

# THE ARCHITECTS' JOURNAL



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

## Standard contents

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

## NEWS and COMMENT

Magical's Notes and Topics

## TECHNICAL SECTION

Information Sheets

Information Centre

Paint Technique

Working Details

Questions and Answers

Industry

## CURRENT BUILDING

or Buildings described:

Plans of Planning, Construction,

Prices and Costs

Buildings in the News

Building Costs Analysed

Architectural Appointments

Completed and Vacant

[389] [Vol. 131]

ARCHITECTURAL PRESS

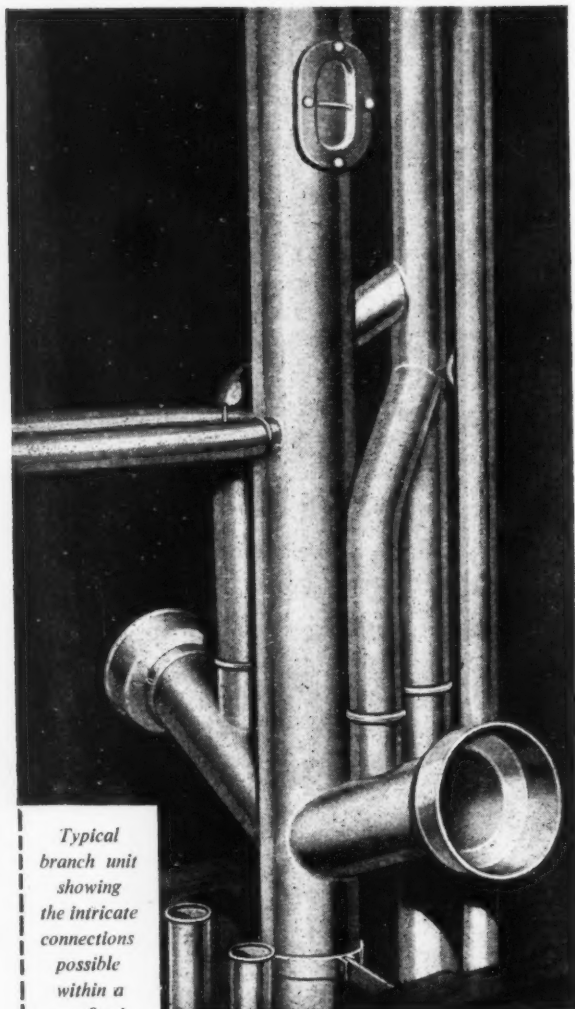
and 13, Queen Anne's Gate, Westminster,

'Phone: Whitehall 0611

Price 1s. 0d.

Registered as a Newspaper.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: J. H. Holden, College of Art, Cavendish Street, Manchester 15	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5533
ABT	Association of Building Technicians. 156, Waterloo Road, S.E.1.	Waterloo 5427
ACGB	Arts Council of Great Britain. 4, St. James's Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 5861
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BC	Building Centre, 26, Store Street, Tottenham Court Road, W.C.1	Museum 5400
BCC	British Colour Council. 13, Portland Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BE	Building Exhibition. 11, Manchester Square, W.1.	Hunter 1951
BEDA	British Electrical Development Association, 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, A.R.I.B.A., Borough Architect and Director of Housing, Town Hall, High Holborn, W.C.1.	Holborn 3411
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), Stafford House, Norfolk Street, W.C.2.	Covent Garden 3008
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 33, John Street, W.C.1. Tel.: Chancery 7583 (6 lines)	
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
LAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers, 37, Soho Square, W.1.	Gerrard 5056



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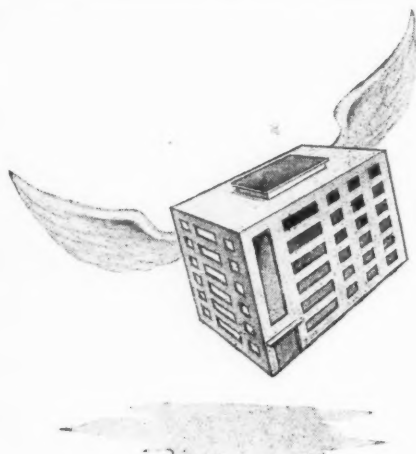
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Photographs: by courtesy of the  
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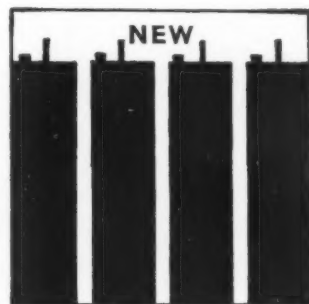
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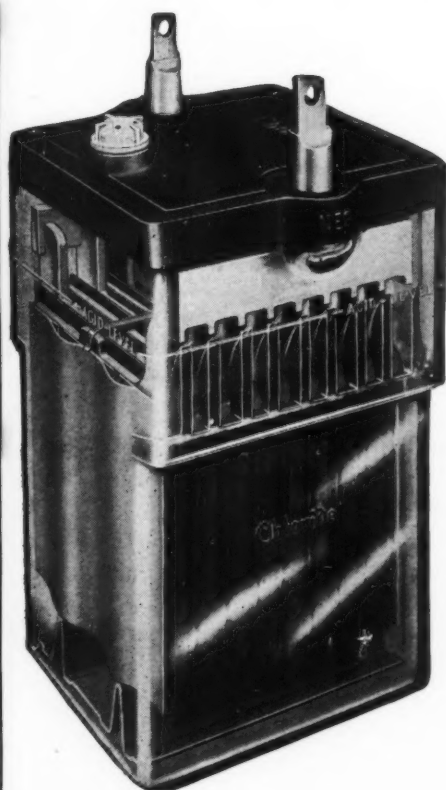
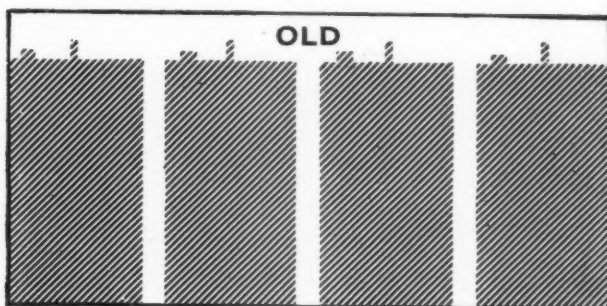


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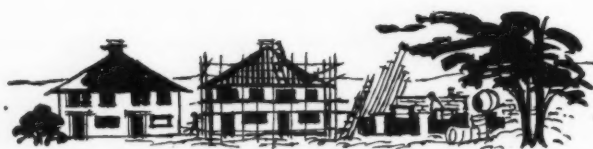
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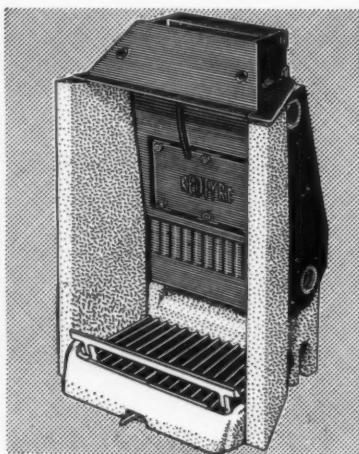
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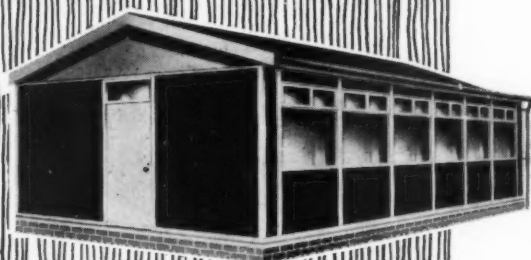
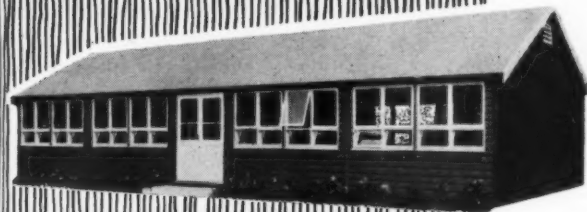
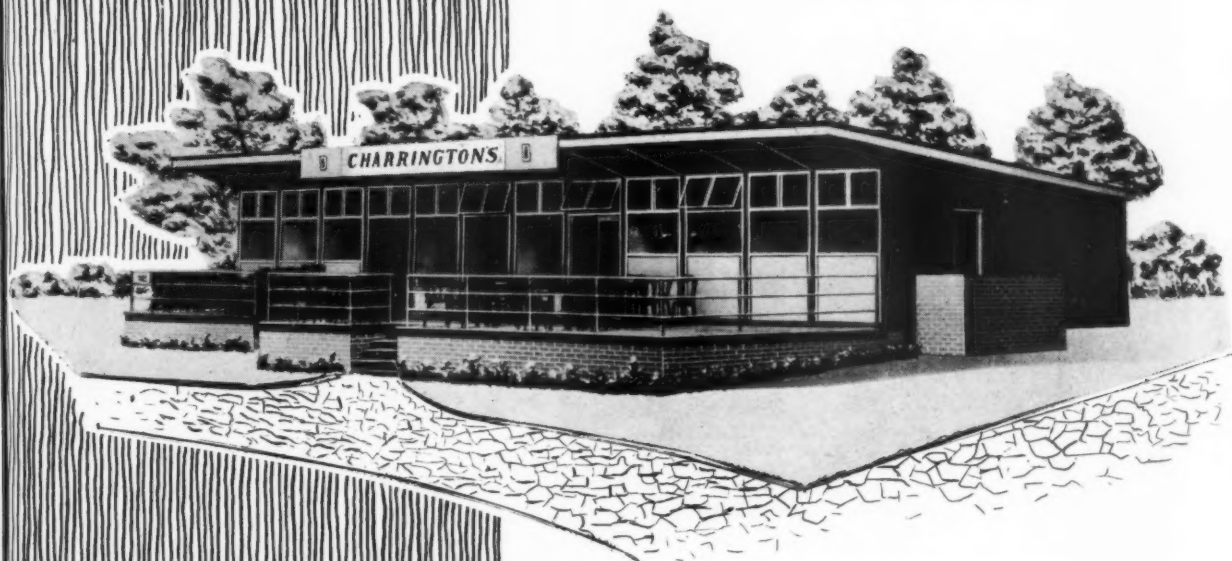
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Architects: Montagu Evans & Son*



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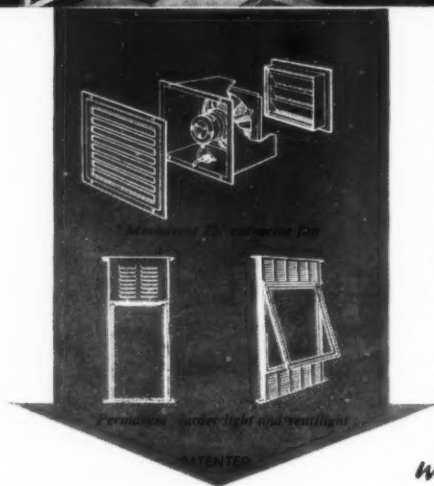


(above) 'The Cricketers,' Woodford—Architect: C. P. Sapin, (Chief Architect)  
McMullen & Son, Ltd  
(left) photograph by courtesy of Turner and Kitching A/A.R.I.B.A., Gravesend

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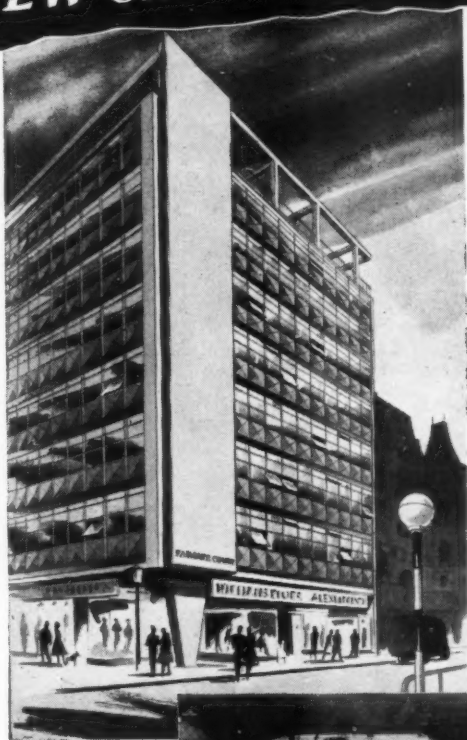
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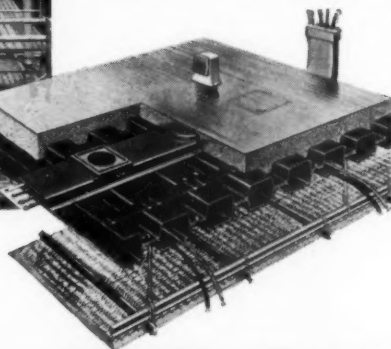
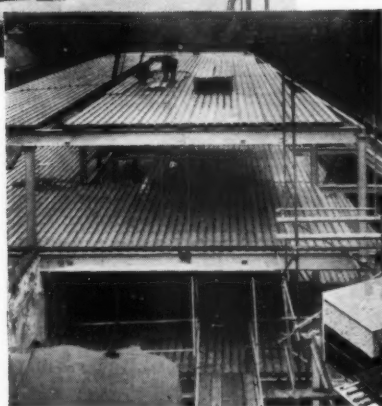
The first phase of a new super block of shops and offices in Fargate, Sheffield, for The United Drapery Stores Group, will shortly be completed. Robertson Q-Floor forms the load-bearing floor on each of the two storeys under construction. It is also specified for the remaining five storeys to be built under phase two of the development.

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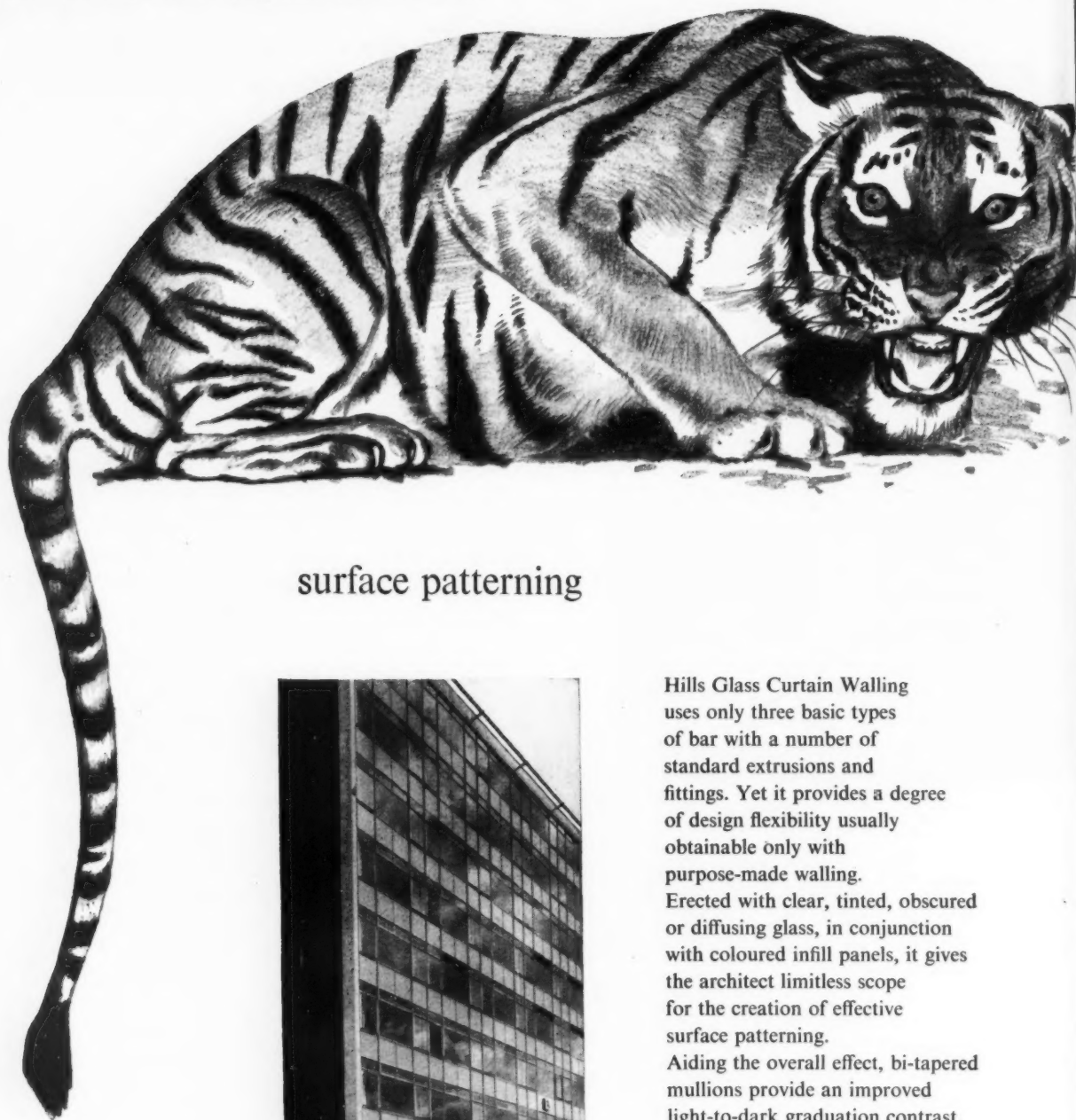


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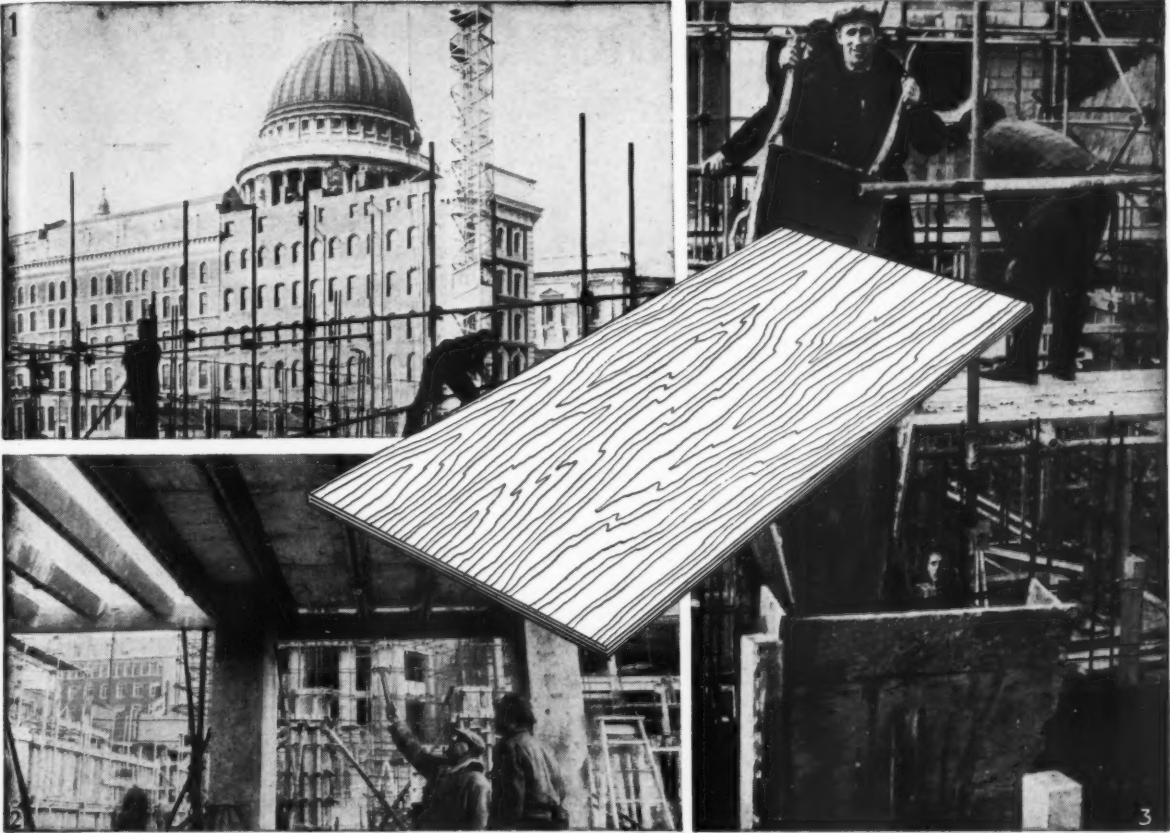
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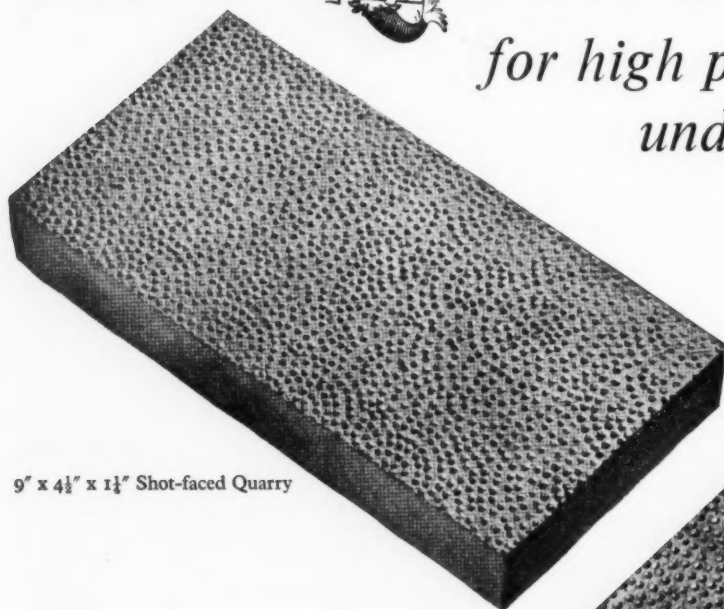
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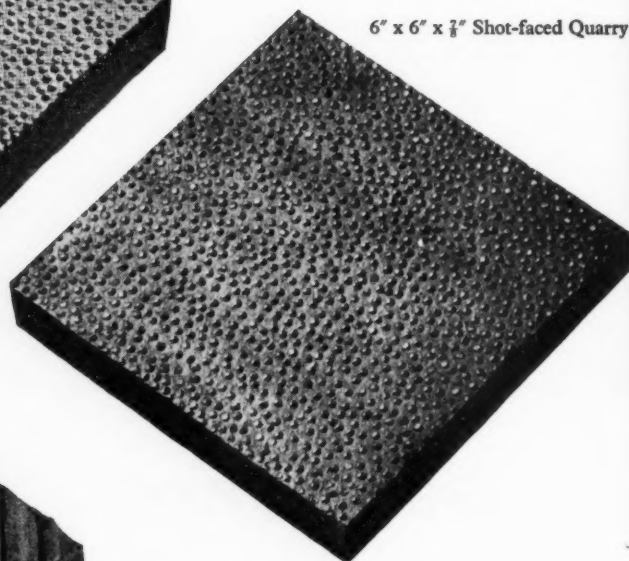
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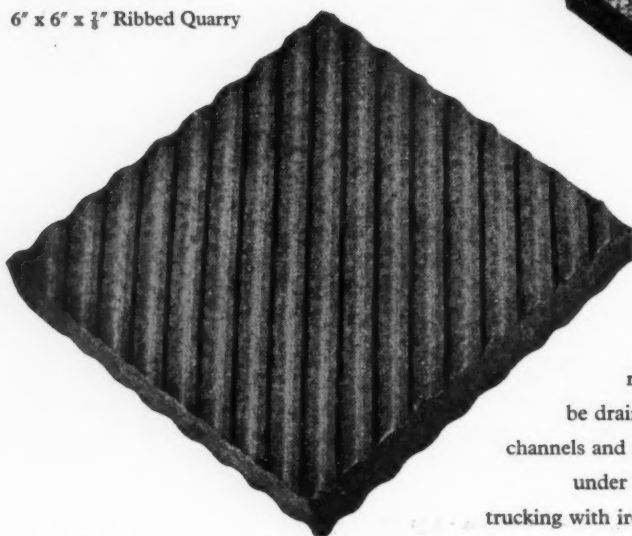
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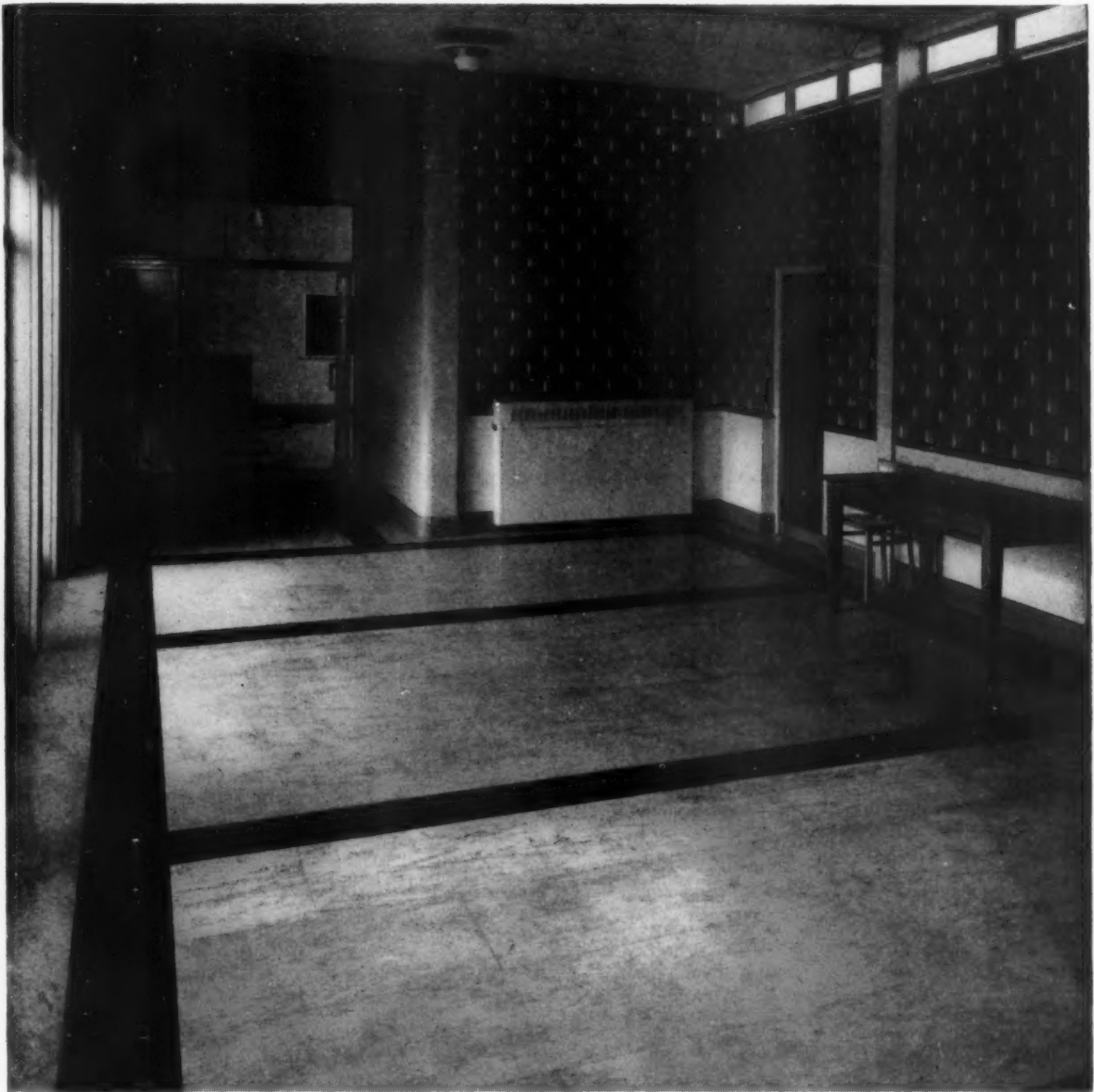
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WH96





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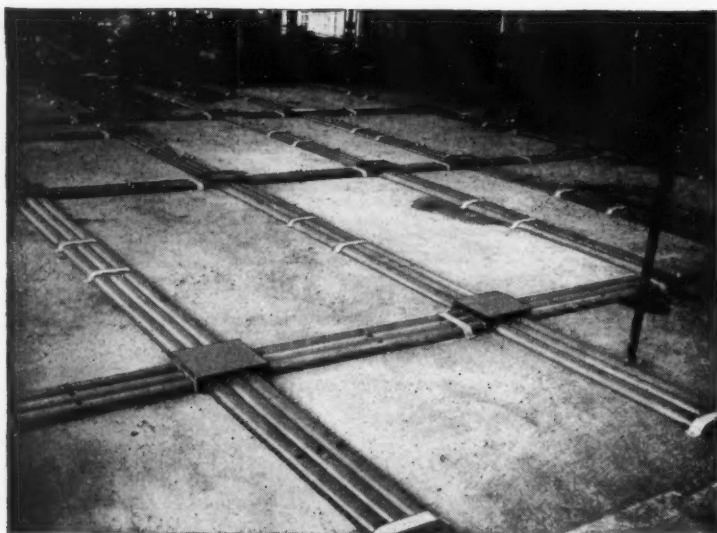


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## UNDERFLOOR DUCT

for the new **Daily Mirror** building



### **SOLVES ALL PRESENT AND FUTURE ELECTRICAL DISTRIBUTION PROBLEMS**

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**NEW SKIRTING DUCT** can be used where the installation of underfloor ducting alone would be impracticable, extending still further its convenience and flexibility.

**NEW DADO DUCT** is similar to skirting duct and is designed for use at desk height. These two systems and underfloor ducting itself can be used alone or in conjunction with one another in both new and existing buildings.



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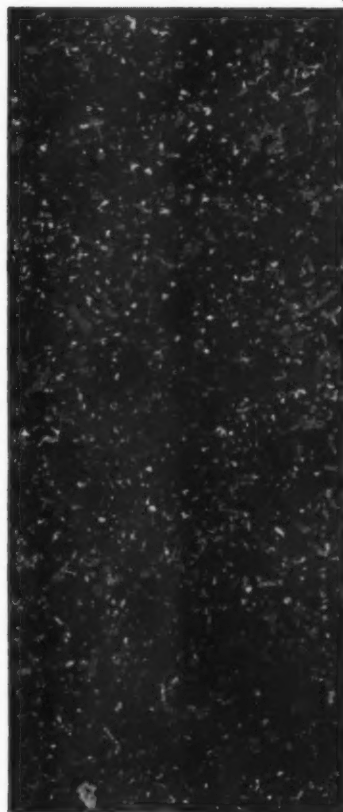
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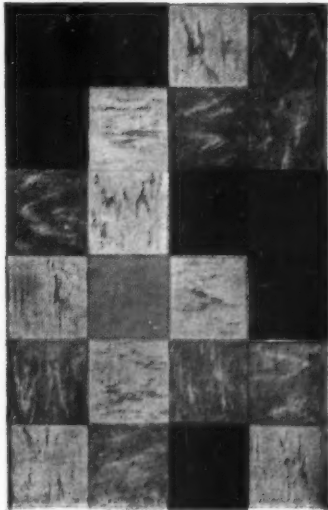
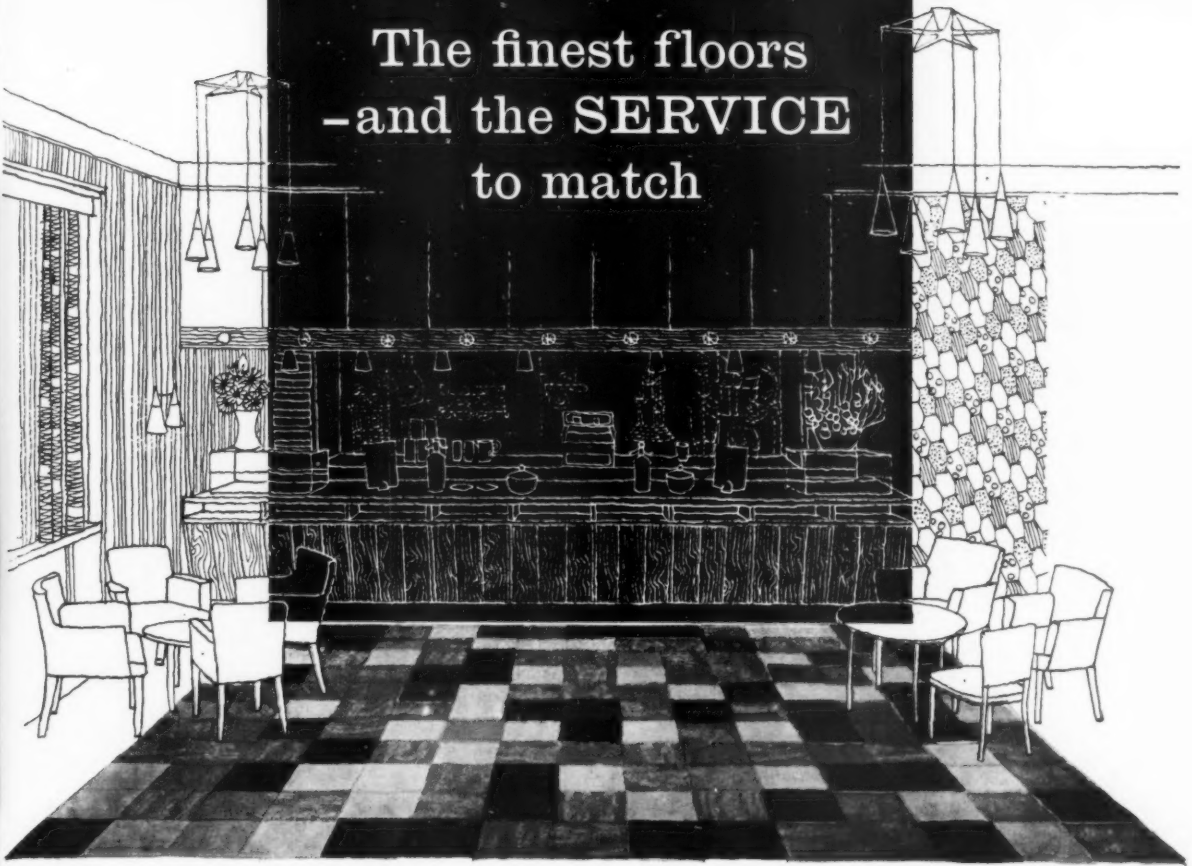
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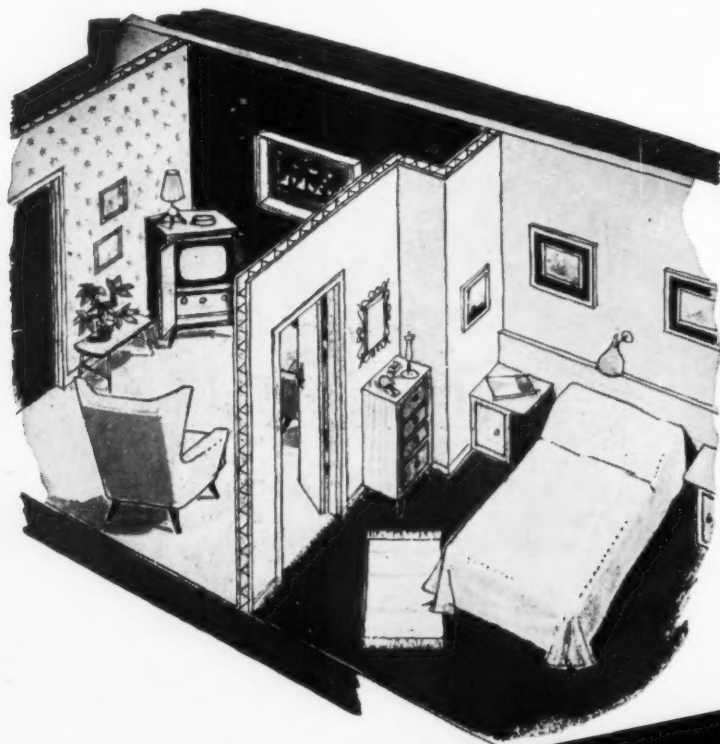
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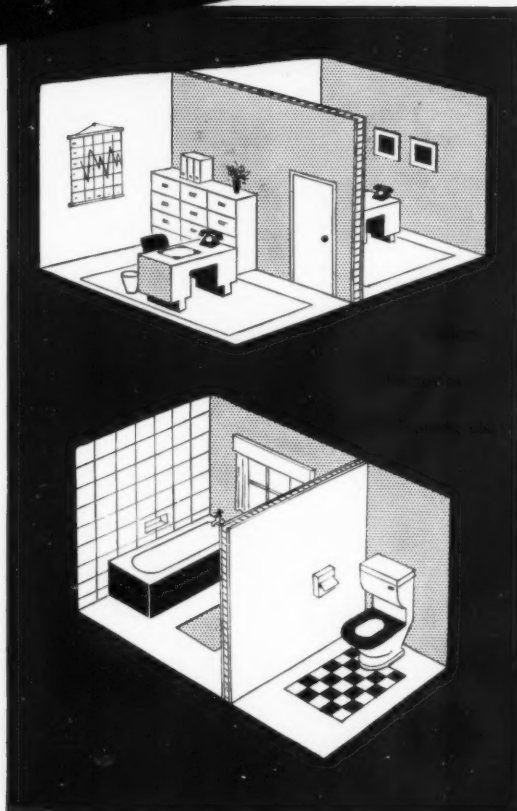
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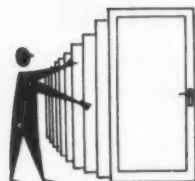
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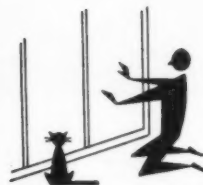
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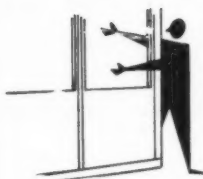
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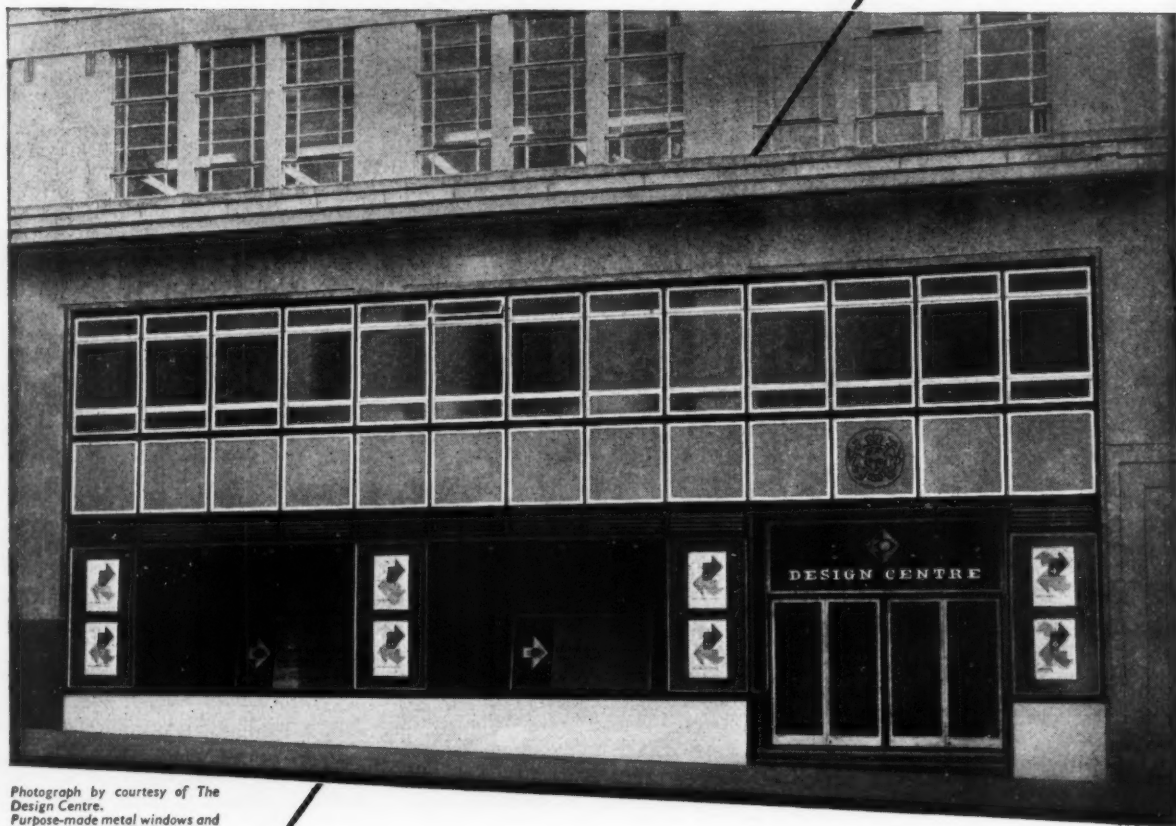
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Purpose-made metal windows and doors by A. Beanes & Co., Ltd.

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## CARTER

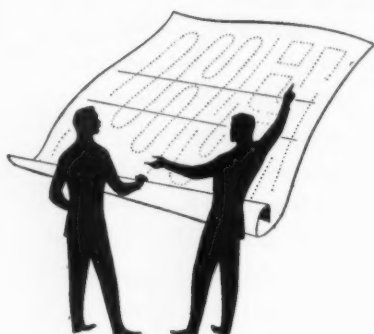
Most people know that pottery and tiles are made at Poole. Not so many people know that other things are also made there—for instance, those distinctive blue and white commemorative plaques which the L.C.C. fixes on old London houses where famous people have lived. Here is one well begun with its dividing lines of slip. Many other kinds of time-defying plaque are also made at Poole, such as medallions and shields of faience, large or small, moulded or modelled, coloured by hand and finally glazed—perhaps to focus the eye by heraldry on the new municipal entrance in the City of Lower Hutt, New Zealand, or to mark the spot where London's first theatre was built in Curtain Road, Shoreditch. This, as "*The Guardian*" once called it in an article, is the Art of Plaquemanship, creative, skilled and specialised.

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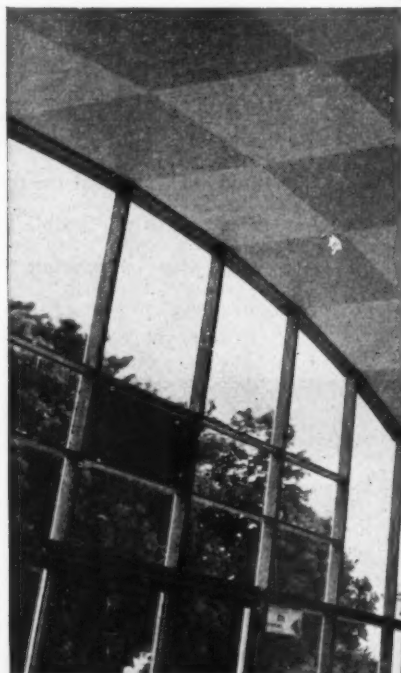
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Architect and Designer: John Amor, A.R.I.B.A.  
Structural Consultant: Eric Catchpole, A.M.I.Struct.E.  
Constructors: Stressed Skin Structures Ltd, Edmonton, N.18.

## Aerolite

*Aerolite and Aerodux are registered trade names*

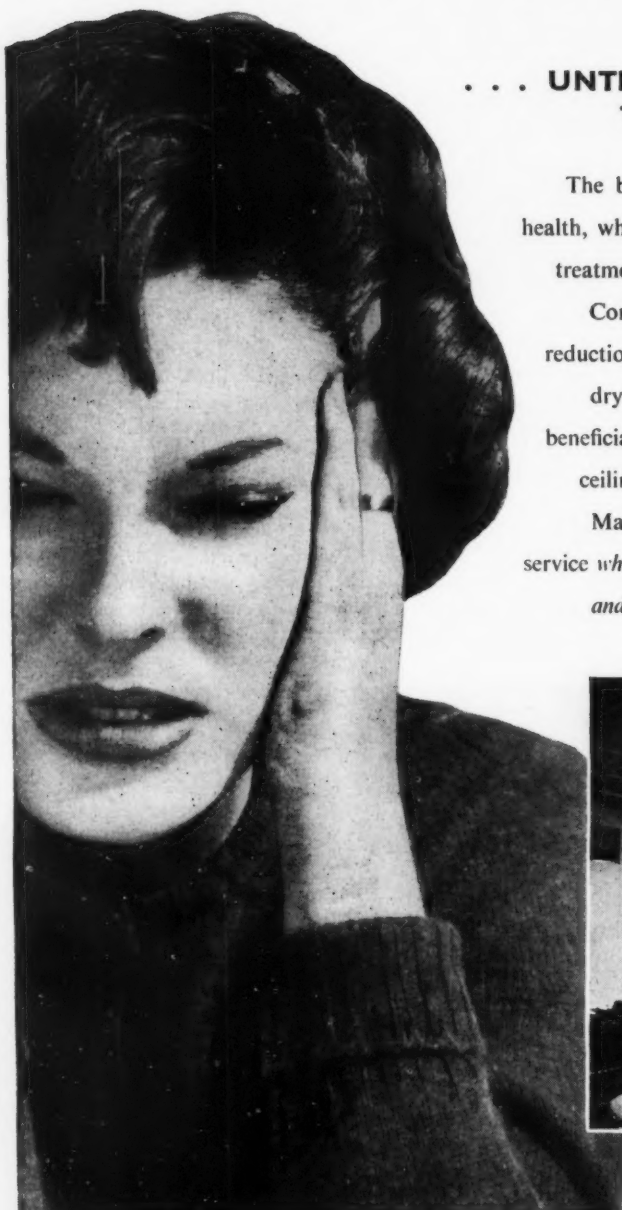
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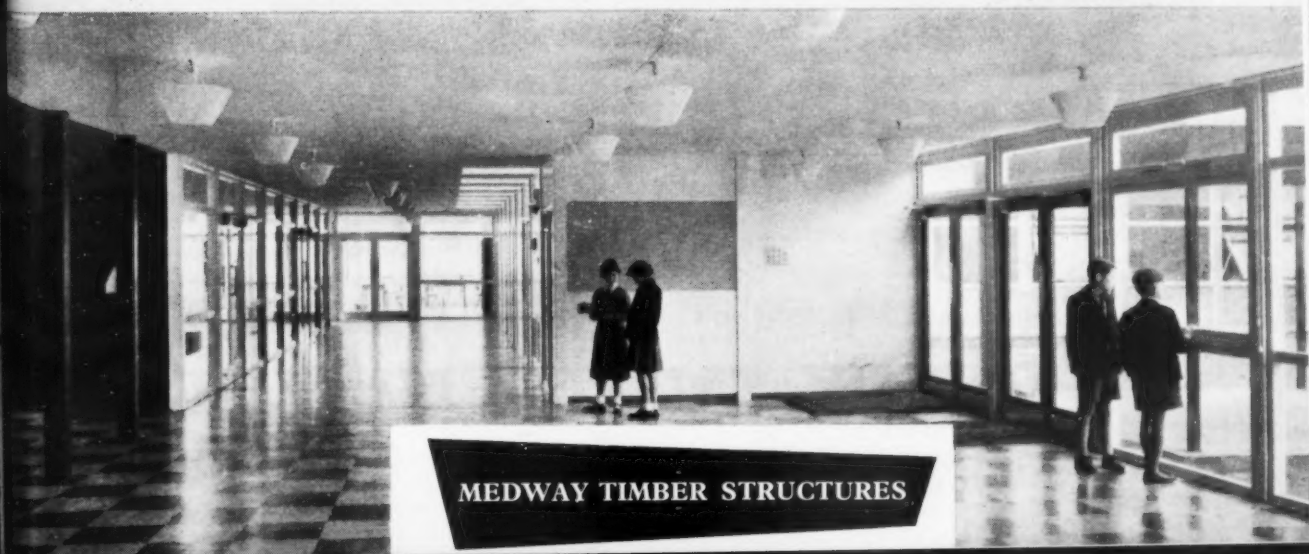




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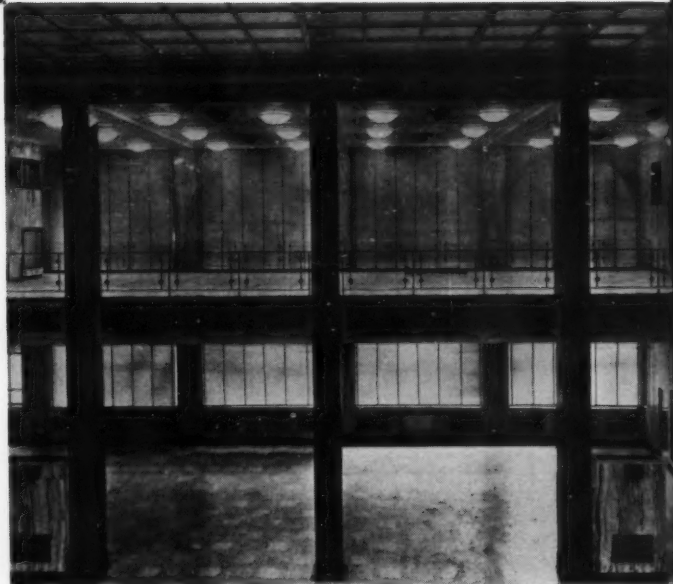
Sunway Skylight Blinds fitted to glass roof of office.



Sunway Standard Blind fitted with invisible Terylene Tapes.



Sunway Blinds with electrical control are Al at Lloyds.



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Specially designed for horizontal and sloping roof lights and floating ceilings. They are a fixed, non-retractable installation with a variable slat adjustment and fitted with a versatile electrical hydraulic or mechanical remote control. (Runs up to 100 feet can be controlled from a single point). They can be instantly adjusted to changing light and heat conditions and eliminate cost of seasonal treating of roof lights.

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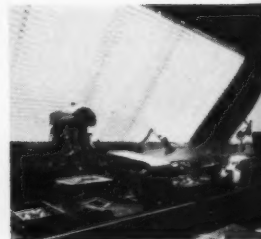
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Sunway Standard Blind fitted with cotton canvas tapes.

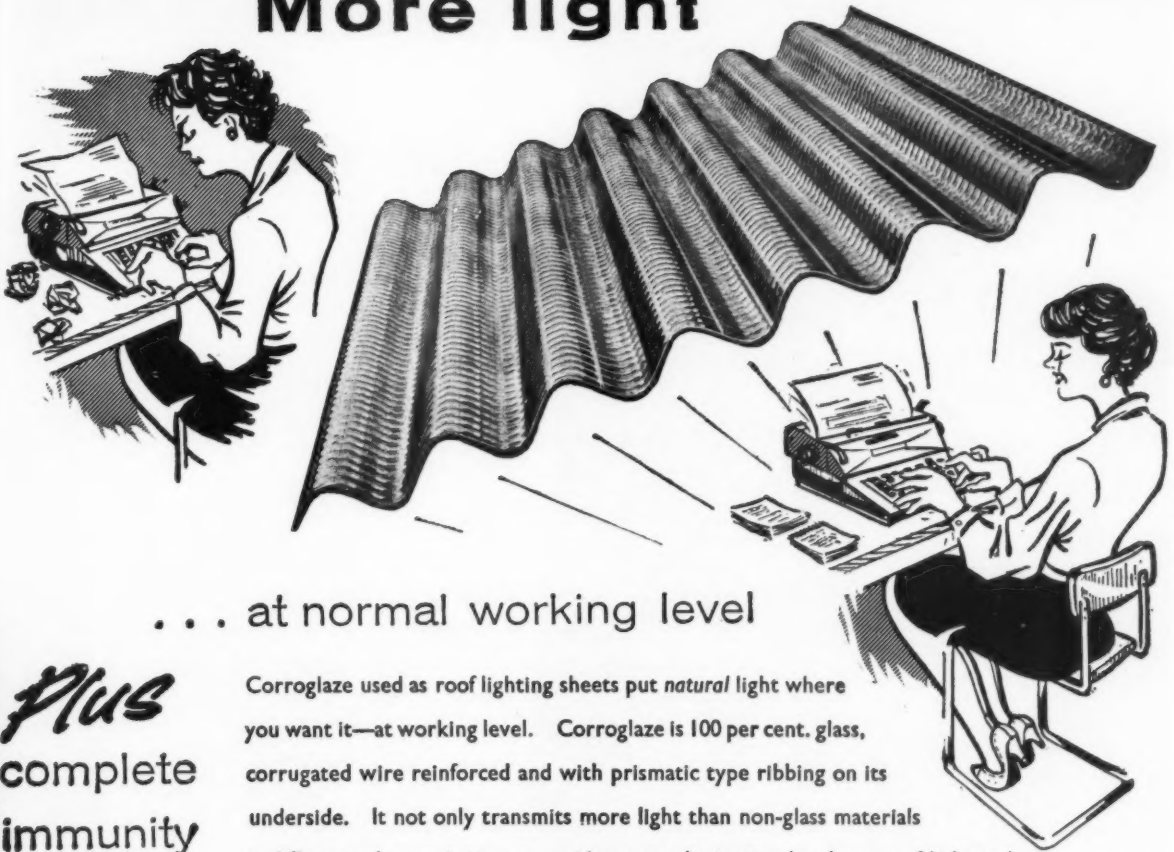


Sunway Skylight Blinds fitted to factory inclined roof light.

Full details and colour charts contained in descriptive folder. Specimen slats and tapes (invisible Terylene, cotton canvas or plasticised) gladly sent on request.



