THE ARCHITECTS' JOURNAL

standard contents

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

No. 2911] [VOL. 112
THE ARCHITECTURAL PRESS
9, 11 *and* 13, *Queen Anne's Gate, Westminster, S.W.*1. *'Phone: Whitehall* 0611

Price 9d.
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.**

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy. : W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. Department of Architecture, School of Building, Ferndale Road, Brixton, S.W.4.	Brixton 7048
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Welbeck 9738
ASB	Architectural Science Board of the Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
AScW	Association of Scientific Workers. 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 9, Conduit Street, W.1.	Mayfair 8641/6
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Flaxman 7766
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BGF	British Gas Federation. 1, Grosvenor Place, S.W.1.	Sloane 8266
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Millbank, S.W.1.	Whitehall 5140
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. 28, Victoria Street, S.W.1.	Abbey 3333
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Borough Architect, Town Hall, Newport, Mon.	Newport 3111
CAS	County Architects Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7.Zurich, Switzerland.	
CID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Whitehall 6322
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUJC	Coal Utilization Joint Council. 13, Grosvenor Gardens, London, S.W.1.	Victoria 1534
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DOT	Department of Overseas Trade. 35, Old Queen Street, S.W.1.	Victoria 9040
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
FASSC	Federation of Association of Specialists and Sub-Contractors. 21, Tothill Street, S.W.1.	Whitehall 9696
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FOB 1951	Festival of Britain 1951. 2, Savoy Court, Strand, W.C.2.	Waterloo 1951
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. 8 Buckingham Palace Gdns., S.W.1.	Sloane 2837
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts, 17-18, Dover Street, Piccadilly, W.1	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215

OOFING

IC

.

t covering

e flats and

proofing:—
; Bridges;

roofing the

membranes

and pres-
gated iron

ELL
TMENT,
, 3.

You'd have to look in lots of units

before you'd find a better unit than an Austin kitchen unit

The same high quality is found in staircases, doors, windows—in fact any Austin joinery

Austins of East Ham

The Biggest Name in Joinery

AUSTINS OF EAST HAM LTD., LONDON, E.6. GRANGEWOOD 3444

the parent Company of

THE AUSTIN-HALL GROUP OF COMPANIES

50 YEARS OF JOINERY

214.14

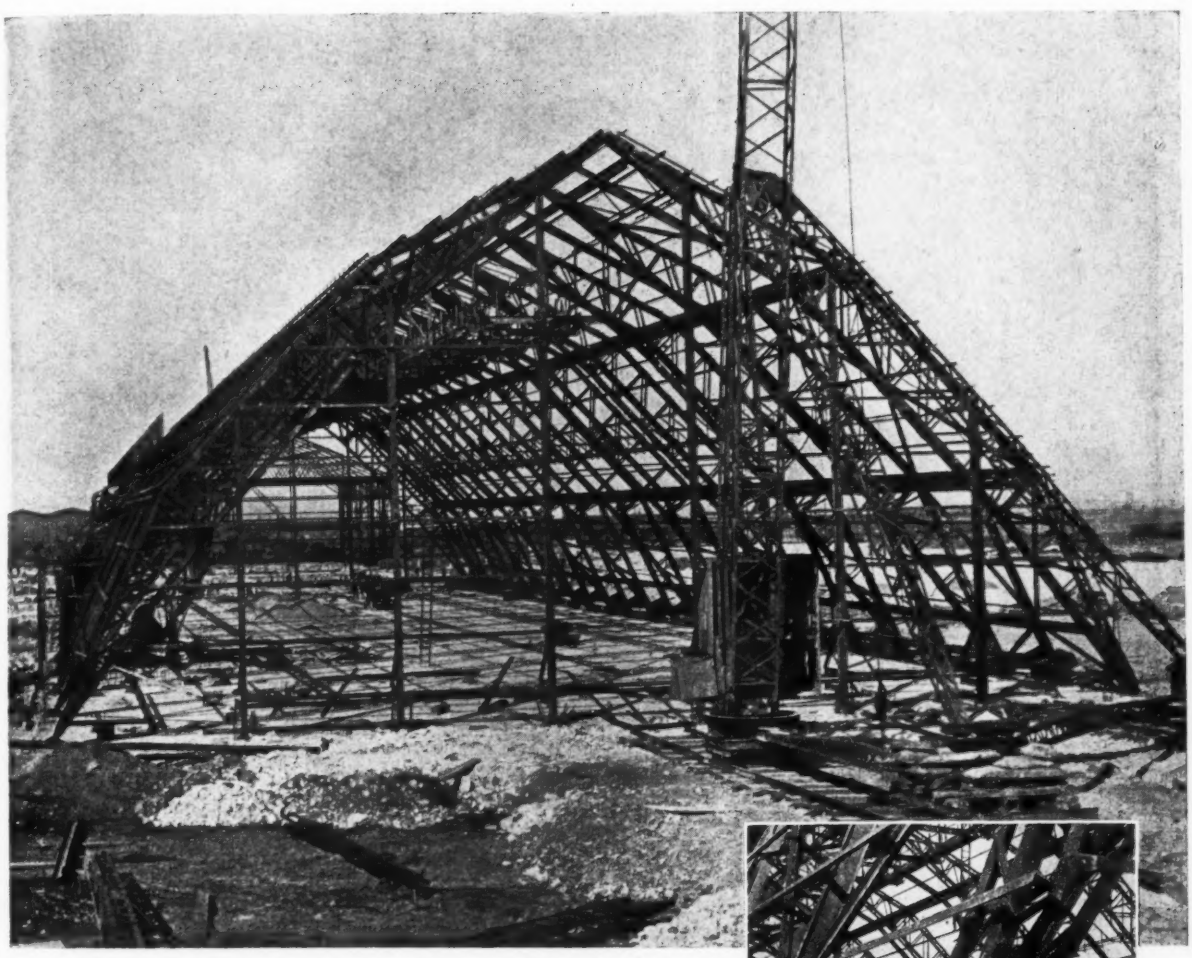
Mosque of Saint Sophia, Istanbul

BYZANTINE Architecture represents the next great advance in style and building practice after the Roman era. From the time when the Emperor Constantine moved the capital of Rome to Byzantium, in 324 A.D. a new and distinctive architectural pattern developed, blending the west with the east.

Many outstanding buildings were sponsored by Constantine and his successors. Probably the most remarkable is the Church of St. Sophia (now a mosque), which was commenced in 532 A.D. during the reign of the Emperor Justinian. After fifteen centuries this building still remains in a state of preservation that testifies to the great skill of its constructors.

Though its aesthetic beauty is questionable, the technical excellence of St. Sophia is beyond doubt. Most conspicuous feature is the great dome, one hundred and seven feet in diameter, carried on four arches and flanked by two semi-domes. The original dome collapsed after about twenty years, but was at once rebuilt and has stood for fifteen hundred years since.

The main structure of St. Sophia is of brick with the interior walls finished in marble and the numerous ground floor columns of porphyry. Beneath the dome, one hundred and eighty feet to its apex, is a vista of spacious grandeur which makes this reminder of the Byzantine Empire a rival to any other erection since its time.



Joint Consulting Engineers: Sir Alexander Gibb and Partners, and Maunsell, Posford and Pavry.

A Phosphate Rock Store for Messrs. Fisons Ltd., Immingham. This construction embodies the 3 Pin Arch principle and is 360 ft. long with a span of 110 ft. and height to top of arch of 56 ft. 6 inches. Weight of steelwork 436 tons. This building is part of a total contract of over 6000 tons of steelwork designed, fabricated and erected by Cargo Fleet.

(Inset). A close-up view of the foot of a Main Arch **Rib.**

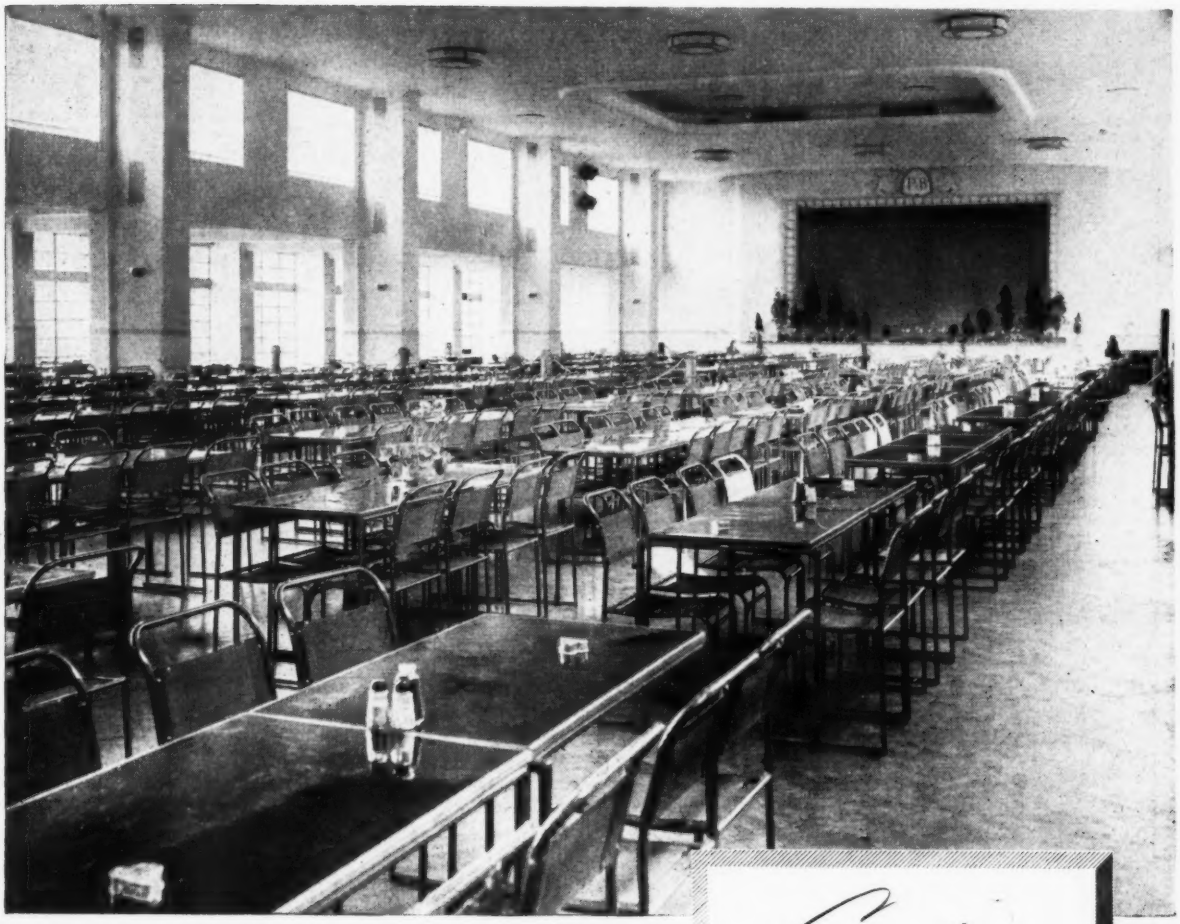
Design for a Hall. *From the original Collage by* R. MYERSCOUGH-WALKER.

BIRD'S-EYE VIEW of an unusual scheme designed by R. Myerscough-Walker in Marley Floor Tiles. An entrancing conception such as this is not an everyday occurrence, but the laying of Marley Floor Tiles certainly is—over 100 million are now in use because of their economy in first cost, comfort, durability and cheerful good looks.

Cock o' the walk

The Marley Tile Company Limited, London Rd., Sevenoaks, Kent. Sevenoaks 2251-8 MARLEY

Paton & Baldwin Ltd., Canteen—Darlington
Photograph by courtesy of Paton & Baldwin Ltd. Architects: Sir Alex Gibbs & Partners, Queen Annes Lodge, London, S.W.1.



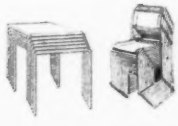
Comfort + convenience

NOWADAYS the works canteen often serves a dual purpose and for that reason permanent furniture is undesirable. When the last meal is served as likely as not preparations will commence for an evening concert or maybe a staff dance. In these circumstances Kingfisher space-saving furniture is the perfect answer. Strong, light and easy-to-handle it facilitates re-arrangement, removal and stacking in a matter of minutes and at the same time provides that degree of comfort which is looked for in furniture of a more permanent character.

The attractive and colourful appearance of Kingfisher Tubular Steel Nesting Chairs and Tables, the unmistakable mark of quality which withstands the most arduous conditions, and the remarkable economy of storage space make them ideal for use in canteens as well as in public halls, civic restaurants and other public buildings.

Kingfisher experience and productions are invaluable to Architects when preparing new designs.

Kingfisher



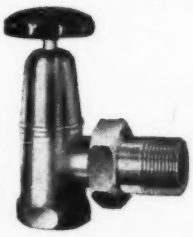
CANTEEN FURNITURE AND EQUIPMENT

KINGFISHER LIMITED. Charles Street and Phoenix Street, West Bromwich, Staffs. Phone: Tipton 1631. Grams: Kingfisher, Phone, West Bromwich
London: 139 Knightsbridge, S.W.1. Telephone: Kensington 1331

FROM THE RAW MATERIAL TO THE FINISHED ARTICLE

HEATING EQUIPMENT...

As the counterpart of their up-to-date boilers for central heating, Crane provide, in a practical range of sizes, radiators that meet any space-heating requirement. Their design, following modern trends and providing clean-cut, tasteful lines, pays regard to hygiene by eliminating inaccessible traps for pests and dust. Yet in no way has efficiency and strength been sacrificed to appearance, the metal used being carefully chosen and critically tested to ensure adequate and consistent wall thickness.

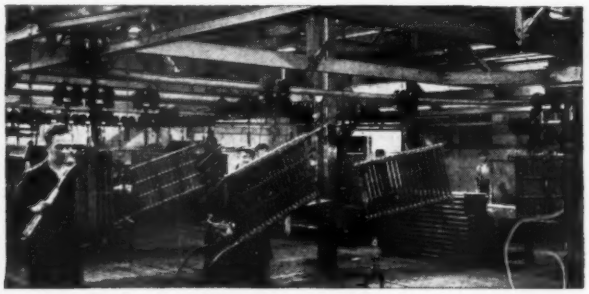


This modern design extends to every feature, including the radiator valves, of which Type No. D.201 illustrated is an excellent example. It is supplied in matt polished or chromium plated finish.

The Crane 'Pall Mall' radiator combines good appearance with great efficiency. It is available in various sizes to meet different space-heating requirements.

Part of the foundry in which the radiator moulds are formed. Photograph shows cores being placed in position.

General view of the shop in which cores for Crane radiators are made.



Testing the radiators for watertightness at pressure.

CRANE

BOILERS AND RADIATORS

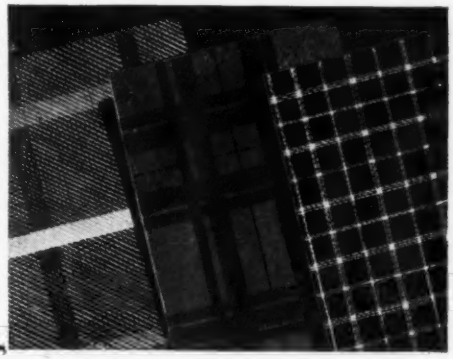
CRANE LTD., 45-51 LEMAN STREET, LONDON, E.1. Works: IPSWICH

BRANCHES: BIRMINGHAM, BRENTFORD, BRISTOL, GLASGOW, MANCHESTER

Tygan was chosen by Mr. Brian O'Rorke, F.R.I.B.A., *for the upholstery of the chairs in the Tourist "B" Class Café on the Orient Line S.S. Orcades.*

Attractive colours and designs

The lovely clear colours and smart designs in which Tygan is available afford every opportunity for the achievement of successful decorative effects.



Tygan can be sponged clean

A wipe over with a sponge or a damp cloth will remove stains and keep Tygan looking like new. Being non-absorbent Tygan is never damp.

For the upholstery in cafés, bars and restaurants Tygan woven fabric is specially suitable. It has the advantage of exceptional smartness. It is one of the toughest fabrics made and successfully resists continuous hard wear. And the ease with which it can be sponged down ensures cleanliness.

FREE FOLDER

Send today to the address below quoting ref.: H4, for this free folder giving fuller details and patterns of Tygan.

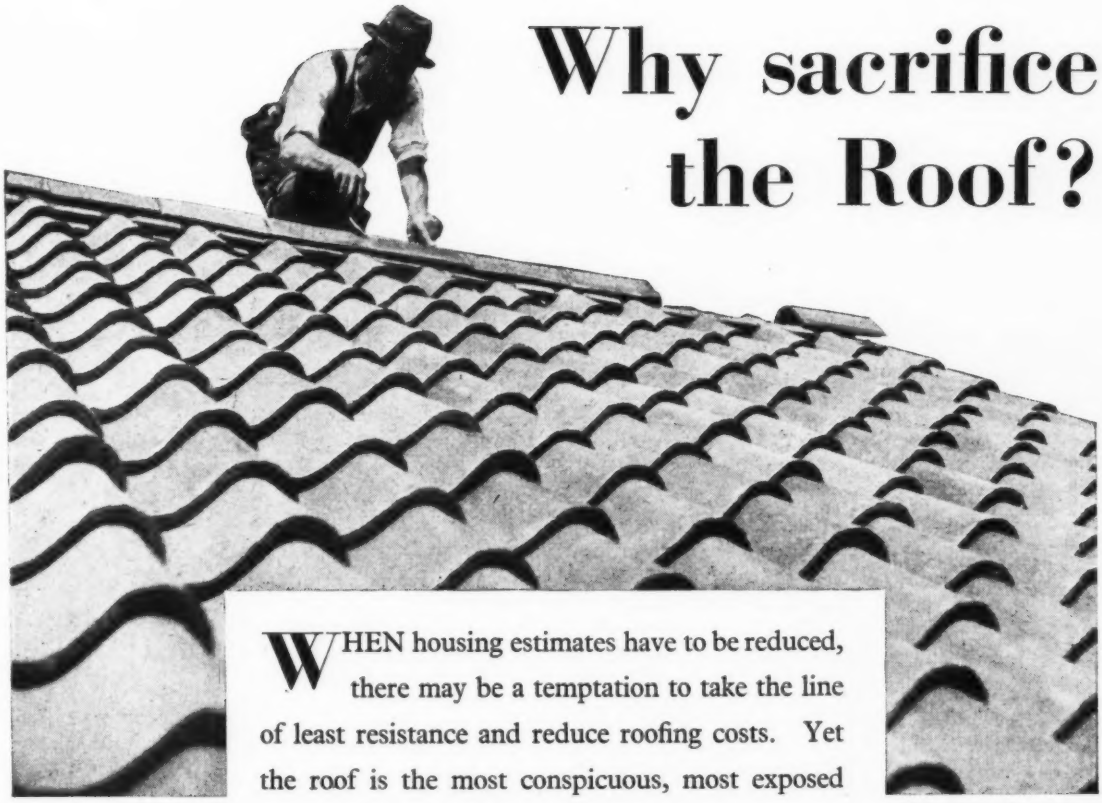
H4

Tygan REG'D **woven fabric**

SMART LOOKING · EASILY CLEANED · LONG LASTING

MANUFACTURED BY

Fothergill & Harvey Ltd., Harvester House, Peter St., Manchester 2



Why sacrifice the Roof?

WHEN housing estimates have to be reduced, there may be a temptation to take the line of least resistance and reduce roofing costs. Yet the roof is the most conspicuous, most exposed and most vulnerable part of a house.

Far better to make internal economies, than to put up with a substitute for *Clay* Roofing Tiles. The difference may not be apparent immediately the house is finished, but as the winters and summers go by the marked superiority of *Clay* Roofing Tiles, with their rich mellow tones, is revealed.

A house roofed with *Clay* Roofing Tiles remains a pleasant feature of the landscape and a credit to its designers and owners.

It is a *wise economy* in the long run to pay the little higher cost of

Clay Roofing Tiles

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

BALANCE

THE Gyroscope, another example of balance in principle, is an important navigational and controlling aid in shipping and aviation, where Balance is vital. Balance is essential in paint manufacture also — because good covering power, toughness, flexibility and colour stability depend on balance in the blending of paint materials.

We have manufactured paint for over 150 years and herein lies the reason for the quality and balance in the present Joseph Mason finishes.

LYNOMAS SUPER GLOSS ENAMEL

ESTABLISHED 1800 · IN THE REIGN OF GEORGE III · JM

JOSEPH MASON & CO. LTD · DERBY

Introducing a new STRUCTURAL Insulating Material

We have pleasure in announcing that a new structural material, combining exceptional load bearing and insulating properties, will shortly be made available to the Building Industry in Great Britain under the registered trade-mark **THERMALITE.**

THERMALITE is a strong, durable, weather resistant, lightweight, cellular building material with unusual dimensional stability and possessing very low thermal conductivity.

THERMALITE is the rational structural material with which to meet the basic requirements of modern building :

LOW COST
RAPID RATE OF BUILDING
ADEQUATE STRENGTH
HIGH THERMAL INSULATION

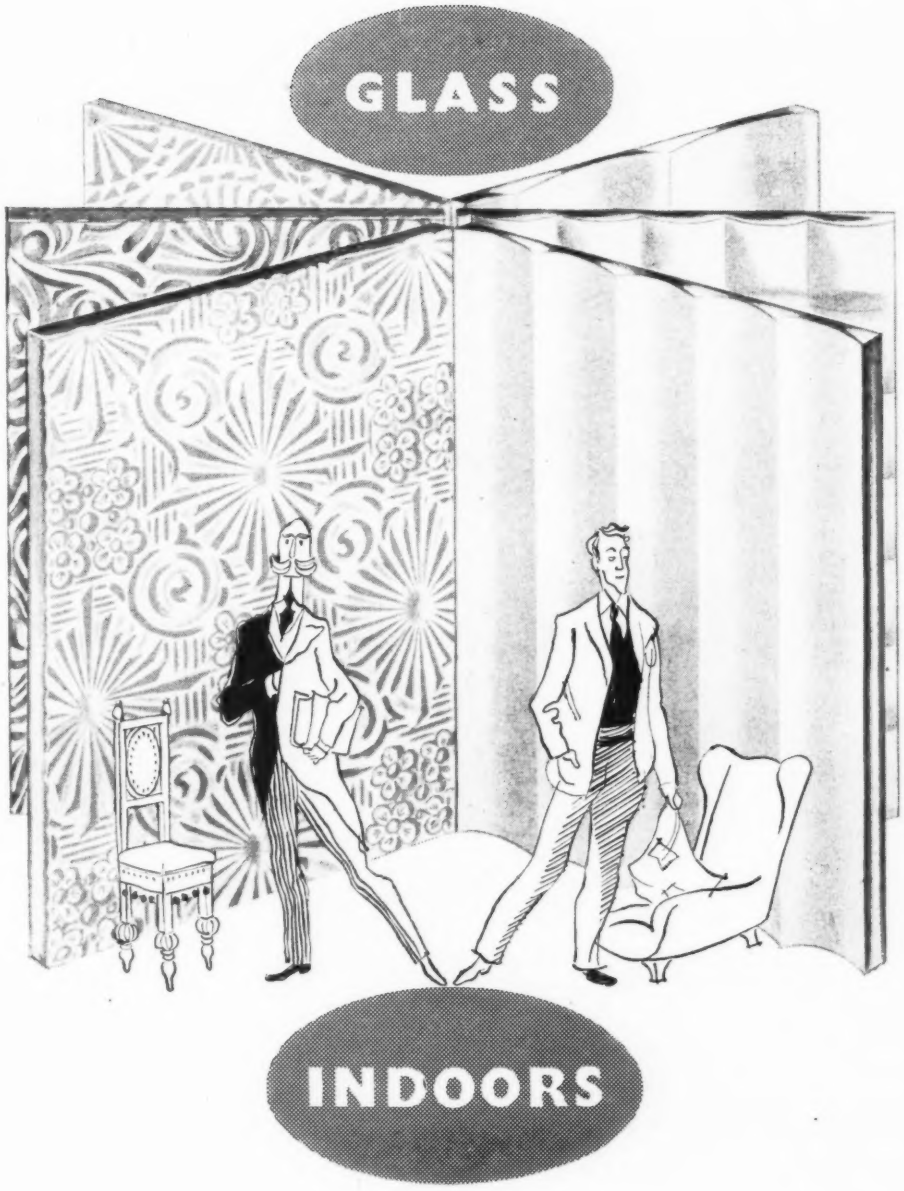
Send for further information, technical data and samples to Thermalite Limited, Earley, Reading. Telephone: Reading 62650

THERMALITE

Density	50 lb./cu. ft.
Compressive strength* (on 6″ cubes cut from standard blocks as delivered)	750—800 lb./sq. in.
Modulus of rupture* (on standard 3″ slabs as delivered)	280—310 lb./sq. in.
Moisture movement (after 4 days immersion according to B.S. conditions	0.06%
Thermal conductivity	1.3—1.4 B.Th. U/sq. ft./hr./°F./inch thickness.

*THERMALITE hardens further on ageing in the building. An increase in strength of approximately 20% is to be expected after one year.

DEVELOPED IN THE LABORATORIES OF JOHN LAING AND SON LIMITED



Fifty years ago (or less) a phrase like "The decorative possibilities of glass" could have referred to windows moulded in imitation frost-spangles, to panels rich with ruby interlacings, to gilded humming birds on overmantels. Today it could not. Shall we regret the change? Chance Reeded and Reedlyte glasses are of the present time. Indoors and out, in flats, hotels and offices, in screens, partitions, lights, they give *directional emphasis* without fuss, *privacy* without obscurity, *texture* without traps for dust.

Chance GLASS

CHANCE REEDED

Narrow Reeded ($\frac{1}{2}$ in. ribs)
Broad Reeded ($\frac{7}{8}$ in. ribs)
Major Reeded ($1\frac{3}{4}$ in. ribs)
Cross Reeded ($\frac{1}{2}$ in. ribs)

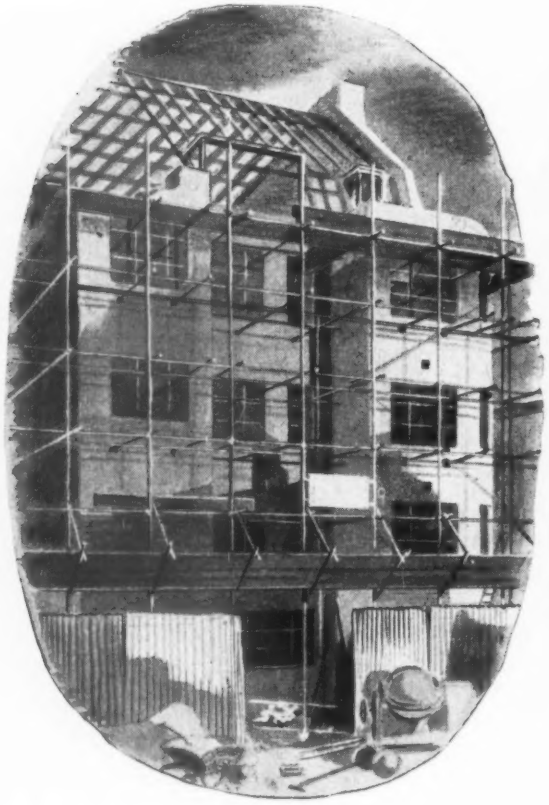
CHANCE REEDLYTE

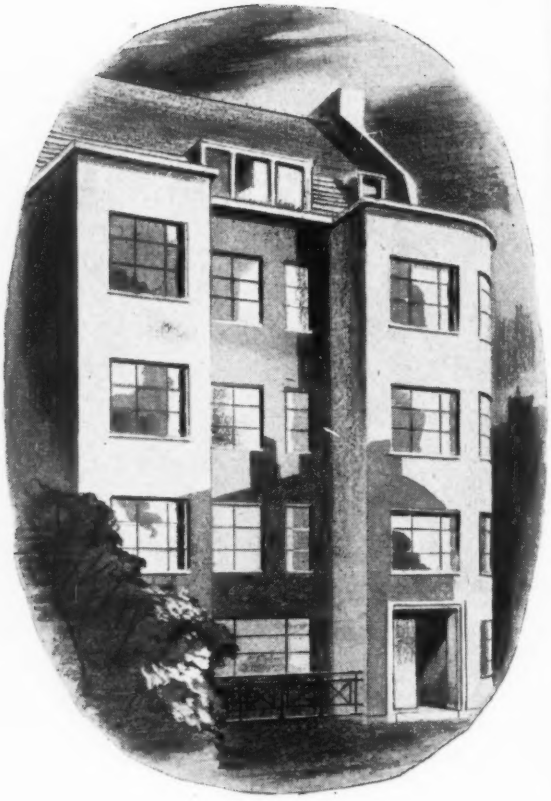
A stipple-finish version of Reeded to give increased obscuring power.
Narrow Reedlyte ($\frac{1}{2}$ in. ribs)
Broad Reedlyte ($\frac{7}{8}$ in. ribs)

The maximum size of the above glasses is 100 in. x 42 in.
Free samples of glass and detailed literature will be forwarded on request.

FOR SCIENCE, INDUSTRY AND THE HOME

CHANCE BROTHERS LIMITED, Glass Works, Smethwick 40, Birmingham. Telephone: West Bromwich 1051
LONDON OFFICE: 28 St. James's Square, London, S.W.1. Telephone: Whitehall 1603. Branch Works at Glasgow, St. Helens and Malvern





START TO FINISH

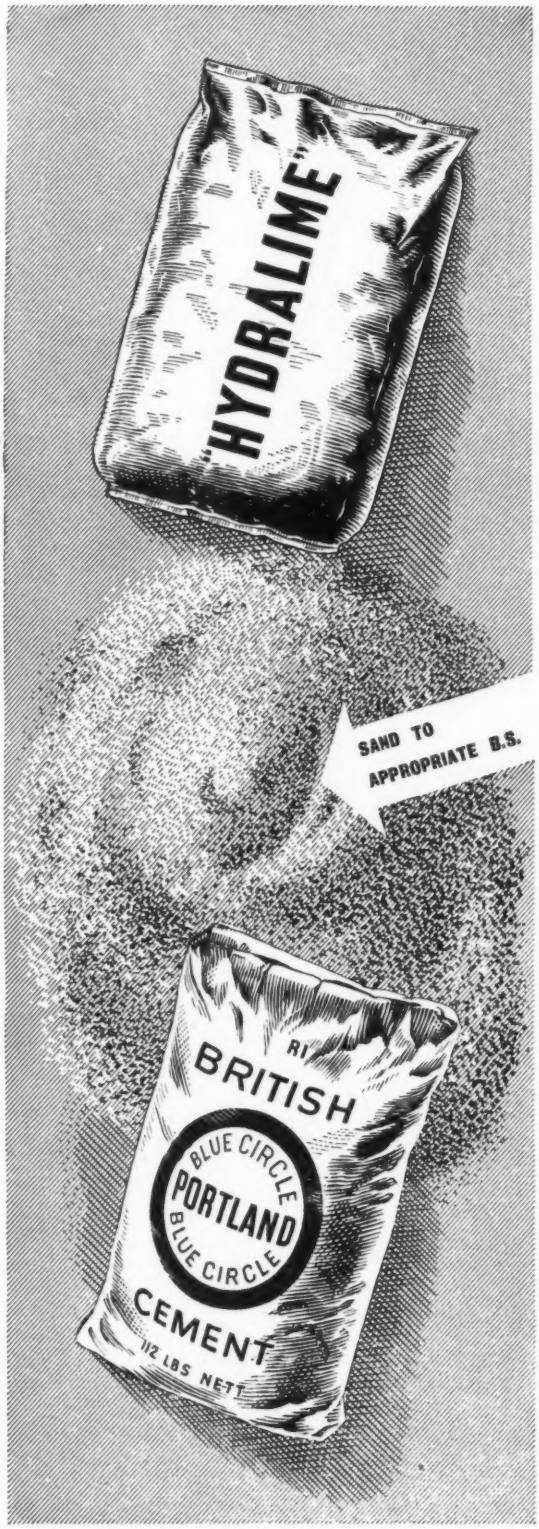
Mander's paints cover all the usual needs of the decorator and most of his unusual ones. The site may be a Mayfair drawing room or a gasometer. The surface may be wood, board, metal, concrete, brick, stone or plaster. Whether the system needed is protective or decorative, or both, Manders can supply the right finish in the right quality at the right price. Delivery of most lines is ex stock from any Mander's depot.

Mander's

There's a Mander's paint for every job

MANDER BROTHERS LIMITED · WOLVERHAMPTON

TBW1



Hydralime + Sand + Blue Circle Portland Cement =

The ideal mortar for brickwork, masonry, and internal plastering

HYDRALIME

THE SCIENTIFICALLY HYDRATED LIME

and

BLUE CIRCLE PORTLAND CEMENT

Recommended mixes, based on Codes of Practice prepared by a Committee convened by the Royal Institute of British Architects on behalf of the Codes of Practice Committee.

Available from

THE CEMENT MARKETING COMPANY LTD

PORTLAND HOUSE, TOTHILL STREET, LONDON, S.W.1.

H.2

PITCHED ROOFS
without timber

These systems of roof construction are referred to in the recent report prepared by *The Department of Scientific and Industrial Research*

COMPOSITE ROOFING

Roofing on these systems is of prefabricated construction, with the traditional well-proved covering of slates or tiles, permanent, secure, fire-resistant and vermin-proof. Their advantages are most fully achieved when their special characteristics are embodied in the design of the whole building. Composite roofing permits considerable freedom of design, but its economies are best realised in simple roof plans, avoiding such complications as hips, valleys and dormers. Large roof areas or repetition of similar units will be found to contribute to the essential economy of the system.

"PRECISION" SYSTEM

This system comprises a steel grillage of horizontal and vertical bars, electrically welded at the intersections. The grillage is prefabricated in sheets specially set out for each building. The slates or tiles are secured to the grillage by stainless steel clips. Standard types of structural or tubular steel trusses and purlins may be used in conjunction with "Precision" grillages, or the "Precision" system may be combined with the:

"RUSSELL SYSTEM"

of patent concrete trusses and purlins. These are assembled on site from pre-cast reinforced concrete units, connected by gusset plates and bolts. The units are of convenient size for transport and handling and are quickly erected by unskilled labour without mechanical aid.

We design and contract for the complete roof and our technical service will prepare schemes and estimates. Full details of the systems will be supplied on request, and we strongly recommend consultation at an early stage of design.

MANCHESTER SLATE COMPANY LIMITED

Roofing Specialists and Contractors

HEAD OFFICE · LANCASTER ROAD · DIDSBURY · MANCHESTER 20 · *Tel. DIDsbury 4806*

MANCHESTER · LIVERPOOL · LONDON · PRESTON WAKEFIELD · BELFAST

MSI

SETTLE ON

INTERNATIONAL PAINT

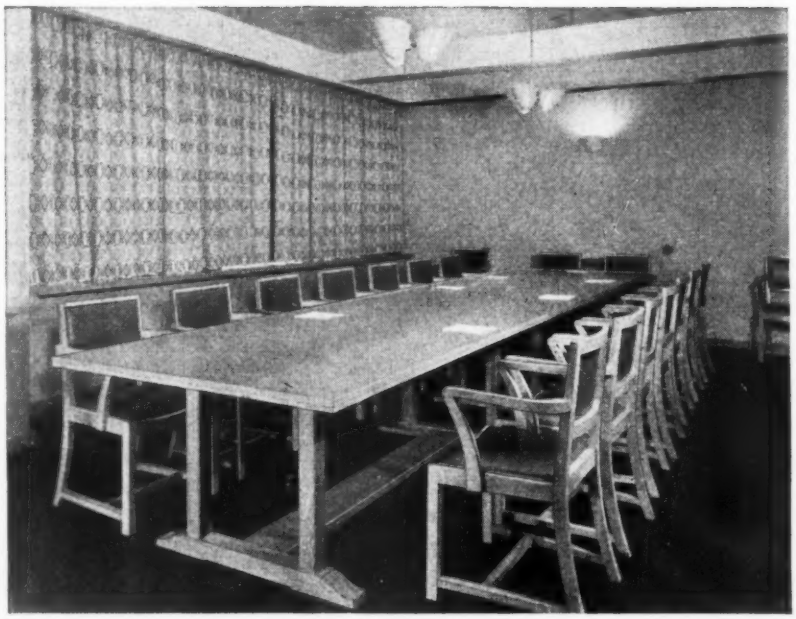
for all decorative jobs

International Paints Ltd

Registered Trade Mark

GROSVENOR GARDENS HOUSE, LONDON, S.W.1. **Tel.: VICtoria 3161 (10 lines)**

Also at: Glasgow • Felling-on-Tyne • Liverpool • Cardiff • Southampton • West Hartlepool, Etc.



The Board Room, International Chemical Co. Ltd., Chenies Street, W.1. The furniture, designed and produced by Heal's Contracts Ltd., is of waxed natural English Oak. The table is made in two sections, and the chairs are covered in green hide. The flint-grey of the wallpaper is repeated in the grey and rust pattern of the curtains. The ceiling is a lighter shade of grey and the carpet is nigger brown.

The
Directors and Staff of

STOTTS of OLDHAM

extend cordial greetings and good wishes to
their business associates and friends

for **Christmas 1950**

and may your NEW YEAR be happy and prosperous

★ You can't wear them out!

Single Compartment
Galvanised Steel Sink

STAINES SINKS STAND UP TO THE HEAVIEST UTENSILS

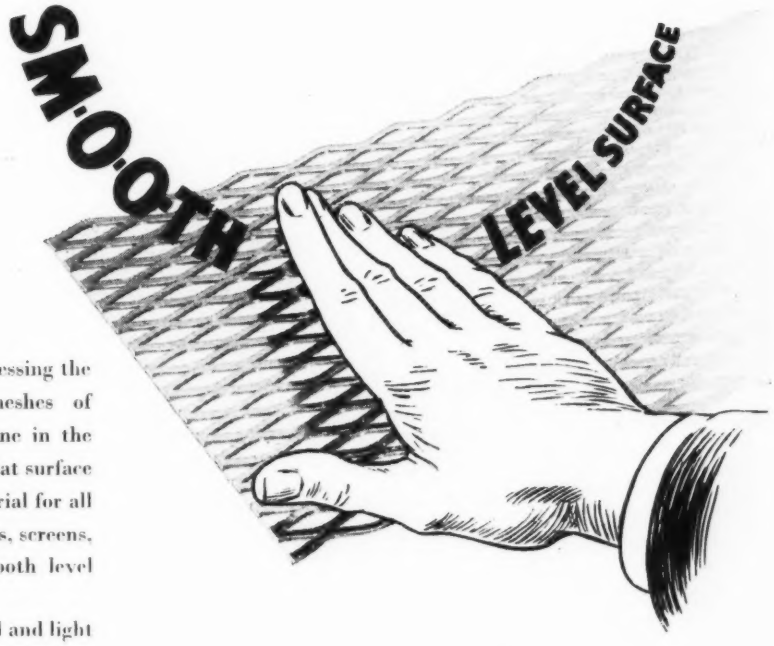
No wonder Staines galvanised steel sinks are tough. They have hardwood draining boards edged with angle iron and secured by *watertight joints*, and brass strips are also fitted to obviate wear. Plated gunmetal wastes with corner strainers and chromium-plated bibcock or swivel taps fitted as standard. Single and double compartment units available. Write now for catalogue and full details. Stainless steel sinks and drainers for all purposes also supplied.

