

THE ARCHITECTS' JOURNAL



standard contents

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

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Wanted and Vacant

No. 3341]

[Vol. 129

THE ARCHITECTURAL PRESS

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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Royal 1826
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5533
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
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, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
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
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square.	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100, Park Street Grosvenor Square, W.1.	Mayfair 7086

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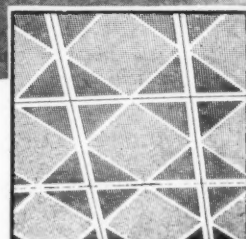
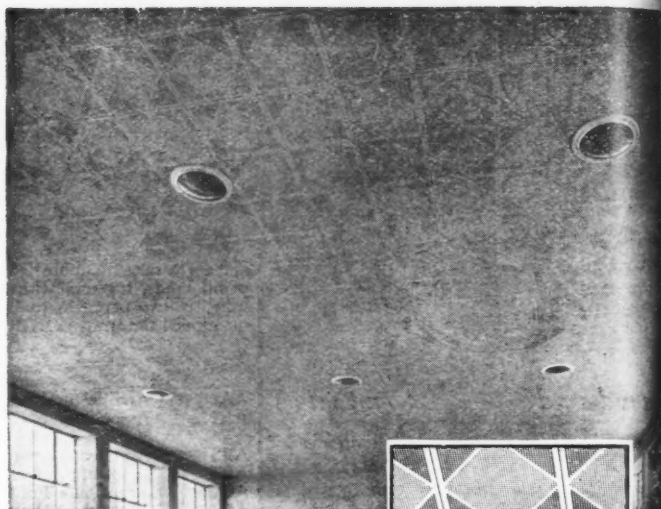
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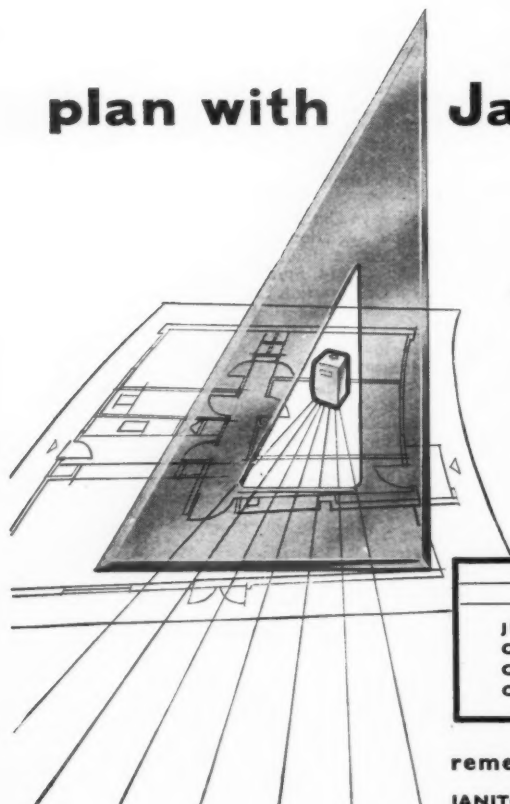
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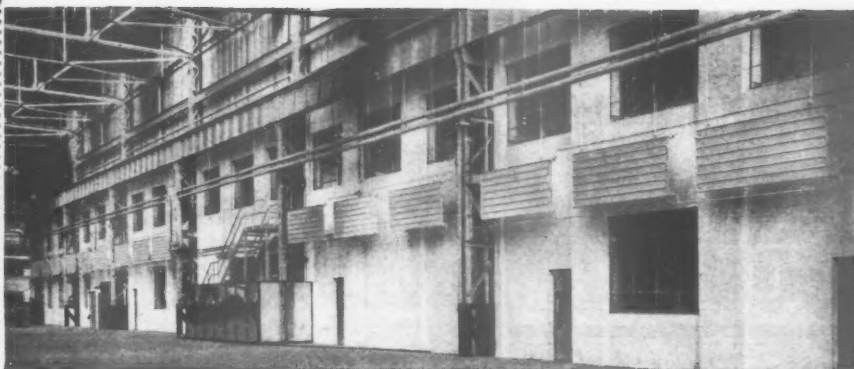
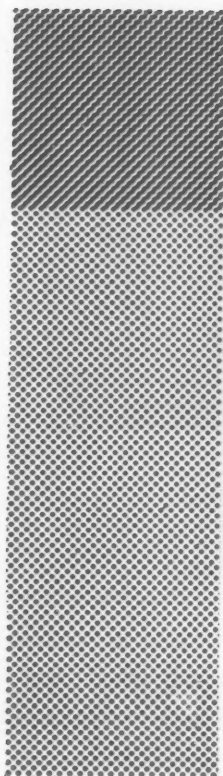
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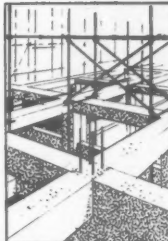
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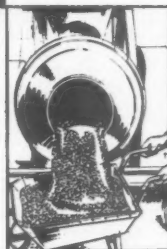
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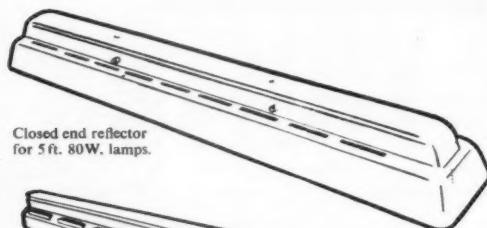
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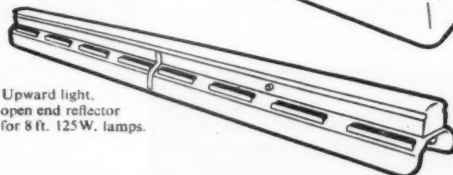
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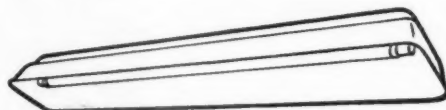
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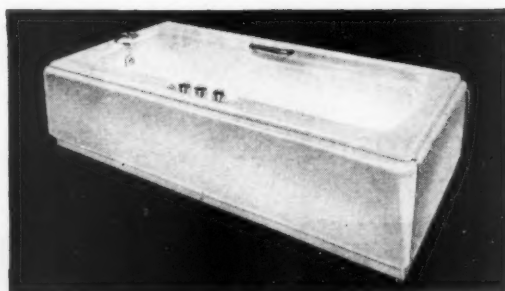
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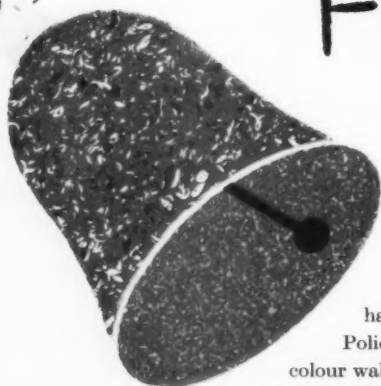
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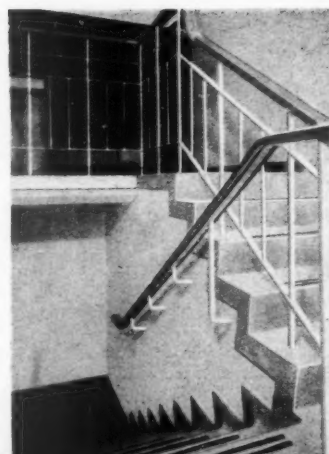
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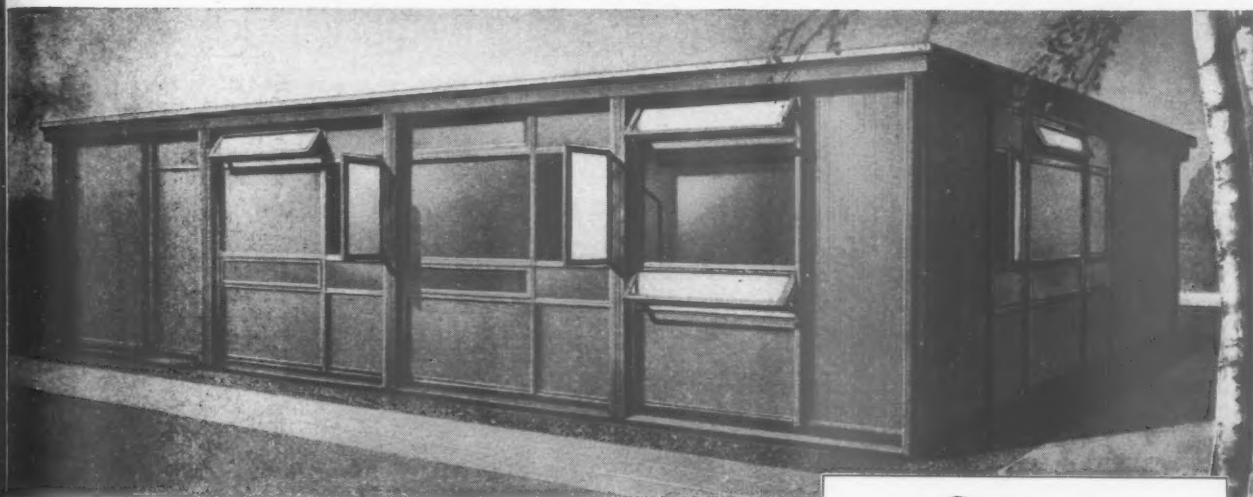
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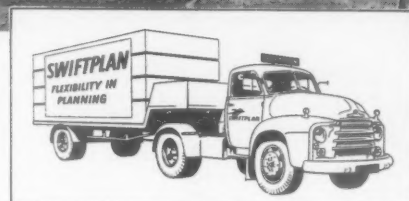
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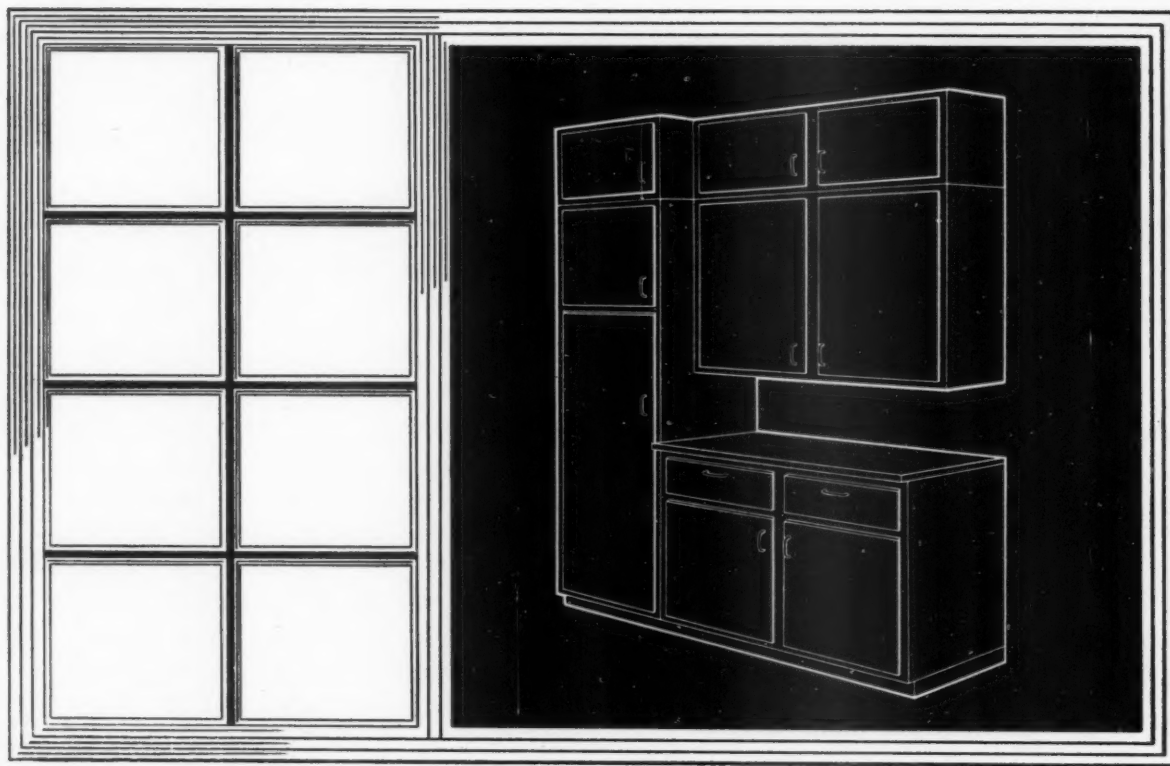
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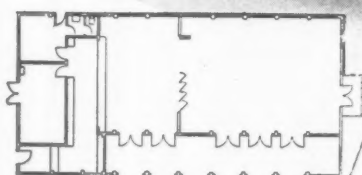
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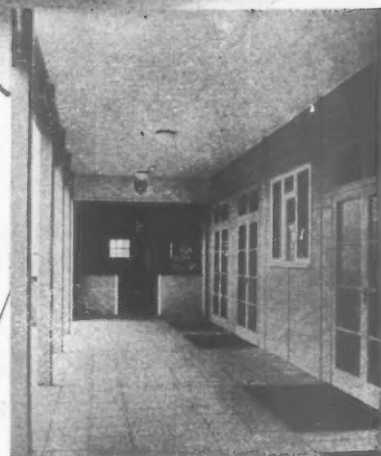
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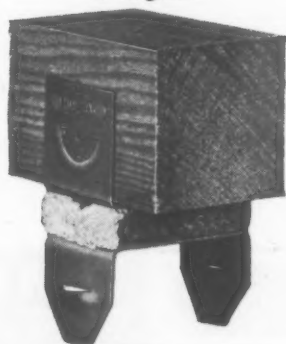


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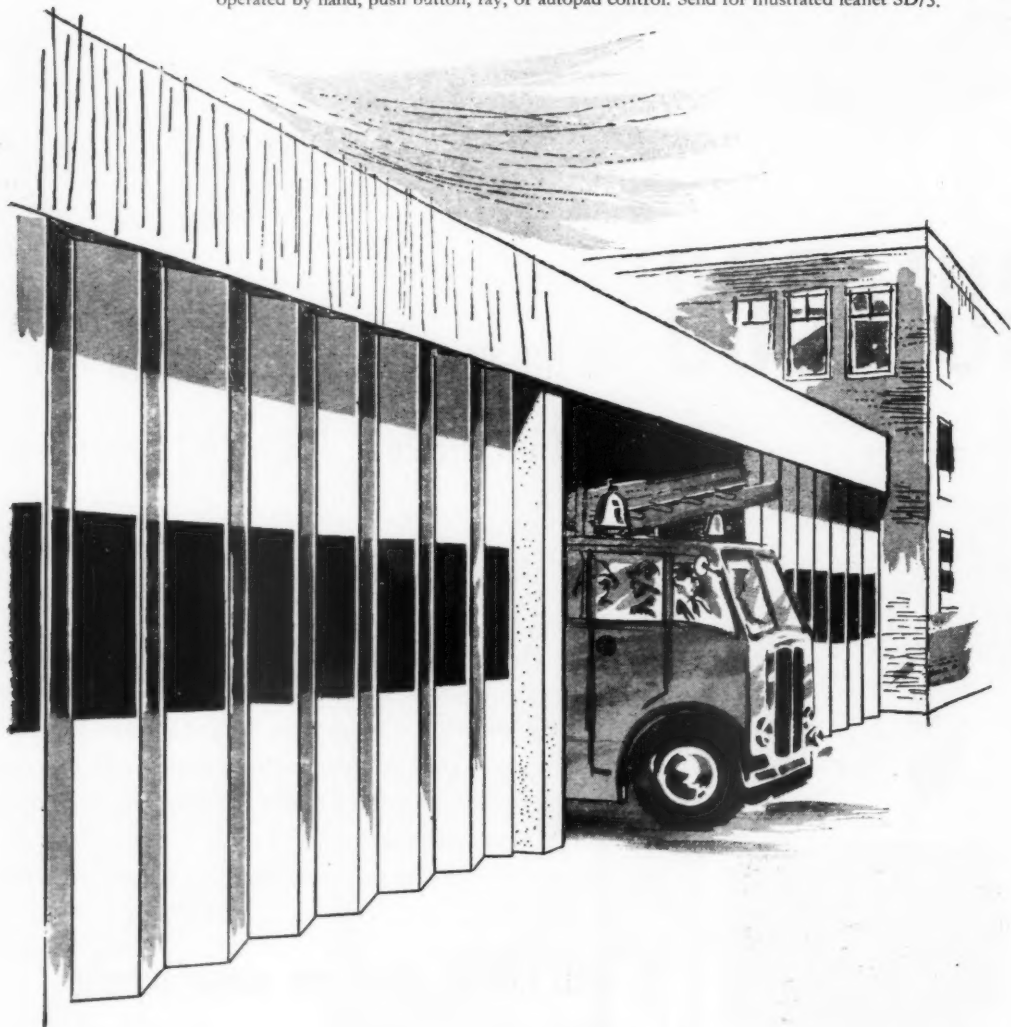
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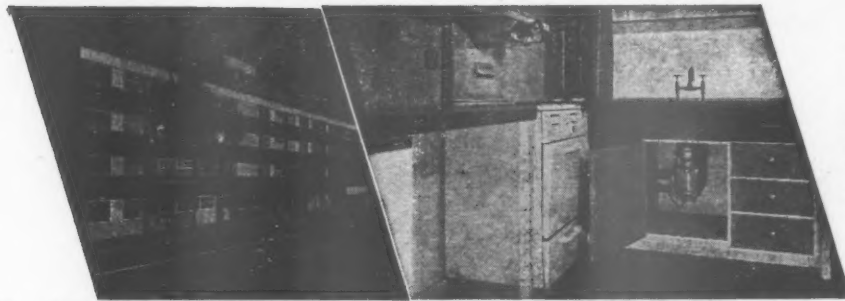
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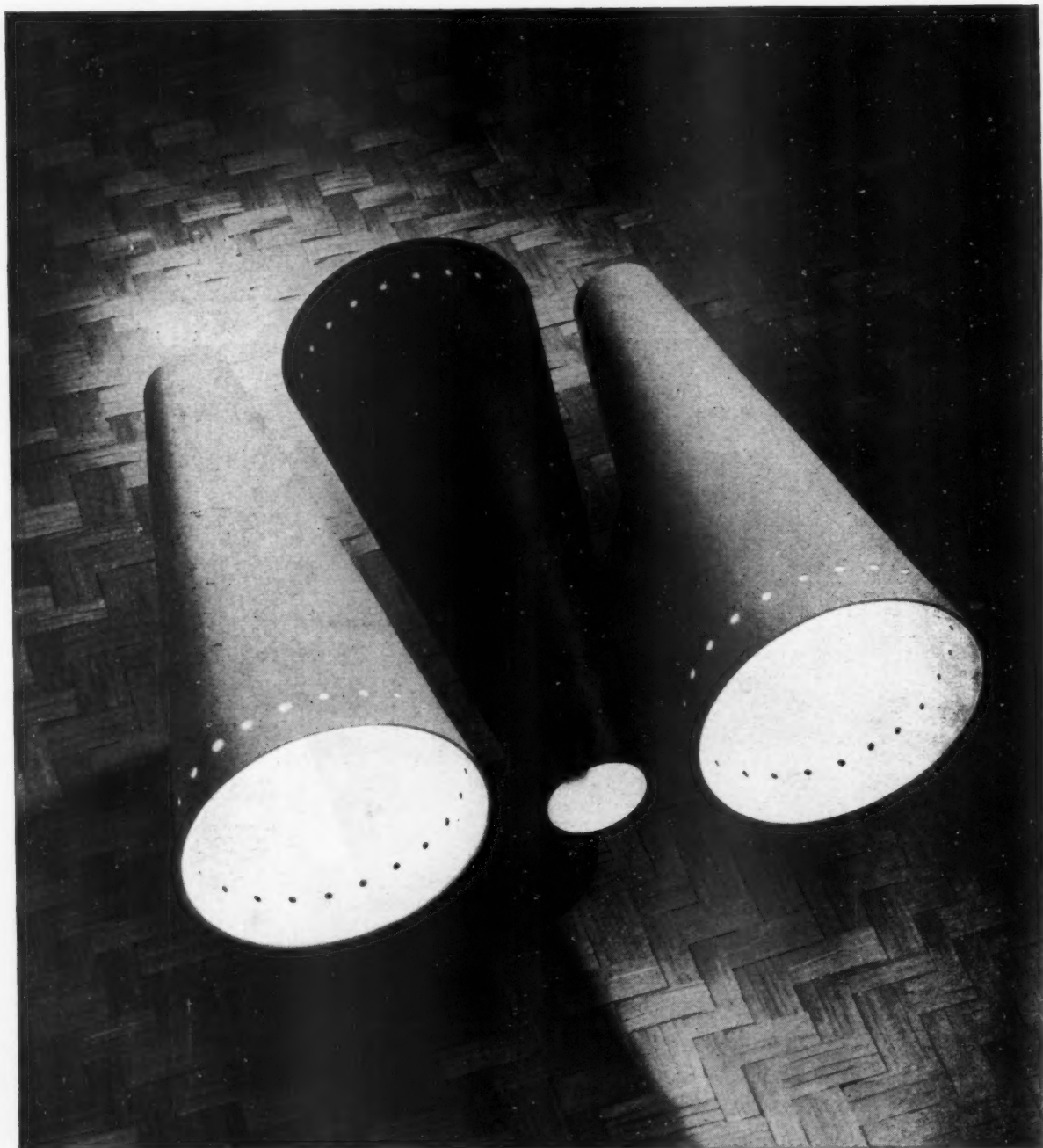
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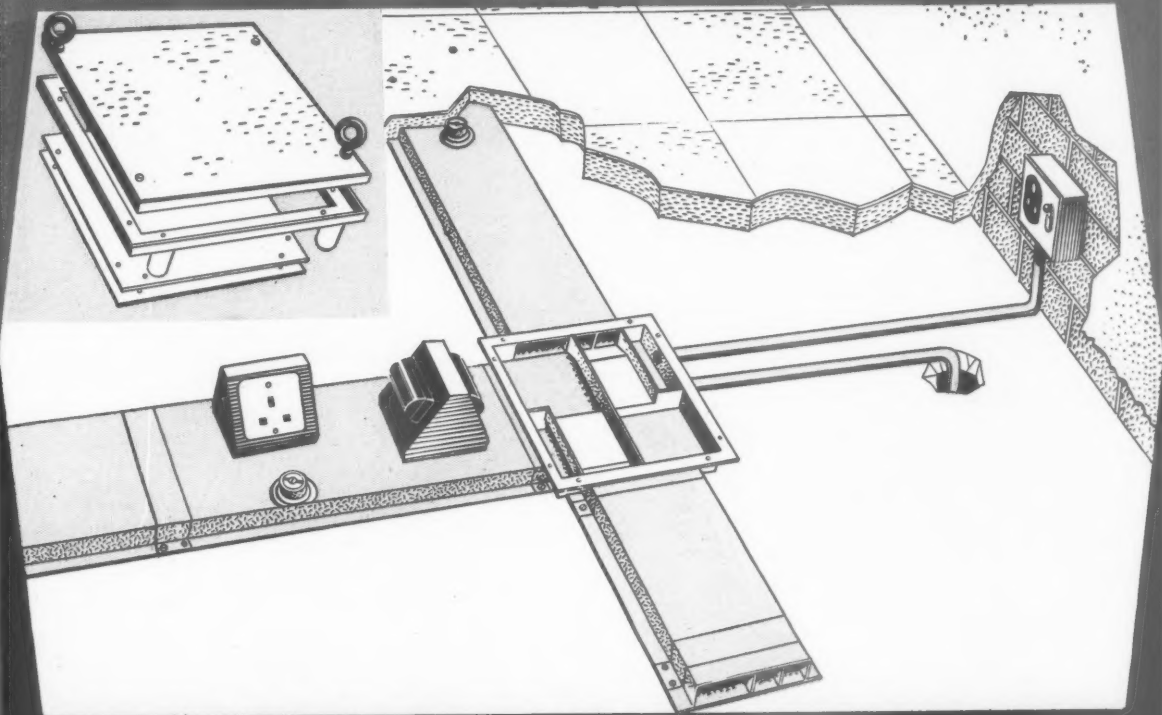


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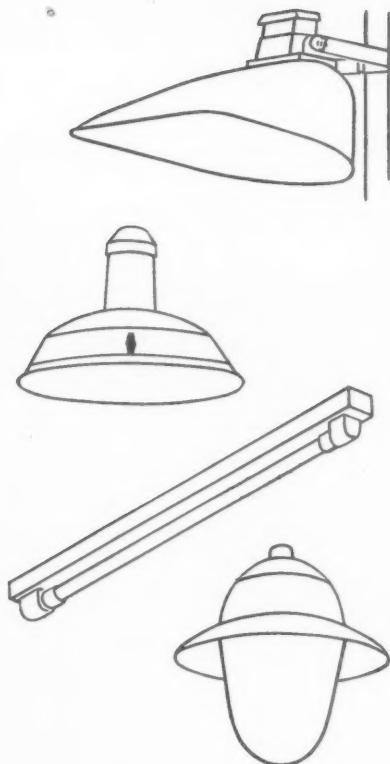
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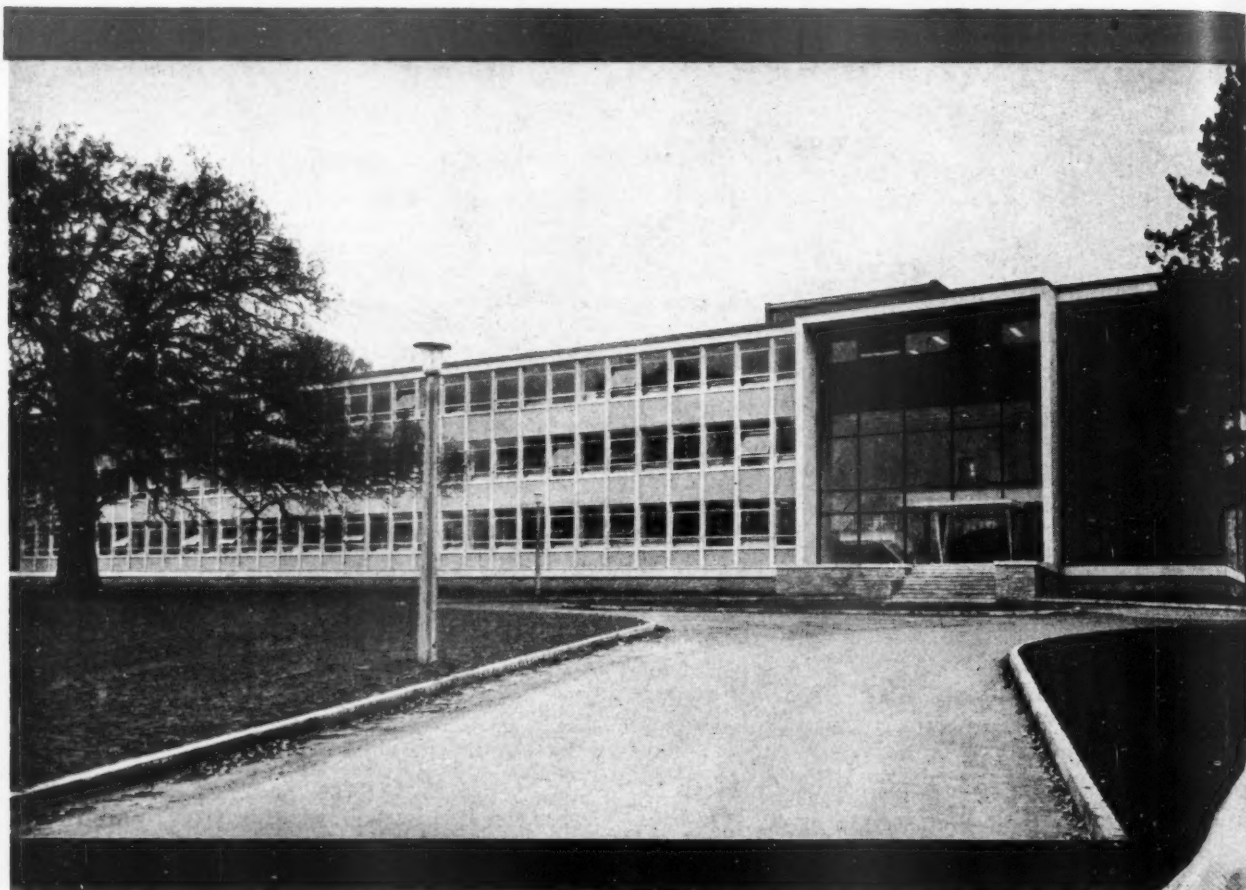
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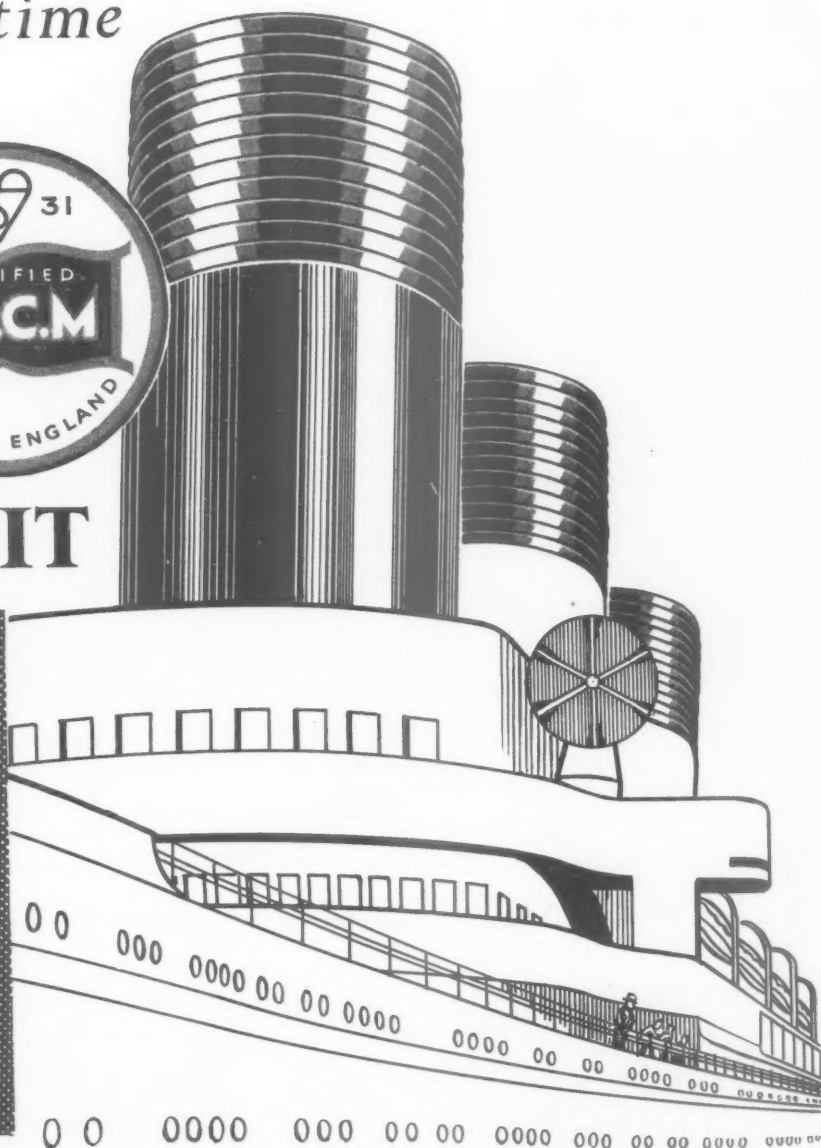
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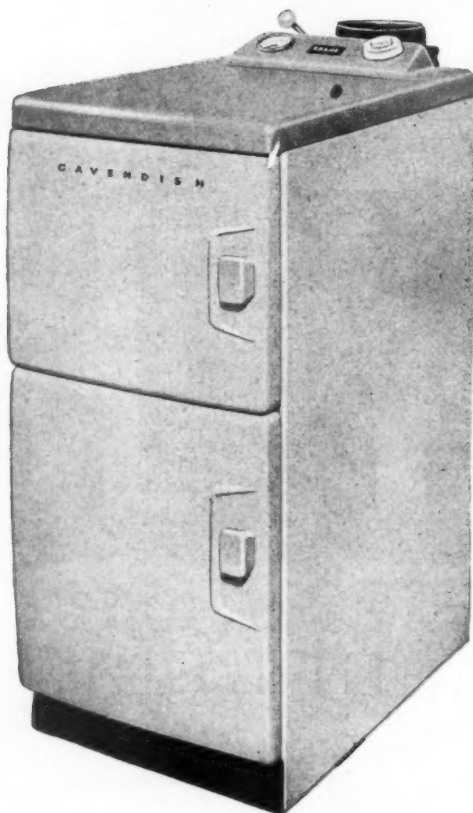
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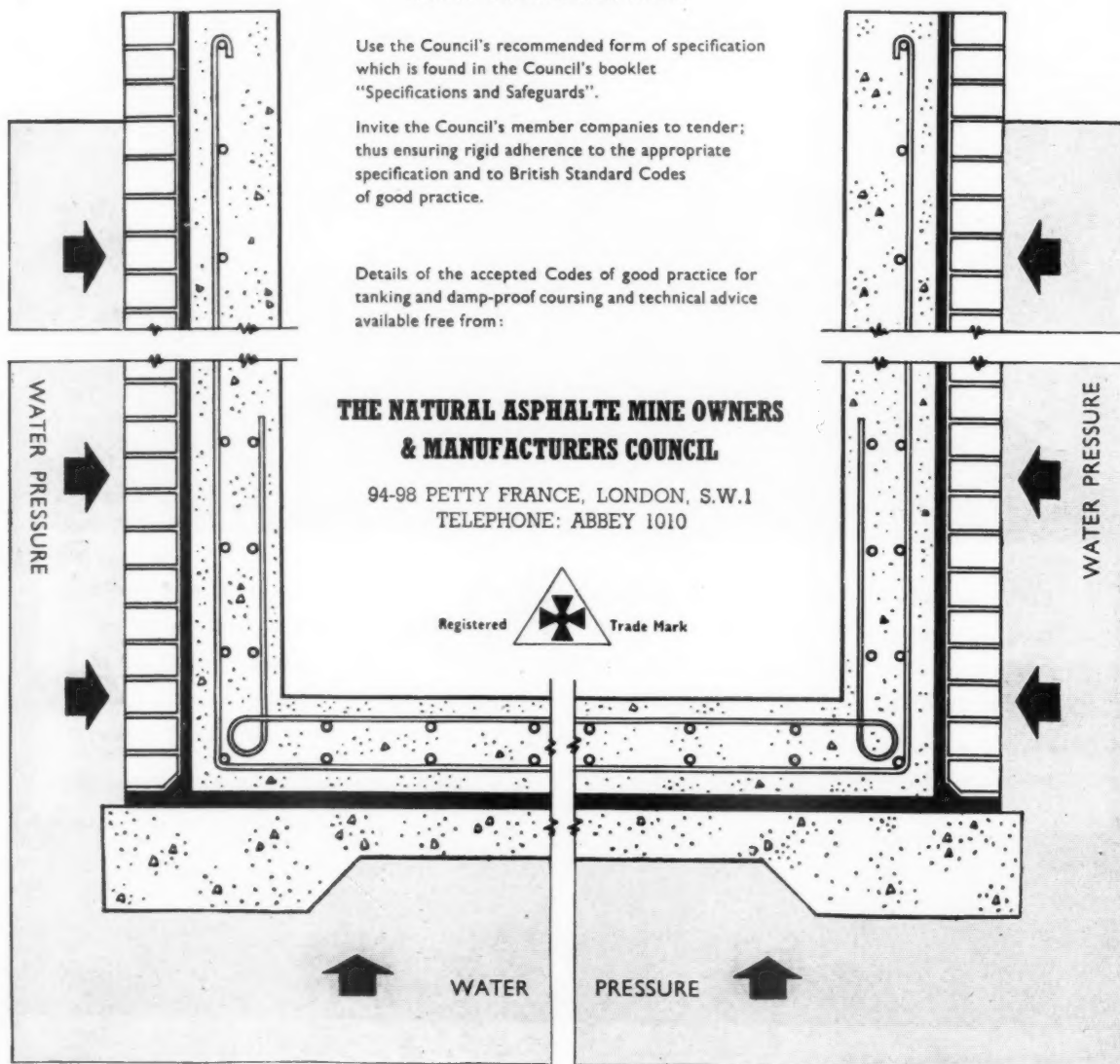
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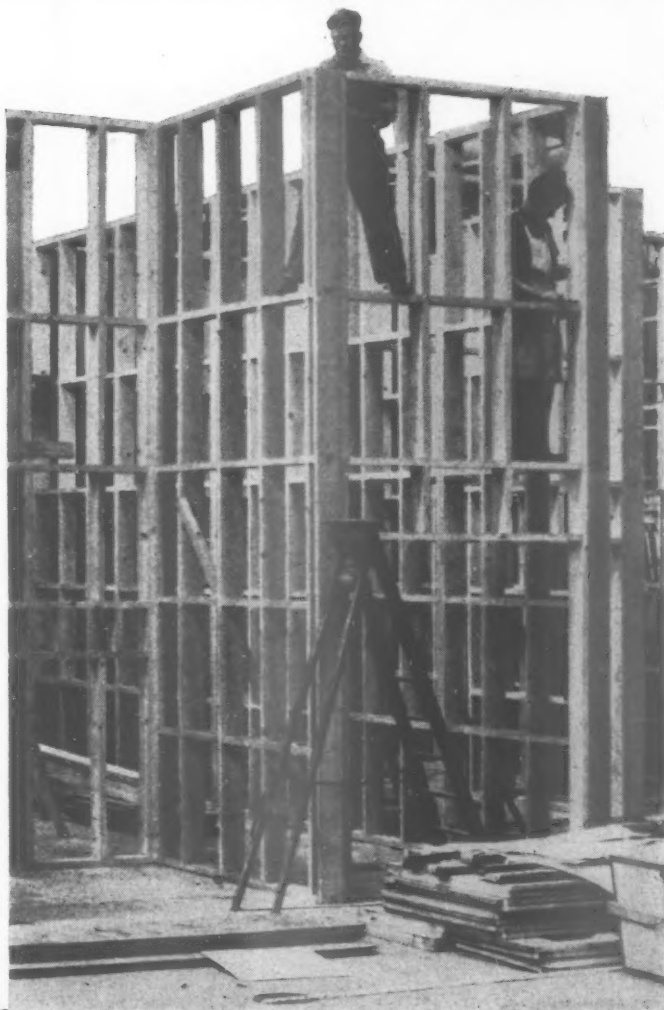
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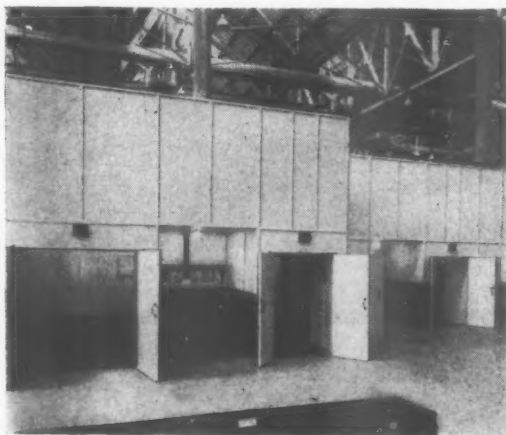
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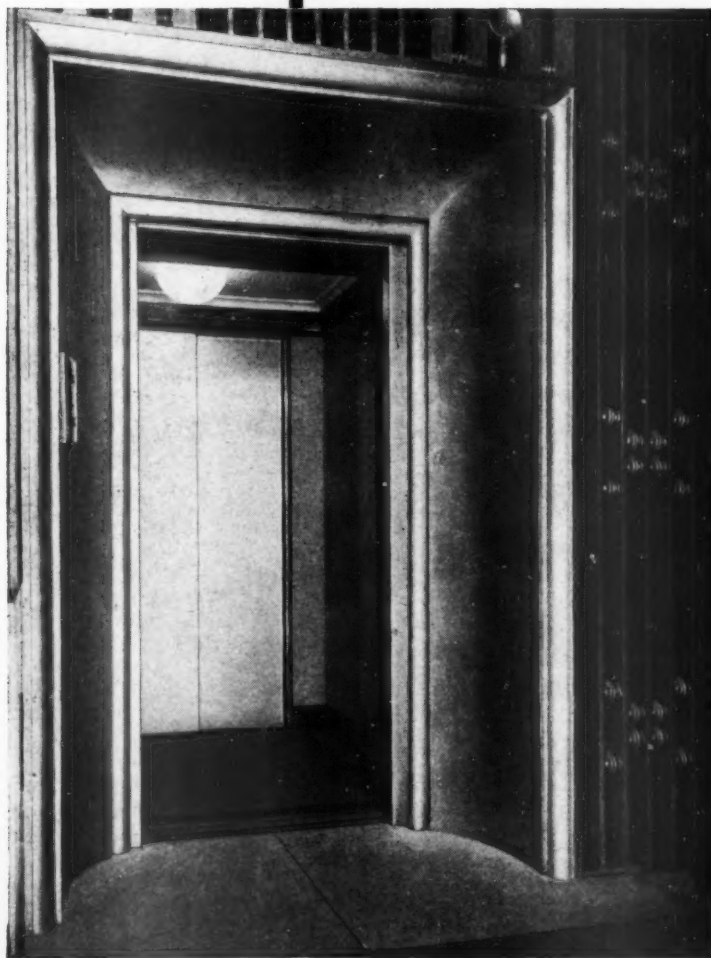
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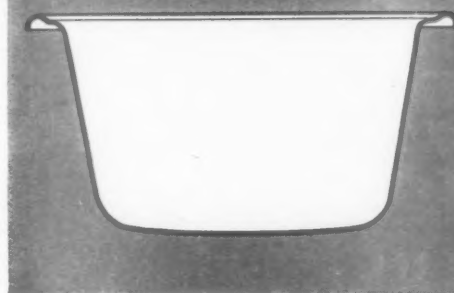
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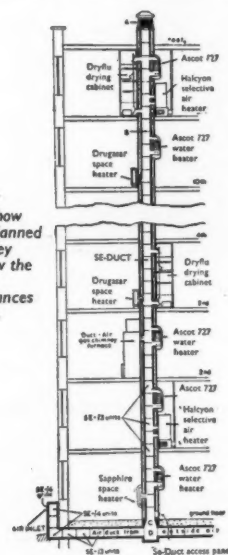
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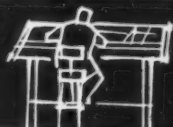
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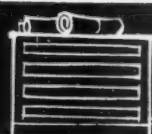
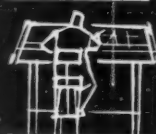
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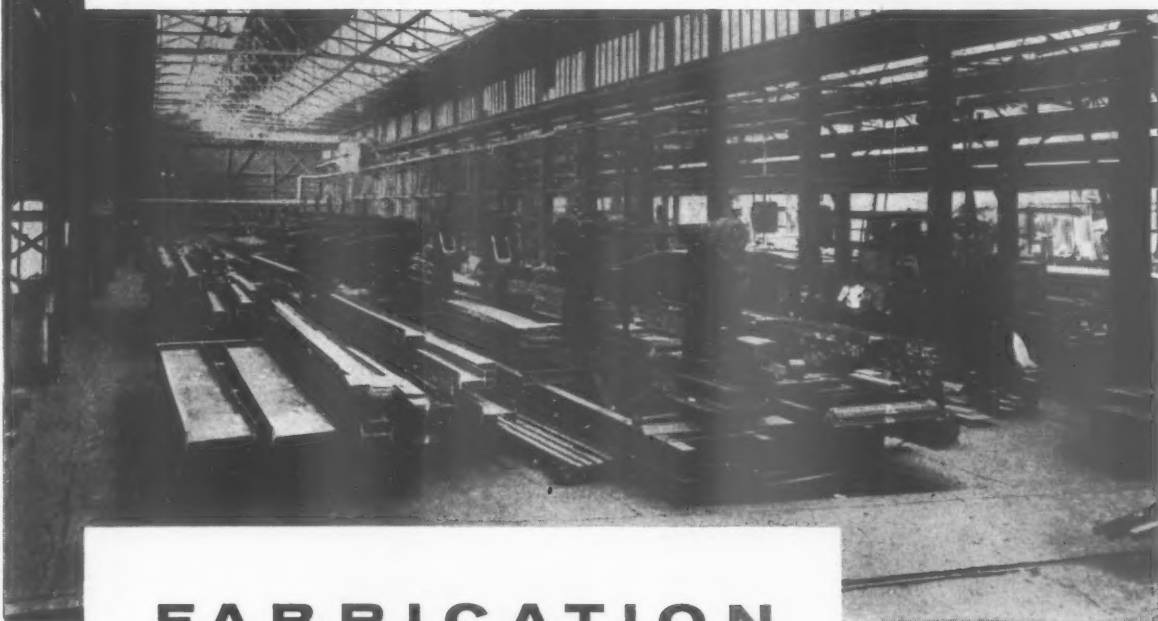


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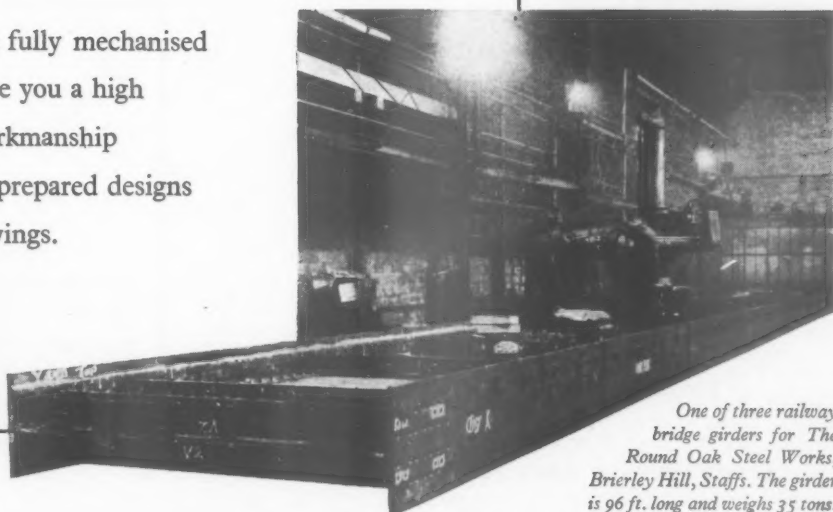


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MOISTOP — is a SISALKRAFT product reinforced with unspun sisal fibres in the longitudinal and cross directions. The fibres are totally enclosed by two layers of high grade bitumen, which in turn are faced with tough, kraft paper, and one surface is coated with a layer of POLYTHENE.

The result of this combination is an effective MOISTURE VAPOUR BARRIER that combines the strength of SISALKRAFT with the virtues of POLYTHENE.

APPLICATIONS

- Sarking under tiles and slates
- Moisture barrier in timber frame construction
- Under timber floors
- Moisture and air stop in walls
- Underlay to concrete
- Separation layer between concrete
- Curing concrete
- Form lining
- Protection from frost
- Temporary tarpaulin

A PRODUCT OF BRITISH SISALKRAFT LTD

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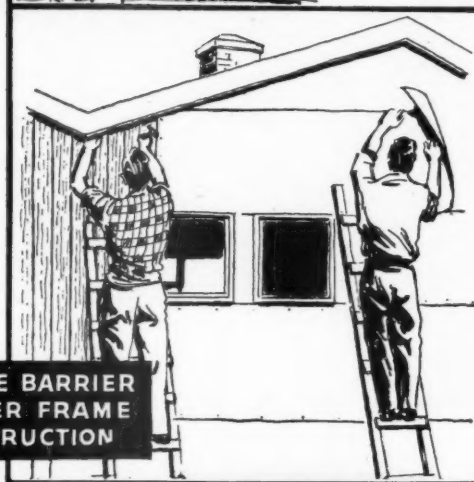
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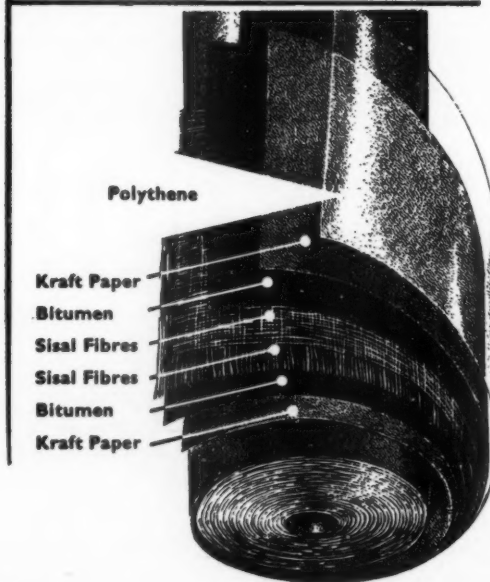
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GRAMS: Brickwork Barking



SARKING UNDER
TILES AND SLATES



MOISTURE BARRIER
IN TIMBER FRAME
CONSTRUCTION



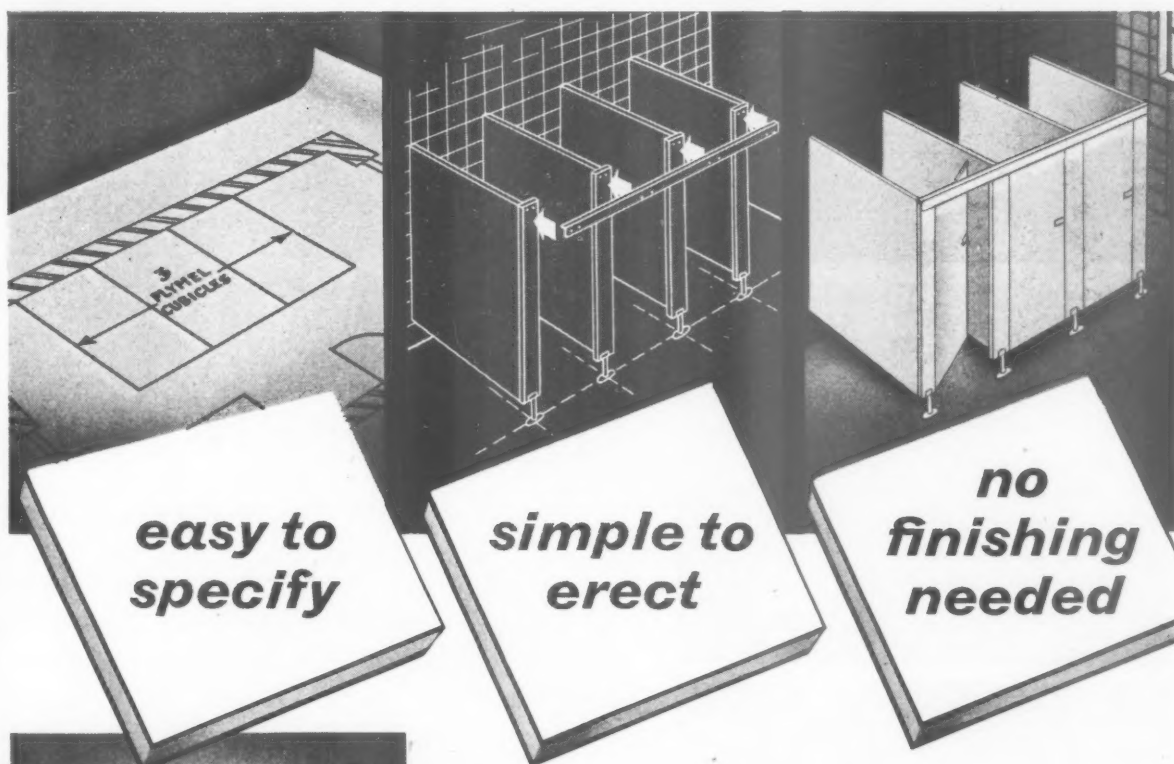
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Plymel*

save work at every stage



W.C. Compartments and shower cubicles in Plymel, the new melamine-faced material by Venesta Limited, are prefabricated in standard units to save hours of your time.

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in PLYMEL, write for leaflet (L11)

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Plywood Division

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T.A.1042



*Westminster Bank Limited, Overseas Branch; Threadneedle Street, E.C.
Architects: S. F. Everson and D. F. Searles, A/A.R.I.B.A.*



Efficiency in Steel

A COMPREHENSIVE INSTALLATION

Conversion of an extensive open floor to this dignified suite of offices was accomplished largely by the installation of Harvey Steel Partitions, Desks, Desking, Filing Cabinets, Shelving, etc.

Adaptable to the most modern conceptions of office planning, Harvey Steel Equipment is built to a standard which ensures prolonged trouble-free service.



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TWYFORDS "SOLA"

Lavatory

in

"CERAMANT"

Vitreous China



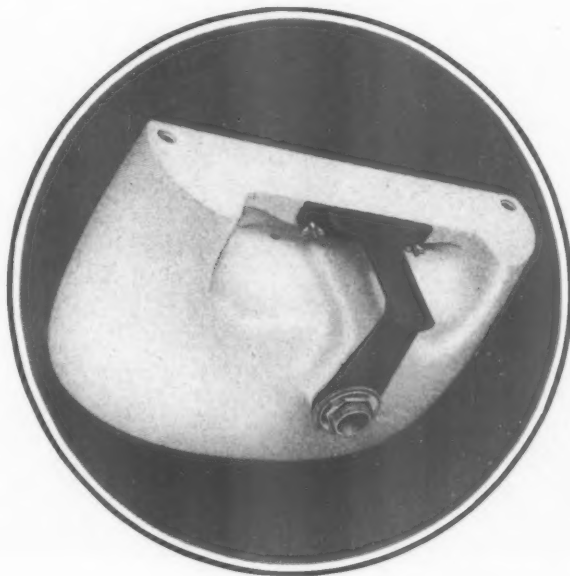
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"SOLA" Lavatory No. 2662

20" x 16"

15" x 13"

- Maximum size bowl with anti-splash rim at front.
- Securely fixed on semi-concealed centre bracket.
- Supplied with one or two tap-holes and centre soap.
- Shape of bowl on underside ensures easy cleaning.
- Supplied in white and seven colours.



Supporting bracket No. 1655

Cantilever pattern for building into wall—No. 1657

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MW 20

This is Medway

Medway is a company with unrivalled experience in the design, production and site construction of factory-made timber building systems. Several independent modular methods of construction are available for permanent or temporary structures on one or two storeys. 'Dry' construction, unaffected by weather delays, saves time and money in the construction of such buildings as offices, laboratories, social halls, pavilions, hospitals and schools (more than 70,000 children are now taught in modern Medway schools). Medway ensures rapid building, a firm schedule, economic cost and, of course, a most attractive building.

