for 16s. instead of 18s. 1d. he is at liberty to spend the saving on the playgrounds. That he may have an easier site than B or C is immaterial.

Point 4: The "unscrambling" of a bill for a variety of blocks would, we agree, be difficult where there was an inextricable mixture of materials and constructional methods in a complicated building. But there appears to us to be no major difficulty in the separate billing of blocks. The extra cost of lithography and the increase in estimators' time must be set against the advantages of useful cost information and assistance to the builder in the management of the contract.

Points 5 and 6: Local price variation and fluctuations will be no more misleading in the form of an analysis than in a bill or any other kind of examination employed by a surveyor. We believe that "local reasons" are often used to explain cost differences that on analysis are found to be due to quite other causes altogether. Other questions raised by Mr. Parrinder are dealt with in our introduction.

SIR: In your article on cost analysis in the JOURNAL for February 24 you invite correspondence and ask whether surveyors would be willing to prepare the proposed analyses. Surely the answer must be that whilst quantity surveyors would wish to avoid being unco-operative, they would only co-operate willingly if they were convinced of the value of this work. So far, I think they are far from being convinced that the analyses would be of value.

Apparently the MOE found that the cost of both primary and secondary schools varied considerably and that the range of prices could not be accounted for by differing requirements, different site conditions and price fluctuations. Quite naturally the MOE set an enquiry in motion, and it is reasonable to suppose that with so many examples at its disposal the Ministry was able to extract some useful statistical information. When this is put to some use, *i.e.*, the conclusions are made available to the numerous architects designing schools today, we may be better able to judge whether the effort was worth while.

In the meantime it is worth stressing how very misleading and dangerous statistics can be unless these limitations are realized. If the roof of a single-storey school cost 9s. 1d. per foot super of floor area and the roof of a 3-storey school cost 3s. 1d. per foot super of floor area, the cost of the roof is 9s. 1d. per foot super in both cases and no one but a lunatic would take the average (6s.) and use this as a yardstick for judging extravagance or otherwise of the next (say) single-storey school; but this presumably is what the JOURNAL would have us do, not realizing perhaps that if the 6s. is the average of a hundred examples instead of two, the error (not so obvious because the average number of storeys will not be apparent) will still be precisely 100 per cent.

The only alternative to using the average costs of a number of schools as a yardstick in this way is to pick on the nearest equivalent school, *e.g.*, when considering roofs, only to compare single-storey four form-entry schools with single-storey four form-entry schools, but this would limit the scope of the system enormously as, in fact, there are very few schools which are wholly of one, two or three storeys.

In fact one would need considerable space in which to describe just a few of the traps for the unwary but at least it should be clear that any conclusions based on the average cost of factories or of hotels, churches, pubs, etc., could be much more misleading than those based on the average cost of schools—where the requirements at least are similar.

The conclusions drawn from the articles published seem to me to be particularly naïve. Structural elements are interdependent and it is, for instance, perfectly sound to have a more expensive frame if it makes corresponding savings in the foundations or the floors or roofs. As the structural costs of schools A, B, and C were much the same, one cannot be justified in querying the cost of school C's frame merely because school A has no frame and the frame of school B (which is only of one storey) is less costly. Quite possibly only a part of school B has a frame anyway.

Surely architects do not require a cost analysis to show them that they have specified costly or economical floor finishes or playgrounds. I would suggest that the differences in cost shown could be due to a number of possible factors, the least probable of which is the architect's ignorance of cost analysis.

Quite apart from the reliability (or otherwise) of the information that can be obtained from the cost analysis, it is not at all clear how it can be used. During the design stage the architect wants to know whether his proposals for particular units of construction such as the external walls of his three-storey classroom block or of his two-storey administration block or of his single-storey assembly hall are likely to be economical and the average cost of the whole of the external walling of another school (or series of schools) per foot super of floor area gives no clue whatsoever.

After tenders are obtained few architects are interested in a post mortem unless the cost is too high, when the reductions must be those which cause the least fundamental alteration and delay, and these can be selected from the bill of quantities and not from a cost analysis.

In conclusion I can only say that I hope that quantity surveyors will co-operate if architects really want these analyses, but that I remain entirely unconvinced of their usefulness.

R. D. HARRIS, A.R.I.C.S.

COMMENT: *Mr. Harris has misunderstood us on the question of averages. There is no*

quantity surveyors continued

average, and analyses are not *to be used "blind,' but as part of all the technical information of the jobs to which they refer. We do welcome Mr. Harris's last sentence, and when we publish our article on "cost planning"—the methodical use of analyses at the design stage—we hope to convince him.*

SIR: I read with interest the article on cost analyses in your JOURNAL of February 24. The suggestions made may not, however, yield the benefits suggested. In my office we have for many years analysed the cost of every contract, on a similar basis to the elements more recently adopted by the Ministry of Education, but the chief use we have found to result from the data we have compiled is in assessing the probable cost of specialist work in early estimates for subsequent similar work. When we have to make an approximate estimate which is something better than an estimate on a foot cube or foot super basis, we do so by preparing approximate quantities from the sketch drawings available at that early stage. Frequently at that time there is no information available on which it is possible to estimate such items as heating and electrical work, etc., and in such cases we have found that our accumulated records of the cost per foot super of the various sections of previous similar jobs enables us to make a reasonably accurate allowance for the probable cost of these services.

The analysis by elements, does, it is true, highlight any particular extravagances, but it must be remembered that these items are generally readily apparent to an experienced surveyor from an examination of the priced bills of quantities and he does not require this form of analysis to draw his attention to them.

The suggestion that the bills of quantities should be rearranged into a form more in accordance with the split-up of the elements used by the Ministry of Education is not, in my opinion, a good one. It must be remembered that the first function of a bill of quantities is to obtain an accurate tender in the most efficient manner, and experience tends to show that the present trade system suits the builder best, particularly at the present time when sub-trading is so prevalent. There might be more to be said for this suggestion if bills of quantities were used as an instrument of cost control. This, however, is not often the case. As things are, all the quantity surveyor usually does is to record cost after the event. If bills of quantities are to be an instrument of cost control then it would be necessary for the architect to break down each certificate showing the amount certified for each element, so that the spending against each item or section of items can be controlled throughout the currency of the contract. This would mean that the architect would not be able to use savings in one section of the job against extras elsewhere.

There is one further point which is worth mentioning, and this is with regard to the copyright vested in the prices in a bill of quantities. With regard to work for local authorities and Ministries, such as the schools referred to in your article, there is probably not so much difficulty about disclosing costs, but it may well be different when it comes to works for private clients. There are a number of clients who would most strongly object to the cost of their factory or office building being made public knowledge. There is also the question of the copyright which vests in the builder with regard to the rates in his bill and it would certainly be a breach of faith to disclose these prices, even in the form of elements, without first obtaining the builder's permission to do so.

C. T. EVERY, F.R.I.C.S.

COMMENT: *Mr. Every is hardly fair when, referring to the possibility of arranging bills by elements, he suggests that the present system "suits the builder best." We do not think this can be known until the idea has had a reasonable trial and its shortcomings are set against its advantages, as compared with the conventional bill. We have knowledge of a few contracts which were let on elemental bills, and hope to describe these in a later article. Mr. Every is unfortunately correct when he says that ". . . all the quantity surveyor usually does is to record the cost after the event . . . ." It is also regrettable that there are few indications from quantity surveyors that they are prepared to adjust their procedures to assist in controlling cost* before *the event. Historically the bill of quantities was intended only for obtaining a price but in default of any other means it has come to serve many purposes for which it is not ideally fitted and which have only arisen in recent decades. If cost control is badly needed to-day, surely the bill should be adapted to serve this need.*

News—(*Continued from page* 495)

holder of the fellowship will be expected to take part in the Division's programme of research, which at present covers hospitals, laboratories and agricultural buildings. The stipend will be between £500 and £750 per annum.

The fellowship is open to men and women who are citizens of the United Kingdom and who have completed a course qualifying them for registration as architects. Applicants should have gained some practical experience after qualifying.

Applications must be received not later than May 1. Full details and application forms are obtainable from The Director, the Nuffield Foundation, Nuffield Lodge, Regent's Park, N.W.1.

HOUSING

February Figures

23,345 houses were completed in Great Britain during February, compared with 19,786 in the same month last year.

15,630 of the houses completed in February were the work of local authorities. Private builders were responsible for 6,710.

SCHOLARSHIP

Marley Tile Award

The Marley Tile Travelling Scholarship for the Study of Architecture in Mexico, Venezuela and Brazil has been won by Gordon Graham, ARIBA, of Nottingham.

There were 72 applications for this scholarship (value £750). The selection committee comprised Howard V. Cobb, H. T. Cadbury Brown and Richard Aisher (of the Marley Tile Company Ltd.).

MOW

Bath Advisory Committee

An advisory committee has been set up at Bath to advise the Historic Buildings Council for England and the Bath Corporation on a programme of repairs to the City's terraces which are of outstanding architectural interest.

The members of the committee are:—Aldermen Berry, Day and Taylor and Councillor Biggs—representing Bath Corporation: R. R. Henshaw, G. E. Hughes—representing Bath Preservation Trust; the Earl of Euston and John Summerson—representing the Historic Buildings Council for England, and Lord Methuen, and Sir Orme Sargent—independent members nominated by the MOW.

The committee held its first meeting on March 17. Alderman Berry has been elected chairman and Lord Euston deputy chairman. Jared Dixon, town clerk of Bath, is the honorary secretary.

The cost of the programme of repairs to the terraces will be met by contributions from owners, by grants from the Bath Corporation and by grants from the MOW after consultation with the Historic Buildings Council for England. The grants from the MOW will be made under Part I of the Historic Buildings and Ancient Monuments Act, 1953.

Among the subjects which the Committee is considering is the most suitable method for restoring the stone facades of terraces such as The Circus.

NFBTE

"Careers in Building"

"Whether it be in the traditional style of Sir Giles Gilbert Scott's addition to Harland House, Oxford, or the modern approach exemplified in the Royal Festival Hall, building offers scope for a worth while career."

So says a caption in the NFBTE's pamphlet "Careers in Building," which is being circulated to youth employment officers, schools' careers masters and regional federations. It is designed to give "a broad outline of the openings for young men in the building industry, how they may be found, and how technical training may be obtained."

LEWISHAM

Architect-Mayor

G. T. Harman, FRIBA, is the Mayor-elect of the Metropolitan Borough of Lewisham for the year 1955-56. He was Mayor of the Borough for the year 1952-53.

APPOINTMENT

Wilfred Lowry has been appointed borough architect and town planning officer for Southport.

WESTBURY HOTEL, BOND STREET, LONDON, W.1

The chief technical interest of the Westbury Hotel (Architect: Michael Rosenauer) lies in the planning. This is influenced mainly by the development of room service. Though there are 219 bedrooms, the dining room accommodates only 90 and the area of public rooms is proportionately small. Part of the kitchen space, however, is devoted exclusively to room service. Food prepared here is placed on specially heated trolleys which pass, via a service lift, to the bedroom floors. Following American precedent, about a third of the ground floor is given over to shops which are accessible from the hotel. The public rooms, but not the bedrooms, are fully air-conditioned. As there are no public rooms on other than the ground floor there is no "grand staircase":

KEY

Basement

1. boiler house
2. pump gallery
3. fuel store
4. paint store
5. area
6. refrig. plant room
7. deep freeze
8. meat store
9. ice making machine
10. pneumatic tube plant
11. water softener plant
12. silver cleaning room
13. goods lift
14. service lift
15. tel. equipment
16. veg. preparation
17. butchers shop
18. fish store
19. dry goods store
20. dairy store
21. veg. store
22. lockers
23. cold room
24. wine store
25. lavatories, male staff
26. gents' toilet
27. shoeshine
28. air conditioning plant room
29. letting space
30. barber's shop
31. linen store
32. engineer's office
33. store
34. workshop
35. furniture and trunk store
36. china, glass and stationery store
37. ejector room under
38. meter and interceptor room
39. transformer room
40. battery room
41. intake room
42. staff dining room
43. servery
44. dry refuse sorting and storage
45. lift well
46. luggage lift
47. staff and goods entrance
48. corridor
49. corridor

Basement plan [Scale : $\frac{1}{32}$" = 1' 0"]

Mezzanine plan

WESTBURY HOTEL, BOND STREET, LONDON, W.1 (continued)

Typical bedroom floor plan

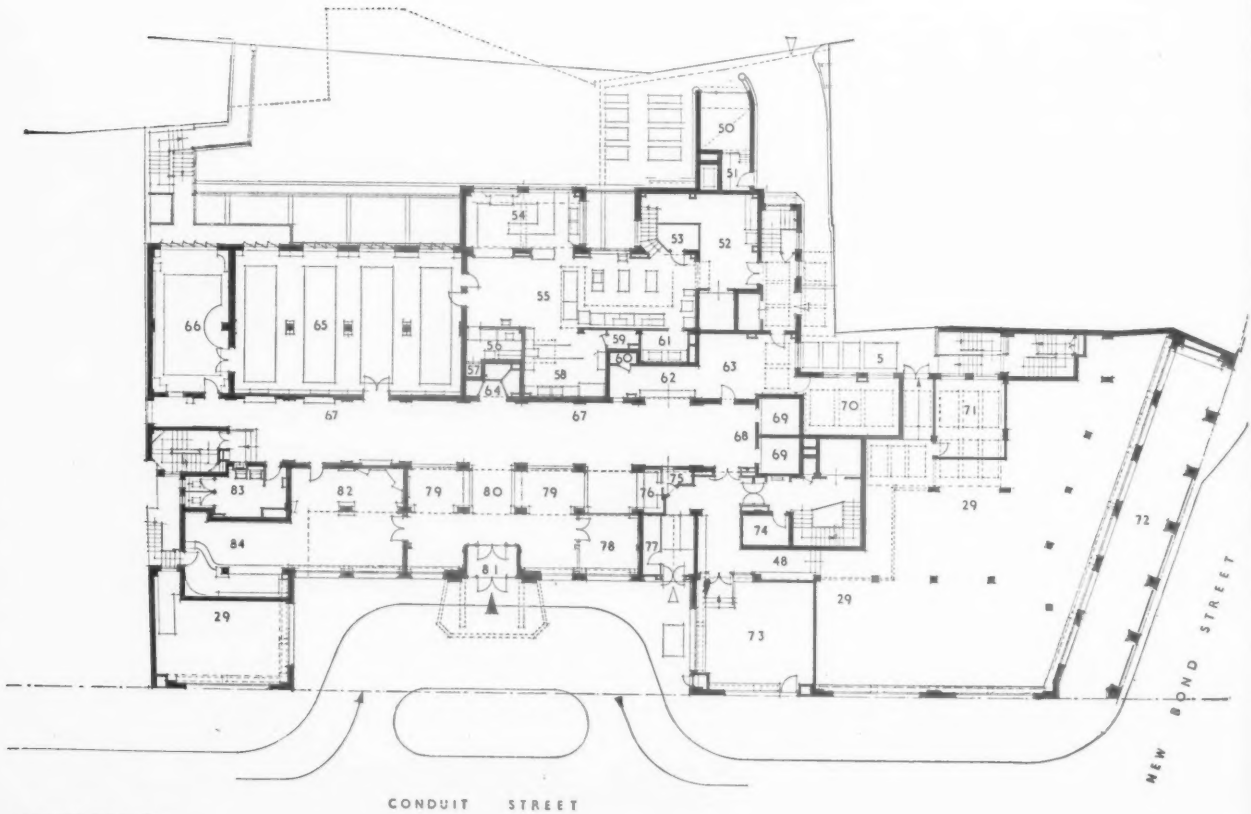
KEY

Ground floor

50. refuse bins
51. bin wash
52. room service
53. chef
54. wash up
55. kitchen
56. wine service
57. wine lift
58. hors d'oeuvre
59. cold store
60. safe
61. pot wash
62. reception and cashier
63. office
64. telephones
65. restaurant
66. tea room
67. gallery
68. lift lobby
69. pass. lifts
70. office
71. manager's office
72. arcade
73. B.O.A.C. booking office
74. parcels and baggage
75. tickets
76. book stall
77. luggage
78. private lounge
79. lounge
80. lobby
81. hotel entrance
82. cocktail lounge
83. ladies lav.
84. bar

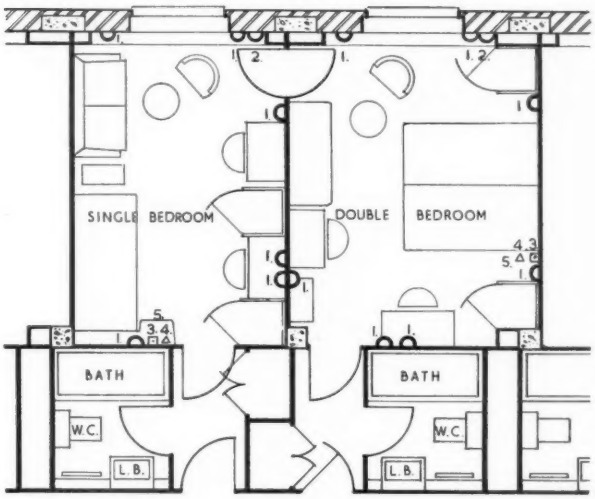
Typical bedroom floor

85. room service
86. single bedrooms
87. double bedrooms
88. valet room

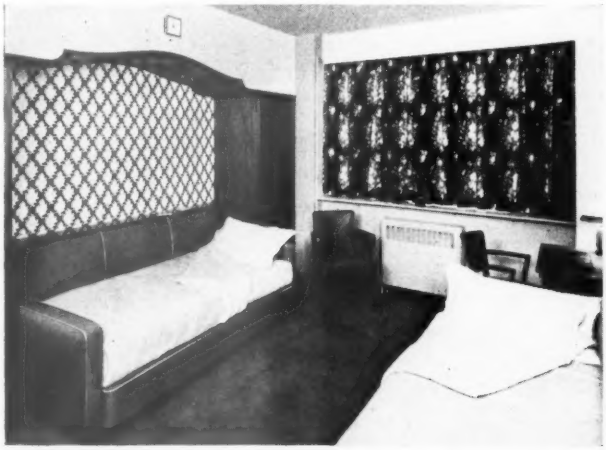


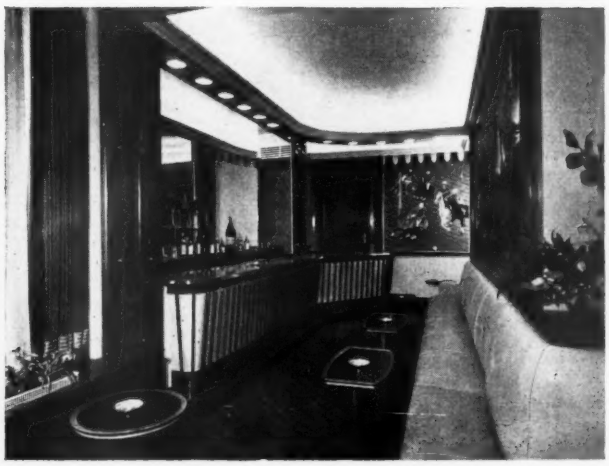
Ground floor plan

all stairs are of the escape-stair class and visitors' access to the upper floors is by the two variable voltage duplex lifts. All bathrooms are internal (one to each bedroom) and are generally so arranged that each adjacent pair of bathrooms shares a common service duct. The photographs show: below, left, a twin-bedded room; right, a single room. Bottom, left, another single room; right, the bar. The building has reinforced concrete foundations and a reinforced concrete frame. This was decided upon to comply with a request from the MOW for economy in the use of steel. The walls facing Bond Street and Conduit Street are 9-in. brickwork faced on the upper storeys with 3 in. of Portland stone, and on the ground storey with Roman stone and an Aberdeen granite plinth. The rear elevation is of 13½-in. brick with sandlime brick lacing. In Bond Street, and along the outer frontage in Conduit Street, there are five bedroom floors, with the addition of a sixth storey set back from the building lines. In the central part of the building, on the seventh floor, the suites enjoy the benefit of private terraces where setting back occurs. Water storage tanks, ventilation plant, lift motors and radio and television equipment occupy a storey above the main roof. The main contractors were G. E. Wallis & Son Ltd.

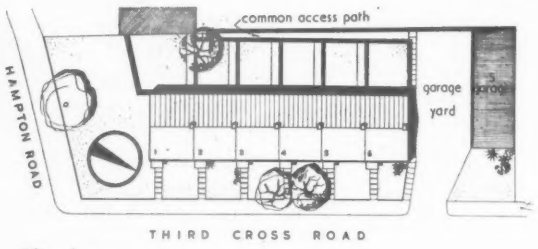


KEY
1. general purpose socket
2. telephone aerial point and general purpose socket.
3. call push
4. phone point
5. radio control unit

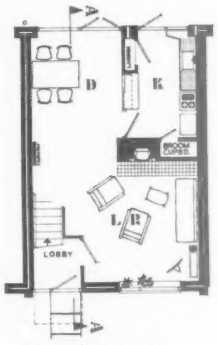




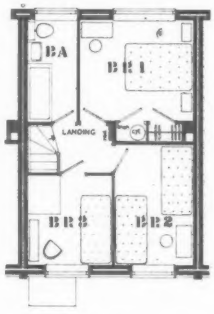
TERRACE HOUSES IN THIRD CROSS ROAD,



Site plan

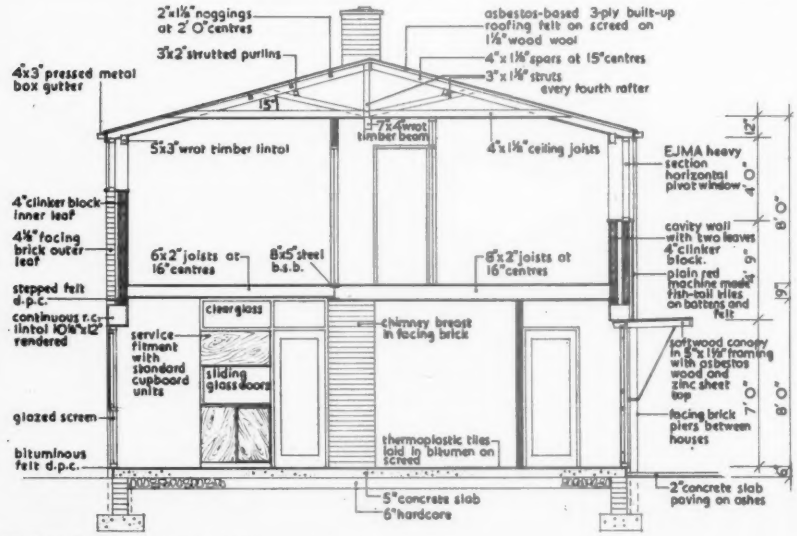


Ground floor plan
[Scale : $\frac{1}{16}$" = 1' 0"]



Typical first floor plan

This block of six terrace houses at Twickenham for Hampton Cross Properties Ltd., was designed by Eric Lyons. The contract price was £9,400 (per house £1,566); price per cube ft., 3s. 6½d. and per ft. sq. 41s. 6d. The contract price for the block of five garages to the north-east of the houses, was £549. The photograph, left, shows the two northerly houses seen from Third Cross Road; below is the entrance door to house number five. On the opposite page: top, the north-east facade of the terrace, seen from under the entrance canopy of house number five; bottom, a view from a typical dining area into the living room, with the kitchen hatch on the left. The clients required three-bedroom houses for a maximum of five persons, at a low cost, combined with a moderate standard of finishes. This meant that the floor area and cube had to be reduced to a minimum. There is a combined living-dining area and first floor ceilings are partly in the roof space. The open ground floor living area, facing roughly east and west,



Section A-A [Scale : ¼" = 1' 0"]

FIRE-RESISTING TREATMENTS | SPRAYED ASBESTOS FINISH

The Architects' Journal Library of Information Sheets 515. Editor: Cotterell Butler, A.R.I.B.A.