## More light

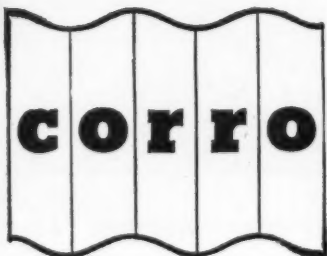


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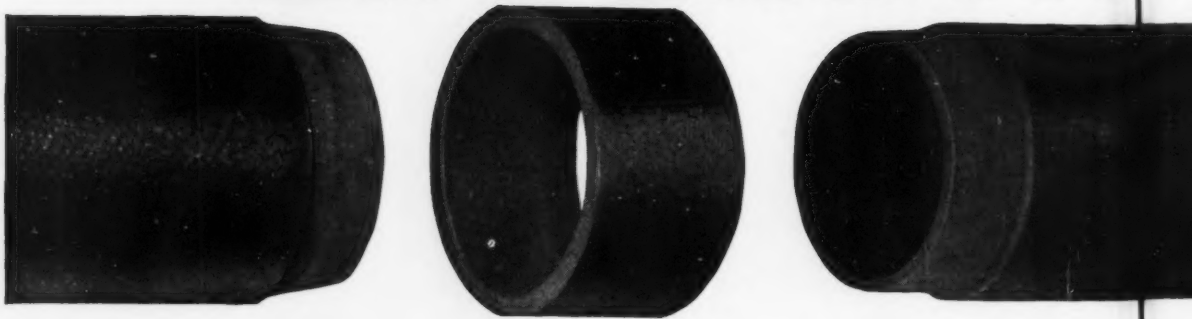
For every specialised requirement in sealing and joint-filling Expandite can provide a product that will solve the specific problem. The Expandite Technical Service Department is ready not only to recommend to Architects, Builders and Civil Engineers on how best to use the many Expandite products that are available, but also to offer advice — without any obligation — on any problem concerning 'joints-that-move'.

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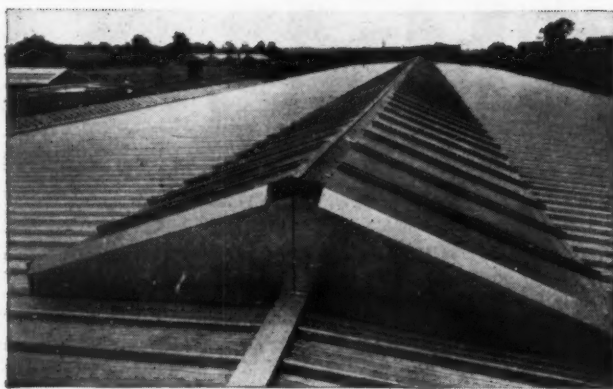
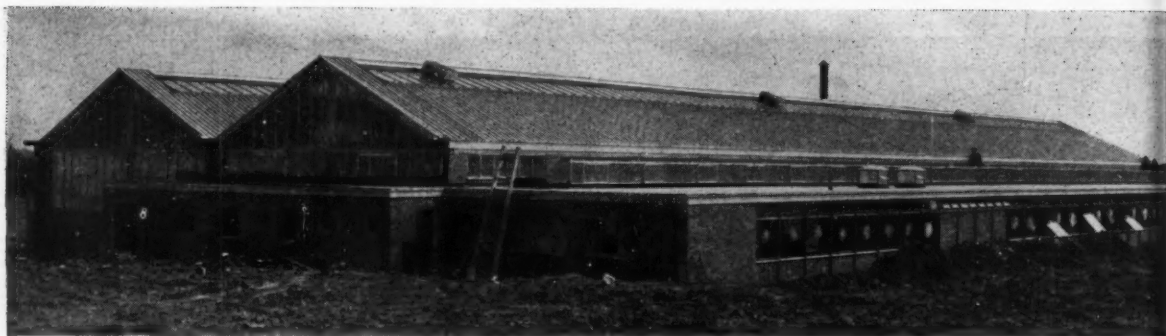
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Fixing Contractors: Messrs Rudders & Paynes Ltd.

# SNAPDEK

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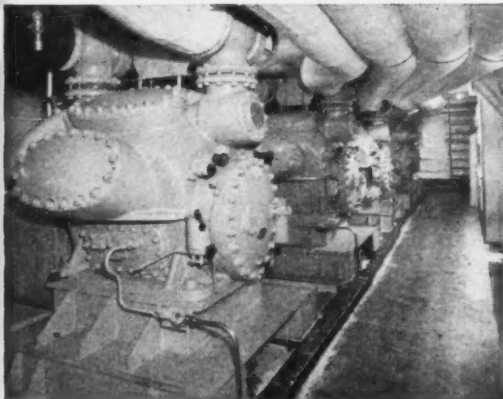
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This is an exceptionally high quality enamel for interior use. It gives a true 'eggshell' sheen with a toughness and durability that withstands frequent washing. Gaymel Eggshell Enamel has a semi-paste consistency and can be applied coat on coat – without a separate undercoat – by brush, roller or spray. It is available from stock in 36 intermixable colours selected from Gay's Architect's Range. For really top class results, with less time and labour, specify GAYMEL EGGSHELL ENAMEL, another sound paint by Gay's.



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- ★ FLAT OR PITCHED ROOFS



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# ADDITIONS

# TO THE



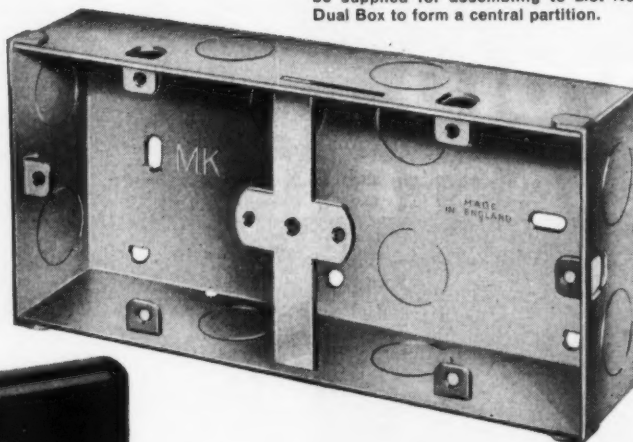
# RANGE

## DUAL BOX

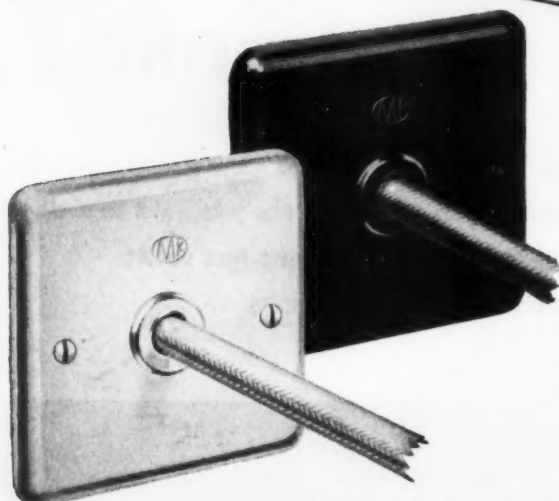
LIST No. 887

A new Box, for flush mounting, designed to accommodate side by side any two M.K. accessories which have plates  $3\frac{1}{2}$ " x  $3\frac{1}{2}$ " and two 4 B.A. fixing holes on 2 $\frac{1}{2}$ " centres. For example, a Fused Spur-Switch and a Socket-Outlet can be combined in the one box. Many other combinations are of course possible.

Twelve  $\frac{3}{4}$ " conduit knockouts are provided.



Where it is necessary to separate phases or services—Dividing Screen List No. 888 can be supplied for assembling to List No. 887 Dual Box to form a central partition.



## FLEX-OUTLET PLATE

LIST No. 990

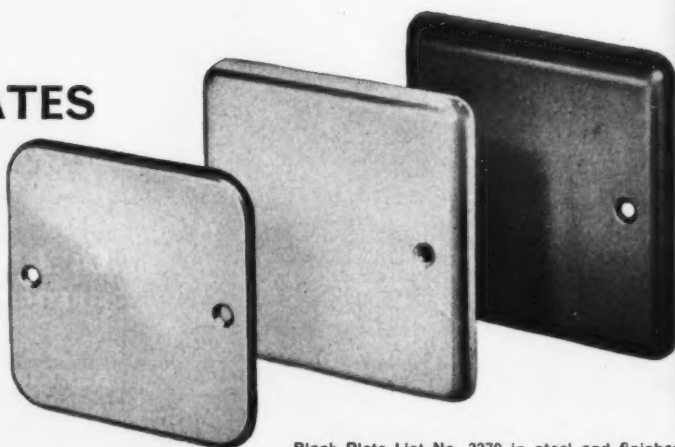
A moulded plate having a central  $\frac{7}{16}$ " diameter aperture for the outlet of a flexible cord. On the underside there is a variable flex grip to securely anchor the flexible cord. There are E. L. & N. terminals of heavy and robust design for the conductors of the flexible cord and also for the wiring cables.

Moulded in Brown or Ivory.

## BLANK PLATES

A range of Blank Plates for covering and sealing-off boxes made to BS. 1299 or BS. 1363 and which are flush mounted. Dimensions are  $3\frac{1}{2}$ " x  $3\frac{1}{2}$ " and corners are rounded to match the styling of M.K. flush accessories which have this size of plate. Two 4 B.A. fixing holes are provided on 2 $\frac{1}{2}$ " centres. List No. 3330 is solid brass finished B.M.A. or Matt Chrome. List No. 3830 Insulated is moulded in

Brown or Ivory.



Blank Plate List No. 3370 in steel and finished Aluminium Stove Enamel is 3" x 3" and suitably shaped to form a lid for M.K. Steel Box List No. 891 when surface mounted.



We shall be delighted to see you at the A.S.E.E. Stand D5 Ground floor

**this sign sells houses**

You can offer decay and insect proofed 'Tanalised' timber as an optional extra in your houses. Being vacuum pressure impregnated it promises your customers life-long freedom from maintenance costs due to Dry Rot, Woodworm, etc. in joists, flooring and roof timbers. 'Tanalised' timber is ideal for house building, being clean, non-oily and odourless. Join the builders who already . . .



**'Tanalised' Timber**

**in this house will  
not be attacked by  
ROT or INSECTS**

As an optional extra the joists, flooring and roofing timbers in these houses can be vacuum/pressure impregnated with 'Tanalised' C preservative before installation. The treatment is clean and odourless and gives full protection against fungal decay (dry and wet rot) and damage by insect grubs (woodworm, longhorn, etc.)

HICKSON'S TIMBER IMPREGNATION CO. (G.B.) LTD.  
Castleford, Yorkshire. Tel. Castleford 3887.



**sell more houses with**

**'Tanalised' Timber**

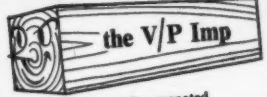
May we quote the small extra cost of using 'Tanalised' timber in your houses? Treatment plants are situated at 38 strategic points and most of them are in timber merchants' yards.

**HICKSON'S TIMBER IMPREGNATION CO. (G.B.) LTD.**

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and at 8 Buckingham Palace Gardens, London, S.W.1.

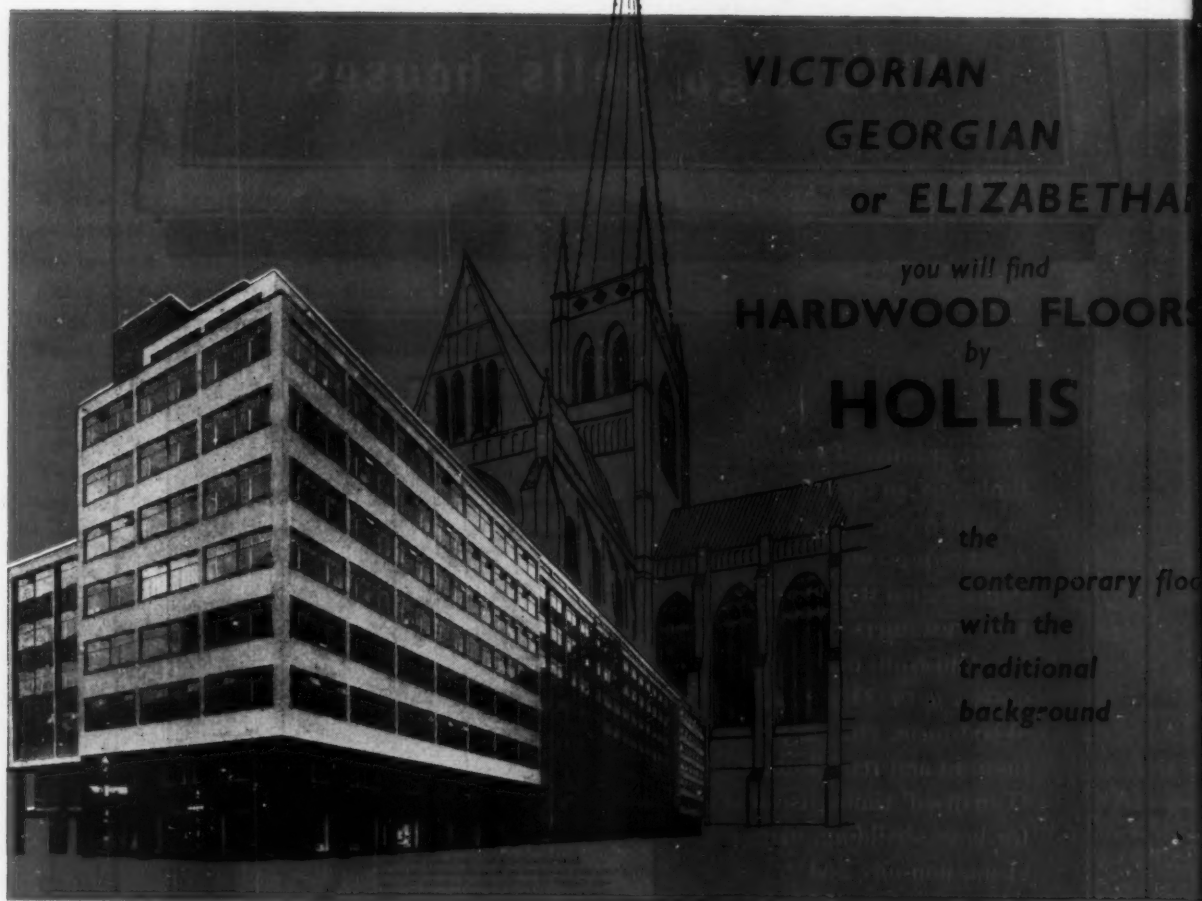
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for the longest life**

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modern... or traditional



VICTORIAN  
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you will find  
HARDWOOD FLOORS  
by  
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the  
contemporary floor  
with the  
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THE PHOTOGRAPH is of 105 Wigmore Street, London W  
and is by courtesy of the Architect, C.H. Elsom, F.R.I.B.A.

Floors of Hardwood still reign supreme. No other floor finish  
combines the attributes of Beauty, Durability and Comfort to the tread  
to anything like the same degree.

WOODBLOCK  
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**SPECIFY MADE IN ENGLAND** to ensure precision in manufacture, controlled moisture content and stability of the floor



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# new!

a plastic trap joins  
the range of well-known

## GREVAK

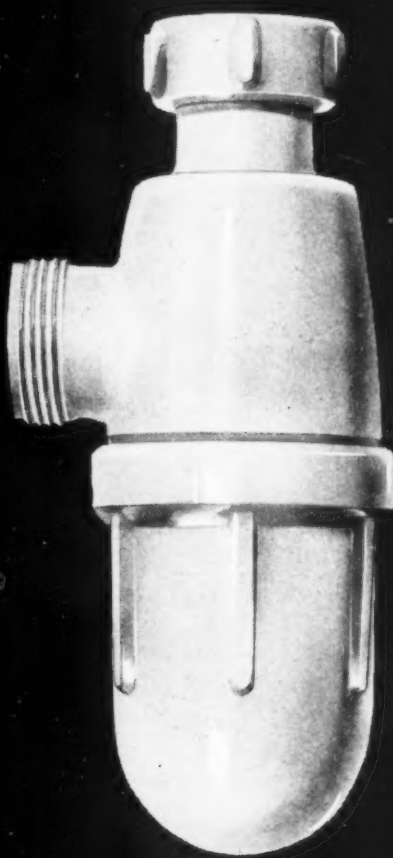
ANTI-SIPHON TRAPS

**"MONITOR"**

(Patent)

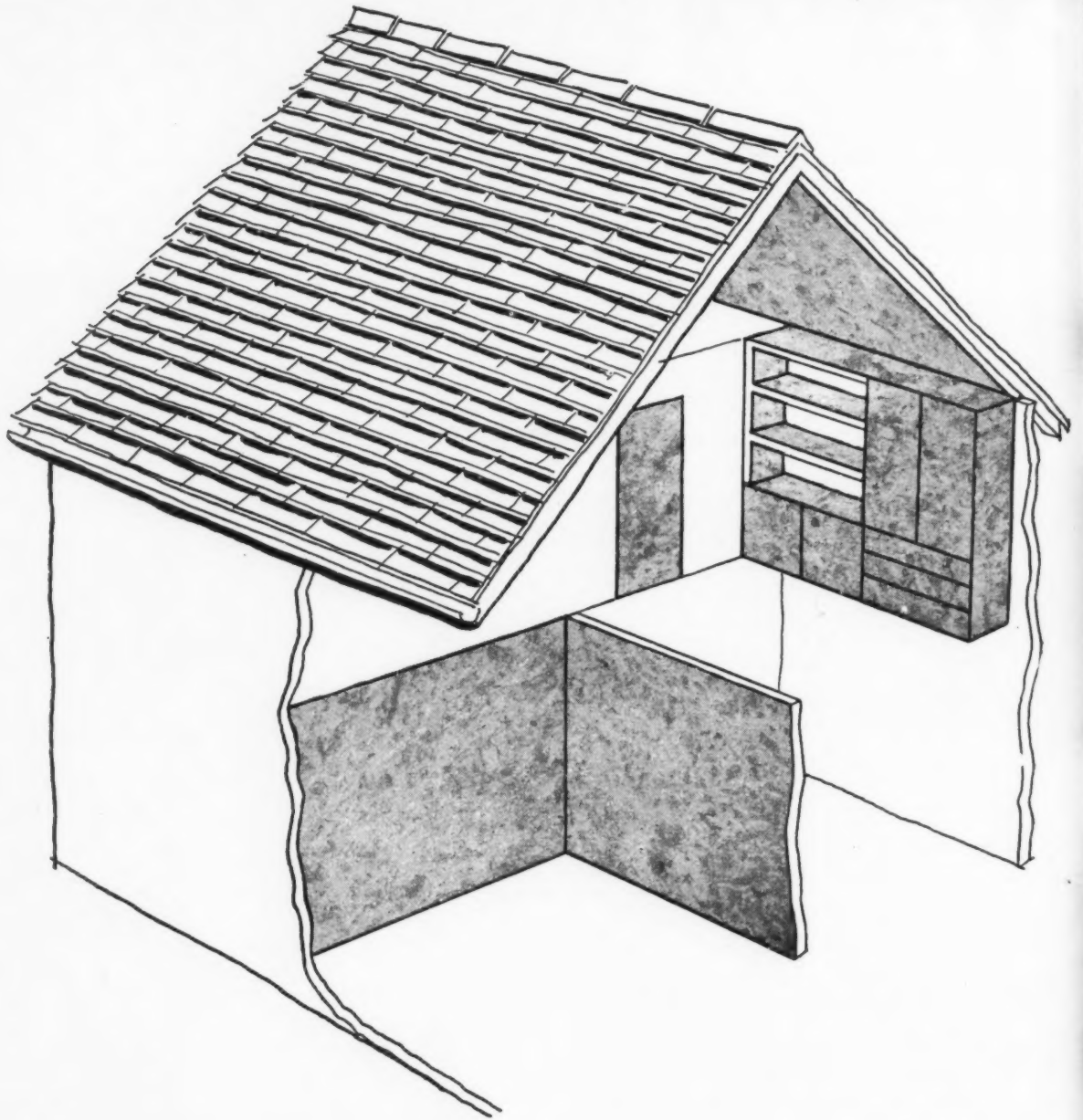
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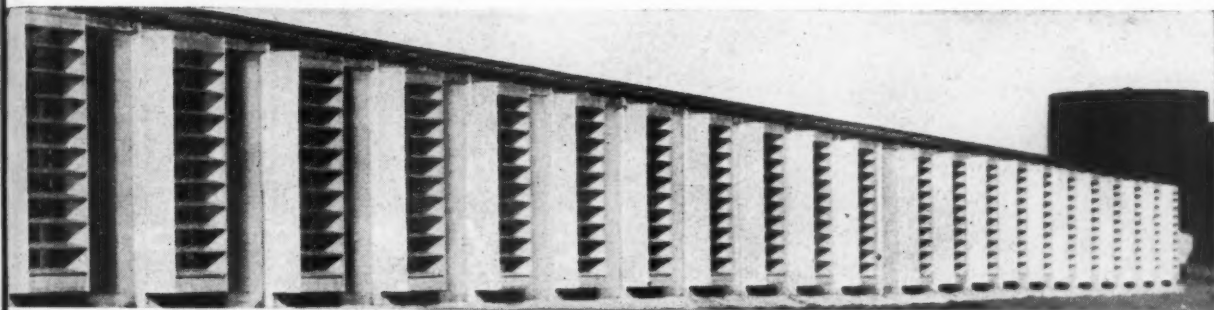


*Whatever the weather—*

Ventilators and louvres designed by Templewood Hawksley provide maximum, trouble-free efficiency in a wide variety of buildings. Economical and simple to install, they make for easy maintenance, and are the complete answer to all standard ventilation problems.

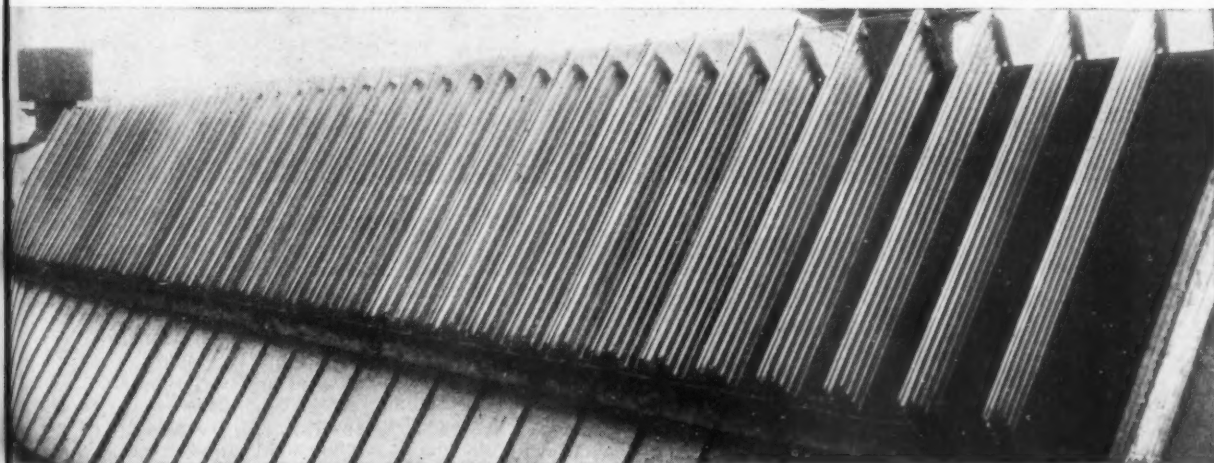


# VENTILATORS



Vertical Louvres. Photo by courtesy of High Duty Alloys, Redditch.

**practical - weathertight closure - precision-engineered**



Slating Shutters. Photo by courtesy of Qualcast Ltd., Derby.

Roof Slope and Vertical Louvres  
Continuous Ridge Ventilators  
Cowl Extractors  
Natural and Fan-assisted Ventilators  
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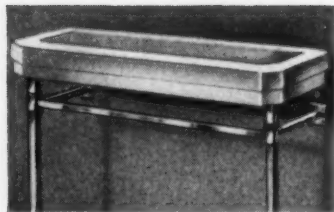
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**MEMBER OF HAWKER SIDDELEY INDUSTRIES LTD.**

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## What goes on in ROOM 504 ?



# fireclay

SANITARY FIRECLAY  
TECHNICAL BUREAU

57 GREAT GEORGE ST. LEEDS 1

A hotel room is a source of income to someone. It is imperative, therefore, that room 504 is available for constant use and will remain so. This can depend upon a number of factors. Take the sanitary installations, for instance. Should replacements become necessary the cost of installing new ware can be twice that of the ware itself, not to mention the loss of revenue and inconvenience. But that's where Ceramic **Glazed Fireclay** comes in. When you specify Ceramic **Glazed Fireclay Sanitary Ware**, not only for hotels but for any other public building, you automatically specify *permanence*. The permanence of strength, solidity, sturdiness, reliability and dependability. It's as simple as that!

*A fully illustrated booklet, published in the interest of more and better hygiene and sanitation is available on request.*

SPECIFY SANITARY FIRECLAY WARE FOR **PERMANENT** SATISFACTION

*For roof waterproofing*—provides a firmly-adhered, flexible and impervious coating. Applied cold and reinforced to withstand normal movement. Simple to apply and satisfactory in any climate.

*For industrial floor surfacing*—Flintkote floors are ideal for tough traffic conditions; remarkable wear resistance and durability, dustless, non-slip, self healing, applied cold.

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*For protection of iron and steelwork*—gives lasting protection, inside or out.

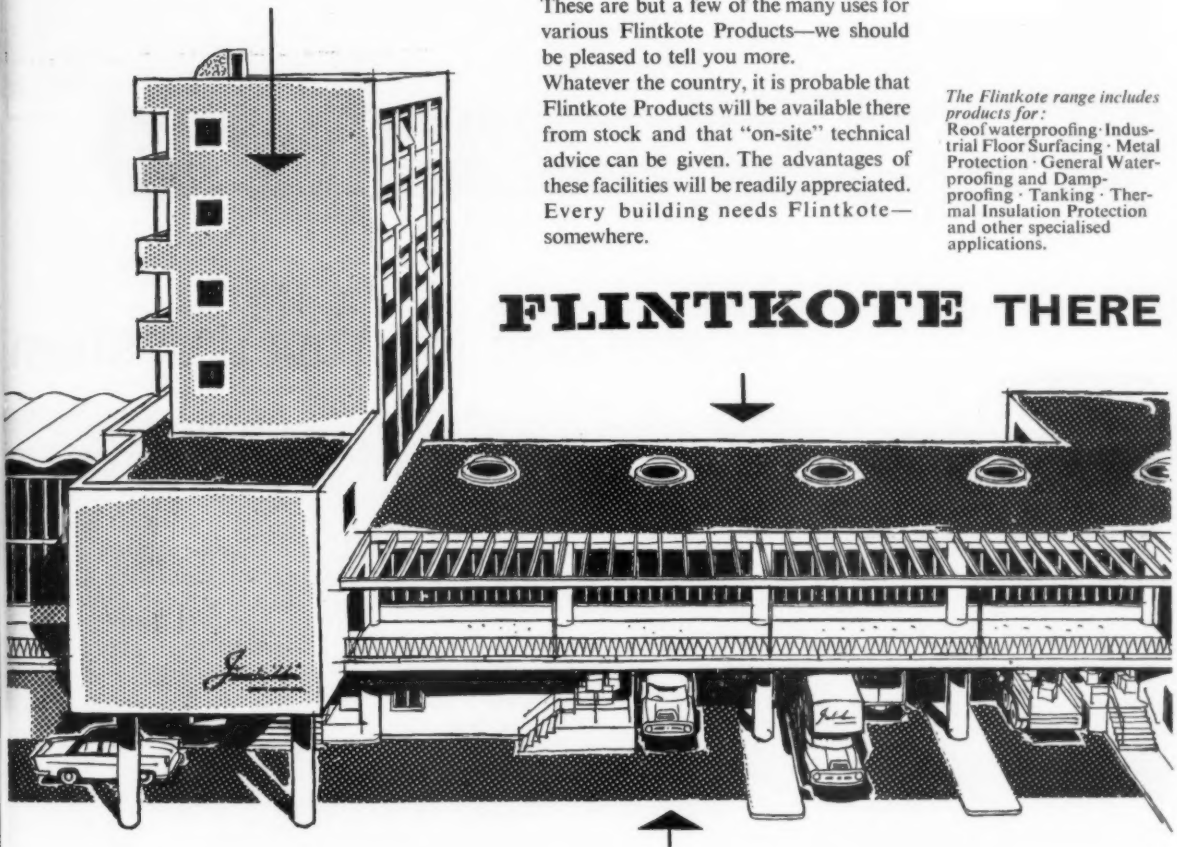
## FLINTKOTE HERE

These are but a few of the many uses for various Flintkote Products—we should be pleased to tell you more.

Whatever the country, it is probable that Flintkote Products will be available there from stock and that "on-site" technical advice can be given. The advantages of these facilities will be readily appreciated. Every building needs Flintkote—somewhere.

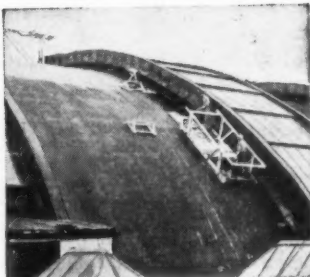
*The Flintkote range includes products for:*  
Roof waterproofing · Industrial Floor Surfacing · Metal Protection · General Waterproofing and Damp-proofing · Tanking · Thermal Insulation Protection and other specialised applications.

## FLINTKOTE THERE



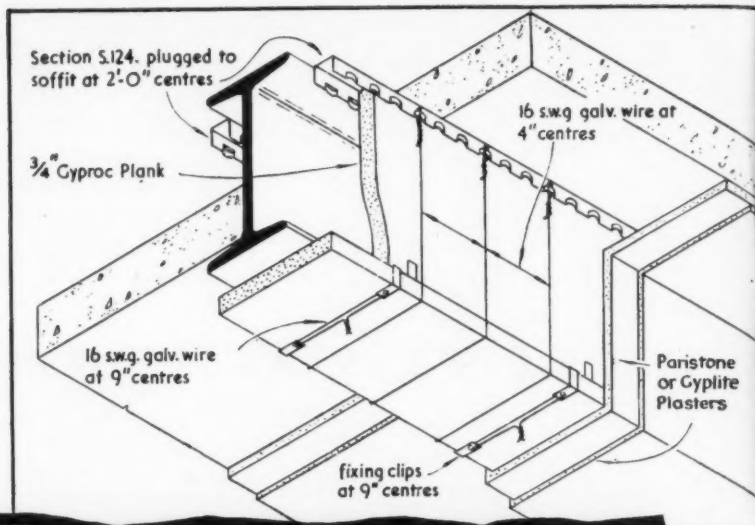
# ... FLINTKOTE REGD ALMOST EVERYWHERE

Large garage for buses and cars belonging to OSLO SPORVEIER, where 2,500 square metres of roof have been treated with Flintkote material since 1958. The remaining areas are to be treated later.



**THE FLINTKOTE COMPANY LIMITED**  
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A new and improved system  
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**GYPROC** products include:

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Literature is readily available on any or all of these products.

with fire resistance ratings

from 1½ hour to 4 hours

Bear in mind that although steelwork is incombustible, it is an extremely vulnerable part of the structure during a fire unless suitably protected. For example a steel column under design load will fail in about eleven minutes when tested for fire resistance in accordance with B.S.476.

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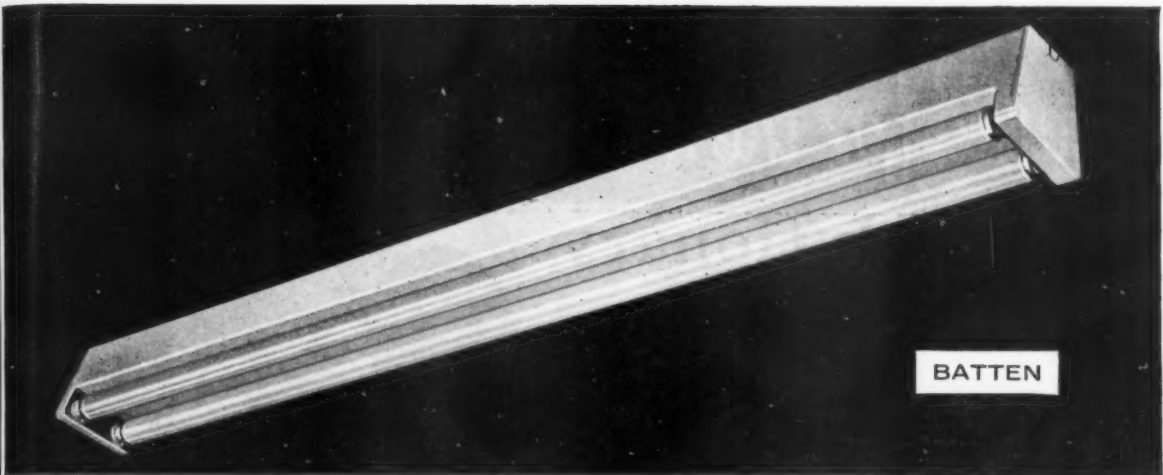
Midland Office: 11 Musters Road, West Bridgford, Nottingham. Nottingham 82101

London Office: Bath House, 82 Piccadilly, London W.1. Grosvenor 4617/9

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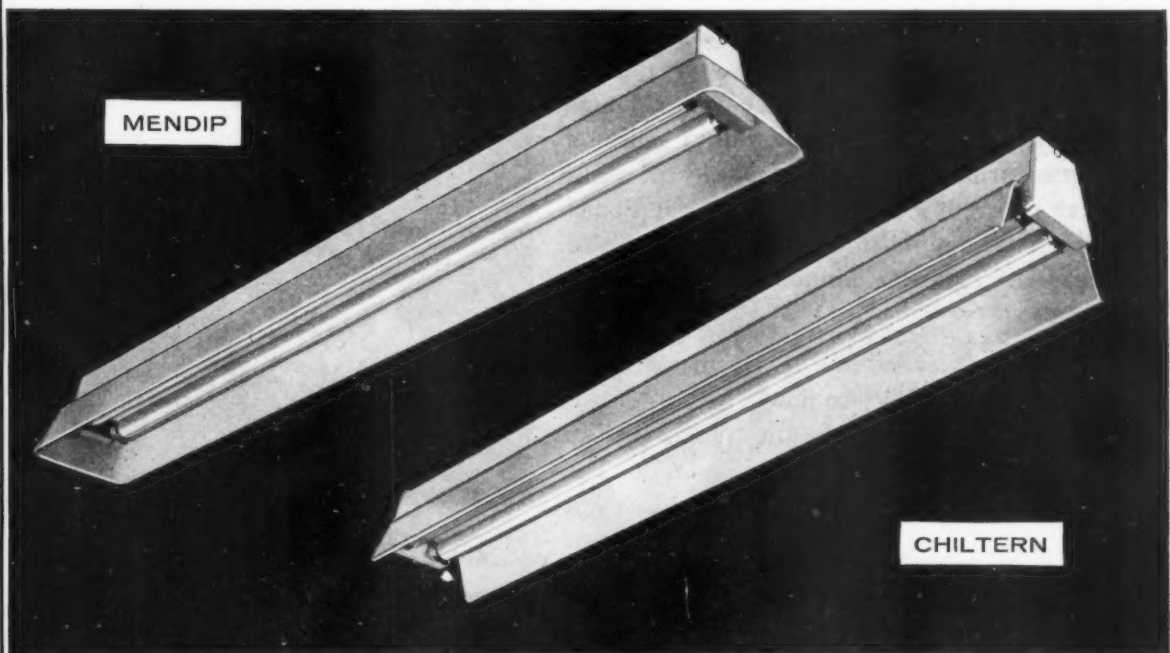




BATTEN

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FALKS "Summit" range embraces more than 70 assemblies with personal choice of lamping, reflector, diffuser and means of suspension. Metalwork is highly corrosion-resistant with basic channels being finished in eggshell off-white and all reflecting surfaces glossy-white. FALKS "Summit" range offers you a standard lighting fitting for commercial uses. Typical assemblies are illustrated.



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*Designed by R. F. Steward L.S.I.A. of Falks*

The comprehensive FALKS range of fluorescent fittings includes Vapour Resistant types, Seagulls, Standard and Simplified Battens, the well-known, decorative "Thames" range and Recessed Modular types for use with suspended ceilings.

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**FALKS**  
FALK, STADELMANN & CO. LTD

*Lighting Engineers  
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*Styled for the modern home*

a revolutionary

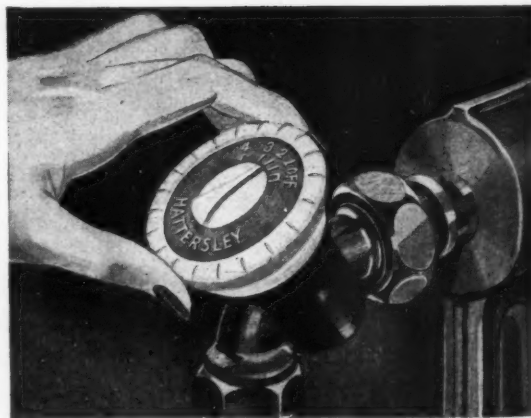
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**Central Heating  
Regulator  
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Smart and stylish, as modern as the moment, this new Hattersley Regulator is the perfect choice for contemporary installations up to 200°F. and 100ft. head. The entirely new "Switch-on" fingertip adjustment automatically regulates the radiator heat output. A quarter turn of the ivory coloured heat-resisting control head permits a range of adjustment from fully open to fully closed, whilst the grey indicator plate shows the exact setting at a glance. The complementary ivory and grey of the head and indicator harmonise perfectly with any decor.

An important feature of the Regulator is its extremely low resistance to flow. It can be used on any part of a domestic heating system and no other type of control valve is necessary. The Regulator is precision engineered with a cast gun metal body. Wheel and Lockshield patterns in Standard and Chromium Plated finish are available with connections for either Iron or Copper Pipes.



**Fingertip control for  
at-a-glance setting**

**AN ATTRACTIVE VALVE AT AN ATTRACTIVE PRICE**

Please write for details to the sole manufacturers.

**HATTERSLEY**  
ESTABLISHED 1897



the name for good valves

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and at **HALIFAX and LONDON**

H.10



# PUT UP SIELECT

Fluorescent Lighting Fittings

## PULL DOWN LIGHTING COSTS

Here are three good reasons why *you* will be particularly interested in the new SIELECT range of fluorescent lighting fittings:

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The range of models includes fittings both with and without reflectors and also an attractive reeded perspex diffuser design all in either single or twin lamp versions.

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*Following the reorganization of the A.E.I. Group these products continue to be sold from former Siemens Edison Swan offices throughout the country. Our staff are unchanged and your enquiries and orders are welcome.*



**LAMPS AND LIGHTING**

38/39 Upper Thames Street, London, E.C.4



CRC 11/71

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attention  
appears  
to be  
wandering,  
Abercrombie"**

"I was just looking at the new houses, sir."

"But, surely you've seen new houses before?"

"Yes, sir, but Boots are building these, sir. That's why they're going up so jolly fast. My father says if everyone built houses as fast as Boots, there jolly well wouldn't be any shortage. Same goes for factories, sir, and schools and hospitals and bridges and airfields and roads, sir. Boots build them

all and lots more things besides. I'll bet there isn't anything they can't build quicker and better than anyone else, sir."

"If you knew as much about pitching tents, Abercrombie, you'd have been a patrol leader six months ago."



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**DURADIO 5-YEAR ENAMEL PAINT** is unsurpassed for interior and exterior decoration.

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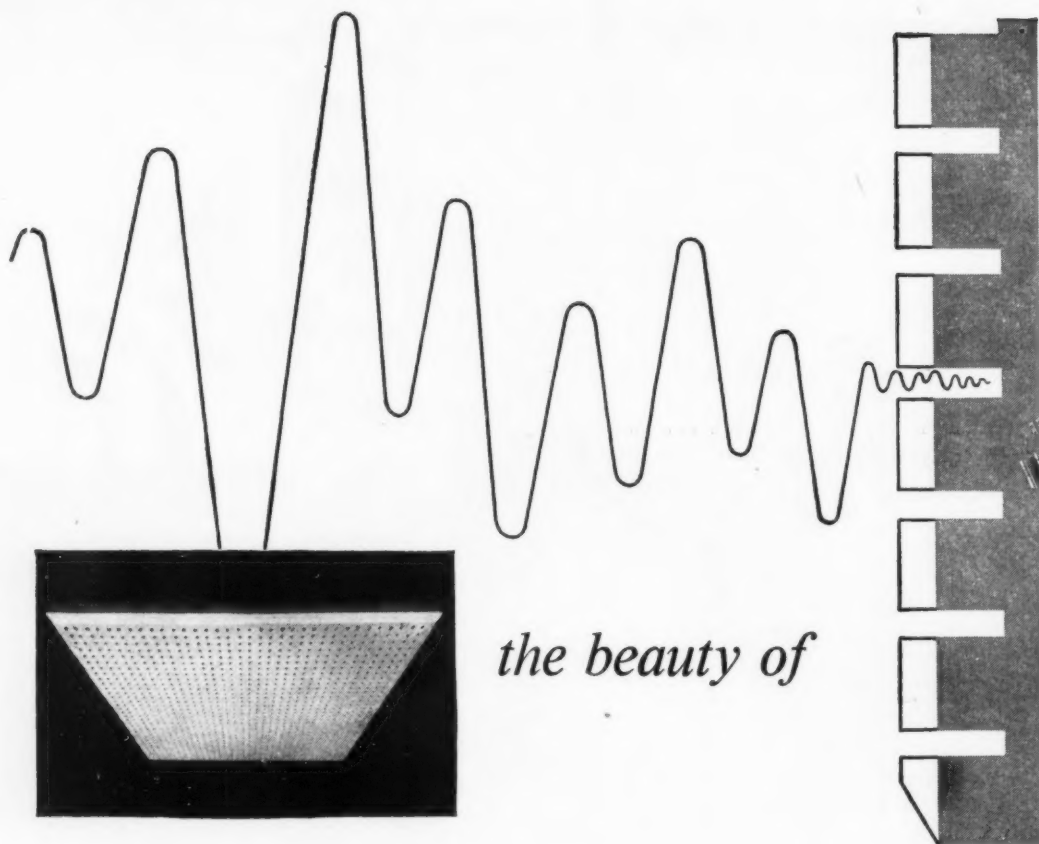
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That is the mark of the genuine Paxtile; it is the reason why Paxtiles provide the most effective sound insulation. Not only do Paxtiles fulfil this basic requirement they additionally offer a marked degree of heat insulation. They are absolutely **FIREPROOF**, rotproof, vermin proof and corrosion resistant. Paxtiles embody a distinctive form of decoration, adding handsomely to the decor of ceilings and walls and they can be painted any colour without detracting from their acoustic qualities. With all these practical attributes it is small wonder that Paxtiles are being specified on an ever increasing scale by modern architects.

Newalls  
(Reg'd brand)

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**NEWALLS INSULATION CO. LTD.** *Head Office : WASHINGTON, CO. DURHAM*

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A large, stylized graphic for an Escaboard advertisement. At the top center is a circular logo with a crown and the letters 'SCA'. Below this, the word 'ESCABOARD' is written in large, bold, italicized capital letters, set against a dark, angular background that resembles a stylized 'E' or a modern architectural element. Below the text, a group of eight people in mid-20th-century attire are shown in silhouette, walking and gesturing as if in a crowd or at a presentation. The entire scene is set against a dark, textured background with a spotlight effect on the people.

**ESCABOARD**

**-AN IMMEDIATE SUCCESS**

***NO FILLING! NO SEALING! NO PRIMING!***

Escaboard has taken a big step forward . . . out of the range of ordinary hardboards and into a class by itself. Recently introduced from Sweden, its revolutionary new features have won for Escaboard immediate and widespread favour.

**SAVES TIME...SAVES PAINT**

Specially made with an unusually smooth, hard surface, Escaboard needs far less paint and gives better coverage. Cuts painting, varnishing and wax polishing time in half.

**CAN BE USED FOR FLOORING**

The very hard and durable surface of Escaboard makes it ideal for floor tiles or panels, as carpet surrounds, etc. Clear varnish or wax polish brings out its full, natural colour and preserves its beauty.

**ESCABOARD OFFERS NEW SCOPE**

Escaboard has been found ideal for silk-screen printing and a host of other applications normally considered to be well outside the scope of ordinary hardboard.



Manufactured by:  
**SVENSKA CELLULOSA AB**  
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SUNDSVALL • SWEDEN



Sole selling agents for U.K. and Eire: **MARTIN OLSSON (FIBREBOARDS) LTD • MELBOURNE HOUSE • ALDWYCH • LONDON W.C.2**



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**FOR BRICKS AND TILES**

*Architects, Builders and Engineers in ever increasing numbers are naming HAUNCHWOOD clay products for quality and economy. For all kinds of bricks, tiles, ridges, chimney pots, hollow blocks, floors and walls, enquiries invited — standards or specials.*



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*of course!*

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FWS



# LOW COST WAY TO HEAT TWO ROOMS

*- and the water as well -*

## FOR NO MORE FUEL THAN AN OPEN FIRE



### CHEVIN CONVECTOR Mk IIIa

The Chevin convector makes better use of heat from fuel by using it three ways—radiant heating, convection heating and water heating. This is on no more than an ordinary open fire—i.e.  $1\frac{1}{2}$ -2 cwt. a week in the winter.

**Warmth for another room.** If the convected warm air is returned to the same room it will fully heat a room up to 20 ft. x 12 ft. x 8 ft. By a simple arrangement of closable grilles the convected warm air can be discharged to an adjoining room or hall as required, leaving the living room to be heated by the open fire.

**Hot water.** The back boiler provides ample domestic hot water. Maximum output is 10,000 B.t.u./hr.: output under normal operation is 7,500 B.t.u./hr. which is equal to 8 gallons of water an hour raised from 50°F. to 140°F.

**Overnight burning.** The Chevin keeps in all night and has a simple economy air control to provide instantly the required rate of burning.

**Installation** is simple. The Chevin can be installed in a tiled surround incorporating independent convection grilles or with an interior frame incorporating concealed air inlet and outlet vents. A patented method of sealing between the surround and the convector body and between the flue adapter and the lintel speeds installation. There is easy access for flue cleaning and boiler servicing.

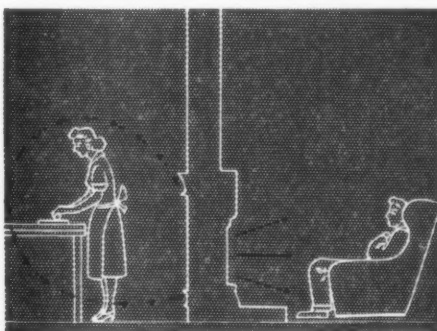
**Ministry approval.** The appliance is approved by the Ministry of Power and is included in the List of Recommended Appliances published by the C.U.C. and the Solid Smokeless Fuels Federation.

The Chevin is available in 5 wipe-clean colours in durable Lexos porcelain enamel. Prices from about £18 according to colour and the accessories required.

(Left). Installed with Chevin C Inset Fire and Interior Frame No. 37 (used only when convected warm air is returned to the same room).



Installed behind tiled surround with independent closable grilles and Chevin C Inset Fire with Overnight plate in position.



Radiant heat to main room, convected heat to warm adjoining room.



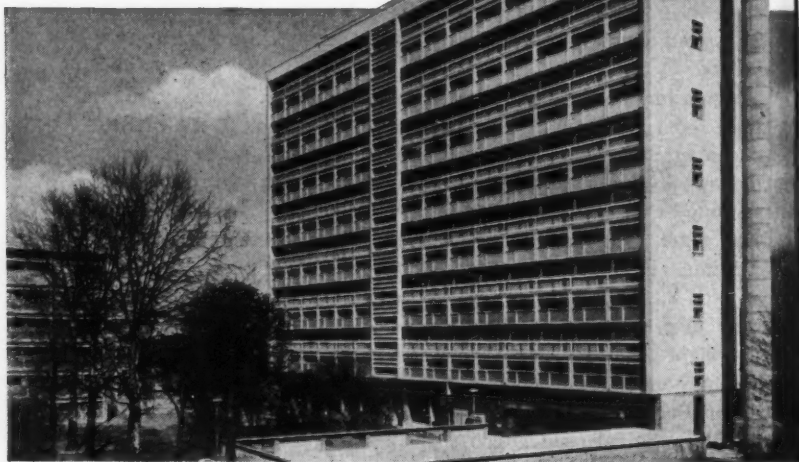
Full details are given in our data sheet available from  
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*...and now*  
**Metered  
warm  
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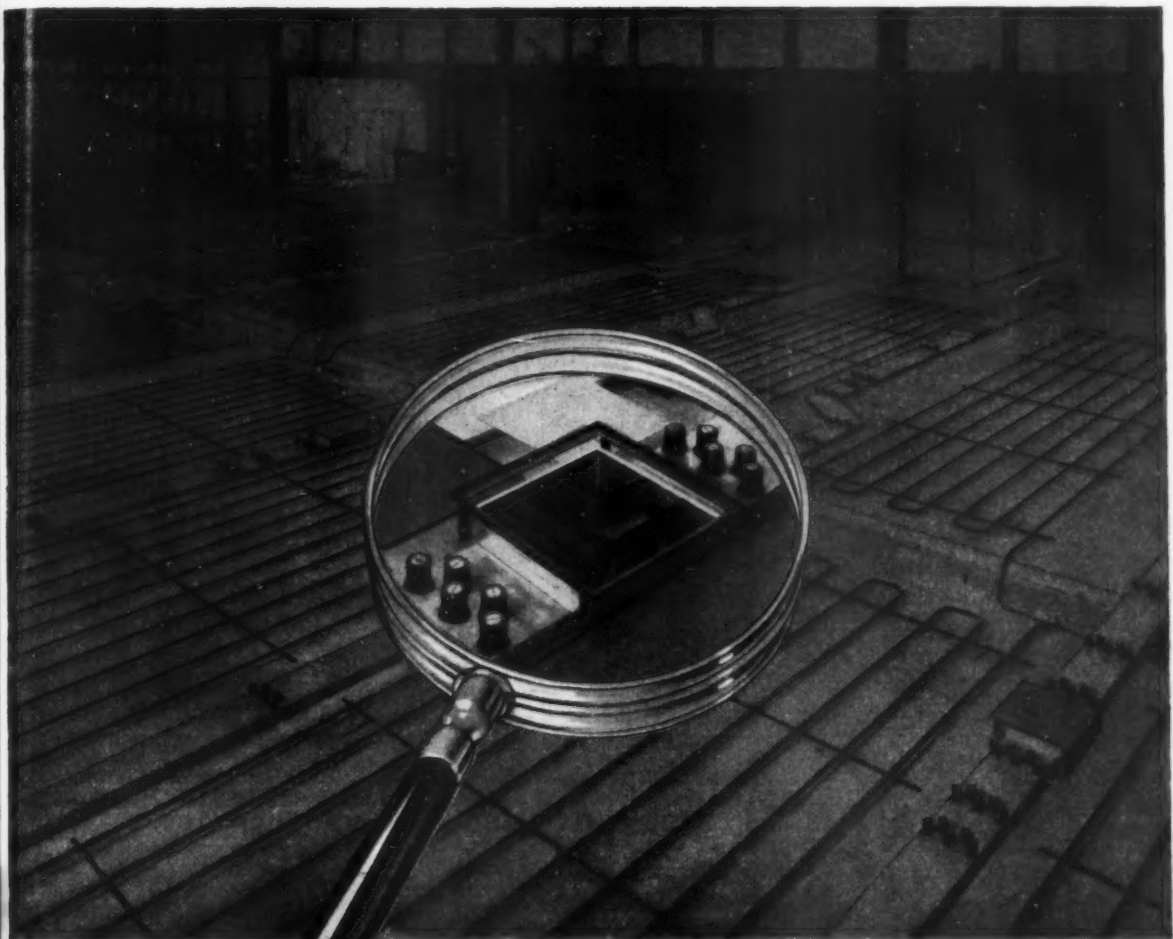
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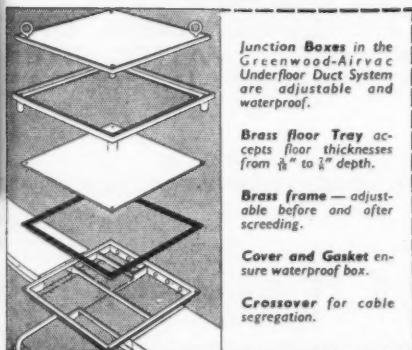
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## Greenwood-Airvac Underfloor Duct System

FOR THEIR NEW UNILEVER EXPORT LTD OFFICE BLOCK AT PORT SUNLIGHT



The Greenwood-Airvac Underfloor Duct System provides for flexibility in office and factory layout. Every feature is planned to meet the requirements of the Architect and Electrical Engineer.

ALL CABLES ARE ACCOMMODATED IN ONE DUCT WITH ADEQUATE SCREENING BETWEEN TELEPHONE AND POWER CABLES.