MK5

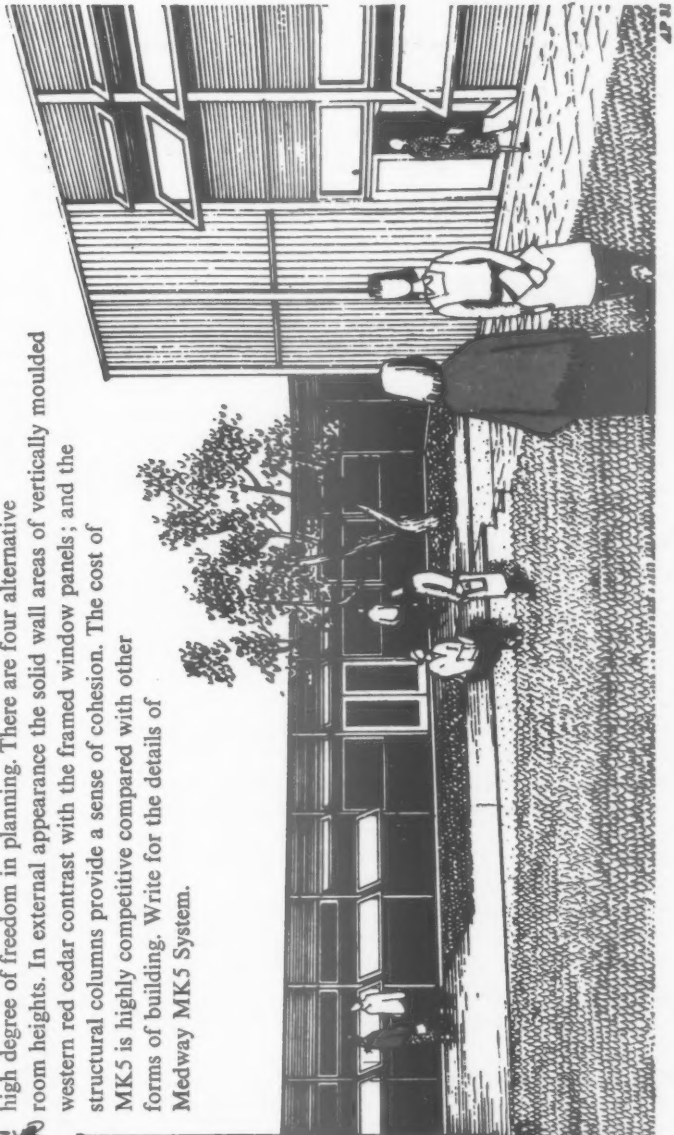
This is Medway

MK5 is Medway's newest system of permanent construction for one- or two-storey buildings. With a structural frame of columns and constant depth lattice beams, construction is all-timber. There is a flat roof, a floating sound-insulated first floor and ceilings suspended below beams at constant level.

With a 6' 4" planning grid and extensive clear spans for floors and roofs, the Architect is offered a high degree of freedom in planning. There are four alternative room heights. In external appearance the solid wall areas of vertically moulded western red cedar contrast with the framed window panels; and the structural columns provide a sense of cohesion. The cost of MK5 is highly competitive compared with other forms of building. Write for the details of Medway MK5 System.

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Key Plan

TO CUT YOUR BUILDING COSTS

Outlay on pipes is only a fraction of the cost of a drainage installation. In winter considerable time is lost when putting in conventional pipes, with subsequent increases in all overheads.

Now you can keep to schedule Delays are negligible with Key pipes, because they can be laid and tested in almost any weather, even despite bad ground. Pre-planning with Key can be done accurately, so that operations are smoothly sequenced and closely dovetailed. Snags are avoided and schedules kept or even bettered.

Urgency on large projects When your normal drain-laying team is too small for a big rush job, work can still go ahead successfully, by making up with semi-skilled men.

In Rain, Frost or Snow Driven taper joints give Key an immediate advantage over cement-jointed rigid pipes, which cannot normally be laid in waterlogged trenches. Runs can be pre-fabricated at ground level, lowered into prepared trenches and tested immediately.

Bad Ground Because they are resilient, Key pipes do not have to be laid in concrete, and haunched, on bad ground. Savings in skilled labour, time and cost are obviously considerable.

Site Congestion Immediate laying, testing and back-filling with Key pipes overcome this problem and keep traffic flowing.

Hot Sun and Drying Winds Even good weather can be bad weather when pipes have to be mortar-jointed. This problem never arises with Key pipes.

Ask for a demonstration

A practical demonstration of the advantages of Key pipes can be arranged at any time through your merchant, who will also supply any quantity you require within a matter of hours.

More advantages of KEY PITCH FIBRE PIPES

NO CORROSION · NO ROOT GROWTH · NO CRACKING THROUGH SETTLEMENT · FASTER LAYING—FEWER BREAKAGES
WIDELY APPROVED · LOWER HANDLING COSTS

Key pipes comply with BS 2760/1956 and are the first pitch fibre drain-pipes to carry the British Standard 'Kite' Mark.

THE JOB GOES AHEAD -against all odds



COST OF A DRAINAGE INSTALLATION

= COST OF LABOUR + COST OF OVERHEADS
+ COST OF MATERIALS + COST OF HOLD-UPS
+ COST OF SITE DISRUPTIONS

Use **KEY**
and cut
this total cost

SPEED THE JOB—CUT THE COST WITH

THE WORLD'S FINEST AND MOST MODERN DRAINAGE SYSTEM



PITCH FIBRE PIPES

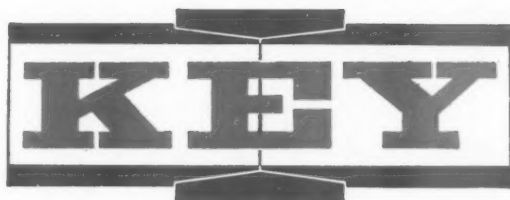
THE KEY ENGINEERING COMPANY LIMITED Larkfield, Near Maidstone, Kent, Telephone: Maidstone 7233, 7401 & 7491

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ONCE AGAIN KEY LOWERS YOUR BUILDING COSTS

announcing the new



STACK DRAINAGE SYSTEM

designed to cut
stack drainage costs by at least

40%

THIS REVOLUTIONARY SYSTEM EMPLOYS STANDARD
KEY DRAINPIPE PLUS NEW KEY-CONEX FITTINGS

You now need only one type of material
for both stackpipe and drainpipe installa-
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fitted on site or prefabricated.

*For further details 'phone, or send this coupon
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LARKFIELD, NR. MAIDSTONE, KENT

*Please send me details of the KEY STACK DRAINAGE
SYSTEM*

NAME

POSITION

A.2.



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LARKFIELD, NR. MAIDSTONE, KENT. TELEPHONE: MAIDSTONE 7233, 7461 & 7481

TGA KEF

Maximum output with minimum input **Riley Oil Burning Equipment**

— is designed for consistent high-combustion efficiencies

Type HL Burner

HIGH/LOW/OFF OPERATION

For capacities above 10 gallons per hour using 220 secs and 950 secs oil. Gives clean combustion and 13% CO₂ at variable firing loads. Incorporates one small and one large air register, each with its own atomiser. On low load only the small burner is alight, at high load both are working at optimum efficiency. Large burner has tip shut off, arranged for hot oil circulation to start and self cooling on shut down.

Type F Burner

ON/OFF OPERATION

Available in capacities from 20 lbs. to 90 lbs. per hour, using 220 secs oil. Air/Oil ratios and pressures are factory set to give suspended intense flame with 13% CO₂, and do not require further adjustment on site.

Type G Burner

ON/OFF OPERATION

Generally similar to type F burner, but designed for use with 40 secs oil.

Type M Burner

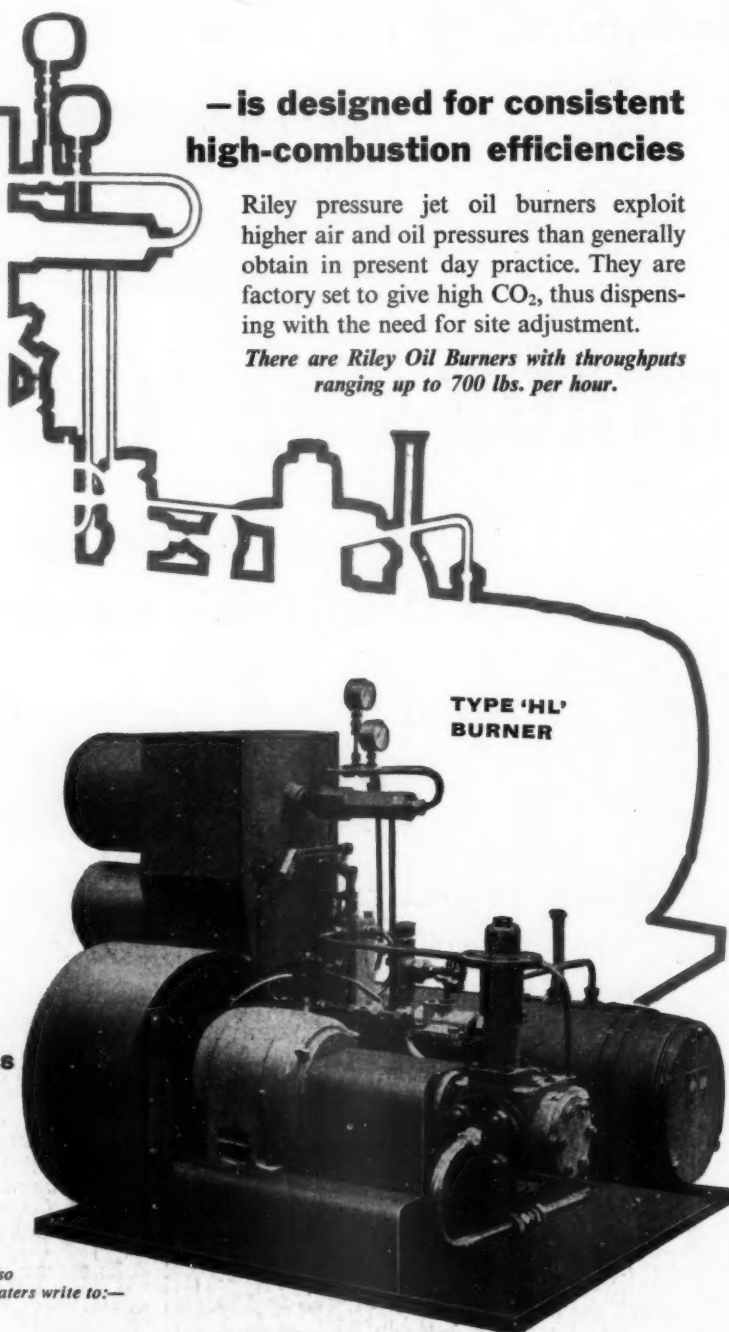
FOR HORIZONTAL SHELL BOILERS

Spill return type atomiser with output range of 3 to 1. Specially developed air register to give clean narrow flame without impingement. Hot oil circulation to start and self cooling on shut down. Suitable for light and heavy fuel oils.

For booklets giving full details of these burners, also Riley Oil Fired Combustion Chambers and Air Heaters write to:—

Riley pressure jet oil burners exploit higher air and oil pressures than generally obtain in present day practice. They are factory set to give high CO₂, thus dispensing with the need for site adjustment.

There are Riley Oil Burners with throughputs ranging up to 700 lbs. per hour.



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TGA. R04A

TECHNICAL DATA SHEET No. 5

Minerva

FIRE PREVENTION BY NUCLEAR DETECTION

FIVE STEPS IN PLANNING A MINERVA INSTALLATION

(1) SELECT A POSITION FOR THE MINERVA CONTROL UNIT AND SIGNAL PANEL

The Minerva Control Unit and Signal Panel is the centre of the Minerva System and its position should be determined having regard to the fact that it is the first thing the Fire Brigade will wish to examine to enable them to locate the seat of any fire to which they are called. It should therefore be mounted near the point of entry to the premises, at a convenient height for ease of observation and operation of the controls, and should be connected to a mains supply point which cannot be inadvertently switched off or confused with other lighting or power services. A separate fused isolating switch of a type which can be left in the locked on position should be provided.

The battery to supply emergency power in the event of mains failure should be located nearby and housed so that it may be conveniently inspected at regular intervals.

(2) DETERMINE THE NUMBER OF GROUPS OF MINERVA DETECTORS REQUIRED

First survey the premises to determine how many separately identifiable zones of risk are involved. Then examine the arrangement of the zones to ensure that each may be accurately identifiable and easily reached. Next examine the area of each zone to ensure that it may be thoroughly searched with the minimum of delay. If because of size or awkward access any zone appears to be unduly large, break it down into two smaller zones. Each of the zones is to be covered by a separate group of Minerva detectors and will be indicated by its own signal lamp on the Minerva Control Unit and Signal Panel.

(3) DESIGN A PATTERN OF MINERVA DETECTORS TO COVER EACH ZONE

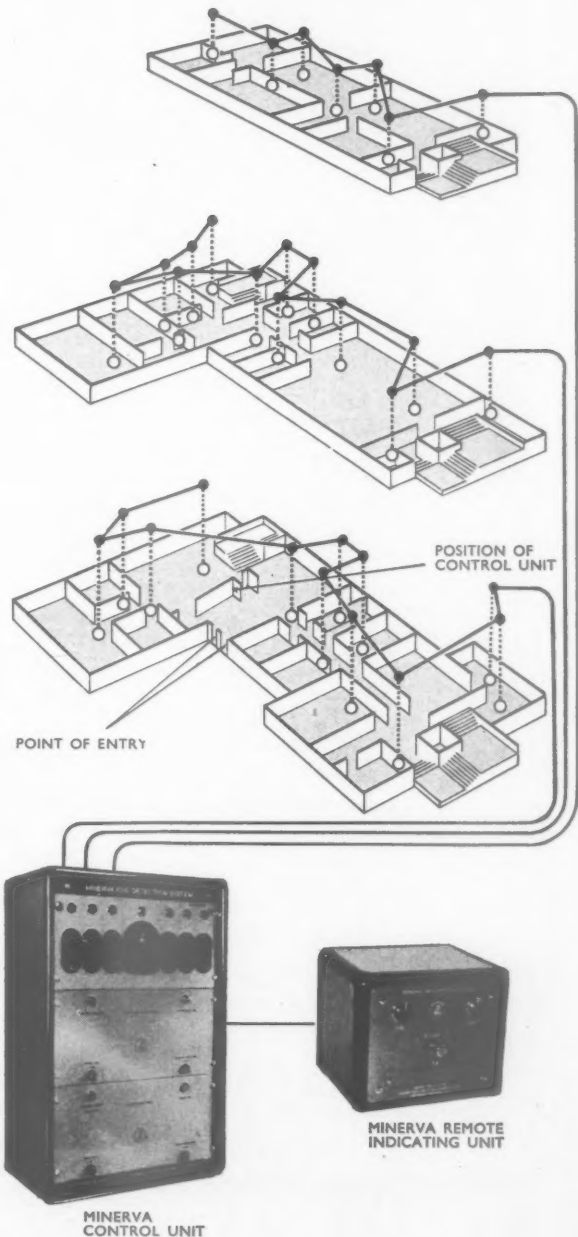
In general, the number of Minerva Detectors in any group should be calculated on the basis of one per thousand square feet of floor area in the zone. In large open areas of small risk one detector per twelve hundred square feet would be adequate whilst in stores or similar areas where high racks carrying combustible materials are to be protected it is advisable to allow rather more than one detector per thousand square feet. Having determined the number of Minerva Detectors to be provided for each zone, ceiling positions should be chosen at which the detectors are to be fixed. A regular pattern should normally be adopted with the nearest detectors to walls being not more than sixteen feet from them. The diagram (right) illustrates the pattern for 32 Minerva Detectors arranged in three groups in a three storey building.

(4) SITING THE ALARM BELLS

The positions for alarm bells will be chosen according to the requirements established for the building, depending for example upon whether general alarm is required as soon as the Minerva System detects the beginning of an incident or, as is more normal, it is required to bring the incident to the notice of fire fighting parties who will usually be able to deal with it by the use of first aid equipment without the need for a general alarm.

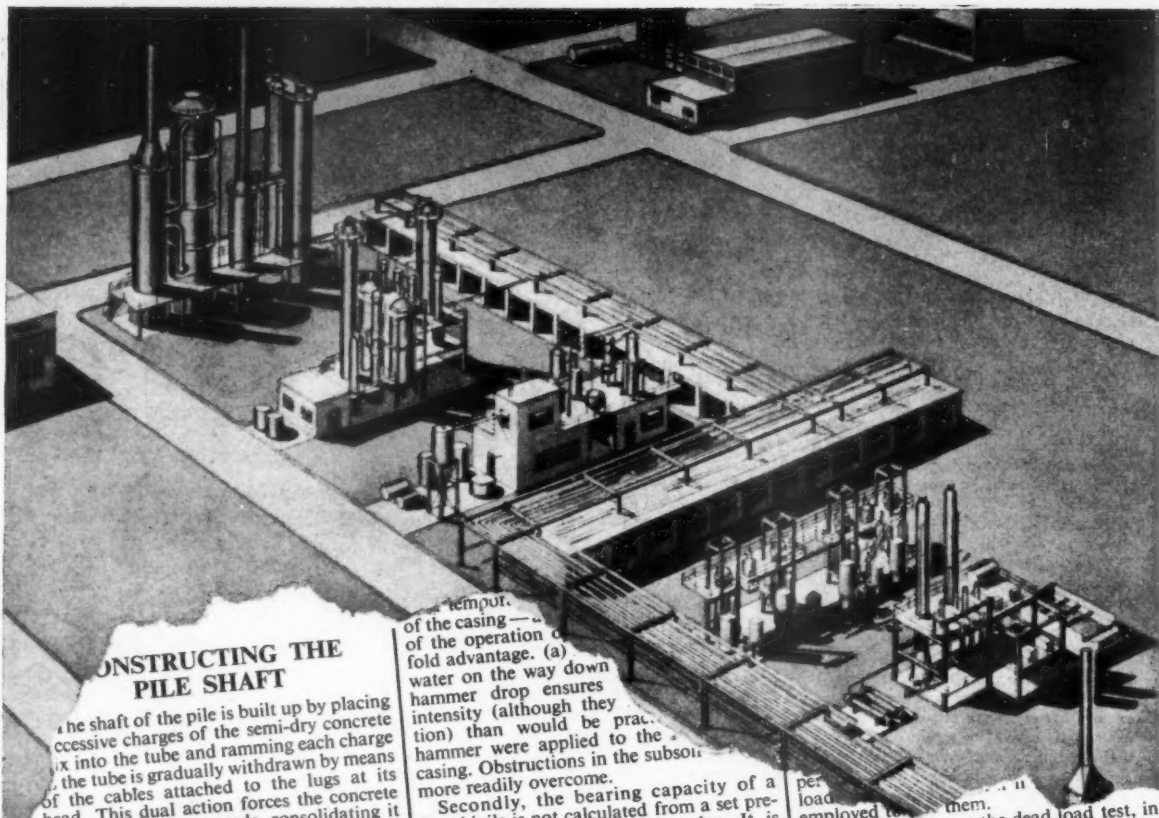
(5) PLANNING THE WIRING OF THE INSTALLATION

Each group of Minerva Detectors will be connected together in parallel and to the Minerva Control Unit and Signal Panel by a separate pair of well insulated (better than 20 megohms on 500V test) wires which run directly, avoiding as far as possible the use of junction boxes. The details of the wiring plan should be worked out in conjunction with the wiring contractor to whom all technical aid is freely available from the Minerva Detector Company Limited.



This is one of a series of technical data sheets describing the various features of the Minerva System of Fire Prevention by Nuclear Detection. The Minerva Detector Company Ltd. provides a complete Fire Prevention Service, undertaking surveys, design of installation for specialised risks, commissioning and routine inspection. A Minerva engineer will be pleased to call to advise on your fire prevention problems. Write to :

THE MINERVA DETECTOR COMPANY LTD., LOWER MORTLAKE RD., RICHMOND, SURREY. (Richmond 6431)



CONSTRUCTING THE PILE SHAFT

The shaft of the pile is built up by placing successive charges of the semi-dry concrete mix into the tube and ramming each charge. The tube is gradually withdrawn by means of the cables attached to the lugs at its head. This dual action forces the concrete downwards and outwards, consolidating it into a dense shaft which compresses the surrounding subsoil as it is forced from the bottom of the tube.

The shaft is thus greater in diameter than outside of the tube, providing adequate cover for the steel reinforcement and at the same time ensuring the maximum skin friction between its rough corrugated surface and the subsoil which has already been compressed by the driving process and is now compressed again by the greater girth of the pile itself.

During the formation of the pile shaft a mark on the hammer cable serves (in the same way as when the tube was driven) to maintain the head of concrete necessary to prevent the entry of water or any other gas matter. Should water accidentally enter the tube the heavy hammer jams in the tube and the pile has to be re-driven.

OWNERS:

South Eastern Gas Board

MAIN CONTRACTORS:

Woodall-Duckham Construction Company Ltd.

THE PILE

The shaft can be stopped at any ground level, always having attained the adequate bearing for stability. Except in cases where no in-situ piles can be driven to the ground level from the surface.

FRANKIPILE

The Frankipile is a concrete pile and its rough contact of concrete is trimmed to leave a hard, clean surface. The main reinforcement rods projecting from the top of the pile are required to be cut off at a greater depth, when the top of the pile is reached.

temporarily of the casing — of the operation of the casing — fold advantage. (a) water on the way down hammer drop ensures intensity (although they tion) than would be practical hammer were applied to the casing. Obstructions in the subsoil more readily overcome.

Secondly, the bearing capacity of a Frankipile is not calculated from a set predetermined by empirical formulae. It is assessed from conditions actually encountered when driving the pile and forming its bulbous base. An exclusive feature of the Franki system is the compaction of this base (like the rest of the pile) by direct mechanical action.

LATE NEWS

NEW EXTENSIONS FOR SOUTH EASTERN GAS BOARD

Another Oil Gasification Plant is being built at the Gas Board's Isle of Grain Works by Woodall-Duckham Construction Company Ltd. The installation will include Shell Gasification Plant with associated Oxygen Plant as well as the usual modern ancillary plants. It will produce more than eighteen million cubic feet of gas daily and is due to be completed in 1960. The site is extensive and the various large buildings will be supported by piled foundations. About 1,500 piles are being installed by Messrs. Frankipile Limited, of 39 Victoria Street, London, S.W.1, and the Company offers a free 95-page book on piling to Architects and Engineers.

per load employed in them.

These methods are the dead load test, in which the weight is provided by successive increments of kentledge bearing directly on the pile cap, and two types of jack test. In the first of these types the weight of a full test load of kentledge is gradually transferred on to the pile by means of the jack. In the second, the jack operates not against kentledge but against the uplift obtained from adjacent piles.

These methods can be relied upon to give equally accurate results, the choice between them generally depending on site conditions and the type of kentledge available.

Whichever method is used, readings are taken at agreed stages during the process of incremental loading until the pile is carrying the full test load. The full load is then allowed to remain on the pile for a determined period, which is normally 24 hours.

After the recording of any settlement which may have occurred during this period the load is gradually reduced again, readings being taken at each stage in the same way as when the load on the pile was increased.

When the pile is completely free of its final reading is taken. The difference between this and the reading under the full test load is recorded as the permanent settlement. Piles are normally tested singly but also be tested in groups.

TESTING THE FRANKIPILE

All piles constructed by the Frankipile Co. Ltd., are guaranteed to carry the working load specified in the guarantee given by the company is subject to the following conditions.

At Your Service throughout the World

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Paints by The Dentolite Process — FUNGI-CHEK Gloss, FUNGI-CHEK Matt and FUNGI-CHEK Emulsion Paint — are finest quality decorative finishes with excellent durability, resistance to steam, abrasion, acids and alkalis, AND made continuously fungicidal and bactericidal by a unique reaction The Dentolite Process (World Patents applied for). This reaction occurs during the drying of the film and lasts throughout its entire life. Thus for many years (tests after five years still show bactericidal activity), the coatings inhibit the growth of Mould, Fungi, Wild Yeasts and Bacteria—pathogenic or otherwise. As FUNGI-CHEK is free from any toxic compounds of lead, arsenic, copper, mercury, tin or any harmful or poisonous chemicals, it must now be considered the ideal paint and the obvious choice for decorative and/or functional painting in many industries, such as Breweries, Distilleries, Bottling Plants, Hospitals, Canteens, Laundries, Tobacco Factories, Textile Works, Pharmaceutical Laboratories and wherever food is manufactured, stored or processed.

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Send for publication FP/106.

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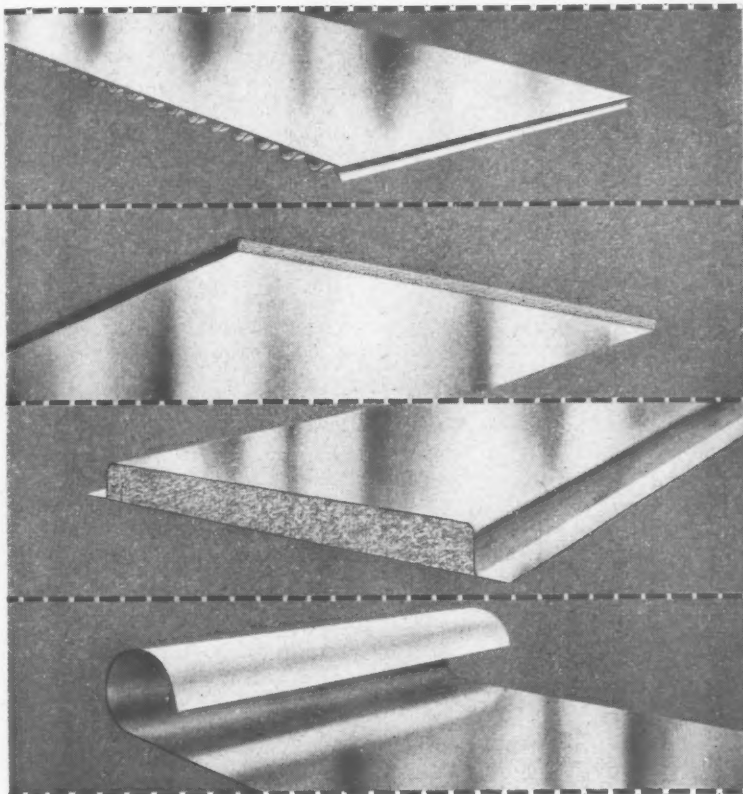
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Aluminium Foil laminated with strong paper.

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The most efficient forms of Thermal Insulation now incorporate Fisher's Foils. Their heat-reflecting properties afford an increased barrier against the passage of heat. Under normal conditions, the thermal insulating properties of Aluminium Foil can be expected to last indefinitely. Its extremely light weight renders unnecessary additional supporting structure. Aluminium Foil reduces the fire hazard.

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TELEPHONE: WEMBLEY 6011 CABLES AND GRAMS: LIOFNIT, WEMBLEY (ABC CODE 6TH EDITION)



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"So's we can see in the dark!"

From our earliest days, when we invented Duresco—the first and still foremost oil-bound water paint—we have studied the problems presented by new methods and materials and the need for a continuous development of decorative and protective coatings to keep pace.

Though we must confess that we have not yet succeeded in making a paint which will light up the dark, we have produced a whole series of specialities: amongst them—SILCOLAC which, by blending the best of traditional materials with the very latest synthetic resins, provides a porcelain-like finish of intense durability; DURESCO EMULSION COATING, a polyvinyl acetate emulsion paint with extraordinary opacity; TEXIDEC, a plastic texture paint which will withstand the rough usage of constant traffic in passages and corridors; TWINCOTE, the universal wall primer undercoat which is alkali resistant and possesses great hiding power. And many more . . .

Duresco Products

If you have a special problem on hand where the conditions are unusual and a new approach may be necessary, our TECHNICAL ADVISORY SERVICE is unreservedly at your disposal.

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was used in this building

View of rear elevation showing Empire Stone with
coloured aggregate faced panels.

Architects:

Messrs. Easton & Robertson F/A/P.F.R.I.B.A.

Executive Architect:

Raymond C. Arnold F.R.I.B.A.

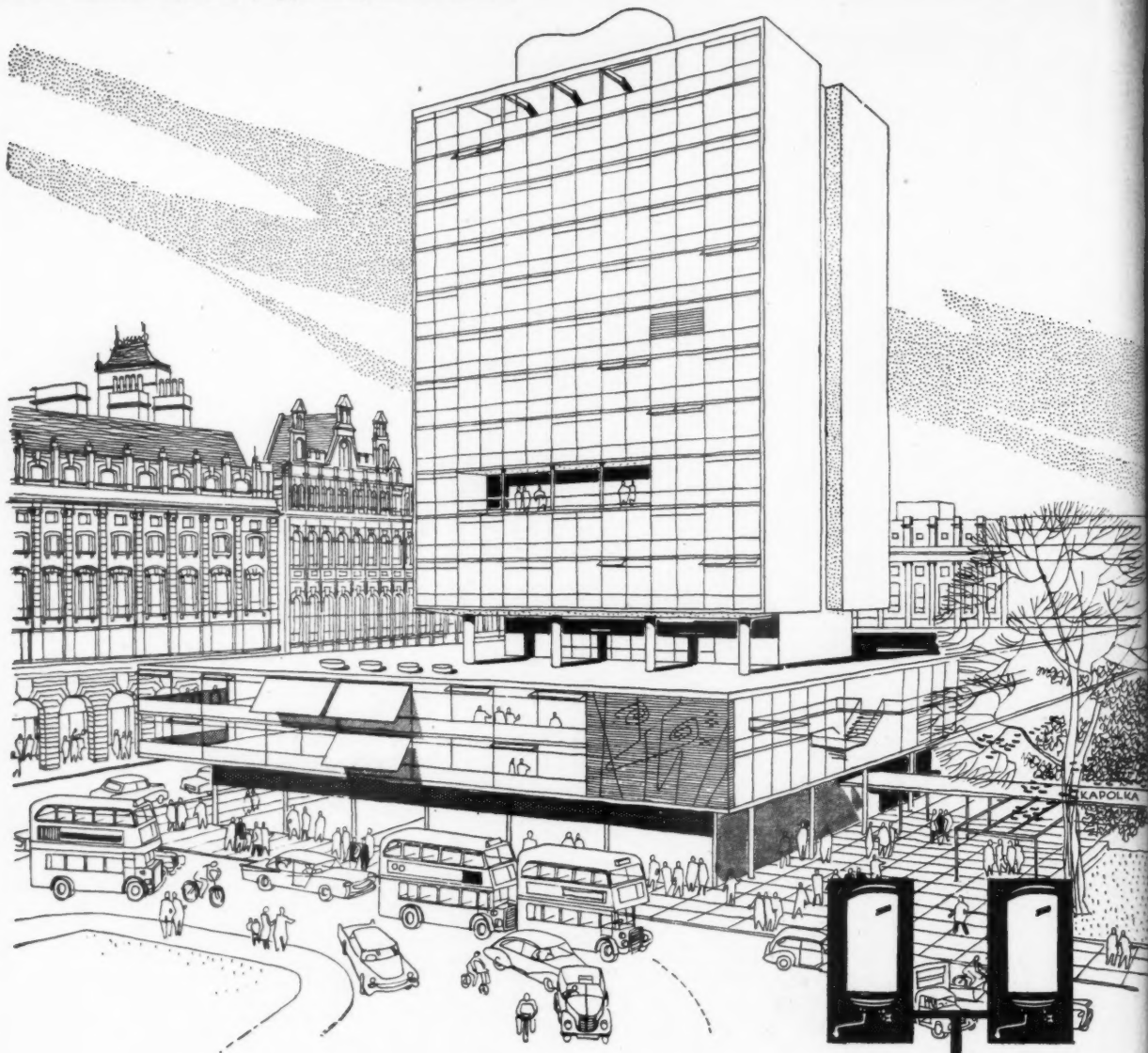
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Thanet House, 231 Strand, London W.C.2

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Narborough, Nr. Leicester

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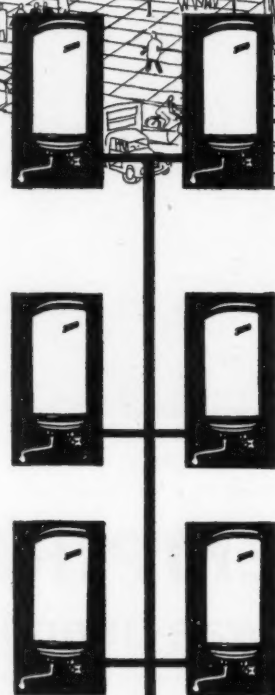
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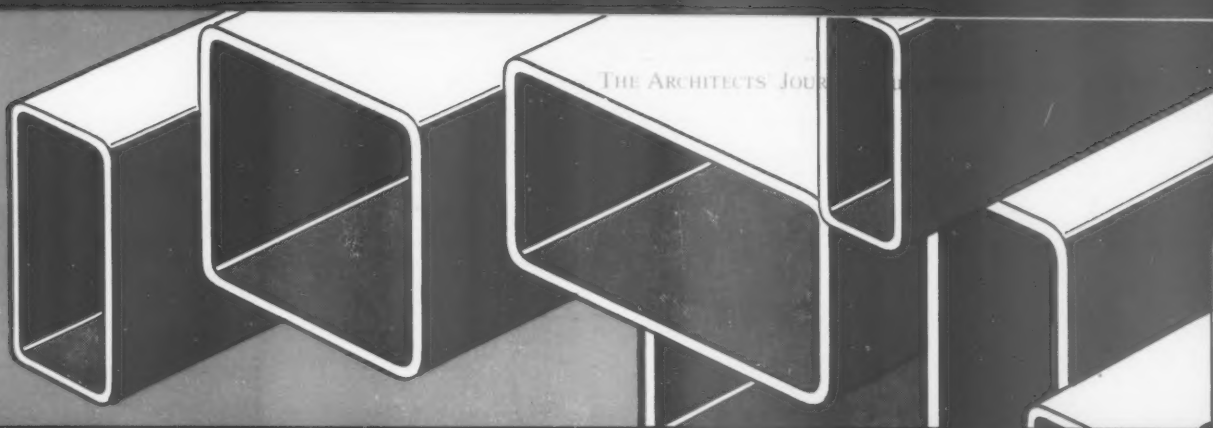
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THE ARCHITECTS' JOURNAL

A further advance in tubular steelwork:

RECTANGULAR HOLLOW SECTIONS

Welded tubular construction has made great progress in recent years in its applications to mechanical handling and similar equipment. A further step forward is being made with our new range of hot-rolled Rectangular Hollow Sections. These have been developed in conjunction with our subsidiary, Tubewrights Ltd., who are acknowledged specialists in tubular construction.

SIMPLICITY

R.H. Sections eliminate the need for special shaping of component members prior to welding. Any straight cut R.H.S. or tube will fit accurately against their flat sides whether square-on or at an angle and, moreover, lugs of various kinds produced from tube or bar are easily attached. Welding is simple and no bevelling is necessary.

SIZES

16 standard sizes of hot-rolled R.H. Sections are available, each in two thicknesses; they range from $1\frac{3}{8}$ " square to $5" \times 2\frac{1}{8}"$. Several sections have matching dimensions and this is of advantage in the production of neat fabricated structures. The $1\frac{7}{8}"$ square R.H.S., for example, matches the short sides of a $3\frac{5}{8}"$ by $1\frac{7}{8}"$ R.H.S.; these matching dimensions are made clear in our pamphlet, and in the accompanying table.

Our subsidiary, Tubewrights Ltd., of 25 Buckingham Gate, London, S.W.1, is willing to advise on or quote for any welded sub-assemblies or complete units in R.H.S., in tubes, or in a combination of both.

STEWARTS AND LLOYDS WAREHOUSES THROUGHOUT THE COUNTRY STOCK R.H.S.

Pamphlet giving full dimensions, properties and prices will be sent on application to:

Stewarts and Lloyds Ltd

STRUCTURAL STEEL DEPARTMENT, BROAD STREET CHAMBERS, BIRMINGHAM, 1

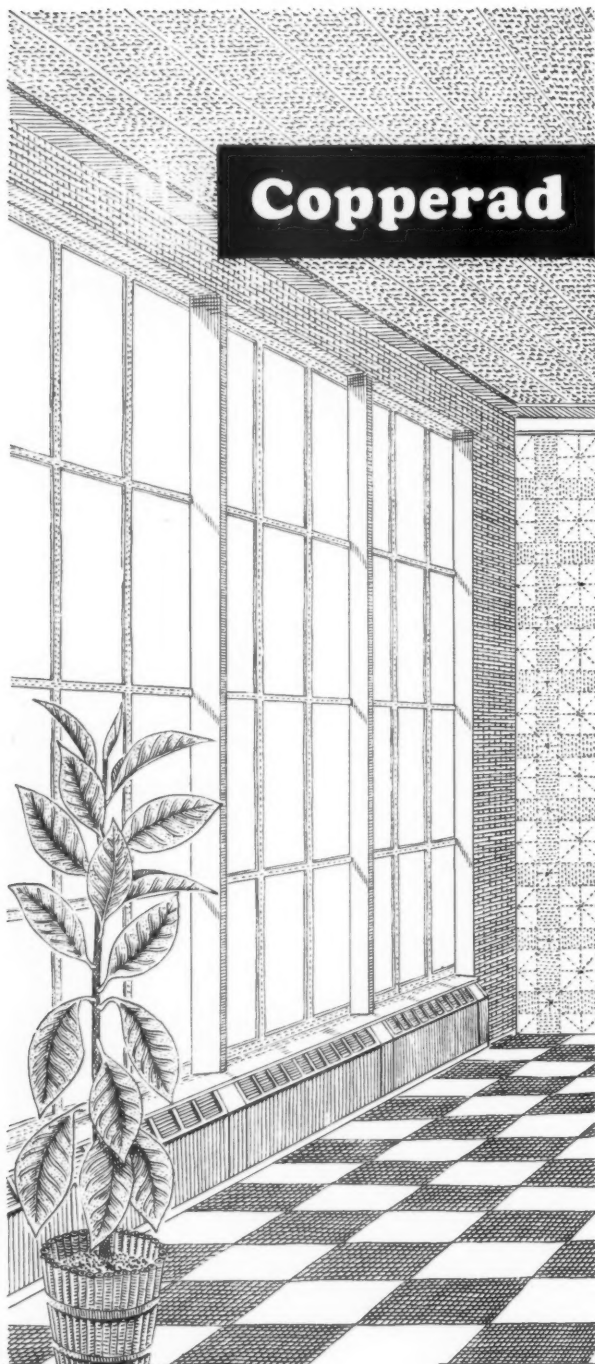


DIMENSIONS OF R H SECTIONS

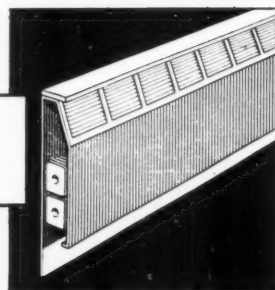
INCHES	S.W.G	INCHES	S.W.G
1×1	12g, 10g	$2\frac{1}{2} \times 1\frac{3}{8}$	11g, 9g
$1\frac{3}{8} \times 1\frac{3}{8}$	11g, 10g	$3\frac{1}{8} \times 1\frac{5}{8}$	10g, 9g
$1\frac{7}{8} \times 1\frac{7}{8}$	11g, 9g	$3\frac{5}{8} \times 1\frac{7}{8}$	10g, 8g
$2\frac{1}{8} \times 2\frac{1}{8}$	10g, 9g	$4\frac{3}{4} \times 2\frac{3}{8}$	9g, 7g
$2\frac{3}{8} \times 2\frac{3}{8}$	10g, 9g	$1\frac{7}{8} \times 1\frac{3}{16}$	11g, 10g
$2\frac{1}{2} \times 2\frac{1}{2}$	10g, 8g	$2\frac{3}{4} \times 1$	11g, 9g
$2\frac{3}{4} \times 2\frac{3}{4}$	10g, 8g	$3\frac{3}{8} \times 1\frac{3}{8}$	10g, 9g
$3\frac{5}{8} \times 3\frac{5}{8}$	9g, 7g	$4 \times 1\frac{5}{8}$	10g, 8g
MATCHING DIMENSIONS ARE SHOWN IN HEAVY TYPE		$5 \times 2\frac{1}{8}$	9g, 7g



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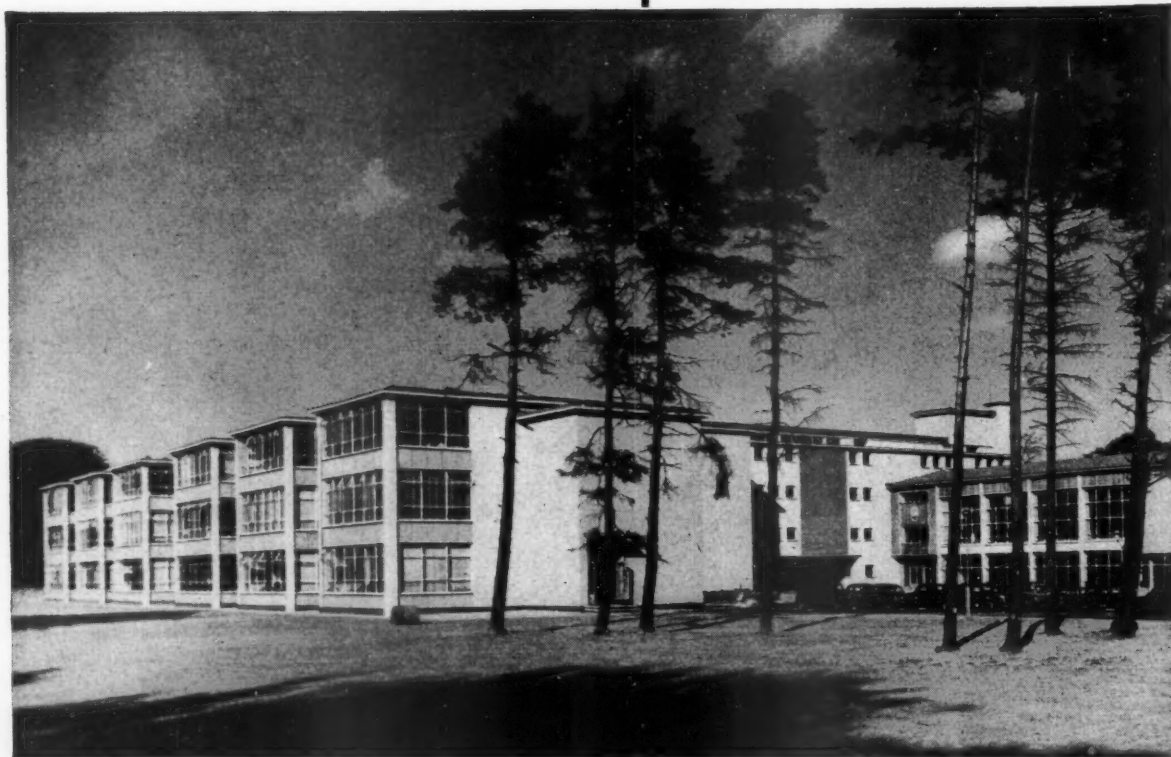
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AP 269

Architect: R. S. Lawrie, Esq., A.R.I.B.A., A.M.T.P.I.,
A.R.I.A.S. County Architect, Fife County Council.

Main Contractor: Messrs. Whatlings Ltd., Glasgow.

Joinery Contractor: Alex. B. Cant, Esq., Dunfermline.



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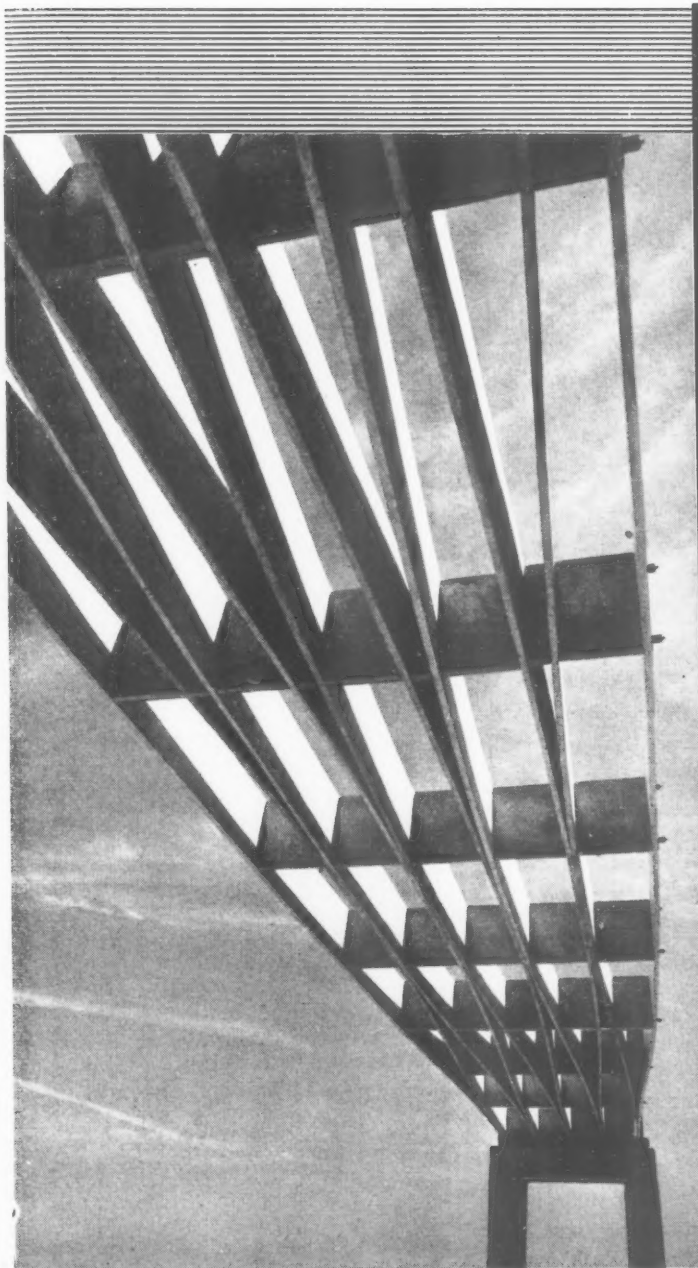
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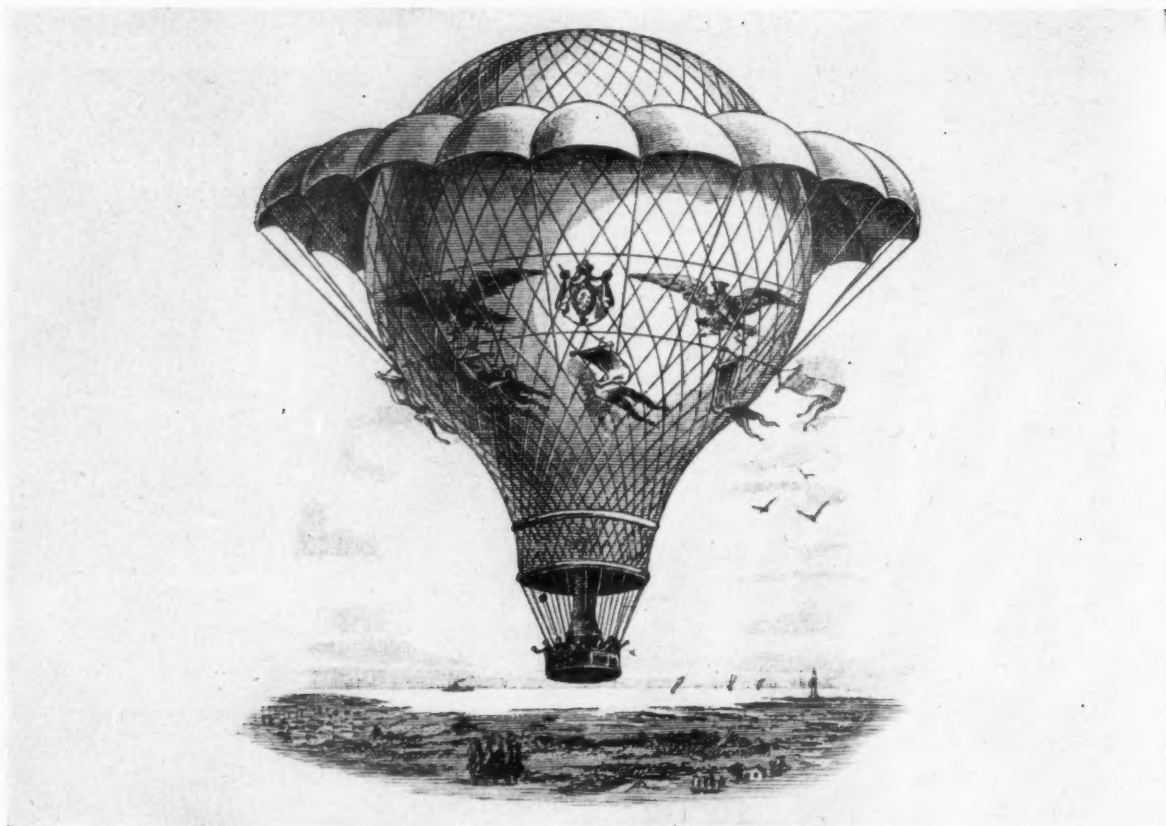
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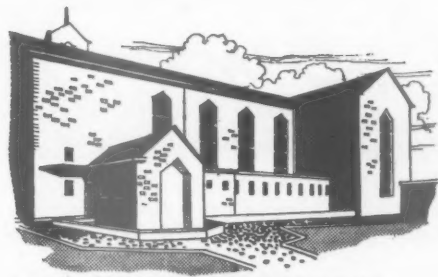
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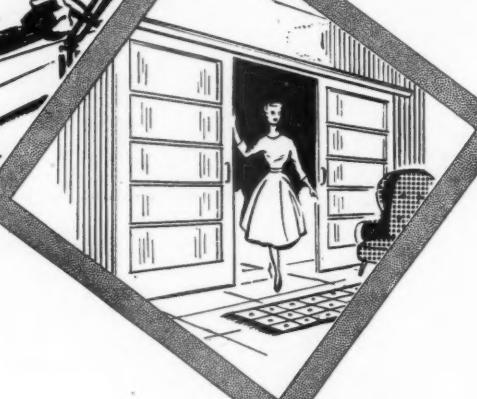
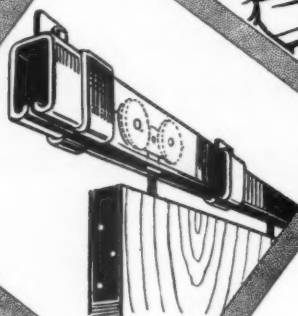


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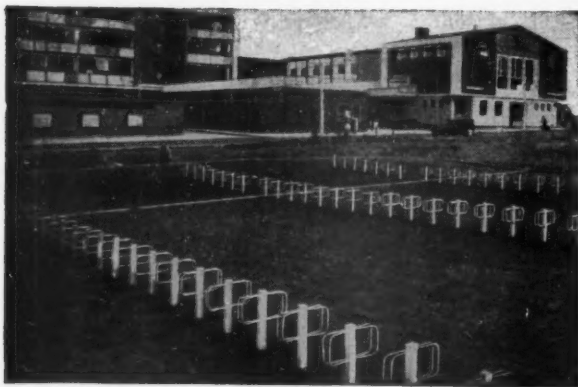
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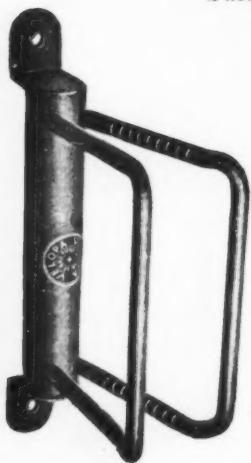
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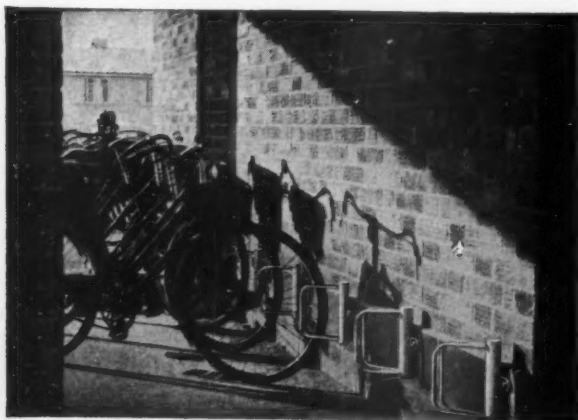
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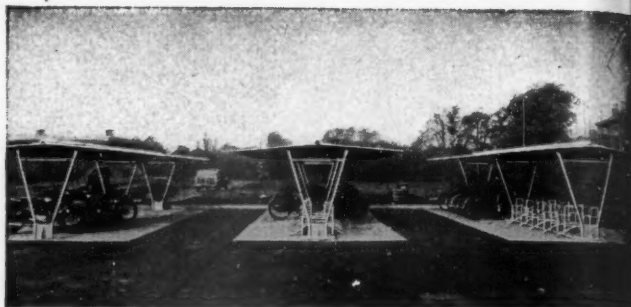
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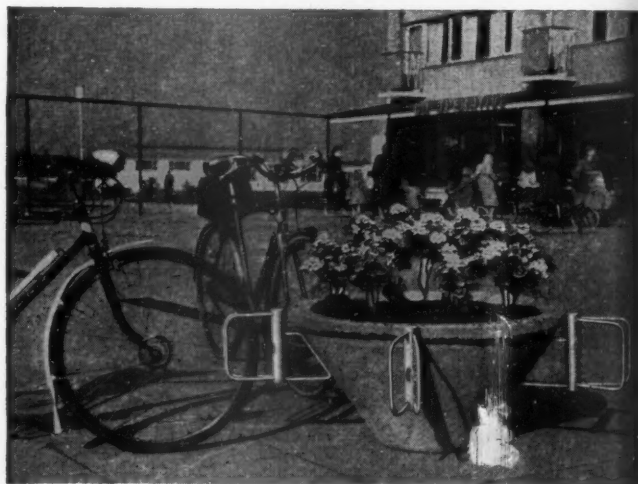
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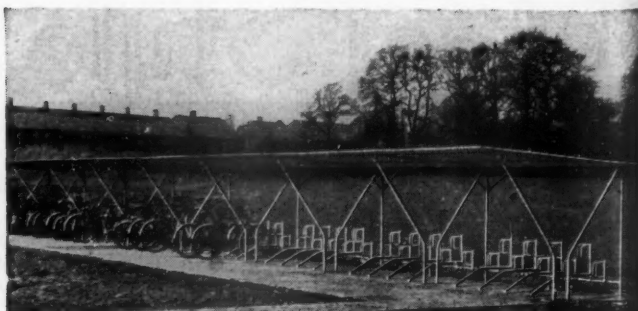
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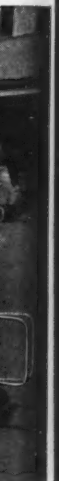
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Architects:
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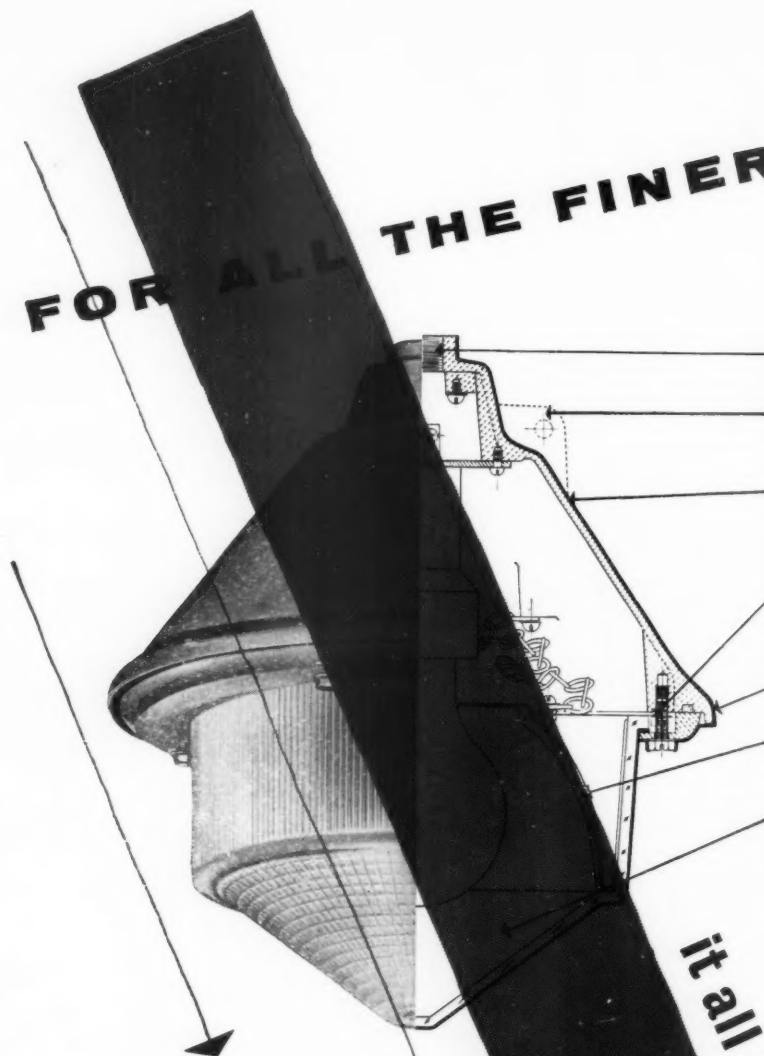