'SPRAYED LIMPET ASBESTOS' APPLIED AS FIRE PROTECTION TO STRUCTURAL STEELWORK

39.B1 'SPRAYED LIMPET ASBESTOS'

This Sheet describes Limpet sprayed asbestos finish which may be used on internal surfaces to give fire protection in addition to improving their thermal-insulating and sound-absorbing qualities.

General

Specially-treated asbestos fibres are projected from a multi-jet gun simultaneously with a very fine spray of water. The mixture remains plastic for a period of up to two hours and can be applied to walls, ceilings and steel or concrete structural members. It is fire-resisting and may be used for thermal insulation and sound-absorption. In addition, it retards rusting or corrosion of steel structural members by protecting the sealing paint film from the action of harmful solutions or atmospheres. A sprayed asbestos lining effectively seals all joints and laps in the supporting material, which makes it particularly desirable where dust and dirt must be excluded, as in industries where precision work is undertaken.

Density

The density of a normal application is approximately 12 lb. per cu. ft.

Fire Resistance

Limpet sprayed asbestos is non-combustible and has an excellent resistance to flame impingement at temperatures in accordance with the standard time/temperature curve shown in B.S. 476: 1953 *Fire tests on building materials and structures.*

Following upon a series of official fire tests undertaken at the Fire Research Station on materials and forms of construction protected by Limpet sprayed asbestos, the Joint Fire Research Organisation has issued the following figures on the estimated ratings of protection against fire afforded by this material when applied to concrete floors and steel beams or columns.

Solid reinforced concrete construction (including flat slab construction and floors constructed of precast U or T section beams):

Fire resistance period	4 hours		2 hours		1 hour	½ hour
Thickness of concrete	5 in.	3½ in.	3½ in.	2 in.	2 in.	1½ in.
Thickness of Limpet sprayed asbestos ..	¾ in.	1 in.	½ in.	¾ in.	½ in.	$\frac{1}{16}$ in.

Steel beams and columns:

Fire resistance period	4 hours	2 hours	1 hour	½ hour
Thickness of Limpet sprayed asbestos ..	1¼ in.	¾ in.	$\frac{1}{16}$ in.	$\frac{1}{16}$ in.

Timber floors can also be protected against fire by the application of Limpet sprayed asbestos to the underside. The thickness of application will depend upon the floor structure and fire-resistance requirements.

Sound Absorption

The following sound absorption coefficients are based upon tests carried out by the National Physical Laboratory on Limpet sprayed asbestos applied direct to a solid base. The calculations are based on the Sabine formula as modified by Eyring.

Material as tested	Absorption coefficients for frequency bands in region (c.p.s.)					
	125	250	500	1,000	2,000	4,000
½ in. thickness ..	0·25	0·25	0·45	0·75	0·75	0·70
1 in. thickness ..	0·30	0·40	0·65	0·80	0·75	0·75

Thermal Insulation

Limpet sprayed asbestos conforms to all the conditions laid down in Part 2, Chapter 16 of B.S. 1785 1951 *Thermal insulating materials for buildings.* In any theoretical computation of the total thermal resistance of a structure, any enclosed air space is invariably given its full value. In practice, and particularly in the construction of public and industrial buildings, it is often difficult, if not impossible, to ensure that air spaces are completely sealed. Since Limpet sprayed asbestos is applied in one unbroken coating direct to a surface, the insulation value more closely approximates the theoretical figure. Where thermal insulation is the sole consideration, a special fibre can be used having a k value of 0·32 B.Th.U./sq. ft./hr./° F./in. thickness, which will give a better result than the use of the standard fibre having a k value of 0·4. The U values given in the following table have been based upon the use of an asbestos fibre with a k value of 0·4.

Construction	k values	U values	
		Untreated	Treated with ½-in. asbestos spray
Corrugated iron sheets ..	—	1·47	0·49
Corrugated asbestos-cement sheets	4·50	1·37	0·48
Turnall combined sheets ..	4·50	0·70	0·29
4-in. concrete	6·00	0·42	0·28
1-in. timber (deal)	0·87	0·50	0·30
4½-in. brickwork	8·00	0·64	0·36
9-in. brickwork	8·00	0·53	0·31
11-in. brickwork (cavity wall, unventilated)	8·00	0·53	0·22
Turnall cavity decking	—	0·47	0·30

Finish

The normal finish of the sprayed surface is textured, but a fine slurry with a content of asbestos fibres may be applied by hand after the spray coat and floated off to leave a surface similar to normal plaster.

Colours

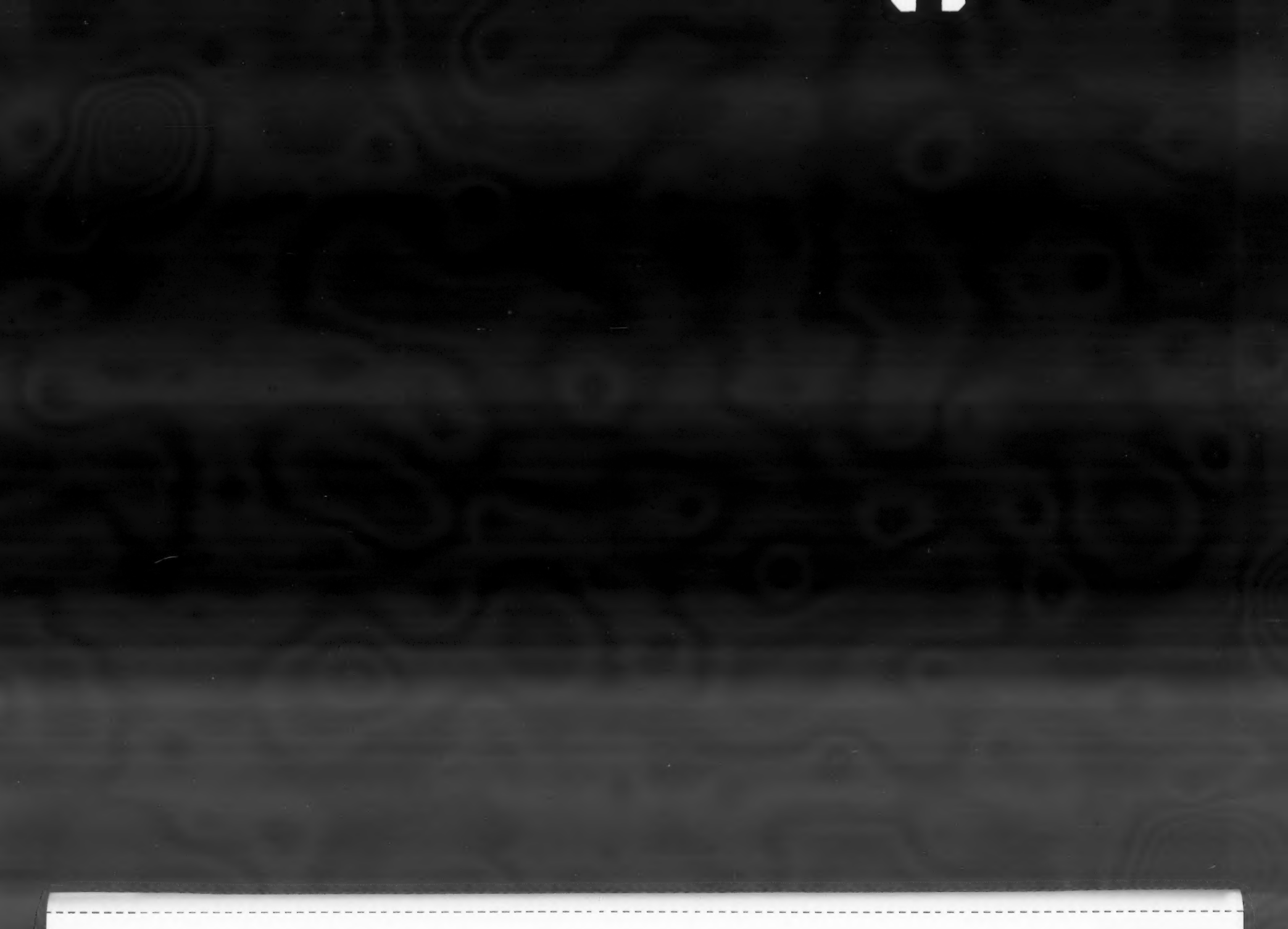
A coloured textured finish, is available. It is composed of very fine asbestos fibres impregnated with pigment and it may be obtained in most shades and colours.

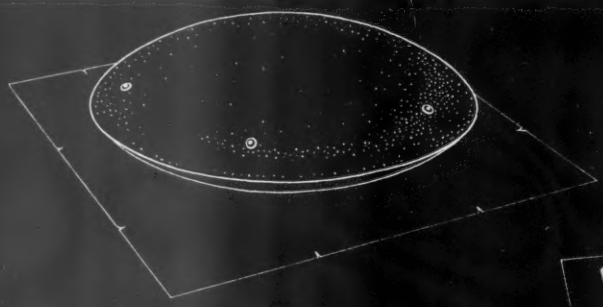
Further Information

The application of Limpet sprayed asbestos involves the use of special equipment which must be operated by specially-trained, skilled labour. The work is therefore carried out on a contract basis by the supplier throughout the British Isles.

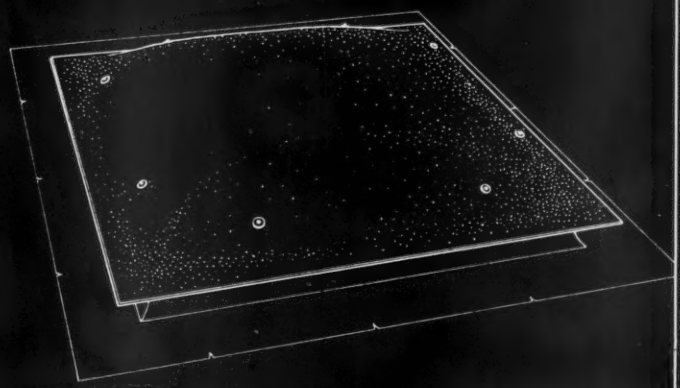
Compiled from information supplied by:

Turners Asbestos Cement Co. Ltd.
(A member of the Turner and Newall Organisation)
Address : Trafford Park, Manchester, 17.
Telephone : Trafford Park 2181.

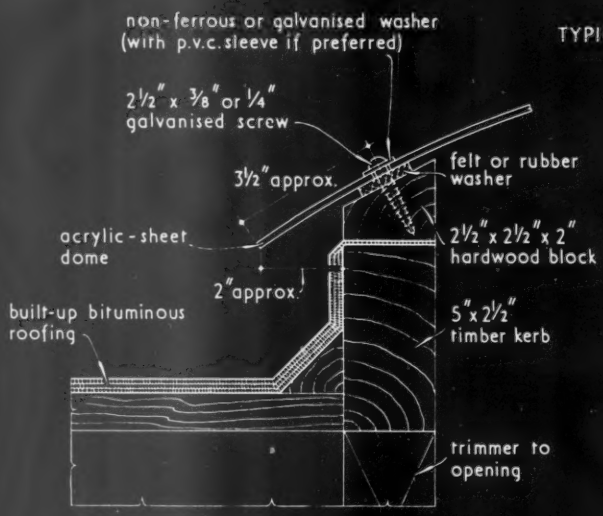




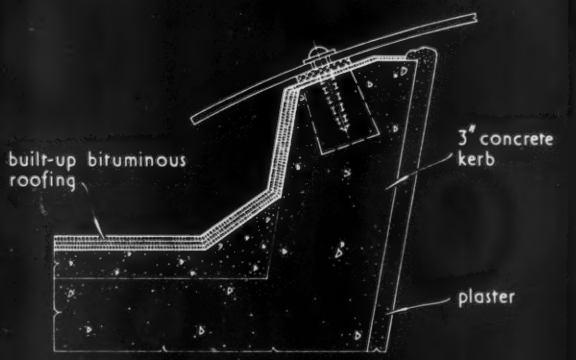
TYPICAL CIRCULAR DOME.



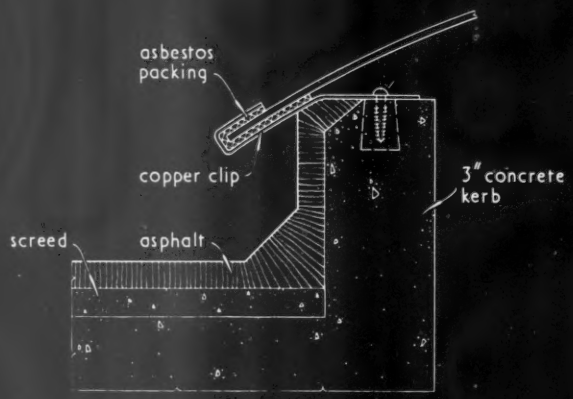
TYPICAL RECTANGULAR DOME.



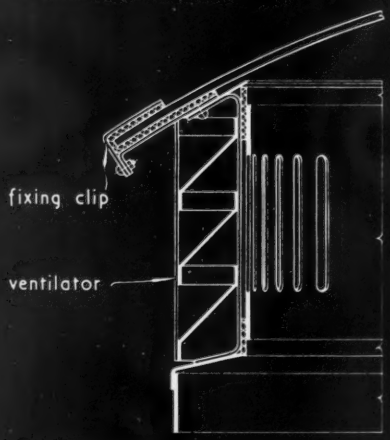
timber kerb with screw fixing : permanent ventilation.



concrete kerb with screw fixing.



concrete kerb with clip fixing.



fixing to proprietary ventilator.

TYPICAL FIXING DETAILS.

ACRYLIC-SHEET DOME ROOFLIGHTS. Manufacturer : Williaam J. Cox Limited.

24.L1 ACRYLIC-SHEET DOME ROOFLIGHTS

This Sheet describes circular and rectangular dome rooflights moulded from " Perspex " acrylic sheeting. They may be used in any situation where a glass dome would be suitable and have the advantages of being extremely light, virtually unbreakable and comparatively inexpensive, in addition to which they transmit a very high percentage of light.

General

When heated above 130° C. acrylic sheet softens and can be formed to the required shape by applying pressure. On cooling the shape is retained. The dome rooflights described in this Sheet are manufactured in this way. The material can be easily drilled with ordinary tools. It is tough, will not shatter and weathers well. It is light, but stable in its dimensions. It will not be affected by normal temperature conditions, but should not be used where temperatures above 160° F. are maintained for considerable periods by convection, e.g., immediately above a furnace. It is affected by some strongly corrosive atmospheres and where such are likely to be encountered the manufacturer should be consulted. One great advantage of acrylic sheet domes is that the rectangular type, for which an opening in the roof is so easily constructed, is no more difficult to make, and therefore no more expensive, than the circular type.

Standard Sizes

Circular: Standard circular domes are in diameters from 18 in. to 44 in. (in 2 in. increments) and also 45 in.

Rectangular: Standard square domes are available in the same overall sizes as the circular domes. Other rectangular sizes are 36 in. by 30 in., 48 in. by 36 in., 60 in. by 42 in. and 69 in. by 45 in.

For domes up to 32 in. overall the acrylic sheeting is $\frac{3}{16}$ in. thick and for domes over this size $\frac{1}{4}$ in. thick.

Non-standard Sizes

Non-standard shapes and sizes within the above limits can be produced at no great increase in cost, even where only small numbers are required. In addition, special sizes are available over 45 in. but not exceeding 57 in. for circular or square domes and over 69 in. by 45 in. but not exceeding 85 in. by 57 in. for rectangular domes.

Weight

$\frac{1}{4}$-in. acrylic sheeting weighs approximately 1·55 lb. per sq. ft. (Wired glass of the same thickness weighs approximately 3·6 lb. per sq. ft.)

Light Transmission

Clear acrylic sheeting transmits 92% of visible light as against the 80% transmitted by glass. It also transmits a higher percentage of ultra-violet light. Its transparency is unimpaired by heat or exposure. In addition to clear sheeting, domes are available made from opal acrylic sheeting for conditions where complete diffusion of sunlight or privacy is required, the light transmission being 80%.

Thermal Conductivity

The thermal conductivity of acrylic sheeting is 1·02 B.Th.U./sq. ft./hr./1° F./in. thickness as compared with an average value of 8·0 for glass. The relative total air-to-air transmission coefficient U for average winter conditions is 0·93 (1·03 for glass).

Fixing

Acrylic-sheet domes are very easy and economical to fix; the work can be done by unskilled labour. Once the fixing holes are made, the dome can be screwed directly onto a timber or plugged concrete kerb.

The manufacturer can supply domes with fixing holes already drilled to the architect's requirements, but it is a simple matter to drill them on the site and this allows for any variation that may be required. A standard twist drill is satisfactory for this purpose, but it is advisable to grind the points rather flat and to drill slowly. Holes should never be punched. Fixing holes are normally placed approximately $3\frac{1}{2}$ in. up from the edge as this gives an overhang of about 2 in., sufficient to exclude weather. Generally, four holes are sufficient for circular or square domes from 18 in. to 30 in. diameter; six, for circular from 32 in. to 38 in.; eight, for circular from 40 in. to 45 in. and square from 32 in. to 45 in.; ten, for larger rectangular domes. The hole should allow for a clearance of $\frac{1}{8}$ in. minimum over the diameter of the screw, for thermal expansion. Screws, washers and sleeves are not supplied by the manufacturer, but where the method of fixing with clips is preferred the manufacturer can supply copper fixing clips lined with asbestos.

The details on the lower face of the Sheet are typical: clips or screws may be used with any type of kerb with or without hardwood blocks to give permanent ventilation. The lower right-hand detail shows a proprietary ventilator fitted with an acrylic-sheet dome.

Applications

Dome lights are extremely effective in providing even, shadow-free lighting in a flat roof area. By dispersing the glazing units in a regular pattern, the best possible use can be made of the available daylight. They may also be used in pitched roofs where roof glazing is required. They may be extensively used for schools, hospitals and other institutions, railway stations, factories and workshops, garages and domestic applications.

Maintenance

Acrylic sheeting requires occasional cleaning with soap or detergent and water. Organic solvents (e.g. petrol, trichlorethylene) should not be used.

Compiled from information supplied by:

Williaam J. Cox Limited.
Address: 559-561, Holloway Road, London, N.19.
Telephone: Archway 1174.

obta
for
orie
sou

TWICKENHAM, MIDDLESEX

obtains sunshine throughout most of the day. This design of terrace is intended also for other sites, and it is thought that this plan gives the greatest possible freedom in orientation. Since this is a corner site, house number one has a large window on the south side, in addition to casement doors on to the garden. The sense of space is increased on the ground floor by a glazed fitment between living room and kitchen, and by glazed doors between lobby, kitchen and living area. Party walls and external walls on ground floor are of 11-in. cavity brickwork. On the front elevation these are faced with patterned red tiles. The ground floor is concrete; first floor, timber joists, and the roof is timber, insulated with 1½-in. woodwool slabs and covered with 3-layer mineral finished felt. The floor area is 755 ft. super. General contractors, E. Gostling Ltd. Sub-contractors, in next week's issue.

The following is the talk—reported nearly in full—which R. Llewelyn Davies gave recently on the BBC Third Programme. ASTRAGAL *commented on this talk—entitled "On the Frontier of Knowledge"—last week.*

ON THE FRONTIER OF KNOWLEDGE

By R. Llewelyn Davies

A few months ago I was in America looking at architecture and talking to architects. I am interested in hospitals, and one evening I asked some of my friends in New York where I could see a hospital which was not merely technically efficient—most new American hospitals are—but was also a really fine piece of architecture. With one accord they said there was no such thing: pressed, they said that hospitals, and indeed many other sorts of buildings, were now so complex that architects were overwhelmed by a mass of specialized technical requirements, to a point where creative design becomes impossible.

In Chicago, I saw the work of Mies Van der Rohe, tall blocks of flats beside Lake Michigan, and the new Illinois Institute of Technology. It is hard to describe the tremendous impact these buildings make—among the work I saw in the United States they stand alone—with calm beauty, immense authority and yet completely unassertive. I tried to discover by what means Mies Van de Rohe had succeeded, where so many architects had failed, bogged down by the complexity of their task. I found that his work depends, in great part, on a rejection of all planning to meet precise needs. His buildings simply provide undifferentiated space, which their users can emply as they will, or as best they can.

This brushing-aside of the functional requirements has freed Mies Van der Rohe, and enabled him to make his very great personal contribution to architecture, a revelation of the exquisite architectural poetry which is inherent in modern construction, but it does not solve the general problem which architects must face, both in America and here:—How are we to master the mass of knowledge—continually increasing in breadth and complexity—needed to design a building today? There are several sides to this problem. How far is the knowledge we need already available? Where it is lacking, how are we to pursue it? What are the channels by which knowledge can pass into practice? Finally, supposing the knowledge is all there, and fully accessible, how can we emerge on top of it, and use it as the raw material for creative design?

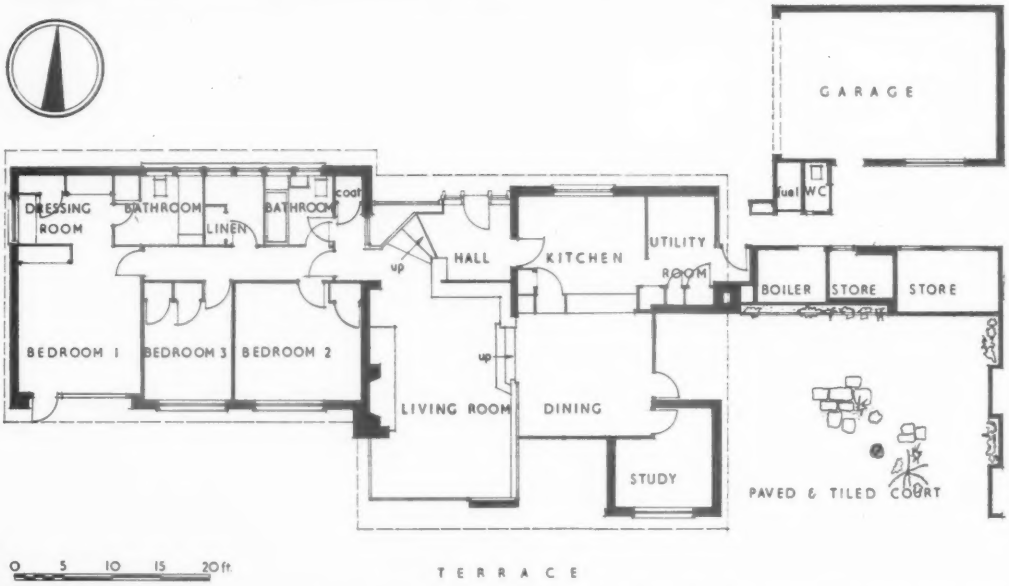
Knowledge of structure and materials is already extensive, and we have been aware for some time of the need to absorb it into practice and into teaching. Indeed we sometimes over-stress the dependence of design on structure. In much contemporary work new structural forms and new materials are seized on, with an almost masochistic eagerness, as a dominating factor in design—particularly those with a strong formal character, such as the shell concrete wall, or the curtain wall. The means to building constitute a major element in design, but this is only half the story. That modern design leans so heavily on the expression of structure and material is the thirst, because we know little of the other half—the purposes of building.

