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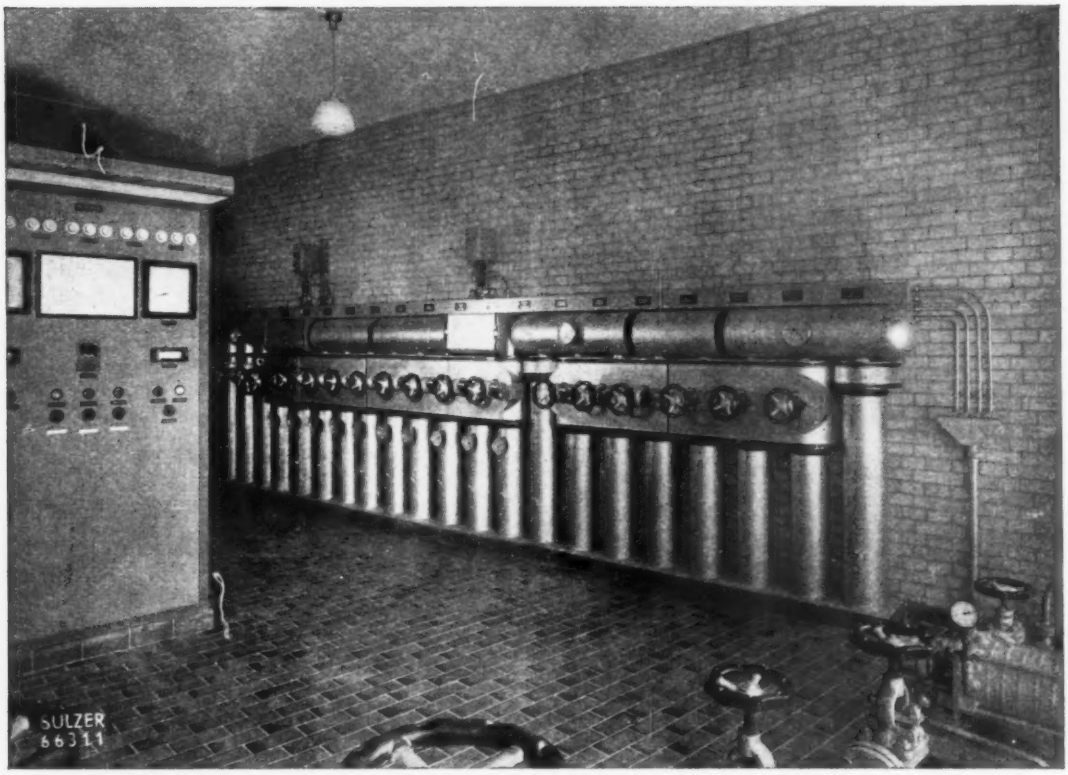
★ A glossary of abbreviations of Government Departments and Societies ... Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih to Z the next. In all cases where the town is not mentioned the word LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, " Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447–8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 78, Wimpole Street, W.1.	Welbeck 2915
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Tate Gallery 8134
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 65491
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611 Ext. 1284
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organization, Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GBPA	Gypsum Building Products 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



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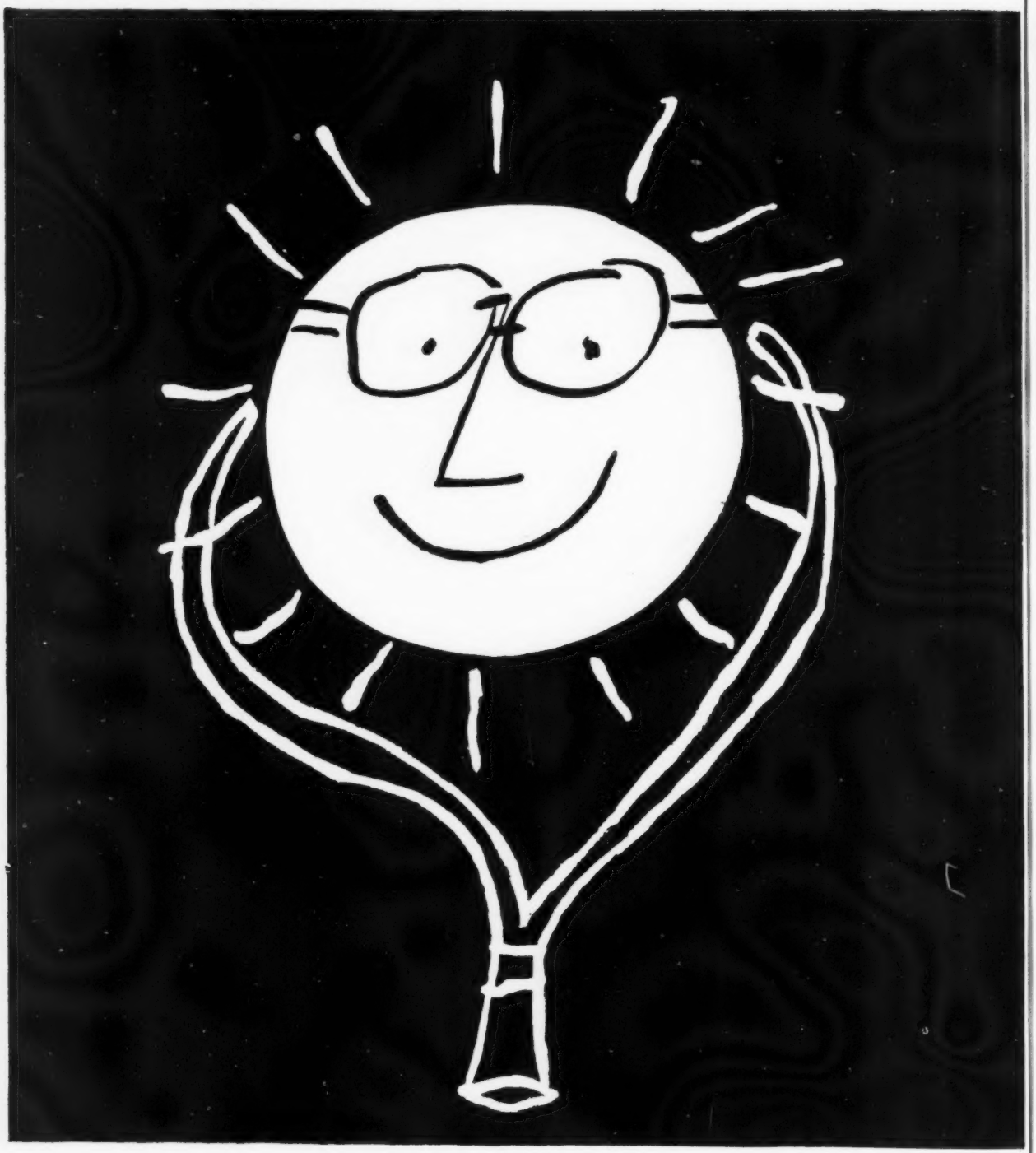

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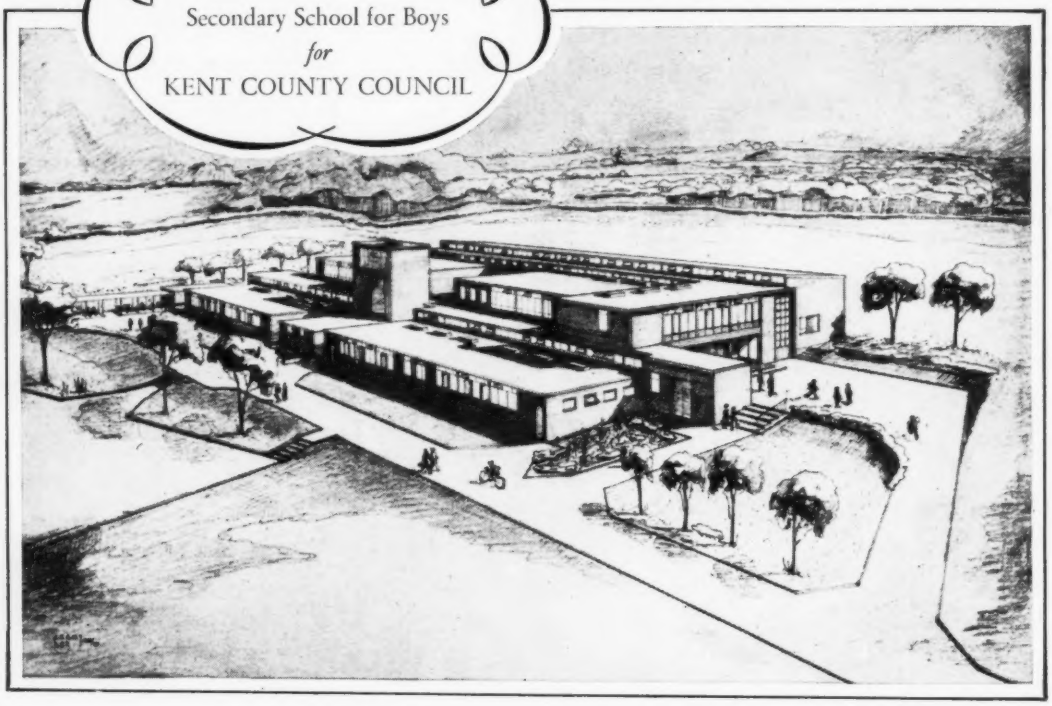

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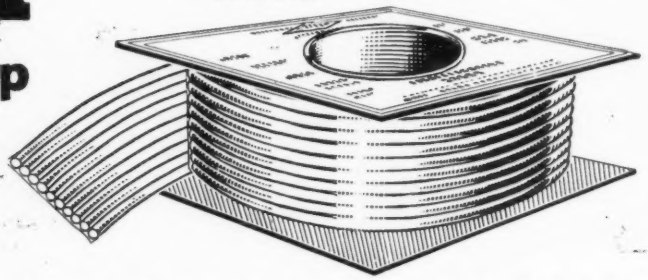

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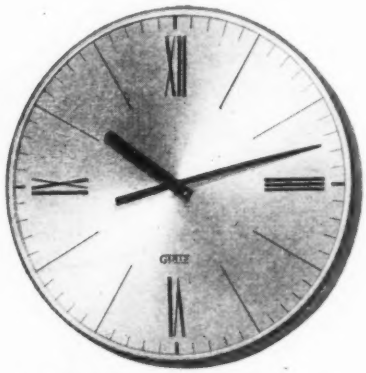

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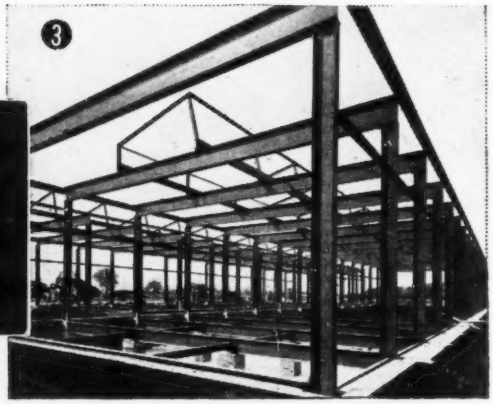

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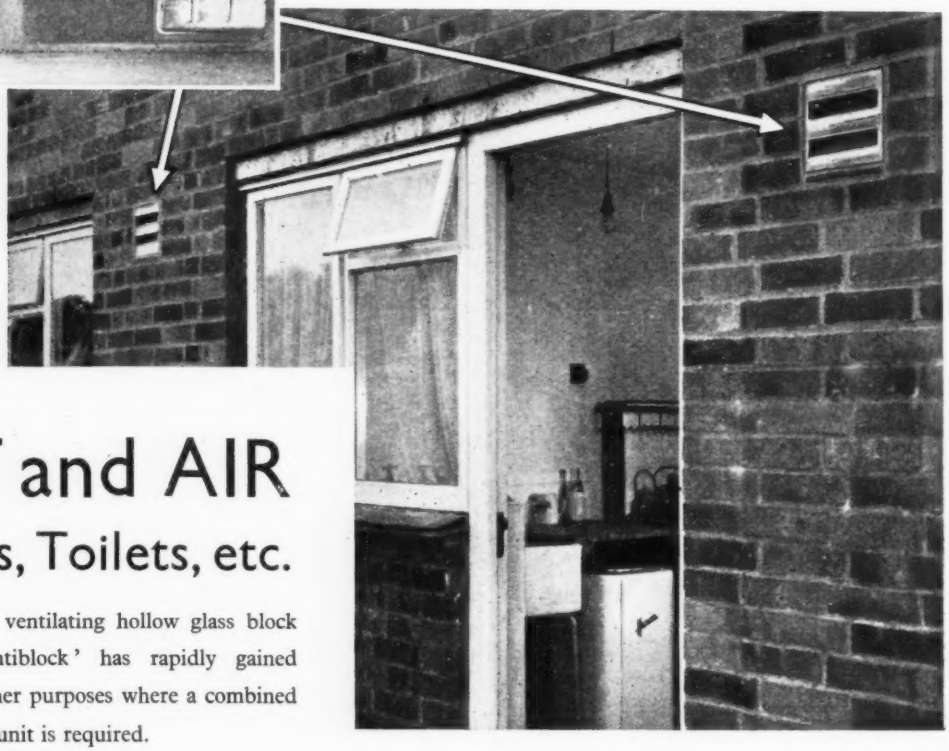

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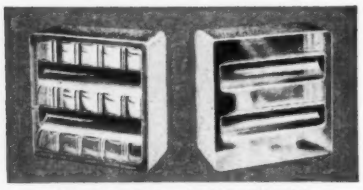

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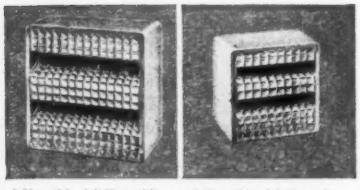

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DEVELOPMENTS IN SELF-SERVICE

Public catering on the large scale has been revolutionised by the general acceptance of self-service and all that it involves. A considerable measure of standardisation has inevitably come about in the equipment used, with the result that a type of service counter has been evolved which now dominates the design of most eating places of this class, and has strongly influenced the arrangement of many others. Another development was the snack bar with its varied menu of light meals, contrasting with the cafeteria with its conventional two- or three-course meal — usually pre-cooked.

A more important advance has now been made by the introduction of specialised electric cooking equipment, whereby the meal is cooked at high speed in full view of the customer, who, only too pleased to see his food freshly cooked, has been more than willing to accept the limitations of menu that this system involves. As the self-service counter also forms the basis of this new arrangement, it will be convenient to consider first its component parts and the ways in which they may be used.

The Self-Service Counter

The units are assembled as a continuous counter, either in a straight line as in Fig. 1, or shaped to follow the irregularities of the site and take account of obstructions such as posts, columns, etc. as in Fig. 2. The basic groups or sections, each of which may contain one or more units are, in order of approach :

(a) Trays and cold service — bread, rolls, butter, cheese, cold meats, etc.
(b) Hot closet, where soup, gravy, vegetables, 'main dish' and puddings are kept warm and served on to plates.
(c) Cold sweets, pastries, ices, etc.
(d) Tea and coffee service.
(e) Cutlery and cashier.

The depth of the counter is usually 2 ft. 6 in. or 2 ft. 9 in. with a uniform working height of 3 ft. and a 6 in. clearance under all units to facilitate cleaning. Construction is generally of aluminium alloy, stainless steel or vitreous enamelled sheet on mild steel angle framing, working surfaces being of stainless steel. The hot closets, refrigerators and any units containing drawers are made in a small range of lengths, others are constructed to any required length from 2 ft. to 8 ft. to provide the accommodation required and to enable the complete counter to fit exactly the space and shape available.

Counter length is determined by the number of meals required to be served per hour, and the type and complexity of the menu. The counter shown in Fig. 1 is 36 ft. long, and, based on a normal canteen kitchen and menu, has a serving capacity of approximately 150 meals in 10-15 minutes ; for a public restaurant with a more varied menu, it would be approximately 400 meals per hour. Fig. 2 shows a similar counter, as modified for an awkward site, in relation to kitchen and wash-up.

Variations in Counter Arrangement

The extent of the hot and cold service facilities and their relation to the counter as a whole, are determined by the type of menu which the customers prefer. Specialised units, such as refrigerated cabinets for cold meats and salads, or cold sweets and ices, can be incorporated in the counter ; soda fountain equipment, if included, usually necessitates the removal of the hot closet section to the wall behind the counter, together with some of the storage units and preparation counters.

When snack bar service is required, the tendency is to separate the actual serving of food (and drink) from its storage, preparation and portioning : the former units constitute the 'front counter' while the latter, placed against the wall behind it, form the 'back bar'. This arrangement is due to a characteristic feature of snack bar service which permits the customer to order, collect and eat his meal at any point along the front counter, instead of passing in front of it as in cafeteria service.

A further variant is to incorporate the tea and coffee service in a self-contained counter, together with a repeat section of cold sweets and pastries, under control of a separate cashier, or to group it with the soda fountain, as commonly done in seaside establishments.

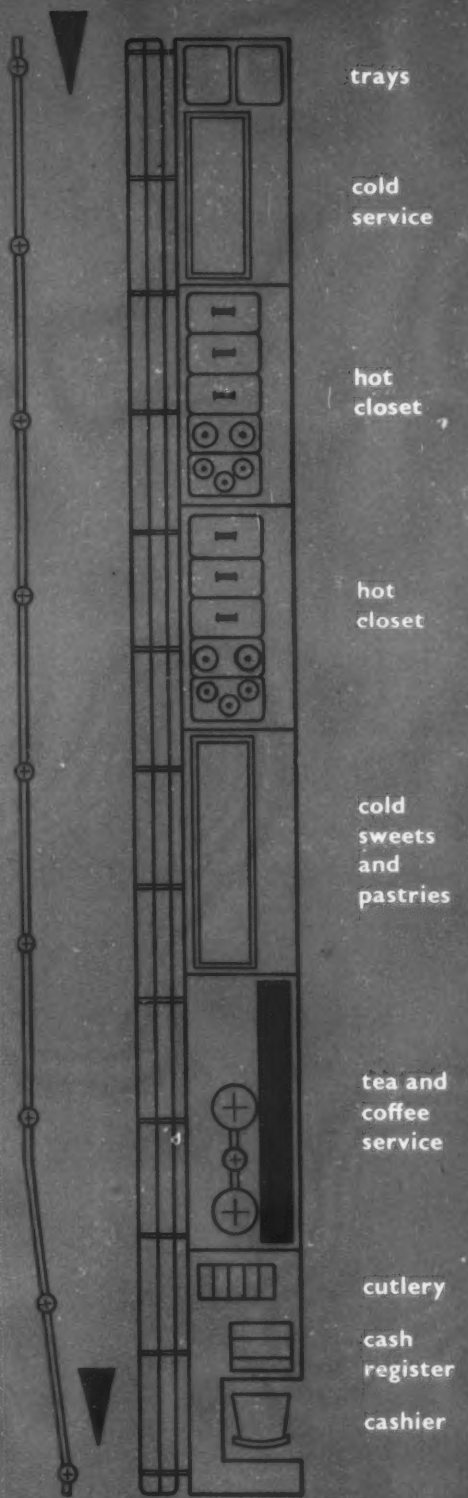
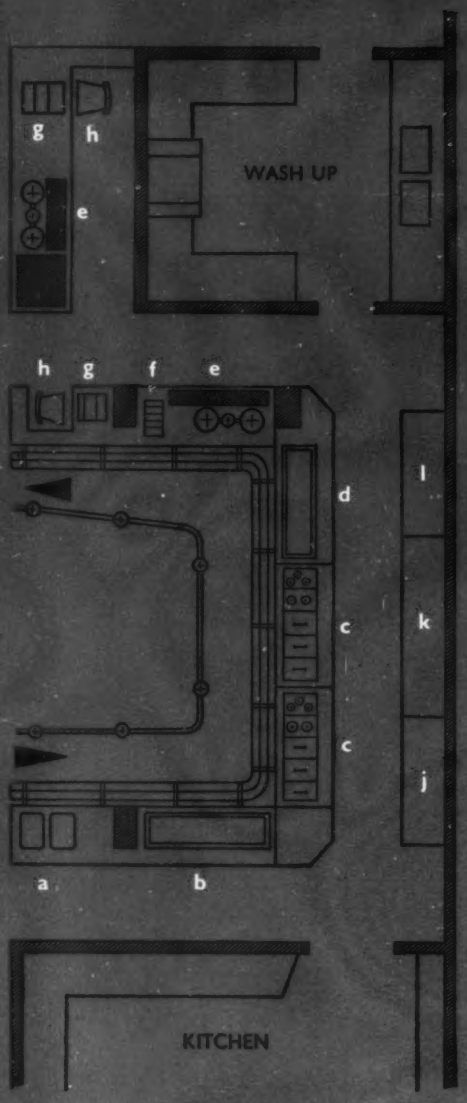


Fig. 1 Typical cafeteria counter

C. 3



a *Trays*
b *Cold service, sundries*
c *Hot closet*
d *Cold sweets, pastries*
e *Tea & coffee service*
f *Cutlery*
g *Cash register*
h *Cashier*
j *Chilled salad unit*
k *Preparation counter*
l *Cold sweets display*

Fig. 2 Cafeteria counter, kitchen and wash-up

Warm Storage

The principal unit of this section is the hot closet, consisting of a bain marie with a hot cupboard below. A number of circular pots and shallow rectangular pans fit into openings in the cover of the bain marie, and are interchangeable so that the accommodation can be varied to suit the day's menu. The bain marie itself may consist of either a hot water bath or a steam bath, the latter supplied from a steam generator with automatic water feed from an integral water cistern. Heat is supplied by thermostatically controlled immersion heaters in both cases. These units require electricity and cold water services, and should be connected to the drainage system to facilitate cleaning and emptying the bain marie.

An interesting accessory is an overhead heating unit for keeping plated meals warm without drying up, the source of heat being a series of infra-red emitters arranged to shine down on a double row of plates standing on top of the counter or hot closet.

Cold Storage

Each cold storage unit is self-contained with its own refrigeration plant. Some are straightforward refrigerators : others incorporate open-access salad pans on top of a chilled cupboard, or sliding trays for prepared food awaiting cooking in the back bar. Ice cream 'conservators', soda fountain and cold sweet units all have their special requirements and are constructed accordingly, some having open refrigerated shelves for the display of made up ice-based goods and a chilled cupboard for storage. All types should be connected to the drainage system for the disposal of water when defrosting, and to the electricity supply.

Back Bar Cooking

In this recently introduced system, the cooking is rapidly carried out by grill, griddle plate and deep-fat fryer grouped together to simplify ventilation arrangements. Some units incorporate a large removable grease filter in a low level hood with duct and exhaust fan, but the extract system, which is of critical importance, must always be worked out to suit local conditions.

The electric grill, of normal type, is placed at eye-level in most cases, the griddle plate for the direct cooking of eggs, bacon, hamburgers, etc., being at counter-level. Another interesting appliance is the so-called infra-red grill, which has two electrically heated plates hinged together at one end to allow the food to be inserted between them. When the upper plate is lowered. the food is 'grilled' on both sides simultaneously with great rapidity.

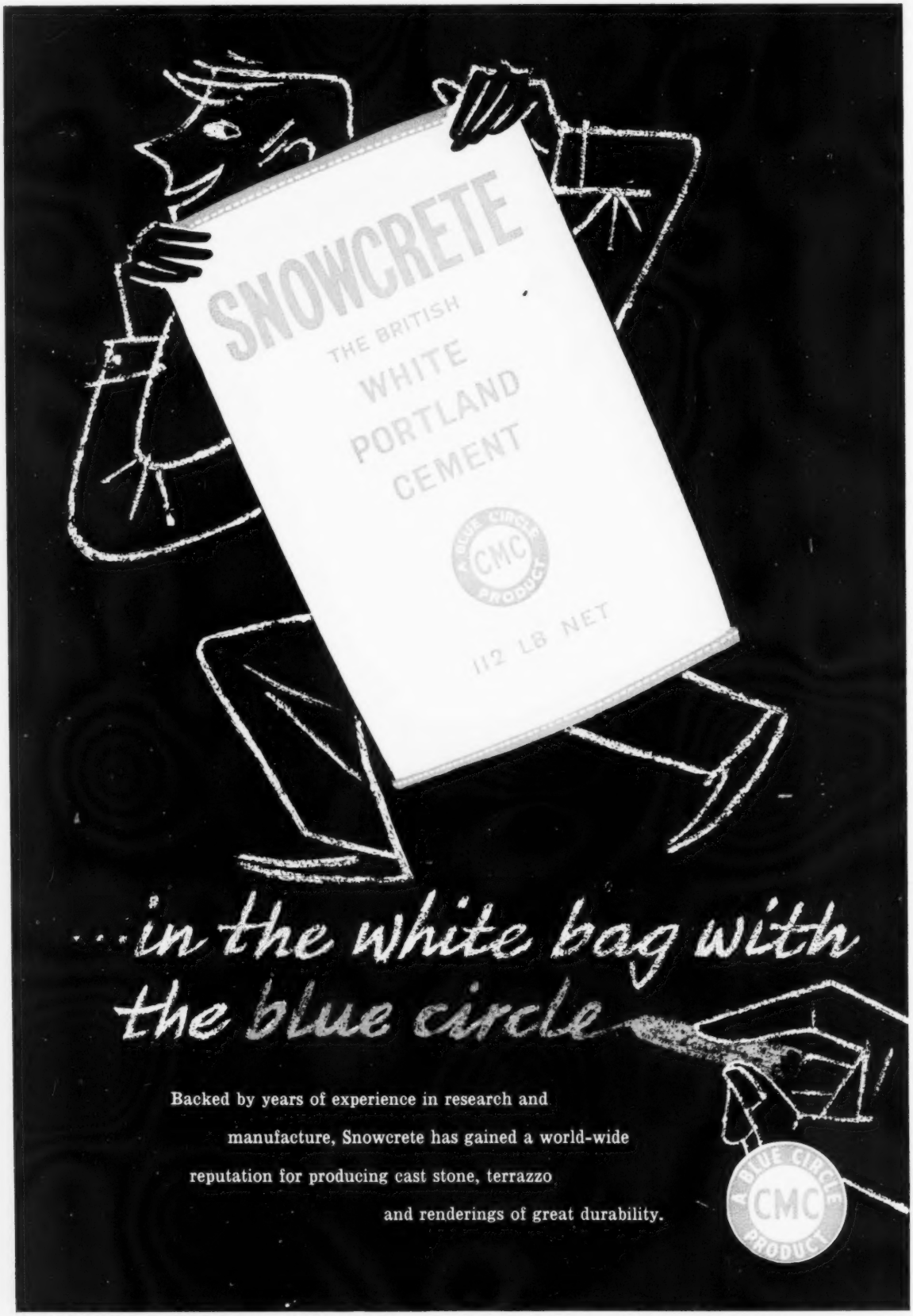
The deep fryer is usually of the counter type in which a small quantity of oil is held at the correct temperature by thermostatically controlled high loading immersion heaters, whilst retaining a cool zone at the bottom of the oil container which allows sediment and burnt particles to be easily drawn off.

Planning Requirements

The fact that the food is prepared raw beforehand and cooked rapidly when required, involves the replacement of the conventional kitchen by a primary food preparation room between food stores and dining place, the making-up and portioning of the actual dishes being done on the front counter and back bar. Boiling plates or pans may be added for cooking vegetables, soups, etc., to supply hot closet units if these additions to the menu are required. Back bar, operators' gangway, front counter and queueing space can be accommodated in a width of 12 ft. 6 ins., the length depending entirely on the circumstances of each case. If required, this equipment and service could be arranged in a long ante-room to the dining room proper. An efficient wash-up is, of course, essential as well, but the overall economies in space, structure, services and staff make this system worthy of consideration in a wide variety of cases.

Back bar cooking with its great potentialities, takes full advantage of the familiar characteristics of electric cooking ; cleanliness, uniformity of heat and automatic control, permitting exact timing, and — most important in this context — the absence of unwanted and wasted heat.

For further information on the use of electricity apply to:



Supplied by THE CEMENT MARKETING COMPANY LTD., PORTLAND HOUSE, TOTHILL STREET, LONDON, S.W.1.
E. & T. EARLE LTD., HULL · THE SOUTH WALES PORTLAND CEMENT & LIME CO. LTD., PENARTH, GLAMORGAN.

THERMALITE-YTONG

lightweight load bearing insulating building blocks

Thermalite-Ytong has been developed specifically to meet the need for a rational walling material. It combines the functions of load-bearing and thermal insulation and enables the architect to design load bearing external walls, with high thermal resistance, at a cost comparable with brickwork or concrete. Thermalite-Ytong consists essentially of a large number of uniformly sized non-intercommunicating air cells, the walls of which are formed of a particularly strong and durable siliceous material. During manufacture the material is cured in high pressure steam which makes it chemically and physically stable. Modern manufacturing techniques guarantee a constant, high quality product. Because of its unique properties it is possible, using Thermalite-Ytong as a structural material, to achieve a degree of Thermal Insulation hitherto only obtainable by the use of specialised insulation materials in conjunction with the normal structural concrete or brickwork.

THERMALITE-YTONG for light weight, for strength, for insulation, for economy

What Thermalite-Ytong is

1 A light weight load bearing insulating building material

2 The size of blocks are nominal 18″×9″×2½, 3″, 4″, 5″, 6″, 8½″

3 The weight of blocks are, 3″ blocks—14 lbs. 4″ blocks—19 lbs. and 6″ blocks—28 lbs.

4 It has a cube compressive strength of 750/800 lbs. per sq. inch and a modulus of rupture of 160 lbs. per sq. inch as delivered

5 It has a high Thermal restivity. Two 3″ leaves of Thermalite-Ytong with 2″ cavity have a "U" Value of 0.15—equal to more than 40″ of brickwork

6 It is a stable weather-resistant material

7 It is easy to cut, chase, saw and work. Nails and screws can be driven direct

8 It is incombustible and fire resistant

9 It is vermin proof

What Thermalite-Ytong does

1 It saves fuel cost in heating of buildings

2 It gives greater comfort in dwellings

3 It reduces site labour costs

4 It carries floor and roof loadings because of its strength

5 It enables easy and direct fixing of joinery and fittings etc.

6 It saves structural steel and/or mild steel reinforcement

7 It saves in foundation costs

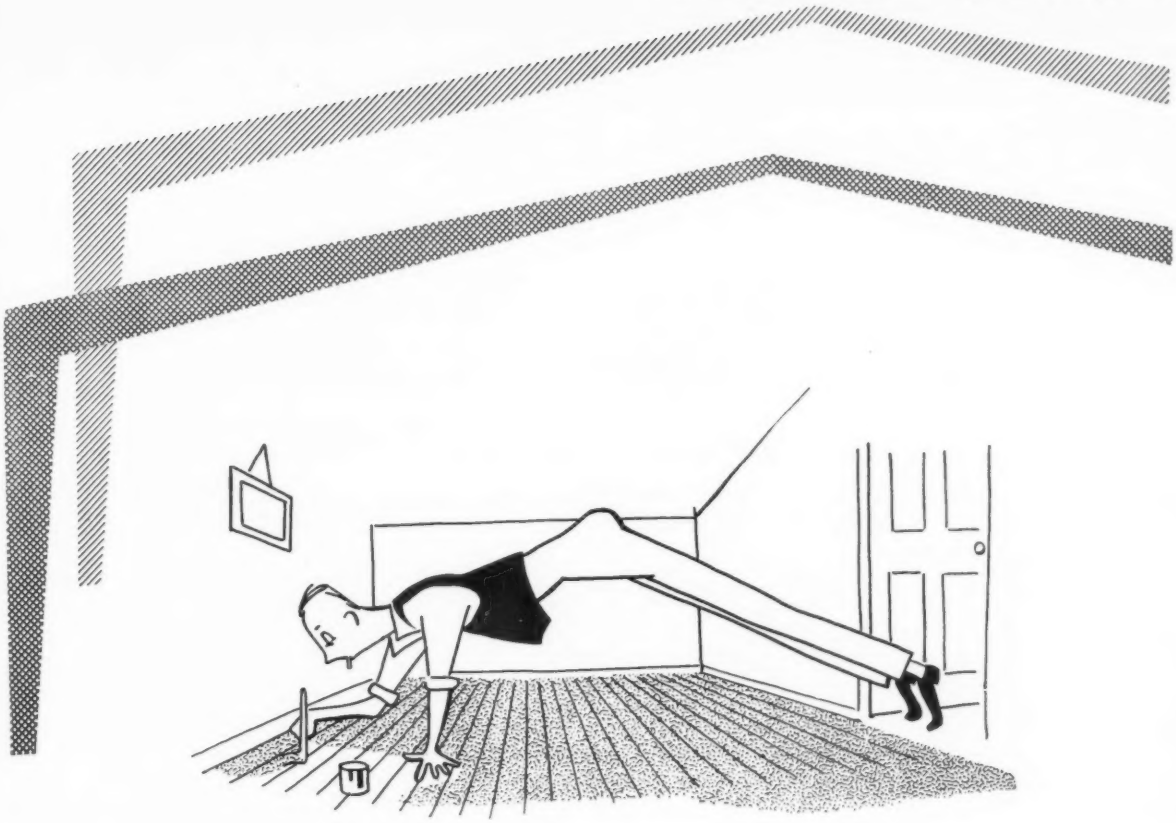
8 It reduces the risk of condensation

For further details and technical data apply to:

THERMALITE LIMITED

SHEPHERDS HOUSE LANE, EARLEY, READING, BERKS. Telephone: Reading 62694.

The Thermalite process which has been developed in the laboratories of John Laing and Son Limited is protected by British Patents Nos. 648280 and 648299.



Wide Spans — unobstructed floor space

Not an ideal way to paint a room we think, unless the phlegmatic, extended gentleman happens to be your neighbour doing the job for you. Nor do we put this forward as the original inspiration for a portal frame.

What we do say, however, is that when wide spans and unobstructed floor space are the primary requirements, then there is no more reliable, no happier medium than steelwork—preferably BOOTH steelwork.

better build it with **BOOTH** Steelwork

JOHN BOOTH & SONS (BOLTON) LTD., HULTON STEELWORKS, BOLTON
Telephone: BOLTON 1195. LONDON: 26 VICTORIA STREET, WESTMINSTER, S.W.1 *Telephone:* ABBey 7162

You *must* be firm!

From where you sit, Sir, in your Director's or Works Manager's chair, unchecked vibration means trouble.

Costly trouble. Great machines shaking themselves and their foundations to pieces. Or delicate instruments turning temperamental as film stars. How comforting then to have at your beck and phone call the Dunlop specialists who have perfected a range of precision-built components — rubber-based, anti-vibration mountings, carpet mountings and flexible couplings — to keep all machine-caused vibration within tolerance limits.