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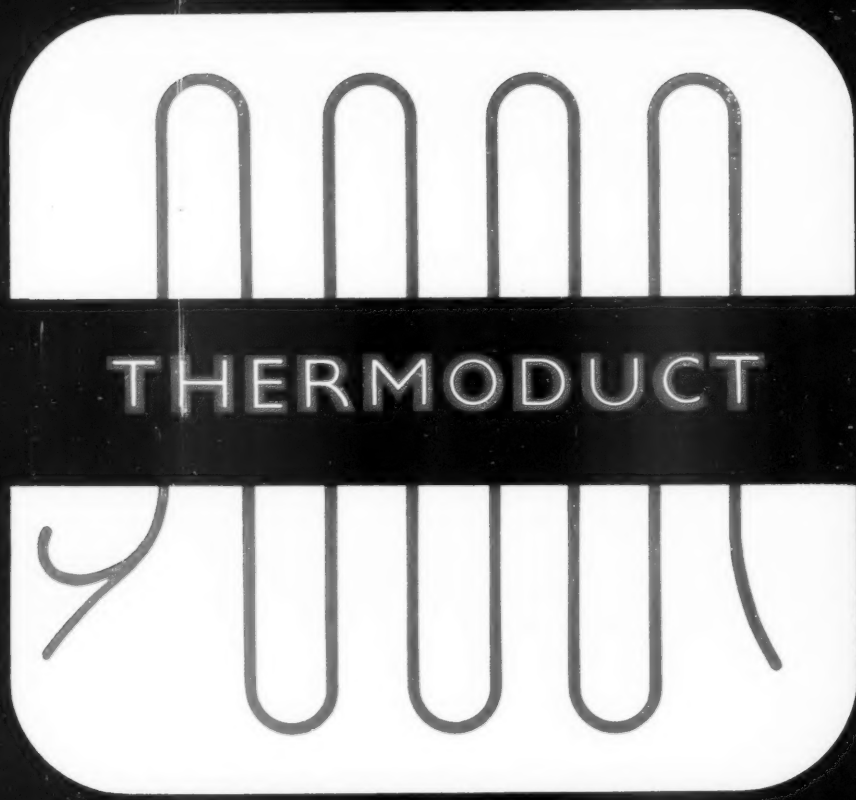
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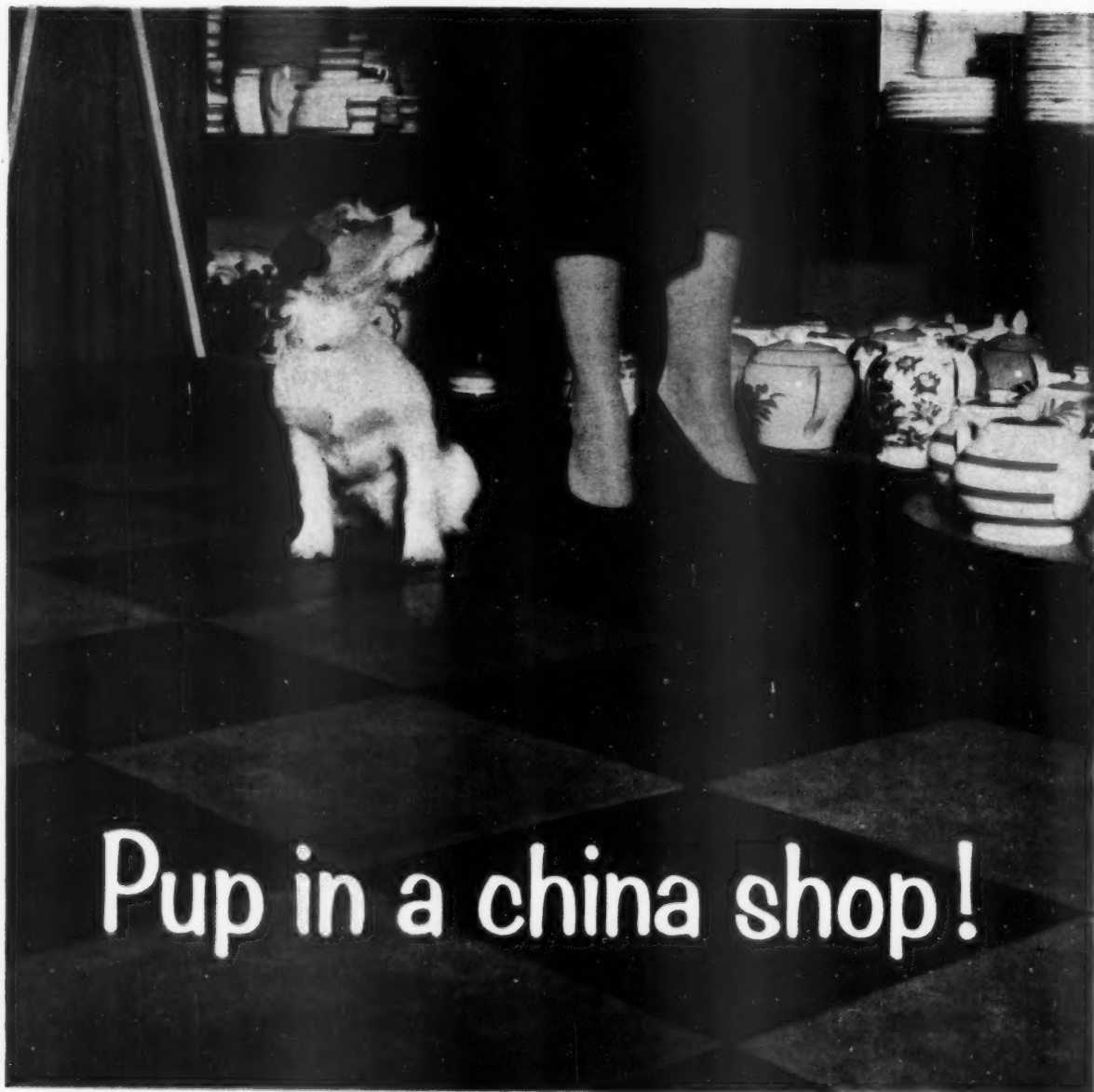
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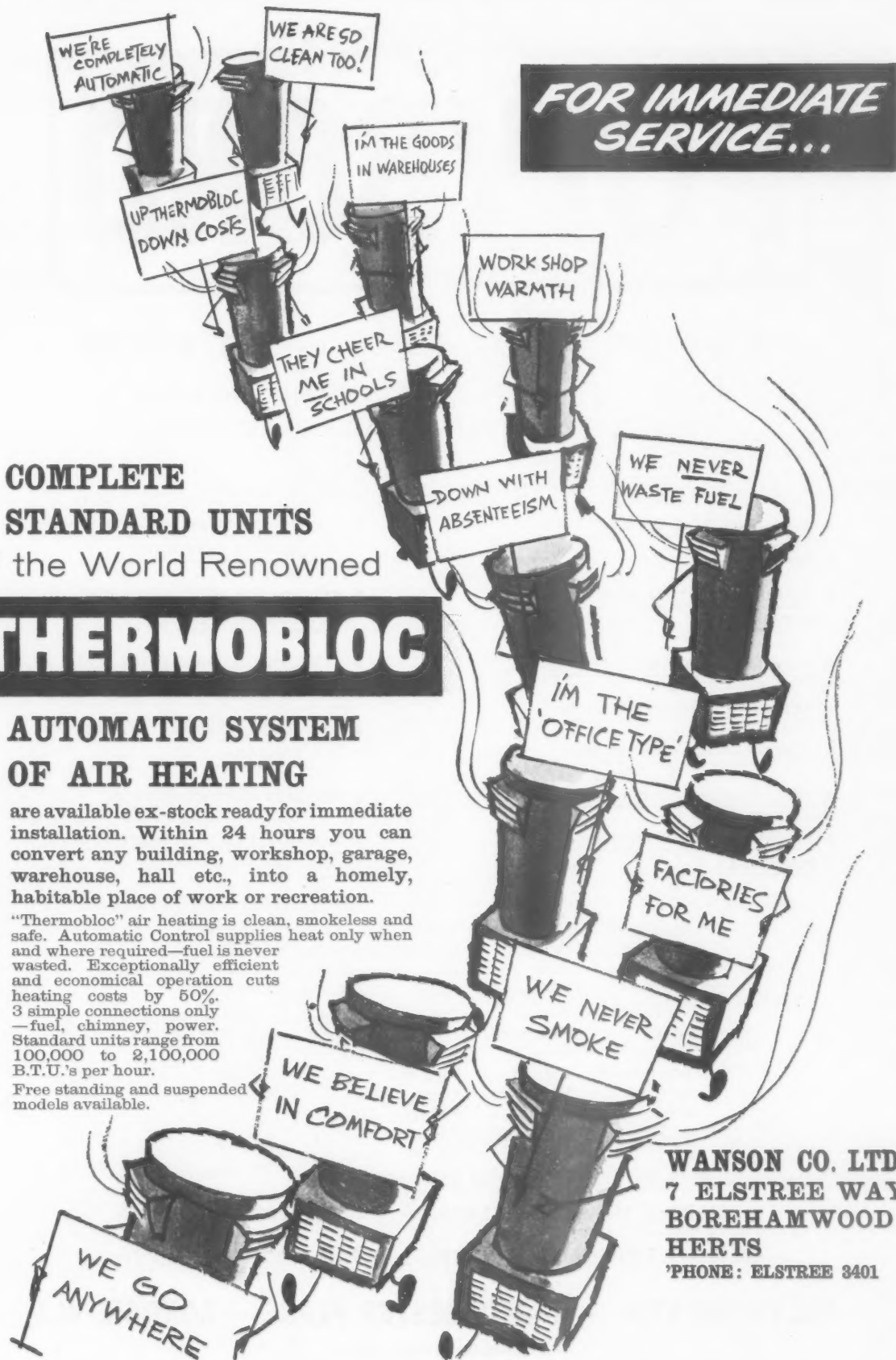
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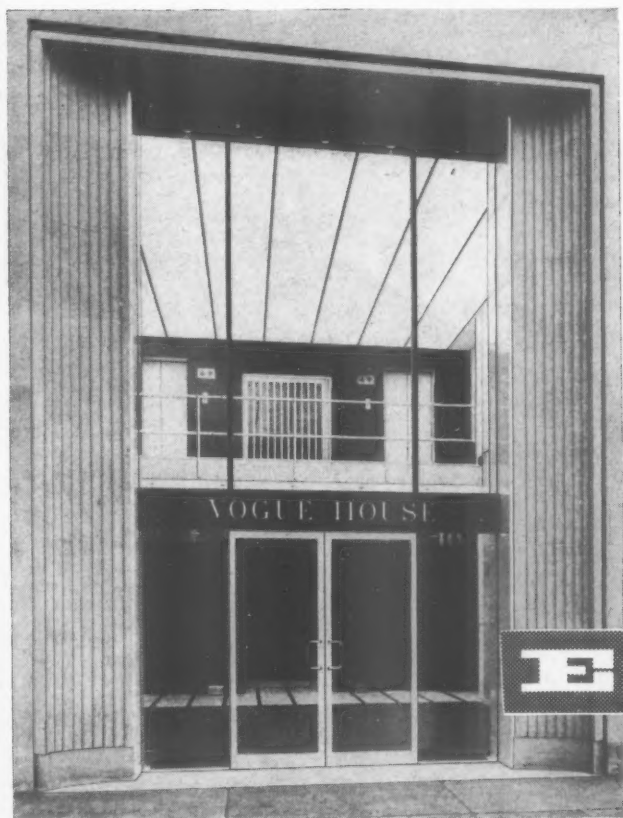
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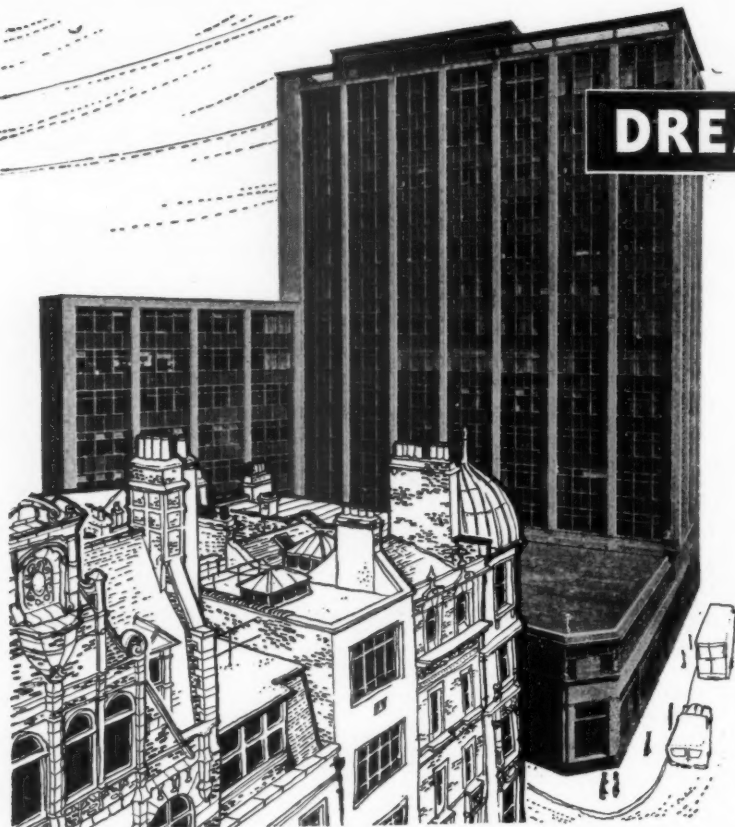
Exteriors

*Entrance to offices and showroom, Vogue House,
Hanover Square, W.1.*

Architects: James Cubitt & Partners, F/R.I.B.A.

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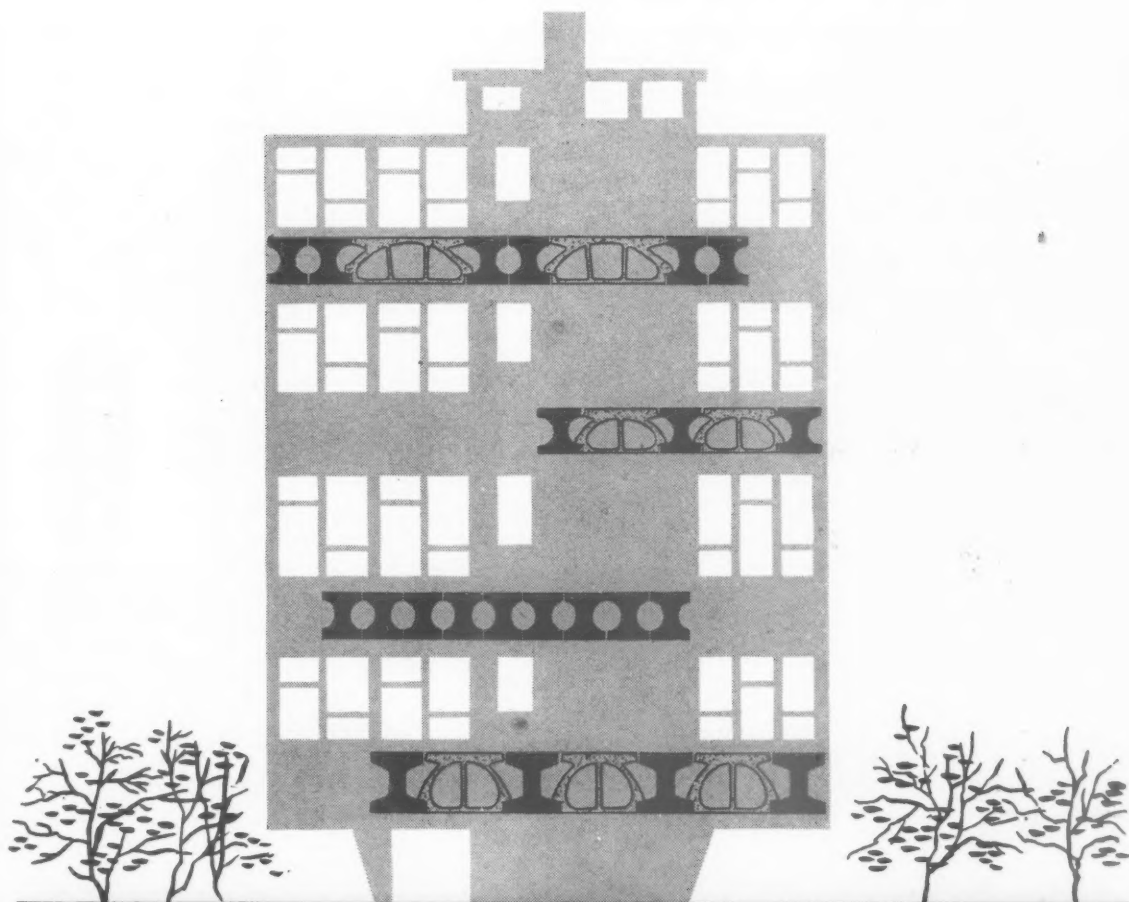


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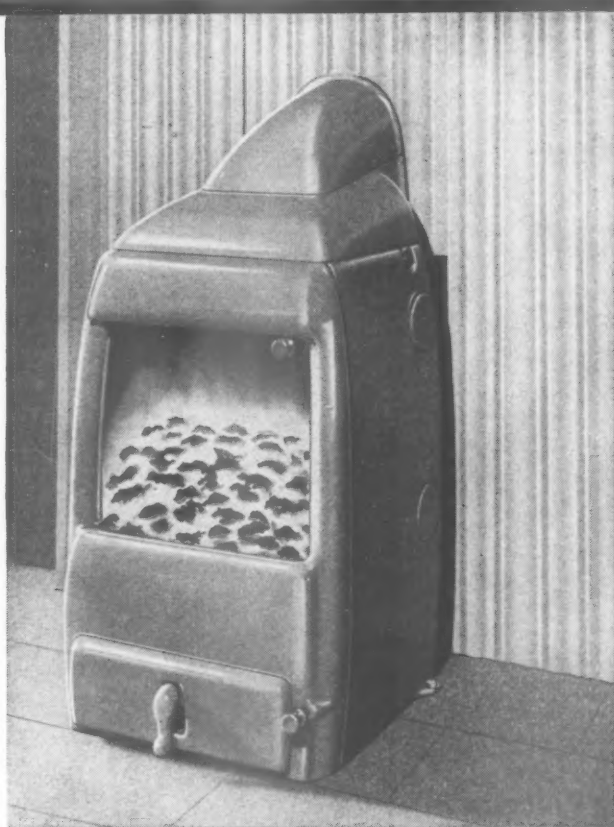
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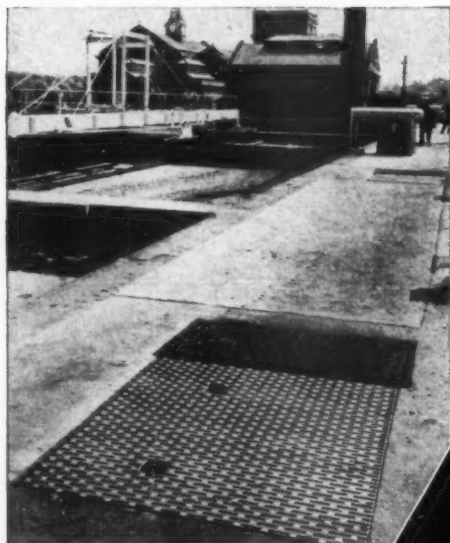
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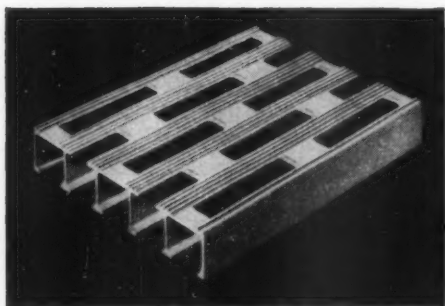
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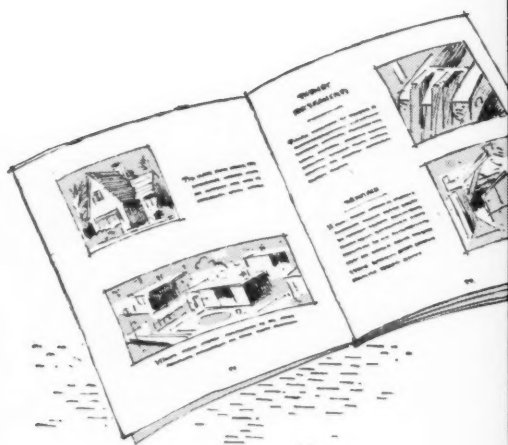
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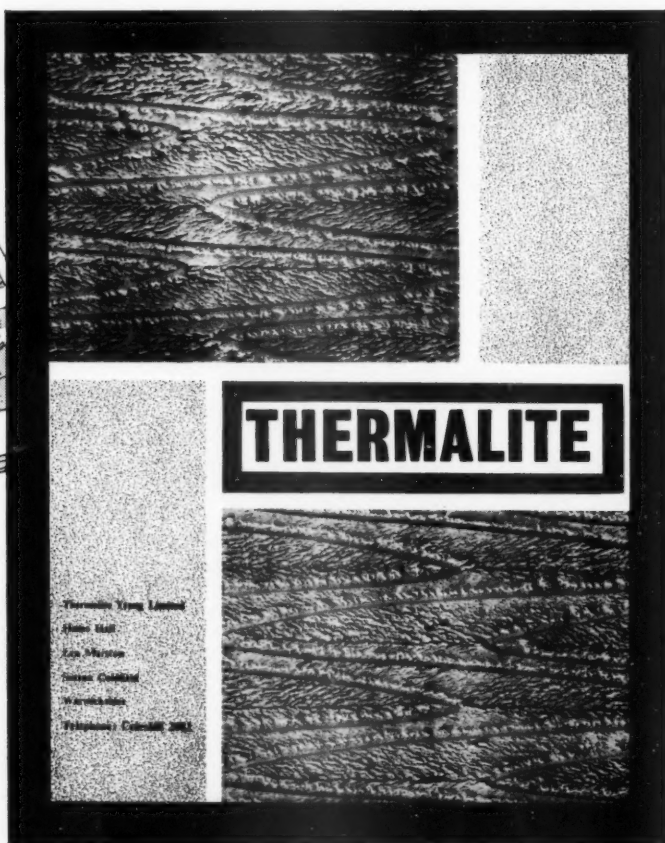


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—well
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For obvious reasons, the real title of the well-known firm of Midland Architects who wrote this letter to us recently, can only be disclosed in confidence. Suffice it to say that, having had the tables turned on us, we happily collaborated with them in the design of some very attractive glasswork for the new public house to which their letter refers.



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The Guvnor'll turn in his grave!

Perhaps they'll give you a couple of
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The Architects' Journal

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NOT QUITE ARCHITECTURE

IDEAL HOMES, 1959

In the stirring words of the handout, this year's exhibition has been built "in the likeness of a Cotswold Village down upon which the noble edifices of Blenheim, Warwick, the Oxford Colleges and that famous English Inn, the Angel at Grantham, look." They do indeed, with an uncertain but touching realism. At gallery level, there are tree-decked balconies from which the public too can look down and imbibe the exhibition's theme "The Heart of England." They will see, crammed incongruously behind two of the "cottages" (Doulton China and Dunlop Rubber), Howard Lobb's Brussels pavilion, nearly meeting the valarium and complete with stuffed beef-eaters and that Anigoni portrait. This is in the Grand Hall.

*

Across in the National Hall, The Heart of England lives on in the Village of Spring—a pond and whitewood rustic bridge centrepiece on either side of which the spec. builders compete in rather mixed language, dormer and picture window, cross wall and battered stone chimney, green pantiles and built-in television sets. Each house is furnished by a different women's magazine (although you would not know it). The Ministry of Housing and Local Government has built a sober illustration from their booklet *Flatlets for Old People*, reassuring after the strident private ventures beyond the pond and hung with little notices explaining how design must cater for the aged (handle to climb out of the bath, no high shelves, etc.).

*

Spec. builders' features include a dark green imitation marble wallpaper, rounded corners to kitchen fittings, plaster leaf cartouches on "contemporary" wardrobe doors. Rope handrails are out, but baby pink carpets and flowered patterns in. The only ideas



Is the Villa Savoye to be Destroyed?

It is ironical that just as the Le Corbusier exhibition finished its highly successful run at the Building Centre, the news should have come through that his Villa Savoye is threatened with immediate demolition. As these photographs show, the villa has been terribly neglected since the war (when Mme. Savoye's son was killed there by the Nazis), and it is

now a market garden store. If the term historic monument means anything this building is one. A campaign has already begun to persuade the French Ministry of Cultural Affairs to declare the villa a historic monument and thereby save it. The campaign should find plenty of support in Britain and in America.



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new to me (where have I been?) were first, a low down w.c. suite with fish and weeds tastefully glazed on to the pan in discreet colours and second, a combined dressing table and lavatory basin (a basin let into a plastic top) called a "Vanitory" and costing anything from £17 to £100. Unity Structures have the best kitchen, Berg Houses the biggest chimney. Warm air heating and metal draught stop thresholds are clearly here to stay and so, unfortunately, is contemporary furniture. House prices seem to vary between £2,000 and £3,500.

*

At this point three crimson-clad sprites (I dare not guess from which stand) appeared on the whitewood bridge, so I escaped across the Avenue of Carpets into the Empire Hall there to find three immense sort-of-Oriental baroque screens and a fountain of gilt nymphs to mark fifty years of Max Factor. I was in the "Golden Court of Beauty" where predatory women lolled in frou-frou pavilions stacked with the mysterious instruments of their trade. A carefully nonchalant walk took me through Garden Sundries to the Gardens, past iron-work gate and stone steps. Here the inevitable centre pond is flanked by firs; flowers and greenery droop sentimentally over ironed-out-joint brickwork. But there are no gnomes. Instead, whimsy of another kind—"a corner of the garden at Chartwell" where Sir Winston has spent "many of the fleeting moments of leisure in his life of fierce endeavour" (I quote the guide-book).

*

Next, upstairs to the bottle and tin openers, patent cleansers, washing up machines, do-it-yourself kits and food. The only items to pause for here were a roll-up ladder and a pen full of live chicks coloured green, purple, blue and red. Something to do with Zeta on the next floor?

*

The International section over the Empire Hall is perhaps the most encouraging to look at. Australia offers tinned food, butter and bursting good health; Cyprus, free wine and sherry, and West Germany, smooth white, black and hardwood radiograms and tape recorders, good glassware, ceramics and serious-minded fabric designs (all available in Great Britain).

*

Exhibitions like this may show to the architect a world he would rather not acknowledge, yet it is a world for which he is partly responsible. So many of the ideas which the salesmen now feel confident to sell were once the daring notions of a minority of architects. They have been emasculated, diluted with incompatibles, misapplied, tamed. But this is the only price we pay for the satisfaction of seeing our ideas pass into general currency.

J. C.

The Editors

HOW TO DISCOURAGE APPEALS AND ENTERPRISE

ERNO GOLDFINGER has won his application to build a modern domestic block in the Vale of Health, Hampstead, but the nine months delay since it was originally made have proved too much for the client. Whatever credit may be due to the Minister of Housing and Local Government for allowing commonsense and sound planning to triumph over prejudice, it cannot be allowed to obscure the scandalous delay for which he has been responsible, and which has forced the client to look elsewhere for a home. Consider the timetable. The application was made to the LCC on June 5, 1958. The LCC failed to make a decision within two months, but was in fact about to decide in Mr. Goldfinger's favour when, on August 15, the Minister decided to hold an enquiry and make the decision himself. Nearly three months passed before the enquiry was held on November 11. On February 6, having heard nothing, Mr. Goldfinger wrote to the Minister, but the decision was not announced until March 2. The Minister's intervention thus added something like six months to the delay, and his decision was not given until nine months after the application and considerably more than a year after the client had first instructed the architect.

Why did the Minister take nearly four months to reach a decision after the enquiry had been held? The delay can hardly have been caused by the Inspector, whose report was so clear and incisive as to leave the Minister no alternative but to agree with him. Indeed, the Inspector's report discloses nothing to justify any intervention by the Minister at all, for the application raised no important issue of principle. It is hard to avoid the suspicion that the only reason for the Minister's intervention was the "modern" character of Mr. Goldfinger's design, and the pressure of the Hampstead preservationist lobby.

It is this kind of thing that is bringing planning into disrepute, and discouraging modern architecture. We do not believe that an application to build a neo-Georgian house on the site would have caused a tremor. The Minister's handling of this case, despite his decision, is a warning to clients and architects to play safe, and to eschew the dangers of advanced design. Mr. Goldfinger has won a Pyrrhic victory by getting permission to build a house his client no longer wants, and the real winners are those whose views the Minister has rejected. Should not the RIBA enquire of the government how such a perversion of justice and logic has come about?

GIFT HORSE

As announced on page 399, BRS have just begun to publish a new series of pamphlets entitled *Factory Building Studies*, which are the fruit of some three years' investigation carried out by BRS and sponsored by the Midlands Regional Board

for Industry. If the high standard of good sense and readability which marks the first pamphlet is kept up in the others, the series should prove of value to many different sorts of person; and we are much beholden to this group of clients for thus adding to our stock of knowledge. The knowledge which lies at the back of these pamphlets is the outcome of a survey of existing premises in the Midlands and of an application to typical factory circumstances of all that BRS knows of heating, lighting, acoustics, etc., etc. This, of course, is exceedingly valuable. At the same time, it is not quite the same thing as development work. These pamphlets will inevitably be more akin to the Post War Building Studies and the Codes of Practice, than to the MOE Bulletins or the publications of the Nuffield Foundation. While, therefore, accepting gratefully these new pamphlets for what they are, we must express the hope that the simple "investigation" will not be accepted as the ideal and sufficient form for user research. How splendid it would be if the Midlands Regional Board were to follow up their good start by initiating some form of joint development of factory premises.



IT'S EVERYBODY'S FAULT

Why did the Sutton and Cheam Council play for safety in choosing its £1½ m. civic centre (shown opposite)? ASTRAGAL was delighted to find that question asked in the *Sutton and Cheam Advertiser*, which says the council has missed a great opportunity by accepting a design that is "unimaginative and far too conventional." The *Advertiser* says that the slow pro-

gress in architectural design is the fault of the conservatism of the public, local authorities and builders. It even tries to excuse traditional-style architects on the grounds that their work is more acceptable to local councils. That, perhaps, is going too far—but it is a pleasant change to find a representative of public opinion willing to blame everyone but the architect for bad architecture.

STOP PRESS

It's an unpleasant change to find an architect defending a dreary building against the attack of an engineer. The attacker is Peter Scott, who recently told members of Rugby city council that their proposed town hall (see opposite page) was 25 years out of date. (The plans are said to be 20 years old and the borough engineer's overcrowded drawing office will get 25 per cent. less space than it now occupies.) The defending architect—he didn't design the building—was Councillor Press, who dismissed "uninformed criticism," congratulated the Council on "hitting the nail right on the head" with its proposal, and stepped back to watch the thing go through by 20 votes to two, with six abstentions. Such is the power of the voice of authority.

RODGERS AND HAMMERSMITH

There's never a week without a reference in this column to the architect's

place in the motorways set-up. This time it is the secretary of the Fabian Society, W. T. Rodgers, who is joining in the fun. In his pamphlet* about roads he says that the solution of the traffic problem lies not only with the engineer but also the architect and the town planner. It is interesting that he reaches this conclusion without discussing what is known, horribly, as the aesthetic aspect of motor roads.

*

The RIBA and its allies should get someone to study the problem and then publish an illustrated pamphlet on the part the architect can play in this matter. Perhaps this will emerge from the Alfred Bossom Research Fellowship under which Gordon Michell is studying the architectural implications of fast motorways in the USA.

GETTING CORB TAPED

Three students spoke about Corb at an AA symposium in the TUC hall last week; they all spoke of the dangers of lesser men copying him. And one of them, an American Fulbright scholar by the name of Sam Mintz, qualified his tribute to "the greatest architect of our time" by adding—in deference to Mies?—"at least from a European standpoint."

*

Mr. Mintz attacked the idea of the Master Genius who could handle all problems alone, and had a go at the "little fantasy boys" (Corb copyists) whose architectural schooldays were spent in putting up whole cities or housing tranquilized souls in glass skyscrapers. Another student, Duncan Hudson, thought that Corb's architecture was too personal and intuitive to be widely reproduced, and a third, Malcolm Hicks, felt that the master's theories were misapplied because his ideas had been conveyed through form rather than content.

*

The most interesting point from the platform was Michael Brawne's argument that Corb had turned his back on the machine at the very moment when technology had made it possible to put his theories of the 'twenties into practice, and that his present philosophical position was therefore untenable.

* *What Shall We Do About The Roads?* Fabian Society, Dartmouth Street, S.W.1. 2s. 6d.

Nevertheless, Mr. Brawne thought that Corb's designs heralded the new shapes of architecture—the Ronchamp roof, for example, gave a foretaste of machine architecture advancing to the wider use of plastics.

This would have been a good subject for discussion, but it was not taken up. In fact, none of the discussion was up to the standard of the prepared contributions from Reyner Banham, Killick and Peter Smithson, who appeared on tape—as did the great man himself. In a fragment of his interview recorded for next Sunday's BBC TV *Monitor* programme, Corb described himself as a visual man for whom poetry was the principal vision of life.

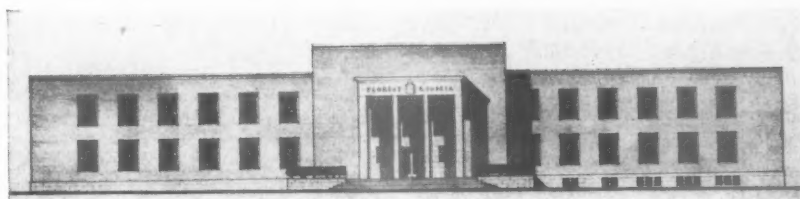
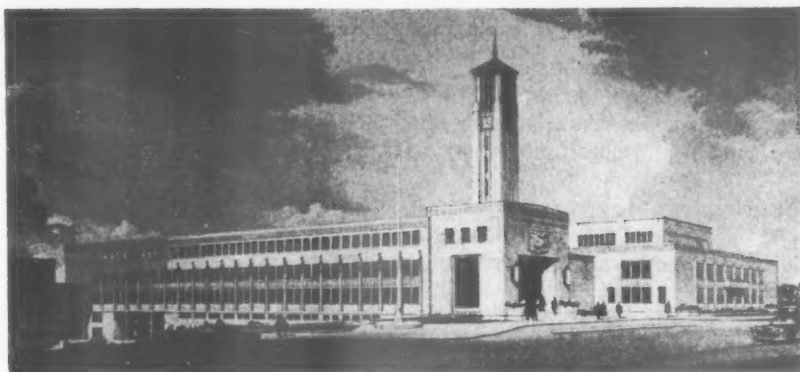
STUDENT INITIATIVE

The opportunities for architects to meet and discuss fundamental professional affairs at leisure are all too rare. The British Architectural Students' Association weekend course at Cambridge will provide just such an opportunity for the fortunate few who will be able to get in.

The Conference is the first of a series of three, and the subject is the function of the architect. Subsequent subjects will be on how best to execute that function and, of course, how best to educate architects to do their job well. Three very important clients, representing the state, commerce and industry, each shadowed by an architect, are leading the discussion, and Professor Sir Leslie Martin is winding up.

A conference on such a subject could not be more opportune. Now that some of the more intelligent laymen have begun to appreciate the value of an ordered, designed, visual environment, it is obviously time for architects to try and pursue further their fundamental responsibilities and functions. The architect is, or should be, learning fast how to handle purely physical requirements in terms of buildings; it is now perhaps time to start considering the more subjective and psychological aspects of a controlled environment.

In organizing this Conference, BASA are showing great initiative and responsibility for so new an organization.



Twenty-two years of "progress" in the design of civic buildings. Top, the proposed civic centre for Sutton and Cheam (architect: Romilly B. Craze). Centre, the proposed Town Hall and municipal offices at Rugby (Architect: J. C. Prestwich & Sons). Right, Barking Town Hall, whose architects (Jackson and Edmonds) won a competition with their design in 1937. Building was begun before the war, suspended, and finished last December.

AS THE BISHOP SAID

The Lord Bishop of London, H. C. Montgomery Campbell, had a light-hearted time talking at the TPI's annual dinner. "Can't wish you happiness," he said, "you're bound to cause distress." He supposed most of the planners' activities in London were complete—"at least I hope so" (hollow laughter).

All good clean fun, but what a pity so eminent a person was unable to acknowledge some of the great things planners are trying to achieve—with nearly everyone against them. And what a pity the TPI's president, who has himself achieved so much, did not make a more spirited response. The only bright spot in the evening was the toast to the guests, made by Professor J. S. Allen, who did his job in a way that augurs well for future dinners under his presidency.

THE GUEST WITH THE BEST

Dr. Peter Murray's lecture at the Courtauld Institute on *The Meaning of*



Bramante's Design for St. Peter's sounded a tough subject, and in places it was—particularly to those like myself who aren't strong on things like the Donations of Constantine and Conciliar Theory. But the main point came across very clearly—Bramante's design, with its bi-axial symmetry, was not a piece of Renaissance art-for-art's-sake, but a learned re-working of mediaeval church plans, intended to give St. Peter's the status of a new Santa Sofia, replacing the old one, which had been lost in the Turkish conquest of Constantinople.

Studies like this, which enrich and fill out the background to famous buildings of the past, should also contribute to the enrichment of the general state of architectural culture. But how can they be reduced to capsule form for

consumption in first or second year history courses? Incidentally, it was nice to see an assistant in a great man's office brought into the limelight. A crucial step in Dr. Murray's argument depended on drawings from the notebook of one Domenico Antonio di Chiarelli, chief stonemason on the works of St. Peter's. I was relieved to find that both name and document were as new to most of the audience as they were to me.

PROFESSIONAL MISCONDUCT

The recommendation of the Professional Purposes Committee of ARCUK on entering into partnership or being employed by an architect who has been struck off the register strikes ASTRAGAL as extraordinary. The fact that architects have been allowed to become partners of a disqualified man, or to work for him, has been a large and scandalous loophole in the Code of Conduct. Now ARCUK is being asked to say that while an architect must not enter into such a partnership, there is nothing wrong either in an existing partnership continuing, or in registered architects working for a disqualified man.

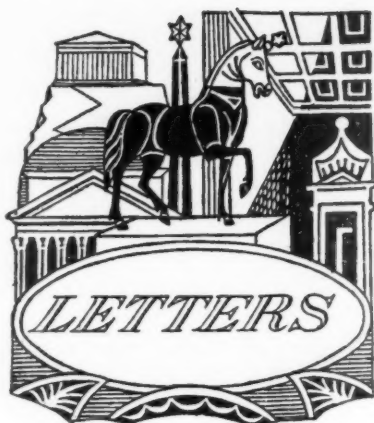
*

The argument, as you can see from the report on page 398, is that such a ban would bring undue hardship to innocent parties (the innocent partners or employees). But surely this means that any firm can allow one or more of its partners to flout the Code of Conduct with impunity, secure in the knowledge that the remaining partners and the employees can carry on—provided, of course, that like the three monkeys they neither saw, heard nor spoke evil. Shouldn't a firm be obliged to get rid of a partner who has been disqualified? A solicitor who has been struck off for some shady conduct can't carry on under the wing of his "innocent" partners. It doesn't say much for the profession if an architect can.

IS IT ON THE INDEX?

Finally, the Editors have asked me to state that the Information Centre Index—the invaluable means of discovering what's missing from your office technical library—can still be ordered if you write to the JOURNAL's office straight away.

ASTRAGAL



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Practising Architect

H. J. Eldridge

C. B. Martindale, F.R.I.B.A.

*David Percival, A.R.I.B.A.
City Architect, Norwich*

Ipswich: "Well Done"

SIR: I should like to thank you for the extremely thorough manner in which you commented on the finalists and the winning design for this competition. You have partially vented my own feelings on the crude and sterile results of this unfortunate competition, at least, as far as you were able to, on the printed page.

Nevertheless, the Ipswich Borough Council did show considerable enterprise in holding an open competition, and it is much to be regretted that this particular one should be so unrewarding for them. As *The Times* has said, "if architectural competitions are to have any future, changes are needed in the way they are organized and particularly in the way they are judged" (my italics). I should be very interested to know how the Ipswich Borough Council, and other promoters in a similar position, are advised to select their Assessors, on whose personally biased judgment the results of the competition, but not the commissioned design, must depend.

I should like to suggest that if the Ipswich Borough Council feel themselves unable to exhibit the drawings of the 147 unplaced

competitors, the JOURNAL might take the lead, and invite these competitors to submit copies of their original entries, for public exhibition in a suitable hall. In this way, we should all be able to see that a number of designs were submitted which were infinitely more mature and worthy of consideration, but which, for reasons known only to the Assessor, were passed over.

JOHN PEVERLEY.

Dover.

Ipswich: "Vituperative"

SIR: It is unfortunate that under the cloak of criticism and comment upon the six designs for the new Civic Centre at Ipswich, published today, that you have chosen to launch an ill-concealed and vituperative attack upon both winners and the runners-up. Your suggestion to use assessors "known to belong to the modern movement" reveals the annoyance you are expressing that the winners are not members of the "modern movement" whatever that is supposed to be, and for one I am grateful to think that the assessors had the taste to select a design with some quality of architecture in it, instead of one with the factory-made components, used so often by "members of the modern movement," which you so frequently publicize.

This won't do, Mr. Editor. Let us have impersonal criticism, and not hot air from the *Bride of Denmark*.

H. R. LEWIS

Ilford.

Brutal to Children

SIR: ASTRAGAL (February 19) reports that the teachers at the school for difficult children in Milan consider their new Brutalist building suitable for their work and helpful to the children.

Those responsible for the Rudolf Steiner homes for difficult children, in this country and abroad, are also very emphatic on the important part which the architectural environment plays in curative work. But their views as to what kind of architecture is most helpful are entirely contrary to those quoted from Milan.

The acknowledged success of the Rudolf Steiner homes is the result of a deep understanding of the real nature of the human being—and therefore of the disturbances and maladjustments which can occur. This understanding also leads to an indication of the kind of architectural form which will be most helpful in re-creating harmony and balance. This is an architecture which is plastic and sculptural in form—of which there are few examples in this country—far removed from the rectilinear inhumanity of the Milan building.

In as much as normal people also need surroundings to which they can fully respond (even though they are less sensitive to environment than the maladjusted) the development of architecture generally must be towards the sculptural.

KENNETH BAYES.

London.

"Skeletons" in The Old Vic

SIR: Having seen the theatre workshops for the Old Vic and formed my own opinion of their value as architecture, I find the remarks accorded to their aesthetic value in your last issue amusing, even if they are really non-committal.

Are we really to consider the elevations of this building architecture and that therefore they have beauty? No doubt the planning is excellent—the function perfect—but surely this concoction of beams, windows and brick infills is not architectural design. Proportions, finesse all seem to have gone and all we have left is an exposed concrete frame, which in this case, certainly has no beauty in itself.

In my view, this building can do as much harm to the general acceptance of contemporary design as some of the pseudo-contemporary office blocks now built in the City and West End have already done. My real regret is that an office that normally produces such fine work should be responsible for this brutal monstrosity.

Structural expression does not mean structural exposure—we only have to look at the human body in relation to the bone structure to see that—or perhaps skeletons walk in the Old Vic Workshops in the same way that be-wigged Georgian Gentlemen walk in Lloyds and the AEI building?

H. OWEN LUDER.

London.

Association of Official Architects

SIR: The letter from Rex Dempsey (AJ, February 12) may lead to certain misunderstanding unless the point which he made is answered by our Association.

Firstly, it will be obvious that the scope of membership of the Association has been most carefully considered and debated. Mr. Dempsey's suggestion that all salaried architects from all fields of employment should be admitted has been one of the major items discussed by the Provisional Executive Committee, and was again the subject of two amendments (which were lost) at the last General Meeting.

The Association of Official Architects, formed as the Local Government Architects' Society, was set up to secure improvement in conditions of service, and salaries for architects in local government. It was hoped to create an organization which would eventually have direct representation in negotiations on service matters, comparable to the other professional organizations such as the Association of Local Government Engineers and Surveyors, the Local Government Legal Society, the Association of Local Government Financial Officers and the Association of Education Officers. Membership was therefore restricted in the first instance to local government employees. Briefly the arguments against widening the class of membership are as follows:

1. There is no employers' organization for private practice or industrial employment with whom any negotiations could be undertaken.
2. Even if such an organization were

created, means of implementation of any agreement would have to be determined.

3. Since this is so the association can offer no benefits to salaried architects in private practice and it would be misleading to offer membership.

4. Dilution of local government membership now would weaken the efforts of the Association to establish itself as a comparable association to the other local government professional associations. In this connection it is worth recalling that the Association of Official Architects is already the second largest of the professional associations.

Finally, I would stress that the aim of the Provisional Executive Committee has been to provide conditions for the new General Council in which the immediate job can be well done. To try and look in all directions at once may mean no progress in any.

MOIRA SHIELD

Assistant Secretary, Publicity,
Association of Official Architects

London

Outrage at Ovington Square

SIR: Having divined Mr. Nairn's reply to my letter (February 19) will you permit me the following remark?

On page 99 of the AJ for January 15 Mr. Nairn describes himself as "6 ft. tall . . . and large ears."

Thinking of the outrages he must endure and looking at the space between and above those large ears I cannot forgive him for having, in his modesty, omitted an essential. I mean a large and luminous *halo*.

WALTER SEGAL.

London.

A Disposal Problem

SIR: Sinclair Gaudie's and Arthur Wright's articles are excellent—could you, or they, tell me how to get rid of the *soi-disant* "Technical Reps"? There are over 600 paint firms in this country and we seem to attract the lot plus 500 others straight from minor Public Schools.

A fascinated group of half-a-dozen £20 a week assistants admiring a slab of Polystyrene plastic is a common sight in our office. My partner and I indulge in a little simple arithmetic which goes:

$$£1,000 \times 20$$

$$52 \times 40 \text{ hr./week} = 10s. \text{ hour}$$

$$\text{Multiply by } 6 = £3 \text{ per hr.}$$

$$\text{Divide by } 2 = £1 \text{ } 10s. \text{ } 0d. \text{ per half hour.}$$

But, with overheads and "loss of profit" an assistant is worth three times his basic = £4 10s. 0d. lost.

Seriously, what does one do?—does the Secretary show them the door . . . or does everyone get in?

PRACTISING ARCHITECT

London.

Glass as Cladding

SIR: The report of my talk to the members of the RICS (AJ, January 22) includes two references to the use of glass as a cladding material which are inaccurate. I would

therefore be glad if you would publish the following statement in order to remove any misconceptions.

During the course of the talk, attention was called to the higher temperatures which coloured glass might attain in direct sunlight in comparison with plain glass, and I mentioned the possibility of variation of temperature over the surface of a pane of glass if part of it was in shadow. A slide was shown to illustrate the shadowing effect of a window frame on a coloured glass panel below it, but no mention was made that this had caused the glass to crack since in fact the glass had not cracked.

The second point relates to the sizes of panes of glass. Obviously panes of glass larger than 4 ft. sq. have been widely used and will continue to be used. The point made, however, was that when using coloured glass of sizes larger than about 4 ft. sq., particular care should be taken to ensure that the method of fixing and the clearance gap between the glass and the metal frame should be sufficient to allow for the differential thermal movements that can occur when different building materials are used in juxtaposition.

Garston

H. J. ELDRIDGE

Motor Roads and Churches

SIR: The voice of the profession must not be extinguished in motorway design. Your photograph and caption on page 219 (AJ, February 5) is surely adequate evidence to carry our case to the House if necessary. There are good reasons for believing that public opinion would come down heavily on our side, if the position were made clear. More space and attention in your JOURNAL would be welcome, and I suggest that it could well be at the expense of such buildings as the Church at Glenrothes (page 231). If the public gets to know that you think these buildings are the profession's acme, the profession will in my opinion suffer damage.

C. B. MARTINDALE

Carlisle.

Aesthetic Control

SIR: I have been belatedly reading in your issue of February 5 the Scottish Planning Officer's view on aesthetic control and I feel compelled to write to show my warm support for what seems to me the best statement on this vexed question that I have yet seen. It falls to my lot to advise the Town Planning Committee in this city on all matters of elevational control and I find that the greater the consultation architects are prepared to enter into before they make submissions of plans, the greater the advantage to all concerned.

Those architects who find themselves in the middle of public controversy have often only themselves to blame. The more positive the collaboration is between the officer responsible for advising on elevational control and the developer, the readier the response of the Planning Committee will be.

DAVID PERCIVAL
City Architect

Norwich



ARCUK

Partnership Ban on Disqualified Persons

The Architects Registration Council of the United Kingdom has been recommended by its Professional Purposes Committee to prohibit architects from entering into partnership with a person whose name has been removed from the register for disgraceful conduct, or for conviction of a criminal offence. But it has withdrawn an earlier recommendation to prohibit architects from entering into employment with such a person.

The Professional Purposes Committee originally recommended both these proposals on October 15, 1958. Since then it has reconsidered the position. Its report to the ARCUK states:

In their further study of the proposal, serious doubts arose as to whether the prohibition should be extended to entering into the employment of persons disqualified for registration under Section 7. The Committee considered the position, *inter alia*, where the disqualified person is at the material time, a member of an existing partnership with another architect or architects. In such circumstances, the first prohibition against entering into partnership with a disqualified person would not affect his existing partnership. The second prohibition would, however, prevent any other architect from entering into the employment of that firm so long as the disqualified person remained a partner. It seems to the Committee that such a ban would bring undue hardship on the innocent party or parties, and for this reason should not be imposed.

Other considerations strengthened the Committee's view that it would be impracticable, undesirable and, in many cases, unfair to include this second prohibition in the proposed new Principle, and accordingly advise that it be omitted therefrom.

On the assumption that the Council will endorse this view, the Committee recommend the following resolution to the Council:

"That the following new Principle be added to the Code of Professional Conduct, and that it shall come into operation

on the first day of January, nineteen hundred and sixty:

"An architect must not enter into partnership, in the practice of architecture, with any person who is disqualified for registration by reason of the fact that his name has been removed from the Register under Section 7 of the Architects (Registration) Act, 1931."

COMPETITION

Motherwell and Wishaw

The Burgh of Motherwell and Wishaw have decided to hold a competition for a new Civic Centre at Kowetop, Motherwell. The premiums suggested are: first £3,000, second £2,000, and third £1,000. The President of the RIBA has been asked to nominate an assessor.

PRESIDENT'S TOUR

Basil Spence Leaves

Basil Spence, the President of the RIBA, C. D. Spragg the Secretary, and Mrs. Spence left London airport on March 4 for their African tour. They return to London on April 13.

OXFORD UNIVERSITY

New Building Exhibition

Sir John Summerson, while opening the exhibition last week of recent and proposed Oxford University Building at the Divinity School, said it was "eloquent of a certain timidity."

"A certain timidity." My God! Why are we so polite? What hope is there for British architecture when slipshod and insipid work is allowed to pass with elegant and polished phrases of deprecation?

There is, in fact, a new spirit moving in Oxford, and if this is not snuffed out by a compromise in committees, it will be in some measure due to the Undergraduates' Design Society, who organized this exhibition. Their enthusiasm, and an incalculable amount of hard work, must be making people aware of what is being done to their environment in Oxford.

The new spirit only has occasional opportunity for expression, and both in variety of style and fidgety detail, there is still ample evidence of fumbling committee patronage. This seems to draw out the worst from even the best architects. For instance, on one façade of the proposed Exeter College building, there are seven different types of window; rubble for the Cotswolds and Ashlar for urbanity. On the new St. Anne's Hall there is a fine collection of contemporary clichés and a mixture of materials which should satisfy the individual preferences of a very large committee.

Styles are chosen so that no one can accuse the Oxford patrons of monotony. Your correspondent casually noted the following and would be glad to quote the buildings if you don't believe it.

Cotswold—of course
Cotswold Oriental



James Nisbet, F.R.I.C.S. (above), Principal Quantity Surveyor at the Ministry of Education, has been appointed Chief Quantity Surveyor to the War Office (where Donald Gibson is now joint Director of Works). Mr. Nisbet was among the Guest Editors of THE ARCHITECTS' JOURNAL for 1955 when they launched the AJ's investigation into costs that did so much to put cost analysis and cost control on the architectural map. Mr. Nisbet has been one of the pioneers in the study of building costs, and led the team of quantity surveyors which evolved the cost analysis and cost planning technique published in MOE Building Bulletin No. 4.

Gothic—High Ruskin
Neo Gothic
Gothick
Neo Georgian
Almost real Georgian!
Neo Regency
"Contemporary"

Contemporary
Brutal in the good old fashioned sense and a mixture which is indescribable.