"STAINES"

Sole Scottish Agent:
J. S. Meechie Ltd.,
10-12 Crichton Street,
DUNDEE. Tel.: 2685

STAINES KITCHEN EQUIPMENT CO. LTD., 94 Victoria Street, London, S.W.1.
'Phone: VICtoria 9772 3 4; 5403 4. 'Grams: Kitchequip, Sowest, London. Cables: Kitchequip, London.

Flattened "Expamet"



Flattened ' Expamet ' is made by pressing the strands and junctions of the meshes of Expanded Metal into the same plane in the sheet, so as to give a smooth, level, flat surface free from burrs. It is the ideal material for all kinds of shelving, racks, trays, guards, screens, openwork panels etc., where a smooth level surface is desirable.

Flattened ' Expamet ' is strong, rigid and light in weight and has the unique, attractive appearance of the regular diamond-shaped pattern of Expanded Metal meshes.

Expanded Metal Products

'EXPAMET'

The Expanded Metal Company, Limited

Burwood House, Caxton Street, S.W.1 WHItehall 1736.

STRANTON WORKS, WEST HARTLEPOOL, HARTLEPOOLS 2194.

ALSO AT: ABERDEEN, BELFAST, BIRMINGHAM, CAMBRIDGE, CARDIFF, EXETER, GLASGOW, LEEDS, MANCHESTER

52

The FIRST STEP in CIVIL DEFENCE

PPG

"THERMAFIL"

Extracts from BASIC FIRE FIGHTING Issued by Home Office.

"Perhaps the greatest lesson brought out by the war was that incendiary bombs caused far more loss of life and property than did High Explosive Bombs."

"So far as property is concerned, war records show that fire from incendiary bombs caused anything from 10 to 100 times as much damage as high explosive, the proportion varying according to the target and the method of attack."

"Wartime experience of Incendiary and H.E. bomb attack showed the value of taking beforehand all practical precautions to reduce the risk of fires starting and spreading."

Originally produced for preventing heat losses, THERMAFIL has extremely high fire resisting properties . . . It retards the spread of flames.

It contains powdered Gypsum, an incombustible mineral. Spread loosely over your existing ceilings to a depth of 2", not only will your house be warmer in winter and cooler in summer, but you will have made it less vulnerable to fire. Saving in fuel will soon repay the capital cost of installation.

EXAMPLE

Official recommendation for heat loss (U)	**= 0·20**
Traditional construction, i.e. tiles on battens, or sarking felt. Conventional ceiling ... ... (U)	**= 0·43**
Traditional ceiling plus 2" thickness of THERMAFIL ... ... (U)	**= 0·15**

SAVING OF FUEL

Based on ceiling area of modern house of 500 sq. ft. Fuel consumption is reduced by ·75 tons—a direct saving of over £3 . 0 . 0 per year.

Write TO-DAY to the makers for explanatory leaflets and quotation.

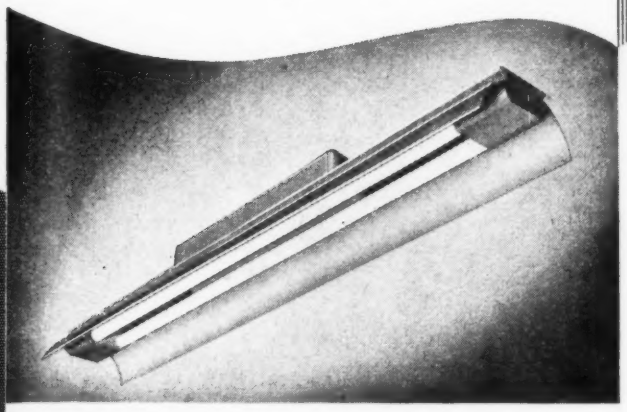
PLASTER PRODUCTS [GREENHITHE] LIMITED

THE MAKERS OF PLASTERBOARD

GREENHITHE, KENT

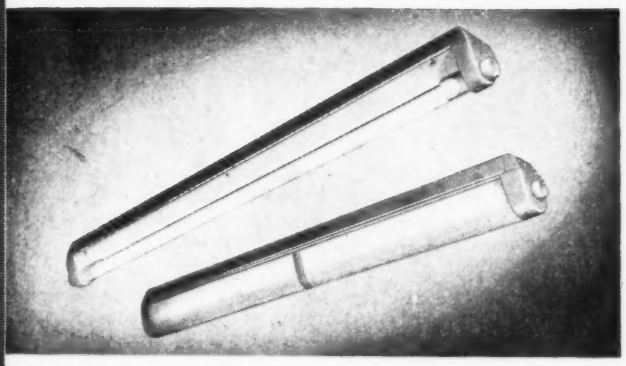
GREENHITHE, 138-40

Lighting WITH A PURPOSE



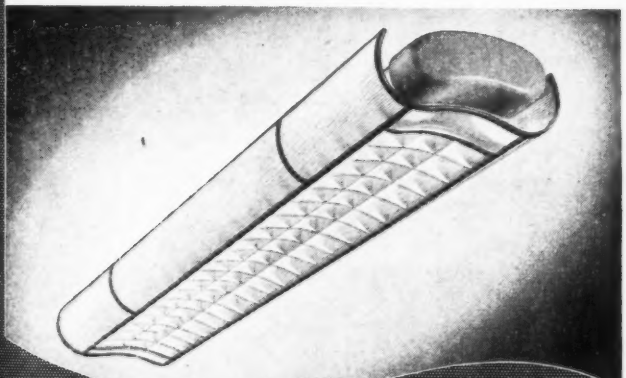
FE/2081.

This ATLAS fitting throws a better light on many industrial problems. And it's able to "stick at it" because of the 'Miracoat' finish that defies corrosive atmospheres. It has two 80 watt tubes.



FB/0081.

A cheery fellow this. In its working dress, it is a simple 5ft. 80 watt batten light, throwing out direct and reflected illumination in factories and offices. But clothe it in its diffuser and you have a unit which fits happily into many surroundings.



GN/2040.

No photograph does justice to ATLAS fitting GN/2040, in its decorative diffuser. The downward light from the louvres, the soft glow through the side panels (which is also reflected from the silvered end caps) make it a fountain of light that cannot be captured in black and white.
It carries two 4ft. 40 watt tubes.

Choosing fluorescent lighting fittings can be quite a headache—especially if you belong to that body of distinguished architects sometimes referred to (by the irreverent younger generation) as the "old school". May we, therefore, suggest that you add the ATLAS catalogue to your reference library? It contains many new answers to old lighting problems.

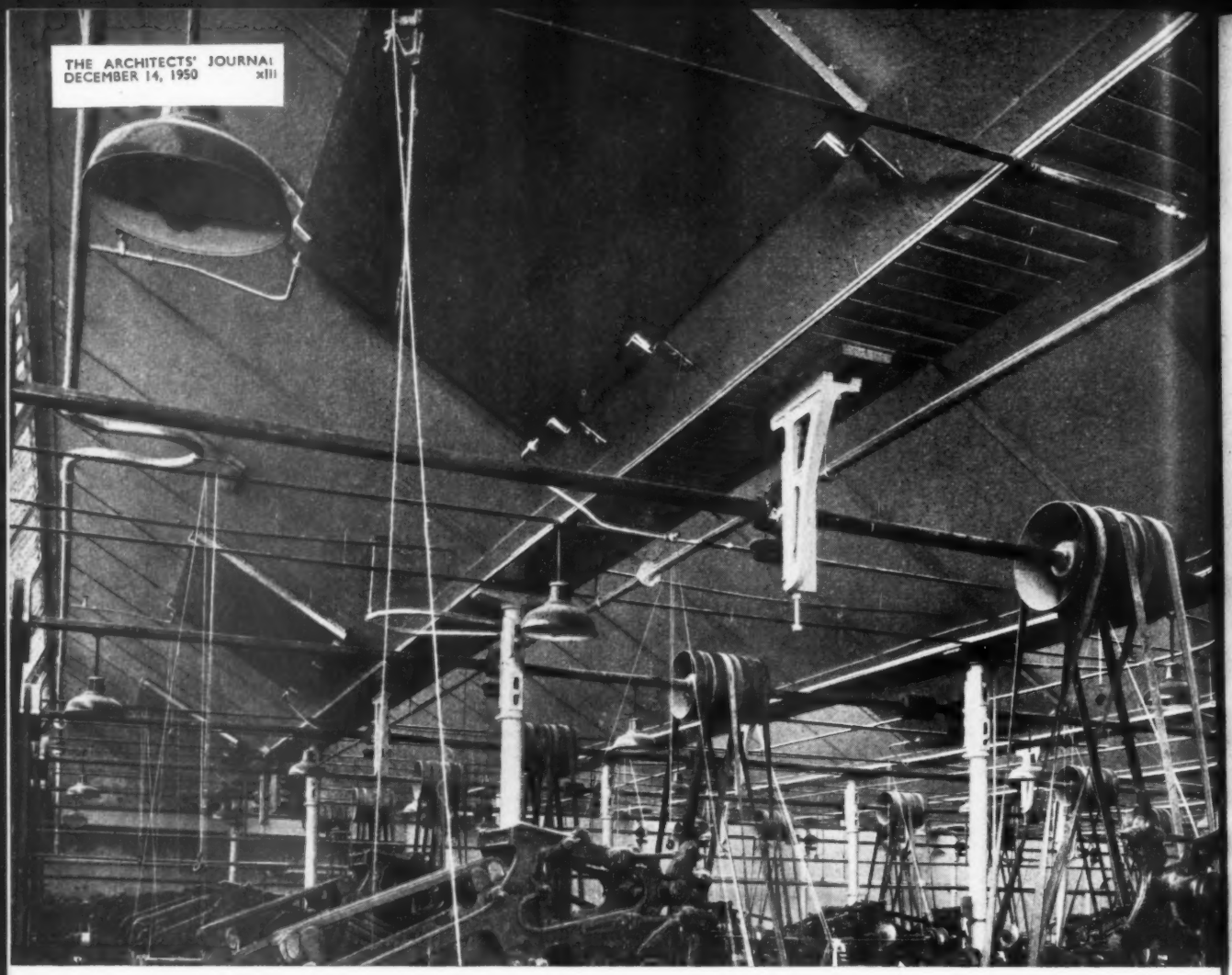
It's surprising how many architects make a regular habit of discussing their lighting projects with our lighting advisory experts.

ATLAS FLUORESCENT

IN 'NORTHLIGHT', 'DAYLIGHT', 'WARM WHITE' AND 'PEACH'

THORN ELECTRICAL INDUSTRIES LTD., 105-109 JUDD ST., LONDON, W.C.1

239/A

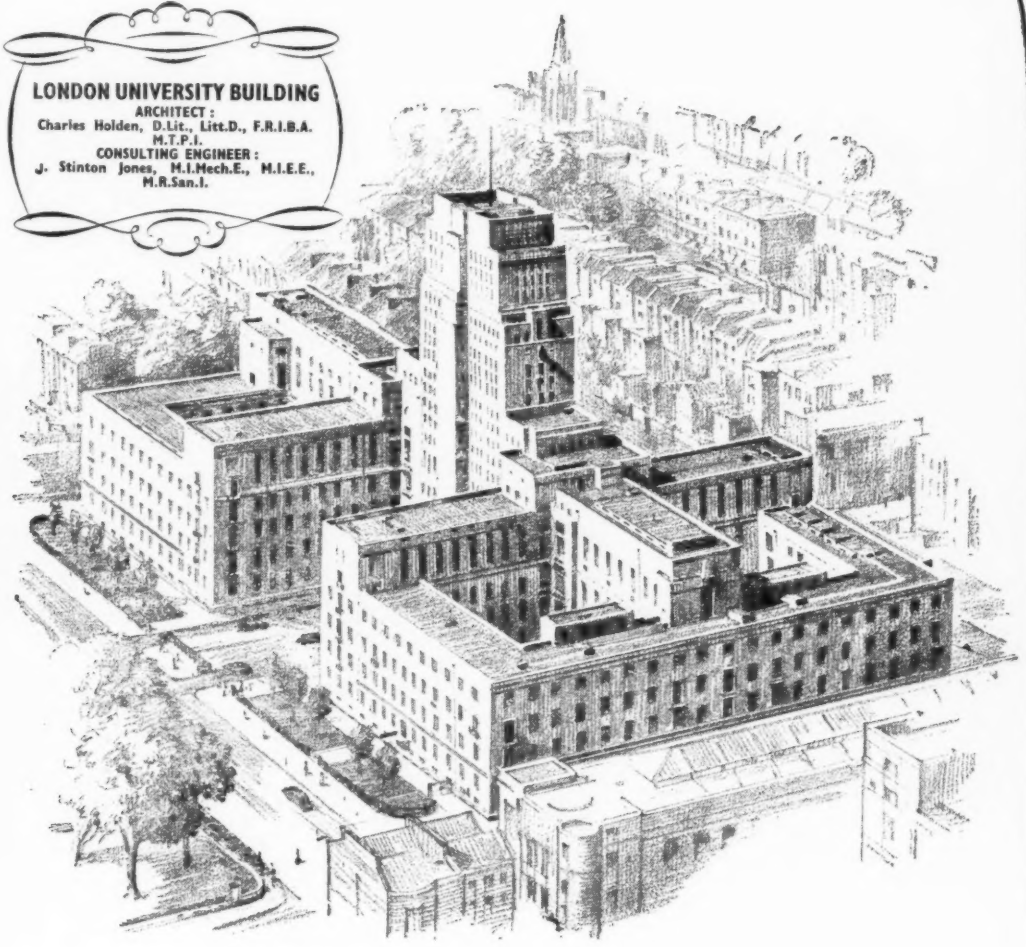


Photograph by kind permission of MESSRS. WILLIAM UTTLEY LTD. *Nelson, Lancs.*

WORKS RADIANT HEATING BY SUNZWAY PANELS

RICHARD CRITTALL

RICHARD CRITTALL & COMPANY LIMITED, 151 Great Portland Street, London, W.1. Tel. Museum 3366
and at Martins Bank Building, Liverpool, Central 3283, *Prudential Buildings, St. Philip's Place, Birmingham, Central* 2478, *and* 136 *Wellington Street, Glasgow, C.2. Douglas* 8761



THE launching of a project on the scale of the London University Building is today more than difficult . . . but at least it is not difficult to obtain the same

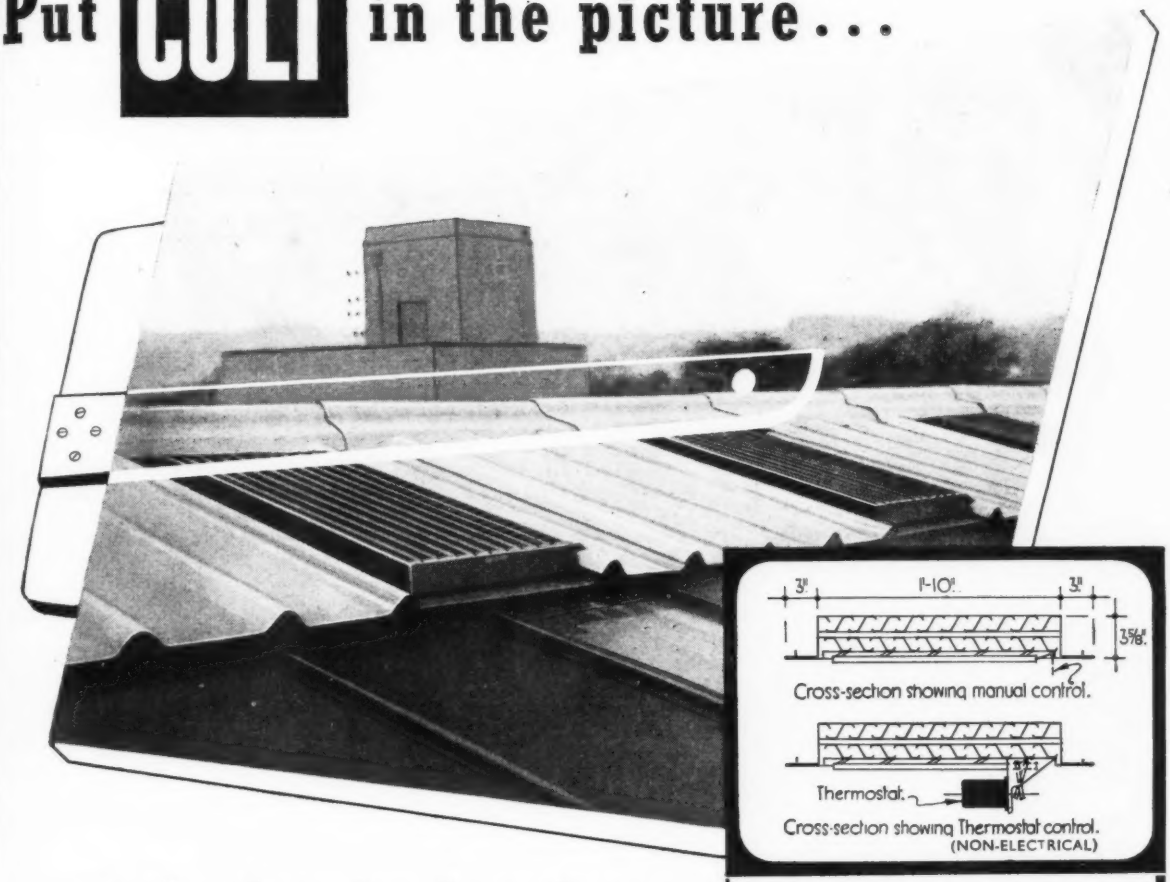
J.&P. CABLES

J.& P. ARE FOUNDATION MEMBERS OF THE C.M.A.

JOHNSON & PHILLIPS LTD., LONDON, S.E.7

ELECTRICAL ENGINEERS AND CABLE MAKERS SINCE 1875

Put COLT in the picture...



... at the drawing board stage

When you feel that your ideas are restricted by inflexible methods of ventilation — see Colt about it at once. Years of wide practical experience of every type of ventilation based on constant scientific research will enable them to solve your problem. When your designs are at their earliest stage . . . when you know what you want to do but are not absolutely certain how you will do it . . . *then* is the time to see Colt.

The unobtrusive Colt P.R. Roof Ventilator, as illustrated, which does not spoil the aesthetic line of a building, has been specially designed to give ventilation whilst at the same time conserving heat. By means of thermostatic or manual control, even temperatures are easily maintained. It can be very simply fixed in any type and pitch of roofing down to and including 10 degrees and due to its lightness in weight requires no structural reinforcements.

Many types of Colt Ventilators are available — in separate units or complete schemes. But much more than that, Colt plan or supply or advise on individual schemes for special purposes. Over 4,000 prominent British firms benefit from Colt Ventilation.

A FREE MANUAL *with full specifications of the types of standard Colt Ventilators is available on request from Dept. T 150.*

COLT VENTILATION

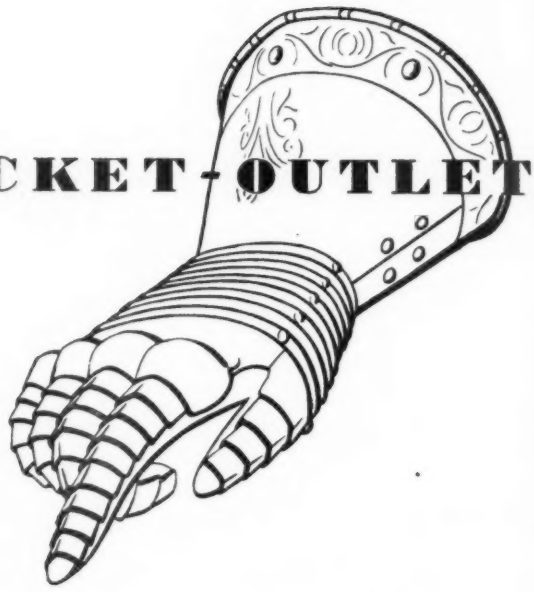
INDUSTRIAL AND DOMESTIC

Colt Ventilation Ltd., Surbiton, Surrey. ELMbridge 6511-5

Also at Birmingham, Bradford, Bristol, Kilmarnock, Manchester, Newcastle, Newport (Mon.) and Sheffield

SEE COLT ABOUT VENTILATION—WHATEVER YOU DO

M.K. METALCLAD SWITCHSOCKET-OUTLETS



Introducing a new range of metalclad switchsocket-outlets and plugs of remarkable value. They incorporate the latest type of A.C. switches, shuttered sockets, and are mounted in pressed steel boxes. Leading features include A.C. type switches incorporating pure silver contacts. Simple and reliable shutters with snap action. Boxes made in one piece from zinc-coated steel, bonderized and finished aluminium. Four $\frac{3}{4}$" knockouts, one on each side. Front plates — protected type, aluminium finish. Domestic type, brass, finished matt bronze. Bases, urea moulding of non-tracking type.

M.K. REGD

M. K. ELECTRIC LIMITED

WAKEFIELD STREET · EDMONTON · LONDON · N.18

Telephone : Tottenham 5151 (6 lines). Telegrams : Multiconta, Southtot, London.

A31

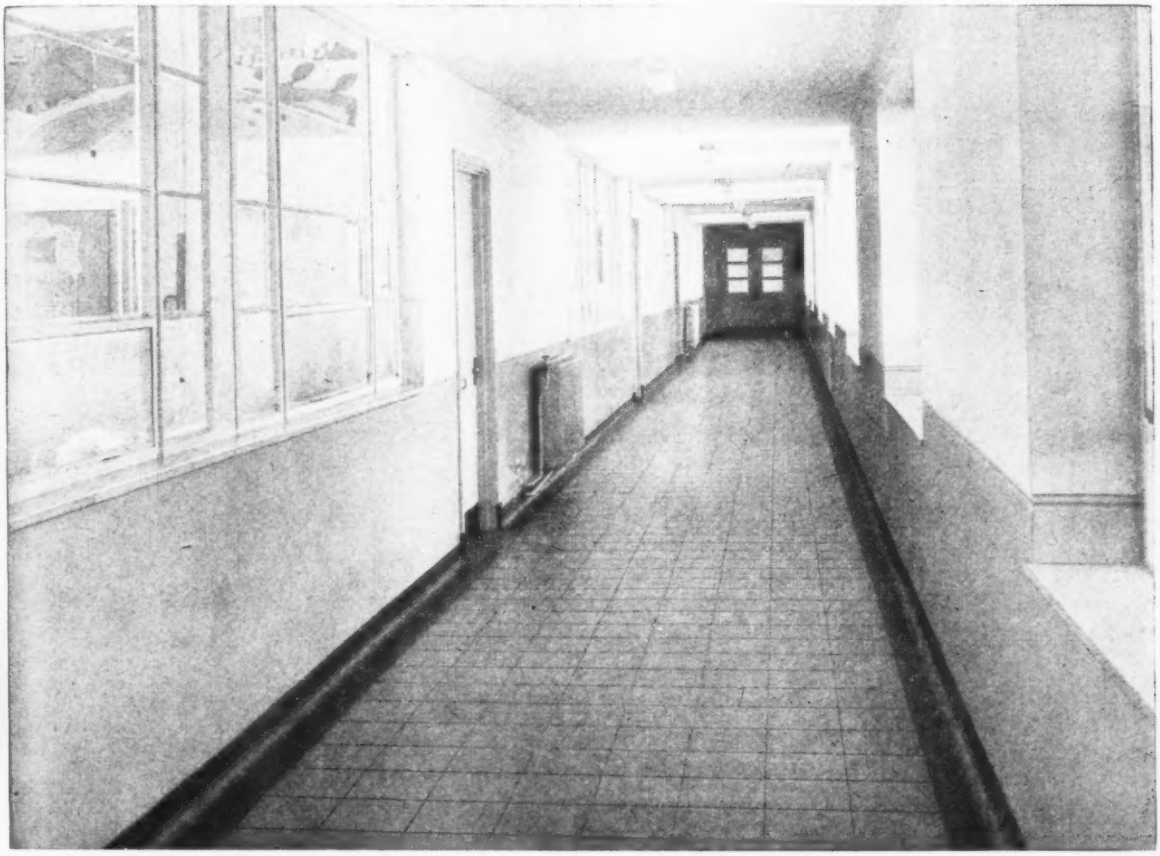
At our Melton Mowbray factory we produce large quantities of standard joinery. We have a very large plant; the best timber we can buy; first class workmen — and very high standards of workmanship. For instance, all window hinges are a special non-ferrous type; any knots are coated with Shellac Knotting and for priming our standard specification is 100% genuine lead paint applied by hand. Furthermore, we deliver to any site on time by our own transport. Please write for our comprehensive catalogue.

Midland Woodworking

Standard Joinery where you want it, when you want it

THE MIDLAND WOODWORKING COMPANY LIMITED · MELTON MOWBRAY

a corridor in the Clarkson Junior School, Norwich ARCHITECT: LEONARD G. HANNAFORD, F.R.I.B.A.



Full Marks for Floors

The qualities demanded of a school floor surface are many and varied. Semastic Decorative Tiles—used in the school corridor pictured above—fulfil the requirements of floor surfacings in schools.

The tramp of hundreds of not-so-tiny feet has no appreciable effect on Semastic Decorative Tiles. They are made to stand up to hard wear. They are easy to clean and to maintain. They are safe for children to run and walk upon, and pleasant to the tread.

Not least, Semastic Decorative Tiles, with their carefully chosen range of plain and marbled colours, lend themselves to a wide variety of colour and design treatments.

Semastic Decorative Tiles have already been laid in forty-one new schools, and many more installations are now in hand.

SEMASTIC

Decorative Tiles

★

a product of

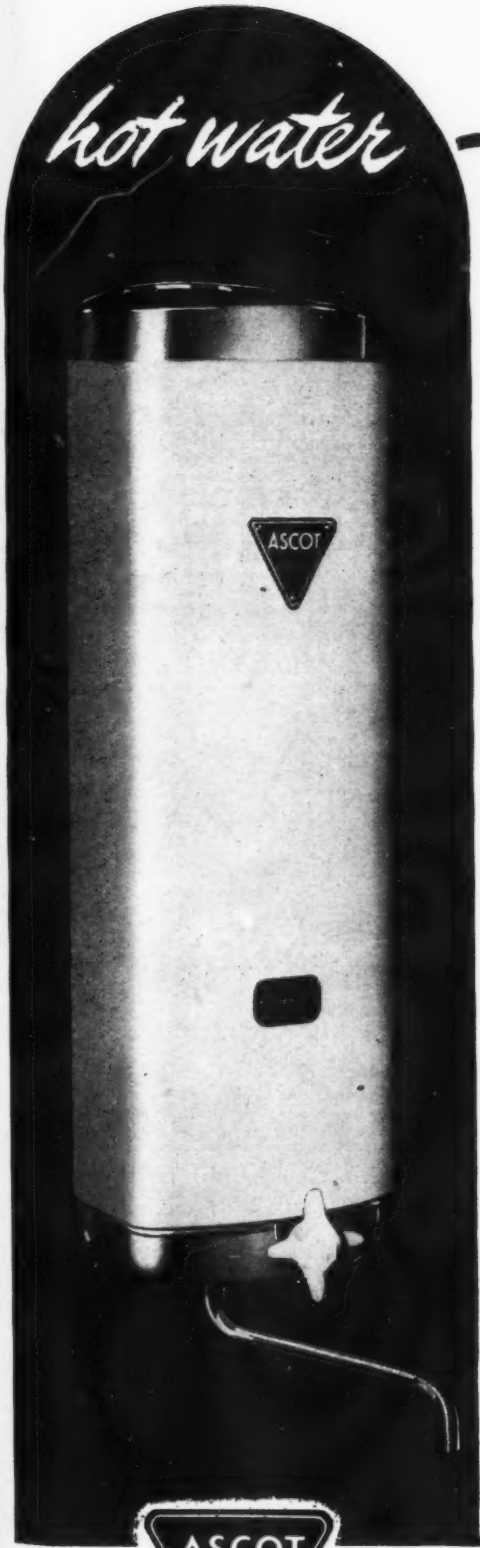
a Dunlop Company

INSTALLATION SERVICE

Countrywide installation service is provided by the following floor laying specialists who represent the highest standard of experience and workmanship available in the country.

- **ALBA FLOORING CO. LTD.**
- **J. A. HEWETSON & CO. LTD.**
- **HOLLIS BROS. LTD.**
- **HORSLEY SMITH & CO. (HAYES) LTD.**
- **PILKINGTON'S ASPHALTE CO. LTD.**
- **SEMTEX LTD.**
- **THE LIMMER & TRINIDAD LAKE ASPHALT CO. LTD.**
- **THE PENMAENMAWR & TRINIDAD LAKE ASPHALT CO. LTD.**
- **THE WESTERN TRINIDAD LAKE ASPHALT CO. LTD.**

5OSE/53



hot water — magnificently!

*

THE *new* ASCOT 503

sink water heater

SIMPLIFIED CONSTRUCTION

LONGER LIFE

EASIER MAINTENANCE

*

Proud companion to the famous Ascot Type R12/4, this NEW Ascot Type 503 Instantaneous Sink Gas Water Heater offers high efficiency and greater ease of maintenance. The handsome vitreous enamelled shell totally encloses mechanism of simplified design and more robust construction—which means longer life and less time spent on servicing.

Here are some of the NEW features of the latest Ascot product :—

Total enclosure. Cleaning is easier but consumer interference with controls more difficult. The shell is quickly removed for maintenance purposes.

Fewer Controls. Maintenance is simplified and costs lowered.

Reinforced rubber diaphragm. Ensures longer life.

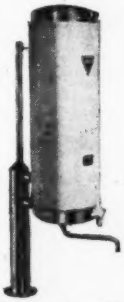
Larger bore inlet and outlet bends. Possibility of blockage by scale is reduced.

Stronger heating body and improved construction of joints. Body life is lengthened. Heat transference is improved. Body will better withstand increases in water pressure to which it may be subjected.

New burner connections. Maintenance is facilitated and risk of damage to burner tube and pilot assembly is reduced. The burner can be removed without dismantling pilot assembly.

Choice of colours. Available in white or cream as desired, bright parts chromium plated.

Support pillar. Heater can be easily fitted to a special freestanding support pillar, offered as an extra in chromium or nickel finish.



This neat support pillar, in chrome or nickel finish, is available as an extra.

New burner connections mean easier maintenance.

MORE ROBUST · MORE ACCESSIBLE

An illustrated technical leaflet describing the new Ascot 503 in detail will be sent on request.

ASCOT

ASCOT GAS WATER HEATERS LIMITED

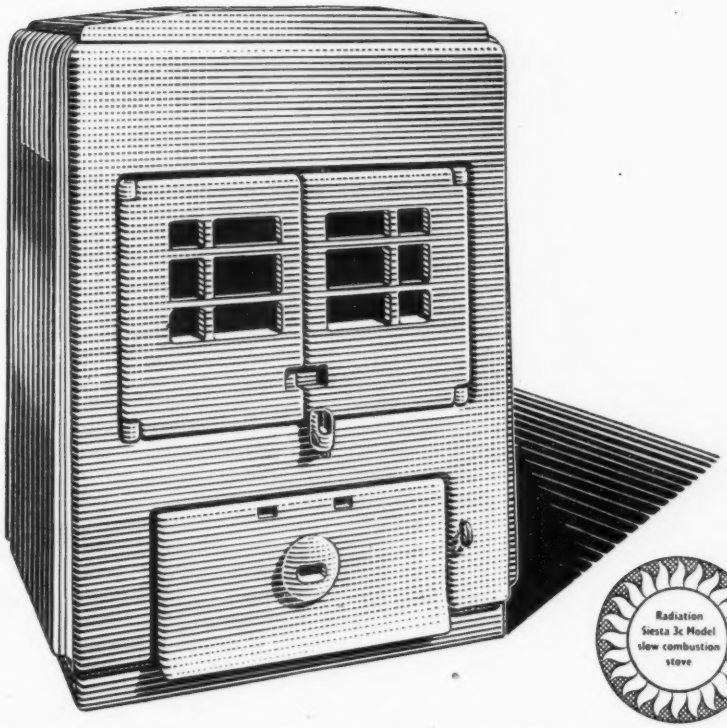
Head Office · 43 PARK STREET · LONDON W1 · Tel: Grosvenor 4491

and at BELFAST · BIRMINGHAM · BOURNEMOUTH · GLASGOW and MANCHESTER.

HIGGS AND HILL
LIMITED

LONDON

LEEDS COVENTRY



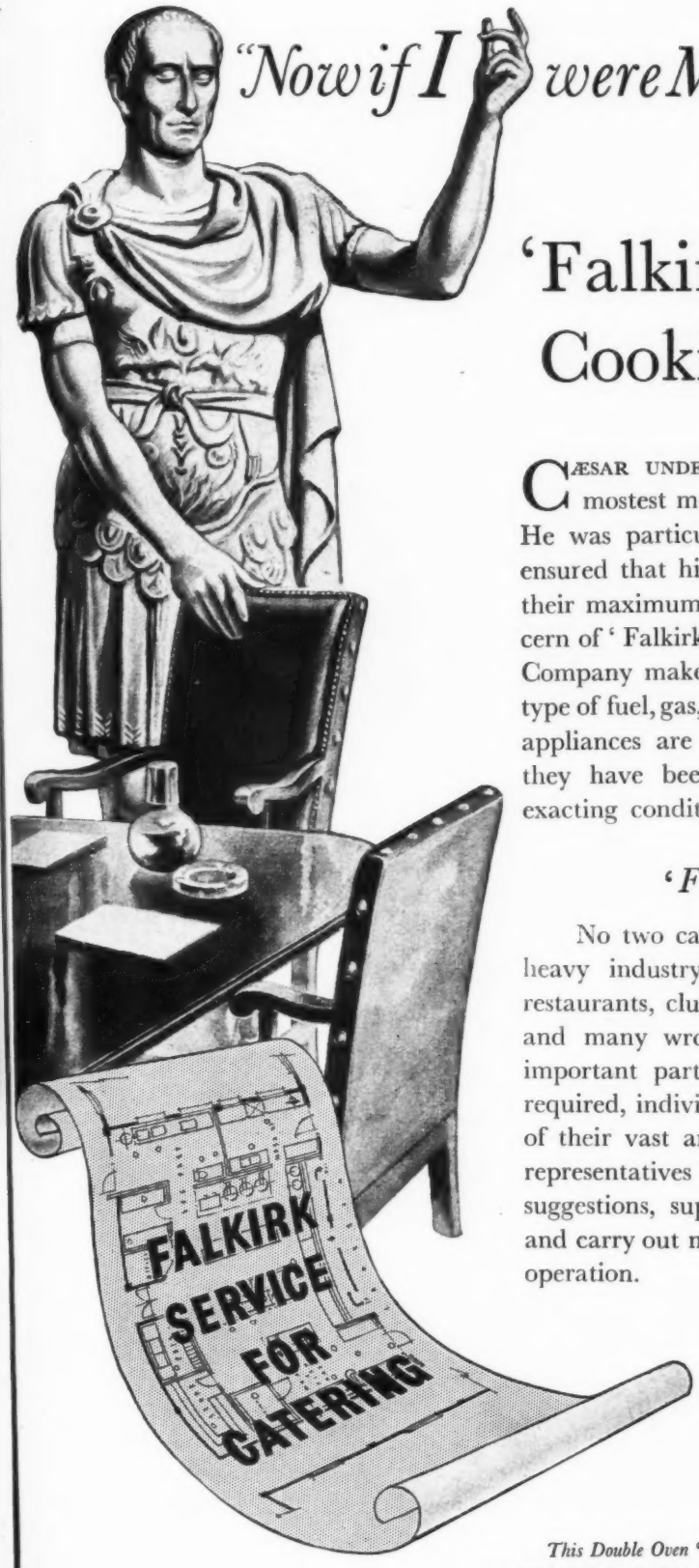
in thousands of homes

Nearly a quarter of a million Radiation 'Siesta' Stoves have gone into new houses since the war. Its wide sanction by the Government is due no doubt, to its high fuel efficiency, which makes it the most economical method of domestic heating. Users appreciate this—but they are also quick to notice the pleasing lines and its fine vitreous enamel finish. The unique feature is the 'disappearing' doors which give a cheerful open fire when required. The stove is easy to control, clean and maintain. The Radiation 'Siesta' Model can be supplied either free-standing or built in; with or without water-heating boiler. Complete details will be gladly supplied. Please address enquiries to the Solid Fuel Division of Radiation Group Sales Ltd.,* Leeds 12.

* Co-ordinating the sales organisation of the three factories producing solid fuel appliances controlled by Radiation Ltd.
They are:
Wilsons & Mathiesons Ltd., Leeds 12.
The Eagle Range & Grate Co. Ltd., Aston, Birmingham 6.
The Park Foundry (Belper) Ltd., Belper, Derbyshire.

SOLID FUEL Radiation APPLIANCES

The Radiation Group supplies apparatus of all types covered by the approved list of the Ministry of Fuel and Power



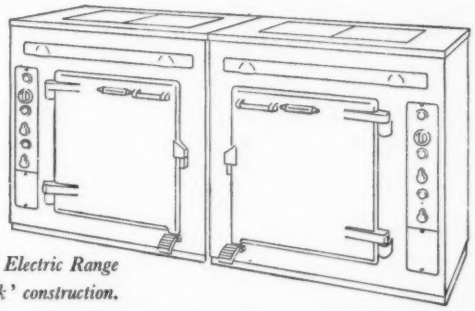
"Now if I were Managing Director...

I'd put in 'Falkirk' Heavy Duty Cooking Equipment"

CÆSAR UNDERSTOOD LOGISTICS, the art of having 'the mostest men at the bestest place at the rightest time.' He was particularly concerned with that branch which ensured that his legions were always well fed and thus at their maximum efficiency. And that, too, is the chief concern of 'Falkirk' in the industrial campaigns of today. The Company makes cooking appliances to burn every known type of fuel, gas, steam, electricity, solid fuel and oil. 'Falkirk' appliances are of outstanding strength and durability — they have been proved over many years in the most exacting conditions.