If you have a vibration problem, contact Dunlop *now!* Expert advice is yours for the asking.

Dunlop

ENGINEERING COMPONENTS

STUDDED CARPET MOUNTINGS FOR ¼" STATIC DEFLECTION AT FULL LOAD

Produced in a range of controlled-stiffness compounds for the insulation of heavy machinery foundations. Circular studs are spaced to create a flexible beam effect.

DUNLOP RUBBER COMPANY LTD. (ENGINEERING COMPONENTS DIVISION) FORT DUNLOP, ERDINGTON, BIRMINGHAM *TEL: ERDINGTON 2121, EXT. 8121*

6SPC/PC3

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6SPC/PC3

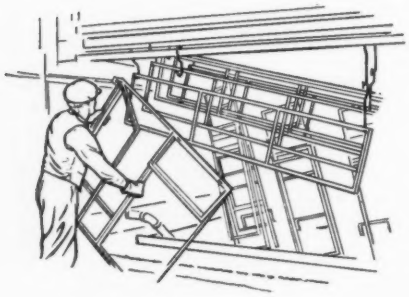
Here's the inside story of the THOMPSON RUSTPROOFING PROCESS

FIRST we shot-blast at 80 lbs. p.s.i.

For steel windows everyone knows that the best protection against rust is a generous coating of zinc. But zinc won't adhere to steel unless its surface is properly prepared. That's why we shot-blast every Beacon Window to ensure a meticulously clean and slightly pitted surface entirely free from scale, grease and dirt, on which the zinc can be deposited to give life-long protection against Rust and Corrosion.

..THEN we coat with Zinc (99·5% pure)

There are several methods of coating steel with zinc to give it the maximum protection against rust and corrosion. As engineers of world-wide experience, Thompson's use every process, but the one chosen for Beacon Windows — the Zinc Wire Metallisation Process — has special advantages. Under the flame of the oxy-propane flame gun the whole window receives a generous coating of zinc—not less than ·004" thick—as an *integral* unit after assembly.



..FINALLY the surface is insulated

Thompson's are not content to stop at the zinc coating stage. Every Beacon Window is passed through a zinc chromate primer tank and stoved at a temperature of 400°F. This insulates against attack from any dissimilar metallic-based finishing paints. It also safeguards against corrosion when stacking on unsuitable ground, prior to use. But, more important, the priming coat being factory-controlled, its quality, density and workmanship can be guaranteed.

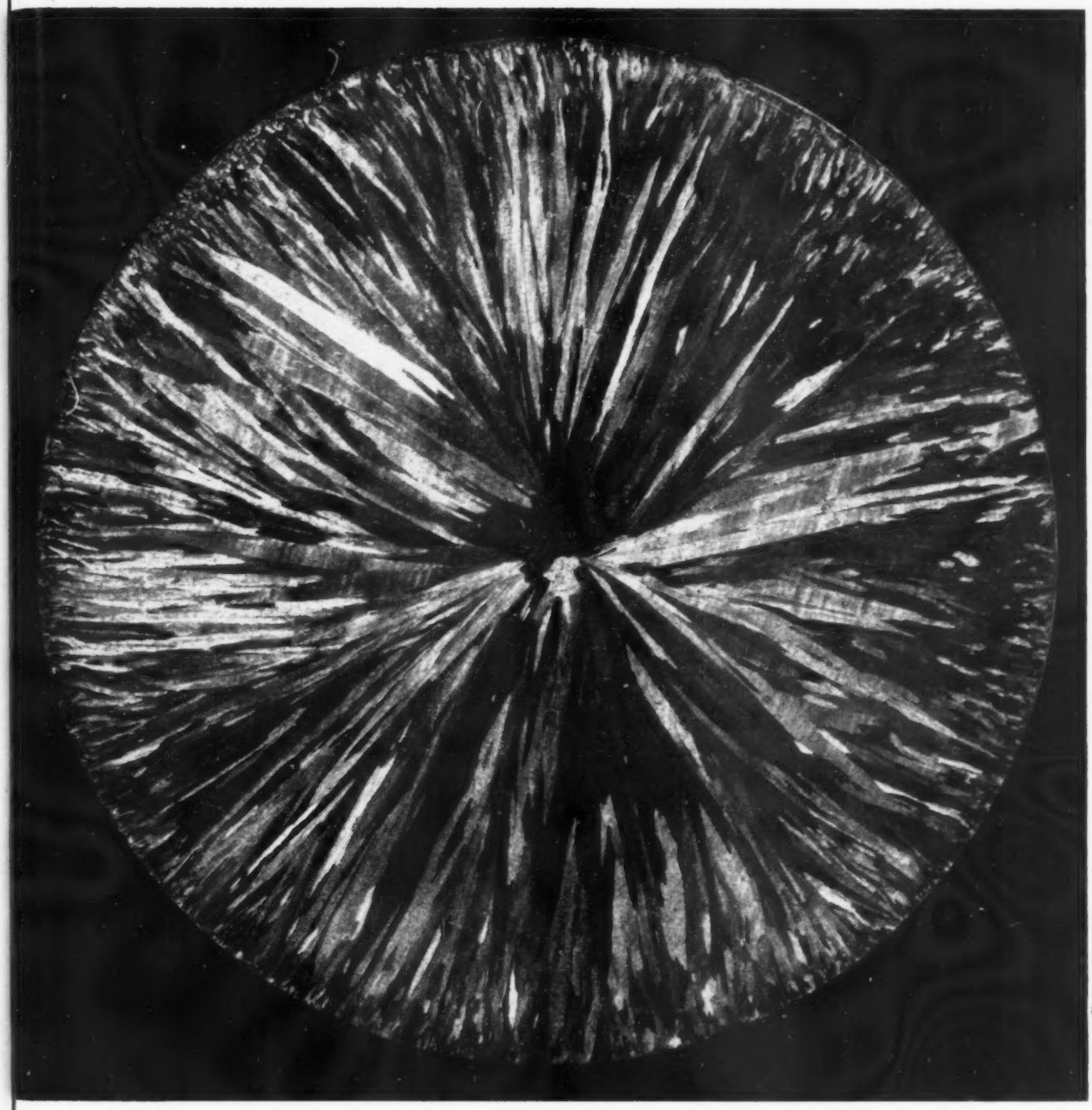
-the result is perfect RUSTPROOFING

There's a quality touch about a Beacon Window characteristic of a product made under the strictest engineering supervision. A Beacon Window always opens and closes smoothly — it fits accurately on all four sides to exclude all draughts. Its bronze furniture is sensibly robust. But, the really important fact — and something which is quite invisible — is that it has been rustproofed to satisfy the most exacting conditions to which steel windows can be subjected. Every Beacon Metal Window, you can be sure, will pass with flying colours all the tests described in B.S.729. There are no better windows made.

BEACON
METAL WINDOWS

Member of the Metal Window Association

JOHN THOMPSON
BEACON WINDOWS LTD
WOLVERHAMPTON



It will never be tested like this again

Wednesbury Copper Tubing owes its down-to-earth reliability to the most precise control of quality at every stage of manufacture. Copper tubing starts in the form of cylindrical "billets", about 5" in diameter. Before manufacture starts, the billets are checked by the laboratory. Slices about half an inch thick are etched before examination. If the etching reveals a long-ray sun-burst structure like that above, it means that copper tubes drawn from the billet will be strong and sound. This is just one of the many tests which ensure the highest quality in BSS Domestic Copper Tubing. So, when you buy or specify . . .

choose WEDNESBURY TUBE

Obtainable from your local stockist or builder's merchant. Manufactured by

THE WEDNESBURY TUBE CO. LTD. BILSTON, STAFFS

CONSTRUCTED OF RESIN BONDED PLYWOOD

provide the answer to the steel shortage

these are some of their advantages

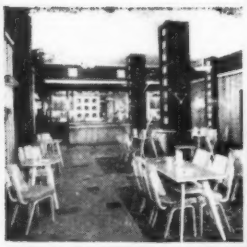
LIGHT AND EASY TO HANDLE. SIMPLE AND QUICK TO ERECT
SUITABLE FOR FIXING TO ANY TYPE OF WALL CONSTRUCTION
NEAT AND ATTRACTIVE IN APPEARANCE
READY FOR IMMEDIATE DECORATIVE TREATMENT
AVAILABLE IN SPANS UP TO 40′ 0″

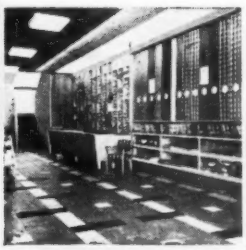
Standard Aero Beams are designed in accordance with C.P.112 to carry a maximum all-up load of 425 lb. per foot run. Beams can be supplied to any reduced load required. They can be used in conjunction with any lightweight roofing materials.

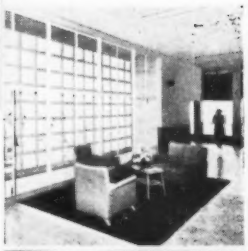
Full details and prices will gladly be given on request.

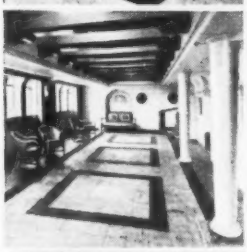
SECO LIMITED. 11 UPPER BROOK STREET, PARK LANE, LONDON W1. Phone: MAYFAIR 9080

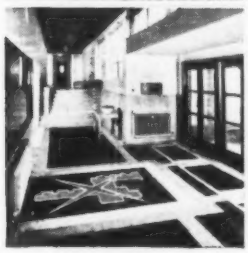

...but splendour



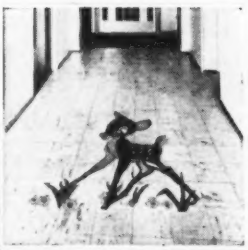


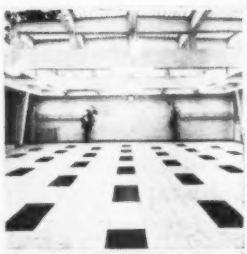






at our feet today





A few pigments, some strips of lead and a magical substance called glass provided a new forte for the artist of the Middle Ages. With these sparse materials and a special genius that has never been surpassed, he painted pictures that borrowed glory from the sun. The same purpose is as well served in these modern times by Semastic Decorative Tiles. These give designers the widest freedom to create colourful floors that bring a new focal point of art to the buildings they grace and unfailing pleasure to those who see and use them.

SEMASTIC DECORATIVE TILES

Products of a Dunlop Company installed by

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

6.SE.39

Church heating

The Church of England alone is responsible for some 15,000 churches of varying character and more than 10,000 of them were built before the nineteenth century.

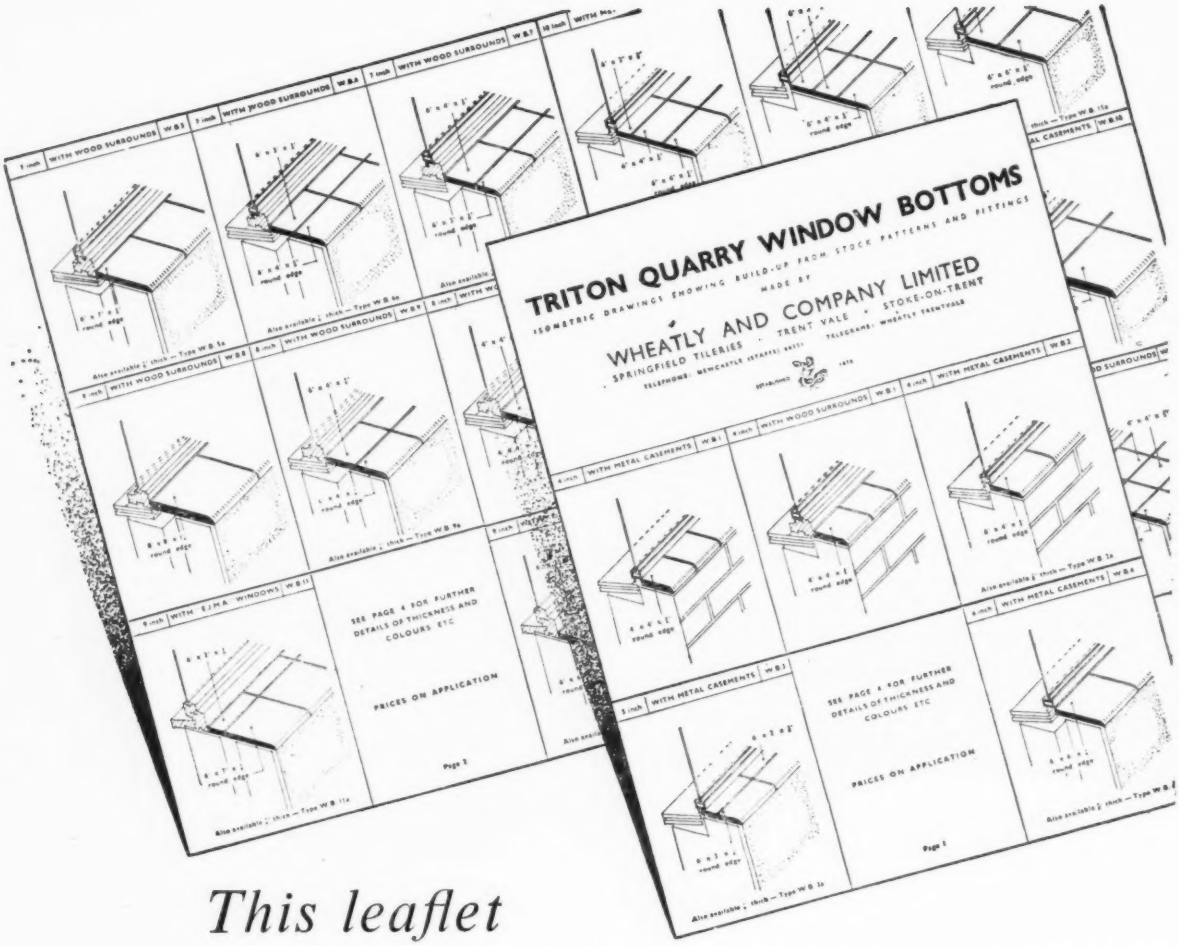
There is obviously no one solution to the heating of so many different buildings. Shall it be continuous or intermittent heating? Will it be radiant or convected heating? However, the Heating Engineer at your Area Gas Board can give expert advice on any space-heating problem from his accumulated knowledge and past experience.

***WHATEVER YOUR BUSINESS*—The Gas Industry appreciates the needs of individual consumers for prompt service and for advice which accords with the customer's special circumstances and requirements. Each Area Gas Board offers efficient service to users of gas-fired equipment and can give expert advice based upon the pooled knowledge of all the Boards and of gas users in other countries.**

—CONSULT YOUR AREA GAS BOARD

ISSUED BY THE GAS COUNCIL

THE GAS INDUSTRY MAKES THE BEST USE OF THE NATION'S COAL



This leaflet gives full details and data regarding

WHEATLY triton

QUARRY WINDOW BOTTOMS

These window bottoms are made in a number of colours. Isometric drawings show build-up from stock patterns and fittings. Correct descriptions, key numbers and principal dimensions are included. The leaflet has been designed to simplify the problems of detailing in the drawing office and of ordering. A copy will be forwarded on request

Specimens of Wheatly burnt clay products may be seen at the Building Centre, London. They include Single-lap Roofing Tiles, Ridge Tiles (blue and red), Floor Quarries, Air Bricks and Briquette Fireplaces.

WHEATLY & COMPANY LIMITED
SPRINGFIELD TILERIES · TRENT VALE · STOKE-ON-TRENT
Telephone : **NEWCASTLE** (*Staffs*) **66251** *Telegrams :* **WHEATLY, TRENTVALE**
WH 57

Only the Primer has made the Difference

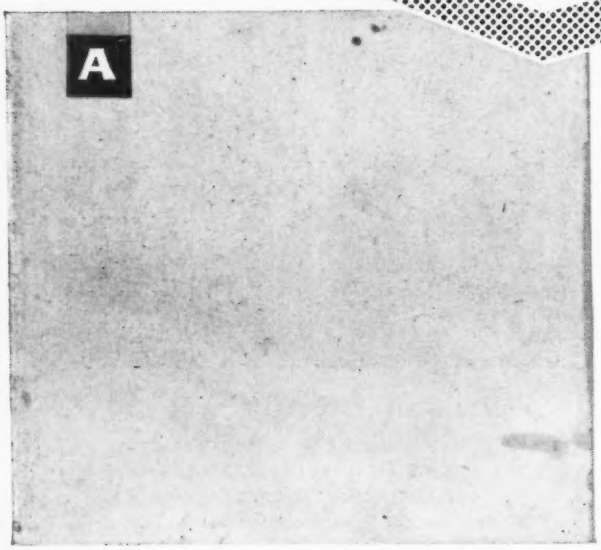
These two identical panels of wood were treated (A) with the Kinslac All-Alkyd System and (B) with the usual oil primer and alkyd undercoat and finish, and both panels were exposed to the elements for a period of 9 years. The photographs (slightly enlarged) speak for themselves.

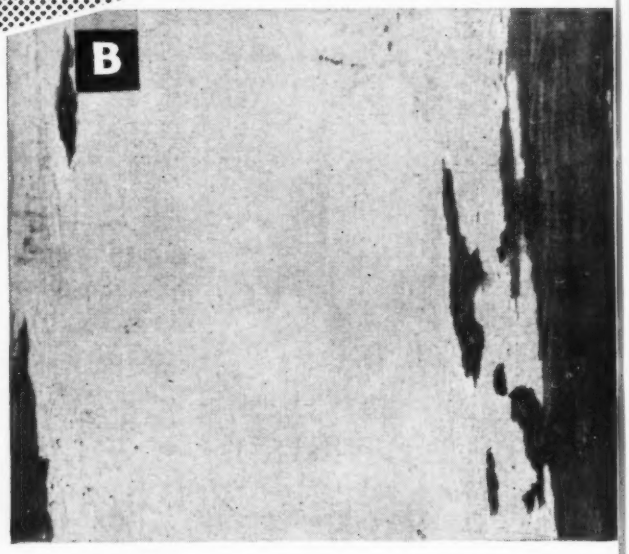
A

The surface of the panel treated with the Kinslac All-Alkyd system showed absolutely no sign of breakage or blistering.

B

Cracks in the finish of the panel treated with the oil primer system have allowed moisture to permeate the undercoat, the primer, and finally the wood itself.





KINSLAC ALL-ALKYD SYSTEM for woodwork means *GREATER DURABILITY*

The Kinslac All-Alkyd System is especially designed so that each coat—primer, undercoat and finish—effects the maximum protection for woodwork. The principal difference between this and any other system is that *all coats* have an Alkyd Medium base—including the primer—giving greater flexibility together with coat-to-coat adhesion. The failure of most paint systems is due to loss of adhesion between either wood and primer or primer and undercoat and this problem is effectively overcome by the Kinslac All-Alkyd system.

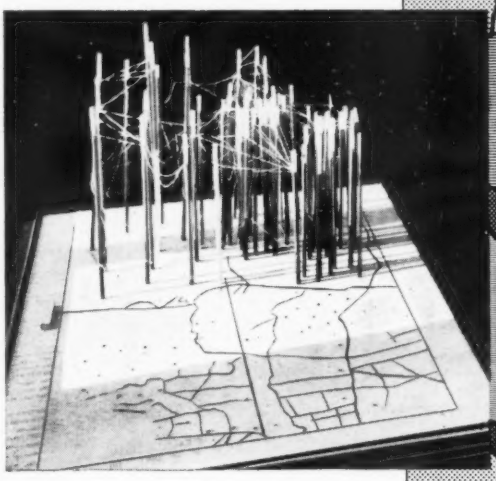
KINSLAC—All-Alkyd Finish, Undercoat and Primer. An Information Sheet fully describing the Kinslac All-Alkyd System is available, and you are invited to write for a copy.

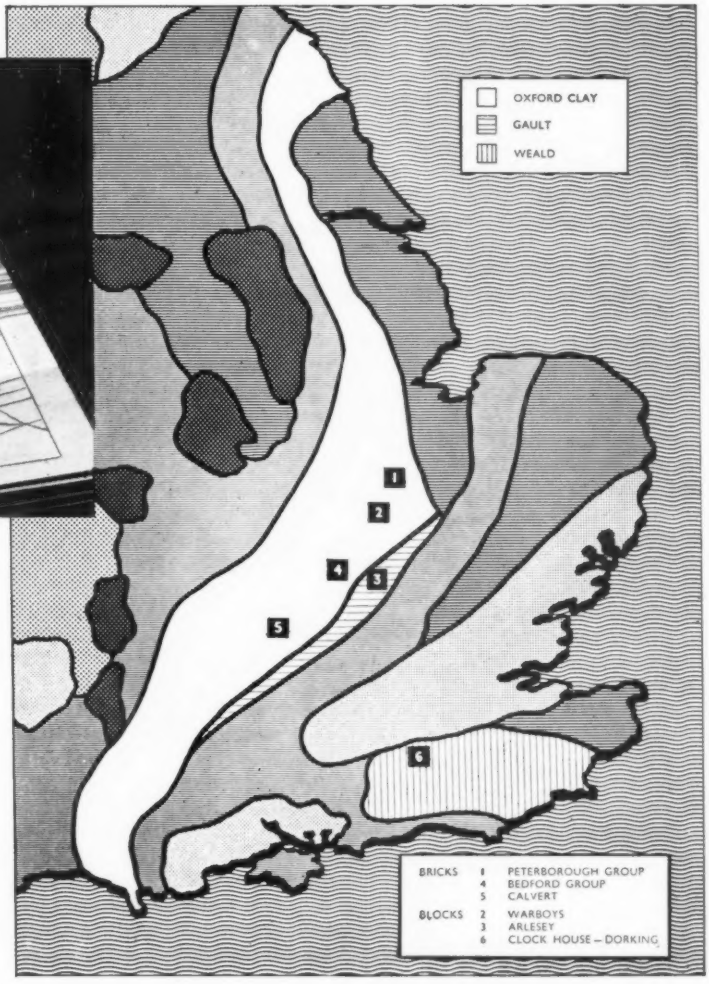
KINSLAC

Made by: A. SANDERSON & CO., LTD., HULL. SPECIALISTS IN FINE PAINTS

BETWEEN THE PIT AND THE SITE . . . one of the links in the 'Phorpres' service is

. . . FORETHOUGHT





PHORPRES

The works of London Brick Company Limited are strategically placed on the geologist's map.

The brick works are situated where the Oxford clay is deep, uniform and suitable for large-scale mechanical excavation. Bricks pressed from this clay are strong enough for mechanical handling before firing and their natural fuel content greatly reduces the addition of coal to complete the burning. Such Oxford clay deposits are a national asset.

The clay block works follow the Weald, Gault and upper Oxford clay strata. Lighter, more plastic clays are better suited to the "wire-cut" process necessary to produce the cellular shaped blocks.

The geologist is, therefore, an important member of the team whose planning and foresight ensure that 'Phorpres' products maintain their high quality and low cost.

LONDON BRICK COMPANY LIMITED in the service of the building industry

Head Office: Africa House, Kingsway, London, W.C.2. Telephone: HOLborn 8282
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, 20-22 St. Paul's Street, Leeds. Telephone: Leeds 20771

BY APPOINTMENT TO HER MAJESTY QUEEN ELIZABETH II BRICK MAKERS

LB49

Office for the Telephone Manager, North Area, London Telecommunications Region, Crouch End Hill.
Architect: N. W. Holder, B.Arch. F.R.I.B.A.
General Contractors: Geo. Wimpey & Co. Ltd.

Architects are fully aware of the virtues of Hollow Block flooring: they are reminded that in this form of flooring we are specialists

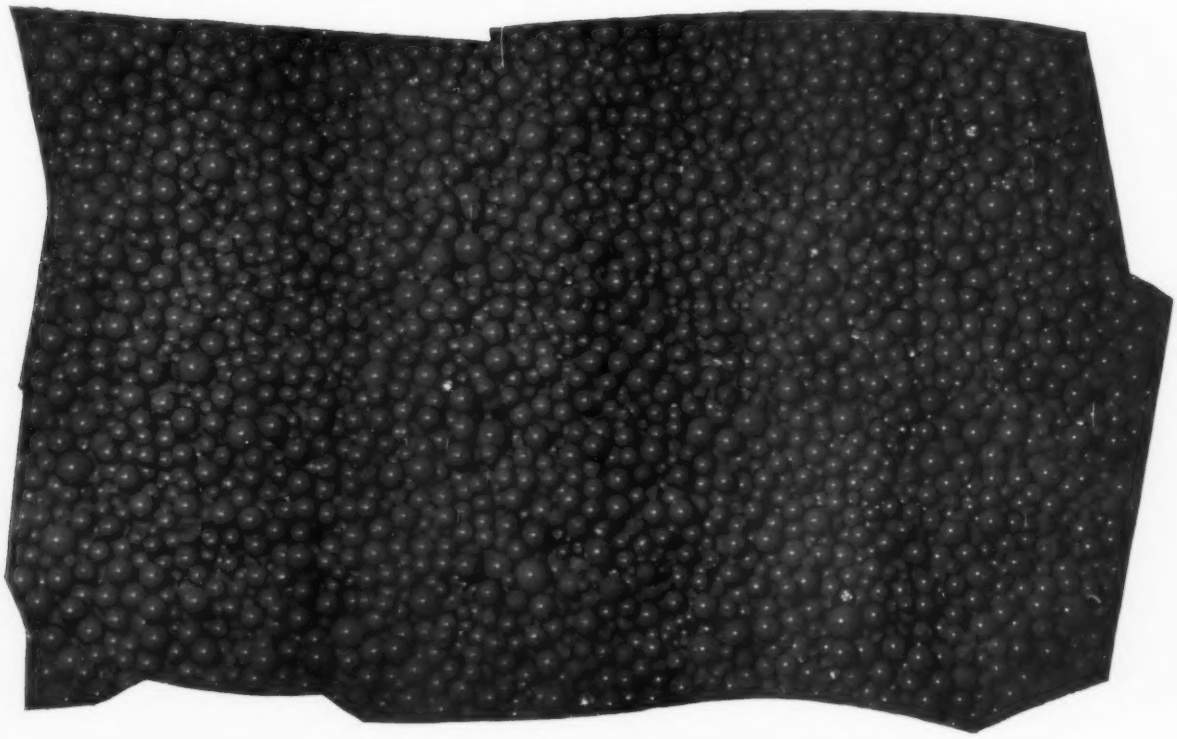
BRADFORDS

FOR CONCRETE DESIGN & CONSTRUCTION

F. BRADFORD & CO. LTD. · ANGEL ROAD · LONDON · N.18 *Telephone: Edmonton 4267*

Background to Beauty. Pearl grey **'VITROLITE'** *by Pilkington Brothers Limited, St. Helens, Lancs.*

'VITROLITE' IS AVAILABLE IN THE FOLLOWING COLOURS: PEARL GREY, PRIMROSE, GREEN, GREEN AGATE, TURQUOISE, EGG SHELL, CREAM, IVORY, BLACK, WHITE. SUPPLIES ARE AVAILABLE THROUGH THE USUAL TRADE CHANNELS. *'Vitrolite' is a registered trade mark of Pilkington Brothers Limite'*



The grinding charge of a ball mill used for making paint.

Architects who use the expert assistance of the International advisory service save time, effort and money.
This comprehensive service includes the inspection of buildings, the preparation of specifications and colour schemes and regular visits to the site while painting is in progress.

FOR THE BEST RESULTS SPECIFY INTERNATIONAL

International Paints Ltd.
GROSVENOR GARDENS HOUSE, LONDON, S.W.1
TELEPHONE: TATE GALLERY 7070 (15 LINES)
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1881 1956

MAIN FACTORY IN U.K. FELLING-ON-TYNE

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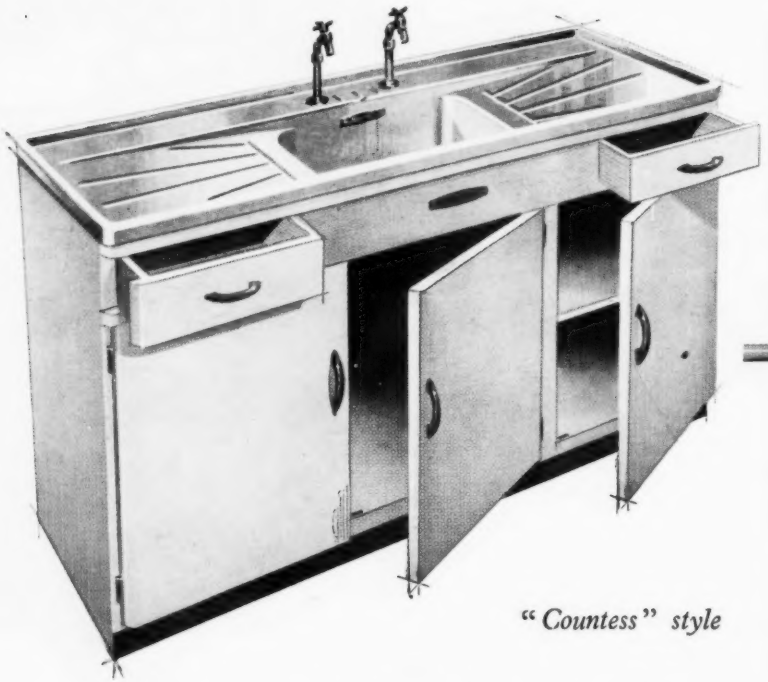
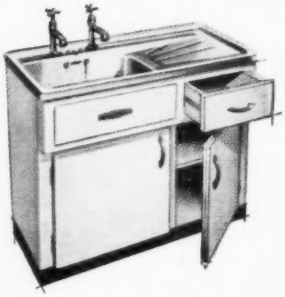
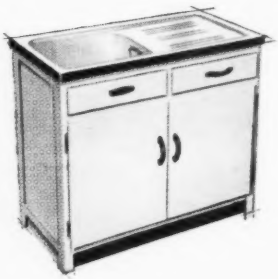


"Countess" style

"Duchess" style



"Princess" style



"Coronet" units

We show here some of the sink units in our range. You will see that there are models—and different styles—suitable for every size of kitchen. Sink tops can be stainless steel or porcelain-enamel* as required, also right or left-handed. The cabinets are all made from sound, well-seasoned wood. As to prices, these are very fair indeed !

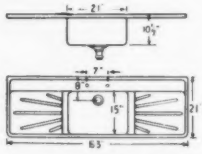
**Available in cream, white, eau-de-nil, light blue and primrose. Cabinets available in cream, white, slate grey and light blue.*

EASICLENE

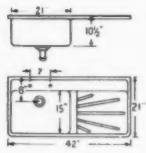
Attractive... efficient... well made!