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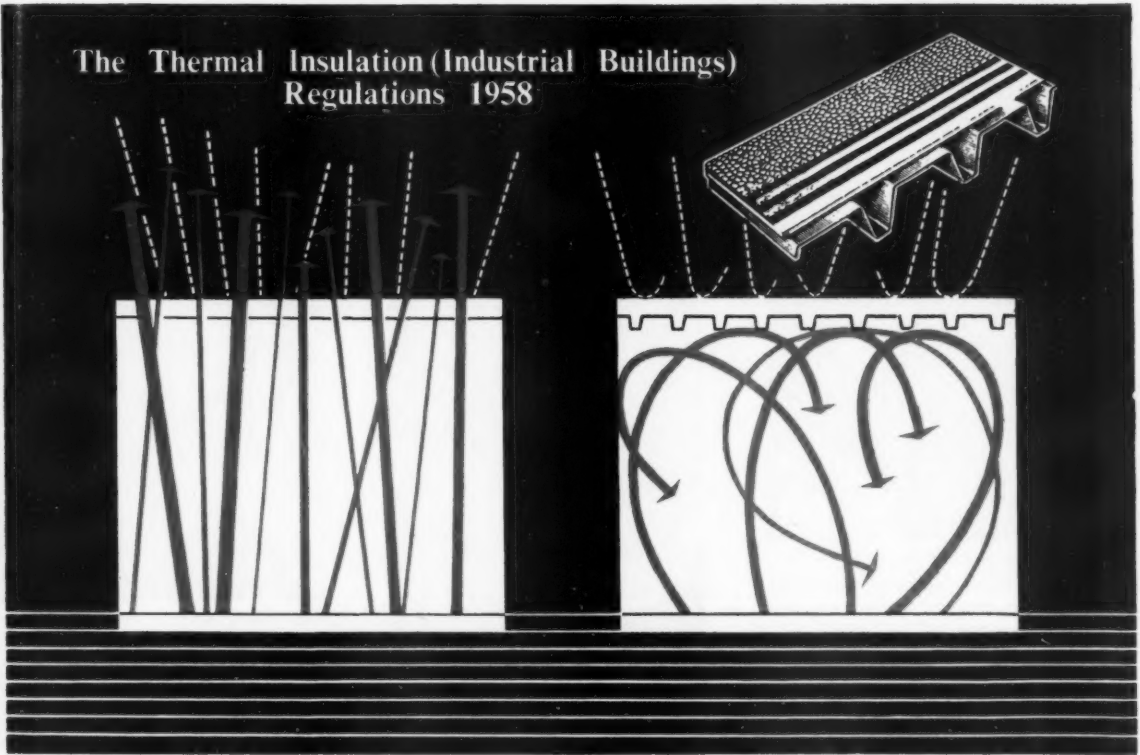
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# The Thermal Insulation (Industrial Buildings) Regulations 1958



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*has full Thermal Insulation and more !*

"BITUMETAL" is the roofing with a "plus". It has a standard "U" value of 0.33, and by increasing the amount of insulation used, any desired "U" value can be obtained. In addition "BITUMETAL" is (1) RUSTPROOF, (2) DUSTPROOF, (3) EASILY ERECTED, (4) MAINTENANCE-FREE, (5) CONDENSATION-FREE, (6) CEILING & ROOF IN ONE.

INSULATION VALUES	Thermal Transmittance	"U" VALUES for Complete Roof
Briggs "BITUMETAL" with 4 in. Insulation Board		0.13 (approx.)
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**THE ARCHITECT** with an eye for efficiency also sees in the Lynx's clean-cut lines contemporary styling at its very best.

THOSE WHO  
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**THE PLUMBER** finds it easiest of all to fit; the concealed fixing is neat and simple.

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**THE CUSTOMER** is delighted to discover that such a handsome cistern also has the most discreetly quiet and dependable mechanism she's ever encountered.

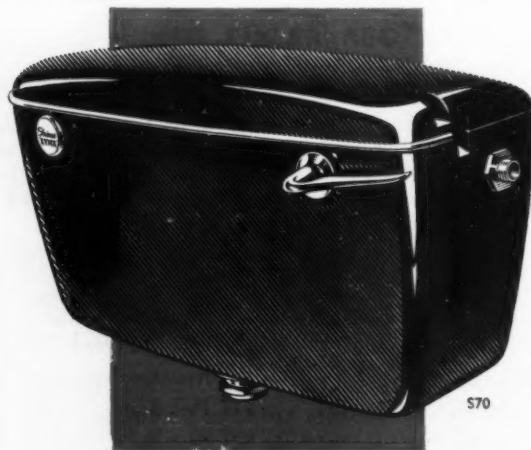
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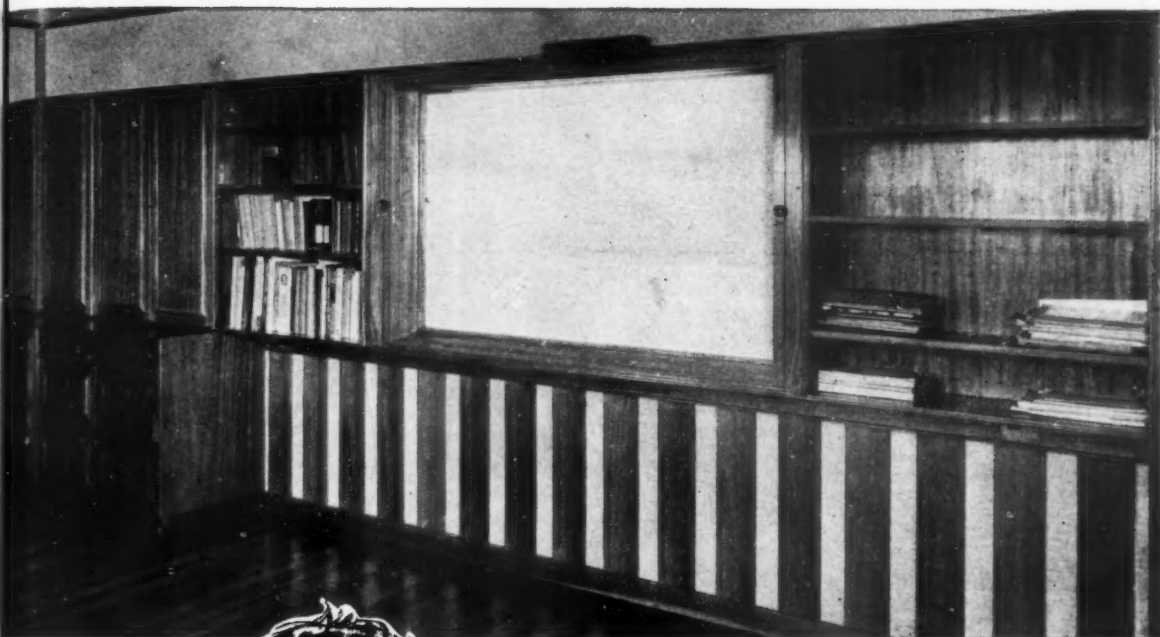
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Shires are the largest manufacturers of flushing cisterns in the world. They also make W.C. pans and seats, pipes, wash-basins and complete W.C. suites.



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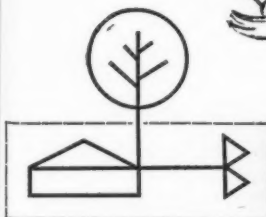
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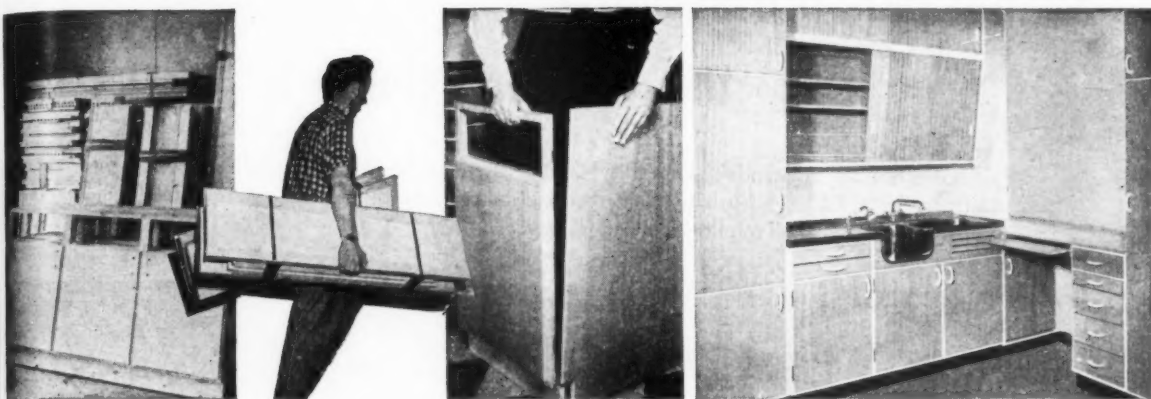
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NORDIA units are brilliantly designed for functional efficiency and they are aesthetically pleasing.

NORDIA saves time and labour: interlocking sections can be assembled in minutes and are supplied primed and ready for painting.

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**NORDIA SAVES STORAGE SPACE — CUTS TRANSPORT COSTS.** All sections pack flat, taking up the minimum space on site and in transit. This cuts freight and handling charges.

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**SEE NORDIA ON STANDS 816-818  
 AT THE BUILDING EXHIBITION**

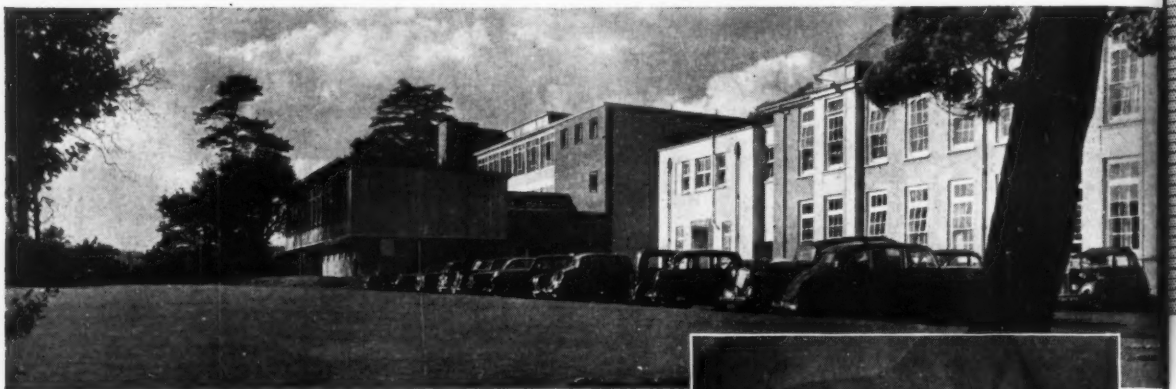
Send this coupon NOW for illustrated brochure with full particulars  
 to: **NORDIA, 235 REGENT STREET, LONDON, W.1.**  
 NORDIA kitchens may be seen at the Building Centre or at our showrooms.

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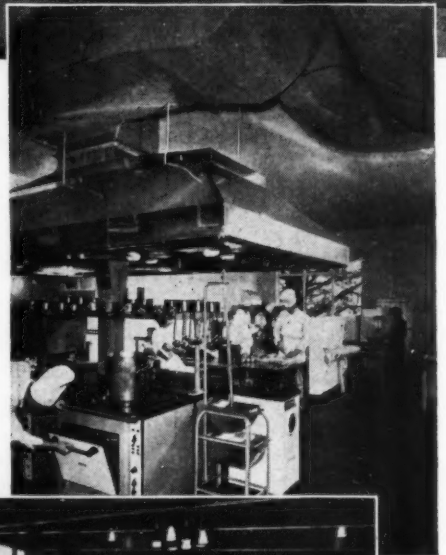
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*A Laing Development for St. Martin's Le Grand Property Co. Ltd.  
Architects: Stone, Toms & Partners*

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And our short answer is...an ASBESTOLUX  
lining specification will outlast the life of  
the building in which it is installed!***

## **THERMAL INSULATION AND FIRE PROTECTION**

The new Thermal Insulation (Industrial Buildings) Act, 1957, specifies the kinds of materials which, if used to a substantial extent to achieve the standard of insulation, must either conform to a prescribed standard of resistance to the spread of flame or be used in such a way that they do not add to the risk of fire.

An Asbestolux lining specification *will provide a superior standard* of insulation and fire protection to the minimum standard as laid down in the new Act, and at the same time ensure **EXTREME DURABILITY**.

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***The non-combustible asbestos insulation board***



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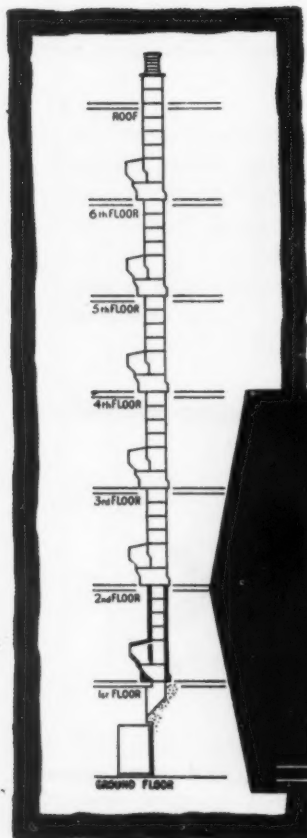
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add inspiration to insulation

These two windows in the home of Mr. and Mrs. Lonsdale, at Adlington, Cheshire, are glazed with "Insulight" Double Glazing Units in  $\frac{1}{4}$ " Polished Plate. The large unit measures approximately 114" x 66", and the smaller unit 54" x 54". Builder: H. Pendlebury, Titherington, Macclesfield.

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For further details write to the manufacturers: Pilkington Brothers Limited, St. Helens, Lancashire. (Tel: St. Helens 4001) or Selwyn House, Cleveland Row, St. James's, S.W.1. (Tel: Whitehall 5672-6).

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## lightweight aggregate

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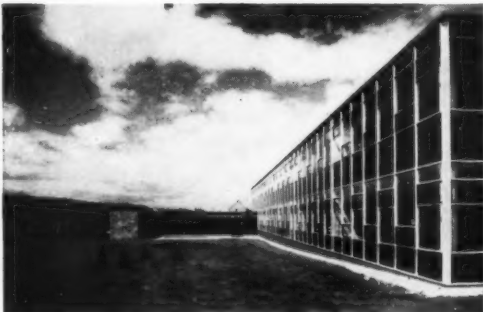




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## Resists ALL Normal Atmospheres

The porcelain enamelled finish of Escol Infilling Panels resists sea atmospheres, and is totally impervious to all normal atmospheric conditions. Colour and texture do not deteriorate; they require no maintenance other than occasional washing and are absolutely PERMANENT.



*Borestone Primary School, Stirling*

*Architects: Alison & Hutchison & Partners, Edinburgh, in association with County Architect, Stirlingshire County Council.  
Framing Manufacturers: Standard Maclean Ltd., Hamilton. Contractors: Stuart Construction Ltd., Glasgow.*



### Stewart & Gray Ltd.

offer a specialised service in the development, manufacture and all technical aspects of porcelain enamelled steel in architecture. It is at the disposal of all architects.

**STEWART & GRAY LTD** SWAINS RD, LONDON, SW17. Tel: MITcham 1634 (5 lines)

Members of the Vitreous Enamel Development Council and the Porcelain Enamel Institute

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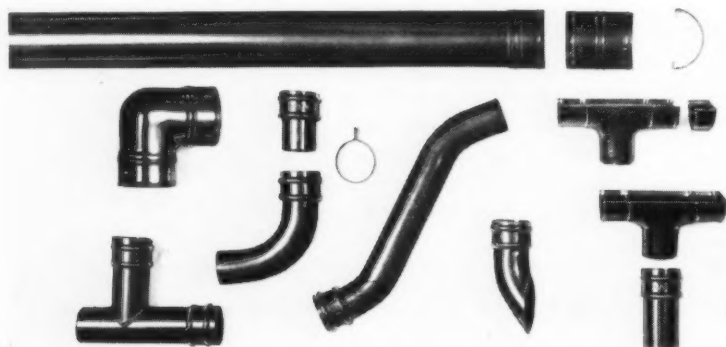
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## MARLEY vinyl RAINWATER GOODS

Resistant to acids and mechanical damage, non-ageing Marley Vinyl Rainwater Goods are not affected by the atmosphere of coastal or heavy industrial areas. They will not abrade, or corrode, to cause clutter and stoppage. There are not, nor ever will be any sharp edges or uneven joints to catch at leaves or grit. There are no faults to start blockage. Everything that

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Light in weight vinyl gutters and down pipes are easily handled and speedily installed. Now ready in grey or black, with more colours to come, they need absolutely no painting or maintenance at any time.



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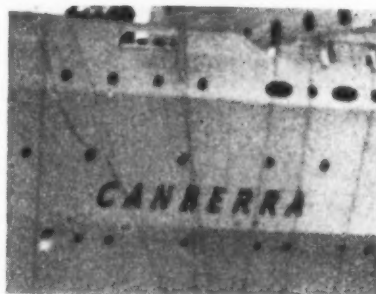
# A J

The Architects' Journal

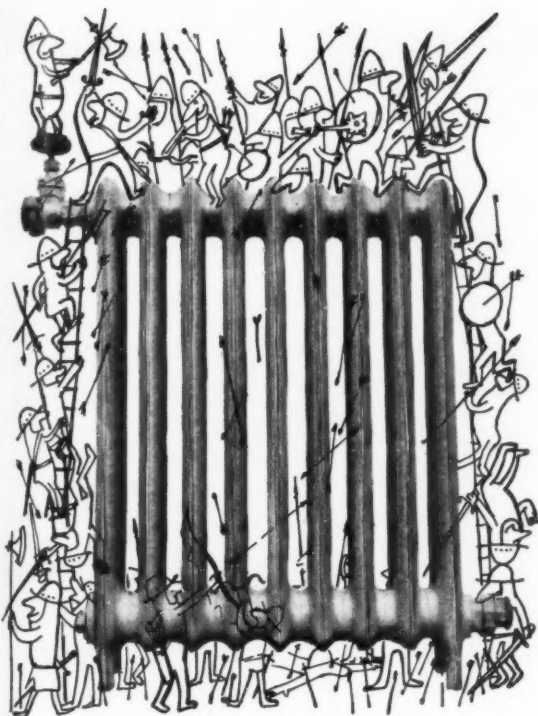
No. 3389. Vol. 131. March 31, 1960

9-13 Queen Anne's Gate, London, S.W.1. Whitehall 0611  
Subscription rates: post paid, inland £2 15s. 0d. per annum; abroad, £3 10s. 0d. per annum. Single copies, 1s.; post paid, 1s. 6d. Special numbers are included in subscriptions; single copies, 2s.; post paid, 2s. 6d. 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 17s. 6d.; carriage 2s. extra.

## NOT QUITE ARCHITECTURE



It was March 16, and the colony of hares that inhabit Nutts Corner were at their usual collective post between the runways. Not an ear twitched as the Viscount screamed past them. Brick-pink, slate-grey, granite-hard, Belfast brooded in the valley beneath raw misty skies. At the hotel bowler-hats and burberries—the shipyard uniform—lay piled on settees, the atmosphere, half-festive, half-anxious, a cross between a first-night audience and an old-school dinner. Snug in the moquette-lined bellies of the coaches the guests were driven off to the yard, past the painted pubs—(Belfast must possess some of the finest sign-writers in the UK)—and the trolleybus queues, along the quays where little tail-heavy colliers discharged their drizzly coal, past the heaps of scrap-metal, and the cart horses steaming under their sacking overcoats, and into a Lowry landscape of high brick walls and corrugated-iron gables and long cobbled roads awash with hurrying cloth-capped heavy-booted figures. Half Belfast and its family seemed to be here today. The crowds thickened, the coaches slowed to a walking pace, then suddenly behind a shed there She was—Ship No. 1621, white painted, her scarlet bulbous nose pointed proudly at the launching platform. Spectators, thick and noisy as starlings, clung to every vantage point—cranes, gangways, and scaffolding, and huddled in great eddying drifts in the shadow of the hull. At the foot of the stairway a green-uniformed band pumped away at a selection of vaguely nautical tunes. The bowlers and



## ARE YOU AN "ANTI-UGLY" ABOUT CENTRAL HEATING?

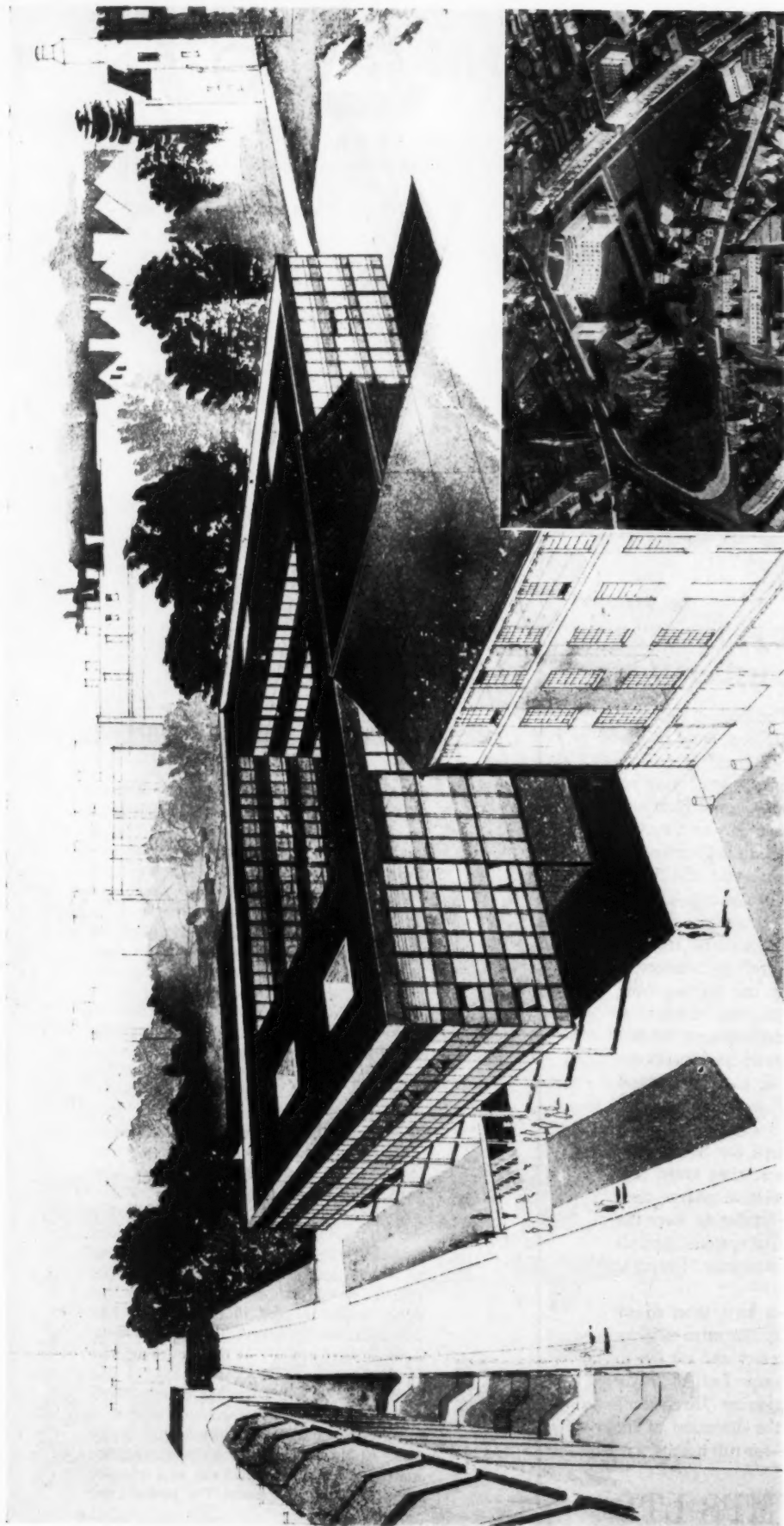
Have you read Betjeman on "The English Country Church Boiler"? Where does Nairn stand in the Big Pipe-Little Pipe controversy? Everyone everywhere is getting worked up about something so why not a little hot water about Central Heating!

Of course, we speak unashamedly as a vested interest; we (Sigmund Pumps Limited) make the ThermoPak which is the business end of a Small Bore Heating System. But we like to consider the architect too. For Small Bore Heating is far and away the most *aesthetic* form of Central Heating with its neat little "Small Bore" ( $\frac{1}{2}$ " diameter) pipes of copper nestling along the skirting connecting up with radiators, skirting heaters or convectors of, we trust, impeccable design. No one has to knock down walls or root up floorboards (or tear up plans if your client decides on Central Heating rather late in the day) to accommodate a Small Bore installation.

Customers who have settled for Small Bore pay up and look happy because they know that they're paying a smaller installation charge than they would for a Gravity-type installation. Even the fuel bill—in terms of all the usual options; gas, oil or solid fuel—is let off lightly when the Heating is "Small Bore."

We're quite sure you're a busy man so we won't hold you up with any further sales talk but suggest you ring for your secretary and ask her to write a letter to Sigmund Pumps Ltd. of Team Valley, Gateshead, II—mentioning "Architect's Journal" and marking it for the Attention of the Architect's Advisory Service—for full details.

## SIGMUND PUMPS LTD



*Winning Design for County Council Offices at Taunton*

A competition for new County Council Offices in Taunton, sponsored by the Council, has given the 500,000 people of Somerset the opportunity of being governed from this new block of modern design costing about £400,000 to be built in the area at bottom right of the inset. On March 22, the assessors, the Hon. Lionel Brett, Geoffrey Jellicoe and J. M. Richards announced their decision to award

the first prize of £1,500 to L. Tatum of Goodwin and Tatum, the £1,000 second prize to Sir John Burnet, Tait & Partners, and the third of £500, to M. Handley. The assessors also commended designs by two other competitors, A. H. R. Weitzel and B. Dewhurst. This week we publish drawings of the winners' designs together with extracts from their and the assessors' reports.

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## The Editors

## CUT THE CACKLE, AND THE TRIMMINGS

UNLIKE nearly everyone else, who has to learn more and more about less and less, the architect must know less and less about more and more. However many new subjects are introduced, whether in architectural practice, or in design, he must master them sufficiently to be able to arbitrate to the client's advantage between the conflicting demands of specialists. Peter Trench, Director of the National Federation of Building Trade Employers, speaking at the RIBA last week to an insultingly small audience, endeavoured to disturb the complacency of architects by pointing out that superior intellect, knowledge and professional status will be insufficient to ensure the architect's position in future society. "By surrounding himself with a mystique of aesthetics he will lose, not gain the confidence of the building public . . . to gain it (confidence) he must show that he is capable of leading a team which can produce in time and at a predetermined price a building that looks well, functions well and is well built. If he can't, then he must not be surprised if the public turn elsewhere, and for the answer he must look to his present training." It is salutary to have such an eminent builder as Mr. Trench echoing comments which have appeared in the JOURNAL and have been made by a select band of architects many times in recent years. To have it repeated by a man capable of turning threats into action may, we hope, stimulate the RIBA and the Allied Societies to adjust their priorities and concentrate their resources on those functions of the RIBA which will rapidly promote efficiency. The RIBA must study the successes of its members and spread the know-how through the membership at large. As a long-term measure it must give a lead on education not just of architects but, as we have said before, of the whole building industry. To make considerable advances in these two fields other pursuits, however enjoyable, should be ruthlessly pruned back.

## A RIDE ON THE BACK OF THE TIGER

The RIBA *Ideal Home* small house competition was supposed to bring architect-designed houses within the reach of the little man who could not afford to pay the full architect's fees. The first houses built to the winning designs are now being advertised, at prices which are grotesquely inflated beyond those given in *The Book Of Small Houses*, published by *Ideal Home*. In the *Evening Standard* last week a house priced in the book at £2,400 to £2,900 is advertised at £3,550 to £3,700; a house priced at £3,550 to £4,050 is advertised at £5,500; a third priced at £2,960 to £3,460 is advertised at £4,240. Most startling of all, the two-bedroom house designed by Grenfell Baines and Hargreaves in association with J. Ingram, priced at £3,350 to £3,850 is advertised at £6,250.

HUGH CASSON

the flowered cloches ascended the gangway to a background of ironic cheers and wolf-whistles. A group of workmen were loosening the last few wedges under the keel. No. 1621, the largest liner to be built since the Queens and the largest in Belfast for fifty years, hung over them as placidly as a moored dirigible. From the launching platform—lively with strong Australian accents—it was possible to appraise her unusual lines—her prow swelling below the waterline like the torpedo-net cutter of an old-fashioned battleship, the vertical sides turning suddenly and almost horizontally into the keel, the screws held clear of the hull on Admiralty fashion, instead of with the more normal fared-in casings.

At 12.15 "God Save the Queen" greeted the arrival of the G.G. and "Waltzing Matilda" the arrival of Dame Patty Menzies. Bouquets, flashlights, presentations. In the BBC box Audrey Russell polished her spectacles. At 12.25 the yard fell silent. Through the loudspeakers the padre's voice echoed over the water, the waiting ship, the distant smoking chimneys. Ten thousand heads were bared. From above it seemed that the great grey crowd had suddenly turned pink. At 12.30 precisely Dame Patty stepped forward, the familiar words were spoken, the bottle broke, the lever was released. For fully ten seconds Ship No. 1621—now and for the first time CANBERRA—hesitated while Belfast held its breath. The builder's chairman glanced anxiously below, but he need not have worried. Almost imperceptibly inch by inch she was moving. The silence was splintered by the first cheer. High in her prow a cap waved. She gathered speed—curious how so visually unpromising movement as a backward slide could seem so graceful and so dignified. As she reached the water, every siren in the port greeted the new arrival and the staging trembled beneath the feet at this thunderous throat-catching tribute. Afloat at last among the debris of shores and props, CANBERRA looked momentarily diminished and forlorn—like a child that has just fallen in the mud and dropped its toys. Half-a-dozen tugs fussed nannily to lead her away. The crowd had begun to disperse. The band struck up "A Life on the Ocean Wave" as the black VIP cars glided off into the mist. The slipway looked unloved and dispossessed—"it's like having a tooth drawn" . . . remarked my neighbour unromantically. As we drove off to the Builder's Lunch, the speeches and presentations—"Its not every day," said Dame Patty, "that a lady can get rid of 35,000 tons of weight"—the band relaxed into "Rock and Roll" and a few pony-tailed girl-clerks started prancing and curvetting over the wet cobbles. Already somebody had rubbed out the chalked number 1621 on the notice board and riveters' hammers were chattering on the next slipway. Another landmark familiar for three years had gone to sea, and the yard was back at work.

inset. On March 22, the assessors, the Hon. Lionel Brett, Geoffrey Jellicoe and J. M. Richards announced their decision to award their and the assessors' reports.

The prices in the book do not, of course, include the price of land, but they are supposed to include the builders' profit. These figures suggest three things. The first is that the price of land has risen to extortionate levels, which put the ownership of these very modest 2-3 bedroom houses beyond the means of many of the people the RIBA was aiming at. The second is that the builders are pocketing an immense additional profit by advertising their houses with the *cachet* of the RIBA, while paying the architect a beggarly fee of £15 for the first house with £8 for repeats. The third is that the quantity surveyor's estimates were wildly inaccurate.

Eric Ambrose, in an article in the *Evening Standard*, acclaims the architects for having produced a "truly altruistic scheme" and Basil Spence, in his foreword to the book, urges the public to build from architects' designs "offered at what are really bargain rates." They certainly are, but who is getting the bargain? Not the client, who, it seems, is being made to pay through the nose, nor the architects, whose legitimate market in the £4,000 to £6,000 range is being invaded by builders using the RIBA-*Ideal Home* cut-price schemes. Builders, who are selling houses at these prices and presumably making fat profits in the process, should be paying full fees. The facts now revealed call for the most stringent inquiries by the RIBA, which has suffered the fate of the unfortunate lady of Riga.



#### HOW TO LOSE GOOD MEN

In recent months the LCC has been losing architects at an alarming rate, and finding it difficult to recruit good new ones. The reason for this wastage

is no secret. Salaries in Grade III, in which the job architects are to be found, are far too low. Several architects who like working for the LCC but can't afford to stay have been persuaded to stay, on the assurance that a substantial pay increase would be coming along, in response to the professional claim made over 15 months ago.

Now the LCC Establishment Committee has made the proposals reported on another page, and they turn out to be a kick in the teeth for the Grade III boys. The senior grades *do* get increases of the order of 10 per cent. But in Grade III the increase at the top of the grade is only £15 a year, unless the head of the department certifies that the man and his job both "justify" two further increments of £50 each. This certificate is not to be required in any other grade. No wonder that there are some angry men at County Hall. If the LCC does not want to say goodbye to men of skill and normal ambition, it had better think again.

#### RIBA MAKE A SPLASH (WITH SCOTCH)

I reported some weeks ago on the proposals for a more friendly atmo-

sphere at 66 Portland Place. The RIBA's pleasant dining room and waiting room have now been joined by a members' bar on the second floor, where the canteen used to be. This lively shoe-string job—by Alison Smithson and W. G. Howell—has walls, ceiling and bar counter in white, set off by purple sofas and carpet, orange chair covers and window wall curtains in sections of orange, purple and blue. The stools and tables, reminiscent of Rietveld, are slightly disquieting in a room from which not all traces of Grey Wornum have been removed. I have only one real criticism. In order to give what is always known as "a feeling of spaciousness," the designers have hacked half the backs off sofas and chairs that were once in the first-floor members' room. This makes them no longer anthropometrically correct by my standards, but I am far too pleased with this experiment to admit that the things are uncomfortable.

#### REYNER'S LINE ON THE TUBE

Reyner Banham gave an excellent half-hour lecture on commercial television last week. But it was a lecture. Nobody had thought of using the unique resources of television to live up what is really the first intelligent architectural series to be presented on the idiot's lantern. However, let me not criticize a programme for not being what it wasn't. What we got was a lot of Banham; and once we had settled down and realized this was pretty well all we were going to get, we had to admit it was Banham at his best. And by that I mean Banham as I like him best—Banham at his most coherent (In other moods he can, as you know, out-Buckminster Fuller).

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This first programme in a series presented by Sir Kenneth Clark was called "The Good Old Rules," and it used Chiswick House as the model of classical rules perfectly applied, with side glances at the Farmers Union, the New York Stock Exchange and a weird bit of neo-Tudor eight storeys up Abbey Road—all as examples of what not to do. What I particularly liked about the talk was that it didn't cram too much into half an hour. Even those who didn't grasp all that Banham had to say—and the comparison with Mies van der Rohe must have been a little tricky for the average viewer—will

have been prompted to go and see Chiswick with a new understanding.

\*

Look out for the second talk—on the post-Castrol era—on Monday, April 4.

#### SQUARE'S DELIGHT

The picture right shows the proposed development of William IV Street, next to St. Martin-in-the-Fields. It has been said—and said by R. Furneaux Jordan in the *Observer*—that the real trouble is that there is nothing to create a shindy about. I disagree. The building is not just a neutral design of expressed column and beam. It is two stories higher than the present densely-packed Regency terrace and its bulk (only one floor lower than South Africa House) will not sit happily beside the church. The columns appear to be loadbearing ashlar piers which—a modern touch—are held up by a widely-spaced bottom-storey frame cantilevering boldly at the corner (an inconsistent device). And the vestigial cornice, mouldings and decorative panels remove the neutral quality which would have formed a better background to its neighbour. No wonder the anti-anglies demonstrated.

\*

Of course, the real shame about the St. Martin's site is the fact that development is taking place there before anyone has a comprehensive plan for Trafalgar Square. The LCC is neglecting its duty here as much as it has done in Piccadilly Circus.

#### OPEN HOUSE

When should a house be a signal box? "Never," said a building society official, and stalked off to his office to



*The proposed offices by St. Martin-in-the-Fields, designed by Fitzroy Robinson and Partners*

turn down a mortgage application for such a design. His decision rubbed home the points Peter Moro had been making about the stupidities of aesthetic control, at a one-day conference on "Homes of the Future." The conference was organized by the Federation of Registered House-Builders, whose Registration Council was praised in a talk by Henry Brooke, Minister of Housing. He said that research was needed if we were to avoid building houses for yesterday's way of life, and John Madge, of BRS, added that housebuilders must take the initiative in trying out new ideas.

#### HOT EXHIBITION

Our only post-graduate course in architecture, so far as ASTRAGAL can

recall, is the AA's Department of Tropical Architecture. Directed over the past six years in a most progressive and lively way by the engineer-planner Otto Koenigsberger, and attended for six months every year by architects from all over the world who have less of the neuroses of the ordinary architectural students, the resulting annual exhibition of work (which opened at Bedford Square last week) shows a greater sense of urgency and a realization of enormous world problems which is welcomingly unexpected in an end-of-session exhibition. One short exercise will be briefly described. ASTRAGAL learns, in a future issue of the AJ.

\*

And what a relief to see tight-knit city plans for a sound, functional reason: borrowing cool shadow from each other, instead of because "it looks nice." It was intriguing to find a sketch of a traditional Punjab house showing the random fenestration and niches which so obviously caught le Corbusier's perceptive eye and thus became an accepted Western cliché.

#### MORE POWER

Should the Royal Fine Art Commission be given greater powers? The question was debated at the Architecture Club last week. Jane Drew proposed that it should, but did not specify in what form, which did not

The new members' bar at the RIBA. See Astragal's comment opposite.





help the debate. Indeed, at one point she said that it had enough power, but needed members who were decisive and good judges of architecture (who selects good judges of architecture?) and said she had the names of suitable strong men. She did recommend, however, that it advised the Government on architectural patronage, and that it undertook research into such subjects as street furniture and the factors which make the urban scene outrageous. Her most practical recommendation was that the RFAC should make more of its statements publicly.

\*

Eric Lyons, who objects to all forms of control save when he can exercise it, naturally opposed the motion, and had great fun describing the RFAC as a detergent service. He asked how we dared set up a censorship of taste and emphasized the difference between criticism (of which we haven't enough, apparently, a point ASTRAGAL will remember) and official censure, a censorship of taste which we should not dare to set up. Robert Jordan expressed best, perhaps, the dilemma of the majority: the instinctive desire for freedom, the need to restrain, as Minister John Hope said, the power of the executive. And on the other hand, the appalling state of architecture which makes some sort of RFAC necessary.

#### ASTRAGAL

## DIARY

*Professional Negligence.* Paper by C. A. Martin French at the RICS, 12, Great George Street, London, S.W.1. 5.45 p.m.

APRIL 4

*Presentation of the Royal Gold Medal for Architecture 1960 to Professor Pier Luigi Nervi.* At the RIBA, 66, Portland Place, W.1. 6 p.m.

APRIL 5

*Exhibition of the Work of Professor Pier Luigi Nervi.* At the RIBA, 66, Portland Place, W.1. Weekdays 10—7 p.m. Saturday 10—5 p.m. (Closed April 6).

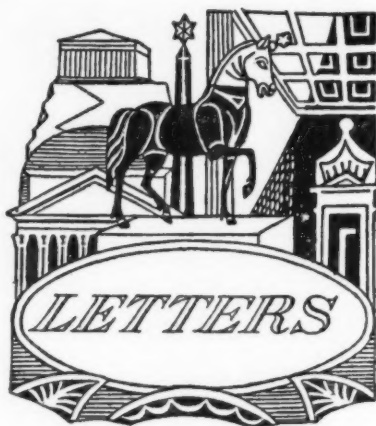
APRIL 5 TO 12

*Electrical Engineers' Exhibition.* At Earls Court.

APRIL 5 TO 8

*Designers of the Future.* Heal's 150th Anniversary Exhibition at 196, Tottenham Court Road, W.1. 9 a.m.—5.30 p.m. daily (to 7 p.m. on Thursdays) and from 9 a.m.—1 p.m. on Saturdays.

UNTIL MAY 24 APPROX.



G. Chace

P. T. Renninson, A.R.I.B.A.

G. L. C. Rossant, A.R.I.B.A.

Associate Partners, Grenfell Baines and Hargreaves

B. A. Hodges,

Secretary, The Institution of Heating and Ventilating Engineers

Alison Imrie,

Assistant Press Officer, Timber Development Association

### Unwelcome News?

SIR: ASTRAGAL, who sometimes pronounces upon planning matters from a rather sketchy knowledge of the subject, says he is glad to hear that the County Architect of Bucks has been appointed County Planning Officer as well.

I submit that this is an extremely unwelcome piece of news, for two reasons. Firstly, it means that the department responsible to the Council for its building development is no longer subject to check by an independent department with its own chief officer. I infer no disrespect to Mr. Pooley when I say that, in the nature of things, his department's preoccupation with design and building economy may tend in such circumstances to overwhelm planning considerations.

The dismally low standard of planning in many County Boroughs (with notable exceptions) is in my view due to the lack of a powerful independent planning department, and is good enough reason for having two-tier local government for planning purposes. Within County Councils, the two-tier effect can only be approximated by the existence of separate and reasonably equal departments.

I will admit that in County Boroughs it is useful, under the present unsatisfactory distribution of planning powers, for the planning department to have the prestige of an enlightened Chief Officer behind it, as it otherwise may have to fight a losing battle to make its voice heard under a "second rank" chief officer. Usually, of course, it is not considered sufficiently important to have its own chief officer, and exists as a bit of subordinate machinery in another department.

The second reason for disagreeing with ASTRAGAL's view is that it may be suspected

that the Buckinghamshire County Council is taking the opportunity to slide out of paying a fair salary to the official who will actually have to do the work under the Architect. Is planning in Bucks really of so little account?

I hope it is clear from what I have said that I do not wish to join in the futile argument as to what are the proper qualifications for a planner.

G. CHACE

Hemel Hempstead

### "The Omniflexibility Myth"

SIR: We were pleased with the publication of the Derby and District College of Technology in the issue for March 17. However, we should like to comment upon two points arising out of the publication.

Readers may be given the wrong impression that we consider flexibility to be a myth. The quotation referred to should have read "the omniflexibility myth" and was made by Mr. Grenfell Baines when speaking at the RIBA Symposium on Laboratories in reference to flexibility in the extreme. Flexibility is often both essential and justified but it can be undoubtedly expensive unless kept under proper control. A more revealing follow-up to that suggested in your comments would be the use made of flexibility where this had been provided as a prime factor in the design and whether the additional costs thus incurred had proved to be justified.

In the more advanced College of Technology it has often been our experience that the requirements of teaching accommodation and workshops are very similar. All too often the workshops become highly technical one-storey laboratories requiring the same standards of finish, acoustic treatment, etc., as their counterpart in the teaching block and it should not be surprising therefore to find that they are similar in cost. Your cost comment on the single-storey workshops takes no account of the ratio of the roof and foundation to floor area as compared with the nine-storey tower block. If this is taken into account, the inference should be that the structure of the tower block is relatively cheap, particularly when it is borne in mind that laboratories form 85 per cent. of the total teaching accommodation.

P. T. RENNINSON

G. L. C. ROSSANT

Associate Partners

Grenfell Baines and Hargreaves

Derby

### More on U Values

SIR: Our attention is drawn to an article appearing in the technical section of the JOURNAL of February 25 by R. M. Rostrom. On page 338 of this article reference is made to the IHVE Guide and the U values contained therein. The author suggests that these figures should be ignored or used with the utmost caution for large glazed areas exposed to the sun. It is quite clear that Mr. Rostrom is confused about the meaning of a U value. This is not affected by solar radiation as he seems to think, but is an air-to-air transmittance factor. Solar radiation

is separated, evaluated, and shaded. In the case of the sun, the sun's rays, which are of this type, are more with American provide construction is done including one can from known and so of. Whatever it is, it would be a mass of there would be transmitted for these per glass block edition a great deal well as s. Secret London R. M. Rostrom page 427 that "U heat transfer form of U observes, (which is transfer), actual U with great exposed separately described last would, of because, do use U for solar to treat ment, I factors in value," "ventilation factor" description. I should for experience thermal would to theory) a the fort neglected



is separate and distinct, and is separately evaluated according to latitude, orientation and shading.

In the case of curtain walling, to which he refers, we would point out that although this type of construction is used in America more widely than anywhere else, that the American Guide has as yet been unable to provide data or factors for this type of construction. Until some fundamental research is done on overall samples of construction, including ribs and other by-passing effects, one can only rely on calculations built up from known  $k$  values, surface resistances and so on.

Whatever the  $U$  value so estimated, however, it will not be affected by solar radiation which in the case of clear windows would be separately evaluated. Due to the mass of a curtain walling panel, however, there would be a time factor delaying the transmittance of heat by a matter of three or four hours. The American Guide gives these periods for various materials, such as glass blocks, and our own Guide in the new edition about to be published also gives a great deal of this kind of information as well as solar gain factors.

B. A. HODGES

Secretary, The Institution of Heating and Ventilating Engineers  
London

R. M. Rostron replies: As I explained on page 427 of last week's JOURNAL, I am aware that "U value" is a measure of the rate of heat transference through an assembly or form of construction. Since, as Mr. Hodges observes, it is unaffected by solar radiation (which will change the net rate of heat transfer), I suggest that *used by itself* the actual U value of glazing should be used with great caution on large glazed areas exposed to the sun. If allowance is made separately for solar radiation, as I described later in the article, published U values would, of course, be a reliable guide, but because, in my experience, many architects do use U values without making corrections for solar heat gain and because my aim was to treat the wall thermally as a single element, I preferred to combine these two factors into a single variable "effective U value." To avoid confusion with the conventional U value, "effective transmittance factor" would, perhaps, be a better description.

I should like to join Mr. Hodges in his plea for experimental data and research on the thermal behaviour of light cladding (which would tell us more than the most lucid theory) and I welcome the attention given in the forthcoming Guide to the hitherto neglected problem of solar heat gain.

STR: In the second of Mr. R. Michael Rostron's series of articles on modern cladding techniques (March 3, 1960), a table of moisture movement is included which is based on the 1954 F.P.R.L. leaflet "The movement of timbers." It may be of interest to your readers to note that this leaflet was revised and slightly amended in August, 1958, and that copies of the more up to date leaflet may be obtained from Forest Products Research Laboratory.

London.

ALISON IMRIE



## RIBA

### Future of the Industry

The problems confronting the architectural profession, said builder Peter Trench happily at the RIBA last week, are rivalled in their complexity only by those confronting the trade unions. The unions' problem, Mr. Trench, the Director of the NFBTE, saw as a need to re-examine first principles. He questioned the principle of craft-training, and asked what skills were required to carry out new work and maintain the old. Is there a need, he asked, for a multi-skilled operation? A scientific research project should be initiated by a university or BRS to establish the industry's requirements. There must be a reassessment of user requirement, or industrial job evaluation, to establish the varying skills and degrees of skill and responsibility required by the future industry, and training programmes must be devised for them.

Mr. Trench started by saying that the influence of political economy and a change in education philosophy would do more to shape the building industry than design, technical, trade union or any other influence. The nation's rate of expansion is likely to be dependent on our ability to sell abroad, and the building industry will no longer be described as "sheltered" by the end of the century. Then, if a building owner will get a better building from a German architect or building firm, patriotism is unlikely to prevent him doing so. A rising standard of living, full employment and a revolution in education will favour the "right" political parties in the next 50 years.

Few industries achieve their end product in conditions so conducive to waste as building—the loss of output a year from bad weather is equivalent to a labour force of 50,000. The country cannot afford waste and the antidotes are: better training, increased management skill, mechanisation, prefabrication and offsite preparation—forced on us by economics.

Mr. Trench feared for the future of the medium-size building company. The small jobbing builder is unshakably ensconced with the advantages of low overheads and a permanent labour force, and repairs and maintenance total £460 million a year. The

larger building firms will, in times of recession, take work from the medium firm, which, due to heavier overheads, will not be able, in turn, to compete with the small jobbing builder. The next half-century could see the advent, however, of the large regional builder as opposed to the national contractor.

In the years to come architects will take their place with engineers on the boards of building companies. With the trend towards negotiated contracts the extent of the contribution that a builder can make at the design stage is commensurate with the calibre of his staff. Mr. Trench envisaged that the packaged deal, the negotiated contract and competition for a contract on a basis of design and erection will all have their place in the future.

On the quantity surveyor's future, Mr. Trench envisaged a change of emphasis from bills of quantities to cost consultancy. On architects, he said that if the profession of the future attempts all the functions at present attributed to him great architecture and efficient building will be a matter of luck. The profession is trying to do too much. To retain his job as leader he must not try to do everybody else's job, but he must have powers of decision, communication and co-ordination.

Mr. Trench ended by discussing joint education, meaning by that courses common and shared by builder, engineer, architect and quantity surveyor. Three years' common grind, followed by two years' specialisation and then out to work, and a further two years' post-graduate study. The seven-year end-product will be the great architect of the future. The five-year product will work for the architects or for building firms. He blamed the RIBA for not taking realistic action about joint education. The lip service paid to it in architectural circles had led him to the conclusion that architects believe they will be the losers by such a move.

The future of the architectural profession will be in jeopardy unless it accepts that efficiency will result only from an analysis of the requirements of the industry, and a policy of training to meet those requirements. Such analysis should be carried out by a research body aided by all sections of the industry.

### Nervi Exhibition

An exhibition of the work of Professor Pier Luigi Nervi has been arranged to coincide with the presentation of the Royal Gold Medal. The presentation ceremony takes place at the RIBA on April 5 at 6 p.m., when speeches will be made by Lionel Brett, Professor Sir Leslie Martin and Professor Robert H. Matthew. Closed circuit television will relay the proceedings to an overflow meeting if necessary.

The exhibition, which has been prepared by the Cement and Concrete Association, will be shown in the Florence Hall at the RIBA from April 5 to 12 (Monday to Friday, 10 to 7, Saturday 10 to 5), with the exception of April 6. It will include some of the most recent work of Professor Nervi.

## Shops Symposium

On Wednesday, March 23, a symposium was held at the RIBA on The Shop and Its Environment. Proceedings were divided into two parts. The first was devoted to the broad planning issues. Wilfrid Burns, the Deputy County Architect for Surrey, spoke on the pattern of shops and shopping centres, Walter Bor of the LCC Planning Department on the problem created by the car and H. S. Howgrave-Graham, the Chief Architect of Crawley, on how to make the shopping centre pay in cash and in amenity.

In the second part architects with special experience spoke of the detailed problems attaching to a particular type of shop, Denys Lasdun speaking of the department store, Ellis Somake of the chain store, Robert Stille of the self-service store, and Norman Westwood of the small specialist shop. The summing up took the form of a commentary on a collection of slides by Bryan Westwood who also served as Chairman.

The symposium as a whole was characterized by sharp reactions from the audience to the points of view put forward by speakers. This was particularly true of the first part of the programme: by the time the second group of speakers had their turn, the audience was probably too exhausted to react.

The main points at issue were, first, what is happening to people's shopping habits in this country, and, second, what part ought architects and planners to play in influencing development.

Wilfrid Burns, speaking on the first of these issues, said that the regional shopping centre on the American pattern, set up outside existing development, was not wanted in this country. His reasons were, first, that unlike America there was no marked increase in the number of shoppers and, therefore, no need for essentially new facilities; second, that we could not permit interruption of the green belt; third, that too much capital was sunk in existing centres and that we could not afford to let it dwindle; and, fourth, that there were in our existing centres social amenities in the form of clubs, libraries, etc., which could not be reproduced elsewhere. He proposed a three-tier shopping pattern: large city centres, where the shops would be of a specialist kind; district centres (*i.e.*, in towns of a population of up to 40,000); and the odd corner shop.

This view was strenuously challenged chiefly by a Mr. Sainsbury of the firm of London grocers and a Mr. Kenny, a shopkeeper from Southend.

Mr. Sainsbury pointed out that the new American shopping development was not confined to regional centres out in the country, but also included smaller centres within the suburban fringe. Though there was no great increase in the number of shoppers, there was an increase in spending power and it was this which justified and required new shopping units. He attacked the corner shop idea on the grounds that corner shops are, in fact, in rapid decline as they cannot compete on price or on the freshness of the products they have to sell. In his view the rapid increase in car ownership on the one hand and of more and larger

refrigerators on the other is going to cause people to do their shopping by car, to travel greater distances to get a better (or cheaper) product and to shop less frequently (once a week instead of the present average of 2½ times a week). Mr. Kenny, taking on from here, said that it was no use providing shopping precincts and parking areas in existing centres since the system of approach roads could not take the traffic.

## LCC

### Salary Proposals

In response to the LCC Staff Association's claim on behalf of the professional staff (made as long ago as January, 1959) the LCC Establishments Committee has now proposed the following increases:

	Existing	Proposed
Asst. Snr. Archt.	£1,535-1,915	£1,900 × 75 —2,050
Principal Asst.	1,475-1,765	1,700 × 50-1,750 × 75-1,900
Grade I	1,295-1,535	1,500 × 50-1,700
Grade II	1,080-1,355	1,250 × 50-1,500
Grade III	850-1,135	750 × 40-1,150 × 50-1,250

The advance from £1,150 to £1,250 in Grade III is subject to a certificate by the head of the department that the ability of the officer and the work assigned to him justify this course.

The chairman of the Establishments Committee said at last week's LCC meeting: "The effect will be to increase the maximum salary of the recruitment grades from £1,135 to £1,250 a year, which is the degree of improvement thought necessary to stimulate recruitment and to reduce the present excessive wastage, and to make roughly corresponding increases in the maxima of the higher grades."

## COID COMPETITION

### Litter Bins

The Council of Industrial Design, in association with the Ministry of Housing and Local Government and the Department of Health for Scotland, is to hold a Litter Bin Competition for which manufacturers are invited to submit new designs. This is announced to meet the demand for litter bins created by the Litter Act, 1958, and to stimulate the production of inexpensive well-designed bins for both the street and public open spaces.