'Falkirk' Service for Caterers

No two catering problems are ever exactly alike. In heavy industry and factory canteens, hotels, hospitals, restaurants, clubs and cafés there is always one right way and many wrong ways of laying out the kitchens. An important part of the 'Falkirk' service is to supply, if required, individual plans prepared by experts in the light of their vast and varied experience. There are 'Falkirk' representatives stationed throughout the country to supply suggestions, supervise installation, and to inspect, advise and carry out maintenance when the kitchens are in actual operation.

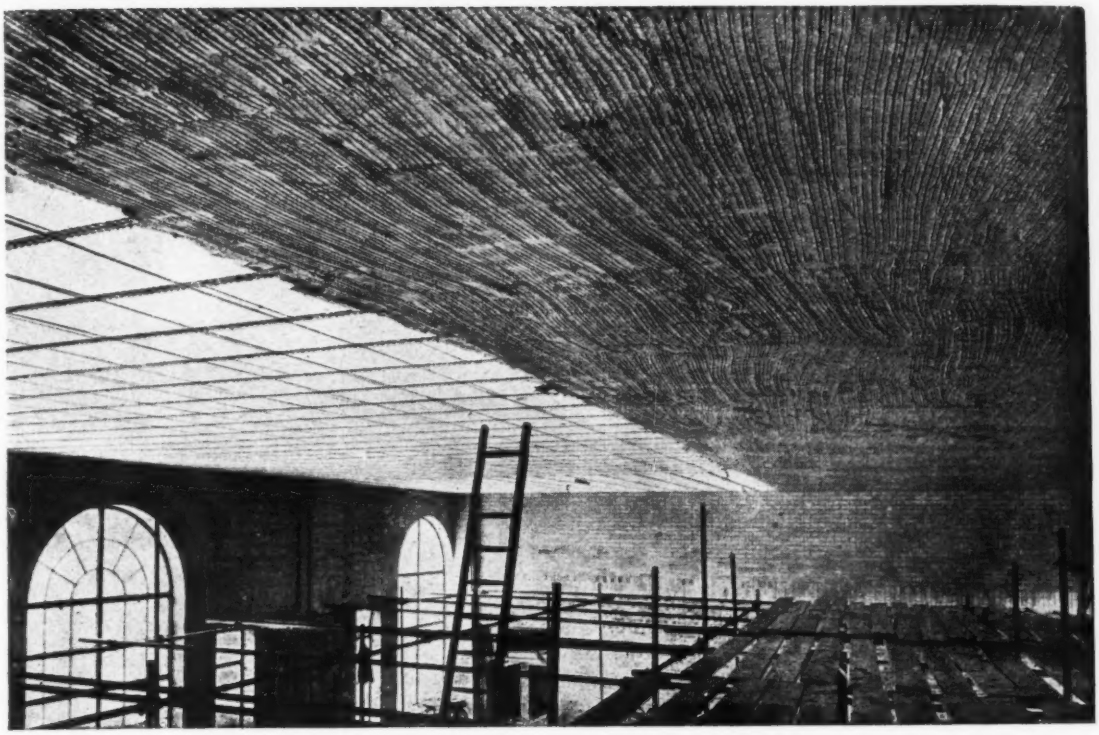


This Double Oven 'Falco' Electric Range is a good example of robust 'Falkirk' construction.

THE FALKIRK IRON CO. LTD. FALKIRK, SCOTLAND AI TRADE MARK

MORTIMER HOUSE, 37/41, MORTIMER ST., LONDON, W.1 LILLIES CHAMBERS, ALBION ST., LEEDS 18, LEIGH ST., LIVERPOOL

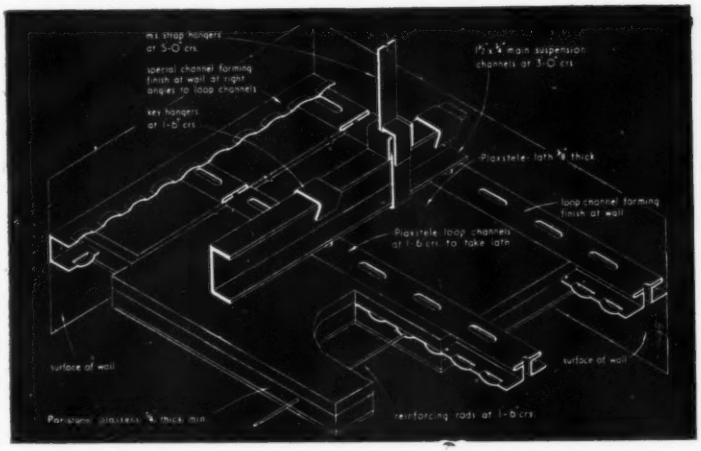
(Proprietors: Allied Ironfounders Ltd.)



Part of a large area *of* **PLAXSTELE** *ceiling*

Registered Trade Mark

The PLAXSTELE system combines the use of PLAXSTELE lath, specially designed for plastering with PARISTONE plaster, with metal patented suspension and jointing members which hold the lath rigid and at the same time anchor metal reinforcing rods in the plaster finish.



It provides a suspended ceiling with a substantial plaster finish having high fire-resisting properties. It is adaptable to any type of building construction and can be suspended horizontally at any level below the main roof structure.

Advantages of this system include simplification of plastering work, saving of time, superior strength, high fire resistance, elimination of timber framing, improved thermal insulation.

The photograph above shows part of a large area of PLAXSTELE ceiling to which the first undercoat of PARISTONE plaster is being applied. The isometric sketch on left shows the general assembly of the component parts.

Further information about this and other GYPROC products or systems will gladly be supplied.

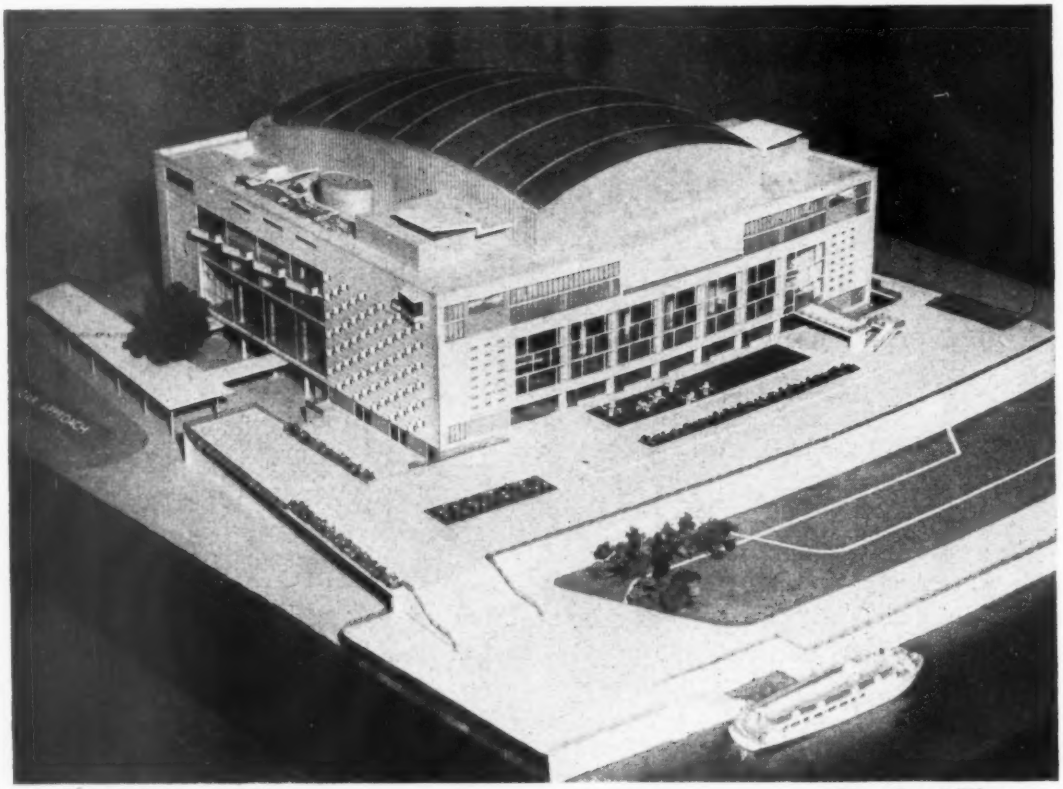
Makers also of ACOUSTELE *Ceilings,* GYPROC *Plaster Board,* GYPKLITH *Lightweight Building Slabs,* GYPSTELE *Partitions and Ceilings,* GYPROC 2" *Solid Partitions.*

GYPROC PRODUCTS LIMITED

HEAD OFFICE: Westfield, Upper Singlewell Road, Gravesend, Kent. Tel: Gravesend 4251-4 'Grams: Gyproc, Gravesend
GLASGOW OFFICE: Gyproc Wharf, Shieldhall, Glasgow, S.W. 1. Telephone: Govan 2141-3. 'Grams: Gyproc, Glasgow
LONDON OFFICE: Morris House, 1-5 Jermyn Street, London, S.W.1 Telephone: Whitehall 8073-4

G.P.3

THE ROYAL FESTIVAL HALL



Robert H. Matthews, A.R.I.B.A.
Chief Architect to the London County Council

Messrs. Scott & Wilson
Consulting Engineers

R.I.W.
REMEMBER IT'S WATERPROOF

We are justly proud of the fact that the following " R.I.W." materials were selected and used on the above project.

R.I.W. MARINE CEMENT—Liquid Ashphaltic Composition.

Permanent waterproofing of the whole of the superstructure was ensured by the application of this material—applied cold—to the external face of the concrete prior to the erection of the exterior natural stone facing. The same material was also used on the special roof construction.

R.I.W. No. 110 DAMP RESISTING COMPOSITION for Back Painting Stone.

Where construction did not permit of the use of R.I.W. Marine Cement then R.I.W. No. 110 Damp Resisting Composition, a material specially formulated for the back-painting of Stone and Marble, was applied to the back of the natural stone, thus affording the most efficient medium for damp-proofing and protection.

R.I.W. CEMENT FLOOR ENAMEL for Floor and Wall Treatments.

The whole of the walls to the Boiler House and the walls to the Basements generally were treated with this " R.I.W." product which is designed for direct application to concrete and other types of surfaces and gives a high gloss finish of a hard tile-like nature, and which, in addition to hardening and dust-proofing, is impervious to the action of water, oil and grease.

R.I.W. KINGSLAND PAINT.

This remarkable material, based upon Chlorinated Rubber, was used for the Ceiling of the Boiler House and Basement ceilings generally. Formulated to meet the demand for painting direct to concrete, asbestos cement and other types of surfaces eliminating the use of a priming coat or special treatment and providing an exceptionally tough film of high durability, washable, fast to light and lime, oil resisting and resistant to dilute acids and alkalies.

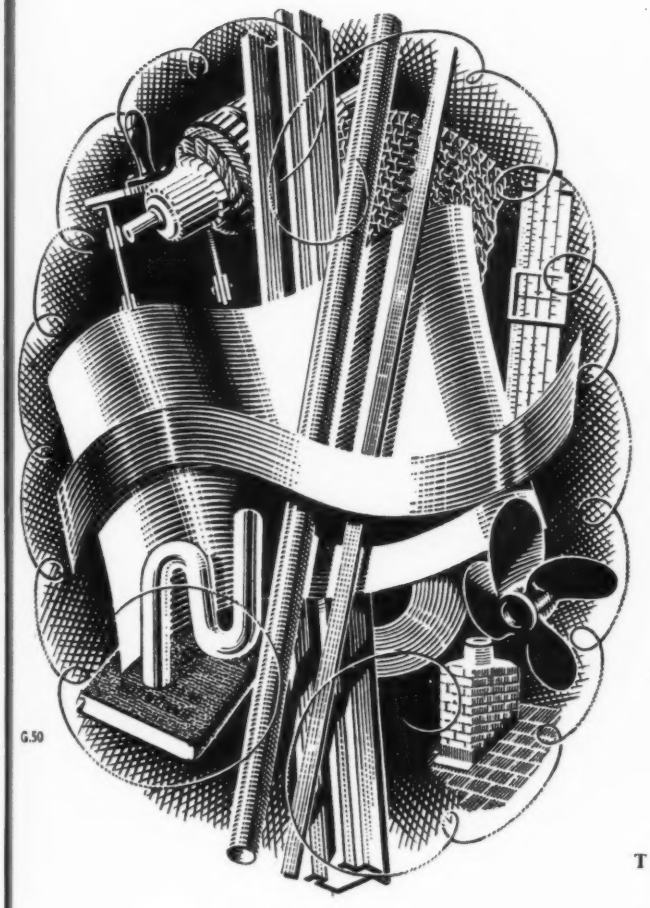
There is a complete range of " R.I.W." products for all types of Constructional Waterproofing, Protection, Damp-proofing and Decoration.

Our " R.I.W." Catalogue and full details of the proved performance of all " R.I.W." materials gladly sent on request.

R.I.W. Protective Products Co. Ltd.

2, Orsman Road, London, N.1.

'Phone: Clerkenwell 3223/4 'Grams: Cementlor, London



G.50

Helping COPPER to help the nation

THE COPPER DEVELOPMENT ASSOCIATION exists to promote the wider and more efficient use of copper and its alloys and to bridge the gap between technical developments and their practical application in industry. The C.D.A. is backed by the resources of the whole British copper industry and is in a unique position to help copper to help you, no matter what your interest may be. The Association, which is a non-trading organisation, can tell you what copper and its alloys can or cannot do and how they can be used to the best advantage. Its services are available to all entirely free of charge or obligation. You have only to ask.

COPPER DEVELOPMENT ASSOCIATION · KENDALS HALL · RADLETT · HERTS · RADLETT 5616

AJ

THE ARCHITECTS' JOURNAL

No 2911 14 DECEMBER 1950 VOL 112

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

Subscription rates: by post in the U.K. or abroad, £1 15s. 0d. per annum. Single copies, 9d. ; post free, 11d. Special numbers are included in subscription ; single copies, 1s. 6d. ; post free, 1s. 9d. Back numbers more than 12 months old (when available), double price. Half-yearly volumes can be bound complete with index in cloth cases for £1 ; carriage 1s. extra.

NEW TOWNS

I have just seen a collected edition of the New Towns Development Corporation's annual reports which they made at the end of last March. A characteristic foreword is contributed by Mr. Dalton who writes, "Since becoming Minister I have directed my energies to speeding up building in the New Towns, and many of the delays and difficulties mentioned in these reports have now been overcome. This should be fully evident next year."

*

This is a bold statement. It may well be that the Minister has dealt adequately with some of the problems that have to be overcome before the development of the New Towns moves faster. But is he satisfied with the whole policy of development? ASTRAGAL is not.

LONDON'S NEW INSTITUTE

This week the Earl of Harewood opened the new premises of the Institute of Contemporay Arts. Ever since —about three years ago—the Institute embarked on its task of doing for London what the Museum of Modern Art does for New York, its activities have been continuous and in some instances spectacular, but it has been handicapped by having no premises of its own.

*

It acquired, however, a spacious first floor in Dover Street in the summer, and since then Maxwell Fry, Jane Drew and Partners have been busy converting it into an elegant exhibition gallery, reading room, club room (with bar) and so on, all of which will effectively increase the Institute's range of activities. I recommend everyone interested in the experimental side of the Arts to join before it becomes so popular that membership has to be limited.

*

The Dover Street premises are equipped with specially made furniture, fabrics, etc., and will themselves be an exhibit of interest to architect members. They open with a show of recent paintings by British artists with emphasis on the coming young men who have yet to make their mark.

*

Don't miss the poster advertising this show. It was designed by Graham Sutherland, at the Institute's invitation, using only those fluorescent printing inks that have provided such a startling addition to London's advertisement sites in recent months. A brilliant idea carried out with great verve by just the right artist for such an experiment.

JAGO V. SWILLERTON AND TOOMER

H. B. (Honeywood File) Creswell was guest of honour at a meeting last week of the Surrey branch of the FAS and the FS(Eng). With great enterprise these Faculties arranged a mock arbitration based upon Mr. Creswell's work, *Jago v. Swillerton and Toomer*. The participants were all unaware of the case in point, and the barristers received their briefs beforehand in the usual way, and there had been consultations between the participants and their representing counsel but, of course, no rehearsals had been held.

*

Some readers may remember the original case. A village hall had collapsed under the strain of a local hop, and the owner of the hall was sueing the architect and the builder for neglect. The claimant's theory was that the dance floor had become damp and swollen, and consequently raised-up in the centre of the hall. The weight of the dancers, it was suggested, had flattened out the floor which, in turn, had pushed the walls over.

*

When the arbitrator had settled the matter in the respondents' favour, Mr. Creswell told the audience that this mock case was based on an actual hall he had designed and built about forty-two years ago. To his surprise, he was soon congratulated on his well-sprung dance floor, and, on inspecting it, he found that the floor had buckled "like the smooth waves of a sea at low tide" and the brick walls were bulging at the springing of the timber braces of the roof. By removing one board the waves were calmed, and, miraculously, the walls fell back into place. A nice success story.

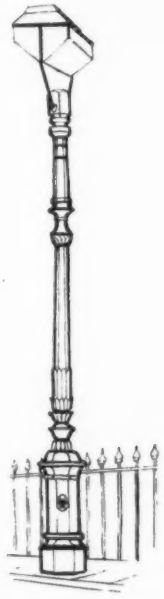
*

Mr. Creswell's theory was that the swelling of the kiln dried boards was the start of the trouble, but that the real cause was that the "rythmic thumping" of the dancers coincided with the

"natural oscillation" of the wall and so caused the damage. And, to bring home the point, Mr. Creswell, with an energy that many of the audience only half his age would be hard put to emulate, broke into "John Peel," waving his arms and beating time with his feet to show how rhythm and oscillation had coincided and nearly brought down the hall. A masterly climax to a most entertaining evening.

DESIGN IN THE STREET

I was glad to see that the practice of adding modern lamps to old lamp standards is deplored in the CID design folio *Street Furniture*; I only wish that the poor design of the modern lamp shown in the drawing illustrating this absurdity had been commented on, too, for it is of a type which is becoming so common that I suspect a lot of people "can't see nothing wrong with it." This new folio is a most welcome addition to a series in which the previous numbers had all dealt with portable objects. I've never concealed my view that there is any amount of room for improvement in the design of street furniture in this country—as CID says, "it is a reflection on our British local authorities and on our manufacturers that the editors of this Folio have been obliged to look abroad for so many of the best contemporary designs of street furniture"—and no such improvement can be expected without the kind of awareness that such publications are designed to foster. The CID design folios, you will remember, consist of some really big photogravure plates, suitable for display in schools and so on, with a brief accompanying text. The text of this one is a palatable mixture of historical instruction and critical comment. The section on that noble invention the pillar box, which celebrates its centenary next year, has a topicality beyond that chance of timing, for I see that the postmen would like the pillar box abolished—for reasons which might be classified as part pedestrian and part canine. And did you know the story of poor Colonel Pierpoint, who was responsible for London's first traffic island and met his end while standing in the road to admire it?



Young bathers outside Oslo Town Hall. See "Fun."

FUN

A Fife architect, S. G. Owen, writes to say that he was interested to read my note about the Oslo flower wheel which was illustrated on December 7. He found it a delightful example of the Scandinavian *joie de vivre*. He agrees with my unfavourable comments about Oslo Town Hall and considers the massing and proportions to be cumbersome and even hideous.

*

Nevertheless, he says, the building contains a wealth of interesting detail and he feels that the architects, the sculptors and decorators have at least had "fun." He sends me a close-up of the building showing that "even the nude bathers in the fountains and cascades seem to appreciate the setting." He asks: "Might *we* not have a little more "fun" in some of our public buildings?"

*

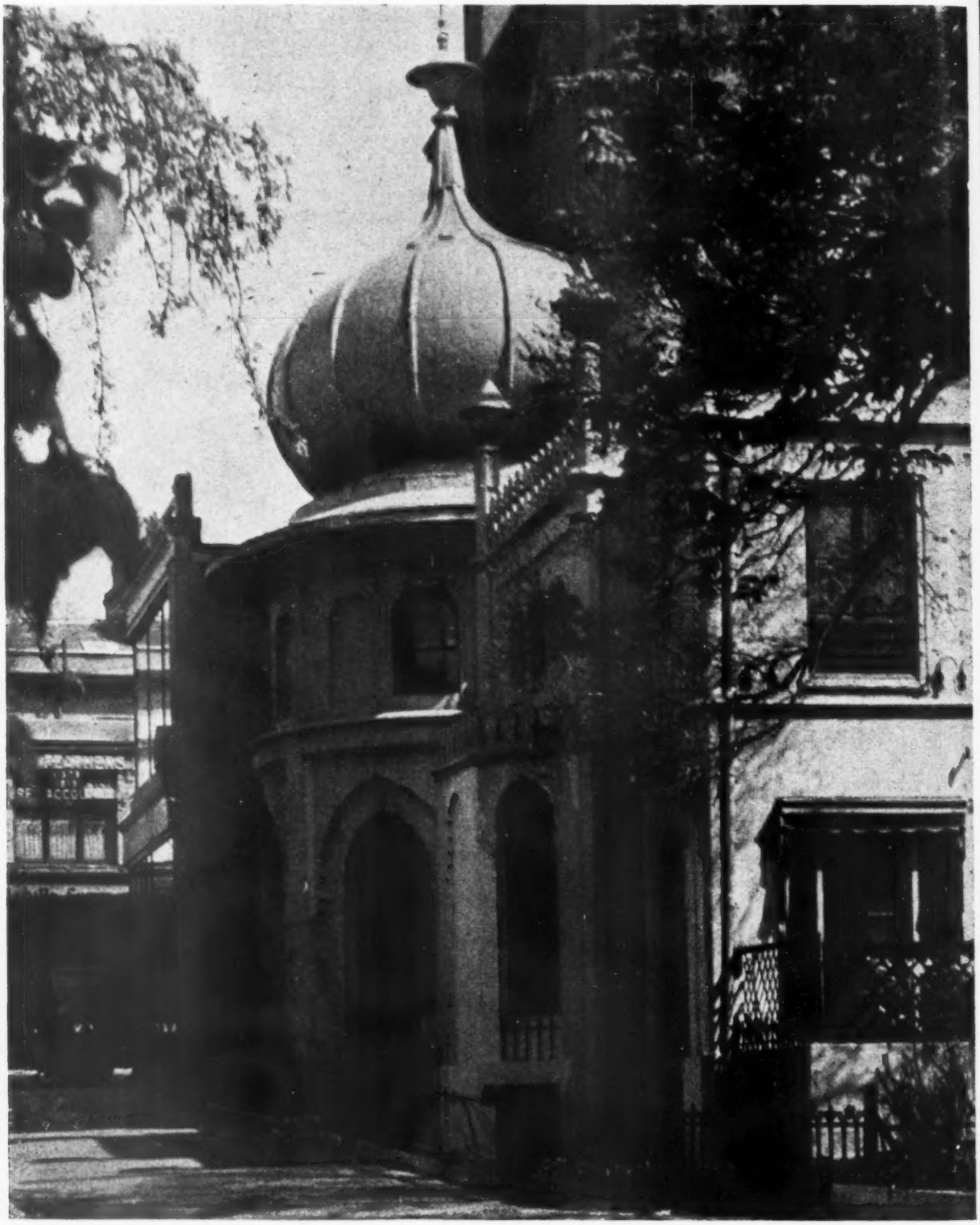
Indeed, why not? That the word fun has now to be put into inverted commas suggests the answer. We in the north have lost all spontaneous *joie de vivre* and we cannot recapture it in architecture until it begins to bubble up again in our bellies. The architect, as architect, is powerless to do anything about it. Fun costs time and money, both of which are at a premium.

But have the Norwegians really had fun at their town hall? Most of the detail seems to be as heavy, laboured and obsessional as the whole. The Vigeland sickness is upon it, something produced by dark winters, and the struggle for life in deep valleys combined with puritanism and belief in the money myth.

EVERYONE BURST OUT SINGING

Not everyone, perhaps, but quite a few of the audience hummed and jigged in their seats at a recent demonstration to the Press of a new cooker. This unexpected development from the usual grab-a-drink, grab-a-handout and get-out technique of journalists was due to a trio of young men, who, having repeatedly assured the audience that they would have baked a cake, if they'd known who was coming, introduced in

A Victorian pillar box. (See "Design in the Street.")



Regency Brighton

This picture, one of seventy on display in the exhibition "Regency Brighton," at the Building Centre, London, shows the Western Pavilion, Western Terrace, Brighton. It is a miniature imitation of the Royal Pavilion and was built by Amon Henry Wilds, in about 1828, for his own residence.

The exhibition, which will be open until Saturday week, was arranged by the Regency Society of Brighton and Hove, which came into existence in 1945, in order to try to safeguard the best buildings of both towns from disfigurement or destruction.

song an "American, or horizontal-style electric cooker; Miss Comet." The curtains drew back to reveal an enamelled piece who, before startled eyes, coyly bowed, opened and closed her drawers and doors and indulged in an excrutiatingly embarrassing coy badinage with a compère in a voice which started, so to speak, with the accents of the dining room, but later, to a rustle of turning script, entered the kitchen and remained there. An expensive bit of publicity, but no doubt well worth it. Certainly no one in the audience could remain unaffected, one way or the other.

CHARLTON ÆSTHETIC?

The other day I visited Charlton House, the big Jacobean mansion which has belonged to the Corporation of Greenwich since 1926 and is now used as a social centre. In the war a rocket landed in the grounds, wrecking one of the wings and bringing down ceilings in other parts of the house. But already, thanks to the energy of the ancient monuments people in the Ministry of Works, this wing has been rebuilt and all the damage indoors has been made good.

*

In general, it is an impressive feat of restoration, and when one sees such things actually *done* one doesn't want to sound querulous. Yet I couldn't help wondering whether it would not have been possible to match the old brickwork a little more closely. For the bricks used in the rebuilt wing bear no more than a vague family resemblance to the old ones in the rest of the house.

*

Some lesser slips of a mildly comical kind have occurred. Under the second floor window at one end of the ruined wing was a sundial, in the form of an oblong stone slab, perhaps five foot by three, flush with the wall. Shattered in the incident, this has been scrupulously reproduced; but the new dial has been built in—most irremediably—upside down. Then indoors in one place on a plaster ceiling the motto across the Prince of Wales's feathers, and in another the harp in the Stuart arms, have also been inverted.

*

I said slips. But of course they may prefer things that way up at Charlton.

ASTRAGAL

The Editors

BUILDING LICENCES

ARCHITECTS are not, either by training or habit of mind, criminals. If they were entirely devoid of scruple, it would still be to their advantage to remain within the laws relating to building licences. Even if a client had every wish to stretch the limitations on building to suit his own particular requirements, the reward his architect would receive for the additional work would not make the game worth the candle. The architect can, at least, in all honesty say: "Show me the law and I'll observe it." That much should be said at the outset, for there are occasions when it is difficult to avoid the conclusion that the MOW and its agents, the local authorities, create more traps for the architect than barriers around the latent pitfalls.

Elsewhere we set out a résumé of the emergency regulations covering building operations, and of the legal decisions that elucidate them. There are two motives behind these regulations: the first, the desire to allocate evenly and in the national interest (not that these two conceptions always go hand in hand) those materials that are scarce. The second is the desire of the Government to keep the total spent in the country on constructional work in the neighbourhood of a specified figure. To achieve that end, the regulations provide that, above a certain low limit, no constructional work, using that phrase loosely, may be undertaken without a Government licence. Further, the licence, when granted, is expressed in terms of money. This situation raises a number of separate problems.

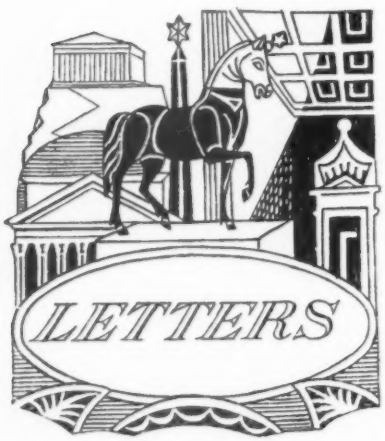
Some can hardly be properly discussed here. A profession as a whole is bound to accept the purpose behind a particular policy of the Government however much its individual members, as voters, may criticize it and agitate against it. On the other hand, a profession, because of its expert knowledge and experience, should be well placed to comment on and be listened to over questions of method.

So far, the Ministry has taken the easy way out. It is obviously less trouble to grant a licence for £x than it is to give one setting out in detail what materials may be used. But can this method still be justified in the light of the price changes of the past year, particularly in the light of the fact that those changes have been far from uniform as between different classes of materials in common demand?

The shortage of material is no longer such a serious factor; at least, it can hardly be claimed that the present system is required solely to deal, say, with a shortage of soft timber or steel. The strongest argument in favour of the present system is that the Treasury must measure building construction in terms of money and so the actual licence should be expressed in terms of money as well. But has not the time come when the Ministry should have the knowledge, and the courage, to be able to say to the applicant for a licence:

" We have seen your plans. We authorize you to carry out that work, or a section of that work, for we know roughly what materials will be used in doing so and we are in as good a position as you to know what they will cost " ? Then the architect could perform his proper function, which is to prepare a plan for the work and to see that the work done conforms to the plan. At the moment, he has, in addition, to keep an eye on the crystal ball of price fluctuations, with the spectre of a prison sentence hanging over his head if his guess is too wild.

It is surely time for the RIBA to tackle not only the question of what the existing regulations mean. That is urgent and important. But should not the profession formulate some view as to what the regulations should be ? So far, the profession has been inclined to shrug its shoulders and carry these burdens, fortified by the vague hope that next year all these regulations will surely go. Today, what was once a hope can only be described as a delusion. The emergency regulations are justified in Parliament, not on the grounds that they are needed because of the difficulties of the past, but because they are needed for the even greater difficulties of the future. If licences and quotas, consents and permission are to be a permanent feature of an architect's professional life, as seems only too likely, the least he can do is to call for a rationalization of the system under which he has to work. And the whole history of the professions over the last five years shows that unless the cry is loud, clear and sustained, nothing will happen. A Ministry is expert at judging the decibels in a protest. There is no response to the timid bleat.



T. Mellor, A.R.I.B.A., A.M.T.P.I.

Anthony Cox, A.R.I.B.A.

Donald Gibson, F.R.I.B.A.

Anthony Pott, A.R.I.B.A.

Reginald Kirby, A.R.I.B.A.

A. G. Bazeley, A.R.I.B.A.

" *Planning Assistant* "

Journal's New Feature "Smug and Sanctimonious" ?

SIR,—As a new reader of the ARCHITECTS' JOURNAL, or more properly a reader again after several years, I feel I must protest at the smugness of your editorial and the criticism which follows it of the prototype classrooms at Oxhey (November 23).

Again, you suggest that a comparison between the cost of the new building and the average cost of other schools is " not altogether valid." It is difficult to see how a comparison can be invalid unless one or other of things compared is either incorrect or misleading. All that the figures indicate is that the cost is fairly high and to say this would have been sufficient.

The most unpleasant paragraph however, is the last. The prosy and pointless warnings and the final sanctimonious sentence about " continuing to draw inspirations from the needs of the people the buildings are designed to serve," is really a little too much. If the editor really talked like this at the interview, I feel sure that the architects said very rude things as soon as they had gone.

Criticism of design and structure is a good idea, but it should be possible to avoid smugness and cant. Or can this be the new empiricism appearing in architectural journalism ; the Victorian sentiments being inserted purposely as foils to the hard boiled progressive style of the rest ? If so, I assume the word " exposé " used in the editorial, when exposure would have done quite as well, is another one.

Lytham St. Annes. T. MELLOR.

[We have shown this letter to the architects of the design who make the following comment:—" We consider that the write-up of the interview was a good summary of the discussion that took place, and we raise no objection to the editors' right to reply as they think fit."—ED.]

—or " of Great Professional Interest " ?

SIR,—May I congratulate you on the feature on the prototype structure in your issue for November 23, and express the hope that you will continue to present buildings in this way and that architects will not be shy of offering their co-operation. So frequently, if I may say so, your presentation of buildings tells us very little about them; still less does it tell us the reasoning behind them. Discussions of the sort that you now propose to publish are surely of the very greatest professional interest and value in developing an informed critical attitude. They deserve every encouragement.

London. ANTHONY COX.

SIR,—I have read with the greatest interest the section in your JOURNAL of November 23 dealing with the prototype classrooms at Oxhey Secondary School. I would like to congratulate the JOURNAL on their method of presentation, which I think could well be followed in a number of other cases. I would also like to congratulate Mr. Aslin on the work that he has done, and especially the team of people who must have done most of the work for him.

DONALD GIBSON.
City Architect and Planning Officer, Coventry.

SIR,—I should like to congratulate the County Architect of Hertfordshire and you on the form in which you presented the interesting prototype classrooms at Oxhey (November 23). The technical journals' usual way of reporting a building—half-a-dozen photographs and a sketchy paragraph or two on its purpose and construction—often leaves the reader frustrated, and so ignorant of the particular problems and conditions of the job he is unable to assess the architect's solutions, or even to argue about them.

I should like to see your new technique of presentation applied to every important new building, with contributions from any other designers who have worked with the architect and any manufacturers who have made substantial contributions to the job. In fact, an extension of your " round table " method into the field of particular jobs.

Harpenden. ANTHONY POTT.

The Case of an Organ

SIR,—Designers of organs in churches have for centuries, with few exceptions, given to these instruments an outward expression which in essentials was functional. It is

therefore surprising indeed that a modern architect in designing the casework of the organ in the Indian Army War Memorial in Royal Military Academy Chapel at Sandhurst (JOURNAL: November 30) should choose partially to conceal the pipes behind a timber grille in order to "prevent the pipes from being too dominant." Would Mr. Casson apply the principle to the Vertical Feature or Dome of Discovery in the 1951 Exhibition?

Essex. REGINALD KIRBY.

[We have shown this letter to Hugh Casson, who makes the following comment:—"The only reply I can make to Mr. Kirby's letter—perhaps because I'm afraid I am not a 'modern architect'—is that we did what we did because we thought it looked nicer that way. The alternative and often very agreeable solution—that of exposing the pipes and grouping them to form their own decorative pattern was, in our view, not possible for the following reasons:—

"1. Due to restrictions of space, the organ builder, who had designed the organ before we were appointed as architects for the Chapel, had been compelled to place all the larger metal pipes on the front of the gallery, and no alternative grouping was permissible.

"2. It was our view that these pipes were so large in girth as to be unpleasantly dominant, if left exposed.

Incidentally, am I not right in thinking that in a large number of (organ) cases the prettily arranged little pipes which form the principal feature of the design are, in fact, often both fake and mute?"—ED.]

Why are Housing Allocations so Small?

SIR,—In your issue for November 9, ASTRAGAL suggests that the RIBA and the profession should ask themselves some searching questions as to why more houses are not being built. I suggest that ASTRAGAL asks himself some searching questions as to what really goes on.

Let me quote Penzance as an example. The building up of an efficient output of Council houses takes, from the initial planning stage, several years. Our figures of completed houses since the war are: 1946, nil; 1947, 35 houses; 1948, 45 houses; 1949, 86 houses.

The thing is now well into its stride. For 1950 our "allocation" was 91 houses (including 20 per cent. private enterprise), but by June we realized that we would need to put more in hand to keep the various trades fully employed in proper rotation.

We asked to be allowed to build more. We were refused. We asked to "borrow" 16 from our 1951 allocation. Still no luck. Because we were not allowed to build houses, we diverted men to public lavatories. Some even had to be paid off.

For 1951 we applied to be allowed to build 150 houses (120 council and 30 private enterprise). We are satisfied the labour is available here to undertake that number successfully. We have been allocated 60 (48 and 12).

No reason was given for this curtailment of our programme. It was implied that the councils were being cut because they had failed to get on sufficiently quickly with earlier allocations. But I find from enquiries I have made that it is evidently a matter of government policy to restrict very drastically the rate of house building. I find that the allocations for 1951 for the whole of Cornwall are only two thirds of those for 1950.

I hope ASTRAGAL will take the trouble to study a copy of the circular letter sent out, probably throughout the country, but certainly throughout the South Western Region, setting out each council's allocations for 1951. To read it you would think that an allocation of houses was like a bag of crumpets—you get them from the shop, toast them for 5 minutes and there they are.

Councils are not allowed even to apply for further allocations until the number of uncompleted houses is down to a certain figure. For Penzance that figure is 70; and we shall reach it by the end of June. Our records show that the shortest time to date between receiving an allocation, and site work actually starting is 7 months. Reasonable foresight would allow a year. This is where the site, the services and the basic type plans are already in existence, but where these are not already provided for one would have to allow at least 2 years.

But even taking the figure of 7 months our progress chart shows that 7 months from the time we are allowed to apply for further houses the number in hand will be 4—in fact the whole of the work on our Council housing estates will have come virtually to a stand-still.

I give the figures for Penzance because as chairman of the housing committee I know my facts. I know too that similar conditions apply elsewhere and if ASTRAGAL is interested I will be glad to tell him more.

But the reason we are not building more houses is quite simply because the Ministry will not allow us to do so.

Penzance. A. G. BLAZELEY.

Planners Underpaid

SIR,—In your editorial on the Report of the Schuster Committee (November 16) you make the observation that many men and women who entered planning during the past five years are now getting out or have got out. I cannot imagine that the Committee's report will have the effect of halting the exodus; in fact, it is more likely to accelerate the process.

The report sets out the exacting educational and other requirements which society in general, and local government in particular, should expect from its planners but omits any reference to the reward any aspiring planner may in turn expect for his labours. For his answer he need look no farther than the "Situations Vacant" in a recent JOURNAL. Here, the West Suffolk County Council offered a post as *Senior* Planning Assistant, and applicants *must* be corporate members of the Town Planning Institute, should preferably have additional qualifications (note the plural) in engineering, surveying or architecture, and have *considerable* experience in all aspects of town planning. In addition, the successful applicant *must* provide a car. The reward? A salary commencing at £10 (gross) per week; not even comparable with salaries for architectural appointments offered by the same authority. So you will see it is financially to his disadvantage to take the extra trouble to qualify as a planner if he is already an architect.