SPECIFICATIONS

VITREOUS ENAMEL ROL 17



VITREOUS ENAMEL ROL 11



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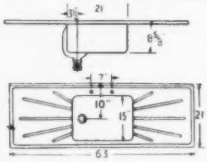

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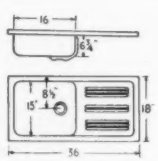

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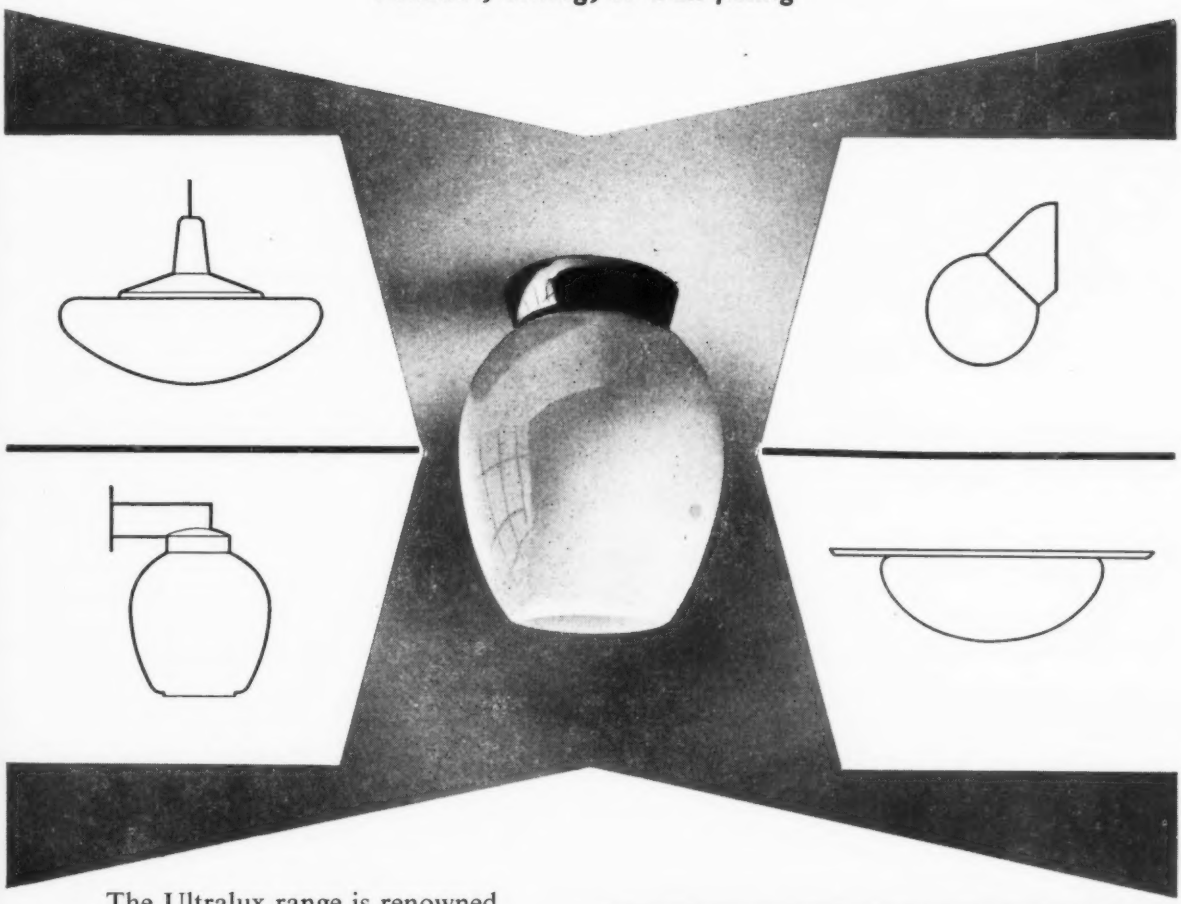

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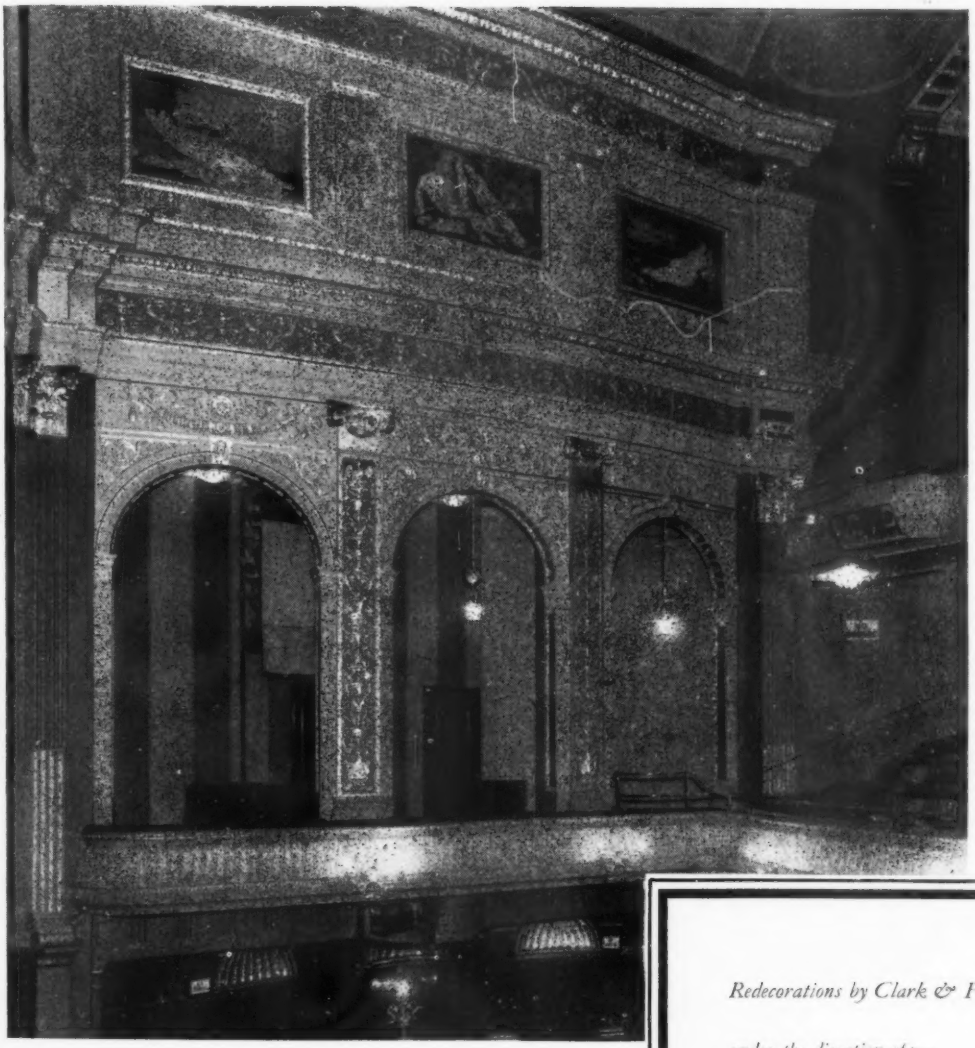

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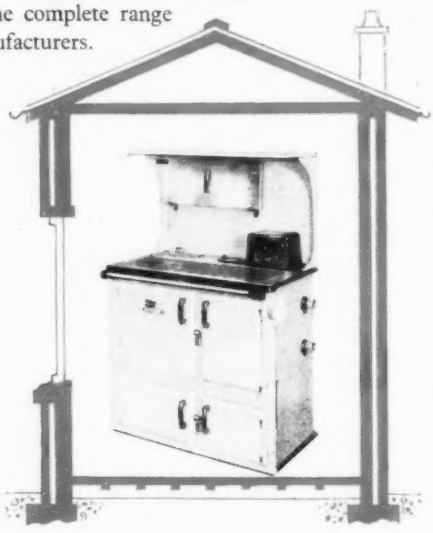

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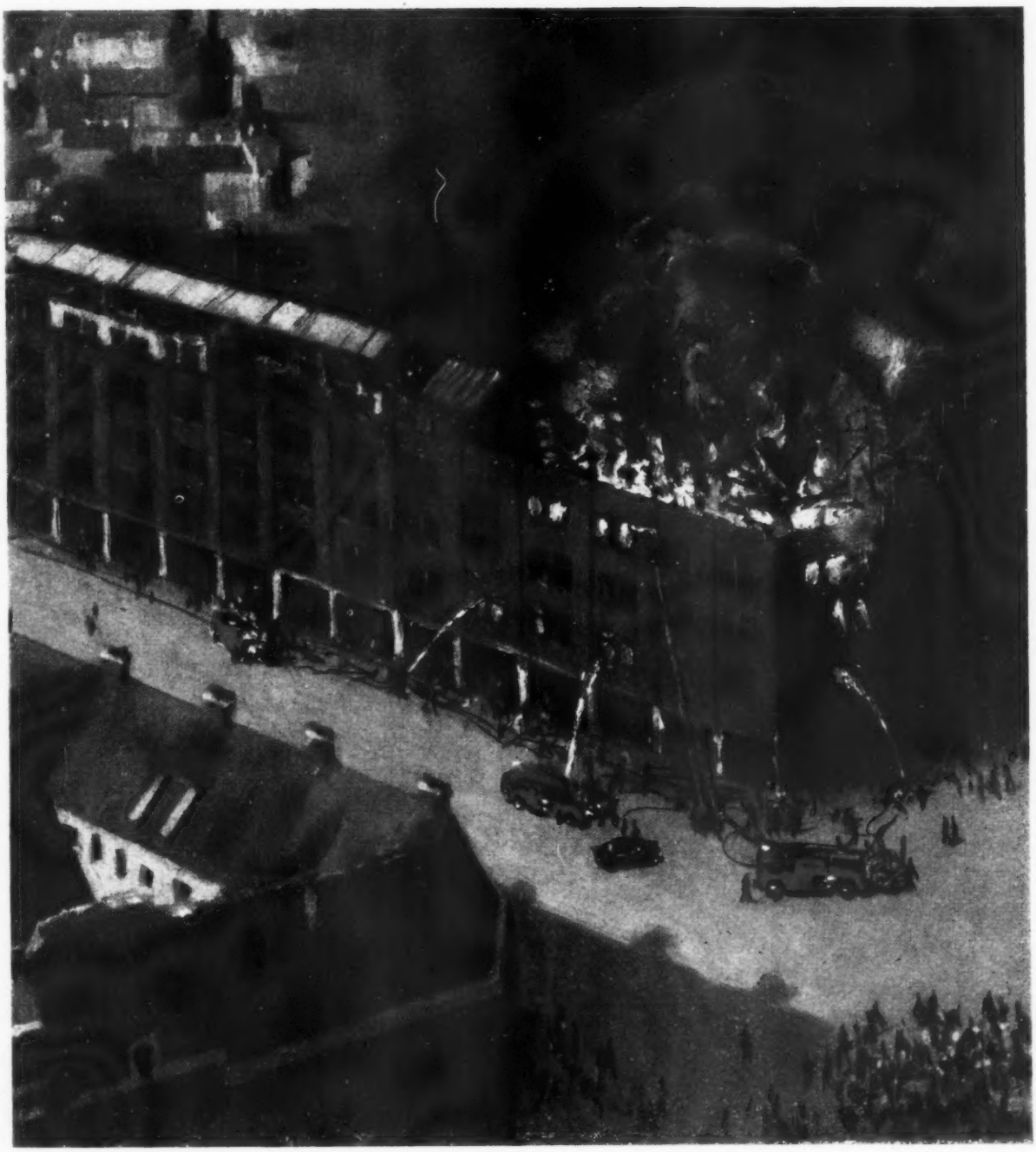

A million pounds up in smoke

One of the most costly fires in recent years occurred in March last year at a large Birmingham warehouse. Practically the whole of the building was destroyed despite the prompt arrival and intensive attack of the City Fire Brigade.

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THE ARCHITECTS' JOURNAL

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NOT QUITE ARCHITECTURE*

LETTER FROM A TRAVELLING ARCHITECT†

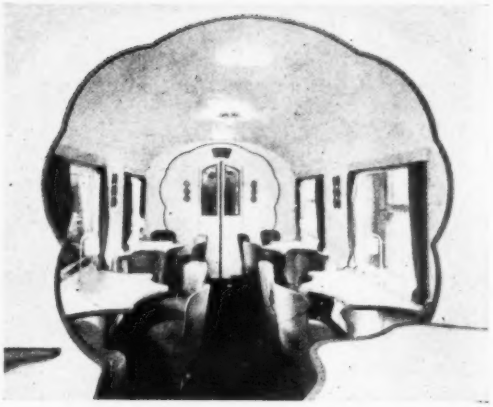
WEST INDIAN APPROACHES

"We hope, Sir, to offer you some hospitality . . ." (Salute). "Goody" said the Pretty Daughter, "that means you're VIP!" Mildly gratified I asked what that meant. "A seat and free drinks, thank goodness. My feet are nearly off." Nothing is ever quite perfect. I had to wait (staring across at Gibberd's promise of things to come) in one of those oh-so-familiar beige and MOW rooms till the Prime Minister of Ceylon arrived—for all the world, and with all respect, like my Aunt Emma caught on the way to the bathroom. Another hitch—solved by the Member of the Government holding court in one corner, while we had the other corner. Later, as we settled into the Monarch Stratocruiser, another thorn was disclosed by VIP-dom: no receipt for my camera. Unless VIP-dom worked inwards as well as out that might spell trouble. We were off, and the Pretty Daughter waved gaily—but alas, from the tarmac. "Only half full at most" remarked a veteran, tipping a mass of gear on to the seat in front. I nodded agreeably and vaguely, wondering whether that second Martini had been wise. "I expect some trouble over X and Y" remarked the chairman, "but we must take things as they come." We took two drinks in the basement bar and the Member of the Government (face *very* familiar) listened graciously to my remarks. It was not until much later that I found the Member of Government was, in fact, sitting two seats away. Then I remembered! That lout who had accepted my reasoned comments on Colonial affairs was someone I used to shovel files at, back in 1945.

*

We continued to take things as they

* Meaning exactly what it says.
† Guess who.



More Espresso Than Express

The photograph above left does not show, as you might suppose, refreshments being served round the periscope of a civilian submarine. It is, in fact, part of the interior of a new British Railways refreshment car. The other picture of this interior, above, shows how the vertical tea table is placed so that people using it will effectively block the entrance to the carriage. Two other new dining cars have also been brought into experimental service by BR. They are all improvements on such earlier schemes for brightening up the railways as those shown top right (1938) and second from the top (1949). But the spiv-shouldered splay-legged chairs and the patterns and colours used are reminiscent of the nastiest conception of "contemporary" design to be found in suburban broadways. (One of these interiors is seen second from the bottom). And why do carriage designers persist in giving windows a cosy-cottage look? ASTRAGAL comments on page 148 on these carriages which, you will be glad to know, are not yet being produced in large quantities. They are being used "to determine the future design" of dining cars. So there is still time for the anonymous designers to modify, and improve, their schemes and to give us rooms on wheels which, in addition to being well designed, maintain a genuine railway character.

came. Turkey salad, champagne, strawberries, cheeses, dessert, perfect coffee and kümmel. 11 p.m., moon over cotton wool and bunks with khaki canvas curtains. Hairy chests and men looking as though they wanted Milton. My bunk was abreast of the engines, glowing bestially from huge exhaust rings, and much as I love Boeing, vibro-massage was nothing to it.

*

We stopped at Gander. I salute it with its trees, its water, its miles and miles of damn-all. Then Idlewild, with glorious Manhattan just over there, never to emerge from the heat haze. Subdued VIP-dom no drinks, just salutes. New Idlewild being built, in the meantime the huts are just like dear old London. Main Avenue (indoors) a replica of Brighton booths on a Bank Holiday if all patrons had spent £50 on clothes the day before. Such bosoms, ankles, colours and crew-cuts; such effulgent energy, such democracy so naturally modified by the dollar! Horrifying and yet stimulating.

*

Flight 604 for Bermuda, Puerto Rico, Barbados. Much smaller seats. Honeymooners aplenty. Girls beautiful, all exactly the same, like different-coloured candies from the same mould. Men young, moody, close cut, solemn, ready even now for the battle to come. Vickers Viscount, straight up to 19,000. Very smooth and new. We dozed. "Lunch Sir? . . ." More turkey salad, champagne, petit fours . . . and here is Hamilton, Bermuda.

*

The blue of the sea was staggering—cobalt, ultramarine, shoaling to a livid coppery-green. It drained the colour from everything else like a trayful of the strongest Reckitt's blue amongst the teacups. One kept watching it. White concrete-tiled roofs, pink colour wash, defiantly British cars and British, coloured police.

*

35 minutes. VIP-dom diminishes. One salute and a cup of coffee. Very hot but a cool wind. "Would you take your seats . . . ?" Half of them empty. Good. (Pity about that Pretty Daughter.) 18,000 ft. ventilation superb. Puerto Rico at 6.30. What the —— *is* the time anyway. 4.45 N.Y. time, about 12 noon B.S.T., about 4 p.m. Barbados. "Ladies and Gentlemen . . . and crossed the Tropic of Cancer." Cancer! These damn cigarettes. No pipes—no pipes for 2 hours. And then 4½ more to Barbados. Oh for a walk . . . Trade wind clouds in puffy balls everywhere. Blue sea. 20 more flights to come on this job. 20 more turkey salads, champagne, strawberries. . . .

AELIUS

The Editors

AMERICAN SPEC BUILDING

A TEAM from the Federation of Registered House Builders recently went to America to see how design, construction techniques and "the promotion of home ownership" are managed over there. What they saw seems to have taken their breath away*—they were obviously shown the best and biggest. One scheme in Pennsylvania will have 17,000 homes (they don't call them houses)—when complete; another on Long Island, of 110 acres, will have a shopping centre for 130 stores and parking for 8,000 cars. The team found that one house in twenty has two bathrooms (often with two basins); that kitchens are "the outstanding feature" (with hip-level cookers, dishwashers, washing machines, garbage units and twelve cubic foot refrigerators); that whole-house heating is "universal," with "U" values of 0.15; and that secret-nailed oak strip flooring is "almost standard." Houses, they say, are about 1,100 sq. ft. in area, mainly of timber and cost between 10,000 and 15,000 dollars (about £5,000). What is more, they are designed by architects whom the *builder* commissions. Photographs in the report show houses that would cause our building societies to blanch.

In their conclusions the British team suggest that we build for too long a life; that we should aim at better insulation, simplified plumbing and a better exchange of technical information between builders. They call for closer support by the government and finance agencies, better liaison between designers, house builders and the manufacturers of equipment and fittings and for modular co-ordination.

But their leading conclusions should be quoted in full: "The fundamental factor in American house building productivity appears to be the attention given to design. The aim of the design is to fulfil the carefully analysed living requirements of the family in such a way as to produce an effective dwelling unit, while paying full regard to simplified construction techniques. Some advantage in productivity might be obtained in Britain if more attention could be given to this aspect of house building."

English house building is inhibited by the fact that householders are assumed to want, and house financiers will only pay for, a kind of house which is not susceptible to speed or cheapness in building. In other words the design is determined before

* "American Housing." Report of a study tour by representatives of the Federation of Registered House Builders. Published by NFBTE. Price 2s.

the methods used to carry it out are considered, so that the scope for savings of time and money are limited from the start. It is interesting that the FRHB team found that the use of architects led to greater productivity. This is quite contrary to English spec builder experience and is so because the American housing-architect designs not merely a house, but its manufacture and erection. Over here, when he is called in at all, it is only to carry out last-minute beautification (like Boxgrove) of houses whose method of manufacture and erection were determined before he came on the scene.

MAYFIELD SCHOOL

It is not often that one has a chance to do a close follow-up on an outstanding new building over a period of several months, and ASTRAGAL, for one, has been grateful that a series of happy accidents has kept him in touch with Powell and Moya's Mayfield School at Putney for a whole academic year. (It is described and analysed at the end of this issue, by the way.) The school, as a school, is enjoying (if that is the word) the growing pains of conversion to comprehensive, and it is clear that some staff complaints about the circulation stem largely from the transitional nature of the time-table, which is only just beginning to settle down to the idea of giving upper forms a clear half-day together at one subject, such as art. When this humane ordinance prevails more generally there will be far less sprinting up and down corridors. Otherwise there are few complaints.

*

What made a particularly apt coda to this academic year was the recent open day, graced by Dame Margot Fonteyn (who was introduced by a very, very VIP as Ninette de Valois, thus inducing suppressed hysterics at sixth-form level) and the architects, who sat at the end of the platform throughout the speeches and the school song, blushing prettily at the Headmistress's compliments and obviously enjoying every minute of it.

BR-RRR!

" Not quite contemporary " was the innocent verdict of a British Railway's representative when BR's new restaurant and buffet cars were shown to the Press last week. " Paddington," he added mysteriously, " wouldn't have it." Well, according to Marylebone, where BR Press blurbs are composed, Paddington has got it whether it wants it or not. " The interior design," reads the blurb, " makes full use of contemporary styles, and the colourful furnishings are a complete departure." It then gives a complete list of departures so that eager journalists can go and see what contemporary design looks like when it is heading north, west or east. Apparently you can travel to Ely on a grey Wilton with a small yellow motif, to Weston-super-Mare on a grey Wilton with a large yellow motif, and to Manchester on slate blue relieved with a pattern in pigeon grey mottled willow grey, lacquer red mottled fawn, and charcoal grey mottled stone white. The impression I got when I walked through these cars was that the use of light colours had destroyed the oppressiveness you often feel in some of the older-type carriages, but that all that was good in the character of the old carriages had not been replaced by a worthwhile new character. Indeed these interiors—with their spiv-shouldered, splay-legged chairs and their oh-so-cosy curtains and pelmets—reminded me of those furniture shop-windows one shudders past in suburban high streets.

*

The Hotels and Catering Services' architect, whose name is absent both from the blurb and the really shocking drawings handed to the Press, cannot be given complete credit or blame for these designs. Apparently they were merely carried out " in conjunction " with him. And he may well have to conjoin again soon because these prototypes were built " to determine the future design." " We have to be careful," I was told by a BR spokesman. " After all," he said, " our first-class passengers may not like these new designs." So there you are, dear readers: it's up to you to record your views as you speed on expenses through fens and wens. But don't put anything too rude in BR's suggestions box. They have " gone contemporary " before (as you will be reminded on page 146) and have even been frightened into a Tudorbethan design. We must give them some credit for the improved kitchen plans in their new cars and for at least being aware that it is time some contemporary ideas were put—if you will forgive me—in train.

THE BIG STREET

I enjoyed Christopher Tunnard's Third Programme talk on Regional Planning. Ever since I read his book " The City of Man " I have felt that Professor Tunnard really has something new to say about urban planning. He pointed out in his broadcast talk that present-day solutions to urbanism, such as " The Garden City—New Towns idea," are hardly bold enough in the light of certain really sensational discoveries made about the nature of the American city. A city 600 miles long with a population of 34 million is not an idea, he says, but a reality. He cites the eastern seaboard complex stretching from Portland, Maine, to Norfolk, Virginia (" the big street," as *Newsweek* has described it), as the largest urban complex of its

This is a scene from "The Man in the Grey Flannel Suit," a film in which, as ASTRAGAL *points out on this page, there are some very good contemporary interiors. The sets were designed by Walter M. Scott and Stuart A. Reiss.*

kind, but he points out that there are others such as the Chicago area and around Los Angeles.

*

The big street, says Professor Tunnard, is a kind of diversified great community with overlapping communications and activities. We are forced to think, he points out, in terms of the regional city, a hierarchy containing many towns, instead of living in "garden cities of the mind."

One has only to think of the Black Country to realize that this is not only an American problem. The ideal of the US radio soap opera and our own is largely a hollow one. All the figures show that American people are becoming increasingly urbanized. Small towns can no longer be self-sufficient. Such concepts of regionalism require new thoughts about community, transportation and local government. If, as Professor Tunnard suggests, we are entering on a new stage of city development, we must think again about our new towns—and we must think hard and quickly if they are not to be obsolescent before they exist.

*

Somewhere in this confused picture is part of Subtopia's cause and cure. Those who are interested in the problems Professor Tunnard discusses should read the talk in last week's *Listener*.

A FILM WORTH LOOKING AT

The picture on this page gives only a hint of the splendour and elegance of the modern interiors used in the coloured CinemaScope production, *The Man in the Grey Flannel Suit*, now showing at the Carlton Cinema. It is a pity that the best backgrounds appeared at the most interesting moments in the script. I could have done with something to catch the eye while Gregory Peck was telling Miss Jennifer Jones that adultery in wartime was no worse than being beastly to the enemy, or even while he was whooping it up with the Other Woman. But it was when Mr. Peck and Frederic March were fascinatingly involved in hammering out questions (if one does hammer out questions) about integrity in big business that the world of the American glossies took over the screen.

*

Whenever I see anything of this kind in an American film (and it is something that just can't happen here) it makes me feel rather silly for getting so excited

On the left is the upright piano which ASTRAGAL *refers to in a note overleaf. It was designed by architects, Ward and Austin. They also designed the grand piano shown here. Both pianos are manufactured by Messrs. Danemann.*

when they change the contemporary wallpaper in the TV news rooms.

UPRIGHT AND HANDSOME

A friend of mine who is a modest but enthusiastic pianist tells me he has found a way of living in the same house as an upright piano. Until recently he bemoaned the fact that he could not bring himself to put such an instrument amongst his new pieces of furniture. But he has now discovered the piano which architects Ward and Austin have designed for Danemann's (it is illustrated on the previous page). I must say I share his enthusiasm. The piano has taken a long time to acquire recognition as a piece of furniture that deserves as much attention in design as a desk or a table. Perhaps that is simply because it is used less and less as a stand for the family pictures and more and more by people who care only what it sounds like. Messrs. Danemann's may well be starting—or reviving—something. It may not be long before a well-placed piano is an essential part of good interior decor.

UNFAIR TO US

Down at the Tate, the Vorticist exhibition is now paralleled, physically as well as aesthetically, by *Autour du Cubisme*, a miscellany of pictures not necessarily Cubist in style, by Cubist painters. These pictures cover something like the same period as the Vorticist offerings in the next room, and make it possible to compare *us* with *them—them* including a fine noisy Leger, appropriately called the *Alarm Clock*; a mysteriously early abstract by Frank Kupka; a little Picasso collage of 1914, and work by Braque, Metzinger, de la Fresnaye, everybody who was anybody in fact. And how does *us* compare? Well, perhaps it was the *teeniest* bit unfair to have this in the same building, let alone the next room as the Vorticists . . .

*

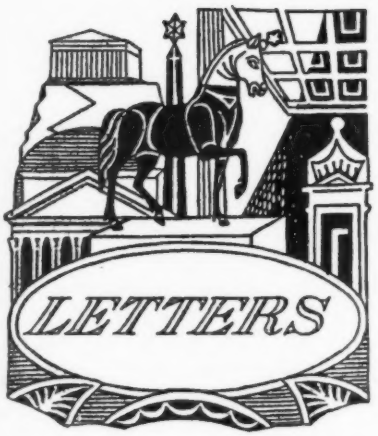
However, it may have been a question of have it now or don't have it at all. These Cubists are on tour at the moment because they have no home, the *Musée d'Art Moderne*, in Paris, which is where they belong, having started to fall to pieces—beginning, one hears, with the ceiling of the *Salle le Corbusier*, where a recently donated collection of the Master's works was exhibited. Anyhow, the *Musée* is closed for repairs, or demolition (some say), and these pictures are wandering from gallery to gallery. It's very nice to have them *en passant*, whatever dim light they may cast on our own Modern Movement.

This delightful photograph was taken two weeks' ago when Frank Lloyd Wright was staying with Clough Williams Ellis at h's home in Penrhyndeudraeth, North Wales.

THE "W" IS SILENT

In my final paragraph last week I said that Hugh Wilson, who has done such a good job as City Architect of Canterbury, was leaving to go to the New Town of Cwmbran. This, I said, was Canterbury's loss and Cwmbran's gain. My facts were wrong: Mr. Wilson *is* leaving, it *will* be Canterbury's loss, but it will *not* be Cwmbran's gain. It will, in fact, be *Cumbernauld's* gain—and perhaps even a gain to the whole conception of New Town planning, because the site for this development north of Glasgow is very limited and will compel Mr. Wilson—to his delight—to work out a high-density plan with an urban quality. He will almost certainly have to design some very high blocks and this will give him the chance of producing the varied skyline that other New Towns sadly lack.

ASTRAGAL



"*Worried*"
Sir Howard Robertson, P.P.R.I.B.A.
"*Norfolk Architect*"
Louis Erdi, L.R.I.B.A.
James Shearer, F.R.I.B.A.
D. Russell
J. D. Richards, F.R.I.B.A.

Unsure About Shell

SIR,—May I, as a younger member of the profession, thank Sir Howard Robertson for his scientific analysis of the problems created by tall buildings and tentatively enquire whether the Shell Mex block is intended to express aesthetically: (a) the new brutalism, or (b) a return to the good old days?

"WORRIED."

London.

Load-Bearing Stone

SIR,—Some of your correspondents, in their replies to my letter, are trying to move from the general to the particular. I myself never mentioned the Shell building. I only wish to comment on one point, in Mr. Keith Seabrook's letter, third paragraph. He mentions stone as load-bearing, only capable of supporting three or four floors. Stone is used more generally as a purely facing material, and why not? Ceramic, aluminium, bronze, glass, are similarly used. No one thinks they are carrying the load. All of them have a partial "masonry" backing, so does stone.

As to solid construction, faced with stone, I believe I am correct in saying that London University, with its 210 feet high tower, is in the main a load-bearing structure, not steel-framed.

If your correspondence has stimulated some interest, and some factual thinking, that is all I wanted.

HOWARD ROBERTSON.

So There!

SIR,—If every dissatisfied salaried assistant architect followed my example and tendered his resignation to take effect from the end of the year, the RIBA would be compelled to take some interest in the welfare of its non-practising members.

"NORFOLK ARCHITECT."

Norfolk.

Whatever Can We Do?

SIR,—Some recent articles criticizing the visual aspects of contemporary buildings put all the blame for aesthetic aberrations on the architect. In fact in numerous cases the blame rests with the controlling authorities, where untrained laymen and, still worse, people out of sympathy with contemporary architecture, vent their views and mar projects.

Due to the slowness of any appeal action to the Minister, recourse to this is strongly resisted by the client, as a rule. The architect therefore can resign or compromise. The former action will ruin his existence, the latter his artistic reputation.

What is there to be done then? Replace the democratically-elected lay councillors by architects' panels? But how many architects agree on aesthetic matters?

Or create a special class of architects, as exist in some Continental countries, who are not subject to aesthetic planning controls? Who should appoint these? And should only contemporary types be included, or others as well?

Or a general "laisser-faire"? What would stop "Subtopia" then?

The problem is real and vital. On its solution depends not only the status of our profession, a small matter, but the heritage this generation will leave to posterity. A solution must be found.

LOUIS ERDI.

London.

A New Urban Vernacular?

SIR,—In your issue of July 19, you publish a three-quarter page photograph of Electrin House, and under the caption "A New Urban Vernacular?" you ask a number of questions which have wide implication. To these you supply answers.

On the qualities of the building illustrated I offer no comment, but the question-mark which you have attached to the caption seems to indicate a (justifiable) doubt of the validity of the comments that follow; for these imply an almost complete inversion of the general ideas—both technical and architectural—which still guide many of us in our daily work.

You ask if, for the bulk of the profession, "the anonymous and off-the-peg qualities" of the curtain wall, instead of being a drawback (presumably to freedom of design) are not actually important advantages because of a number of practical and economic reasons which you state. The "discerning architect", you suggest, will recognize that in view of these advantages he ought to use curtain walls and that, unless he does, "an ideal means of creating and preserving unity in the street scene" cannot be achieved. Well. These are precisely the reasons advanced to justify the monotony of our mass-produced housing in which the street scenes have a unity which most people deplore.

Your "Urban Vernacular" looks to me like a contradiction in terms, for it is difficult to associate even mass-produced houses with any known vernacular—much less city streets. I am also wondering how many members of our profession will recognize in the building you illustrate a contemporary "equivalent" of the point of view that produced the Georgian Facade.

And is unity in the scale and character of the street scene an incontrovertible merit? I have walked along many fine streets of cities both at home and abroad, and have never seen one which exhibits the kind of unity you seem to advocate. On the contrary, their diversity of interest is inexhaustible. I, personally, attach a high value to diversity of interest, which at present is rapidly disappearing all over Europe; yet I do agree with you in thinking that an architectural masterpiece occurring in an urban area of "run-of-the-mill jobs" would be most embarrassing.

"Provided that art work is kept at bay"—you write, with a hint of yearning, great improvements would come into view.

That aspiration, by no means unfamiliar to us, strikes me as an odd one to find in an architectural journal. Yet it is entirely consistent with the general tenor of your remarks, and I have been prompted to write this letter mainly to draw special attention to it. For I have never before run across this attitude expressed professionally with so much candour.

In this same issue of the JOURNAL (July 19) I notice that Sir Howard Robertson's admirable letter, of which every line is informed by great knowledge and experience, is questioned at many points by a student of the Kingston School of Art. Is it merely fanciful to associate this, indirectly, with the subject I have ventured to discuss?

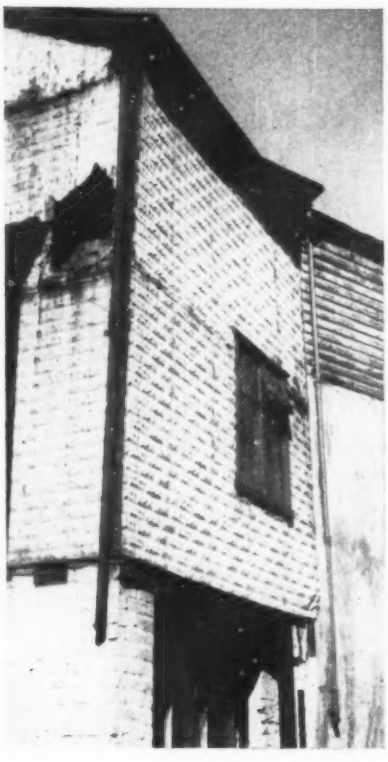
JAMES SHEARER

Dunfermline.

Prefabricated Stonework

SIR,—I enclose an interesting picture showing prefabricated "stonework".

Mevagissey, a small Cornish fishing village, having ample supplies of granite, has faced a house with "coursed rough-hewn stonework" pressed out of mild steel sheets. A passing lorry has crumpled the "stone" in the bottom right hand corner and on the return face the wall has rusted through exposing the timber studding.



Do readers know whether this facing has been used elsewhere? It seems rather out of place in its context and I feel that it is not a product of Cornish industry.

DAVID RUSSELL.

Sussex.

The *Review's* Outrage Policy Criticized

SIR,—So ASTRAGAL is worried (July 26) that the *Architectural Review's* Outrage policy is being mistaken for Good Earthery? The confusion is easy to understand. I must confess that when I first saw the Outrage *Review* I didn't know as I looked at each page of pungent photographs whether I was supposed to acclaim or be outraged, until it was explained by the caption. Since then it has become clear that at least half of the Outrage attack is wholly irrelevant. Phrases like "the preservation of Urban England" get us nowhere near the root of the problem.

The fault, of course, is that the policy, despite all the pretence to the contrary, is based on loose visual values. In that particular *Review* a picture of a comely landscape was juxtaposed with a picture of the same landscape containing a comely factory. One was interested. One thought of regionalization, and Sunila. One wondered of what produce of this landscape the factory could be an expression. But no! One looked at the bottom of the page and it was an OUTRAGE! Somewhere else in the issue one was told to watch out or the Highlands would be spoiled. But the Highlands are about the most hideously despoiled area in Britain, in terms of human sacrifice, agricultural error and economic plunder, which are the things that matter. They matter more at any rate than the "architectural" quality of the overhead wires which bring hope to the hearts of the people who live there. So while applauding most of the *Review's* motives I'm ready to throw their policy in ASTRAGAL'S shapely white teeth.

And also recommend that next time they want to protect a despoiled area or create about the "disastrous landscape effects of (British Railways) overhead electrification policy" (and on what nation would they have us depend for diesel oil, and why?), they look and see how many Lady Watercolourists they have among themselves.

J. D. RICHARDS.

Essex.

LAW REPORT

"Making Good" War Damage

What does "making good" war damage mean? The War Damage Commission in dealing with cases where additions or alterations were to be made in the course of repairing war damaged property suggested the following test:—"Looking at the works executed, can the property be fairly described as the same property as before the war damage though altered or added to? And it is to be answered on common-sense lines."

With this test, the Chancery Court agreed, in the recent appeals brought by a city council against the determination of the Commission, that the erection of a new block on the sites of war damaged properties, which ranked for cost of works payments, did not contribute in any way the making good of the damage sustained by those properties. The result of such a ruling, it seems, deprives the owners of compensation altogether.

Whether a "cost of works" or a "value" payment is the appropriate type of compensation depends in general on the nature and extent of the damage. If it is so extensive that it would not be economic to repair the property, because of the expense involved being in excess of any additional capital value that could thus be put into the building in its war damaged state, then a "value" payment, representing the difference between the value the property had in its original state, and the value in its damaged state, would be the appropriate type of payment. This type of compensation would be recoverable, quite irrespectively of whether or not the owner intended to rebuild.

Where, however, the restoration of the property would be an economic proposition in the sense above indicated, the damage would rank for a "cost of works" payment. This compensation, however, could only be recovered if and when the damage was "made good." For this purpose, it would be permissible in the course of restoration, to make additions and alterations, though such work would be completely excluded from consideration in determining the amount of compensation.

But as the decisions on these appeals indicate, if the work done is such as to cause the original building to lose its identity completely, then it would not be a case of "making good" the war damage, and the "cost of works" compensation, which otherwise would have been payable, will not be recoverable, nor, it seems, will any other compensation be recoverable in such circumstances.

In the above case, the war damage had occurred to separate small units of buildings, comprising basements and ground and upper floors, the area of the sites in each case being also quite small. All the buildings were apparently pulled down, and a large block was erected on their sites. Although the scheme of redevelopment was an admirable one, unfortunately its effect in the view of the court could not be regarded as constituting alterations or additions to the old buildings. The only point in common between the new building and the old buildings was the site. The latter in the words of Mr. Justice Vaisey, "had been altered or added to not only out of all recognition but out of existence."

In the planning therefore of any schemes of reconstruction, the important principle laid down by this case need not be lost sight of, if the right to the cost of work payments which otherwise would be payable, is to be preserved.

COID

International Congress

The Council of Industrial Design is organizing an international Design Congress as a sequel to the successful Congress on design policy in industry held in 1951. The theme of the 1956 Congress will be: "The Management of Design." It aims to compare the experience of companies in Britain, the U.S.A., and Europe in the execution of their design policies.