The competition is limited to bona fide manufacturers both willing and able to execute orders to the designs submitted. These must be in prototype form, or pre-production samples, and accompanied by a short explanatory report. The competition is to be judged by the Council of Industrial Design's Street Furniture Panel, of which the members are as follows: Jack Howe, F.R.I.B.A., Geoffrey A. Jellicoe, F.R.I.B.A., George Williams, Paul Reilly, Director, Council of Industrial Design, Alec Gardner-Medwin, Chief Industrial Officer, CoID, Peter Whitworth, Secretary, CoID Street Furniture Panel.

## TAUNTON COUNTY OFFICES

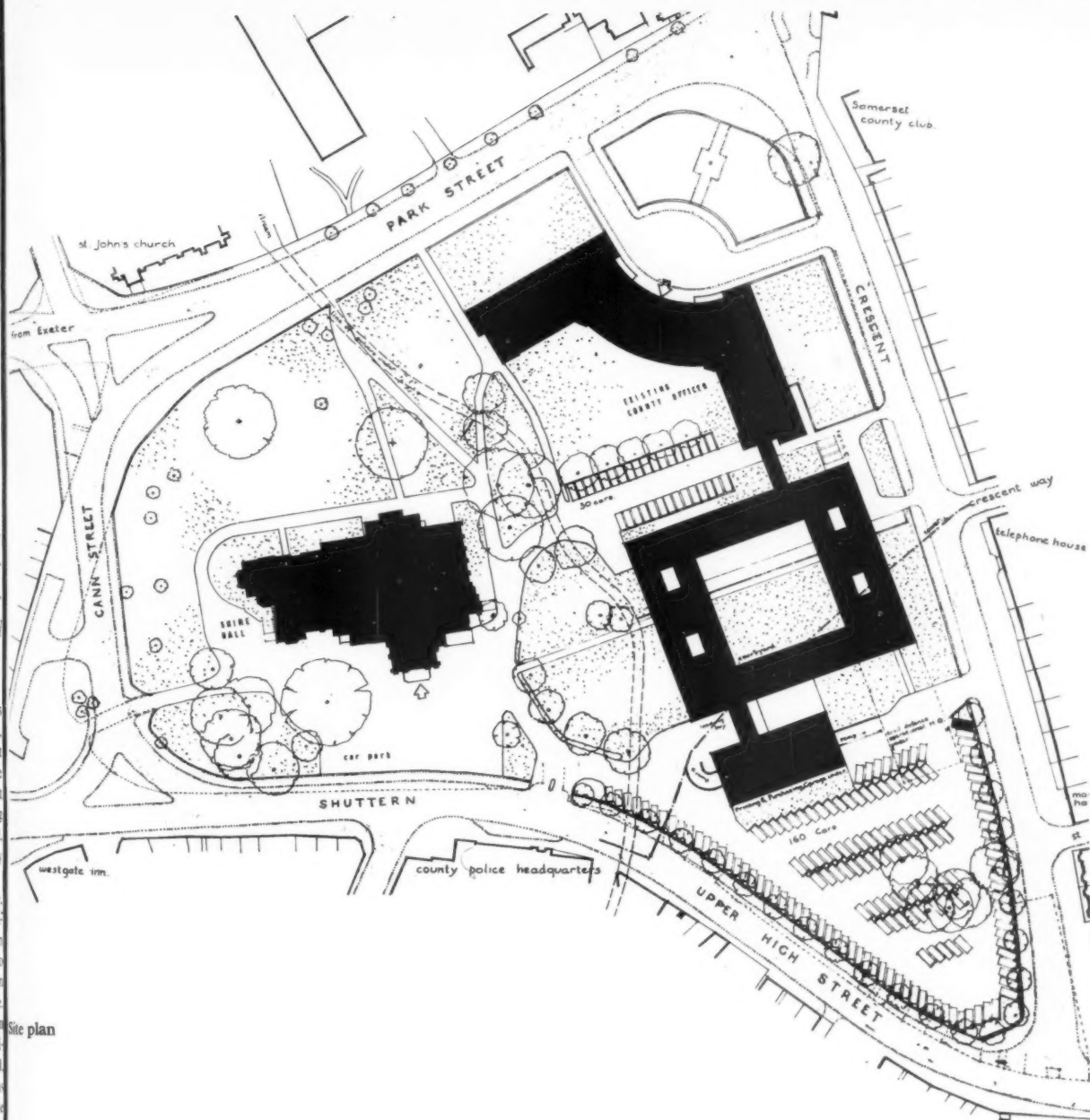
### Competition Results

*This competition for the new County offices at Taunton attracted eighty-four entries. Of these, the assessors, the Hon. Lionel Brett, Geoffrey Jellicoe and J. M. Richards have selected three prize winners and have recommended two further schemes. The first prize goes to L. Tatum who receives £1,500, the second to Sir John Burnet, Tait and Partners (£1,000) and the third to M. Handley (£500). The designs commended by the assessors, an extract of whose report follows, were by A. H. R. Weitzel and B. Dewhurst.*

There was a rewarding number of designs deserving serious and detailed consideration, but at the end the assessors were in no doubt of the outstanding all-round qualities of the winner's. The promoters can be satisfied that in it they have the promise of a building which will serve its purpose excellently and, as a work of architecture, will do the County Council and the town of Taunton credit.

The site was an unusually interesting one, and demanded a design worthy of the beautiful setting it provided, able to hold its own with the two buildings with which it had to be shared, and at the same time to create, in conjunction with them, a coherent landscape. It was in successfully fitting the building on to the site, and in making sufficiently imaginative use of the opportunities it offered, that many otherwise well-planned designs failed. Compared with the proper use of the site, the planning of the required office accommodation presented no exceptional problems, although not many competitors managed to achieve good lighting, easy circulation, the necessary flexibility and convenient grouping of departments all at the same time.

Most of the designs submitted conformed to one of three types of layout: the quad and its variant, the slab and the tower. There was, however, a number of departures from these three types, including the second and third prize-winners—of which more later—and several others of the more interesting entries. Of those that found a solution wholly their own, perhaps the most notable was by Quine & Newberry, a pure glass pyramid just over 100 ft. high. It was much more than the stunt such a design might seem at first glance, and demanded to be taken seriously. On close examination it disclosed a number of impressive qualities, though not all the qualities needed. (Continued on p. 506.)



## FIRST PRIZE BY L. TATUM

FROM THE ASSESSORS' REPORT: The winning design, by L. Tatum, of Goodwin & Tatum, was presented in a set of drawings much less attractive than some, and its outstanding qualities only emerged when the assessors studied it closely. By comparison with many of the designs already referred to, it interfered very little with the present modelling of the site and set a quadrangular building down on it in such a way as to allow the landscape to flow beneath it. This was achieved by an open ground floor, which freed the site in a more brilliant way and promised to provide at ground-level spaces that would be delightful to walk about in. The main entrance and the canteen were well placed in relation to all these. The printing and purchasing departments which, with their blind walls, would

have stood in the way of an open ground floor, were in a separate low building placed so as to screen the car-parking area in the southern corner.

The planning of the accommodation on the three upper floors promised agreeable and well-lighted suites of offices. A clever and justifiable device was the combination of a vertical with the orthodox horizontal grouping of departments on the two upper floors—what might be described as a maisonette type of planning—with each department connected internally by its own corner staircase. Another interesting device was the use of light wells which, although small, descended into the open area of the ground floor and would therefore introduce reflected light from below as well as direct light from above.

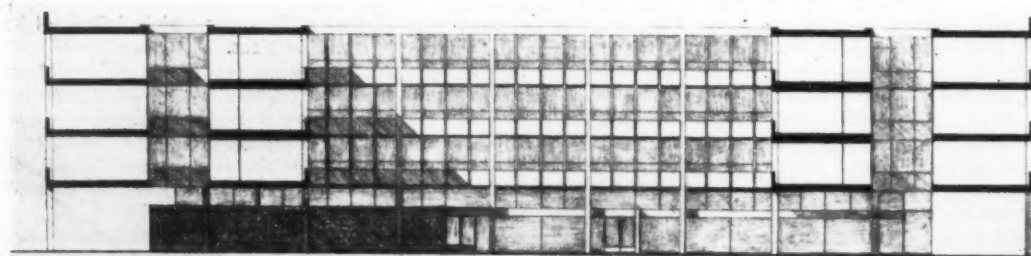
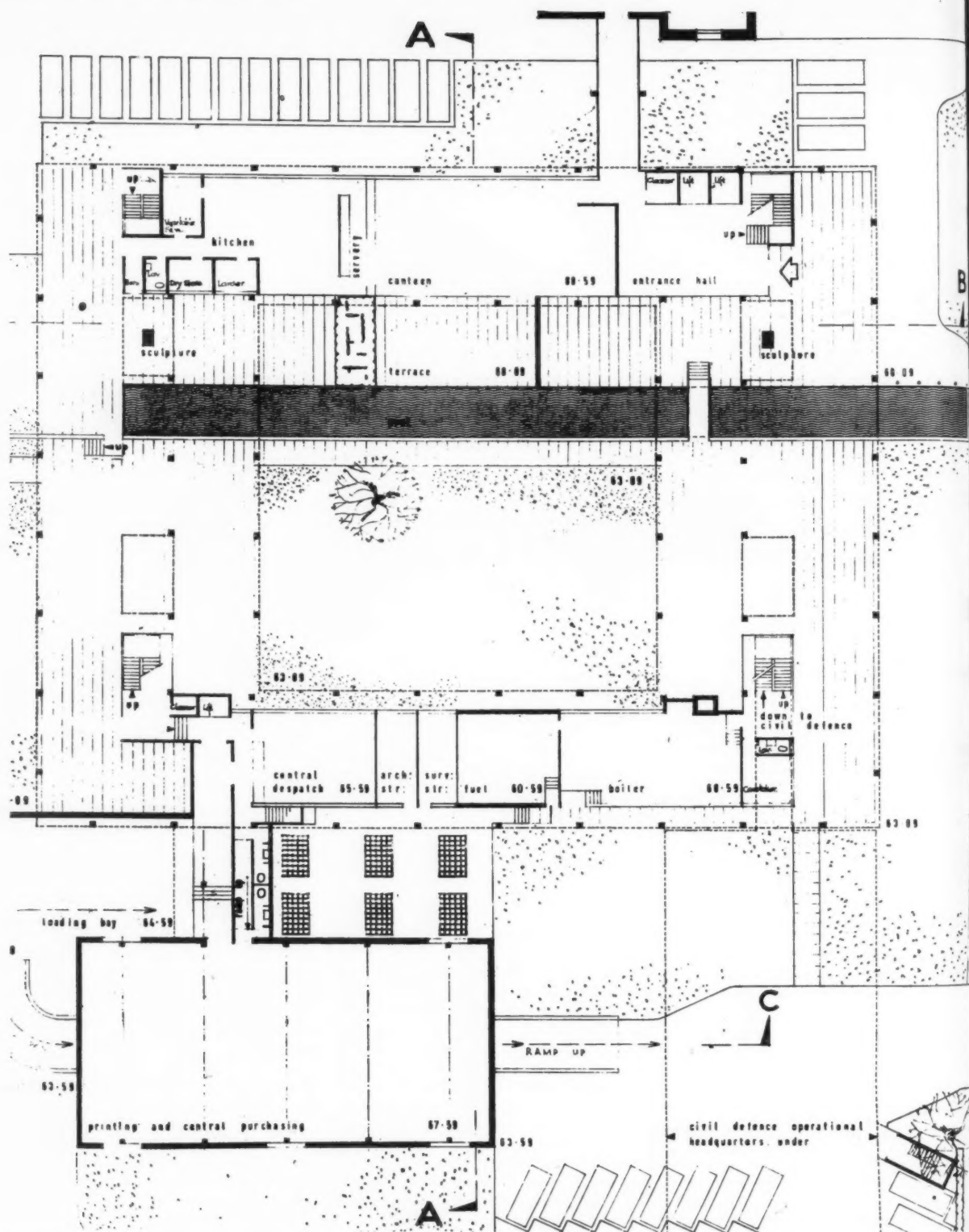
The winner's elevations were more tentative than some, but showed sensitivity and the promise of development into a building of real character, no more pretentious than an office building should be, but with the refinement and dignity that the situation and purpose require.

FROM THE COMPETITOR'S REPORT: The siting of the buildings was mainly influenced by two considerations.

First, a desire to provide a continuous façade on the west side of the Crescent of similar height to the existing houses. In view of the openness of the new building at ground floor level and its difference in character from the existing County Hall, its façade was brought forward.

Second, to keep the centre of the triangular





Ground floor plan

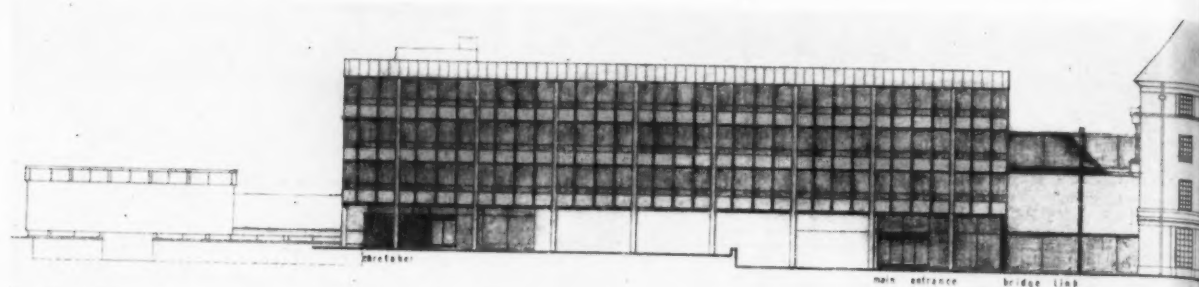
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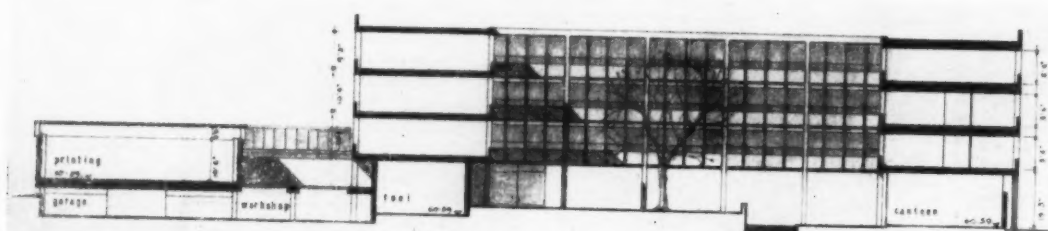




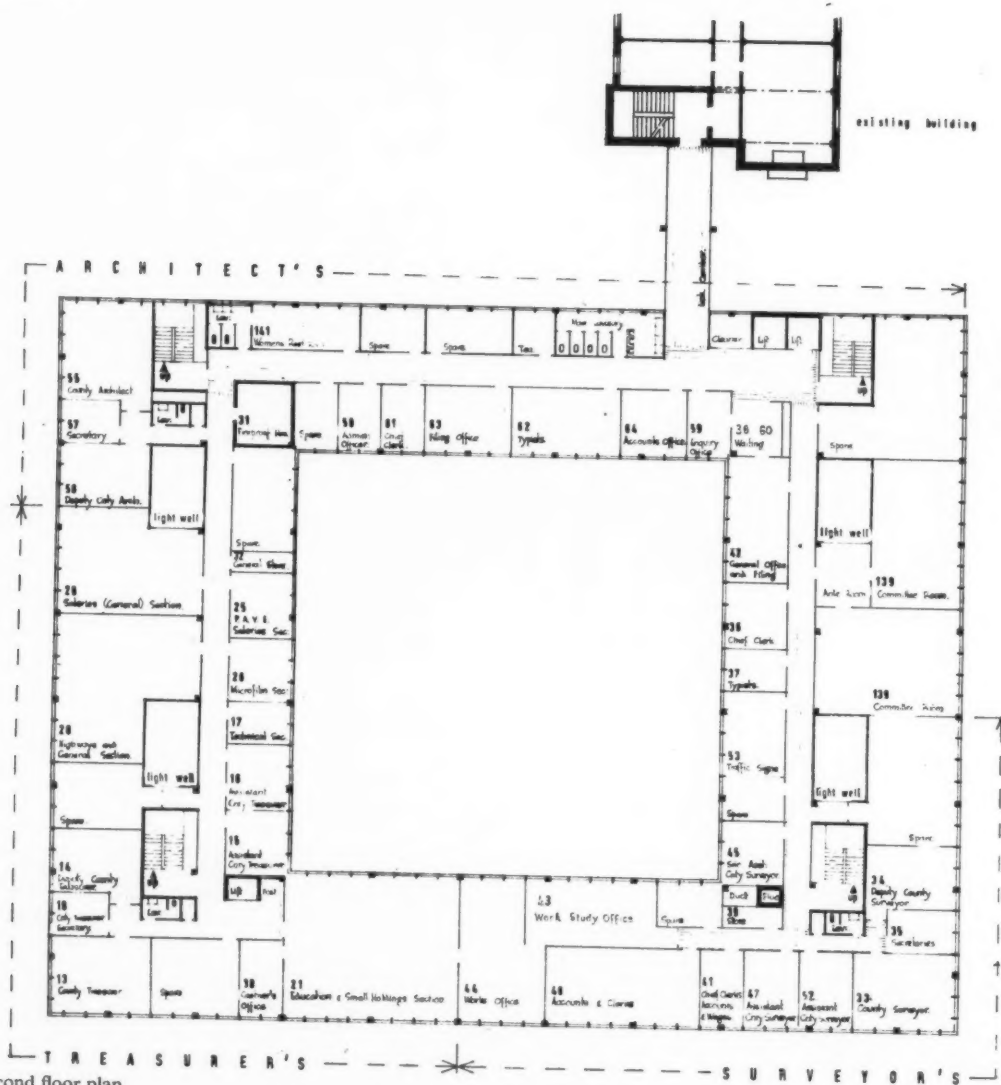
# TAUNTON COMPETITION: FIRST PRIZE BY L. TATUM



East elevation



Section AA



The third floor is similar to the second with individual vertical circulation for the various departments.

## SECOND PRIZE BY SIR JOHN BURNET TAIT &amp; PARTNERS

FROM THE ASSESSORS' REPORT: The second prizewinner, by Sir John Burnet Tait & Partners, though less imaginative was extremely efficient, with the deceptive simplicity of the thoroughly worked-out plan. The arrangement of the accommodation in two wings, one along the Crescent and one, the higher, at right-angles, worked very well and had the advantage both of moving the higher block far enough away to prevent it competing directly with the existing County Hall and of allowing cross-views from the Crescent to Shire Hall and the church spire. The car-parking problem had been conscientiously faced but in a way that cluttered up the base of the building and offered unattractive views down into the sunken garage from the entrance and nearby. At the back, the end of the high wing came rather close to Shire Hall, with the result that the characteristic effect of the ground

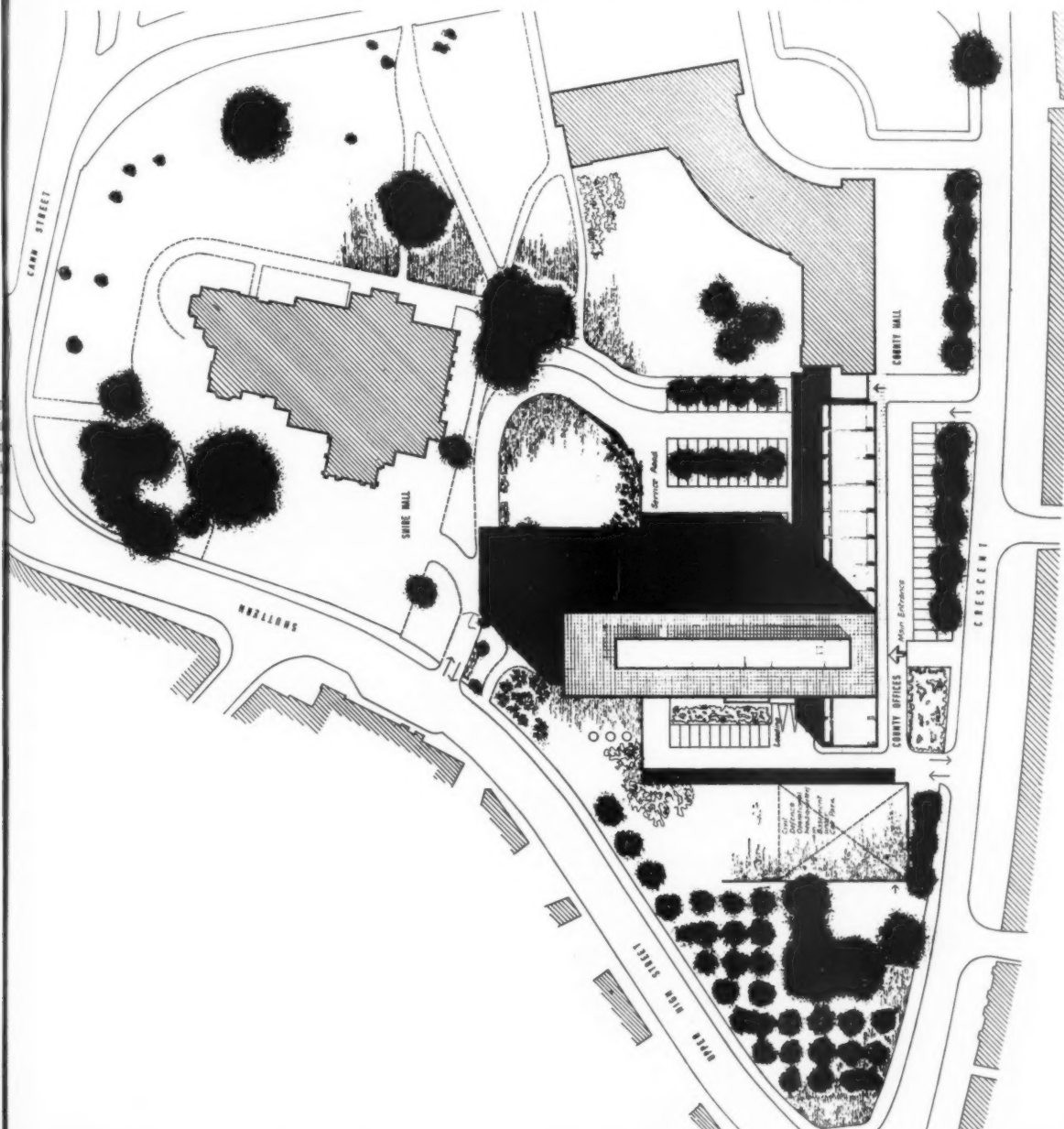
falling away at this point was lost.

FROM THE COMPETITOR'S REPORT: The accommodation, with the exception of the Civil Defence Building and the garage, is contained within a T shape, the upright portion of the T being of six storeys and the cross piece, facing the Crescent, of two storeys. The whole is placed on the site in such a way as to compose with the existing county hall and shire hall, but without aping their architectural mannerisms or reducing its own status to that of an appendage to an existing building. The central precinct thus formed between the two old and one new buildings could be partially devoted to car parking, but by means of levels, and by planting flowering crab-apple trees to form a parasol over the cars, it is intended to play this down as much as possible while retaining the convenience of having the cars as close as possible to the buildings for which

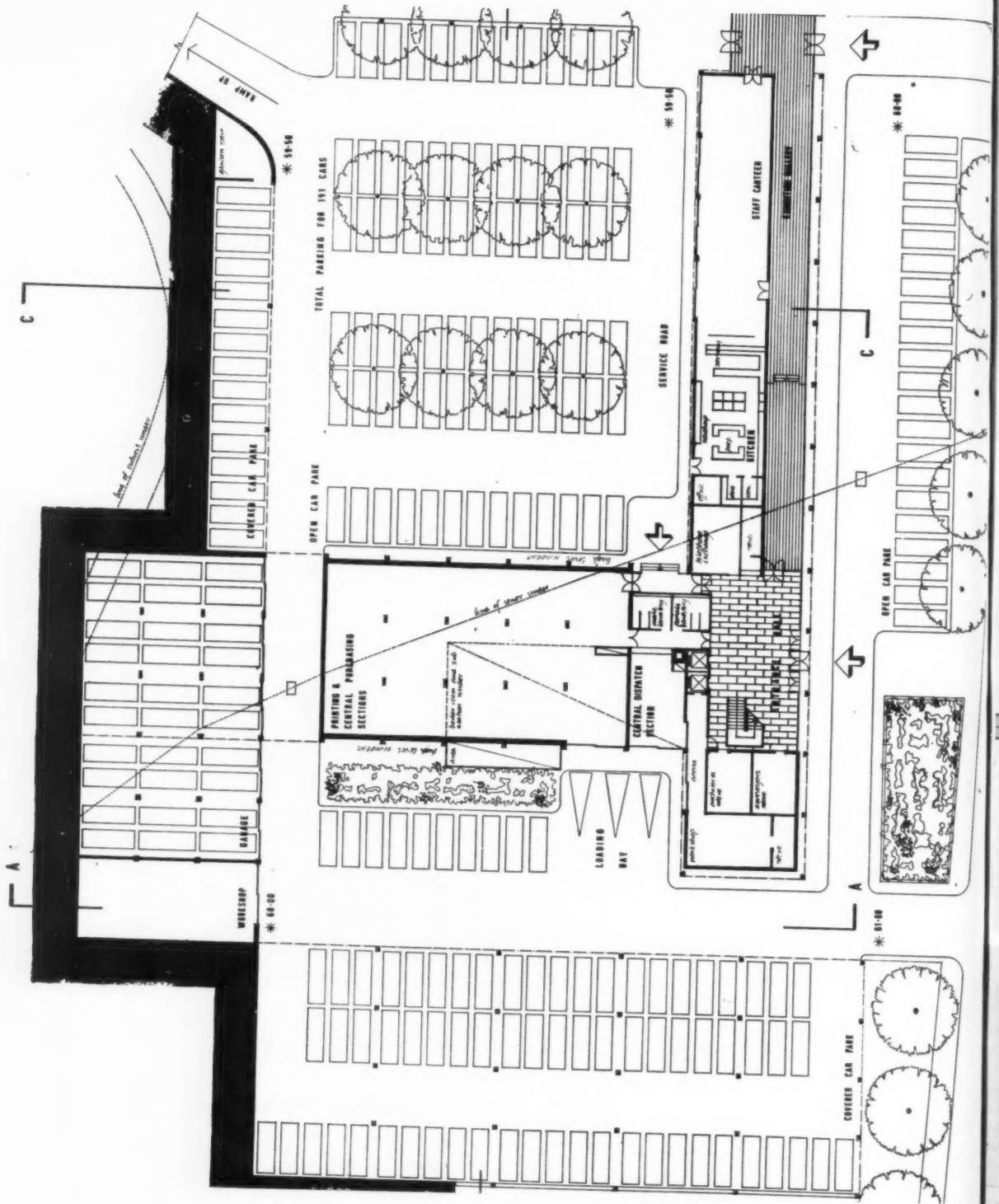
they are needed. Additional car parking, the garage, and the Civil Defence operational Headquarters are placed to the south and their roofs covered with grass and cover planting to merge into the landscaping.

The main entrance is approached from the Crescent, an additional access from this street being provided in order that visitors' cars, taxis, etc., may be separated from service vehicles and permanently parked cars. All loading and unloading of goods is to the rear of the wing facing the Crescent at ground level.

There is communication with the County Hall at ground and first-floor level, the corridor at ground floor level being increased in width in order to serve as a gallery for temporary exhibitions. The canteen is entered from this corridor at the end nearest County Hall, and at this point there are external doors.



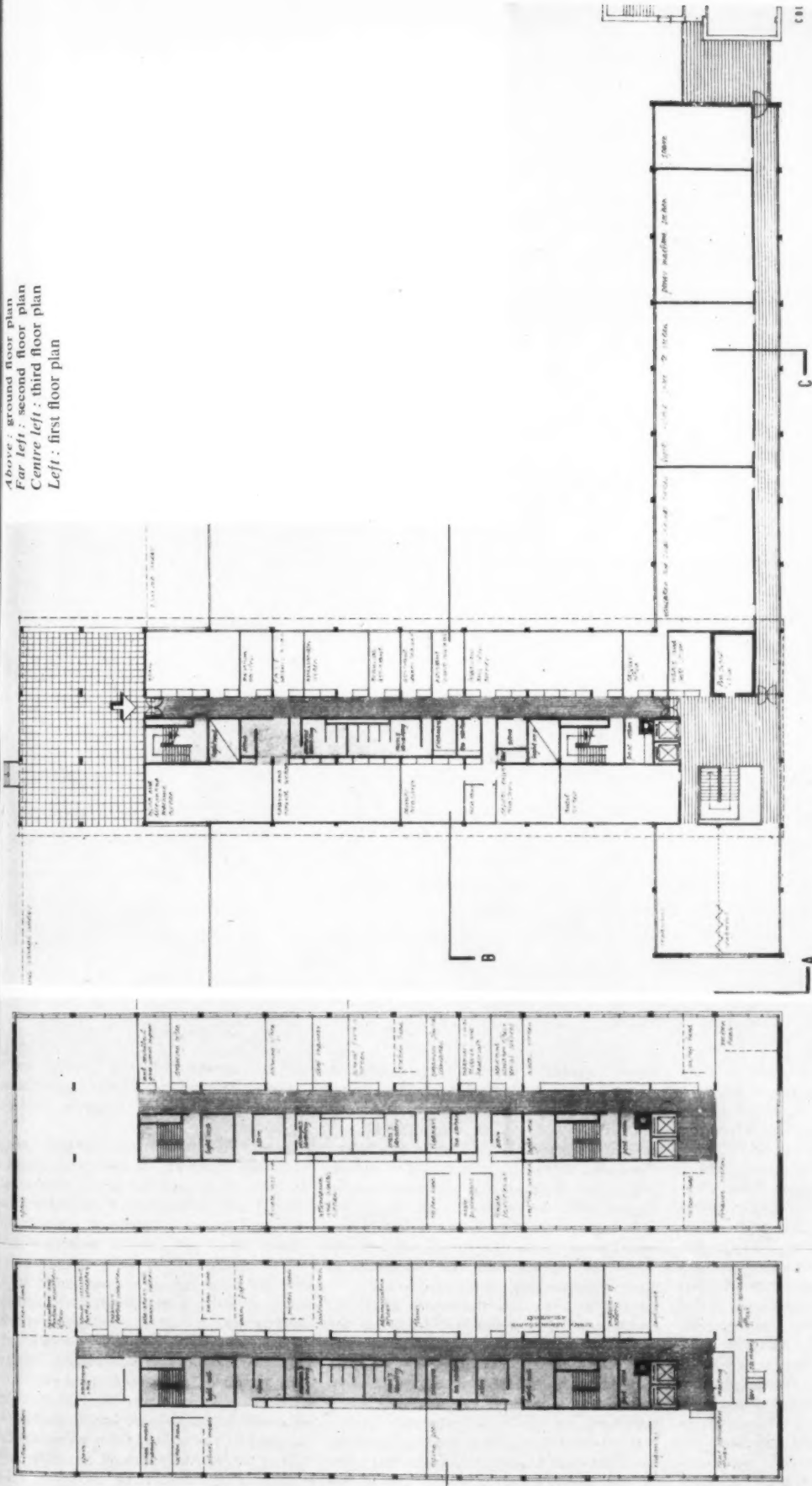
Site plan



Above: ground floor plan  
Far left: second floor plan  
Centre left: third floor plan  
Left: first floor plan

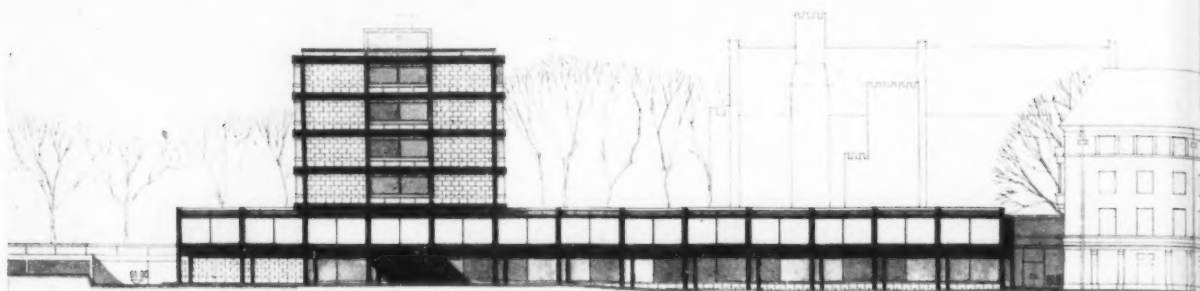


Above: ground floor plan  
 Far left: second floor plan  
 Centre left: third floor plan  
 Left: first floor plan

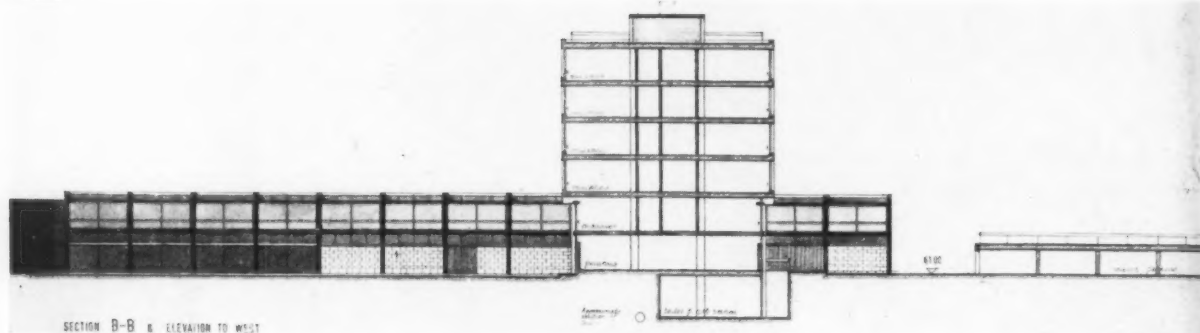


TAUNTON COMPETITION: SECOND PRIZE BY SIR JOHN BURNET TAIT & PARTNERS

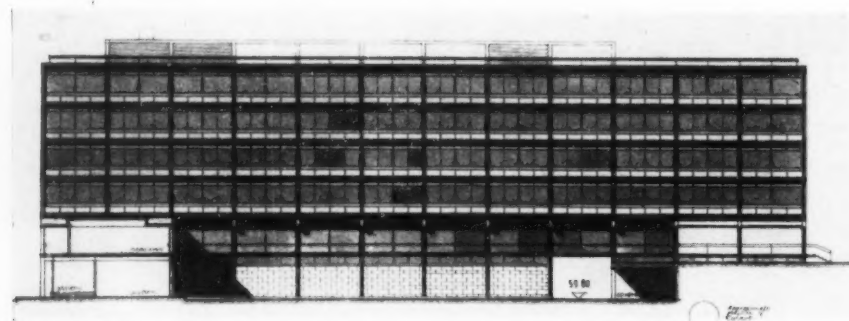
## SECOND PRIZE BY SIR JOHN BURNET TAIT &amp; PARTNER



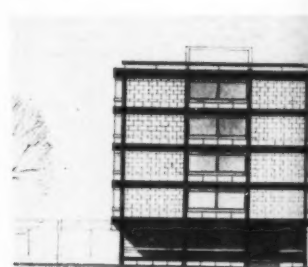
Elevation to Crescent



Section North-South



Elevation to North



Elevation to West

ASSESSORS' REPORT *contd.* from p. 498: Among the more orthodox designs that also departed from the three types of layout noted above, the following deserved notice. No. 63 (by R. H. Gallanaugh) which combined a curving two-storey wing near the east end of the Shire Hall with a four-storey wing running at right-angles up to the Crescent, and a basement car-park. Its elevations, however, were disappointing. No. 66 (by Bryan and Norman Westwood and Partners), which also had two wings at right-angles, the higher wing in this case being parallel with the Crescent. But the height was excessive, resulting in a defect common to many schemes with the bulk of the accommodation in this position, that of casting into shadow the present sun-filled Crescent, and blocking the views from it. This design omitted the link with the existing County Hall that the conditions asked for. The curtain-wall type elevations

were beautifully scaled and proportioned. This was an exceptionally good set of drawings, No. 36 (by Alison and Hutchinson and Partners), No. 81 (A. D. Blee), and No. 84 (W. Livingstone Stuart and A. Drew-Edwards), all had an open plan with spreading wings. In these the planning was, in varying degrees, confused (and so, in the case of the scheme by Alison and Hutchinson and Partners, were the elevations), and the immediate surroundings of the buildings were unsympathetic to the landscape.

To return to the three main types of layout, there were several brave attempts at the tower plan, but they were out of scale with the surroundings and failed to compose well with the existing buildings. A tower, moreover, with its small area, made it necessary to distribute departments over several floors. In spite of its obvious advantages in freeing ground-space, it was clear to the assessors that a tower-building was

not the answer. The best attempt was by Cannon, Morgan and Rheinberg, which was well thought-out and unusually sensitively drawn.

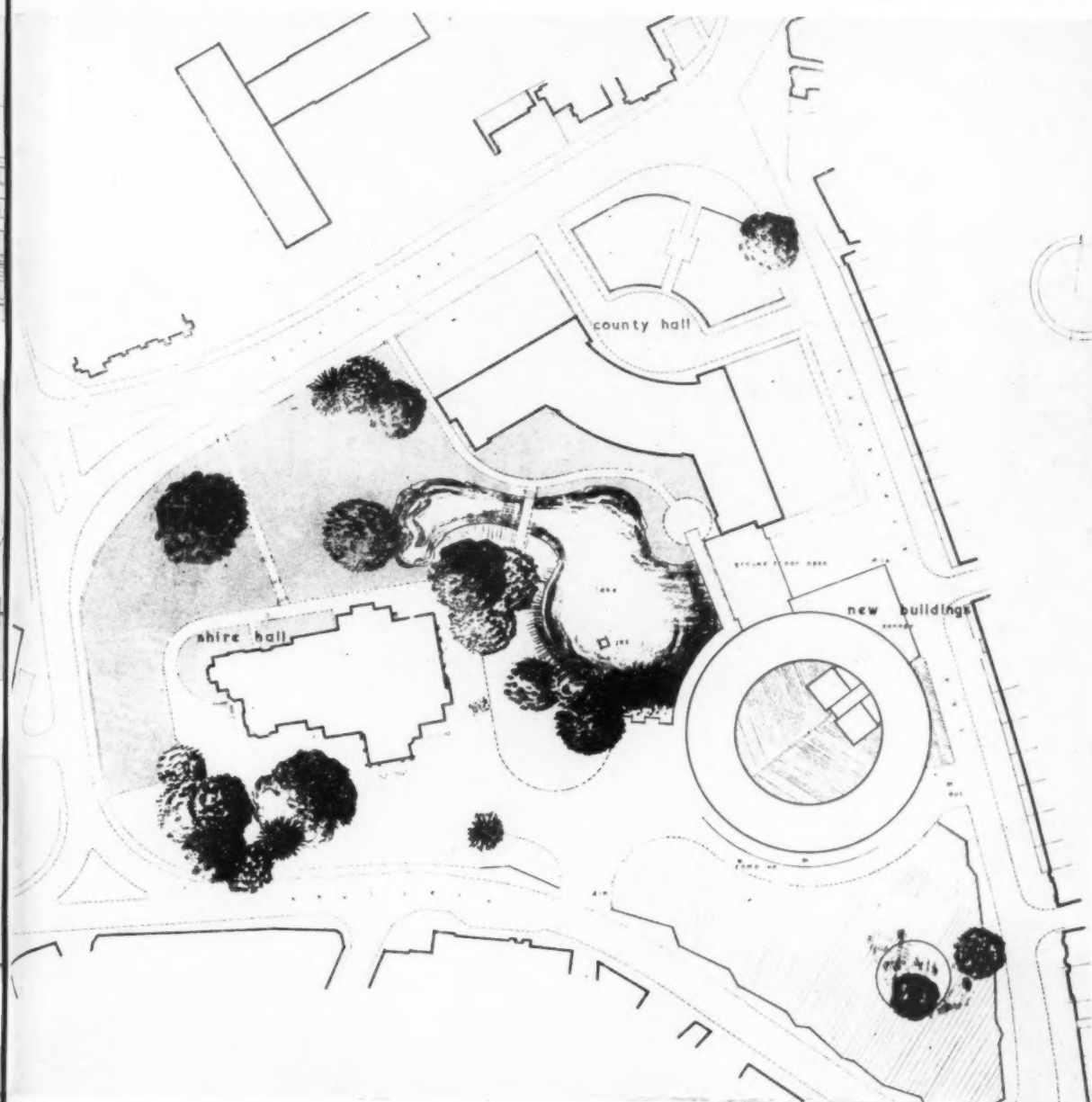
None of the attempts at a slab plan, parallel with the Crescent, was very successful in spite of its advantages in the way of simplicity, largely because it spoilt the openness of the Crescent, interrupted the delightful views across the site (for example, to the tower of the Gilbert Scott church) and, in order to get the accommodation into the plan, it was necessary to rise to a height greater than that of the existing County Hall, which seemed undesirable, especially when the new building, as was usually the case, was placed immediately adjoining it.

The quadrangular plans were, on the whole, the most successful, and lent themselves well to the efficient layout of the accommodation asked for. But they needed careful handling because they tended to occupy a lot

Site plan

ground and the site in most cases being within the town outside the circle, it was by M. H. assessors' plan, it was necessary to rise to a height greater than that of the existing County Hall, which seemed undesirable, especially when the new building, as was usually the case, was placed immediately adjoining it. The quadrangular plans were, on the whole, the most successful, and lent themselves well to the efficient layout of the accommodation asked for. But they needed careful handling because they tended to occupy a lot

## TAUNTON COMPETITION: THIRD PRIZE BY M. HANDLEY



was  
which was  
sensitive

parallel ground and to cut into the landscaping of the site in a rigid and unsympathetic way. In most cases, also, their internal courtyards, being wholly enclosed, could play no part in the total landscape, the building from the outside reading as one solid block.

FROM THE ASSESSORS' REPORT: The scheme by M. Handley, placed third, appealed to the assessors enormously and was nearly a brilliant winner. In the form of a simple hollow circle, it promised a building with its own forceful character, making a self-contained architectural statement complementary to that made by the two existing buildings on the site, and handling the space between the three buildings more attractively than any. The landscape flowed between them delightfully, and the whole conception showed

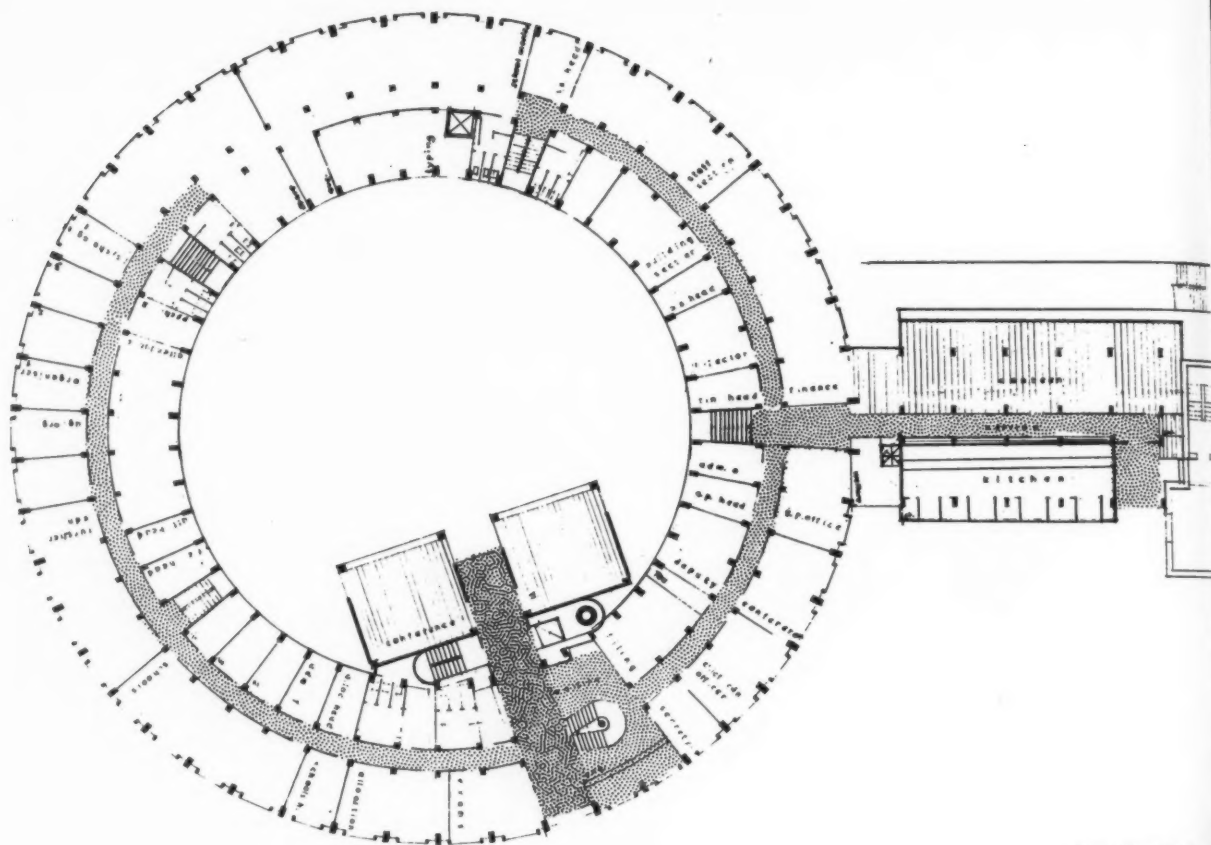
welcome qualities of imagination. The expressive drawings suggested that the author was capable of creating a real work of art. The obvious disadvantages of the radial plan in the way of loss of flexibility and the inevitable wedge shape of the rooms could, the assessors felt, have been outweighed by the design's many advantages, but when they came to analyse the design in detail they found faults of planning and circulation, and other weaknesses in the realization of the idea, which suggested that the author had not yet the experience to plan a building of this kind. The plan could also have been improved by giving the dead space within the circle some outlet into the landscape on the far side, and the square block projecting into the circle was not well

handled. The car-parking problem had been rather perfunctorily solved and the cost of the building would have been high.

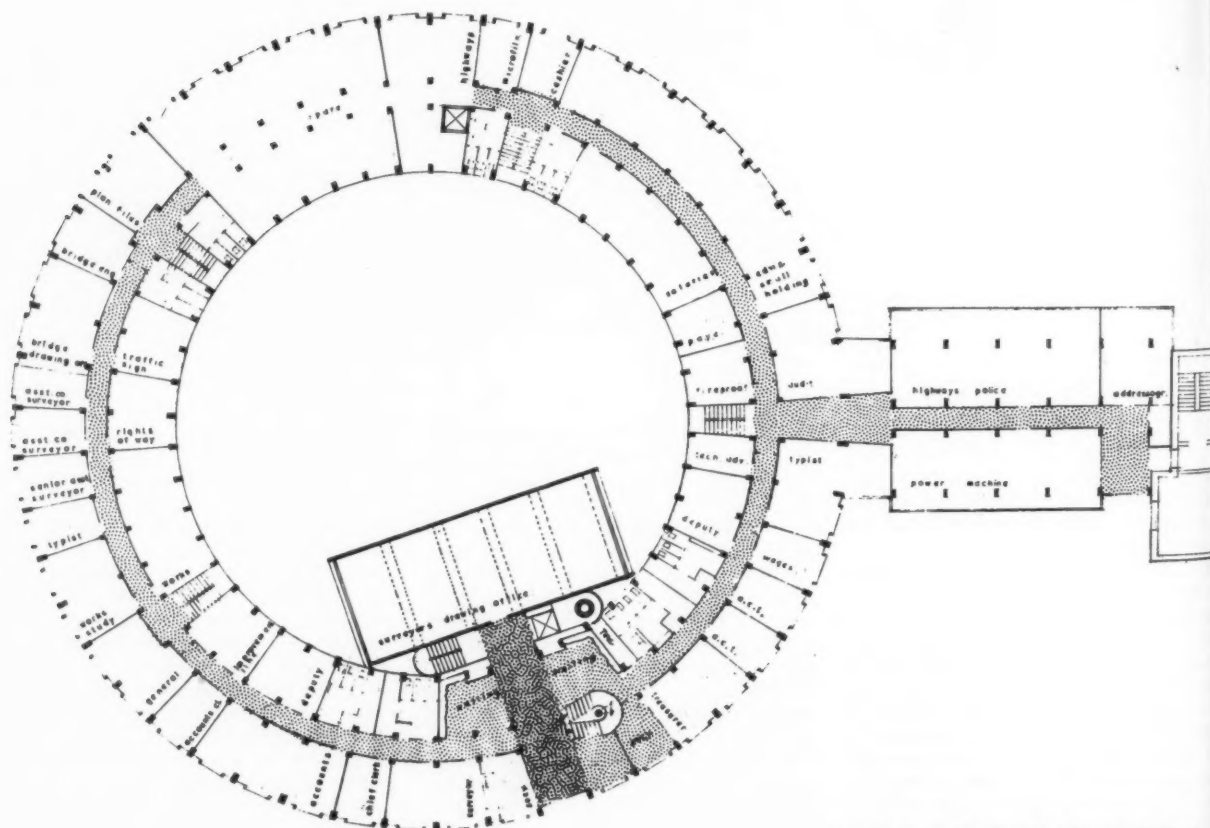
FROM THE COMPETITOR'S REPORT: The Shire Hall mound, with its easy landscape, has been levelled down for the geometry of the County Hall. Congested buildings on the southern corner of the site spread ruggedly back to the Shire Hall to cause a three-cornered confusion. Unseen, below, a culvert divides Shire Hall from its neighbour. The buildings surrounding the site are Taunton scale, accented by the proposed seven-storey office block and the spire of St. John's Church, which latter offers the prospects of vista.

First thoughts lead to the notion that the building under consideration should be

# TAUNTON COMPETITION: THE



First floor plan



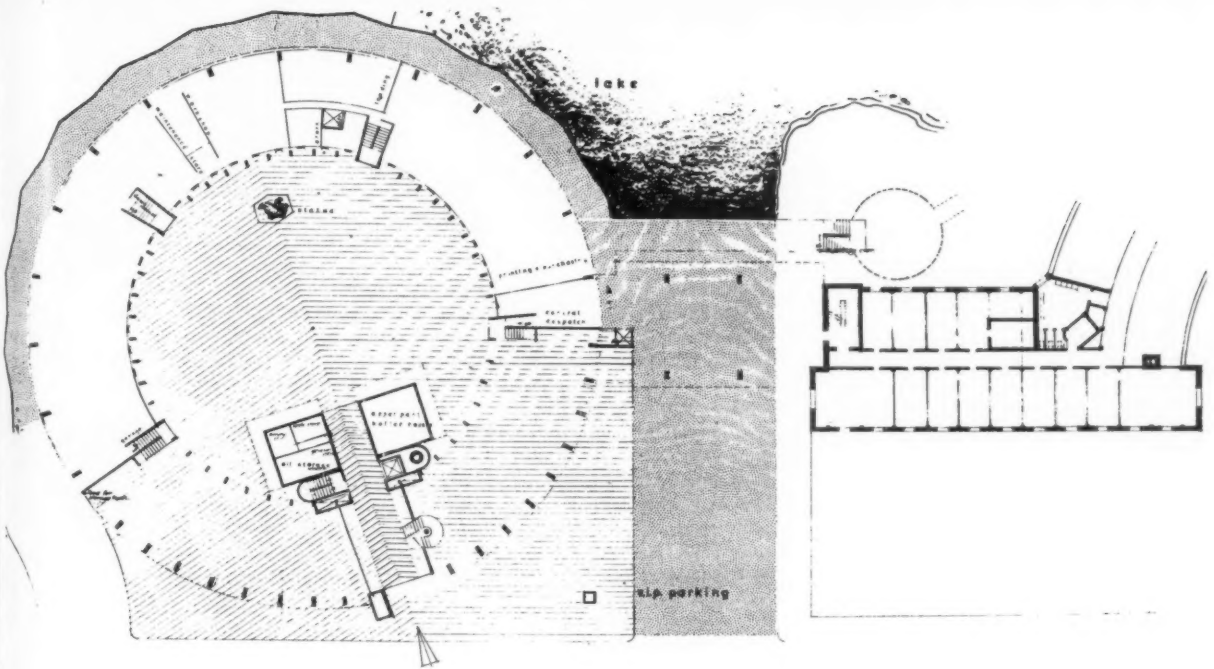
Second floor plan (the third floor is similar)

Top :  
Above  
Right  
Below

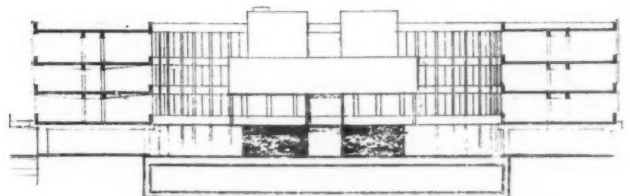
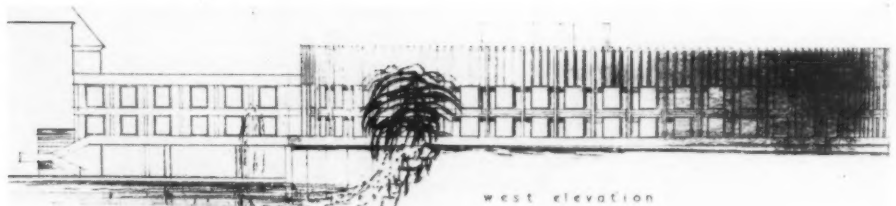
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# ON: THIRD PRIZE BY M. HANDLEY



Top: ground floor plan  
Above: east elevation  
Right: west elevation  
Below right: section



linked to the southern wing of the County Hall for direct circulation, and that the approach should be immediately recognizable from the other end of Corporation Street. A building brought nearer to the Crescent than County Hall meets these requirements.