If, for any reason, this position does not appeal to him another opportunity presents itself in the Highways and Planning Department of the County of Glamorgan (JOURNAL for November 30), where it would appear they also have been studying the Schuster Committee Report for, in accordance with the recommendations, they require that applicants shall be university graduates with at least two years professional experience and be qualified in either Town Planning, Civil or Municipal Engineering and Surveying. For these high attainments they are prepared to pay £9 4s. 7d. (gross) per week, but £8 13s. 0d. (gross) if he has only yet passed the Intermediate examination of one of the professional institutes. In this case, the salaries offered do not even accord with the NALGO Charter conditions for the professionally qualified. They are even below that deplorable minimum! What rewards are these for all the years of effort and heavy cost of acquiring the qualifications which the Schuster Committee consider necessary?

At a rough estimate it would take between 5 and 10 years of these salaries to reccup the cost of acquiring the education and qualifications necessary, plus a further year's salary to pay for the car which must be provided. Salaries apart, the planner's lot in local government is not a happy one. You are correct in your statement that in most local authorities the Planning Department is looked on with disfavour and is, of course, the new boy. I would go further and say he is the whipping boy, not only of local government, but of the public at large, and the Press, who jump on his every mistake with avid glee.

Because of staff shortage he is usually expected to do the work of two or three people; the attitude of establishment committees when presented with requests for additional planning staff seems to be: "Make do with what you have, they will have to work harder." I know of at least one very capable divisional planning officer who got out because it was thought that working overtime every evening, Saturday afternoon and Sunday was no more than he ought to do.

In these circumstances, the Schuster Committee Report and, for that matter, the Town & Country Planning Act might as well be consigned to the waste paper basket, for they both depend on the existence of planners. If the evaluation of a planner's worth is only a bare fraction higher than that of the lowliest workers at the Ford Motor Works, and frequently less than that of the average artisan, there will be no planners.

Bromley. PLANNING ASSISTANT.

DIARY

Regency Brighton. Exhibition. At The Building Centre, 9, Conduit Street, W.1 (Sponsor, the Regency Society of Brighton and Hove.) Weekdays: 10 a.m. to 5 p.m. Saturdays: 10 a.m. to 1 p.m.

UNTIL DEC. 23

Good Practice in Domestic Drainage. F. J. Crabb. At the Town Hall, Devizes. (Sponsor, MOW.) 7.30 p.m.

DEC. 14

Address to AA Students. Recording of talk given by Frank Lloyd Wright at this year's AA prize-giving. BBC Third Programme. 6 p.m. to 6.15 p.m.

DEC. 16

Developments in the Design and Construction of Furniture. David W. Pye. At 66, Portland Place, W.1. (Sponsor, Architectural Science Board.) 6 p.m.

DEC. 19

The Structural and Decorative Use of Timber. J. R. M. Poole. At 13, Suffolk Street, S.W.1. (Sponsor HC.) 6.30 p.m.

JAN. 5

Draughtsmanship of the Past. H. S. Goodhart-Rendel. At RIBA, 66, Portland Place, W.1, on the occasion of the announcement of awards of prizes and studentships. 6 p.m.

JAN. 9

Housing Association's Post-War Housing Schemes. Layouts, plans and photographs of housing schemes and reconditioning carried out by housing associations since 1945. Daily: 9.30 a.m. to 5.30 p.m. Saturdays: 9.30 a.m. to 12.30 p.m.

DEC. 18 to JAN. 13

The Early Years of Illuminating Engineering in Great Britain. Dr. J. W. T. Walsh. At the Royal Institution, Albemarle Street, W.1. (Sponsor, IES.) 6 p.m.

JAN. 17

This feature covers aspects of legislation, parliamentary news or statutory rules and regulations. This week Mr. Watkins discusses the control of building operations

ERNEST WATKINS

The Architect and Current Affairs

The control of building operations is effected by two Statutory Instruments, the first, Defence Regulation 56A; the second, the Control of Building (No. 15) Order, 1950, made by the MOW under the authority of Defence Regulation 56A. The first regulation, substantially in its present form, has been in existence since 1942; the second, one of a long series, since July 1, 1950. Under the provisions of the Supplies and Services Act, 1945, both can remain in force until the end of 1951 and longer if extended by resolution of both Houses of Parliament.

Regulation 56A, Para. 1, covers work normally carried out by local and statutory authorities in respect of their own undertakings. The combined effect of this paragraph and of the 1950 Order is that, if the cost of the work will exceed £500, the authority must obtain the authorization of the government department concerned.

Paragraph 2 deals with all other work, and in a complicated way, for it incorporates in it a number of cross references to the 6th Schedule to the Defence Regulations themselves. It provides that the carrying out in the United Kingdom (except for a purpose covered by Para. 1, that is, except for work done for a local or statutory authority which itself will already have obtained authority from its appropriate department) of any work "done in the construction, re-construction, alteration, demolition, repair or decoration of a building" or "for the purpose of providing water, light, heating or other services for a building" or "of a kind required for the purpose of a public utility undertaking or any other fixed works of construction or civil engineering including a road" or "in the protection of a building or such works against hostile attack" or "of any maintenance work on a building or on any such works . . . shall be unlawful except in so far as there is in force in respect thereof a licence granted by the Minister" (the Minister being the MOW). In addition, temporary work pending a repair is brought within the scope of the regulation. This phraseology is cumbersome. The various classifications and definitions have to be assembled from the paragraph itself and from the Schedule, but their general effect is clear enough. Virtually all building and constructional work is brought within the scope of the regulation, and the regulation is positive in this respect; work is illegal unless there is a licence.

EXEMPTIONS FROM A LICENCE

There is, however, one important qualification to this. The proviso to Para. 2 empowers the Minister to make regulations creating exemptions from this need to obtain a licence. It is under this proviso that the Minister makes, and varies, the Orders fixing the limits of work that may be done without licence, and these will be noted when the 1950 Order is considered.

The remainder of Regulation 56A is amplification of the above. The following points are important: (*a*) The value of all goods and services used in the operation must be taken into account even though they were not bought or procured for that operation. This prevents the use of old material or materials from existing stocks for the purpose of increasing the amount of work that can be done under a licence expressed in terms of cash. (*b*) The need for a licence does not apply to work done under a contract with a government department, or where a department will defray the cost, or for a local authority when the authority has already been given permission to borrow the money needed for the operation.

But it should be noted that the expression "the cost of which a government department has agreed to defray" must be construed strictly. In the case of *Clegg and Another v. Barnes* (1944 108 JPJo 223), a hotel had been requisitioned for the RAF and the requisition notice said that compensation would be paid in due course. After the requisitioning ended, the owner, without a licence, spent £275 on the repairs then needed. Although he ultimately received £232 in compensation, the magistrates held that the original requisitioning notice did not constitute an agreement by a government department to defray the cost of the work he had carried out and in consequence they convicted him of an offence under the Regulation.

(*c*) Para. 6 of the Regulation provides that if its provisions are contravened, the "person at whose expense the operation is carried out and . . . the person undertaking the operation . . . and . . . any architect engineer or other person employed in an advisory or supervisory capacity" shall each be guilty of an offence.

There are two important provisos to this. The first states that where the operation was authorized up to the spending of a stated sum and the amount is exceeded, if the person charged proves that "at the time when the operation began . . . he had reasonable grounds for believing that the cost would not exceed that amount" he is not guilty of an offence. The second also makes it a good defence to a charge if the person charged can prove that the works were urgently necessary and that the nature of the emergency made it impracticable to obtain prior authorization.

It should be noted that there are two alternative courses open to anyone concerned with the operation when it becomes likely that the figure in the original licence will be exceeded. If the additional cost results in any way from a variation in the plans and estimates on which the original licence was granted, the only course open is to apply for a supplemental licence, and that at the earliest practicable moment. But if the additional cost results solely from a rise in price of the materials originally intended to be used, or results from increases in wage rates, the MOW licensing officer has authority to amend (that is, increase) the figure shown in the original licence. This will not be done if work outside the original licence has been undertaken.

(*d*) Penalties for an offence under the Regulation are imprisonment for not more than seven years or a fine or both. Normally the fine is to be fixed by reference to the value of the work not covered by the licence and, in the case of the architect or engineer, for which he was personally responsible.

CONTROL OF BUILDING OPERATIONS

The main purpose of the Control of Building Operations Order, 1950, as with the previous Orders, is to lay down the various exemptions from the need to obtain a licence. Para. 3 of the Order provides that any person may carry out without licence on a single building within the period from July 1, 1950, to June 30, 1951, any work if the "cost of the work together with the cost of any other such work previously carried out on that property during that period without a licence" does not exceed £100. This paragraph also raises the exemption limit to £500 when the property concerned is used for the purpose of a trade or a business or for agriculture.

A single property is normally a property having a separate assessment for income tax purposes or shown separately in the valuation list.

Licences are normally granted by the MOW but under MOH Circular 8/47 dated January 20, 1947, local authorities have been appointed the agents of the Ministry to grant licences for all works affecting private dwelling houses.

The following decisions on the Regulations are of interest: In *Jackson Stansfield & Sons v. Butterworth* (1948 2 All ER 558) the Court of Appeal held that a licence under these Regulations must be in writing and that oral permission could not be confirmed retrospectively by the issue of a written licence.

In *Dennis & Co. v. Mann* (1949 1 All ER 616) the Court of Appeal held that where licence had been granted and the figure exceeded, the owner could not add his "free allowance" under a Control of Building Order to cover his excess expenditure.

An architect faced with the Regulations has two points to consider. He may find that his conduct amounts to an offence under the Regulations, leading to a fine and possibly imprisonment. He may also find that, although no prosecution results, his contract with his client has become illegal and that, should his client decide so to do, that fact can be set up as a good answer to any claim he may make for his fees. How can he best guard against the risks of the situation?

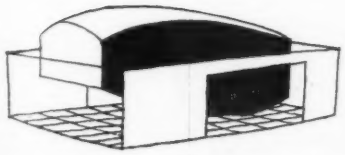
WHAT WORKS NEED A LICENCE?

The first question that commonly arises is, what works need a licence? Unfortunately, from the nature of things, no hard and fast line can be drawn. For example, when does the making of a tennis court cease to be the rolling down of a piece of grass and become an operation of a civil engineering kind? The hanging of pictures or tapestry on the walls of a house is clearly decorating the house; supposing, instead, panelling is screwed into the wall instead of tapestry suspended against the wall? Has that become an operation involving the decoration of the house and must a licence be applied for, with a figure high enough to include the cost or value of the panelling itself?

Inside the house, perhaps the best working rule to take is that provided by the distinction between a landlord's and a tenant's fixture. A landlord's fixture is something built into the structure and so something that cannot be removed at the end of the tenancy. A tenant's fixture is something that is affixed to the structure; it can be removed. Similarly, the kind of work to which the regulations are intended to apply are works intended to become part of the structure (for even a coat of distemper becomes part of the structure of the wall). But this distinction has no legal validity. It is no more than a working rule.

But, generally, this problem is more apparent than real. It is the small jobs that are normally on the borderline and, unless they are one of a long succession of similar jobs, they are usually within the exemption limit. When a proposed operation is likely to cost more than £100—certainly when it is likely to cost more than £500—there is not much doubt but that it is caught by one or other of the definitions incorporated in Para. 2 of Regulation 56A and so requires a licence.

The architect's real difficulty comes from the fact that the licence is expressed in terms of money and it is far from easy to keep a day-to-day check on the total spent or committed. The architect is very much in the hands of the builder and a great deal can go wrong between one monthly certificate and another. All the architect can do is accept the fact that the money total of what is spent is the only test the Ministry will apply and that, while Ministry officials are only exceptionally people anxious to prosecute every mistake, that is not the only risk that he runs. The architect must remember that the regulation is couched in terms of "Every building operation is illegal, unless. . . ." It is his duty to keep his contract legal and to bear the consequences if he fails to do so.



DIARY

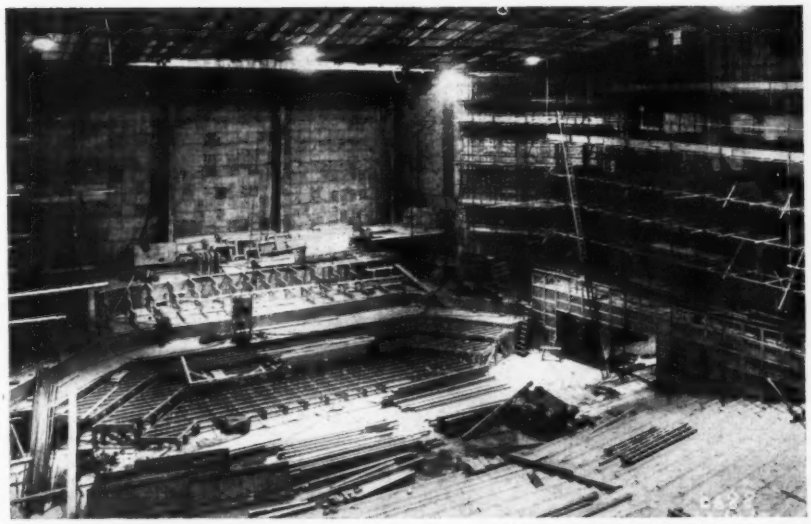
Work completed or practically completed from August to October: Copper roof to auditorium—Fixing of Portland stone slabbing—Derbydene stone floors—Artificial stone floors—Fibrous plaster to main auditorium ceiling—Suspended ceiling to kitchen area—Fixing of grounds for auditorium panelling—Large metal window frames, with aluminium castings, and teak surrounds—Metal windows to staircase blocks—Connection and testing of gas mains—Installation of kitchen equipment.

Work in Progress:—Hadene wall slabbing. Black terrazzo in lavatories—Laying of granolithic floors—Hard plaster to walls and ceilings—Fixing of acoustic ceilings—Windows to temporary changing rooms—Window glazing (following fixing of frames)—Fixing of staircase balustrade core rails—Insulation of heating pipes—Installation of main ventilating trunking and plant—Installation of lifts—Construction of terrace and car park.

Work recently completed:—Structural steel work to temporary south-east end—Screed to roof and roof terraces.

ROYAL FESTIVAL HALL: 8

Progress report by John Eastwick-Field and John Stillman on the finishes.



A recent photograph of the interior

In the preceding articles we have tried to supply the reasons for the choice of materials and techniques which are involved in the construction of the Royal Festival Hall. It has been possible, amongst other things, to say why the foundations were constructed in a particular way, why reinforced concrete construction was preferred to that of steel and why gas was chosen as the fuel for the boilers. These particular decisions, however, did not have more than an indirect influence on the final appearance of the building, as the underlying reasons for making them were mainly of a practical nature. The finishes, on the other hand, which are discussed in this article, have a direct bearing on the appearance of the building. The reasons for their choice, whilst being practical, are also related to the æsthetic ideas on which the design was based and to the personal preferences of the architect. The æsthetic ideas were explained briefly in our last article (see page 186, August 24) and are now touched upon again where they influence the choice of finish. It is obviously more difficult to discover the subjective reasons which govern many of the choices.

Because this is a public building of importance, where many people will assemble, the finishes have to be such as will withstand intensive use, and at the same time satisfy acoustic and other requirements.

In general, the building industry is now organized in such a way that most finishes of this kind are undertaken by specialized sub-contractors and in some instances the processes involved have become trade secrets, unknown to the BSS and Codes of Practice. In many trades, as for instance terrazzo work, for which even now Italian craftsmen are used, the onus of ensuring a high quality of workmanship is largely borne by the firm, which has a reputation to maintain. This is not always true of many of the general building trades, nor indeed of some of the new specialist trades and it raises a controversial issue, namely, whether an architect should attempt to have specialized knowledge of every trade.

At the Royal Festival Hall many traditional finishes still have a place, but the decorative details which used to be associated with them and which may have had a constructional origin are often omitted, causing problems for which new solutions are required: for instance, recessed skirtings and cornices are used to emphasize the structure, with the result that, amongst other things, plaster cannot be finished against hidden grounds.

As a consequence of the architect's early decision that concrete was an insufficiently decorative material to be left exposed, a number of special facing materials are used and the term "finishes" applies equally to the outside as to the inside. The generally acceptable methods of providing a satisfactory surface to the concrete were considered unacceptable and as a result, such materials as stone facing, marble facing and tiles are applied to a much larger proportion of walling than in most such buildings. The Royal Festival Hall is, in fact, conceived as a monolithic structure, clothed with decorative materials, applied as veneers. This principle enables contrast in colour and texture to be obtained by the use of natural materials, rather than by the extensive use of colours in the form of paint; and, to avoid any possible misunderstanding of the nature of the construction, the veneers are so arranged that they are obviously "applied." The marble facing, which has straight vertical joints, is a typical example.

In general, the finishes on this job are used to emphasize the architectural expression, by identifying various parts of the building, particularly the form of the auditorium itself. Also, the finishes are arranged so that the visitor finds a gradual change, from a cold external feeling in the entrances, to the warmth and comfort of carpets and wood panelling in the auditorium.

It need hardly be added that all the normal regulations as to fire resistance and other requirements for public buildings have had to be observed and have restricted the choice of finishing treatments to some extent, particularly in respect of acoustic surfaces.

A list of the sub-contractors and suppliers mentioned in the following pages will be found on page 528.

ROYAL FESTIVAL HALL:

ENTRANCES, HALLS AND FOYERS

EXTERNAL PAVING

Reconstructed Stone

2-in. thick granite aggregate, with carborundum finishing in various sizes, laid to form patterns. Also used internally in entrance at 12 level.

Chosen mainly because it provided a reliable paving at a more reasonable price than natural stone. Paving of this kind is normally hydraulically pressed, but in this instance where special sizes, including, for instance, 3 ft. by 1 ft. 6in. were required, the slabs are being vibrated. They are bedded on lime mortar with joints from $\frac{1}{8}$ in. to $\frac{1}{4}$ in. thick. In some places they are being used as a foil to cobble stones.

FLOORS

Stone: Derbydene

1¼ in. thick laid on screed to form patterns. Stones taken from two different beds to give contrast in true. This material is used principally in the main foyer.

Derbydene is a crystalline carboniferous limestone. It is referred to as a "marble" since it is a hard stone and will take a high polish, revealing a decorative figure. As we describe later, it is also fixed like marble in slabs to form a wall lining. The stone is dark grey in colour. It is said that it does not become slippery with wear when used for flooring. The material was chosen, after consultation with the suppliers, because it was home produced and readily available, at the same time satisfying the requirements of colour, texture and durability: it could also be used internally or externally for walls.

Wood Strip: Teak (Tectona Grandis) and Muhimbi (Cynometra Alexandrii)

Normal wood strip flooring on battens —wax polished. Teak is used over heating coils, and elsewhere Muhimbi. In small foyer spaces and in cloakrooms and powder rooms Muhimbi is used in block form.

Teak does not warp or split if it is properly seasoned and it is especially because of this property that it has been chosen for use over heating panels. It was not available in sufficient quantities to be used entirely where wood flooring was required.

Muhimbi is a hard and heavy timber, reddish brown in colour, with light and dark markings. It is very fine and even in texture and its grain is reasonably straight. It comes from Uganda. Its resistance to abrasive action is of a very high order and in this respect it is superior to many of the better quality fine textured hardwoods. Its price compares with that of oak.

WALLS (Outside of auditorium shell)

Marble Facing: Derbydene

Generally 1 in. thick, in slabs 20 in. wide and of random height, with a 6-in. maximum bond. It is fixed traditionally, with copper wire cramps and plaster of Paris dabs and is polished (see sketch).

Derbydene was chosen for this position on account of its decorative quality and because of the contrast which it provided with other adjacent materials, used on walls and ceilings and with the external Portland stone facing, where the two materials can be seen in juxtaposition.

WALLS (other than above)

Painted Plaster

Two-coat work in 3:1 cement and sand rendering and setting coat of anhydrous gypsum plaster used throughout on walls. On concrete surfaces a special liquid cement hardener, incorporated in a cement slurry is used to form a key. The bottom few inches of the wall plaster is formed in Keenes as a protection against damage.

The anhydrous gypsum plaster is next in order of hardness to Keenes and it is interesting to note that all the latest publications do not recommend a backing coat of cement and sand on *in situ* concrete. This is presumably because of the difficulty of obtaining a key on the concrete, but in this case the problem has been overcome by using a special cement slurry as discussed below. The fact that this anhydrous gypsum plaster is well known and is widely used and would be unlikely to cause any technical difficulties was one reason for its choice.

The special liquid cement hardener, incorporated in a cement slurry, is a proprietary mixture which does the same job as the spatterdash which has been adopted from Continental rendering practice. Both these methods achieve a key without hacking, and so save much labour and dust.

CEILING

Plaster on Concrete

As walls.

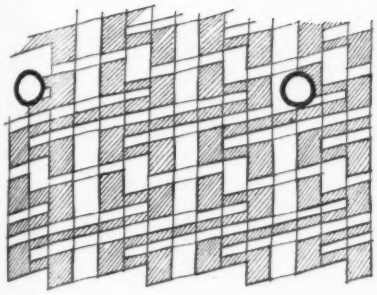
Plaster on Expanded Metal

Three-coat work with loin.

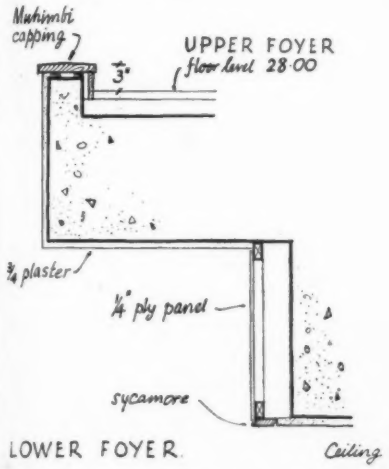
Perforated Plastic Sheet

Tap screwed to metal hangers with 2-in. rock wool in muslin bags laid on top.

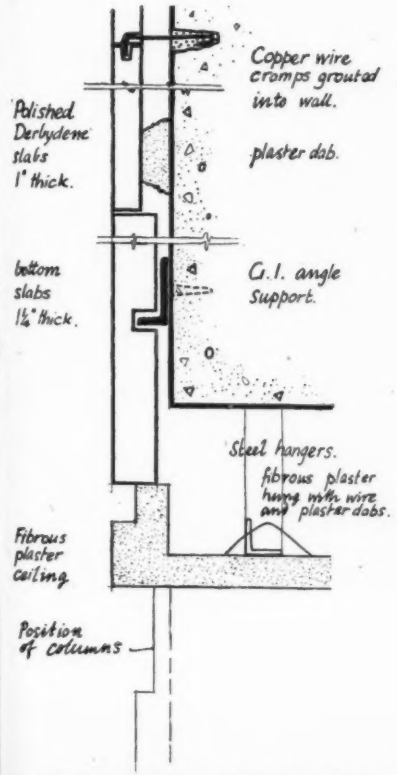
This combination of materials was chosen because it was difficult to find any alternatives which provided at once: (*a*) a finished decorative effect; (*b*) a hygienic surface; (*c*) a good acoustic absorption; (*d*) the degree of fire resistance required in a public building. Such acoustic materials as are fire resisting, other than perforated panels, cannot be redecorated, and in this respect the cellular plastic sheet is



Detail showing pattern of part of foyer floor composed of 1½-in. Derbydene stone slabs from two different beds.

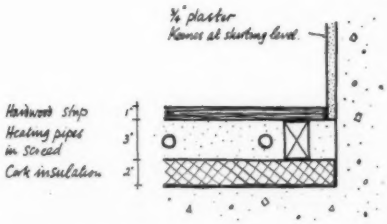


Detail at edge of foyer floor at position overlooking lower foyer.

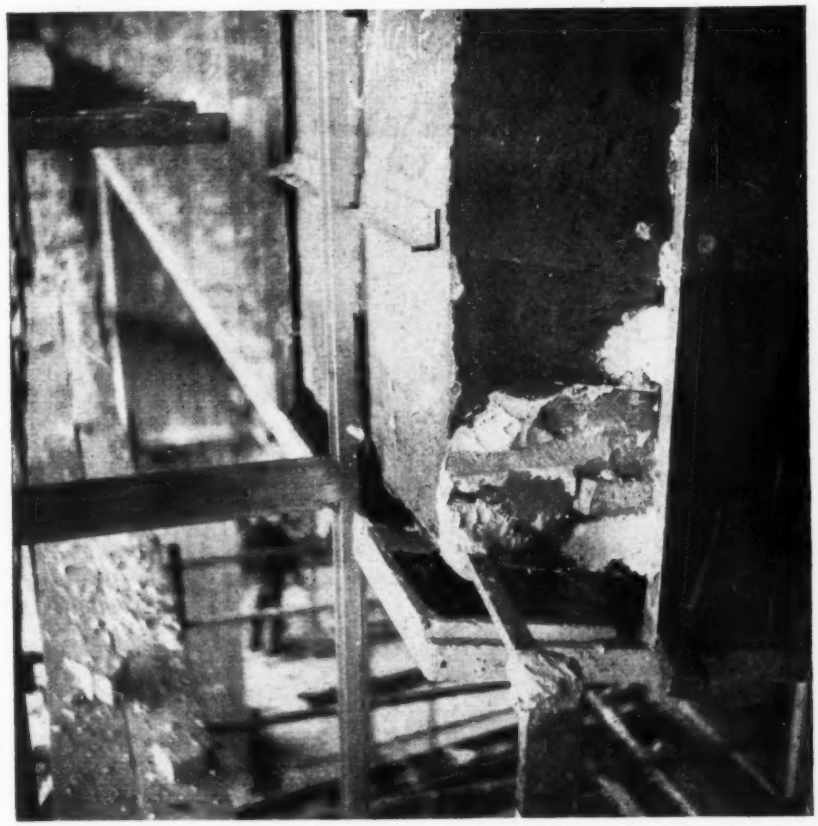


Detail section of internal Derbydene facing to auditorium showing fibrous plaster ceiling to foyer beneath.

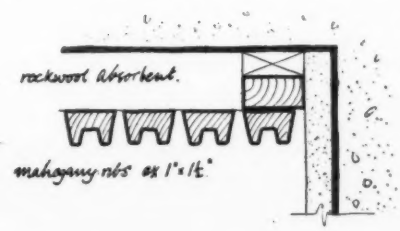
Artificial stone paving to floor of entrance hall at 12 level.



Left, typical detail of wood strip floor at junction with plastered wall.

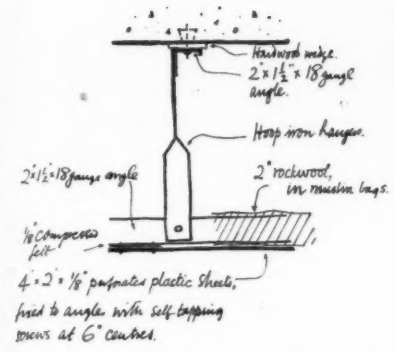


Lower corner of auditorium "shell" within foyer space. The facing of Derbydene slabs is nearing completion, and the suspended fibrous plaster ceiling can be seen below.

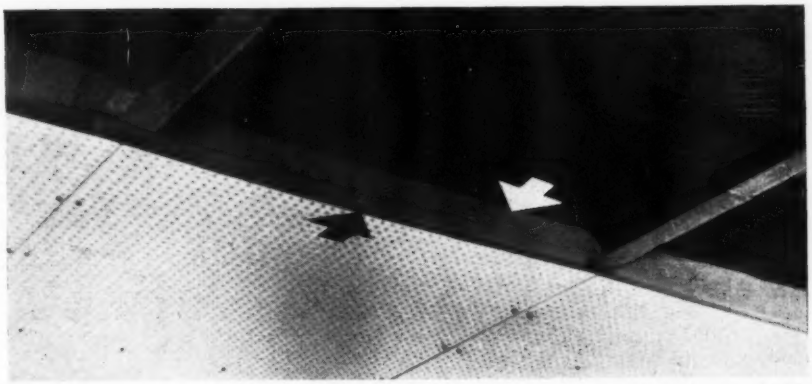


Left, detail of acoustic wall treatment in lift hall.

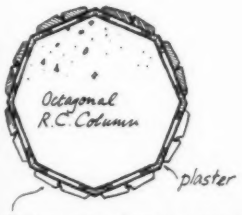
WALLS (continued)		satisfactory. Nevertheless there has been difficulty in aligning the sheets on the metal battens in such a way that, in a large area, the highly finished surface does not give rise to irregularities which, in contrast with the smooth surfaces of the marble and plaster, would be very apparent (see sketch for fixing).
	Wood Waxed hardwood battens, on rectangular and octagonal shaped columns (see sketch).	
	Stucco-marble	This is in effect a high grade plaster finish containing a large proportion of marble dust, which after being polished, gives the appearance of real marble. It may be coloured and grained, but at the Royal Festival Hall plain white with an eggshell finish has been chosen. Stucco-marble is an old Italian art which, it is thought, has not been practised in this country, and it has been carried out by craftsmen brought from Italy.
	Silver Bronze Columns finished at base with a recessed band of silver bronze.	
STAIRCASES (external)	*Granolithic Teak: Slatted*	
STAIRCASES (internal)	*Laminated Wood* The treads of the two cantilever staircases at the sides of the main foyer are constructed of laminated wood. These treads are cantilevered over the sides of the main concrete bearer. The treads are wax polished.	These staircases were constructed in this manner to obtain a feeling of lightness, which could not be obtained with concrete and normal finishes. A material of exceptional strength was required for the treads, and a number of wood, and wood and metal laminated materials were tried before a final choice was made. The type chosen is densified laminated wood made by bonding $\frac{1}{36}$-in. birch and beech veneers with phenolic resins, under hydraulic pressure. The resulting "wood" is exceptionally dense and in this instance, where only birch veneers are used, two grades are employed, one having a density of 65 lb. per cubic ft. and the other 84 lb. This type of lamination was used extensively for aeroplane propellers during the war, notably for the Spitfire, and is now employed for many purposes where wood of high strength is required, as for "picking sticks" in modern looms.
	Carpet Fixed on felt and inset in treads. Nosings in timber. *Granolithic* Natural coloured granolithic, *in situ*, on escape stairs. Carborundum incorporated to provide less slippery surface.	
AUDITORIUM		The materials used inside the auditorium were largely dictated by acoustic requirements and more detailed information about certain of them will be given in a later article.
FLOORS	*Carpet* Carpet laid on $\frac{3}{8}$-in. felt in gangways.	This is used for comfort and sound absorption.
	Cork Tile $\frac{3}{8}$-in. polished tiles stuck to risers and treads under seating.	Chosen for acoustic absorption, and used under the seats where carpet cannot be appreciated and is difficult to clean.
WALLS	*Wood: Elm Panelling* Elm veneered $\frac{3}{8}$-in. ply panelling in flush frames fixed to major area of side walls on battens with 4-in. air space behind (see sketch). Other materials chosen specifically for acoustic purposes, to be dealt with in later report.	Wood panelling was chosen because of obvious advantages of timber as a facing material; and because, when fixed in this manner, it has particular acoustic properties both as a reflector and also as an absorbent at different frequencies. Elm was chosen because of its attractive colour and figuring.
BOXES	*Wood: Walnut Ply Panelling* Mounted as other panelling.	
LOBBIES	*Leather* Walls leather upholstered.	Leather on padding, chosen because it provided a pleasing but hard wearing surface, and because the lobbies were designed to act as sound traps between the auditorium and the foyers. Buttoned leather is also used to make back walls absorbent.



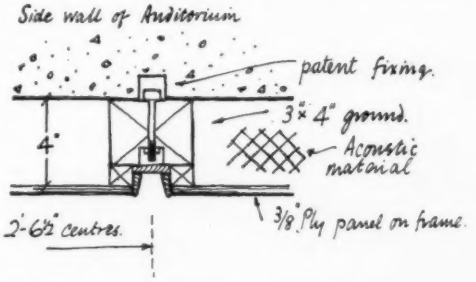
Detail of perforated plastic sheet acoustic ceiling to foyers.



Acoustic ceiling to foyer. Black arrow points to edge of ⅛-in. perforated plastic sheet, and white arrow to rockwool insulation in muslin bags. The self-tapping fixing screws can also be seen.



Right, detail showing fixing of elm faced plywood panels inside the auditorium. A number of different materials are used to fill the 4-in. cavity behind the panels in order to obtain acoustic absorption at various frequencies.



Left, detail of typical wood-cased column.

Fibrous plaster ceiling to auditorium nearing completion. The supporting metalwork is largely site welded. (Official photograph.)

CEILING	*Fibrous Plaster* Fibrous plaster fixed in sections to metal lathing hung from tresses and moulded to shapes for lighting, ventilation and sound reflection.	A robust ceiling was required in order to avoid resonance, and since the fibrous plaster is relatively thin, a full thickness of 2 in. was made up with a backing of vermiculite, weakly bound with lime.
KITCHEN		
FLOORS	*Quarry Tiles* 6 in. by 6 in., heather brown.	Chosen for hard wearing qualities and resistance to cooking fats, acids, etc.
WALLS	*Glazed Tiles* 6 in. by 6 in. white glazed.	Terrazzo and opaque, coloured, hard surfaced glass were alternatives considered for this purpose, but glazed tiles were chosen on account of cost and speed of application.
CEILING	*Asbestos Composition* Suspended panels of fireproof building board (see sketch for suspension system).	This ceiling has the advantage of being hard but at the same time slightly absorbent. The panels can also be removed to give access to the services above. Other materials considered were vitreous enamelled sheet, hardboard and metal faced ply.

EXTERIOR

AUDITORIUM

Stone: Derbydene
2 in. thick fixed as internally, with a backing of asphaltum waterproof solution, but left unpolished. This to be fixed to the end of the auditorium facing the river.

The external finishes were chosen to accentuate the form of the auditorium within and above the surrounding foyers, and the same facing material, Derbydene, was used for the auditorium, both within the building and without. For the surrounding foyers as much glass was used as possible to give transparency, and the remainder of the exposed surfaces were considered as an opportunity for patterning, using Portland stone and tiles, in addition to small areas of painted concrete.

Paint
Textured lime-mortar rendering, containing no Portland cement. Cement paints.

The use of paint is temporary, pending complete facing with Derbydene at the sides of the auditorium.

SURROUNDING FOYERS, ETC.

Portland Stone
4 in. thick (4½ in. in lower courses) (see sketch). From Whitbed quarries, backed with asphaltum waterproof solution. Used on river front and on staircase blocks and on the sides, except where tiled or glazed.

Used because of natural acceptance in London, interest created by weathering, especially as the site is smoky. The new Waterloo Bridge is also faced with Portland stone. It is interesting to contrast the fixing of relatively soft Portland stone with that of Derbydene which is a hard stone fixed in the same way as marble.

Tiles (Walls)
6 in. by 6 in. by $\frac{7}{8}$ in. one-fire tiles in several colours: Terracotta, white, grey-green and pale blue. Fixed on a special cement slurry key with ½-in., 3 : 1 cement sand rendering with ⅜-in. bedding of 1 : 1 cement and sand, with cement waterproofing incorporated. Some joints have a black dye incorporated, for effect.

These tiles, used in large vertical panels, are of a relatively unusual kind and are called in the trade " one-fire " ceramic marble tiles. The pigment and the glaze are applied at the first kilning. This class of tile is usually fired twice, first the body, and secondly the glaze, at a somewhat lower temperature. It is then generally known as faience. Whilst the double firing gives a wider range of brighter colours, it is considered that the " one-fire " tiles, whilst limited to a few softer (though very pleasant) colours, have a higher resistance to frost and these were the principal reasons for their choice. Both types cost in the region of three pounds per yard fixed, but this naturally varies according to the job and the size of the units. Tiles, slabs and moulded blocks are obtainable up to sizes of approximately 18 in. by 12 in. in which case the thickness might by 2 in., or for moulded blocks as much as 4 in.

ROOFS

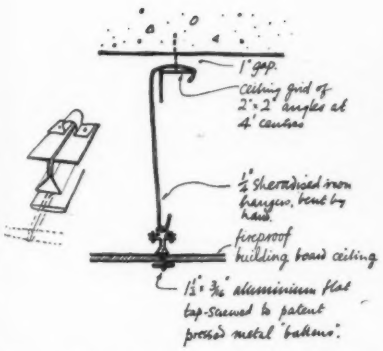
Tiles (Plinth)
6 in. by 6 in. by $\frac{7}{8}$ in. brown unglazed tiles.

Chosen because a dark brown colour was required. This tile, although usually used for floors is also frost resisting and suitable for exterior use.

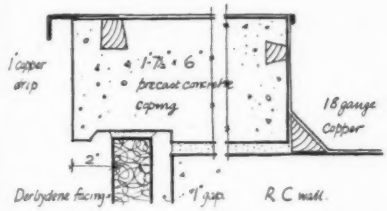
Copper (Main Roof)
18 gauge hard rolled, fixed with rolls and double welts in accordance with recommendations of the Copper Development Association. Laid on ½-in. insulating fibre board, treated wooden rolls fixed to hard-wood inserts in top member of roof beams (see photograph). Copper tacks securing welts screwed to asbestos fibre wallplugs in concrete.

Screed
In situ ¾-in. thick cement and sand screed on top of built-up roofing composed of 3 layers of bitumen felt (30 lb. per 12 yds.) with first layer sealed to concrete. Screed divided into tile form by the removal of metal division strips, ½ in. wide, put down when the screed is formed. The joints are arranged on a grid 2 ft. by 1 ft. and are filled in with oxidized bitumen.

This was chosen because the roofs would be walked upon and this particular roofing is a very economic one where it is likely to be used for this purpose.

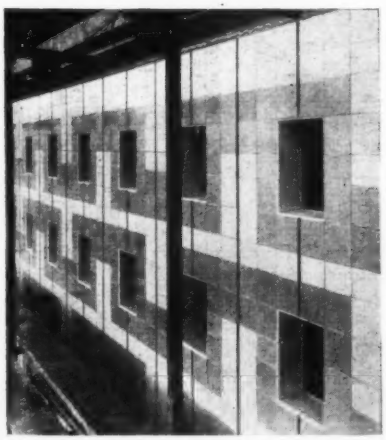


Detail of asbestos suspended ceiling to kitchen.

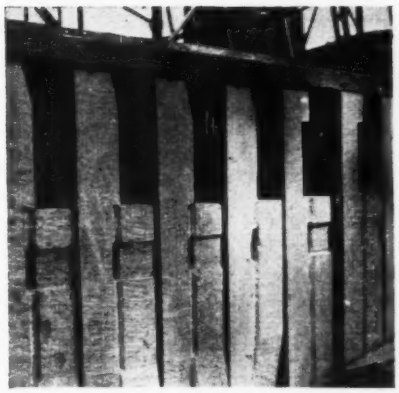


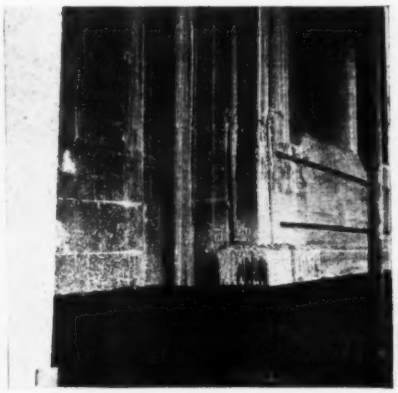
Detail of coping to auditorium roof on the river front.