The Congress will be held in the Victoria and Albert Museum and the Royal College of Art, South Kensington, on September 12 and 13, and chief executives and designers from a limited number of firms, amounting to 200 in all, are to be invited to the COID.

After the formal opening of the Congress, there will be a plenary session addressed by the Chairman of the COID, W. J. Worboys, Director, Imperial Chemical Industries Ltd. The Congress will then divide into three discussion groups of 60 to 70 each. As far as possible members will be assigned to these groups to provide a community of interest between related industries. The groups will hold three sessions at which the following subjects will be discussed: (1) Case Histories; (2) The Role of the Designer; (3) Implications for Management.

Chairman of the discussion groups will be the following members of the COID: F. J. Stratton, C.B.E., Chairman and Managing Director of Dolcis Ltd.; E. A. S. Alexander, Managing Director, The United Glass Bottle Manufacturers Ltd.; and G. W. Lacey, Director, The British Aluminium Co. Ltd. The Chairman for the final session, at which the conclusions of the Congress will be summed up, will be Sir Colin Anderson, member of the COID, director, Anderson Green & Co. Ltd.

MANCHESTER

Chairs in Building

Two new chairs are to be set up at the Manchester College of Science and Technology—one in building and the other in structural engineering.

PARLIAMENT

Office Development

Last week the Minister of Housing and Local Government was asked whether his attention had been called to the LCC report about office development in central London; and whether he would consult with the LCC about the action to be taken about the problem which it reveals. He was also asked for an estimate of the amount of residential property in central London being used as offices; and whether, in view of the increase in new office accommodation, he would take powers to ensure that, where suitable, these houses, in addition to those with a temporary permission for office use, would revert to residential use.

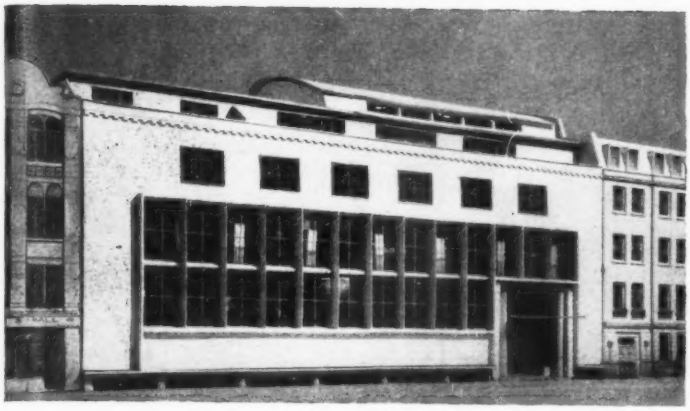
Mr. Sandys replied that last year, after considering the County of London Development Plan, he asked the LCC to carry out a survey of actual and proposed office building in central London. The report setting out the results of the survey was published the previous week. The report showed that, since 1948, office space for 96,000 workers had been provided in the central area of London, space for another 66,000 was under construction, and planning permissions already given, but not yet acted on, provided for 116,000 more. He had already had a number of discussions with representatives of the County Council about this problem, and he was expecting shortly to receive from them proposals for further action.

DIARY

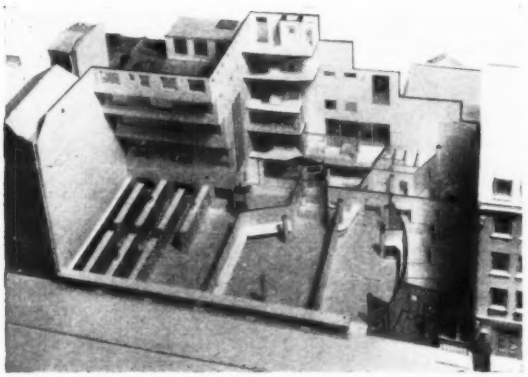
The Management of Design. COID, 1956. Design Congress, three sessions: 1, Case Histories. 2, The Role of the Designer. 3, Implications for Management. At the Victoria and Albert Museum and the Royal College of Art, South Kensington.

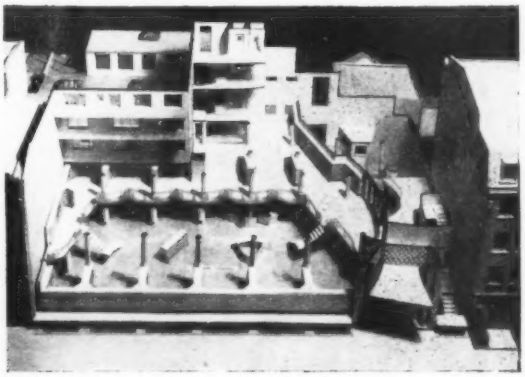
SEPTEMBER 12 AND 13

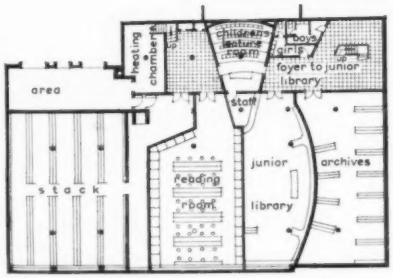
PROPOSED PUBLIC LIBRARY, HOLBORN, W.C.1



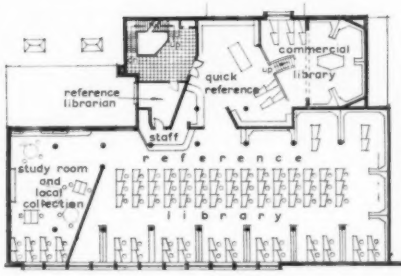
Plans for a new Central Library for a site in Theobalds Road have been prepared by S. A. G. Cook, Borough Architect, Holborn, and E. L. Ives, Deputy Borough Architect. The model photograph, above, shows the south facade, facing Theobalds Road and Jockeys Fields. Below left, the lower ground floor, which will accommodate the children's library of 8,000 volumes, and a small hall where discussions and talks can be held for an audience of 20-30 children. Below right, the lending library on the ground floor, which will be able to carry a stock of 100,000 books. This capacity, the borough librarian estimates, will be reached, at the present rate of growth, in 20-30 years' time. Bookcases will be constructed in bays at approximately 15 ft. centres and 12 ft. depth. The large entrance hall on this level will be used for display stands and showcases and as queueing space for borrowers during peak hours. On the first floor there will be a reference library, on the second floor administration accommodation, staff rooms, kitchen, workroom and a gramophone library with storage for 6,000 records. On the top floor is a lecture hall to seat 250 persons. The block, showing floor plans, below, is published by courtesy of the "Municipal Journal."



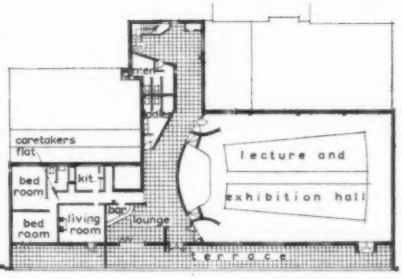




BASEMENT PLAN



FIRST FLOOR PLAN



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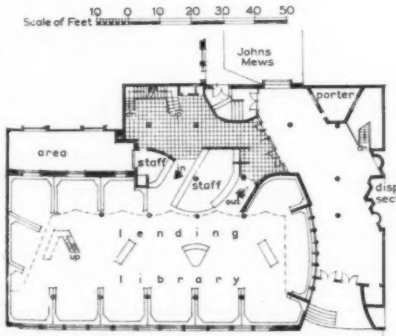
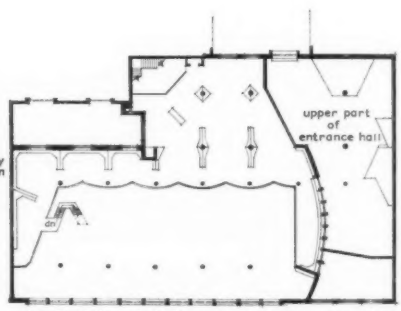
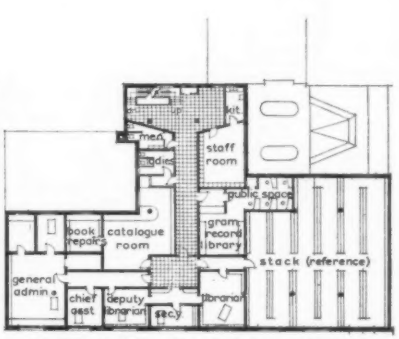


GROUND FLOOR PLAN



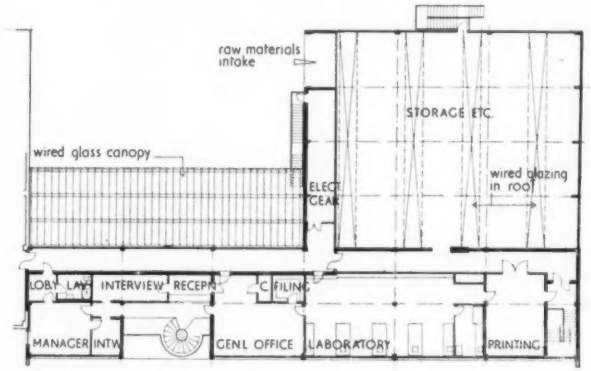
MEZZANINE FLOOR PLAN



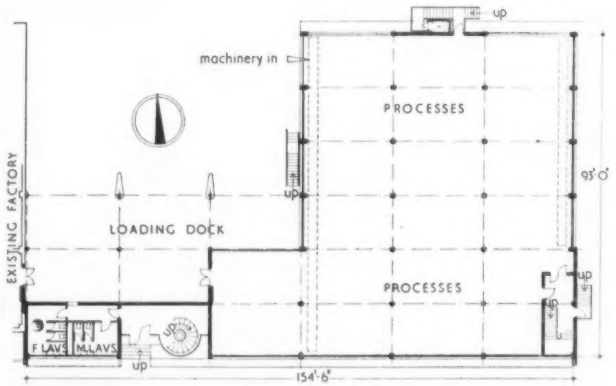
SECOND FLOOR PLAN

EXTENSION TO PRINTING INK FACTORY AT WATFORD BY-PASS HERTS

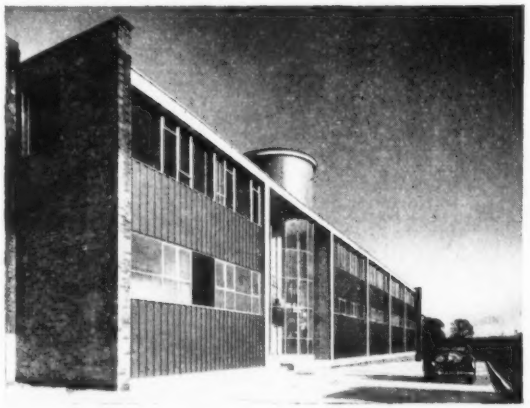
This factory extension for Ault and Wiborg Ltd., at Watford, was designed by Maurice Hardstaff (assistant architect, T. L. Lilley and consultant architect, P. R. Bee). The clients wanted the extension to match the original building, which can be seen from the Watford By-Pass,



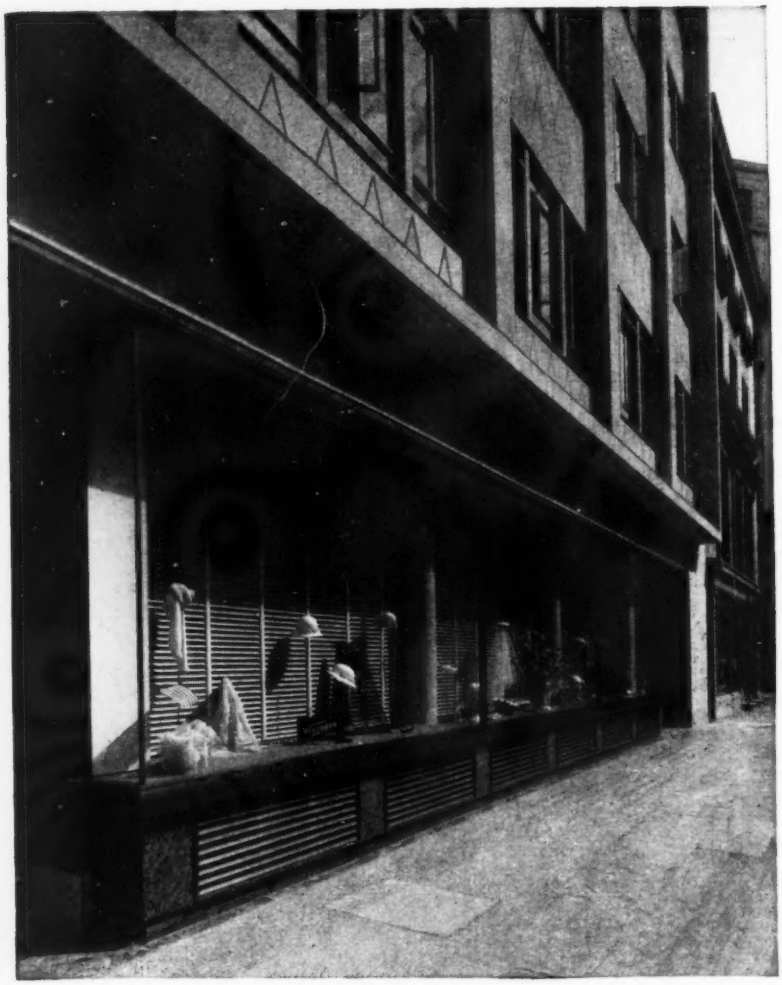
First floor plan



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

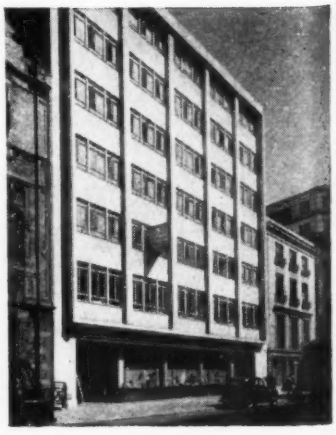


but on being shown the architect's sketch plans and perspective, they agreed that the new building should be designed as a logical outcome of the structure used, while still retaining the same bay-spacing and floor heights as the original factory. The photograph above is of the administrative block from the west. Right is the main entrance hall and the spiral staircase. This staircase is constructed of precast concrete treads cantilevered from a central column, which is plastered and finished with blue emulsion paint. Other plastered surfaces are painted pale yellow. The windows have purpose-made steel frames and glazing of 24 oz. clear sheet glass. The external panel infilling between columns is of 5-in. thick in situ waterproofed concrete, with 2-in. thick woodwool permanent shuttering internally. The external finish is two coats of dark grey chlorinated rubber paint. The columns are painted light grey and the tank room, over the main entrance, is painted blue. The plinth under the main frame is faced with 2⅝-in. Staffordshire blue wire-cut bricks. The administration block has a r.c. frame, floors and roof and a roof finish of bituminous felt. Heating is by radiators, served from oil-fired boilers. The floor area of the extension is approximately 20,000 sq. ft. The general contractors were The London Ferro-Concrete Co. Ltd.



The shop front and millinery stock and display units in these new premises, Great Marlborough Street, London, were constructed by our organisation for Messrs. Vyse, Son & Co. Ltd., to the designs and under the direction of the architects, Stone, Toms & Partners.

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



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technical section

INFORMATION CENTRE

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

9.58 design: general

BUILDING ELEMENTS

Building Elements. Richard Llewelyn Davies and D. J. Petty. (Architectural Press. 37s. 6d.)

The publication of this, the third and last volume of the " Modern Building Construction Series " instigated by the RIBA's Text and Reference Book Committee, prompts the question " have we in these three books a comparable building construction reference to that provided by the classics of the past, Mitchell, Rivington and Jaggard and Drury? " When put in this uncompromising form the answer must be no. But in justice we must hasten to add that the situation of the building industry may render it no longer feasible to enshrine the amount of detailed constructional data those books gave in anything so monumental as a book. We have to contend, first, with the intrusion of factory-made proprietary components into the constructional field and, second, with the rapid rate of change to which these are subject.

Take, as an example of the difficulty, the case of curtain walling. It might reasonably be expected that a book on Building Elements published in mid-1956 would have a lot to say about curtain walls. But when you look into it, you see that to do this in the kind of detail that, say, Rivington would have shown, you would have to give full drawings of the eight or ten main proprietary systems now in use, in the certain knowledge that each would be modified out of all recognition before you could go to press. In the event, the authors have evaded their dilemma by showing a drawing of a timber curtain wall which was architect designed, even though this is by no means representative of curtain walling as a whole. The first quarter of this book discusses the principles which must govern the design of elements and is in effect a useful summary of our knowledge of weather exclusion, sound and thermal insulation, and fire protection—to which has been added, laudably but rather sketchily, a chapter on " design and expression." The remainder of the book considers in turn the applications of these principles to external and internal walls, to roofs, to floors, to stairs, to flues and fireplaces and to windows and doors. In assessing the value of this, the main section of the book, we must remember that the architect has to make a long series of decisions with very little time for each. These decisions must be concrete : they must be capable of being expressed as lines on a drawing or words in a specification : the architect cannot conscientiously afford the luxury of generalities. His books of reference, therefore, must help him to come to his decisions quickly. It does not help him greatly to be told of the six or seven alternatives which are open to him if he is not at the same time told how to choose between them. The strength of this book is that it describes principles clearly : its weakness is that in too many cases it does not explain how to apply them in a manner to help the man at the board. A contributory cause of this may be that the book was planned before costs had come into the forefront. In an attempt to help the reader to cast his mind into some shape the authors give short lists relating to each element and setting down whether strength, protection, sound insulation, weather exclusion and thermal insulation are likely to be " decisive," " important " or not critical : but in practice the architect cannot make his decision without some kind of cost comparison, and, lacking this, the whole mental operation of choice has an unsubstantial nature.

Insofar as this book fails it does so in the same way and for the same reason that the Codes of Practice fail : it is too full of unexceptionable advice, and of such lofty phrases as " in some cases it may be necessary . . ." (without saying *when*) or " it is important to ensure that . . ." (without saying *how*), leaving the serious reader in a state of irremediable dither. Is it possible to bridge the gap between theory and practice? Probably not so long as authors draw their information almost exclusively from official or semi-official sources. It must be accepted that, provided the reader is set on his guard, factual information which may go out of date is really more useful than timeless generalities : that there is room for the kind of textbook which will say in effect " at the time of writing one firm attempts to get over this difficulty by doing so-and-so " and by stating what they do in the fullest detail. For this at least brings the problem to earth, gives readers a starting point. Another means might be more use of that humble textbook expedient, the worked example. Nonetheless, this book is better than anything the current generation has had so far. It has many virtues, not the least of them being the *systematic* notice of fire protection, an aspect of design which is all too easily forgotten.

19.194 construction: details

CROSS WALLS

The Construction of Slender Brick or Block Walls for Buildings of more than two Storeys. Department of Health for Scotland.

This is a short document—4 pages of cyclostyled text and 6 pages of axonometric drawings—but is a useful addition to our literature on cross wall construction. Though prepared from material furnished by the Scottish Branch of BRS with Scottish practice in mind, the advice given holds good anywhere and appears to be more thorough in several respects than corresponding advice emanating from MOHLG. Throughout there is a greater awareness of the importance of the floors in giving lateral restraint to both cross and external walls. The system of anchoring proposed is more systematic: for instance, where joists run parallel to an external wall they are to be strutted (with " dwangs," as the Scots call them, *i.e.* short lengths of wood of the same section as the joist) and 1¼ in. by ¼ in. anchors engaging no less than three joists tie the floor into the external wall. The memorandum also gives good advice on the need to strengthen the brickwork in cross walls at the point where joists pass through their thickness.

technical section

10 DESIGN: BUILDING TYPES
Hertfordshire schools development, 6

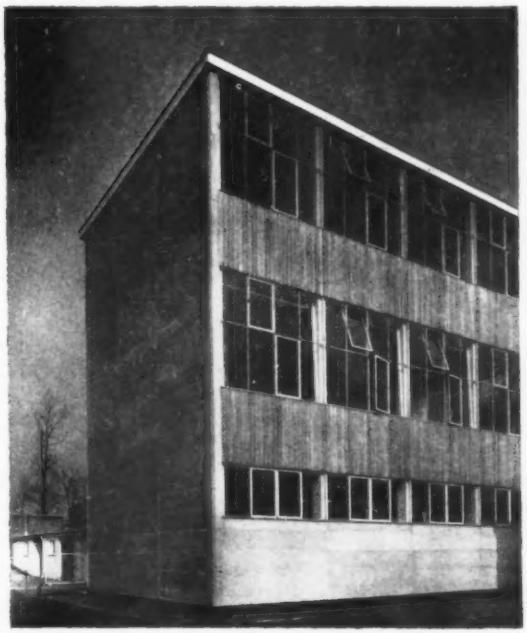
In the last article in this series* (April 19, 1956), K. C. Twist, J. T. Redpath and K. C. Evans described the development work carried out by Herts County Architect's Department (County Architect, C. H. Aslin, PPRIBA) on their first programme of Secondary Schools, dated 1949/50. This week the same authors describe development work on the County's second programme for Secondary Schools, dated 1952/53.

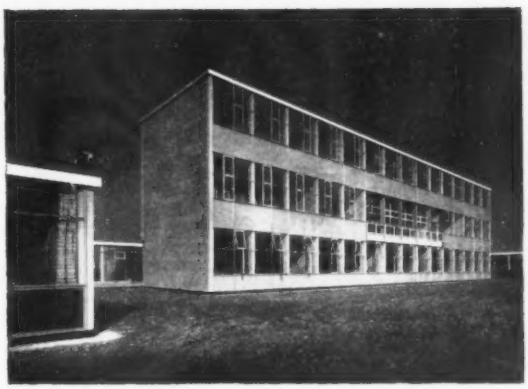
*Other articles in the series were published on May 12 & 26, 1955, August 11, 1955 and December 22, 1955.

For various reasons, including the higher cost of the frame and the difficulty of solving the curtain wall problems, it was considered unwise to attempt to carry out this programme (of at least nine secondary schools) on the 3 ft. 4 in. modular basis in its then stage of development. Two schools were allocated as development projects on 3 ft. 4 in., in which timber frames were investigated as a reserve in case the steel position (influenced by the Korean War) deteriorated still further. It was decided that the remainder should be built on the 8 ft. 3 in. grid system, using the steel frame as economically as possible.

The schools of the previous programme were not yet completed but they were sufficiently advanced for some conclusions to be drawn. These were:

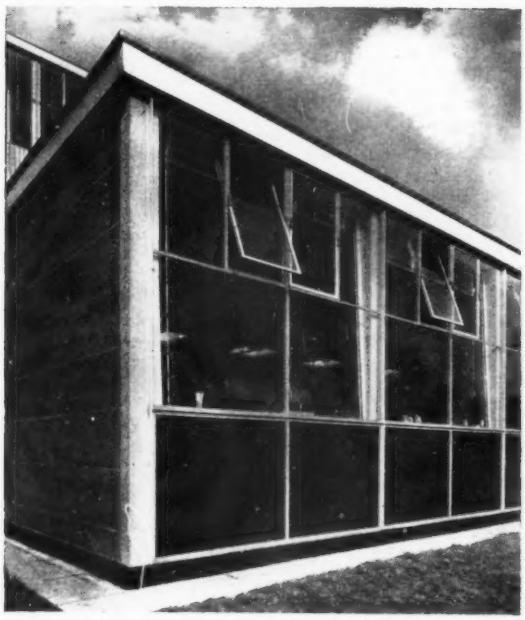
1. Two-storey work appeared to be relatively expensive and the schools still occupied too much of the site. The clients were generally opposed to a "magic-box" solution on general educational grounds, and it was therefore agreed that certain parts of schools could be built in three-storey work. It appeared that this would be more economical than two-storey work as the staircases would begin to pay for themselves and the roof-to-floor-area-ratio appeared to be more economic.
2. The steel shortage was becoming more acute and pressed metal was difficult to obtain. It was therefore decided to redesign the window system completely to cut out trim and to achieve considerable economies such as the reduction of painting maintenance costs.
3. There was a considerable feeling in the Group against the projecting eaves details of previous programmes when used in multi-storey work. In view of the high cost of these, and the maintenance liability of soffit painting, it was agreed to attempt a financial saving and an aesthetic improvement by designing a simple fascia detail.
4. Timber in good quality was becoming more easily available and it was decided to replace all internal metal screen details by a suitable range in timber.
5. The MOE cost limit was reduced to £240 per place and the general rise in prices amounted to about 17 per cent. It was calculated that the target design area per cost place should not exceed 75

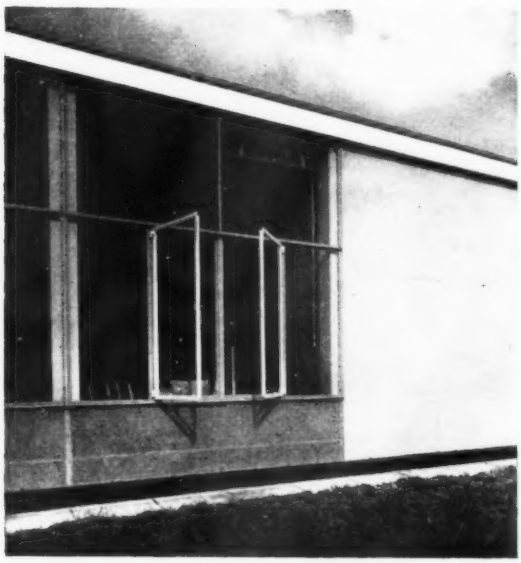




Top, Fig. 1: detail of cladding of three-storey block at the Heathcote School, Stevenage, showing vertical cedar weatherboarding included within the window construction. The curtain does not extend to ground floor level. Concrete cladding is used in two colours to articulate the form of the blocks. Above, Fig. 2: detail of cladding of three-storey classroom block at the Bennetts End School, Hemel Hempstead. Here the window construction has been developed into a full curtain wall reaching from eaves to ground. The panels are wired cast glass with Asbestolux panels behind, which are removable for painting and cleaning. The library on the first floor receives a different elevational treatment.

technical section





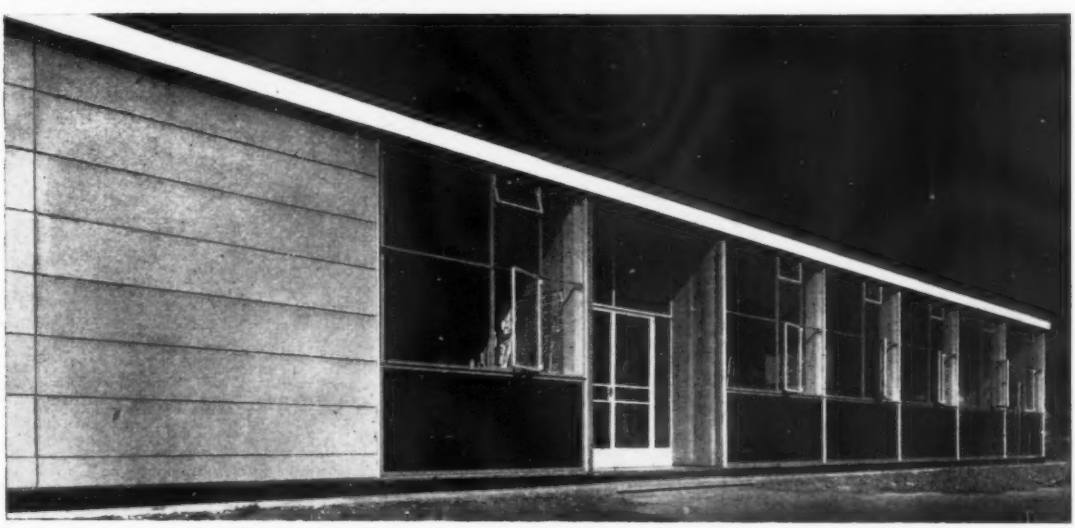
square feet if the cost limits were not to be exceeded. It was agreed that the quality of finishes used on the 1950 schools could not be reduced if reasonably maintenance-free schools were to be provided.

6. The " user's requirements " for secondary schools were becoming more clear but it was still too early to assess the 1950 schools in action. (*N.B.*—This slower turnover of the larger projects both for construction developments and planning requirements was one of the major differences between the work of the Secondary Schools Group and the Primary Schools, as in the latter case schools were more rapidly in action and allowed relatively quick reassessments of all factors.)

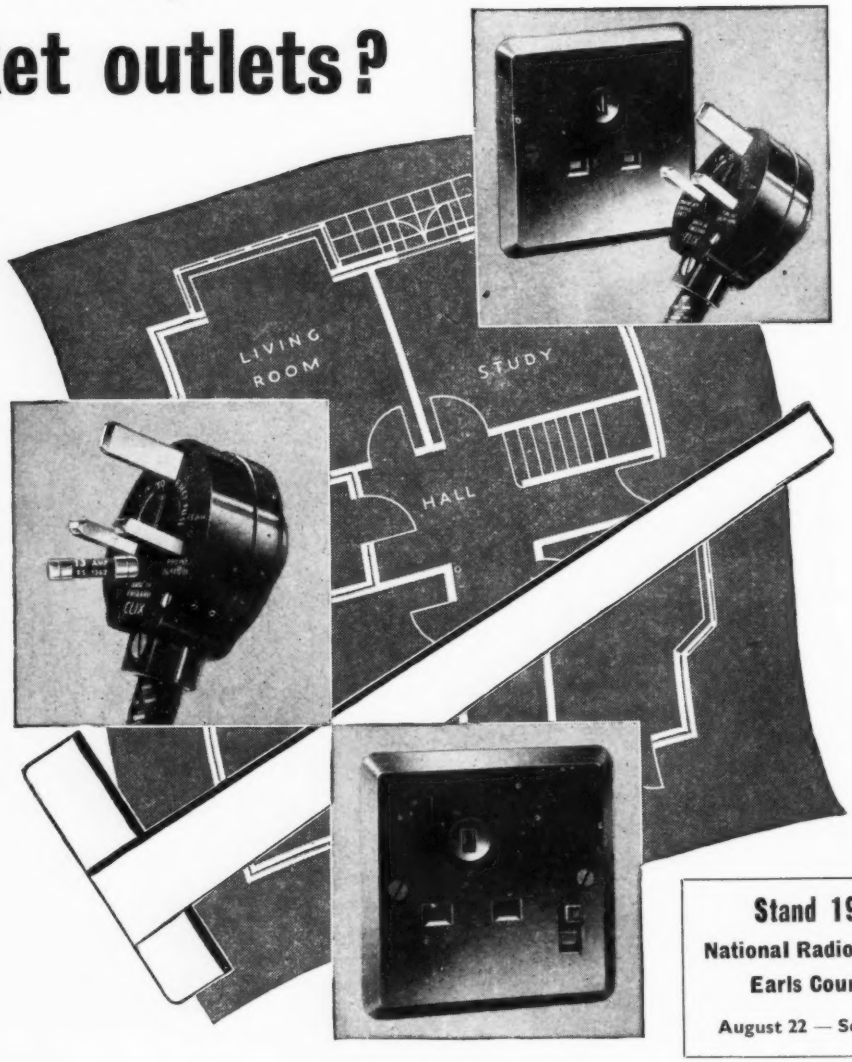
7. It was discovered, after the first pilot scheme tenders were received, that 75 sq. ft. was too optimistic, and later schools were planned down to 72 sq. ft. per place, and later, as costs continued to rise, to 70 sq. ft. This was despite the revised ceiling price of £250 per place introduced by the MOE after the first school had been designed.

8. SUB-CONTRACTORS: Messrs. Hills (West Bromwich) Ltd. were engaged to supply and erect the frames on a direct contract basis. Messrs. Weatherfoil Ltd. were engaged to provide the heating system on a direct contract basis. Preliminary discussions took place with Messrs. Crittall Manufacturing Co. Ltd., who were later successful in tendering for the window system. Messrs. Dow-Mac Ltd. were successful in tendering for the wall blocks. Messrs. Concrete Ltd. were successful in tendering for the floor and roof blocks.

Differing elevational treatment of single-storey blocks. Above left and left, Figs. 3 and 4: two examples from the Heathcote School, Stevenage, showing respectively the use of Holoplast panels and of the cheaper expedient of using coloured cladding blocks to differentiate from the walling alongside. Below, Fig. 5: aluminium-faced chipboard panels used at the Bennetts End School, Hemel Hempstead.



how many socket outlets?



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For an efficient and well-planned job make sure there are adequate numbers of Socket Outlets in each room, and remember to specify the Windsor range of Ediswan Accessories. These are quality Accessories at competitive prices, and the range includes all types of 13-amp. socket outlets, switch socket outlets and rectangular pin fused plugs for normal installations. The Ediswan plug that can be re-fused in 15 seconds, without the use of tools, is also available.

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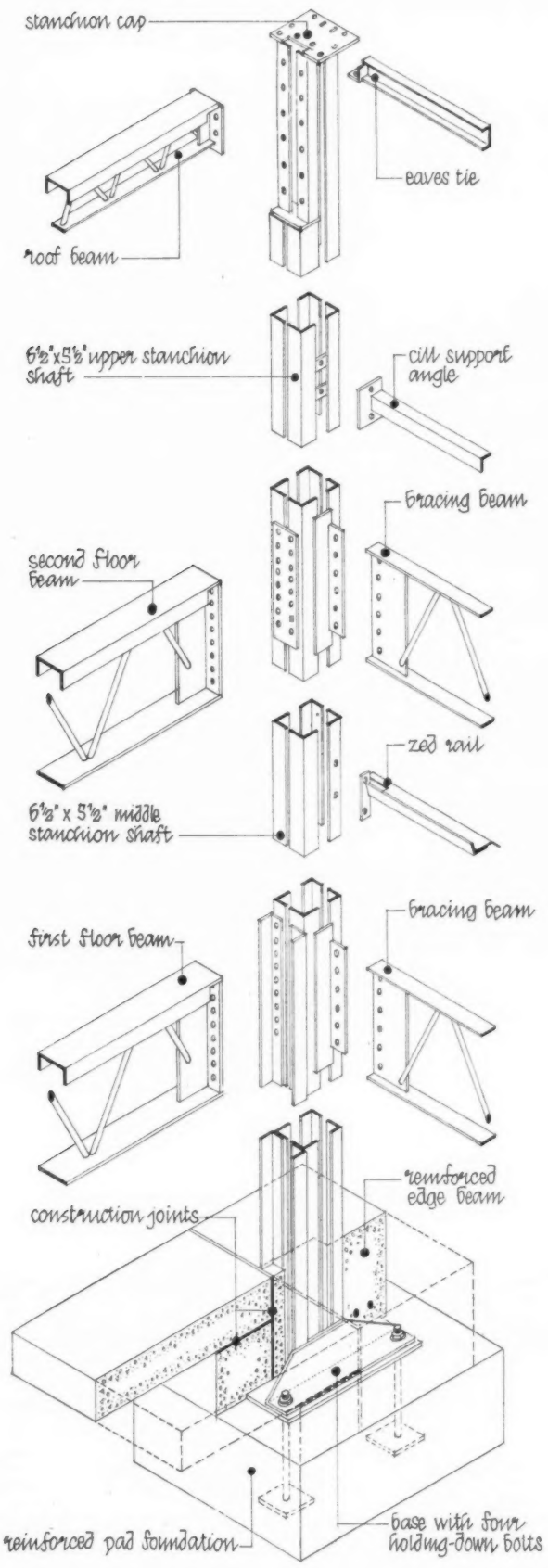
1952/53: SECONDARY SCHOOLS

FRAME



DEVELOPMENT WORK: The main development here was the adoption of a three-storey frame. Messrs. Hills (West Bromwich) Ltd., had just commenced work on the design of such a frame when discussions took place with the architects and the following points of rationalisation of the system were agreed and worked out together:

(*a*) A range of standard depth floor beams was developed.