After seeing this first rate exhibition your correspondent, for one, is prepared openly to side with the committee, who say that British architects are *not good enough* to design a new College for Oxford, because they cannot be relied on to detail and carry through the job themselves. I say "openly" because the opposition resort to deprecation: referring to "Minor Danish Architects." The man's name is Jacobsen; he is a real designer in the sense that our successful architects, with their big offices cannot find the time to be.

T. L.

WORK STUDY

Film for Builders

The Building Industry showed its first film on work study at the RIBA recently. Stanley Farrow, chairman of the London Building Productivity Committee presided and after the film, Sir Miles

Thomas, chairman of the British Productivity Council gave a pep talk on the need for industrial efficiency ("the answer to the European Common Market"). The Jarvis hall was packed, mainly by builders, with here and there a lone management-conscious architect. The Minister of Works was represented by his Parliamentary Private Secretary.

The film, which is quite short and specific, begins with a token story—the engineer who visits his sceptical brother, goes on site with him and points with eager pipe stem and wind blown hair at what is wrong. There is quite a lot: concrete barrowmen getting in each other's way on a plank run; reinforcing bars stacked in the reverse order to their use and plenty of general muddle. The builder's scepticism begins to melt and so a bright and promising foreman is sent on a work study course. We see him there with stop watch, notebook and enthusiasm, reorganizing a brick hoisting operation (two barrows turn out to be nearly 60 per cent more productive than three or four). Next, we follow with him, the working day of a dispirited looking carpenter who tramps up and down stairs, spends ages looking for spare plinth blocks or finding the charge hand to be told what he has to do next, and has to queue for his tea at the canteen. By the time our bright foreman has put this all right (materials ready to hand, tea brought round on a trolley, etc.), he is fit to return to his own company. His first idea there, is to speed up the unloading of precast floor units from a lorry, and his answer to it—a rather elaborate fork lift, which is hooked on to the crane (previously seen standing idle)—its forks being pushed into hollow pallets on which the blocks are stacked on the lorry back. "Mistakes" are introduced to aid realism. The first notion is to unload from the side of the lorry—but this holds up the traffic (shot of impatient driver), so the final stage shows unloading from the back, and confident smiles on all faces. This episode virtually ends the film.

It is clear that the film makers have decided to restrict their aim to three aspects only of work study—time study of an operation in which the operation itself (the brick hoisting) is not questioned; programming of work (the carpenter) and method study (the unloading). Thus they are able to be specific, to show exactly how the tools of management are applied and what results this application can yield. Thus, although the film lacks the imagination and drama of other work study films for other industries, it is probably as convincing as is possible to those builders who are at all open to new ideas.

Architects may want to question more deeply—why use bricks at all? why have plinth blocks? why not package precast floor units—or have larger units? The gap between designer and builder is apparent at every stage, but to make a film which attempts to show how the gap can be closed, how work study problems can be solved, or eliminated on the drawing board would be a long way ahead of present developments. This film shows what can be done now.

J. C.

VALE OF HEALTH FLATS

The Minister's Decision

The Minister of Housing and Local Government, Henry Brooke, has granted Erno Goldfinger's application to erect a block containing a maisonette and two flats on the site of the Athenæum, in the Vale of Health, Hampstead. The Ministry decision letter states:

"The Inspector observed that the main ground of objection was excessive density; in his view however the advantages to be gained by replacing the Athenæum with the proposed building easily outweighed this objection. He thought that the closely-knit character of the Vale of Health at this point justified high density. He saw no reason why the proposed design should not fit in with the surroundings. He did not think the proposal would add significantly to traffic problems. He recommended that permission should be given, subject to the conditions suggested by the local planning authority.

"The Minister has carefully considered the question of density. A density of 30 persons per acre was laid down in the Development Plan in respect of part of Hampstead in order to preserve the special residential amenities of the area. But the Vale of Health, which has a special character of its own, is mainly closely-knit and in parts is densely developed. The Minister considers therefore that a departure here from the overall density of 30 persons per acre would not and should not set any precedent as to what might be permitted on the fringes of Hampstead Heath generally. He also holds that there are special circumstances applying to this site, in that the application would involve substituting a residential building for a taller and bulkier building with industrial use rights which are undesirable in such an area. He accepts that it would be difficult for this site to be developed satisfactorily with low density residential building.

"The Minister feels that these special circumstances, in sum, outweigh the density and daylighting objections.

"The Minister has also considered the representations made with regard to the design of the building. This is a matter on which differing views may be held; but since it is agreed that the quality of the adjoining buildings is mediocre, the Minister does not see how it could be maintained that a building with the proposed elevations would be detrimental to its immediate surroundings.

"The Minister also finds no substantial reason for withholding permission on traffic grounds.

"Accordingly the Minister hereby grants permission for the development of the site of the Athenæum, Vale of Health, Hampstead, by the erection thereon of a building comprising one maisonette and two flats in accordance with the drawings numbered VH/1 and VH/2 submitted with the said application dated June 5, 1958, subject to the following conditions:

1. The car port shall not be used for any

purpose other than the accommodation of private vehicles.

2. Particulars of the colour and texture of the facing materials to be used in the proposed building shall be submitted to and approved by the Council, or, failing agreement, determined by the Minister, before any work is commenced."

Mr. Goldfinger's client, it is understood, was unable to wait for the decision, and is not going to build on the site. The Minister has also approved a proposal by another architect. The Editors refer to this case on page 393.

BUILDING RESEARCH STATION

Factory Building Studies

On March 5 BRS held a press conference at the RIBA to launch a new series of "Factory Building Studies." These are the outcome of three years' investigation carried out by BRS and sponsored by the Midland Regional Board for Industry. The Chairman of the press conference was Major Dibben, Chairman both of the Midland Regional Board and of the "Factory Research Committee" which the Board set up to handle this matter. With him on the platform were Sir Harry Melville, Permanent Secretary of DSIR, Dr. Lea, Director of BRS, Sir Herbert Manzoni and Harry Weedon, representing the RIBA.

The Regional Board put up some £15,000 for the project. Sir Harry Melville, of DSIR, in welcoming this joint initiative, said that it was always easier to justify BRS expenditure on a specific building type if those directly concerned were prepared to make a contribution towards it themselves.

Dr. Lea, describing the scope of the investigation, said that it had been decided not to undertake development work like the Nuffield Foundation or MOE, but, instead, to make a survey of existing factories with the object of gathering systematically the wealth of existing experience. The first publication (Factory Building Study, No. 1), entitled "Modern Multi-Storey Factories: A discussion of their design," was presented at the conference. Written by William Allen, it is intended primarily to help factory managers and their architects to draw up a satisfactory brief. This choice of multi-storey factories as the first subject was prompted by one of the findings of the investigation to the effect that the multi-storey factory is suitable for a greater variety of users than had previously been imagined; and by the urgent need to make a more sparing use of industrial sites. It is intended that these pamphlets should follow one another at monthly intervals and should cover the subjects of lighting, heating, thermal insulation, floor coverings, fire prevention, the use of colour, noise control, structural loading, dimensions and electricity supply and distribution.



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Deploing the damage done to the profession by inhibitions deriving from bad teaching of structural theory, H. Werner Rosenthal, lecturer in this subject at the Regent Street Polytechnic, calls for a new approach in which each separate expression used in formulae is linked to concepts which the architect can understand.

THE TEACHING OF STRUCTURAL THEORY

By H. Werner Rosenthal

The new pamphlet by the Minister of Education on the need for more imaginative teaching of mathematics in schools has a strong bearing on architectural education.

At last someone seems to wake up to the fact that artistic imagination and mathematical talent need not be mutually exclusive, and that it is not the subject but the unimaginative approach to it which scares off the artistically minded, and, conversely only too often attracts those who can cover up the absence of creative ability by taking refuge in figures and learnable rules. Through this attitude imaginative young people are often lost to science while the "arts" student keeps aloof from and evades all contact with those "dull" and uninspiring aspects of education.

The subject which suffers from it most in architectural education is "Theory of Structures." The antagonism against anything that smacks of numbers and formulae implanted into the student in his school days is passed on to the student days and is often perpetuated by dull teachers, who themselves look at this development as natural and becoming to the artistically minded architectural student; and this is only too often borne out by the fact that those who lack creative imagination but are good at "swotting" are the only ones who really take to the subject of structures and pass with flying colours.

So lip service is paid to a scientific approach to design and architect-engineer co-operation in later practice becomes the farce it usually is with the engineer either ruling the roost entirely or making the architect's design "stand up" at all cost, in a way no different in principle from that of the Victorian architect.

The subject is usually taught as a calculation method, a kind of box of tricks enabling the manipulator to arrive mysteriously at certain sizes and thicknesses, while the architect who can guess these within a few inches considers himself as being in possession of a "structural feeling."

Leaving out for a moment the vast amount of inspiration which can be obtained from a real structural feeling, there is little idea even in the minds of the average designer of what is implied by different stanchion spacings and beam arrangements. Few know the effect of different forms of shells on their structural behaviour, not to mention such things as catenaries and similar more advanced forms. There is ignorance even of such mundane matters as the behaviour of cross walls and the right or wrong application of cantilevers, all items

which can have a substantial influence at the early stage.

Although it should be well within the capacity of the average practitioner to work out at least his own timber joists and concrete floors, calculations should not be regarded as ends in themselves. And herein lies the crux of the matter, the key to the whole attitude to the subject, beginning with the teaching of mathematics in the schools. There are certain fundamental principles pervading the whole gamut of structural thinking and it is these which have to be brought out in the teaching and of which the architect must be made aware. Calculations therefore should only serve to illustrate certain thought processes and formulae be regarded merely as "short-hand" expressions for structural behaviour. In these brief notes this can only be illustrated by very few elementary examples. For instance, the expression for the maximum bending moment for a distributed load is:

$$wl^2/8$$

The number 8 here refers only to the fixing, what matters is that the bending moment grows with the SQUARE of the length of a beam and is directly proportional to the load. Deflection follows the expression

$$d = \text{coeff} \times \frac{wl^4}{EI}$$

which implies that it goes up with the fourth power of the length and a beam twice as long will deflect 16 times as much. It is on the other hand inversely proportional to E and I. So a material like aluminium with an "E" value one third of that of steel will deflect three times as much, everything else being the same; while "I" normally goes up with the square of the depth and doubling the depth of, say, a truss (which need not imply doubling the weight) would give four times the "I" value thereby counteracting the decrease in Elasticity.

In other words, a formula can tell a story about structural behaviour and its derivation is usually based on this too. It is thoughts such as these which have to be passed on to the designer so that he acquires a true "stress consciousness" and the subject becomes a living thing.

The parallel with the teaching of mathematics is obvious. It is futile at present to insist on high pass marks in mathematics in the GCE as a prime requisite as very few of the more imaginative among potential architectural students will have been taught in this way and most will have accepted "maths" as a necessary evil.

But we could make good this deficiency by a new approach to the teaching of structural theory if we could bring up our engineers to look upon it in this way or if architects were to teach it their way themselves.

All the courses at architectural schools achieve, at best, is to produce dilettante engineers with the well-known disastrous results in architect-engineer co-operation.

If this is remedied on the lines suggested we can perhaps get a truly "functional" approach to design from which not only architecture but even the client may benefit.

This should not mean that structure and engineering principles will dictate design, but form will become more meaningful; and where structural considerations are flouted, at least this would be done consciously and with the full knowledge on the part of the architect.

DIARY

Antoni Gaudi of Barcelona. Talk by Dr. N. Pevsner at the Art Workers' Guild, 6, Queen Square, W.C.1. 6.30 p.m. for 7 p.m. MARCH 13

Interview with Le Corbusier. BBC Monitor Television. 10.5 p.m. MARCH 15

The Classical Country House in 18th Century England. Last of the three Cantor Lectures by Sir John Summerson. RSA, John Adam Street, W.C.2. 6 p.m. MARCH 16

Hostels, Hotels and Motels. Discussion by Bryan Westwood, Louis Erdi and Professor S. R. Sparkes at the RIBA, 66, Portland Place, W.1. MARCH 17

New Town Neighbourhood Design in 1959. A team from Hemel Hempstead Development Corporation, at the TCPA, 28, King Street, Covent Garden, W.C.2. 6 p.m. MARCH 17

Electrical Engineers' Exhibition. At Earls Court. MARCH 17-21

The Use of Lightweight Concrete for Reinforced Concrete Structures. Talk by A. Short at the RCA, 11, Upper Belgrave Street, S.W.1. 6 p.m. MARCH 18

Further Experiments in Modular Design. Modular Society meeting. A paper given by Professor Hugo van Kuyck at the Building Centre, 26, Store Street, W.C.1. 6 p.m. MARCH 18

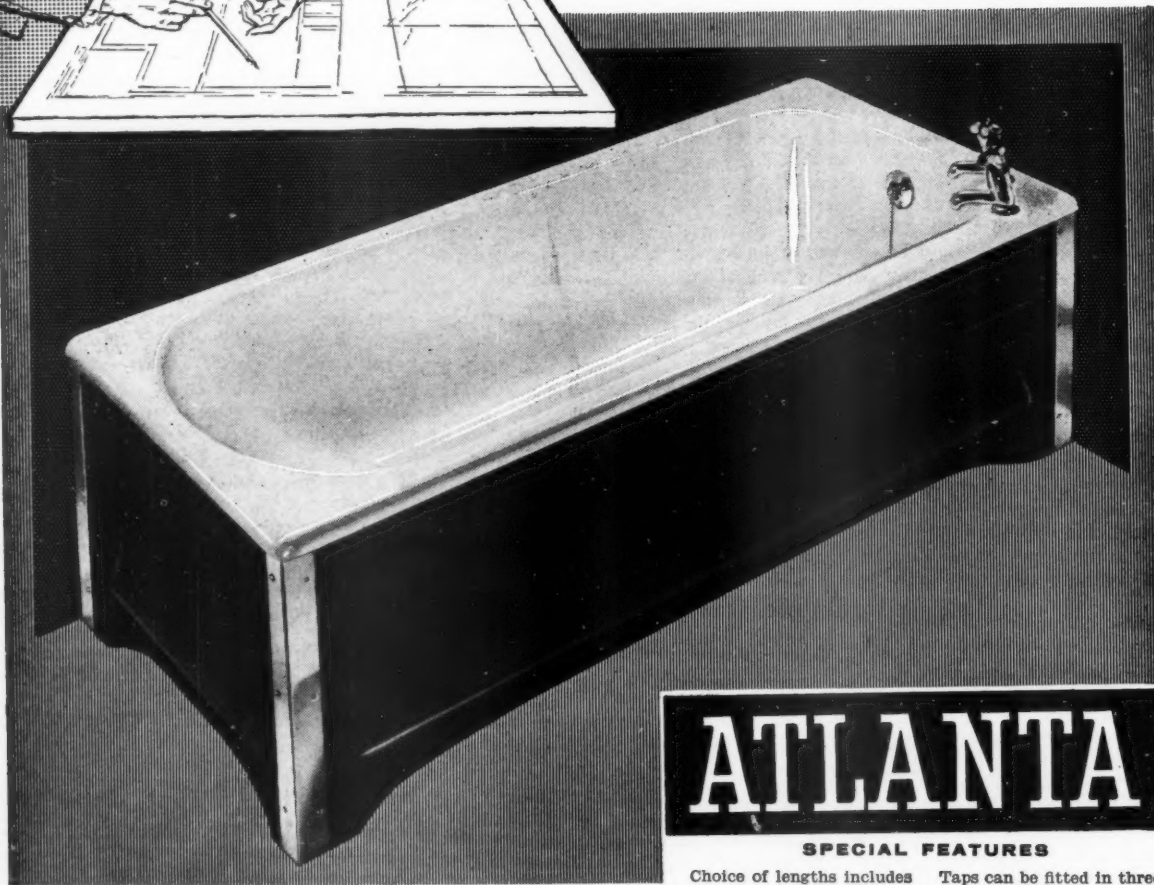
Some Thoughts on Recent Developments in Modern Civic Design. Talk by A. G. Sheppard-Fidler at the Midlands Branch of the Institute of Quantity Surveyors, Lecture Hall, Byng Kenrick Professional Bodies' Suite, College of Technology, Gosta Green, Birmingham. 7 p.m. MARCH 20

Exhibition of the Work of Arne Jacobsen. RIBA, 66, Portland Place, W.C.1. Weekdays 10 a.m. to 7 p.m. Saturdays 10 a.m. to 5 p.m. UNTIL MARCH 25

Ideal Home Exhibition. Olympia. UNTIL MARCH 30



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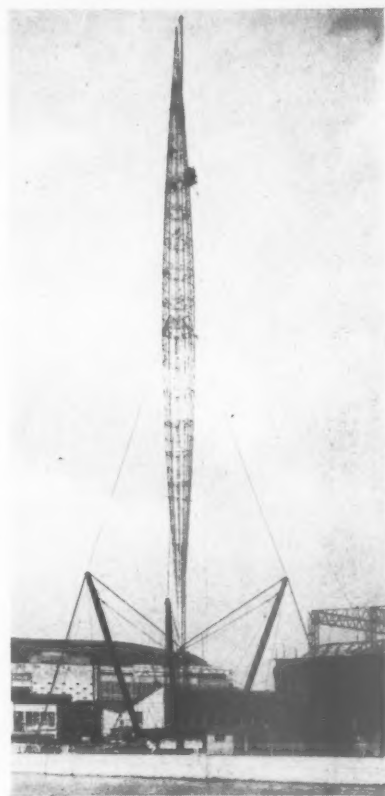
A Tribute to Felix J. Samuely by Frank Newby

For many years Felix Samuely had gradually become recognized by architects, engineers and contractors as a pioneer in new structures, as a teacher and as a man of original thought. He was always conscious of the need to increase the efficiency of the building industry by developing new techniques and by stimulating a better understanding and co-operation between consultants and contractors.

After the war with the shortage of steel and timber and with the trend for building technicians to seek stable employment in factories Felix Samuely began his studies into the use of precast and prestressed concrete. He felt the need was to minimize the use of shuttering on site, to use the cranes on site to their fullest extent and to standardize precast concrete units to the economic limit of the method of fabrication. He was always searching for economic methods of construction and in the case of precast floors he realized that using the expensive precast concrete as permanent shuttering and combining with it the relatively cheaper *in situ* concrete on site to form a composite construction was to become typical construction in later years. Composite construction also reduced the weight of units to be erected on site and yet retained the qualities of traditional monolithic *in situ* concrete structures. In 1949 Felix Samuely built at Malago, Bristol, a factory (architect E. Collins) in which he incorporated his ideas on precast and prestressed concrete. The heavily loaded floors were made from precast concrete trusses with prestressed concrete ties and with infill composite slabs. For long span floors he developed a continuous composite slab using prestressed concrete planks as reinforcement. Since then he proceeded to introduce these techniques to the building site. His next important building was the Hatfield Technical College 1949-51 (architects, Easton and Robertson) which had a fully precast concrete frame with composite concrete floors. All precast concrete units had mechanical connections for quick and stable erection. In fact he considered precast concrete to be very similar to steelwork with regard to connections. Later in 1951 for a multi-storey office building at

London Bridge Street (architect, John Lacey) he introduced precast concrete H frames for the external structural frame with a bolted column-to-column connection which so far has not been surpassed; a connection which allows upper floors to be erected before the joint is concreted. Felix Samuely was using precast concrete as a new material and was not imitating *in situ* concrete forms. With his buildings slowly came the beginnings of a precast concrete aestheticism as seen in the offices for the National Dock Labour Board, Albert Embankment, 1953 (architect, Frederick Gibberd), Derby Technical College 1954 (architect, Grenfell Baines), Shell Offices, Stanlow, 1956 (architect, Grenfell Baines), Ipswich College 1957 (architects, Johns Slater and Haward) and the US Embassy in London 1958 (architect, Eero Saarinen and Associates).

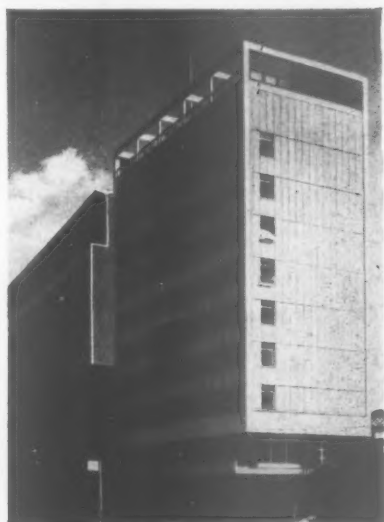
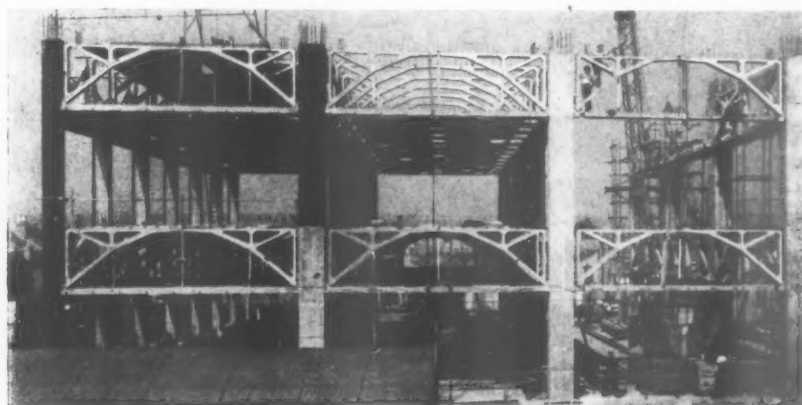
Felix Samuely was not only interested in new techniques after the war but in new structures. He is known to many for his space frames and to all for his pioneering of three-dimensional structures. He was a complete engineer with more than a knowledge of structural materials for in his structures, especially space structures, he reveals a unique feeling towards materials. He did not think in artistic curves but in industrial shapes dictated by the methods of fabrication, of transport and of erection. He quickly turned from concrete shell roofs to folded slab roofs where the structure is made up from a series of planes instead of a curve. It is not surprising that his first folded slab roof was of composite construction with precast concrete units as permanent shuttering for Kingsmead School 1949 (architect, George Fairweather). The greater variety of shapes with folded slabs and their economic construction from latticed steel or timber have now been accepted by many engineers. Not content to develop these new space structures with traditional materials Felix Samuely turned to prestressed steel to cut to an absolute minimum the weight of steel in the workshop roofs for the Wigan Technical School 1950 (architects, H. V. Lobb and Grenfell Baines and Hargreaves). He always used a space structure where it provided an economic solution to the structural problem

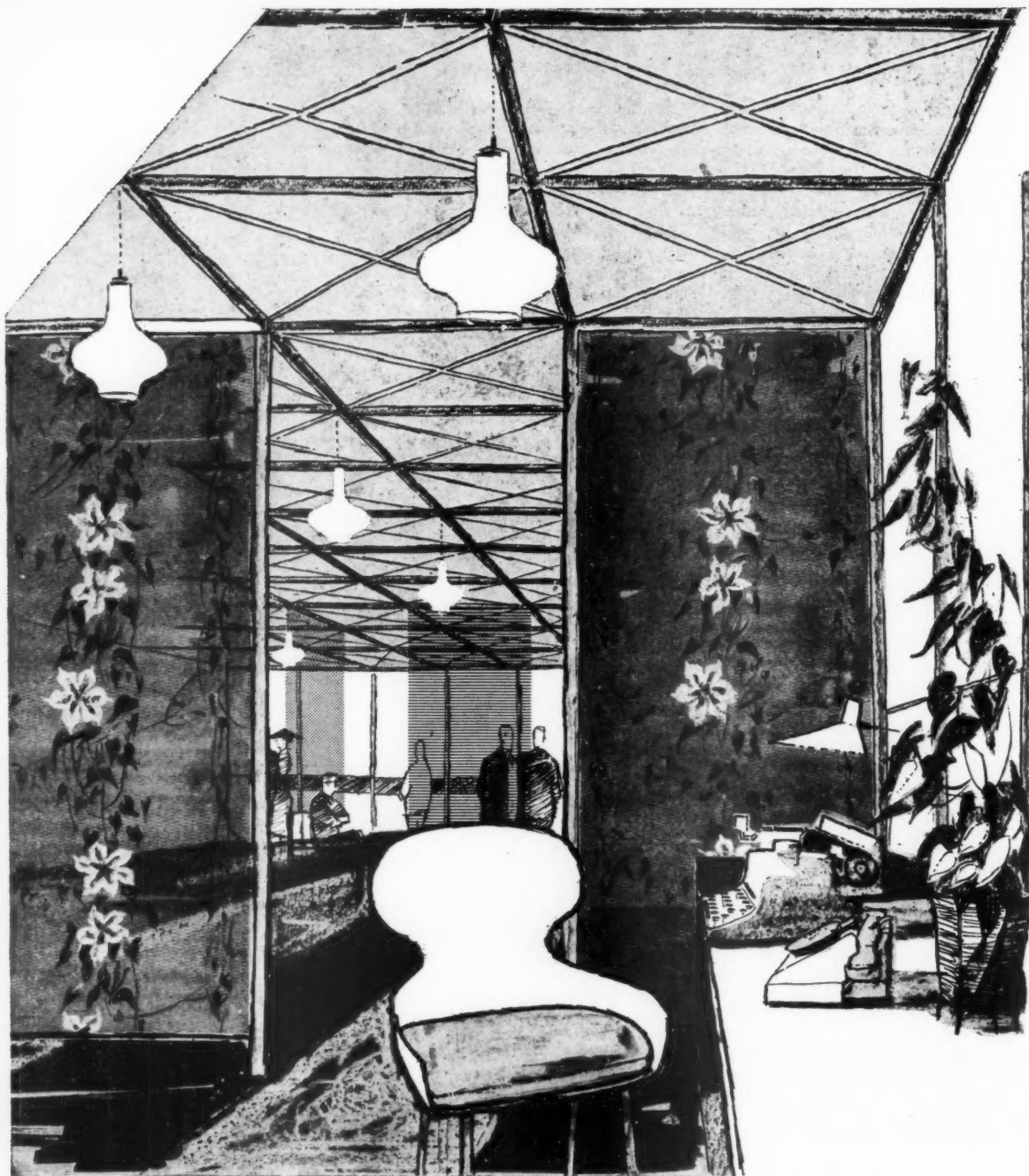


Above, the Skylon at the 1951 South Bank Exhibition, and below, Hatfield Technical College.



Below left, factory for E. S. and A. Robertson, Bristol, and right offices for National Dock Labour Board, Albert Embankment.





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as in the latticed concrete folded slab gallery supported on a Y beam at the Woodberry Down Comprehensive School for the LCC. But in most cases there is more scope with long span roof construction. The folded slab roofs which Felix Samuely particularly enjoyed were those of latticed steel of the Pavilions of Industry (architects, Grenfell Baines and Hargreaves) and of Transport (architect, Arcon) at the 1951 Festival of Britain, of latticed steel for a factory at Crawley 1952 (architect, J. Austin Smith and Partners), for the LCC, 1952, of prestressed timber for the St. Clements Dane Comprehensive School, of prestressed concrete for the Malory Comprehensive School 1954 (architects, Bridgwater and Shephard) and for a church at Ipswich, 1957 (architects, Johns Slater and Haward), of precast concrete for a church at Stamford, USA, 1955 (architects, Harrison and Abromavitz), of timber for the Government Pavilion at the 1958 Brussels Exhibition (architects, H. V. Lobb and Partners) and of latticed steel for the British Industry Pavilion (architects, E. D. Mills and Partners) at the Exhibition. There are many other structures where Felix Samuely has shown his original thought, such as the Skylon at the 1951 Festival of Britain (architects, Powell and Moya). His thoughts were always directed towards an understanding of the architect's and contractor's problems. He believed in the closest collaboration between all concerned. As a theoretician he was brilliant, but he



The US Embassy, Grosvenor Square, taken in January, 1959.

approached structural design more from a practical and simple angle than from a theoretical design. In his lectures and writings he attempted to show in a simple way how apparently complicated space structures really acted. He had unlimited patience with his students and engineers and will be remembered as a great teacher,

particularly at the Architectural Association where he greatly influenced the structural aspect of the architect's training.

The life of a pioneer is not easy. Felix Samuely had many hurdles to clear with the introduction of new structures yet he never erred in his ambition to be a complete engineer.

The principal works of Felix J. Samuely

Of the many projects carried out since 1947 his more important works are as follows:

1949	Factory at Malago, Bristol Architect: John E. Collins	Prestressed concrete continuous foundation beams and floors. Prestressed and precast concrete floor trusses Skin roof of composite concrete construction
1949	Kingsmead School Architect: George Fairweather	
1950	Woodberry Down Comprehensive School for LCC	Prestressed concrete floors of composite construction. Reinforced concrete and steel skin roofs Prestressed steel skin roofs
1950	Wigan Technical School Architects: H. V. Lobb and Grenfell Baines and Hargreaves	
1950	School at Harrow Architects: Stillman and Eastwick-Field	Precast concrete skin roofs. Prestressed brick piers
1951	Hatfield Technical College Architects: Easton and Robertson	Fully precast concrete structure
1951	Skylon—Festival of Britain Architects: Powell and Moya	Prestressed steel construction
1951	Pavilion of Industry—Festival of Britain Architects: Grenfell, Baines and Hargreaves	Steel skin roof
1951	Pavilion of Industry—Festival of Britain Architect: Arcon	Steel skin roof
1951	Offices at London Bridge Street Architect: John Lacey	Precast concrete H frames for external walls. Prestressed concrete composite construction
1952	St. Clements Dane Comprehensive School for LCC	Steel and prestressed timber skin
1953	Offices for National Dock Labour Board, Albert Embankment Architect: F. Gibberd	Precast concrete H frames for external walls. Prestressed concrete composite construction
1953	Factory at Crawley Architect: Austin Smith & Partners	Steel skin roofs
1953	Staveley Road School Architects: Stillman and Eastwick-Field	Prestressed concrete latticed floor trusses
1953	School at Cow Close, Leeds Architects: Johns Slater and Haward	Prestressed concrete roof trusses supporting concrete floors on prestressed concrete hangers
1953	Flats at Bentham Road for LCC	Precast concrete frames and composite concrete floors Prestressed concrete skin roofs
1954	Malory Comprehensive School for LCC Architect: Bridgwater and Shephard	
1954	Derby Technical College Architect: Grenfell, Baines and Hargreaves	Precast concrete latticed trusses supporting precast concrete H frames for external walls
1955	Church at Stamford, Connecticut, USA Architects: Harrison and Abromavitz	Precast concrete skin structure
1955	Brandon Estate for LCC	17-storey blocks of flats
1956	Shell Offices, Stanlow Architects: Grenfell Baines and Hargreaves	H frame construction, prestressed concrete floors
1957	Ipswich Church Architects: Johns Slater and Haward	Pretensioned and post-tensioned concrete skin roof
1957	Ipswich College Architects: Johns Slater and Haward	Prestressed concrete trusses supporting precast concrete H frames for external walls
1958	British Government Pavilion at Brussels Exhibition Architects: H. V. Lobb and Partners	Timber skin structure
1958	British Industry Pavilion at Brussels Exhibition Architects: E. D. Mills and Partners	Steel skin structure
1958	US Embassy in London Architects: Eero Saarinen and Associates	Prestressed concrete composite floors; precast concrete frames for exterior walls



Above, church at Stamford, Connecticut.



Above, Derby Technical College and below, The British Industries Pavilion, Brussels Exhibition, 1958.



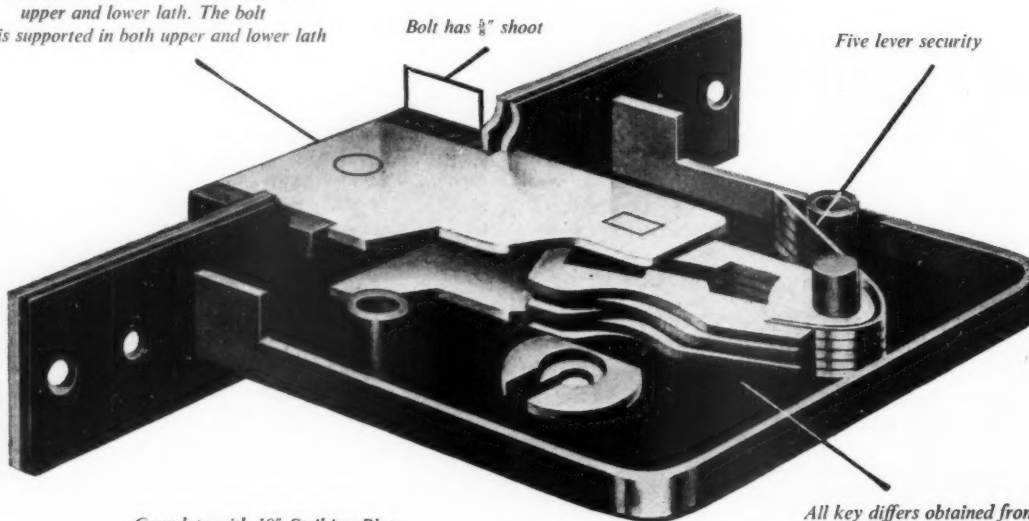
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THE INDUSTRY

This week Brian Grant devotes his column to a review of domestic appliances on view at the Ideal Home Exhibition at Olympia.

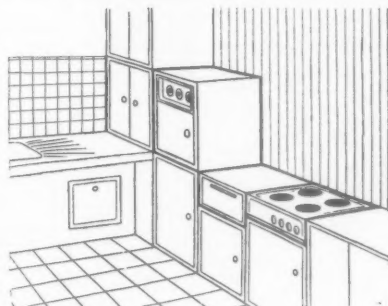
Several of the new domestic appliances on show at the Ideal Home Exhibition have already been described in these notes, but there are still a few which have not been seen before. One of the more interesting developments is the use of plastics for the lining and outer casing of refrigerators, which are made in the form of a double walled box filled with glass silk for insulation, there being only a single wall thickness at the back, where the cooling equipment is installed. These mouldings are made in one piece, so that there are no crevices to collect dirt, and of the two models shown one was a Jackson 2 cu. ft. (Radiation Ltd., Electrical Division, 255, North Circular Road, London,

N.W.10) and the other a Main, 2.2 cu. ft., selling at 43 guineas with a five-year guarantee for the cooling unit. The same firm was also showing the Apollo instantaneous gas water heater, which has an output of half a gallon a minute thermostatically controlled to a temperature of 145 deg. F. This is intended mainly for use at the sink, but there is a change over tap so that it can be used to supply the bathroom basin, or a shower head. It is especially useful for the latter purpose, as the thermostat controls the gas supply and if there should be a drop in water pressure the gas is cut down at once, and there is no danger of scalding. Price is £15 5s. 11d. including purchase tax. (R. & A. Main Ltd., 48, Grosvenor Gardens, S.W.1.)

Built-in cookers

Since it is thought that the majority of American cookers are now built in, two firms are making tentative experiments here. Tricity Cookers Ltd. (109, Kingsway, London, W.C.2) have an electrical model, illustrated here with a sketch, in which the oven unit has the now usual time controls, and a grill at the top, the four ring hob being a separate unit. There is also a heated cupboard which would normally be mounted

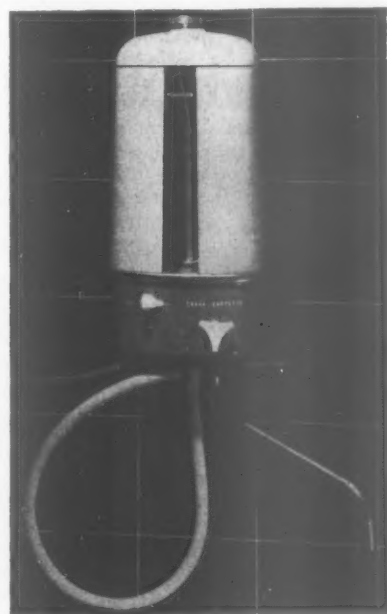
under the oven, but can be elsewhere if necessary. Production is to start in the autumn. It is thought that the three units will cost between £80 and £100. The grill may be under the hob and not in the oven, which seems preferable. Radiation (Stratford Place, London, W.1) are working on much the same lines with a model 72, consisting of a separate oven and a four burner hot plate plus grill. This should be available some time next month, and the price will be about £50. The only other new cooker is the Parkinson Prince, a modified and slightly cheaper (39



Above, the Tricity built-in cooker.

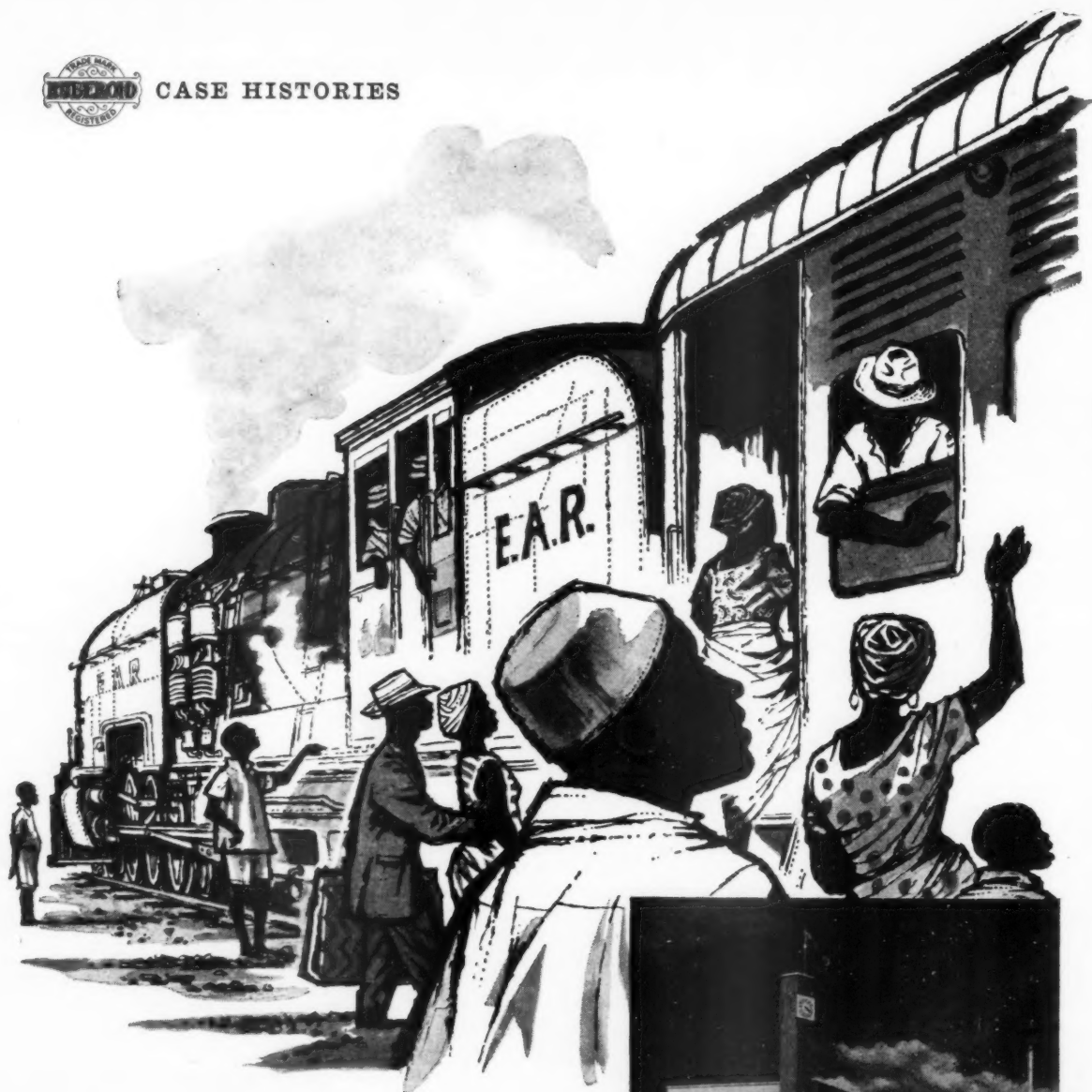
Below left, fittings for the Cannon power unit.

Below, the Creda Corvette water heater.





CASE HISTORIES



First-class Nakuru

With its fine new railway station—the most up-to-date in East Africa—the town of Nakuru can welcome the world. Until very recently a few old sheds of wood and tin stood in for a station in this flourishing East African town, centre of Kenya's Rift Valley agricultural area. To Ruberoid Contract Agents went the contract for the supply and fixing of some 40,000 square feet of Ruberoid Roofing for the new building, designed by the Chief Architect, East African Railways and Harbours Administration.



Nakuru's pride and joy. The Ruberoid Contract Agents Messrs. Naumann, Gepp (East Africa) Ltd. were responsible for all roofing. Ruberoid Contract Departments throughout the British Isles and Contract Agents overseas offer the benefits of expert advice at the planning stage and skilled craftsmen to execute the work.

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guineas) version of the same firm's Renown. (Parkinson Cowan Appliances Ltd., Stechford, Birmingham 33.)

In the electrical section is the Creda Corvette, a small sink water heater with a maximum capacity of 1 gallon. It is not a storage heater, and it is filled with the required amount of water by a rubber hose from the sink tap, though it could presumably be modified to accept a piped supply. With a loading of 3 kW. it will boil a gallon of water in about 11 minutes, but the main virtue of the appliance is that it is only necessary to heat the amount of water actually needed, from a cupful upwards, and the temperature is adjustable by thermostat if only warm water is needed. The heater is easy to descale in hard water districts as the water container is easily removable. Both wall and window sill mountings are available, and the only connection necessary is to a 13-amp socket so that installation is easy. Price is £12 12s. 6d. including purchase tax. (Simplex Electric Co. Ltd., Creda Works, Blythe Bridge, Staffs.)

Built-in mixers

Cannon Industries (Deepfields, Bilston, Staffs) are showing a range of power driven mixers and other devices which are driven by an electric power unit built into the dresser top, or even into the front of a drawer, covered by a waterproof stainless steel plate with a recessed multi-speed switch and a vertical spindle to drive the mixers. This seems a very neat fitting, and provided enough thought is given to its placing its lack of portability should not be a disadvantage. A number of extra appliances will be available in future, including a coffee mill, and several kitchen cabinet makers are installing it in cabinets and sink units. The Xpelair window mounting fan has been in production for some time, and this has now been followed by a built in version selling at the low price of £14. Installation is quite simple, as the fan box is designed for building into an 11-in. wall, the fan and shutter units being fixed afterwards. Extract capacity is 20,000 cu. ft. per hour, and a shutter to prevent back draught is connected to the fan switch. (Woods of Colchester Ltd., 59/62, High Holborn, London, W.C.1.)

Among the relatively minor items there are no less than three different makes of time delay switch on the EDA stand. Two of them, by Berry's Electric (Touchbutton House, Newman St., W.1) and Hursel (229, Regent St., W.1) can be set to give a delay of anything up to 12 hours before switching on, and can be used to control fires or any other type of appliance. The other is the Timostat (Herga Electric Heating Systems, Northolt Road, Harrow, Middlesex) and has a delay of up to 24 hours. It also incorporates an adjustable thermostat.

Lastly, I noticed that Bridges (York Road, Battersea, S.W.11) have introduced a paint sprayer unit, compressor and a separate gun, to be driven by their standard quarter inch drill. The compressor provides air at 100 lb., so you can use it for car tyres or garden spraying.

INFORMATION CENTRE

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

7.72 practice LAW TEXTBOOK

Principles of Local Government Law. By C. A. Cross. Published by Sweet & Maxwell. 35s.

Though only a proportion of this book affects architects as architects, most of it affects them as leading members of the community. Gives useful summaries of Local Authorities' responsibilities with regard to Housing and Public Health, carrying the story right up to the Thermal Insulation (Industrial Buildings) Act of last year. A good, comprehensible book, but of marginal interest to the ordinary practising architect.

7.73 practice AMERICAN CLERK OF WORK'S TEXT-BOOK

Field Inspection of Building Construction. T. H. McKaig. F. W. Dodge Corporation, New York. \$9.35.

This is a textbook for the American clerk of works, running to 337 pages. It begins with a chapter "The Job of the Inspector" (Co-operative Spirit, Record Keeping, Avoiding Trouble are three of the paragraph headings) and goes through the construction of buildings chapter by chapter in trade order—foundations, frame, intermediate stage and finishings. There is a final chapter devoted entirely to concrete.

If the book is only partly true of common practice, the American clerk of works is a man very different from, yet curiously similar to, his British counterpart. To begin with, he is "college trained" (one paragraph warns him of possible resentment from the workmen because he is "white collar"). He uses a typewriter, takes progress photographs, understands about shear stress, keeps a personal library of technical books, and is familiar with American standard specifications. Apart from all this, the picture of American building practice that emerges from the book is surprisingly like our own. There is little evidence of the legendary speed or organization, even time and progress schedules occupy very little space in the book whereas the author has much to say about the minutiae of craft techniques. Indeed he is a little too discursive, and given to idealistic advice on such matters, though rarely boring.

One would have expected the American clerk of work's duties to be more schematic and economical than the book suggests, to include some kind of methodic progressing and information feed back drills. Its value for English practice is probably enhanced by the lack of textbooks of our own.

10.176 design: building types APARTMENT HOUSES

Apartments and Dormitories. By the Editors of *Architectural Record*. Published by F. W. Dodge Corporation. \$8.95.

A collection of articles which have previously appeared in the *Architectural Record* has been reprinted in book form. The book is very fully illustrated with photographs and plans of various forms of modern multiple dwellings and sets out to cover a fairly wide field.

In the foreword it is said that the book should prove valuable to designers, builders, owners and managers of rental housing. In order to cater for this rather extensive readership the diversity of subjects dealt with is considerable. On the one hand there are articles entitled "Skip floor access saves cubage" and "Partitions function as columns" and on the other hand "Accent on better living" and "Communities for the good life." The result is unfortunate. What one would imagine from its title was a technical article turns out to be too superficially treated to be of real value to the designer and what one would suppose to be a general subject is treated too technically for the lay reader.

18.201 construction: theory TEXTBOOK

Structural Mechanics. W. Morgan and D. T. Williams. Pitman. £1 1s.

"Structures" is well known as the highest hurdle for architectural examinees. It is said that since architectural students are more often "artistically" gifted, mathematics comes hard to them. Structural expertise involves arithmetical manipulation and so the simpler the figure work in a textbook the better chance a student has of dealing with question papers. This mode of reasoning has influenced more than one author and it is the declared aim of this volume.

The 19 chapters begin very gently with step by-step explanations of reactions, triangle of forces and moments, each page being lightened by neat diagrams of levers, pulleys and beams. Not until page 119 do we come, by easy stages to framed structures—with line force diagrams of triangular trusses and girders. Next come demonstrations of stress, strain and elasticity followed by chapter 12 "Simple Beam Design." The book concludes with axially loaded columns and retaining walls. It thus covers the RIBA Intermediate examination paper.

The authors certainly fulfil their intention to lead the reader by the hand with admirable clarity and with a freedom from those exasperating unexplained bits that brought



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technical section

sweat to our brows in student days. It is not their fault that the book fails utterly to invite a sympathetic response to the structure as a whole. True there are no mathematics—but there is no building either. Textbooks such as this are for examinations; and the purpose of a structures exam. for architectural students is to test the ability to perform certain tricks, not as it should, to test their understanding.

17.115 construction: general REFERENCE BOOK

Kempe's Engineers Year Book. 2 vols. Morgan Bros. Ltd. £4 2s. 6d.

These two thick squat books of nearly 1,400 pages each are of very marginal interest to the architect. They give brief technical descriptions, reference tables and formulae for every kind of engineering you can think of. Sections on Building, Factory Planning and Acoustics are better dealt with elsewhere.

25.132 water supply: sanitation PLUMBING

Plumbing: Materials and Techniques. Sidney Webster. Batsford. £1 10s. 0d.

This book—a companion to its predecessor *Plumbing in Building*—is of extraordinary thoroughness. It deals with the whole field of the traditional art, beginning with seven chapters on seven different materials (including polythene and asbestos cement). Following chapters cover roof plumbing, soil and waste piping, hot and cold water installations and the last four describe simple heating systems.

The volume is both a textbook and a work of reference. For example, it discusses the chemical differences between various kinds of cast iron and lists the complete range of copper pipes—diameters, gauges, and weights—of BSS 1386 and BSS 659. The book is profusely illustrated by pleasant perspective sketches (on almost every page), even to a section of an ordinary bib tap.

Explanations of the jointing of polythene pipe and the inclusion of underfloor heating (with calculations) for houses mark the work as being more up to date than most building textbooks.

There has been a need for textbooks on services for architectural and building students, growing more urgent as the post-war years slipped by; books which besides being technically informative (which this one certainly is) also attempt to identify the "place" of their subject within the architectural context. Integration is one of those realities which most of us perceive and affirm generically, but few can identify specifically. The simple proposition that we should relate ends to means becomes very complex when we see that it entails function, cost, sub-contracting and symbolism. If this book is a little daunting to leaf through, this is less because the treatment is that of an engineer (the author is in fact an architect) than because "ends" are interpreted in the narrowest sense.

10 DESIGN: BUILDING TYPES

second RIBA symposium on laboratories: the chemistry department

The author, W. H. Lloyd, B.Sc. (Leeds), is Head of the Science Department at Brighton College and his paper is, in fact, a detailed description of the Chemistry Department in the new science block at Brighton College designed to his requirements by Kenneth E. Black, F.R.I.B.A.

The author begins by describing the science building as a whole. He then turns to the Chemistry Department:

The floor areas adopted for the Chemistry Department were to some extent imposed by the current recommendations specified in the architectural brochure*: 960 sq. ft. for an elementary laboratory for 30 boys, whereas we adopted 900 sq. ft. for a maximum of 24 boys; and 600 sq. ft. for an advanced laboratory for 16 boys, compared with the 750 sq. ft. we adopted for a possible maximum of 18 boys—although it is essential that this number is reduced for efficient sixth form work. Further comment will be made later on the suitability of these areas in practice in a school with 360 boys aged 13 and over, divided into three forms (with four sets in each) up to ordinary level GCE, and a lower and upper sixth form taking Advanced and Scholarship

chemistry.

Two doors control entry to the whole department: one provides direct access for juniors into the elementary laboratory, and the other leads to the passage. Thus the movement of juniors is easily supervised, and noise is kept remote from the lecture room at the far end of the passage. Apart from the main doors and passage, there is internal access from room to room.

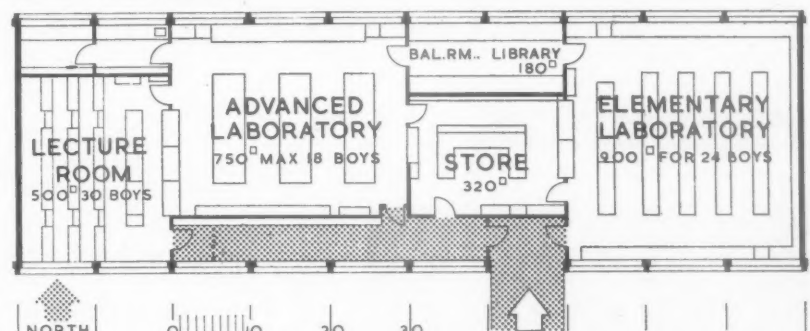
A glass fronted notice and display case, together with a vertical sliding chalkboard, is well situated to attract attention between the two main entrance doors, which may be latched, or locked, when open, into the side framework of the case. The lower part of this framework surrounds the fire hose fitted to the wall.

Elementary laboratory

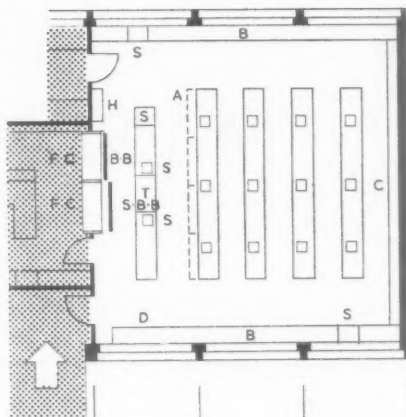
The design features to be noted in this general purpose junior laboratory are:

Boys' benches and equipment

There are four benches 18 ft. x 2 ft. x



Above, general ground floor plan of school chemistry department. Left, plan of elementary laboratory (scale: $\frac{1}{16}$ " = 1 ft.)

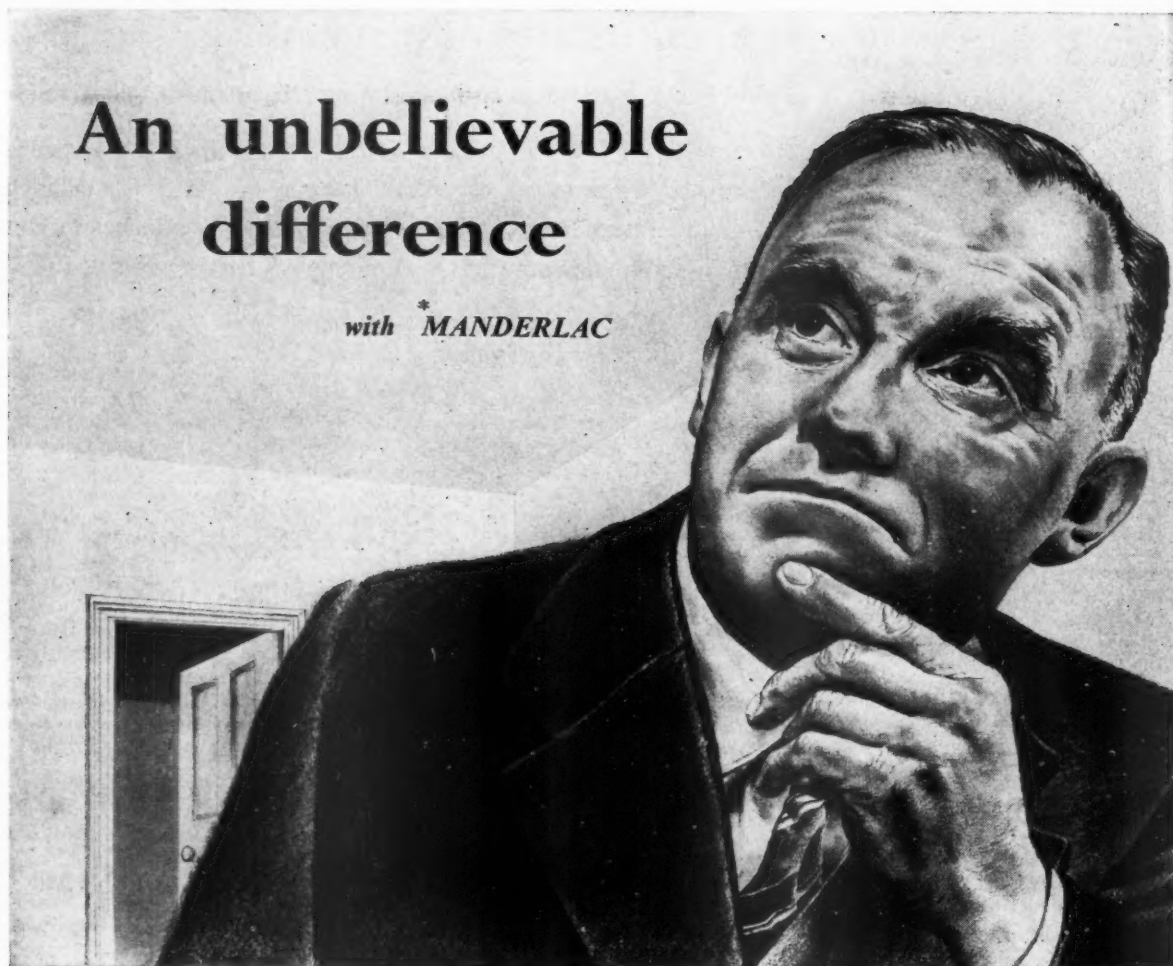


Elementary laboratory
KEY
A. Hinged front seats
B. Bench
C. Cupboards
D. Drawers

T. Removable trolley
S. Sink
FC. Fume cupboard
H. Heater
BB. Blackboard
SBB. Sliding blackboard

3 ft. high, with three spaced sinks concealed by hinged lids (9 in. x 9 in.) opening towards the boy's side. There is an asbestos-cement panel (8 in. x 8 in.) on the underside to take hot articles when the lid is open back on the bench.