Below, "one-fire" tiles in cream and blue-grey fixed to staircase tower. The wide vertical joints will be filled with black mortar. (Official photograph.)

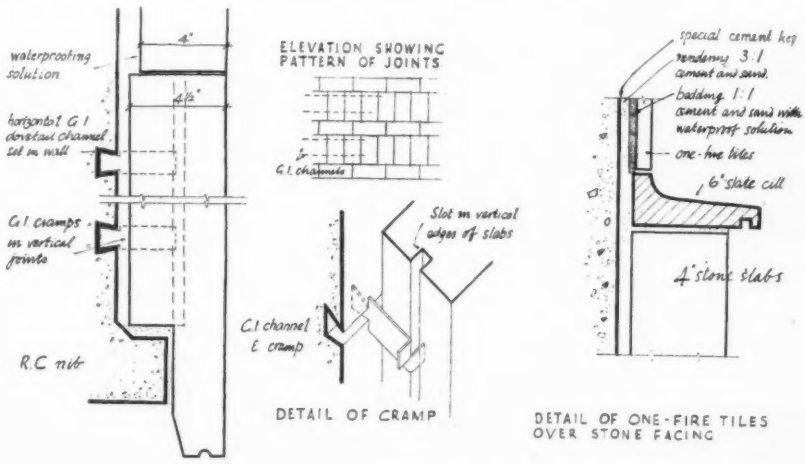


Right, early photograph illustrating principle of roof construction. All the units shown are precast, and the slab is completed by 4 in. of in-situ concrete. Concrete sleeper walls are supported on this inner shell, over which a glass silk blanket is draped. The outer slab then rests on the glass silk, and the roof is finished with ½ in. insulating board and 18 gauge hard-rolled copper. Extreme right, up-stand seams being made in copper roof. Roll joints are also used to allow for expansion and a typical creosoted wood roll can be seen in the foreground.

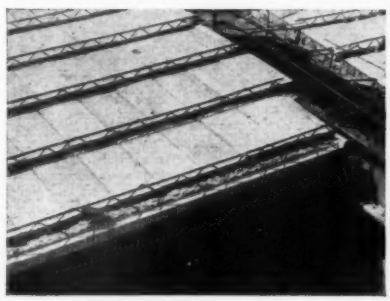




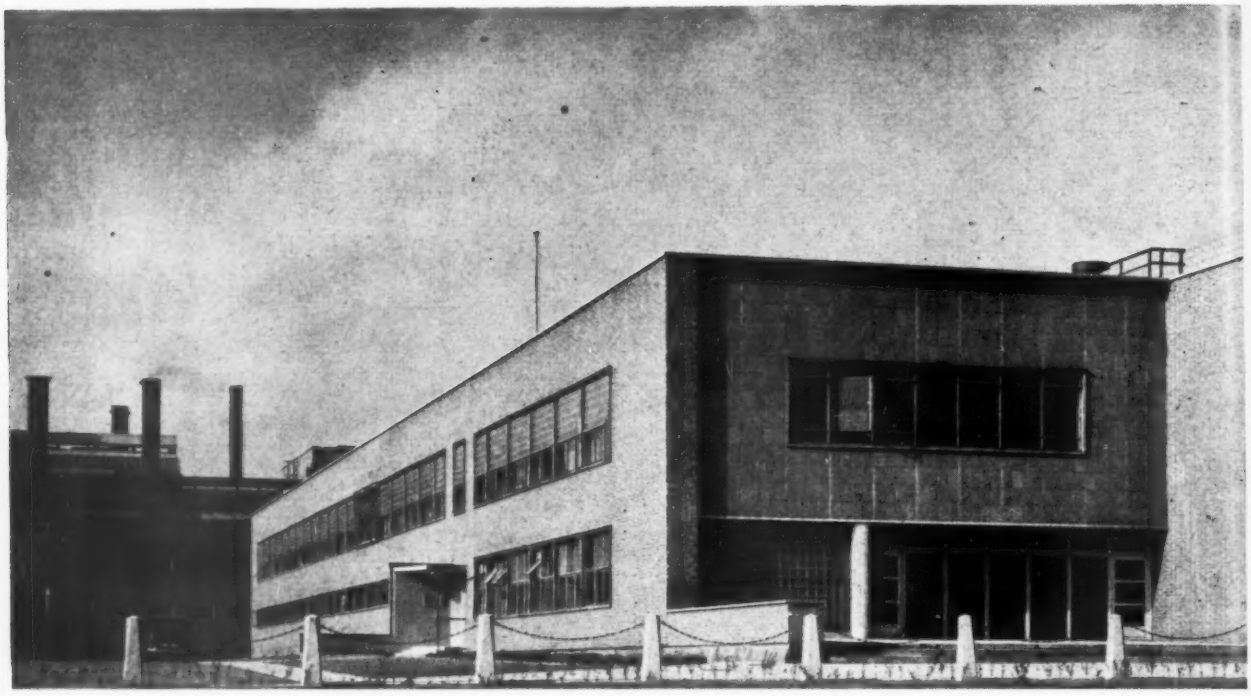
Top left, the lowest course of the Portland stone facing slabs stacked (upside down) before erection. The drip, the rebate and vertical slot are clearly visible. Top right, the RC nib designed to support the external stone slabbing. It also shows horizontal and vertical GI dovetail channels. Above left, fixing cramps and setting slab into position. Above right, a section of stone facing fixed away from the concrete wall with long cramps.



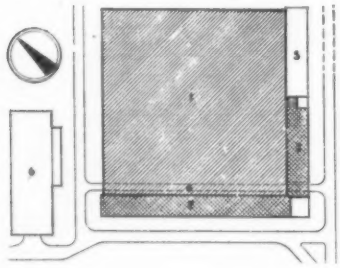
Typical details of external Portland stone facing.



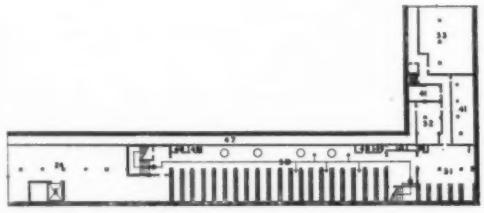
OFFICES AND WORKSHOPS FOR STEELWORKS AT



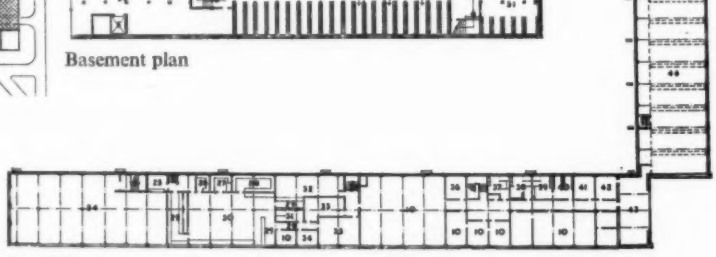
The administration block and maintenance workshop for the Appleby Frodingham Steel Co. were designed by Frederick Gibberd. (Further buildings designed by Mr. Gibberd for the same company were illustrated in the AJ, November 17, 1949, pages 559-568.) The building is steel framed to a 12-ft. 6-in. grid with reinforced concrete hollow tile floors and roof. External walls are 9-in. brickwork with 2-in. cavity and 3-in. foam slag inner skin. The glass brick glazing s built in panels between the stanchions and they are bedded on steel channels supported on tubular steel mullions between metal windows. The north lighting to the drawing office is of patent aluminium glazing and other windows are of steel. Window surrounds and copings are constructed of precast stonework cramped to the concrete backing and faience tiles and used at the concourse and office entrances. The roof is insulated with ½-in. insulation board and finished with ¾-in. asphalt. As the building site consists of a layer some 9 ft. deep of waste material from the works, it was found economical to excavate the whole area of the adminis-



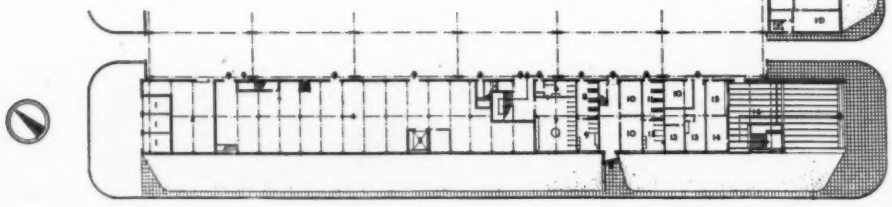
Site plan



Basement plan

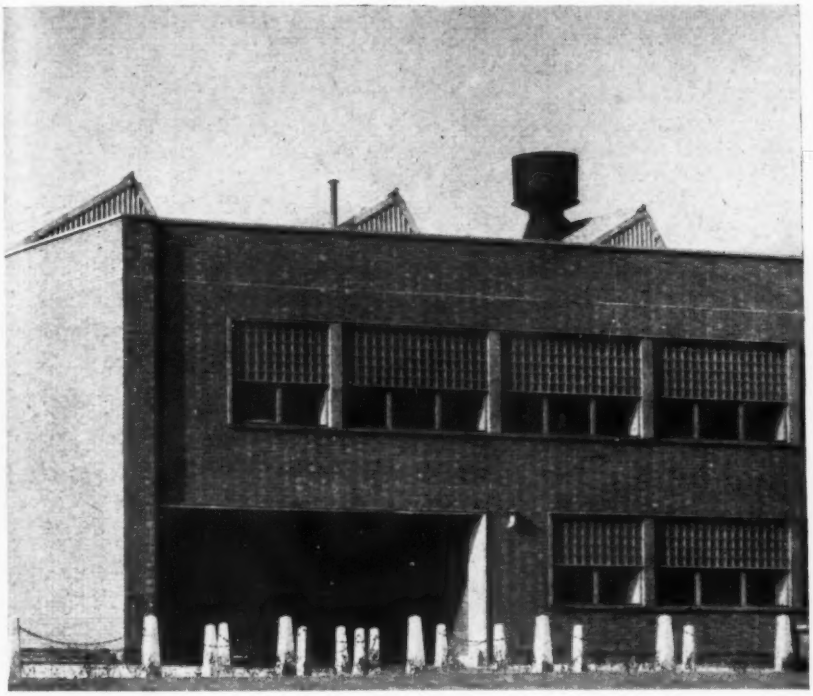


First floor plan



Ground floor
[Scale 1/16" = 1'0"]

AT SCUNTHORPE, LINCOLNSHIRE



tration building and form basements. Because of the problems arising from the dust-laden atmosphere and noise, it was decided that the buildings should be sealed from the outside air and artificially ventilated by filters and heated air. Above is a view of the administration block and maintenance workshops from the south. Below, the maintenance workshop, looking north-east. Bottom, an entrance to the administration block. The general contractors were John Mowlem & Co., Ltd. Sub-contractors appear on page 528.

KEY

SITE PLAN

1. Maintenance workshops.
2. South-west wing.
3. South-east wing.
4. Service road.
5. Future extension.
6. Sub-station.

GROUND FLOOR

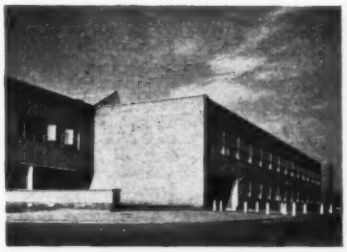
1. Transformer houses.
2. Switch room.
3. Kitchen lift.
4. Engineering workshops stores.
5. Stores lift.
6. Apprentices lavatory.
7. Workmen's lavatory.
8. Foremen's lockers.
9. Foremen's lavatory.
10. Offices.
11. Women's lockers.
12. Women's lavatory.
13. First aid.
14. Production committee room.
15. Time and pay office.
16. Concourse with access to workmen's lavatories and lockers.
17. Passenger lift.
18. Female lavatory.
19. Female lockers.
20. Male lavatory.
21. Male lockers.
22. Cleaner.
23. Enquiries.

FIRST FLOOR

24. Workmen's canteen.
25. Shop.
26. Dry store.
27. Larder.
28. Vegetable preparation.
29. Service.
30. Kitchen.
31. Lavatory.
32. Apprentices canteen.
33. Foremen's canteen.
34. Rest room.
35. Staff canteen.
36. Waiting room.
37. Managers' lavatory.
38. Female staff lavatory.
39. Male staff lavatory.
40. Locker room.
41. Store.
42. Library.
43. Lecture room.
44. Drawing office.
45. Male staff lavatory.
46. Cloakroom.

PART BASEMENT PLAN

47. Service pipe duct.
48. Showers.
49. Lavatories.
50. Men's lockers and ablutions.
51. Apprentices lockers and ablutions.
52. Calorifier chamber.
53. Printing rooms.



ARCUK

Maintenance scholarships in Architecture

The Architects' Registration Council of the United Kingdom offer for award in June, 1951, certain maintenance scholarships in architecture. The scholarships will consist of a grant for the payment of one-third of the school fees and, when necessary, a maintenance allowance. They will be available for students of British nationality who could not otherwise afford training to enable them to attend architectural schools approved by the Council. They will be renewable from year to year. Scholarships will not be granted to students who will be less than 17 years of age on October 1 of the year in which the examination is taken. Particulars and forms of application may be obtained from the secretary to the Board of Architectural Education, Architects' Registration Council of the United Kingdom, 68, Portland Place, W.1. Copies of previous years' examination papers may be obtained on payment of 6d. The closing date for the receipt of applications is January 31, 1951.

MOTCP

Attempt to Save Land for Agriculture

A call to local authorities to save every acre of productive agricultural land by ensuring that it is not taken for development when less good land would serve the purpose is made in a circular issued by the MOTCP. This is *Ministry of Town and Country Planning Circular No.* 99; "*Safeguarding of Agricultural Land*" (*HMSO, price* 2*d.*).

Planning and development, the circular points out, are not the same thing, although they are often confused. It is the planner's job to try to reconcile the conflicting demands of building and agriculture. Planning authorities at present preparing development plans are being supplied with information about the relative values of agricultural land in their areas by the Provincial Land Commissioners of the MOA. When development plans come before the MOTCP for his approval, he will need to be satisfied that this information has been properly taken into account.

Avoidance of unnecessarily spacious housing lay-outs and thus of a corresponding extravagance in land is recommended to all authorities. The view of both the Ministers of Town and Country Planning and of Health is that the density of housing

could sometimes be rather higher than housing authorities and private developers are accustomed to propose. This does not mean that there should be any lowering of housing standards.

As the circular states, "standards of development which have been reached as a result of years of struggle to improve the living conditions of the people should not be reduced; but by skill in planning, by ever-present consciousness that land, even though its cost be low, is one of the nation's most valuable assets, by readiness in difficult areas to compromise, worth-while economies can be achieved, and it is the responsibility of Planning Authorities to see that this is done".

Tynemouth Development Plan Approved

The Minister of Town and Country Planning has approved the development plan of the Tynemouth borough council. Tynemouth was the first local authority in the country to submit a plan for the whole of its area to the Minister in accordance with the provisions of the Town and Country Planning Act, 1947.

No public inquiry was held, as there were no sustained objections from members of the public or interested bodies. The Minister found it necessary to make only a few minor changes to the plan as originally submitted.

The plan was prepared by the council after consultation with government departments and other interested bodies. It is based on the assumption that the population of the borough will increase from 66,000 to about 73,000 in 1972.

It is pointed out in the plan itself that its realization is governed by the supply of labour, materials and financial resources. The council estimate that during the next five years a labour force of about 1,300 men will be available to the borough and, assuming that materials will be forthcoming and the present level of capital investment maintained, the council believe that this force should be able to carry out all the proposals contained in the first five years' programme.

The plan is intended only to show the broad outlines of development and redevelopment proposed by the council within the next twenty years, but it will be reviewed every five years so as to enable the authority to amend any of its proposals.

Redevelopment East of St. Paul's to go ahead

Mr. Hugh Dalton, Minister of Town and Country Planning, has confirmed, without modification, a compulsory purchase order made by the corporation of the City of London for an area of some eight acres lying to the east of St. Paul's Cathedral. The purpose of the order is to enable comprehensive redevelopment to be carried out.

This is the first order of its kind for the City of London which the Minister has confirmed. Last April Mr. Dalton confirmed the first part of the order, covering a small section of the area, so that the City could begin work on the permanent memorial gardens, which are planned to be ready in time for the Festival of Britain.

The area covered by the order now confirmed is bounded by Cheapside to the north, Bread Street to the east, Cannon Street to the south, and St. Paul's Churchyard to the west.

Plans for its redevelopment include an eastward extension of the precinct of St. Paul's, the closing of the streets of St. Paul's Churchyard and Old Change, and the making of a new link road between Cheapside and Cannon Street.

AUSTRALIA

War Memorial Competition Results

Ernest Edward Milston, A.R.A.I.A., of Prague, has won the competition for an Australian World War 2 Memorial to form an extension to the Shrine of Remembrance at Melbourne. Mr. Milston settled in Australia in 1938 and served in the Royal Australian Engineers. The sponsor for the competition was the Australian Battlefields Memorial Committee.

The following was taken from replies to questions which were sent by the AJ to architects or organizations in the countries concerned. The questions were :—How many architects are there in your country? Is entry to the architectural profession controlled by examination and are there any regulations to prevent people calling themselves architects and practising as such? On what basis are architects' fees calculated? What is the mode of training for the profession and are the number of entrants for training limited?

PRACTICE ABROAD

Italy, Belgium and Norway

ITALY

Those qualified to practise the profession of architect in Italy number about 5,000. At present the academic qualifications they hold vary, because the law of 1925 regulating conditions of practice in the profession had to take account of the following categories: (*a*) Civil engineers devoting themselves mainly to the profession of architect, qualified before 1925. (*b*) Holders of diplomas of the Academy of Fine Arts dated earlier than 1925. (*c*) Graduates of the Faculty of Architecture set up in 1925.

It should be noted that although building work is at present directed either by architects qualified through the Faculty of Architects or by Engineers qualified through the Faculty of Engineering, since 1925 only the former are entitled to be called architects.

Fees, as in all liberal professions, are paid in accordance with a professional tariff approved by law.

The right to practice the profession is obtained by admission to the professional roll of one of the Regional Orders. The Regional Councils of these Orders, with the National Council, control professional discipline.

BELGIUM

About 5,000 Belgian architects are on the registers in various parts of the country.

The law passed on February 20, 1939, concerning the protection of the title and profession of architects rules that architects must be in possession of a diploma, which is given to students having studied at an architectural school for five years and having satisfactorily passed tests at the end of the year.

Fees are calculated on a percentage of the cost of construction. There are various scales drawn up by professional and recognized societies. There are also special scales for architects doing special jobs requiring expert knowledge of some kind.

Normally, young architects, on leaving school, take a two-year apprenticeship in an architectural office, but this is not essential.

The number of qualified architects is not limited, and everyone who passes the various examinations is entitled to a diploma.

NORWAY

There are about 800 architects in Norway; 620 of them are members of the Institute.

The architectural profession is free in Norway, there are no regulations preventing people to use the title and practise as architects. However, most Norwegian architects are educated in technical universities.

Architects' fees are calculated as a percentage on the cost of executed works; the percentage falls as the cost becomes greater. Buildings are also classified in six categories. For instance, class 1 (very simple houses) means smaller architects' fees than class 2 (simple houses, plain dwellings, factories, etc.).

Architects' fees for town planning works are dependent on the area and the extent of the works.

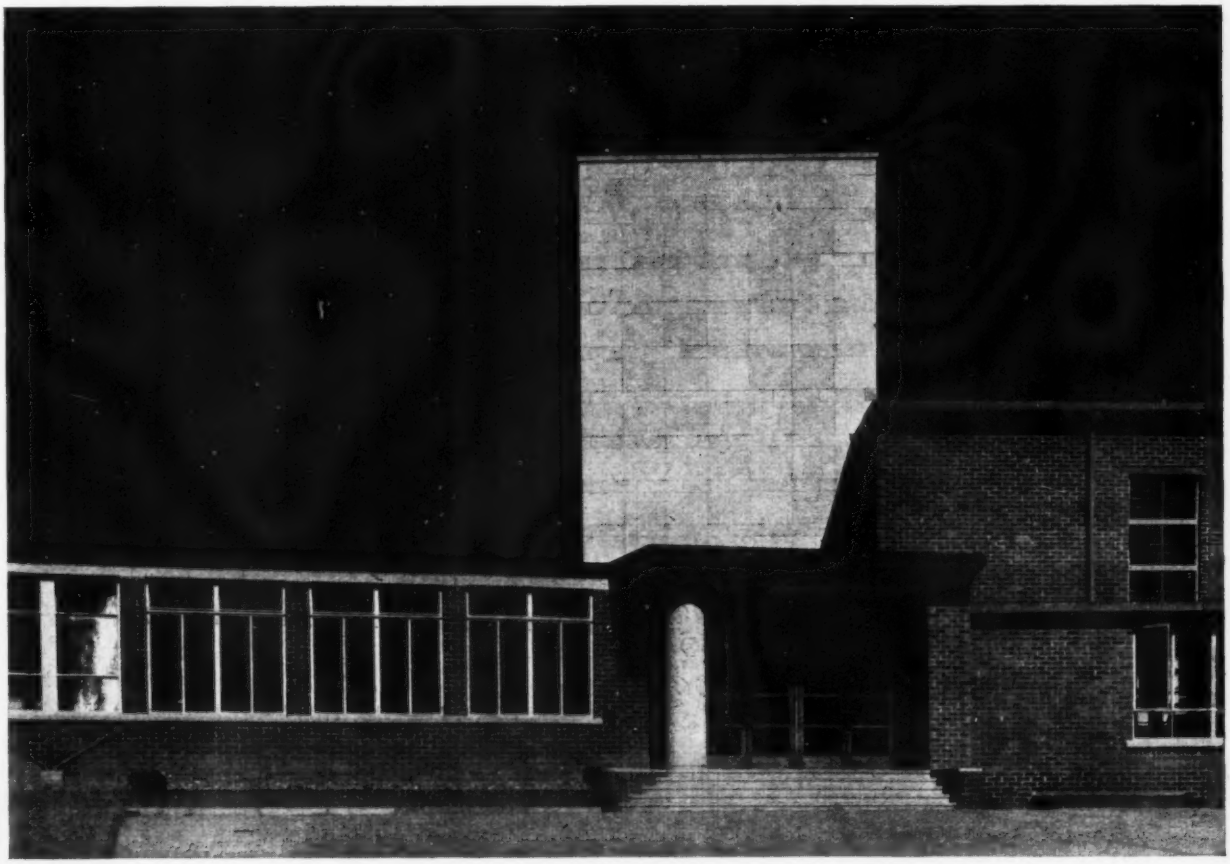
Most of the Norwegian architects are educated at the Norwegian Technical University (four years at school plus six months' practice at a building under construction). Members of the Institute must have three years additional training at an architect's office. Only a limited number of students are admitted to the University every year.

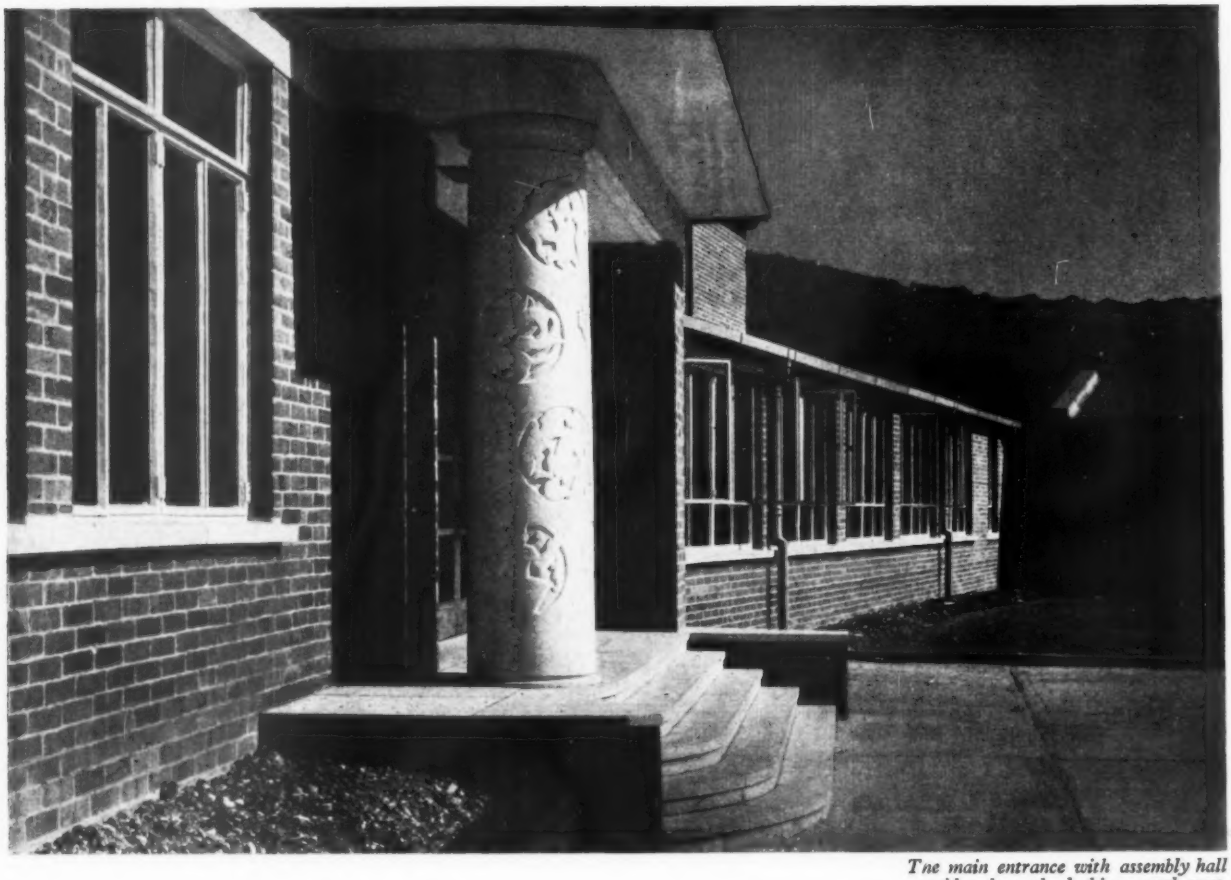
PRIMARY SCHOOL

at BUCKLAND, DOVER
designed by WILLAN and STEWART

The Powell County Primary School on the new Buckland Valley housing estate near Dover provides accommodation for 360 mixed pupils, consisting of 240 juniors and 120 infants, and includes an assembly hall, dining room to seat 196 and staff administration wing. The assembly and dining halls were planned nearest to the road as they are also intended for public use. All classrooms face south-east and have open-air spaces in front. The school was designed in collaboration with S. H. Loweth, Kent County Architect.

The main entrance looking north-west.





The main entrance with assembly hall corridor beyond, looking north-west.

PRIMARY SCHOOL

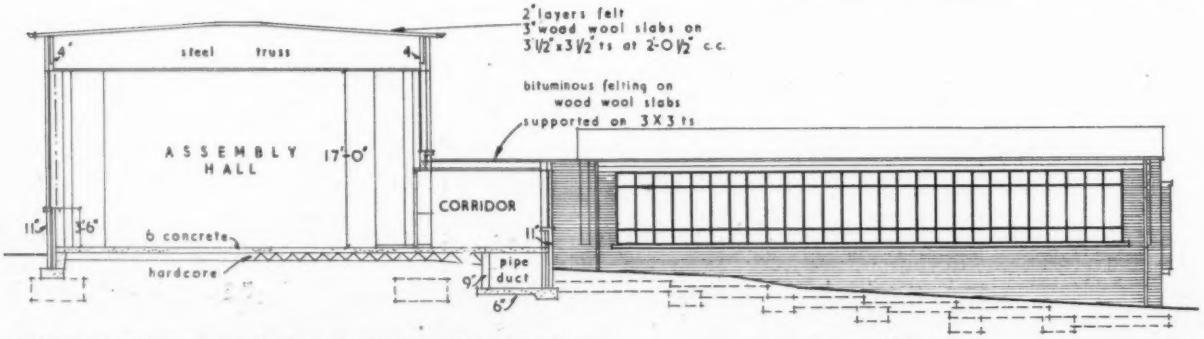
at BUCKLAND, DOVER

designed by WILLAN and STEWART

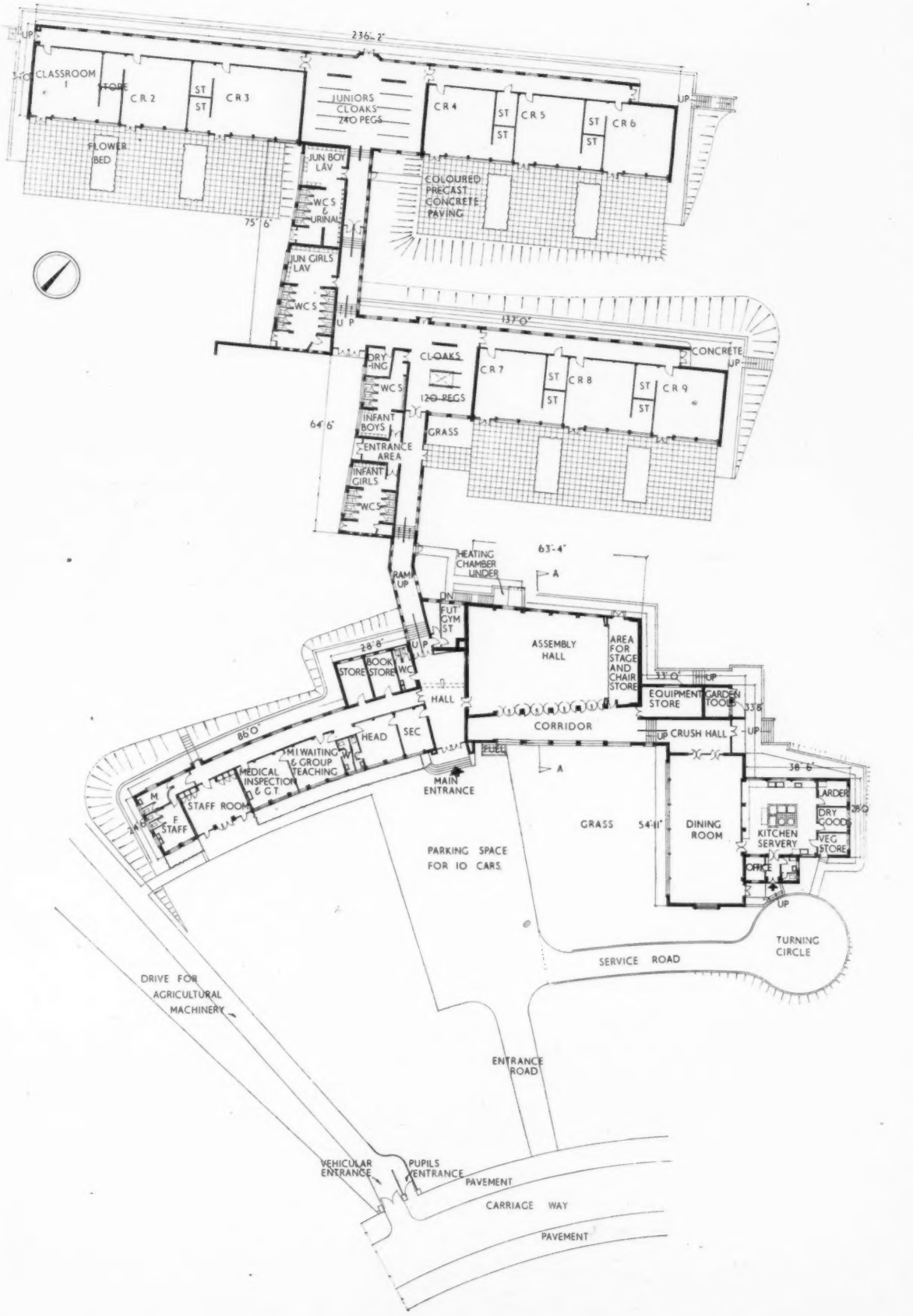
SITE.—The site of about 9 acres slopes steeply and has restricted access to the road. The playgrounds, which are cut out of the chalk, are away from the classrooms and there is a sand pit and paddling pool for the infants.

CONSTRUCTION AND FINISHES.—Steel-frame, partially welded, with stanchions at 8 ft. 1½ in. centres; brick walls with silver-grey facings externally and sand-lime bricks internally, distempered, with cellulose painted dado. Roof—aluminium decking, covered with ½-in. insulation board and 3 layers of bituminous roofing felt. This decking was found expensive and, over the assembly hall dining hall and kitchen, was replaced by 3-in. wood-wool slabs.

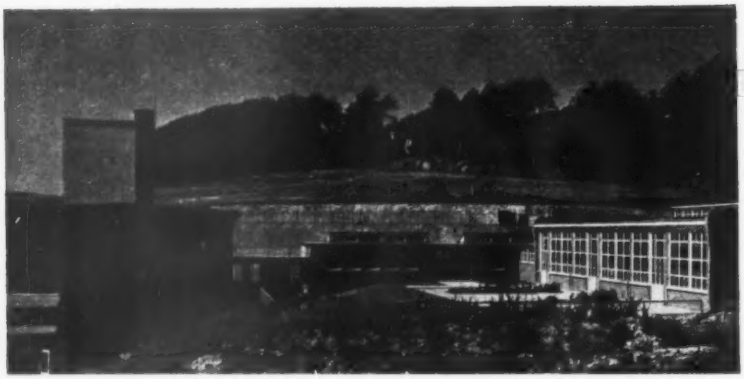
SERVICES.—Central heating and hot water supply by accelerated, low-pressure, hot water system, with



Section A-A and west elevation of dining hall [Scale: ⅛"=1'0"]



Plan [Scale : $\frac{1}{16}$" = 1'0"]



One of the classroom blocks on the right and the assembly hall and tower on the left, looking west.

PRIMARY SCHOOL

at BUCKLAND, DOVER
designed by WILLAN and STEWART

solid fuel boiler. There is storage space for 50 tons of solid fuel.

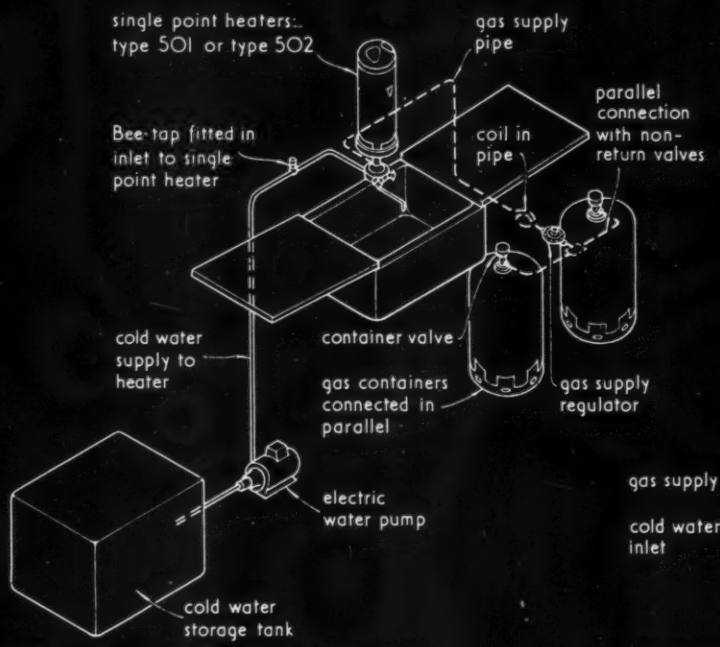
CONTRACT.—In order that work on the school could be started before preparation of bill of quantities or completion of drawings, a Kent County Council "fixed fee" contract was used. The contractor receives cost of labour and materials, plus a predetermined "fixed fee" based on an approximate estimate. With this form of contract, the Clerk of Works becomes a very important person and he vets all time sheets and delivery notes.

The general contractors were C. Jenner and Son Ltd. For list of sub-contractors see page 528.

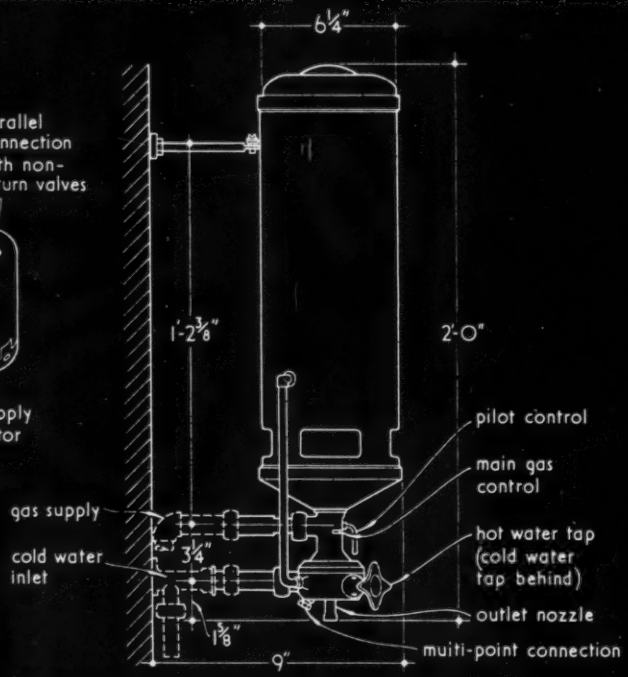
Above, the dining hall showing servery. Left, classroom 3 with store beyond.

WATER HEATING | UNITS | GAS

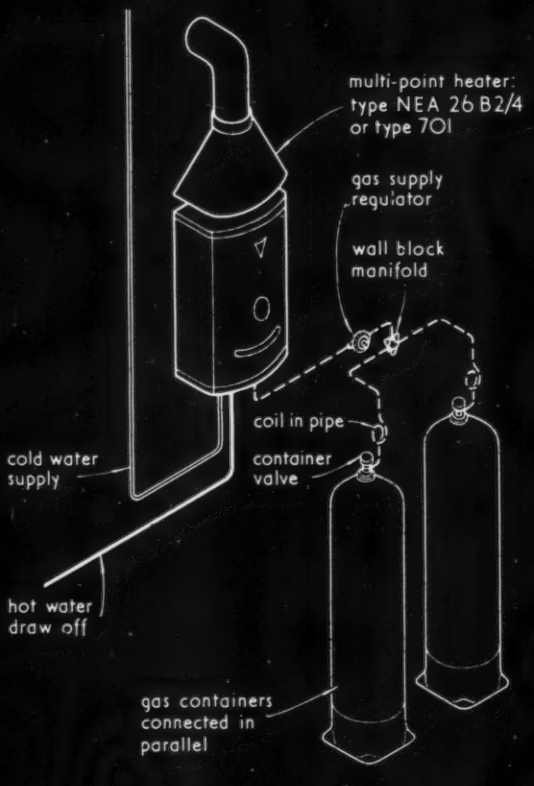
The Architects' Journal Library of Information Sheets 283. Editor: Cotterell Butler, A.R.I.B.A.