Today, it is very often that neither the architect, nor the people who commission a building, have a clear picture of what it has

(Continued on page 507)

HOUSE IN TOTTERIDGE LANE, TOTTERIDGE,

The house illustrated on this page and opposite was designed by Sydney Greenwood and Howard N. Michell and was completed in 1954. *The site was part of the grounds of an existing house and there were many fine trees and an orchard already established. As many as possible of these original trees have been preserved and the house is sited to take advantage of the fine views over steeply sloping ground to the south. The photograph above shows the south facade of the house, with the bedroom wing on the left. Below right, the entrance facade, seen from the north-west; below left, the steps which lead down from the hall into the living room. On the opposite page the photographs showt: op, the living room fireplace, with the hall on the right; centre, the living room and, at a higher level, the dining area; bottom, part of the east facade, showing the paved and tiled court and, in the background, the french window leading to the dining room. The client required that the house should be large enough for entertaining, yet small enough to be run by his wife with occasional help. The external walls are of cavity load-bearing construction, with an outer skin of golden brown bricks, intermixed with Bedford greys.*

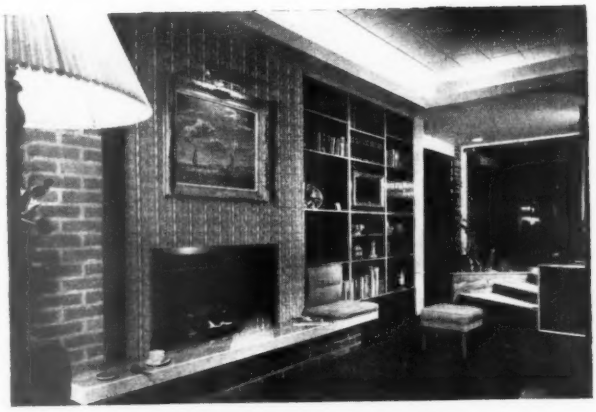


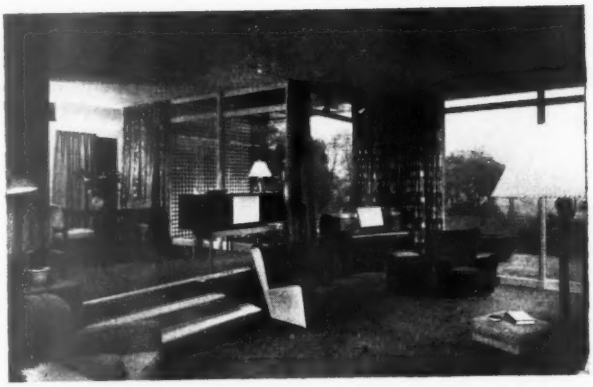
0 5 10 15 20 ft

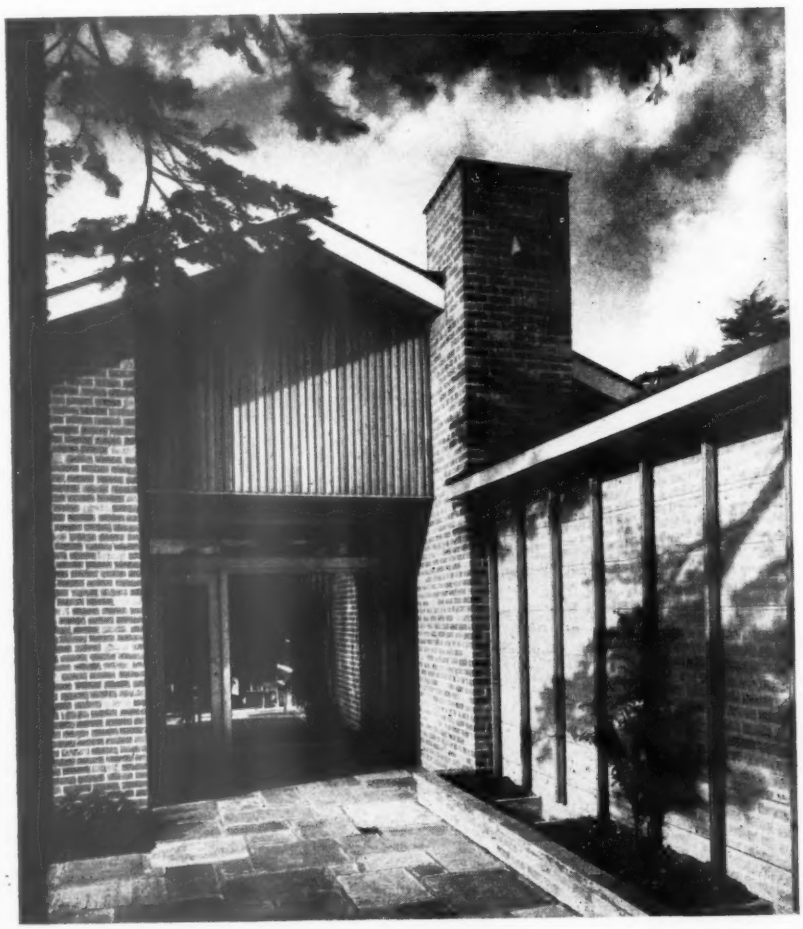
Ground floor plan

LONDON, N.20

There are also areas of glazed tiles, vertical cedar boarding and onyx marbles. The whole house is floor-heated by coils laid over 2-in. wood-wool slabs and covered with 3½-in. concrete, screeded. All rooms, except the utility room and bathrooms, are double glazed. The general contractors were John Laing & Son, Ltd. For sub-contractors see page 522.







(*Continued from page* 505)

to do. The architect's contribution is thus reduced to little more than drawing a pencil line round a list of rooms. He may leave it at that, but the result will then, most certainly, not be architecture. If he attempts to reach some formal coherence in design he will be driven, in the absence of real understanding of the needs of the building, to impose a wilful or artificial unity.

Like Mies Van der Rohe, Le Corbusier and other great architects have made their contribution by escaping, in various ways, from this dilemma. Le Corbusier designs round his own, intuitive concept of how people ought to live in cities, and he imposes this concept of living on the occupants of his Marseilles block. He is great and bold enough to do this but, not unnaturally, other architects have found it hard to follow him. He and other pioneers have shown us, by an imaginative projection, where architecture is going. To get there *we* must understand what the purposes of present day building really are.

Architects have not always had to face this difficulty. Often, in the past, they worked within a traditional culture, which kept pace with changes in society and the development of technique. Today, change is too rapid for tradition to keep pace. An airport, or a laboratory, must house and express a life for which there is no precedent. The design of a new school, or a new hospital, should reflect new thinking in education and medicine, not the method and habits of the past. To understand present day needs, we must look directly at what goes on in buildings, using appropriate research methods to do so.

But the conditions of normal practice do not permit an individual architect to make an intensive study of each building problem that comes his way. He needs knowledge which can only be arrived at by research, but that research must be the task of special bodies. Such bodies have lately been set up, both here and in the United States. In this country, there are today three or four full-time research teams engaged on the study of special buildings, hospitals, schools, laboratories and farms. It is already possible to see, in outline, what the impact of this work may be on architecture.

First, it is significant that all the research now in progress has been set up, and maintained, by Ministries, Research Councils, Foundations and similar bodies, directly or indirectly the users of buildings.

Serious, organized research is expensive. The fact that responsible bodies will now finance it means that they, and the clients they represent, have found by hard experience that existing knowledge is inadequate to produce the architecture they need. They have realized that satisfactory buildings cannot be had, if the users themselves do not know what they want.

The pattern of work developed by the research teams is one of simultaneous study by a group of people, each with different training and experience. For example, the team making a study of hospital design at the Nuffield Foundation included a historian, a sociologist, a statistician, a doctor and a nurse, working with architects and scientists. As an example, I can take the hospital ward —one of the subjects studied by the team I have mentioned. One of our first tasks was to discover what proportion of the patients, under present day conditions, are bedfast, and what proportion able to get up and do a certain amount for themselves. A survey, conducted by the doctor, showed that over two-thirds of the patients are often able to move about. Indeed, it is better from a medical point of view if they do. This has obvious repercussions on planning, which until recently has been based on the assumption that all the patients would be in bed all of the time. Another survey, made by the doctor, established how many

(*Continued on page* 508)

Continued from page 507)

single rooms or cubicles will be needed for patients who are very ill, or should be segregated for other reasons. We also looked at the organization, and the detailed daily tasks of the ward nurses. We traced the pattern of movement of a nurse about the ward, by winding thread on pins stuck into a plan. From this we could see how design might minimize her walking—a nurse, we discovered, walks 2½ miles a day, just moving to and fro within the ward. We also made a film of nursing, to see how much space was needed for particular jobs, using a caste of the fattest possible nurses, to be on the safe side. Working with physicists at the Building Research Station, we built a model of a ward to get information about daylighting, window design, and the use of colour. With their help, we also made records of the noise in hospitals—which is often terrific—and looked for ways, by planning and construction, to cut down the amount of noise reaching patients.

I mentioned that a historian took part in these studies. I believe that a historical approach is essential to throw light on the interaction between architecture and our patterns of life and organization. Architcture may at one stage express a current social pattern, at another, owing to the long lige of buildings, it may tend to freeze our thinking as to how we can best live and work. This point was strikingly brought out in our study into ward planning. We found in present day hospitals a clear-cut pattern of nursing work and organization. It would, however, have been quite wrong to accept this pattern as a guide to design—for historical study showed clearly that it had come into being to fit the architecture of the famous Florence Nightingale ward. It became firmly established during the century when wards were nearly all on this plan, and persisted even after they were superseded.

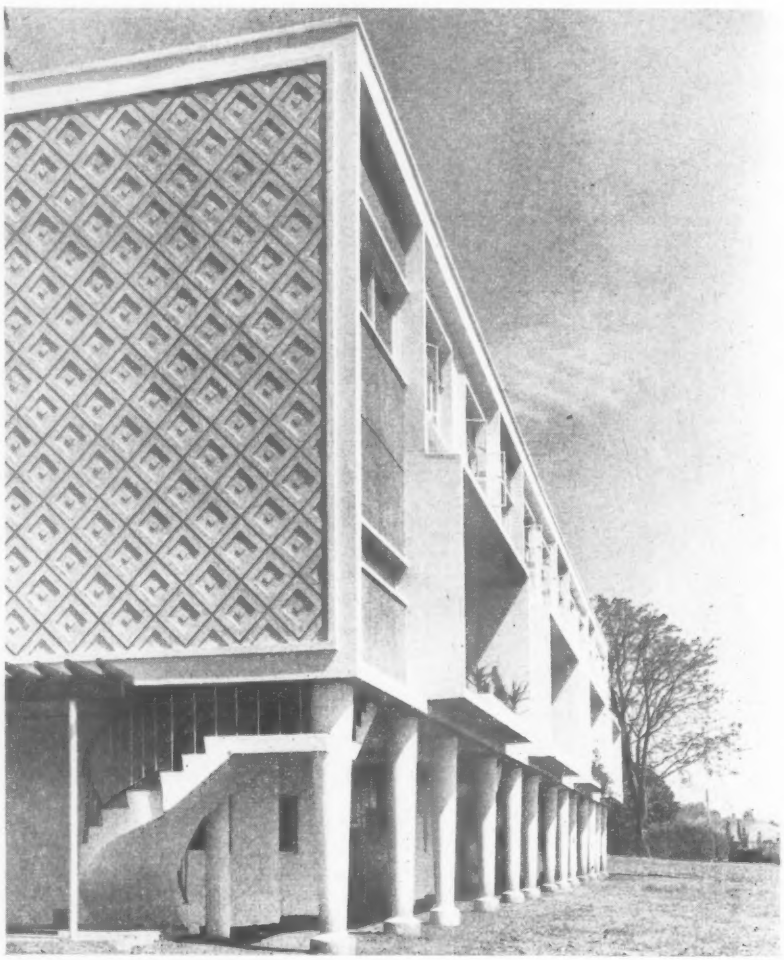
Such studies, as I have been describing, each explore a different aspect of one design problem. They represent the first, analytical stage in research, and each, by itself, means little. The next step is to put them together and see what they add up to—and this is a very exciting experience for an architect. A problem, like ward design, for which rather dreary stereotyped solutions used to seem inevitable, is suddenly illuminated by new knowledge, and seen as full of rich and various architectural possibilities. Some teams have gone on to explore these possibilities by designing experimental buildings, to demonstrate and test the results of research. Experimental schools have been built at Wokingham and at Coventry, and experimental hospital buildings at Greenock and in the new town of Corby. These buildings are not to be thought of as ideals, or standards; they are *examples* of the sort of architecture that may follow research. Like a prototype aeroplane, they enable new designs to be tested in actual use, before they are accepted into practice.

Much of the research now in progress has not yet had time to filter through into practice. I think school building is an exception. Many new schools, built since the war, are delightful examples of modern architecture, light, gay, full of colour, expressing perfectly the modern concept of teaching children. The architecture of these schools was greatly influenced by the work of research groups, and it has been very striking to see how rapidly this influence has spread, and how quickly the results of research and experiment have been assimilated by architects all over the country.

The most direct channel of communication is by publication. There have been the bulletins issued by the Ministry of Education, which are based on the work done by the Ministry's research teams. A less direct, but extremely effective channel has been the demonstration of research results in the form

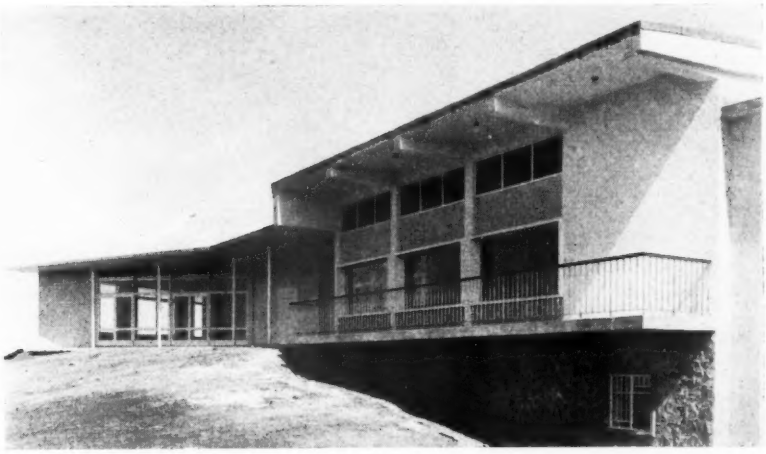
(*Continued on page* 510)

RECENT BUILDINGS IN KA



Among recent buildings in Uganda, illustrated on these pages, is the Owen Falls dam at Jinja, situated at the north of Lake Victoria. At the bottom of the opposite page is a photograph of the power house for the dam and a sketch of the complete scheme, by which the water level of the whole lake is raised approximately 4 ft. to give a guaranteed flow in the Nile for irrigation. The 3-ton precast wall units of which the power house is built are faced with local pink granite. They were lowered by crane into the reinforced concrete frame. The consulting engineers were Sir Alexander Gibb and Partners and the architect, Harry Ford. Illustrated on this page are two blocks of flats for the Kampala Municipal Council, designed by Deans, Inglis and Partners. Each block contains four flats. There is no living accommodation on the ground floor: this prevents the effect of night-time radiation from heat absorbed in the ground and

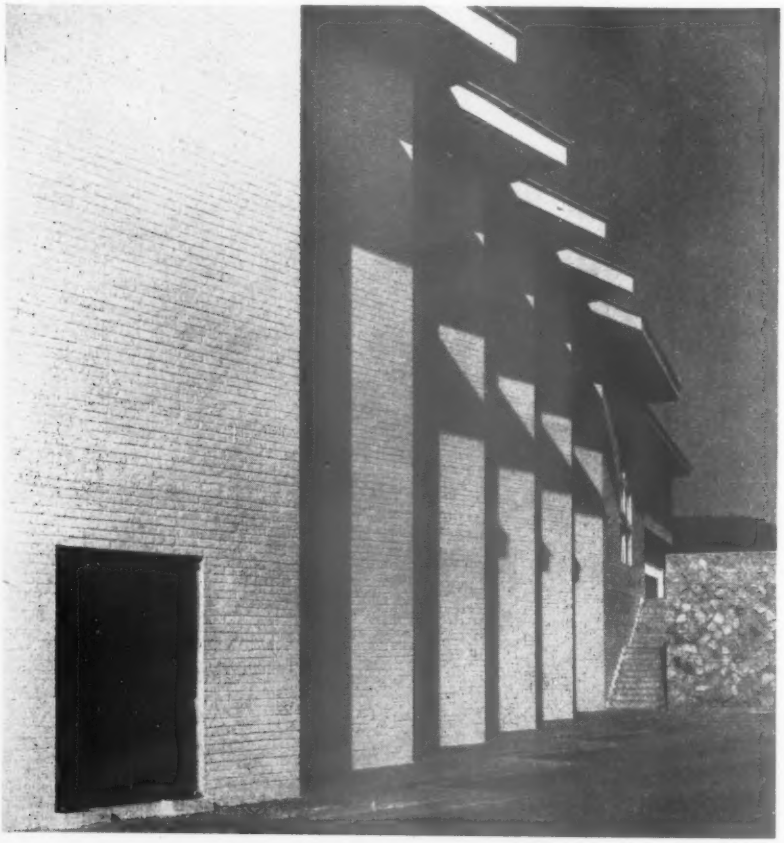
KAMPALA, JINJA, AND MBALE, UGANDA



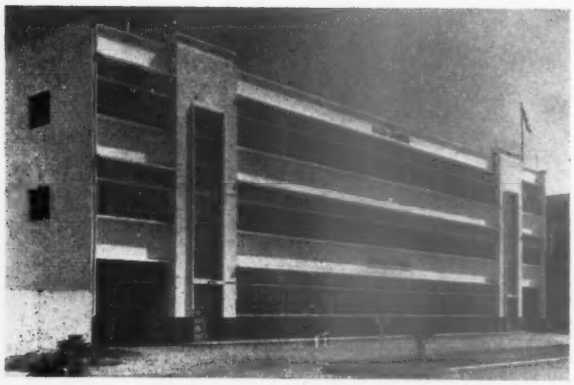
enables the flats to gain the advantages of daytime breezes and views of Lake Victoria. Brick and concrete block panel walls are rendered and colour-washed externally with a different colour for each flat. The photographs on this page show further work by the same firm of architects. Above is a showroom and offices in Mbale, which has living accommodation on the first floor for the European staff. Between each living room window on the front facade is a perforated concrete screen and there is a continuous window box under the windows. Above right is a hostel for the Uganda Electricity Board at Kampala, built on a steeply sloping hillside in a residential area, with fine views over the lake. Accommodation consists of bed-sitting rooms and a central restaurant shown in the photograph. The construction

consists of a r.c. frame, with rendered concrete block infilling panels and flat or single pitch roofs. Above is a pair of semi-detached houses at Jinja, standing on a ¾-acre site in a new residential area. Accommodation in each house consists of a living room with dining recess and three bedrooms. There is a car port and boxroom, and servants quarters are situated to the rear of the houses. The single pitch roofs are of insulating board on timber joists, and have a finish of bitumastic felt. The end and party walls are of rendered concrete blocks. On page 510, top and centre, are two views of the Uganda Museum, designed by Ernst May and Partners. The top photograph is of the main exhibition hall, which is lit on either side by splayed windows, which almost

RECENT BUILDINGS IN UGANDA



eliminate direct sunlight. Protection from the intense light on the south elevation is provided by panel walls of glazed precast concrete tracery. The bottom photograph shows offices at Kampala designed by Radford, Howell and Partners. On completion the accommodation was leased by a single Government department. The architects for these offices are responsible for most of the development of the civic centre. The information concerning these buildings was supplied by R. A. J. Gazzard, Planning officer, Eastern Province, Uganda and the photographs were supplied by the Information Department.



(*Continued from page* 508)

of experimental school buildings. Faced with an unfamiliar problem, an architect will nearly always seek out the best recent work, go and see it, and learn an enormous amount by doing so. Demonstration in actual building is therefore the most rapid method of communication between research and practice. A slower process, but very important in the long run, is the movement of men from the research teams into practice and teaching. This is only just beginning, but it will in time have its effect on our thinking, and on our methods of work.

Thanks to the spread of knowledge, school design is no longer a matter for a few specialist architects, but is understood by the profession as a whole. This may perhaps point to a way out from the dilemma of specialization, which faces architecture, as it does other professions and disciplines. So long as we think in terms of each architect himself building up a private stock of knowledge, specialization must follow inevitably from the complexity of modern building problems. If, however, we see the collection of knowledge, research and experiment as the task of specialist bodies, then perhaps the practice of architecture need not itself become specialized.

The profession which has been most successful in combining *specialized* knowledge with *general* practise is medicine. The majority of doctors are still general practitioners and it is important that this should be so, for the general practitioner alone can look at the patient as a whole human being, and take a balanced view of his health problems. Nevertheless, almost the whole body of medical knowledge is inevitably specialized, and the task of developing and extending this knowledge falls to the specialist doctors, working and researching in hospitals. The medical profession is so organized that teaching, research and specialization go hand in hand, and doctors are trained by specialists in the teaching hospitals, although the bulk of them will eventually become general practitioners.

In medicine, research and specialization function in the right places—on the frontiers of knowledge. The knowledge gained in research is constantly fed back into practise, and it is significant that what is the work of a specialist today is very often applied in general practise tomorrow. If architectural practice and research develop along somewhat similar lines, as I think they will, there are some important implications for its teaching.

The most important is that we should recognize that architecture is a social art, dependent on contact with many arts and sciences, and not only with technology. We should train young architects to understand the great sweep of knowledge necessary for the practise of our art, and show them how to acquire and use what they need, when they need it. We should re-establish, but in a somewhat new sense, the Renaissance ideal—of the architect as Homo Universale. He can no longer carry in his own brain the whole of contemporary knowledge and culture, but he can know its extent. We should therefore keep undergraduate training broad, and resist the temptation to introduce more and more courses in the vain hope of catching up, at all points, with the expanding horizon of knowledge. Besides training all-round architects, we shall also have to meet a demand for men with more advanced and specialized training and experience. We already need such men in our growing research organizations and in teaching, and often we cannot find them. For this we shall need post-graduate training, which exists in most other professions, but with us is only just beginning. In architecture, as in other subjects, post-graduate work is naturally combined with research and it is at this level that advanced specialized study is appropriate.

PRIMARY SCHOOL

in CATOR ROAD, BECKENHAM, KENT

designed by ELIE MAYORCAS, assistant architect-in-charge, L. E. TATUM

in collaboration with the Kent County Architect's Department,

consulting engineer, structural, F. J. SAMUELY, services, G. H. BUCKLE and PARTNERS,

quantity surveyors, C. JOHN MANN and SON

West facade of assembly hall.

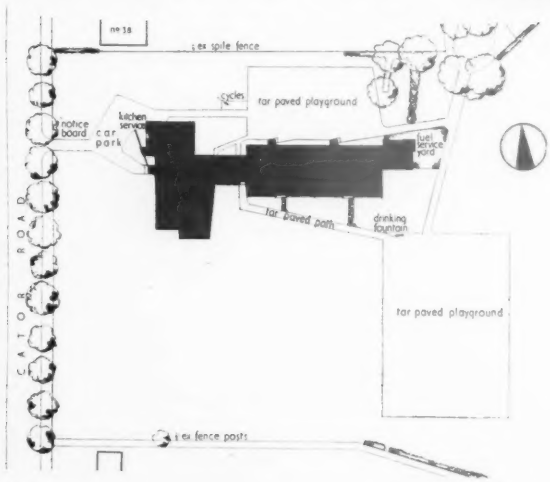
The Beckenham Alexandra County Primary School for the Kent County Council Education Committee was designed as a two-form entry junior mixed school, to accommodate 160 boys and 160 girls. The clients required eight classrooms on two floors, an assembly hall rectangular in shape and that the school should be sited fairly close to the main approach road in order to leave the rear of the site free for a future school and playing fields.

From the north-east entrance gates.