Each sink unit caters for a boy on both sides with 2 ft. 6 in. length of individual working bench (excluding the width of the sink). Under each boy's working bench there is a melamine surfaced pull out shelf for writing or housing books away from the often damp working surface. Stools are stored under



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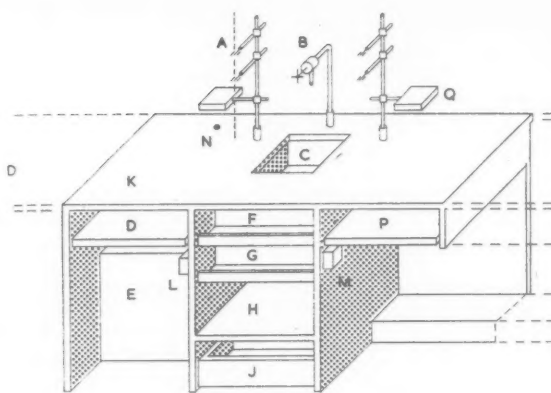
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technical section



- KEY
 A. 1-in. rod scaffolding
 B. 12-in. water standard
 C. Sink with hinged lid
 D. Pull-out shelf
 E. Knee space and stool
 F. 50-c.c. dropper bottles
 G. 250-c.c. reagent bottles
 H. Apparatus shelf
 J. Waste box
 K. Teak bench top
 L. 12 V d.c.
 M. 230 V a.c.
 N. Gas tap
 P. Pull-out shelf
 Q. Alum. heating block

Elementary laboratory bench unit.

suggested that the current recommendation of 960 sq. ft. floor area should be increased to approximately 1,100 sq. ft. incorporating teaching/demonstration space. Cost will be increased, but may be offset by a possible reduction in the total number of individual departmental lecture rooms depending on good layout for sharing in use.

Demonstration bench

The master's double sided desk is incorporated in the south end of the demonstration bench, with a movable lectern on top. This is a strategic position for the master: close to the entrance and storeroom doors, and convenient for righthanded writing on the chalkboard.

The centre portion of the demonstration bench contains a flush fitting trolley (3 ft. 6 in. x 2 ft.) on Sheppard castors. There are four of these interchangeable trollies available for use in this laboratory and the lecture room which has an exactly similar demonstration bench. They can be used anywhere in the department for demonstration or transport, and one is permanently equipped with a 1.t. rectifier with switched output up to 22 V. 10 A.

Inverted scaffolding feet are screwed on the underside of the trolley bench top which has 1/2-in. holes to take vertical rods for supporting apparatus. Thus experimental equipment can be pre-assembled elsewhere, stored if necessary, brought in when required, and rapidly removed after use for dismantling. This helps laboratory assistants, or the lack of assistance.

All services are concentrated at each side of the trolley station in the demonstration benches to facilitate use with apparatus on the trollies. There are double gas taps and a low-water standard on each side with small drip sinks concealed by 5-in. square hinged lids. 230 V. a.c. is also close at hand.

At the north end there is a large sink set lower than bench level, and fitted with a swan neck tap and water suction pump.

Chalkboards and fume cupboard

The left hand chalkboard slides horizontally over the other fixed one on the right to provide access to the fume cupboard which has toughened glass windows on both sides. It is

the shelf recesses. Service pipes are encased in a wooden duct which affords protection from kicking and provides a foot rest.

Shelf units below sinks

Each sink is set into a unit 2 ft. wide below bench level with two reagent bottle shelves: the top shelf with 14 screw-capped dropper bottles (2 oz.), and the lower shelf with space for 8 common reagent bottles (250 cc). Below these there is an open apparatus shelf, with an open-drawer type wooden waste box at floor level.

Both the reagent shelves are lined with white vitrolite and have front battens to retain the bottles. These battens and the bottles are named and numbered with the same printed strip labels which can be used in a complete length or cut up for individual labels.

The small dropper bottles are incorporated to provide a larger number of reagents at each working position than in past practice because small scale (semi-micro) methods can be introduced into junior work. The advantages of these methods will be discussed later.

Bench scaffolding

Ironware retort stands, tripods, gauzes, pipe-clay triangles and sandtrays, as well as wooden burette stands and clamps, are discarded in favour of aluminium rod (1/2 in.) scaffolding units which are fixed on the bench about 8 in. from each side of the sink. They may be used singly by each boy, or in conjunction with horizontal connecting rods across the sink. Normal screw bosses and clamps, or simpler Terry clips on rods, can be attached as required.

A cast aluminium heating block (5 in. square, 1 in. thick) has been developed to our own design and found extremely useful (see page 409).

The large corner hole supports 30-mm. diameter crucibles, and the two smaller socket holes take standard 1/2-in. and 3/4-in. test tubes respectively. The many possible uses of this permanent feature on scaffolding will be readily appreciated by chemists. It is durable, and readily cleaned by wire wool or wire brush used in a power drill.

The 18-in. vertical rod also carries two 6-in. horizontal rods fitted with polythene coated Terry clips to hold burettes.

All permanent rods connected at right angles are securely clamped by crossover pieces tightened with Allen screws and keys (which boys do not usually carry).

Services

The 14-in. high water standard and two gas taps are available at each sink unit, while 230 V. a.c. and 22 V. 1.t. sockets are situated below the pull out shelves on either side with master controls at the demonstration bench. Black polythene waste pipes and traps are used.

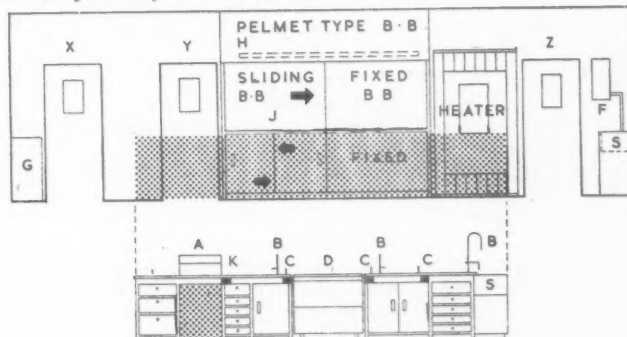
Extra front seating

Running along the entire length of the front of the first boys' bench there is a hinged bench type seat in four sections. For demonstration purposes half the form can be accommodated on this bench seat and the other half can sit on their stools at higher level behind the front working bench.

Desirable development

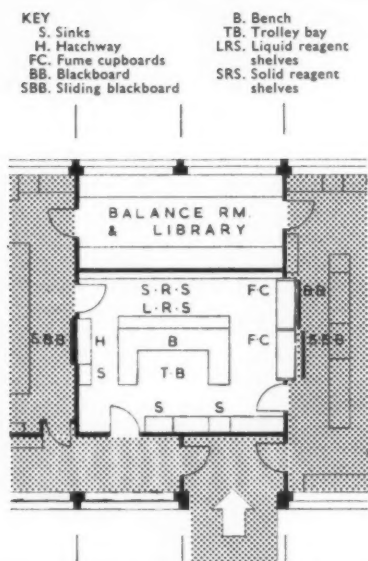
Our original plans called for dual purpose laboratories containing facilities for ordinary teaching, demonstration and practical work, to give optimum efficiency in use and time-table working. The above mentioned extra seating was part of the compromise solution adopted to provide the dual facilities successfully, but ideally a larger floor area is desirable to allow table seating between the demonstration bench and the first bench for practical work. It is therefore respectfully

Elementary laboratory: west wall and demonstration bench.



- KEY
 A. Lectern
 B. Sink and tap
 C. Gas tap
 D. Trolley
 F. Water heater
 G. Wall bench
 H. Strip light
 J. Fume cupboards
 K. Electrical points
 X. Entrance door
 Y. Store room
 Z. Balance room and library

technical section



thus available to the storeroom and to the laboratory besides functioning as a service hatch.

A fixed pelmet type chalkboard, extending up to the ceiling, overhangs the normal chalkboards. Strip lighting for chalkboard illumination is concealed under the overhang, and the upper pelmet chalkboard provides space for semi-permanent chalk notices, diagrams, posters, etc. It is painted green like the normal chalkboards.

Wall benches and washing up

The narrow 18-in. wide benches on the north and south walls are fitted with a simple holding shelf below and have large washing up sinks at the north-west and south-east ends.

In the south-west corner there is a set of wide and narrow drawers for holding standard sets of apparatus which can simply be pulled out and put on the side wall benches for distribution and use. For example, a wide shallow drawer holds exactly 24 burettes gripped in Terry clips for the whole form. Distribution, collection, and rapid checking are thus facilitated.

While washing up duties are normally confined to the kitchen, the chemist cannot escape on going to his laboratory where the problem is continual. Therefore small Ewart water heaters and bottle washing taps have been provided at the large sinks. Boys should learn the gentle art as early as possible, besides being able to wash themselves in the laboratory at any time.

Wall cupboards

Tall wall cupboards extend along the whole length of the back east wall for general storage. Only the top portions are glazed.

Balance room combined with reference library

The balance room is directly accessible from both laboratories, and also serves as the chemistry reference library. This useful dual purpose dictated the design: long table height benches extend the full length of each wall, and a concrete balance shelf is



Left; plan of balance room, reference library, storeroom and main entrance (scale: $\frac{1}{8}$ in. = 1 ft.). Above, section of balance room and library (scale: $\frac{1}{4}$ in. = 1 ft.).

set 8 in. above and along each table. The shelf, which is 12 in. wide, is carried by vertical tubular barrel supports off the surface concrete below the wood floor which is cut round and kept out of contact with the supports. This structure has proved to be practically vibrationless for analytical and ordinary balances. Above the balance cases, the library book shelves cover the whole of the south wall (20 ft.).

Some might prefer the concrete shelf set at the back of, and level with, the table bench tops at 2 ft. 6 in. high. The useful facilities of this room might also be extended with advantage by providing a larger floor area to take a long central table, then a small group could even be taught here.

A small projector is permanently set up for slide and filmstrip viewing as the library of these items is also housed here.

Storeroom

The storeroom is deliberately placed between the two laboratories so that it can serve them like a shop. It is also close to the main entrance for deliveries, and to the backyard for disposal of waste, storage of crates, etc.

Service to the advanced laboratory is provided by a bench and hatch which is closed by a sliding chalkboard. The adjacent door gives direct access for staff. The elementary laboratory can also be served by the fume cupboard and door already mentioned. The other fume cupboard is for the storage of substances which are unsuitable or unpleasant on the ordinary shelving, e.g., Kipp's apparatus.

Reagent shelving for solids covers the entire north wall up to the ceiling. Liquid reagents are housed on another set of similar shelves, 3 ft. away, and forming a passage between them.

This latter set of shelves forms the back of a bay of central benches containing cupboards and drawers. The space inside the bay accommodates the trolleys.

The main washing up sink is centrally placed on the south wall with large draining boards and draining racks on each side.

Hot water and bottle washing taps are provided.

The distilled water equipment is placed high on the wall behind the door with a large storage tank below. A small booster pump gives the additional pressure necessary at four taps in selected positions in the laboratories.

All main controls, switches and fuses are centralized in the storeroom as a measure of precaution with boys.

Advanced laboratory

Purpose and size

This is essentially a laboratory for the advanced and scholarship level practical work done by sixth form boys, and in our case is also used by some fifth forms.

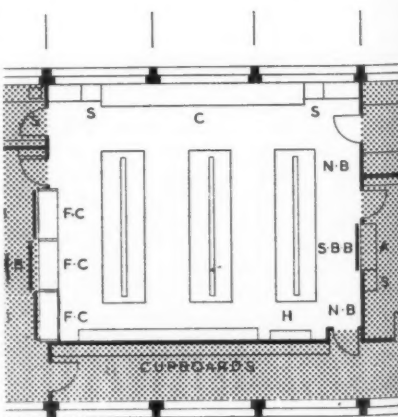
It is 750 sq. ft. and accommodates a maximum of 18 boys each with 4 ft. 6 in. length of bench—compared with the recommended 600 sq. ft. for 15 boys in the architectural brochure. The average sixth form should certainly not be more than 15, and in our opinion it would be better restricted to 10 or 12 by splitting large sets; but availability of staff and timetable mechanics do not usually permit this desirable policy.

In general, it is a compact design planned to provide all facilities at the bench or within easy access, as well as providing optimum flexibility in use. From the master's point of view, it is easy to supervise.

Boys' benches

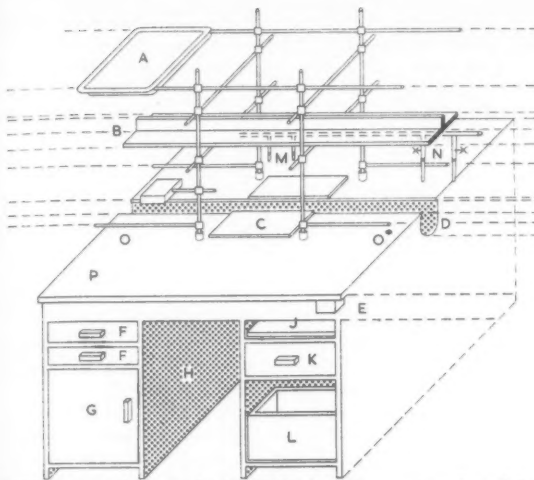
There are three double sided benches 14 ft. 6 in. long, 4 ft. wide, with central channel sinks. Each island bench provides three working positions on each side. The 4 ft. 6 in. length of bench unit for one boy is designed like a double sided desk, 3 ft. high, with central knee space and stool. (So often there are three cupboard units and only two knee spaces.) On his left hand side,

Plan of advanced chemistry laboratory (scale: $\frac{1}{16}$ in. = 1 ft.).



KEY
C. Bench cupboards and drawers
H. Heater
A. Hatchway
NB. Notice board
S. Sink
FC. Fume cupboard
BB. Blackboard
SBB. Sliding blackboard

technical section



- KEY
- A. Metal tray
 - B. Reagent shelving
 - C. Vitrolite tile
 - D. 4-in. channel sink
 - E. 230 V a.c.
 - F. Two apparatus drawers
 - G. Apparatus cupboard
 - H. Knee space and stool
 - J. Pull-out shelf
 - K. Reagent bottles
 - L. Waste boxes
 - M. Water taps
 - N. Water vac. pumps
 - O. Gas taps
 - P. Teak bench top

Advanced laboratory unit bench for 6th form.

there are two drawers for individual equipment, with an 18-in. high locker cupboard below for apparatus in general use and for Winchester bottles. On his right hand side, there is a space at the top for holding books and a pull out formica shelf for writing at the side. Immediately below this shelf a reagent drawer contains 48 hexagonal screw-capped 2-oz. bottles for small scale analysis. These bottles are retained in orderly rows by loose fitting battens carrying name and number labels. The batten height reaches the shoulder of the bottle to give good visibility for reading the labels.

The choice of hexagonal bottles enables the dropper cap to be unscrewed and manipulated by one hand without the bottle turning as well. Concentrated acid bottles have plastic stoppers.

An open drawer type wooden box is available below the reagent drawer. The base board of the waste box is screwed on and not inset for easy replacement when chemical waste causes rotting.

Distilled water

At the north end of each island bench there is one central distilled water tap on a stand high enough to clear a Winchester bottle, and turned inward so that it drips into the end of the bench channel. These three taps, and one in the elementary laboratory, are force fed from the distilled water tank in the store room by a $\frac{1}{2}$ -h.p. booster pump. This elaboration was necessary because the low ceiling limited the available head of water pressure from the tank. An electric still is installed in the storeroom although some might now prefer an ion exchange column.

Bench scaffolding

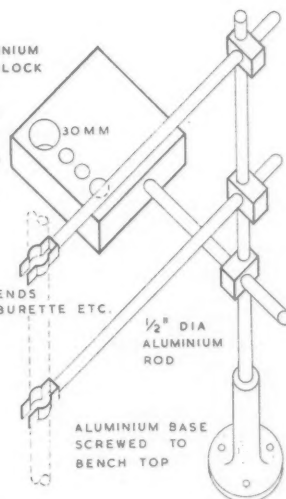
Aluminium rod scaffolding is used to support the general reagent shelf running over the entire length of the central sink channel, and the rods are so arranged as to provide permanent horizontal, vertical and projecting members for fixing the heating block, burettes, and any other apparatus for permanent or temporary requirements. A white vitrolite shelf runs above the reagent bottles, and aluminium trays rest between the top rods. These trays were introduced to protect the bench surfaces but have also

proved useful for general purposes. We are still searching and testing for the ideal bench top finish. In each position the bench is covered by an 18-in. \times 6-in. white vitrolite panel screwed close to the channel where the taps are operated.

CAST ALUMINIUM HEATING BLOCK

HOLES FOR CRUCIBLE TEST TUBES $\frac{1}{2}$ " DIA. TEST TUBE $\frac{3}{4}$ " DIA.

CLIPS AT ENDS TO HOLD BURETTE ETC.



Detail of bench scaffolding.

Services

Three pairs of water taps are provided along the channel sinks and can be operated from either side. Filter suction pumps are fitted between the pairs of taps.

Two gas taps are available to each boy as normal and micro burners are required. A mains electric point is situated under the bench from ledge which is protected by a drip groove on the underside.

North wall bench

This is fitted with cupboards and drawers for more specialized apparatus, e.g., B14 glass joined apparatus for organic preparations, while the bench is available for more permanent equipment such as the electric furnace, multiple water bath, U.V. lamp, electric stirrers, etc.

There are two large washing up sinks at the ends of this bench with hot water, bottle

washers and our own design of draining rack to replace the old peg boards.

South wall shelves

All the general liquid reagents are housed here on shelves covering the wall like an extended old-fashioned dresser.

Storeroom service hatch

A door provides direct entry for staff only, while a sliding chalkboard uncovers a service counter bench for boys' requirements. This bench is fully equipped for some demonstration purposes with a small group. By leaving more room between this bench and the first working bench it would be possible to provide teaching, demonstration, and practical facilities in the one laboratory for fullest use. As it is, a trolley can be brought to the north end of the centre bench for some demonstration work.

Fume cupboards

The three fume cupboards are situated at the west end with the centre one also accessible to the lecture room next door behind the sliding chalkboard. Like the rest of the department they are finished with chlorinated rubber paint and have replaceable asbestos compound bases. The toughened glass windows slide up in front of panels to the ceiling which are painted as chalkboards and used for notices, etc. Lengths of narrow cast iron grille are let into the wood floor just in front of all fume cupboards to admit the right amount of air for maximum efficiency for the extract system.

Study/preparation room and workshop

These two small rooms lead out of the north-west corner of the laboratory. The first is furnished with a desk and laboratory type wall bench, together with bookshelves, cupboards and drawers. It is essential for the head of a department to have this accommodation as his administrative centre—so often neglected in planning.

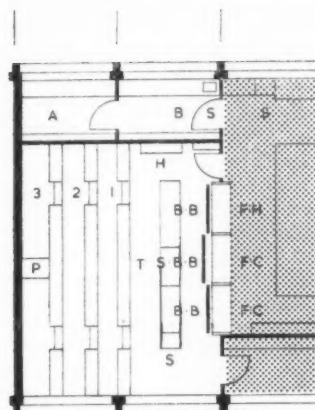
Leading out of the above room is a small departmental workshop reasonably removed from fumes and fingers. This is not ideal because of entry via the study but because of that it is easy to control tools and machinery. Maintenance, production and development of equipment should be encouraged in every department.

Lecture room

This is a comparatively small room 20 ft. \times 25 ft. with three rows of pew-type benches and seats stepped up to the back wall for 30 boys or 50 with a crush using extra hinged seats on the front bench.

Instead of fitting the seats of one row to the front panel of the row behind, the bench-type seats were especially designed and fixed to the floor. An 8-in. space was left behind the back rail to allow a passage way behind the seat. This gives freedom of movement without disturbing the whole row of boys (and also prevents any tendency to sleep against the back panel). The seats are slightly sloping backwards which is more comfortable than the usual level seating, and

technical section



KEY

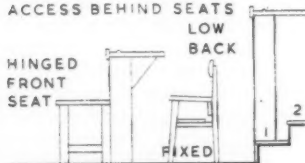
H. Heater
A. Work store
B. Prep room
P. Projector table

FH. Fume hood
FC. Fume cupboard
T. Movable trolley
BB. Blackboard
SBB. Sliding blackboard

Above, plan of lecture room (scale: $\frac{1}{8}$ in. = 1 ft.).

Below, diagram of lecture room seating (scale: $\frac{1}{4}$ in. = 1 ft.).

SEATS DESKS FIXED TO FLOOR
SEATING IN TIERS
LOW BACK TO SEATS
SHELF FOR BOOKS UNDER SEAT
ACCESS BEHIND SEATS



they have a low back rail which well supports the small of the back. The rail is low enough to step over with ease, and is upholstered with p.v.c. felt backed floor covering in red.

The demonstration bench is exactly the same as the one in the elementary laboratory, with a similar but wider sliding chalkboard unit concealing a fume cupboard in the centre. One board has permanently painted squares for graphs, diagrams, etc.

The room is fitted with blackout and full facilities for cine and epidiascope projection. All controls for lights, blinds, power supplies are centralized at the projection position on the back row. The roll up Perlux screen is fixed to the ceiling in front of the centre chalkboard, and will also serve for projection television from a ceiling unit giving a 4-ft. x 3-ft. size picture. (Higher authority has yet to be persuaded to instal it although supply points were inserted in the ceiling.)

The loudspeakers are fitted to a panel hinged in continuation of the top pelmet type chalkboard and the angle can be adjusted for optimum acoustics.

Exit passage

Leaving the lecture room by the other door, there is the only passage back to the advanced laboratory, storeroom and main entrance. A series of tall storage cupboards cover the wall as far as the laboratory. The passageway area is less than 9 per cent of the total floor area.

General fittings

Lighting

After testing various types, 5-ft. colour matching fluorescent tubes, with simple clip-on louvres, were installed approximately one to every 100 sq. ft. of floor area. Good lighting is essential for chemistry and for this particular location which is below ground level on the north side.

The results are almost as good as daylight.

Windows

All windows are set at 4 ft. 6 in. from the floor up to the ceiling. There are two fan extractors in both laboratories and one in the lecture room, for which a circular series of eyelet holes were inserted in the black-out blind. With low ceilings it is essential to have these extractors in a chemistry laboratory.

Heating

A fully automatic oil boiler supplies the whole building. The main rooms being heated by Dunham-driven units and ordinary radiators used for small rooms and passages.

Decorations

All walls were left unplastered except in lecture rooms, and any thought that this gives a crude appearance may be dispelled by the fact that most of the wall space is used for fittings—and bright contemporary colours have been used to give an effective finish. Each department chose one main and distinctive colour: signal red for chemistry, a deep blue for physics, and a green for biology. These colours are also useful for marking equipment. The red doors of the chemistry department are effectively blended into a general scheme of broken white walls and ceilings, hemp surrounds up to 3 ft., and yellow window surrounds and fall pipes.

Floors

Strip iroko wood was used throughout the building.

Design around methods and equipment

The design was planned and built around the methods, equipment, and services used in current practice. Some of these items have already been described and it will be realized that methods and equipment dictated the design of the bench units, which in their turn dictated the layout of the laboratories and ultimately the whole integrated floor plan.

No attempt can be made here to cover more than a few of the factors which influenced the design. The main features introduced are the use of permanent scaffolding and small scale methods in new purpose

designed bench units.

Various makes of scaffolding are available and more use could be made of this chemical meccano in school laboratories. The burette clips and our design of heating block, together with ordinary clamps, provides for every chemist's first necessity of supporting his apparatus on the bench at any time.

The merits of small scale techniques and preparations are slowly becoming appreciated for sixth form work, but it is not generally realized that some of these methods are equally attractive for junior work besides laying the foundations for advanced work. Our experience is that juniors prefer these methods—and even mothers will tolerate them at home.

Small scale methods are safer, more economical, usually quicker, and equally reliable. In analysis, only drops of reagents are necessary for tests—hence the introduction of the dropper bottles—on tiles or in solid watch-glasses. For example, the brown ring test for a nitrate uses 2 or 3 cc of concentrated sulphuric acid whereas the small scale method only requires one drop of the acid—which is less than the amount often spilt on the bench or dropped into the boy's shoe laces. Test-tubes with attached side tubes can be fitted with cork and thistle funnel to make small scale gas preparation vessels. Small scale gas testing gives quick and reliable results using a piece of glassware to our own design based on the familiar S-bend principle.

It is not suggested or recommended that all practical work should be on the small scale. There must always be a critical assessment of the respective merits of methods. Apart from the above considerations, the size of the burettes used has been reduced from the usual 50 cc to 25 cc as these are more manageable. Burettes with interchangeable graduated tube, jet, and plastic tap have proved more satisfactory than those in one assembly with glass taps; parts, especially jets, can easily be replaced, and the plastic taps eliminate greasing. Likewise 10 cc pipettes are in routine use, with 20 cc types available if required. The $\frac{1}{4}$ in. plastic covered Terry clips used on the scaffolding accept most types of standard burette.

The type and size of reagent bottle used determines shelf dimensions on the bench units. 250 cc and 500 cc sizes are used in the elementary and advanced laboratories respectively. They have interchangeable plastic stoppers to avoid the sticking experienced with groundglass stoppers (and some boys' unerring ability to put glass stoppers in the wrong bottles).

Acknowledgment must be made to British Drug Houses Ltd. for their kind permission to use their attractive registered design of bottle and stopper. Standard reagent sets have enamelled labels, and some bottles are used with a plain sandblast panel with no lettering. This matt sandblast surface takes pencil writing (it is easily erased) and avoids paper labels.

The author concluded his paper with reflections of a general nature.

SIX SPECIAL SCHOOLS FOR PHYSICALLY HANDICAPPED CHILDREN

The six schools described here were all designed for children suffering various physical handicaps, part of the plan to provide special schools for children with special needs that followed from the 1944 Education Act. Much medical and educational research since the war has been directed to exploring how far children with acute disabilities can be

Every year £1.1 to £2 million are spent on the construction of special schools—that is, schools for children who because of some mental or physical handicap require special teaching facilities, often combined with special medical or remedial treatment. Most of these schools are for children with mental handicaps, the educationally subnormal, and requirements for these schools are discussed, with examples, in MOE Building Bulletin No. 14. Requirements for special schools for the physically handicapped are as varied as the handicaps for which they cater, and

six such schools—for physically handicapped, partially sighted, deaf and delicate children—are the subject of this article.

Although the requirements which affect the design of such buildings differ with each school, all have a number of common characteristics.

1. These schools cater for relatively few pupils, ranging from 75 to 180 in the schools visited, and combining all ages from 5 to 16. In addition, schools for deaf children, for whom early speech training is particularly important, take children from the age of 2½.

2. Classes are smaller and more diverse than in ordinary schools. Among the reasons for this are the effect of the child's handicap on methods of teaching, the wider range of ages in a class, due to the smallness of the school, the backwardness of some children owing to illness and consequent wide variation of intellectual ability. This diversity of class group is reflected in a wider range of size and height among the children in each class, which means that special consideration must be given to the sizes of furniture and fittings for the classroom. In some schools there may be

additional anthropometrical factors to be taken into account: for instance, delicate children requiring special schools are noticeably small for their age, while those in the schools for the physically handicapped may be in wheel chairs, and thus require an entirely different set of anthropometric data.

3. Except in schools for the deaf, boys generally outnumber girls by two to one. One would think this should have affected the sanitary accommodation provided, but in the schools visited this does not seem to have been pointed out to the architects!

4. Specialist teaching accommodation and medical facilities may conveniently be shared by several schools grouped on one site, and in the schools under review sites are shared in Birmingham and in London. The accommodation required for medical inspection and treatment is necessarily much more extensive than in ordinary schools.

5. In many parts of the country, though not in such large cities as Birmingham or London, children requiring special schools for their particular handicaps are so widely scattered that boarding accommodation must be included.

6. No cost per place limits are set for these schools, but an overall net cost limit for each school is agreed on the basis of the schedule of accommodation. Finally, in designing special schools there is much less general experience to draw on than in the case with ordinary schools, and the functional requirements have to be determined anew in each case because, owing to medical and educational progress, these are changing all the time.

General view of Nottingham's residential school for severely physically handicapped children, Thieves Wood, in Sherwood Forest.



critical study

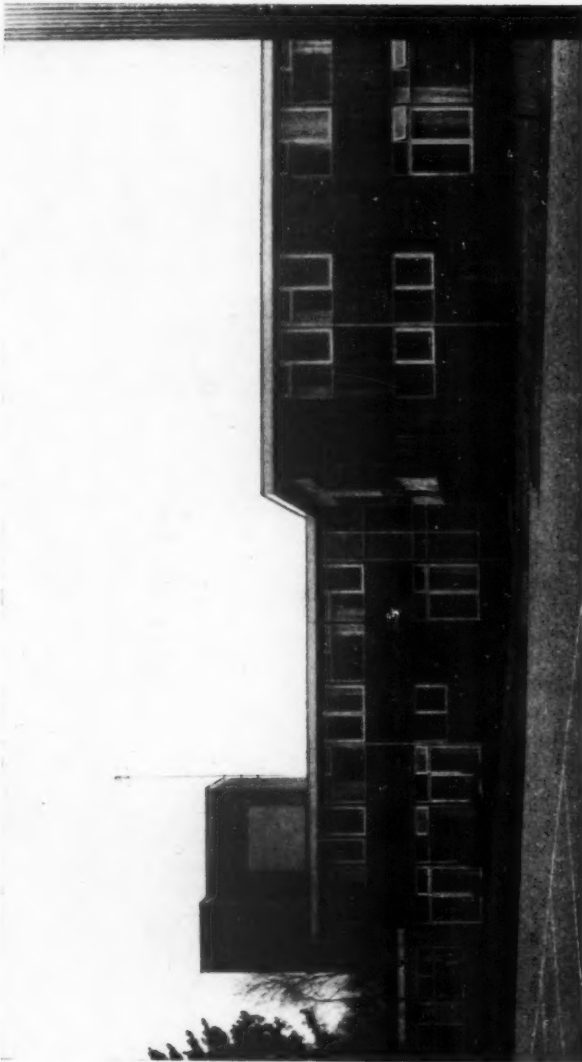
Six special schools: THIEVES WOOD RESIDENTIAL SCHOOL AT SUTTON-IN-ASHFIELD, NOTTS



Above, view from the terrace of Thieves Wood, towards the forest.

Above right, a view from the entrance courtyard.

Below, a corner of the common room.



Thieves Wood School was built by Nottinghamshire (county architect at that time, D. E. E. Gibson) for children with physical defects severely restricting their freedom of movement, but it is used by half a dozen neighbouring Authorities, who met in 1946 to discuss mutual problems regarding provision for handicapped children. It provides accommodation for 75 children, and the dormitory space is divided into three units, for 30 boys, 30 girls and 15 infants each with their own lavatory and bathing facilities, and linked together by two playgrounds.

The school is charmingly situated in a clearing in Sherwood Forest, as can be seen on page 411 and above, and the character of the building fits in well with its surroundings, the narrow boards of its timber cladding carrying on the

strong vertical rhythm of the spindly trees around it while the limits of the building are defined and held together by the broad white band of the fascia. Owing to the nearness and density of the trees it is not possible to see the building from a distance or as a whole and in these circumstances it was perhaps permissible—if justified for other reasons—to adopt a rather haphazard plan. But haphazardness has been carried to such extremes that even the rhythm imposed by the modular system employed for its construction has been destroyed, as the above photograph makes clear.

The teaching and residential accommodation have been planned in separate wings, linked together by a combined assembly and dining hall, an arrangement which allows some differentiation

in the character of "home" and "school"; one wishes it could have been more marked. The residential accommodation for the staff however is badly placed, since it lies over the children's bedrooms and limits the amount of noise which the staff can make in the evenings. Another criticism of the plan that might be made is that the laundry seems rather arbitrarily placed beyond the kitchen, instead of being related to the clothes storage and sewing rooms in the bedroom wing.

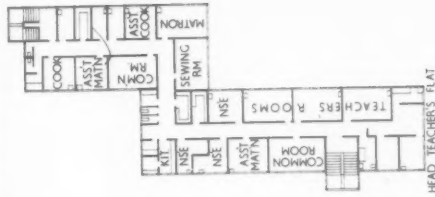
One third of the children in this school are in wheel chairs and more are on crutches: the building must therefore be considered from their point of view. Quite rightly all steps have been eliminated from the plan, but to achieve this, the building has been extended along the contour. In consequence, distances

between rooms can be relatively great, too great for children who find movement difficult and slow. Circulation spaces are straightforward and at 6 ft. adequately wide, as are the 3-ft. 3-in. doors. The classrooms, approximately 25 ft. square for 15 pupils, though a good shape, have been found to be inadequate in size, since a great deal of space is required to manipulate a wheel chair into position at a table.

Movement in restricted areas, such as lavatories and bathrooms, has not been sufficiently considered: lavatories need both entrance and exit doors to avoid congestion, and a greater number of w.c. compartments large enough to take both a wheel chair and an orderly would have been an advantage. Doors which can be used as fire exits have been provided in all the classrooms, but not in



A typical dormitory, and scarcely homelike.



First floor plan

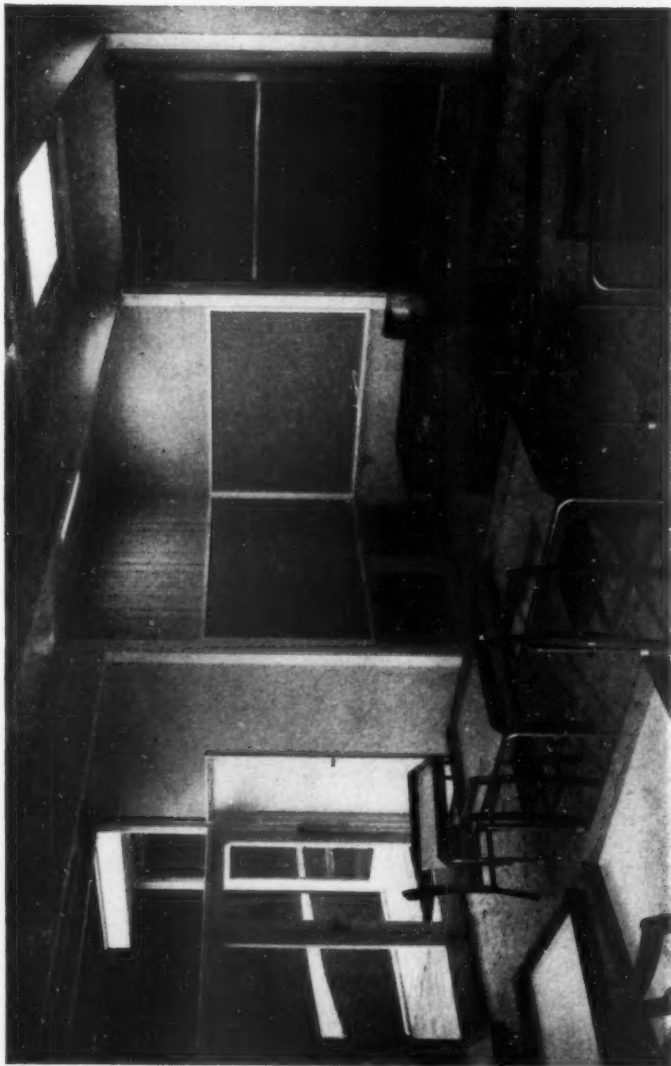
Cheerful animals prance among the bathroom tiles. Note the special bath, with handles, and space to manoeuvre a wheel chair.



Ground floor plan [Scale: 1/4" = 1' 0"]

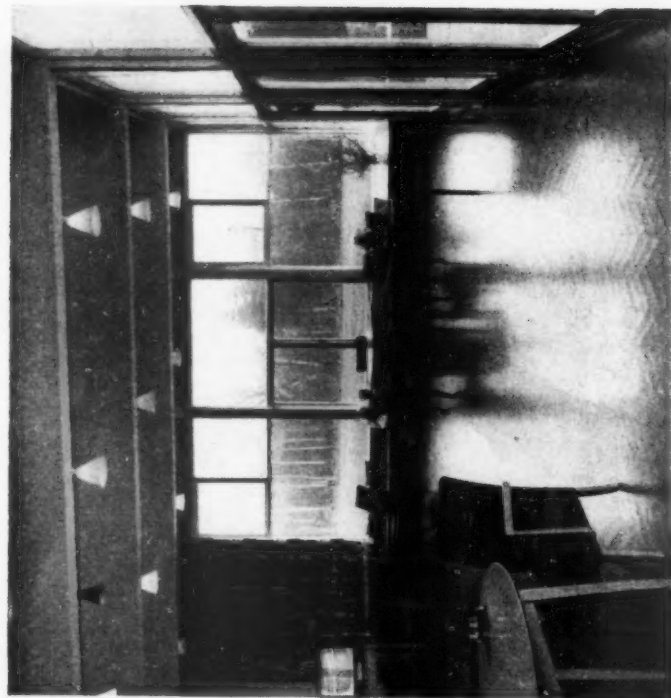
Six special schools: THIEVES WOOD RESIDENTIAL SCHOOL AT SUTTON-IN-ASHFIELD continued

critical study



Above, classroom tables can be adjusted in height and have upstanding edges to prevent things falling off.

Above right, one of the playrooms.



the dormitories, where they seem equally important.

The child in the wheel chair presents the need for a special set of anthropometric data, and this has been recognised in the design of the classroom tables shown above. Extension pieces can be added to the legs so that the tables can be adjusted for use with wheel chairs and to conform to BS sizes. Sinks fixed at normal height for standing use are too high, however, for these children, and the lids of the window seat lockers in the playrooms, shown above, are too low and too heavy. Some of the children have poor muscular co-ordination, and classroom tables

therefore have upstands on three sides to prevent books, etc., from being accidentally pushed off. For the same reason, some lever taps have been provided in sinks and basins, although these are not as widely distributed through the school as required.

CONSTRUCTION: A patent system of timber cladding has been used for the superstructure, on a 5-in. reinforced concrete slab, with staircases and boiler house in loadbearing brickwork.

Floor finishes: Non-slip, quiet finishes were required, and the following were selected: Assembly hall, reading room and playrooms, wood block;

physiotherapy and speech therapy, cork tiles; classrooms and craft rooms, thermoplastic; dormitories and bathrooms, linoleum; lavatories and showers, pitch-mastic; kitchen and ancillary rooms, terrazzo tiles.

Heating: Warm air units and radiators supplied from oil-fired boilers. **Drainage:** Surface water to soakways on site; soil drains to private disposal plant on adjacent site at Portland Training College.

SUMMARY: Ground floor area, 24,506 sq. ft. Total floor area, 30,666 sq. ft. Type of contract, negotiated. Work began, March, 1956. Work finished,

September, 1957.

COST SUMMARY: Tender price for foundations, superstructure, installations and finishes, £704,439 11s. 6d. Tender price for external works and ancillary buildings, £19,404 13s. 8d. Total, £723,844 5s. 2d. Net cost per place, £1,392 10s. 7d. Net cost per square foot of floor area, 68s. 1d. Area per place, 408.9 sq. ft.

Designed by D. E. E. Gibson, Nottinghamshire County Architect; job architect, Robert E. Waller; quantity surveyor, T. O. Human; general contractor, Simms, Sons & Cooke Ltd. Sub-contractors, page 425.

THE WILSON STUART, BRAIDWOOD AND PRIESTLEY SMITH SCHOOLS IN BIRMINGHAM

These three Birmingham schools, for physically handicapped, deaf and partially sighted children, share a site of 7½ acres on the northern outskirts of the city. The schools for the physically handicapped and the deaf children are linked by short covered ways to a central block containing dining and medical accommodation which both use. The school for the partially sighted children was kept separate because it was in a later programme and also because these children are not good at mixing with other handicapped children.

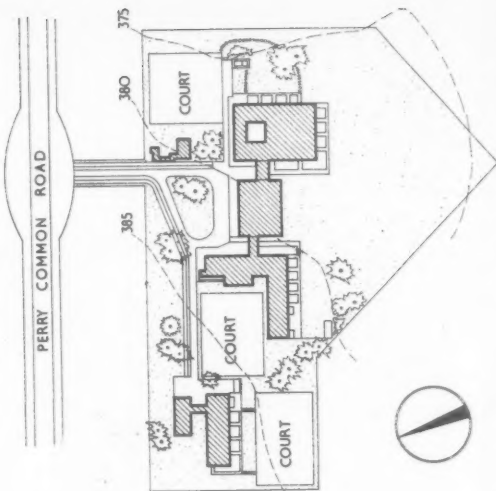
The grouping of the three linked units—two schools and central block—seen below is not visually very attractive although each of the units is simple and straightforward. It might have been more satisfactory to have incorporated the central block within the school for physically handicapped pupils, thus reducing the distances to be traversed by this group of children to a minimum, and to have provided two separate

buildings for the other schools. This arrangement is in fact being considered for another scheme now on the drawing board: it has the additional advantage of facilitating the provision for acoustic and electrical isolation, required for the deaf children.

CONSTRUCTION: The schools are of load bearing brick wall construction, roofed with precast, prestressed concrete beams, screeded and finished in built-up mineral roofing felt. The corridor link has similar finishes laid on wood wool slabs supported on coupled steel angles. The large non-load bearing external wall panels were fabricated off-site by the contractor. They are full storey-height and bay-width, framed in agba, containing doors and windows as required and faced externally with varnished vertical agba strip or infill sheets of painted exterior-quality plywood. They are lined internally with plaster board backed with aluminium foil. Slip joints in the panel heads take

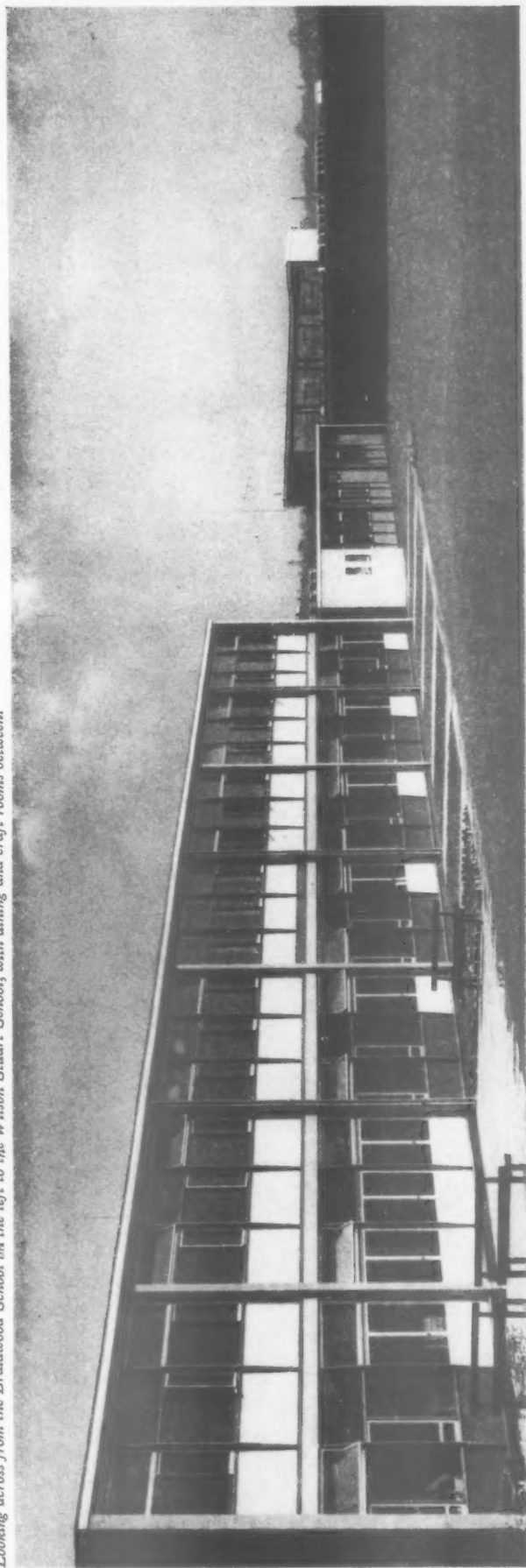
up any thermal movements in the concrete roof beams while any bowing away from the panel head at mid span is masked by an aluminium eaves strip. Central heating and hot water are supplied to the three schools from solid fuel fired boilers in the communal plant which serves the group, and is situated in the north wing of the deaf children's school. Heating generally is by radiators, with warmed air convectors in nurseries and halls.

Designed by A. G. Sheppard Fidler (city architect); J. R. Sheridan-Shedden (deputy city architect); E. Mason (senior architect schools); S. G. V. Milligan (principal architect schools); H. Williams (assistant principal architect schools); M. E. L. Granelli (architect-in-charge). Consultants: A. J. P. Pashler (engineering services); S. Willis (structural). Quantity surveyors L. C. Wakeman and Partners. General contractors Thomas Lowe & Sons, Ltd. Sub-contractors, page 425.



Site plan: the Priestley Smith School is on the left and the Braidwood and Wilson Stuart Schools are linked on the right.

Looking across from the Braidwood School on the left to the Wilson Stuart School, with dining and craft rooms between.

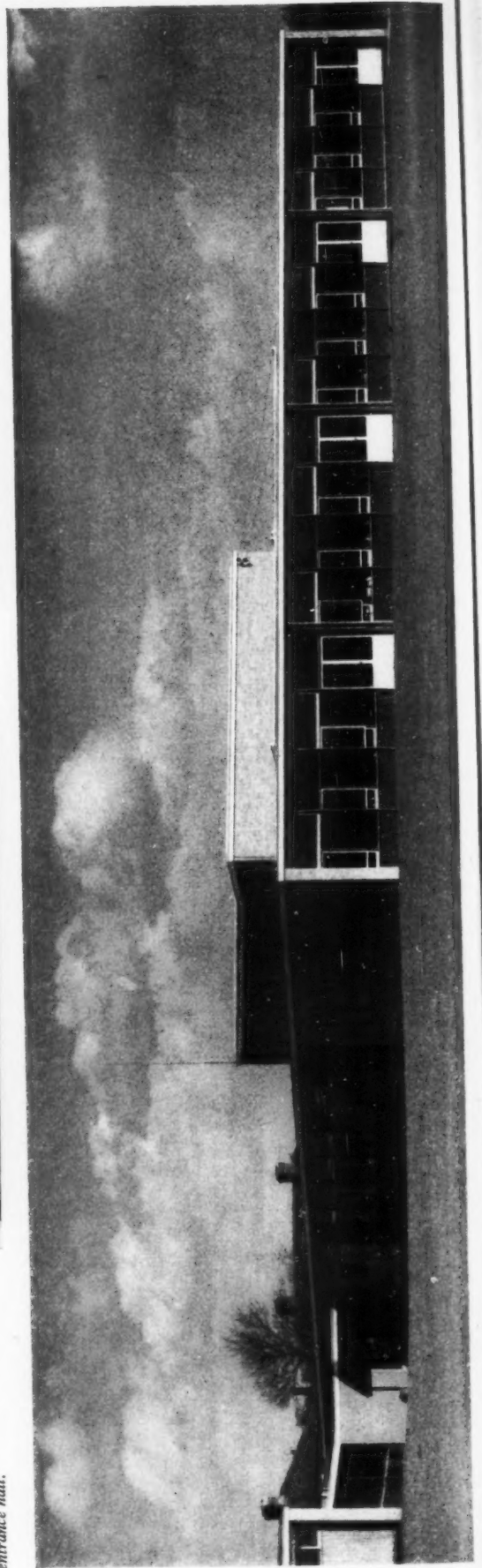
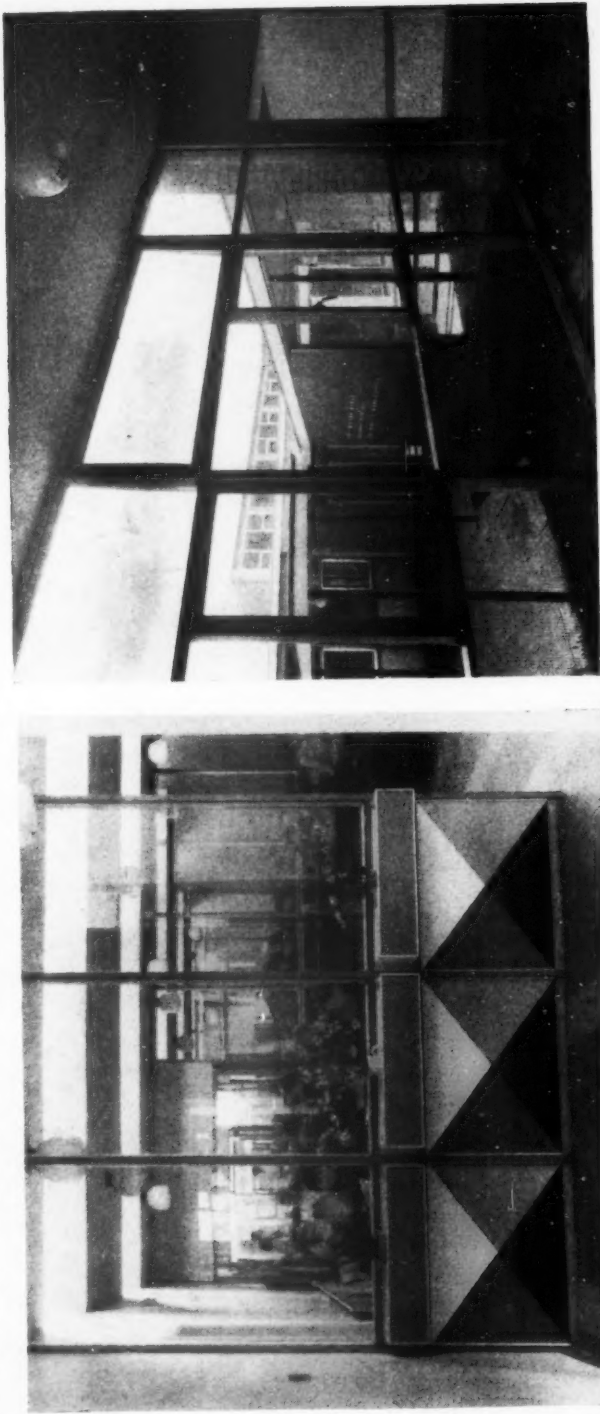


critical study

Six special schools: THE WILSON STUART SCHOOL IN BIRMINGHAM

The general character of this school, is typical of the good standard now being achieved in school design: the detailing is well thought out and the colours, chosen from the Archrome 2 range are gay and well matched. The headmistress reports that the children are evidently stimulated by the building, that they eat better, for example, and there is a general improvement in their health. Whatever detailed criticisms can be made, this is a heartening indication of the architects' ability to provide a suitable environment for the children. The 160 pupils in the Wilson Stuart school suffer generally from the same handicaps as those at Thieves Wood, but less severely. A smaller proportion are in wheel chairs but a large number have casts or calipers, so the need to reduce distances to a minimum, to make

Below, west elevation. Right, looking into one of the classrooms. Far right, the entrance hall.



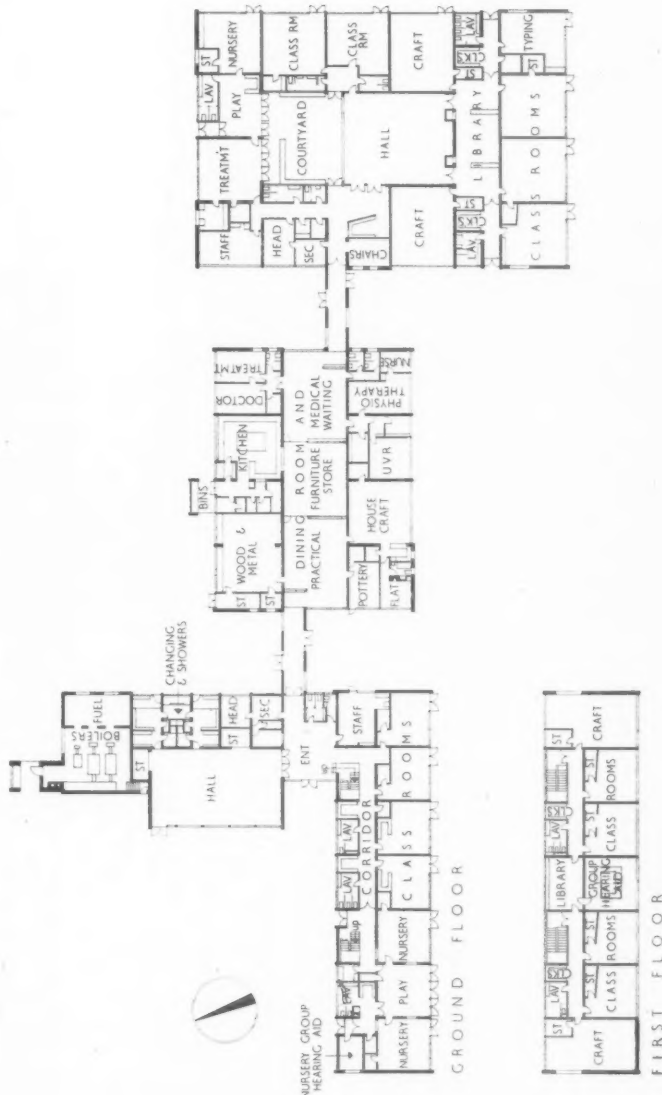
therefore stand up to frequent attempts to remove finger marks, or must be better planned *en suite* and not in two separate blocks on either side of the circulation straight-forward and to ning criticisms: the playground would be accessible from them in the first place.

circulation straight-forward and to allow for poor muscular co-ordination are still prime considerations. The plan has been kept admirably compact, with teaching and other accommodation grouped round a central assembly hall and courtyard, and the sanitary accommodation has been dispersed throughout the building. There are, however, three main plan-

ning criticisms: the playground would have been more easily accessible from the teaching spaces if sited at the south corner of the building; the ramp between the school and the central block impedes the movement of wheel chairs and is not traversed easily by children in calipers; and lastly the medical inspection, treatment and changing rooms would have been

better planned *en suite* and not in two separate blocks on either side of the dining room. Wall and floor finishes here tend to receive rougher treatment than in other schools. Unprotected plaster corners are damaged by wheel chairs. Even though rails are provided along the corridors, some children rely on the walls for support. The surface must

therefore stand up to frequent attempts to remove finger marks, or must be proof against them in the first place. Sheet rubber and cork floor finishes seem to wear best, they are resilient and non-slip, help to reduce reverberation, and withstand the abrasion of calipers. Studded rubber tiles, however, tend to get kicked up and thermoplastic tiles are too slippery.