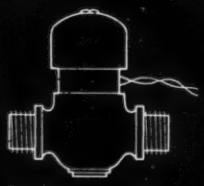
TYPICAL SMALL HEATER INSTALLATION USING PUMPED WATER SUPPLY.



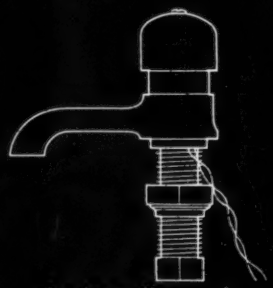
TYPE 504 SMALL MULTI-POINT HEATER.



TYPICAL LARGE HEATER INSTALLATION.



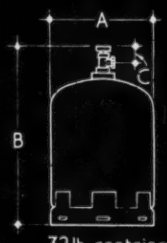
for inlet to single point heaters



for draw off points from multi-point heaters

BEE-TAPS.

83lb. container



32lb. container

min. clearance above containers: 6"

container	A	B	C
83lb.	1'-1"	4'-2"	2"
32lb.	1'-1"	1'-10½"	2"

DIMENSIONS OF TYPICAL GAS CONTAINERS.

·ASCOT· INSTANTANEOUS GAS WATER HEATERS OPERATED BY LIQUEFIED PETROLEUM (BOTTLED) GASES.

Manufacturers: Ascot Gas Water Heaters Ltd.

32C.30 ASCOT INSTANTANEOUS GAS WATER HEATERS OPERATED BY LIQUEFIED PETROLEUM (BOTTLED) GASES

This Sheet describes the application of Ascot instantaneous gas water heaters for use with liquefied petroleum (bottled) gases, *viz.* Butane and Propane. These gases are generally distributed in steel containers to areas where towns gas is not available, or for use where it would be uneconomical or impracticable to install a piped supply from an existing gas main, *e.g.*, rural properties, remote outbuildings, boats, etc.

Selection of Heater

Sheet 32.C22 deals fully with the selection of Ascot heaters for specific purposes, and the general principles apply equally to Ascot L.P. gas water heaters. The following table lists their respective functions and where applicable gives their corresponding type numbers when operated by towns gas so that the information given in other Sheets in this series may be applied. The small multi-point heater type 504 (illustrated on the face of this Sheet) is of the pressure-proof type, and will provide a hot water service to two sinks or basins and a shower.

L.P. gas heater type number	Function	Equivalent towns gas type number
501	Small single point sink heater	R 12/4
502	Small single point sink heater with means for providing boiling water	RS 52/1
504*	Small multi-point heater	—
NEA 26B2/4	Large multi-point heater	NEA 32/6
701*	Large multi-point heater	NEA 32/6

* These heaters may only be supplied for overseas markets.

Characteristics

Type No.	Output		Input	
	B.Th.U./min.	≡ gal./min. raised through ° F.	Lb. of gas/hr.	Cu. ft./hr. (Butane)
501	375	0·75 raised 50 or 0·5 ,, 75 or 0·375 ,, 100	1·3	8·6
502	450	0·9 raised 50 or 0·5 ,, 90 or 2/2½ pints boiling water/min.	1·55	10·3
504	400	0·8 raised 50 or 0·5 ,, 80 or 0·4 ,, 100	1·35	9·4
NEA 26B2/4 and 701	1000	2·0 raised 50 or 1·25 ,, 80 or 1·0 ,, 100	3·5	23·4

Components

With the exception of gas sections, burners and pilot safety devices, constructional details and dimensions are as given on Sheets 32.C20 and 32.C21 for the corresponding Ascot towns gas heaters.

Installation

The information given on Sheets 32.C23, 25, 26, 27, 28 and 29 may be applied (subject to the different ratings noted above) with the following exceptions: *Gas supply:* The gas containers should be installed at ground level (*not* in basements) and provision made for a free flow of air, particularly at the lowest point. The containers must not be positioned close to a heat source or where air temperature is subject to extreme fluctuation and they must not be lagged in any way.

Types 501, 502 and 504.—The supply should be taken from two containers connected with either an automatic changeover valve, parallel connector with non-return valves, or a wall block manifold. The advantages of these installations are that adequate fuel reserve is available and that the replacement of empty containers is facilitated. See diagram of typical installation. Supply piping—up to 20 ft. from the container—$\frac{3}{8}$ in. external diameter.†

Types NEA 26B2/4 and 701.—The supply should be taken from two standard containers preferably of the large size, feeding into either a parallel connector or a wall block manifold as shown in the diagram of a typical installation. Supply piping—up to 20 ft. from the containers—$\frac{1}{2}$ in. external diameter.†

† Provided an independent supply is used for the heater.

The following table shows the approximate discharge in cu. ft./hr. in straight horizontal pipes (semi-rigid copper) allowing $\frac{5}{10}$ in. differential pressure drop with Butane. (sp.gr.=2(air=1).

Length in feet	Pipe size, o.d. in inches					
	¼	⅜	½	⅝	¾	⅞
10	3	13	30	64	107	163
20	2	8	20	42	70	112
30	1	7	16	35	59	90
40	—	6	13	29	47	76
50	—	—	12	26	42	64
100	—	—	8	18	29	45

Water supply: Where the height available from tank supply is inadequate or where mains supply is non-existent, an electric water pump may be used to supply cold water from a storage tank, which may be situated at any level, to the heater. If the tank is at a lower level than the heater a non-return valve must be fitted in the cold water supply pipe close to the outlet from the tank. The pump must be operated by spring-loaded electrical contact taps (·Bee· taps). The drawing at the top of the face of this Sheet shows a typical installation. Further details of suitable pumps and ·Bee· taps will be given on application.

Ventilation: Towns gas requirements are adequate for L.P. (bottled) gases.

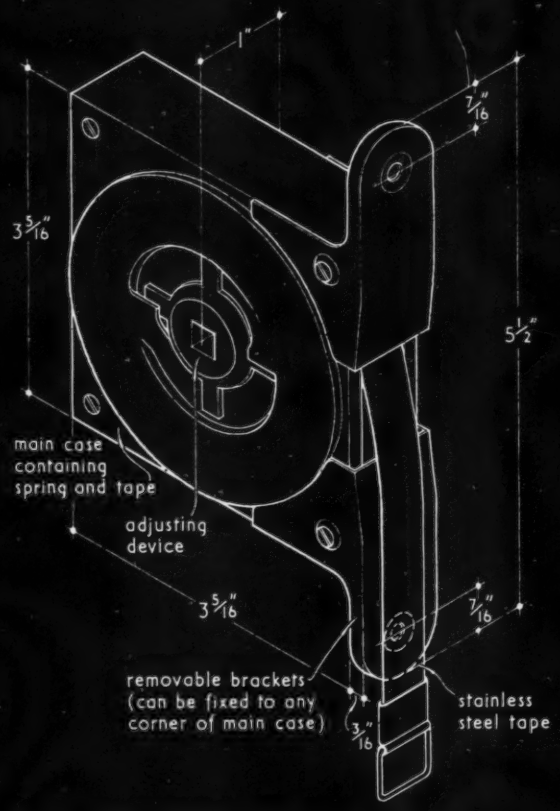
Compiled from information supplied by:

Ascot Gas Water Heaters Ltd.

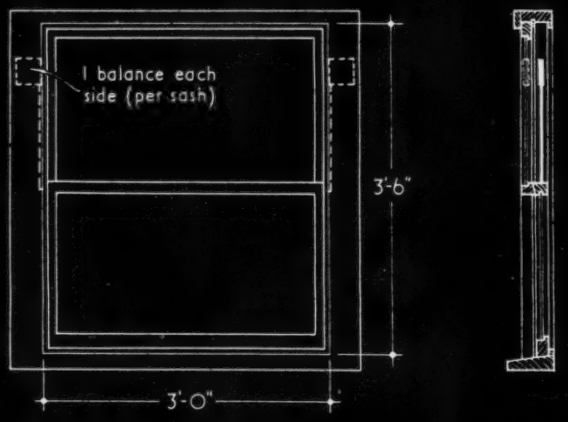
Head Office: 43, Park Street, London, W.1.
Telephone: Grosvenor 4491.
Works: Ascot Works, Neasden, London, N.W.10.
Telephone: Willesden 5121.
Telegrams: Gascot, Phone, London.
Branch Offices: Belfast, Birmingham, Bournemouth, Bristol, Cambridge, Glasgow and Manchester.

FITTINGS | WINDOWS | SASH BALANCES

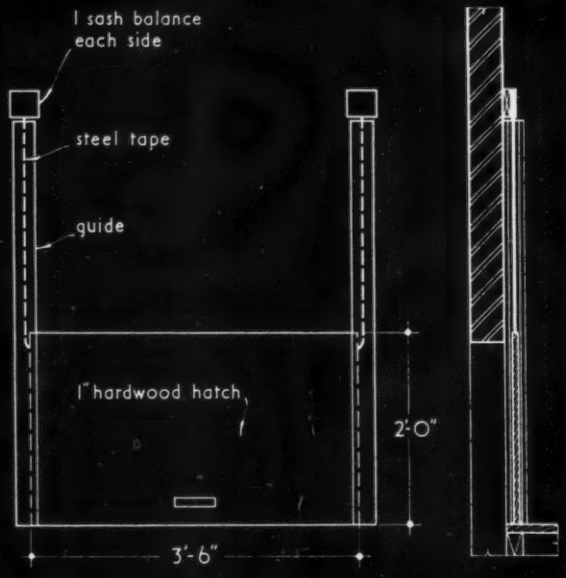
The Architects' Journal Library of Information Sheets 284. Editor: Cotterell Butler, A.R.I.B.A.



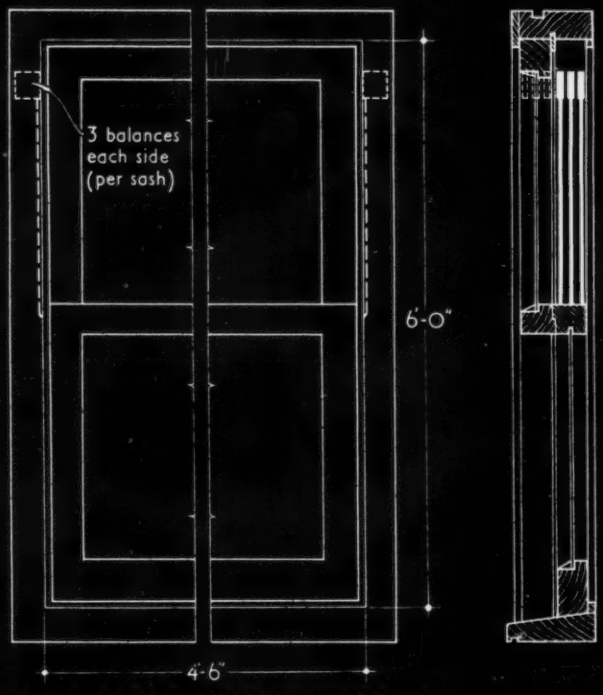
ISOMETRIC VIEW OF SASH BALANCE.



SMALL PLATE GLASS SASH WINDOW.
approximate weight per sash 30lb.



VERTICAL SLIDING HATCH.
approximate weight 30lb.



LARGE PLATE GLASS SASH WINDOW.
approximate weight per sash 90lb.

ADJUSTABLE SPRING TAPE SASH BALANCE. Manufacturer: Beckett Laycock and Watkinson Ltd.

44.J1 ADJUSTABLE SPRING TAPE SASH BALANCE. *(Patent Nos. 476690 and 480926)*

This Sheet describes an adjustable spring sash balance. The balance is suitable for application to sash windows, serving hatches and other forms of vertical sliding panel where an appreciable weight has to be overcome. The drawings on the face of this Sheet give details of the balance and show its application to plate glass sashes and timber hatches.

Construction Generally

The spring sash balance consists of a pressed rust-proofed steel, or alternatively brass, outer case inside which revolves a steel drum. Wound round the drum is a stainless steel tape. The inner end of this tape is attached to the drum and the free end is fitted with a suitable attachment for fixing to the sash. Housed inside the drum is a flat coiled spring having its outer end fastened to the drum and its inner end to the spindle on which the drum rotates. The spindle, which projects through the cover of the main case, is provided with a special ratchet-shaped head and forms part of the patented adjusting device. When the spindle is turned by an ordinary square budget lock key or screw driver inserted in the square socket provided, the tension of the spring is increased or decreased.
The interior components are entirely enclosed by the main casing which is packed with grease.

Capacity of Balances

Each pair of balances is capable of counterbalancing a load of 30 lb.

Length of Travel of Sash

The length of perfectly balanced travel averages 24 in. The maximum travel length is 39 in., which is quite satisfactory, but the travel length cannot be increased by lengthening the tape. Longer tapes than the standard 46 in. can be supplied to allow the balance to be fitted further away from the sash. It may be necessary to fit a locking catch or bolt when the travel exceeds 24 in.

Fixing

The corner brackets on the outer case are removable without disturbing the balancing mechanism and can be arranged to enable nine different positions of fixing to be obtained.

Applications

The examples on the face of this Sheet are typical only. When incorporating the balances in B.S. double-hung wood sashes the jamb linings should be increased slightly or alternatively a small recess should be cut in the brickwork at the back of the balances.

Compiled from information supplied by :

Beckett, Laycock and Watkinson, Ltd.
Address : Acton Lane, London, N.W.10.
Telephone : Elgar 5403.
Telegrams : Beclawat, Norphone, London.

INFORMATION CENTRE · INFORMATION SHEETS
QUESTIONS AND ANSWERS · CURRENT TECHNIQUE
THE INDUSTRY · PRICES · TECHNICAL ARTICLES

TECHNICAL SECTION

Louvre systems have been used for a long time in various disguises. Recently they have become a popular feature in design and part of our every day architectural vocabulary. But, as is so often true of devices whose complexity is above average, their "modus operandi" is seldom adequately appreciated. This article should bring a wider understanding of a subject which has so many interesting design possibilities.

THE USE OF LOUVRES IN BUILDINGS

By J. Bickerdike

One of the chief uses of louvres is to prevent or limit direct views of a source of light. This is a major objective in lighting as exposed sources prevent the eyes adapting properly to the illumination in a room. Details and colours cannot be distinguished so easily. The reason is that the eyes adjust themselves to some particular level of adaptation governed by the brightness of different things in view at any given moment. When so adapted they will register in comfort only a limited range of brightness above and below this particular level of adaptation. Brightness above the range causes discomfort and that below becomes indistinguishable. A common experience illustrates this. When out of doors, the sky's brightness causes the eyes to adapt to a very high level. Then they cannot see detail inside a building, but on going inside the eyes rapidly adapt to the very much lower brightness at which all the things that had appeared dark from outside seem quite reasonably light. At the same time, views of sky which were quite comfortable out of doors will now often seem too bright for comfort because they are above the range which can be accommodated at the lower level. Thus, in a room in which the light sources, windows or light fitting, are dominant, the adaptation of our eyes will tend to be biased toward their high brightnesses and so make the rest of the room seem underlit. This occurs in picture galleries which have exposed roof-lights. The effect is sharpest when the thing of particular interest is small and the source of light is proportionally large.

What we understand by glare is also largely a result of the inflexibility of our adaptation mechanism. Bright sources in view may be far above the limit and discomfort and strain will result. It is easy to demonstrate this effect by shielding the eyes with one's hand. The colour and contrast in the whole scene becomes livelier, and discomfort and strain disappear. Glare increases as the contrast between source and surroundings is increased. Whenever possible therefore we should screen the sources of light from direct view.

Quantitative standards in terms of, say, daylight factors or foot-candles, are, of course, valuable—in the end they determine how well we can see—but alone they are meaningless. High levels enable us to see more clearly and readily, but this presupposes good brightness and contrast conditions in which the eyes can develop their full powers.

THE TRADITIONAL USE OF LOUVRING TECHNIQUES

The architecture of the Renaissance provides numerous examples of sensitive lighting, and the screening of the source almost always plays an essential part. But, louvres as we know them were never used. The structure and the fabric of the building were used instead. So, in the example of a Georgian room and the Gallerie de Henri II at Fontainebleau shown in Figs. 1 and 2, the piers and walls between windows are, in effect, large louvres screening the sky from view. Both these rooms look brilliantly lit and are notably free from gloominess, yet, by modern standards, their levels of illumination are low and, at Fontainebleau, the ceiling and walls have dark decoration. Of course, both the Georgian room and the Gallerie have other qualities, such as the graduation of brightness around the Georgian windows to reduce glare.

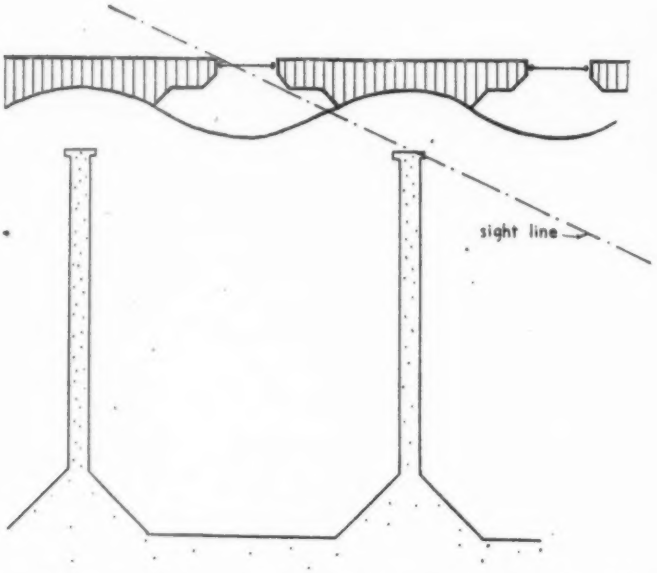
Mediæval building is also full of such examples. How well the deep buttresses, massive piers and tracered windows of the great gothic cathedrals combine to screen our eyes from the aisle and clerestory windows. There is seldom gloom or glare, with even the darkest stonework, and the windows cannot distract. Only the large east window is ever troublesome, and as Atkinson and Bagenal* say, "Its disadvantages in these respects have caused a movement in English church design in the 19th Century towards the blind east end and the elaborate reredos." It has been suggested that the east window was retained for so long because of its disabling effect, which, by preventing the clear seeing of altar details and ceremony, enhanced the impression of unearthliness and spiritual aura.

Another feature is the positioning, on plan, of piers in relation to the direction of light. Almost always they are diagonal and not square to the aisles and their four faces are thus uniformly lighted from either the clerestory or the big side windows. In a view down the nave or aisles the columns always present brightly lit faces. But if they were square to the nave they would not, as their return faces cannot be properly illuminated.

It can of course be argued with some truth that these developments arise directly out of structural requirements and that the lighting effects were incidental. But, the sensitivity of early designers to lighting problems is undeniable and it is probably more accurate to say that their best solutions were nice integrations of material and æsthetic values. Naturally their reasoning was less explicit and development was slower than ours but

*Atkinson and Bagenal, Theory and Elements of Architecture Vol. 1 Part 1, page 315.

Right, Fig. 1, the screening effect of deep piers in a Georgian room. Below, Fig. 2, the Gallerie de Henri II at Fontainebleau—the windows are out of sight between massive piers.



Right, Fig. 3, a long side-lit room at the Boymans Museum, in which the sky is well screened from view by window columns. Above, Fig. 4, plan of side-lit rooms at Boymans Museum, Rotterdam.

they had time for experiment. No doubt good traditional lighting was arrived at on the basis of æsthetic satisfaction; by definition good lighting must please the eye. However, aside from the reasoning, the fact is that the solutions are successful for illumination and can be a great help to us in applying our newly acquired knowledge.

MODERN LOUVRE TECHNIQUES

The modern counterparts of these traditional techniques are illustrated by two examples of windows from the Boymans Museum at Rotterdam (Fig. 3 and 4) and two roof-lights, one from Alvar Aalto's well-known library at Viipuri (Fig. 5) and the other from the new schools built by the Herts County Council (Fig. 6).

At the Boymans Museum (Fig. 3) the structural members between windows form the screening to the sky while in Fig. 4 it is seen that the shaping of the walls is finely arranged to prevent spectators seeing the windows of adjacent rooms. Similarly the circular roof-lights of Aalto's library and the narrow rectangular ones in the Hertfordshire schools are both deep enough adequately to reduce the sky views. Each provide a cut-off of about 45°.

The use of louvres added to and not forming an integral part of the fabric of buildings is new. One reason is the thinness of the modern wall which does not form itself naturally in louvres. Another is the use of much greater window areas which often makes some form of louvring essential for comfort, especially when, as in this country, the skies are commonly very bright.

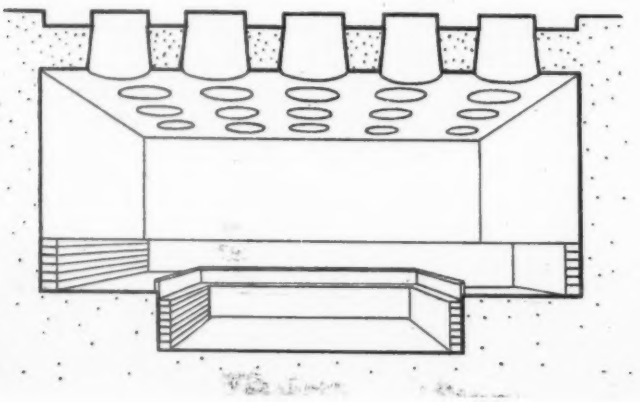
Thus we find the louvred blind being used much more extensively than ever before—more as protection against sky glare than sunlight. Even if blinds cannot fully screen the sky, the effect is valuable because the total area of visible sky is reduced and area is an important factor in comfort. Naturally, rooms from which full views of sky are visible will benefit more than those which are obstructed externally. This is especially true of the upper floors of tall buildings.

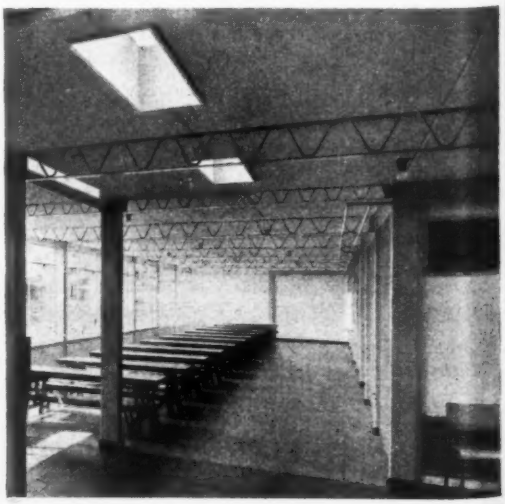
Since cost is always critical in these matters, it may often be less expensive to fit fixed louvres to the northerly windows and restrict the adjustable ones to the south where sun glare is also a problem.

The choice of fixed louvres is between horizontal and vertical ones. Horizontal ones are apt to curtail the penetration of light into a room and this may be especially critical in, say, classrooms and offices. Vertical louvres may then be preferable even though the restriction of sky can never be as complete.

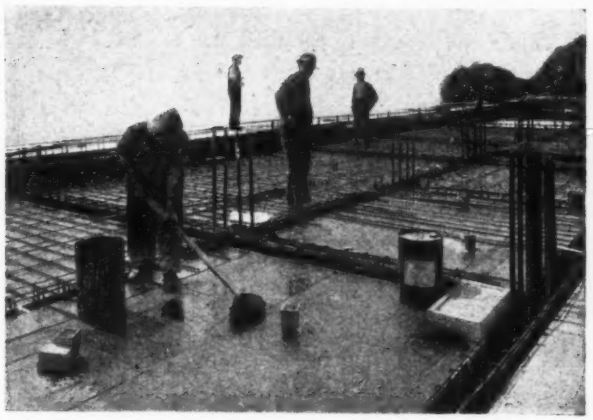
Two examples of vertical louvring are

Below, Fig. 5, cross-section through Alvar Aalto's library at Viipuri. Right, Fig. 6, small top-lights, widely used in the new Hertfordshire schools.





LET THERE BE NO DOUBT ABOUT REDALON



REDALON Liquid Cement Retarder has been specified by Architects and Engineers, and used by Contractors voluntarily since 1927, but even so there are still those who would like to use Redalon, because they have heard it is good, but wonder if it is really safe. The answer is, of course, yes. The following points will, I hope, remove all doubts.

WHY USE REDALON?

It provides an efficient suction-key over the whole surface, whereas hacking only gives a key at the best over 33⅓ per cent. of the area and weakens the concrete.

DOES IT ATTACK THE REINFORCING?

Redalon Liquid has do deleterious effect on steel. Splashes of Redalon, which might get on to the reinforcing, would not affect the adhesion.

WILL IT PENETRATE TOO FAR?

The maximum penetration of Redalon when painted on the shuttering is $\frac{1}{8}$ in. to $\frac{1}{4}$ in. It only retards the setting. It does not kill the cement.

DOES IT ROT THE CONCRETE?

If all the Redalon painted on the shuttering, even on a 4 in. wall, treated both sides, were mixed up in the concrete, the final strength of the concrete would not be reduced.

WHAT ABOUT THE RED COLOURING?

It is a water solvent colour released by the lime in the cement. It has no retarding properties. Concrete made with the coloured water is the same strength as with main water.

IS IT ECONOMICAL?

It is cheaper to use Redalon than to hack. Furthermore, the shuttering is easier to strike. There is no suction, and the shuttering does not require scraping.

WHAT IS REDALON?

REDALON Liquid is a series of chemicals in Varnish form used to retard the surface cement skin allowing it to be brushed off when striking the shuttering thus providing a natural key.

HOW IS IT APPLIED?

By brushing on to the wood or steel shuttering immediately or months before pouring the concrete.

* * *

REMEMBER!

No Redalon Bonded plaster has ever fallen—even when subject to bomb damage.

Cecil Kahn

Amongst typical contracts upon which Redalon has been used, are:

Daily Express, Fleet Street
Middlesex County Council Schools
Marble Arch Subway
Midland Bank Head Office
Telephone Exchanges
Thames House, Millbank
Pimlico Flats
Subways, London Airport
Housing Estate, Liverpool
L.T.E. Headquarters, Broadway, S.W.1

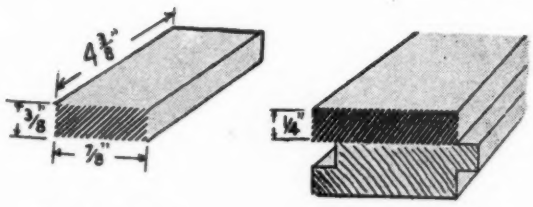
THE ADAMITE COMPANY LTD., Manfield House, Strand, W.C.2, Tem 6233/6

THE WINDSOR FLOOR

Patent No. 5[illegible]424

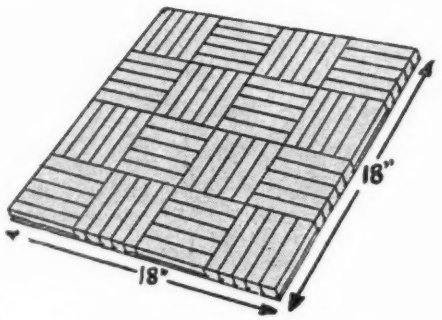
A Mosaic Parquet

The Windsor is an Oak parquet floor capable of taking a high polish and having a wearing surface slightly thicker than standard wood block. It is durable, elegant and healthy and can be laid on any level sub-floor. The price supplied and fixed complete is 25/- to 35/- per yard super, dependent on locality. London area 25/- per yard super only.

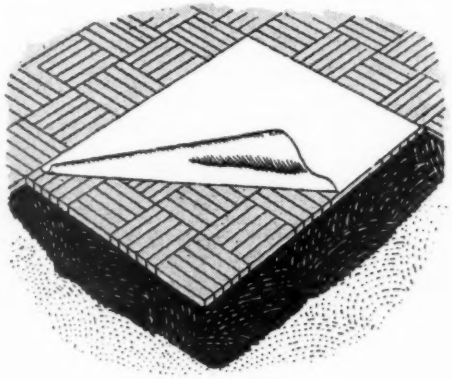


Windsor Floor *Standard Parquet*

The floor is composed of individual strips of seasoned hardwood placed together to form a mosaic panel approximately 18in. square. It is fixed by a special adhesive which retains its elasticity and allows slight play between the surface and the sub-floor.



The floor is laid only by our own layers. It is held together during laying by glued paper which is afterwards removed. The panels can be artificially seasoned to any required moisture content.



Branches at :

BIRMINGHAM
238-9, Monument Road, Edgbaston.
Tel. Edgbaston 1178

CARDIFF
High Street Chambers, 17, High Street.
Tel. Cardiff 2491

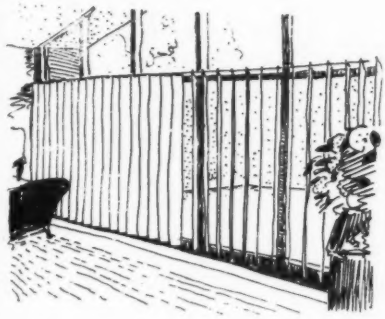
MANCHESTER
10, Corporation Street,
Tel. Deansgate 5971

READING
571-3, Basingstoke Road.
Tel. Reading 81560

Jaconello LTD
ASSOCIATED WITH "Doloment" REG TRADE MARK

147 VICTORIA STREET
LONDON, S.W.1
Tel. Victoria 3043 (6 *lines*)

Above, Fig. 7, plan of louvred window at the Boymans Museum, Rotterdam. Below, Fig. 8, adjustable vertical louvre blind made of translucent cloth (America).



shown in Figs. 7 and 8. Fig. 7 is again from the Boymans Museum. The louvres are splayed so that light can penetrate more freely to the pictures on the side walls. The other example, from America, is an ingenious system of translucent cloth slats which can be drawn across a window at will. The translucency of these is a notable feature, for while it reduces the sky brightness adequately, some light can always penetrate directly into the room. Other materials, like opal perspex, would be equally effective.

As a general rule, simple louvring is most efficient and cheap. Large louvres, few in number, are better than many little ones; this leads back to the logical solution of the structure itself doing the screening. Louvres should always be thin and have a virtual feather-edge to avoid a shadow area which might contrast sharply with their brightly lit surfaces.

Louvres are especially useful in roof lights. The Boymans Museum provides a variety of examples. Two very simple arrangements using deep crossing screens topped by laylights are illustrated in Figs. 9 and 10. A good criticism would be that the screens themselves have now become rather too bright especially in the second example. A darker colour would have helped to pull their brightness down. Thus, for example, there may be twice as much light falling on the louvres as on the ceiling, in which case if the louvres were painted half the reflection factor of the ceiling, the two would look equal in brightness.

A more involved system (Fig. 11) is used in the main picture rooms at the Boymans. Here the intention is to exercise a deliberate control over the distribution of light on the walls while still screening the sky from spectators. The system fails on the first count because the louvres are all set at the same arbitrary angle. The top of the walls have the best light, the paintings the worst.

The solution proposed by the Building Research Station for the National Gallery (Fig. 12) attempted to overcome that defect by focusing all the louvres on to the paintings. Then the louvres present the minimum obstruction to the light as seen from the pictures but obstruct it progressively toward the top of the walls. The paintings are thus in the best light.

A much simpler and perhaps more effective solution has been suggested by the Station for the reconstruction of some rooms in the Birmingham Art Gallery. A cross-section is shown in Fig. 13. A velarium provides the major part of the screening of the roof light, but a single large baffle has been interposed between it and the cornice to complete the screening. As before, this louvre is arranged to present the minimum obstruction to the picture light. It is also proposed to cross-louvre the velarium. This has the particular advantage that, while light can penetrate to the floor and the sky is screened, the brightness of the velarium is controllable by the colour of the slats.

Fig. 9, simple vertical ceiling louvres; Boymans Museum.

SUN LOUVRES

The sun presents two problems, heat and glare. Both are solved in the first instance by proper orientation and the size of the opening. Screening techniques come into their own only when the building has not or cannot be sited to avoid the other difficul-

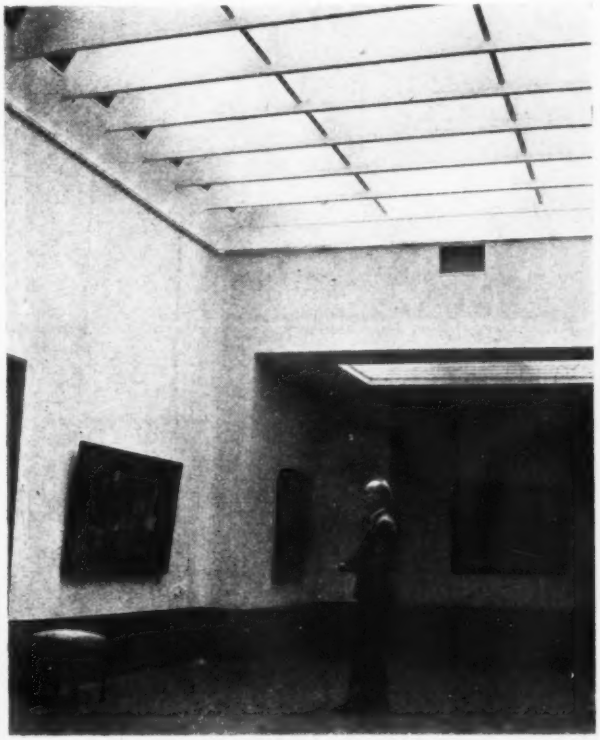
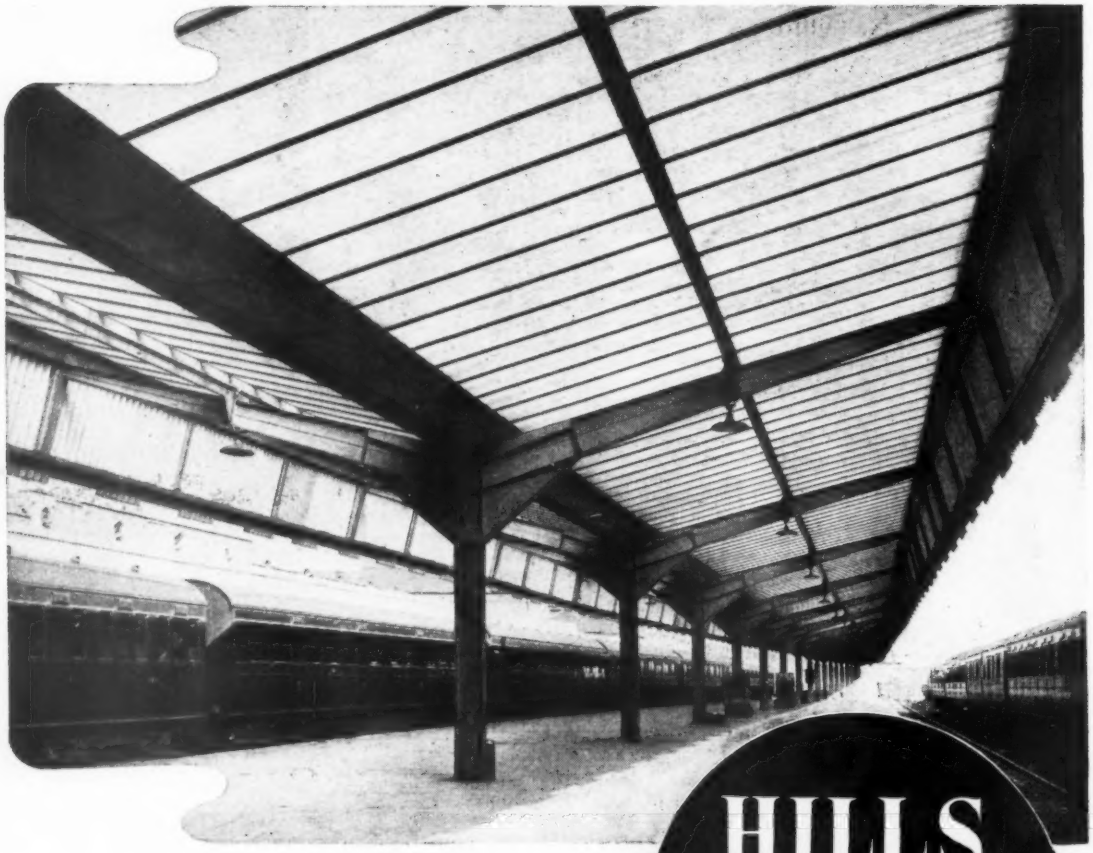


Fig. 10, a similar arrangement to that shown in Fig. 9, used in a picture room at the Boymans Museum.

Fig. 11, inclined louvres in the ceilings of the main picture rooms at the Boymans Museum.



Hills Patent Glazing at York Road Station, Belfast, for the Northern Counties Committee. Engineer: N. C. Cain, B.Sc.

HILLS PATENT GLAZING

HILLS Lead Clothed Glazing Bars, hermetically sealed, have been tested and proved over many years, and have for long been adopted as standard practice. To fulfil the demand for an alternative to the traditonal lead-clothed bar, Hills also offer HILUMILUX Roof Glazing Bars which are fabricated from extruded alloy. A unique feature of these bars is the use of oiled asbestos cord, rolled and bedded into the aluminium cap to ensure a dust-and-water-tight fitting. Hills Patent Glazing includes all types of glazed Roofing, Lantern Lights, Deck Lights, Laylights and Ventilation, together with the necessary operating gear. Detailed information will gladly be sent on request.

Hills Lantern Lights at New Factory for Messrs. W. Canning & Co Ltd. Architects: Harry Bloomer & Son

HILLS (WEST BROMWICH) LIMITED

ALBION ROAD, WEST BROMWICH, STAFFS
'Phone: West Bromwich 1025

London Office: 125, High Holbon, London, W.C.1. 'Phone: HOL 8005/6

ties. This may imply a criticism of designers, who through lack of foresight in planning make louvres and other such devices their subterfuge. Why use unnecessarily large glass areas, then louvre them to prevent excessive heat gain in summer and double glaze to reduce heat losses in winter?