(*b*) The floor bracing beam was redesigned to be of the same depth and at the same level as the floor-beam system. It was fixed by web bolting to cleats welded to the stanchion shaft. The engineers solved the problem of the four-way beam connection to the stanchion by the ingenious method of "through bolting."

(*c*) A criticism of the 1950 programme was that the multiplicity of elevational steelwork created considerable manufacturing and erection problems. These were solved by the replacing of elevational steelwork wherever possible by a window grid system (to be provided by the window manufacturer) in which all essential members, with the exception of the Zed rail, were clamp-fixed to avoid the complications of stanchion drilling in manufacture.

(*d*) The Zed rail was redesigned in the form of a pressed-steel weathering, welded to a continuous rolled-steel obtuse angle, one leg of which was projected into the cavity to form a condensation-drainage tray.

(*e*) The eaves projection was reduced to a minimum and eaves cantilever-brackets were omitted, except in assembly halls and gymnasia.

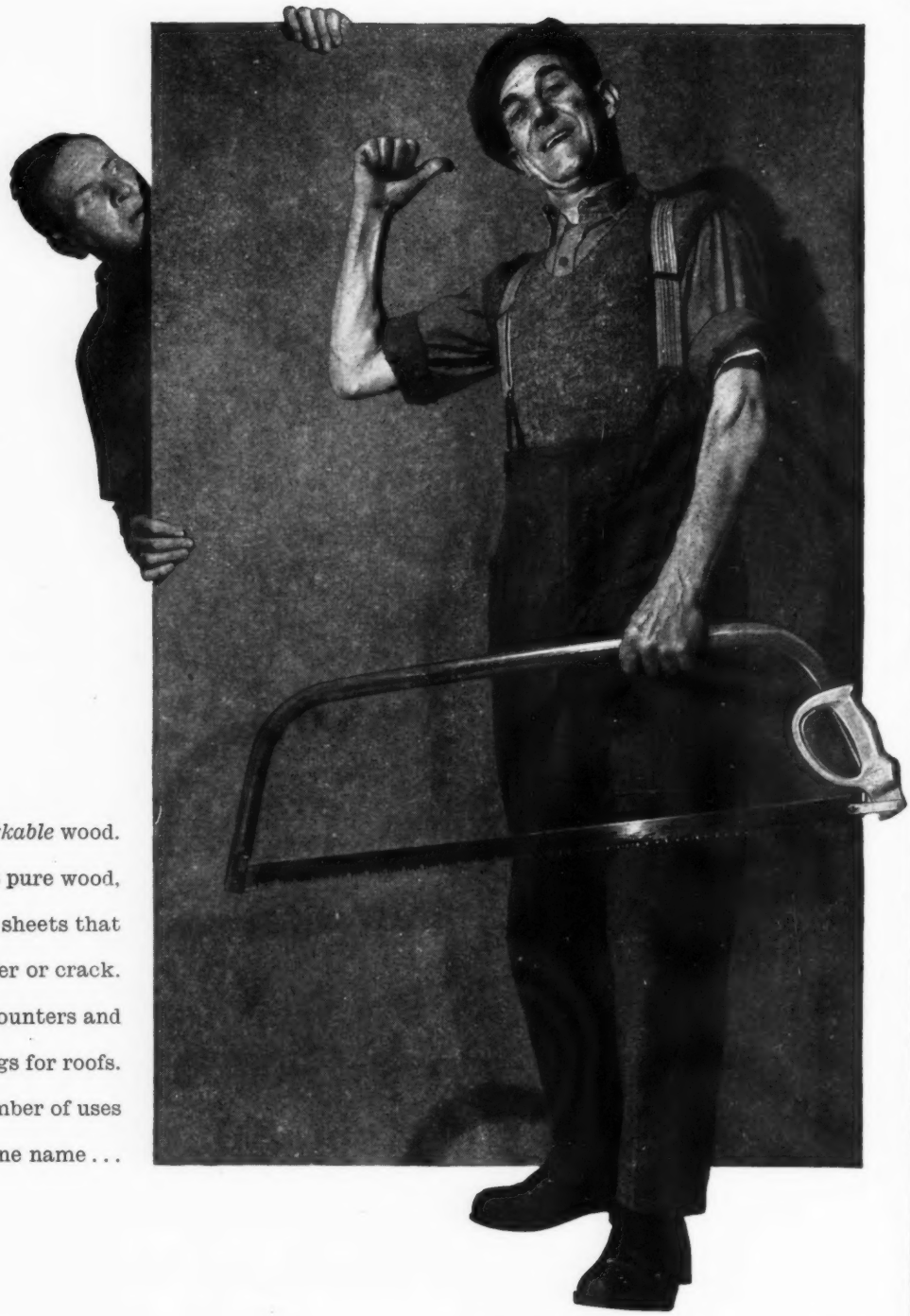
(*f*) Eaves and gable ties were inverted to fix above the stanchion cap in the roof thickness, thus permitting the introduction of a modular window grid, eliminating pressed-metal trim, reducing fibrous-plaster cornices and allowing more complete ceiling lighting.

(*g*) Two holes were arranged in each stanchion cap to allow conduit drops from the roof to be concealed within stanchions.

(*h*) Since contractors did not take advantage of mechanical excavation, edge-beam foundations were abandoned, the single-storey stanchion base was raised to 12 in. below finished floor level and after a cost study of "pads and piles," pad foundations were adopted with overturning moments taken by the pads themselves.

CRITICISM: *Drawing Office*—The three-storey frame was a great improvement on its two-storey forerunner. The detailing of the Zed rail was not entirely satisfactory. The pressed steel weathering which showed on elevation was of too light gauge and developed unsightly curves. It was replaced by a much stronger member after the third school in the programme. Conduit drops were made quite successfully down single- and two-storey stanchions, but because of floor beam connections and stanchion construction it was difficult to get out of the back of the ground floor portion of the three-storey stanchion without some site drilling.

Manufacture and erection—The manufacture of components continued satisfactorily throughout the programme. In the first school there were teething troubles when a number of three-storey stanchions which had become distorted in galvanising and transport were straightened by the use of additional tension bracing, but delivery and erection processes improved as the programme progressed.



I knew it when it was a tree...

Now it's really *workable* wood. No knots. No trouble. Just pure wood, compressed into sheets that won't split or splinter or crack. Just right for counters and cabinets and linings for roofs. It has any number of uses but only one name...

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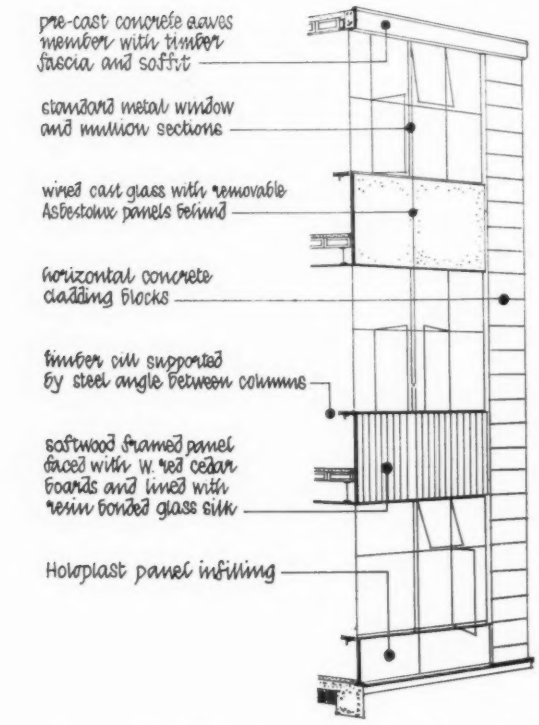
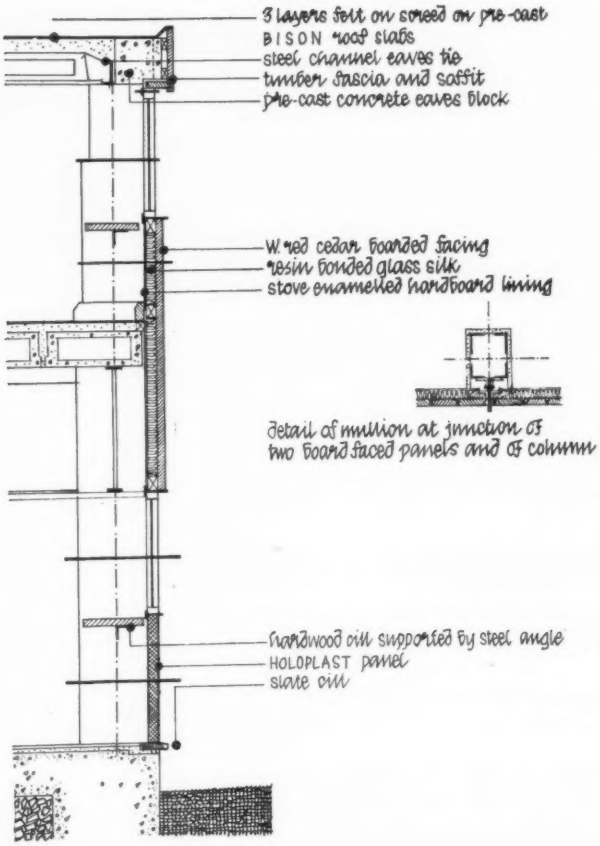
technical section

1952/53: SECONDARY SCHOOLS

WALLS AND WINDOWS





Detail of mullion at junction of two board faced panels and of column

DEVELOPMENT WORK: The summing up of the 1950 programme had been that apart from the colour the horizontal concrete block was a good idea, pressed metal should be avoided because of its scarcity and cost and the window range was too limited. To avoid the use of pressed-metal window trim, a modular form of curtain walling was developed. Early discussions with Messrs. Crittall were on rather unconventional lines. The architects having prepared a theoretical scheme, went to the window experts and asked how the theory could most economically be put into practice. Thus the system was limited to the use of only standard-steel window sections and consisted of "Detroit" bars, clamped to the outside faces of stanchions to which were fixed a series of frames in sash section subdivided for glazing-in with glass or glazing-out with panels, and coupled—where necessary—with standard cills and transomes. For use in conjunction with these frames which, to provide the required degree of flexibility were designed to cover every vertical modular increment, there was a range of screw-in vents in small or medium universal section and beaded-in Holoplast panels. The limiting size of medium universal section involved a basic four-unit division of the 8 ft. 3 in. wide unit to give approximately 2 ft. casement sizes. An alternative panel was developed, consisting of a softwood frame with an infilling of resin-bonded glass silk, faced outside with Western red cedar vertical boarding and inside with stove enamelled asbestos. On the first school detailed estimates indicated that although this system was theoretically more simple for production, the increased number of units and coupling bars resulted in higher costs than had been anticipated. It was therefore modified to comprise window units of the maximum size suitable for Messrs. Crittall's production line and galvanizing tanks. This generally limited 8 ft. 3 in. wide assemblies to a height of 6 ft. 8 in. and resulted in a considerable saving in cost.

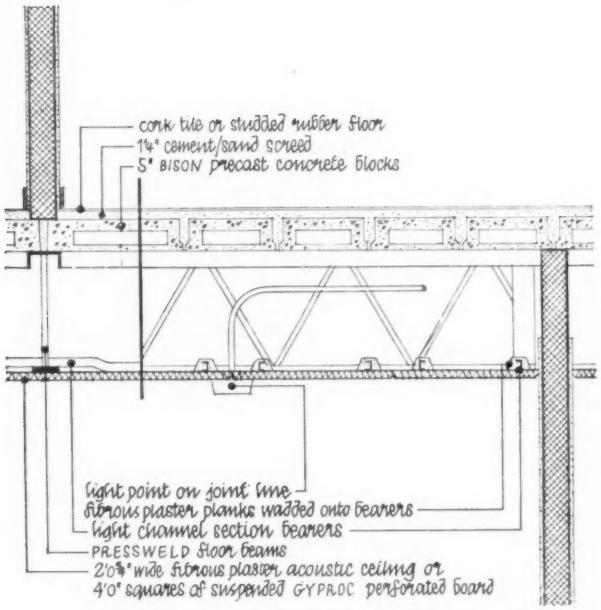
Although cost and the possible shortage of pressed steel played large parts in the reconsideration of the eaves detail there was a strong feeling that on aesthetic grounds the deep projection should be superseded by a fascia which should do no more than master the external walling.

CRITICISM: *Drawing Office.* Messrs. Crittall, in conjunction with the architects, prepared a most elaborate set of standard details and few difficulties were encountered until the latter stages of the programme, when job architects tended to introduce new fenestration patterns. This slowed down the manufacturing process.

MANUFACTURE AND ERECTION. Inaccuracies in the faces of three-storey stanchions in early schools, which resulted in problems in fixing the "Detroit" bars, were quickly solved by Messrs. Crittall, who devised an alternative clamp plate which allowed greater erection tolerances. Generally the walling was most satisfactory once the initial difficulties were overcome but the infilling panel system was found to be expensive. This resulted in the need for the redesign of some elevations, using more cladding blocks. Difficulties were experienced in obtaining suitable quantities of prime clear-quality cedar boarding, and towards the end of the programme a fully-glazed curtain wall system was developed in which the infilling panel was wired-cast glass with removable, painted-Asbestolux sheets behind.

Once again this system proved expensive and further attempts were made to restore a more clearly-articulated elevational treatment in which cladding blocks would not occur either above or below windows. An aluminium-faced chipboard panel was used which was aesthetically satisfactory, but trouble was experienced in effectively sealing the edges against moisture penetration, and a satisfactory solution to this problem has yet to be worked out.

UPPER FLOORS AND CEILINGS



DEVELOPMENT: It was decided to continue with the precast-concrete floor blocks as 1950/51. Floating floors were abandoned on the grounds of cost, and soft floor finishes were specified, generally studded-rubber tiles or cork tile. It was decided to develop alternative suspended ceilings and two methods were worked out, one with 4 ft. × 4 ft. perforated plaster board, glued to battens, with glass silk insulation, and aluminium H section jointing strips (Messrs. Gyproc Products Ltd.), the second in fibrous plaster (with Messrs. Claridges (Putney) Ltd.) panels 8 ft. 3 in. × 2 ft. 0¼ in. with acoustic slots backed with glass silk.

CRITICISM: *Drawing Office.* (*a*) The floor and flooring presented no difficulties.

(*b*) There was the usual dimensional problem with the 4 ft. square plasterboard ceilings. These rapidly ran off grid and were awkward to deal with in irregularly-shaped rooms. A filler cornice in fibrous plaster was required. Light points, if in the centre of a grid bay, coincided with suspension points and this could be arranged only with extra expenditure.

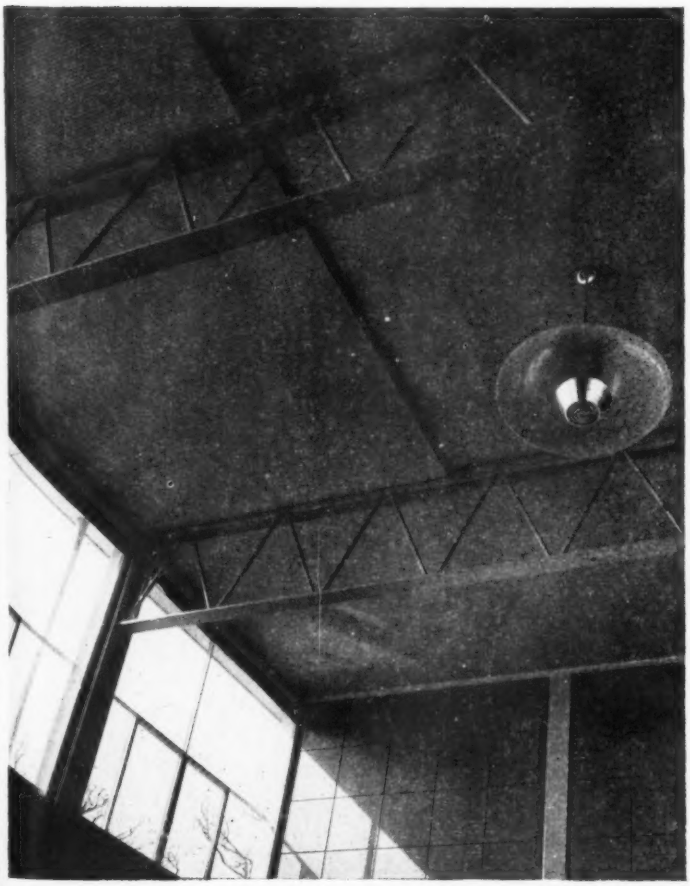
(*c*) The fibrous-plaster ceiling made cornices unnecessary, as extra width or reduced size panels could easily be made. The suspension consisted of light channel sections, wadded on to the backs of the panels, and these were self-supporting between the bottom booms of the floor beams.

MANUFACTURE AND ERECTION: (*a*) Floors presented no problems.

(*b*) The "Gyproc" ceiling, though neat in appearance, presented the problems of infilling cornices. All dimensional irregularities in the frame and walls were therefore passed on to the fibrous plaster cornice, which had to be scribed on site.

(*c*) The fibrous plaster ceiling proved very satisfactory.

(*d*) Both ceilings were satisfactory acoustically and complied with the fire protection period of ½ hour.

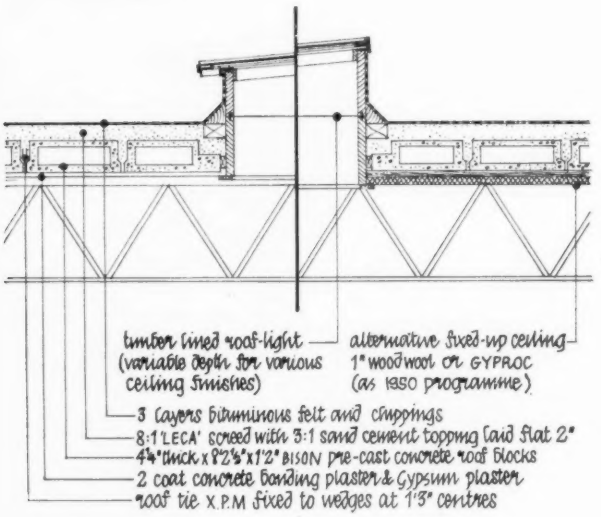


Two alternative ceiling treatments at the Heathcote School, Stevenage. Left, Fig. 6: the use of perforated plasterboard (note also the built-in blackout blinds at window head); above, Fig. 7: the use of perforated fibrous plaster panels spanning between floor beams.

technical section

1952/53: SECONDARY SCHOOLS

ROOFS



DEVELOPMENT WORK: It was decided to continue with the precast-block roof and the same system of ceilings for 1952, whilst attempting a radical development for a later stage of the programme (see below). To reduce roof slab movement, the blocks were grouted in 8 ft. 3 in. squares, the grout being omitted over roof beams and structural roof ties. Screeds were specified in LECA (expanded clay aggregate) to reduce softness and cost. Roof drainage was to be by internal pipes. To simplify screeding, the falls were omitted except for collecting "dishes" 8 ft. 3 in. square around sumps. Roofing was in two-layer bituminous felt as before with granite chippings. The ceiling range was as for 1950/51. With the general abolition of clerestory lighting the rooflights became more important and opening types were required to give cross-ventilation. In some rooms these required "blacking-out." It was decided to design a rooflight as a timber upstand box with steel rooflight frames. It was necessary that the rooflight could remain open in rain and bad weather. A pressed metal hood was devised with Messrs. Crittall. (See Working Detail: AJ February 24, 1955.)

CRITICISM: *Drawing Office.* The increased numbers of rooflights involved additional detailing of ceilings to give satisfactory relationship and some difficulty in the location of light points.

MANUFACTURE AND ERECTION: (*a*) Some minor cracking still occurred in soffit plastering at roof ties.
(*b*) The greater numbers of rooflights required (often in adjacent roof bays) involved a higher proportion of in situ work in trimming openings in the structural roof. This slowed up progress in the structural roof.
(*c*) The eaves fascia had a negligible upstand and with no falls on the roof some trouble was experienced with water being blown off on to adjacent walls.
(*d*) The rooflight appeared to work very well and looked neat. Minor modifications of detail only were required.

Special Development of LECA Roof Units: A serious attempt was made to develop a dry-roof construction which could receive felt roofing and have a soffit which would provide suitable appearance and with good acoustic properties and with adequate thermal insulation. LECA, as a controlled size lightweight aggregate, seemed the answer. Messrs. Concrete Ltd. developed a technique of reinforcement by prestressing small-section concrete strips which were then embedded in the LECA cast in the normal mould. This roof was used on the gymnasium in a late school in the 1953 programme and was very successful. Messrs. Shockcrete Ltd., who were successful in tendering for the roofs and floors in the next programme, investigated the provision of cast-in ducts for electrical wiring, and were able to produce a top side suitable to receive the felt roofing without screed. The ends of the blocks were formed in dense concrete. The third school in the 1953 phase of the programme was roofed with these units.

CRITICISM: *Drawing Office.* Considerable care was required to design the conduit positions to suit the lighting scheme, which was required very early.

MANUFACTURE AND ERECTION: (*a*) The blocks had to be handled with extreme care to avoid any damage to edges which would show on the exposed undersides.
(*b*) Despite exposure to the severe weather for the winter of 1954/55, which delayed the application of the felt roofing, no deterioration took place in the structure of the blocks.
(*c*) Unfortunately, the manufacture of LECA aggregate in this country stopped in 1954, and the very promising development of this roof unit had to be abandoned for the time being.

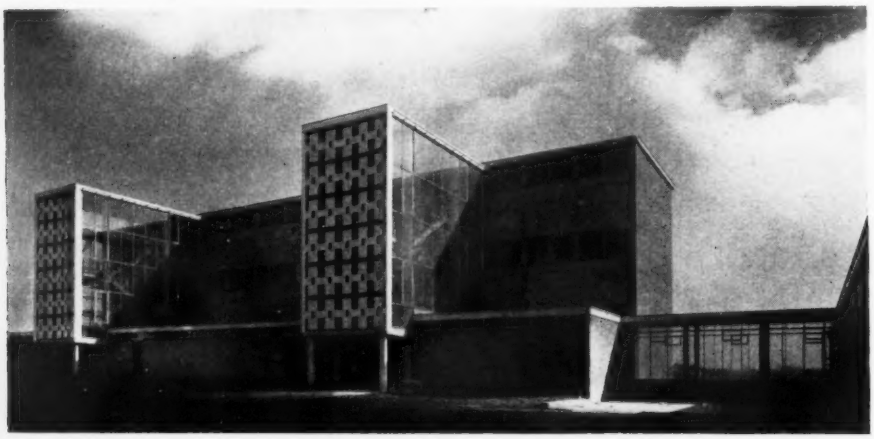


Fig. 8. View of three-storey block at the Bennetts End School, Hemel Hempstead showing the treatment of staircases. These were found to create a special problem as the 8 ft. 3 in. grid was not wide enough. Here they were built in reinforced concrete with Frameweld reinforcement. The end walls are faced in mosaic tiles.

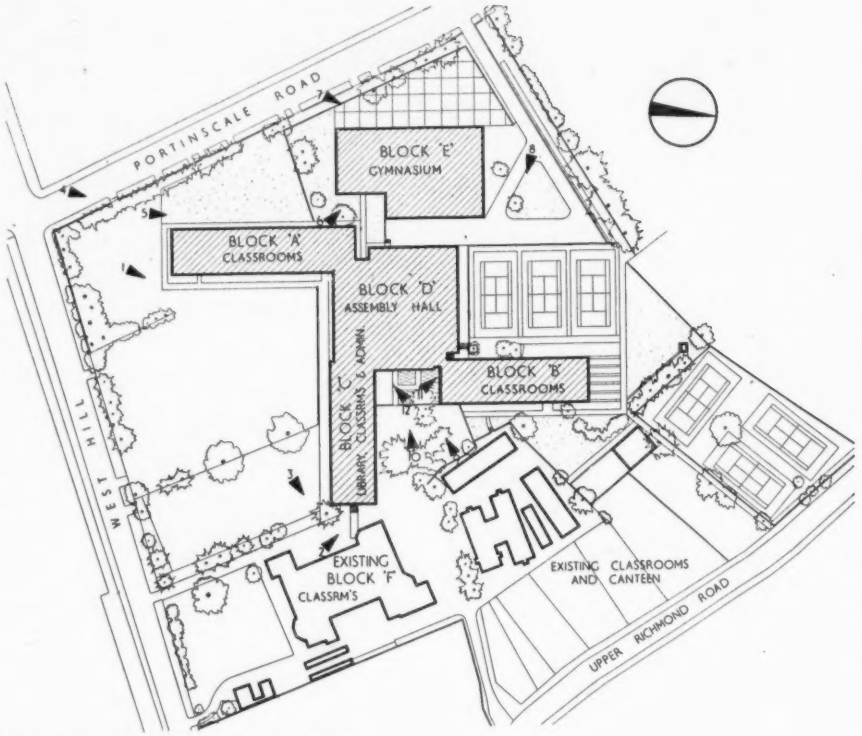
COMPREHENSIVE SCHOOL

at WEST HILL, PUTNEY, LONDON, S.W.15, for the LONDON COUNTY COUNCIL designed by POWELL and MOYA; assistants ROBERT HENLEY, PETER JONES, PETER STEWART; consultants (structural) OVE ARUP and PARTNERS; (heating) J. ROGER PRESTON and PARTNERS; (electrical) chief engineer LCC; quantity surveyors DAVIS, BELFIELD and EVEREST

Progress articles about the Mayfield Comprehensive Secondary School, Putney, were published previously in the JOURNAL on January 7, 1954, August 18, 1955 and April 5, 1956. This, however, is the first full description of the school to be published with a cost analysis. The exceptionally low cost of the school, £178 per place, compared with the allowable cost per place of £250 at the time the school was designed, is discussed on page 178. The school is an extension to the original Edwardian girls' grammar school which provided 500 places. The school now accommodates 2,120 pupils.

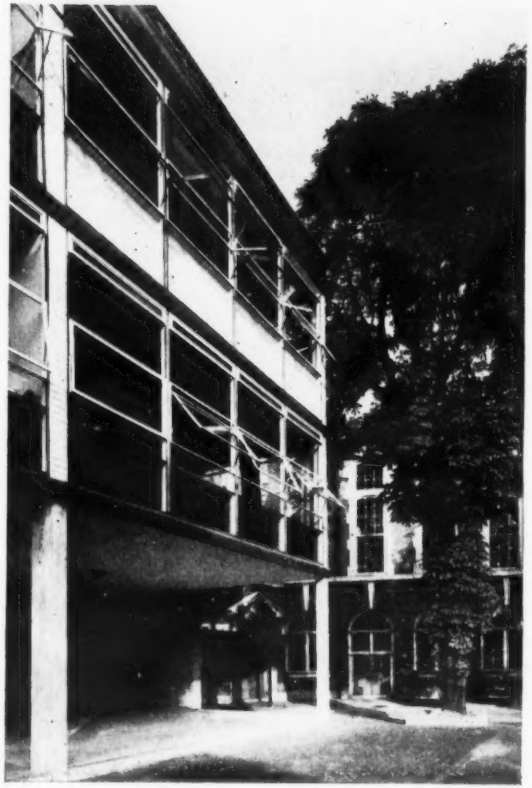
Viewpoint 1 : the school from the south.

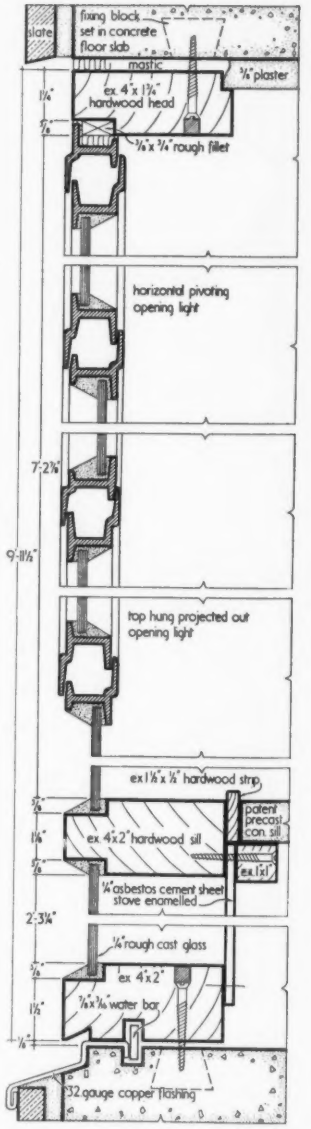
building illustrated



Key plan showing photographic viewpoints

Above right (viewpoint 2): the new buildings, although independent, are an addition to the existing Edwardian-built school, which is still used to provide some 500 places. The junction between the two buildings, seen here, is by covered way to the play space and entrance hall on the ground floor of block C. The retaining of the high-level window above the door in the existing building has resulted in an unfortunate relationship between the roof of the covered way and the first floor slab in the new building. Right (viewpoint 3): in this teaching-block (C) the ground floor has an open plan which makes it impossible to use cross walls, as in blocks A and B. Reinforced concrete beams and columns have been substituted where required as the load-bearing element.

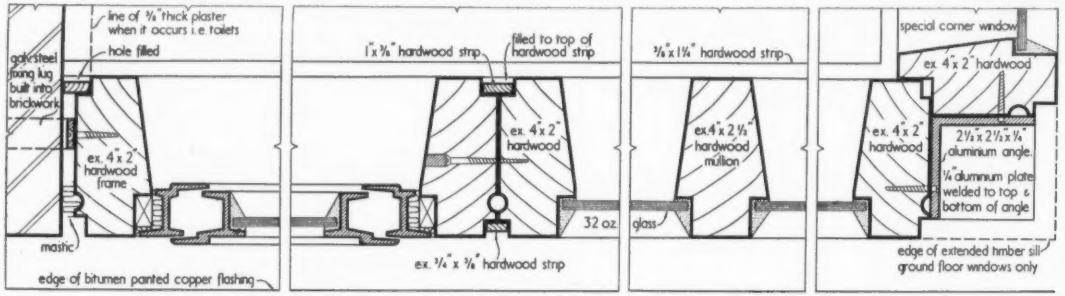




Detail section, typical classroom block cladding [Scale : 3" = 1' 0"]

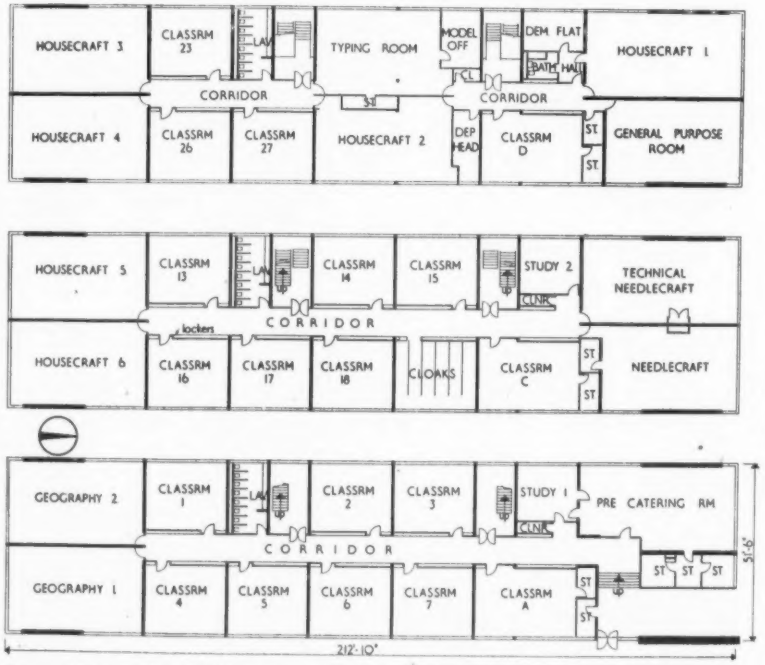
as in blocks A and B. Reinforced concrete beams and columns have been substituted where required as the load-bearing element.

Detail section, typical classroom block cladding [Scale : 3″ = 1′ 0″]



Detail section, typical classroom block cladding [Scale: 3″ = 1′ 0″]

Top right (viewpoint 4): view from the south from Portinscale Road, with teaching block A in the foreground. Right (viewpoint 5): close-up of teaching block A with gymnasia in the background. In the immediate right foreground the corner junction between the glazing panels consists of a 2½ in. by 2½ in. by ¼ in. aluminium angle screwed to the two hardwood frames. Sill heights vary with the room function, the level of the projecting steel open lights is constant and the resultant gap is closed with a strip of fixed glazing where necessary. On the ground floor glazing panels finish at sill height and are replaced by 2-in. blue stable yard bricks laid on edge and backed with the usual 4-in. clinker block wall.