Ground floor plan of Braidwood School (left) and Wilson Stuart school (right)

[Scale: 1" = 1' 0"]

THE BRAIDWOOD SCHOOL FOR DEAF CHILDREN IN BIRMINGHAM

Control of noise is important in the design of all schools but is especially so in schools for the deaf, where good acoustic conditions are essential for the development of the children's voices. This requirement affects the siting of the school, its planning and internal

finishes.* (see footnote on page 420.) This school is fairly well sited, with the teaching spaces facing across the open part of the site. Internally the school is well planned, with staircases isolated from teaching rooms and the upper floors finished with

studded rubber tiles to reduce transmission of impact sound to the rooms below.

The school is designed for 120 pupils and the teaching block contains 12 teaching spaces for groups of ten children—the maximum number that,

while wearing portable hearing aids (similar to those used by adults), can follow what the teacher is saying. Following the teacher implies not only hearing but also seeing clearly the movements of his lips. Lighting from two sides of the classroom instead of from

One of the two group hearing-aid rooms at the Braidwood school for deaf children. This one is for four children and has a portable training aid which enables the child to hear both the teacher's voice and his own.



critical study

Six special schools: THE BRAIDWOOD SCHOOL FOR DEAF CHILDREN IN BIRMINGHAM continued

the one main window would have reduced the intensity of shadows and thus given better conditions for this. There are also two group hearing-aid rooms, containing the special equipment used in the development and improvement of the children's voices and speech. One room is for a maximum of four children and contains a portable speech hearing training aid, consisting of microphone, amplifier and earphones housed in a box about 10 cu. in., which enables the child to hear both the teacher's voice and his own. The second room, for full class groups, contains a larger group hearing aid, a fixed piece of loop inductance apparatus with portable microphones. Here, through their own hearing aids, the children can hear both the teacher and one another.

The recommended reverberation time of 0.5 seconds has been achieved in the classrooms by the use of sprayed vermiculite ceilings. In the group hearing-aid rooms the walls and ceilings are lined with glass silk quilts covered with perforated hardboard on battens and clips,

and the floors are boarding on battens attached to the concrete sub-floor. In these rooms conditions are uncomfortable since any movement of furniture or feet sounds particularly sharp but this has been remedied by laying rubber sheeting with sponge rubber backing on the floors. In their next scheme the architects intend to make the ceiling and upper part of the walls reverberant and the remainder of the walls, and floor, absorbent.

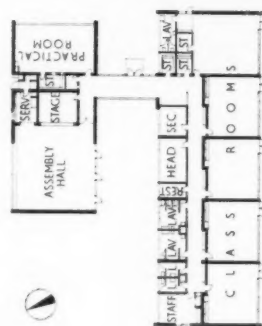
The use of visual aids is important in this school and several classrooms are equipped with daylight projection apparatus, installed in the store wall. This can be used without dim-out so that the children are still able to follow the teacher's lip movements. Fire alarms are also visual and take the form of red lights.

The hall is used for music and movement and the sprung wooden board floor here helps the children to feel the vibrations from the piano through their feet. Future schools may have special hearing aids for these activities.



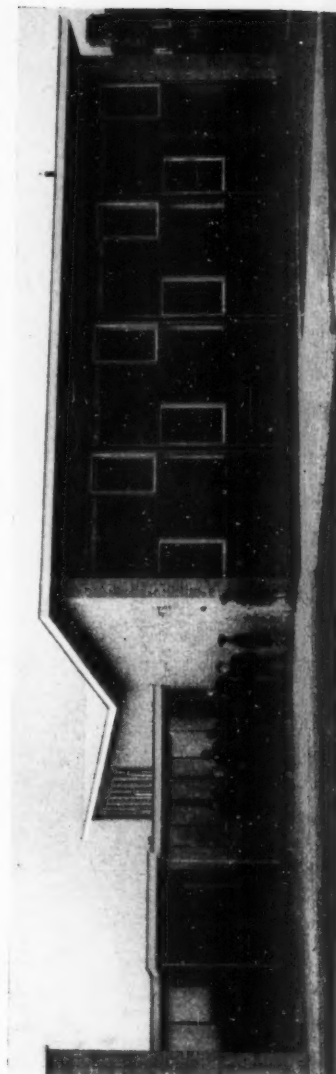
The large group hearing-aid room at the Wilson Stuart School.

THE PRIESTLEY SMITH SCHOOL FOR PARTIALLY-SIGHTED CHILDREN IN BIRMINGHAM



Ground floor plan [scale: 1/4" = 1' 0"]

This was the first day school of its type to be built in this country. It is for children whose disabilities show great variations: none is blind but some see their surroundings only as a blur, others are albinos, while others again suffer similarly from a degree of short sightedness that would seriously retard their progress in an ordinary school. The aim is to equip them all for a normal school life, and this involves the development of self-reliance as a prime consideration. This is done in various ways: the children are encouraged to



walls and they come to school on foot, for him from the lighting point of view, and small enough for its limits to be window wall and a continuous strip of give an overall illumination of 30 lumens per sq. ft. S.S. measurements taken

for him from the lighting point of view. As the children have a variety of sight defects, they spread themselves fairly evenly about the room.

The hall is used for assembly, for music and dancing and for drama, which is considered particularly important in giving the children confidence. The stage, (overleaf), is ideal, being simple

and small enough for its limits to be visible to the children and low enough at 1 ft. 6 in. above floor level, to maintain contact between players and audience.

Even daylighting and a minimum daylight factor of 5 per cent. in the classrooms was required and this need has been met by providing a main south

window wall and a continuous strip of rooflight adjacent to the north wall in each room. The main windows are fitted with venetian blinds to control glare: this is particularly important for partially sighted children since glare is accentuated by the wearing or using of lenses, and is painful for albinos.

The artificial lighting was designed to

give an overall illumination of 30 lumens per sq. ft. Spot measurements taken soon after the opening of the school gave readings of 65-95 lumens per sq. ft. The lighting is provided by means of a luminous ceiling of corrugated translucent sheets with fluorescent tubes above. Since the design of this

Looking through one of the classrooms to the central corridor of the Priestley Smith School.



walk and they come to school on foot, accompanied by guides. Normal hazards, such as steps, are not eliminated but are boldly indicated to them by painting the risers black. The school, designed for only 75 pupils, is small and simple and has been kept separate from the others on the site, and the treatment of the main entrance, shown above affords a good example of the general clarity of the building. The entrance doors are situated in the link between the two wings of the school and this link is fully glazed except for the panel immediately opposite the doors, which is of solid wall construction and is covered internally with a very dark wallpaper. Consequently, as one approaches the school up the slightly rising road, the entrance doors stand out in maximum contrast to the link itself and are further defined by two white-painted tubular columns which support the porch roof.

The internal planning of the school is extremely simple. The entrance link connects the assembly hall and practical room to the corridor which serves the double banked classroom block, with classrooms on the south side and staff rooms, storage and sanitary accommodation on the north. The central corridor has been well handled by its division into a series of bays of classroom width (seen through the door on the right of the photograph right). The opening in the crosswalls is not taken up to full ceiling height and part of each bay is widened to form a coat hanging space. The colour scheme is the same in each bay, however, and identification might have been made easier if one or more of the elements in each had been painted different colours.

Classrooms of 480 sq. ft. area are designed for groups of 15 children. But that for the youngest children is rather larger. Such an area allows for the almost individual teaching which these children require, besides allowing each child to choose the position in the room most suitable

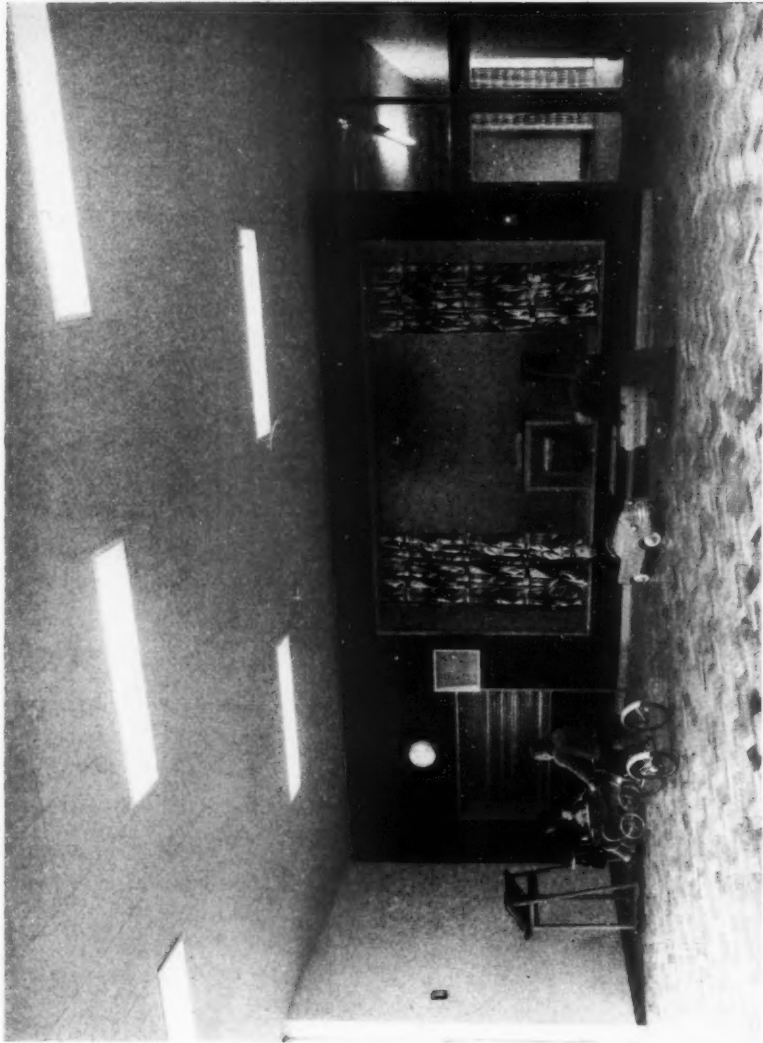
Six special schools: THE PRIESTLEY SMITH SCHOOL FOR PARTIALLY SIGHTED CHILDREN IN BIRMINGHAM continued

critical study

they would be accentuated by the high level of illumination, and care was taken to choose colours which change as little as possible under daylight and artificial light. For large areas colours were selected from the green and yellow-green groups (BS 5.059, 5.062, 5.070, 6.066, and 7.077), while for modelling and accentuation, hues of stronger chroma (BS card o) were used.

SUMMARY

	Wilson Stuart and Braidwood (common block)	Priestley Smith
Ground floor area	29,349 sq. ft.	7,455 sq. ft.
Total floor area	34,454 sq. ft.	7,455 sq. ft.
Type of contract	Measure and value	Negotiated tender based on scheduled rates
Work began	April, 1954	May, 1956
Work finished	October, 1956	September, 1957
Cost summary		
Tender price for foundations, superstructure, installations, and finishes	£114,884 (including £2,000 abnormalities)	£31,999 (including £5,622 abnormalities)
External works	£8,847	£1,917
Net cost per place	£382 16s. 2d. (excluding abnormalities)	£351 14s. 0d. (excluding abnormalities)
Net cost per sq. ft.	£3 5s. 5½d. (excluding abnormalities)	£3 10s. 9d. (excluding abnormalities)
Area per place	123.05 sq. ft.	99.4 sq. ft.



The hall of the Priestley Smith School.

* In Professor Ewing's book, *Educational Guidance and the Deaf Child* (published by the Manchester U.P., price 45s.), S. E. J. John and H. Thomas make the following recommendations on the design of schools for the deaf: The noise permitted to enter the school from outside should not be more than 30 db. in intensity. Sites with noise levels up to 60 db. are acceptable because a reduction of 30 db. can be obtained through planting or earth mounding. Special attention should be paid to the detailing of 45 db., and doors to circulation spaces should be sealed with rubber strips. Circulation areas should have absorbents on walls and ceilings. Impact noise should be dealt with by discontinuous structures and resilient floor finishes.

of ventilating ans and ducts, to avoid the transmission of noise. The control of reverberation is the most important single factor affecting the use of hearing aids and the recommended reverberation time for classrooms is 0.5 seconds. † In the Memorandum the Committee point out that children with a variety of visual defects commonly use the same classrooms, but that identical lighting conditions are not equally suitable for all. They conclude that higher levels of

illumination than normal are important and more critical for partially sighted children, because the level of illumination affects the speed, ease and accuracy with which a task can be performed. They also consider that a "cheerfully bright environment" is psychologically important for partially sighted children, who because of their handicap are often emotionally "difficult." The recommendations of the Committee stress that visual comfort is of the first importance in design and this means, among other things, avoidance of all forms of glare. Since the levels of illumination recommended may involve installations in which the light source is very large, it will be interesting to see how the recommendations of the Committee relate to the work on this subject being carried out jointly at the present time by the Building Research Station and Cornell University. The full report is available from The Medical Research Council.

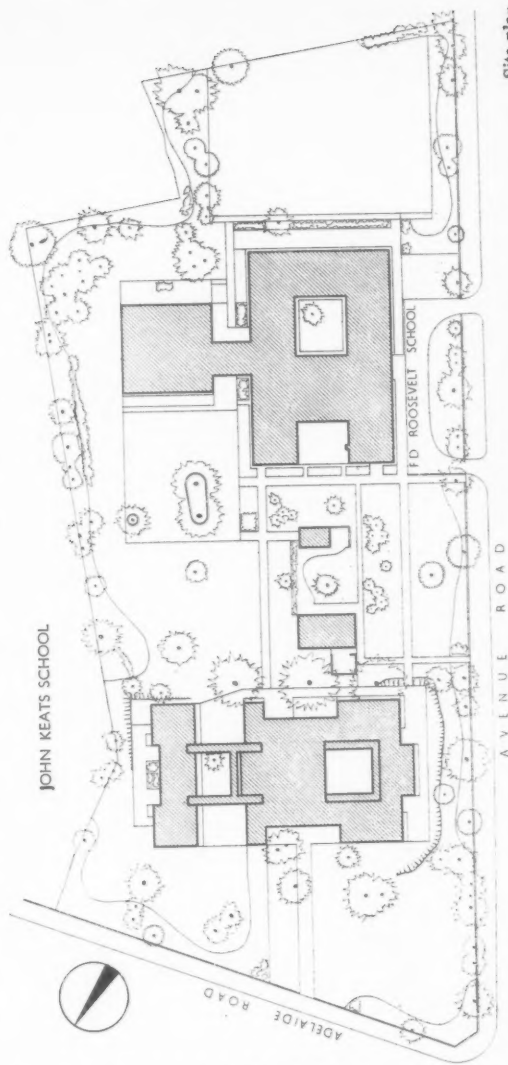
Six special schools: THE JOHN KEATS SCHOOL AND THE FRANKLIN D. ROOSEVELT SCHOOL, LONDON, N.W.3

These two schools (architect, Hubert Bennett, architect to the LCC) share a well wooded site of about 4 acres in Hampstead: the Franklin Delano Roosevelt School for Physically Handicapped Children occupies the eastern half of the site, the John Keats School for Delicate Children, the western half. Since this survey has already discussed two schools for the physically handicapped, we will merely summarise the Franklin Delano Roosevelt school, after discussing in detail, John Keats School. Pupils usually attend schools for delicate children for a few months only, when poor health, perhaps the aftermath of some serious illness, demands special care and treatment. The John Keats School, is therefore largely a "short stay" school for 180 boys and girls, although a few pupils may

stay there for two or three years. They range in age from 5 to 15 years.

The building consists of a central assembly-dining hall with a courtyard in front surrounded by classrooms, staff rooms, lavatories, etc., where pupils can do some of their work in the fresh air. A second courtyard has been formed, for the same purpose, by setting the primary class rooms away from the rest of the school and enclosing the intermediate space with glass screens. These two courts are an important part of the school, as the children are encouraged to be out of doors as much as possible both during lessons and in their daily rest period.

The building is designed simply and boldly and is well placed on the site, but the disposition of the rooms within does not seem to have been so well consi-



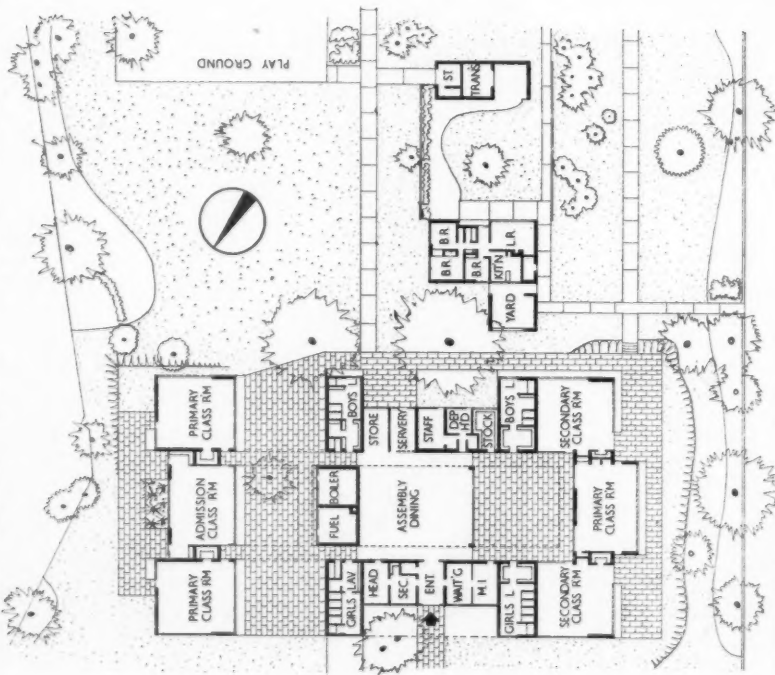
Site plan

The John Keats School for Delicate Children seen from the south.



Six special schools: THE JOHN KEATS SCHOOL IN AVENUE ROAD, LONDON, N.W.3 continued

critical study



Ground floor plan (Scale: 1/4" = 1' 0")

insuperable. Since the children are required to have as much fresh air as possible, the windows have been designed with 100 per cent. opening lights and are actually kept open most of the time. It is undoubtedly pleasant to look out on nearby trees, and this problem might have been solved by the provision of rooflights. But there is also the problem of traffic noise here, which appears

Right, inside one of the classrooms. Opposite, the internal courtyard looking towards the assembly-dining hall.

of the picture below—is unsatisfactory in bad weather. The opening lights consist entirely of vertically pivoted doubled casements running from sill to ceiling, which, owing also to the lack of projecting eaves, allow rain to fall within the classrooms. In a rain storm of any duration all must be closed and the lack of fresh air resulting is undesirable for delicate children.

The classrooms for 30 pupils have an area of between 800 and 850 sq. ft., and this amount of space is required for setting out the beds during rest periods when these cannot be taken out of doors. Storage space for beds and blankets is provided in each classroom. Because the children need a high protein diet, three meals, breakfast, dinner and tea, are served at school, in the central assembly and dining hall. This restricts the use of the hall for other purposes and involves much daily movement of furniture, which would have been avoided if separate halls could have been provided. The main meal of the day is cooked in the kitchen in the neighbour-

ing Franklin Delano Roosevelt School, but breakfasts and teas are produced in the servery attached to the John Keats school hall.

The medical inspection and waiting rooms are fully used for daily treatments and doctors' weekly visits. The school has no specialist craft rooms of its own, the children sharing the use of the specialist rooms and workshops in the school next door.

SUMMARY: The school is planned on one level and in two blocks, the larger containing the assembly/dining hall with meals servery, the head teacher's rooms, three senior classrooms, cloak and lavatory accommodation and the boiler house and fuel store planned round a paved courtyard. The small block contains three primary classrooms and is reached by covered ways across a paved courtyard.

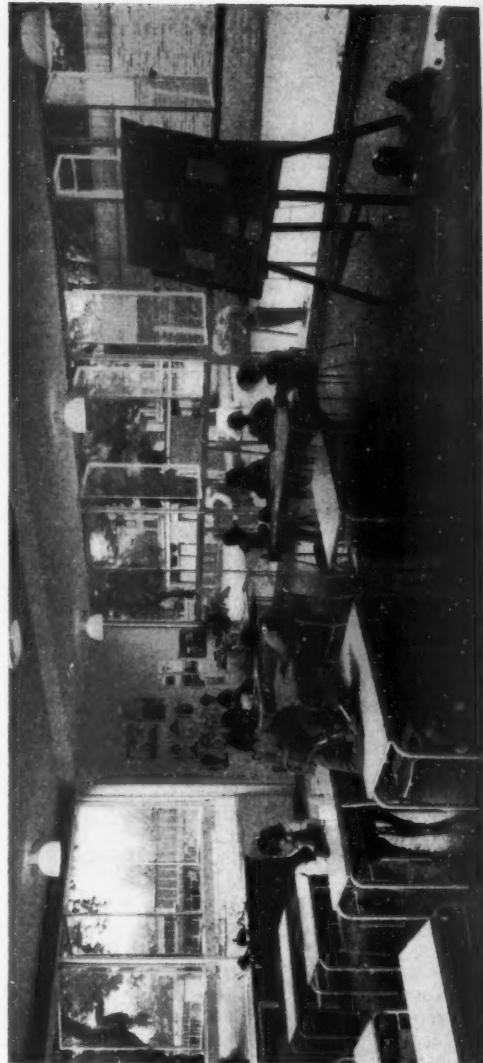
The construction is generally of load-bearing brickwork supporting a roof of *in-situ* hollow tile reinforced concrete. The assembly hall is steel framed with

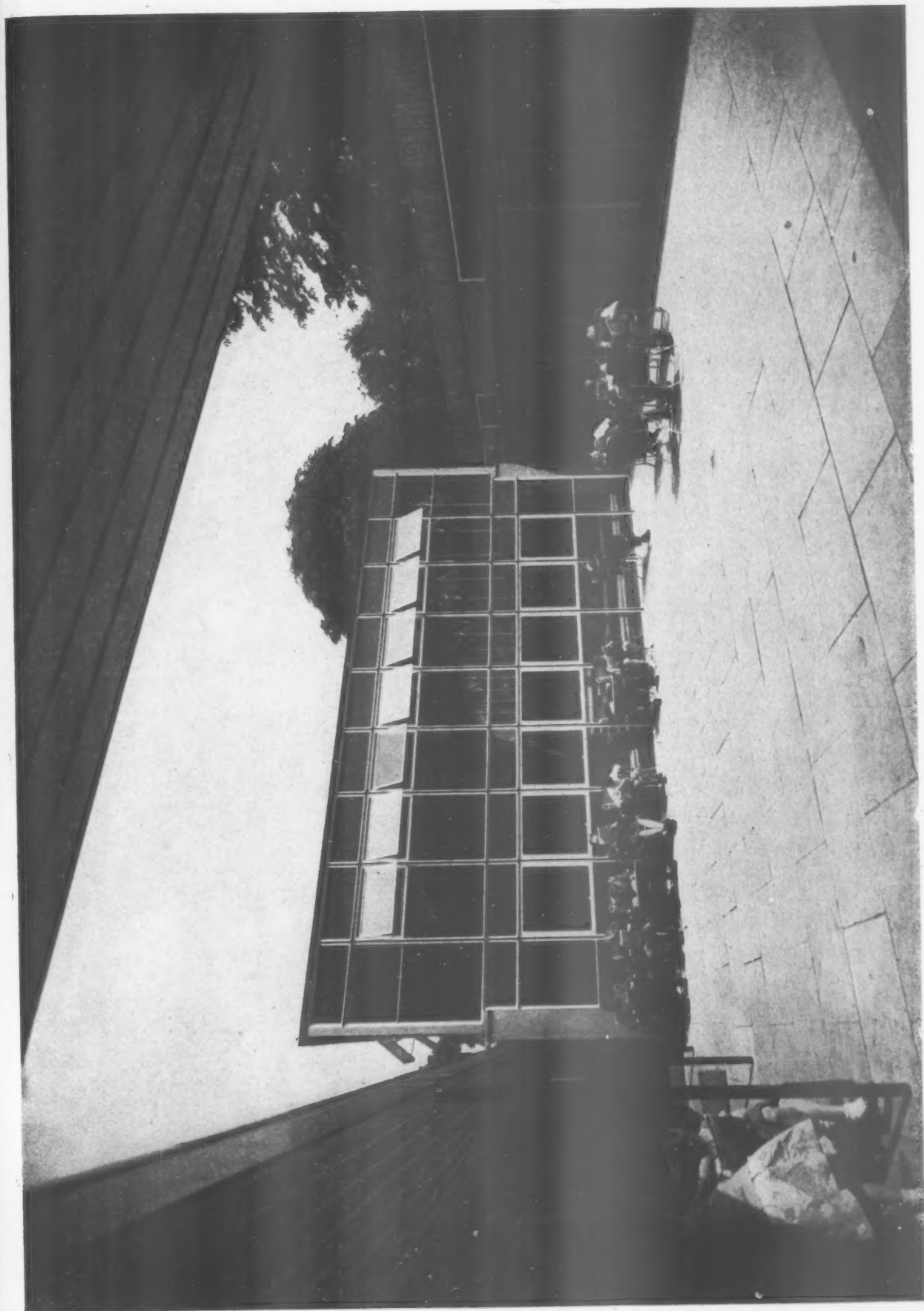
a roof of reinforced woodwool slabs. The assembly hall and all classrooms are glazed with areas of metal patent glazing containing the maximum number of opening lights above sill level.

Elsewhere, metal opening casements are contained in painted softwood frames. In-fill panels and the fascia to the roof construction are of vertical cedar boarding. An oil-fired boiler provides heating and hot water: the assembly hall and six classrooms are heated by sheathed hot water pipe coils embedded in the floor, with a finished floor covering of artificial stone composition blocks. Other rooms are heated by means of radiators.

Ground floor area, 11,087 sq. ft. Type of contract, Lump sum. Work began, October, 1956, Work finished, December, 1957.

COST SUMMARY: Tender price for foundations, superstructure, installations and finishes, £49,783. Net cost per place, £277. Net cost per sq. ft. of floor area, 87s. 11d. Area per place, 61.6 sq. ft.

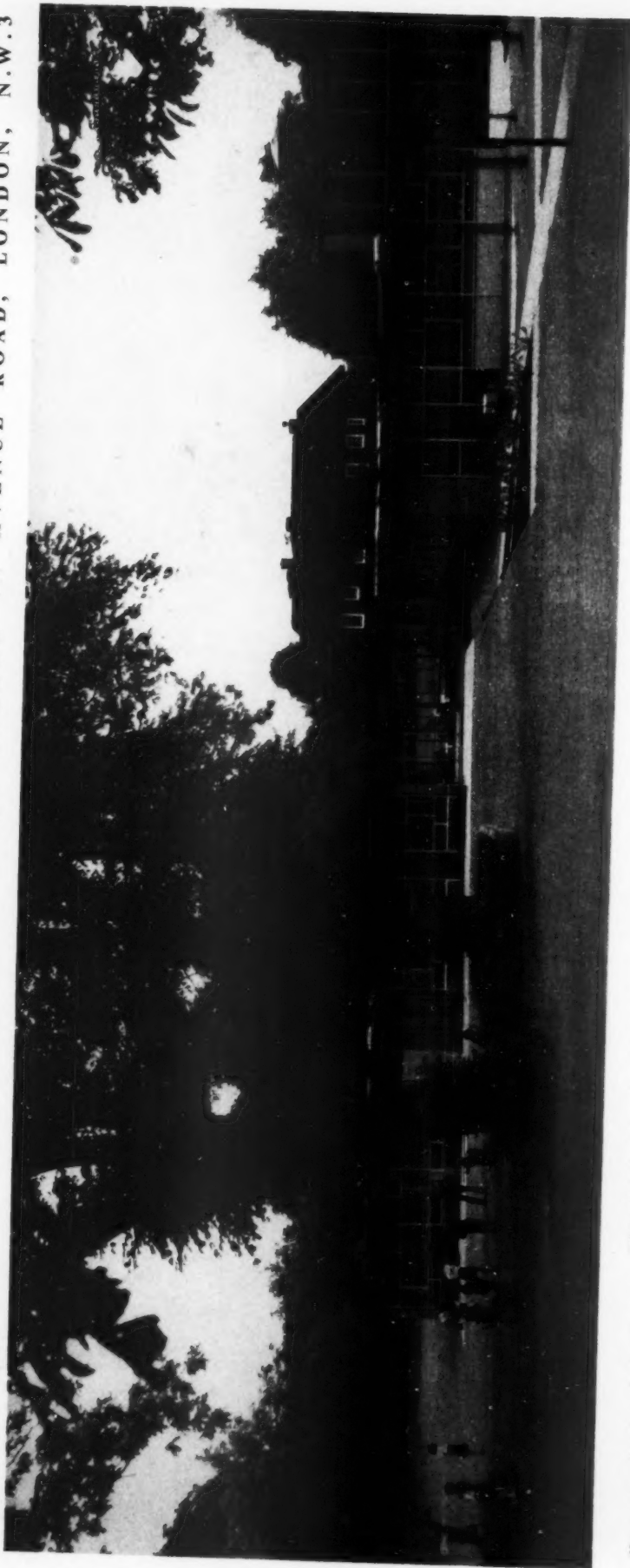




Right, inside one of the classrooms. Opposite, the internal courtyard looking towards the assembly-dining hall.

Six special schools : THE FRANKLIN DELANO ROOSEVELT SCHOOL IN AVENUE ROAD, LONDON, N.W.3

critical study



Above, general view of the Franklin Delano Roosevelt School from the north. Below, from the west, with the sand pit in the foreground.



The school is designed to accommodate 160 physically handicapped children of both sexes and all ages from five to 15 years, and to enable the children to move about with ease the whole building has been designed on one floor level throughout, including the external paved and grassed areas.

The main block is planned round a small grassed courtyard and contains the assembly/dining hall with kitchen attached, head teacher's and staff rooms, a medical suite including remedial exercise room, four secondary classrooms and a wood and metal workshop. The assembly hall contains gym apparatus and can be used for group

exercises. Each class room is equipped to be used for art, science, commerce or history and geography in addition to general subjects. A housecraft room is equipped for cookery and needlework. A smaller block connected to the main block by a fully-glazed library/rest room, contains four primary classrooms, with storage for rest beds and blankets, and cloak and lavatory accommodation. The construction is of brick cross-walls carrying a roof of pre-stressed pre-cast r.c. beams. The assembly hall roof is of reinforced wood wool slabs on a steel frame. The infilling glazed frames are of painted softwood with metal opening lights and undersill panels of vertical

cedar boarding. The assembly hall, entrance and link are clad with metal patent glazing. The fascia to the roof construction is of vertical cedar boarding. An oil fired boiler serves heating and hot water systems.

Undulating grassed areas surround the two tar-paved play pitches, and shrubs have been planted between the playground and the road. A sand pit is provided for young children.

Ground floor area, 1,620 sq. ft. Type of contract, lump sum. Work began, March, 1955. Work finished, January, 1957.

COST SUMMARY: Tender price for foundations, superstructure, installa-

tions and finishes, £54,965. Net cost per place, £344. Net cost per sq. ft. of floor area, 68s. 7d. Area per place, 100·125 sq. ft.

Architects for this and the John Keats School, Hubert Bennett (architect to the LCC); F.G. West (deputy architect to the LCC); Michael Powell (architect, schools, division); Geoffrey Horsfall (deputy architect, schools division); architect-in-charge, W. Kretschmer; assistant architects, C. Seligman and J. Lyne, Consultants (heating and electrical), the Chief Engineer, LCC, Quantity surveyors, J. J. Stevens & Son. General contractor, Howard & Co. Sub-contractors, page 426.



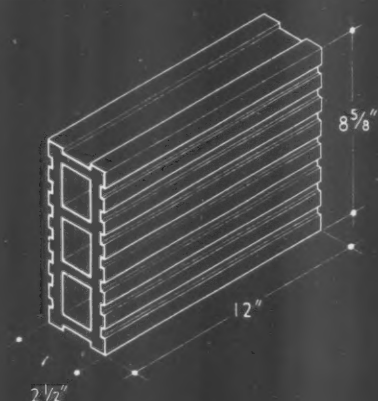
The assembly hall contains gym apparatus and can be used for group lights and undersill panels of vertical

foundations, superstructure, installations

COST SUMMARY: Tender price for Son, General contractor, Howard & Co. Sub-contractors, page 426.

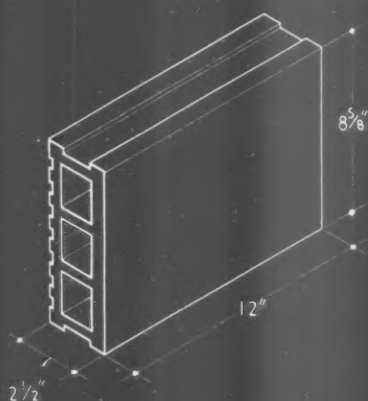
BUILDING BLOCKS | HOLLOW CLAY | GENERAL DATA**14.B1**

The Architects' Journal Library of Information Sheets 712. Editor: Cotterell Butler, A.R.I.B.A.

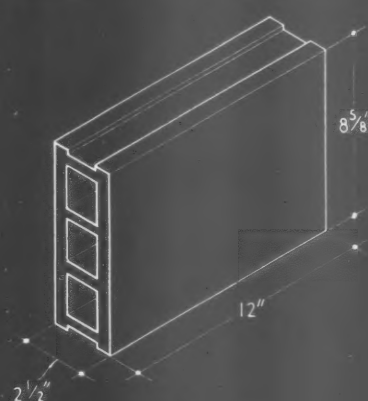


KEYED BOTH FACES.

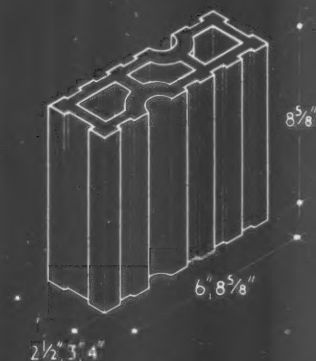
STANDARD PARTITION BLOCKS. (half blocks also available)



KEYED ONE FACE.

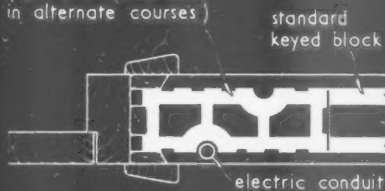


SMOOTH BOTH FACES.

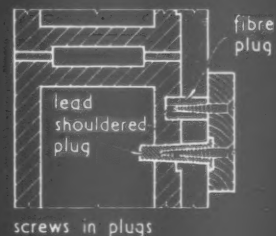


CONDUIT BLOCK.

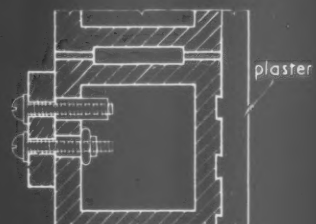
8 5/8" x 8 5/8" conduit block
(6" x 8 5/8" block used
in alternate courses)



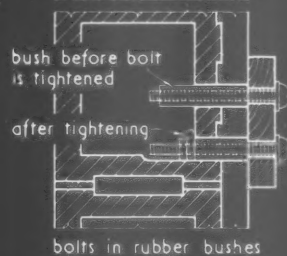
application of conduit blocks



screws in plugs

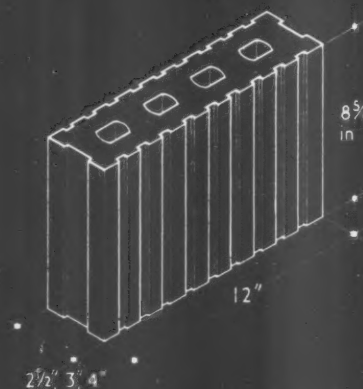


plaster

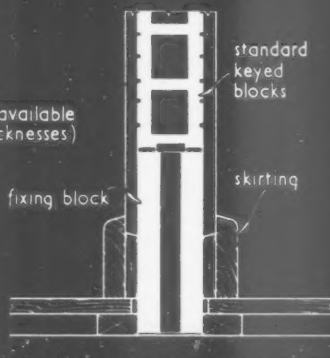
bush before bolt
is tightened

after tightening

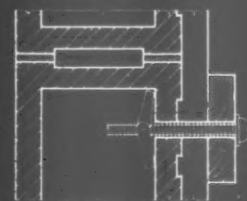
bolts in rubber bushes



FIXING BLOCK.



typical application of fixing block



spring toggle

ALTERNATIVE FIXING
DETAILS.

14.B1 · PHORPRES · HOLLOW CLAY BLOCKS FOR PARTITIONS

This Sheet is one of a series on Phorpres hollow clay blocks, and describes their use for partitions: it supersedes all previous Sheets on this subject. Sheets 14.B2 and 14.B3 deal with the use of Phorpres blocks for forming walls and Sheet 14.B4, with floor blocks.

Materials

Phorpres partition blocks are manufactured from gault (buff in colour) and also weald clay (terra cotta in colour), the latter being a high-quality engineering clay.

The clays are extensively tempered and extruded into hollow blocks, which are then entirely mechanically handled throughout a strictly controlled drying and burning process. The clays are generally free from injurious particles of lime or salts and the burning process renders the material entirely inert, minimising the occurrence of shrinkage or cracking in the finished plastered surface. The finished product is uniform in size and shape and free from excessive winding and bowing (see B.S. 1190:1951 for tolerances) ensuring minimum laying and plastering costs.

Sizes and Weights of Partition Blocks (Keyed)

Size	Wt. of blocks (lb. per sq. yd.)*		Yards per ton	
	Gault	Weald	Gault	Weald
12" × 8½" × 2½"	94	97	23½	23½

* 12 blocks per sq. yd.

Crushing Strength

Average crushing strengths of individual blocks (weald and gault) tested on edge.

Type of block	Crushing strength (lb. per sq. in.)
Non-loadbearing parti- tion blocks	2½" 500 (B.S. requires 200)

From routine crushing strength tests by the Technical and Research Laboratories, London Brick Company Limited.

Applications

Phorpres hollow clay blocks are adaptable building units for all types of partition work, and are manufactured to comply with the crushing strength tests laid down in B.S. 1190:1951. Their strength is combined with lightness in weight and high fire-resisting qualities.

The course height of 8½ in. enables the blocks to be bonded perfectly with 2½ in. brickwork.

Key for plaster: The bond or physical adhesion of a rendering or plaster is dependent upon the inherent porosity of the backing material, and in this respect Phorpres blocks possess a balanced absorption or suction value. This is further assisted by the mechanical keying provided by grooves of definite dovetail form. This mechanical key is of first importance in the early stages of drying and setting, when cracking may result from vibration, inevitable during construction. Such vibration without the support provided by mechanical keying may also interfere with, or even prevent, the development of the necessary physical adhesion.

Fixing to blocks: The drawings on the lower face of the Sheet show alternative methods of fixing to standard hollow blocks.

Holes should be drilled with a durium carbide tipped masonry drill.

Laying Instructions

Phorpres hollow blocks should be laid in 1:1:6 cement/lime/sand mortar, or its equivalent (if other plasticisers are preferred to lime); too rich a mortar mix and thick joints should be avoided.

At floor and ceiling, partitions should be wedged in accordance with the recommendations in B.S. Code of Practice CP 122:1952.

Conduit Partition Blocks

While in general practice clay blocks can be accurately chased, conduit partition blocks have been specially designed to eliminate chasing where there is a known requirement.

The groove in each block coincides with that of the blocks above and below it to form a continuous channel. In this way a conduit can be provided for on one or both sides of the partition.

Fixing Blocks

These are manufactured for use with the standard partition blocks, to be built in where fixings for skirtings, picture rails, etc., are known to be required.

Patents

Conduit partition blocks: The manufacturers are the patentees of these blocks.

This Series of Sheets on bricks and blocks covers general data on, and applications of, common, facing, cellular and keyed bricks, hollow walling, partition and floor blocks.

Compiled from information supplied by:

London Brick Company Limited.

Head Office: Africa House, Kingsway, London, W.C.2.

Telephone: Holborn 8282.

Telegrams: Phorpres, Westcent, London.

Midland District

Office: Prudential Buildings, St. Philip's Place, Birmingham, 3.

Telephone: Central 4141.

South Western

District Office: 11, Orchard Street, Bristol, 1.

Telephone: Bristol 23004/5.

Northern District

Office: St. Paul's House, St. Paul's Street, Leeds, 1.

Telephone: Leeds 20771.

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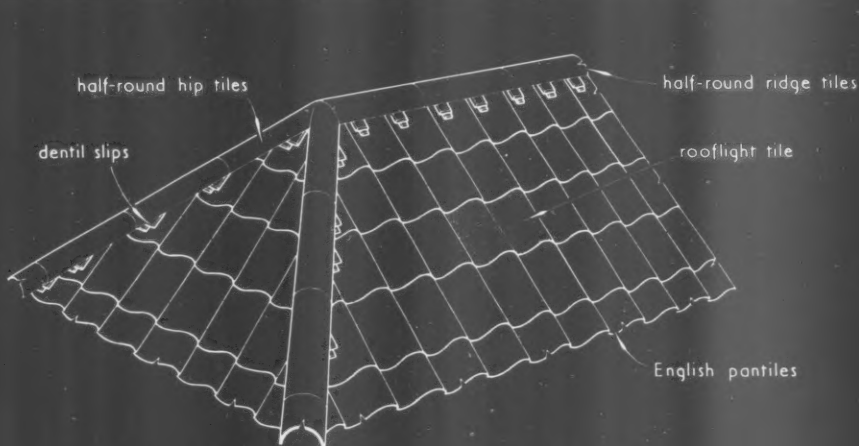
The Architects' Journal Library of Information Sheets.

Editor: Cotterell Butler, A.R.I.B.A.

TILES | CONCRETE | GENERAL DATA

17.D4

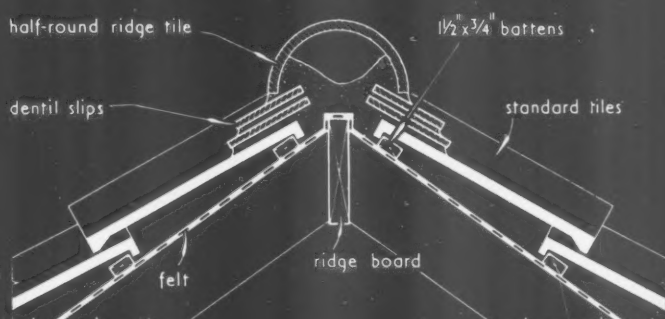
The Architects' Journal Library of Information Sheets 713. Editor: Cotterell Butler, A.R.I.B.A.



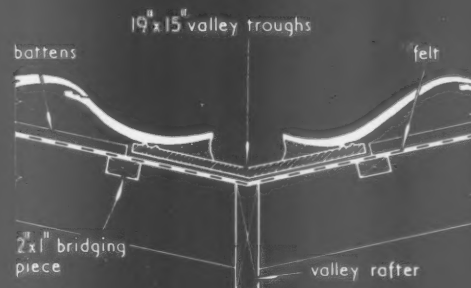
PERSPECTIVE SKETCH SHOWING TYPICAL DETAILS OF ROOF.



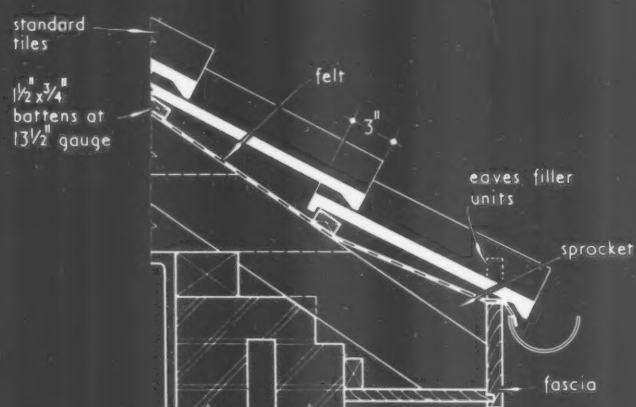
STANDARD TILE.



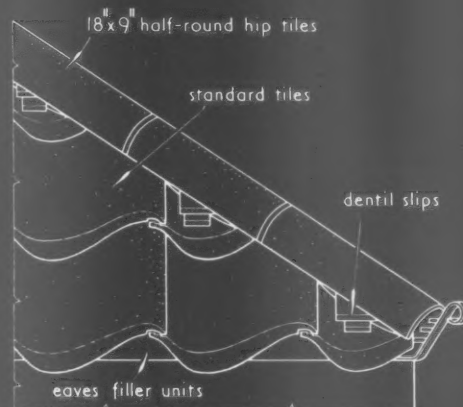
SECTION THROUGH RIDGE.



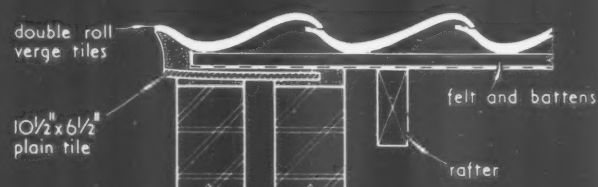
TYPICAL DETAIL OF VALLEY.



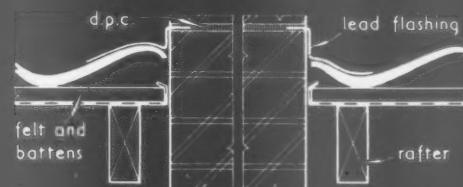
TYPICAL DETAIL AT EAVES.



ELEVATION OF FINISH AT EAVES.



TYPICAL DETAIL AT VERGE.



TYPICAL DETAIL AT ABUTMENTS.

17.D4 · REDLAND 52 · PANTILES

This Sheet describes Redland 52 pantiles. The drawings on the face show the standard tile and give details of its application to a roof. The tiles conform to B.S.550:1956 *Concrete Interlocking Roofing Tiles* in all respects except actual dimensions.

Description

The tiles are of concrete to B.S.550 and are designed with a special interlocking edge to give a positive engagement between adjacent tiles. They are suitable for roofs of 30° pitch or over. Double-roll tiles are available for left-hand verges and the standard Redland half-round tiles, obtainable in the same colours as the pantiles, are used at ridge and hips. (Socket tiles may be used as an alternative for the latter.) Standard Redland valley troughs are available for valleys. For eaves fixing, a special filler has been produced which makes bedding unnecessary. Clear Perspex tiles are available for roof-lighting, as shown in the perspective sketch on the upper face of the Sheet. They are of double-tile width and bond in with the pantiles.

Sizes

The tiles are 16½ in. by 11 in. with a covering width of 9½ in. (1·23 tiles per foot run of eaves).

Weight

Laid to a gauge of 13½ in. the tiles weigh approximately 8·3 cwt. per square.

Covering Capacity

The net covering capacity is 110 tiles per square laid to a gauge of 13½ in.

Preparation of Roof

Untearable felt to B.S.747 or building paper should be laid over the rafters lapped 3 in. horizontally and 6 in. vertically. It should be carried well into gutters and secured with clout nails. Softwood tiling battens 1½ in. by ½ in. to B.S. 1318 should be laid at 13½ in. maximum centres and any joint should always be in the centre of the top face of a rafter.

Laying

The tiles are laid in even courses as shown in the perspective drawing on the face of the Sheet, to a gauge of 13½ in. maximum (3-in. minimum head lap). The gauge chosen depends on the length of the rafters. Each tile in every alternate course should be nailed with a 1½-in. aluminium-alloy nail. All bedding mortar used should be three parts sharp sand to one part Portland cement. Bedding should be struck off with a trowel to give a smooth finish: no pointing with a separate material should be carried out.

Ridge: Half-round ridge tiles are hollow-bedded on the pantiles, with a dentil course of two tile slips to each pantile.

Hips: Hips are covered with half-round ridge tiles or socket tiles, hollow-bedded on the cut tiles with dentil courses as for the ridge. A galvanized hip iron is screwed to the foot of the hip rafter to support the tiles.

Verge: Double-roll tiles are used on the left-hand verges. Both verges should have a plain tile undercloak formed of one course, laid with the faced side of the tiles downwards and the short edge projecting 1½ to 2 in. beyond the wall face. The spaces between the pantiles and the undercloak should be filled with bedding mortar.

Valley: Valleys may be formed by using standard Redland valley troughs exposed to a width of 4 in. with the tiling cut and bedded. Alternatively, they may be lined with lead on valley boarding, the adjacent tiling being cut and bedded on a slate undercloak.

Abutment: The pantiles are cut close to abutments and a stepped lead flashing provided, extending over the first roll of the tiles.

Eaves filler unit: The eaves filler unit has been designed to simplify eaves fixing and provide a weatherproof and bird-proof seal. It consists of a timber fillet 1 in. thick shaped to fit the tile profile. The fillet is pretreated with timber preservative and drilled to receive an 11- or 12-in. gauge 1½ in. tiling nail. The fillet is fixed at the same time as the tiles, one nail being driven vertically through the hole provided and a second nail being skew-driven behind the fillet to prevent it from swivelling. In addition to the saving in labour, the fillets greatly reduce the weight on the fascia and also serve to anchor the roof underlay. The finish they give is neat and uniform.

Rooflight tile: The recommended position for the Perspex tile for lighting the roof space is three courses down from the ridge: its efficiency is reduced if placed too low in the roof slope. A piece of clear plastic sheet 3 ft. square is supplied with the tile, to replace the roofing felt immediately beneath it. The felt is cut away and the plastic sheet nailed to the rafters with its edges under the cut felt at the sides and top and over the felt at the bottom. The tiling battens are fixed over the plastic sheet in the normal way. The rooflight tile is laid to bond in with the standard pantiles and is held in place by the surrounding tiles, but, if fixing is considered necessary, nails should not be used: screws and washers are provided.

Colours

The tiles are available in green, straw, brown, dark slate, red, antique red, silver grey, and Cotswold.

Further Information

The manufacturer maintains a technical advisory department which is available to answer questions and advise on problems dealing with this subject generally.

Compiled from information supplied by:
Redland Tiles Limited

Address: Castle Gate, Reigate, Surrey.
Telephone: Reigate 4781 (10 lines).

working detail

WINDOWS: 70

WINDOWS: OFFICES IN GENEVA

George Addor, architect (material supplied by Dariush Borbor)



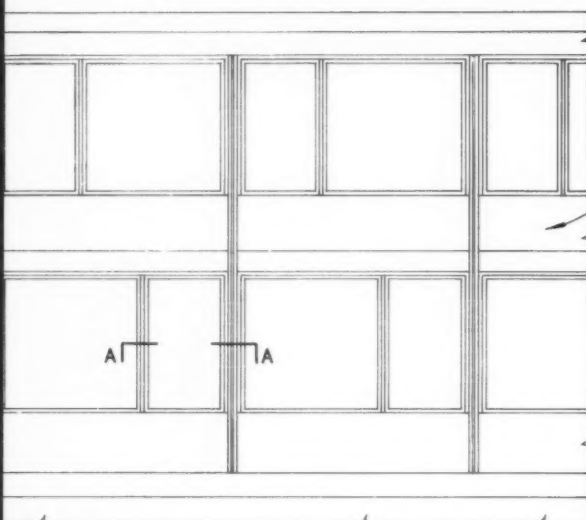
The most unusual feature of this detail (though it is fairly common on the Continent) is the facing of the timber windows and subframes with aluminium sheet.

working detail

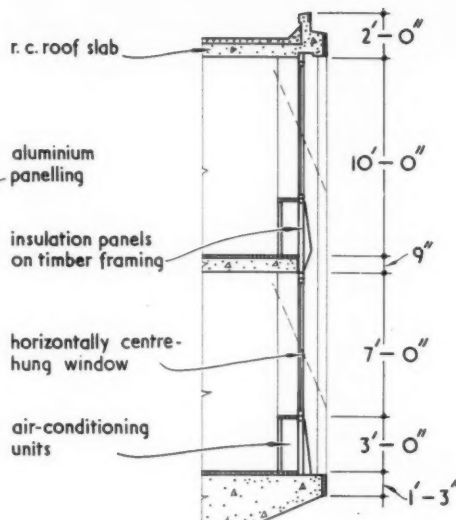
WINDOWS: 70

WINDOWS: OFFICES IN GENEVA

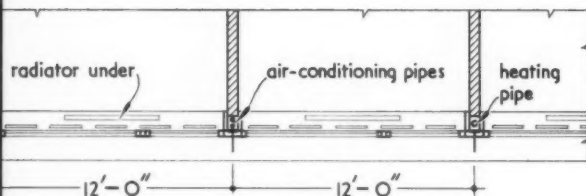
George Addor, architect (material supplied by Dariush Borbor)



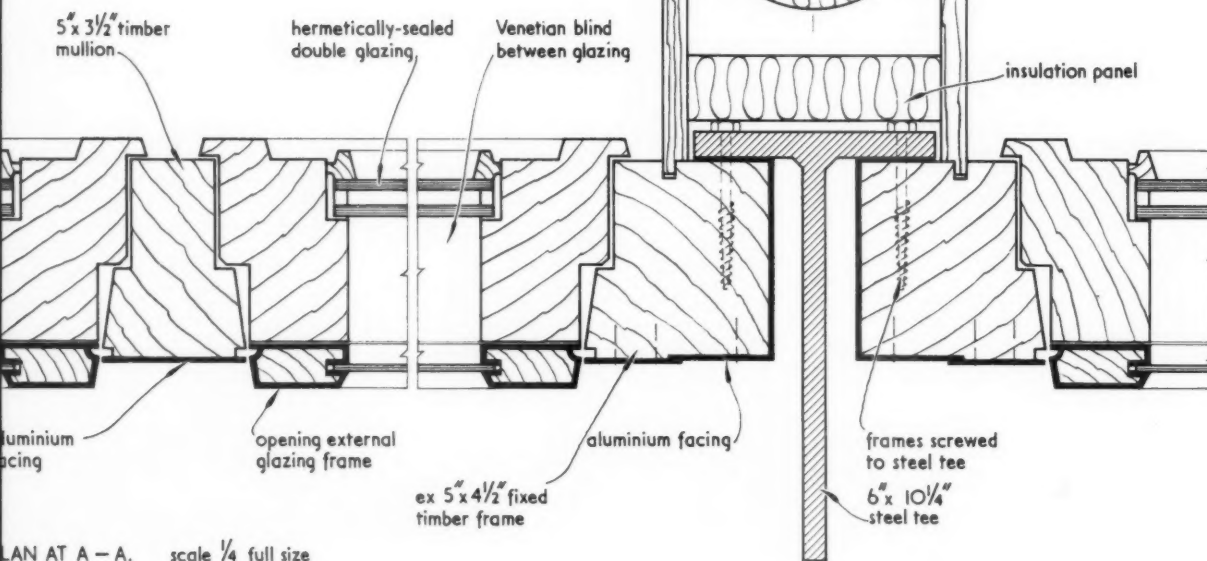
ELEVATION. scale $\frac{1}{8}'' = 1' - 0''$



SECTION.