The solar heat problem has two aspects, how to prevent either a general heat gain in a building or a local heating effect due to direct rays penetrating. To prevent the first, the treatment must be external, for once the sun's rays pass through the outer glass and fall on surfaces and objects inside, their full heating effect will be felt internally. It is not a question therefore of using any such device as an internal sun blind. The obvious course is to introduce some kind of external louvring or blinds. The solution to the second is largely to diffuse the sunlight so that its heat is never concentrated at any one place in the room.

Any attempt to exclude sunlight or heat is bound to affect the daylight and the object is obviously to exclude as much heat as possible for a small loss of daylight.

Screening for top lights and for windows are different problems. For windows, the high-angle hot sun is easily stopped by simple external blinds or by horizontal louvres. Provided a screening angle of about 60° is provided, the sun at its highest altitude cannot penetrate. But, thereafter, some of the lower angle morning and afternoon sun and most of the winter sun can penetrate deeply into the building though in limited amounts. The space between louvres must be reduced more and more as the sun's altitude drops and correspondingly more direct daylight will be excluded. Vertical louvres may be a little better in some respects, especially against oblique low angle sun. The "Brise Soleil" is the logical conclusion to this complex and individual problem. In this country however, sustained sun is seldom a really serious problem and a simple arrangement which takes the "top" off the heat on our worst days will generally be adequate. Still the best and simplest arrangement at present for windows is the common external sun blind.

On the other hand penetration of heat from low angle sun through top lights is easy to control. Simple external louvres running east-west are usually adequate. The angle between them depends on how much of the heat has to be excluded. The greater the angle, up to the sun's maximum angle of 62°, the more heat will be excluded. The effect of such an arrangement on the light in the room below depends on this angle and on the colour of the louvres. The floor illumination will generally be little affected, as will the light on the walls running at right angles to the louvres. If the cut-off between the louvres is great, little direct light can be expected to reach the other walls, *i.e.*, those running parallel to the louvres, and reliance will have to be placed on the light reflected from the sides of the louvres. It is important therefore that the louvres are light in colour and regularly cleaned.

So far as sunshine is concerned then, internal louvres are only useful to screen against sun glare and to prevent direct sunlight from interfering with the use of the room. For windows, the louvred Venetian blind is often a good answer.

For top lights, if complete diffusion of sunlight is required, there is no simpler arrangement than diffusing glass with vertical louvres below to screen views of the glass, which in sunlight can "flash" intolerably brightly. The cut-off between louvres should preferably be not less than 40° and need not be more than 60°. There is no point whatsoever in developing a complicated system of louvres to screen the sun throughout its course across the sky.

This article is published by permission of the Director of Building Research.

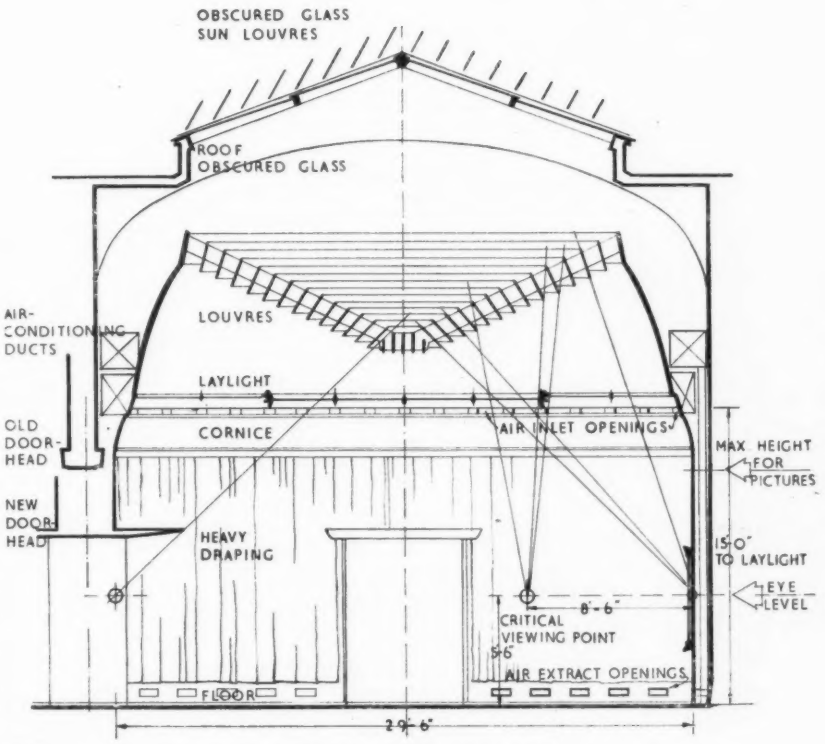


Fig. 12, cross section through proposals for the National Gallery London.

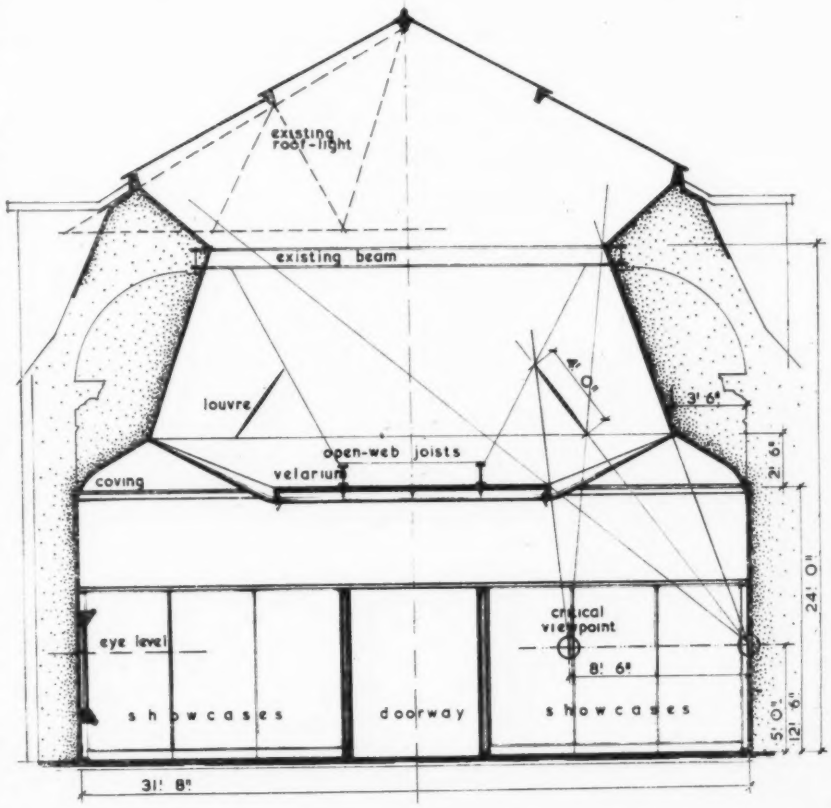


Fig. 13, cross section through proposals for the Birmingham Art Gallery.

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

INFORMATION CENTRE

15.80 materials: applied finishes and treatments
PAINTING OF METALS

The Painting of Non-Ferrous Metals. Draft BS C of P, Sub Code 231:302. (British Standards Institution. 1950. 3s.)

Preparation of surfaces, types of priming paint and methods of application.

This Code, which should be read in conjunction with Code 231, "Painting," sets out the principles involved in the painting of non-ferrous metals, especially dealing with the need to secure adequate adhesion between the paint and the metal. The section dealing with materials gives a general description for zinc chromate priming paint for aluminium and also a pigmented varnish jointing compound.

Recommendations are given on the preparatory treatment and choice of priming paint for aluminium and its alloys, for aluminium coatings on steel, for magnesium and its alloys, zinc, galvanized and other zinc-coated iron and steel, cadmium-coated steel, copper and copper alloys, lead, terne plate and tin. There are some notes on general precautions to be taken to avoid electrolytic action and condensation of moisture during painting.

It is recommended that, in certain circumstances, non-ferrous metals should be prepared and primed before delivery to site, and suitable treatments are suggested. The technique of preparing and priming the metal on site is also described, and recommendations made as to maintenance.

The appendices include notes on cleansing and preparing aluminium, magnesium and copper and their alloys prior to painting, and on durability.

18.63 construction: theory
R.C. DESIGN TEXTBOOK

A Course of Reinforced Concrete Design. Thomas J. Bray (Chapman & Hall, Ltd., 1950, 30s.)

Second edition (revised) of a textbook first published 1946. Originated in the author's lecture courses at Derby Technical College. Useful to students and as a reference book to practising designers. 220 pp., numerous tables, graphs and charts.

The origin of this book explains the treatment given to the subject of design. The author rightly gives preference to first principles in putting a problem before the student, who should thus be encouraged to stand on his own feet whenever confronted with new types of construction. Each of the 39 chapters was intended for use as a self-contained lecture in the author's course. In addition 27 full-page charts and graphs are given at the end of the book. They are very well produced and should be a welcome help to the busy designer. The subjects include those which inevitably concern the architect, such as beams of rectangular, L- and T-section, slabs spanning in one and two directions, staircases, columns, footings and foundations. The design for bending, shear, torsion and buckling is well explained by sketches and mathematical derivations. But the book deals also with many types of structure which are normally beyond the architect's scope and will gladly be left to the engineer's attention, *e.g.*, the various types of retaining wall, circular and rectangular tanks, silos, chimneys, piles, flat slabs, arches and dome structures. While the subject of earth pressure is dealt with at some length in the design of some of these structures Rebhann's simple graphical method for determining the lateral pressure is not mentioned. Nor is the subject of prestressed concrete or that of welding both of which ought to be known to the student. The general index does not quite serve its purpose if it is hidden away between the pages. And last but not least, the new BS Code of Practice CP 114 : 1948 mentioned in the author's preface, and in the Appendix, should be given more prominence in a new edition of this book which certainly deserves commendation.

21.36 construction: miscellaneous
STABILIZED EARTH ROADS

Soil Cement Roads. W. P. Andrews. (Cement and Concrete Association. 1950.)

Soil survey. Three types of construction. The mix-in-place method described in some detail. Photographs.

Stabilized earth roads have been widely used in USA and it appears that they might well be used more here for light traffic roads. The design of a correct mix based on proper soil surveys is obviously an essential feature and one requiring a fairly expert knowledge which could not be obtained entirely from this publication. Nevertheless, the booklet is worth studying to obtain an idea of the possibilities, for doubtless the necessary specialist assistance could easily be obtained if one realised the possibilities of using this method of construction. Some soils are more suitable than others but it seems that peat and cohesive clays are the only types which are quite unsuitable.

23.136 heating and ventilation
INSULATING MATERIALS

Thermal Insulating Materials. Plastic Composition, Flexible and Loose-Fill. BS 1589:1950. (British Standards Institution. 2s.)

Insulating materials for heating and hot and cold water supply systems. Parallel to BS 1334 which deals with pre-formed insulating materials.

This deals with plastic composition, flexible and loose-fill materials for temperatures up to 180° F. normal but does not include refrigeration. Physical characteristics of the materials are specified. The part most useful to architects is in Appendices which make recommendations for thickness of material for varying sizes of hot and cold pipes according to the conductivity value of the insulating material. It is difficult to see why this British Standard could not be combined with BS 1334 to make for easier reference.

23.137 heating and ventilation
RADIANT PANEL HEATING CONTROL PROBLEMS

Control of Radiant Panel Heating. Edwin F. Snyder. (Progressive Architecture [USA]. Aug. 8, 1950.)

Article describing control problems of radiant panel heating and methods of overcoming them, especially by electronic means.

The author of this article is a member of the Minneapolis-Honeywell Regulator Company, well-known manufacturers of control equipment in the USA.

Each type of radiant panel—wall, floor, ceiling or skirting, with water, air or electrical heating, has its own problems of control. Floor heating is considered the most difficult to control, on account of the large mass and the low temperature limit (85° F.). Outdoor temperature variations of 70° F.—0° F. must be covered by a surface temperature differential of only 15° F. (70°-85° F.). This demands great sensitivity of control, for a control system should give instantaneous response to load changes and changes in outdoor temperature. It should also be simple, cheap, attractive in appearance and require the minimum of service.

The author describes an electronic control of suitable characteristics, utilizing the principle of the Wheatstone Bridge. The temperature sensitive elements consist merely of coils of wire which have the ability to change their resistance as their temperature changes. There is a room thermostat, an immersion thermostat, and an outdoor thermostat, termed an "anticipator." The signals are amplified by a conventional electronic amplifier. A very high degree of sensitivity is claimed. It may be applied to warm air-, water- or electrically-heated panels.

Also described are methods of using the system to switch a circulating pump, and of controlling a single-zone warmed air radiant ceiling panel system, keeping the fan running and regulating the oil burner itself. Multiple-zone systems can also be controlled.

Finally the application of the device to electrical heating systems is described.

26.79 services and equipment: miscellaneous
DESIGN AND INSTALLATION OF SEPTIC TANKS FOR DOMESTIC AND SMALL SCHEMES

Small Private Septic Tanks. L. B. Escritt (The Surveyor and Municipal and County Engineer, Aug., 25, 1950. 9d.)

Article dealing with the design and installation of septic tanks for private dwellings and similar small schemes.

A useful article, presenting some ideas at variance with those usually accepted (and with the Report of the Royal Commission on Sewage Disposal) which have proved successful in practice.

Unlike sedimentation tanks, septic tanks must be completely emptied for sludge removal. In some cases, the provision of two tanks in parallel, with isolating valves may be desirable.

The Royal Commission on Sewage Disposal recommended that tanks should have a capacity of not more than 24- or less than 12-hours' flow for municipal plants. The author, however, recommends that, for small private plants, no septic tank should be of less than 750 gal. capacity, however small the premises, and during the period of sludge storage between times of emptying, the tank should not be filled to more than half its capacity with solid matter. As most cesspool-emptiers have a capacity of 750 gallons, and most local authorities allow for sludge removal every three months, a capacity of 750 gallons per 20 persons served is recommended as a general guide.

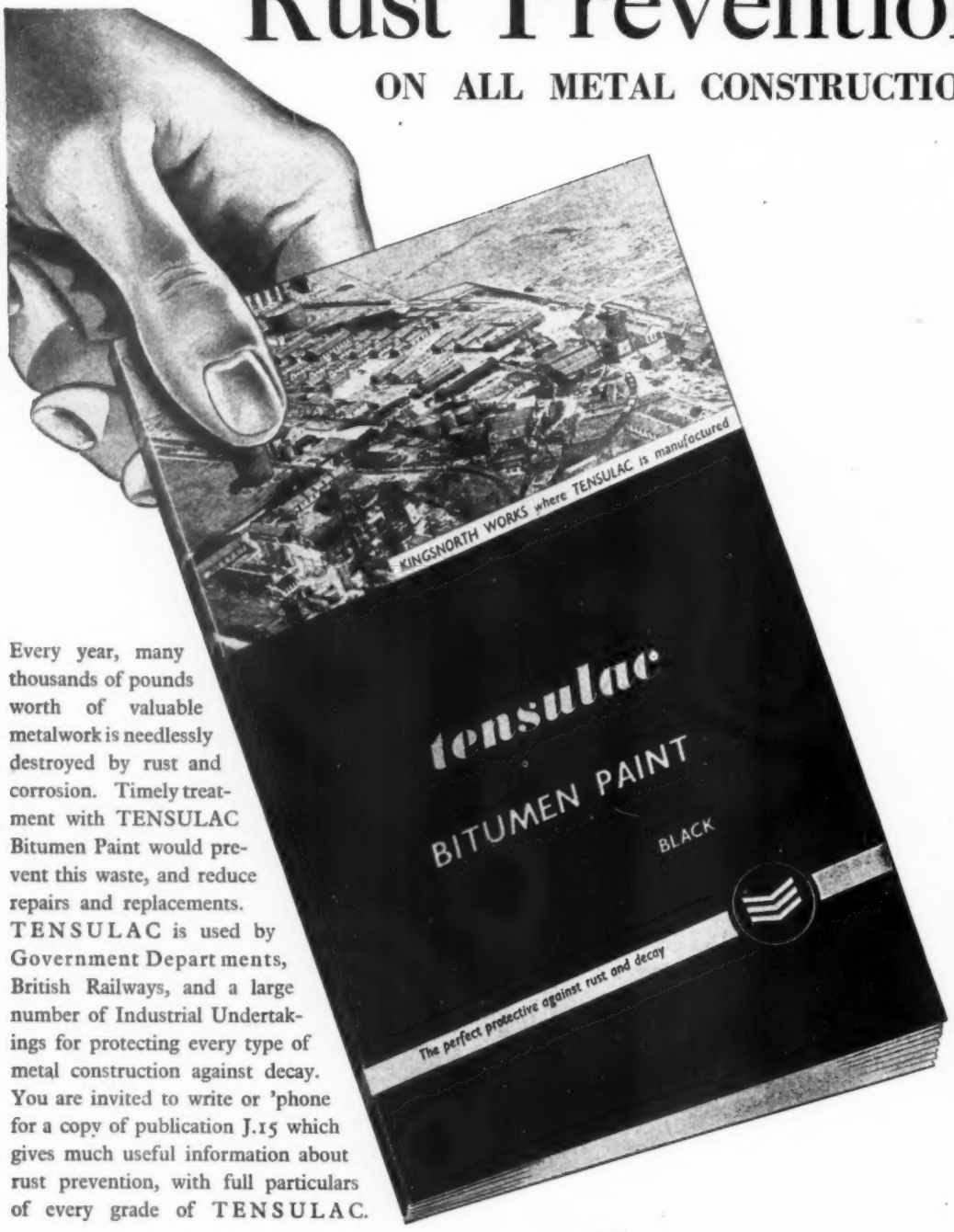
Under the model bye-laws, tanks must be placed not less than 50 feet from a dwelling and 60 feet from a water source likely to be used for drinking. Septic tanks are usually covered for appearance and safety but need not be for proper functioning; when covered, they should be properly ventilated.

Where sludge removal by vehicle is impractical, pumping onto ploughed land or into trenches may be resorted to; the area required should be not less than 1 yard super per person. Where sludge is pumped to lagoons, there should be two, each with a capacity equal to half that of the tank.

A PUBLICATION OF IMPORTANCE TO ALL CONCERNED WITH

Rust Prevention

ON ALL METAL CONSTRUCTIONS



Every year, many thousands of pounds worth of valuable metalwork is needlessly destroyed by rust and corrosion. Timely treatment with TENSULAC Bitumen Paint would prevent this waste, and reduce repairs and replacements. TENSULAC is used by Government Departments, British Railways, and a large number of Industrial Undertakings for protecting every type of metal construction against decay. You are invited to write or 'phone for a copy of publication J.15 which gives much useful information about rust prevention, with full particulars of every grade of TENSULAC.

tensulac

BITUMEN PAINT

for lasting protection against rust and corrosion

BERRY WIGGINS & CO. LTD., FIELD HOUSE, BREAMS BUILDINGS, FETTER LANE, LONDON, E.C.4

Telephone : Holborn 0941

THE INDUSTRY

By Brian Grant

NEW ELECTRIC COOKER

The photograph on the right shows the new Creda Comet cooker, which is an attempt to produce a model of the so-called, "American" type which can still sell at a reasonable price. Height and depth are the present standard figures of 36 in. and 21 in. and the width is 36 in. against the more usual 21 in. This gives an oven about half as big again as the standard cooker, a large grill with an area of 9¾ in. by 7¼ in., and a low temperature plate warming drawer with a 400-watt heating element which can also be used for low temperature cooking. Underneath (see illustration) is quite a large cupboard for the storage of cooking utensils. The oven has thermostatic temperature control and a spring counterbalanced drop down door with an automatic interior light. The hot plate has three boiling rings each of 1,000 watts. and each controlled by thermostatic Simmerstat switches.

Two models are produced, with and without the bottom cupboard, at prices of £63 and £56 14s. respectively. There are also corresponding export models with a fourth boiling ring at higher prices. The standard models should be available early next year and the export types will also be on the home market in due course.

This cooker seems a pleasant piece of straightforward design, and should be very suitable for households needing something larger than the standard models. (*Simplex Electric Co. Ltd., Broadwell, Oldbury, Birmingham.*)

LONG RADIATOR

The photograph at the foot of this page shows a radiator which, with a length of 17 ft., is claimed to be the longest ever produced. There is, of course, no obvious reason why any sectional radiator should not, if necessary, go on more or less indefinitely, but this particular example is of some general interest in that it has also been curved to fit the window bay and gives an idea of what can be done without undue difficulty. (*Gulf Radiator Co. Ltd., Cardiff.*)

ELECTRIC CONTROL UNITS

A new consumer's control unit and a range of steel-cased distribution boards have been introduced recently by GEC.

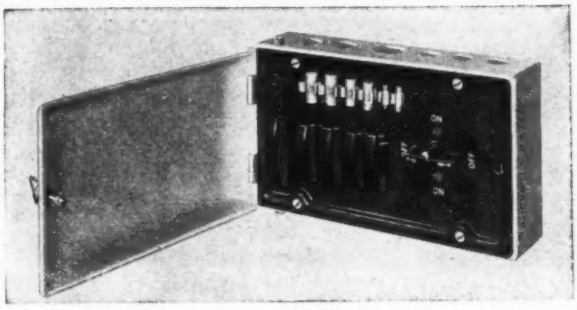
The control unit is suitable for AC only and contains a 60-amp. rotary switch and a bank of four, five or six single-pole fuses with a neutral link. The fuse carriers are designed to take high rupturing capacity cartridge fuses and clips are provided inside the case for spares. The capacity and the number of fuse-ways can be varied to meet the requirements of different installations, and the unit can be used for ring main wiring systems. Prices vary from £4 3s. to £4 8s.

The fuseboards are in 30-amp., 60-amp. and 100-amp. sizes, for circuits up to 500 volts. They are finished in grey enamel and arranged to provide convenient wiring space combined with good accessibility. Special locking and padlocking fastenings are provided and cable entry can be made from both top and bottom. The main cable sockets are designed to align with the cable "sweep-in," so as to avoid the necessity for cutting cables to precise lengths, and to prevent strain on sweated joints.

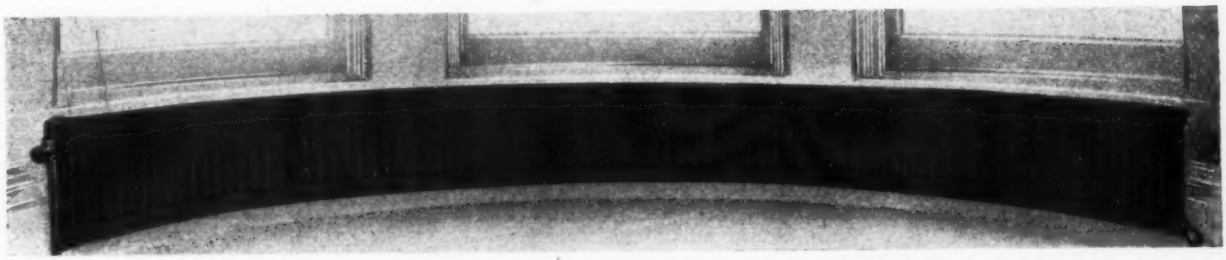
All sizes of boards are available in double-pole, triple-pole and triple-pole-and-neutral types and in the 30-amp. size there is a range of single-pole-and-neutral boards. The 30-amp. range is available in 2, 4, 6, 8, 10 and 12-way forms and the 60 amp. and 100 amp. in 2, 4, 6 and 8-way. In every case the boards can be supplied with rewirable fuse carriers or with carriers to accommodate high breaking capacity cartridge fuses. (*The General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.2.*)

ELECTRIC CLOCKS

The timekeeping qualities of the typical household electric clock are entirely dependent on the accuracy with which the alternating current supply is kept at its standard frequency of 50 cycles per second. With a complete power cut, even if the clock motor is self-starting, the results will generally be obvious, but the now common habit of "load shedding" means dropping the frequency, so that the clock will still be going, but may be slow to the extent of ten minutes or so: an irritating amount, as it is just large enough to make one miss trains. According to the British Electricity Authority, when the frequency is dropped during the day, it is correspondingly increased during off peak periods, and in theory your clocks should speed up during the night and be right again by the time you wake up in the morning, but in practice I find that this does not always happen, my own clock having needed re-setting by anything up to 5 minutes each day during last week's cold snap. So if you have a penchant for keeping your appointments on time, it's as well to check your clock every few days and not assume that because it's going it's automatically right.



Above, GEC consumer control unit. Right, Creda Comet electric cooker. Below, a radiator which is claimed to be the longest ever produced, manufactured by the Gulf Radiator Co. Ltd.



Buildings Illustrated

Royal Festival Hall, South Bank, London, S.E.1. (Pages 507-513.) Architect: Robert H. Matthew, A.R.I.B.A. Consulting Civil Engineers: Scott and Wilson. General Contractors: Holland & Hannen & Cubitts Ltd. Sub-contractors: Copper roofing, Holloway Metal Roofs Ltd.; precast concrete roofing, Triad Floors Ltd.; "Nacocrete" flat roofing, Neuchatel Asphalte Co. Ltd.; external tiles, Carter & Co. Ltd.; stone and marble facings, Holland & Hannen and Cubitts Ltd.; waterproof backing, R.I.W. Products Ltd.; waterproof solution and dye in tile bedding, Tretol Ltd.; fibrous plaster ceilings, David Esdaile & Co. Ltd.; hangers for auditorium ceiling, Bracketing Centering & Lathing Ltd.; acoustic ceilings in foyers, Holoplast Ltd.; rockwool insulation, Stillite Products Ltd.; asbestos (Kimoloboard) kitchen and other ceilings, Structural Insulation Ltd.; lavatory and kitchen wall tiles, kitchen floor quarry tiles, Parkinsons (Wall Tiling) Ltd.; stucco-marble to columns, auditorium floor, cork tiles and cork insulation, Jaconello Ltd.; hydulignum cantilever staircase treads, Hordern-Richmond Ltd.; ply panelling to boxes in auditorium, leather in lobbies, H. H. Martyn & Co. Ltd.; terrazzo in lavatories, Diespeker & Co. Ltd.; external asbestos sheeting, Belmont Building Supplies Ltd. and Universal Asbestos Co. Ltd.; reconstructed stone paving, The Liverpool Artificial Stone Co. Ltd.; external rendering (Stonite), Callow & Keppich Ltd.; external paints on concrete (Cementone), Joseph Freeman Sons & Co. Ltd.

Engineering Workshops and Administration Block for the Appleby Frodingham Steel Co., at Scunthorpe, Lincolnshire. (Pages 514-515.) Architect: Frederick Gibberd, F.R.I.B.A. Assistant Architect: J. W. Grimes, A.R.I.B.A. Chief Designing Engineer: I. M. Kemp. Civil and Mechanical Engineer: K. Paterson. Chief Electrical Engineer: J. L. Gaskell. Manager of constructional department: H. Saunders. Consulting Engineer for the engineering workshops; Cecil Bentham, C.B.E., M.INST.C.E. Manager of the central engineering workshops: G. C. Oram. Site engineer: R. C. A. Aylmore. Quantity Surveyor: P. T. Walters, F.R.I.C.S. General Contractors: John Mowlem & Co. Ltd. Sub-contractors: Steelwork, Appleby Frodingham Steel Co.; hollow tile floors, The Kleine Co. Ltd.; asphalt tanking, D.P.C. and roofing, Lincolnshire Rock Asphalte Co. Ltd.; patent glazing, Williams & Williams Ltd.; faience tiling, Bristol Clay Products Ltd.; roller shutters, John Booth & Sons (Bolton) Ltd.; tubular steel gates, The Morris Singer Co.; staircase handrails, Grundy Arnatt Ltd.; kitchen equipment, Sumerling & Co. Ltd.; lifts, Gimson & Co. (Leicester) Ltd.; electrical installation, S. W. Wing, W. J. Furse & Co. (Manchester) Ltd., S. E. Wing, F. H. Wheeler (Sheffield) Ltd.; terrazzo, Art Pavements & Decorations Ltd.; plumbing, J. H. Shouksmith & Sons Ltd.; heating and ventilation, S. W. Wing, W. Richardson & Co. Ltd., S. E. Wing, Alfred Grindrod & Co. Ltd.; floor finishes, Lincolnshire Rock Asphalte Co. Ltd., The Granwood Flooring Co. Ltd.; asbestos spray, Turner Asbestos Cement Co. Ltd. Nominated suppliers: Bricks, Brick Marketing Co.; foamed slag and partition blocks, Hydroprest Concrete Ltd.; clay partition blocks, London Brick Co. Ltd.; precast stonework, The Hull Concrete Stone Co. Ltd.; flush doors, Boulton & Paul Ltd.; glass bricks, Pilkington Brothers Ltd.; sanitary fittings, Dent & Hellyer Ltd.; cloakroom fittings, Lockerbie & Wilkinsons (Birmingham) Ltd.; lighting fittings, The Benjamin Electric Ltd., Troughton & Young Ltd.; nameplates, The London Nameplate Manufacturing Co. Ltd.; ironmongery, A. J. Binns Ltd., James Gibbons Ltd., Rownson Drew & Clydesdale Ltd.; counter panelling, Wareite Ltd.

Powell County Primary School, Buckland Valley, Dover, Kent. (Pages 517-520.) Architects: Willan & Stewart, F./A.R.I.B.A., in collaboration with S. H. Loweth, F.S.A., F.R.I.B.A., County Architect. Quantity Surveyor: Drower & Son. Clerk of Works: L. C. Lockyer. General Contractor: C. Jenner & Son Ltd. Sub-contractors: Excavation, Mears Bros. Ltd.; foundations, joinery, school fittings, C. Jenner & Son Ltd.; dampcourses, G. M. Callender & Co. Ltd.; facing bricks, High Broom Brick Co.; interior sand-lime facing bricks, Ryarsh Brick Co.; artificial stone, The Empire Stone Co. Ltd.; structural steel, Smith Walker Ltd.; fireproof construction, precast concrete roof slabs, Concrete Ltd.; special roofings "Bitumetal," Briggs Bros. Ltd.; roofing felt, D. Anderson Ltd.; glass, Pilkington Bros. Ltd.; patent glazing, casements, Williams & Williams Ltd.; woodblock flooring, Horsley Smith & Co. Ltd., Phillip Flooring Co. Ltd.; asphalt tile floors, Marley Ltd.; cork floors, Marbolith Flooring Co.; central heating, plumbing, G. N. Haden & Sons Ltd.; boilers, Beeston Boiler Co. Ltd.; electric wiring, Dover Corporation Electricity Department; sanitary fittings, Doulton & Co. Ltd.; cloakroom fittings, door furniture, Lockerbie & Wilkinson (Birmingham) Ltd.; terrazzo partitions for w.c.s, The Mosaic & Terrazzo Precast Co.; tiling, Carters Ltd.; furniture, Kent County Supplies Department; shrubs and trees, Kent County Lands Department; paint and distemper, Imperial Chemical Industries Ltd. (Paints Division); clocks, Gent & Co. Ltd.; acoustic treatment in assembly hall, May Acoustics Ltd.

Correction

In our feature on the reconstructed Old Vic theatre (November 30) we omitted to mention that Margaret Harris collaborated with James Brown on the colour scheme and decorations.

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 Announcement

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

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: EMPLOYMENT REGISTER, WREN PARK, WHITELEAFE. Tel.: Uplands 0935. 991

NORTH THAMES GAS BOARD.

Applications are invited for the following appointment in the Architects' Section of the Chief Engineer's Department of Westminster: SENIOR ARCHITECTURAL ASSISTANT, minimum starting salary £650 per annum.

Applicants, who must be Registered Architects and should be studying for or have passed the Final Examination of the R.I.B.A., should be capable of preparing working and detailed drawings and specifications, and supervising and controlling the work on contracts. Experience in design and planning of industrial buildings would be an advantage.

The appointment is of a permanent nature, and pension arrangements will be discussed with short list candidates.

Applications, stating age, qualifications, and particulars of previous appointments held, must be submitted to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, London, W.8, quoting reference 9757. 4341

LONDON COUNTY COUNCIL.

Applications are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £580 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats), and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816) 4558

LIVERPOOL REGIONAL HOSPITAL BOARD.

Applications are invited for the permanent pensionable appointment of ASSISTANT QUANTITY SURVEYOR, in the Regional Architect's Department, on the Headquarters staff of the Board.

Applicants should be Corporate Members of the Royal Institute of Chartered Surveyors, having passed the Final Examination in the Quantities Sub-Division, and should have had considerable experience in "taking-off" and settling Contractors' Final Accounts.

Salary £635, rising by annual increments of £25 to a maximum of £710 per annum, in accordance with A.P.T., Grade VII.

Applications, stating age, education, qualifications, experience, present and previous appointments, salary, war service, together with the names and addresses of three referees, should be sent to the undersigned at No. 19, James Street, Liverpool, 2, not later than 29th December, 1950.

VINCENT COLLINGE,
Secretary to the Board.
1349

ADMINISTRATIVE COUNTIES OF EAST AND WEST SUFFOLK.
COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of CHIEF PLANNING ASSISTANT in the County Planning Department.

The salary will be within Grade VIII (£685-£760 per annum) of the National Joint Council's Scales, with scale allowance for use of motor car; and will be determinable by one month's notice on either side.

Candidates must have passed the Associate Membership Examination of the Town Planning Institute or equivalent examination, and preference will be given to those possessing a degree or diploma in architecture.

The successful applicant will be attached to the Development Plan Section in charge of the drawing office, and considerable experience in the preparation of development plans and the detailed planning of residential and industrial areas is essential.

Applications, stating age, qualifications, experience, present and past appointments, present salary, and giving names and addresses of two referees, to be delivered to the County Planning Officer, County Hall, Ipswich, not later than Saturday morning, the 23rd December, 1950.

Canvassing, directly or indirectly, will disqualify.

G. C. LIGHTFOOT,
Clerk of the East Suffolk County Council.
County Hall, Ipswich.
29th November, 1950. 1394

WREXHAM RURAL DISTRICT COUNCIL.
APPOINTMENT OF (*a*) ARCHITECTURAL ASSISTANT, (*b*) QUANTITY SURVEYING ASSISTANT.

Applications are invited for the following appointments in the Engineer and Surveyor's Department of the Council, namely:—

(*a*) Architectural Assistant, at a salary in accordance with Grade VII of the A.P.T. Division (£635×£25 to £710). Applicants must be Associates of the Royal Institute of British Architects, or Registered Architects, and must be competent to undertake housing and general architectural work.

(*b*) Quantity Surveying Assistant, at a salary in accordance with Grade VII of the A.P.T. Division (£635×£25 to £710). Applicants must be Associates of the Royal Institute of Chartered Surveyors (Quantities Division), and have had experience in the preparation of Bills of Quantities for housing and road works and the measuring of works in progress and on completion.

The appointments will be determined by one month's notice in writing on either side and will be subject to the provisions of the Local Government Act, 1937, and the National Joint Council's Scheme of Conditions of Service. The successful applicants will be required to pass a medical examination. The Council will provide housing accommodation, if required.

Applications, stating age, qualifications, experience, present appointment and salary, together with copies of two recent testimonials, must be delivered to the undersigned not later than Monday, 18th December, 1950, in envelopes suitably endorsed.

Canvassing, either directly or indirectly, will be a disqualification, and relationship to any member or senior officer of the Council must be disclosed.

TREVOR L. WILLIAMS,
Clerk and Solicitor.
Imperial Buildings, Regent Street, Wrexham.
28th November, 1950. 1377

METROPOLITAN BOROUGH OF POPLAR.
APPOINTMENT OF CHIEF ARCHITECTURAL ASSISTANT (GRADE A.P.T., VII).

Applications are invited from suitably qualified persons for the permanent appointment of CHIEF ARCHITECTURAL ASSISTANT in the Architect's Section of the Borough Engineer and Surveyor's Department. The salary payable will be in accordance with Grade A.P.T., VII, of the National Salary Scales, *i.e.*, £635-£710 per annum, plus London "weighting."

Applicants should have had experience of housing and multi-storey flats, and have a good knowledge of building construction and specification writing, and must be able to supervise a team of assistants.

Several schemes, including interesting constructional and detailing problems, are in hand or under construction, and the applicant appointed will be engaged on these projects.

Preference will be given to applicants who are Associate Members of the Royal Institute of British Architects.

Full details of the appointment and forms on which application must be made, may be obtained from the Borough Engineer and Surveyor, Poplar Town Hall, Bow Road, E.3, to whom completed applications must be delivered not later than first post on Monday, 1st January, 1951.

Poplar Town Hall, Bow Road, E.3.
24th November, 1950. 1346

SALOP COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments to Established posts in the Department:—

(1) ASSISTANT ARCHITECT. A.P.T., Grades II-III (£420 to £495 per annum).

(2) JUNIOR ASSISTANT ARCHITECT. A.P.T., Grades I-II (£390 to £465 per annum).

The appointments will be subject to one month's notice in writing on either side; to the terms of the National Joint Council's Scheme of Conditions of Service, and to the provisions of the Local Government Superannuation Act, 1937. The successful applicants will be required to pass a medical examination.

Application forms may be obtained from the County Architect, A. G. Chant, F.R.I.B.A., Column House, London Road, Shrewsbury, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than Saturday, 30th December, 1950.

G. C. GODBER,
Clerk of the Council.
Shrewsbury.
November, 1950. 1373

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
PLANNING STAFF.

Applications are invited for positions of PLANNING OFFICER, Grade II (£700-£840), Grade III (£550-£700), and TECHNICAL ASSISTANTS (up to £580). The positions are superannuable. Candidates for Grade II and III positions should have architectural or surveying qualifications, preferably with town planning qualifications in addition. They will be engaged on Information and Research, Development Plan, Reconstruction Areas, Development Control or Detailed Planning. Technical Assistants are required for work on all these aspects.

Particulars and application forms from the Architect, AR/EK/P, The County Hall, Westminster Bridge, S.E.1, enclosing stamped addressed foolscap envelope. Canvassing disqualifies. (1429) 1192

NATIONAL COAL BOARD—EAST MIDLANDS DIVISION.
ARCHITECT'S DEPARTMENT.

Applications are invited for the following permanent and superannuated appointments:—

(*a*) ARCHITECT, Grade I. Salary £700×£25—£375 per annum.

(*b*) ARCHITECTS, Grade II. Salary £450×£25—£700 per annum.

The point of entry into the relevant salary scales will depend on the qualifications and experience of the successful applicants, and subject to satisfactory service, opportunities will be available for promotion to higher grades.

The architectural work of the Department covers all new projects in the Division, which embraces five counties. The work is of considerable variety and interest and includes the design of industrial buildings of all types concerned in the planning of collieries, such as workshops, power plants, offices, stores, pithead baths, canteens, medical centres, recreation buildings, convalescent homes, etc.