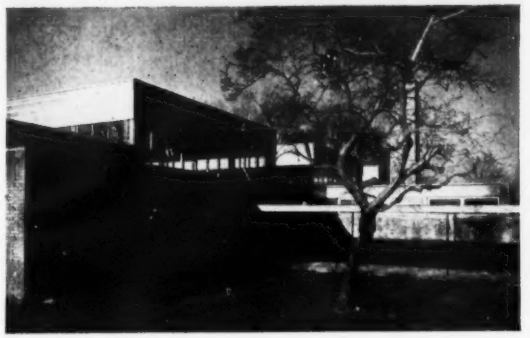


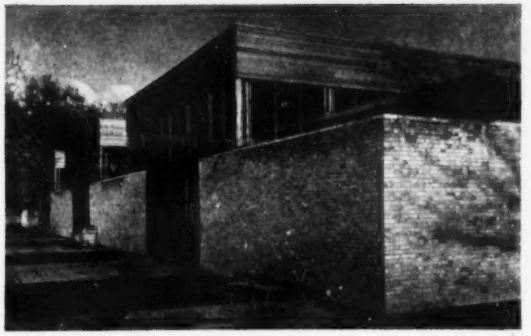
Ground, first and second floor plans, Block A [Scale: $\frac{1}{16}$″ = 1′ 0″]

Ground, first and second floor plans, Block C [Scale: $\frac{1}{16}$″ = 1′ 0″]

COMPREHENSIVE SCHOOL

at PUTNEY, LONDON, S.W.15
designed by POWELL and MOYA



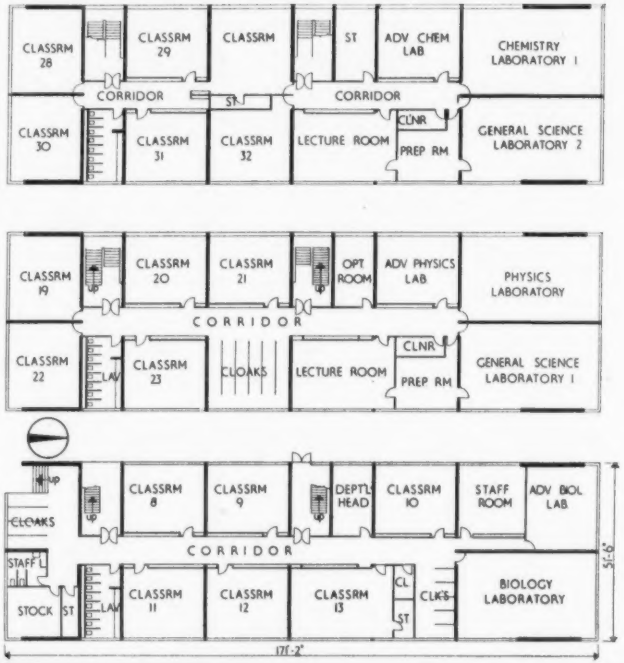


COMPREHENSIVE SCHOOL

at PUTNEY, LONDON, S.W.15

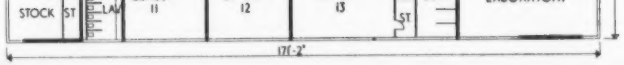
designed by POWELL and MOYA

Left: ground floor plan, Block E (gymnasia). [Scale: $\frac{1}{16}$" = 1' 0"]



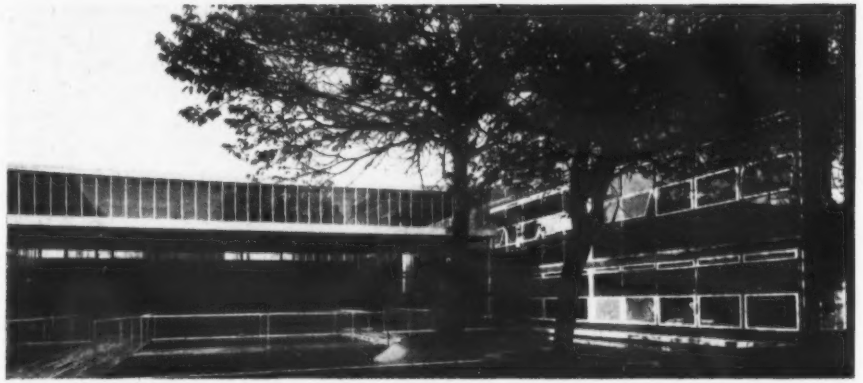
Left: ground, first and second floor plans, Block B [Scale: $\frac{1}{16}$" = 1' 0"]

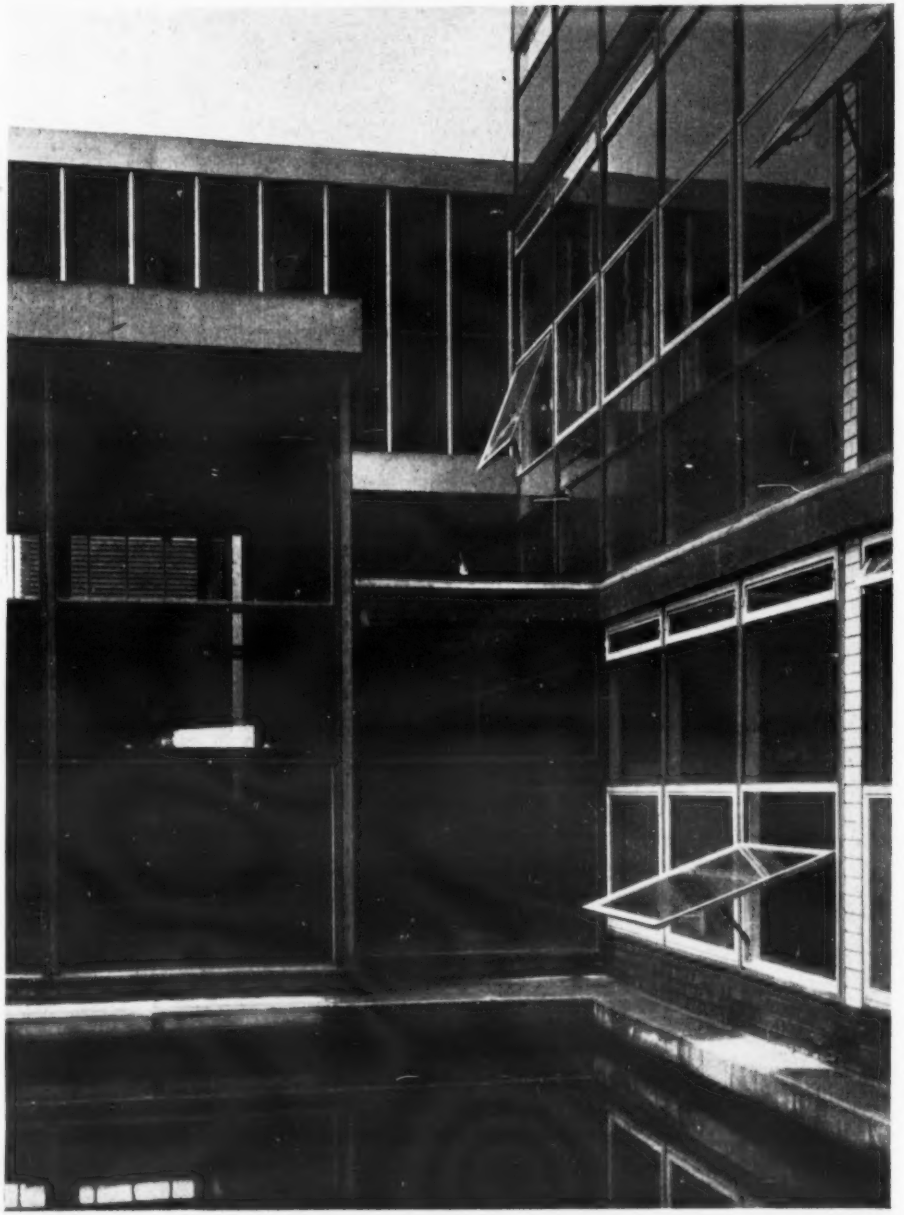
Above (viewpoint 6): the gymnasia and the boiler house (to the right) are linked to the rest of the school by a covered way. Brickwork: second hard London stock facings. Fascia: 1-in. cedar boarding backed with $\frac{1}{4}$-in. asbestos cement sheets. Above right (viewpoint 7): the three gymnasia with changing rooms between. Roofs on timber trusses are supported on columns of two 6-in. by 2-in. uprights 5$\frac{1}{4}$ in. apart, thus forming the end post to both high and low level trusses. Opposite page, top left (viewpoint 8): the junction of the assembly hall and teaching block B. The service road in the foreground leads to boiler house and kitchen (extract hood on extreme right). Window units, each approximately 10 ft. 0 in. long by 5 ft. 7 in. wide, link together to form a complete glazed panel between cross walls. Below the sill $\frac{1}{4}$-in. rough cast glass is backed with stove-enamelled asbestos cement sheets screwed to the back of the frames, and behind this there is a 4-in. clinker block wall. Opposite, centre left (viewpoint 9): in the intimate courtyard which is contained by the teaching blocks B and C and the assembly hall the architects have placed a biology pool. The site has an abundance of good trees. Trees have been used as integral parts of the exciting vistas which open up as one walks around the school. Opposite, bottom left (viewpoint 10): in the background are the high-level aluminium patent-glazing windows to the assembly hall. Apart from these, most windows on the job follow the principle of hardwood frames glazed direct, with opening lights in steel. Where the height of the windows necessitated a strength not obtainable with the standard 4-in. by 2-in. hardwood section, as in the windows immediately behind the biology pool, a steel tee piece was inserted between frames which were rebated to surround it. Opposite page, right (viewpoint 11): the junction between the assembly hall and classroom block B. The classroom block is separated from the assembly hall, above the site slab, by an expansion joint. The recessed low-level portion of the roof is a concrete slab, structurally cantilevered from the first floor of the teaching block, and free to slide within a 9-in. by 3-in. R.S. channel which is part of the assembly hall foyer structure. Weatherproofing is by copper flashing.



biology pool. The site has an abundance of good trees. Trees

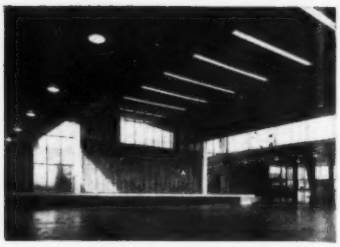
Left: ground, first and second floor plans, Block B [Scale: $\frac{1}{16}$" = 1' 0"]





building illustrated

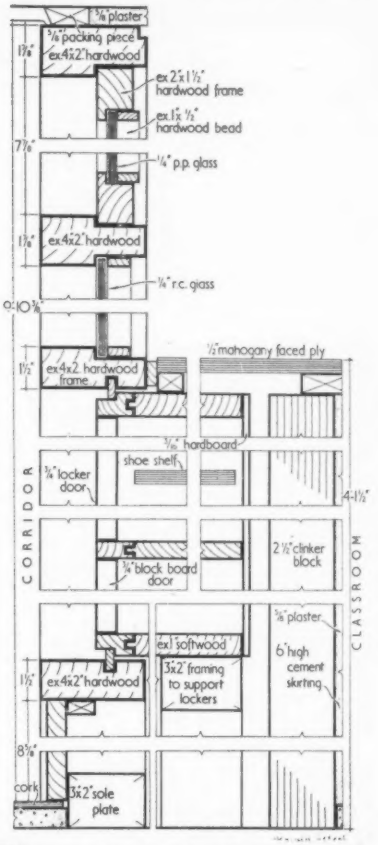
Ground floor and basement plans, Block D. [Scale: $\frac{1}{16}$" = 1' 0"]



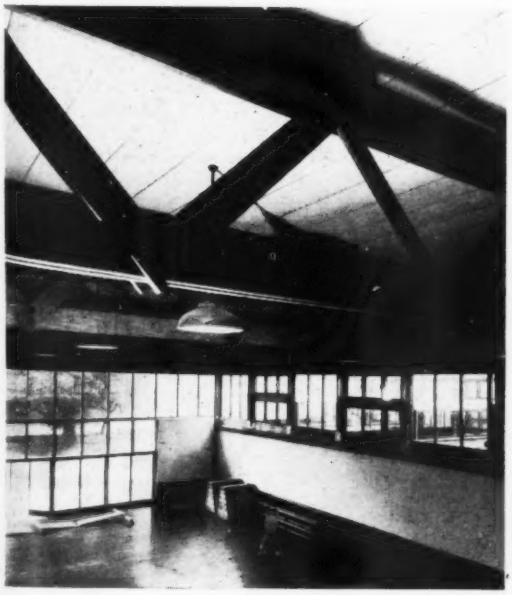
Top right: the assembly hall at Mayfield is the central hub of the plan. It is used for dining and is constantly walked through by the children, so that for all its size it will not be a semi-sacred, uneconomical room like many large peripheral assembly halls. The stage is equipped with sliding-folding doors which convert this area into a third auxiliary hall. Above: at the rear of the assembly hall (centre of this photograph) there are two sets of sliding-folding doors which, when both closed, create a corridor between the assembly hall and the two auxiliary halls beyond. When open they increase the assembly hall floor area by about a third its normal size. Character of the space is given by the form of the structure and the careful selection of natural materials for their colour and richness. The sliding folding doors are faced—for acoustic reasons—with self-finished perforated hardboard on the assembly hall side, and with gaboon-faced plywood on the other side. Left: the space frames supporting the assembly hall roof are encased in 7-in. by 1-in. West African mahogany boarding with a shiplap joint. The space thus enclosed houses the mechanical ventilating plant. Below: the main staircase rises from the entrance hall in teaching block C. The whole staircase was cast in situ. This is the only stair of its kind in the school, others have solid RC carriages and are finished with granolithic.

building illustrated

Below left: roof trusses in the gymnasia are of West African mahogany. The ceiling is of ¼-in. V-jointed softboard secured straight to the roof joists. Hardwood floor is 1-in. nominal gurjun strip. The gymnasia are airy and well lit and heated by continuous dado radiant panels. The sill below the high-level glazing is a concrete beam cast in situ in two stages. The first-stage concrete is an 8 in. by 6 in. continuous beam cast on top of the brickwork, to which cleats are bolted to secure the truss posts. After this the second-stage concrete—the sloping part of the sill—is poured. Below right: classrooms and corridors in the teaching blocks are separated by a timber-framed partition containing book lockers which project into the classroom, producing a useful working top. The timber framing is of West African mahogany, finished with an alkyd rubber varnish. Blockboard doors to the book lockers are painted. Glazing is ¼-in. rough cast glass. Floor finish on all upper floors of the teaching blocks is of studded rubber tiles.

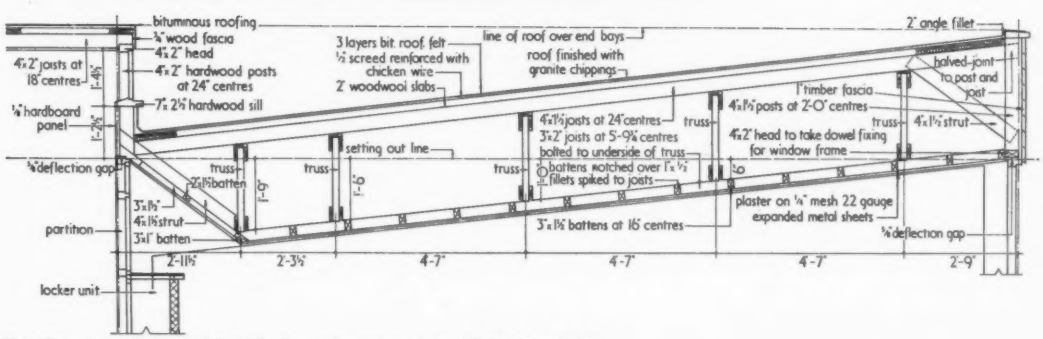


Detail section, internal partition, corridor/classroom
[Scale: 2" = 1' 0"]



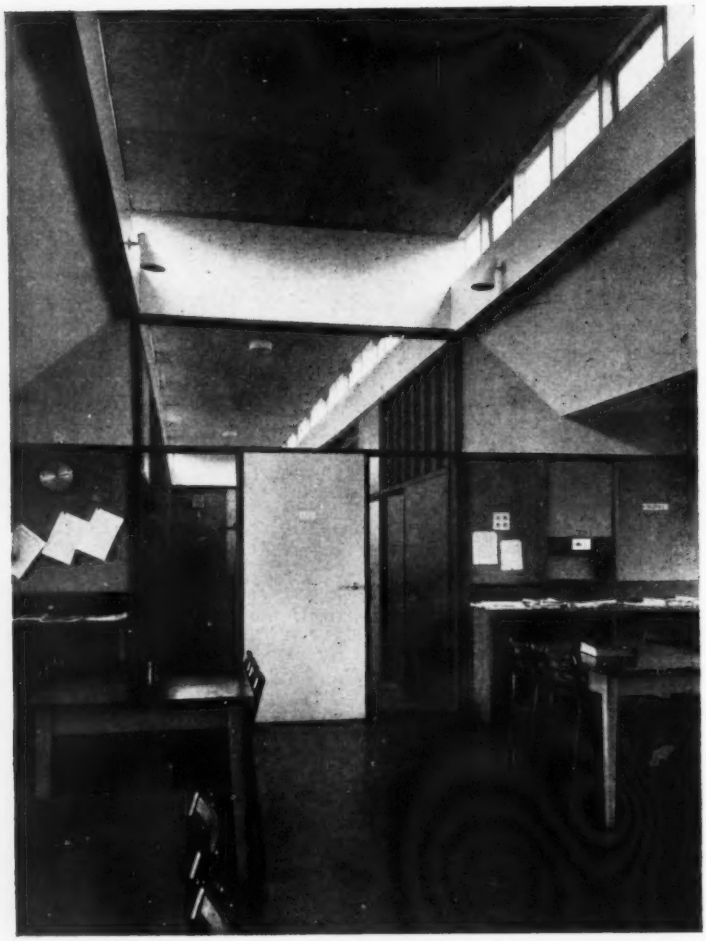
COMPREHENSIVE SCHOOL

at PUTNEY, LONDON, S.W.15
designed by POWELL and MOYA



Detail part section, teaching block roof construction [Scale: ½" = 1' 0"]

building illustrated



Above: the teaching blocks are double-banked, with a central spine corridor. Trusses over classrooms span from crosswalls and are built in to fall over the classroom towards the centre of the building. The corridor roof maintains the eaves level and the consequent upstand is used as a clerestory. The roof to the corridor is supported on load-bearing timber mullions carrying 4 in. by 2 in. joists and woodwool decking. Top right: general view of the library, which is on the top floor of teaching block C. Loose furniture was supplied by the LCC; bookshelves were architect-designed. The floor is cork tiled. Principal doors throughout the school are 6 ft. 6 in. by 3 ft. 0 in. skeleton-cored with a plywood facing veneered with black, grey or red plastic sheeting with a hardwood lipping. Door furniture is anodized aluminium. Second from top: this housecraft room is in teaching block A. Fixed furniture was designed by the architects, kneehole tables and stools are standard LCC equipment. Third from top: island and demonstration benches, wall cupboards, chalkboard and loudspeaker in this laboratory, in classroom-block B, are standard LCC equipment. The fume cupboards, the working top around the walls and the bookshelves were architect-designed and made by the general contractor.

analysis

COMPREHENSIVE SCHOOL

at PUTNEY, LONDON, S.W.15

designed by POWELL and MOYA

CLIENT'S BRIEF: his stated requirements

1,620 new places were to be provided as additional building to the existing Edwardian-built girl's Grammar School, bringing the total to about 2,120 places and thereby creating a girl's comprehensive school. No particular educational bias was required and, as with all LCC schools, a schedule of accommodation was prepared by the LCC with regard to the particular educational requirements of the district.

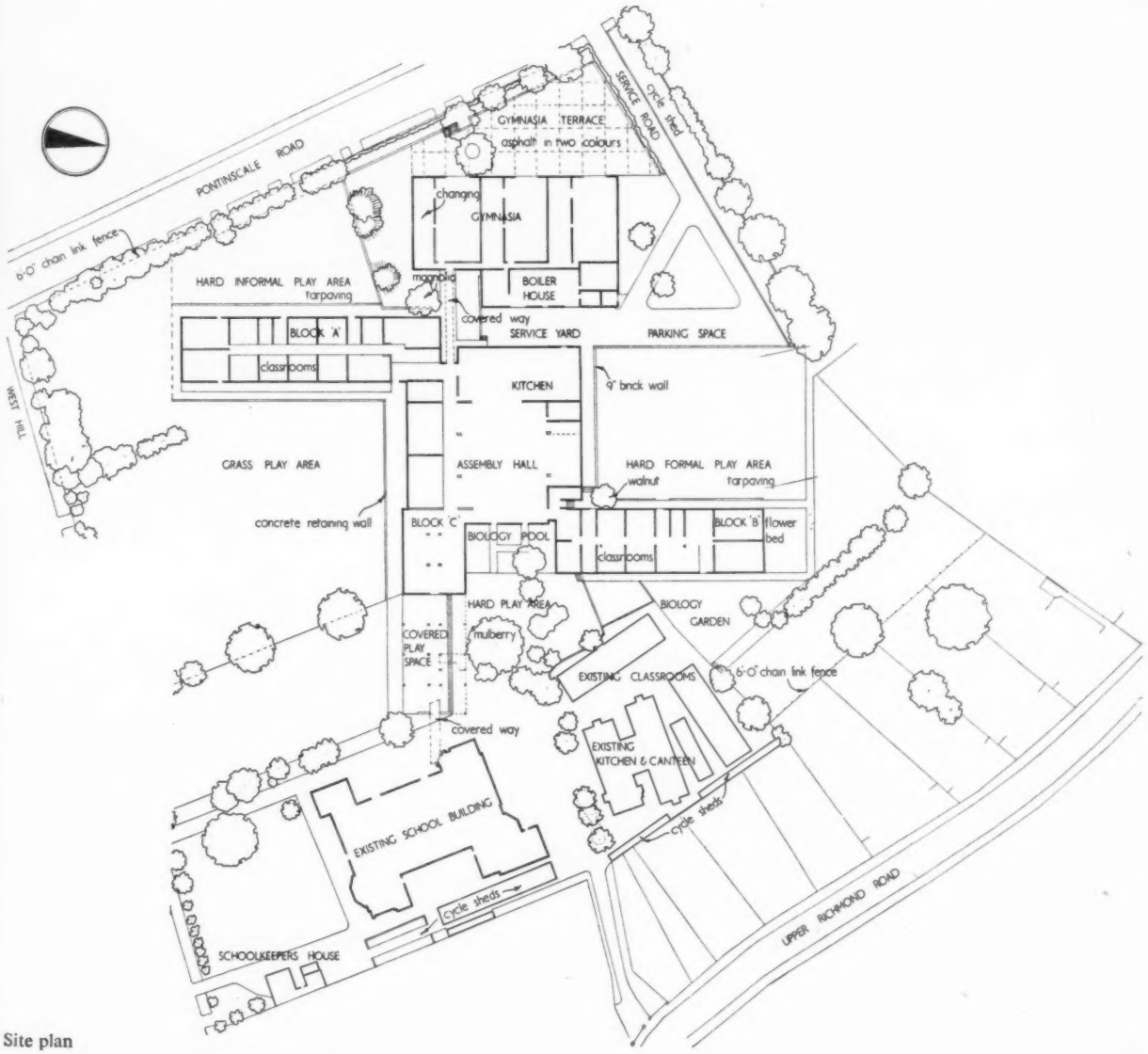
The old building would be used in conjunction with the new but no alteration or conversion work was to be carried out. The temporary hutted school buildings on the site were to be retained unaltered.

SITE

The site of about four acres was increased for the new extension to nine acres by taking in adjacent bomb damaged properties. Along the southern boundary of this extended site runs West Hill, a busy road with fairly fast-moving traffic. Portinscale Road on the west is a quiet residential street. The north and most of the east boundary of the site are bordered by large private gardens. There is a pedestrian way to the boundary of the site from the Upper Richmond Road. There are many fine trees and a good playing field on the portion overlooked by West Hill. The ground slopes gently from east to west, about 4 ft. along the length of the site reserved for the new buildings. Existing trees, hardly any of which have been felled, influenced the siting of the building.

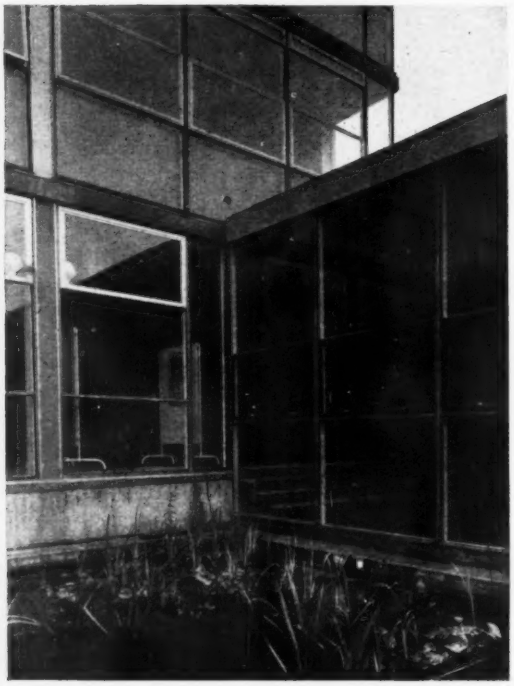
PLAN: general appreciation and relation of units

The school is very large and it was decided as a design principle to keep the buildings intimate and the scale as small as was reasonably possible. Classrooms are divided between three blocks, so placed, relative to each other, and to the single storey gymnasia and the hall that whilst walking round the building only parts can be seen at a time. Three storey height was chosen for the teaching blocks so that (*a*) the scale of the existing building would not be dwarfed, (*b*) the use of lifts would be avoided, and (*c*) an inherently economical form of construction could be used. Centre corridor access for the teaching blocks was chosen not just because it is economical but because it allows for compact grouping of rooms and buildings and for short corridors. Cloak spaces are decentralised and accommodated in widenings of the ground and first floor corridors going right through to the external walls and therefore acting as "lungs" for light and air. Double banking resulted in a building wide enough to accommodate the larger rooms side by side in the end of each block and the breakdown into three teaching wings gave a useful dispersal of this type of room. The assembly hall group is the hub around which the other blocks revolve. The auxiliary halls can be thrown into the main assembly hall and when



Site plan

analysis



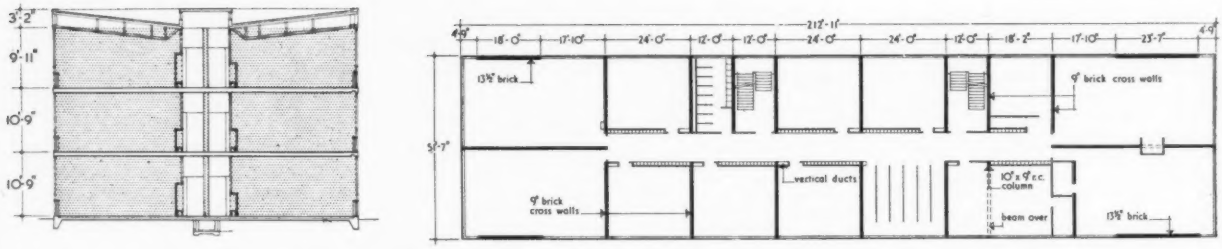
thus enlarged the whole school can be seated in one space. The assembly hall is used for dining, two sittings of 700 each are served from the kitchen which, with the boiler house, has been so arranged to open on a service yard remote from the rest of the school.

MAIN CONSTRUCTION:

general appreciation

Unlike most present day schools, Mayfield does not depend to any great extent on a standardised, factory built structure. The conception is of traditional techniques, though perhaps somewhat simplified. The choice of structure for the various parts of the job may appear almost casual but in each individual case the structure felt to be most appropriate has been chosen. The economics of this diversity of structural systems can be exploited in buildings depending largely, as this does, on traditional techniques. The new buildings were designed during a steel shortage and it was felt that brick structural walls would not only save steel but would provide an economical solution. At the same time for good daylighting without excessively high rooms, wide windows were necessary. The main structural walls are therefore the internal 9 in. common brick cross walls. First and second floors are pre-stressed reinforced concrete with timber trussed roofs. In the few positions where a solid wall is not practical it has been replaced by an R.C. beam and column structure. Four columns support the assembly hall space frame roof from which hangs the low level roofs surrounding it. This gave freedom from the imposed discipline of periphery columns and allowed continuous high level glazing. The kitchen roof is of steel and timber supported on load bearing mullions and the gymnasia roofs are carried by simple hardwood trusses carried on the load bearing walls.

Left (viewpoint 12): close-up of the junction at the other end of the assembly hall foyer to teaching block C. The two blocks are separated only above site concrete, a 1-in. expansion joint being left between the timber and wood-wool roof to the foyer and the edge of the concrete floor slab to the teaching block. Copper flashing weatherproofs the gap. Fascia to the assembly hall foyer is in aluminium; that to the teaching block slab is slate.



Typical section and plan through classroom block [Scale: ¼" = 1' 0"]

cost per sq. ft.	s	d
preliminaries and insurance	2	10
contingencies	3	4½

STRUCTURAL ELEMENTS

Work below ground floor level: foundation type	*Location*	*Materials*	*Finish*	*Reasons and comments*
Strip foundations. Approx. 1 ft. 6 in. by 3 ft. wide; 3 ft. 6 in. deep to underside from ground floor level; 13½-in. brickwork to underside of slab, two courses 9-in. blue engineering brick D.P.C.	Load-bearing walls to teaching blocks and gymnasia	Mass concrete		Reasonable bearing capacity of the soil (gravel, 2½ tons/sq. ft.), a low water table and the uniformity of the cross walls themselves simplified foundations and resulted in relatively small, shallow trenches and consequently low spoil banks around external walls. Access was easier and this allowed some of the drainage work to be completed at an early date
Point foundations	Under steel columns to assembly hall and concrete columns to teaching block C	Reinforced concrete		
Ground floor slabs thickened into downstand ground beams (unreinforced) at edges	Teaching blocks, gymnasia	3-in. blinding concrete (no hardcore), D.P.M. 4-in. mass concrete slab		
	Assembly hall	3-in. blinding concrete D.P.M. 6-in. concrete slab with heating panels bedded in		
Retaining walls and floor slab	Basement under stage, containing chair store, etc.	9-in. and 6-in. concrete		
Heating ducts	All blocks	Two 4½-in. brick skins separated by continuous D.P.M. laid on top of 4-in. concrete slab base		Trenches are beneath corridors with access manholes for main services. Branch services run in small ducts formed in the surface concrete

work below ground floor level	3	6½

analysis

				s	d
Load-bearing walls	*Location*	*Materials*	*Reasons and comments*		
Cross wall construction	Teaching blocks A, B and C Gymnasia and changing rooms	Internal walls of 9-in. common brickwork built off two courses of Staffs. blue engineering bricks. Gauged mortar, 1:2.9 mix to give maximum permissible stress of 115 lb. p.s.i. White glazed bricks bonded in at exposed ends	Planning considerations and an acute steel shortage during the design stage pointed to load-bearing walls as an appropriate structural solution. Repetitive classroom units were compatible with the inherent planning limitations of cross wall construction, which has the added advantage of leaving the external face quite free for maximum glazing		
External walls and facings	*Location*	*Materials*	*Finish*	*Reasons and comments*	
	End bays of teaching blocks A and B	13½-in. secondhand London stock facings, giving maximum permissible stress of 157 lb. p.s.i.			
	Gymnasia	11-in. cavity brickwork. External skin London stocks, inner skin white flint lime facings			
				load bearing walls	**2** **8**
Frame	*Location*	*Materials*	*Reasons and comments*		
Beam and column	Ground floor and part first and second floors of teaching block C	15 in. by 9 in., 9 in. by 10 in., 9 in. by 9 in., 2 ft. 9 in. by 1 ft. 3 in. (H plan) reinforced concrete columns and beams of varying depth	Cross walls were replaced by column and beam structure to provide open play space and entrance hall on the ground floor. Cross walls are continued from the first floor		
Two triangulated space frames supported by four 2 ft. by 1 ft. 3 in. steel columns	Assembly hall	Space frames made of a combination of standard steel tubes and sections, each frame factory-fabricated in three sections and assembled on site. Columns each two 15 in. by 4 in. channels back to back, 16 in. apart, continuously plated on one side, partially on the other to allow access to internal duct space	By the time detailed designing of the assembly hall began, improved supplies of steel made possible the use of light tube steel space frames. Frames were assembled on the ground below their high level position and joined by the 7 in. by 3 in. channels which span between them. The whole structure was then raised, the four columns were positioned and bolted down and the structure was lowered on to them. Space frames are timber clad to (*a*) improve acoustics, (*b*) conceal extract fans, (*c*) allow relatively crude detailing for the steel. 7 in. by 1½ in. West African mahogany boards with ship-lap joints are secret-nailed to 3 in. by 2 in. joists at 16 in. c/c notched to 6 in. by 3 in. purlins at 8 ft. c/c, U-bolted to steel tubes		
Trusses carried by columns and edge beams, suspended immediately below perimeter of high-level space frames	Auxiliary halls, kitchen and accommodation surrounding assembly hall	Trusses of standard steel sections, welded, suspended by 1-in. diameter m.s. bars. Columns of two 4 in. by 2 in. channels welded together			
				frame	**1** **9½**
Upper floor construction	*Location*	*Materials*	*Finish*	*Reasons and comments*	
Clay planks carrying hollow tiles with structural concrete topping. Span generally 23 ft. 3 in.	First and second floors of teaching blocks	5⅝ in. by 2½ in. prestressed clay planks, 8 in. apart carrying either 6½ in. or 8½ in. deep hollow tiles with rebated sides. In-situ steel for transverse reinforcement, for beams over corridors, and upstand beams in end bays	External edge of the slabs are clad with ¾ in. slate facing, fixed after concreting with bronze cramps grouted in. Below the cramps the slate is grooved to take a continuous aluminium angle which aligns the slate and acts as permanent shuttering to the grout which is poured behind. The joint between the slate and the slab is covered with lead sheet flashed into a groove in the slab which also takes the windows frame weather bar	Floor loads and spans allowed the use of prestressed plank and hollow tile floors, which are economical on shuttering, the components being light and easy to handle on site. Electrical conduit, R.W.P.S. and soil pipes were positioned and cast in when concrete was poured. There is little tolerance in the planks and hollow tiles and therefore an accumulation of pipes passing through, as in the lavatory. bays, is dealt with by using an in-situ slab. Increase in the span in the end bays of the teaching blocks necessitated deeper hollow tiles, the difference in floor depths being taken up by a small step at thresholds	
Staircases	*Location*	*Materials*	*Finish*	*Reasons and comments*	
Free-standing carriages spanning between in-situ R.C. slab landings. 13 risers to half landing, 7 risers to landing, etc.	Teaching blocks A, B and C	In-situ R.C.	½-in. granolithic on risers and treads with 9-in. by 9-in. black quarry tile inset in tread, soffit and sides of flight finished with stone paint		
Free-standing strings with open risers spanning between in-situ R.C. slab landings	Teaching block C	Balustrading to both stairs of ¾-in. by ¾-in. uprights at 5 in. c/c, welded to 2 in. by ⅝ in. top and bottom rails. Main supports to which rails are welded, are at 2 ft. 6 in. c/c grouted into concrete. Handrails ex. 3 in. by 1½ in. hardwood	White terrazzo with glass mosaic inset nosing		
Height: floor to floor 10 ft. 9 in. Width between landings: 10 ft.					
				upper floor construction and staircases	**2** **4**
Roof construction	*Location*	*Materials*	*Finish*	*Reasons and comments*	
Flat roofs over end bays and central spine corridor with pitched roofs over classrooms with fall towards corridors to enable these to be lit by clerestory. Line of the fascia is maintained at the same height around the perimeter of the roof	Teaching blocks	Main trusses are from Canadian fir (Grade I.B.S.C.o.P. 112) 24 ft. span with double diagonal bracing and 12 ft. span with single diagonal bracing. Trusses carry 4 in. by 1½ in. rafters at 24 in. c/c. Corridor flat roofs are 8 ft. wide and are supported by 4 in. by 2 in. load bearing mullions at 24 in. c/c carrying 4 in. by 2 in. rafters at 18 in. c/c.	6-ft. by 2-ft. by 2-in. heavy duty woodwool slabs fixed in staggered pattern. ½-in. cement/sand screed with chicken wire reinforcement three layers bituminous felt laid in hot bitumen with topping of grey granite chippings. Fascia of 1 in. cedar boards secret nailed with Muntz metal nails on a backing of ½ in. asbestos/cement sheets. Ex. 6 in. by 2 in. capping pieces have an aluminium flashing	Shortage of steel at design stage led to the choice of timber for the roof construction. Trusses span between cross walls the pitch giving a sloping ceiling to the classrooms. It was considered necessary to use the same height and type of classroom/corridor partition on the top floor as in corridors on other floors. These partitions have borrowed lights at high level which occur directly below the corridor clerestory. For this reason the last classroom roof truss could not be placed in its logical position and was moved away from the partition giving the upper class-	

analysis

Roof construction continued	*Location*	*Materials*	*Finishes*	*Comments*	s	d
				room ceilings their characteristic form. Flat timber roofs are not laid to falls and the architects report that the uneven deflection inherent in this form of construction has led to the formation of unsightly pools of rainwater		
Flat roofs with clerestory lighting to gymnasia and monitor type lighting to changing rooms	Gymnasia and changing rooms	In gymnasia conventional timber trusses, 3 ft. 6 in. deep, at approx. 8 ft. c c, spanning 37 ft. 2 in. Bottom booms of trusses of two 7 ft. by 1¾ in. boards leaving a 1¾-in. gap with struts and ties arranged Warren girder pattern. Timber is West African mahogany and all connections are with ½ in. diameter bolts and standard split ring connectors. Trusses over changing rooms are 4 ft. 2 in. deep and span 19 ft. High and low level trusses are both carried by the same timber column made up of two 6-in. by 2-in. posts, 5¼ in. apart. The head of the column forms the end post of the high-level truss and the same for the low-level truss at the base	As for teaching block roofs	To give stability against wind-loading trusses in the gymnasium without changing room alongside are carried on R.C. columns, which carry down through the cavity brickwork. The low level truss was designed so that there should be as little obstruction as possible for the passage of daylight		
Flat roofs	Assembly hall	2-in. woodwool slabs nailed to timber rafters (5 in. by 1½ in. at 16 in. c c) carried by steel roof structure	As for teaching block roofs	No fall was needed in the screed because the space frames deflect 1 400th of the 73 ft. span giving a fall of 2 in. to midspan		
	Boiler house	Prestressed plank and hollow tile roof similar to the floors of the teaching blocks.	As for teaching block roofs			
				roof construction	**4**	**10¾**