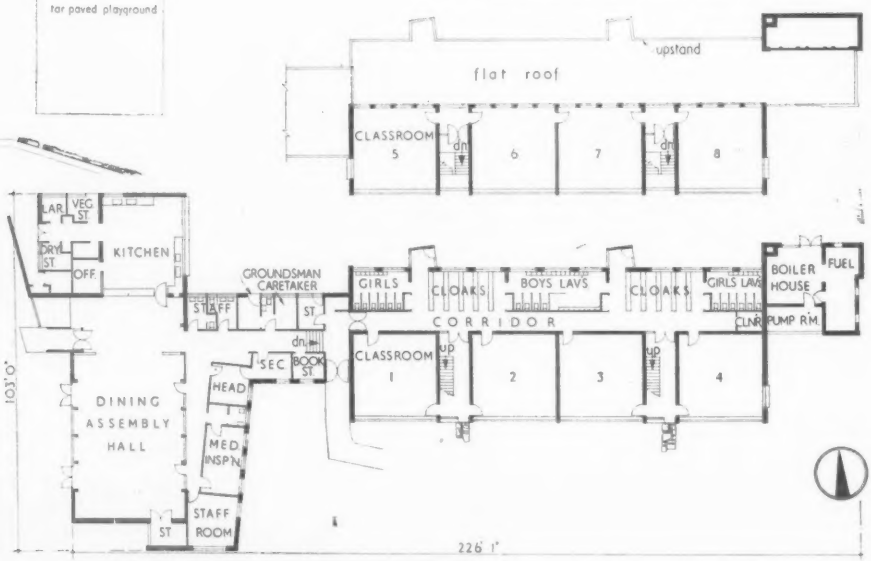
Above, the north facade seen across the hard playground. Top left, a general view from the south-east, with the classroom wing on the left.

SITE.—The site is an area formerly used as playing fields and the ground consists of London clay, with a tendency to become waterlogged in very wet weather. The main approach, from a residential road, is on the west, with a fall of 8 ft. to 10 ft. towards the east of the site. To avoid deep excavation in difficult ground the boiler house is placed at the east end of the building and fuel deliveries are made from a secondary approach road to the north-east of the school. Owing to the condition of the site, the ground on which the school stands is drained by a perimeter land drain connected to the local authority surface water drain.

PLAN.—The first floor classrooms are approached in pairs by staircases, thus avoiding an upstairs corridor and allowing cross lighting and ventilation in ground floor classrooms. To economise in floor area the combined entrance hall and dining area form a part of the assembly hall, with a sliding folding screen dividing this portion of the hall, to allow different activities to take place when meals are being served. To keep the height of ground floor classrooms to a minimum meant reducing the clerestory windows to an extent which made the natural lighting, though adequate, somewhat uneven



Site plan

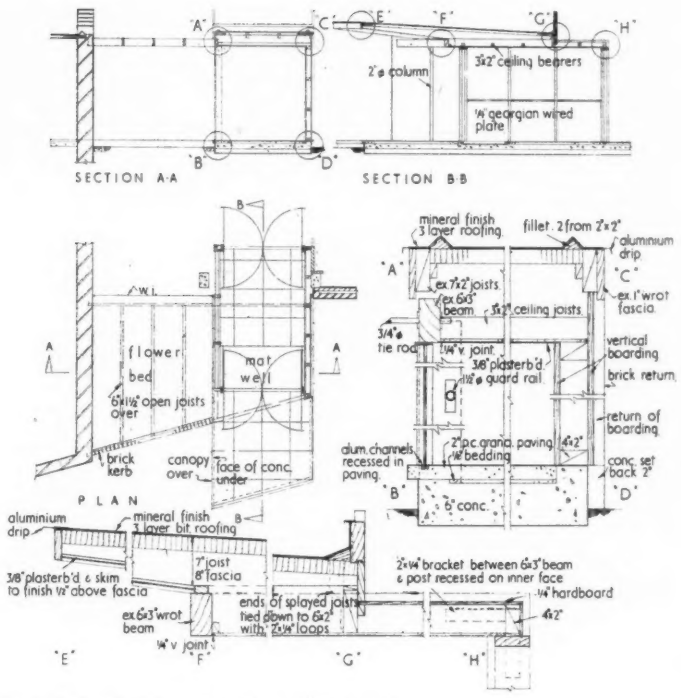


Ground and first floor plans [Scale : 1/16" = 1' 0"]

and this has been corrected by aluminium sunbreakers on the south side. First-floor classrooms have a lower ceiling height as the north wall is free for any size of clerestory window required to give an even light in the classrooms.

CONSTRUCTION.—External walls are generally of load-bearing brickwork, with brick cross walls in the two-storey block. These cross walls support precast prestressed concrete planks at first floor level. These planks carry precast r.c. trough units for in situ r.c. topping. The roof of the classroom block is supported by post-tensioned precast-concrete trussed beams, which were illustrated as a Working Detail in the JOURNAL for November 18, 1954. The assembly hall block is constructed of precast r.c. portal frames and eaves tie beams, supporting galvanised steel T's for 2-in. strawboard roof panels. Internal partitions and panel walls are of 4½-in. sand lime brickwork increased to 9-in. and 13½-in. where load-bearing.

FINISHES.—Materials used externally include yellow London stock bricks, iroko boarding, corrugated asbestos sheeting and windows with hardwood and rust-proof metal frames. In administrative rooms and elsewhere, centre side hung, double-glazed windows are used. Rubber chlorinated paint was applied to asbestos sheeting and exposed fair faced concrete. Oil and ships' varnish was used on hardwood windows. Internally, walls are generally plastered or of fair faced sandlime brickwork, the latter having an application of plastic emulsion or glazed rubber chlorinated paint. Floors are covered with thermoplastic tiles in classrooms and adminis-

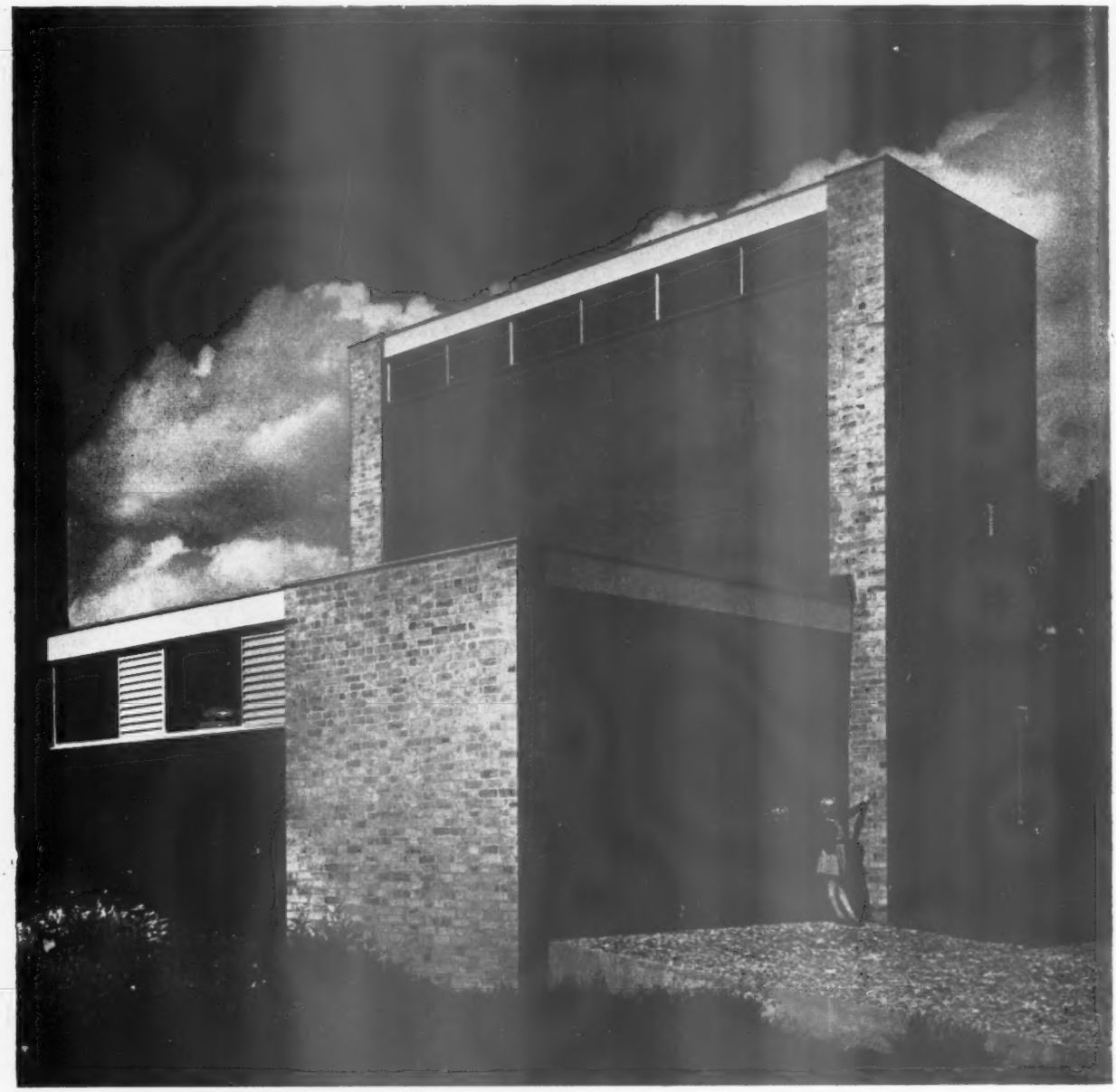


Details of main entrance [Scales : ½" and ¼" = 1']

PRIMARY SCHOOL

in CATOR ROAD, BECKENHAM, KENT
designed by ELIE MAYORCAS

Left, entrance to dining area and assembly hall from the west. Below, the assembly hall seen from the dining area. A glazed screen, and, below it, sliding-folding doors divide the hall when part is required for other purposes during meals.



The south-east corner of the school. The tower contains the boiler house, fuel store and tank room. The south face of the tower is clad with corrugated asbestos sheeting.

PRIMARY SCHOOL

in CATOR ROAD, BECKENHAM, KENT

designed by ELIE MAYORCAS

trative rooms, granolithic in stores, corridors, lavatories and cloakrooms, wood blocks in assembly hall and tesselated tiles in the kitchen. Classrooms have specially designed cupboards and shelving and a wide hardwood internal sill for exhibiting flowers, etc.

SERVICES.—Heating is by a low pressure hot water system served by hand-fired solid fuel boilers. The hospital-type radiators used are supported clear of the floor on wall brackets. Hot water is provided by a separate boiler and calorifier. The estimated gross cost was £49,313 and estimated net cost (less site works) £44,618. Gross cost per ft. cube, 4s. 9½d. (net. 4s. 4d.), per ft. sq. gross £3 7s. (net £3 3s.).

The school forms part of the 1952-53 programme (MOE net cost per place limit £140) and the date of tender was December 2, 1952. The number of sq. ft. per place is 41·9 and the estimated gross cost per place £154 1s. (net. £139 4s.).

The general contractors were the Anglo-Scottish Construction Co., Ltd. For sub-contractors see page 522.

TECHNICAL SECTION

The most respectable contribution to architectural knowledge at this year's Ideal Home Exhibition was probably the kitchen designed under the auspices of the Council of Scientific Management in the Home. As the Council was careful to point out, this was not a type-kitchen, to be copied cold, but merely one possible embodiment of certain principles. These principles were arrived at after one of the most thorough user-surveys ever made on this subject. Some 700 housewives were questioned and some 260 plans—mostly local authority—were assessed for their efficiency. The report of the enquiry is published under the title *Meals in Modern Homes**. The findings could hardly be startling: most important is the insistence that the sequence work-surface/cooker/work-surface/sink/work-surface must not be broken by a door or passage. Provided this is observed it does not matter greatly if the plan is linear, U- or L-shaped. Dimensions of equipment, cupboards, etc., are mostly those laid down in BS 1195 : 1948, though it is interesting to note that the report calls for one working surface at 2 ft. 9 in., in place of the unvarying 3 ft. which was formerly the rule. One height which seems too readily accepted by housewives and architects alike is that of the sink. We always speak of " bending over the sink," but is it really necessary?

* Obtainable from the Council of Scientific Management in the Home, 26, Bedford Square, W.C.1. Price 5s.

This week's special article

26 SERVICES AND EQUIPMENT
tailor-made refrigeration

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

The many available brands of mass-produced refrigerator fulfil the ordinary needs of most people. Nevertheless, architects often find (particularly on conversion jobs) that the use of a standard refrigerator not only takes up floor space which cannot be spared, but interferes with the sequence of operations in a kitchen and gives less refrigerator space than the family actually needs. This week we have asked Robert Scutt, a refrigeration engineer, to discuss the alternative: a tailor-made, built-in refrigerator.

There are several possible motives for considering a tailor-made as against a standard refrigerator. The most common is that there is no room for the standard product: or, to be more exact, that there is no room in the right place. This is a situation which may occur more frequently than the architect is prepared to admit: for though, even in the smallest kitchens, room can usually be found for a free-standing refrigerator *somewhere*, it happens all too often that this place is not the right one from the point of view of the sequence of operations. The right place for the refrigerator generally speaking is with the larder, for from the point of view of sequence there is

Figs. 1 and 2. A built-in refrigerator in an architect's house. The architect-owner had originally allowed for a space measuring 42 in. by 24 in. by 19 in., as prescribed in BS C of P 324/403, for an inset refrigerator of 4 cu. ft. capacity. The writer of the article was called in to advise, and as a result a refrigerator of nearly 7 cu. ft. capacity was accommodated in the space where only 4 cu. ft. had been visualized. This was achieved mainly by placing the condensing unit in the loft. Above, general view from the kitchen. Below, the condensing unit.

no difference between foods which must be kept at a low temperature and those which need not. Allied to this is the consideration that there is no valid technical reason why refrigerator space should be in the compact, cubical form of the standard products. Though, as we shall see, there must be adequate ventilation, the physical space occupied is governed by no more exacting considerations than those which govern the shape of a cupboard.

The last motive relates to the question of the area of refrigerated space wanted. The fact that the cost of standard refrigerators rises very steeply with the increase in cubic content has accustomed people to the idea that they must "make do" with one which is as small as possible. Only the very perishable foods, therefore, find a place there. But the range of foods which can benefit from refrigeration is much wider and, other factors being equal, there is a case for providing 10 to 12 cub. ft. of space instead of the more usual 2 to 4 cub. ft.

COST

As you would expect, for the smaller cubic areas the standard product is cheaper than a tailor-made refrigerator of the same size. The balance of cost changes, however, with increase in size: at 7 cub. ft. the cost of both is about the same and above 7 cub. ft. the tailor-made job begins to be the cheaper. It is not possible to give close figures, but as a rough guide it may be said that the cost of a tailor-made refrigerator of 12 cub. ft. is of the order of £109-£130. This is lower than you would expect by about 50 per cent., owing to the fortuitous circumstance that for equipment of 12 cub. ft. and above the purchase tax is removed. The implication of this ruling is that so long as present ideas remain in force refrigeration space above 12 cub. ft. is assumed to be for commercial as against domestic use.

On this question of cost a word must be said on the subject of "deep freeze." "Deep freeze" means refrigerator space held at a temperature of about 0° F. Low temperatures (though not so low as this) are achieved within the small space of the evaporator. But to maintain larger spaces at 0° F. is exceedingly costly. You could, for instance, obtain some 3 cub. ft. by using ice cream equipment costing about £90; but this order of space would be of little value to a family. Special "deep freeze" compartments, to be worth while, must be large enough to store really substantial quantities of fresh food for several months on end and require, say, some 100 cub. ft. The cost of this, alas! is still prohibitive for the ordinary householder and the subject is therefore not treated in this article.

REFRIGERATING SYSTEMS

Before going into this matter further it is perhaps worth recalling the elementary fact that refrigeration is removal of heat. It is quite wrong to speak of producing cold. Cold is merely absence of heat. A refrigerator, therefore, is a piece of apparatus which removes heat.

There are many ways of doing this, but readers will wish to know only about those applications which have come to be regarded as satisfactory for domestic purposes. By domestic refrigeration is meant a compartment for short storage of food and other substances at temperatures known to be the most suitable for them (40° F. to 50° F.).

The *absorption system* makes use of ammonia as a refrigerant and refrigeration is obtained by merely applying heat. This can be mains gas, electricity, paraffin oil or Calor gas. Such a refrigerator is noiseless and has no moving parts. These two virtues

The front and interior of these new premises were carried out by our organisation to the designs of Bronek Katz & R. Vaughan.

Architects are invited to consult us with the assurance that their schemes for Stores, Shops and all Architectural Decoration will receive faithful interpretation by an organisation with a long and varied experience.

OUR DESIGN AND TECHNICAL SERVICE IS READILY AVAILABLE TO ASSIST IN THE DEVELOPMENT OF ALL TYPES OF DECORATIVE SCHEMES.

Harris & Sheldon Ltd

The organisation with a background of 75 years experience

BIRMINGHAM . LONDON . MANCHESTER . GLASGOW

L.G.B.

Figs. 3, 4 *and* 5. *A* 15 *cu. ft. refrigerator built in to a small house in the country. Above left, view showing position of refrigerator cabinet which has been planned in a recess off the kitchen. Above right, the housing of the condenser unit. Right, the condenser unit with the housing removed.*

have earned for certain proprietary makes a great reputation. The thermal efficiency of this type, however, is much lower than that of the compressor type and much more space is needed to accommodate the "works"; consequently it is not suitable for building-in.

The alternative is the *compressor system.* In order to understand how this works it is as well to visualize the free evaporation of a liquid refrigerant in a trough at the top of the cabinet. Under normal atmospheric pressure and at normal temperatures this refrigerant would be a gas, but under high pressure can be held in liquid form. If a quantity of this liquid refrigerant is poured into the trough, it will rapidly vaporize and disappear. In the process of so doing it will take heat from the cabinet and make it cold. This, then, will be a refrigerator, but obviously one cannot keep pouring away expensive refrigerant in this manner. What can be done, however, is to collect it, compress it, reliquify it, and use it over and over again.

The apparatus required to do this is a condensing unit consisting of a motor-driven compressor and a cooling condenser mounted on a suitable base plate and installed remote from the compartment which has to be cooled. The motor required will be $\frac{1}{6}$ h.p. for refrigerating up to 10 cub. ft., $\frac{1}{4}$ h.p. for larger sizes. An evaporator mounted inside the food compartment is connected to the condensing unit by two copper pipes: a $\frac{1}{4}$-in. delivery pipe and a $\frac{3}{8}$-in. or $\frac{1}{2}$-in. suction pipe.

From the foregoing it will be apparent that the condensing unit is distinct from the food compartment. It can be fixed in an adjoining ventilated cupboard above or below the food compartment, or it can be in some place apart, and in fact it is sometimes a better proposition to make plans to have it well away from the food compartment, such as outside the house, in a garage, or in a loft.

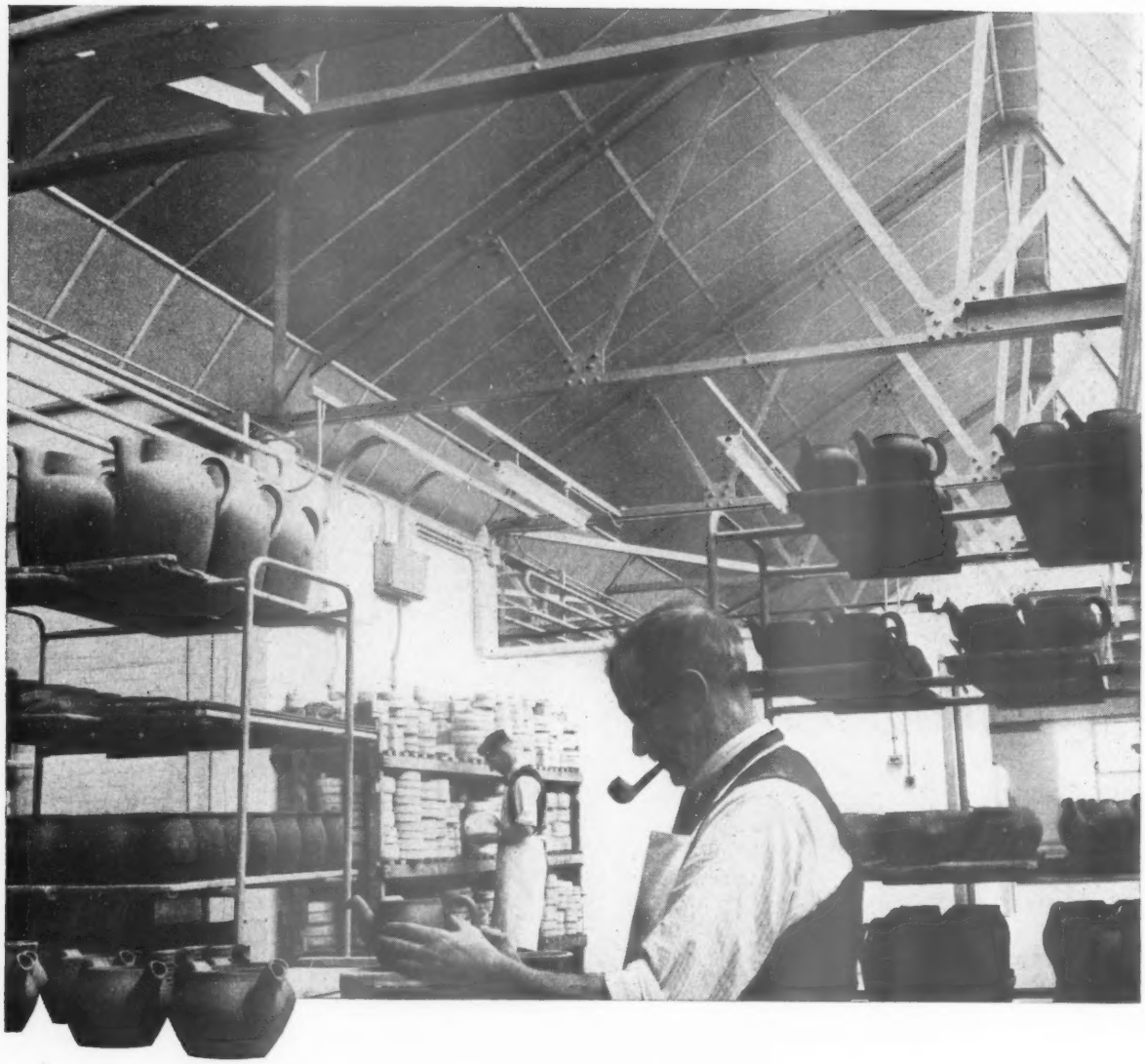
THE EVAPORATOR

The required temperature in the cabinet is 40° to 50° F. Since, however, it is desirable to be able to make ice and also to store ice cream and other frozen products, it must naturally be provided with some section which can be held at a much lower temperature. The usual procedure is to have an evaporator of such size and shape, in relation to the size and shape of the food compartment, that if the evaporator is held at approximately 15° to 20° F. the average temperature throughout the remainder of the compartment will be the desired 40° to 50° F. Since warm air rises and cold air drops, it follows that the evaporator *must* be mounted at the top. This temperature of 15° to 20° in the evaporator is sufficient to make ice, but is not low enough to store frozen foods for long periods. To achieve this, the temperature must be reduced to 0° F. Most evaporators can be adjusted to give this reduction but it must be remembered that when they are working to this figure they will reduce the temperature of the remainder of the space considerably below the ideal figure.

It is usual to have one or more ice-trays, while in some evaporators there is also a small cupboard for frozen foods.

THE CONDENSING UNIT

The condensing unit for a built-in refrigerator can be housed in any convenient position provided it is well ventilated. The writer is a very strong advocate for having it outside the house if this can be arranged (see Fig. 5). The householder cannot hear any sound inside the house, the condensing unit is easily accessible for service, and the ready supply of air ensures that the operating time is short with consequent low running cost and long life. This question of operating time is important not so much on account of current used (which is negligible)



What does cold weather cost you – in good work?