Part-time studying facilities are given to assistants in the Department to avail themselves of the advantages of the Nottingham School of Architecture.

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

THE SECRETARY,
National Coal Board,
East Midlands Division, Sherwood Lodge,
Arnold, near Nottingham.

Envelopes should be marked "S.V.48," and original testimonials should *not* be sent. 1293

KENT COUNTY COUNCIL.

Applications are invited for the appointment in the Buildings Department of an ARCHITECTURAL ASSISTANT, at a salary within A.P.T., Grades II-III (£420-£495).

Candidates must have passed the Intermediate Examination of the Royal Institute of British Architects, and have had experience in the preparation of working drawings and development of detail drawings.

The commencing salary will be dependent upon the experience of the successful candidate.

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

Applications on forms obtainable from the County Architect, Springfield, Maidstone, should be delivered to him within two weeks of the appearance of this advertisement.

W. L. PLATTS,
Clerk of the County Council.
County Hall, Maidstone.
23rd November, 1950. 1350

BOROUGH OF DEVIZES.
TECHNICAL ASSISTANT.

Applications are invited for the temporary appointment of TECHNICAL ASSISTANT in the office of the Borough Surveyor and Water Engineer, to assist in the preparation of schemes for the Council's permanent housing programme, at a salary in accordance with Grade II (A.P.T.) of the National Scale of Salaries.

Applicants should have had good experience in the preparation of schemes of Municipal housing, including sewerage, highways and water supply. Preference will be given to applicants who have passed an examination of the Institution of Civil Engineers or the Institution of Municipal Engineers or the Royal Institute of British Architects.

Forms of application and any further particulars may be obtained from, and applications should be addressed to the Borough Surveyor and Water Engineer, The Chequers, Devizes.

All applications should be received in an envelope endorsed "Technical Assistant," by not later than noon on Tuesday, 2nd January, 1951.

The appointment will be subject to one month's notice on either side.

A. HODGE,
Town Clerk.
Midland Bank Chambers, Devizes, Wilts.
22nd November, 1950. 1367

COUNTY BOROUGH OF GREAT YARMOUTH.
BOROUGH ENGINEER'S DEPARTMENT.
APPOINTMENT OF SENIOR ASSISTANT ARCHITECT.

Applications are invited for the appointment of a Senior Assistant Architect in the Borough Engineer's Department. Salary A.P.T., Grade VI (£595-£660). Candidates should be Associates of the Royal Institute of British Architects, but need not have had previous Local Government experience. The appointment will be terminable by one month's notice on either side and will be subject to the provision of the Local Government Superannuation Act, 1937, and to the passing of a medical examination.

Housing accommodation will be offered to the successful applicant, if married.

Applications, stating age, qualifications and experience, together with the names of three persons to whom reference could be made, should be enclosed in an envelope endorsed "Senior Assistant Architect," and must be received by me not later than Friday, 22nd December, 1950. Canvassing will be deemed a disqualification, and candidates must disclose in writing any relationship to any member or holder of any senior office under the Council. Candidates who fail to do so will be disqualified, and, if appointed, will be liable to dismissal without notice.

FARRA CONWAY,
Town Clerk.
Town Hall, Great Yarmouth.
1st December, 1950. 1402

FERMANAGH COUNTY EDUCATION COMMITTEE.

APPOINTMENT OF ASSISTANT ARCHITECT.

Applications are invited from fully qualified Architects for a post on the permanent staff of the Architect's Department.

The salary scale will be £650×£25 to £750 per annum, and the point of entry to the scale will be determined according to the experience of the person appointed.

Preference will be given to suitably qualified ex-Service applicants provided the Committee is satisfied that such applicants can, or within a reasonable time will be able to, fill the post efficiently.

The successful candidate will be required to contribute in accordance with the provisions of the Local Government (Superannuation) Act (Northern Ireland), 1950.

Forms of application and conditions of appointment may be obtained from the undersigned, with whom completed applications must be lodged not later than Saturday, 13th January, 1951.

J. MALONE,
Chief Education Officer.

Education Office, 27, High Street,
Enniskillen, Northern Ireland.
23rd November, 1950. 1351

BOROUGH OF WIMBLEDON.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments on the established staff:—

(a) ONE CHIEF ARCHITECTURAL ASSISTANT, on Grade A.P.T., VII, at a commencing salary of £635 per annum, rising by three annual increments of £25 to a maximum of £710 per annum. Applicants must have had considerable experience in an Architect's office, and must be Associate Members of the Royal Institute of British Architects and be Registered Architects.

(b) TWO SENIOR ARCHITECTURAL ASSISTANTS, on Grade A.P.T., VI, at a commencing salary of £595 per annum, rising by two annual increments of £20 and one of £25 to a maximum of £660 per annum. Applicants must be Registered Architects. Candidates must have had considerable experience in an Architect's office, and membership of the Royal Institute of British Architects would be an advantage.

(c) ONE GENERAL ARCHITECTURAL ASSISTANT, on Grade A.P.T., III, at a commencing salary of £450 per annum, rising by three annual increments of £15 to a maximum of £496 per annum. Applicants must have served their articles of pupilage or have worked in an architectural office for a minimum period of three years, and have passed the R.I.B.A. Intermediate Examination or its equivalent at one of the recognised Schools of Architecture.

London weighting is paid in addition to the above salaries, and the appointments are subject to:—

(a) The National Scheme of Conditions of Service;
(b) The provisions of the Local Government Superannuation Acts, and
(c) satisfactory medical examination.

Applications, endorsed "Chief Architectural Assistant," "Senior Architectural Assistant," and "General Architectural Assistant," stating age, qualification, former local government service, present and previous appointments and experience, length of notice required to terminate present appointment, and the names and addresses of three persons as referees, must be forwarded to the Borough Engineer and Surveyor by Friday, 22nd December, 1950.

Candidates must disclose in writing to the undersigned if to their knowledge they are related to any member or senior officer of the Council.

EDWIN M. NEAVE,
Town Clerk.

Town Hall, Wimbledon S.W.19. 1392

BOROUGH OF ILFORD.
APPOINTMENT OF
ARCHITECTURAL ASSISTANT. A.P.T., Grade VII.

Applications are invited for the following appointment on the staff of the Borough Engineer's Department:—

Architectural Assistant. Permanent staff. Salary in accordance with A.P.T., Grade VII, £635×£25—£710 per annum, plus London weighting. Candidates should be Chartered Architects and Corporate Members of the Royal Institute of British Architects and have a thorough knowledge of architectural works, with practical experience in the design and development of public buildings of all types, the preparation of specifications, and be capable of supervising and controlling contracts. The work will not be connected with post-war Housing schemes, or the construction of Schools.

The Council is prepared to consider (if necessary) the question of housing accommodation.

The above appointment is whole-time (private practice being prohibited), is subject to one month's notice on either side, to the provisions of the Local Government Superannuation Acts, the National Scheme of Conditions of Service, and medical examination.

Forms of application may be obtained from the Borough Engineer and Surveyor, Town Hall, Ilford, and should be returned to the undersigned not later than the 30th December, 1950.

Canvassing, either directly or indirectly, will be a disqualification.

K. F. B. NICHOLLS,
Town Clerk.

Town Hall, Ilford.
December, 1950. 1425

BOROUGH OF ACTON.
ARCHITECTURAL ASSISTANT.

Applications are invited for this permanent appointment, at a salary in accordance with Grades A.P.T., V/Va, of the National Scale (£520-£610 p.a.), plus London "weighting." The commencing salary may be fixed within the Grades according to the qualifications and experience of the person appointed.

Applicants must be Registered Architects, experienced in the design, erection and maintenance of houses, flats and public buildings.

If necessary, housing accommodation will be made available to the person appointed.

An application form and a copy of the conditions of appointment may be obtained from the Borough Engineer, Town Hall, Acton, W.3, to whom applications must be delivered by 1st January, 1951.

Canvassing will disqualify.

H. C. LOCKYER,
Town Clerk.

Town Hall, Acton, W.3. 1421

GOVERNMENT OF NORTHERN IRELAND.
CIVIL SERVICE COMMISSION.

Applications are invited for the post of SENIOR QUANTITY SURVEYOR in the Works Division, Ministry of Finance, Northern Ireland. Subject to a probationary period of two years the post will be permanent and pensionable. Candidates must be British subjects, ordinarily resident in the United Kingdom.

Qualifications: Candidates must be Fellows or Associates of the Royal Institution of Chartered Surveyors (Quantities Section). They must be thoroughly proficient in all branches of quantity surveying, including the preparation of Bills of Quantities, approximate estimates, dilapidations, the interpretation of contract documents and the settlement of large and intricate final accounts. Experience in a Quantity Surveyor's office and in the supervision of staff is an essential qualification; experience in engineering as well as architectural services will be an advantage.

Remuneration: The salary scale attaching to the appointment is £950×£30—£1,100 per annum.

Preference will be given to suitably qualified candidates who served with H.M. Forces during wartime, provided the Commissioners are satisfied that such candidates can, or within a reasonable time will, be able to fill the post efficiently.

Applications must be made on the prescribed form which may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast, and must be returned, duly completed, with copies of two recent testimonials so as to reach him not later than 2nd January, 1951. 1428

COUNTY BOROUGH OF MERTHYR TYDFIL.
BOROUGH ENGINEER, SURVEYOR AND ARCHITECT'S DEPARTMENT.

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

(*a*) JUNIOR ENGINEER ASSISTANT. Grade A.P.T., II (£420-£465).

(*b*) JUNIOR ARCHITECTURAL ASSISTANT. Grade A.P.T., II (£420-£465).

Candidates for (*a*) should have experience in Local Government, and preference will be given to students of the Institute of Municipal Engineers or the Institute of Civil Engineers.

Candidates for (*b*) should have experience in Local Government, and preference will be given to students of the R.I.B.A.

The appointments will be subject to :—

(1) Scheme of Conditions of Service of the National Joint Council.

(2) Provisions of the Local Government Superannuation Act, 1937.

(3) The passing of a satisfactory medical examination.

(4) One month's written notice on either side.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, should be delivered to the undersigned not later than Thursday, 21st December, 1950.

Canvassing in any form will be deemed a disqualification.

T. S. EVANS,
Town Clerk.

Town Hall, Merthyr Tydfil. 1423

SOUTH-EASTERN REGIONAL HOSPITAL BOARD, SCOTLAND.

APPOINTMENT OF REGIONAL ARCHITECT.

Applications are invited for the post of Regional Architect to the above-mentioned Regional Board. Applicants should be Fellows or Associates of the R.I.B.A. and should have had experience of architectural practice, office organisation, and in the field; experience of hospital building is desirable.

The Regional Architect's office is in Edinburgh, and the scope of the work involved will include the general supervision of the Board's Annual Building Programme, the designing of certain new units, and the maintenance of existing hospital buildings; and collaboration with private architects engaged in the Board's service.

Salary will be at the rate of £1,350, rising by £50 to £1,550 per annum. The post is subject to the provisions of the National Health Service (Scotland) (Superannuation) Regulations, 1950.

Forms of application may be obtained from the Secretary, South-Eastern Regional Hospital Board, Scotland, 11, Drumsheugh Gardens, Edinburgh, 3, and should be returned to the same address not later than 3rd January, 1951.

Canvassing in any form will disqualify. 1435

COUNTY BOROUGH OF BELFAST.
EDUCATION COMMITTEE.
EDUCATION ARCHITECT'S DEPARTMENT.

Applications are invited for the following posts on the permanent staff of the Education Architect's Department :—

(*a*) ASSISTANT ARCHITECTS.

(*b*) ARCHITECTURAL ASSISTANTS.

Candidates for positions (*a*) should be Registered Architects, and preferably have experience in modern school design and planning.

The salary for (*a*) is £350×£25—£550 per annum, plus cost-of-living bonus, at present £78-£90 per month, according to position on scale.

Candidates for positions (*b*) should have a sound practical experience in connection with the design and construction of buildings, preparation of specifications and surveying of sites. Preference will be given to candidates who have reached the standard of the R.I.B.A. Intermediate Examination.

The salary for (*b*) is £250×£25—£450 per annum, plus cost-of-living bonus, at present £78-£90 per annum, according to the position on scale.

The commencing salary in each case will be determined in the light of the qualifications, ability and experience of the person appointed.

Preference will be given to suitably qualified ex-Service candidates provided the Committee is satisfied that such candidates can fill or within a reasonable time will be able to fill the posts efficiently.

Forms of application and conditions of appointment may be obtained at the Education Office, Academy Street, Belfast.

Applications, endorsed "Appointment of ....," and accompanied by copies of three recent testimonials, must be lodged with the undersigned not later than 12 o'clock noon on Thursday, 28th December, 1950.

Canvassing in any form, oral or written, direct, or indirect, will, if proved to the satisfaction of the Committee, disqualify a candidate for appointment.

JOHN DUNLOP,
Town Clerk.

City Hall, Belfast. 1420

COUNTY BOROUGH OF DERBY.

Applications are invited for the following appointments on the temporary staff, in accordance with the National Scale of Salaries :—

TWO JUNIOR ARCHITECTS, Grade I/II. Salary £390-£465.

Applicants should be not less than 21 years of age, and should have passed the Preliminary Examination of the R.I.B.A., and have had experience in general architectural work.

The appointments will be subject to one month's notice in writing on either side, and to the terms of the National Joint Council's Scheme of Conditions of Service, and the provisions of the Local Government Superannuation Act, 1937, and the successful applicants will be required to pass a medical examination.

Forms of application may be obtained from the Borough Architect, The Council House, Corporation Street, Derby, and should be returned when completed, together with a copy of one testimonial and the names of two persons to whom reference may be made, to arrive not later than Monday, 1st January, 1951.

Canvassing, directly or indirectly, will be a disqualification.

E. H. NICHOLS,
Town Clerk.
1419

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.
SCHOOLS DIVISION.

Applications are invited for positions of ARCHITECT, Grade II (£700-£840); ARCHITECT, Grade III (£550-£700), and TECHNICAL ASSISTANT (up to £580), for work on new schools and major alterations and extensions to existing schools. The positions are superannuable. Candidates for Grades II and III should possess professional qualifications. Application forms obtainable from the Architect (AR/EK/S), The County Hall, S.E.1 (enclosing stamped addressed foolscap envelope), to be returned by 30th December, 1950. Canvassing disqualifies. (1569). 1398

BOROUGH OF CHELMSFORD.
ARCHITECTURAL ASSISTANT, GRADE A.P.T., Va.

Applications are invited for the appointment of Architectural Assistant, at a salary in accordance with Grade A.P.T., Va. Applicants must be suitably qualified and experienced in the design and construction of houses and flats for Local Authorities.

The appointment will be subject to the National Conditions of Service and the Local Government Superannuation Act, 1937, and will be terminable by one month's notice on either side. The selected applicant will be required to pass a medical examination. A house will be available for the successful applicant, if required.

Applications, stating age, qualifications, experience, present and previous appointments (with salaries), together with the names and addresses of two referees, are to be delivered to the Borough Engineer, Surveyor and Architect, Municipal Offices, Duke Street, Chelmsford, not later than Wednesday, 20th December, 1950. Applicants must state whether to their knowledge they are related to any member of or holder of any office under the Council.

Canvassing, either directly or indirectly, will be a disqualification.

B. A. FRANCIS,
Town Clerk.

Municipal Offices, Duke Street, Chelmsford.
5th December, 1950. 1418

CORBY DEVELOPMENT CORPORATION.

Applications are invited from well qualified persons for the following appointments, at a commencing salary, within the ranges stated, according to experience and qualifications:—

(*a*) CHIEF ARCHITECT. Salary range, £1,500-£1,700.

(*b*) ASSISTANT CHIEF ARCHITECT. Salary range, £900-£1,050.

(*c*) SENIOR ARCHITECTURAL ASSISTANT. Salary range, £750-£850.

And applications are also invited for:

(*d*) ARCHITECTURAL ASSISTANTS (TWO). Salary, £550×£25—£650.

Candidates must have had considerable experience in, for appointment (*a*) the design and execution of large scale housing operations and other buildings for local authorities and the necessary staff organisation and control; town planning experience, though not essential, may be an advantage; (*b*) and (*c*) the design and execution of large scale housing and other building works, etc.; (*d*) drawing, construction, etc., under an Architect.

The appointments, under the direction of the General Manager, are expected to involve large scale construction projects associated with the development of a New Town.

The successful candidates will be required to pass a medical examination, to contribute either to a Superannuation or an Assurance Scheme, and to carry out such duties as the Corporation may require.

Applications, stating age, education, training, qualifications, experience, past and present appointments and salaries, together with the names of two persons to whom reference may be made, must be received by the undersigned not later than 29th December, 1950. Envelopes and applications must clearly indicate the appointment for which application is made.

E. F. BROOKS GRUNDY,
General Manager.

Corby Development Corporation,
The Stone House, Corby, Northants. 1436

MONTGOMERYSHIRE COUNTY COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant (A.P.T., Grade II, £420-£465 per annum) in the office of the County Architect.

Application forms (giving particulars of age, experience and qualifications, etc., and the names of two persons to whom reference can be made), obtainable on application, and when completed should be forwarded, together with copies of not more than three recent testimonials, to the undersigned by not later than Saturday, 23rd December, 1950.

The person appointed will be required to pass a medical examination, and the appointment is subject to the Local Government (Superannuation) Act, 1937. Canvassing disqualifies.

P. E. WHITE,
Clerk of the County Council.

County Offices, Welshpool.
4th December, 1950. 1427

TYRONE COUNTY EDUCATION COMMITTEE.

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

(*a*) ASSISTANT ARCHITECT. Applicants should be Registered Architects. Salary: £650×£25—£750 per annum.

(*b*) ARCHITECTURAL ASSISTANT. Applicants should have reached the standard of the R.I.B.A. Intermediate Examination. Salary: £350×£25—£500 per annum, plus cost-of-living bonus (£78 to £90).

In each case the point of entry in the salary scales will be determined according to the qualifications and experience of the person appointed.

Application Forms and Conditions of Appointment may be obtained from the undersigned, with whom completed applications must be lodged not later than Saturday, 30th December, 1950.

A. GIBSON,
Chief Education Officer.

Education Offices, Omagh, Co. Tyrone,
N. Ireland. 1437

METROPOLITAN BOROUGH OF PADDINGTON.
HOUSING DEPARTMENT: ARCHITECTURAL SECTION:

Applications are invited for the undermentioned appointments, which are subject to the National Joint Council's Service Conditions, the Council's Superannuation Acts, and to one month's notice on either side.

(*a*) ASSISTANT ARCHITECT (II). A.P.T., Va (£550×£23—£610 p.a., plus London "weighting").

Candidates must be Registered Architects, preferably Associates of the Royal Institute of British Architects, and have had experience in Architectural design and construction of general Municipal work, including multi-storey flats, or similar experience with private firms of Architects.

(*b*) ARCHITECTURAL ASSISTANT. A.P.T., III (£450×£15—£495 p.a., plus London "weighting")

Candidates must have passed the Intermediate Examination of the Royal Institute of British Architects, be used to preparing working and detail drawings, and be good draughtsmen.

(*c*) BUILDING SURVEYING ASSISTANT. A.P.T., I and II (£390×£15—£465 p.a., plus London "weighting").

Candidates should possess a sound practical knowledge of building construction, be experienced in surveying sites and buildings, the repair, adaptation and conversion of civic and residential properties, capable of preparing plans, specifications and estimates of costs in respect of such works, and their supervision. All things being equal, preference will be given to applicants who are at an advanced stage of preparation for the Intermediate Examination of the Royal Institute of Chartered Surveyors, or other equivalent qualification.

Candidates for the above appointments must state age, qualifications, present and past appointments, with dates and salaries, experience, and names of three referees.

Applications must be received not later than noon on Friday, 29th December, 1950.

W. H. BENTLEY,
Town Clerk.

Town Hall, Paddington, W.2.
14th December, 1950. 1442

WELSH REGIONAL HOSPITAL BOARD.

Applications are invited for the following permanent post in the Architect's Division:—

ASSISTANT ARCHITECT. Salary A.P.T., Grade VIII (£685-£760).

Applicants must be Registered Architects, have passed the Final Examination of the R.I.B.A., and have had wide experience in planning and construction, and in the preparation of working drawings for hospitals or other large buildings. The appointment is superannuable.

Applications, stating age, qualifications and experience, with the names of two referees, should be addressed to the Secretary, Temple of Peace and Health, Cathays Park, Cardiff, so as to reach him not later than 28th December, 1950. 1444

COUNTY BOROUGH OF READING.
CLERK OF WORKS.
MID-SOUTH SECONDARY BOYS' SCHOOL.

Applications are invited for the appointment of a Clerk of Works in connection with the erection of the above School. The School will have accommodation for approximately 600 pupils in three separate blocks; the main part of the School will be "Orlit" Construction, Assembly and Administration being in steel framework with brick cladding.

The appointment will be for approximately two years at a salary of £545 per annum.

Applications, stating age, experience, qualifications and date when services would be available, accompanied by names and addresses of three persons to whom reference may be made, must be delivered to me in an envelope endorsed "Clerk of Works—Education," not later than the 1st January, 1951.

G. F. DARLOW,
Town Clerk.

Town Hall, Reading.
December, 1950. 1434

ESTON URBAN DISTRICT COUNCIL.
APPOINTMENT OF ARCHITECTURAL ASSISTANT, GRADE III, IV OR V.

Applications are invited for the appointment of Architectural Assistant, at a salary in accordance with Grade A.P.T., III, IV or V, of the National Scales, namely £450 to £495, £480 to £525, or £520 to £570, according to qualifications and experience.

Applicants should have had good general training, with experience in housing work, and preference will be given to candidates who have passed the Intermediate Examination of the Royal Institute of British Architects.

The conditions of service are those formulated by the National Joint Council, and the appointment is subject to the passing of a medical examination and the provisions of the Local Government Superannuation Act, 1937. Housing accommodation will be made available to the successful candidate if required.

Applications, giving full details of training, qualifications, experience and copies of two recent testimonials, should be sent to me by first post on Thursday, 21st December, 1950.

N. C. HARRISON, A.M.I.C.E., M.I.Mun.E.,
Engineer and Surveyor.

Engineer and Surveyor's Dept., Normanby Road, South Bank, Middlesbrough.
7th December, 1950. 1441

GOWER RURAL DISTRICT COUNCIL.
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment, in the Engineer and Surveyor's Department, at a salary in accordance with A.P.T., Grade V (£520-£570 per annum).

Applicants should be Associates of the Royal Institution of British Architects, and have had experience in Municipal Housing Schemes, Shops, Adaptations, Estimating and Supervision of Works.

The appointment is a temporary one for a minimum period of three years, and will be terminable by one month's notice in writing on either side. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937.

Housing accommodation will be provided if necessary.

Applications endorsed "Senior Architectural Assistant," stating age, experience and qualifications, and accompanied by copies of not more than three recent testimonials, should be delivered to the undersigned not later than Friday, the 29th December, 1950.

H. K. NEWCOMBE,
Clerk of the Council.

Council Offices, 8, Uplands Crescent, Swansea. 1424

COUNTY COUNCIL OF ESSEX.
COUNTY LAND AGENT'S DEPARTMENT.

Applications are invited for the appointment on the established staff of a BUILDING AND ARCHITECTURAL ASSISTANT. Salary according to qualifications and experience, but not exceeding Grade III, A.P.T. Division (£450, rising to £495 by three annual increments).

Candidates must be neat and accurate draughtsmen and have been trained in an appropriate professional office. They should also have sound knowledge of building details and construction, and it will be an advantage if their experience has been in connection with farm buildings and rural houses.

Applications must be made on a form obtainable from the County Land Agent, 69, Duke Street, Chelmsford, and be returned to him completed, together with copies of not more than three recent testimonials, not later than 5th January, 1951.

Canvassing, either directly or indirectly, is forbidden.

JOHN E. LIGHTBURN,
Clerk of the County Council.

County Hall, Chelmsford.
December, 1950. 1439

COUNTY BOROUGH OF CARLISLE.
CITY ENGINEER'S DEPT.

Applications are invited for the appointment of a QUANTITY SURVEYOR, Grade A.P.T., Va (£550-£610).

Applicants for the appointment should preferably be Corporate Members of the Royal Institution of Chartered Surveyors (Quantities Division), and should have experience in the preparation of Bills of Quantities, Estimates, measuring up and settlement of Final Accounts.

Housing accommodation will be provided for the successful applicant if required.

Forms of application and conditions of employment may be obtained from the City Engineer, 18, Fisher Street, Carlisle, to whom all applications should be returned not later than 2nd January, 1951.

H. D. A. ROBERTSON,
Town Clerk.

Town Clerk's Office, Fisher Street, Carlisle. 1426

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for positions of ARCHITECT, Grade III (£550-£700) and TECHNICAL ASSISTANT (up to £580) for work on new housing, schools, and other public buildings. The positions are superannuable. Candidates for Grade III positions should possess professional qualifications. Application forms from the Architect (AR/P/8), The County Hall, Westminster Bridge, S.E.1, enclosing stamped addressed foolscap envelope. Canvassing disqualifies. (384) 3914

COUNTY BOROUGH OF BURNLEY.
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the undermentioned appointments :—

(*a*) SENIOR ARCHITECTURAL ASSISTANT. Grade V (£520-£570 per annum).

(*b*) ARCHITECTURAL ASSISTANT. Grade III (£450-£495 per annum).

Candidates for appointment (*a*) should have had considerable experience in the design and construction of educational buildings, and in respect of (*b*) considerable general experience in a Municipal architect's office is required. Preference will be given to candidates holding recognised professional qualifications.

Forms of application, etc., may be obtained from the Borough Engineer and Surveyor, 22-24, Nicholas Street, Burnley, to whom applications should be returned not later than Friday, the 12th January, 1951.

C. V. THORNLEY,
Town Clerk.
1440

CITY AND ROYAL BURGH OF EDINBURGH.
TOWN PLANNING DEPARTMENT
ESTABLISHMENT.

Applications are invited for the following appointment :—

DEPUTY TOWN PLANNING OFFICER. Salary £1,200 per annum. Qualifications and experience of candidates should be as below :—

Appointment : Corporate Membership of Town Planning Institute is essential, together with an additional qualification in Architecture. A sound knowledge, with at least 5 years' experience, of contemporary Town and Country Planning practice and office administration also essential. Responsibilities will include supervision of work concerned with current development under the Act and advising the Town Planning Officer in architectural and other matters arising therefrom.

A house may be available towards meeting the requirements of the successful candidate. The right of allocation is reserved to the Corporation.

Applications, stating age, present and previous appointments and present salary, qualifications, and experience, should be forwarded to the Town Planning Officer, City Chambers, Edinburgh, 1, within 14 days from the appearance of this advertisement.

J. STORRAR,
Town Clerk.

8th December, 1950. 1443

LONDON HOSPITAL, WHITECHAPEL, E.1.

Applications are invited for the undermentioned appointments :—

ASSISTANT ARCHITECT. A.P.T., VI (£595×£20×£20×£25—£660).

ASSISTANT ARCHITECT. A.P.T., III (£450×£15—£495).

ASSISTANT ARCHITECT. A.P.T., I (£390×£15—£435).

In addition, London weighting payable according to age. The appointments will be subject to the National Health Service (Superannuation) Regulations and a medical examination.

Applications, giving details of age, qualifications, experience, present position and salary, should be endorsed "Architects" and sent to the House Governor. 1414

Tenders for Contracts

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

BOROUGH OF WIDNES.
EDUCATION COMMITTEE.
FAIRFIELD BOYS' SECONDARY MODERN SCHOOL.

Contractors, desirous of tendering for the erection of the above School, are invited to submit their names to the Borough Architect, Brendan House, Widnes Road, Widnes, not later than the 18th December, 1950.

The work comprises the complete erection of the School, which will provide accommodation for 340 pupils.

The following information should be supplied :—

(*a*) Brief particulars of constructional works in hand or completed since the war for Local Authorities, Government Departments, Public Undertakings, or private clients.

(*b*) An assurance that the applicant has the necessary financial and material resources and the organisation to carry out the work.

Bills of Quantities and Form of Tender, together with relevant details as to the date and time for receipt of Tenders, will be forwarded to selected applicants in due course.

FRANK HOWARTH,
Town Clerk.

Town Hall, Widnes. 1422

Partnership

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

EAST AFRICA.—JUNIOR PARTNERSHIPS offered to Architects with A.R.I.B.A. or Inter. R.I.B.A. qualifications. Salary £750 p.a., plus 10 per cent. profit, or £600 p.a., plus 5 per cent. profit. Passages of wife and applicant provided to and from East Africa; three months' paid leave after three years and two weeks' local leave per annum; housing available; minimum capital required £300. Write by registered airmail giving full particulars of age, experience, present salary, marital status, date available, and copies of testimonials, to Voucher 2062, Uganda Herald, P.O. Box 84, Kampala, Uganda. 1416

Architectural Appointments Vacant

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

EXPERIENCED ARCHITECTURAL ASSISTANT required for busy Provincial and Country practice. Good all round practical knowledge essential. Salary £550 upwards, according to ability. F. J. Lenton & Partners, F./A.R.I.B.A., 16, Broad Street, Stamford. 1297

SENIOR ARCHITECTURAL ASSISTANT required. Sound general office experience. Good knowledge of building construction, supervision, etc., on large-scale high-class work. Appropriate salary. Give full particulars. Herbert J. Rowse, F.R.I.B.A., Martins Bank Building, Liverpool, 2. 1432

SCHERRER & HICKS, FF.R.I.B.A., of 19, Cavendish Square, W.1, require TWO ASSISTANTS, of Intermediate standard, in January, 1951. Salary by arrangement. Museum 1106. 1379

ARCHITECTURAL DRAUGHTSMEN, up to Inter. R.I.B.A. standard, required. London area. Write, stating experience and salary, to Box 1364.

ARCHITECTURAL DRAUGHTSMAN required for detailing Masonry and Precast Concrete Units. Write, stating full particulars of experience, age, salary required, to Girlings Ferro-Concrete Co., Ltd., Rothwell, near Leeds. 1352

A COMPETENT SENIOR ASSISTANT required to take charge of Drawing Office in Victoria Street, Westminster. Must have experience of design from sketch plan stage to complete working drawings, and able to organise staff efficiently. Good opportunity and progressive position offered to person with suitable qualifications. Salary offered £700-£850 p.a. 5-day week. Reply Box 1388.

REQUIRED immediately experienced ARCHITECTURAL ASSISTANTS. High salary, according to ability. Five-day week. Knowledge of Industrial work an advantage. Apply Ley, Colbeck & Partners, FF.R.I.B.A., 51, Bishopsgate, E.C.2. Telephone: London Wall 2917. 1403

EXPERIENCED SENIOR ARCHITECT'S ASSISTANT required by large multiple firm. Very busy office in Birmingham. Good prospects for live and capable man. State age, experience and salary. Box 1407.

OLD-ESTABLISHED Firm of Consulting Civil Engineers have a number of vacancies for ARCHITECTURAL ASSISTANTS and DRAUGHTSMEN for general building work in connection with Generating Stations and a variety of industrial construction. Positions are of a permanent character, and opportunities for individual ability and initiative will be provided. A full scale Superannuation Scheme is in operation. Salaries will in the first place be in accordance with experience and qualifications, but will be under constant review for adjustment in accordance with proved ability. The majority of applicants will be interviewed, when full details of the character of the work will be explained. Travelling expenses, etc., for interviews will be refunded. Applicants are asked to send full details of experience, etc., and approximate salary required, to C. S. Allott & Son, North Parade, St. Mary's Parsonage, Manchester, 3. 1433

ARCHITECTURAL ASSISTANT, Intermediate standard, required. Knowledge of licensed house work an advantage. Full particulars and salary required to H. R. Robinson, L.R.I.B.A., Stroud Brewery Co., Ltd., Stroud, Glos. 1431

WEST END London Firm requires ARCHITECTURAL ASSISTANT, qualified R.I.B.A., with office experience in preparation tion of working drawings, preferably in connection with industrial building. Write, stating qualifications, etc., and salary required. Box 1430, or telephone Welbeck 8962.

ARCHITECTURAL ASSISTANT required, of R.I.C.S. or R.I.B.A. Inter. standard, by Chartered Surveyor in private practice on South Coast. Apply to Derek Bingley, A.R.I.C.S., Arcade Chambers, Littlehampton. 1413

QUALIFIED ASSISTANT ARCHITECT required. Must be good draughtsman and experienced in both working drawings and sketch plans. Apply, stating age, experience, and salary required, to T. P. Bennett & Son, 43, Bloomsbury Square, London, W.C.1. 1438

REQUIRED, at Company's Head Office, Guildford, ARCHITECTURAL ASSISTANT, R.I.B.A. Intermediate standard. Varied work, mainly factory. Five-day week. Salary by arrangement. Box 1445.

Architectural Appointments Wanted

A POSITION is required as ARCHITECTURAL ASSISTANT by Chartered Architect (Dist. in Thesis), 2 years' experience in contemporary work. Small office preferred. Box 45.

A R.I.B.A. (40) desires Senior position, with prospects, in London or Provinces. Please state approximate salary. Box 46.

JUNIOR ARCHITECTURAL ASSISTANT (21), moving to Manchester area, requires position. Two years' drawing office experience. Box 47.

ARCHITECTURAL ASSISTANT, with good experience of domestic work, etc., requires position, London. Box 48.

Other Appointments Vacant

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

ARCHITECTURAL METALWORK DETAILING DRAUGHTSMAN wanted; good wages and ideal working conditions. Apply: The Morris Singer Co., Ltd., Ferry Lane, Forest Road, Walthamstow, E.17. 3524

ARCHITECTURAL Metalworkers require a DESIGNER DRAUGHTSMAN of considerable merit; top salaried position for skilled man. Apply The Morris Singer Company, Hope House, Gt. Peter Street, Westminster, S.W.1. 3564

CLERK OF WORKS wanted immediately for erection of steel and brick stores buildings in the Falkirk Area, having wide knowledge of all building trades, steel erection, road construction, and site development.

Must be qualified and preferably be a holder of the National Certificate for Builders, a capable man able to measure work for interim certificates, and with at least 10 years' practical experience.

Write, stating age, qualifications and experience, salary expected for contract period of approximately eight months, to: South-East Scotland Electricity Board, Central Sub-Area, "Woodlands," St. Ninians Road, Stirling. 1429

A MAJOR Persian Gulf Oil Company requires (*a*) a QUANTITY SURVEYOR'S ASSISTANT, to be employed in the Persian Gulf. To have had at least 7 years' experience in a Quantity Surveyor's office, be capable of taking off, abstracting, billing, preparing estimates from drawings, measuring work on site, settling accounts and able to prepare small sub contracts and write specifications. Age under 35. Salary starting £630 p.a. clear, free messing and accommodation, kit allowance, pension scheme. (*b*) QUANTITY SURVEYOR'S ASSISTANT, for work in London office, but must be prepared to work abroad for periods of up to six months at a time. Will assist in taking off and checking quantities, quotations, materials lists, estimates, also follow up enquiries, orders, etc. Must possess at least National Certificate in building construction and have previous experience in a Quantity Surveyor's office. Age 22-28, salary minimum £350 p.a., but according to age and experience. Luncheon scheme, pension scheme. Write, giving brief details, and in case (*a*) quoting K.1133 and (*b*) LO.164, to Box "J.C.," c/o J. W. Vickers & Co., Ltd., 7/8, Great Winchester Street, London, E.C.2. 1415

Services Offered

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

ARCHITECTURAL MODELS and Dioramas. Edward J. Ashenden, A.R.C.A., 15, Chenil Studios, 183, Kings Road, S.W.3. Tel.: Flax 6103. 2566

MANUFACTURERS of exclusive hand-made Lampshades; architects' contracts carried out. J. & M. Beagley, 51, Great Ormond Street, London, W.C.1. CHAncery 8959. 2397

WINSTON WALKER, A.A.Dipl., F.R.I.B.A., Dipl.T.P., will be pleased to execute a limited number of Perspective Drawings for submission Royal Academy, 1951. Prices from 20 gns. For a small fee advice given on size of drawings, technique, viewpoint, etc., to Architects preparing own works for submission. 107, Sloane Street, S.W.1. SLOane 1410. 1387

R.I.B.A. Calculations of Simple Structural Members and Theory of Structures. Postal Tuition. Apply D. A. Fowler, Dip.Arch.(Abdn.), F.R.I.B.A., 22, Oakwell Mount, Leeds, 8. 1208

B.ARCH., A.R.I.B.A., aged 38, offers other Architects full time or occasional services at his own office in London, W.C.1. Box 1417.

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, guard rail, factory partitions and gates. Harvest Works, 99-107, St. Pauls Road, N.1. Canonbury 2061.

The Race Upholstery Unit will be pleased to report on and tender for your specialised upholstery requirements and repairs. 22, Union Road, Clapham, S.W.4. 4048

FLOORS OF DISTINCTION Laid; in wood, rubber, composition, cork, mosaic; existing floors repaired, resurfaced and polished; also panelling restored. Davis Floorings, Grove Hall Court, Hall Road, N.W.8. CUN. 3205/6 and 5616. 600

FENCING FOR ALL PURPOSES. Supplied and erected; established 100 years. PARKER, WINDER & ACHURCH, LTD., 80, Broad Street, Birmingham, 1.

ARCHITECT'S SMOCKS.—Natural colour high grade Irish linen, zip front, 37s. 6d., including P.T. State size. E. Ashcroft, 167, Oldham Road, Manchester, 4. 1381

BACHELOR FLAT, Hampstead.—Furnished. Contemporary. Near Heath. Terms reasonable. Will gentleman willing share write Box 1412.

ALWAYS available night or day, may we quote for that next job. Rylex Co., GRA. 2210, Electrical Contractors, Harold Road, London, E.13. 1410

Educational Announcements

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

R.I.B.A. EXAMS.—Mr. L. Stuart Stanley, M.A., F.R.I.B.A., M.T.P.I., Dist. in T.P. (Tutor in the Sch. of Arch. Lond. Univ.), prepares Students by correspondence tuition. 15, North Road, N.6. MOU. 8104.

MECHANIC'S SUBJECT, R.I.B.A.; Inter. and Final exams.; specially condensed, simple course for Students, 10s. per copy. Copies or details from 1, Rosapenna Drive, Belfast. 1411

Alphabetical Index to Advertisers

For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Educational, Legal Notices, Miscellaneous Property, Land and Sales, see lxxxix, xc, xci, xcii, xciii, xciv and xcv.

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 His Majesty The King, London, Hayes (Middx.), and High Wycombe.

ear.

D.