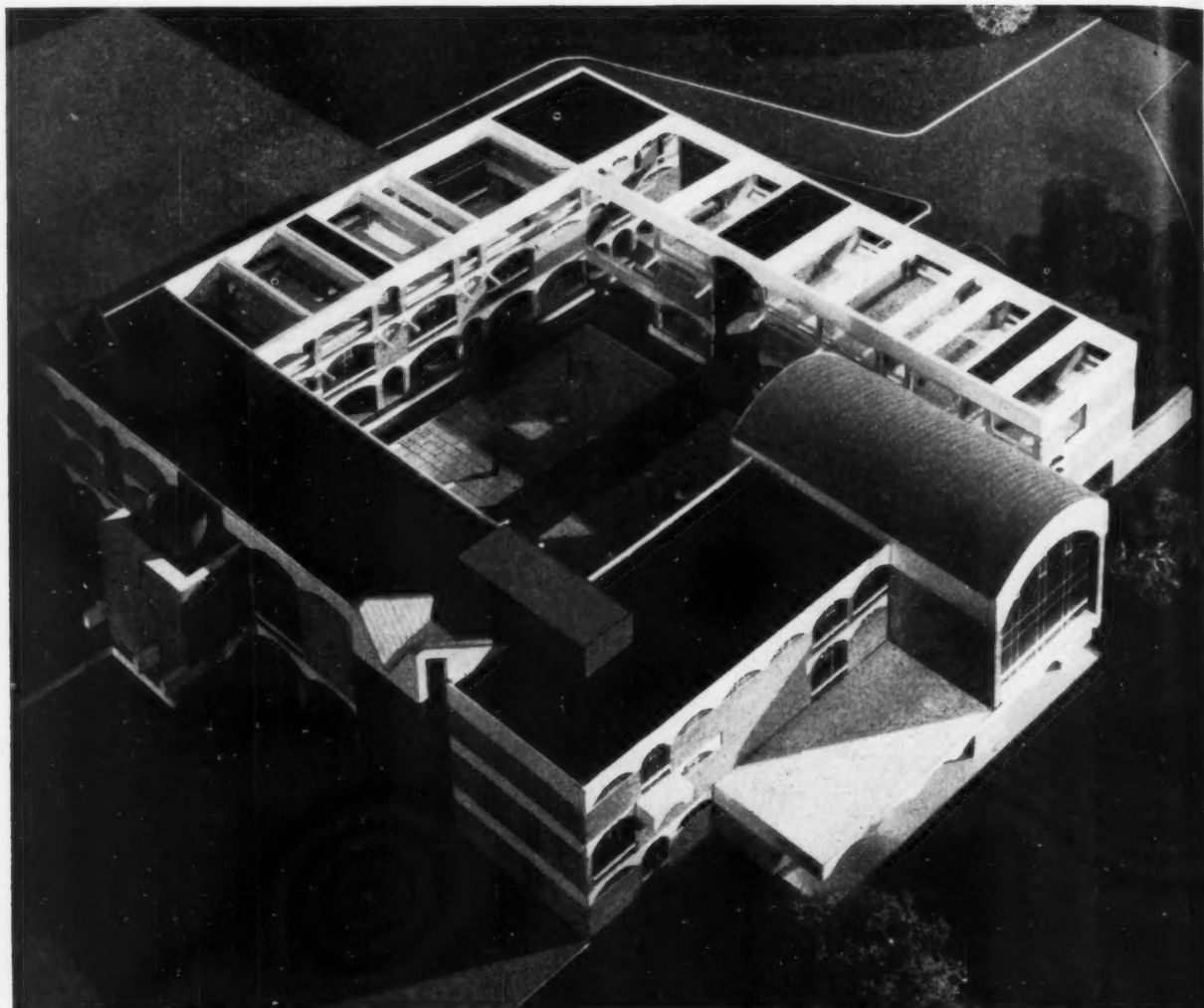
The dominance of curve in County Hall approached either from the town or from Shire Hall mound cannot be ignored, and in freeing the site this will become more and more apparent. Relating the competition requirement of easy vehicular access to this dominance of curve, and recognizing the desire for unity on the site, there emerges the suggestion of a knuckle joint between

the two buildings differing so much in silhouette and conception. The solution is a circular plan.

The half-exposed curve eased on the site proud of County Hall presents an element of surprise and leads leisurely over the rising ground to the drama of cascade, and for a sheet of water around which the three buildings group. The essential repetitive element of the planning requirement is a

"couple" comprising one room of 180 sq. ft. and another of 135 sq. ft. (together with their multiples) and this unit can be obtained naturally round a circular courtyard whose diameter is 116 ft.

Because of their special function, the two committee rooms have been brought out of the general run of office accommodation to stabilize the circular plan around the entrance.



College House

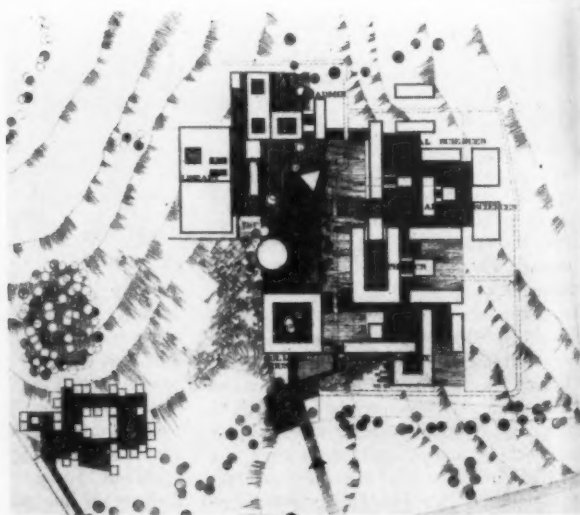
# SUSSEX UNIVERSITY, DESIGNED BY BASIL SPENCE

England's second new post-war university—the University College of Sussex—has got off to an architecturally interesting start with a design by Basil Spence, unlike poor Keele College. The site, shown by model and plan below, is of 150 acres in Stanmer Park, near Falmer, about 3 miles from Brighton on the Lewes

Site model

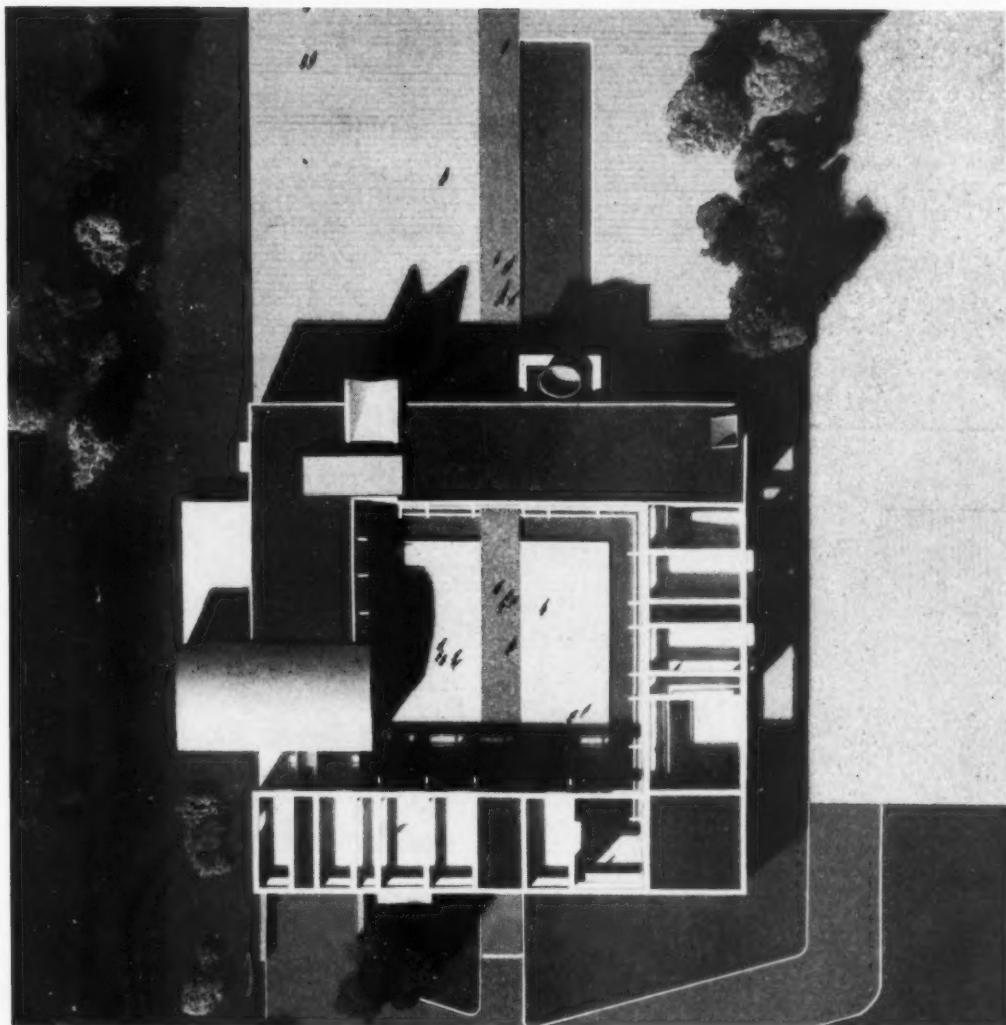


Site plan



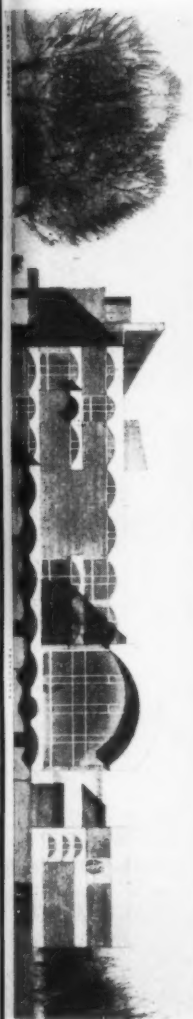


North elevation

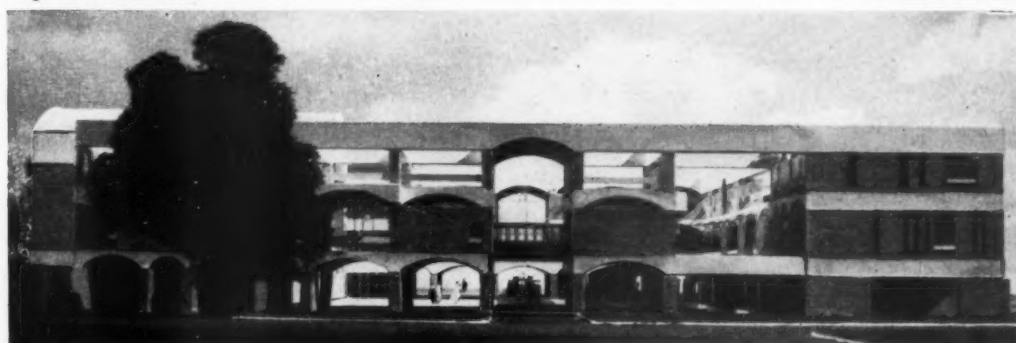


Top view of model

South elevation



West elevation



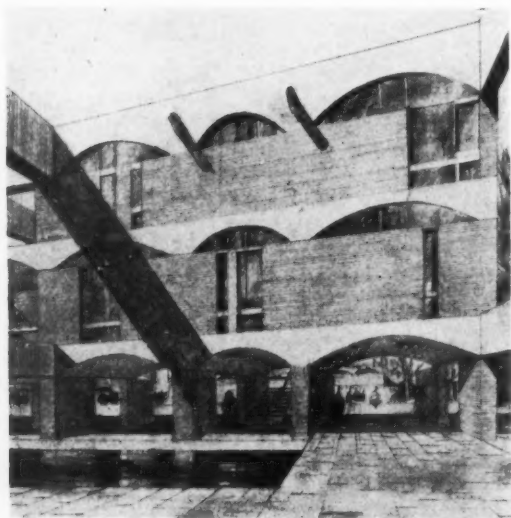
ge House

Site plan



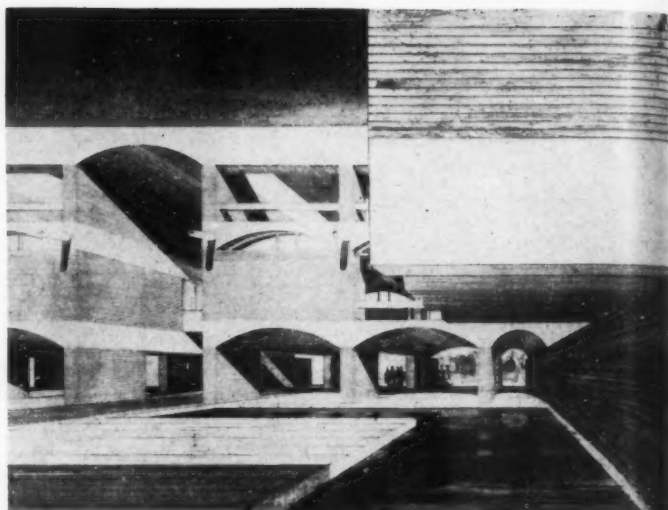
## SUSSEX UNIVERSITY

Road. The first building is College House, the focus of the university's social activities, the large quadrangular building in the site plan. Anti-clockwise from this Spence has sited the Chemistry buildings, Physics (illustrated on pages 514-515), Applied Sciences, Natural Sciences, the chapel (a triangle), administration, Arts and Library. South-west is a cluster of staff houses. College House is planned round a 120-ft. square court. Between the buildings and the central paving is an internal moat, bridged only by the main access path. There is no planting within, only water and hard surfaces, in formal contrast with the sylvan scenery outside. Mr. Spence does not expect this treatment to

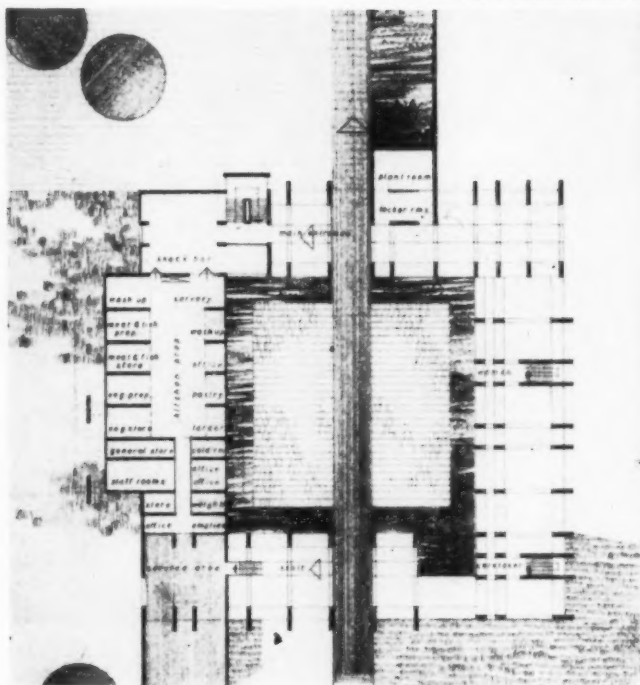


View east inside court

cause a high noise level within the court. The construction is simple: solid, pink Sussex brick walls, unplastered, support shell concrete vaults of 10 ft., 15 ft. and 20 ft. spans. Timber floors run above the vaults and services are concealed in the space between floor and vault. To avoid chasing the brickwork, light switches will be at skirting level. Any echo caused by the shells will be corrected either by an acoustic plaster or by leaving holes in the concrete. One staircase wall, on the north elevation, will be faced with knapped flints. The plan at ground floor level, above, centre, is largely open cloisters, save for the kitchen on the west, and this open treatment is continued to a lesser degree

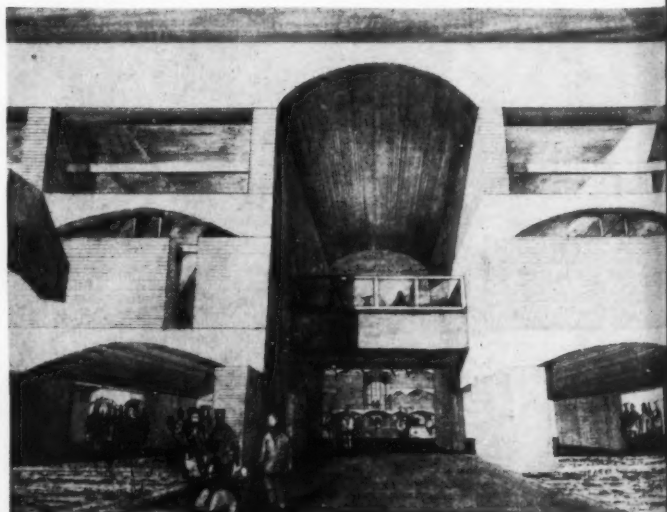


View south inside court



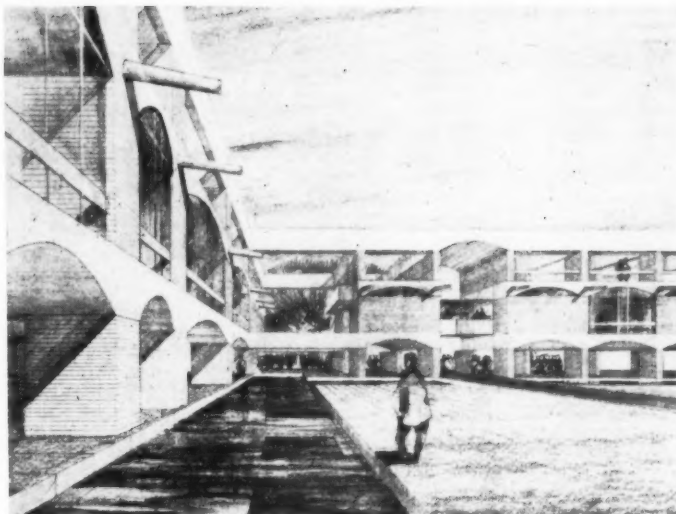
Ground floor

View of entrance from south

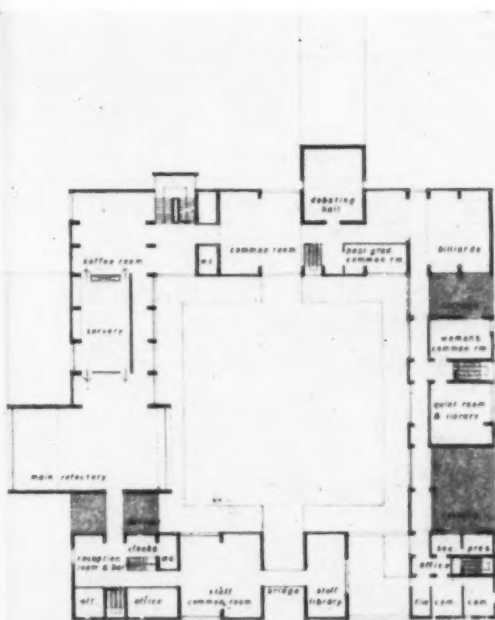




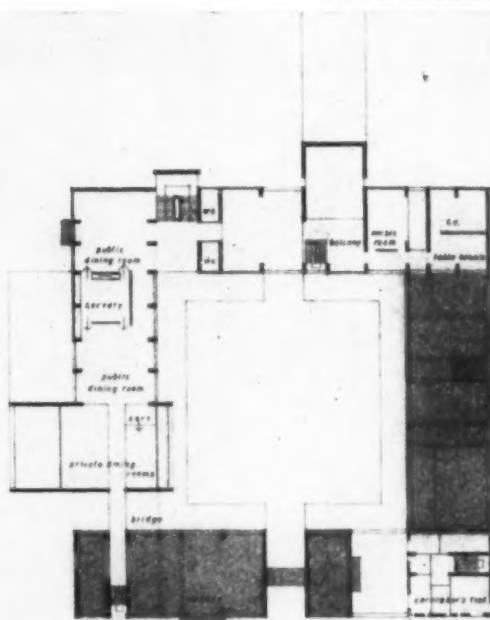
the first and second floors, opposite page, thus allowing for a certain amount of expansion within the overall framework of the structure. The sketches on these two pages show: top left, the underside of the cantilevered refectory, looking towards the entry to the court; centre, looking right on entering the court; bottom left, the main entrance (a dramatic sketch which is misleading, except, we hope, to the architect, as the far side of the court is only 200 ft. away from the viewpoint). Above is the east side of the court, with the women's common room and the library on the left. Right, a view from an arch to the left of the entrance way looking towards the main entrance on the far side of the court. The U.G.C. have given £1,500,000 for



View south inside court

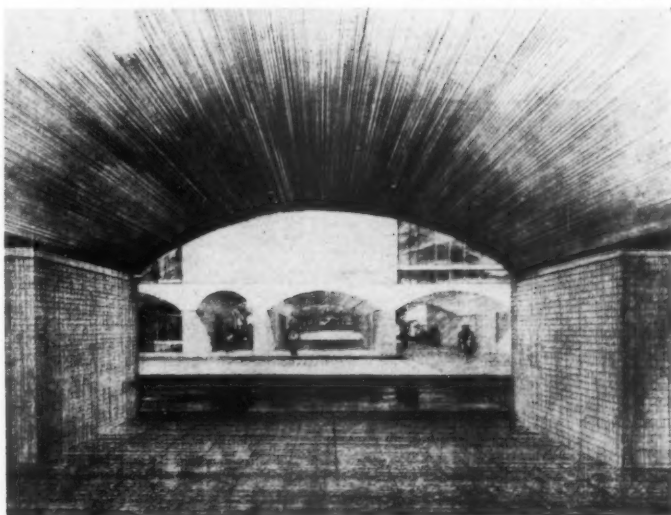


First and second floors



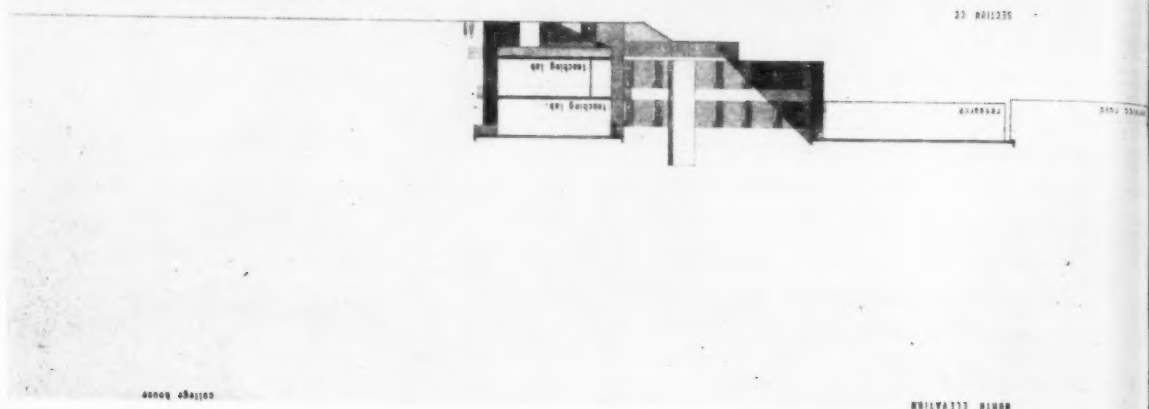
View into court from south

cost of all the buildings. It is hoped that the College house, and the Physics building, shown overleaf, will be completed by October, 1962.



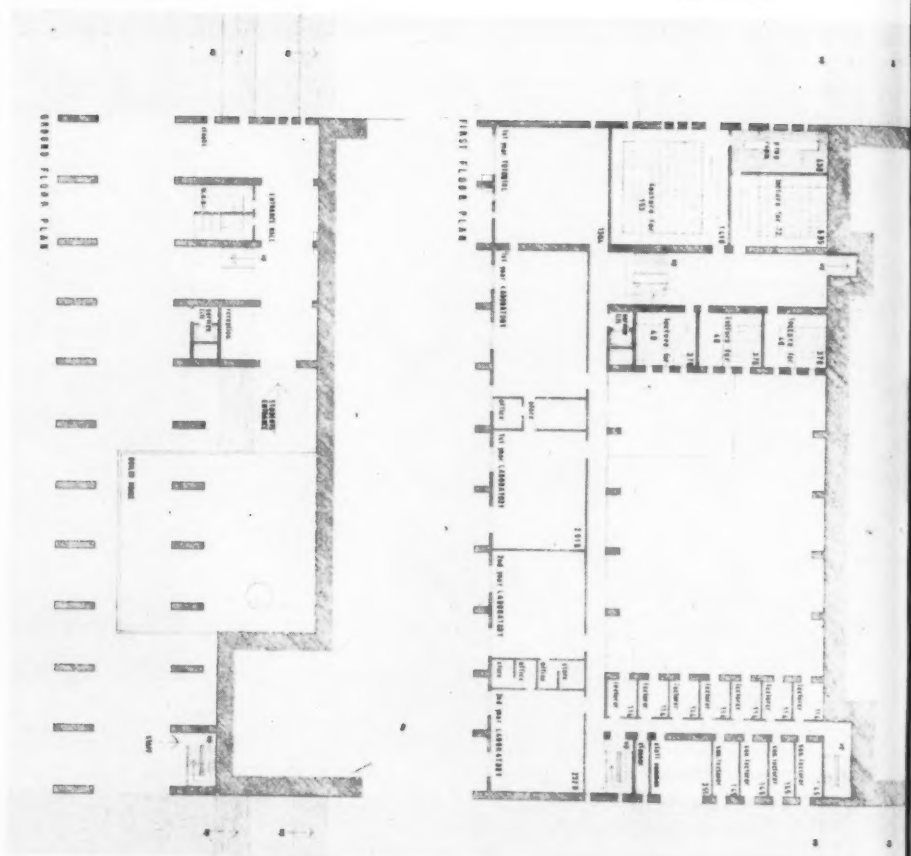
## SUSSEX UNIVERSITY PHYSICS BLOCK

### Transverse section

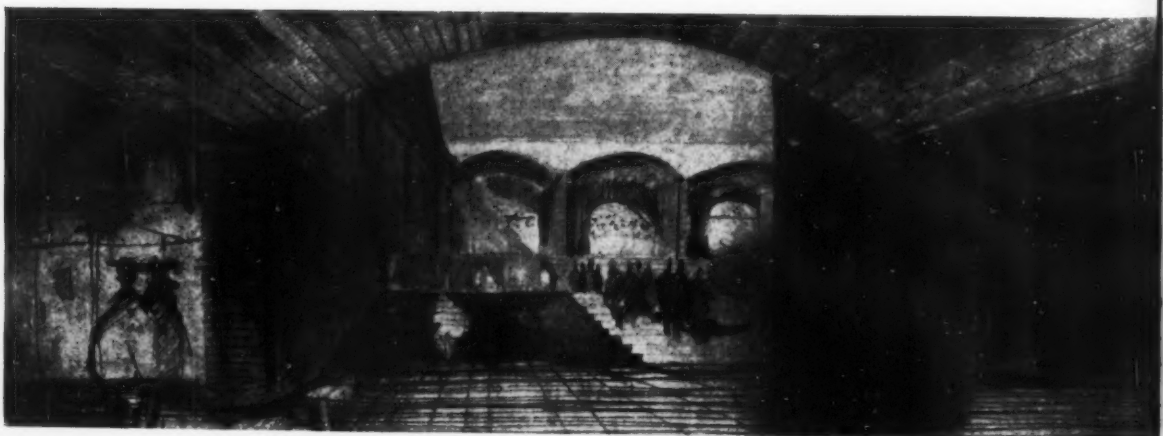


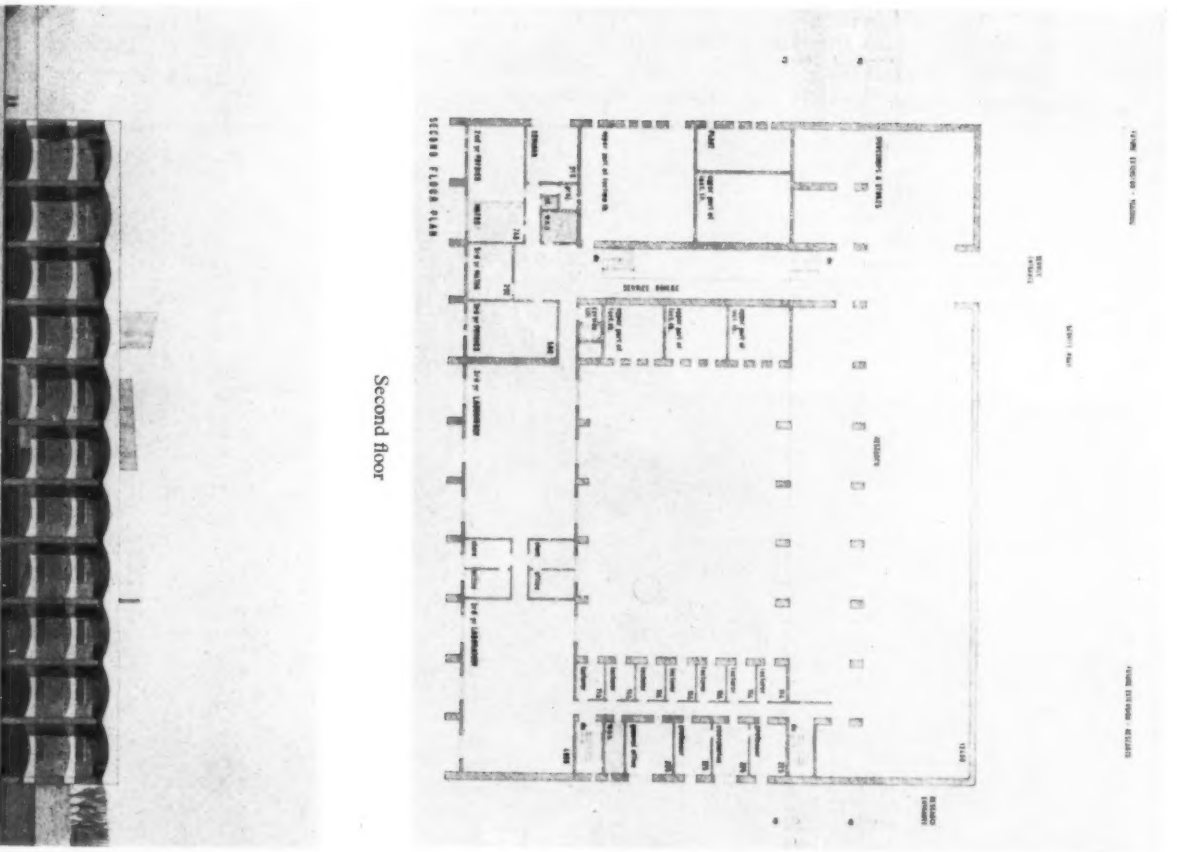
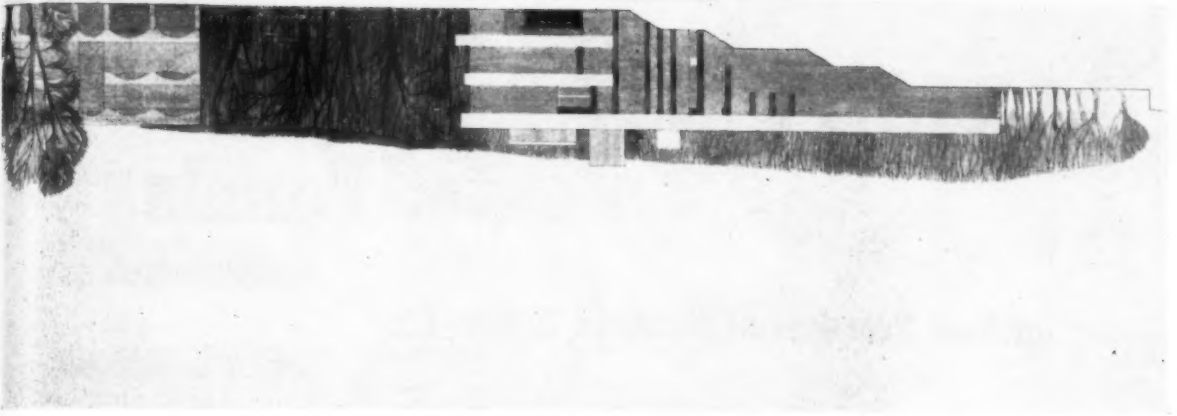
### First floor and ground floor

*On this and the opposite page are the ground, first and second floor plans, the main elevation and one section through the Physics block for Sussex University, designed by Basil Spence. The perspective shows the students' entrance up the steps from the cloister, with the boilerhouse on the right.*



## Students' entrance





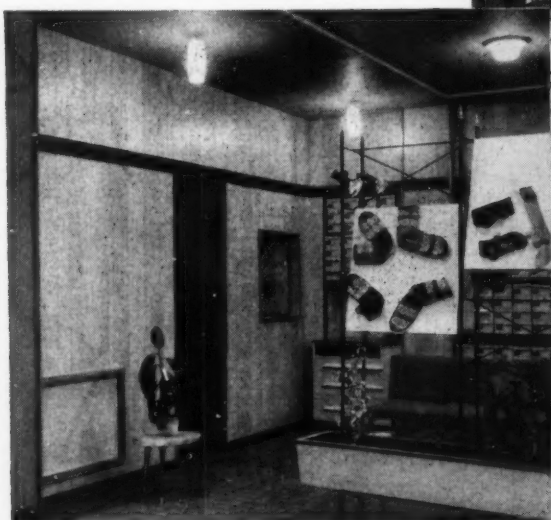
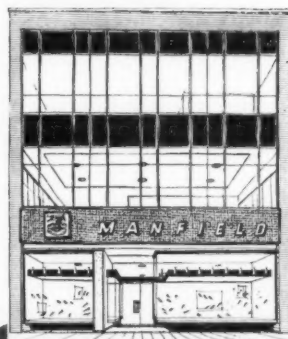
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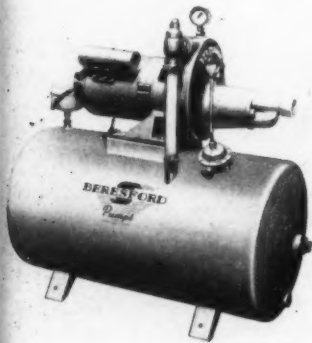
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## THE INDUSTRY

This week Brian Grant describes  
a new pressure water system, a  
document copying service, new  
purlin beams, and a polyethylene  
anti-siphon trap.

supplies in the country



The new Beresford Automatic pressure water system provides, in effect, a mains water supply from any country supply. The system is quite compact and consists of an electrically-driven centrifugal pump mounted on a pressure/water storage tank to which is added the regulating equipment including a flow volume control and pressure switch. The unit is installed close to the water source (well or borehole). The pump fitted to the shallow well unit will raise water a

maximum of 20 ft. and deliver this to the storage tank. The tank contains a cushion of air which is automatically maintained by the air volume control operating in conjunction with the pump. As water is drawn off the air pressure and water level in the tank drop until a point is reached where the pressure switch automatically starts the motor. A reasonable amount of water may be drawn off before the motor starts, and it would only operate infrequently under normal domestic conditions. It is not necessary to have a roof tank unless a feed is required to a boiler or central heating system. Two models are available, both of which can be arranged for shallow or deep well operation. The smaller provides 390 gallons an hour at a cost of £46 and the larger 610 gallons an hour at a price of £57. Beresfords also produce a corresponding range of units for boosting water supply pressures in high buildings. (James Beresford & Son Ltd., Ace Works, Kitts Green, Birmingham 33.)

#### Copying documents

A recent leaflet (Reference RX. 32) from the Rank organization sets out the work done by the Rank-XeroX document copying service. It is used by the LCC for bills of quantities and also for producing further copies when the priced bills are completed. In the past the contractor's pricing figures had to be typed into blank forms to give the necessary extra copies for clerks of works and surveyors, at a considerable cost in both time and checking. Since the XeroX process is photographic no checking is necessary, and the LCC appears to have cut the copying time from three months to about a fortnight.

The process can provide good quality copies on paper or card from all types of text or line drawings, and it is at the same time possible to make enlargements or reductions. (Rank-XeroX Ltd., 33/41 Mortimer Street, London, W.1.)

#### Timber purlin beams

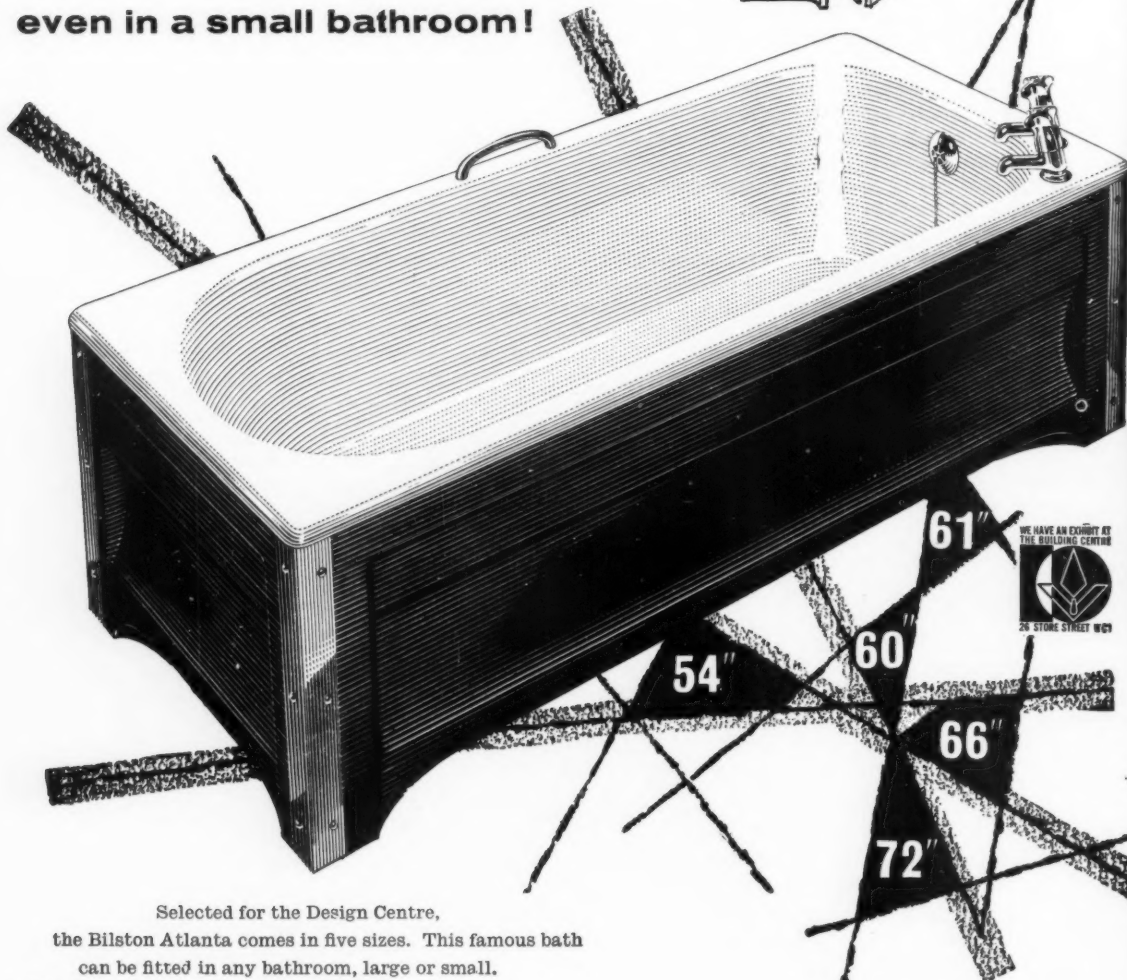
Dexion Ltd., well known for their slotted angle, are now producing Tecton timber purlin beams, which simplify pitched roof construction and should also reduce costs. The beams are made in standard depths from 24 in. to 48 in., and to the exact length required. They span between cross walls and carry the load of the roof, so that the front and back walls of the house, and all internal partitions, need not carry any load. The beams are surprisingly light, a 16 ft. by 24 in. deep weighing less than 1 cwt., so that they are easy to erect and need no special equipment. The beams can also be used at eaves and for use in curtain walling, where they can be clad with timber boarding or any other finish such as tile hanging. (Dexion Ltd., Maygrove Road, London, N.W.6.)

#### Anti-siphon traps

The illustration below shows the new Grevak Monitor trap made in polyethylene. It gives a maximum seal of 3 in. and is available with outlets suitable for lead, copper, steel or plastic pipe. S trap adaptors are also available. Standard size is 1½ in. b.s.p. Price (P type) is 19s. 6d. (Greenwood & Hughes Ltd., 8, Southampton Row, London, W.C.1.)



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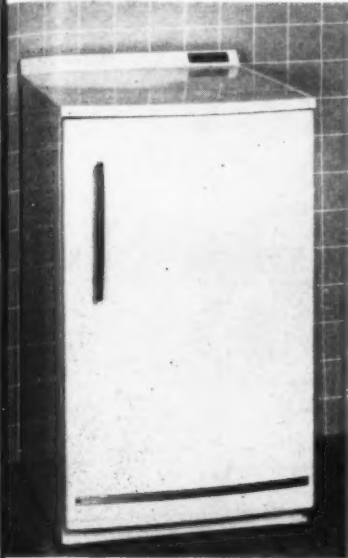
**Fittings.** The Atlanta is supplied with or without overflow... with or without hand grip. The feet can be adjusted to accommodate all types of trap, including the Bilston 'Wastello' prefabricated waste, trap and overflow unit. Also available with the Bilston O.P. Hand Grip helpful to the elderly or infirm.

**Colours.** The Bilston range includes white, or the exact colour required for any decorative scheme.

## technical section

## Two new refrigerator makers

Two firms, Creda and Tricity, have just started producing refrigerators, and announced them at a joint display just before the Ideal Home. Tricity have a single model with a capacity of 4.2 cu. ft., at 63 gns., while Creda have two, with capacities of 3 cu. ft. and 4.75 cu. ft. at 52 and 66 gns., all prices including purchase tax.



The Tricity model is made of zinc coated steel to prevent the spread of corrosion under the stove enamel finish, and the top is a glossy enamel. Four rubber wheels are fitted so that the whole refrigerator can be easily moved out for cleaning not only the wall and floor, but also the pipework and heat exchanger coils: there is a brake to hold the refrigerator still when it is in position.



Both Creda models have cooling units which are guaranteed for five years. Tops are covered in Melamine and can be used as a working surface and the internal shelves are polythene coated. (Tricity Cookers Ltd., Horn House, Upper St. Martin's Lane, London, W.C.2, and Simplex Electric Co. Ltd., Creda Works, Blythe Bridge, Staffs.)

## Repairing industrial floors

The two before and after photographs show an oil saturated floor which was also subjected to a considerable amount of traffic with iron shod wheels. As a result the floor had become badly pitted, and was repaired with an Araldite epoxy resin surface in which a cadmium pigment was incorporated to give a coloured finish. The floor was laid in small areas to avoid interrupting production, and the factory belongs to Johnson, Matthey & Co. Ltd. (Ciba (A.R.L.) Ltd., Duxford, Cambridge.)



## INFORMATION CENTRE

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

B

69-001-3

18.210 construction: details

## EXTERNAL RENDERING

*External Rendered Finishes.* BRS Digest No. 131. HMSO 3d.

This digest does not set out to give new information but instead points out the ways in which architects and others are still transgressing the rules originally set out in National Building Studies Bulletin No. 10. The digest contains a useful table which tells you the mix you should use for the different backgrounds, the different finishes and different exposures.

B

69-001-3

15.144 materials: applied finishes and treatments

## FLOOR SEALS

*Floor seals.* By V. R. Gray, M.A., Ph.D. Published by TDA. 3s. 6d.

TDA are at present busy on a research programme which records the behaviour of different proprietary floor seals in an existing office block. This paper is an interim report on this programme and necessarily falls short of what architects want to know. Sixty products are named and each is allocated to the chemical class to which it belongs. The distinction is drawn between the "varnish" type sealer and the urea-formaldehyde sealers: the latter give a longer life. The life of a sealer depends partly on its composition, partly on thickness. The author says that a two-coat sealer should stand up to heavy traffic in an office corridor for about one year without renewal.

B

69-059-1

7.77 practice

## PRESERVATION

*The Care of Old Buildings.* By Donald W. Insall. Published by the SPAB. 10s. 6d.

JOURNAL readers who remember the series of articles and special issue on this subject which appeared in the JOURNAL in 1958 should know that the whole is available as a reprint from the SPAB. It is certainly the most up-to-date reference on this important subject and includes a bibliography (though non-critical) which did not appear in the JOURNAL.



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CHURCH OF SCOTLAND  
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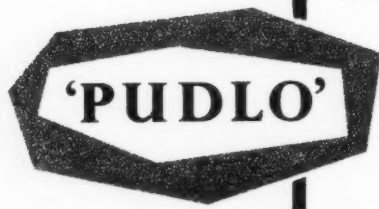
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## technical section

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69-002-325

## 17 CONSTRUCTION: GENERAL

## light cladding, 5 sound insulation

The author, R. Michael Rostron, begins this fifth article in his series\* by rehearsing the facts known about impact and airborne sound, instancing, as an example of the former, the noise of window cleaning equipment grating on mullions. The most serious problem, however, is created by airborne sound, since light cladding, by description, responds unfavourably to the Mass Law. The greater part of his article is, therefore, a description of ways of producing a worthwhile airborne sound reduction while still keeping the cladding "light."

The control of noise in buildings of lightweight construction is complicated by the incompatibility of lightness in weight and high resistance to the transmission of airborne sound. The position is aggravated by the existence of a number of misconceptions surrounding the theory of sound insulation, particularly concerning the function of absorbent materials.

Sound is a form of energy, or, to be more precise, a series of vibrations of air. It cannot, itself, pass through an obstacle, such as a wall. The vibrating air impinges on the surface of the wall and sets the wall vibrating. This vibrating mass in turn causes the air on the other side of the wall to vibrate and this is received by the ear as the sensation of sound. The interval of time between successive vibrations determines the frequency or pitch of the sound. Air which is vibrating quickly will produce a higher-pitched sound than slowly vibrating air.

It is apparent that a wall which can resist the tendency to vibrate will radiate less sound on its far side than one which can vibrate freely. Ideally, a wall which is incapable of vibration is also incapable of transmitting sound. The resistance of a wall to vibration should not be confused with structural rigidity. The amount of movement induced in a wall is very small and of high speed, and can only be resisted by the natural inertia of the wall. If we consider a vibrating mass of air attempting to vibrate a wall, it is obvious that the heavier

the wall becomes, the more difficult it will be to induce these high speed vibrations. In other words, *the transmission of sound through any barrier is determined almost entirely by its weight per unit area*. This so-called "mass law" is illustrated diagrammatically in Fig. 1, where superficial weight is plotted against sound reduction decibels. It is seen that doubling the weight per unit area results in approximately a 5 dB increase in insulation.

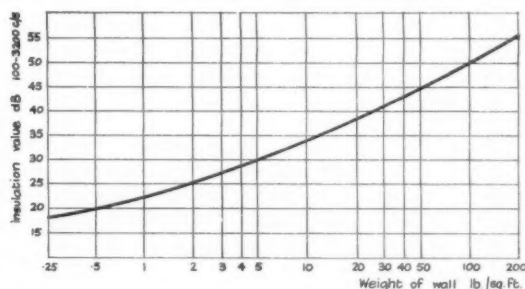


Fig. 1. Relationship between mass and insulation.

It is always easier to move an object to and fro slowly than quickly. For this reason, high frequency sounds find it much more difficult to vibrate a barrier than the lower frequency sounds. In general terms, the insulation value of any barrier varies with frequency, the sound insulation increasing by about 5 dB for each doubling of frequency (Fig. 2). This phenomenon raises some difficulty in expressing the insulation value of a given wall; a complete description of its insulation must give the sound reduction at all frequencies, as does the graph in Fig. 2. For convenience, however, a single value is

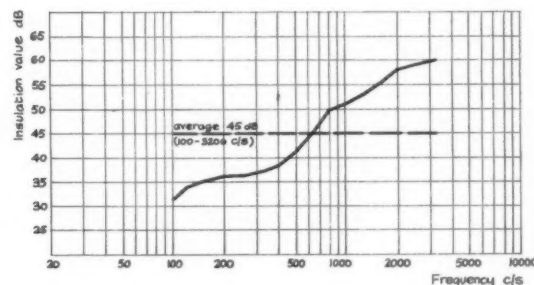


Fig. 2. Insulation values of 4½-in. brick wall (plastered).

usually given, and this is the average insulation over a certain frequency range, generally from 100 to 3,200 cycles per second. This range is chosen because it covers most of the frequencies which are of practical importance. One of the dangers of this single figure is that it may be different for the same wall if another frequency range is used. In the example of a 4½-in. plastered brick wall shown in Fig. 2, the average insulation over the 100-3,200 c/s frequency range is 45 dB. If the sound source is predominantly low frequency sound, and the 100-1,600 c/s range is chosen, the insulation is 41.7 dB. On the other hand, for a predominantly high frequency sound, the insulation in the 250-3,200 c/s range is

\* Previous articles in this series are as follows: Heat Transmission (February 25, 1960), Stability (March 3), Condensation (March 10), and Fire Resistance (March 17).

## technical section

48.5 dB, a variation of nearly 7 dB, which is considerable. The single average figure is a useful convention which gives satisfactory results if used intelligently. When insulation is required against noises of a characteristic frequency, however, the insulation of the wall in the particular frequency range must be known.

The application of the principles of sound insulation to light cladding may conveniently be divided into the solution of two problems: the prevention of structure-borne noise and the prevention of airborne noise.

**Structure-borne noise**

The propagation of structure-borne noise is similar to the transmission of airborne noise through a structure. The main difference is that, whereas airborne noise vibrates a wall or component by the vibration of adjacent air, structure-borne noise is radiated from a vibrating component which is in direct physical contact with the noise source. The most obvious example is the transmission of noise along continuous vertical mullions, and cases are known where the sound of a window cleaner's cradle guided over mullions has been radiated into rooms on every floor over as many as ten storeys. Other examples include the transmission of structure-borne noise from machinery inside the building which is mechanically linked (by the floor slab, for example) to the cladding.

In most cases, the noise is transmitted along the framing members and where prevention is required, adequate cushioning between joints in the framing and between framing and structure is necessary. A suggested cushioned joint is shown in Fig. 3.

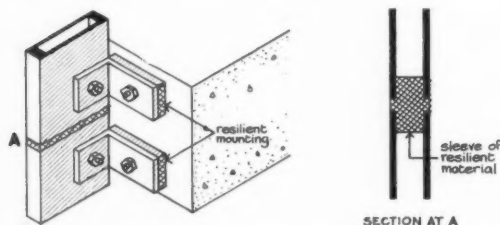


Fig. 3. Cushioned joint to reduce structure-borne sound.

Ideally, however, the solution to structure-borne sound should always be sought at its source. In other words, every effort must be made to prevent the noise source from transmitting sound into the structure. Noisy machinery should be isolated on resilient mountings, and cleaning cradles should be insulated from mullions by rubber tyres. Apart from the obvious economic gains, such solutions will generally be found to be more effective than curative structural cushioning.

**Airborne noise**

Airborne noise may be transmitted through the cladding from an exterior source, or it may travel from room to room or floor to floor from an internal source. Both are essentially problems of sound insulation, although airborne noise from an internal source may be considerably reduced by absorbents.

It is unlikely that an external noise source will consist

of pure sound, that is, sound of a single frequency. Most sounds encountered in buildings are composed of a mixture of sounds of differing frequencies, covering the whole audible range. It is also improbable that the intensity of sound (or sound pressure) will be uniform over the entire frequency range. Fig. 4 analyses two

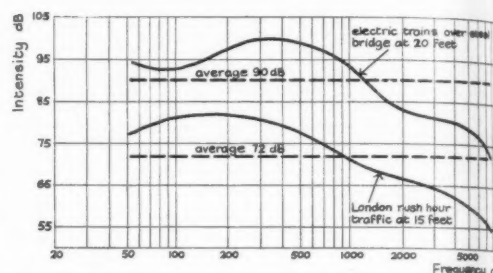


Fig. 4. Analysis of two common noises.

common noise sources: traffic noises at a kerbside of main road in London at 15 ft., and electric trains passing over a steel bridge at 20 ft. In both cases there is a falling off of sound pressure in the higher frequencies and these sounds (in common with most traffic noises) may be said to have a characteristic low frequency noise level. As we have already seen, the insulation value of a wall varies with frequency, and for a characteristic low frequency noise, the sound reduction offered by the wall will be slightly less than the average value over the 100/3,200 c/s range.

Unless, however, extreme accuracy is required, or the characteristic frequency range of the noise source is very small, average noise level values may be used provided they are intelligently applied. Average values for the two noise sources examined are included in Fig. 4, and Table 1 gives the average noise levels in dB of some common outdoor noises.