Roof lights	*Location*	*Materials*	*Finish*	*Reasons and comments*		
Rectangular dome lights	Over kitchen, wash-up and gymnasia corridor	Cast glass domes. Carried on timber upstands				
				rooflights	**0**	**6**

Windows and external doors, glazing	*Location*	*Materials*	*Finish*	*Reasons and comments*		
Floor to ceiling windows in units approx. 10 ft. high by 5 ft. 7 in. wide, which link together to form a complete panel between cross wall projections	Teaching blocks	Ex. 4 in. by 2 in. hardwood frames; opening lights top-hung, projecting type and horizontal pivoting type both in galvanised steel. All glazed with 32 oz. clear glass. Below sill glazing is ¼ in. rough-cast glass backed by asbestos cement sheets screwed to the back of the frames. Below sill internally there is an independent skin of 4-in. clinker block plastered. 6½-in. precast concrete sills are used throughout. Externally below ground floor sills hardwood frames are replaced by 2-in. blue stable yard bricks laid on edge and tied back to the internal clinker skin	All hardwood frames oiled. Metal opening lights painted. The asbestos cement backing sheets are stove enamelled to required colours	All windows glazed direct to timber frames except for opening lights which are in metal. Window sizes have been carefully regulated to avoid the use of expensive glass		
Similar frames at 5 ft. c/c	Low level accommodation surrounding assembly hall	R.S. tee piece inserted between frames to strengthen long runs of window				
Similar frames approx. 6 ft. by 6 ft. with two mullions	High level windows to gymnasia	Geared metal opening lights				
					2	**11**
Metal window units	Monitor type high level windows to changing rooms	Standard aluminium casement sections throughout				
Patent glazing	High level windows to assembly hall	Aluminium sections				
Main entrance doors	Teaching block C	Two 6 ft. 5⅜ in. by ½ in. armour-plate glass doors, base channel and push plates of stainless steel. Door stiles of 2-in. dia. stainless steel tube with double action floor springs. All contained within hardwood surround				
External doors	General	Standard metal doors with ¼-in. Georgian wired plate glass				
				glazing	**0**	**10½**

analysis

PARTITIONING

Internal partitions and screens	*Location*	*Materials*	*Finish*	*Reasons and comments*
Composite partition and storage walls. Flush doors are contained within the frame at one end whilst below sill locker units fit between exposed mullions and project into the classrooms	Generally between classrooms and corridors in teaching blocks	Ex. 4-in. by 2-in. hardwood framing which above sill height is either glazed with ¼-in. rough cast or ¼-in. Georgian wired glass. Hopper vent at high level clear glazed with ¼-in. polished plate. Locker units are softwood, framed with ⅜ in. blockboard doors. On the classroom side lockers are backed with two ½-in. clinker block plastered, with a sill of mahogany-faced plywood	Hardwood frames finished with alkyd rubber varnish. Unveneered plywood painted, block-board doors painted	Where required by regulations the panel above the doors is in fireproof construction. From the corridor side it consists of ¼-in. painted plywood, two sheets of ⅜-in. plasterboard with ½-in. cavity and ¼-in. plywood facing, painted, to the classroom
Reinforced plaster	Where required in teaching blocks, usually sub-divisions between cross walls	¾-in. plasterboard core reinforced with 16 gauge galvanised wires at 12 in. c c held with special hook nails with ⅜ in. plaster over	Painted	Where this Chick type partition occurs below timber trusses which might deflect, 2-in. woodwool was used as the core material. The partitions are light and cheap. This patent system, devised by Mr. Chick, a Wiltshire builder, is described on page 326 of the Journal for April 5, 1956.
Sliding folding doors	(*a*) To separate assembly hall from stage. (*b*) Between assembly hall and rear cross access space. (*c*) Between cross access space and auxiliary halls	Generally hardwood framing with hardwood veneered flush plywood panelling. Sliding-folding doors in (*b*) are faced on the assembly-hall side with panels of perforated hardboard backed with sound-absorbent packing	Alykd rubber varnish to all hardwood frames. Perforated hardboard left natural	
Pivoting screens	Both sides of stage in assembly hall	Framing of hardwood with flush panelling of ¼-in. gaboon-faced plywood, sprung to natural curve	Two coats alkyd rubber varnish	The screens can be used in line at right angles to the stage, or they can be tilted at various angles, separately or parallel, to act as directional sounding boards. They can be completely removed
Glazed screens	Teaching block			

internal partitions and screens 1 0

W.C. doors and partitions	*Materials*
Flush doors and panelled partitions—70 partitions and 82 doors	Hardwood framed partition with ½-in. plywood panel fixed with hardwood beads. 1½-in. flush doors

w.c. doors and partitions 0 3½

Internal doors and ironmongery	*Location*	*Materials*	*Finish*	*Reasons and comments*
6 ft. 6 in. by 3 ft. flush doors	Throughout	Skeleton-cored timber doors to B.S.S. with plywood facing veneered with ⅛-in. plastic sheeting with hardwood	Aluminium door furniture usually asymmetrical knobs or lever handles	Doors are faced with plastic sheets to give a hygienic, easily-cleaned and maintenance-free surface

internal doors 1 4

ironmongery 0 7½

FINISHINGS

Floor finishes	*Location*	*Materials*	*Reasons and comments*
1 in. nominal Missanda wood block on ¾-in. cement sand screed	Assembly hall auxiliary halls changing rooms	Plastic seal	Studded rubber tiles were used on all upper floors to reduce sound transmission through impact. Skirtings are not applied to walls but where considered necessary the bottom 6 in. of plastered surface is in Keenes cement
1-in. nominal Gurjon strip on 2-in. by 2-in. joists, held down by metal clips	Stage, gymnasia	Plastic seal	
4-in. by 4-in. by ⅛-in. quarry tile on approx. ¾-in. screed	Shower rooms, pottery room, lavatories and kitchen	Self finished	
12-in. by 12-in. thermoplastic tile on approx 1⅛-in. screed	Offices to kitchen, stores, ground floor teaching rooms	Self finished	
12-in. by 12-in. studded rubber tile on approx 1⅛-in. screed	Corridors, cloak spaces, some specialist rooms, all teaching rooms on upper floors	Self finished	
2-mm. P.V.C. sheeting on approx 1⅛-in. screed	Laboratories, housecraft rooms	Self finished	

floor finishes 3 3½

Wall finishes	*Location*	*Finish*	*Reasons and comments*
Medium hard gypsum plaster	General	Emulsion paint	
Mosaic	Flank walls	One side in hand-made English glass, the other in vitreous tessarae opaque	
Unglazed wall tiles on cement sand screed	Assembly hall	Self finished	
Sprayed asbestos	Assembly hall. Casing to beams, etc.	Self finished	

wall finishes 0 11½

analysis

				s	d
Ceiling finishes	*Location*	*Materials*	*Finish*		
Suspended ceilings	Top floor, teaching blocks	Vermiculite plaster on ¼-in. mesh, 22 gauge, expanded metal carried by 3 in. by 1½ in. joists at 16 in. c/c.	Emulsion paint		
Asbestos spray	Corridors, clock spaces, staircases common rooms in teaching blocks. High level roof to assembly hall	Normally sprayed direct to soffit of concrete slabs. On the corridor ceilings of teaching block top floors it is sprayed on $\frac{3}{16}$-in. asbestos cement sheets held by 4-in. by 2-in. joists at 18 in. c/c.	Self finished		
Plaster	Ground floor and first floor ceilings to classrooms in teaching blocks.	Medium hard plaster direct on soffit of plank and hollow pot floors	Emulsion paint		
	Auxiliary halls	Medium hard plaster on metal lathing			
½-in. insulation board	Gymnasia	V.-jointed board secured direct to 4-in. by 2-in. rafters	Self finished		
Cement render	Boiler house	Direct to soffit of concrete roof			
			ceiling finishes	**1**	**2½**

Decorations	*Paint types*	*Location*	*Colour Ref.*	*Colour scheme and comments*		
Applied paint finish	Two coats full-gloss oil on primer	Steel opening lights, steel doors, etc.	Archrome (Munsell) colour range—11 colours, 1 neutral. Old B.S. colours 222, 223, 536. Black, white	In classrooms with a north or east aspect warm colours have been used (green-yellows) while cool colours (blues) have been used in rooms with a southerly aspect. Colour in other areas is used to define space to give climax or contrast. External colour is subdued, leaving the natural materials to "express" the building		
	Two coats plastic emulsion	Plastered walls generally				
	Stove-enamelled asbestos cement sheets	Below sill behind glass facing				
				decorations	**1**	**4½**

FITTINGS

Cloak fittings	*Location*	*Materials*		
Island or promontory fittings with back to back seating, double-banked shoe lockers under high level coat pegs at 5-in. c/c.	1,732 shoe lockers and coat pegs are provided in all the teaching blocks	1¼-in. m.s. tubing uprights, plugged to floor supporting peg rails. Seats and lockers fit between uprights and are of box-frame timber construction		
			cloakroom fittings	**0**	**3½**

Other fittings

Classroom cupboards, island benches, demonstration benches, wall cupboards, housecraft room fittings, gym kit lockers, etc., are all standard LCC equipment, designed by their furniture department, supplied according to LCC schedules, the cost being included within the building costs. Cupboards are designed to fit beneath working tops and benches which are detailed by the architects to fit the particular requirements of the school layout, structure, etc. Book lockers were designed by the architects and are located in the walls between classrooms and corridors; their cost is included within the element internal partitions and screens. Chalkboards, curtains and fire fighting equipment are supplied by the LCC but their cost is excluded from the building costs.

other fittings **3** **1½**

SERVICES

Rain-water disposal	*Location*	*Materials*	*Finish*		
Standard roof outlets	General	Cast-iron pipes. In gymnasia galvanised steel tubes	Normally within cupboards or storerooms, elsewhere housed in ducts		
			rainwater disposal and external plumbing	**0**	**5**

Sanitary fittings

88 W.C's, 88 hand-basins, 25 shower cubicles and fittings (gym. block), 1 bath (demonstration flat), 3 urinals (male visitors' lavatories)

sanitary fittings **0** **6½**

Hot water storage	*Location*	*Materials*	*Capacity*	*Reasons and comments*
Calorifiers	Boiler house	Galvanised steel indirect cylinders	Three 500 gallons	Indirect system with galvanised steel piping and a pumped secondary circulation

Cold water storage	*Location*	*Materials*	*Capacity*	*Reasons and comments*
Single-storage tank	Roof of teaching block A	Reinforced concrete lined with asphalt	900 gals.	The tank is an integral part of the reinforced concrete frame to teaching block A

Heat exchanger type	*Location*	*Criteria. Temp.*	*Reasons and comments*
Hospital-pattern radiators	General except for assembly hall and gymnasia	All to MOE requirements	In a space with as large a volume as the assembly hall and a large heat loss it was considered essential to make use of the fabric of the structure in heating the building. The system uses ½-in. piping with an asbestos cement cover enabling normal heating water at 180 deg. F. to be used
Dado radiant panels	Gymnasia		
Embedded floor heating	Assembly hall		

analysis

			s	d
Boiler type and capacity	*Heat load and fuel*	*Stoking method*		
Three C.I. sectional	Each boiler output 1,276,000 B.Th.U.'s per hour. 200 sec. oil stores in three 4,000 gal. tanks	Automatic		
Water heater type	*Heat load and fuel*	*Stoking method*		
One C.I. sectional	1,276,000 B.Th.U.'s per hour. 200 sec. fuel oil	Automatic		

Ventilation	*Location*	*Type*	*Air change rate*
Extract	Assembly hall	Centrifugal type	2½ per hour
	Kitchen	Axial flow in extract hood	2½ per hour

Gas installation

There is a gas supply for the laboratories and for cooking equipment in the kitchens and housecraft rooms

boiler type, water heater type, ventilation, hot and cold water storage, heat exchanger, gas installation — **7 0**

Drainage	*Location*	*Materials*
Combined soil and rainwater system	General	C.I. below buildings to s.g. stoneware pipes. Manholes in brickwork with C.I. covers

drainage adjacent to buildings — **0 9**

Electrical installation: source and fitting type	*Location*	*Illumination level*	*Quality*	*Reasons and comments*
Dispersive, plastic reflectors. Tungsten source	Classrooms	12-14 ft. candles	Daylight	In the assembly hall the combination of new-warm white cold cathode, new-warm white fluorescent and recessed tungsten fittings gives a well balanced mixture of artificial lighting for general purposes
Recessed fittings. Tungsten source	Classrooms on top floors	10 ft. candles	Daylight	
Cold cathode Fluorescent Recessed fittings Tungsten source	Assembly hall	16 ft. candles	Daylight	
Directional fittings	Main staircase			
15 circuit stage lighting board	Front bar of spots and floods. Bar of wide angle floods for cyclorama			

Wiring and switching type	*Location*	*Materials*
Main cable	Laid in heating ducts	T.I.L.C.S.W. & S.
Sub main	Distributed through heating ducts, along vertical service ducts to distribution boards	Mineral insulated copper sheathed wire
Sub circuit	General	P.V.C. cables in conduit
Sub switches	General	Recessed type with anodised aluminium plate

electrical installation	**4**	**5½**
paved areas	**1**	**0½**
total net cost per sq. ft.	**53**	**4**
external works*	**4**	**9**
total gross cost per sq. ft.	**58**	**1**

*External works = drainage beyond manholes adjacent to building; roads, paths and fencing; site layout and planting; playing fields.
Gross cost = net cost plus external works.

TIME SCHEDULE

First instructions from client	December, 1951	Tender date	July, 1953
Sketch scheme submitted	March, 1952	Work commenced	August, 1953
Working drawings commenced	September, 1952	Work completed	October, 1954
Working drawings completed	March, 1953		

RATIOS

Area of enclosing walls / Total floor area	0·60 / 1	Area of windows (inc. ext. shutters) / Total floor area	0·48 / 1
Area of solid wall / Total floor area	0·12 / 1	Total roof area / Total floor area	0·53 / 1

analysis

SITE AND PLAN ANALYSIS

Site accommodation	*Area in acres*	*% of total*	*Plan accommodation*	*Area sq. ft.*	*% of total*	*Area per place*
Building	1·25	17·9	Halls	8,470	7·8	5·3
Playing fields	0·95	13·6	Stage	1,185	1·1	0·7
Hard playing areas	1·25	17·9	Gymnasia	7,194	6·7	4·5
School garden	0·14	2·0	Library	1,654	1·5	1·0
Planting near building	0·33	4·7	General and practical classrooms	45,477	42·0	28·1
Roads	0·29	4·1	Staffrooms and administration	4,524	4·2	2·8
Paths and paving	0·32	4·6	Service	7,071	6·5	4·4
Total area of site excluding existing buildings and adjacent areas	7·0	100·0	Stores, sanitary accommodation circulation and area occupied by internal walls, etc.	32,714	30·2	20·2
Total area of site including existing buildings and adjacent areas	9·0	—	Total	108,289	100·0	67

COST ANALYSIS

			£	s.	d.
No. of form entries	10		288,650	0	0
No. of places	1,620	Net cost per place	178	3	7
Floor area, sq. ft.	108,289	External works	25,661	12	3
No. of sq. ft. per place	67	Gross cost	314,311	12	3
		Gross cost per place	194	0	5

NOTE: Allowable net cost per place at time of planning was £250.

COST COMMENTS

This is the third analysis to be published of secondary schools for 1200 or more pupils, and having a contract value in excess of £300,000. The summary given below shows that this project is clearly the least costly of the three.

	Mayfield	*Woodland* (See AJ, Aug. 25, 1955)	*Catford* (See AJ, Oct. 13, 1955)
1. Tender date	July 1953	July 1952	Oct. 1952
2. Number of places	1620	1200	1200
3. Area per place	67	72½	68
4. Net costs	288,650	281,761	288,000
5. Net cost	53*s.* 4*d.*	65*s.* 4½*d.**	80*s.* 7*d.*
per foot super	21*s.* 5½*d.*	35*s.**	43*s.* 8*d.*
	32*s.*	30*s.**	37*s.*

* Central block only analysed.

It can be seen that Mayfield accommodates 420 more pupils than Catford for the same capital outlay and the same space. The differences in the building cost in the elements forming the structure (see page 172) are very considerable. Clearly, the need to avoid use of a steel frame, and the consequent combined use of modern and traditional materials has resulted in considerable economies. Such an approach to the problem i.e. the introduction of relatively more of the wet trades would lead to a much longer contract period in certain parts of the country.

One might have expected that without a frame, more expensive load-carrying external walls and partitions would have been found in Mayfield as compared with the other two schools. But this is not so, even allowing for widely different wall and window to floor ratios.

SITE ORGANIZATION

Site labour and equipment: the labour on the site was organised under the following:

1 general foreman, 1 foreman carpenter, 1 foreman bricklayer, 1 ganger foreman, 1 time and materials clerk and 1 surveyor.

The following equipment was used:

Mechanical excavators and lorries (to reduce digging and drains), for 2 months. Diesel mixers and hoists, electric hammers and drills, for the duration of contract.

Job management: A two-year progress chart was compiled at the beginning of the job (Aug., 1953), although the actual contract time was 2½ years. Three quarters of the school was completed and handed over in September, 1955, and the whole job was completed in November, 1955. Wherever practicable, work was put on a bonus basis. The job was visited at least twice a week and sometimes fortnightly, when queries and other problems appertaining to the job were discussed. All materials requisitioned by the site, office were dealt with at head office.

Sub letting: plumbing, plasterer, painter, glazier wall and floor tiling. This is normal practice for this general contractor.

CONTRACTORS

Clerk of Works: F. Wright. *General contractors:* C. Miskin & Sons Limited. *Sub-contractors and suppliers: Heating and mechanical services:* Barrett & Wrights Ltd. *Pre-stressed concrete floors:* Costain Concrete Co. Ltd. *Damp proof course:* G. M. Callender & Co. Ltd. *Bricks:* Richard Parton Ltd., Stoneware Ltd. *Wood window frames:* Walter Lawrence & Sons Ltd. *Slate facings:* The Bow Slate & Enamel Co. Ltd. *Steel windows:* Crittall Manufacturing Co. Ltd. *Structural steelwork:* Carter-Horseley (*Engineers*), Ltd. *Electrical installation:* Berkeley Electrical Engineering Co. Ltd. *Boiler house chimney:* Chimneys Ltd. *Balustrading and metalwork:* The Birmingham Guild Ltd. *Tarmacadam:* A. C. W. Hobman & Co. Ltd. *Lightning conductor:* W. J. Furse & Co. (London) Ltd. *Patent glazing and aluminium windows:* Aygee Ltd. *Chain link fencing:* Chain Link Fencing Ltd., Peerless Fence & Product Ltd. *Pre-cast concrete:* Malcolm Macleod & Co. Ltd. *Terrazzo:* W. B. Simpson & Sons Ltd. *Bituminous felt roofing:* William Briggs & Sons Ltd. *Main staircase steelwork:* Scaffolding (Great Britain) Ltd. *Sanitary Fittings :* Stitsons Sanitary Fitting Ltd. *Asbestos spray:* Turners' Asbestos Cement Co. Ltd. *Stove enamelled asbestos:* The Atlas Stone Co. Ltd. *Sill tiles:* McKenzie Brytiles Ltd. *Glass domes:* T. & W. Ide Ltd. *Doors:* Veneercraft Ltd. *Wall tiling:* Dennis M. Williams. *Roller shutters:* Dennison, Kett & Co. Ltd. *Wood block and strip flooring:* Horsley, Smith & Co. (Hayes) Ltd. *Thermoplastic, rubber, cork and p.v.c. sheet flooring:* Semtex Ltd. *Remote control gear:* Arens Controls Ltd. *Ironmongery:* A. G. Roberts Ltd. *Sliding folding door gear:* E. Hill Aldam & Co. Ltd. *Cloakroom fittings (metal work):* R. Smith (Horley) Ltd. *Cloakroom fittings (wood work):* W. H. Gaze & Sons Ltd. *Main entrance doors:* Frederick Sage & Co. Ltd. *Metal faced ply:* Venesta Ltd. *Horticultural works:* Gilliam & Co. Ltd. *Oil and emulsion paints:* Hadfield (Merton) Ltd. *Distemper:* The Walpamur Co. Ltd. *Alkyd rubber varnish:* Vitretex (England) Ltd. *Reinforced plaster partitions:* Patentee: Highworth Processes Ltd.

working detail

GREENHOUSE: SCHOOL AT GREAT MISSENDEN, BUCKINGHAMSHIRE

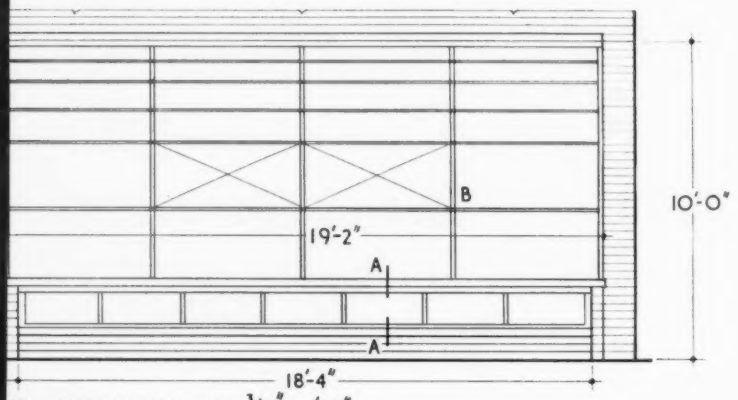
Frederick B. Pooley, architect to the Buckinghamshire County Council

The greenhouse is built from extruded aluminium-alloy sections, the glass being held by p.v.c. extrusions. The timber-framed dutch-lights, which are removable, are retained in position by dowel pegs fixed in the sill and engaging in holes drilled in the sides of the frames.

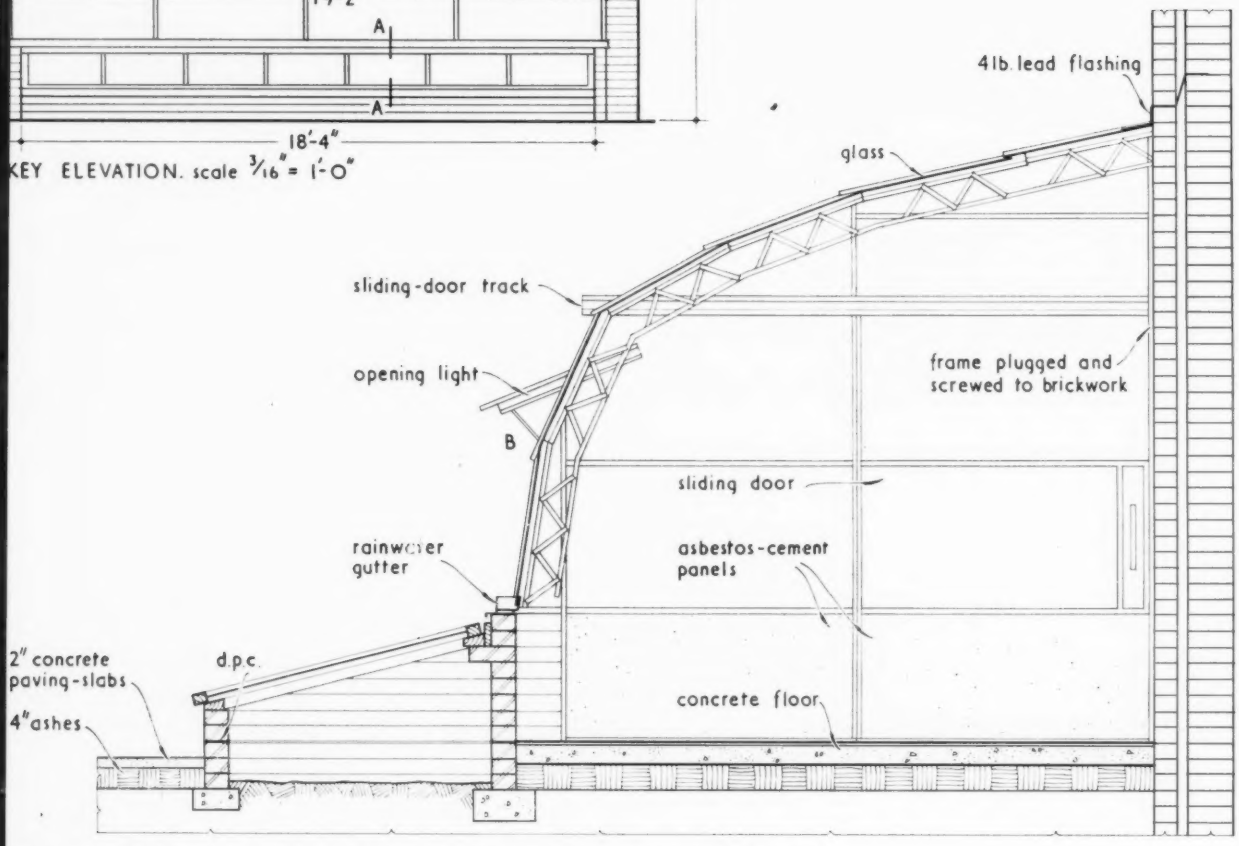
working detail

GREENHOUSE: SCHOOL AT GREAT MISSENDEN, BUCKINGHAMSHIRE

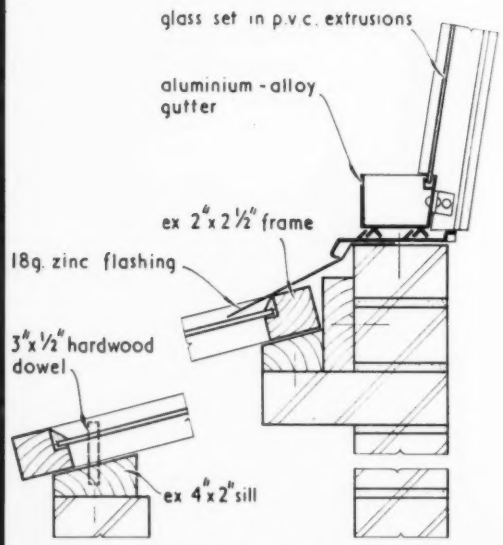
Frederick B. Pooley, architect to the Buckinghamshire County Council



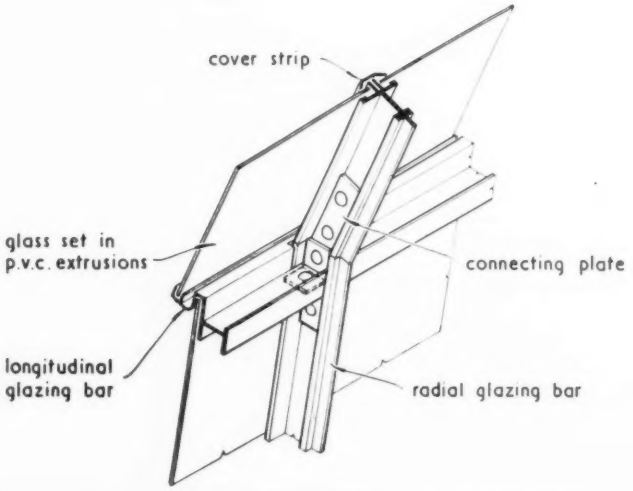
KEY ELEVATION. scale 3/16" = 1'-0"



SECTION THROUGH GREENHOUSE AND DUTCH-LIGHTS. scale 3/8" = 1'-0"



SECTION 'A-A'. scale 1/8 full size



ISOMETRIC SKETCH OF JOINT AT 'B'.

working detail

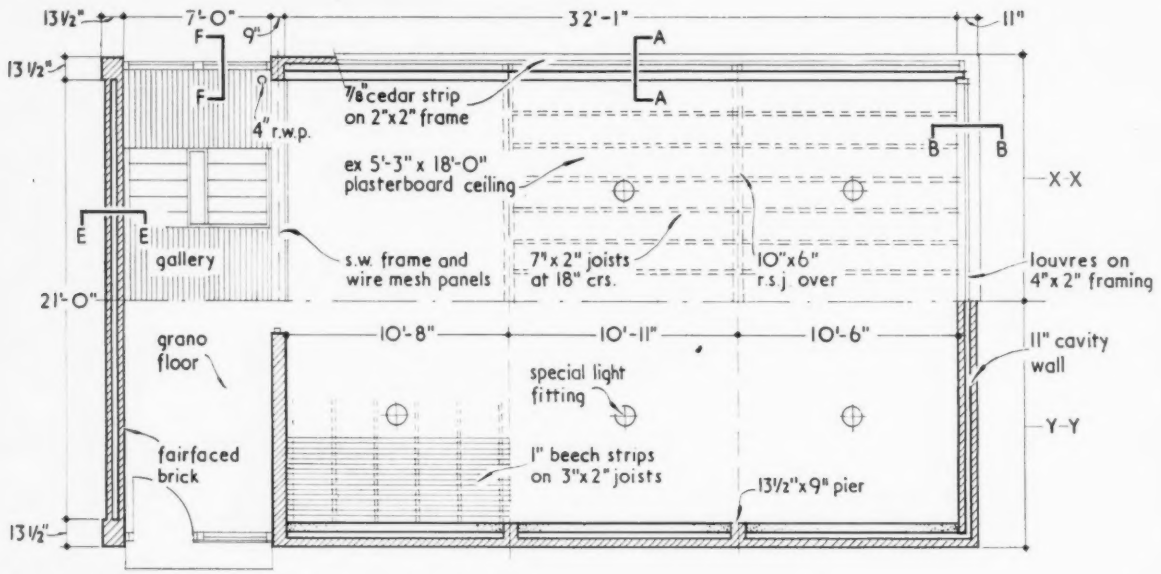
SQUASH COURT : ST. ANTONY'S COLLEGE, OXFORD

Stephen Gardiner, architect

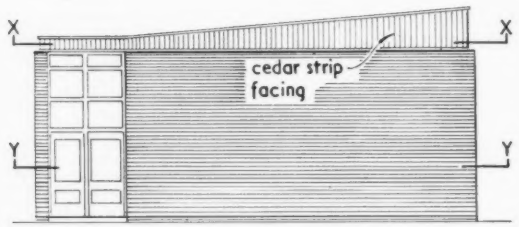
The spectators' gallery is protected by a wire-mesh screen. The door to the court has been specially designed so that when shut it is flush with the wall surface, and has an inset handle. The wall lines are 1-in. strips of aluminium-alloy, fixed to timber grounds, and are painted scarlet. Each light fitting contains a 500 watt bulb and has a wire guard.