PLAN. scale $\frac{1}{8}'' = 1' - 0''$



PLAN AT A - A. scale $\frac{1}{4}$ full size

note: figured dimensions in feet and inches are approximate



Glamorock used to gay effect on the Classic cinema, Chelsea. Architects: Dourton & Hurst. Contractors: W. Phillips & Son Ltd.

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Surface Protection Limited, 28 South Street, London, W.1.
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Contractors: Hinkins & Frewin, Oxford

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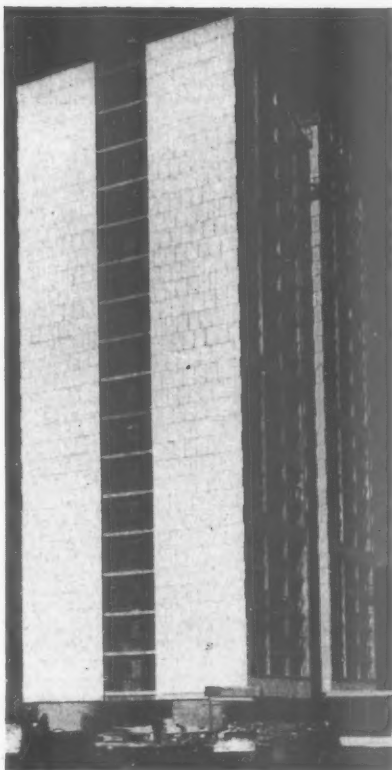
19



BIRMI

18-STOREY FLATS IN SOUTHWARK

The first block of 18-storey flats to be built in this country has now been structurally completed for the LCC (Hubert Bennett, chief architect; H. J. Whitfield-Lewis, principal housing architect; E. Hollamby, architect-in-charge; D. Gregory-Jones, assistant architect; F. S. Samuely, consulting engineer) by Wates Ltd. The building is the first of six tower blocks, which each contain 64 two-bedroom flats and four single-bedroom penthouses. Each flat has approximately 660 sq. ft. of floor area divided into two double bedrooms, living room, kitchen with dining recess, bathroom and separate w.c., and access is from a common lobby containing two high-speed lifts and refuse chute. A full description of this building, including a cost analysis, will be published in the *AJ* shortly.



Contractors

Thieves Wood Residential School at Sutton-in-Ashfield, Notts (pages 411-414). Architect: D. E. E. Gibson, C.B.E., A.R.I.B.A. (Notts County Architect). Job architect: Robert E. Waller, L.R.I.B.A. Quantity surveyor: T. O. Human. General contractors: Simms, Sons and Cooke Ltd. Sub-contractors: "Derwent" superstructure: Vic Hallam Ltd. Heating installation: Weatherfoil Heating Systems Ltd. Electrical installations: Fredk. Lamb Ltd. Floorings: Hollis Bros. Ltd. and Fitchett & Wollacott Ltd. Wall tilings: Carter & Co. (London) Ltd. W.c. partitions: Flexo Plywood Industries Ltd. Sanitary fittings: Adamsez Ltd.

The Wilson Stuart, Braidwood and Priestley Smith Schools at Wyrley Birch, Birmingham (pages 415-420). Architects: A. G. Sheppard Fidler, F.R.I.B.A. (City Architect); J. R. Sheridan-Shedden, F.R.I.B.A. (Deputy City Architect); E. Mason, A.R.I.B.A. (Senior Architect, Schools); S. G. V. Milligan, A.R.I.B.A. (Principal Architect, Schools); H. Williams, A.R.I.B.A. (Assistant Principal Architect Schools); Mrs. M. E. L. Granelli, A.R.I.B.A. (Architect-in-charge). Quantity surveyors: L. C. Wakeman & Partners. Consultants (engineering services): A. J. P. Pashler; (structural): S. Willis. General contractors: T. Lowe & Sons Ltd. Sub-contractors: Mechanical services: Steels Engineering Ltd. Electrical: Midland Electricity Board and Dale Electric Ltd. Steelwork: E. C. and J. Keay Ltd. Prestressed concrete beams: Concrete Ltd. Precast concrete beams: Constone Ltd. Suspended ceilings and acoustic linings: Midland Wallboard Ltd. W.c. par-

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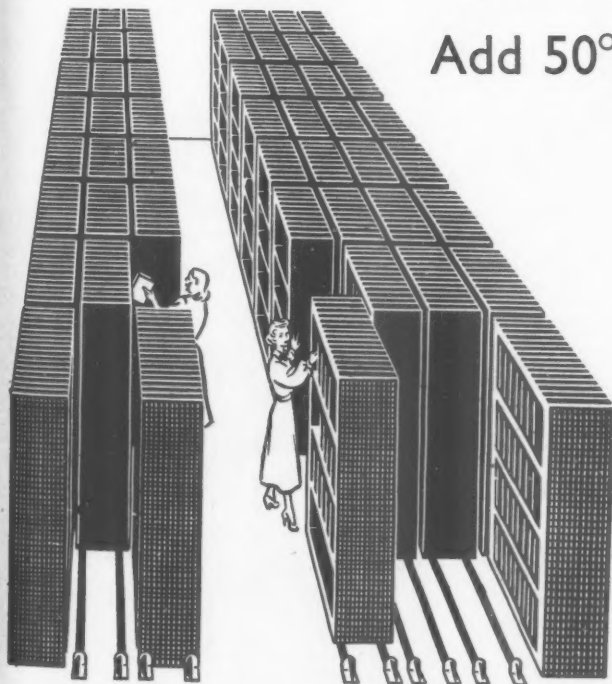
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titions: Flexo Plywood Industries Ltd. Plastering and screeding: Jennings and Baggett. Pyrok: Pyrok Contracts (Midlands) Ltd. Cell concrete: Celcon Ltd. Plumbing: Arthur Howell Ltd. Glazing and patent glazing: Aygee Ltd. Glazed wall tiling and quarry tiles: W. Mason. Painting: Geo. H. Eyre. Terrazzo work: Roman Mosaic Ltd. Granolithic: Stuarts Granolithic. Cork tiling: Cork Insulation & Asbestos Co. Ltd. Plastic tiling: Semtex Co. Ltd. Hardwood flooring and strip flooring: Vigers Bros. Ltd. Felt roofing: Highways Construction Ltd. Asphalt: Val de Travers Paving Co. Ltd. Tarpaving: The General Asphalt Co. Ltd. Fencing: Rudders & Paynes Ltd. Horticulture: The En-Tout-Cas Co. Ltd. Metal windows: Monk Metal Window Co. Ltd. Roller shutters: Conn Martin. Lightning conductor: W. J. Furse & Co. Ltd. Plastic lettering: The Lettering Centre Ltd. Ironmongery: James Gibbons Ltd. Facing bricks: Himley Brick Co. Ltd. Plastic illuminated ceilings: Lumenated Ceilings Ltd. Valtor spring floor system: J. A. Hewetson Ltd. Deaf Group Hearing aid equipment: Western Electric Co. Ltd. Entrance gates: Mountford Bros. Paints, Dulux, Dulite and Arpax: I.C.I.

John Keats School and Franklin Delano Roosevelt School at Avenue Road, London, N.W.3 (pages 421-424). Architects: Hubert Bennett, F.R.I.B.A. (architect to the London County Council); F. G. West, A.R.I.B.A. (deputy architect to the London County Council); Michael Powell, A.R.I.B.A. (architect, schools division); Geoffrey Horsfall, M.B.E., A.R.I.B.A. (deputy architect, schools division); architect-in-charge: W. Kretchmer, A.R.I.B.A.; assistant architects: C. Seligman, A.R.I.B.A., and J. Lyne. Consultant (heating and electrical): the Chief Engineer, L.C.C. Quantity surveyors: J. J. Stevens & Son. General contractors: Howard & Co. Sub-contractors:

Facing bricks: Cement Marketing Co. Ltd. Structural steelwork: Cooke & Co. In-situ hollow tile roofs: Broadmead Products Ltd. Metal windows and steel glazed cladding: Crittall Manufacturing Co. Ltd. Glazing in timber frames and doors: Hond and Langer Ltd. Felt roofing: Overall Roof Coverings. Zinc work: L. Carter & Sons Ltd. Asphalt tanking: Durastic Ltd. Plastering: The General Plasterers Ltd. Composition block flooring: Stonewood Flooring Co. Ltd. Quarry tile flooring: F. & E. Eastman Ltd. Ironmongery and sanitary fittings: Eastwood Sales Ltd. Aluminium roller shutter: G. Brady & Co. Ltd. Plumbing and drainage: Thorpe Bros. (Wimbledon) Ltd. Joinery: A. E. Lindsay & Son Ltd. Plastic wall finish: Plastic Surfaces Ltd. Paints: Denton, Edwards Paints Ltd. Heating, hot water and ventilation work: Heating and General Engineering Co. Ltd. Electrical work: Beaufort Electrical Engineering Co. Ltd. Landscape planting: Clifton Nurseries Ltd. Chain link fencing: Malan, Stephens & Johnson Ltd.

Announcements

PROFESSIONAL

Harold E. Buteux, A.R.I.B.A., A.M.T.P.L., Senior Architect (Housing) with the City of Birmingham, has been appointed to the post of Chief Technical Officer with the Scottish Special Housing Association.

The Directors of the Bristol Building Centre Ltd. have recently appointed Michael Stokes as Manager of their Design Exhibition.

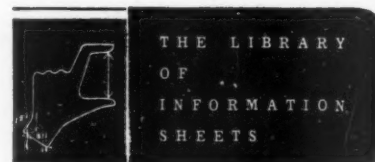
E. G. Thomas, Lecturer-in-Charge of the Department of Building, Mander College, Cauldwell Street, Bedford, is planning a Building Materials Laboratory and would appreciate it if manufacturers of building materials could send all types of samples.

TRADE

The new address of the London Office of F. W. Hills & Sons Ltd. is: Southern Area Depot, Sopers Road, Cuffley, Potters Bar, Middlesex (telephone Cuffley 2824/5).

The Caterpillar Tractor Co. Ltd. have appointed John L. Deffenbaugh as Manager of their new factory in Glasgow.

Following upon the change of control of the British Aluminium Co. Ltd., Lord Portal and Geoffrey Cunliffe, Chairman and Deputy Chairman respectively, have left the Boards of that Company and all its subsidiary and associated companies. Sir Ivan A. R. Stedford has been elected a Director and Chairman of the Board of the British Aluminium Co. Ltd., and Richard S. Reynolds has been elected a Director of that company.



CANCELLATION 15.B3.

Readers are asked to note that Sheet 15.B3 is cancelled and should be removed from collections.

REFERENCE BACK 29.J1, 29.J3-6

The manufacturer now has a Nottingham Office at 202, Mansfield Road. Telephone: Nottingham 63526.



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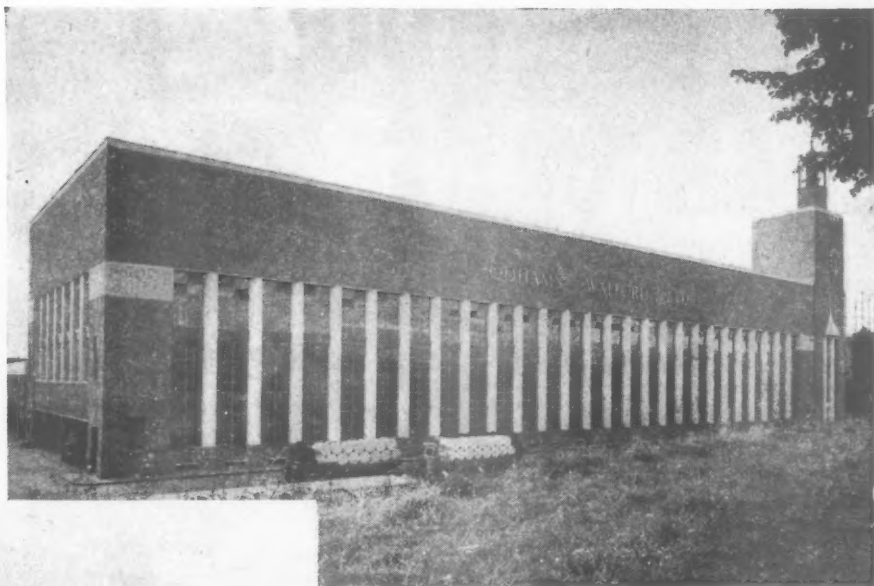


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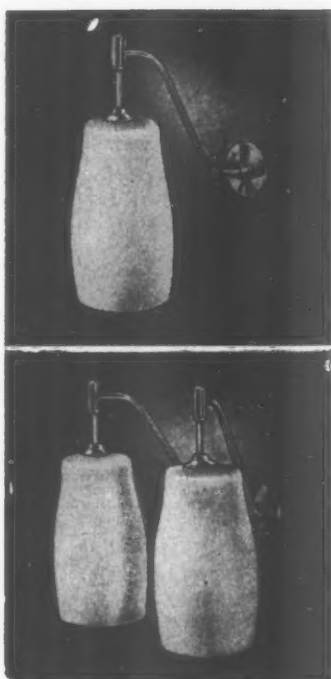
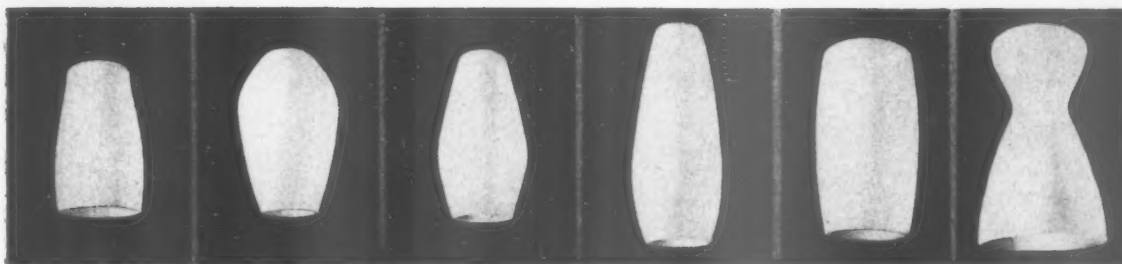
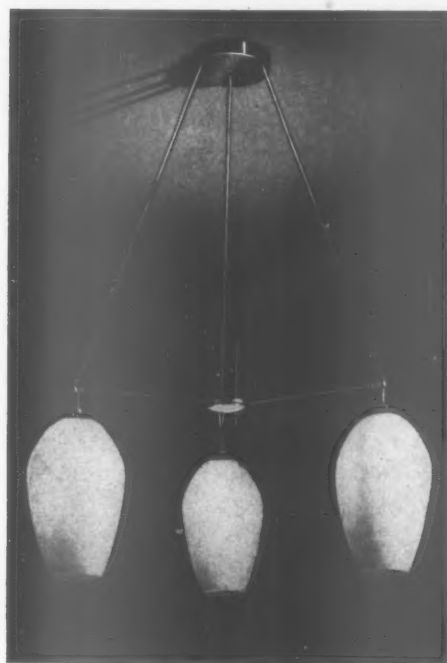


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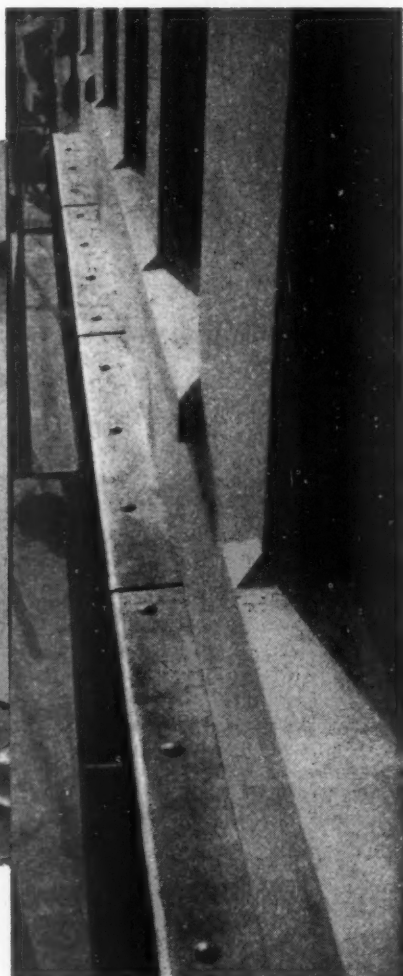
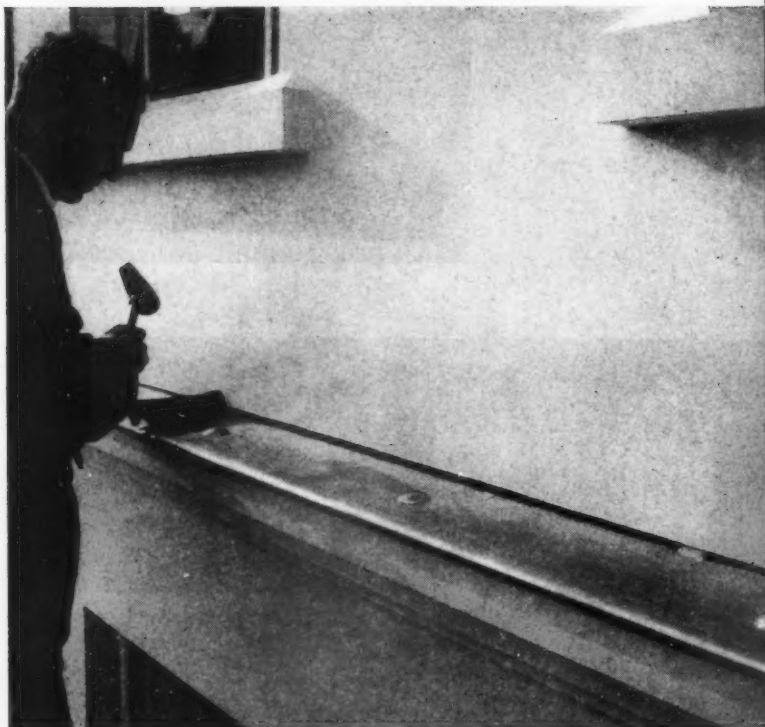
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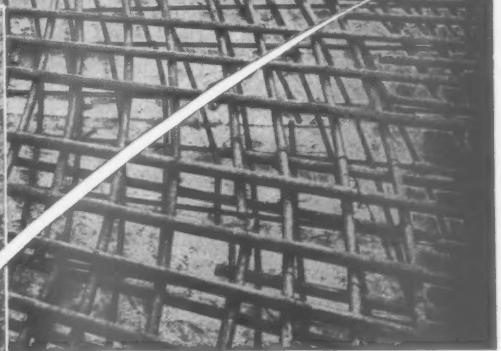
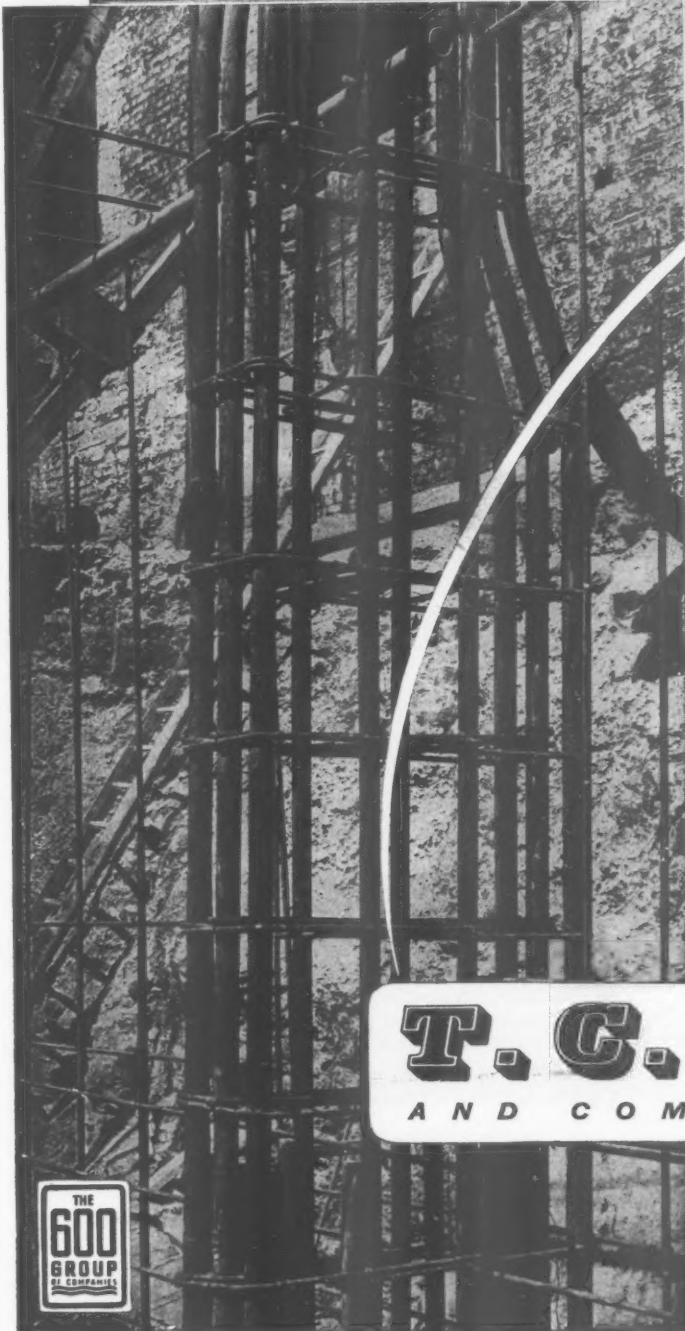
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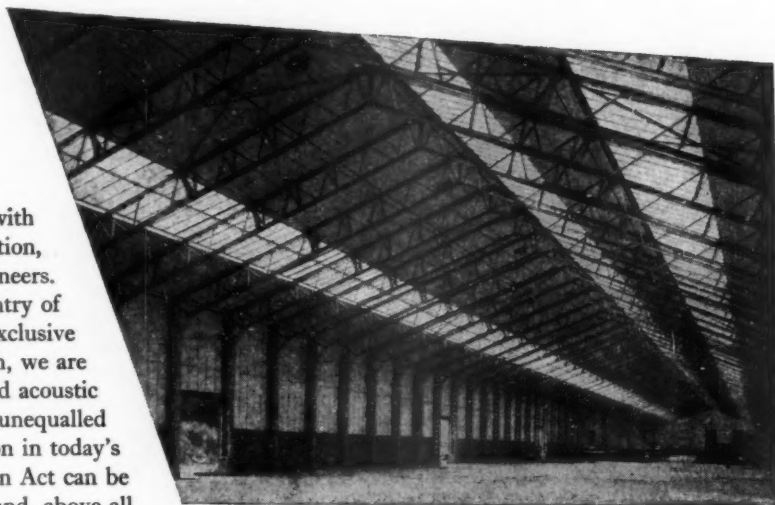
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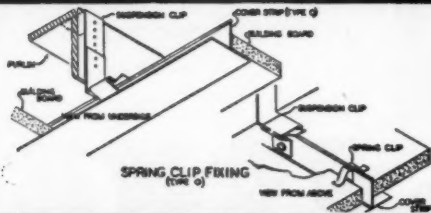
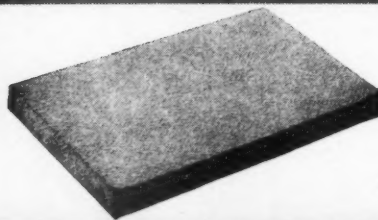
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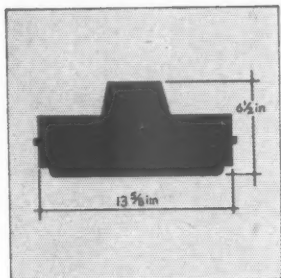
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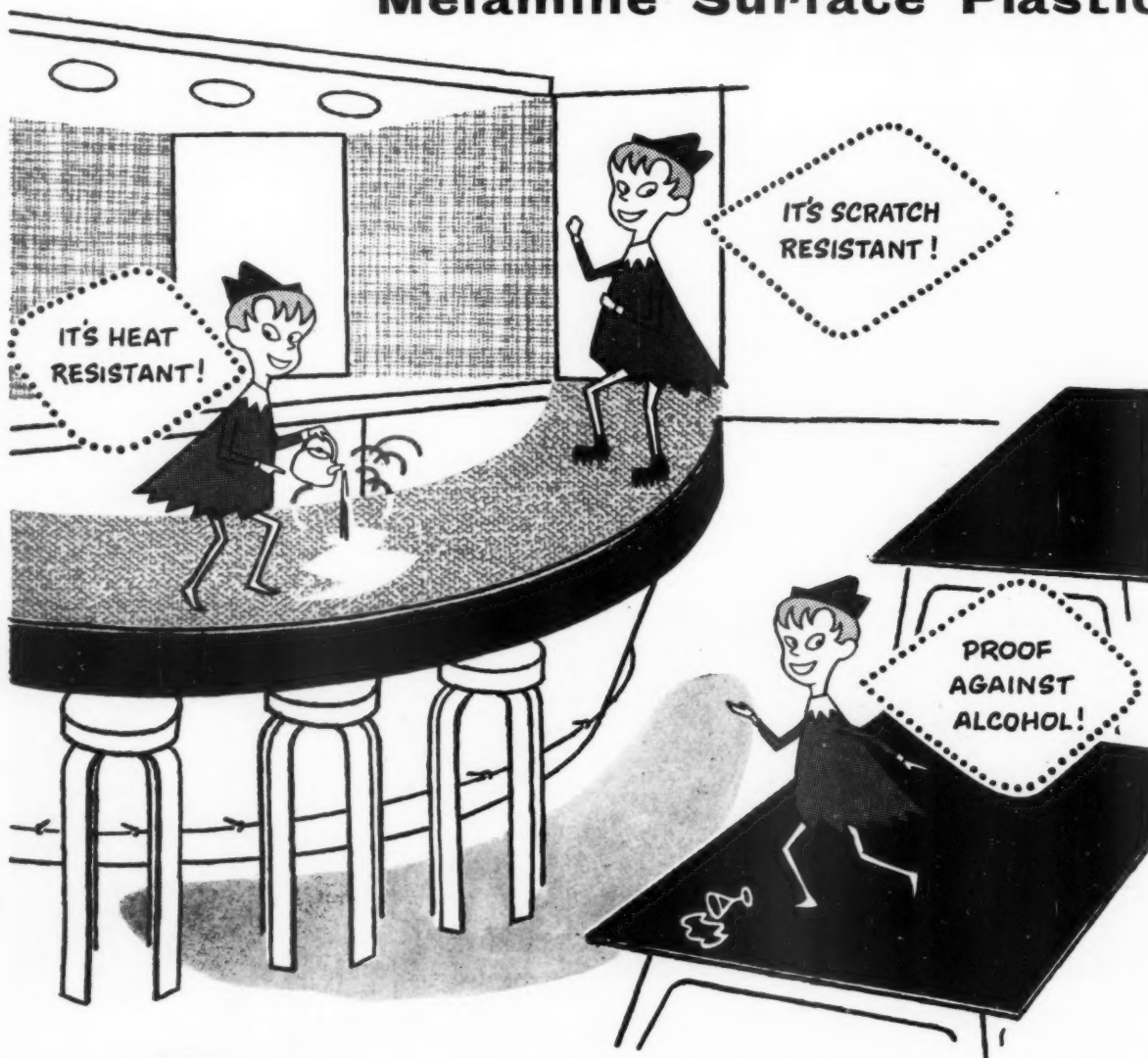
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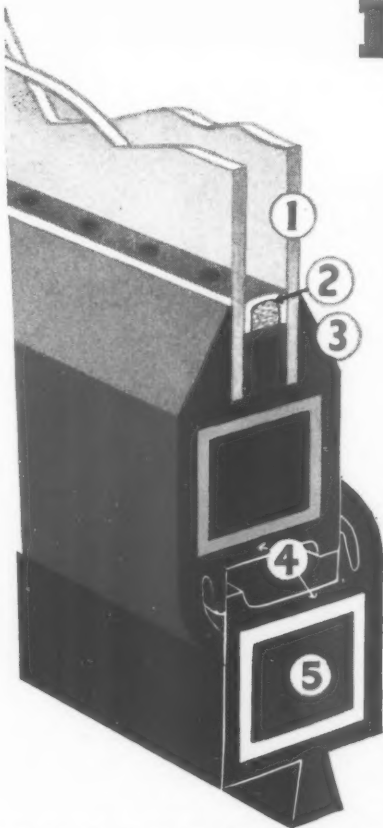
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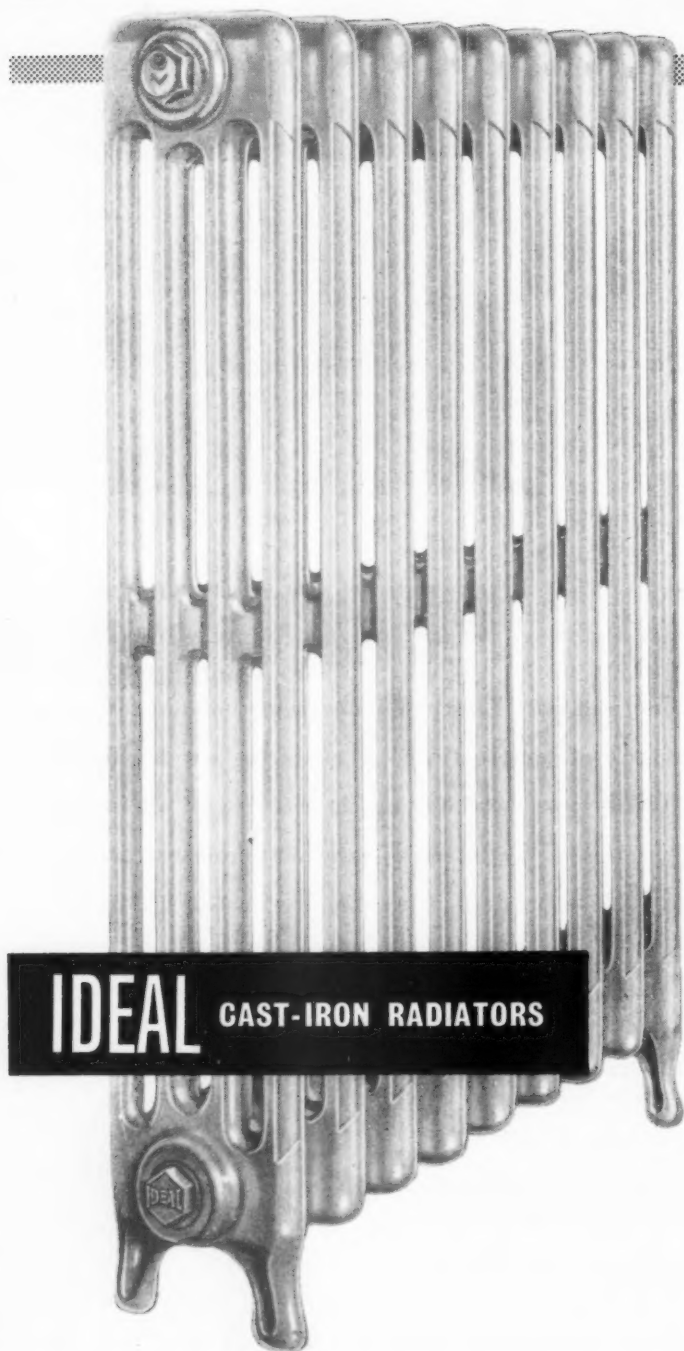


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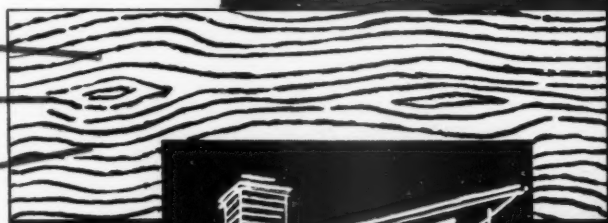
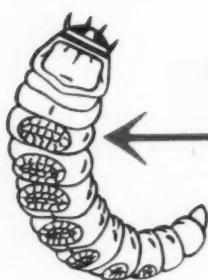
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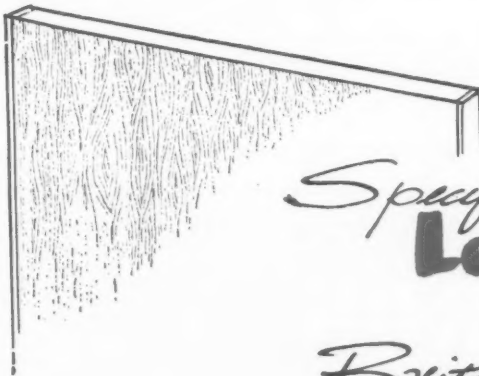


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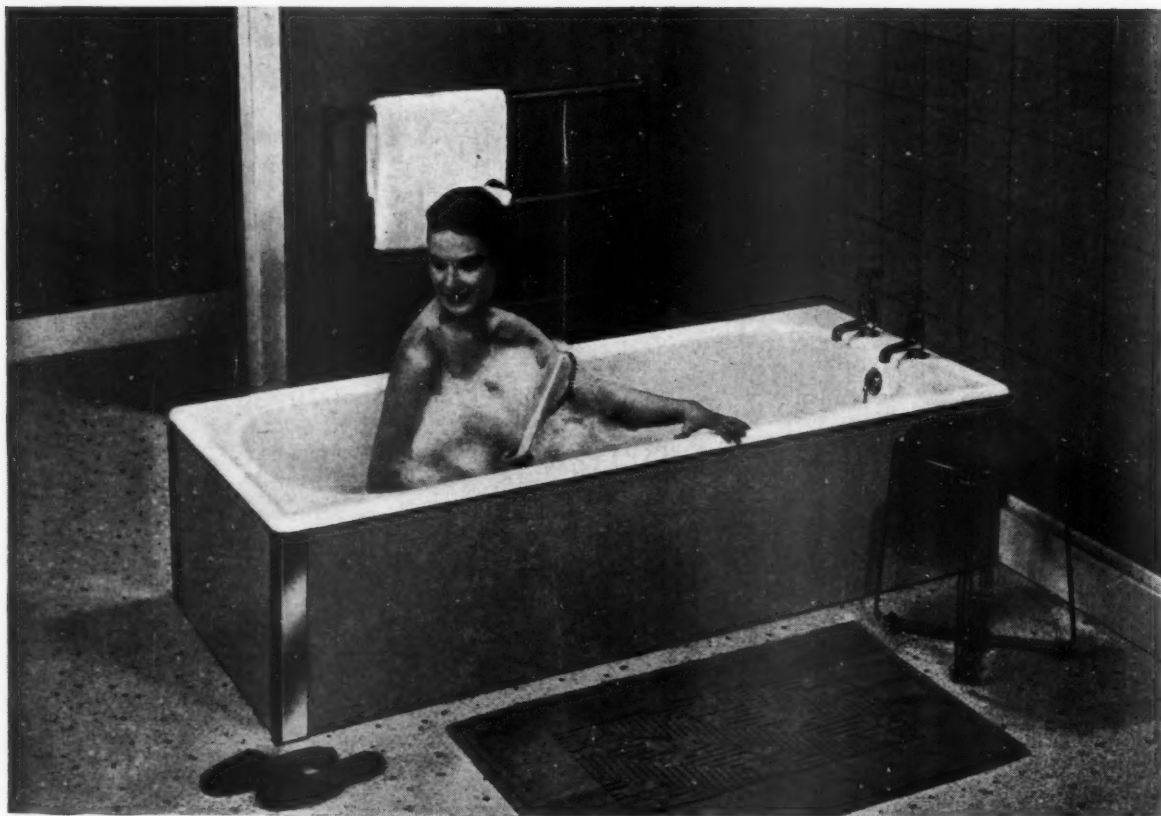
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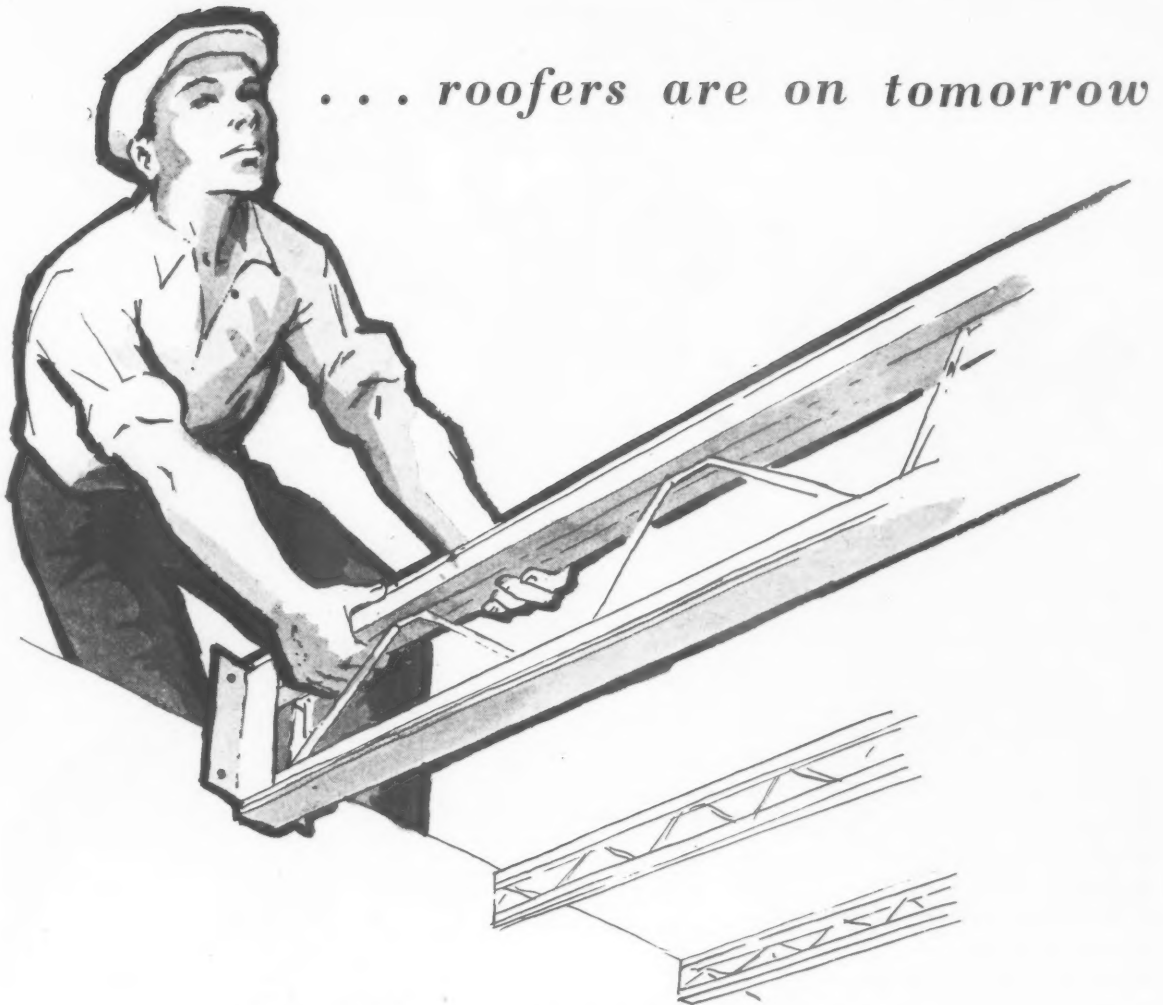
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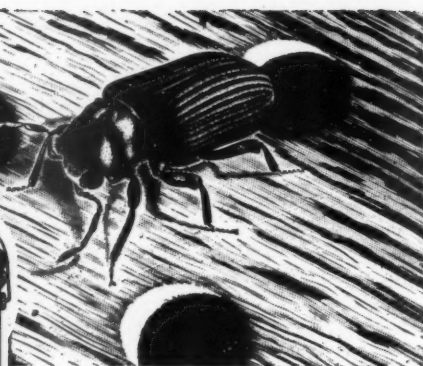
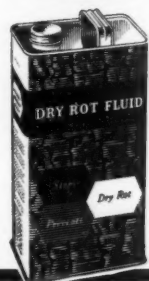
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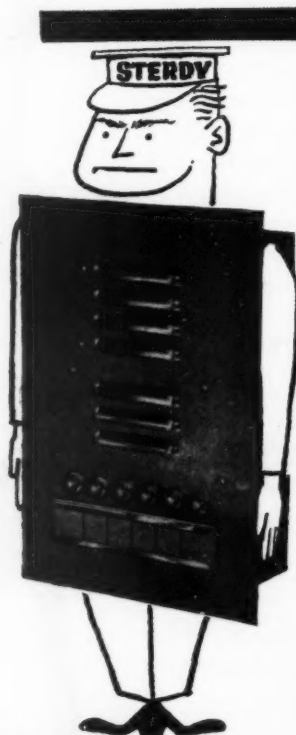
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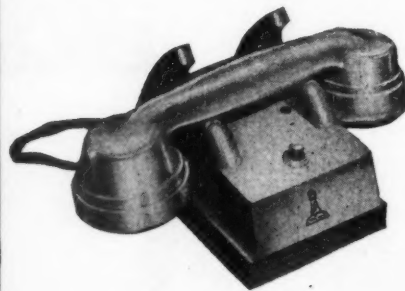
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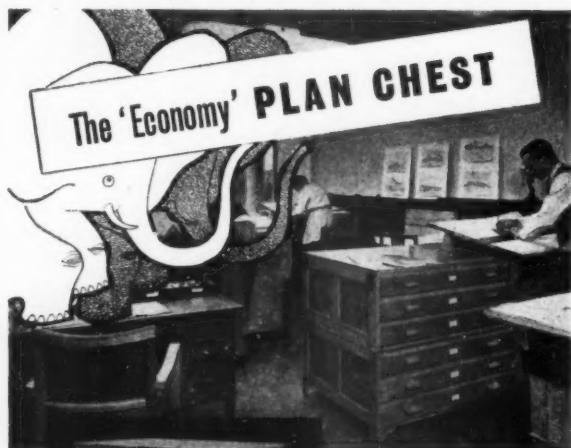
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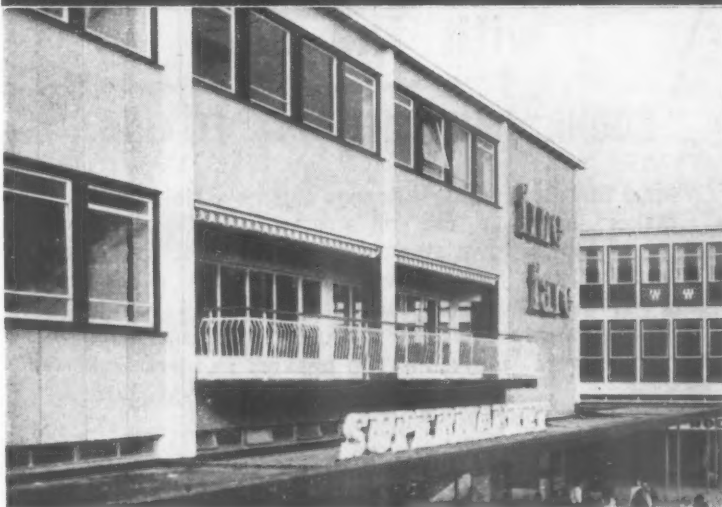


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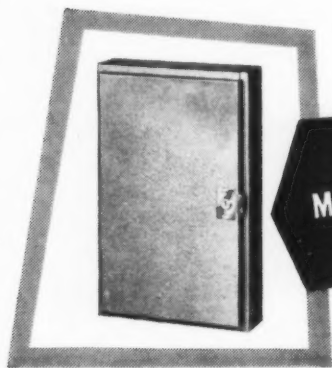
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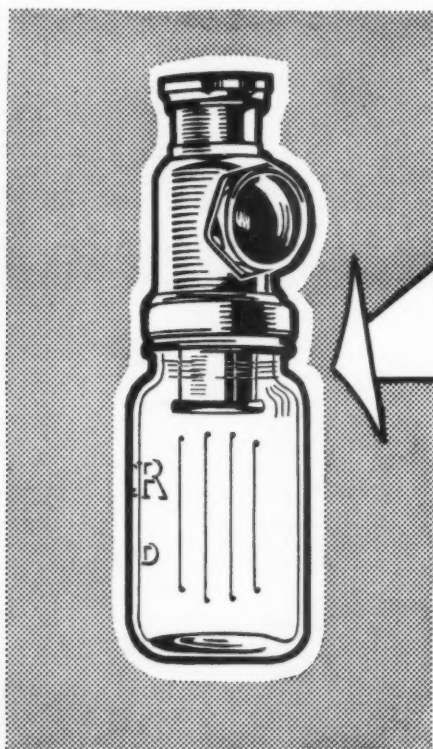
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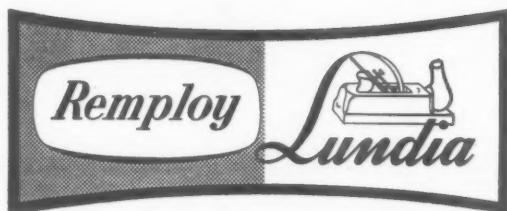


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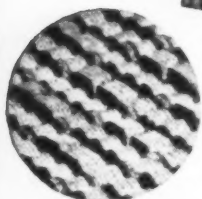
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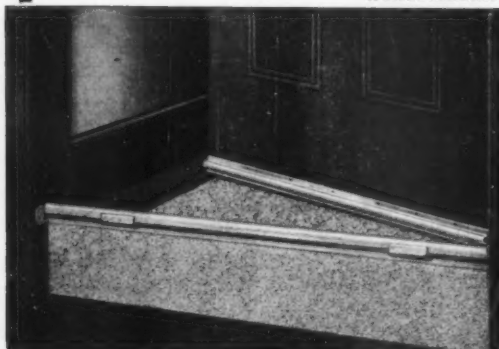
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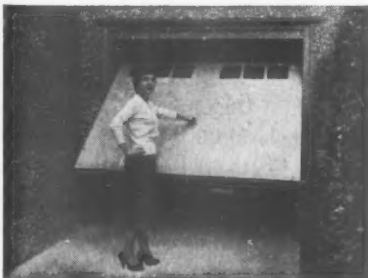
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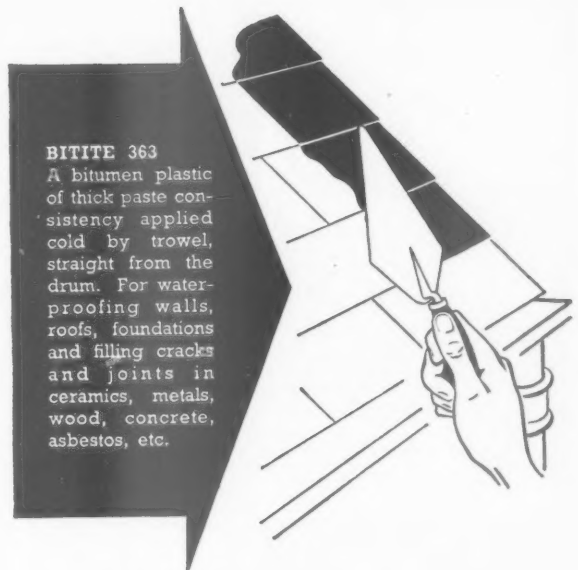
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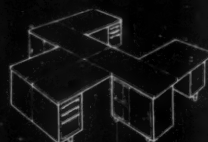


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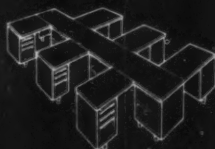
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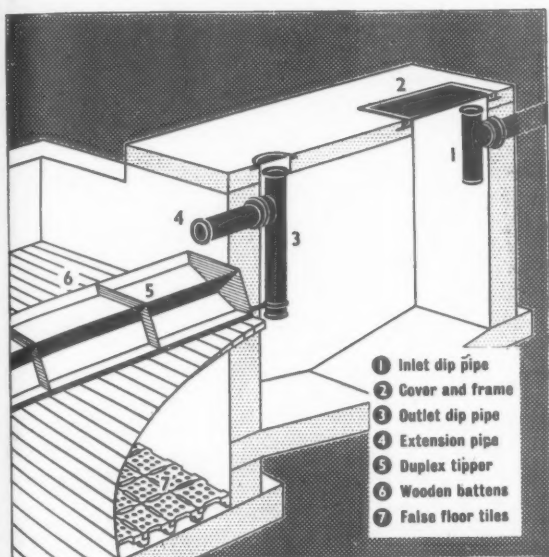
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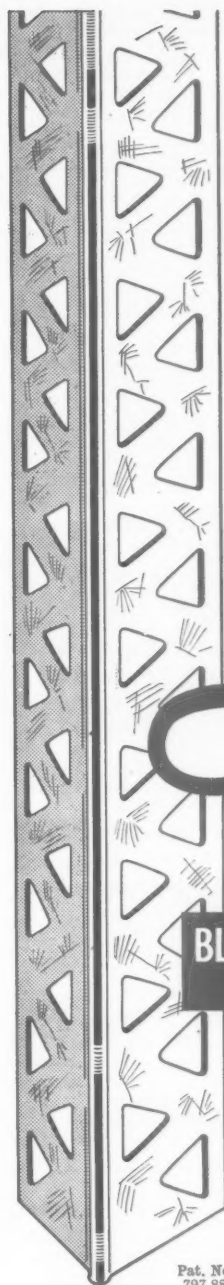
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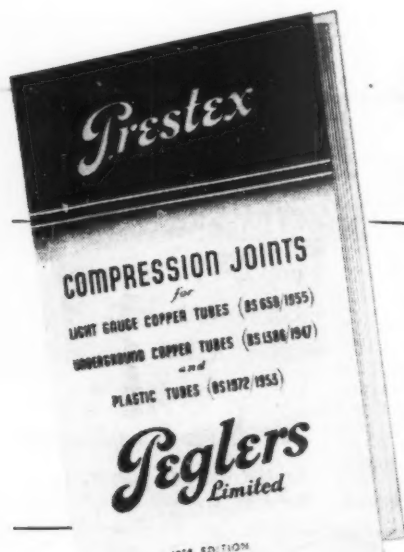
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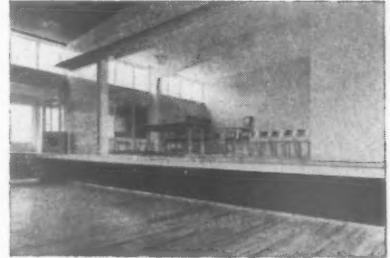
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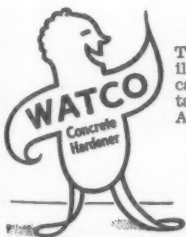
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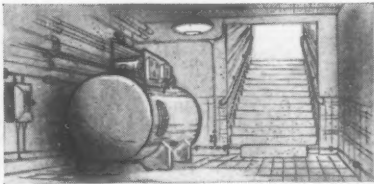
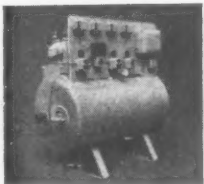
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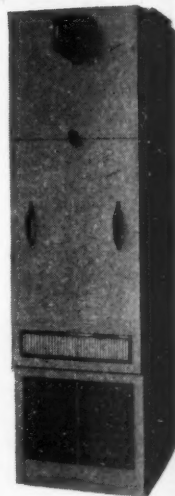
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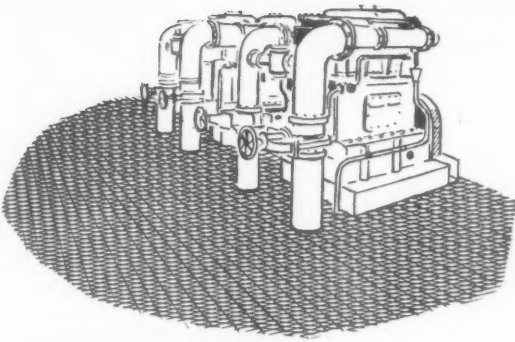


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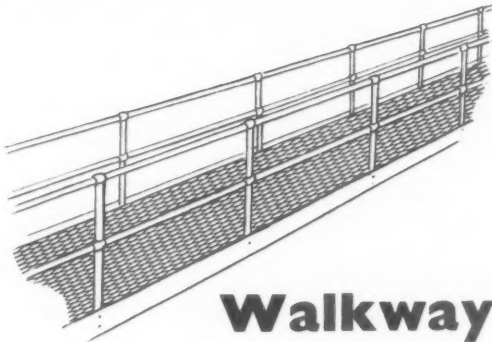
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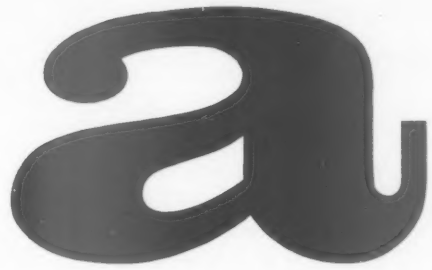
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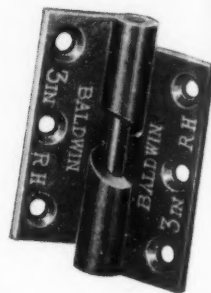
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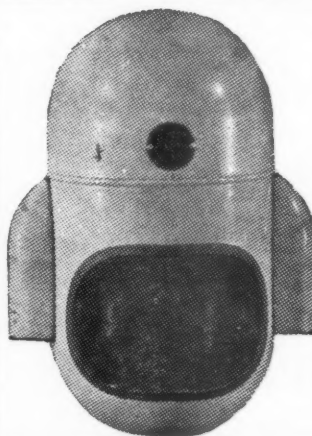
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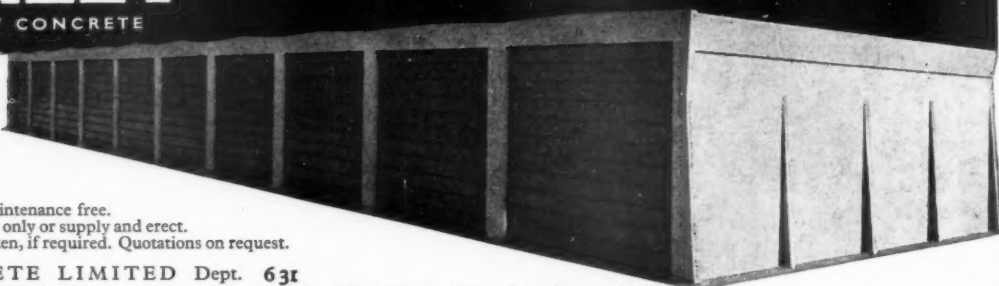
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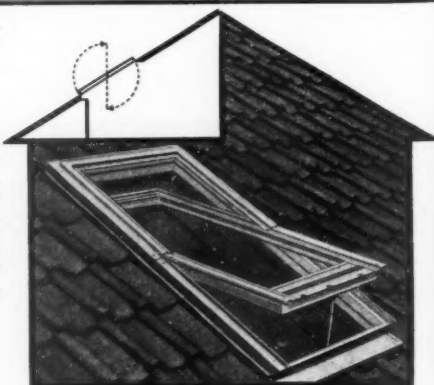
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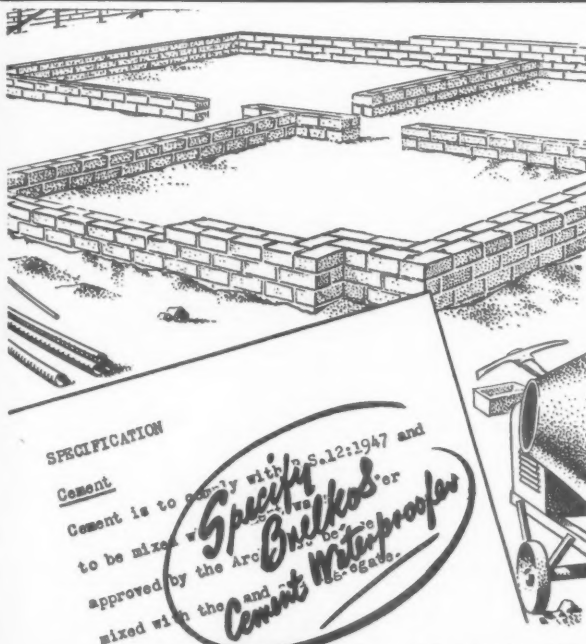
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CLASSIFIED ADVERTISEMENTS

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

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

AIR-MAIL SERVICE available on request: 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 prepayment 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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ARCHITECTURAL ASSISTANTS

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For employment in London and Provinces on design and detailing work on construction and maintenance of all types of public buildings. Salary range £550 (age 21) to £870 p.a. London (slightly less elsewhere).