Before the required sound reduction can be calculated it is necessary to know the permissible noise level in the room. At first sight, this appears to be a simple criterion to ascertain, but in practice its determination is a complicated physical and psychological problem. Primarily the permissible internal noise level will depend on the function of the room. It is obvious that a hospital ward will require a much lower noise level than, for instance, a typing office. Secondly, the nature of the noise source is important. Whilst the hum of an electric motor may be almost inaudible, an intermittent noise of the same intensity, such as light hammering, would be both audible and disturbing. Thirdly, because the human ear is more sensitive to high frequency sounds than to middle and low frequency sounds, the characteristic frequency of the noise source is important. For

Table 1. Intensity of common noise

Noise source	Distance, ft.	Intensity, dB
Heavy traffic	25—30	70—80
Average traffic	25—30	55
Light traffic	25—30	50
Steam train	8,000	45
Steam train	100	75
Electric train	100	65—70
Electric train	20	90

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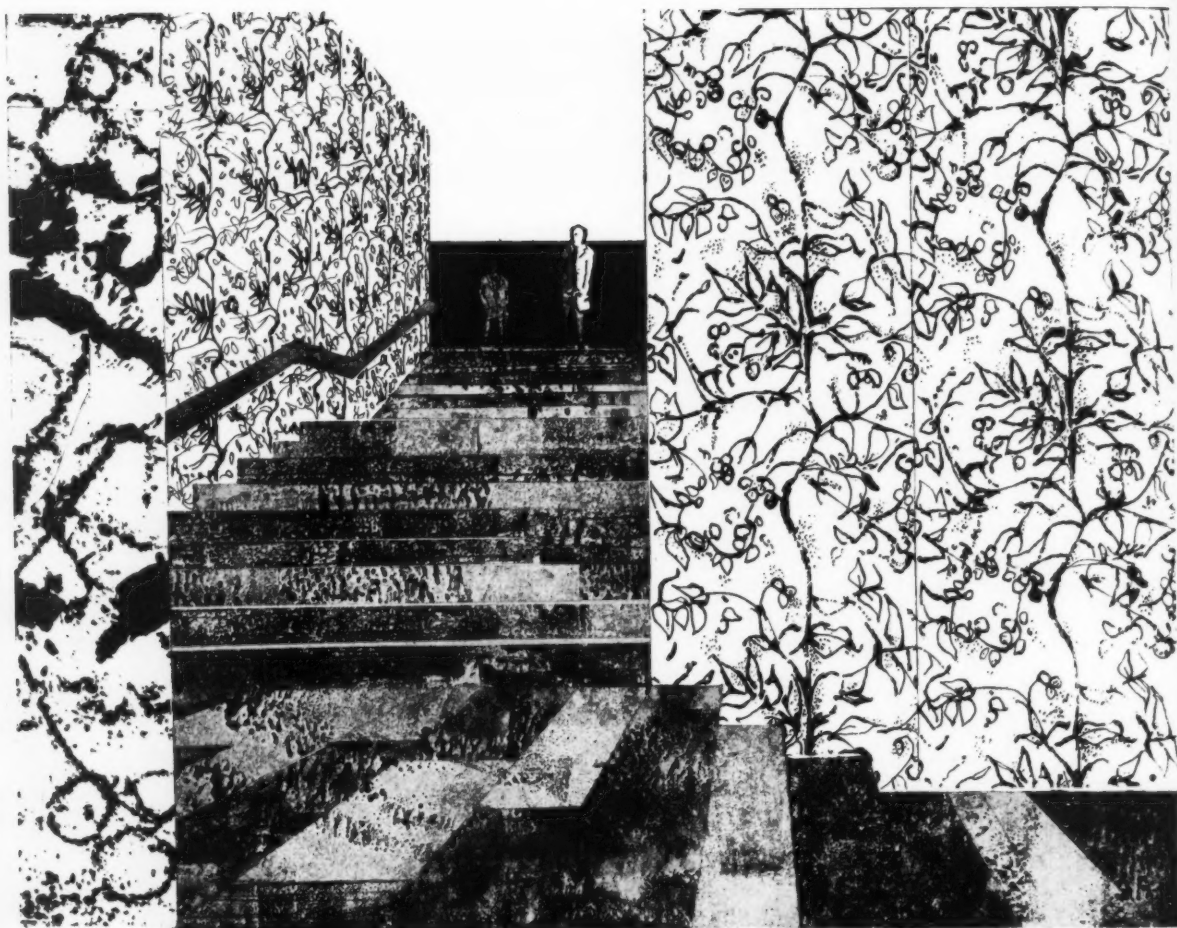
The De Luxe is 23½" high, 10½" wide and 8½" deep and gives 30,000 B.t.u./hr. thermal output from an input of 40,000 B.t.u./hr. producing 0.5 g.p.m. raised 100°F, and 0.625 g.p.m. raised 80°F, and pro rata. Pilot consumption is 250 B.t.u./hr.

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## technical section

example, a pure sound of 60 dB intensity at a frequency of 40 c/s would appear to the ear to be of the same loudness as a sound of 20 dB intensity at 1,000 c/s. The unit of loudness, the "phon," is an arbitrary unit determined subjectively from a large number of people and is defined as the loudness of a 1,000 c/s pure sound. In the example referred to, both sounds have a loudness of 20 phons. The relationship between decibels and phons, in other words the loudness of pure sounds of varying frequency, is shown in Fig. 5. Finally, in order to determine the permissible noise level in a room, the intensity of noise from any source inside the room (such as typewriters) must be known. Such continuous background noise may partly mask intruding noise, the permissible level of which may be correspondingly greater.

Two of these four criteria, the function of the room and its background noise level, are reasonably constant,

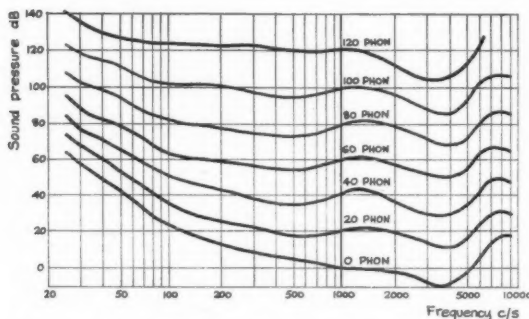


Fig. 5. Contours of equal loudness (Robinson and Dadson).

and on these the permissible indoor noise levels given in Table 2 are based. They should, however, not be regarded as invariable, and lower values may be necessary when noises abnormal in either nature or frequency are encountered.

Very approximately, the insulation required is the difference between the sound from the noise source and the permissible noise level in the room, subject to any modifications for the reasons described. A more accurate assessment of the insulation required is achieved by

Table 2. Permissible room noise levels

Theatres, concert halls	30—35 dB
Hospitals	35—40 dB
Flats, hotels	35—45 dB
Classrooms, lecture rooms	35—40 dB
Conference rooms	40—45 dB
Offices, executive	40—45 dB
Offices, general, banks	45—55 dB
Offices, typing	65—70 dB
Restaurants	50—55 dB

calculating the insulation necessary to reduce the sound from the noise source to inaudibility.

Inaudibility should not be confused with silence. Pure silence (i.e., zero sound pressure) is hardly ever attained except in the laboratory. The complete absence of sound is a very disturbing sensation, and not at all desirable in buildings. Inaudibility, on the other hand, is a steady habitual sound of low intensity which the ear becomes accustomed to and ignores. This, in fact, is the ear's

impression of "silence" and may have an intensity of 20/30 dB. The point at which inaudible sounds become audible is termed the "threshold of audibility" and, by definition, has a loudness of zero phons. The threshold of audibility is the lowest curve in Fig. 5. For a continuous noise, the threshold may be slightly higher, since the ear, whilst being able to perceive the noise, is able to ignore it. This higher threshold is shown in Fig. 6.

To reduce a sound to inaudibility, it is necessary to reduce its intensity to that given in Fig. 4. For example, a noise of 70 dB in the 300-600 c/s octave must be reduced to 18 dB to be inaudible. Therefore, the wall must give a reduction of 52 dB in this frequency range. This applies only when there is no other noise in the receiving room. If there is some other noise, it is obvious

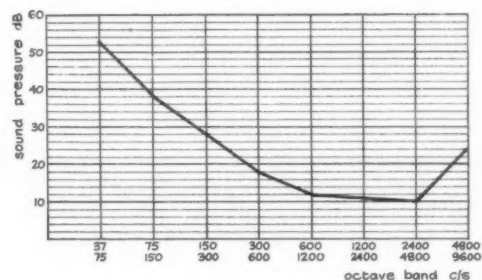


Fig. 6. Threshold of audibility for continuous noise (Parkin and Humphreys).

that the intruding noise will not have to be reduced so much. The masking of one noise by another, particularly if they occupy different frequency ranges is, however, a complicated phenomenon. An outline of the method is given in *Acoustics, Noise and Buildings*, by P. H. Parkin and H. R. Humphreys (Faber and Faber, 1958, p. 302) and should be used when great accuracy is required.

Having calculated the sound insulation required of the wall, the next step is to determine the wall construction which will give this value. When homogeneous construction is used and weight is unimportant, this is an easy task; the "mass law" relationship given in Fig. 1 gives the weight per superficial foot of the wall. For example, if a 50 dB reduction is required, the wall must weigh 100 lb. per sq. ft. and this is equivalent to a 9-in. brick wall. It is, however, not always possible, especially when a large sound reduction is required, to rely on weight alone. Light cladding panels are not often heavier than 12-15 lb. per sq. ft. and when used without back-up wall, this weight will only give a reduction of about 35 dB. When a greater insulation value is required and an increase in weight is undesirable, it is necessary to use a cavity or, to be more exact, double construction. In theory this is a simple device; two leaves are separated by a mass of air, and the insulation of each leaf reduces the sound. For example, suppose each leaf has an insulation value of 20 dB. This is equivalent to a reduction of 0.9 in sound energy, so 0.1 of the energy is transmitted through each leaf. If the leaves are in contact, that is, if the thickness of one leaf is doubled, the transmission will be halved. Thus 0.05 of the total

## technical section

sound energy falling on the wall will be transmitted, and this is equivalent to about 26 dB reduction. If, on the other hand, the leaves are separated by a cavity of air, the first leaf will transmit 0.1 of the energy, and the second leaf will transmit 0.1 of this amount, so the total transmission is only 0.01, equivalent to an insulation value of 40 dB. Without increasing the total weight of the wall, the insulation has been increased from 26 dB to 40 dB.

In practice the increase in insulation will depend on two factors. Firstly, the width of the cavity is critical. Four inches is about the minimum if the advantage of the cavity is to be realized, and eight inches is preferable. Secondly, the calculated increase in insulation is based on complete discontinuity, and in practice this is not possible. Only a slight increase will result if the leaves are connected with ties, slightly more if they are joined at edges, more still if they are unconnected except at their base, and the greatest increase if they are taken down to separate foundations. The greater the degree of discontinuity obtained, the more closely will the increase in insulation approach the calculated value. When panels incorporating a cavity are used, or when separate skins are supported between mullions, the cavity should be continuous over at least 2 ft. if it is appreciably to reduce sound transmission.

It is often thought that the insertion into the cavity of fibrous, lightweight materials, such as glass wool, will increase the insulation value. The particular nature of such materials is not, however, of advantage in sound insulation, as it is in thermal insulation. They obey the "mass law" relationship in exactly the same way as other materials, and, because they are light in weight, they offer little resistance to sound. In addition, because they are by nature porous, they allow air and therefore sound to pass through. In practice, therefore, they increase the sound insulation by an amount corresponding to their weight—about 3 dB. If such an increase is required, there are cheaper ways of providing it unless, of course (as is often the case) the material is necessary for thermal insulation. On the other hand if the inner surfaces of the cavity are highly sound-reflecting (e.g. glass) some gain in insulation can be got by putting sound-absorbent material in the cavity, although it would not fill it. This is the reason for absorbent to the reveals of double windows.

Perhaps the most important aspect of sound insulation, apart from the "mass law" relationship, is the fact that, in order to perform its insulating function efficiently, a wall must be completely impervious to air flow: it must be airtight. The importance of airtightness is illustrated by the following example. Assume a wall 10 ft. square has an insulation of 40 dB. This is equivalent to a wall of 100 sq. ft. transmitting 0.01 of the sound energy falling on it. If we make a hole in this wall, the hole will transmit all the sound energy falling on it. It will have a transmission coefficient of .01 (or even more if allowance is made for diffraction). If we take the coefficient as 1.0, the hole will only have to be .01 sq. ft. in area to transmit as much energy as the remainder of the wall. In other words, as much sound will be

transmitted through a hole about 1½ in. in diameter as through the rest of the 10-ft. square wall. If the hole is larger, it will transmit more sound than the wall, and very soon the sound insulation of the wall is of no importance.

Airtightness is difficult to achieve in load-bearing construction. In light cladding the problem is far more severe, mainly due to the multiplicity of joints, the provision of weep-holes, and the otherwise desirable qualities of dry jointing. The fact remains, however (and there is no alternative) that if a high degree of sound insulation is required, particular attention must be given to ensure that leakage of air is as small as possible. The reduction in insulation caused by even small holes and leaks is so great that good workmanship becomes more vital than ever.

A very important factor—often overlooked—is that the *total sound insulation of a composite construction is determined mainly by its weakest link*. The example of the hole in the wall illustrates the fact that a "weak link" will considerably reduce the overall insulation. In this example, the original 40 dB insulation was reduced to 34 dB, equivalent to halving the wall thickness. A hole may be regarded as an extreme case, but any reduction in the insulation value of the wall is a weak link. Windows are the most obvious type of unavoidable reduction in insulation. The insulation of a 4½-in. brick wall will be reduced from 45 dB to about 26 dB if a window is inserted into it.

### Windows

In any building, whatever its construction, the type and size of window used determines the sound insulation value of the wall. As the proportion of glazed area to wall area increases, the importance of the sound reduction offered by the window becomes greater and the insulation value of the opaque portion of the wall decreases in importance. Table 3 gives the insulation values of some common panels and load-bearing walls and should be read in conjunction with Table 4, which gives the adjustment necessary when windows of varying size and type are inserted in the walls. Some startling results emerge. If, for example, three-quarters of a wall has the large insulation value of 50 dB and the remaining quarter is a closed window, only 21 dB overall insulation may be expected. A parallel may be drawn with the importance of the thermal insulation of the window. It is a waste of both time and money to increase the insulation of the panel if the insulation of the window (sound or thermal) is low. In both cases, the complete wall—panel and window—must be treated as a single composite unit.

There are four ways in which the transmission of sound through glazed areas may be reduced. The first of these, limiting the area of glazing, is, as Table 4 shows, not particularly effective unless very severe restrictions are placed on its relative area. A more convenient method is to use the "mass law" relationship and increase the thickness (and therefore the weight) of the glass. Fig. 7 gives the insulation values of various glass thicknesses and shows that by replacing 26-oz. glass

# ELECTRIC FLOOR-WARMING

INFORMATION SHEET

1



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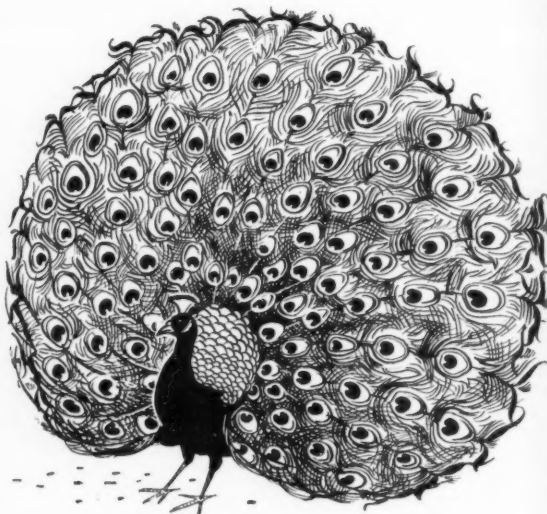
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## technical section

with  $\frac{1}{4}$ -in. plate, a 5 dB increase in insulation is attained—as much as by reducing the relative area of glass/wall from 75 per cent to 25 per cent. Thirdly, a definite increase in insulation—up to 10 dB—will result if leakage of air through cracks and gaps around opening

Table 3. Insulation of various wall constructions

Construction	Weight, lb./sq. ft.	Reduction, dB
16-s.w.g. steel sheet Asbestos cement sheet 1-in. chipboard or blockboard	2—5	15—20
$\frac{1}{2}$ -in. plywood or hardboard on both sides of 2 $\frac{1}{2}$ -in. timber studs, with glass silk in cavity Single sandwich panel	5—10	30—35
Panels with cavity between faces 2-in. concrete slabs	10—15 25	40
Single sandwich panel/cavity/3-in. clinker concrete back-up wall 4 $\frac{1}{2}$ -in. brickwork	25—35 50	45
3-in. clinker/3-in. cavity/3-in. clinker 9-in. brickwork	40—45 100	50

Table 4. Variation of sound insulation with wall insulation and area and type of glazing

Type of glazing	Insulation of wall, dB	Reduction of wall and window, dB				
		Percentage of glazing in wall				
		0	25	50	75	100
Single 26/32-oz. with opening lights	30—35	30—35	20—21	18	16	15
	40	40	21	18	16	15
	45	45	21	18	16	15
	50	50	21	18	16	15
Single 26/32-oz., with fixed lights	30—35	30—35	27	25	23	22
	40	40	27	25	23	22
	45	45	27	25	23	22
	50	50	28	25	23	22
Double $\frac{1}{4}$ -in. plate, with 8-in. cavity	30—35	30—35	36	37	38	40
	40	40	40	40	40	40
	45	45	43	42	41	40
	50	50	48	44	42	40

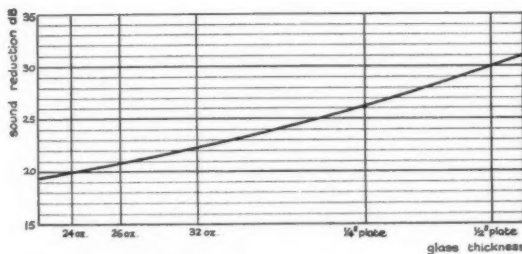


Fig. 7. Sound reduction of single glazing.

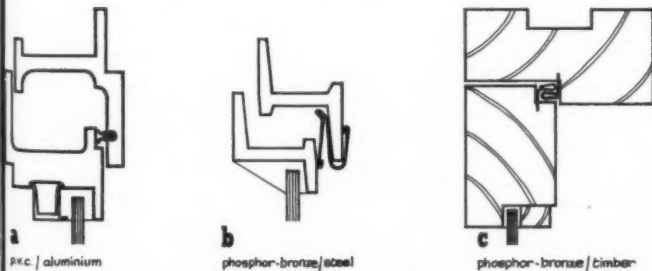


Fig. 8. Window seats: plastic and phosphor bronze.

lights is eliminated. On metal windows, extruded plastic gaskets (Fig. 8a) are effective, provided they are hollow

or resilient enough to ensure a positive seal if the window twists or warps. Alternatively, clip-on phosphor-bronze sealing strips (Fig. 8b) may be used. Wooden windows are rather easier to seal because they can be grooved to provide an interlocking seal, either of phosphor-

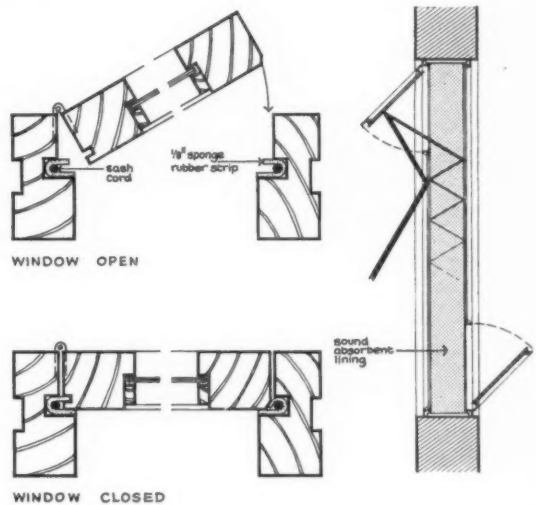


Fig. 9 (left). Window seats: sponge rubber.

Fig. 10 (right). Double window: staggered opening lights to reduce transmitted noise by absorption and multiple reflection.

bronze (Fig. 8c) or of sponge rubber (Fig. 9). Manufacturers are now realizing the importance of adequate sealing to prevent heat loss and sound transmission, and an increasing number of proprietary windows, especially double metal windows, include built-in seals. It is, however, likely that the progressive increase in the sound insulation of the wall which results from a decrease in the number of opening windows will be carried to its logical conclusion, and completely sealed windows coupled with air conditioning will become the ultimate answer when exterior noise levels are high.

The fourth, most effective and most expensive, method of reducing sound transmission through glazed areas is to use a double window. It is not vital to use a double frame, but improvement in sound insulation is negligible unless the panes are at least 2 in. apart. Double glass, with a cavity of  $\frac{1}{8}$  in. to  $\frac{1}{2}$  in. does not give any more insulation than would a single sheet of glass of the same weight. The greatest insulation is attained by using separate frames, sealed at the edges against leakage, with absorbent reveals and a cavity of 4 to 8 in. between heavy panes. Prefabricated double windows, either glazed into the same frame or into separate frames coupled together, are less effective. A further disadvantage of prefabricated double windows is that their efficacy disappears when they are opened, since both panes generally open together. If intermittent ventilation is required through double windows, the most effective method is to stagger the opening portions of each window to eliminate direct transmission (Fig. 10). Table 5 summarizes the average insulation which may be expected from various types and conditions of window. It should

technical section

Table 5. Sound reduction of windows

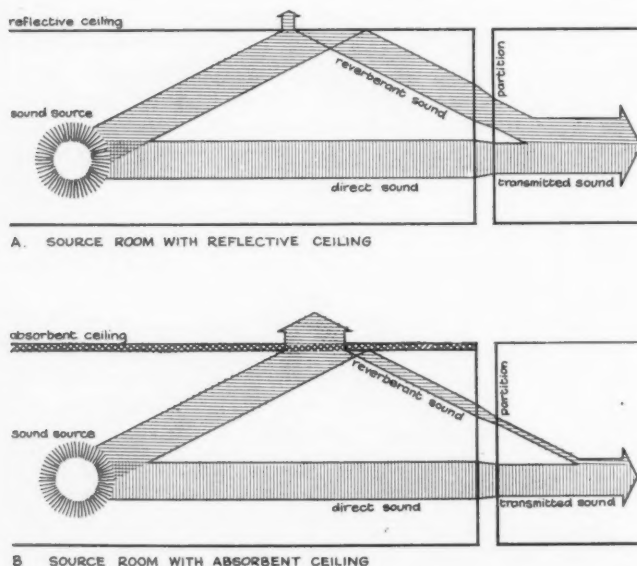
Type	Fixing	Glass	dB reduction
Open			0-7
Single	Opening lights (closed) Fixed or sealed	All thicknesses	15
		24/32 oz.	20-22
		$\frac{1}{2}$ in. plate	26
		$\frac{1}{2}$ in. plate	30
Double	Opening lights (closed)	24/32 oz. 4 in. cavity	22
		24/32 oz. 8 in. cavity	24
		$\frac{1}{2}$ in. plate 4 in. cavity	22
		$\frac{1}{2}$ in. plate 8 in. cavity	24
	Opening lights (closed) plus absorbent at sides	24/32 oz. 4 in. cavity	26
		24/32 oz. 8 in. cavity	30
		$\frac{1}{2}$ in. plate 4 in. cavity	26
		$\frac{1}{2}$ in. plate 8 in. cavity	30
	Fixed or sealed plus absorbent at sides	24/32 oz. 4 in. cavity	30-35
		24/32 oz. 8 in. cavity	35-40
		$\frac{1}{2}$ in. plate 4 in. cavity	33-38
		$\frac{1}{2}$ in. plate 8 in. cavity	40-45

be stressed, however, that these are average values. Depending on workmanship, the degree of airtightness of opening lights and the efficiency of the seal, a variation of about 2 dB in each direction may occur, and this should be borne in mind in calculations.

#### Airborne sound within the building

A common complaint in buildings which use light cladding is the transmission of internal noise from room to room and from floor to floor. Whilst this is to some extent a problem of adequate insulation of floors and partitions, a large proportion of noise from an internal source is transmitted through the space between the floor or partition and the cladding. To prevent sound transmission these junctions must be airtight. When a

Fig. 11. Diagrammatic explanation of the use of absorbents in sound insulation. Reduction in reverberant and transmitted sound by means of an absorbent ceiling



high standard of internal sound insulation is required, they present sealing problems as important and as difficult as the sealing of external joints.

Little field research has been carried out on this subject and consequently there exists the unfortunate belief that its solution is impossible. Recent experiments in America suggest that a seal of any flexible material which is impervious to air will result in a substantial reduction of transmitted sound. Seals of semi-compressed foam rubber and even impervious adhesive tape have been used with success.

Another way in which the transmission of airborne sound within buildings may be reduced is by the correct use of absorbent materials. This is not strictly a cladding problem, but there is such a widespread belief that absorbents are, in themselves, sound insulating materials that a brief explanation of their properties will, perhaps, dispel a number of misconceptions.

The majority of sound absorbent materials are composed of a very large number of air pockets. In other words, they are porous and therefore of low density. Sound energy falling on an absorbent material is encouraged to infiltrate into these air pockets and is reflected within them from side to side. Part of the energy is converted into minute quantities of heat by multiple reflection within the air space and, because the absorbent is porous to air, the remainder of the sound energy passes through the material. "Absorbent" is, perhaps, a misnomer: very little of the sound is "absorbed" or converted, and a great deal simply passes through. The most important feature of an absorbent material is that it is *non-reflective* and it is this property of which use is made in reducing the level of internally transmitted sound.

Sound at any position from a noise source inside a room is made up of two parts: direct sound (i.e. sound travelling directly from the source) and reverberant sound (i.e. sound reaching the position after multiple reflections from the room surfaces). The intensity of reverberant sound at any position is determined by the amount of sound reflected from each surface or, alternatively, by the amount of absorbent surfaces in the room. Thus, the reverberant sound (but *not* direct sound) can be reduced by increasing the absorption.

Provided the largest horizontal dimension of the room is substantially greater than its height, the most important reflecting surfaces are the floor and the ceiling (except in rooms for specialised functions, such as concert halls) and it is on these surfaces that absorbents are most effective. The installation, for example, of an absorbent ceiling into a rather bare room will reduce the reverberant sound by as much as 10 dB. Apart from a general reduction in noise in the room and reduced reverberation from transient noises (riveting, typing), the sound energy falling on room surfaces is less, and therefore less sound will be transmitted through partitions to other rooms. Fig. 11 illustrates the principle involved. The most important point to note is that the absorbent reduces sound transmission indirectly and not in itself. It is not an insulator and would be useless if applied to the partition.

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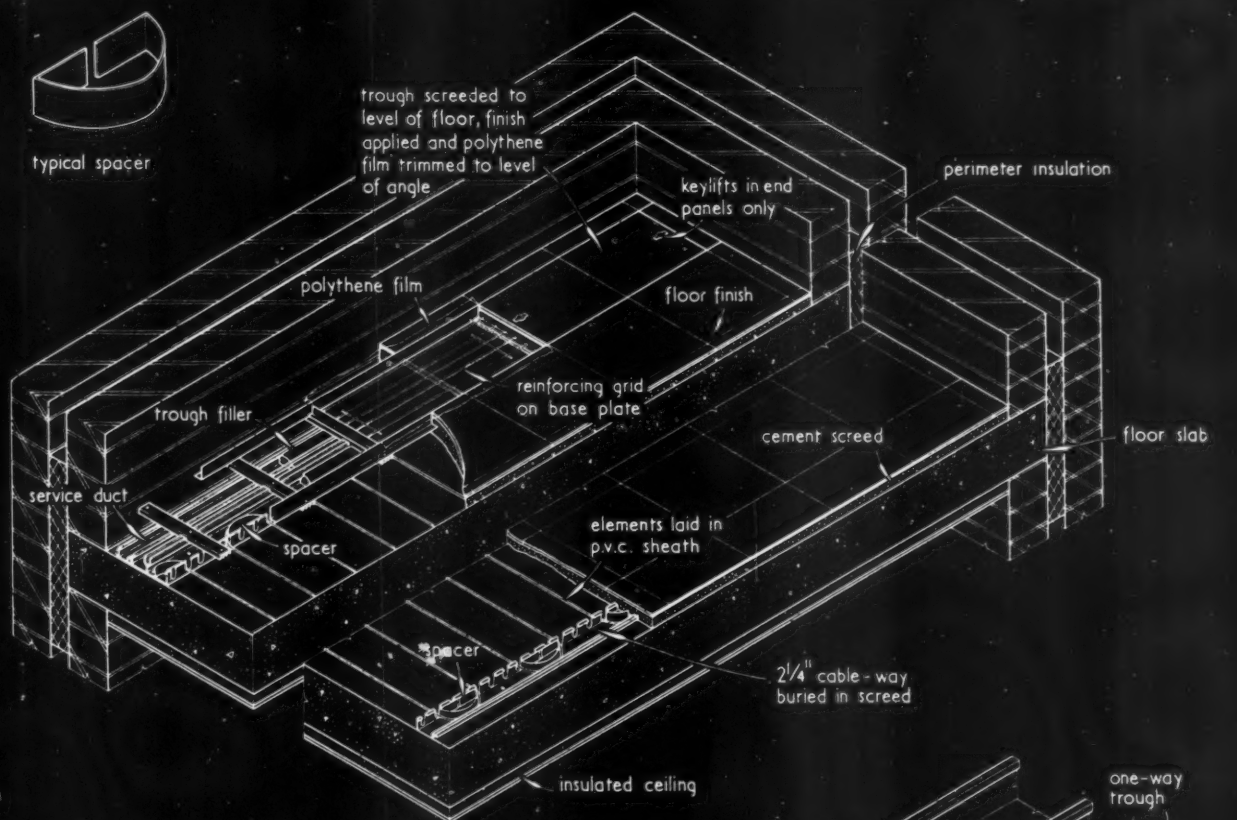
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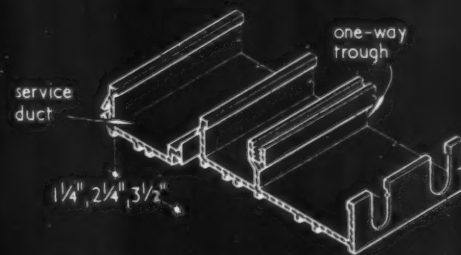


## SPACE HEATING | SYSTEMS | ELECTRIC

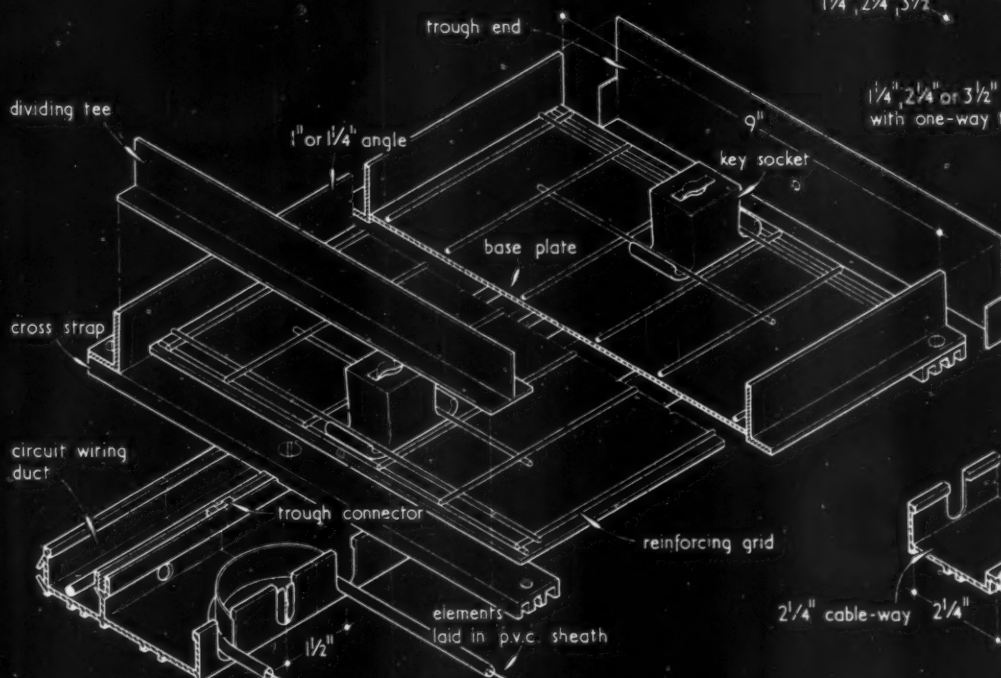
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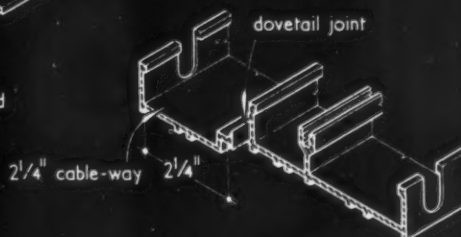
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1 1/4", 2 1/4" or 3 1/2" service ducts with one-way trough



GENERAL ASSEMBLY OF COMPONENT PARTS.



assembly of two-way trough

## 29.G2 THERMODARE FLOOR HEATING SYSTEM

**This Sheet** describes the Thermodare system of floor heating and supersedes Sheet 29.G2 published 22.8.57. Heating by electricity eliminates labour and the necessity to provide fuel storage space, and this system can be effectively controlled by automatic means to take advantage of off-peak rates for current. With air heating systems, the air may become comfortable in a short while after the heating is turned on, but the fabric remains cold and contact with floors, etc., may still cause discomfort: the Thermodare system overcomes this disadvantage.

The system is contained within the limits of the normal depth of floor screed and surface finish. It may be used with any type of floor finish and, although some affect the balance of the heating better than others after the switch-on, none has any effect upon the subsequent control of heat. Installation is quick and simple, and heating elements can be readily replaced if damaged.

### Components

**Heating element:** The element is a high-tensile alloy conductor enclosed in an extruded sheath of special grade p.v.c. The internal diameter of the sheath is over twice that of the element.

The element is available in six sizes, identified by the use of different coloured p.v.c. sheaths (black, green, blue, yellow, brown, red). The diameter of the sheath is the same for each size.

**Floor troughing:** This is of extruded aluminium alloy,  $3\frac{3}{4}$  in. wide by 1 in. deep, and is supplied in lengths of 6 ft. 0 in. A partition is provided to protect the circuit cables from direct contact with the heating element. Slots at  $1\frac{1}{2}$ -in. centres along the front of the trough provide entries for the element. An additional component,  $2\frac{1}{2}$  in. wide with slotted side, is available for assembling a two-way trough where the distance from wall to wall exceeds the maximum practicable for rewiring. The same component also provides anchorage for the cable on the side of the heated area opposite the access trough. End sections and trough connectors are available.

**Service ducts:** The installation can incorporate ducts for power, lighting or general service cables. They are obtainable in three widths,  $1\frac{1}{2}$  in.,  $2\frac{1}{2}$  in. and  $3\frac{1}{2}$  in. in lengths of 6 ft. 0 in., and are attached to each other and to the troughing by the sliding dovetail joints shown in the drawing.

**Removable spacers:** These are provided to maintain the correct radius of the element in the troughing and are obtainable for element spacings of 3 in.,  $4\frac{1}{2}$  in., 6 in., and  $7\frac{1}{2}$  in.

**Cross straps:** The cross straps are screwed to the troughing at 9-in. centres, provision for the screws being made by a continuous Whitworth thread formed in the extrusions of the trough and cross straps.

**Angles and dividing tees:** Angles 1 in. or  $1\frac{1}{2}$  in. high, are supported at the ends by screwing to the cross straps and the dividing tees are placed on the cross straps as shown.

**Base plate:** This is of 0.048 in. thickness sheet aluminium and forms a base for the screed and floor finish in the trough.

**Reinforcing grid and key sockets:** The reinforcing grid for the screed is placed over the key sockets.

**Cable connections:** Connections between circuit cable and heating element are compression joints. Both wires are inserted into a metal ferrule to its full length and the ferrule compressed in two places. The joint is then covered with a p.v.c. sleeve and the ends of the sleeve bonded to both cables with p.v.c. adhesive tape.

### Installation

The troughing sections are fixed directly to the main floor slab or precast structure. Two fixings to each 6-ft. length are sufficient, through the front duct. The troughs must be aligned and connected by tapping the trough connector into the continuous thread in each length of troughing. The spacers are then placed at the required interval and the cable laid and tautened. The cross straps, angles and dividing tees are then fixed. The floor is screeded with a 3:1 sand/cement mix to a depth that will enable the floor finish to align with the tops of the angles; inside the angles, the screed should be to the top of the cross straps and no screeding material should be allowed in the troughing. The troughs are then filled to the level of the cross straps with the special filler provided, mixed with water to a firm, workable consistency. A sheet of polythene is laid along between the angles overlapping them. The base plates, key sockets and reinforcing grids are then placed in position on it. This area is then filled with screed to the same level as the main screed and the floor finish applied to the main floor and the troughing cover sections. The edges of the polythene film are finally trimmed level with the edges of the angles.

**Insulation:** The floor should be well insulated at the perimeter to prevent heat losses, but complete underfloor insulation is not normally recommended as this prevents the build-up of a heat reserve in the earth under the floor slab.

### Maintenance

Should the heating element become damaged, and this can only happen through structural damage to the floor, the section affected may be withdrawn by severing the loop in the troughing section at each end. A new length may then be pushed through the p.v.c. sheath and compression-jointed to the rest of the element.

### Further Information

In order to ensure completely successful installations, the Thermodare Technical Sales Service will provide a detailed specification for any heating system. For this purpose architectural drawings must be provided showing all constructional data and the voltage of the available electricity supply must be stated.

*Compiled from information supplied by:*

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Address: York Mansions, 94-98, Petty France, London, S.W.1  
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## BUILDING SCIENCE | SOUND

The Architects' Journal Library of Information Sheets 760. Editor: Cotterell Butler, A.R.I.B.A.

## SOUND INSULATION, 1: APPLICATION OF THE MASS LAW TO SINGLE-LEAF STRUCTURES

This Sheet is the first of a series on sound insulation and describes the application of the mass law to single-leaf structures, which include double brick or block walls unless the leaves are unconnected or tied only by light "butterfly" wire ties.

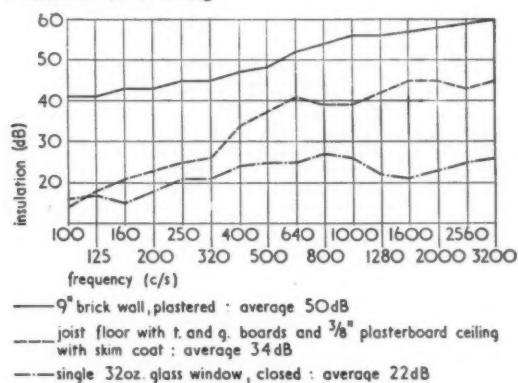
Other Sheets in the series deal with cavity and composite structures; impact insulation; sound absorbents; design of auditoria.

## Principle

In practice the sound insulation of single-leaf walls or floors is almost entirely determined by the weight per unit area. Insulation values are given in decibels (dB), and reference should be made to a text book for a definition of this unit. Decibels are units which can be directly used by designers. For example, if a noise has a value of 80 dB and a barrier with an insulation value of 30 dB is interposed between the source and a listener, the value of the noise heard will be about  $80 - 30 = 50$  dB. It is necessary to refer to a text book for the limitations of this statement, but for most practical purposes it can be taken as accurate.

## Average Insulation Values

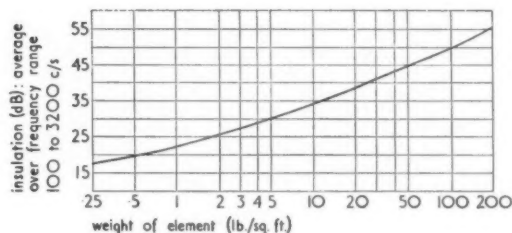
The complete specification of sound insulation for a structure consists of a number of values (or a graph) because the insulation is not the same at all pitches or frequencies of sound. All known forms of structure have a lower insulation value at the low frequencies than at the high ones. The rate of increase of insulation value with rising frequency is often about 5 dB per octave (i.e., for every time the frequency doubles). It is obviously possible to quote an average value based on a normal range of sound frequencies. That used in the U.K. and most European countries (but not in the U.S.A.) is 100 to 3,200 cycles per second (c/s). Assuming that the sound insulation value increases steadily with frequency, the average value of a material will be equivalent to that at about 600 c/s. Some typical measured curves of sound insulation over this normal frequency range are shown on the graph below. For many insulation problems the single figure of average insulation can be used, but, where very high orders of insulation are necessary or abnormal noises are concerned, then the values at a number of frequencies must be considered. This is the basis of the grade system, proposed by B.R.S. for insulation standards in dwellings.



## Insulation Value/Weight Relationship

The second graph shows how the average sound

insulation (100 to 3,200 c/s) is related to weight. It is rare to find a form of construction which departs by a significant amount (more than  $\pm 2$  dB) from this law. To enable this graph to be used readily, a table of the weight per square foot of some of the commoner building materials is given below. The values for bricks, blocks, etc. are "as built."



Material	Nominal thickness	Weight, lb./sq. ft.
Asphalt—rock	1 in.	11.0
Blocks—walling		
Solid:		
Clinker concrete	per in.	6.0
Lightweight concrete	per in.	4.1
Hollow:		
Clay	per in.	4.0
Boards and slabs:		
Asbestos insulating	1/2 in.	1.75
Blockboard	1 in.	2.5
Chipboard	1 in.	3.0
Hardboard:		
Medium	1/2 in.	0.7
Super	1/2 in.	1.0
Plasterboard	5/8 in.	1.7
Plasterboard, plastered with skim coat (1/8 in.)	—	2.7
Plywood	1 mm	0.1
	1 in.	2.6
Straw slabs	2 in.	3.8
Wood-fibre insulation	1/2 in.	0.7
Woodwool	1 in.	2.0
Brickwork (as laid):		
Common, e.g., London stock, fletton, sand lime	4 1/2 in.	42.0
Diatomaceous earth (flue liners)	4 1/2 in.	16.0
Engineering, dense	4 1/2 in.	52.0
Concrete (poured):		
Brick aggregate	1 in.	10.0
Clinker aggregate	1 in.	7.0
Sand, gravel or crushed stone aggregate (reinforced)	1 in.	12.0
Glass	1/2 in.	3.0
Plaster, gypsum or lime	1/2 in.	4.0
Plaster and lath (wood or metal), 3-coat	—	6.0
Sheets:		
Aluminium	22 s.w.g.	0.4
Asbestos and steel (fireproof)	1/2 in.	4.5
Asbestos cement	1/2 in.	2.0
Copper	24 s.w.g.	1.0
Steel	16 s.w.g.	2.5
Zinc	20 s.w.g.	1.3
Slate—sawn slab	1 in.	14.7
Stone (average)	1 in.	10.5
Timber:		
Seasoned softwoods	1 in.	2.5
Common hardwoods	1 in.	3.7



## 2.E1. SOUND INSULATION, 1: APPLICATION OF THE MASS LAW TO SINGLE-LEAF STRUCTURES

### Deviations from the Mass Law

It is emphasized that the values obtained from the mass law apply only to single-leaf constructions where the whole of the dividing element (wall or floor) is of the same material, and there are no holes or cracks. Where there are holes, cracks or local areas of lower insulation (such as doors or windows) the insulation obtained will be lower than the value given by the mass law. For a method of determining how much lower see Sheet 2.E2.

Double-leaf (cavity) construction can result in increased insulation, i.e., give a value higher than the mass law value for the total weight of the two leaves. However, certain important, but at the moment not very well understood, conditions must be met if this increase is to be successfully attained. The principal condition is that one leaf should not be too rigidly bonded or tied to the second leaf, as the vibrations of the leaf receiving sound would be directly transmitted to the other leaf and the cavity could give no advantage. All normal types of light core, such as egg-crate construction of hardboard, millboard or the various open cores used in flush doors, constitute too rigid a bond. The insulation of such structures will, therefore, never be more than the mass law value for the combined weight of the two leaves: the weight of the core itself must be ignored.

Stud partitions consisting of sheet materials fixed to timber or metal framing are borderline cases. Some examples have been noted where a slight increase over the mass law value has been achieved. As a practical guide for this type of construction, it is usually safe to add the weight of the studs or joists to the weight of the two leaves and read the insulation from the mass law curve. It is essential that the leaves are free from cracks. For example, a plain-edged boarded floor (particularly after the timber has shrunk) does not satisfy this condition, although well cramped t. and g. boarding may be regarded as sealed. For stud partitions sheeted on one side only, the weight of the studs should be ignored.

Double brick or block walls must be regarded as single walls unless the leaves are unconnected or tied only by light "butterfly" wire ties.

### Average Insulation Values of Typical Constructions

The following table sets out the average insulation value of a number of typical wall and floor constructions as used in normal building structures. The attainment of these values in practice depends very much on the conditions mentioned above. The examples given are all effectively single-leaf constructions as defined above. True cavity constructions yielding insulation above the mass law value are given in Sheet 2.E2.

Element	Construction	Average Insulation (dB)
Door	Flush (hollow core with $\frac{1}{4}$ -in. hardboard or plywood both sides), normal cracks at edges	15
Wall	$\frac{1}{2}$ -in. fibreboard on one or both sides of timber frame	20
Door	Flush (hollow core with $\frac{1}{4}$ -in. hardboard or plywood both sides), cracks well sealed	
Window	Single 26 oz. glass window, closed	
Floor	Joists with t. and g. boards, no ceiling	
Wall	$\frac{3}{4}$ -in. plasterboard, plastered $\frac{1}{2}$ in., on timber frame	25
Wall	Two $\frac{1}{2}$ in. hardboard sheets on egg-crate core	
Door	2-in. solid hardwood, normal cracks at edges	
Window	26 oz. glass, sealed; no opening lights	
Wall	$\frac{3}{4}$ -in. plasterboard, plastered both sides on 4 in. timber studs	30
Door	2-in. solid hardwood, all edges well sealed	
Window	$\frac{1}{4}$ -in. plate glass, sealed: no opening lights	
Wall	2-in. clinker or lightweight concrete block, plastered both sides	35
Wall	2 $\frac{1}{2}$ -in. hollow clay block, plastered both sides	
Wall	Lath and plaster (3 coats) both sides on 4-in. studs	
Floor	Joist with t. and g. boards, $\frac{3}{4}$ -in. plaster-board ceiling, with skim coat.	
Wall	3-in. clinker or lightweight concrete block, plastered both sides	40
Wall	2-in. dense concrete	
Floor	Joists with t. and g. boards, lath and plaster ceiling	
Wall	4 $\frac{1}{2}$ -in. brick, plastered	45
Wall	6-in. no-fines concrete, plastered	
Floor	Concrete including hollow blocks or beams provided overall average weight exceeds 45 lb./sq. ft.	
Wall	9-in. brick or stone, plastered	50
Wall	7-in. dense concrete, plastered	
Floor	7-in. solid concrete	

Compiled by H. R. Humphreys, A.R.I.B.A.



c  
on

s.



**working detail**

**FURNITURE AND FITTINGS: 90**

RECEPTION COUNTER: HOSPITAL IN SWINDON

*Powell and Moya, architects*



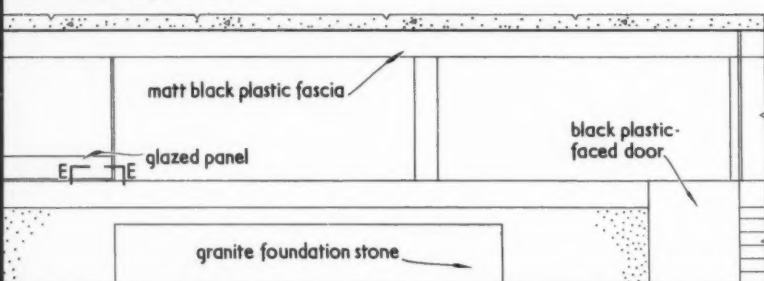
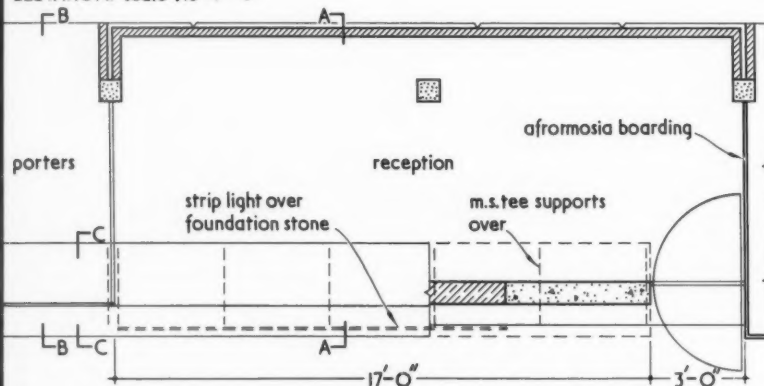
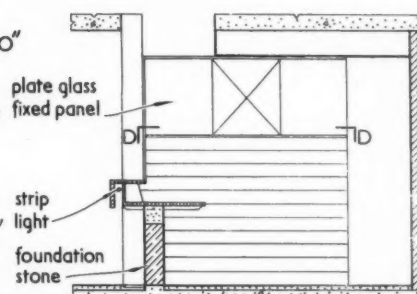
*This two-level counter (one level for leaning against, one level for sitting at) shows how a consistent detailing policy can, from a comparatively complex requirement, produce a simple effect.*

## working detail

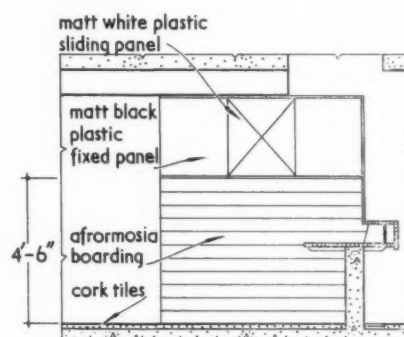
## FURNITURE AND FITTINGS: 90

## RECEPTION COUNTER: HOSPITAL IN SWINDON

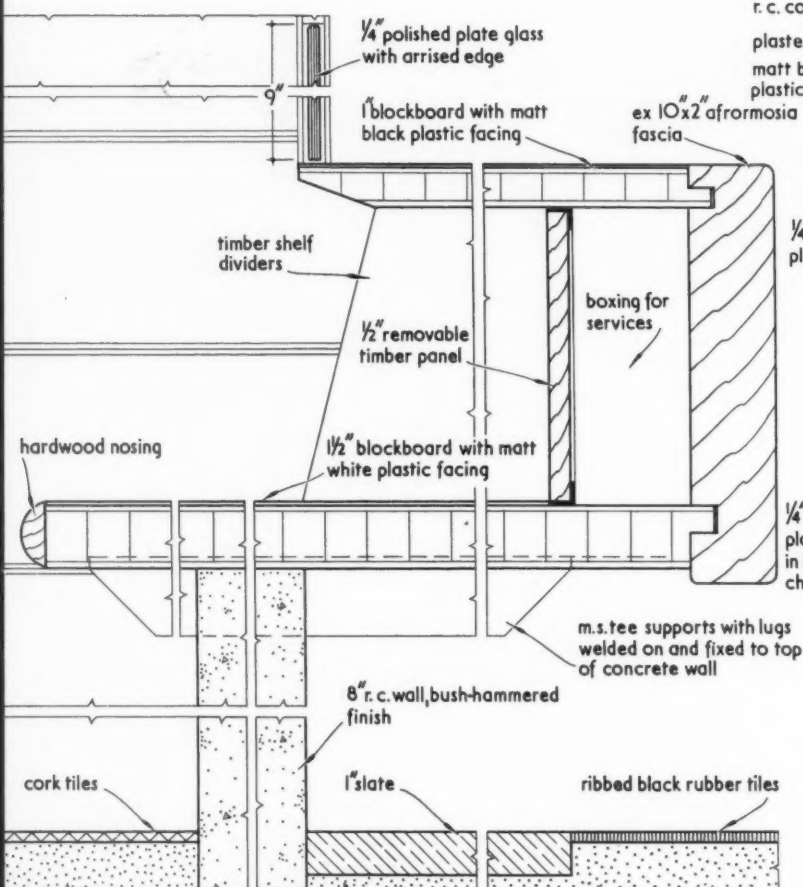
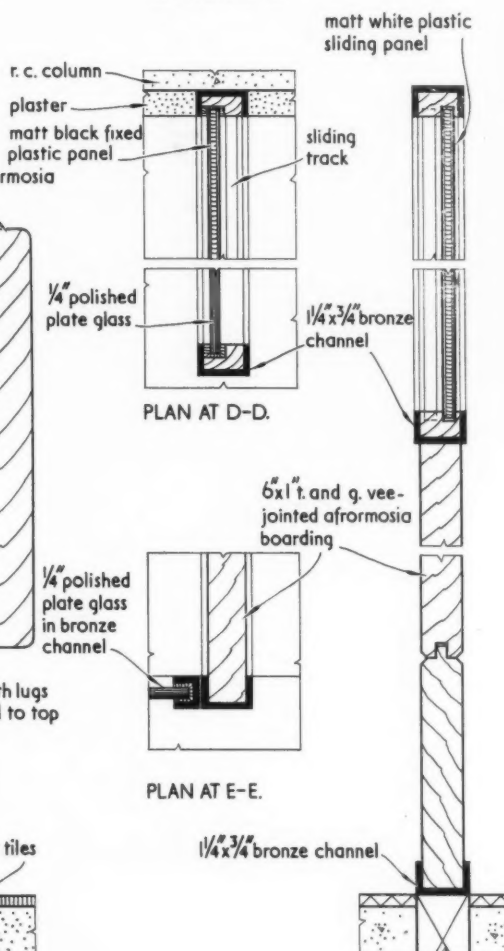
Powell and Moya, architects

ELEVATION. scale  $\frac{3}{16}''=1'-0''$ PLAN. scale  $\frac{3}{16}''=1'-0''$ 

SECTION A-A.