When this photograph was taken at Denby Potteries, near Derby, it was freezing outside. Yet the men you see are working *in their shirt sleeves* unconcernedly and skilfully.

Look to the roof for the explanation. It is lined with ½ in. Lloyd Insulation Board. Before insulation the highest work-temperature that could be attained when it was really cold was 46°F. Now it is a comfortable 62°F—a direct increase of 16°F, achieved without incurring the heavy expense of either new heating plant, *or greater fuel consumption by the existing plant.*

There follow other advantages vital for such work. Lighting is better and more easily reflected; dust is excluded; in summer, solar radiation is reduced, and cool working conditions are ensured.

Insulation makes sense for most factories. Ask for a copy of "The Heat Barrier" booklet, which enables you to calculate, as nearly as possible, how soon the money saved on fuel bills will catch up the initial cost of insulating your own works.

WHEN IT'S A MATTER OF KEEPING WARM AND SAVING FULL HAVE A WORD WITH

BOWATERS BUILDING BOARDS LIMITED

Bowater House, Stratton Street, London, W.1. Tel: GRO 4161 *A member of the Bowater Organisation.*

but on account of wear and tear. Running time relates directly to the readiness with which the machine can get rid of heat. The writer had occasion to time a condensing unit placed in a cupboard inside a room and remarked that on average it ran for a period of 10 minutes and remained idle for 15 minutes. The same machine maintaining the same space at the same temperature, but placed *outside* the house ran an average period of 3 minutes followed by 30 minutes idle. The condenser must, however, be housed so that it is well protected from the weather.

SEALED REFRIGERATING SYSTEMS

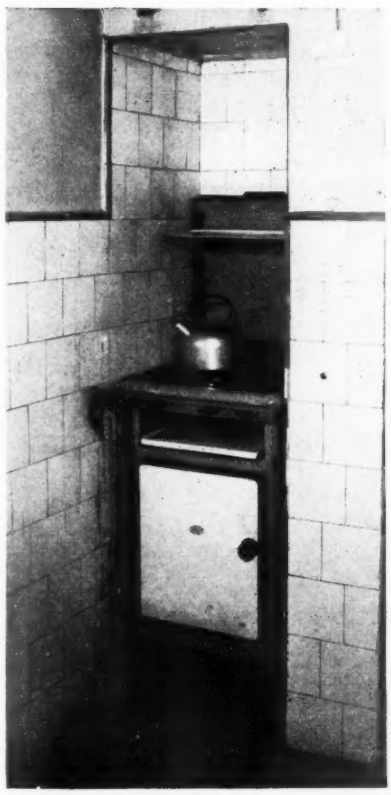
All the foregoing relates to what is generally known as the Open Type, but mention must now be made of Sealed Refrigerating Systems.

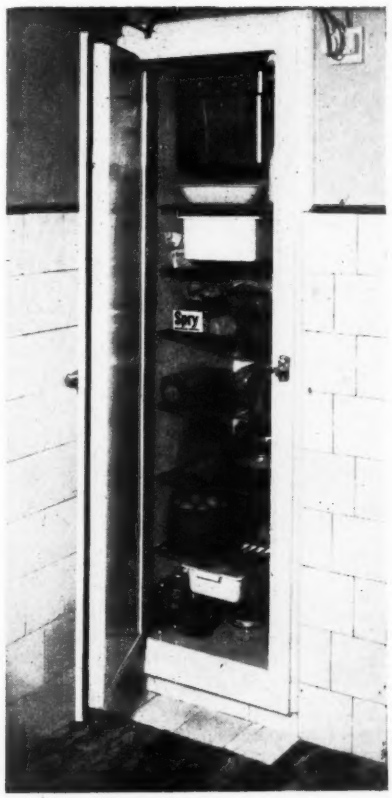
A Sealed Refrigerating System is a complete, compact unit with all working parts enclosed in a sealed container and protected from air, dirt and moisture.

Unlike the Open Type, the evaporator cannot, for installation purposes, be separated from the condensing unit and in the vast majority of instances it would not be a proposition to endeavour to provide for remote installation as described above. Sealed Refrigerating Systems can, however, be used for built-in jobs if a suitably ventilated compartment, reasonably adjacent to the food compartment, is available, but special provision will be necessary for effecting the installation either by having a suitable plugged door in the food compartment through which the evaporator can be passed, or else the provision of a slot which will permit the pipes to be fitted in without cutting.

INSULATION AND LINING

The designing of the actual compartment of a built-in refrigerator is more akin to the designing of cold stores than to that of standard refrigerators. In place of the steel liner coated with vitreous enamel the architect must use one or other of the asbestos cement sheets with a glazed surface, or hardboard with an enamelled surface or, best of all, a plastic sheet. He must in addition insulate not only the door but all the bounding surfaces. The alternative materials are too many to specify here: nearly all have a K value of about 0·3 which means in practice that in normal circumstances 2 in. all round should be sufficient. It is hardly necessary to remind architects that this is the equivalent of 2 ft. 6 in. thickness of brickwork. Where a refrigerator opens on to a kitchen facing south in which there is also a domestic boiler the ambient temperature can easily rise to 90° F. and in these circumstances it would be wise to increase the insulation of the door to 3 in.





Figs. 6 and 7. A characteristic conversion job in old property. The gas cooker, left, was removed from a most inconvenient position to make way for a 14 cu. ft. built-in refrigerator, right, designed to the housewife's requirements.

INFORMATION CENTRE

2.137 planning : general

THE LAND

Man and the Land. L. Dudley Stamp. (Collins 25s., 1955.)

A companion volume to Dr. Dudley Stamp's well-known *Britain's Structure and Scenery* in Collins's popular The New Naturalist series of books. 272 pp., illustrated, diagrams, photographs and colour plates.

Among the many books which have been published in recent years on the historical development of the land in this country, *Man and the Land* is likely to find a permanent place, especially for the "Planning" reader, for there are few authors today who can write as sympathetically minded for the needs and ways of those who live on and by the land and for those whose profession it is to study, manage or to plan.

The scope of this book is wide: a historical study from the beginning of the British Eden until the second Elizabethan age and the future, covering in its stride both the evolution of the land and the development of all that grows upon it: both in terms of crops and forestry and animal and bird life.

This book deserves to find a permanent place upon the bookshelves of planning readers for many years to come.

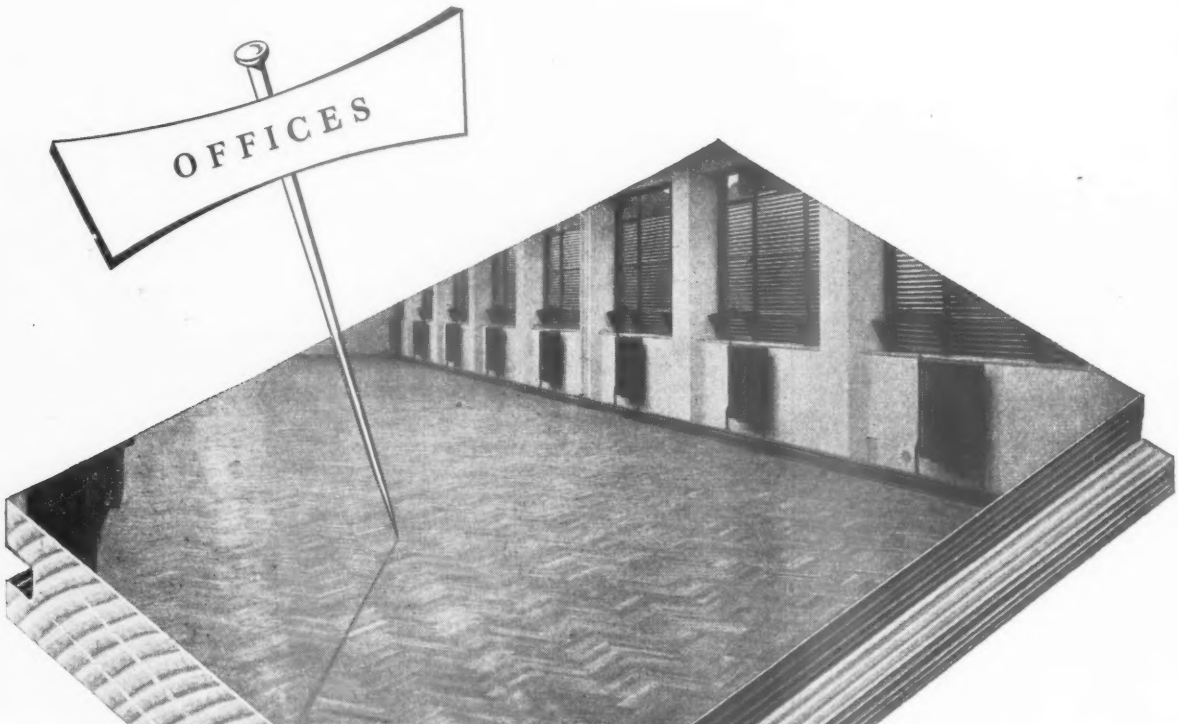
5.52 planning: public utilities

TRANSPORT AND LAND USE

Land Use Location and Transport, by K. Liepmann, Ph.D. (The Manchester School, January, 1955.)

In this article the author considers the relationship between the three terms of her title; indeed, her first point is that, except in a very local sense, they are rarely considered as having a relationship at all.

With the passing of an agricultural economy and the later advent of modern transport the factors determining the location of our various land uses have changed radically. Facility of transport has led to low density "open" development; to decentralization and to the segregation of activities—the increasing specialization of land use. These effects amount to a policy of dispersal. The author suggests that while dispersal brings certain benefits—relief of urban congestion, lower, and thus possibly cheaper, buildings, reduction of the migration of workers consequent upon economic change—its defects are the more serious. There is the depletion of the stock of available land; the loss of time in the transport of people and goods; the costs of transport; and lastly the enfeeblement of the social fabric. Under these headings some impressive facts and figures are marshalled: for example, that £150,000,000 has been spent on new residential roads since the war and that some 9 per cent. of the employed population is engaged in transport and related industries. But ultimately the most forceful case against dispersal is the breakdown of that vital fabric of exchange and intercourse between people; a breakdown framed in the tidy but spiritually ill-informed notion of "zon-



Wood Block Floor in the service offices of the Triumph Engineering Company's factory extension. Architects: Harry W. Weedon and Partners.

They chose WOOD floors

★ A good hardwood floor stands up to a lifetime of hard wear

★ It is quiet, warm and comfortable underfoot

★ It is a pleasure to look at

★ It can be cheaply and easily maintained in perfect condition

There's nothing like WOOD

ISSUED BY THE TIMBER DEVELOPMENT ASSOCIATION LIMITED, 21 COLLEGE HILL, LONDON, E.C.4, AND BRANCHES THROUGHOUT THE COUNTRY IN CONJUNCTION WITH THE HARDWOOD FLOORING MANUFACTURERS' ASSOCIATION

TD 44

ing." The author mentions the "Essential inter-action between great numbers" in both the social and the industrial senses, but suggests that to combine this with "open" development and decentralization imposes too heavy a social and economic burden.

In conclusion the author calls for a greater variety and compactness of development; for the use of transport to "temper" compactness and administer to freedom of choice.

5.53 planning: public utilities
CAR PARKING

Car Parking in Central Areas. (The Surveyor and Municipal and County Engineer, p. 1019, November 20, 1954, p. 1046, November 27, 1954.)

A brief account of Mr. Buchanan's paper given to the Public Works and Municipal Services Congress. A very clear analysis of this most intractable problem. Commended.

15.129 materials: steel
STRUCTURAL STEEL SECTIONS

Broad Flange Beams. B.S. 2566: 1955. (British Standards Institution.) 2s. 6d. 1955.

New BS gives details of new standard sections for broad flange beams, heavy flanged T-bars and long legged T-bars. These range from 6 in. × 6 in. to 24 in × 12 in., 6 in. × $2\frac{15}{16}$ in. to 12 in. × $11\frac{15}{16}$ in. and 1 in. × 3 in. to 5 in. × 10 in. respectively. Consideration was given to a large number of special sections which had been put forward as incorporating factors which would facilitate their being welded and the sections considered most suitable are those now included in the new BS.

18.162 construction: theory
SITE ENGINEERING

Simplified Site Engineering for Architects and Builders. Parker & McGuire. (Chapman & Hall Ltd. 1954. 40s.)

American text book mainly devoted to simple surveying and setting out works of interest to Architects and Builders.

The average student of building works in this country would value a book which dealt with site engineering as a valuable work which taught him all those things about concrete placing, plastering, brickwork, etc., which he never saw at college. It is therefore essential to describe the field which this particular work covers as it is not so wide as the title suggests. Mr. Parker has been concerned with a number of simple explanations of this, that and the other and usually does them very well. This work of 250 pages and many tables begins with the basic mathematics for use with simple surveying. Chapters 3-5 deal with simple surveying, the use of tape and instruments for measurement of distances and angles. Typical mistakes in the use of the instruments are given. The next few chapters cover computations of the survey and areas, the plotting of the survey and balancing corrections, levelling, setting out of horizontal and vertical curves, computations for cut and fill. Chapters 15-17 are more in keeping with the title and deal with site works such as drainage, grading and setting out of buildings.

18.163 construction: theory
STEELWORK DESIGN

Steel Designers Manual. (Crosby Lockwood. 1955. 50s.)

Comprehensive data for design of steel structures mainly for designers but of general interest to Architects.

The 909 pages of this work contain a vast collection of theory, facts and figures intended to embody all the material necessary for the design of steel structures. In a book of this kind the authors must have a harder task deciding what information can be left out so as to render the book not too unwieldy. After all the whole value of a design handbook is that the designer must be able to flip open the book at the very page he requires. In this respect several essentials are lacking such as code loadings, safe load tables and a set of full scale part sections of flanges of joists and channels so essential to detailing of connections. The chapters on welding and plastic design could have been further advanced. The contents do include, however, just about everything else the steelwork designer needs and the book must be considered a most valuable prize to any Engineer or Architect at the price of 50s.

18.164 construction : theory
STRUCTURAL DESIGN

Structural Analysis. W. Fisher Cassie. (Longmans, Green & Co. Ltd. 1955. 18s.)

Second edition of this well-known book of examples in structural analysis, of interest to both Architects and Engineers.

The only main alterations in this second edition are the addition of two pages in the area moment method (Chapter 2) to indicate a solution for a beam subjected to an applied moment and the addition of a new chapter (Chapter 10) dealing with model analysis. This chapter gives advice on the preparation of perspex or cardboard models, the proportions required to assimilate the members in the frame and the methods of applying the rotations and displacements and measuring same. The book is of great value to all students in that it concentrates on presenting the theory by way of actual solutions to problems and by working through these problems a far better knowledge is obtained than reading much of pure theory.

18.165 construction: theory
ARCH DESIGN

Reinforced Concrete Arch Design. G. P. Manning. (Sir Isaac Pitman & Sons Ltd. 1954. 30s.)

Second edition of text book on reinforced concrete arches of interest to Architects and Engineers.

The second edition has 192 pages, 144 figs., seven plates and appendix and subject index. The general theory of the thin elastic arch is first presented, followed by the symmetrical fixed arch, the symmetrical one span two pinned arch and the symmetrical one span two pinned tied-arch. Chapters 5 & 6 deal with the symmetrical fixed tied arch and the unsymmetrical fixed arch. Chapter 7 has been revised to be brought into line with the author's displacement method and covers continuous arches on flexible supports. The next chapter on practical considerations contains some wise words not only on arches but on concrete generally. Then follow three detailed cases of spans ranging from 60 ft. to 130 ft. Chapters 12 and 13 cover solid abutments and piled foundations and perhaps are in sufficient detail to belie the title of the book but are nevertheless quite interesting. A final chapter deals with temporary hinges.

The book is intended for the use of designers and provides a definite method which, followed step by step gives the most economical shape and thickness for an arch in any given case.

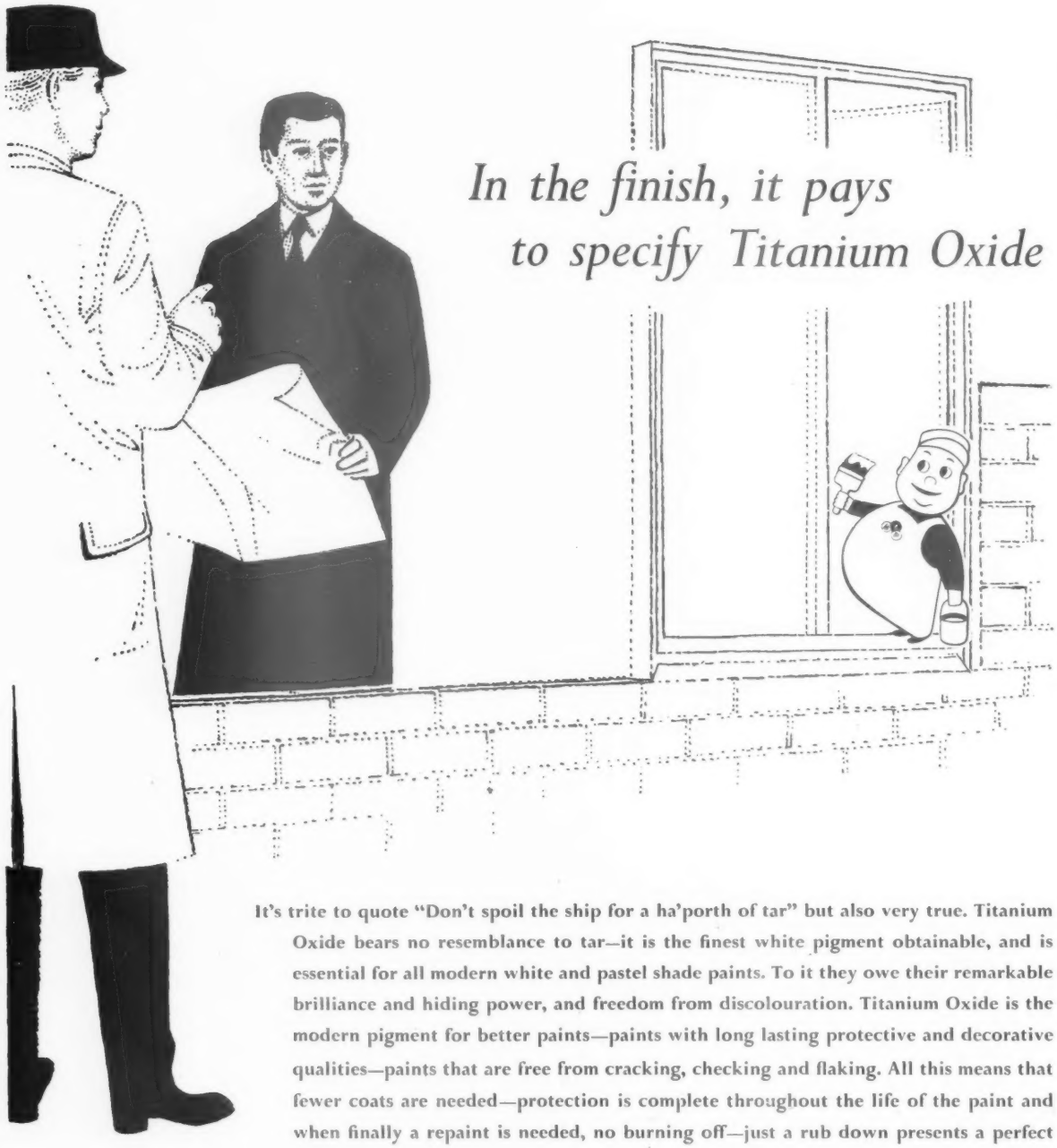
THE INDUSTRY

From the Industry this week Brian Grant reports on three items which he saw at the Factory Equipment Exhibition, Earls Court: a loud-speaking telephone, radiant strip heating and a factory ventilating unit. He also comments on a recessed lighting system, a key for plaster and a substitute for wall paper linings.

At the Factory Equipment Exhibition, which will have closed long before these notes appear, there was not very much new of interest to the architect—although the Exhibition was worth a quick visit merely to gain background information about such things as bicycle racks, canteen equipment, and the many types of office equipment now in common use.

There was, however, one gadget which has been advertised quite a lot, but which I had not, until this show, seen demonstrated. This is the Fonadek, a device which should do much to defeat the menace of the telephone. Lots of my time seems to be spent waiting for someone who is "on another line" when I want him, or else my patience is rapidly exhausted while a succession of dovelike voices repeats "one moment please" until someone can be bothered to remember who he asked for. The Fonadek is a small pyramidal cabinet which sits on your desk and on to which you hook the handset of your phone. This converts the handset into a loud-speaking

Fonadek loudspeaking telephone.



In the finish, it pays to specify Titanium Oxide

It's trite to quote "Don't spoil the ship for a ha'porth of tar" but also very true. Titanium Oxide bears no resemblance to tar—it is the finest white pigment obtainable, and is essential for all modern white and pastel shade paints. To it they owe their remarkable brilliance and hiding power, and freedom from discolouration. Titanium Oxide is the modern pigment for better paints—paints with long lasting protective and decorative qualities—paints that are free from cracking, checking and flaking. All this means that fewer coats are needed—protection is complete throughout the life of the paint and when finally a repaint is needed, no burning off—just a rub down presents a perfect surface for new paint.

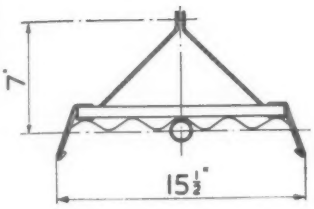
Specify titanium paint and have the best.

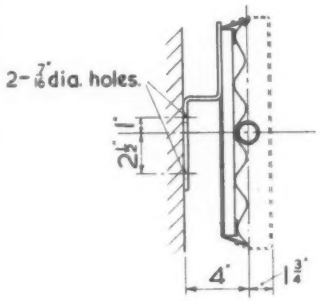
Issued in the interests of better paintwork.

T
B P
TITANIUM PIGMENTS

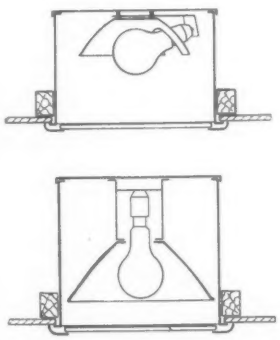
Factories at Grimsby and Billingham and at Burnie, Tasmania. Agents in most principal countries.

BRITISH TITAN PRODUCTS COMPANY LIMITED
COPPERGATE
YORK





Above, Raystrip radiant strip heating. Upper detail shows horizontal fitting; lower detail shows wall mounted fitting. Below, "In-Bilt" recessed lighting. Upper detail shows inclined lamp mounting; lower detail shows vertical lamp mounting.



telephone, so that you can carry on with your homework while you wait, the incoming voice being amplified and outward speech transmitted via an acoustic bowl into the telephone mouthpiece (see illustration). I must confess that nearly all loud-speaking phones sound to me like nasal cockney with a four-ale blur, but the Fonadek is as good as most, and you can always use the handset in the usual way. The device is mains or battery operated, and equally good with GPO or internal phones. (*Fonadek* [*Branson*] *Ltd., Vivian Road, Harborne, Birmingham,* 17.)