Five-day week. 34 weeks annual leave initially. Starting pay according to age, qualifications and experience. Good prospects of promotion with salaries of £1,015 p.a. and above.

Opportunities for permanent posts leading to pensions (non contributory).

Interviews at Regional Offices where possible. Applicants should be of Intermediate R.I.B.A. standard. State age, training and experience to Chief Architect, Ministry of Works, Room 435, Abell House, John Islip Street, S.W.1. 3444

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

Vacancies for ARCHITECTURAL ASSISTANTS, starting salary up to £860. Full and interesting programme of houses, flats, schools and general buildings.

Application form and particulars from The Architect to the Council, County Hall, S.E.1, quoting AR/EC/14/59 (256). 3046

DEPARTMENT OF ARCHITECTURE,

SURVEYING AND BUILDING

The School of Architecture offers a five-year full-time course leading to the Final Examination of the Royal Institute of British Architects. Students successfully completing the first three years of the course obtain exemption from the intermediate examination of the aforementioned Institute.

The portfolio of work completed during the final two years of the course is accepted by the Royal Institute of British Architects in lieu of the Testimonies of Study.

The College has established a list of approved students' lodgings in the County Borough of Southend-on-Sea. The arrangements for the placing of students in these lodgings are made by the Welfare Officer Supervisor of Student Lodgings.

Further details and forms of application for admission to the five-year full-time course may be obtained from J. M. Scott, B.Arch., F.R.I.B.A., Head of Department of Architecture, Surveying and Building, Municipal College, Victoria Circus, Southend-on-Sea.

D. B. BARTLETT, M.A.,
Chief Education Officer.

4th February, 1959. 3190

BOROUGH OF KING'S LYNN

HOUSING ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of QUANTITY SURVEYOR. Salary Grade II A.P.T. (£725 rising to £845). The appointment is superannuable and subject to the National Scheme of Conditions of Service, and to Medical Examination. Form of Application and further particulars from G. Holmes, A.R.I.B.A. Housing Architect, Clifton House, Queen Street, King's Lynn, to whom applications should be submitted not later than Friday, 20th March, 1959.

E. W. GOCHER,
Town Clerk.

Town Hall,
King's Lynn,
Norfolk. 3278

LONDON COUNTY COUNCIL

ARCHITECT'S DEPARTMENT

Vacancies for ARCHITECT/PLANNERS. Tasks include three-dimensional planning within London's eight major Comprehensive Development Areas (including Stenney/Poplar, South Bank and Elephant and Castle) and other Redevelopment Areas. Work includes preparation of comprehensive layouts for all important areas of new development throughout the County including areas to be redeveloped in connection with road improvements.

Starting salaries up to £860 according to experience and qualifications. Application forms and particulars obtainable from Hubert Bennett, F.R.I.B.A., Architect to Council (Ref. AR/EC/7/69). County Hall, London, S.E.1. (146) 2804

CITY OF CANTERBURY

Applications are invited from persons who have passed the Final Examination of the R.I.B.A. for the temporary appointment of ASSISTANT ARCHITECT. Special Scale (£750-£1,030).

The successful candidate will be engaged on the design and construction of housing projects and the appointment offers considerable scope for initiative and experience in this field.

The commencing salary will be fixed within the scale, according to ability and experience.

The Council are prepared to assist the successful candidate to obtain housing accommodation, if necessary.

Applications, together with the names of two referees, must reach the City Architect & Planning Officer, Mr. J. L. Berbers, F.R.I.B.A., A.M.T.P.I., not later than Saturday, 21st March, 1959.

Canvassing will disqualify.

J. BOYLE,
Town Clerk.

Municipal Buildings,
Canterbury. 3275

COUNTY BOROUGH OF MERTHYR TYDFIL

APPOINTMENT OF BOROUGH ARCHITECT

Applications are invited from Associates of the R.I.B.A. with appropriate experience for the above post at a salary of £1,930 rising by one increment of £70 and three of £65 to £2,195.

Application forms, which also contain particulars and duties of the appointment, may be obtained from the undersigned and must be returned with copies of three recent testimonials by 19th March, 1959.

The appointment is subject to the provisions of the Local Government Superannuation Acts and to the passing of a medical examination and is terminable by three months' notice on either side.

Canvassing in any form will disqualify.

T. S. EVANS,
Town Clerk.

Town Hall,
Merthyr Tydfil.
23rd February, 1959. 3288

SOUTHAMPTON COUNTY BOROUGH

COUNCIL

requires under N.J.C. Conditions of Service ASSISTANT QUANTITY SURVEYOR—Salary within Special Grade (£750/£1,030 p.a.).

Applicants must be Chartered Quantity Surveyors, preferably with experience in municipal housing including multi-storey flats and shopping centres.

Apply on application form obtainable from the Borough Engineer and Surveyor, Civic Centre, Southampton, by not later than Monday, 23rd March, 1959. 3297

COUNTY COUNCIL OF ESSEX

COUNTY PLANNING DEPARTMENT

Applications are invited for post of ASSISTANT AREA PLANNING OFFICER, A.P.T. Grade IV (£1,025-£1,175) at Braintree. Applicants must be Corporate Members of the Town Planning Institute and the possession of an additional professional qualification in Architecture will be considered an advantage. Applicants must have had wide experience in development control and some experience in the preparation of development plans for county towns and large villages. They should also be able to assume control of an area office of 11 persons during the absence of the Area Officer.

Five-day week; medical examination; superannuation.

Application forms from County Planning Adviser, Broomfield Place, Broomfield, Chelmsford, returnable by 16th March, 1959. 3193

QUANTITY SURVEYING ASSISTANTS

required by AIR MINISTRY in LONDON and PROVINCES.

Duties include abstracting and billing, site measurement and preparation of estimates. Commencing salary according to age, qualifications and experience. Salary ranges in London £695 at age 26 rising to £870 for candidates holding O.N.C. (Building) or (Builders Quantities) or equivalent, and good experience under Quantity Surveyor or Building Contractor. Knowledge of W.D. schedule an advantage. Approved full time study will count towards period of experience. Salaries somewhat lower in Provinces. Promotion and pensionable prospects. Five-day week, three weeks leave a year. Appointments carry liability for service anywhere U.K. or overseas. Applicants normally should be natural born British subjects. Write stating age, qualifications and previous appointments including type of work done, to Manager, Professional and Executive Register, Ministry of Labour and National Service, Atlantic House, Farringdon Street, E.C.4, quoting reference PE 105/745. No original testimonials should be sent. Only applicants selected for interview will be advised. 3024

CITY OF BIRMINGHAM

ASSISTANT ARCHITECTS are required in the City Architect's Department for the design of new Civic Buildings, Schools, Technical Colleges, etc., and Housing Schemes (including tall blocks of flats), Shopping Centres, etc.

Commencing salaries will be within the Special Scale (£750 x £40 - £1,030) according to capabilities and experience.

Applicants should have passed Parts I and II Final R.I.B.A. or hold equivalent qualifications. 5-day Week. Medical Examination.

Applications, stating age, present position and salary, qualifications, experience and two referees to the undersigned by 26th March, 1959.

A. G. SHEPPARD FIDLER,
Civic Centre, City Architect. 3378

CITY OF LIVERPOOL

ARCHITECTURAL AND HOUSING

DEPARTMENT

Applications are invited for the following appointments, viz.:-

(a) ASSISTANT ARCHITECTS.

(b) ASSISTANT SURVEYORS.

Salary in each case £750-£1,030 p.a. (N.J.C. Scale). Commencing salary will depend upon experience.

Applicants for—

(a) Should be Associates of the Royal Institute of British Architects or hold equivalent qualification. Vacancies exist in General, Housing and Redevelopment Architectural Sections, and preference for a particular type of work will be considered. The work involved is interesting and includes building for the education programme, other public buildings, the housing programme, including multi-storey blocks and slum clearance.

(b) Should possess the A.R.I.C.S. A.M.I.Mun.E. or equivalent qualification. Persons appointed will be employed in the section dealing with estate layouts, roads and sewers.

Application forms, obtainable from the City Architect and Director of Housing, Blackburn Chambers, Dale Street, Liverpool, 2, returnable to him by 31st March, 1959.

The appointments are superannuable and subject to the Standing Orders of the City Council. Canvassing disqualifies.

THOMAS ALKER,
Town Clerk. 3202

(J. 5545.)

DEPARTMENT OF MUNICIPAL AFFAIRS

AND SUPPLY

PROVINCE OF NEWFOUNDLAND, CANADA

APPOINTMENT OF SENIOR PLANNING

ASSISTANT

Applications are invited from suitably qualified and experienced persons for the above appointment in the Provincial Planning Division of the Department of Municipal Affairs and Supply in St. John's. The appointment will be contractual for a period of two years and subject to satisfactory service will be established at the end of that time. Salary will be within the salary scale. \$5390 x \$100 - \$5830.

2. Duties will include the preparation of Municipal and Regional Plans including detailed designs for communities and districts throughout the Province, and the control of development in accordance with various Provincial regulations.

The office is situated in St. John's but travelling within the Province will be required.

3. Candidates must have appropriate professional qualifications in Town Planning together with considerable practical post-graduate experience. Experience in public relations and ability to address meetings of different types is very necessary.

4. Conditions of service full details of which are available on request provide free passage of applicant and family to St. John's.

5. Applications giving full details of candidate's age, education, professional qualifications, appointments held, professional experience, together with the names of two referees should be sent to J. T. Allston, Director of Urban and Rural Planning, Department of Municipal Affairs and Supply, P.O. Box E5251, St. John's, Newfoundland. Applications must be received not later than 1 April, '59. 3387

MANCHESTER REGIONAL HOSPITAL BOARD

Applications are invited for the following posts:—

(a) SENIOR ASSISTANT ARCHITECT

Salary £1,050-£1,245.

Applicants must be Registered Architects.

(b) ASSISTANT SURVEYOR

ASSISTANT QUANTITY SURVEYOR

Salary for both posts £730-£1,055.

Professional qualifications required.

(c) SURVEYING ASSISTANT

ARCHITECTURAL ASSISTANT

Salary for both posts £546-£765.

Intermediate examination qualifications required.

(d) DRAUGHTSMAN

Salary £445-£660.

3 years' drawing experience essential.

All the posts are superannuable and subject to National Health Service conditions. Application forms and details of the post obtainable from the Secretary, Manchester Regional Hospital Board, Cheetwood Road, Manchester 8, to whom they should be returned no later than 21st March, 1959. 3388

NORTH RIDING COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of:

(a) TWO ASSISTANT ARCHITECTS, on permanent staff, with Final R.I.B.A. examination.

Salary, Special Scale (£750-£1,030), point of entry will depend on experience.

(b) TEMPORARY JUNIOR ARCHITECTURAL ASSISTANT with Intermediate R.I.B.A. examination or equivalent school examination. Salary A.P.T. Grade I (£575-£725), point of entry will depend on experience. Service period will be for two years with possibility of extension.

The National Scheme for Conditions of Service apply, and medical examination required for superannuation purposes. Applications stating age, qualifications and experience, with particulars of present and previous appointments and names and addresses of three referees to be delivered to the Clerk of the County Council, County Hall, Northallerton, by 1st April, 1959.

Canvassing will disqualify and candidates should state whether they are related to any member of, or senior officer under, the Council. 3368

BOROUGH OF FINCHLEY

CLERK OF WORKS, temporary, required in Housing Department. Salary within Grade A.P.T. II (£725 x £430-£845) plus London weighting according to qualifications and experience. N.J.C. service conditions. Superannuation. No housing accommodation.

Practical knowledge of all branches of building trade, use of level, ability to set out and read plans essential.

Applications giving age, education, experience, qualifications and names of two referees to: I. Fooks, F.A.I., Housing Department, The Avenue, N.3, not later than the 18th March, 1959.

R. M. FRANKLIN,
Town Clerk.

Municipal Offices,
N.3. 3303

BOROUGH OF WREXHAM

Applications are invited for the following appointment in the Borough Engineer & Surveyor's Department.

ARCHITECTURAL ASSISTANT, salary A.P.T. II (£725-£845 per annum). Point of entry according to qualifications and experience.

House provided, if required.

Forms of application and particulars obtainable from the Borough Surveyor, 31, Chester Street, Wrexham.

Applications to the undersigned by 12 noon, 23rd March, 1959.

PHILIP J. WALTERS,
Town Clerk.

Guildhall,
Wrexham. 3324

BOROUGH OF WALTHAMSTOW**ARCHITECTURAL ASSISTANT**

Applications are invited for the above appointment in the Borough Architect, Engineer and Surveyor's Department (F. G. Southgate, A.R.I.B.A., M.I.Mun.E., A.M.T.P.I., Borough Architect, Engineer & Surveyor) at a salary in accordance with Grade A.P.T. I (£575 to £725 per annum, exclusive of London Weighting) with the commencing salary according to qualifications and experience.

Applications, stating age, qualifications, experience and present occupation, together with the names of two referees, one of whom should be the present or former employer, are to be received by the undersigned not later than noon on Friday, 20th March, 1959, endorsed "Architectural Assistant."

G. A. BLAKELEY,
Town Clerk.

Town Hall,
Walthamstow, E.17. 3326

BASILDON DEVELOPMENT CORPORATION**DEPARTMENT OF ARCHITECTURE AND PLANNING**

Applications are invited for the post of **SENIOR PLANNER** to lead a Section engaged on the implementation of the Master Plan for a New Town of 100,000.

The work includes all aspects of development for residential, commercial and industrial areas and requires considerable skill and experience in advanced planning for the large projects still to be done.

Candidates must be A.M.T.P.I. and A.R.I.B.A. The appointment will be within the salary range of £1,139-£1,682 in relation to ability and experience.

House or flat available. Superannuation.

Applications on the special form (obtainable from the Chief Architect/Planner) to the General Manager, Basildon Development Corporation, Gifford House, Basildon, Essex, endorsed "Senior Planner," by Thursday, 26th March, 1959. 3336

ZETLAND COUNTY COUNCIL

Applications are invited for the appointment of **ASSISTANT ARCHITECT** to the Council. Candidates, who must be Registered Architects, should have had wide experience in the preparation of sketch plans, working drawings and details. Preference will be given to Candidates who have had experience in the planning and supervision of school projects, and who are conversant with the Scottish Education Department's regulations for school planning. Salary scale in A. & P. Division, Grades VI to VII (£890-£1,025 per annum) with placing according to qualifications, age and experience. The appointment is superannuable and applications, stating age, experience and qualifications, and accompanied by copies of two recent testimonials, must be lodged with the undersigned by 18th April, 1959.

JOHN N. SINCLAIR,
County Clerk.

County Buildings,
Lerwick, Shetland.
2nd March, 1959. 3331

UNIVERSITY OF KHARTOUM

Applications are invited for Lectureship in Architecture. Salary scale: £81,077 x £75-£81,977 p.a., entry point according to qualifications and experience. Cost of living allowance approximately £580 p.a. Outfit allowance £550. Family Allowances: wife-£850 p.a., 1st child-£890 p.a., 2nd and 3rd child-£830 p.a. each (£81-£105.6d. sterling). Passages for appointee and family on appointment, termination and annual leave. Initial appointment five years with possible renewal. Superannuation Scheme. Unfurnished accommodation provided at rent up to 7½ per cent. of salary.

Detailed applications (8 copies) naming 3 referees by 20th April, 1959, to Secretary, Inter-University Council for Higher Education Overseas, 29, Woburn Square, London, W.C.1, from whom further particulars may be obtained. 3314

HAMPSHIRE COUNTY COUNCIL

Applications are invited for the following pensionable appointments in the County Planning Department Headquarters at Winchester. Assistance with removal and other expenses in approved cases. Five-day week.

SENIOR PLANNING ASSISTANT, A.P.T. IV (£1,025-£1,175) for work in connection with the preparation of Town Maps and the review of the County Development Plan. Candidates should be corporate members of the Town Planning Institute and should have had good all round planning experience. An additional professional qualification would be an advantage.

ARCHITECTURAL PLANNING ASSISTANT, A.P.T. II (£725-£845) for work in the Development Plan Section. Candidates must have passed the Intermediate Examination of the Royal Institute of British Architects or of the Town Planning Institute and be experienced and capable designers.

PLANNING ASSISTANT, A.P.T. II (£725-£845) for survey statistical and other work in connection with the preparation and review of Development Plan maps. Candidates should preferably have a suitable degree of a British University or have passed the Intermediate examination of the Town Planning Institute or a related professional body.

Applications, stating age, education, qualifications and experience, together with a copy of one testimonial and the names of two referees, should reach the Clerk of the County Council, The Castle, Winchester, by 24th March. 3329

EAST BARNET URBAN DISTRICT COUNCIL

Applications are invited for the undermentioned appointments in the Engineer and Surveyor's Department.

(i) **SENIOR ASSISTANT ARCHITECT**-Grade A.P.T. III (£845-£1,025) plus London weighting of £20 or £30 per annum, according to age.

(ii) **SENIOR ASSISTANT ENGINEER**-Special Grade (£750-£1,030 plus an additional payment of £50 per annum), plus London weighting of £20 or £30 per annum, according to age.

If necessary, the provision of housing accommodation would be considered.

Conditions of Appointment and Forms of Application, returnable by the 23rd March, 1959, may be obtained from the Engineer and Surveyor, Town Hall, Station Road, New Barnet, Herts. 3328

KINGSTON UPON HULL EDUCATION**COMMITTEE****REGIONAL COLLEGE OF ARTS AND CRAFTS**

Principal: S. I. HEMMING, A.R.C.A. (LOND.), F.R.S.A.

SCHOOL OF ARCHITECTURE

Applications are invited for the post of **SENIOR LECTURER** in the School of Architecture, which conducts a five-year full-time Diploma course in Architecture and a part-time course in Town Planning. Candidates should have had some years of professional experience and possess a degree or Diploma of a recognised School of Architecture. Salary: Barnham Technical Scale: £1,417 10s. 0d. x £52 10s. 0d. - £1,627 10s. 0d.

Application forms, to be returned not later than the 27th March, 1959, will be supplied by the Chief Education Officer, Guildhall, Kingston upon Hull. 3382

CRAWLEY URBAN DISTRICT COUNCIL**ASSISTANT ARCHITECT**

Applications are invited from qualified Architects for the above post. Salary-Special grade, £750 x £40-£1,030 per annum, in the Engineer & Surveyor's Department. In addition to the salary scale quoted temporary local weighting (£10-£30 per annum according to age) will be paid.

The appointment will be subject to the National Scheme of Conditions of Service for Local Authorities' Administrative, Professional, Technical and Clerical Services, the provisions of the Local Government Superannuation Acts and to the passing of a medical examination.

Form of application may be obtained from the Engineer and Surveyor, Goffs Park House, Horsham Road, Crawley, Sussex, and must be returned to him by 23rd March, 1959.

Canvassing, directly or indirectly, will disqualify and applicants must disclose in writing whether they are related to any member or senior officer of the Council.

R. W. J. TRIDGELL,
Clerk of the Council.

Robinson House,
Robinson Road,
Crawley, Sussex. 3325

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

ASSISTANT ARCHITECT required-good experience of design and construction necessary preferably in hospital work. Applicants must be Associate Members of the R.I.B.A. Salary scale £730 x £25 (2) x £30 (2) x £35 (5) x £40 (1)-£1,055 plus £20-£50 London weighting. Ref. 704.

ARCHITECTURAL ASSISTANTS also required. Applicants must have Intermediate R.I.B.A. Salary scale £545 (age 21) x £30 (3) x £25 (4) x £30 (2)-£765 plus £20-£30 London weighting. Ref. 705.

Commencing salary above minimum may be paid according to relevant practical experience appropriate to the posts. Whitley Council conditions, superannuable.

Apply, stating age, qualifications (with date) and experience, with names of two referees to Secretary, North West Metropolitan Regional Hospital Board, 40, Eastbourne Terrace, W.2, by 18th March, 1959, quoting appropriate reference number. 3367

BOROUGH OF SUTTON AND CHEAM**BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT****APPOINTMENT OF ARCHITECTURAL ASSISTANT**

Applications are invited for the appointment of an Architectural Assistant, Special Grade (£750-£1,030 per annum, plus £20/£30 London weighting per annum).

Applicants should have good general experience in Housing and Public Buildings.

Commencing salary will be according to ability and experience.

The appointment, which is terminable by one month's notice in writing on either side, is on the permanent staff of the Corporation, is subject to the provisions of the Local Government Superannuation Acts, 1937 to 1953, and to the National Scheme of Conditions of Service.

The successful candidate will be required to pass a medical examination. Forms of application may be obtained from Mr. N. H. Michell, A.M.I.C.E., M.I.Mun.E., Borough Engineer & Surveyor, to whom they should be returned, accompanied by copies of two recent testimonials, not later than 25th March, 1959, endorsed "Architectural Assistant Special Grade." Applicants must state whether they are related to any member or holder of any senior office under the Borough Council. Canvassing in any form will disqualify.

ARTHUR PRIESTLEY,
Town Clerk.

Municipal Offices,
Sutton, Surrey. 3323

BOROUGH OF KEIGHLEY**BOROUGH ARCHITECT'S DEPARTMENT**

Applications are invited for the following appointments on the permanent staff -

(a) **ONE ASSISTANT ARCHITECT**, Special Grade. Salary scale £750-£1,030.

(b) **ONE ARCHITECTURAL ASSISTANT**, Grade A.P.T. I. Salary scale £575-£725.

(c) **CLERK OF WORKS**, Grade A.P.T. I. Salary scale £575-£725.

Applicants for positions (a) and (b) should possess general architectural experience; knowledge of School work an advantage for position (c).

Conditions of Service and salaries are in accordance with the National Joint Council Scheme for Local Authorities.

Applications to be made upon the prescribed form to be obtained from the undersigned, to whom same must be returned, accompanied by copies only of two recent testimonials, not later than first post Thursday, 2nd April, 1959.

E. G. FELGATE, A.R.I.B.A.,
Borough Architect.

Borough Architect's Department,
College Street, Keighley. 3365

AIR MINISTRY WORKS Design Branch

requires in LONDON and PROVINCES **ARCHITECTURAL ASSISTANTS** experienced in planning/preparation of working drawings and details for permanent and semi-permanent buildings. Salaries in LONDON up to £1,055 p.a. for men and £1,008 p.a. for women. Somewhat lower in provinces. Starting pay dependent on age, qualifications and experience. Long term possibilities with promotion and pensionable prospects. Five-day week, three weeks three days' leave a year. Liability for overseas service (for men). Normally natural born British subjects. Write stating age, qualifications, employment details including type of work done to any Employment Exchange quoting Order No. Borough 250. 3337

CHARTERED QUANTITY SURVEYOR required by the **ATOMIC WEAPONS RESEARCH ESTABLISHMENT ALDERMASTON**, Berks. To prepare estimates and contract documents, to examine tenders and to settle accounts for building and engineering work.

Wide experience on building and civil engineering contracts is required. Additional experience in mechanical or electrical work would be an advantage.

SALARY. This will be assessed in one of the following scales according to ability, knowledge and experience.

£1,345-£1,800.

£845 (at age 25)-£1,150 (at age 34 or over)-£1,315.

Contributory Superannuation scheme. A house or alternatively substantial assistance with house purchase will become available for married officers living beyond daily travelling distance.

POSTCARDS for application forms to the Senior Recruitment Officer at above address. Please quote ref. 2194/119. 3345

LONDON COUNTY COUNCIL

ARCHITECTS, Grade III, required for Housing, Schools and General Divisions. Full and varied programme of new work including schools, multi-storey flats and Town Development. Up to £1,090 according to qualifications and experience. Particulars and application form from Hubert Bennett, F.R.I.B.A., Architect to Council, AR/BK/25/29, County Hall, S.E.1. (441). 3310

URBAN DISTRICT COUNCIL OF BASILDON

(Population 75,000-27,000 acres-rapidly developing district)

ARCHITECTURAL ASSISTANT (Established)

Within A.P.T. II (£725-£845 p.a.)

This appointment offers work of an interesting and varied character and calls for practical experience.

Housing accommodation will be considered.

Full particulars and application form from the latter returnable to Mr. S. A. Wadsworth, A.M.I.C.E., A.M.I.Mun.E., Engineer & Surveyor, 108, High Street, Billericay, Essex. Closing date 23rd March. 3322

THE ARCHITECTS' JOURNAL for March 12, 1959

THE ROYAL INFIRMARY OF EDINBURGH AND ASSOCIATED HOSPITALS ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment. Candidates should preferably hold the Intermediate Certificate of the R.I.B.A., and must be experienced. Starting salary £525-£605 per annum, according to age and experience. Applications, giving details of age, qualifications and experience, together with the names of two referees, should be addressed to the Personnel Officer, Royal Infirmary, Edinburgh, 3. 3319

CITY AND COUNTY OF THE CITY OF EXETER

CITY ARCHITECT'S DEPARTMENT
Vacancy on established staff for ARCHITECTURAL ASSISTANT, salary A.P.T. Grade II (£725-£845 per annum).
Applicants must have passed the Intermediate R.I.B.A. Examination.

The appointment is subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts 1937 and 1953. The successful applicant will be required to pass a medical examination.

Applications stating age, qualifications, previous and present appointments and salaries, full details of experience and earliest possible date when available should be sent to the City Architect, Municipal Offices, Exeter, not later than the 28th March, 1959. 3348

EAST ANGLIAN REGIONAL HOSPITAL BOARD

SENIOR ASSISTANT ARCHITECTS for work on major hospital development (estimated cost £23m.) at Peterborough and District Memorial Hospital expected to last 3 to 4 years. Candidates must be registered architects and have had good general experience; hospital experience will be an advantage. Salary £1,050-£1,245.

Applications stating age, qualifications, experience and details of present position (salary, etc.) with names of three referees to Secretary of Board, 117 Chesterton Road, Cambridge, by 31st March, 1959. 3380

SURREY COUNTY COUNCIL

Applications invited for following appointments:—

1. ASSISTANT ARCHITECT GRADE IV. £1,025-£1,175 p.a. plus £30 p.a. London Allowance. Must be A.R.I.B.A.
 2. ASSISTANT ARCHITECT GRADE II. £725-£845 p.a. plus £30 p.a. London Allowance. Must be of good general training, pref. given those who have passed Inter. R.I.B.A.
- Full details, present salary and 3 copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 3381

BRACKNELL DEVELOPMENT CORPORATION

Applications are invited for the post of ARCHITECT, salary range £1,139-£1,366. Applicants must be Corporate Members of the R.I.B.A. Superannuation schemes, medical examination. Housing available. Apply by 24th March, 1959, giving age, education and qualifications, experience and appointments held (with dates and salaries), and names of two referees, to General Manager (A), Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 3374

BIRMINGHAM REGIONAL HOSPITAL BOARD

SENIOR ASSISTANT ARCHITECTS required—£1,050 to £1,245 per annum. Applicants must be registered architects having passed the requisite examinations. Experience of hospital planning and construction an advantage. Ability to control drawing-office staff essential. Superannuable. Apply giving details of training, present appointment and previous experience and naming three referees to Secretary, 10, Augustus Road, Birmingham 15, by 31st March. 3379

COUNTY BOROUGH OF GLOUCESTER

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

(a) ARCHITECTURAL ASSISTANT, A.P.T. II, within £725 x £30 - £845 p.a. (Inter. R.I.B.A., plus progress towards Final or adequate experience).

(b) ARCHITECTURAL ASSISTANT, A.P.T. I, within £575 x £30 - £725 p.a. (Inter. R.I.B.A.). Interesting contemporary work. Superannuable posts. Medical examination. Municipal experience not essential.

Full particulars to City Architect, Suffolk House, Greyfriars, Gloucester, on or before 20th March, 1959. 3377

ADMINISTRATIVE COUNTY OF LEICESTER

SENIOR ASSISTANT ARCHITECT

£1,025-£1,175
Candidates must be A.R.I.B.A., have had considerable office experience preferably on the design of schools and be capable of taking charge of large contracts. Removal expenses and lodging allowance may be paid to a married man. Apply by 2nd April on forms obtainable from County Architect, 123, London Road, Leicester. 3376

LAMBETH BOROUGH COUNCIL

Applications invited from ARCHITECTS for housing work, including extensive conversion programme.

Senior applicants—qualified with good experience capable of working with little supervision. Salary according to qualifications, up to £1,055.

Junior Assistants, £755 to £875.
Full details to Town Clerk, Lambeth Town Hall, Brixton Hill, S.W.2, by 31st March. 3335

BOROUGH OF TAUNTON ARCHITECTURAL ASSISTANT

Applications are invited for appointment of Architectural Assistant in the Housing Architect's Department, Grade APT II, £725-£845 per annum. Superannuable post, subject to medical examination, and to National Conditions of Service. Applications, stating age, present position and salary, qualifications, experience and names of two referees, to be sent to C. Bacon, F.R.I.B.A., Housing Architect, Flook House, Station Road, Taunton, by 31st March, 1959.

Canvassing will disqualify.
Consideration will be given to housing accommodation, if required.

K. A. HORNE,
Town Clerk. 3375

COUNTY BOROUGH OF WOLVERHAMPTON

Applications are invited for the appointment of an ASSISTANT ARCHITECT, salary Grade A.P.T. I (£575 to £725 p.a.) with Intermediate R.I.B.A. examination or equivalent School Examination.

Applications, stating age, education, experience, with particulars of present and previous appointments, together with the names and addresses of two referees, to be forwarded to the Borough Engineer and Surveyor, Town Hall, Wolverhampton, not later than 1st April, 1959. 3358

CITY OF SHEFFIELD CITY ENGINEER & SURVEYOR'S DEPARTMENT

ASSISTANT STRUCTURAL ENGINEER SPECIAL CLASSES GRADE

Applications are invited from suitably qualified persons for the position of Assistant Structural Engineer, on the staff of the City Engineer and Surveyor and Town Planning Officer (H. Foster, M.A., M.I.C.E., M.I.Mun.E.). The post is established in the Special Classes Grade (£750-£1,030 p.a.). A commencing salary of £910 or £950 per annum is envisaged but will be commensurate with the successful applicant's experience.

Candidates will be required to work in the Building Surveyor's Section of the Department, and should be capable of dealing with all kinds of structural proposals under the various codes of practice.

Superannuable post, N.J.C. Conditions of Service. Medical Examination.

Applications, stating age, education and training, qualifications, experience, present and past appointments (with dates and salaries) and quoting the names of two referees, should be submitted to the undersigned by the 6th April, 1959.

JOHN HEYS,
Town Clerk. 3394

Town Hall,
Sheffield, 1.

clean air act

The Iron Fireman Coal burning Automatic Stoker will solve the problem of smoke without the use of expensive fuels. We have developed new techniques for ensuring smokeless combustion and Iron Fireman Stokers are meeting the requirements of the Clean Air Act in the great majority of our industrial centres.

There is a model for every type and size of boiler from 200,000 to 9,000,000 B.T.U's. per hour capacity and we have a nation-wide organisation for the service and maintenance of our machines.

Iron Fireman

FIRST AND FOREMOST
Automatic Coal Stokers

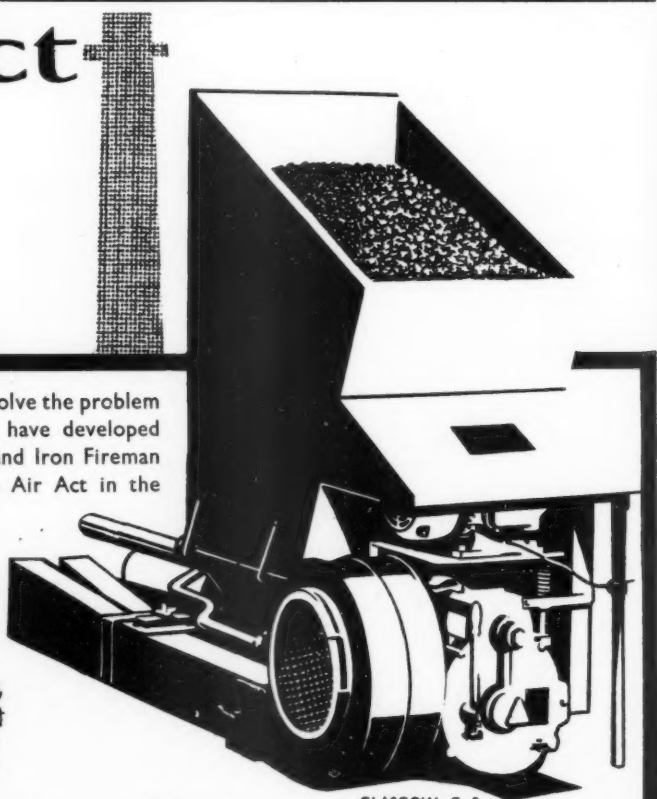
ASHWELL & NESBIT LTD.
BARKBY ROAD, LEICESTER.



LONDON, W.C.1.
12 Great James Street.
LEEDS, 6.
32 Headingley Lane.

BIRMINGHAM, 4.
12 Whittall Street.
MANCHESTER, 13.
182 and 184 Oxford Road.

GLASGOW, C. 3.
15 Fitzroy Place,
Sauchiehall Street.
BELFAST.
14 Corporation Street.



BOROUGH OF SCUNTHORPE

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

(a) **QUANTITY SURVEYING ASSISTANT**, A.P.T. II (£725-£945 p.a.). Applicants should be of Intermediate Examination standard and capable of all stages of working-up for Bills of Quantities, site measuring, final accounts, interim certificates, and junior taking-off.

(b) **QUANTITY SURVEYING ASSISTANT**, A.P.T. I (£575-£725 p.a.). Must be experienced in site measuring and final accounts.

Commencing salaries will be fixed according to qualifications and experience.

Housing accommodation will be available if required. Applications giving particulars of age, experience, qualifications and appointments, together with the names of two referees should be submitted to the undersigned not later than Tuesday, 24th March, 1959.

T. M. LISTER,
Town Clerk.

Municipal Offices,
34, High Street,
Scunthorpe. 3397

COUNTY BOROUGH OF SUNDERLAND

SENIOR ASSISTANT ARCHITECTS

Special Scale (maximum £1,030)

Applications are invited for the above posts. Particulars of the appointments may be obtained from Borough Architect, Grange House, Stockton Road, Sunderland.

Applications must be addressed to me and received at my office, Town Hall, Sunderland, not later than 23rd March, 1959.

Canvassing will disqualify.

G. S. MCINTIRE,
Town Clerk. 3392

URBAN DISTRICT COUNCIL OF CORBY

CHIEF ARCHITECTURAL ASSISTANT

Applications are invited for this appointment in the Department of the Engineer and Surveyor. Salary grade A.P.T. IV, £1,025-£1,175, commencing at £1,025 per annum. Essential User's allowance for cars up to 10 h.p. Housing accommodation available.

Considerable experience required of design, construction and supervision of building contracts, including housing. Must be Registered Architects and preferably possess the A.R.I.B.A. qualification.

Forms of application may be obtained from the undersigned, to whom they should be returned not later than Monday, 23rd March, 1959.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
Corby. 3399
Northants.

Tenders Invited

6 lines or under, 15s.; each additional line, 2s. 6d.
Box Number, including forwarding replies, 2s. extra

DURHAM COUNTY COUNCIL

PROPOSED NEW COUNTY OFFICES AT

AYKLEY HEADS, DURHAM CITY

ELECTRICAL INSTALLATION

Tenders are invited for the complete electrical installation of the above buildings and Electrical Contractors desirous of tendering should make application to G. R. Clayton, Esq., F.R.I.B.A., County Architect, South Street, Durham, not later than 23rd March, 1959, for the necessary tender documents. Applicants should forward a deposit of £10 10s. made payable to the Durham County Council. This deposit will be returned on receipt of a bona fide tender or the return of the tender documents.

The successful tenderer will be subject to the R.I.B.A. Conditions of Contract and will become a nominated Sub-Contractor of the General Contractor responsible for the erection of the main building.

This will be a very substantial contract and only Electrical Contractors who have had considerable experience of carrying out large installation should apply.

The Council do not bind themselves to accept the lowest or any tender.

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

Shire Hall,
Durham. 3342

DURHAM COUNTY COUNCIL

PROPOSED NEW COUNTY OFFICES AT

AYKLEY HEADS, DURHAM CITY

ELECTRIC LIFT INSTALLATION

Tenders are invited for the above installation and Contractors desirous of tendering should make application to G. R. Clayton, Esq., F.R.I.B.A., County Architect, South Street, Durham, not later than 23rd March, 1959, for the necessary tender documents. Applicants should forward a deposit of £5 5s. made payable to the Durham County Council. This deposit will be returned on receipt of a bona fide tender or the return of the tender documents.

The successful tenderer will be subject to the R.I.B.A. Conditions of Contract and will become a nominated Sub-Contractor of the General Contractor responsible for the erection of the main building.

The Council do not bind themselves to accept the lowest or any tender.

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

Shire Hall,
Durham. 3341

METROPOLITAN BOROUGH OF STEPNEY

BUTRESS STREET HOUSING SCHEME

Tenders are invited for the erection of one block of 31 dwellings (four/five storeys).

Forms of tender, with conditions, etc., obtainable from the Borough Engineer and Surveyor, Municipal Offices, 227/233, Commercial Road, E.1, upon payment of a deposit of ten guineas.

Closing date for tenders—13th April, 1959.

WILFRED REEVE,
Town Clerk. 3347

DURHAM COUNTY COUNCIL
PROPOSED NEW COUNTY OFFICES
TO BUILDING CONTRACTORS

The County Council invite tenders for the erection of the above buildings at Aykley Heads, Durham City. The Contract will include the erection of a main building consisting of a part basement with seven additional storeys and a pent house and a separate ancillary building two storeys high together with a sub-station, certain outbuildings, Garages, etc., internal roads, paths, drainage, sewers, ground layout, etc. The main buildings will entail heavy excavations and site works with reinforced concrete foundations, reinforced concrete frame, precast pre-stressed concrete floors and natural stone and brick in-filling to certain parts of the buildings. It is anticipated that Bills of Quantities will be completed early in June and application should now be made to G. R. Clayton, Esq., F.R.I.B.A., County Architect, South Street, Durham, for copies of the Bills of Quantities. Each application should include a deposit of £10 10s., which will be returned on receipt of a bona fide tender or the return of the contract documents. Cheques should be made payable to Durham County Council.

Only Contractors with experience in carrying out large building Contracts should apply. The Council do not bind themselves to accept the lowest or any tender.

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

Shire Hall,
Durham. 3343

DURHAM COUNTY COUNCIL

PROPOSED NEW COUNTY OFFICES AT

AYKLEY HEADS, DURHAM CITY

Heating and Ventilating Installation, including

suspended ceilings, domestic hot and cold water

installation and gas installation to laboratories.

Tenders are invited for the above installations and Heating Contractors desirous of tendering should make application to G. R. Clayton, Esq., F.R.I.B.A., County Architect, South Street, Durham, not later than 23rd March, 1959, for the necessary tender documents. Applicants should forward a deposit of £10 10s., made payable to the Durham County Council. This deposit will be returned on receipt of a bona fide tender or the return of the tender documents.

The successful tenderer will be subject to the R.I.B.A. Conditions of Contract and will become a nominated Sub-Contractor of the General Contractor responsible for the erection of the main building.

This will be a very substantial contract and only Heating Contractors who have had considerable experience of carrying out large installations should apply.

The Council do not bind themselves to accept the lowest or any tender.

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

Shire Hall,
Durham. 3344

CITY OF PLYMOUTH

CIVIC CENTRE

APPLICATIONS are invited from contractors FOR PERMISSION TO TENDER for the completion of the superstructure of the Council House, 14-storey administration building, other office buildings and external works to the Civic Centre. It is expected that the value of the contract will exceed one million pounds and that the construction period will be in the region of two years.

The foundation and substructure contract is scheduled for completion at the end of September, 1959 and the site should be available for the contractor for the next stage by October, 1959.

Applications from contractors should be submitted on a form to be obtained from the Architects, Messrs. G. A. Jellicoe & Partners, 5, Princess Square, Plymouth. The completed forms should be returned to the Architects, and the closing date for applications is 31st March, 1959.

Selection of a list of contractors to be permitted to submit tenders will be made and the selected contractors will be notified that, upon receipt of a deposit of £25, the tender documents and drawings will be sent to them on the 27th April, 1959.

Tenders will be required to be delivered to the Town Clerk not later than 5 p.m. on the 5th June. 3353

Architectural Appointments Vacant

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

ARCHITECT'S ASSISTANT required for the London Office of a firm of Architects with interests throughout the country. Must be of Intermediate R.I.B.A. or R.I.C.S. standard. Superannuation scheme. Apply to: Cotton, Ballard & Blow, 5, Baker Street, London, W.1. 2818

ASSISTANT ARCHITECTS for Co-operative

Wholesale Society Ltd., Architect's Department, Cardiff. Salary scale £600-£870 p.a.

Applications are invited to fill positions at the Cardiff Branch Office. Salary according to age, qualifications and experience. The posts are superannuable, subject to medical examination. Five-day week in operation.

Applications, stating age, experience, qualifications and salary required, to: W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 99, Leman Street, London, E.1. 2743

ASSISTANT required in connection with expansion of extensive old established practice, about 40 miles London, in approx. £700 to £900 salary range, or according to experience and ability. Write particulars to Box 3189.

SENIOR ASSISTANT with several years' experience able to assume responsibility and control of staff under the Branch Architect at Birmingham. The Office is engaged on a varied and interesting programme of commercial projects. A five-day week and Superannuation Scheme is in operation. Applications, giving full particulars and salary required to: G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Limited, 1, Balloon Street, Manchester, 4. 3083

SENIOR ASSISTANT required of Intermediate/Final standard in Croydon office. Varied practice of interesting work. Good draughtsman and sound knowledge of construction essential, together with ability to manage jobs. Five-day week. Salary according to experience. Apply George Lowe & Partner, 4, High Street, Croydon 3608/9. 2611

ARCHITECTURAL firm in Home Counties with varied practice, require ASSISTANTS. Intermediate, qualified, or at that standard. State experience and salary required to Box 3089.

RONALD FIELDING, A.R.I.B.A., immediately requires qualified and Intermediate ASSISTANTS. Please write or telephone for appointments. Aldwych House, London, W.C.2. CHANCERY 8201/5. 3130

MORRIS DE METZ, F.R.I.B.A., requires experienced ASSISTANTS for large scale projects. West End Office. Salary up to £950. Telephone CITY 4086 or HUNTER 1051. 3133

ARCHITECTURAL ASSISTANTS required in West End Office. Large interesting contracts just commencing. Salaries around £900. Box 3154.

ARCHITECTURAL ASSISTANTS, with previous experience, required immediately for surveys and housing layouts. Head Office of firm: Southsea, Hants. Box 3136.

ALL grades, ARCHITECTURAL ASSISTANTS required. Ronald Ward & Partners, 29, Chesham Place, London, S.W.1. Belgraveia 3361. 3146

JOHN LAING AND SON LIMITED

INVITE applications for the following vacancies in their ARCHITECTS' DEPARTMENT (Chief Architect, Sydney Greenwood, A.R.I.B.A.) at their Head Office in N.W. London.

ARCHITECTS AND ARCHITECTURAL ASSISTANTS of Intermediate or Final R.I.B.A. standard with experience in one of the following: Office and Industrial Schemes; Multi-Storey Flats and Maisonnets; Private and Municipal Housing.

These positions offer opportunities for advancement and a wide variety of work in a busy office. Pension Scheme after two years' service. Five-day week.

Applications to Personnel Manager (Ref. AAA 1) John Laing and Son Limited, Building and Civil Engineering Contractors, Page Street, Mill Hill, London, N.W.7. 3192

SINGLE ARCHITECTURAL ASSISTANT of Intermediate standard required as Assistant Manager at Dereham, Norfolk Branch Office. Car owner-driver. Details of age, experience and salary required to Harold Marsh, L.R.I.B.A., 14, King Street, King's Lynn. 3233

ASSISTANT ARCHITECTS required for wide range of contemporary work in Knightsbridge Office, men only. Write with details of age, nationality, experience and salary required to Box 3252.

S. W. MILBURN & PARTNERS have vacancies for two ARCHITECTURAL ASSISTANTS of R.I.B.A. Final standard, and two JUNIOR ASSISTANTS. Write stating age, salary and experience to the above at 9, The Esplanade, Sunderland. 3251

QUALIFIED CHIEF ASSISTANT required with knowledge of provincial practice. Work includes Schools, Hospitals, Banks, Shops and Housing. Salary about £1,000 per annum. Bonus and Pension Schemes in operation. Excellent prospects. F. J. Lenton & Partners, A./A.R.I.B.A., 16, Broad Street, Stamford, Lincs. 3253

ARCHITECTURAL ASSISTANT up to Intermediate standard required urgently. An only stating age and salary required to Earl Rogers & Harrison, A./A.R.I.B.A., Guild Chambers, Scholars Lane, Stratford-upon-Avon. 3259

YOUNG SURVEYOR or ARCHITECT, preferably qualified, required in Estates Department of expanding multiple concern, W.1 area. Experience in Shop, Office and Factory development and administration. Knowledge of Values and additional advantage. Car driver. Details of previous experience and salary required to Box 3279.

ARCHITECTS' co-partnership require ASSISTANTS for working drawings and detailed design. Salary according to experience. Write 44 Charlotte Street, London, W.1. or telephone Langham 5791. 3265

ASSISTANT required for small expanding practice in central London. Salary up to £750 according to ability. Good opportunity for responsible person with contemporary outlook. Box 3262.

ASSISTANT about Intermediate standard to work directly with Architect of Development Company in London on new project. The position carries responsibility and opportunity to gain sound knowledge of all aspects of an Architect's practice. Box 3267.

GEORGE WIMPEY & CO., LIMITED
The Architect's Department's current work covers all types of technical, industrial and domestic projects.
Appointments are available for a wide range of experience, particularly for assistants who appreciate the contribution good design can make towards efficient construction and are interested in applying cost knowledge to detailing.
Appointments are immediately available for two ASSISTANT ARCHITECTS, four ARCHITECTURAL ASSISTANTS, and three top line ARCHITECTURAL DRAUGHTSMEN.
Salaries will match qualifications and experience, and subject to a trial period there is a Pension Scheme available.
Applicants should write to E. V. Collins, A.R.I.B.A., 27, Hammersmith Grove, London, W.6. 3207

COLLINS, MELVIN, WARD & PARTNERS require ARCHITECTURAL ASSISTANT for their Sheffield office. Write: 281, Glossop Road, Sheffield 10, or telephone 29922, for an appointment. 3212

LANCHESTER & LODGE urgently require ARCHITECTURAL ASSISTANTS nearing Final standard to assist on large and interesting University project. Write full particulars, 10 Woburn Square, London, W.C.1. 3210

LANCHESTER & LODGE urgently require JUNIOR ASSISTANTS with minimum of two years' experience. Write full particulars, 10 Woburn Square, London, W.C.1. 3211

A JUNIOR and SENIOR ASSISTANT required immediately in Chartered Architect's office in West Midlands, capable of working on own initiative for five days per week. Please reply, with relevant information on experience and salary, to Box 3209.

SOUTH COAST Office requires ARCHITECTURAL ASSISTANTS, Intermediate to Final standard, primarily in connection with a large block of modern flats. Five-day week. Good salary and working conditions. Apply stating salary required to Box 3201.

W. H. WATKINS, GRAY & PARTNERS require ASSISTANT for interesting hospital work, pension scheme in operation. Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 3200

ASSISTANTS of Final standard required, to work in London or Lewes. Only those having sound knowledge of construction and good design abilities should apply Box 3231.

CHIEF ASSISTANT, Responsible appointment. £900 approximately. Age near 35. Sound training experience private practice. Contract management necessary qualification. Salisbury, Wilt. Wallace F. Smith, A.R.I.B.A., M.S.I.A., c/o G.P.O., Salisbury. 3229

BURLES & NEWTON require JUNIOR ARCHITECTURAL ASSISTANTS. The appointments offer experience and opportunity. Reply 25, Bedford Row, W.C.1. 3293

ASSISTANT for lively Country Practice. Intermediate standard, knowledge working drawings and specifications. Required drive car. Apply stating salary required, when free, etc., F. C. Levitt, Commerce House, Biggleswade. 3286

ARCHITECTURAL ASSISTANTS required for Brighton office, with at least 3 years' office experience. Apply in writing stating age, experience and present salary to E. J. Thomas, Jolly, Grant & Hunter, 11 Old Steine, Brighton. 3290

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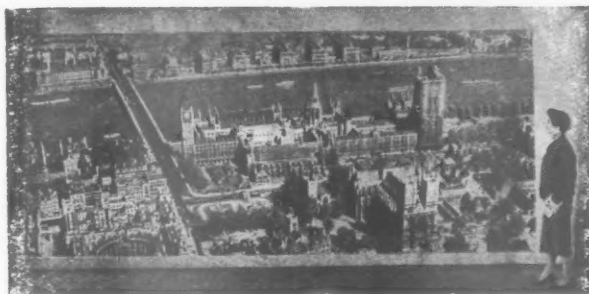
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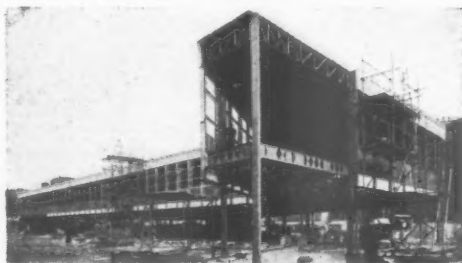
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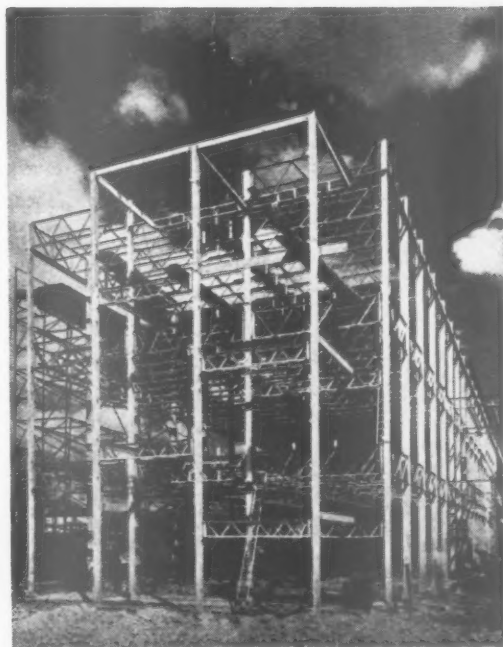
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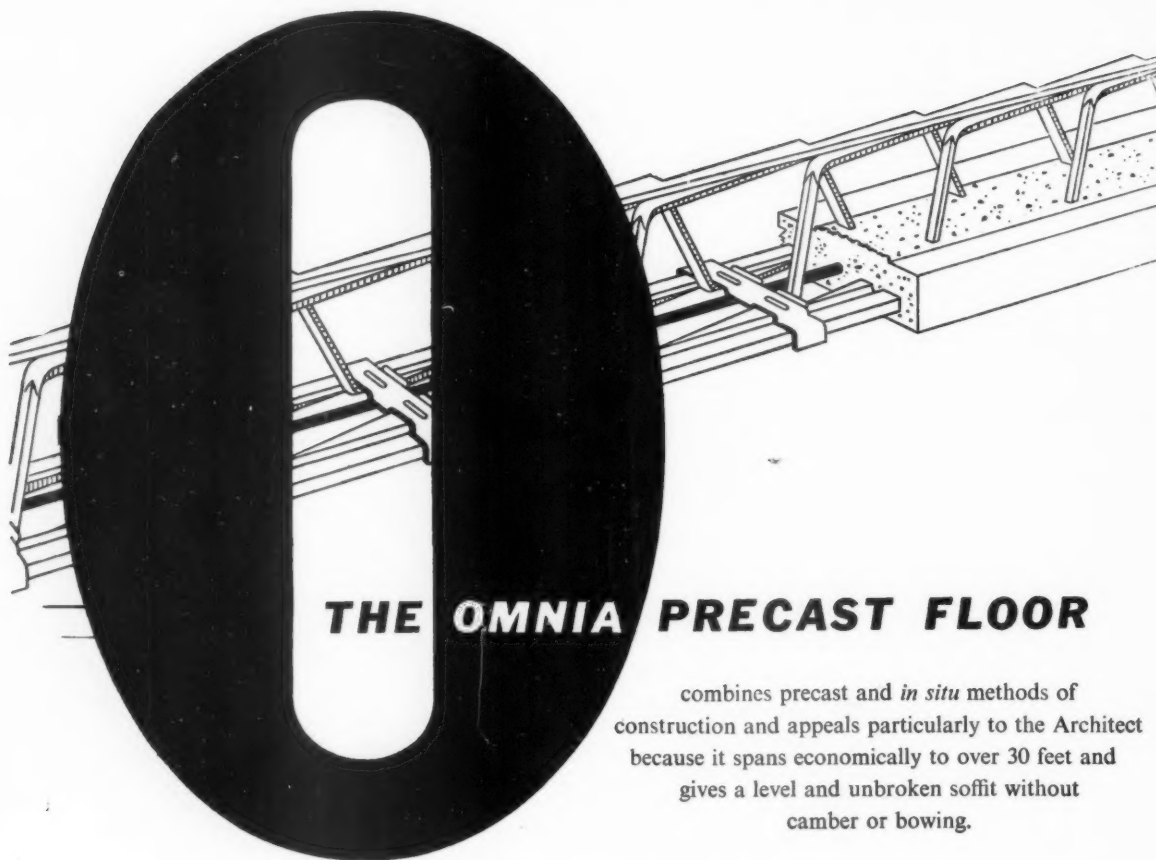
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