SECTION B-B.

SECTION C-C. scale  $\frac{1}{4}''$  full size

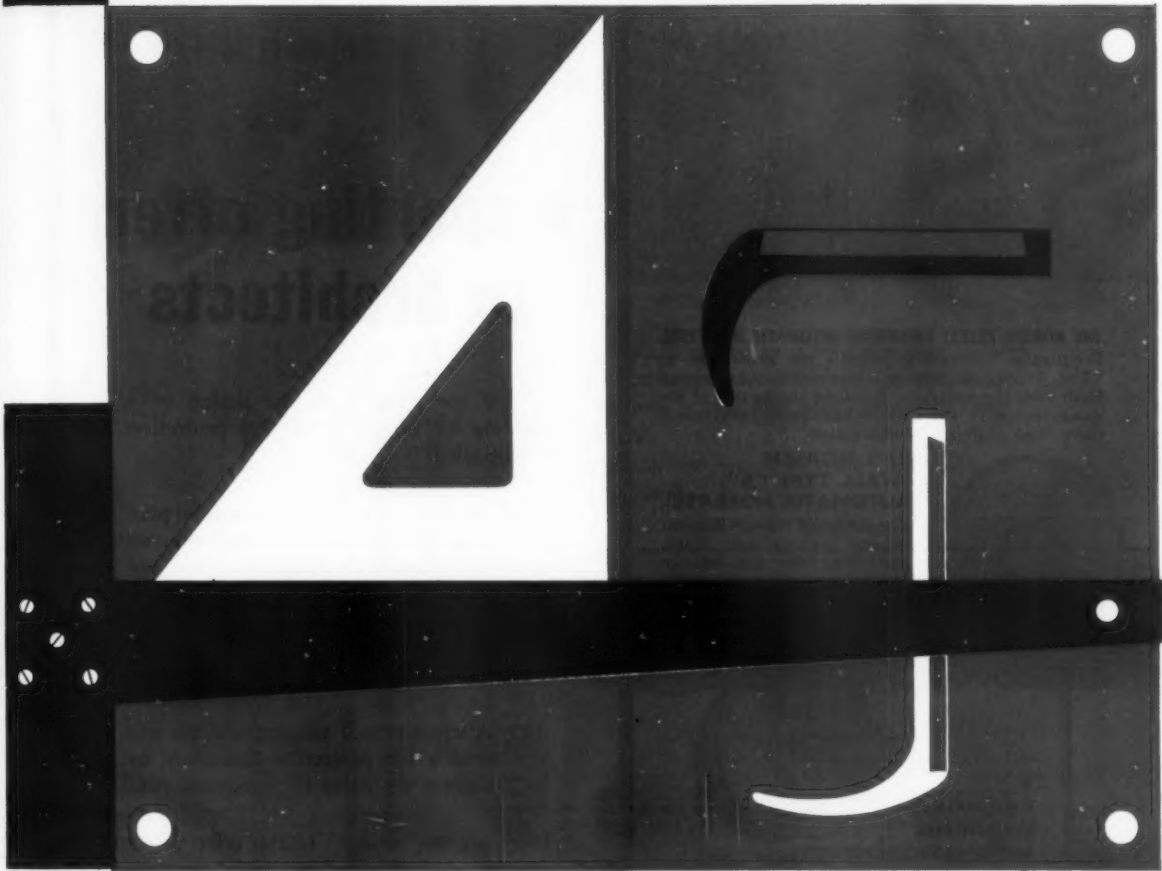
PLAN AT D-D.

PLAN AT E-E.

SECTION F-F.



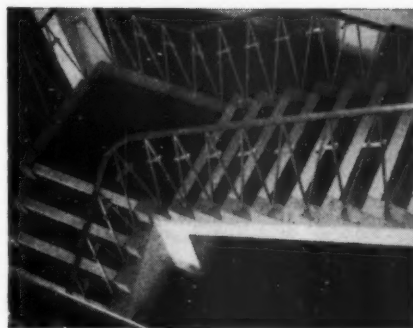
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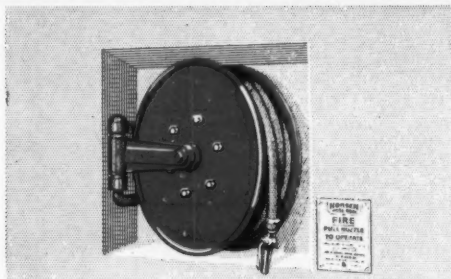
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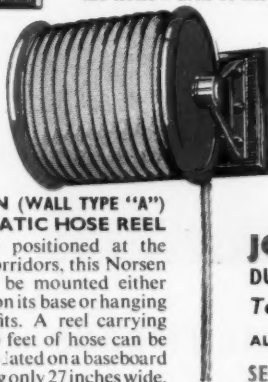
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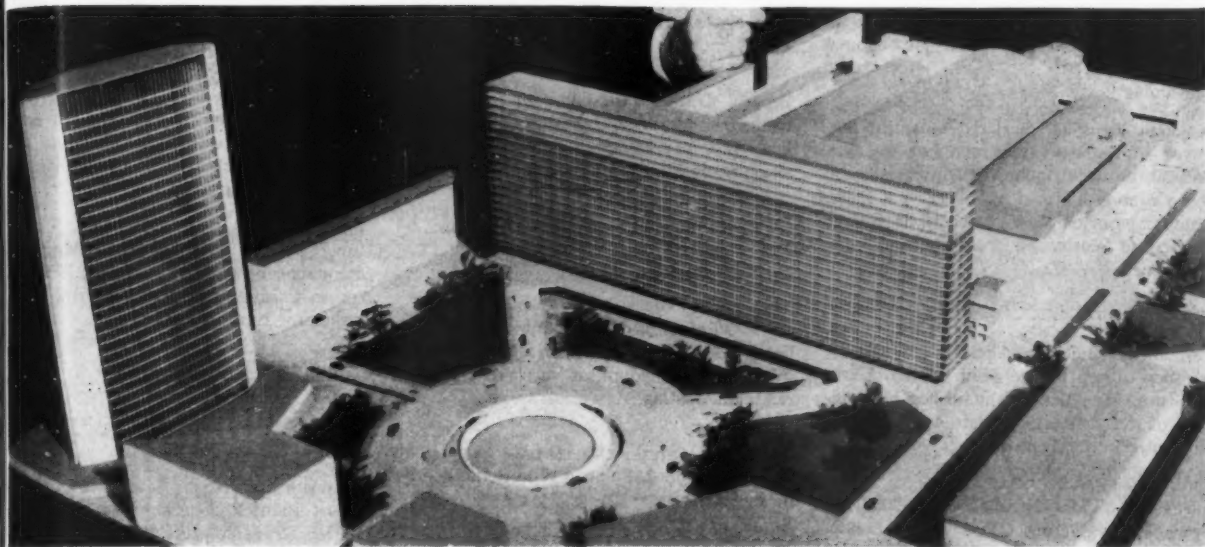
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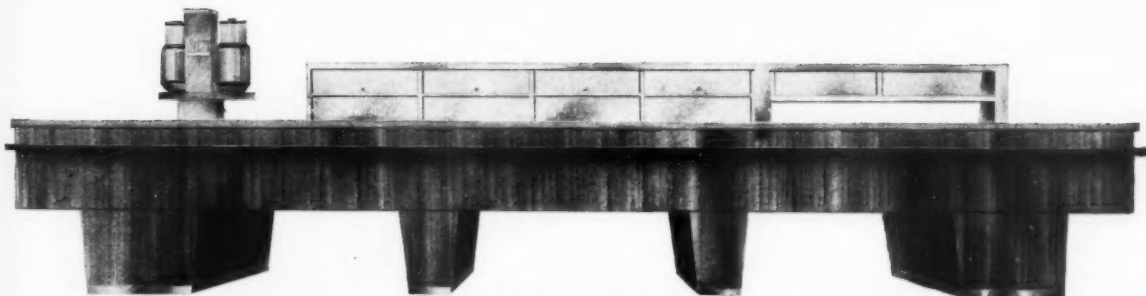


Plans are well advanced for this reconstruction and complete modernisation of the main railway station of Milan. It is planned to build what would be the most modern traffic centre of the world at the Duca D'Aosta Square, where trains—Pullmans and even helicopters will terminate. The new building will be 210 metres in

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## Announcements

### PROFESSIONAL

Sir John Burnet, Tait & Partners have made John Anthony Buck, A.R.I.B.A. and Thomas Kenneth Jack, M.A., A.R.I.B.A., Associates of the above partnership.

Kenneth Kensall, Chartered Quantity Surveyor, of 18, Sackville Street, London, W.1, and 50, Norfolk Square, Brighton, is opening a branch office at 22, Brunswick Place, Southampton, on April 1, where he will be pleased to receive all trade literature and catalogues.

Leslie Blease, A.R.I.B.A., A.R.I.C.S., has been elected to the board of the Co-operative Permanent Building Society, filling the vacancy caused by the death of Mr. Harry L. Score. Mr. Blease relinquishes his position as the Society's Chief Architect and will enter into private practice.

Philip S. Cocker, A.R.I.B.A., A.M.T.P.I., has opened an office at Old Council Chamber, Town Hall, Charing Cross, Grangemouth, Stirlingshire, where he will be pleased to receive trade literature.

Vallance, Westwick & Associates, Chartered Architects and Surveyors, are changing the name of the firm to Myles-White & Associates on April 1. The practice will be carried on from Paradise House, Paradise Street, Sheffield, 1, and White Hart Chambers, Mansfield, Notts.

### TRADE

David Radford of Ekco Plastics Ltd. has been elected chairman of the British Plastics Federation in succession to N. B. Punfield.

Berger Traffic Marking Ltd. has been formed in association with Lewis Berger & Sons Ltd. to provide a service for traffic marking of all descriptions.

K. F. Goodenough B.Sc. (Eng.), A.C.G.I., is now a director of Goodenough Pumps Ltd. and associated companies

Albi-Willesden Ltd. have appointed Hadfields (Merton) Ltd. as main distributors in the United Kingdom of their Albi-R fire retardant coating.

Hattersley (Ormskirk) Ltd. have appointed A. Nocton and R. Stephen Wild to the board of directors.

Bolton Gate Co. Ltd. have opened a London office at Abbey House, Victoria Street, London, S.W.1 (telephone Abbey 6942).

C. A. Harding & Co. (Bricks) Ltd. have been appointed London and Home Counties representative for the slate and limestone quarried by the Limestone and Green Slate Slab Co. Ltd. of Coniston and Kendal.

Barron & Shepherd Ltd. have combined their London and Dorking factories and City office and are operating from their new factory at 315, Kennington Road, S.E.11 (telephone Reliance 6051/2/3.)

The Urastone Co. Ltd. one of the British Uralite Group of Companies, have appointed J. York as Regional Manager for the Northern Region.

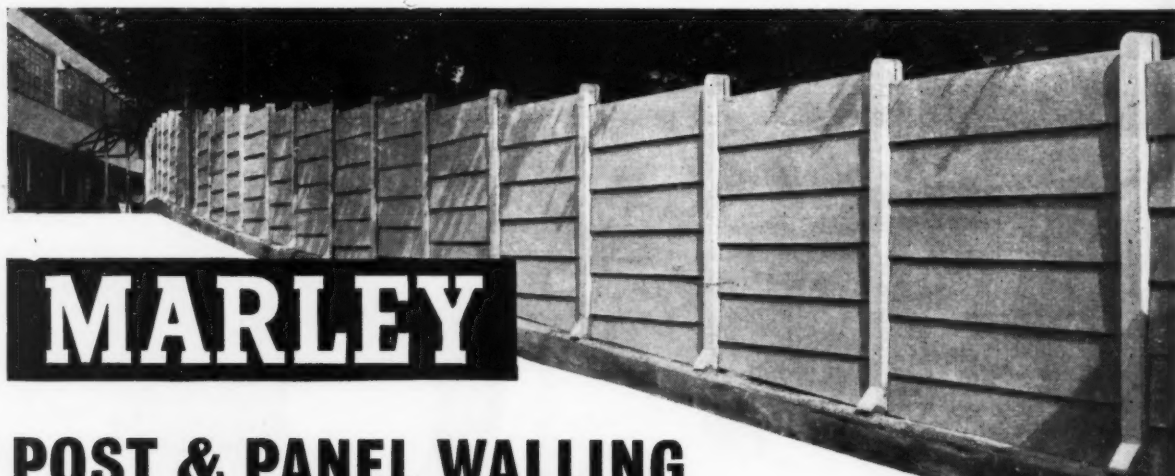
Robert Barr, President of Barlin-Scott Manufacturing Co. Ltd., Canada, is in London on a month's visit to study the British market for central heating.

### OBITUARIES

The death occurred on March 16 of Harold Gilbert Ramsell, General Manager of The Yale & Towne Manufacturing Co.

The death occurred on March 14 of George Wood, C.B.E., Vice-President of Thos. Ward Ltd.

The death has occurred of A. J. Hutchins, former branch administrator in Birmingham for Philips Electrical Ltd.



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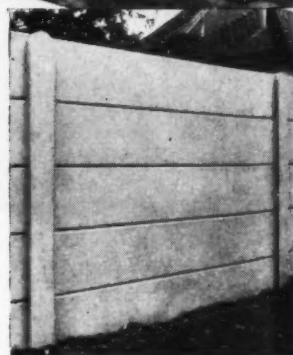
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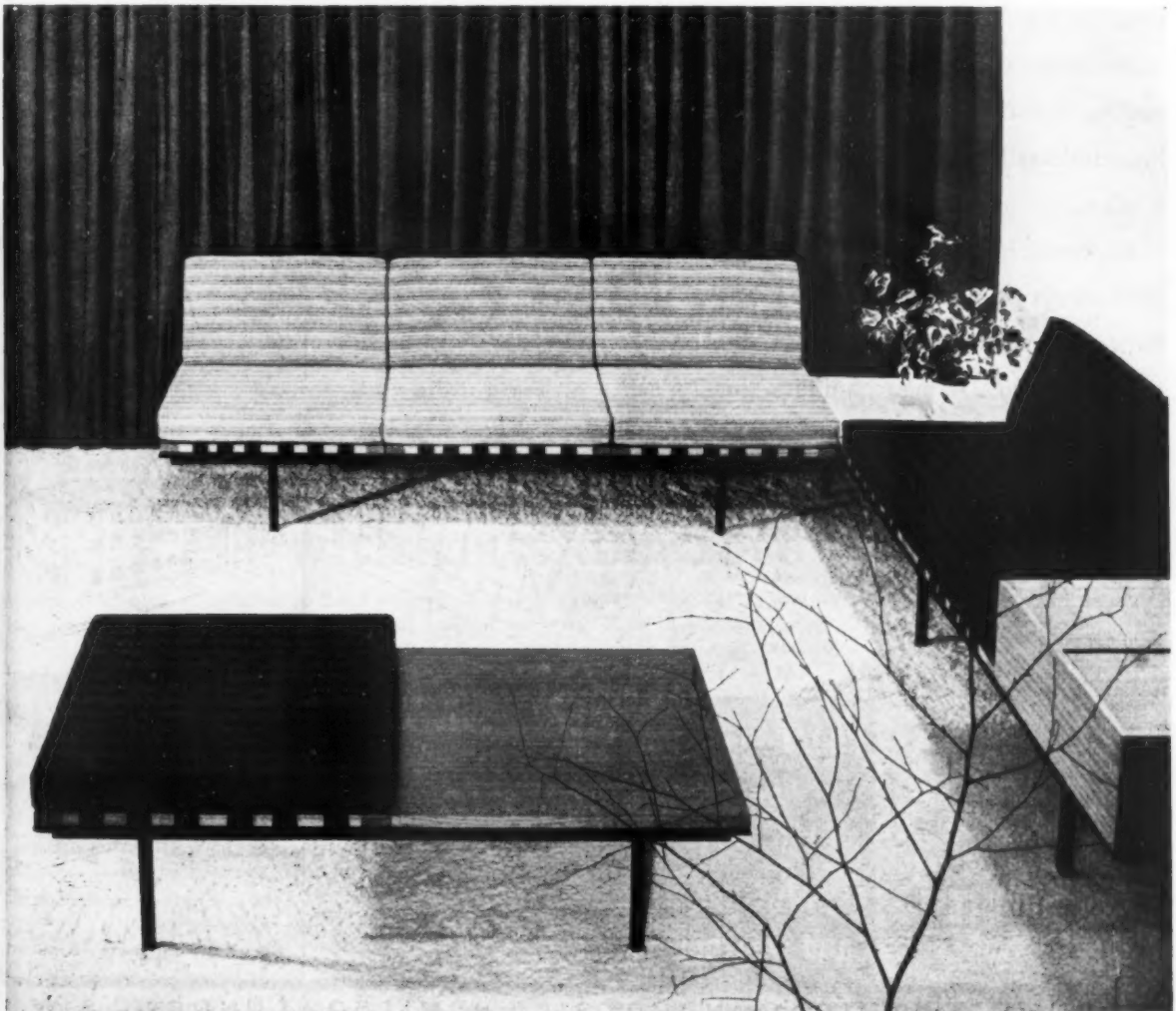
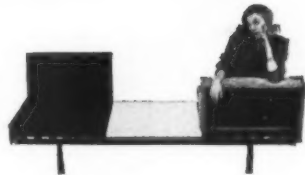


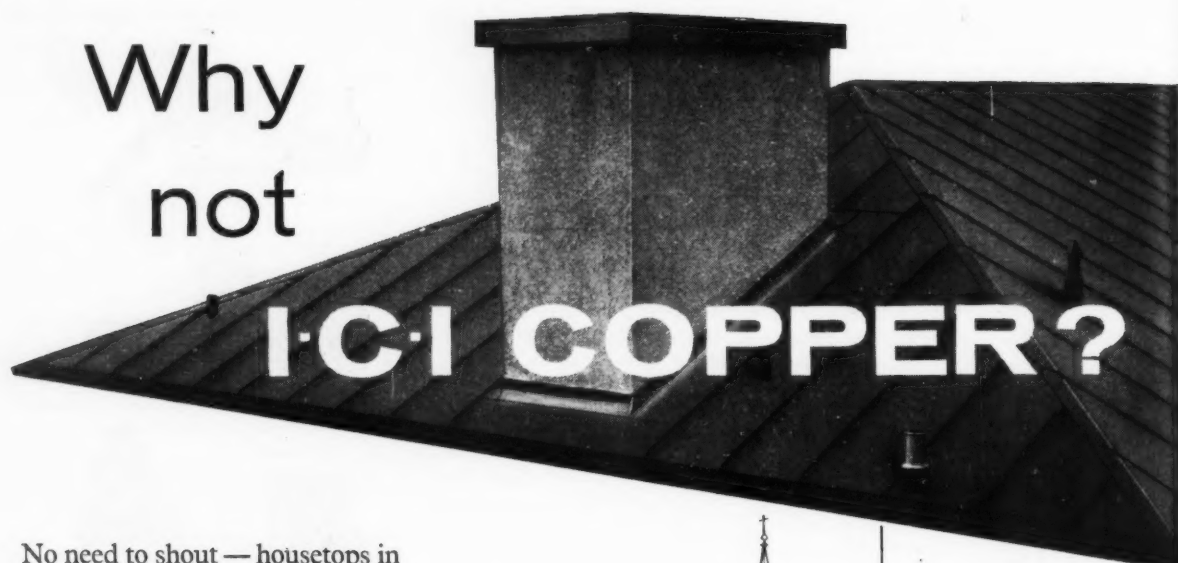


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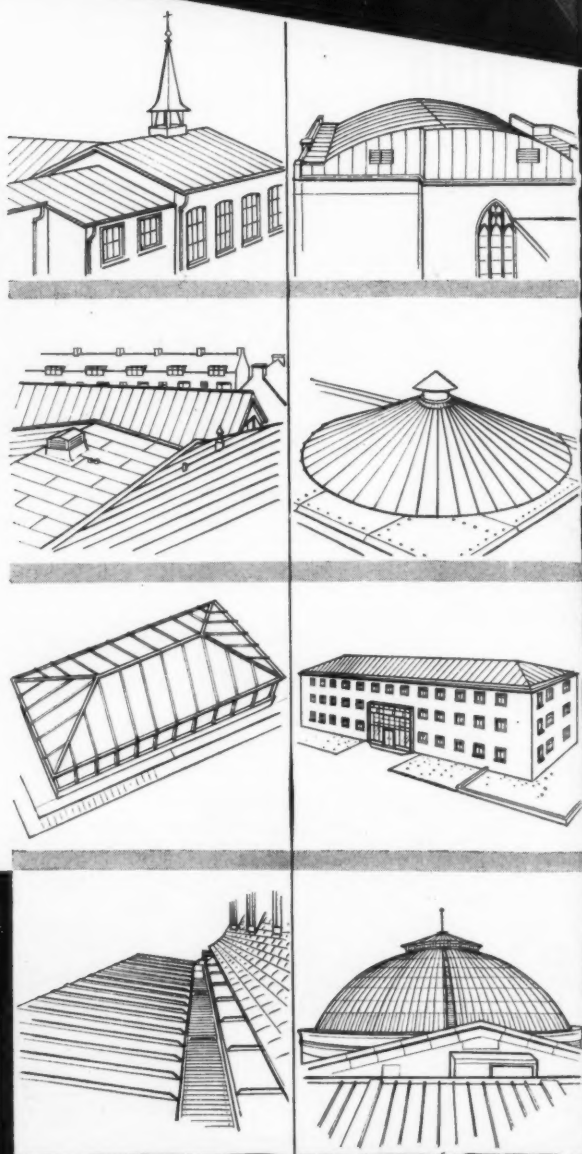
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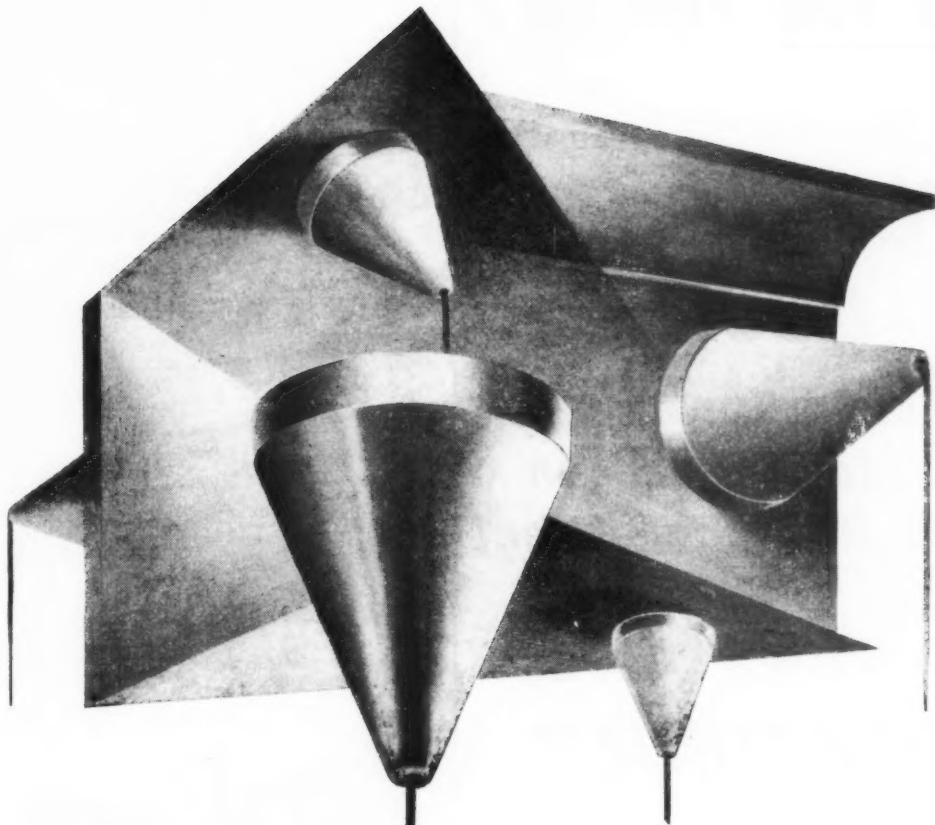


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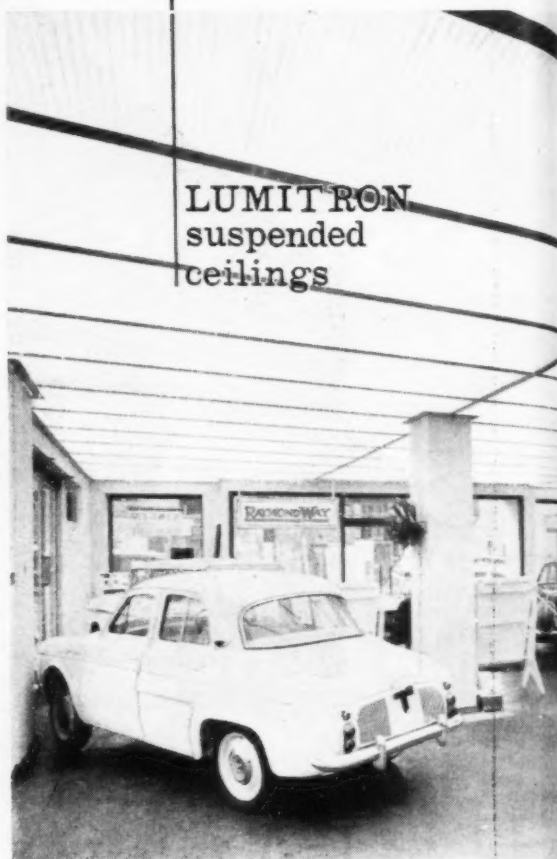
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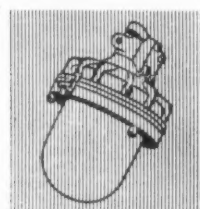
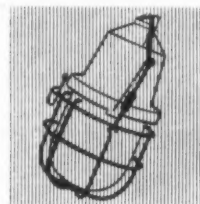
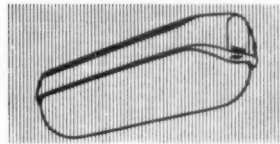
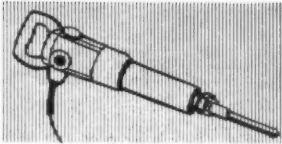
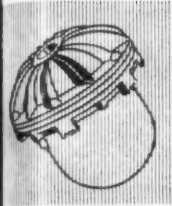
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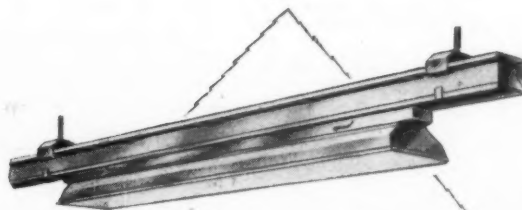
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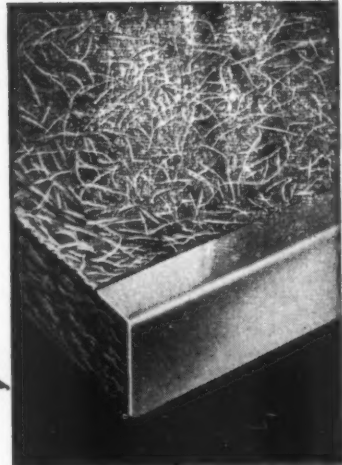
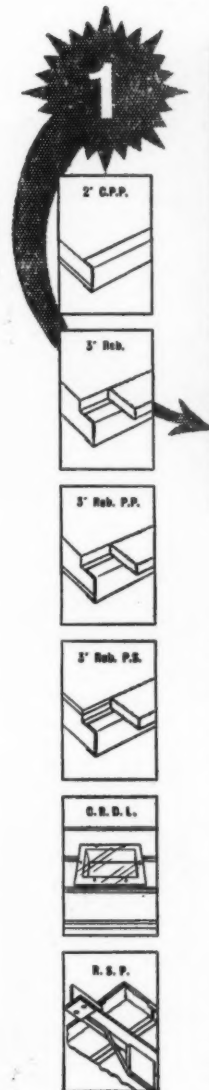
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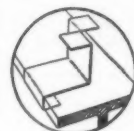
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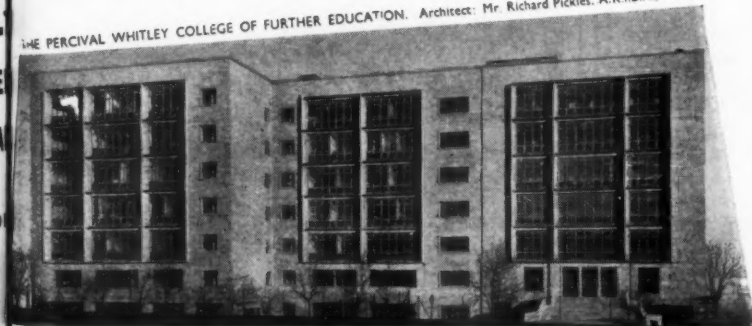
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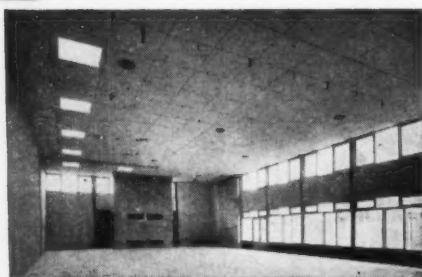
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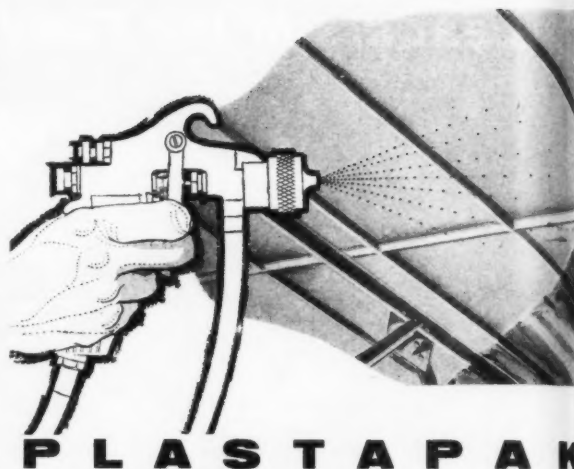
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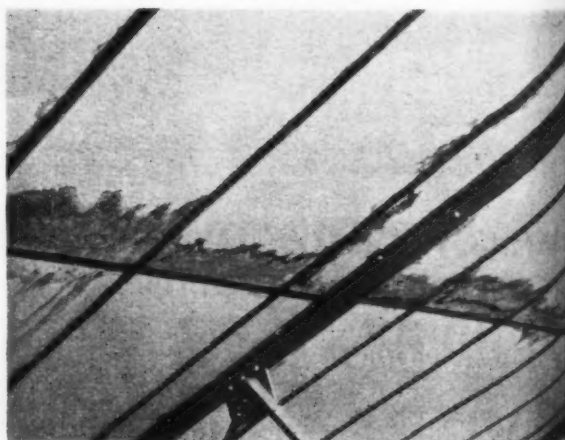
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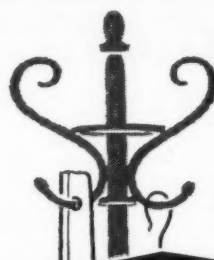
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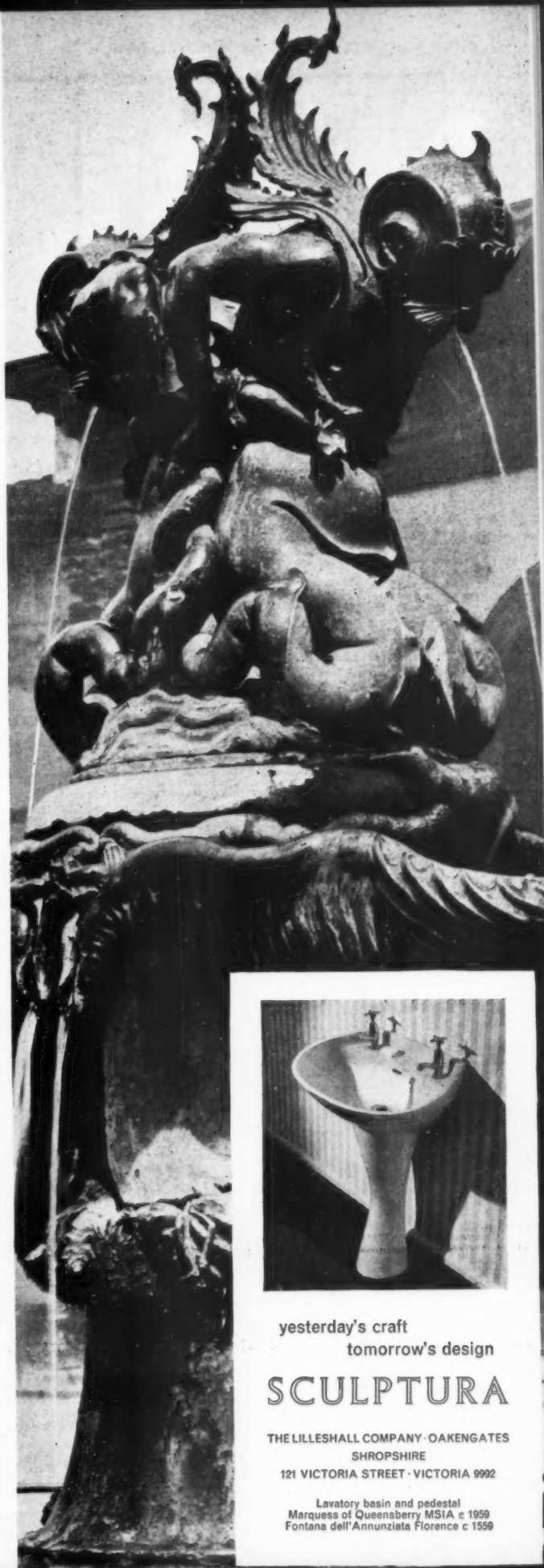
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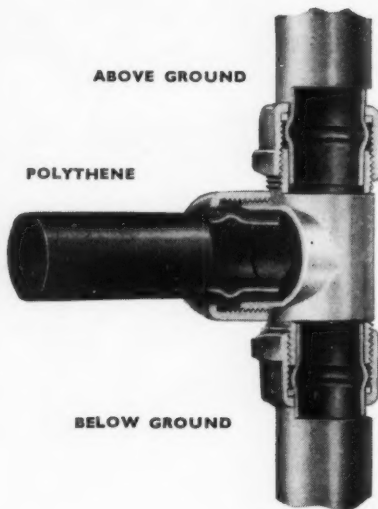


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Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

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

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In response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appointments Vacant, we have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 5s. for four weeks (1s. 3d. for each additional week) and payment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

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BOROUGH OF ENFIELD  
BOROUGH ENGINEER & SURVEYOR'S  
DEPARTMENT

Applications are invited for the post of ARCHITECTURAL ASSISTANT, Grade A.P.T. I (£610-£765 per annum, plus a London Weighting Allowance of £10-£30 per annum according to age).

Applicants must have had experience in the preparation of plans, specifications, etc., including the maintenance of public buildings.

Saturday mornings are normally free of duty. Application forms obtainable from H. D. Peake, M.Sc.(Eng.), M.I.C.E., Borough Engineer & Surveyor, 7 Little Park Gardens, Enfield, Middx., returnable to the undersigned.

CYRIL E. C. R. PLATTEN, Town Clerk. 8454

## BUILDING SURVEYORS

Architect's Department, L.C.C., has vacancies in Building Regulation Division and District Surveyors' Service for work in connection with applications under London Building Acts and bye-laws. District Surveyors' Offices are located in Metropolitan Boroughs and work involves negotiations with developers and supervision of works in progress.

Up to £1,135 (under review) commencing according to qualifications and experience. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/AJ/494/4), County Hall, S.E.1. 9076

LONDON COUNTY COUNCIL  
ARCHITECT'S DEPARTMENT

ARCHITECT/PLANNERS required. Tasks include three-dimensional planning in Comprehensive Development Areas and all other important areas of new development throughout London, including those associated with road improvements. Up to £1,135 (under review) according to experience and qualifications.

Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council (EK/AJ/527/4), County Hall, S.E.1. 9077

CAERNARVONSHIRE COUNTY COUNCIL  
COUNTY PLANNING DEPARTMENT

Applications invited for post of SENIOR PLANNING ASSISTANT. Commencing salary according to qualifications and experience within the Grades A.P.T. III/IV (£880-£1,220). New housing accommodation available if required.

Applicants should be corporate members of the Town Planning Institute or hold an equivalent qualification and must have had experience in the preparation of development plans, preferably including comprehensive development areas.

Further particulars and application forms from Clerk of County Council, Caernarvon. Closing date, 16th April, 1960. 9116

WARWICKSHIRE COUNTY COUNCIL  
ARCHITECT'S DEPARTMENT

Applications are invited for the following appointments:—

SENIOR ASSISTANT ARCHITECTS—Grade A.P.T. III-IV (£880-£1,220). Applicants must be members of the Royal Institute of British Architects and be competent engineers with a good knowledge of modern methods of construction.

ASSISTANT ARCHITECTS—Special Grade (£785-£1,070). Applicants must have passed Parts I and II of the R.I.B.A. Final or Special Examinations or their equivalent at one of the recognised schools of architecture. The successful applicants will work in teams on large projects, but opportunity will be given to men with enthusiasm and ability to design and carry out smaller projects under a Group Architect.

The commencing salary can be within the grade according to ability and experience. Application forms and other conditions applicable to the appointments can be obtained from Mr. Davies, F.R.I.B.A., A.M.T.P.I., County Architect, Shire Hall, Warwick.

L. EDGAR STEPHENS, Clerk of the Council. 9115

Shire Hall, Warwick. March, 1960.

## WORCESTERSHIRE COUNTY COUNCIL

SENIOR PLANNING ASSISTANTS, A.P.T. IV. Two experienced Planners are required in connection with the review of the County Development Plan, preparation of new Towns Maps, redevelopment of built-up areas by Comprehensive Development Area schemes. Salary £1,065-£1,220. Candidates must be A.M.T.P.I. and additional qualifications in architecture and/or surveying would be an advantage.

JUNIOR PLANNING ASSISTANT, A.P.T. I. This Assistant will work in the Development Plan Section on the review of the County Development Plan, research and preparation of new Town Maps. Salary £610-£765. Candidates should be University graduates and/or have passed Intermediate T.P.I. Examination.

All posts are pensionable and subject to a medical examination. Car required—allowance. Help given in removal expenses.

Application forms from: County Planning Officer, County Buildings, Worcester. (XIII.) 9131

CWMBRAN NEW TOWN  
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- (a) TWO CHIEF ASSISTANT ARCHITECTS, Grade VII (£1,257 to £1,485).
- (b) ONE SENIOR ASSISTANT ARCHITECT, Grade V (£1,220 to £1,375).
- (c) TWO ASSISTANT ARCHITECTS, Grade III (£880 to £1,065).

Applications are invited from suitably qualified Architects for the above posts in my Department. The programme of future work includes large scale residential development of new areas, the Commercial Centre of the New Town and a variety of other projects including neighbourhood shopping centres, industrial buildings, etc.

Candidates for (a) and (b) must be Associates of the R.I.B.A. with first class experience in design. In the case of (a) considerable responsibility will be required of the successful candidate, who will take charge of the development of new housing and commercial projects respectively. Candidates for (c) should be Associates of the R.I.B.A. with good office experience, preferably including housing design and layout. Conditions of Service are similar to those in Local Government and housing accommodation will be available if required.

Please write for details and forms of application which must be returned to me by Tuesday, 19th April, 1960.

J. C. P. WEST, A.R.I.B.A., M.T.P.I., Chief Architect. Cwmbran Development Corporation, Victoria Street, Cwmbran, Mon. 9124

## BOROUGH OF BEXLEY

## ARCHITECTURAL ASSISTANT

Applications are invited for this appointment in the Borough Engineer and Surveyor's Department. The salary is within Grade A.P.T. II (£765-£880 per annum) plus London Weighting. Preference will be given to suitably qualified candidates with experience of housing and school projects.

Form of application and conditions of appointment are obtainable from the Borough Engineer, West Lodge, Broadway, Bexleyheath, Kent, to whom completed applications must be returned by Monday, 11th April, 1960.

The Council may be prepared to assist in the provision of housing accommodation. Canvassing will disqualify.

ARTHUR GOLDFINCH, Town Clerk. 9176

## BOROUGH OF CASTLEFORD

## APPOINTMENT OF ASSISTANT ARCHITECT

Salary Grade A.P.T. I (£610-£765). Commencing salary according to qualifications and experience; N.J.C. Service Conditions; superannuable; terminable on one month's notice either side.

Applicants should have passed the Intermediate R.I.B.A. Examination or its equivalent at one of the recognised Schools of Architecture.

The successful applicant will be required to pass satisfactorily a medical examination.

If required housing accommodation will be provided for the successful married applicant. Applications, on forms obtainable from me, to be returned by the 9th April, 1960.

Canvassing disqualifies. ERNEST HUTCHINSON, Town Clerk. 9163

## COUNTY BOROUGH OF PRESTON

## Appointment of

- (a) SENIOR ARCHITECT (Salary APT V: £1,220-£1,375).
- (b) ASSISTANT ARCHITECT (Special Grade salary: £785-£1,070).

Applications are invited for the above-mentioned appointments in the Borough Surveyor's Department. Candidates must be Registered Architects and Corporate members of the R.I.B.A.

The programme of work is large and varied and the appointments afford opportunities for good experience, particularly in educational buildings.

The National Scheme of Conditions of Service and Local Superannuation Acts apply, and the successful applicants will be required to pass a medical examination.

Forms of application can be obtained from the undersigned, to whom they must be returned, completed, not later than 20th April, 1960.

W. E. E. LOCKLEY, Town Clerk. 9157

BOROUGH OF LEYTON  
(in the County of Essex)  
COMMITTEE FOR EDUCATION  
APPOINTMENT OF ARCHITECTURAL  
ASSISTANT

Applications are invited for the permanent appointment of Architectural Assistant, Grade A.P.T. II £765-£880 per annum, plus London Weighting. The successful applicant will be employed by the Essex County Council, and will work in the School Architect's Section of the Borough Engineer & Surveyor's Department, Town Hall, Leyton, E.10, five-day week is operated.

Details and forms of application from the Borough Education Officer, Education Offices, Kirkdale Road, Leytonstone, E.11, to whom they should be returned within 10 days from the appearance of this advertisement.

D. J. OSBORNE, Town Clerk. 9162

CORPORATION OF GLASGOW  
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ASSISTANT QUANTITY SURVEYORS

Vacancies exist for a number of qualified assistants as above. Salary scale £795-£1,240 with placing according to experience.

Applications should be addressed to the City Architect and Planning Officer, 20, Tronkate, Glasgow, C.1. Those who have submitted applications during the past 12 months should not reply to this advertisement.

A. G. JURY, City Architect and Planning Officer. 9015

## ARCHITECTS AND BUILDING SURVEYORS

Vacancies in Architect's Department, L.C.C., for Architects or Building Surveyors experienced in surveying existing buildings, preparing sketch schemes, working drawings and specifications and supervising works in progress, for the complete internal replanning and modernisation of the older blocks of Council flats (jobs up to £50,000).

Applicants should have initiative, a real interest in this type of work and ability to act on their own judgment since the maximum opportunity will be afforded for each to carry his own job through from survey to completion. Salaries range £700-£1,135 (under review). Promotion by merit.

Application form from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/AJ/620/4), County Hall, S.E.1. 9139

## EAST BARNET URBAN DISTRICT COUNCIL

Applications are invited for the following permanent appointments:—

- (a) SENIOR ASSISTANT ARCHITECT—Special Grade (£785-£1,070, plus London Weighting). Applicants should have passed the Final examination of the Royal Institute of British Architects.
- (b) ASSISTANT ARCHITECT—A.P.T. II (£765-£880, plus London Weighting). Applicants should have passed the Intermediate examination of the Royal Institute of British Architects, or equivalent.
- (c) ARCHITECTURAL DRAUGHTSMAN A.P.T. I (£610-£765, plus London Weighting).
- (d) SENIOR ASSISTANT ENGINEER—Special Grade (£785-£1,070, plus London Weighting). Applicants should have passed the Final examination of either the Institution of Civil Engineers or the Institution of Municipal Engineers.
- (e) ASSISTANT ENGINEER—A.P.T. II (£765-£880, plus London Weighting). Applicants should have passed Part I of the Institution of Civil Engineers or the Intermediate examination of the Institution of Municipal Engineers, or equivalent.
- (f) ENGINEERING DRAUGHTSMAN A.P.T. I (£610-£765, plus London Weighting).

Application forms, obtainable from the Engineer & Surveyor, Town Hall, Station Road, New Barnet, Hertfordshire, must be returned by not later than Monday, 11th April, 1960. 9172

## LONDON COUNTY COUNCIL

## ARCHITECTURAL DRAUGHTSMEN

Unqualified ARCHITECTURAL ASSISTANTS required in Housing Division, Architect's Department. Candidates must have drawing board experience in an architect's office. Preference to those proposing to qualify by continuing study though others will be considered. Full programme of new work. Promotion opportunities. Starting salaries according to age and experience. Form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/AJ/619/4), County Hall, S.E.1. 9154

## EAST RIDING OF YORKSHIRE COUNTY COUNCIL

Applications are invited for the appointment of ASSISTANT ARCHITECTS on the staff of the County Architect.

The salary will be in accordance with Grade A.P.T. IV of the N.J.C. Scales (£1,065 to £1,220 per annum).

Applications giving particulars of qualifications, experience, age, past and present appointments with salaries, together with the names of three referees should be sent to the County Architect, County Hall, Beverley, not later than 10 a.m. on Tuesday, 12th April, 1960.

Assistance towards removal, lodging and travelling expenses may be granted.

THOMAS STEPHENSON, Clerk of the Council. 9357



**WEST SUSSEX COUNTY COUNCIL  
COUNTY ARCHITECT'S DEPARTMENT**  
Applications are invited for the following appointments:—

**TEMPORARY ASSISTANT ARCHITECTS**, salary in accordance with Qualifications and Experience, ranging up to £1,400 per annum. Further particulars should be obtained from County Architect, County Hall, Chichester, to whom detailed applications should be submitted by 19th April, 1960.

**T. C. HAYWARD**,  
Clerk of the County Council.  
County Hall,  
Chichester. 9161

**THE NORTH WESTERN ELECTRICITY  
BOARD  
THIRD ASSISTANT ENGINEER  
(CIVIL ENGINEERING)  
SUB-AREA ENGINEERING DEPARTMENT,  
OLDHAM**

Applicants should be suitably qualified and have had experience in preparing sketch schemes, working drawings and specifications for commercial buildings, including Service Centres and supervision of work on site. Membership of the Royal Institute of British Architects will be an advantage.

Salary Scale: £1,025/£1,085 p.a., Class "L"  
Grade 10, N.J.B. Conditions.  
Applications must be made on a form to be obtained from the Manager, No. 3 Sub-Area, The North Western Electricity Board, Union Street, Oldham, and returned to him so as to be received not later than 9th April, 1960. 9348

**COUNTY COUNCIL OF THE WEST RIDING  
OF YORKSHIRE**

**OFFICE OF THE COUNTY ARCHITECT**  
The Council requires **SENIOR ASSISTANT ARCHITECTS** in the salary grades shown below for their extensive and interesting building programme, which includes schools, colleges, old people's and children's homes, clinics, ambulance, fire and police stations, and other public buildings. Architects appointed will be employed at the Central Office in Wakefield solely upon capital works dealing with building projects from sketch plans to completion.

J.N.C. Scale A. £1,170—£1,390.  
A.P.T. V. £1,220—£1,375.  
Applications stating age, qualifications, experience, present position, and giving names and addresses of three referees, to be sent to the undersigned not later than Tuesday, 12th April, 1960.

**A. W. GLOVER, F.R.I.B.A.**,  
County Architect.

Bishopgarth,  
Westfield Road,  
Wakefield. 9320

**CHESTERFIELD RURAL DISTRICT COUNCIL  
ENGINEER AND SURVEYOR'S DEPARTMENT  
TOWN AND COUNTRY PLANNING STAFF**

The Council has a population of 95,620 and is now to exercise additional Town and Country Planning Functions under the Town and Country Planning (Delegation) Regulations, 1959. The following additional staff are required:—  
(a) **PLANNING ASSISTANT**, Grade A.P.T. IV (£1,065—£1,220). Essential User Car Allowance for Class I car.  
(b) **PLANNING DRAUGHTSWOMAN**, General Division (£210—£295).

Candidates for post (a) should have passed the Final Examination of the Town Planning Institute and an architectural qualification will be an added advantage. Commencing salaries fixed according to experience. The Council is prepared to assist in appropriate cases, with housing accommodation and will pay household removal expenses.

Applications, stating age, marital status, qualifications, present and past appointments, fully detailed particulars of experience, and the names and addresses of two referees to reach the undersigned not later than 7th April, 1960.

**H. O. HAWKINS**,  
Clerk of the Council.  
Rural Council House,  
Saltergate,  
Chesterfield. 9285

**BOROUGH OF ROMFORD  
ASSISTANT ARCHITECT**

Applications are invited for a post of **SENIOR ASSISTANT ARCHITECT** within the salary range £1,095—£1,250 p.a. Applicants must be fully qualified and must have at least three years' experience subsequent to qualification. Interesting and varied work available. In appropriate cases housing accommodation will be made available and removal expenses paid. "Essential user" car allowance. Five-day week.

Full particulars and conditions can be obtained from the Town Clerk, Town Hall, Romford, to whom applications for the appointment are to be sent by 11th April. 9268

**GLENROTHES DEVELOPMENT  
CORPORATION**

**ARCHITECT/PLANNER** required on grade £1,220/£1,375 with placing according to qualifications and experience. Applicants must hold the Final examination of the Town Planning Institute. An additional architectural or engineering qualification would be advantageous. Candidates should have sound planning experience including the layout of large residential developments, central and industrial areas. Medical examination for Superannuation Scheme. House to rent available if required. Application forms from Secretary and Legal Adviser, Glenrothes Development Corporation, Glenrothes, Fife, to be returned by 16th April, 1960. 9315

**BOROUGH OF NEWCASTLE UNDER LYNE**

Requires:—

(a) **ASSISTANT ARCHITECT**, Special Grade. Salary £785 to £1,070 p.a.  
(b) **TWO ARCHITECTURAL ASSISTANTS**, Grade A.P.T. II. Salary £765 to £880 p.a. Applicants for (a) are required to have passed Parts 1 and 2 of the R.I.B.A. Final or Special Final Examination.  
Applicants for (b) should have passed the R.I.B.A. Intermediate Examination.

Commencing salaries will be in accordance with qualifications and experience.  
Favourable consideration will be given to the provision of housing accommodation in suitable cases.

Further particulars and conditions of appointment may be obtained from Borough Surveyor, Lancaster Building, High Street, Newcastle, Staffs, to whom applications must be submitted by 11th April, 1960. 9261

**EASINGTON RURAL DISTRICT COUNCIL  
CHIEF ASSISTANT ARCHITECT**

Applications are invited from persons with good general experience and who have passed the Final examination of the R.I.B.A. for the above mentioned appointment.

Salary Grade A.P.T. IV (£1,065—£25—£50 (2)—£1,220).

Assistance will be given to find housing accommodation.  
Form of application (with full details of the terms and conditions of appointment) obtainable from the undersigned, must reach me by Thursday, 14th April, 1960.

**T. AGAR**,  
Clerk of the Council.

Council Offices,  
Easington,  
Co. Durham. 9291

**COUNTY COUNCIL OF ESSEX  
ASSISTANT ARCHITECTS**

Continuing development of the County offers experience on large scale public buildings—large extensions to County Hall, new colleges, libraries, schools, court houses, police and fire stations—with opportunities to design and supervise.  
Five-day week.

One Assistant Architect, salary between £1,130 and £1,485.

Six Assistant Architects, salaries between £1,220 and £1,375.

Nine Assistant Architects, salaries between £1,065 and £1,220.

Two Assistant Architects, salaries between £1,070 and £1,220.

Application forms from County Architect, County Hall, Chelmsford (state post for which form is required) to be returned by 14th April, 1960. 9260



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**ARCHITECTS' just published  
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D.A.C.A. Boyne & Lance Wright A.R.I.B.A.**

THE SIXTH volume in this popular series, which provides architects with readily accessible solutions to many everyday design problems, is of exceptional importance: all the details illustrated are, for the first time in the series, details of recent foreign buildings. This volume therefore offers to those architects—and especially to students—who have had little opportunity for extensive fact-finding foreign tours, an unrivalled collection of examples from the offices of many of the most progressive architects now practising in Brazil, Canada, Denmark, France, Finland, Germany, Holland, Italy, Sweden, Switzerland and the U.S.A.