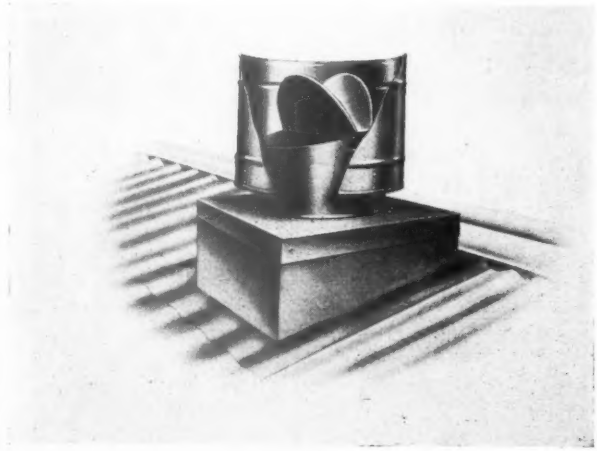
RADIANT STRIP HEATING

The sections on the left show a new type of heating panel known as "Raystrip." This consists essentially of lengths of corrugated aluminium sheet prepared for attachment to long runs of 1¼-in. bore steel pipe. The system has been developed particularly for use in factories with the radiant face parallel to the floor, but other versions are available for mounting on walls to give horizontal radiation or for mounting between bays to give radiation in both directions. In the type illustrated the downward radiation forms a high percentage of the total heat emission, but the strip can also be used uninsulated if a greater proportion of convected heat is required.

The system can be used with either low-temperature hot water, or with medium- or high-temperature hot water or steam. Erection is simple and in most cases the pipes can be arranged in long hairpin loops running the full length of the building so that mains and valve requirements are kept to a minimum. (*Copperad Ltd., Colnbrook, Bucks.*)

FACTORY VENTILATION

A new type of factory ventilating unit has recently been introduced by P. M. Walker & Co. Six sizes are standardized, with capacities ranging from 2,000 to 27,000 cub. ft./min. and a two-year guarantee is given. As can be seen from the illustration, the outlets have a pair of shutters which can be closed when the fan is not in use so that heat losses are reduced to a minimum, while the cylindrical wind guard prevents down draughts and other interference. The shutters themselves are in stainless steel and the rest of the unit is in galvanized steel sheet, though alternative materials are available if required. The motors are to BS 168 or 170, and are suitable for continuous running in temperatures up to 105 degrees, or, if necessary, up to 250 degrees with special windings and silicone grease packed bearings. Flameproof motors can also be supplied and special protective treatments can be arranged for factories where acid fumes or other chemicals are a problem. (*P. M. Walker & Co. (Halifax) Ltd., Alexander Works, Halifax.*)



Left, P. M. Walker & Co.'s ventilating unit with shutters which can be closed to reduce heat loss when fan is not in use.

"IN-BILT" LIGHTING

A temporary catalogue (publication 55/1) describes Messrs. Holophane's new "In-Bilt" lighting system, which includes both flush and semi-recessed fittings. The System forms part of the building structure and can be arranged to provide either high intensity localized illumination or general lighting. As with all Holophane fittings, full light distribution curves are available, so that it is possible to provide any degree of illumination where it is needed. (*Holophane Ltd., Elverton St., Westminster, London, S.W.*1.)

GLOSS PAINTS

Docker Bros. announce a new range of gloss paints called Dockerlux, which is to replace both Hernator and Syntholux. It is based on a special medium which is claimed to have the best properties of oil bases and synthetic resins, and is suitable for both inside and outside work. (*Docker Bros., Ladywood, Birmingham* 16.)

PLASTERING ON SMOOTH SURFACES

A new material known as Plastaweld is claimed to do away with the need for hacking or raking out joints before plastering, and also to give a satisfactory key between all types of gypsum plaster and painted work, glazed bricks and tiles and even metal. Plastaweld is applied by brush or spray and will cover from 70 to 120 square yards per gallon, and thereafter the plaster can be applied in two hours, or at any time up to a fortnight. (*J. Manger & Son, 57d Kingsland High St., London, E.*8.)

PAPERHANGING

An alternative to lining paper is Polylina, a fibrous cellulose material which can be mixed with water to form a smooth paste and brushed on. It forms a paper-like film which will bridge small cracks and irregularities and which needs no sizing or rubbing down. It is recommended for use with Polycell adhesive. (*Polycell Products Ltd., 73 Highgate Road, London, N.W.*5.)

SOLID FUEL APPLIANCES

List No. 10, Recommended Solid Fuel Appliances, has now been published, replacing List No. 9 dated July, 1954. Prepared in consultation with the Ministry of Fuel and Power, the list contains all the approved domestic solid fuel appliances and has notes on the type of fuel suitable for them. Price 6d. (*The Coal Utilisation Council, 3 Upper Belgrave St., London, S.W.*1.)

CORRECTIONS

In the report of the Ideal Home Exhibition (page 385, March 17) there were two errors. The output of the Ideal No. 2A Autocrat boiler should be 40,000 B.Th.U. per hour, and the price of the Jackson electric cooker should be £31 10s. as illustrated. There is also another model listed at £30 10s.

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

ENQUIRY FORM

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

.....

.....

.....

Please ask manufacturers to send further particulars to :—

NAME .....

PROFESSION or TRADE

.....

ADDRESS .....

.....

14.4.55

Buildings Illustrated

House in Totteridge Lane, Totteridge, Herts. (Pages 506-507). Architects: Sydney Greenwood & Howard N. Michell, A/A.R.I.B.A. General Contractor: John Laing & Son Ltd. Sub-contractors: bricks, Proctor & Lavender Ltd. (golden brown facings), London Brick Co. Ltd. (Tuscan facings); stone, marble, Anselm Odling & Son Ltd.; special roofings, W. M. Walker & Co. Ltd. (cedar shingles); roofing felt, Permanite Ltd.; glass, Pilkington Bros. Ltd. (insulite) supply only, Newman & Watson Ltd.; patent flooring (mosaic), S. A. Forbes & Sons Ltd.; central heating, plumbing, G. N. Haden Ltd.; fireplace, Allied Ironfounders Ltd.; gas fixtures, gas fitting, Eastern Gas Board; electric wiring, Holliday Hall & Stinson; electric light fixtures, Merchant Adventurers of London Ltd., Troughton & Young Ltd., Falk Stadelmann & Co. Ltd.; electric heating, Bratt Colbran; external tiling, Carter & Co. (London) Ltd.; sanitary fittings, Shanks & Co. Ltd.; door furniture, A. C. Roberts, A. J. Binns Ltd., Childs Constantine & Co. Ltd.; casements, sunblinds, window furniture, greenhouse, Crittall Manufacturing Co. Ltd. (metal windows), Holcon Ltd. (Carda windows); plaster, Pollock Bros.

Beckenham Alexandra County Primary School in Cator Road, London, for Kent Education Committee. (Pages 511-514). Architects: Elie Mayorcas, F.R.I.B.A., assistant architect-in-charge: L. E. Tatum, A.R.I.B.A., in collaboration with Kent County Architect's Department, consulting engineer, structural: F. J. Samuely, services, G. H. Buckle & Partners, quantity surveyors, C. John Mann & Son. General Contractor: Anglo-Scottish Construction Co. Ltd.: Clerk of Works, R. Norris: General Foreman, Mr. Graham. Sub-contractors: reinforced concrete (pre-cast), Helical Bar & Engineering Co. Ltd., (pre-stressed and trussed beams) Atlas Stone Co. Ltd.; bricks (external facings), The London Brick Co. Ltd.; structural steel, R. W. Sharman Ltd.; roofing felt, William Briggs & Sons Ltd.; glass, Rayner Davis & Co. Ltd.; patent glazing, The Morris Singer Co. Ltd.; woodblock flooring, Vigers Bros. Ltd.; plastic tile flooring, Armstrong Cork Co. Ltd.; central heating, Fred G. Alden Ltd.; electric wiring, J. H. Plant Ltd.: electric light fixtures, Falk, Stadelmann & Co. Ltd.; sanitary fittings, Stitson's Sanitary Fittings Ltd.; sliding door fittings, Hill Aldam & Co. Ltd.; door furniture, Lockerbie & Wilkinson Ltd.; casements and window furniture (metal), The Morris Singer Co. Ltd. (hardwood), Holcon Ltd.; rolling shutters, Shutter Contractors Ltd.; metalwork (balustrades, handrails, etc.), Light Steelwork (London) Ltd.; (pressed door linings), The Morris Singer Co. Ltd.; joinery, John Sadd & Co. Ltd.; pre-cast terrazzo partitions, Zanelli (London) Ltd.; tiling, F. & E. Eastman (England) Ltd.; textiles, Gerald Holtom; wallpapers, Arthur Sanderson & Sons Ltd., and John Line & Co. Ltd.; cloakroom fittings, A. J. Binns Ltd.; letters and card holders, Dales (Lettering) Ltd.; oil paints, etc., Screeton (Paintmaker) Ltd.; plastic emulsion and chlorinated rubber paints, etc., Chemical Building Products Ltd.

Corrections

Ian G. Hampson, whose letter on the proposed D. H. Lawrence memorial for Eastwood, Nottinghamshire, was published on March 31, is an associate of the RIBA, not —as we indicated—a student.

On page 401 of our issue for March 24, 1955, roofing slabs at the Sheffield secondary school were referred to on a drawing as "strawboard." These slabs, made by Stramit Boards Ltd., were correctly described on page 407 of the same issue as "2-in. thick compressed straw paper covered slabs."

A tall tale? No!

SECULATE ACTUALLY PREVENTS CONDENSATION

For a substance to prevent condensation by setting up a barrier between the air—no matter how moist—and the surface on which it is applied sounds a bit far-fetched, but it's an established fact. We have proved the case for Seculate time after time, under the most adverse conditions.

Seculate is quickly and easily applied by brush or by trowel. It is quick-drying and gives an even finish or it may be stippled to obtain a textured surface.

It adheres well to metal, stone, concrete, plaster, cement and wood. It is washable, durable, mould-resistant, fire resisting and will not flake, even under intense vibration. Write to us for literature.

SECULATE

PATENTS APPLIED FOR

ANTI-CONDENSATION COMPOUND

Supplied by

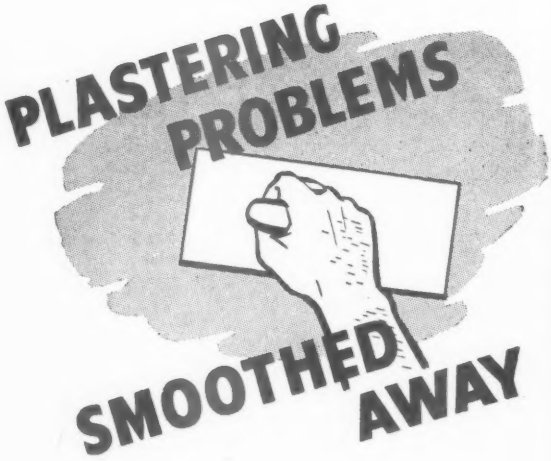
BRITISH LEAD MILLS LIMITED

BYRON HOUSE, 7-8-9, ST. JAMES'S ST., LONDON, S.W.1.

WORKS: WELWYN GARDEN CITY, HERTS. ALSO WARRINGTON, LANCS.

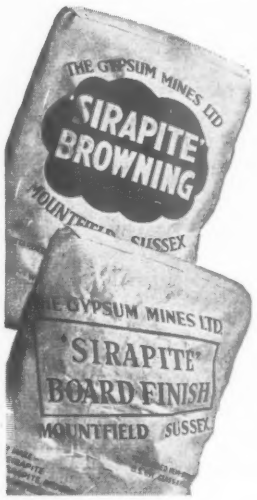
CRC1SC

PLASTERING PROBLEMS SMOOTHED AWAY



Introduced many years ago, 'Sirapite' Plaster rapidly established itself as a first-class product. Consistently developed and improved, it is now generally recognised as the ideal finishing plaster.

The following supplementary 'Sirapite' products are manufactured to the same high standard:



'SIRAPITE' BROWNING

(Retarded Hemi-hydrate) Class B, type 'a'.
The quick-setting undercoat plaster.
Specially produced to enable surfaces to be rendered and set in one day. High covering capacity.
Good insulating and fire-resisting properties.

'SIRAPITE' BOARD FINISH

(Retarded Hemi-hydrate) Class B, type 'b'.
For use as a single coat on plaster board, fibre and other wallboards.

Full technical service available, including consultation on site.
SPECIFICATION BOOKLET free on request.

'Sirapite' REG°

PRODUCTS

from

THE GYPSUM MINES LTD

MOUNTFIELD · ROBERTSBRIDGE · SUSSEX

Phone: Robertsbridge 80. *And at Kingston-on-Soar, Nottingham.*

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

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

LONDON COUNTY COUNCIL.

Grade III ENGINEERS (salary up to £892 10s.) and SURVEYING ASSISTANTS (up to £739 10s.) required in District Surveyor's Service. Qualifications A.R.I.B.A., A.M.I.Str.E., or A.R.I.C.S.; structural knowledge essential. Particulars and application forms from Architect (AR/EK/DS/2), County Hall, S.E.1. (1025). 3511

LONDON COUNTY COUNCIL.

Architects and surveyors required for safety regulations of theatres and special buildings, and for general building regulation work. Salaries up to £892 10s., according to experience. A.R.I.B.A. or A.R.I.C.S. essential. Particulars and application form from Architect (AR/EK/TBR/3), The County Hall, S.E.1. (848) 3487

NATIONAL COAL BOARD.
NORTHERN (N. & C.) DIVISION.
VACANCIES FOR ARCHITECTS.

There are vacancies for ARCHITECTS at salaries up to £900 per annum in the office of the Divisional Architect at Gosforth, Newcastle-upon-Tyne, 3, for work of interest and variety in large reconstruction schemes. Work will include workshops, laboratories, offices, pithead baths, farms, fire stations, housing.

Qualified Architects and Architects at Intermediate stage are required: further particulars of the posts can be obtained from J.C. Spooner, A.R.I.B.A., A.R.I.C.S., Divisional Architect, Ashfield Tower, Kenton Road, Gosforth, Newcastle-upon-Tyne, 3, to whom applications, stating age, training, and details including salary of past and present appointments, should be submitted within 10 days of the publication of this announcement. 9095

BOROUGH OF GRANTHAM.

SECOND ARCHITECTURAL ASSISTANT wanted in Borough Surveyor's department in A.P.T. Grade III (£600—£725). National Conditions of Service and Local Government Superannuation Act apply. Appointment is terminable by one month's notice. Good general experience, especially of housing, is essential, and previous local government service is desirable. A house is available.

Applications, quoting three references, should be sent to the Borough Surveyor, Guildhall, Grantham, by 19th April, 1955.

JOHN F. GUILE,
Town Clerk.

Guildhall, Grantham. 9334

BOROUGH OF CHELTENHAM.
APPOINTMENTS OF TWO ARCHITECTURAL ASSISTANTS.

Applications are invited for the above appointments (salaries within Grade A.P.T. IV—£675 to £825 per annum) on the Capital Works Establishment.

Applicants must be Associate Members of R.I.B.A. or equivalent, and experienced in the design of public Buildings, Housing and Ancillary Buildings in connection with Estate Development.

The appointments are subject to the National Conditions of Service; to the Superannuation Acts; and to a medical examination, and will be terminable by one month's notice on either side.

Applications, endorsed "Senior Architectural Assistant," stating age, training, qualifications and experience of present and previous appointments, and giving the names of two referees, are to reach Mr. G. Gould Marsland, M.B.E., B.Sc., M.Inst.C.E., Borough Surveyor, Municipal Offices, Cheltenham, not later than Monday, 18th April, 1955.

F. D. LITTLEWOOD,
Town Clerk.

Municipal Offices, Cheltenham.
26th March, 1955. 9358

COVENTRY CORPORATION require

(*a*) 8 Qualified ASSISTANT ARCHITECTS.
(*b*) 1 Qualified ASSISTANT PLANNER.
(*c*) 4 ARCHITECTURAL ASSISTANTS.

Salary New Grade for Special Classes £650—£775 (posts *a* and *b*) and within A.P.T. II £560—£640 (post *c*). Additional local award £26 (men) or £19.10s. (women) in approved circumstances on salaries up to £750.

For post (*b*) Associate T.P.I. with practical experience development control work essential. Additional architectural qualification an advantage. For post (*c*) Inter R.I.B.A. or equivalent required. Housing accommodation may be available posts (*a*) and (*b*). Application form and conditions from Acting City Architect and Planning Officer, Bull Yard, Coventry, returnable 30th April. 9384

CITY OF CAMBRIDGE.

Applications are invited for the appointment of a SENIOR ASSISTANT ARCHITECT—GRADE IV (commencing salary £765) in the Architectural Section of the City Surveyor's Department.

The successful applicant, who must be an A.R.I.B.A. and have had sound experience in the design and construction through all stages of large Local Authority building projects, particularly schools, will be employed in a senior capacity in connection with an interesting and varied building programme which will provide scope for initiative and responsibility.

The post is permanent, superannuable, subject to medical examination and to one month's notice on either side.

Housing accommodation is available.

Forms of application may be obtained from T. V. Burrows, City Surveyor, The Guildhall, Cambridge, to whom they must be returned by the 26th April, 1955.

ALAN H. I. SWIFT,
Town Clerk.

The Guildhall,
Cambridge. 9385

BOROUGH OF EALING requires a Temporary SENIOR ARCHITECTURAL ASSISTANT, salary A.P.T. IV—V, £675—£900, plus London Weighting. Application form and full particulars to be obtained from Borough Surveyor, Town Hall, Ealing, W.5. Closing date 18th April, 1955.

E. J. COPE-BROWN,
Town Clerk.
9307

BOROUGH OF WORTHING.
BOROUGH ENGINEER'S DEPARTMENT.
ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the above appointment at a salary in accordance with Grade A.P.T. II of the National Joint Council's Scale of Salaries, i.e., £560—£640 per annum.

Applicants should have passed the Intermediate Examination of the Royal Institution of Chartered Surveyors, Sub-Section 3, and must be capable of and had experience in abstracting and building and measurement of works on site. Experience of taking off and in the settlement of final accounts would be an advantage.

The appointment will be subject to the National Scheme and Conditions of Service of Local Government Officers; to the Local Government Superannuation Act, 1953, and Local Government Superannuation (Benefits) Regulations 1954; and to the successful applicant passing satisfactorily a medical examination. The appointment will be terminable by one month's notice on either side.

The Council will assist in finding housing accommodation for the successful applicant if required.

Applications endorsed "Assistant Quantity Surveyor" stating age, status, qualifications, experience, present and past appointments with duties, and accompanied by copies of two testimonials, should be sent to the Borough Engineer, Town Hall, Worthing, not later than Friday, 22nd April, 1955.

ERNEST G. TOWNSEND,
Town Clerk.

Town Hall, Worthing.
24 March, 1955. 9352

CORPORATION OF GLASGOW.
ARCHITECTURAL AND PLANNING DEPARTMENT.
ASSISTANT ARCHITECTS
PLANNING ASSISTANTS
ASSISTANT QUANTITY SURVEYORS
ASSISTANT CIVIL ENGINEERS
ASSISTANT HEATING AND VENTILATING ENGINEERS.

Applications are invited from suitably qualified persons, salary on a scale £545—£915 with placing according to age, qualifications and experience. The posts are superannuable subject to medical examination. Forms of application may be obtained from the Principal Administrative Officer, 20, Trongate, Glasgow, C.1.

A. G. JURY,
City Architect and Planning Officer.
9119

ESSEX EDUCATION COMMITTEE.

South-east Essex Technical College and School of Art, Longbridge Road, Dagenham.

Applications are invited from Architects to form a panel of LECTURERS in the part-time day and evening courses in Architecture in all Intermediate and Final subjects of the examinations of the Royal Institute of British Architects. Applicants should be Associates of R.I.B.A. preferably with some teaching experience, and be conversant with contemporary design.

Forms of application may be obtained from the Clerk to the Governors at the College. 9457

HERTFORDSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following:—

(*a*) CHIEF ASST. QUANTITY SURVEYOR, Grade VII, £900—£1,100.
(*b*) ASSISTANT QUANTITY SURVEYORS, Grade V, £750—£900.
(*c*) ASSISTANT QUANTITY SURVEYORS, Grade IV, £675—£825.
(*d*) ASSISTANT QUANTITY SURVEYORS, Grade II, £560—£640.

Previous Local Government experience not essential.

Applicants must give full particulars of qualifications, training and experience, and state clearly which post is applied for.

Applications, with names of two referees, to County Architect, County Hall, Hertford, Herts., not later than 2nd May, 1955. 9401

NORTHUMBERLAND COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of a SENIOR ASSISTANT ARCHITECT/PLANNER at a salary in accordance with A.P.T. Grade IV of the National Joint Council Scales (£675—£825 p.a.). The actual commencing point will depend upon qualifications and experience.

The successful candidate will be in charge of the Architectural Design Section of the department and must have experience in dealing with re-development schemes, housing layouts, and architectural control. This appointment involves considerable responsibility and provides a wide scope for an architect who is interested in the related architectural/planning problems of a County Planning Authority. The final qualification of the A.R.I.B.A. is an essential requirement and possession of the A.M.T.P.I. qualification would be an advantage.

Applications on forms obtainable from the undersigned should be completed and returned not later than the 21st April, 1955.

J. B. ROSS, A.R.I.C.S.,
County Planning Officer.

County Hall,
Newcastle-upon-Tyne. 1. 9406

HARLOW DEVELOPMENT CORPORATION.

Applications are invited from suitably qualified architects to fill the following vacancies:—

ASSISTANT ARCHITECT, Grade IV(*b*) (£810 × £30—£960 per annum).

Applicants to have had considerable experience in design and supervision of large-scale housing and general works.

ASSISTANT ARCHITECT, Grade IV(*a*) (£695 × £30 (4) × £20—£835 per annum).

Applicants to have had experience in large-scale housing and general work, including preparation of working drawings for town centre and commercial buildings.

Housing. Superannuation.

Applications giving full details, stating post applied for and names of two referees to be sent to General Manager, "Terlings," Harlow, Essex, within 7 days. 9407

SOUTH EASTERN ELECTRICITY BOARD.

ARCHITECTURAL ASSISTANT—Surveyor's Section, Headquarters.

Salary £645—£720 under NJC Grade IV. Superannuable. Applicants must be competent draughtsmen, capable of preparing specifications and drawings for all types of buildings and carrying out site surveys. Applicants should preferably be members of the R.I.B.A. or the I.A.A.S., and should state age and particulars of present and previous appointments.

Applications, naming two referees, to The Surveyor, SEEBoard, 10, Queen's Gdns., Hove, 3, by 30th April, 1955.

A. L. BURNELL,
Secretary.
9408

BLABY RURAL DISTRICT COUNCIL.
ENGINEER, SURVEYOR & ARCHITECT'S DEPARTMENT.

Applications are invited for the position of ARCHITECTURAL ASSISTANT in the above department under the National Council Conditions of Service, A.P.T. Grade II, at a commencing salary of £560 per annum.

The person appointed must have passed the R.I.B.A. Intermediate Examination, or its equivalent, and have subsequently worked for a minimum period of one year in an architectural office.

Applications with copies of two recent testimonials to be forwarded to the undersigned not later than 23rd April, 1955.

J. J. DERRY,
Clerk of the Council.

Council Offices,
Narborough
Leicester.
30th March, 1955. 9411

CITY OF LONDON.

Applications are invited from Members of the Royal Institute of British Architects for the new whole-time appointment of CITY ARCHITECT at a salary between £3,250 and £3,500 per annum according to qualifications and experience. The City Architect will advise on the exercise of planning powers in the reconstruction and redevelopment of the City of London, and be in charge of all architectural services of the Corporation. Full particulars of the office and forms of application from E. H. Nichols, Town Clerk, 55/61, Moorgate, London, E.C.2: completed applications to be returned by 9th May. 9444

SURREY COUNTY COUNCIL.

Applications invited for following appointments:—

1. ASSISTANT ARCHITECT Grade V, £750 × £30 to £900 p.a., plus London Allowance. Must be Associate Members of R.I.B.A.

2. ASSISTANT ARCHITECT Grade III, £600 × £25 to £725 p.a., plus London Allowance. Preference given to applicants who are Associate Members of R.I.B.A.

Applicants for both Grades must have had good training and adequate experience in design and construction of modern buildings.

3. ASSISTANT QUANTITY SURVEYOR Grade IV, £675 × £30 to £825 p.a., plus London Allowance. Experienced taking off, site measuring, interim valuations and final accounts and must have passed final R.I.C.S.

Full details and present salary, accompanied by copies of three recent testimonials to County Architect, County Hall, Kingston, by 23rd April, 1955. 9403

CITY OF WAKEFIELD.
CITY ENGINEER'S DEPARTMENT.
PRINCIPAL ARCHITECTURAL ASSISTANT—GRADE A.P.T. IV.

Applications are invited for the above superannuable appointment on the new Grade A.P.T. IV commencing at £765 per annum and rising by two annual increments of £30 to £825 per annum.

Applicants who must be A.R.I.B.A. must have experience on the design, construction and maintenance of schools. The Authority has a progressive Education Building programme.

Applications stating age, qualifications, appointments and experience, with the names of two referees to be sent to me not later than 22nd April, 1955.

The provision of housing accommodation will be considered.

W. S. DES FORGES,
Town Clerk.

Town Hall, Wakefield. 9410

HARLOW DEVELOPMENT CORPORATION.
PLANNING ASSISTANT, Grade IV (*b*) (£810 × £30—£960 per annum). Suitably qualified applicants to be experienced in preparation of development and re-development plans. Housing. Superannuation.

Applications giving full details and names of two referees to General Manager, "Terlings," Harlow, Essex, within 7 days. 9409

LONDON COUNTY COUNCIL, PARKS DEPARTMENT, requires :—

(I) LANDSCAPE ARCHITECT. Recognised professional qualifications and extensive experience of preparation of working drawings and specifications and execution of work by contract. Commencing salary (on a scale £701 5s.—£31 17s. 6d.—£892 10s.), according to qualifications and experience.

(II) ARCHITECTURAL ASSISTANTS for preparation of working drawings and specification and supervision of work on site. Experience in landscape work and design an advantage. Salaries up to £688 10s.

(III) LANDSCAPE ASSISTANTS. Good knowledge of preparation of working drawings, schedules and specifications for park or garden re-instatement or new layouts to be executed under contract. Salaries up to £688 10s.

An extensive programme of construction of new parks and open spaces, the laying-out of grounds to new schools and housing estates and other types of ground work, is in hand, and these positions provide exceptional opportunities for applicants desiring to extend their experience in this field and in architectural work in association with landscaping.

Application forms from Chief Officer of the Parks Department (A.1.) Old County Hall, Spring Gardens, S.W.1. (WHItehall 3121, Ext. 33.) (420) 9447

CITY OF CHESTER.
DEPARTMENT OF CITY ENGINEER.

Applications invited for :—

(1) SENIOR ARCHITECTURAL ASSISTANT. Salary new A.P.T. Grade IV, namely £675—£825 per annum. Candidates should have had good training and experience, particularly in school design and should be Associates of the R.I.B.A. or hold a University degree in Architecture.

(2) QUANTITY SURVEYING ASSISTANT. Salary new A.P.T. Grade IV as above. Candidates should be suitably qualified and fully experienced in the preparation of Bills of Quantities and settlement of interim and final accounts in connection with construction of Houses, Schools and other buildings.

Applications with two testimonials should reach the City Engineer, 43, Northgate Street, Chester, by Saturday, 30th April, 1955. Canvassing directly or indirectly will disqualify and relationship with any member or officer of the Council must be disclosed. 9460

ARGYLL COUNTY COUNCIL.

Applications are invited for the post of CHIEF ASSISTANT ARCHITECT in the County Architect's Department: Salary Scale A.P.T. VII—VIII (£790—£915 per annum). The post is superannuable.

Applicants must be members of the Royal Institute of British Architects and should have had experience in the design, construction, and execution of works of housing schemes, schools and buildings of a public character, and in the care and maintenance of such schemes and buildings.

Further particulars as to terms and conditions of appointment and service can be obtained from the County Architect, County Offices, Dunoon, with whom applications, accompanied by copies of not more than two recent testimonials and giving the names of two persons prepared to act as referees, should be lodged within 14 days of the appearance of this advertisement.

A. D. JACKSON, *County Clerk.* 9455

SHEFFIELD REGIONAL HOSPITAL BOARD.

Applications are invited for the whole-time post of SENIOR ASSISTANT ARCHITECT. Salary scale £900 × £30—£1,050. Candidates must be Registered Architects and should be capable of taking charge of a block of work in the architectural department and of undertaking personally the more difficult and responsible individual projects. The appointment is subject to the Whitley Council terms and conditions of service, to the National Health Service (Superannuation) Regulations, and to one month's notice on either side. Applications, together with the names of three referees should be sent by the 30th April to the Secretary to the Board, Fulwood House, Old Fulwood Road, Sheffield, 10. 9426

HERTFORDSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of ASSISTANT ARCHITECTS within a salary range of £650 to £900 per annum, the commencing salary to be fixed according to qualifications and experience.

Previous Local Government experience not essential.

Applications, with names of two referees, to County Architect, County Hall, Hertford, Herts., not later than 25th April, 1955. 9400

STAFFORDSHIRE COUNTY COUNCIL.
EDUCATION ARCHITECT'S DEPARTMENT.
SUPERVISORY CLERKS OF WORKS.

Applications are invited from fully experienced CLERKS OF WORKS to act in a supervisory capacity in one of the following areas :—

(*a*) Stafford Area.
(*b*) Biddulph Area.
(*c*) Wolverhampton Area.

The salary for the post will be 11 guineas per week and though temporary the department has a large annual building programme, which should make continuity of employment possible. Experience in supervision of large educational establishments would be a definite advantage. Preference would be given to members of the Clerks of Works Association or equivalent body. Forms of application may be obtained from :—

A. C. H. Stillman, F.R.I.B.A.,
County Education Architect,
Green Hall, Lichfield Road,
Stafford.

Completed forms to be returned not later than Saturday, the 23rd April, 1955.

T. H. EVANS.
Clerk of the County Council. 9442

CARDIGANSHIRE COUNTY COUNCIL.

Applications are invited for the following appointments :—

1 ASSISTANT ARCHITECT. Grade A.P.T. IV (£675—£825). Applicants should be members of the R.I.B.A.

1 ARCHITECTURAL ASSISTANT, Grade A.P.T. III (£600—£795). Applicants should have passed the R.I.B.A. Intermediate Examination.

Commencing salary will be in accordance with qualifications and experience.

The appointment is in the County Architect's Department, County Hall, Aberaeron.

Application forms can be obtained from the County Architect and these must be returned to the undersigned by not later than the 30th April, 1955.

J. E. R. CARSON,
Clerk of the Cardiganshire County Council.

Swyddfaór Sir,
Aberystwyth. 9441

BOROUGH OF CHATHAM.
APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited for the appointment of ASSISTANT ARCHITECT within New Grade £650 × £25—£775, commencing at £650 per annum.

The person appointed is required for the redevelopment of central areas and other works offering considerable scope.

Applications, with copies of two testimonials or the names and addresses of two referees, should be delivered to the Borough Engineer and Surveyor, Town Hall, Chatham, by Friday, 29th April, 1955.

The appointment will be subject to the National Scheme of Conditions of Service; to the provisions of the Local Government Superannuation Acts and the candidate satisfactorily passing a medical examination. The appointment will be terminable by one month's notice on either side.

Housing Accommodation will be available if required. 9440

MIDDLESEX COUNTY COUNCIL—COUNTY ARCHITECT'S DEPARTMENT.

(*a*) ASSISTANT ARCHITECT, A.P.T. V (£780 to £930 p.a., inclusive).

(*b*) ASSISTANT ARCHITECT, A.P.T. III (£630—£755 p.a. inclusive).

Should be Registered Architects, experience of School Buildings advantage. Appointments to grade minima. Established, pensionable subject to medical assessment and prescribed conditions. Application forms (stamped addressed foolscap envelope) from County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1, returnable by 27th April (Quote Q.269 AJ) Canvassing disqualifies.

KENNETH GOODACRE.
Clerk of the County Council.

Guildhall,
Westminster, S.W.1. 9439

BILLINGHAM URBAN DISTRICT COUNCIL.
ARCHITECTURAL ASSISTANT.

Applications are invited, with names and addresses of two referees, by first post on Monday, 25th April, 1955, for the post of ARCHITECTURAL ASSISTANT—Salary A.P.T. II (£560—£640) commencing salary according to qualifications and experience.

Experience of housing and willingness to assist with quantity surveying duties an advantage.

Billingham is a rapidly expanding town (population 24,500) building approximately 400 houses per year under contract.

Consideration will be given to housing accommodation.

FRED M. DAWSON.
Clerk of the Council.

Council Offices,
Haverton Hill,
Billingham. 9417

DENBIGHSHIRE COUNTY COUNCIL.

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

(*a*) Two ASSISTANT ARCHITECTS, A.P.T. Grade IV (£675 to £825).

(*b*) Two ASSISTANT ARCHITECTS, A.P.T. Grade III (£600 to £725).

(*c*) Two ASSISTANT ARCHITECTS, A.P.T. Grade II (£560 to £640).

(*d*) Two ASSISTANT ARCHITECTS, A.P.T. Grade I (£500 to £580).

(*e*) One ASSISTANT QUANTITY SURVEYOR, Special Grade (£650 to £775).

(*f*) One LANDS & BUILDINGS SURVEYOR, Special Grade (£650 to £775).

(*g*) One ASSISTANT ELECTRICAL ENGINEER, A.P.T. Grade II (£560 to £640).

(*h*) One ASSISTANT HEATING ENGINEER, A.P.T. Grade II (£560 to £640).

Further details and application forms may be obtained from the undersigned to whom the completed application forms are to be returned by 30th April, 1955, except post (*h*), which shall be returned not later than 7th May, 1955.

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

County Offices,
Ruthin. 9443

THE NUFFIELD FOUNDATION.
RESEARCH FELLOWSHIP IN ARCHITECTURE.

The NUFFIELD FOUNDATION invites applications for a Fellowship tenable for two years at the Foundation's Division for Architectural Studies in London. The holder of the Fellowship will be expected to take part in the Division's programme of research, which at present covers hospitals, laboratories and agricultural buildings. The stipend attaching to the Fellowship will be within the range of £500 to £750 per annum.

The Fellowship is open to men and women who are citizens of the United Kingdom and who have completed a course qualifying them for registration as architects. Applicants should have gained some practical experience after qualifying. Evidence of experience in research and the intention to engage subsequently in research or teaching will be an advantage.

Applications must be received not later than May 1st, 1955. Full details and application forms are obtainable from The Director, The Nuffield Foundation, Nuffield Lodge, Regent's Park, London, N.W.1.

L. FARRER-BROWN,
Director of the Nuffield Foundation. 9422

HACKNEY BOROUGH COUNCIL invite applications for the following appointments on the permanent establishment :—

(*a*) ASSISTANT ARCHITECT. Salary within Grades A.P.T. IV/V (£675 p.a.—£900 p.a.) plus London Weighting allowance. Candidates must be Registered Architects and preference will be given to candidates with experience in the design and construction of municipal housing schemes and public buildings.

(*b*) JUNIOR ARCHITECTURAL ASSISTANT. Salary within Grade A.P.T. I (£500 p.a.—£580 p.a.) plus London Weighting allowance. Candidates should have had a good architectural training and be at least Probationers of the R.I.B.A. with several years' experience in an architect's office.

Application form obtainable from the Town Clerk, Town Hall, Hackney, E.8, returnable by 25th April, 1955. 9414

DERBYSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Vacancies for qualified ARCHITECTS exist on the undermentioned scales :—

(*a*) £750 × £30 to £900 per annum.
(*b*) £650 × £25 to £775 per annum.

The department has an extensive programme of interesting work, particularly in the new schools section.

N.J.C. Conditions of service. Pensionable post. Canvassing disqualifies. Further details and application forms from The County Architect, County Offices, St. Mary's Gate, Derby—returnable by 30th April, 1955. 9421

COUNTY BOROUGH OF SOUTHAMPTON.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments :—

(*a*) ASSISTANT ARCHITECT, Grade II (£560—£640).

(*b*) ARCHITECTURAL ASSISTANTS, Grade I (£500—£580).

(*c*) JUNIOR ARCHITECTURAL ASSISTANTS, Higher General Division (£170—£475 male; £150—£390 female).

(*d*) ASSISTAINT QUANTITY SURVEYOR, Grade I (£500—£580).

(*e*) JUNIOR QUANTITY SURVEYING ASSISTANT. Higher General Division, with two years' Quantity Surveyor's office experience (£170—£475).

(*f*) PLANNING ASSISTANT, Grade II (£560—£640).

(*g*) PLANNING ASSISTANTS, Grade I (£500—£580).

(*h*) JUNIOR PLANNING ASSISTANT, Higher General Division (£170—£475).

Applicants for positions in the A.P.T. Division should possess the appropriate qualifications for Special Classes of Officers under N.J.C. Conditions of Service.

Applicants should state their housing needs.

Application forms from the Borough Architect, Civic Centre, Southampton, to be returned by 18th April, 1955. 9458

Architectural Appointments Vacant

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

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

BUILDING SURVEYING ASSISTANT (about R.I.C.S. Final Standard) with at least two years' practical experience required by City firm of Chartered Surveyors & Architects. 3925

ARCHITECTURAL ASSISTANT: Intermediate approaching final. Commercial and industrial work; large-scale contracts. Watson, Johnson, Stokes, Victoria Square, Birmingham. 4895

ARCHITECTURAL ASSISTANT required for busy practice covering North West England. Box 9136.

SALARY up to £793, according to experience for ASSISTANT in first class City Office. Box 9169.

URGENTLY required. ASSISTANT for responsible position in general practice with interesting work in hand over a large area. Salary directly related to ability. Accommodation available if required. Martindale and Jackson, F./A.R.I.B.A., Cathedral Chambers, Castle Street, Carlisle 9135

ARCHITECTURAL ASSISTANT required, intermediate stage or above, some office experience. Write for interview. Box 8770.

JUNIOR and intermediate ARCHITECTURAL ASSISTANTS required. Applicants with knowledge of commercial work, including offices and stores, etc. London experience an advantage. Box 8481.

"THE ARCHITECT'S JOURNAL" requires a DRAUGHTSMAN, to assist in the preparation of drawings for Working Details and Information Sheets. Good draughtsmanship, a knowledge of building construction, and a keen interest in the above type of work are necessary. Write to the Editor (Information Sheets), 9, Queen Anne's Gate, S.W.1, stating age, architectural training, and experience. 901

MESSRS. NORTH & PARTNERS are seeking an ASSISTANT with general experience in surveys of existing properties and building sites. As the practice extends throughout the whole of Gt. Britain the successful applicant must be prepared to travel. Ability to assist generally in the drawing office would be an added advantage. Salary according to experience. Reply to North & Partners, Maidenhead. 8807

RONALD WARD & PARTNERS require several ARCHITECTURAL ASSISTANTS. Apply 29, Chesham Place, Belgrave Square, S.W.1, or telephone Belgravia 3361. 7023

ARCHITECT'S ASSISTANTS required (1 Senior and 2 Juniors) for West End Office. Write, stating full particulars and salary required, to Box 8725.

REQUIRED for Architects' office, Central London area, young qualified ASSISTANTS interested in design and construction. Write, stating experience and salary required. Box 2325.

CLIFFORD TEE & GALE, F/F.R.I.B.A., require SENIOR and JUNIOR ASSISTANTS in their Westminster Office on Research Laboratories and other interesting projects. Please apply to 5, Buckingham Palace Gardens, S.W.1. (Sloane 2296). Five-day week 8660

RCHITECTURAL DRAUGHTSMAN required by multiple shop Co., interesting and varied work, involves a certain amount of travelling, 5-day week, staff canteen, pension scheme. Write, stating age, qualifications, salary required, to Box 9005.

ARCHITECTURAL ASSISTANT required in the West End Offices of Percy Bilton Ltd. Salary about £500—£600 according to experience. Work would entail preparation of drawings, details and specifications for wide range of buildings including houses, flats and offices. Write giving experience and other useful information to Staff Architect, Percy Bilton Ltd., 113, Park Street, W.1. 8292

SENIOR ASSISTANT required in pleasant Midlands private office for interesting and varied work. Should be qualified and experienced, capable of supervising staff and taking full responsibility. Good salary and prospect of partnership. Please write stating full particulars and salary required Box 9373.

ARCHITECT'S ASSISTANT required for Liverpool office. 5-day week. State experience and salary. Box L562, Lee & Nightingale, Liverpool. 9381

ARCHITECTURAL STAFF, all grades, wanted, interesting and varied work of contemporary character; light and airy offices. Apply J. Seymour Harris & Partners, 4, Greenfield Crescent, Edgbaston, Birmingham, 15. 8786

ARCHITECT'S ASSISTANT required in Midlands. Not necessarily fully qualified. Experience in surveying, levelling, estate layout as well as architecture an advantage. Salary range £550—£700. Reply giving full particulars to Box 9281.

ARCHITECTURAL ASSISTANTS required by B.B.C. in London for work on design of studios, transmitter and office premises. Candidates should be up to intermediate or final R.I.B.A. standard and have had some design office experience. Salary in scales £545 to £755 or £646 to £880, according to qualifications and experience. Requests for application forms to Engineering Establishment Officer, Broadcasting House, London, W.1, within 7 days, quoting ref. EX.27 A.J. 9104

ARCHITECTURAL ASSISTANTS urgently required up to Intermediate standard and preferably with office experience. State salary required. Fowler, Grove & Haggar, 149, Lodge Road, Southampton. 9283

ARCHITECTURAL ASSISTANT required in small private office. Intermediate to Final standard. Write, stating experience and salary required, to: A. F. Bennett, 35, Queen's Gate Mews, London, S.W.7. 9266

ARCHITECTURAL ASSISTANT required by Major Oil Company undergoing expansion, for its Sheffield office. Applicants should be of Intermediate standard, and must be capable of carrying out work on the design and re-modelling of service stations. Social Club, Pension and Life Assurance scheme, generous sickness benefits. Write, giving full details of experience, age and salary required, to Box 9262, quoting Ref. A.A. 588.

ARCHITECT, OR EXPERIENCED ASSISTANT, REQUIRED BY "THE ARCHITECTS' JOURNAL." Ability to write fluently and well, and a sound knowledge of construction and contemporary building techniques essential. Will be expected to write reports on buildings, supervise the production of technical architectural drawings, commission and sub-edit technical articles and assist production. Please reply to The Editor, "The Architects' Journal," 9, Queen Anne's Gate, S.W.1. 902

JUNIOR ARCHITECTURAL ASSISTANT required for busy West End practice. Salary according to age and experience. Shaw & Lloyd, Museum 9693. 9199

REQUIRED in Chief Architect's Department at Head Office of Multiple Store in London. (*a*) JUNIOR ARCHITECTURAL DRAUGHTSMAN or ASSISTANT with good basic experience to prepare sketch plans, working drawings and give general assistance; (*b*) JUNIOR SHOPFITTING DRAUGHTSMAN for Store Fixtures and Fittings. Write, with details of experience and salary required, to Box 9194.

SENIOR and JUNIOR WORKERS-UP urgently required. Five-day week. Apply, stating age, experience and salary required, to Stanley Griffith & Partners, Greycoat Chambers, 29, Greycoat Street, Westminster, S.W.1. 9232

ARCHITECTURAL ASSISTANT with good knowledge of design and working drawings required in small busy West End office, with interesting work of a varied nature. Apply in writing, stating qualifications and salary required. Box 9233.

OPENING for QUALIFIED ARCHITECTS as Assistant Designers with an expanding firm of new traditional builders. Must have good general practical knowledge and a keen interest in new building methods. A prospect exists for working overseas. Starting salaries range between £650 and £750 according to experience, with an increase after six months' satisfactory service. Messrs. Reema Construction, Ltd., Milford Manor, Salisbury, Wilts. 9235

MINOPRIO & SPENCELY & P. W. MACFARLANE need experienced ARCHITECTURAL ASSISTANT, salary £750 to £850, for London office. Write 18, Seymour Street, W.1. 9228

EXPERIENCED ARCHITECTURAL DRAUGHTSMEN required by Sir Alfred McAlpine & Son Limited, Building & Civil Engineering Contractors, Hooton, Wirral. Permanent employment and good prospects for suitable candidates. 9272

AN Established Engineering Firm in the East Midlands has an interesting vacancy for a DRAUGHTSMAN who has specialised on building work. The successful applicant will act as clerk of works on new constructions, deal with contractors, estimate, progress and check details of completed work. Quantity surveying experience would be an advantage. Excellent conditions of employment, pension scheme available. Please write, stating training, experience, qualifications, which will be treated in strictest confidence, to Box 8530, c/o Charles Barker & Sons Ltd., 31, Budge Row, London, E.C.4. 9322

A. R.I.B.A., single, newly qualified, for busy office in Gold Coast, West Africa. Accommodation (incl. feeding) and car provided. Salary by arrangement. Engagement for two years in first instance, with liberal leave, and air passages paid. Opportunity for partnership in growing practice for right type who must be prepared to work hard and get on well with Africans. Interviews in London. State when available. Apply with full particulars and photograph to Box 9319.

QUALIFIED ARCHITECTURAL ASSISTANT and ARCHITECTURAL DRAUGHTSMAN required for busy Dumfries Office with considerable variety of work. Reply, stating age, experience and salary required, to M. Purdon Smith & Partners, Architects, 33, Castle Street, Dumfries. 9415

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required for busy general practice. Commencing salaries £500 to £750 p.a., according to experience and qualifications. Apply H. N. Jepson & Partners, Chartered Architects, Midland Bank Chambers, Nuneaton. 9338

ARCHITECTURAL ASSISTANTS, Final and Intermediate standard for Schools, Churches, &c. Apply giving details of experience and salary required, to J. C. Prestwich & Sons, M.A., F/A.R.I.B.A., Bradshawgate Chambers, Leigh, Lancs. 9339

ARCHITECTURAL ASSISTANT required for busy Country Practice. Office experience essential; drive car desirable. Apply, stating training, experience and salary. Box 9345.

SAMUEL MORRISON AND PARTNERS require ASSISTANT ARCHITECTS of Intermediate and Final standard, with or without experience. Work includes interesting contemporary schools, factories, shops and houses in various parts of the country, industrial design and the development of prefabricated structures. Salaries comparable to Local Authority scales; interview expenses paid. Good office accommodation in pleasant surroundings. St. Alkmund's House, Belper Road, Derby. 9344

ASSISTANT required in Architect's Office at Reading. Knowledge of industrial and commercial work an advantage. Good prospects. Pension Scheme. Apply Sainsbury and Chamberlain, L/F.R.I.B.A., 14, Cross Street, Reading. 9346

ARCHITECTURAL ASSISTANTS required by The United Kingdom Atomic Energy Authority for Drawing Office work at Risley and other stations in the north west.

Qualifications:—At least three years' architectural training, some experience in an architect's office, and R.I.B.A. intermediate standard. Salary range £455 (at age 21) to £715. There is a contributory superannuation scheme, and an assisted travel scheme is in operation.

Long term possibilities and good prospects.

Applications to the United Kingdom Atomic Energy Authority, Industrial Group Headquarters, Risley, Warrington, quoting 882. 9348

ARCHITECTURAL ASSISTANT required; Intermediate standard for busy West End practice. Opportunity for young man wishing to obtain good general experience and use of initiative. Salary according to experience. Apply Eric H. Davie, A.R.I.B.A., A.M.T.P.I., Staff Architect, Hillier, Parker, May and Rowden, 77, Grosvenor Street, W.1. 9341

YOUNG ARCHITECT required by a well-known National Multiple selling all types of food. This is a progressive post calling for initiative and imagination and the successful applicant, whilst being a member of the Property Department would work very closely with the Managing Director on new building and refitting schemes. Applicants should send full details of training, qualifications and past commercial experience (if any), age, salary required, to Box 9330. All applications will be acknowledged.