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**THE ARCHITECTURAL PRESS**  
9-13 Queen Anne's Gate, Westminster, S.W.1.



## ARCHITECTURAL ASSISTANTS

Required by Glenrothes Development Corporation. Salary grade £610/£880 with placing according to experience and qualifications. Preference given to candidates holding Intermediate R.I.B.A. Certificate. Medical examination under Superannuation Scheme. House to rent available if required. Application forms from the Secretary and Legal Adviser, Glenrothes Development Corporation, to be returned by 7th April, 1960. 9363

## WEST SUSSEX COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT  
Applications are invited for the following appointments:—

ARCHITECTURAL ASSISTANTS and ASSISTANT ARCHITECTS at salaries ranging up to £1,200 per annum. Commencing salary according to qualifications and/or experience.

Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom all detailed applications must be submitted not later than 22nd April, 1960.

T. C. HAYWARD,  
Clerk of the County Council.

County Hall, Chichester. 9324

## DURHAM COUNTY COUNCIL

PLANNING DEPARTMENT  
LANDSCAPE ARCHITECT. Salary £1,065 to £1,260. Applicants must be Associates of the Institute of Landscape Architects or B.Sc. Horticulture may be considered. Will be required for work on landscape schemes for parks and housing estates, restoration of derelict land, afforestation of colliery tips, tree preservation orders, etc. Housing available at Peterlee and Newton Aycliffe, 12 miles from Durham. Forms and further particulars from the County Planning Officer, 10, Church Street, Durham. Closing date, 20th April, 1960. Canvassing members of the Council is prohibited.

J. K. HOPE,  
Clerk of the County Council.

County Hall, Durham. 9323

## COUNTY BOROUGH OF DEWSBURY

BOROUGH ARCHITECT AND BUILDING SURVEYOR'S DEPARTMENT  
Applications are invited for the appointment of PRINCIPAL ASSISTANT ARCHITECT (Housing and General Section) at a salary in accordance with A.P.T. Grade V (£1,220-£1,375 p.a.) the commencing salary to be fixed within the scope of this grade according to qualifications and experience. Applicants should be A.R.I.B.A. Housing accommodation may be made available if required.

The appointment will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts. Applications stating age, education, qualifications, full particulars of training and experience, together with copies of two recent testimonials, should be sent to the undersigned not later than Tuesday, 12th April, 1960, in envelopes endorsed "Appointment of Principal Assistant Architect."

A. NORMAN JAMES,  
Town Clerk.

Town Hall, Dewsbury. 9230

## LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT  
CRYSTAL PALACE NATIONAL RECREATION CENTRE  
APPOINTMENT OF CLERKS OF WORKS

Construction of this important project value approximately £2,000,000 is due to commence in May, 1960 (duration 3 years). Applications are invited for staff to superintend the construction. Previous experience of large building schemes is essential, together with a thorough knowledge of modern building techniques and materials. Administrative and organising ability is desirable together with, for post (a) powers of leadership.

(a) CHIEF CLERK OF WORKS, £1,560 per annum.  
(b) ASSISTANT CLERKS OF WORKS (2) up to £1,000 per annum.

Application form, returnable by 12th April, 1960, obtainable from the Architect to the Council, (BK/AJ/689/4), the County Hall, S.E.1. 9312

## METROPOLITAN BOROUGH OF ISLINGTON

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT  
Applications are invited from persons not more than 50 years of age for the following appointments on the permanent staff:

(a) THREE SENIOR ARCHITECTURAL ASSISTANTS, Grade A.P.T. V (£1,220/£1,375 p.a.).

(b) TWO ARCHITECTURAL ASSISTANTS, Grade A.P.T. III (£880/£1,065 p.a.).

(c) ONE JUNIOR ARCHITECTURAL ASSISTANT, Grade A.P.T. II (£765/£880 p.a.).

All plus London weighting.

Applicants for (a) should be Associate Members of the R.I.B.A. with considerable experience including the design and construction of multi-storey housing;

(b) should have passed the Intermediate examination of the R.I.B.A. and be suitably experienced;

(c) should have a sound knowledge of building construction with experience in the preparation of working drawings.

Application forms, returnable by first post on Tuesday, 19th April, 1960, obtainable from Mr. C. N. Cowney, Borough Engineer and Surveyor, Town Hall, Upper Street, N.1.

H. DIXON CLARK,  
Town Clerk.

9310

## CITY OF MANCHESTER

HOUSING COMMITTEE  
Applications invited from suitably qualified persons for the following appointments:

DEPUTY CHIEF ASSISTANT ARCHITECT, Senior Scale "A", £1,250-£1,420 per annum.

SENIOR ASSISTANT ARCHITECT, A.P.T. V, £1,220-£1,375 per annum.

SENIOR ASSISTANT ARCHITECT, A.P.T. IV, £1,065-£1,220 per annum.

Details from the Director of Housing, Town Hall, Manchester, 2, to whom applications should be returned not later than the 23rd April, 1960. 9266

BRITISH OVERSEAS AIRWAYS CORPORATION invite application for post of ASSISTANT STAFF ARCHITECTS. Applicants should preferably be single and available for world travel with the ability to assume responsibility and act on their own initiative.

Qualifications:—First class designers with knowledge of shop-fitting work and competency in rapid sketch planning and estimating plus the ability to control medium sized projects throughout. Industrial experience will be an advantage with an aptitude for dealing speedily with contracts involving alterations to, and maintenance of, existing property.

Salary range: £940 per annum to £1,120 per annum.

Attractive pension, staff insurance and leave facilities.

Write, giving full details of experience and qualifications, to:—Recruitment Manager, B.O.A.C., London Airport, Hounslow, Middlesex. 9304

## ROYAL BOROUGH OF

KINGSTON-UPON-THAMES  
Appointment of PLANNING ASSISTANT, A.P.T. Grade II (£765 to £880 plus London weighting).

Applications are invited for the above mentioned appointment. Experience in development control essential. Preference given to candidates who have passed the Intermediate examination of the Town Planning Institute or equivalent.

Details and application forms from Borough Surveyor, Guildhall, Kingston-upon-Thames and returnable by 11th April, 1960.

A. B. ROGERS,  
Town Clerk.

Guildhall, Kingston-upon-Thames. 9225

## HAYES &amp; HARLINGTON U.D.C.

Applications are invited for:—

(a) ASSISTANT ARCHITECT. Salary within Special Grade, i.e., £785-£1,070 p.a.

(b) ARCHITECTURAL ASSISTANTS (Two). Salary within Grade A.P.T. II, i.e., £765-£880 p.a.

Plus appropriate London weighting in all cases, 21-25 years, £20 p.a.; 26 years and over, £30 p.a. Preference will be given to candidates for (a) who have passed the examination for Associateship of the R.I.B.A. and who must be capable of preparing sketch designs, full working drawings, specifications, supervision of building contracts, etc.

Applicants for (b) should have passed the Intermediate examination of the R.I.B.A. and must have good general architectural experience. Five-day week. Housing accommodation if required will be made available for (a) and for one of the appointments (b). Further particulars and conditions of service and form of application obtainable from the undersigned, which when completed must be returned by 19th April, 1960.

GEORGE HOOPER,  
Clerk and Solicitor.

Town Hall, Hayes, Middlesex. 9226

## BUCKINGHAMSHIRE COUNTY COUNCIL

Applications are invited for the following appointments in the South-East Bucks Area Office of the County Planning Department:—

(a) SENIOR PLANNING ASSISTANT, Grade A.P.T. IV (£1,065-£1,220) to work at Slough.

(b) PLANNING ASSISTANT, Special Scale (£785-£1,070) to work at Amersham.

(c) DRAUGHTSMAN/PLANNING ASSISTANT, Grade A.P.T. I (£610-£765) to work at Slough.

Candidates for post (a) must be Corporate Members of the Town Planning Institute and preference will be given to those holding an additional recognised qualification. They must have had considerable experience covering both county problems and urban development.

Candidates for post (b) must be Corporate Members of the Town Planning Institute with considerable experience in all aspects of statutory planning, development control and planning procedure.

Candidates for post (c) should have had training in a Planning, Architectural, Surveying or Engineering Office.

The commencing salary for each appointment will be according to qualifications and experience. The appointments are superannuable and subject to medical examinations.

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

Forms of application may be obtained from the County Planning Officer, County Offices, Aylesbury, to whom completed applications must be returned by Friday, 8th April, 1960.

R. E. MILLARD,  
Clerk of the County Council.

County Hall, Aylesbury. 9232

March, 1960.

HOLLAND COUNTY COUNCIL invite applications for the appointment of a SENIOR ASSISTANT ARCHITECT, Grade A.P.T. IV, £1,065-£1,220 p.a.

The Council have a varied and interesting programme and the successful applicant will be required to work within a "Group" system, where enthusiasm, initiative and contemporary outlook are required.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, the N.J.C. Scheme of Conditions of Service and a medical examination.

The County Council would consider making a contribution towards the cost of removal.

Forms obtainable from the County Architect. Should be returned to the Clerk of the County Council, County Hall, Boston, Lincs, by 11th April, 1960. 9221

## NOTTINGHAMSHIRE COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT  
APPOINTMENT OF SENIOR ARCHITECT

GRADE JNC.B  
Applications are invited from qualified and experienced Architects for the above post which is in one of the four Groups handling the County Council's Major Building Programme.

The post is one of responsibility requiring a high degree of initiative and applicants must have good experience in design, job planning and organisation. The office is mainly concerned with the design and control of component prefabrication for all major types of building and has a policy of continuous development in planning and construction in which the person appointed will have an opportunity of taking part.

The salary of the Grade ranges from £1,305-£1,485 per annum.

Forms of application may be obtained from the County Architect, County Hall, West Bridgford, Nottingham, to whom they should be returned as soon as possible and in any case not later than 14th April, 1960.

A. R. DAVIS,  
Clerk of the County Council.

9241

## CHESHIRE COUNTY COUNCIL

COUNTY PLANNING DEPARTMENT  
Applications are invited for the following permanent appointments in the above department:—

CHIEF PLANNING ASSISTANT (Design) in the headquarters office at the County Hall. Candidates must be appropriately qualified.

The successful applicant will be required to work mainly upon re-development schemes for town centres and other design problems.

CHIEF PLANNING ASSISTANT (Development Control) in the headquarters office or in one of the five area offices throughout the County. Candidates must be corporate members of the Town Planning Institute, and should have had experience in the preparation of Development Plans and in the control of development.

The salary payable for both appointments will be on A.P.T. IV (£1,065 x £50-£1,220).

Forms of application and further particulars can be obtained from me and should be returned not later than Thursday, 14th April, 1960.

The Council are unable to provide housing accommodation.

KENNETH O. MALE,  
County Planning Officer.

County Hall, Chester. 9243

## CITY OF NOTTINGHAM

ESTATES DEPARTMENT  
Applications are invited for the following posts in the Chief Architect's Section:—

(a) ASSISTANT ARCHITECT at a commencing salary within the Special Grade (£785-£1,070). Applicants should have passed Parts 1 and 2 of the Final Examination of the Royal Institute of British Architects.

(b) ARCHITECTURAL ASSISTANT of Intermediate R.I.B.A. standard at a commencing salary within Grades A.P.T. 1 and 2 (£610-£765 and £765-£880), in accordance with qualifications and experience.

The appointments will be subject to the National Joint Council's Scheme of Conditions of Service.

Applications stating age, qualifications, experience, present appointment and salary and naming two referees should be sent to the Estates Surveyor & Valuer, The Guildhall, Nottingham, by 8th April, 1960.

T. J. OWEN,  
Town Clerk.

The Guildhall, Nottingham. 9249

## CITY OF ST. ALBANS

BUILDING INSPECTOR  
Applications are invited for the appointment of Building Inspector in the City Engineer and Surveyor's Department. Established post on Grade A.P.T. II (£765-£880) with essential car user allowance in accordance with N.J.C. scale.

Applicants should have had experience in a similar capacity with a Local Authority, have a good knowledge of building construction and practice, be capable of examining and reporting on deposited plans and hold an appropriate qualification of a recognised professional body. Housing accommodation available if required.

Applications stating age, qualifications and experience together with the names of two persons to whom reference can be made must reach me not later than 20th April, 1960.

B. V. ENTWISTLE,  
Town Clerk.

Town Clerk's Office, 38, St. Peter's Street, St. Albans. 9267

## CITY OF LEEDS

## CITY ARCHITECT'S DEPARTMENT

Applications are invited for vacancies in the following grades:—

1. SENIOR ASSISTANT ARCHITECTS, Grade A.P.T. V (£1,220—£1,375).
2. SENIOR ASSISTANT ARCHITECTS, Grade A.P.T. IV (£1,065—£1,220).
3. ASSISTANT ARCHITECTS, Grade A.P.T. III (£880—£1,065).
4. ASSISTANT ARCHITECTS, Grade A.P.T. II (£765—£880).
5. ARCHITECTURAL ASSISTANTS, Grade A.P.T. I (£610—£765).

Applicants for Posts Nos. 1 and 2 should be fully qualified and members of the R.I.B.A.

Applicants for posts Nos. 3 and 4 should preferably have passed the Intermediate R.I.B.A. examination.

In addition to large annual programmes for both housing, including multi-storey dwellings, and schools, a number of interesting projects are likely to be carried out in the near future, e.g. public baths, abattoir and meat markets, fruit and vegetable markets, civic hall extensions, branch colleges and hostels.

The recently appointed City Architect, Mr. J. R. Sheridan-Shedden, Dip.Arch., F.R.I.B.A., will be taking up his appointment in the near future and, as groups of architects are being formed to deal with these projects, applicants will be considered on their capability for design, experience, contemporary outlook and suitability for inclusion in such groups.

The appointments are supernumerary and the successful applicants will be required to pass a medical examination.

Application forms may be obtained from the Acting City Architect, Priestley House, Quarry Hill, Leeds 9, to whom they must be returned not later than 12 noon on Friday, 22nd April, 1960.

Canvassing in any form, either directly or indirectly, will be a disqualification.

P. B. HASWELL,  
Acting City Architect.

Priestley House,  
Quarry Hill,  
Leeds, 9.

9273

## ASSISTANT QUANTITY SURVEYOR

Applications invited from Corporate Members of the Royal Institution of Chartered Surveyors (Quantities) for unestablished post in Chief Quantity Surveyor's Branch, Ministry of Finance. Experience in "taking off" for large building works essential. Salary scale £805—£1,250, entry point according to age and experience. Prospects of permanent and pensionable appointment. Preference for ex-servicemen. Application forms, obtainable from Director of Establishments, Room 271, Stormont, Belfast, to be completed and returned by the 20th April, 1960.

9294

DENBIGHSHIRE COUNTY COUNCIL  
COUNTY ARCHITECT'S DEPARTMENT

## WREXHAM

Applications are invited for the following appointments in the above Department, viz:—

- (a) CHIEF ARCHITECTURAL ASSISTANT, A.P.T. Grade V (salary £1,220—£1,375 per annum).
- (b) SENIOR ARCHITECTURAL ASSISTANTS (TWO), Special Scale (salary £785—£1,070 per annum).
- (c) JUNIOR ARCHITECTURAL ASSISTANTS (TWO), A.P.T. Grade II (salary £765—£880 per annum).
- (d) QUANTITY SURVEYING ASSISTANT, Special Scale (salary £785—£1,070 per annum).
- (e) QUANTITY SURVEYING ASSISTANT, A.P.T. Grade II (salary £765—£880 per annum).

The Department is engaged upon a building programme of new Schools and extensions to existing Schools, County Offices, etc., and the above posts offer opportunities and interesting work.

Further details with form of application can be obtained from me. Completed forms to be returned by 9th April, 1960.

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

County Offices,  
Ruthin,  
Denbighshire.

9295

COUNTY BOROUGH OF DUDLEY  
ASSISTANT ARCHITECT

## A.P.T. SPECIAL GRADE (£795—£1,075)

Applications are invited for the above permanent appointment in the Borough Architect's Department.

Applicants must be A.R.I.B.A., and the commencing salary will be according to qualifications and experience.

The successful applicant will be required to pass a medical examination.

Applications, stating age, details of training, qualifications and experience, present and previous appointments and salary, together with the names and addresses of two referees, must be received by me by Thursday, 21st April, 1960.

P. D. WADSWORTH,  
Town Clerk.

The Council House,  
Dudley,  
Worcs.

24th March, 1960.

9329

## RENFREW COUNTY COUNCIL

The Council have vacancies for young ARCHITECTURAL ASSISTANTS, recently qualified, with practical experience in domestic and general architecture. £795—£1,075 p.a. Supernumerary appointments. Applications stating age, qualifications, etc., and naming two referees, to County Clerk, P.O. Box 12, Paisley, immediately.

9270

## COUNTY BOROUGH OF EAST HAM

## BOROUGH ENGINEER'S DEPARTMENT

Applications are invited for the following temporary appointment:—

## SENIOR ASSISTANT ARCHITECT, Grade IV, £1,065—£1,220.

London weighting is paid in addition, and a salary in excess of the minimum may be paid according to qualifications and experience. The appointment is for work on a new Technical College and is expected to be for a period of not less than three years.

Further details and application forms returnable by 15th April 1960 from the Town Clerk, Town Hall, East Ham, E.6.

9317

BRITISH RAILWAYS  
LONDON MIDLAND REGION  
EUSTON

## ASSISTANT ARCHITECTS REQUIRED

Applicants are required for work on the comprehensive re-development of major stations. The developments will include offices, hotels, multi-storey car parks, shopping centres and many ancillary facilities of an industrial nature.

Wide scope will be given to imaginative designers of experience who are prepared to work at high pressure. In the senior positions it is essential that applicants should have experience of the control and direction of staff. All applicants must be qualified members of the R.I.B.A. and should preferably also hold the Diploma of a recognised School of Architecture.

Vacancies exist for—

## SECTIONAL ARCHITECTS—

Salary range £1,475/£1,695 per annum.

## SENIOR ASSISTANT ARCHITECTS—

Salary range £1,200/£1,420 per annum.

## LEADING ASSISTANT ARCHITECTS—

Salary range £1,095/£1,200 per annum.

Vacancies also exist within the salary range £875 to £1,034, and applicants for these posts, who will be required for general work, should be either qualified or have Intermediate and several years' experience.

Five-day week and concessionary rail travel.

Applications in writing quoting reference No. 100 (AJ) and stating qualifications, age, experience and salary required to:—

W. R. Headley, A.R.I.B.A., A.A.Dipl.,  
Regional Architect,  
Chief Civil Engineer's Office,

British Railways, London Midland Region,  
5a Euston Grove, London, N.W.1.

9212

## COUNTY COUNCIL OF BSSEX

SENIOR ARCHITECT, £1,065 to £1,220, for liaison work with private architects—mainly administrative duties—with ample opportunity for initiative and interesting work in consultations and discussions with leading private architects and officers of Ministries.

Application forms from H. Conolly, C.B.E., F.R.I.B.A., County Architect, County Hall, Chelmsford, to be returned with copies of three testimonials by 15th April, 1960.

9328

## CITY OF HALIFAX

## NOVA SCOTIA, CANADA

## PLANNING ASSISTANT

Urgently required to assist in work on an extensive redevelopment programme and master plan for the City. Candidates to this new post should be qualified planners or have experience in planning work. Additional qualification in architecture would be an advantage.

Salary range \$4,455 to \$5,632, plus 5% per annum depending on qualifications and experience. Help in defraying travelling expenses from overseas a strong possibility for the successful candidate.

The work will include design for commercial and residential renewal of the central areas and preparation of master plan for the whole of Halifax. It will offer excellent opportunities to the successful candidate for progressive planning work and professional advancement.

Apply by Air Mail enclosing a recent photograph and stating age, marital status, education, training, details of experience, names and addresses of three references and when available to K. M. Munnich, D.A., S.P.Dip., A.R.I.B.A., A.M.T.P.I., Director of Planning, City Hall, Halifax, Nova Scotia, Canada. Persons who have already replied to previous advertisements need not apply again. Their applications will be automatically reconsidered.

9371

## BOROUGH OF SCUNTHORPE

(An expanding modern town of 61,000 population, 7,955 acres, R.V. £1,034,880)

ENGINEERING AND ARCHITECTURAL  
APPOINTMENTS

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

SENIOR ASSISTANT ARCHITECTS,  
A.P.T. III-IV (£880—£1,220 p.a.).ASSISTANT ARCHITECTS,  
A.P.T. II (£765—£880 p.a.).ARCHITECTURAL DRAUGHTSMAN,  
Misc. Grade V (£650—£715 p.a.).ASSISTANT ENGINEER,  
A.P.T. II (£765—£880 p.a.).

Commencing salaries will be fixed according to qualifications and experience.

Housing accommodation available if required, approved removal expenses reimbursed in full, five-day working week.

Further information and application forms relating to the appointments may be obtained from the Borough Surveyor, Laneham Street, Scunthorpe.

Completed forms must be returned to the Town Clerk, 34 High Street, Scunthorpe, not later than Wednesday, 13th April, 1960.

9334

## COUNTY BOROUGH OF SOUTHAMPTON

## BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the permanent post of SENIOR ASSISTANT ARCHITECT, Grade A.P.T. IV (£1,065—£1,220).

Applicants should possess appropriate qualifications and should state their housing needs and commencing salary required.

Application forms from the Borough Architect, Civic Centre, Southampton, returnable by 11th April, 1960.

9269

## CITY ARCHITECT'S OFFICE, MANCHESTER

Applications are invited for appointment of ASSISTANT ARCHITECT/ARCHITECTURAL ASSISTANT. Salary special scale £785-£1,070 (commencing salary will be fixed according to qualifications and experience). Five-day week. Removal expenses allowed. Housing accommodation for a limited period may be provided. Forms of application from City Architect, P.O. Box 48, Town Hall, returnable by 13th April, 1960.

9369

## LONDON COUNTY COUNCIL

ARCHITECTS (up to £1,135) (under review) required for Housing, Schools, General and Special Works Divisions. Full and varied programme of new work including schools, multi-storey flats and Town Development. Starting salaries according to qualifications and experience.

Particulars and application form from Hubert Bennett, F.R.I.B.A., Architect to Council (EK/AJ 496/4), County Hall, S.E.1.

9078

## BOROUGH OF SLOUGH

ASSISTANT ARCHITECT required for housing and redevelopment and general building works. Applicants should have good experience in design and supervision. Knowledge of multi-storey flat construction an advantage. Salary within "Special Classes" Grade (£785-£1,070). Must be A.R.I.B.A. Housing provided for married candidates.

Applications, giving names of two referees, age, qualifications and experience to Borough Engineer, Town Hall, Slough, Bucks, by Monday, 11th April, 1960.

9242

## COUNTY BOROUGH OF ST. HELENS

## BOROUGH ENGINEER'S DEPARTMENT

Applications are invited for the following appointments in the Architectural Section of the Department:—

(A) CHIEF ARCHITECT —  
Scale C (£1,385/£1,620).

## (B) TWO PRINCIPAL ASSISTANT ARCHITECTS—Grade A.P.T. V (£1,220/£1,375).

(C) ASSISTANT ARCHITECT —  
Grade A.P.T. IV (£1,065/£1,220).(D) TWO ARCHITECTURAL ASSISTANTS—  
Grade A.P.T. II/III (£765/£1,065).

Applicants for appointment A should be Corporate Members of the R.I.B.A. with wide and varied experience in design and construction of Public Buildings, Redevelopment Schemes and large scale housing development.

Applicants for appointments B & C should be qualified Architects with good experience in general Municipal Development.

The Council operates a 5-day working week.

The appointment will be terminable by one month's notice and will be subject to the Local Government Superannuation Acts, Medical Examination and N.C.C. conditions of service.

Applications stating age, qualifications, present and past appointments, and details of experience, giving names of two referees and clearly indicating the appointment applied for, must be forwarded to the undersigned not later than Tuesday, April 19th, 1960.

Applicants must reveal relationship to any member or senior officer of the Council. Canvassing will disqualify.

M. WARD.

M.I.Mun.E., M.T.P.I., A.M.I.Struc.E.,  
Borough Engineer.

Town Hall,  
St. Helens.

9345

THE RURAL DISTRICT COUNCIL OF  
GOSWOLD

## CHIEF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the Engineer & Surveyor's Department at a salary in accordance with A.P.T. Grade V of the National Scales (£1,220—£1,375 p.a.). A car allowance on the essential user basis (not exceeding 10 h.p. or 1.199 c.c.) is payable.

The Council have a varied and interesting building programme on hand including blocks of 3-storey houses and flats, aged persons' flats, and various other building projects, including a community centre.

The appointment will be subject to: (i) the provisions of the Local Government Superannuation Acts, (ii) The National Scheme of Conditions of Service, (iii) one month's notice in writing on either side.

The Council will assist in the provision of housing accommodation, if required.

Applications stating age, qualifications and experience, together with the names and addresses of two persons to whom reference may be made should reach the undersigned not later than the 13th April, 1960.

M. HAWORTH,  
Clerk of the Council.

Council Offices,  
Oxted, Surrey.

9280

Vacancy for ASSISTANT ARCHITECT in the Department of Transport and Power, Dublin. Salary scale: (man) €655 (or higher) rising to €1,235. Age limits: 21 to 35 years. Application forms etc. from Secretary, Civil Service Commission, 45, Upper O'Connell Street, Dublin. Latest date for receiving completed application forms: 21st April, 1960.

9254



**LANCASHIRE COUNTY COUNCIL**  
Applications are invited from qualified ARCHITECTS of initiative, keen on design and modern constructional methods, for a large and varied programme.  
Permanent posts in A.P.T. Grade V (£1,220-£1,350). Starting point according to experience. Applicants should not re-apply.  
Application forms and conditions of service from the County Architect, P.O. Box 26, County Hall, Preston, to be returned by 11th April, 1960. Closing reference A/AJ. 9340

### Tenders Invited

3s. per inch; each additional line, 3s. including forwarding replies 2s. extra

**NEWCASTLE REGIONAL HOSPITAL BOARD**  
SPECIAL AREA COMMITTEE FOR CUMBERLAND AND NORTH WESTMORLAND

**NEW WEST CUMBERLAND HOSPITAL**  
SECOND AND MAIN STAGE OF CONSTRUCTION

The Board expects within the next 6 to 8 weeks to be able to invite tenders for the main stage of construction of this new hospital. The (5-storey) main block will be of reinforced-concrete frame construction and will include the following:—wards accommodating 265 beds, four Operating theatres, Physical Medicine, Radiology, Pathology, Pharmacy, Central Sterilizing and Out-patient departments, an Orthopaedic, Fracture and Casualty Wing, the main Kitchen and Dining rooms, Central Changing Rooms for Staff, Hospital-Group Stores and Records accommodation. There will also be ancillary buildings including a Doctors' Residence, an extension of the Nurses' Home, Staff Houses, a block of small Flats and Staff Garages, and the project will include road works, car parks, traffic-control buildings and landscaping. It is possible that the building contract may be extended to include a 60-bed Maternity Department with an attached Clinic and a Midwifery Training School.

The site (of about 40 acres) has already been cleared up by the construction of a number of peripheral buildings on a main ring road, and services have been installed. The recently completed buildings include several single-storey units, the Laundry/Boiler-house/Workshops and the first section of the Nurses' Home and small Flats and Houses.

Tender documents are now being prepared under the direction of Messrs. C. B. Pearson & Co., F.R.I.B.A., Chartered Architects, of Lancaster, in collaboration with P. H. Knighton, R.I.B.A., Architect to the Board.

Firms of good standing and possessing the necessary facilities, and command of labour necessary for carrying out this major project on due despatch, are invited to submit their tenders to the Clerk to the Special Area Committee, 72 Warwick Road, Carlisle, not later than 11th April, 1960. A limited number of firms will be invited to tender and the lowest or any other will not necessarily be accepted. 9344

**Architectural Appointments Vacant**  
per line: minimum 12s. Box Number, including forwarding replies 2s. extra.

**TWO ARCHITECTURAL ASSISTANTS** required—Intermediate R.I.B.A. standard—have had good office experience. Salary £6-£10,000 according to experience. Housing accommodation could be provided. Reply, giving particulars of age and experience and salary required, to: Francis W. Keyworth, L.R.I.B.A., Park Road, Melton Mowbray, and 31, Friar St., Leicester. 8776

**H. ELSOM & PARTNERS** require ASSISTANTS for work on theatres, laboratories, shops, stores and town centre redevelopment. etc. Apply to 10, Lower Grosvenor Place, W.1. VIC. 4304. 8638

**ARCHITECTURAL ASSISTANT** required. Intermediate/Final standard. Varied interesting work. Good draughtsmanship, sound knowledge of construction and ability to manage essential. Five-day week. Apply, stating experience and salary required, to: George & Partner, 79, George Street, Croydon. 8645

**ARCHITECT** requires CHIEF or SENIOR ASSISTANT, also JUNIOR ASSISTANT interesting work including shops, offices and flats. Apply in writing, stating age, experience and salary required, to: Rolf Maran, L.B.A., M.T.P.I., 125/7, London Road, Hammersford. 8991

**ARCHITECTURAL ASSISTANTS** required. Starting salary £915 per annum. Glasgow five-day week. Schools, Offices, etc. State experience. D. Harvey & A. Scott, 2, Lynedoch St., Glasgow, C.3. 8992

**ARCHITECTURAL ASSISTANTS** required. Starting salary £750 per annum. Glasgow five-day week. State experience. D. Harvey & A. Scott, 2, Lynedoch Place, Glasgow, C.3. 8993

**SENIOR and Intermediate Standard ARCHITECTURAL ASSISTANTS** required for town and Weston-super-Mare. Write full particulars including salary required. R. H. Hannan, L.R.I.B.A., 54, Queen Anne Street, Don. W.1. 8999

**ARCHITECTURAL ASSISTANT** required. Intermediate standard. Apply stating experience and salary required. Howell, Freeman & Partners, Chartered Architects, Reading. 8959

**ARCHITECTURAL ASSISTANTS** of all grades required in busy London Office. Applicants must be prepared to work on their own initiative and be capable of producing working drawings and details for new contracts of contemporary design. Pleasant working conditions, with a five-day week, 9.30 a.m. to 5.30 p.m., and luncheon Voucher scheme. Write, stating experience, age and salary required, to: W. Russell Orme & Partners, 55, Manchester Street, W.1. or telephone HUNTER 1498. 8945

**ARCHITECTURAL ASSISTANT** required. Age 25-35. Full qualifications not as essential as experience in an architect's office and ability to produce working drawings. Apply Oliver Law & Partners, 36, Ebury Street. (S.O. 2488.) 8961

**SENIOR ARCHITECTURAL ASSISTANT** required in busy practice with interesting and varied projects in hand. Five-day week. Salary £800-£1,000. Graham Crump & Denis Crump, F.A.R.I.B.A., 43, George Street, Croydon. 9036

**ARCHITECTURAL ASSISTANTS** required in Croydon office. Intermediate standard with several years' office experience. Interesting and varied work. Salary £600-£800 according to abilities. Five-day week. Graham Crump & Denis Crump, F.A.R.I.B.A., 43, George Street. 9037

**ARCHITECTURAL ASSISTANTS** required. Intermediate standard, busy London and Reading Offices. Good prospects. Apply Eric G. V. Hives & Sons, 46, Queen's Road, Reading. (Telephone 56484/5.) 9012

**INTELLIGENT ASSISTANT** required, capable of handling small contracts of varied nature. Pleasant office conditions. State salary required. Apply F. C. Levitt, F.R.I.B.A., Commerce House, Biggleswade, Beds. 9026

**MORRISON, ROSE & PARTNERS** have immediate vacancies for First Class ASSISTANTS, Final and Intermediate standard. Salary by arrangement. Tel.: LAN. 8061, 4, Wimpole Street, W.1. 9029

**DEVEREUX & DAVIES** require capable and enthusiastic ARCHITECTURAL ASSISTANTS salary £750 per annum or according to experience and ability. 3 Gower St., Bedford Sq., London, W.C.1. 8628

**QUALIFIED ARCHITECTS AND ASSISTANTS** of Intermediate standard requiring highly paid positions, with an interesting variety of work, please telephone AMB. 8189 for an appointment. 9065

**ASSISTANTS** required in Bank Architect's office in City. Salary range £700/£800 according to age and ability. Good prospects of advancement for suitable applicants. Write stating age, particulars of experience and salary required. Box 9159.

**ASSISTANT ARCHITECT** required by Harker & Hall, L.F.R.I.B.A., for responsible position in their London office, 13, Welbeck Street, W.1. (WEL. 0061.) 9061

**ARCHITECTURAL ASSISTANTS** required. Senior and Intermediate standards. Salary scale £750-£1,100 and £600-£700 respectively. Five-day week. Superannuation scheme in operation. Please write, giving full particulars of experience, to: Johns, Slater and Haward, F.A.R.I.B.A., 32, Foundation Street, Ipswich. 9063

**KENNETH LINDY & PARTNERS'** Office requires experienced ASSISTANT ARCHITECT. Varied practice. Salary to £1,100. Avenue 5629 or 4430. 9057

**W. LESLIE JONES & PARTNERS** require further ASSISTANTS at both their Bolton and Poole offices. Salaries £450-£1,000. Please apply in first instance to 59, High Street, Great Missenden, Bucks. 9054

**INTERMEDIATE ASSISTANT** wanted, capable of thoughtful detailing and prepared to take individual responsibility. Small City office with varied and interesting work. Salary £750-£850, according to ability. Please telephone Central 5766 or write Box. 9164.

**BASIL SPENCE AND PARTNERS** require qualified and experienced ARCHITECTS to fill positions of responsibility on a major building programme. Write to 48 Queen Anne Street, W.1. stating experience and salary required. 8829

**ARCHITECTURAL STAFF**, all grades, required for interesting work. Good salary, bonus, superannuation scheme. House Purchase Assistance Scheme. Excellent working conditions, five-day week. Please apply, giving details of qualifications, experience and salary required to: George Brown & Partners, A.A.R.I.B.A., F.I.A.C. and Eric Ross, F.R.I.B.A., Equity & Law Building, Baldwin Street, Bristol, 1. 8838

**BIRMINGHAM.** Clifford Tee & Gale, F.R.I.B.A., require experienced SENIOR ASSISTANTS and experienced INTERMEDIATE standard ASSISTANTS for interesting industrial and commercial work in a congenial atmosphere. Five-day week. Three weeks' holiday after two years' service. Profit-sharing scheme. Pension scheme. Please apply to Mr. R. G. Cox, F.R.I.B.A., 43, Frederick Road, Birmingham 15. Tel.: Edgbaston 3576. 8877

**ARCHITECTURAL ASSISTANTS** required in busy Bloomsbury office with varied practice. Good salary and prospects for suitable applicants. Five-day week. Write giving particulars of age, qualifications, experience, etc., to Box 910, c/o 7, Coptic Street, W.C.1. 8815

**SENIOR ARCHITECTURAL ASSISTANTS** required in salary range £700-£1,000 to take control of varied and interesting jobs of all sizes. Experience in colour and design of interiors and fittings and good presentation draughtsmanship an advantage. Five-day week, excellent working conditions and holidays. Please write, giving full details of experience and qualifications, to: Deacon and Laing, 65, Goldington Road, Bedford. 8878

**ARCHITECTURAL ASSISTANTS** required. Mature design ability and experience essential. Salary from £800 to £1,000. Please ring Wells, Hickman & Partners, Tekminus 1404, for appointment. 8909

**PATRICK GWYNNE** requires an ASSISTANT to work personally with him on private houses and interior design. Must be thoroughly experienced and capable of first class detail drawing. The Homewood, Esher, Surrey. Tel. Esher 3310. 8855

**ASSISTANT ARCHITECTS** required in busy Nottingham Office. Intermediate or Final A.R.I.B.A. Salary £750-£1,000 p.a. dependent on experience. Reply, stating age, qualifications and experience, etc., to Box 8986.

**ASSISTANT ARCHITECTS** required in busy Manchester Office. Intermediate or Final A.R.I.B.A. Salary £750-£1,000 p.a. dependent on experience. Reply, stating age, qualifications and experience, etc., to Box 8985.

**SEVERAL ARCHITECTURAL AND SURVEYING ASSISTANTS** required in progressive office. Quick draughtsmen. Good salary and prospects. B. Newton, 307, Finchley Road, N.W.3. 8981

**NEWCASTLE-ON-TYNE** Architects require SENIOR ASSISTANT capable of controlling contracts from sketch plans to final accounts. A commencing salary of £1,000 plus, and a permanent progressive position is offered to experienced applicant. Stephenson, Gillis and Partners, 2, Saville Chambers, North Street, Newcastle-on-Tyne. Tel. 28407. 8979

**PERSONAL** Intermediate ASSISTANT required for Architect in Holland Park Office in a private residence. Salary by arrangement. PAR 7042. 8974

**LOUIS DE SOISSONS, PEACOCK, HODGES & ROBERTSON** have immediate vacancies in their London office for SENIOR ASSISTANTS. Write, stating age, salary and experience, to the above at: 3, Park Square Mews, Upper Harley Street, N.W.1. 8971

**LOUIS DE SOISSONS, PEACOCK, HODGES & ROBERTSON** have immediate vacancies in their Welwyn Garden City office for SENIOR ASSISTANTS. Write, stating age, salary and experience, to the above at: Midland Bank Chambers, Howardgate, Welwyn Garden City, Herts. 8972

**YOUNG ASSISTANT** required. Good draughtsman. Intermediate standard. Five-day week. Bernard Gold & Partners, 4/6, Savile Row, W.1. Phone: Regent 7551. 8970

**ASSISTANT ARCHITECTS** required by firm with offices in Middlesbrough and Billingham-on-Tees. The work is interesting and of considerable variety. Salary according to experience and ability. Elder and Lester, A.A.R.I.B.A., Grosvenor Buildings, 65, Albert Road, Middlesbrough. 8820

**TOOLEY AND FOSTER** require two ARCHITECTURAL ASSISTANTS (preferably just qualified or about to take R.I.B.A. Final) for school work in Essex practice ten miles from London. Unfurnished two-bedroom flat available if required. Salary by arrangement in accordance with age and experience; five-day week; voluntary superannuation scheme. Apply by letter to Midland Bank Chambers, Buckhurst Hill, Essex. 8965

**ARCHITECTURAL ASSISTANTS** required. Probationer up to Intermediate R.I.B.A. Level, or Students R.I.B.A. Facilities given for study of design at London Schools—Hare & Pert, A.A.R.I.B.A., 29, Elm Street, Ipswich. 9006

**ASSISTANTS** required capable of taking responsibility for the preparation of working drawings and supervision of contracts. Interesting projects with opportunity to gain worthwhile experience. Telephone Mayfair 3111 for appointment or write giving details of experience to Box 8930.

**ARCHITECTURAL ASSISTANTS** required by Harker & Hall, L.F.R.I.B.A., in their offices in London and Warwickshire. Good salary, with scope for initiative and responsibility. Write to 13, Welbeck Street, W.1. or telephone WEL 0061 or Knowle (Birmingham) 3502. 9062

**DEVEREUX & DAVIES** require capable and enthusiastic ASSISTANT ARCHITECTS salary £1,000 per annum or according to experience and ability. 3, Gower St., Bedford Sq., London, W.C.1. 8629

**W. H. WATKINS, GRAY & PARTNERS** require ASSISTANTS of Intermediate and Final standard, Pension scheme and luncheon vouchers. Salary range £700 to £900. Apply 57, Catherine Place, London, S.W.1. 8720

**ARCHITECTURAL ASSISTANTS** required. R.I.B.A. Intermediate standard with some office experience. Varied and interesting work. Five-day week. Good salaries for keen and competent people. William Crabtree, F.R.I.B.A., 8, Robert Adam Street, W.1 (WELbeck 9909). 8934

**ASSISTANTS** required for busy Architect's City office; Laboratory and industrial projects. Intermediate standard or above. Apply to: Secretary, Fairlough and Morris, Temple Chambers, Temple Avenue, E.C.4. **F.L.E. 6395.** 5932

**RONALD WARD & PARTNERS** have immediate vacancy for **ASSISTANT ARCHITECTS** with initiative and some experience, for interesting, commercial, industrial and civic projects. Salaries commensurate with ability. Apply, 29, Chesham Place, S.W.1. **BELGRAVIA 3361.** 5639

**TREHEARNE & NORMAN, PRESTON & PARTNERS** have vacancies for **ARCHITECTS** and **ASSISTANTS** with imagination and designing ability to assist with important new developments in the London area. Apply in confidence to 83, Kingsway, London, W.C.2. (**HOL. 4671.**) 6429

**ELIE MAYORCAS** requires **SENIOR ASSISTANTS** with minimum of three years' office experience in this country. Write, giving particulars of architectural education and experience, and salary required, to: 13, David Mews, Baker Street, W.1. 8099

**LARGE SCALE** Development in London and Industrial Buildings in Home Counties. High office blocks and residential flats. Four **ASSISTANT ARCHITECTS** required. Senior and Intermediate standard. West End Office. Five-day week. Good salaries and bonuses. Box 8086.

**LEWIS SOLOMON, KAYE & PARTNERS,** rapidly expanding practice require **ARCHITECTS** and **ASSISTANTS** with initiative and competence to work on major design projects in the London area. These projects include Comprehensive Development Schemes, Hotels, Schools, Offices, and Luxury Flats. Good salaries according to ability and experience, luncheon vouchers, five-day week, and excellent working conditions. Write 5, Holborn Circus, Tavistock House, E.C.1, or telephone City 8811, quoting **SLB** in both instances. 7788

**ARCHITECTURAL ASSISTANT** required, with at least two years' office experience. Apply in writing to Thomas Mitchell & Partners, 20, Bedford Square, London, W.C.1. 7282

**TWO ASSISTANTS** required: one at Intermediate standard and one qualified with some years office experience, for small busy office. Salary according to experience. Bing Langham 1738 or write to F. G. Frizzell, A.R.I.B.A., 89, Portland Place, W.1. 8022

**ARCHITECTURAL ASSISTANTS** required in West End office. Should have good knowledge of building construction and several years' office experience. Box 7777.

**ARCHITECTURAL ASSISTANTS** required for practice in West End, for large interesting commercial projects. Preferably with Inter R.I.B.A. or R.I.C.S. and some general office experience. Superannuation scheme and five-day week. Salary according to experience. Write:—Cotton, Ballard & Blow, 5, Baker Street, W.1, or telephone WELBEC 3364. 8341

**VACANCIES** exist for **ASSISTANTS** of Pre-Intermediate to Final Grades. Salary Range £500—£900 per annum. Interesting work and good prospects. Apply in writing to: H. Hubbard Ford, F.R.I.B.A., 35 South Audley Street, London, W.1. 8498

**ARCHITECTURAL ASSISTANT** (Intermediate standard) required, capable of making site surveys, preparing sketch plans, working drawings and specifications. Please apply, stating age, experience and salary required, to: R. E. AKERMAN, F.R.I.B.A., Chief Architect, United Dairies Ltd., 31, St. Petersburg Place, W.2. 9489

**MONRO AND PARTNERS** require **ARCHITECTURAL ASSISTANTS** of Intermediate/Final R.I.B.A. standard in their London, Watford, and Glasgow offices for work on interesting industrial and commercial projects. Salary range £200—£1,000 p.a. Non-contributory Pension Scheme. Five-day week. Apply in writing to 32, Clarendon Road, Watford. 8669

**SENIOR ASSISTANT** urgently required for pleasant office in Gray's Inn. Interesting and varied practice. Salary up to £1,100. Telephone Chancery 8387. 8336

**SENIOR AND ADVANCED ASSISTANTS** with initiative required immediately to work on varied and interesting projects with the minimum supervision. Congenial working conditions. Excellent salaries offered for competent assistants. Write stating age, experience and availability etc. to Messrs. J. W. Hammond, Lloyd's Bank Chambers, Main Road, Gidea Park, Romford, Essex. 8839

**ARCHITECTURAL ASSISTANTS** of Intermediate/Final standard required: previous office experience essential. Written application only, stating age, experience, education and present salary to: Frank W. Wills & Sons, 15, Orchard Street, Bristol, 1. 9141

**CHIEF ARCHITECTURAL ASSISTANT** required immediately for established firm on the South Coast. Excellent opportunity for the right man who will be expected to take charge of and be responsible for various large contracts. Must be an Associate of the R.I.B.A. Salary bracket £1,200/£1,500 p.a., dependent upon experience and ability. Write: Thomas, Jolly, Grant & Kelsey, 26, Kent Road, Southsea, Hants. 9146

**SEELY & PAGET** have immediate vacancy in their City office. Standard near Final R.I.B.A. with office experience. Holiday arrangements respected. Salary range £242 x £52 (4)—£1,050 plus luncheon vouchers. Write 41, Cloth Fair, E.C.1, or telephone M8T 8511. 9155

**WARWICK—ARCHITECTURAL ASSISTANT** of Intermediate standard required immediately for varied practice. Reply stating experience and salary required to Trepsen, Harley-Smith and Steel, 1 Church Street, Warwick. Tel Warwick 19. 9211

**MORRIS DE METZ, F.R.I.B.A.,** requires an assistant for interesting work. Salary from £950 according to ability and experience. 29, Gloucester Place, W.1. Telephone HUNter 2681/3. 9150

**ARCHITECTURAL ASSISTANTS**, senior and junior, required by firm in High Wycombe for commercial and industrial schemes. Scope for responsibility and experience. Five-day week. Box 9143.

**AN Experienced ARCHITECTURAL ASSISTANT**, holding Intermediate R.I.B.A., required immediately for established firm on the South Coast. Opportunity presented to obtain further experience on various large contracts. Salary bracket £750/£850 p.a. Write stating age and experience: Thomas, Jolly, Grant & Kelsey, 26, Kent Road, Southsea, Hants. 9146

**OPPORTUNITY** for first-class **ARCHITECTS** with initiative to take responsibility for a variety of contemporary work. South Yorkshire area. Salary according to ability. Bonus, Pension and Life Assurance Schemes. Travelling, Removal and Interview expenses paid. Box 9148

**VARIED Country Practice** requires Junior and Senior Assistants with good all-round knowledge, initiative, and sense of responsibility. Five-day week. Salaries according to experience. Full details of training, etc., to Alexander Graham, F.R.I.B.A., Chartered Architect, 15, The Tything, Worcester. 9152

**AN expanding programme** of work in the Architects' Department offers good opportunities to **ARCHITECTS** and **ASSISTANTS** keen to apply their knowledge and ability to progressive design and construction techniques. The work covers varying types of Industrial, Commercial and Domestic Projects of considerable size and interest.

Permanent appointments, with good salaries, and covering a wide range of experience, are immediately available at Head Office. Five-day week; Pension scheme available for successful applicants wishing to make a career with the Company.

Applicants should write to:—H. V. Collins, A.R.I.B.A., Chief Architect, **GEORGE WIMPEY & CO., LIMITED**, 27, Hammersmith Grove, London, W.6. 9201

**DONALD ROWSWELL** requires capable **ASSISTANTS** for rapidly expanding practice in Croydon. Salary range £500 to £800. Apply with full details to 54, Friends Road, Croydon, or telephone Croydon 4080. Holiday arrangements will be honoured. 9107

**FOUR-FIGURE SALARY. SENIOR ASSISTANT** required in Architects' West End office. Varied interesting work. Applicants must be capable of taking responsibility and controlling drawing office team. Box 9096.

**WEST END Architects** require qualified experienced **ASSISTANT** for interesting commercial developments in London and Provinces. Genuine prospects for advancement to applicant with ability and initiative, commencing salary £1,100 per annum. Telephone Langham 9251 or write giving particulars of experience to Newman, Levinson & Partners, 9, Mansfield Street, London, W.1. 9104

**BRONEK KATZ & E. VAUGHAN** require a **SENIOR** and **JUNIOR ASSISTANT**. Phone REGent 5401. 9668

**FOUR-DAY WEEK. Opportunity** for Juniors and/or post Intermediate Students to keep abreast with their school work and undertake interesting and varied office work including Schools, Hospitals, and Public Houses. Good salary according to qualifications and experience. Five-day working and overtime when desired, luncheon vouchers. Appointment by telephone **ROYAL 5216.** Stewart Hendry & Smith, F.R.I.B.A., A.M.T.P.I., 90, Fenchurch Street, London, E.C.3. 9095

**EXPERIENCED ARCHITECTURAL ASSISTANTS** required to work in District Architects Office of Multiple Company at **NORBURY**. Applicants should be capable of carrying out surveys, preparing working drawings and details, organizing and controlling new buildings, extensions, alterations, etc., to completion with a minimum of supervision. Five-day week. Dining facilities. Superannuation scheme. Apply giving details age, experience and salary required to Box 9213.

**ASSISTANT** required for interesting and varied work on industrial, commercial and domestic contracts. Intermediate to Final Standard; some office experience essential; five-day week. Apply Box 9159.

**H. OWEN LUDER, A.R.I.B.A.,** requires **ASSISTANTS** in growing practice. Particularly one experienced in perspectives interior design. Phone VIO 2171. 9174

**W. S. HATTRELL & PARTNERS** Architects COVENTRY

**INVITE** applications for the following vacancies:—  
(a) **SENIOR ASSISTANTS** (Salary £1,000 minimum) Must be fully qualified architects with 10 years' office experience, capable of taking large measure of responsibility for a wide range of contracts.

(b) **ASSISTANTS** (Salary £750—£1,000) Should be of Intermediate—Final Standard, capable of preparing full working drawings, specifications, etc., under supervision, and taking responsibility for smaller contracts.

(c) **JUNIOR ARCHITECTURAL ASSISTANTS** (Salary up to £750) Up to Intermediate R.I.B.A. Standard. Opportunities to gain experience on a wide range of contracts.

Progressive salary depending on ability. Pension Scheme. 5-day week. Travelling expenses paid to interviewed applicants. **HOUSE AVAILABLE.** Replies to 1, Queen's Road, Coventry.

**W. S. HATTRELL & PARTNERS** Architects LONDON

**INVITE** applications for the following vacancies:—  
(a) **SENIOR ASSISTANTS** (Salary £1,000 minimum) Must be fully qualified architects with 10 years' office experience, capable of taking large measure of responsibility for a wide range of contracts.

(b) **ASSISTANTS** (Salary £750—£1,000) Should be of Intermediate—Final Standard, capable of preparing full working drawings, specifications, etc., under supervision, and taking responsibility for smaller contracts.

(c) **JUNIOR ARCHITECTURAL ASSISTANTS** (Salary up to £750) Up to Intermediate R.I.B.A. Standard. Opportunities to gain experience on a wide range of contracts.

Progressive salary depending on ability. Pension Scheme. 5-day week. Travelling expenses paid to interviewed applicants. **HOUSE AVAILABLE.** Replies to 21, Cleveland Place, St. James's, W.1. 9368

**W. S. HATTRELL & PARTNERS** Architects MANCHESTER

**INVITE** applications for the following vacancies:—  
(a) **SENIOR ASSISTANTS** (Salary £1,000 minimum) Must be fully qualified architects with 10 years' office experience, capable of taking large measure of responsibility for a wide range of contracts.

(b) **ASSISTANTS** (Salary £750—£1,000) Should be of Intermediate—Final Standard, capable of preparing full working drawings, specifications, etc., under supervision, and taking responsibility for smaller contracts.

(c) **JUNIOR ARCHITECTURAL ASSISTANTS** (Salary up to £750) Up to Intermediate R.I.B.A. Standard. Opportunities to gain experience on a wide range of contracts.

Progressive salary depending on ability. Pension Scheme. 5-day week. Travelling expenses paid to interviewed applicants. **HOUSE AVAILABLE.** Replies to 15, Piccadilly, Manchester, 1. 9368

**ARCHITECTURAL ASSISTANT** required for Planning Department of building organization engaged in large scale residential development throughout the country.

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**L**ONDON Architects with Manchester Office require qualified **ARCHITECT** with several years' experience, preferably though not essentially on schools. Five-day week. Apply in writing or telephone Scherrer & Hicks, 60, Spring Gardens, Manchester, 2. 9263

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**S**HEPPERDSON & DIXON, of 2, Museum Street, Ipswich, urgently require additional experienced **ARCHITECTURAL ASSISTANTS** at their Ipswich and Colchester Offices. 9293

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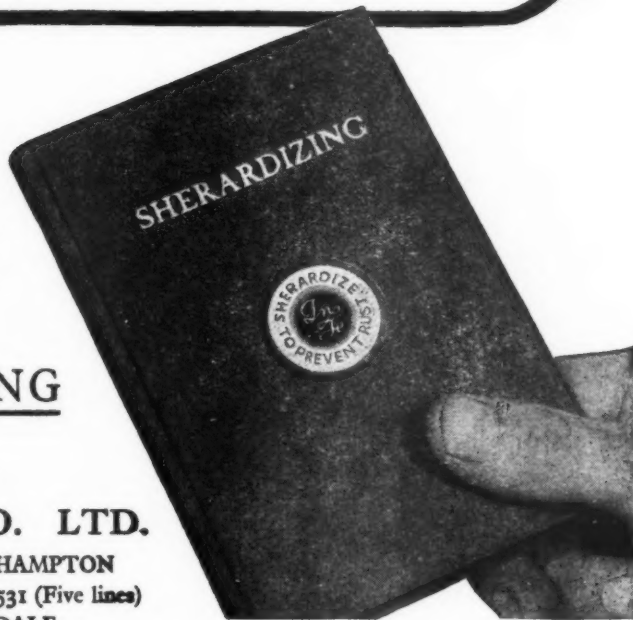
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