NATIONAL COAL BOARD—EAST MIDLANDS DIVISION.
ARCHITECT'S DEPARTMENT, MILTON STREET, NOTTINGHAM.

APPLICATIONS are invited for the following permanent and superannuated appointments. Superannuation rights under Local Authority Schemes are transferable

S.V. 387—*Architects Grade II.*

Salary £600 × £25—£650 × £30—£900. Candidates should be Corporate Members of the R.I.B.A.

S.V. 388—*Architectural Assistants, Grade I.*

Salary £525 × £25—£650 (exceptionally to £800.) Candidates should be of R.I.B.A. Intermediate Standard and have had not less than 3 years' subsequent practical experience. Facilities are granted in certain circumstances to Assistants for part-time study at the Nottingham School of Architecture.

S.V. 389—*Quantity Surveyor Grade I.*

Salary £900 × £35—£1,200. Candidates should be Corporate Members of the R.I.C.S. with considerable experience.

The grade and point of entry into the above salary scales will depend on the qualifications and experience of the applicant.

The architectural work of the Department covers the design of Colliery Surface Buildings of all types required in the Division, including Workshops, Stores, Power Plants, Offices, Pithead Baths, Canteens, Medical Centres, Institutes and Recreation Buildings.

Applications, stating age, education, qualifications, present appointment and salary should be submitted within 14 days of publication to:—

The Secretary, National Coal Board, East Midlands Division, Sherwood Lodge, Arnold, Notts.

Envelopes and applications should be marked with the appropriate S.V. reference number. Original testimonials should not be sent. 9324

£500—£700 per annum salary offered for ASSISTANT to take part in large-scale development and remodelling of petrol filling stations, service stations, garages and workshops, etc. Must be capable of working independently. Should be of intermediate standard. Work will involve original design, site visits and a high standard of presentation. Five-day week, good pension and life assurance scheme, sickness benefits and free luncheon vouchers. Social Club. Write, giving full details, stating age, experience and salary required to Box 9325, quoting Ref. Y 593.

DESIGNER/DRAUGHTSMAN wanted to assist designer of Church, School, and Domestic, Woodwork, Furniture and Interiors. State age, experience and salary. Walker-Symondson Ltd., Braintree Road, Ruislip. 9337

ADAMS, HOLDEN & PEARSON require SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS immediately. Write, giving particulars of experience and salary required, to 36, Gordon Square, W.C.1. 9323

QUALIFIED ARCHITECT interested in Church and School work required. Salary dependent on qualifications and experience. Some practical building experience necessary. Ring Thomas F. Ford & Partners (VIC. 4853) for appointment. 9420

INTERMEDIATE ARCHITECTURAL ASSISTANT required in Central London office. Experience of shops and shopfitting an asset. Write Box 9419 stating age, experience and salary required.

ARCHITECTURAL ASSISTANT, 25—30, required in London office of major oil company for service station construction. Good draughtsman, sound knowledge construction, specifications an advantage. Superannuation, etc. Reply, stating experience and salary required, to Box 9418.

ARCHITECTURAL ASSISTANT required, experience up to Final or Intermediate standard in preparation of working drawings, details, specifications, for South West London office. Apply in writing, giving full particulars of experience, age and salary required, to Box 9098.

INTERMEDIATE standard ASSISTANT required for general practice, Central London Area. Five-day week. Telephone John A. Gosschalk, Chartered Architect, Welbeck 0893, for appointment, or write brief details to Box 9157.

THE Architects' Department of Ind Coope & Allsopp Limited require a JUNIOR ASSISTANT for their Llandudno office. Applicants should be Students of the R.I.B.A., and the commencing salary will be £450 per annum. Appointment will be on the temporary staff and transfer to the permanent staff, with participation in a contributory Superannuation Scheme, will be considered after a probationary period. Particulars of training, past and present appointments, together with testimonials, whether married or single, and age, should be sent to the Chief Architect, Ind Coope & Allsopp Ltd., Burton-on-Trent. 9416

ARCHITECTURAL ASSISTANT wanted in office at London Bridge; qualifications not necessary but draughtsmanship and some office experience essential; to take charge of small contracts. Salary approximately £550 p.a. Apply—Douglas White & Furniss, A/A.R.I.B.A., 12, Station Approach, London Bridge, S.E.1. 9404

SANITARY ENGINEER required by London Architects for the design of plumbing and drainage schemes to multi-storey flats, office buildings and factories. Knowledge of heating desirable. Salary by arrangement. Write Box 9405.

JUNIOR ARCHITECTURAL DRAUGHTSMAN required to assist in preparation sketch and working drawings for development of Service Stations and similar work. Replies should be addressed to Employee Relations Manager, Esso Petroleum Company, Limited, Little Aston Hall, Sutton Coldfield, Birmingham. 9412

JUNIOR ARCHITECTURAL ASSISTANT required in Croydon office for varied private practice. Good opportunity. Write, stating age, experience and salary. Box 9413.

CROYDON. — SENIOR ARCHITECTURAL ASSISTANT required. Age about 30. Salary up to £750 p.a. according to qualification and experience. Interesting varied private practice. Good opportunity for man with initiative. Box 9222.

COBB - ARCHER - SCARSMELL, FF/R.I.B.A., require the services of a SENIOR ARCHITECTURAL ASSISTANT for Nairobi. Age about 35 years; with experience and ability. Salary: £1,500 per annum. Apply R. S. Cobb, Mill End, Kidlington, Oxon. 9402

APPLICATIONS are invited from qualified ARCHITECTS under 30 years of age (completed Military Service) for an interesting position with large and expanding multiple clothing company. Future prospects are very good for a young man who is prepared to work hard and take an interest in the development of shop designs as an aid to retailing. Applications should be supported by full details of qualifications, positions held (including balances) and addressed to The Secretary, Alexandre Limited, 19, Lady Lane, Leeds, 2. 9392

ARCHITECT with varied practice requires capable ASSISTANT. Good draughtsman with knowledge of construction. Reply with details of age, experience and salary expected, to A. W. J. Mullins, L.R.I.B.A., 78, Thoro'fare, Woodbridge, Suffolk. 9393

ARCHITECTURAL ASSISTANT, Intermediate. General Practice. Much responsibility. State age and salary. Jackson & Jackson. Folkestone 2913. 9394

ARCHITECTURAL ASSISTANTS required for West End office. Salary £350—£700 p.a. according to experience and ability. Scherrer and Hicks, 19, Cavendish Square, W.1. 9395

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required. Apply in writing, giving FULL particulars—R. H. Gallannaugh, L.R.I.B.A., 12, Grafton Street, London, W.1. 9396

ARCHITECTURAL ASSISTANT required for General Practice, apply in writing, stating age, general experience, and salary required, to Rayner & Fedeski, Chartered Architects, 28, The Parade, Leamington Spa. 9398

BRITISH RAILWAYS.
WESTERN REGION—PADDINGTON.

APPLICATIONS are invited for ASSISTANT ARCHITECTS to work on projects connected with the Railway Modernisation Plan. Must be A.R.I.B.A., with keen interest in contemporary design and knowledge of modern structural techniques. Commencing salary £660 per annum. Post offers permanency and carries advantages of Superannuation and rail-travel privileges. Apply, giving age, experience and qualifications, to Chief Civil Engineer, PADDINGTON STATION, W.2. 9388

ARCHITECTS. Owing to a vast expansion programme vacancies have arisen in the Construction Department of a nationally renowned business house in Liverpool for SENIOR ARCHITECTURAL ASSISTANTS. Applicants must have had at least 4 years' practical experience, preferably on commercial buildings, factories and shops, from initial surveys to supervision of construction. Commencing salaries will be commensurate with qualifications and experience. Excellent opportunities for advancement. Staff Life Assurance and Pension Scheme. Five-day week. Applications stating age, qualifications and experience to Box 9389.

SENIOR ARCHITECTURAL ASSISTANT required, R.I.B.A. Final standard, for varied London practice. Write, giving particulars of age, experience, salary required, etc. Box 9391.

ARCHITECTURAL ASSISTANT of R.I.B.A. Intermediate standard required for Architect's Dept. of Contractors and Estate Developers in the outer London South Eastern area, engaged on private estate development, shops and light industrial premises. Salary up to £500 per annum according to experience. JUNIOR ASSISTANT also required. Please reply, stating age and experience, to Box 9399.

ARCHITECT'S ASSISTANT required immediately in Brentwood, capable of preparing working and detail drawings, surveys, etc., under nominal supervision. Good prospects for the right man. State age, experience and salary required to Box 9397.

SENIOR ARCHITECTURAL ASSISTANT required in the firm of Messrs. Richardson & Houfe. Required to take charge of a large contract of considerable architectural interest. Salary according to experience. Box 9454.

ASSISTANT SURVEYORS experienced in the preparation of detailed drawings and surveys required by Davis Estates, Ltd., 346/350, Kilburn High Road, London, N.W.6. Apply giving details of past employment and salary required. 9462

NORTH COUNTRY BREWERY has opening for young and enterprising qualified ARCHITECT. Write stating age, experience and initial salary required to Box A.J. 261, c/o 191, Gresham House, E.C.2. 9456

NEW ZEALAND ARCHITECTURAL PRACTICE, mainly in commercial and industrial work, requires ADDITIONAL SENIOR ASSISTANTS, preferably qualified A.R.I.B.A. with some experience since exams., either single or married although accommodation easier for single men. Good opportunity enterprising and capable man considering emigration. Commencing salary £750/£900 according to capabilities. Two years' assured engagement and passage money assistance for right man, subject certain conditions. Apply airmail, with snapshot and personal and experience details, plus small working drawing recent work, to Mitchell & Mitchell & Partners, P.O. Box 187, Wellington, C1, New Zealand. 9446

SENIOR and INTERMEDIATE ARCHITECTURAL ASSISTANTS required. Five-day week. Write or telephone, giving full particulars, including age and salary, to Hasker & Hall, Architects, 13, Welbeck Street, W.1 (WELbeck 0061). 9445

REQUIRED by West End London Architects, young ASSISTANT with practical experience of detailing. Keen interest more important than qualifications. Box 9165.

ARCHITECTURAL ASSISTANTS required, approaching or at Intermediate stage. Salary up to £500 per annum according to ability and experience. D. Plaskett Marshall, F.R.I.B.A., 59, Gordon Square, W.C.1. MUSeum 7176/7. 9423

LOCKE, SON & NEWCOMBE, L/A.R.I.B.A., Chartered Architects, require ARCHITECTURAL ASSISTANTS up to Inter. standard. Write, giving details, to 2, St. Paul's Road, Newton Abbot, Devon. 9424

CLIFFORD CULPIN & PARTNER require an additional ASSISTANT. Salary £650 to £750 according to experience. Full summer holiday. Apply in writing to 3, Southampton Place, W.C.1. 9437

QUALIFIED or experienced ARCHITECTURAL ASSISTANTS required for general practice in Lincoln. Box 9361.

NORTHERN RHODESIA.—SENIOR ASSISTANT ARCHITECT, for growing practice, salary £1,000 p.a.; free passage; single accommodation available; home leave. Apply, quoting: OSS. 56/4, Overseas Technical Service, 5, Welldon Crescent, Harrow. 9438

ALLEYN & MANSEL require ASSISTANT of Intermediate standard or higher for responsible post in connection with a variety of work both contemporary and traditional. Salary from £600, according to experience.
GENERAL ASSISTANT also required for similar type of work. Salary from £400, according to experience. Address: 1A, Berners Street, London, W.1. Telephone Number: LANgham 8357. 9436

EXPERIENCED ASSISTANT of Intermediate standard required immediately in busy London Architect's office. Write, giving details of experience, salary required, when free. Box 9435.

ARCHITECTURAL ASSISTANT required in London office for interesting work in progress throughout the country, preferably member of the R.I.B.A. with experience of design and supervision of complete contracts. Salary £700—£900 according to experience; also
ARCHITECTURAL DRAUGHTSMAN with considerable drawing office experience, quick and neat draughtsman, able to prepare all types of working drawings under supervision. Salary £500—£700 according to experience.
Applications stating age, detailed experience, present salary, to be addressed to Box 9434.

ASSISTANT of R.I.B.A. (Inter.) standard with previous office experience required by busy general practice. Salary up to £400 according to experience. John E. M. Macgregor & Partners, 53, Great Ormond Street, W.C.1. 9433

SENIOR and JUNIOR ARCHITECTURAL ASSISTANTS required by architects in City of London for varied commercial and industrial works. Write, stating age, qualifications and salary required to Box 9432.

ASSISTANT QUANTITY SURVEYOR required by Manchester firm of Architects, experienced taker-off. Write, stating age, experience, qualifications and salary required. Box 9428.

BUILDING SURVEYOR required by Manchester firm of Architects for preparation of Specifications, Bills of Quantities for small jobs, approximate estimates, valuations for interim and final certificates, and assisting in administration of contracts. Write stating age, experience and salary required. Box 9429.

JUNIOR QUANTITY SURVEYOR required by Manchester firm of Architects. Main duties will be abstracting and billing; some taking-off. Write stating age, experience, qualifications and salary required. Box 9430.

ARCHITECT'S ASSISTANT required by Manchester firm of Architects. R.I.B.A. Intermediate standard or beyond, with some previous office experience. Write stating age, experience, qualifications and salary required. Box 9431.

ARCHITECTURAL ASSISTANT about Intermediate R.I.B.A. standard required for Manchester firm of Architects and Surveyors. Good prospects. State age, salary and experience. Box 9427.

SENIOR ARCHITECTURAL ASSISTANTS required immediately to work on large City office blocks. Final standard with 5 years' office experience. Salary £650—£800. Apply, in writing, to Campbell Jones & Sons, Chartered Architects, 9, Dowgate Hill, E.C.4, or telephone CEN. 7748. 9425

THE Girls' Public Day School Trust require an ASSISTANT ARCHITECT, preferably qualified and experienced in the design of extensions and adaptations of School Buildings. Apply in writing to the Secretary, G.P.D.S.T., Broadway Court, Westminster, S.W.1. 9449

ARCHITECTURAL ASSISTANT: Intermediate or Senior for general practice in Dartford, Kent. Salary by arrangement. Box 9451; or telephone Dartford 4350.

ARCHITECTURAL ASSISTANT required immediately. Qualified, with two years' practical office experience, or of Intermediate standard with 3-4 years' office experience. Starting salary £650. Denis Clarke Hall. WHI. 2951. 9450

ARCHITECTURAL ASSISTANT required for Surveyor's offices, specialising in Estate development. Must be quick, accurate and able to carry out work from sketch layout to final account. Exceptional opportunity for development of own ideas and initiative. Full responsibility will be given to proved man. Write stating age, salary required, together with previous experience to Box 9453.

SENIOR ARCHITECTURAL ASSISTANT required for Contemporary work in Glasgow office. Starting salary £800 p.a. State experience, etc. Box 9448.

DRAUGHTSMAN with knowledge of architectural and/or design and interior decoration for shopfitting work of specialist character dealing primarily with interior layouts. Progressive and interesting opportunity for man, age 21—30. Salary commensurate with experience and knowledge. Apply Henry Serventi, Ltd., 61/3, Beak Street, London, W.1. GERrard 7414. 9452

Architectural Appointments Wanted

ARCHITECT with over 20 years' experience, well known name and with high academic qualifications and wide technical knowledge, very progressive outlook, wishes to settle down in the London region and is looking for post to supplement own practice, preferably of a nature which could lead to associateship or partnership. Box 9316.

STUDENT ARCHITECT, Zagreb University, desires employment in architect's office as learner during the summer holiday with minimum pay. Qualifications: 3 years' study; speaks English and German. Information: FLA 7770; and Drasko Plevan, Vlaska 24, Zagreb, Jugoslavia. 9387

Other Appointments Vacant

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

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

EXPERIENCED REINFORCED CONCRETE DRAUGHTSMEN required by Sir Alfred McAlpine & Son Limited, Building & Civil Engineering Contractors, Hooton, Wirral. Permanent employment and good prospects for suitable candidates. 9273

SHORTHAND TYPIST required, Architect's Office, West End. 5-day week. Apply Box 9340.

LARGE engineering organisation requires executive STRUCTURAL ENGINEERING DESIGNER for buildings prefabricated from cold formed steel sections. Experience must include composite hot and cold rolled systems. Sales contact with architects and clients essential. Applicants should give full details of technical qualifications and experience together with age and indication of salary required. All applications will be treated in strict confidence. Apply: Box 9461.

CLERK OF WORKS required of good general experience, particularly maintenance. Must have initiative. Applications stating age, experience and salary required to Chief Architect, The Granada Theatres Limited, 36, Golden Square, London, W.1.

COMPETENT CLERK OF WORKS required for a new building at Blackpool. Salary will be at the rate of £600/£700 per annum, according to experience. Applicants must be fully conversant with constructional steel work, reinforced concrete and all normal building trades including specialists' work. Duties to commence April 1955 for an approximate duration of 18 months. Applications must be in writing, stating experience, availability to commence duties, etc., and addressed to the General Manager, North Western Gas Board (Fylde Group), Princess Street, Blackpool, to be received within 14 days of this advertisement. 9390

Services Offered

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

THE Site Survey Company, Blackheath, London, S.E.3. Tel. LEE Green 8597, will be pleased to quote for urgent surveys to any scale for sites in this country or abroad. 8008

DETAILED SURVEYS and drawings of sites and buildings, reports, schedule of repairs, etc. Qualified Surveyor. LIV. 1839. 2785

TYPEWRITING/DUPLICATING. — Specifications, etc., undertaken by experts. Reasonable charges. Stone's Secretarial Services, 446, Strand. Tem. 5984. 8616

QUANTITY SURVEYORS with central London office can accept further commissions from Architects and the profession. Site measuring, specification, Bills of Quantities, Final Accounts, etc. Prompt and efficient service. Box 9256.

FREE-LANCE SURVEYOR offers services to Architects and Builders requiring accurate surveys and levelling of sites for housing, factories, schools, etc. Box 9362.

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

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.

GALVANISED Chain Link: always specify MASTERFOIL made to BSS 1722. Fencing & Gates Ltd., Fourteen Stanhope Gate, London, W.1. Tel.: Grosvenor 4527. 4398

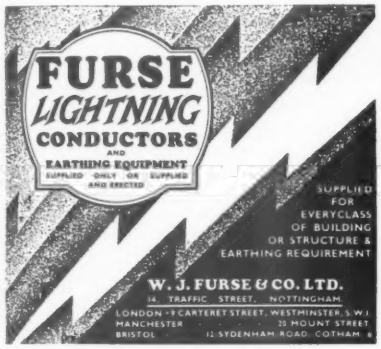
EXCEPTIONAL offer 3rd floor at 94, New Bond St., W.1. 1,300 sq. ft. £950 p.a. Long lease available, perfect natural lighting suitable for drawing office. Tel. GRO. 6601. 8231

Educational Announcements

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

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.

COURSES for all R.I.B.A. EXAMS.
Postal tuition in History, Testimonies, Design, Calculations, Materials, Construction, Structures, Hygiene, Specifications, Professional Practice, etc. Also in general educational subjects.
ELLIS SCHOOL OF ARCHITECTURE
Principal: A. B. Waters, M.B.E., G.M., F.R.I.B.A.
103B OLD BROMPTON RD., LONDON, S.W.7
Phone: KEN 4477 *and at Worcester*

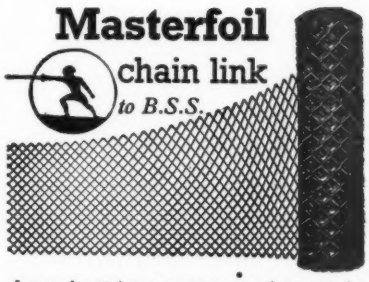


MINIMISE FIRE RISK WITH
DURASTEEL
STRUCTURAL FIRE PROTECTION
For Partitions, False Ceilings, Lift Shaft, Cladding, Fire Check Doors, etc., specify DURASTEEL 3DF2 Composite Steel-&-Asbestos Sheeting. Send for data and test details to manufacturers :—
DURASTEEL LTD., OLDFIELD LANE, GREENFORD MIDDX. *Tel. WAXlow 1051 (P.B.X.)*

THE WORLD'S GREATEST BOOKS HOP
FOYLES
• FOR BOOKS •
All new Books available on day of publication. Secondhand and rare Books on every subject. Stock of over three million volumes.
Join The Book Club. Members buy books published at 9/6, 10/6 & 12/6 for only 3/6. Write today for details.
119-125 CHARING CROSS ROAD WC2
Gerrard 5660 (16 lines) ★ *Open 9-6 (incl. Sats.)*
Two minutes from Tottenham Court Rd. Stn.

WHITE FACING
BRICKS
(S. P. W. BRAND)
Telephone: BULwell 27-8237/8/9 • Telegrams: "Maclime", Bulwell, Nottingham
M. McCARTHY & SONS, LTD
BULWELL • NOTTINGHAM

Masterfoil
chain link
to B.S.S.



protects your interests
FENCING & GATES LTD., FOURTEEN STANHOPE GATE, LONDON, W.1. TELEPHONE: GROSVENOR 4527

ARCHITECTURAL
— contemporary
SIGN LETTERS
IN A VARIETY OF METALS & FINISHES
WARD AND COMPANY
128 CHELTENHAM ROAD, BRISTOL 6
TELEPHONE 21536

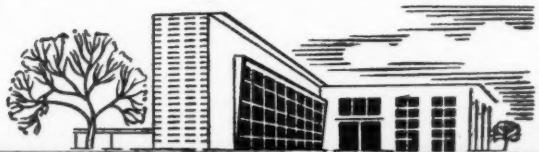
---

are *you* qualified to put **R.I.C.S.** **R.I.B.A.** or **I.Q.S.** after your name?

If not, let the I.C.S. coach you.
Every year many brilliant successes are gained by our students. Let us prepare you for success in the R.I.B.A., R.I.C.S., I.Q.S., I.Struct.E. or I.Mun.E. Exams. You study at home — in your own time—and the I.C.S. will coach you until you pass. Moderate fee includes all books required.
Fill in and post the coupon for FREE BOOKLET. Please state the examination you wish to pass or the subject you want to study.
Dept. 5D, I.C.S., 71, Kingsway, W.C.2.

INTERNATIONAL CORRESPONDENCE SCHOOLS
Dept. 5D, International Buildings, Kingsway, London, W.C.2.
Subject .....
Name..... Age.....
Address .....
.....
ICS

HATHERNWARE
The toughest FAIENCE made



HATHERNWARE LIMITED, LOUGHBOROUGH, LEICESTERSHIRE
*dm*HL8

ANOTHER *Sommerfelds'* PRODUCT
LONDON OFFICE: 167, VICTORIA ST., S.W.1
TEL. VIC. 1000
SOMMERFELDS LTD. WELLINGTON · SHROPS · TELE 1000

LATTICE BEAMS
OF WELDED CONSTRUCTION IN HIGH TENSILE STEEL
IMMEDIATE DELIVERY
ECONOMY · RIGIDITY

Alphabetical Index to Advertisers

Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Education, Legal Notices, Miscellaneous, Property, Land and Sales, see lxxxiv, lxxxv, lxxxvi, lxxxvii, lxxxviii, lxxxix.

Re

wi

tr

BAT
Door
can
open
into
of 6'
sag.

Pane
Grac
take
DEI

63d, C

fla

Dept.

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., Printers to the late King George VI, London, Hayes (Middx.), and High Wycombe. Editorial illustrations engraved by THE ENGRAVERS' GUILD LTD., Windsor House, 23/26, Cursitor Street London E.C.4.