SQUASH COURT : ST. ANTONY'S COLLEGE, OXFORD

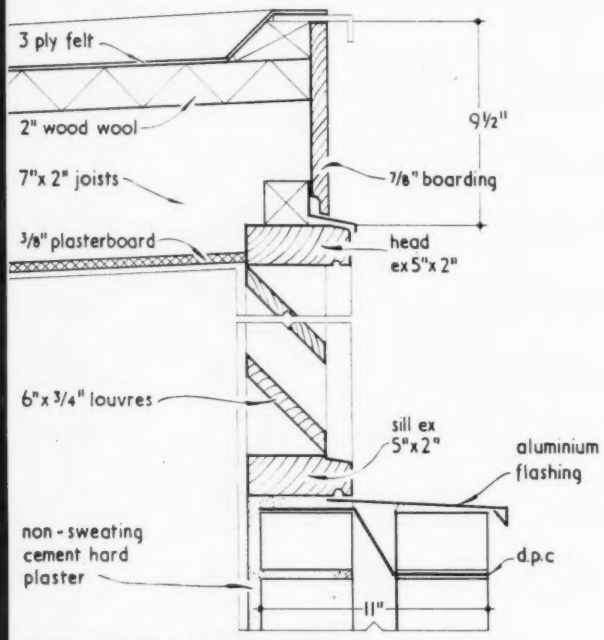
Stephen Gardiner, architect



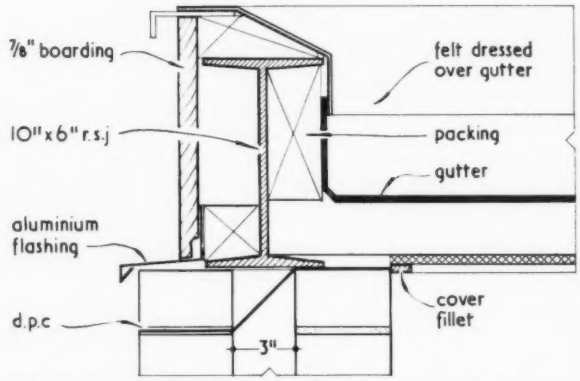
PLAN AT LEVELS X-X AND Y-Y. scale 1/8" = 1'-0"



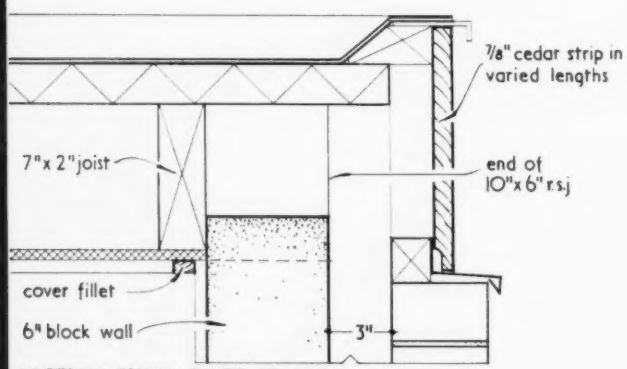
ENTRANCE ELEVATION scale 1/16" : 1'-0"



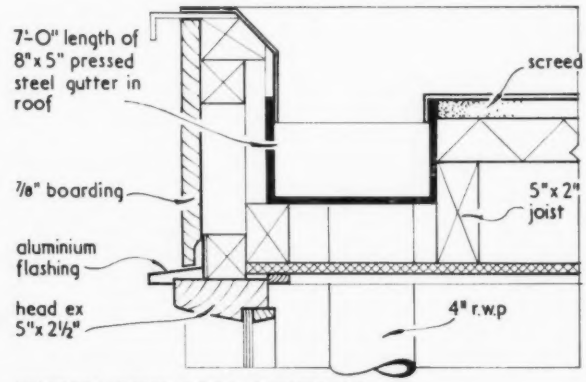
SECTION THRO' LOUVRES AT B–B. scale 1/8 full size



SECTION THRO' ROOF GUTTER AT E-E. scale 1/8 full size



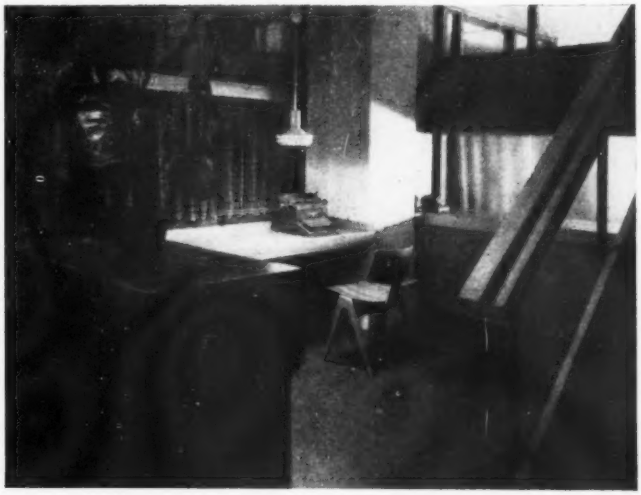
SECTION THRO' EAVES AT A–A SHOWING VERTICAL BOARDING. scale 1/8 full size



SECTION THRO' ROOF GUTTER AT F–F. scale 1/8 full size

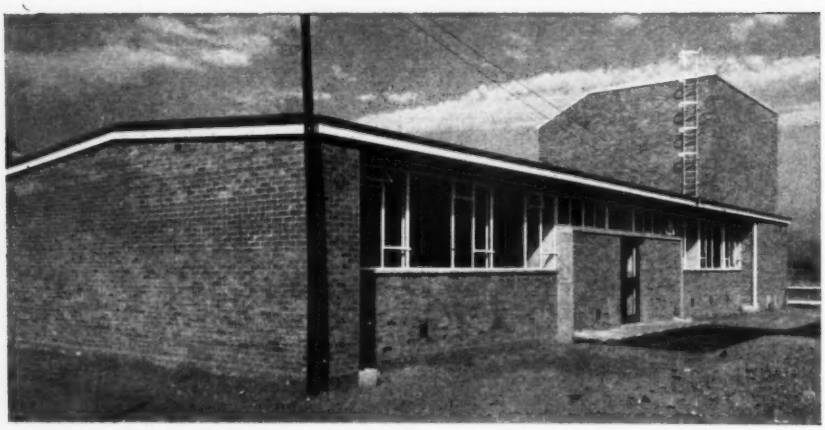
BUILDINGS IN THE NEWS

Offices at Truro, Cornwall



Illustrated here are converted premises for a building society in Boscawen Street, Truro, which form part of the remodelling of the City Hall foyer. Within an area of approximately 1,400 sq. ft., the architects, Taylor and Crowther, have designed a gift shop and a branch office for the Bridgwater and West of England Permanent Building Society. In the centre of the street facade there is a small arcade with entrance doors to the shop and offices. On either side of the arcade is a display window. Above left, the building society's reception room seen from the street. Above right, the reception area, showing a glazed screen, behind which is the manager's office and a free-standing steel staircase leading to the newly constructed mezzanine floor. Colours used include white on the granite walls, dark red for the composition floor tiles and scarlet for the tops of desks and built-in fittings. The general contractor was W. J. Roberts.

BUILDINGS IN THE NEWS continued



Photographic unit, Nacton, Ipswich, Suffolk

A new photographic department was required by Ransomes, Sims and Jefferies Ltd. at Nacton, near Ipswich, and was designed by Hare and Pert. The building, seen from the west in this photograph, accommodates departments to deal with all the most modern methods of photography for publicity purposes. The tall block contains a studio, equipped with a 3-ton travelling crane, where the clients' products are photographed from a high-level platform.

Announcements

O. H. Collins, M.A., F.R.I.B.A., F.R.I.C.S., M.R.SAN.INST., of 34, London Wall, E.C.2, previously in practice with M. Glicker, A.R.I.C.S., is now in practice with M. E. Collins at 31, Jamieson Street, W.8; telephone Bayswater 0693. M. Glicker, A.R.I.C.S., is now in partnership with R. P. Hildebrand, A.R.I.B.A., and continues to practice from 34, London Wall, E.C.2; telephone Monarch 6754/5. Both firms will continue in close co-operation.

R. A. Jensen, director of housing and borough architect for Paddington, is leaving to take up an appointment to the new Chair of Architecture at Adelaide University. He expects to leave this country about the end of October.

The IAAS say that widespread interest is being displayed in the new municipal land surveying examination recently announced and that a number of requests have been received for details of suitable facilities.

Certain schools have already indicated their willingness to introduce special courses to cover this examination and to enable an accurate survey to be made, applicants who experience any difficulty in obtaining study facilities should notify the IAAS, at 29, Belgrave Square, S.W.1.

The Uxbridge Flint Brick Co. Ltd. have made arrangements for unified administration with The Cape Asbestos Co. Ltd. and in future the Company, under which all activities will be combined, will be known as: The Cape Building Products Ltd.

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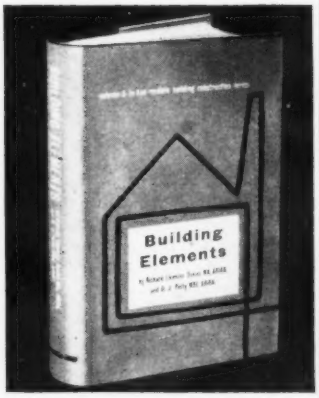
building elements by R. LLEWELYN DAVIES, M.A., A.R.I.B.A. and D. J. PETTY, M.B.E., M.A., A.R.I.B.A. Foreword by W. A. ALLEN, B.ARCH., A.R.I.B.A.

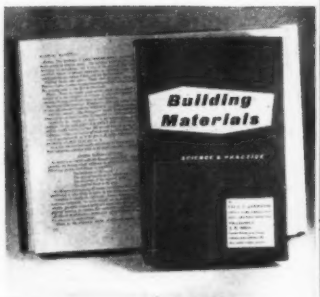


This Book deals with the structural elements of which a building consists, its walls, roofs, floors, windows, etc., and explains the functional requirements a building has to meet. It then describes how these requirements are met in the actual design of the various structural elements.

The book is divided into two parts, the first of which contains chapters on the requirements of building elements under the headings of Design and Expression; Weather Exclusion; Thermal Insulation; Sound Insulation; Fire Protection. In Part 2 *chapters deal with the principal kinds of External Walls; Internal Walls; Roofs; Floors; Stairs; Flues and Fireplaces; Windows and Doors; which are in current use, and show how far and in what way, each of these elements fulfils the requirements described in Part* 1.

Size: 8¾*in. by* 5⅝*in., containing* 384 *pages including over* 190 *diagrams and halftone illustrations.* 37*s.* 6*d. net, postage* 1*s.* 4*d.*

building materials by CECIL C. HANDISYDE, A.R.I.B.A. Foreword by A. H. MOBERLY.



This book provides up-to-date information on building materials in a form most useful to architectural students and practising architects. In addition to traditional materials, Mr. Handisyde deals with the many new materials which have come into use during the last twenty-five years, and takes full account of the very considerable amount of recent scientific research which has been brought to bear on both old and new materials. He examines thoroughly those problems of increasing concern to architects today—to what extent will alternative materials provide comfortable buildings, buildings that are warm and quiet and reasonably secure against fire, as well as being weatherproof and strong enough for their purpose.

Size: 8¾ *in. by* 5⅝ *in. Containing* 336 *pages including* 58 *diagrams and halftone illustrations. Second edition,* 30*s. net, postage* 1*s.* 3*d.*

structure in building by W. FISHER CASSIE, PH.D., M.S., F.R.S.E., M.I.C.E., M.I.STRUCT.E., and J. H. NAPPER, M.A., F.R.I.B.A., A.M.T.P.I. Foreword by W. A. ALLEN, B.ARCH., A.R.I.B.A.

Steel, concrete, aluminium alloys, etc., have revolutionised structural design, and although this field is largely an engineering one, today it is essential for the architect to understand something about it. No attempt is made in the book to give the formulae and methods of analysis and design used by the structural engineer; rather it provides the architect and student with mental pictures of how structures behave, for without the ability to 'feel' how forces act and react in the support of buildings, the architect cannot hope to put into practice the spatial conceptions of present-day architecture.

The book fills a gap in the literature on structural design and provides the architect with all the information he needs about systems of construction, their character, possibilities and limitations, to enable him to produce designs for new buildings with economy and imagination.

Size: 8¾ *in. by* 5⅝ *in. Containing* 268 *pages including over* 150 *diagrams and halftone illustrations. Second impression,* 30*s. net, postage* 1*s.* 2*d.*

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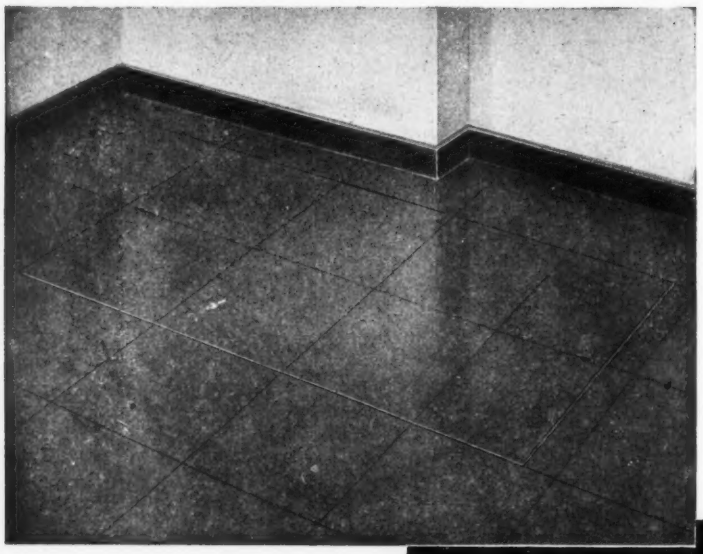

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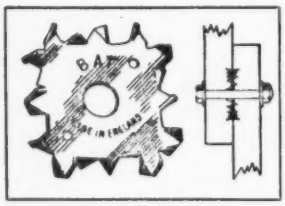

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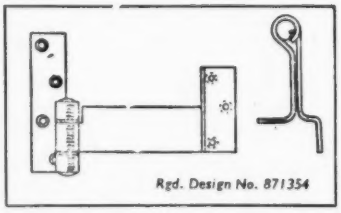

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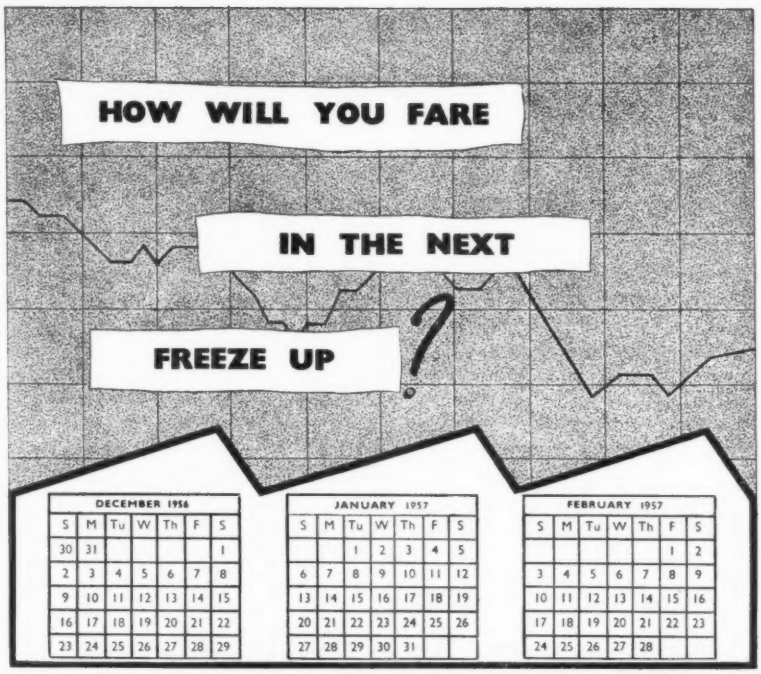

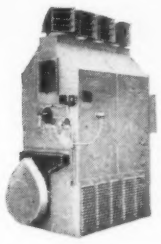

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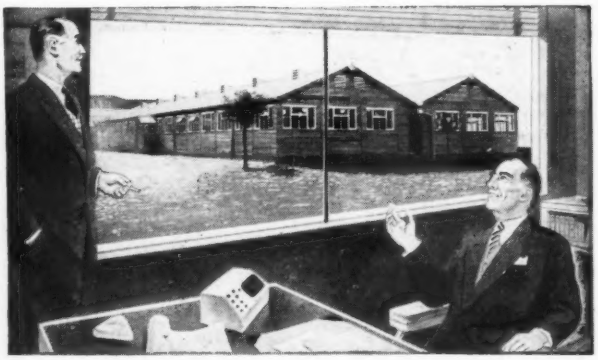

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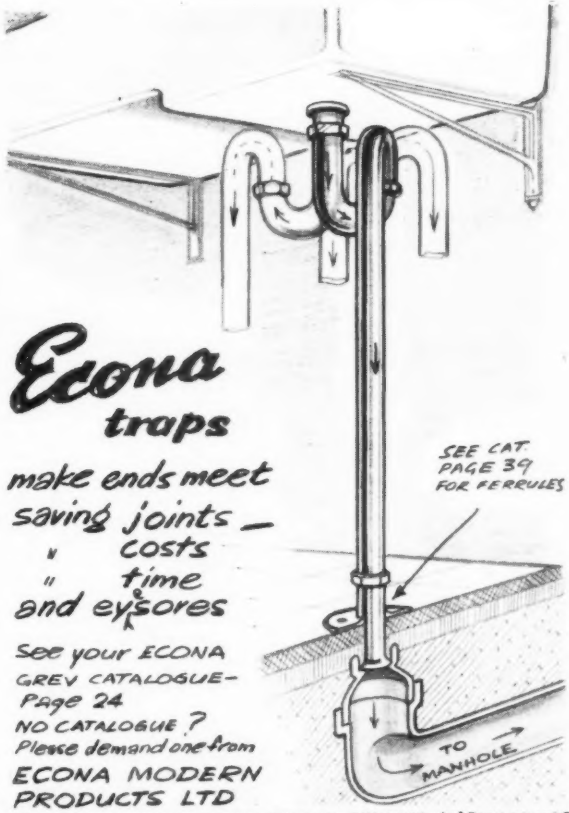

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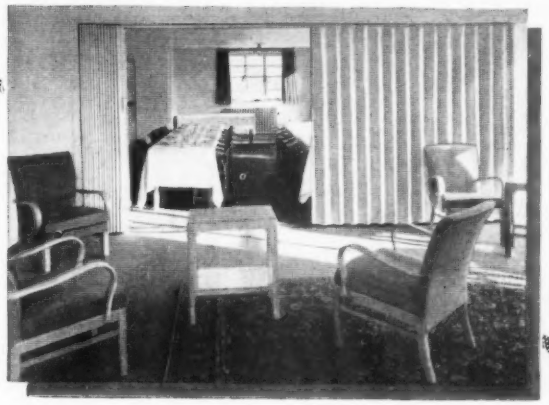

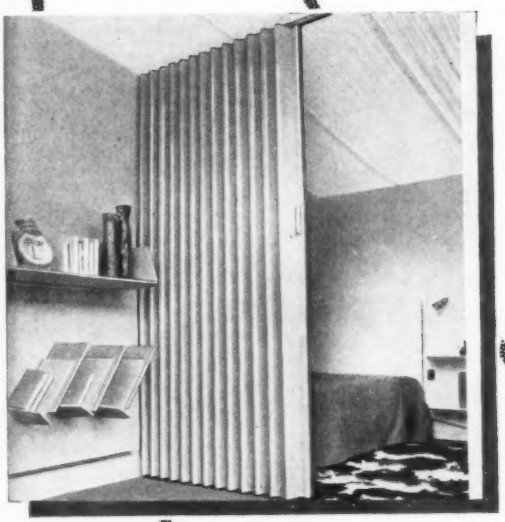

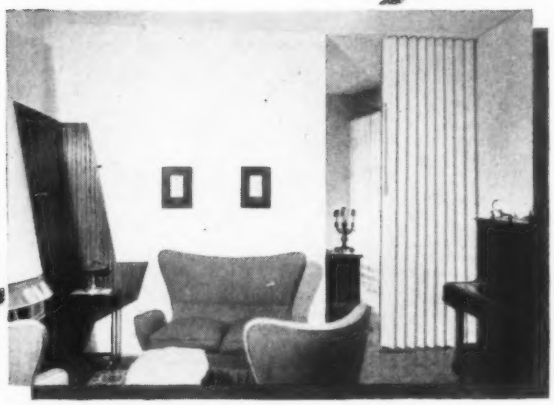

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CLASSIFIED ADVERTISEMENTS

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.

Public and Official Announcements

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

HAYES AND HARLINGTON URBAN DISTRICT COUNCIL

Applications are invited for:—

(*a*) ARCHITECTURAL ASSISTANTS (PERMANENT) (two vacancies) within Grade A.P.T. II, *i.e.*, £595—£675 per annum. (*b*) SENIOR ARCHITECTURAL ASSISTANT (TEMPORARY) within Grade A.P.T. IV, *i.e.*, £710—£885 per annum, plus London weighting, in each instance, 21—25 years £20 per annum, 26 years and over £30 per annum. Candidates for (*a*) must have passed the R.I.B.A. Inter. Exam., good experience of housing work with local authority. Housing accommodation will be made available for one of these two appointments if necessary. (*b*) Must be a Registered Architect, have good general experience in design and construction in relation to municipal housing and other works, and capable of supervising large building contracts. Housing accommodation will be made available if necessary. 5-day week. Further particulars and form of application obtainable from the undersigned, which, when completed, must be returned as soon as possible.

GEORGE HOOPER,
Clerk and Solicitor.

Town Hall, Hayes, Middlesex. 1277

BOROUGH OF BUXTON
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for the above permanent appointment at a salary in accordance with the "Special" Grade for Architectural Assistants (£690—£840) per annum.

Applicants must be registered Architects and have had experience in housing and estate development. Preference will be given to those who have passed all or part of the R.I.B.A. examination.

The appointment will be subject to the provisions of the Local Government Act, 1937, and the successful candidate will be required to pass a medical examination.

Canvassing will disqualify, and an applicant who is related to any member or senior official must disclose the fact in his application.

Applications, giving the names of two persons to whom reference may be made, to be delivered to the undersigned not later than 9 a.m. on Wednesday, the 22nd August, 1956.

A. C. W. RYLAND, A.M.I.C.E.,
Borough Engineer.

Town Hall, Buxton, Derbyshire.
26th July, 1956. 1886

CITY OF PETERBOROUGH
APPOINTMENT OF ARCHITECTURAL ASSISTANT
Grade A.P.T. II

Applications are invited for the above appointment in the City Engineer's Department. Applicants must possess a sound knowledge of building construction and be capable of preparing working and detail drawings under supervision. Previous experience on school buildings will be an advantage.

Applications stating age, experience, details of qualifications, together with copies of three recent testimonials, should be sent in envelopes endorsed "Architectural Assistant" to Mr. L. H. Robjohn, M.B.E., A.M.I.C.E., City Engineer and Surveyor, Town Hall, Peterborough, to reach him not later than Tuesday, 7th August.

Consideration will be given to the provision of Council housing accommodation.

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

C. PETER CLARKE,
Town Clerk.

Town Hall,
Peterborough.
July, 1956. 1804

CUMBERLAND COUNTY COUNCIL
APPOINTMENT OF SENIOR QUANTITY SURVEYOR
A.P.T. GRADE VI (£880×£40—£1,080)

Applications are invited for the above appointment in the County Architect's Department. N.J.C. Service Conditions. Post pensionable. Subject to medical examination.

Applicants should be A.R.I.C.S. (Quantities) or hold other equivalent qualifications, and be fully experienced in cost analysis, estimating, taking-off abstracting and billing, measurement of work in progress, and settlement of final accounts.

Applications, on forms obtainable from John H. Haughan, F.R.I.B.A., County Architect, 15, Portland Square, Carlisle, to be received by him not later than Wednesday, 15th August, 1956.

G. N. C. SWIFT,
Clerk of the County Council.

1835

THE CORPORATION OF GLASGOW
ARCHITECTURAL AND PLANNING DEPARTMENT
ASSISTANT ARCHITECTS
PLANNING ASSISTANTS
CIVIL ENGINEERS
QUANTITY SURVEYORS

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

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

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

1685

COUNTY BOROUGH OF GREAT YARMOUTH
SCHOOLS ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of a TEMPORARY ASSISTANT ARCHITECT within Grade A.P.T. VI (£880—£1,080). The post is superannuable and subject to the National Conditions of Service.

Candidates must be Associate Members of the R.I.B.A. and should have experience in design, alterations and construction of schools. Previous knowledge of schools for partially deaf and blind children will be an advantage.

Housing accommodation will be made available if required and the post is guaranteed for a minimum of two years.

Applications stating age, qualifications, experience, with details of past and present appointments, together with the names of two referees, should reach the Schools' Architect, 22, Euston Road, Great Yarmouth, by 17th August, 1956.

D. G. FARROW,
Chief Education Officer.

22, Euston Road,
Great Yarmouth. 1897

BOROUGH OF BEXLEY
ASSISTANT ARCHITECT

Salary—Grade A.P.T IV (£710—£885 p.a.) plus London weighting.

Candidates should have passed the final examination of the R.I.B.A. and have had experience in housing, school and other building projects.

Forms of application with conditions of appointment obtainable from Borough Engineer, West Lodge, Broadway, Bexleyheath, to whom completed applications must be returned by Monday, 20th August, 1956.

Canvassing will disqualify.

ARTHUR GOLDFINCH,
Town Clerk.

1796

CITY OF PETERBOROUGH
APPOINTMENT OF QUANTITY SURVEYOR
CITY ENGINEER'S DEPARTMENT

Applications are invited from suitably qualified Quantity Surveyors for the above appointment at a salary in accordance with Grades II and III A.P.T. (£595 per annum rising by annual increments to a maximum of £765).

Applicants should have wide experience including taking off bills for new schools.

Any further information can be obtained from the City Engineer and Surveyor (Mr. L. H. Robjohn, M.B.E., A.M.I.C.E.).

Consideration will be given to the provision of Council housing accommodation.

Closing date for receipt of applications Tuesday, 7th August.

C. PETER CLARKE,
Town Clerk.

Town Hall,
Peterborough.
July, 1956. 1802

The CHESHAM URBAN DISTRICT COUNCIL requires an ARCHITECTURAL ASSISTANT wishing to obtain experience in Municipal work. He will be engaged primarily upon the reconstruction of Council Offices and other capital works. Candidates should have passed the R.I.B.A. Intermediate Examination or possess equivalent qualification from a recognised School of Architecture. Remuneration on the scale A.P.T. IV (£710×£35—£885). The post is superannuable and subject to the N.J.C. conditions. Housing accommodation is made available when required. Further particulars available from the Engineer and Surveyor.

Applications, disclosing any relationship to a member or senior official of the Council, and giving the names of two referees to whom reference can be made, should be addressed to the Clerk of the Council, Council Offices, Chesham, Bucks., not later than Monday, 27th August, 1956.

1888

HARLOW DEVELOPMENT CORPORATION
Frederick Gibberd (Architect Planner)
Victor Hamnett (Executive Architect)

Opportunities exist in interesting New Town work for ASSISTANT ARCHITECTS (£695×£30 (4)×£20—£835 per annum) and JUNIOR ASSISTANT ARCHITECTS (£565×£30—£715 per annum) in the Architect's Department of the Harlow Development Corporation.

Candidates must be suitably qualified and have had office experience in design and preparation of working drawings for various types of buildings.

Superannuation. Accommodation in suitable cases.

Detailed applications, stating post applied for, and giving names of two referees, to the General Manager, "Terlings," Harlow, Essex, within 14 days. 1863

DRAUGHTSMEN required by GOVERNMENT OF BECHUANALAND PROTECTORATE, on contract for one tour of 30 months in the first instance. Salary £800 a year. Cost-of-living allowance 12 per cent. (married), 6 per cent. (single). Special allowance £60 a year (married), £30 a year (single). Resettlement grant at rate of £100 a year payable on satisfactory completion of contract. Free passages. Furnished quarters provided at rental of 10 per cent. of salary. Liberal leave on full salary.

Candidates under 45 years of age must have good draughting experience in architectural civil engineering office.—Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/41883/AG. 1868

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Vacancies exist for ARCHITECT/PLANNERS (salaries up to £817). Tasks include 3-dimensional planning within London's eight major Comprehensive Development Areas (including Stepney/Poplar, the South Bank, and Elephant and Castle) and other Redevelopment Areas.

The work includes the preparation of comprehensive layouts covering all the important areas of new public and private development throughout the County, and covers the whole field of planning technique.

Particulars and application form from Architect (AR/EK/ATP/1), County Hall, S.E.1. (907)

1278

SOUTH EASTERN GAS BOARD
ARCHITECTURAL ASSISTANT
Architect and Surveyor's Department,
Katharine Street, Croydon

Candidates must have a sound architectural training and be able to prepare specifications.

Salary within the range £700—£780 p.a.

Applications in writing, quoting reference V16/615 and giving full details should reach the undersigned within ten days after the publication of this notice.

R. J. McCRAE,
Personnel Manager.

Katharine Street,
Croydon. 1807

BOROUGH OF SOLIHULL
ASSISTANT QUANTITY SURVEYORS
(A.P.T., Grade IV, £710×£35 to £885)

Applications are invited for the above-mentioned posts in the Borough Engineer and Surveyor's Department.

Solihull has a population of 82,000, which is to increase to 100,000 over the next few years, and the appointments are primarily in connection with the large programme of work which is in hand as a result of the rapid expansion of the Borough.

No application forms are being issued, but the Borough Engineer will be pleased to answer specific questions regarding the position.

Commencing salary may be fixed at the appropriate stage within the Grade, according to qualifications and experience.

Applications, giving the names of two referees, should be sent to the Borough Engineer and Surveyor, 90, Station Road, Solihull, not later than Tuesday, 21st August, 1956.

The appointments are subject to Local Government Superannuation Acts, the National Scheme of Conditions of Service, and one month's notice on either side.

Where applicable, housing accommodation may be made available as soon as possible.

W. MAURICE MELL,
Town Clerk.

18th July, 1956. 1859

COUNTY BOROUGH OF SOUTHAMPTON requires under N.J.C. conditions of service:—

ASSISTANT ARCHITECT, Special Scale (£690—£840).

Applicants should have passed Parts I and II of the R.I.B.A. Final Examination (or equivalent), and have had at least 5 years' experience, including period spent on theoretical training, and preferably have had experience in Municipal housing estate development and administration of contracts.

If assistance in housing accommodation is needed, please state requirements.

Apply, with copies of two testimonials, to the Borough Engineer and Surveyor, Civic Centre, Southampton, by Monday, 13th August, 1956.

1875

BOROUGH OF TWICKENHAM.—Applications are invited for the following positions:—(*a*) TWO JUNIOR ENGINEERING ASSISTANTS, A.P.T. II (£595—£675); (*b*) ONE JUNIOR ARCHITECTURAL ASSISTANT, A.P.T. II (£595—£675); (*c*) TWO DRAUGHTSMEN, H.G.D. (£350—£500). All plus London weighting allowance. Candidates for (*a*) and (*b*) should have passed the Inter. Examination of an appropriate Engineering or Architectural body, and for (*c*) previous experience is essential. Applications, stating qualifications, experience, age, etc., and giving the names of two referees, must be received by the Borough Engineer, Municipal Offices, Twickenham, by 15th August, 1956. N.J.C. conditions will apply and superannuation payable. Canvassing will disqualify. An applicant who is related to a member of the Corporation or to a senior officer must disclose the fact in the application.

W. H. JONES,
Town Clerk.

Municipal Offices, Twickenham.
23rd July, 1956. 1867

CITY OF CARDIFF EDUCATION COMMITTEE
COLLEGE OF TECHNOLOGY AND COMMERCE
(In affiliation with the University of Wales)
Principal: DR. W. HARVEY, B.Sc., F.Inst.P.

Applications are invited for the post of ASSISTANT LECTURER AND STUDIO INSTRUCTOR in the Welsh School of Architecture, a department of the College. Candidates should have been trained in a recognised School of Architecture, be Associates of the R.I.B.A., and have had at least two years' Practical professional experience.

The salary will be in accordance with the new Burnham Technical Scale for Assistants, Grade B (£650×£25—£1,025) (men), plus allowance for degree (or degree equivalent) and training. Allowance will be made in placing on the scale for previous teaching or professional experience.

Application forms and further particulars are obtainable from the undersigned, on receipt of a stamped addressed foolscap envelope. Applications should be returned as soon as possible.

ROBERT E. PRESSWOOD,
Director of Education.
City Hall, Cardiff. 1882

METROPOLITAN BOROUGH OF BATTERSEA

Appointment of TWO ASSISTANT ARCHITECTS, A.P.T. V (£795×£35 to £970 per annum, plus London weighting).

Applications are invited for the above-mentioned permanent appointments. Applicants should be Associates of the R.I.B.A. and have had several years' office experience. Successful applicants will be engaged on a large programme of new construction and redevelopment.

Application forms from the Borough Engineer and Surveyor, Town Hall, S.W.11. Closing date: 20th August. 1866

CARDIGANSHIRE COUNTY COUNCIL

Applications are invited for the post of PRINCIPAL ASSISTANT ARCHITECT (A.P.T. Grade VI, £880×£40—£1,080) in the County Architect's Department, County Hall, Aberayron.

Applicants should be Members of the R.I.B.A., with good experience in the design and construction of modern buildings.

The successful person will be in charge of the Drawing Office and will have general responsibility for the Department in the absence of the County Architect and his Deputy.

Forms of application and further details obtainable from the County Architect.

Applications to be returned to the undersigned by not later than 20th August, 1956.

J. E. R. CARSON,
Clerk of the Cardiganshire County Council.
Swyddfa'r Sir, Marine Terrace,
Aberystwyth, Cards. 1841

TOWN PLANNING ASSISTANT required by HAYES & HARLINGTON U.D.C. Salary within Grade A.P.T. I (£530—£610 p.a., plus appropriate London weighting). Candidates must be capable of the preparation of plans, maintenance of Town Planning records, and after training undertaking other Town Planning duties. Experience in similar duties with a local authority an advantage. Further particulars and form of application obtainable from the undersigned, which when completed must be returned by 27th August, 1956.

GEORGE HOOPER,
Clerk and Solicitor.
Town Hall, Hayes, Middx. 1858

COUNTY BOROUGH OF GATESHEAD

Applications are invited from qualified and experienced persons for the following appointments, which are subject to N.J.C. Conditions:—

SENIOR ARCHITECTURAL ASSISTANTS, A.P.T. V (£795—£970).

Applicants must be Registered Architects, and should be Corporate Members of the Royal Institute of British Architects. They should have had good experience in the design and construction of Public Buildings, Schools and/or Municipal Housing Schemes.

JUNIOR ARCHITECTURAL ASSISTANT, A.P.T., I-III (£530—£765).

Applicants should have had previous experience in an Architect's office and must have passed the R.I.B.A. Intermediate Examination.

Posts pensionable, subject to medical examination and one month's notice on either side.

Applications, on forms obtainable from the Borough Surveyor, Swinburne Street, Gateshead, 8, must be returned to him not later than Saturday, 25th August, 1956.

C. D. JACKSON,
Town Clerk.
Town Hall, Gateshead, 8.
24th July, 1956. 1875

METROPOLITAN BOROUGH OF FULHAM
BOROUGH ARCHITECTS AND HOUSING DEPARTMENT

(*a*) TWO ASSISTANT ARCHITECTS, A.P.T. III or IV (£670—£795 or £740—£915 p.a. including £30 p.a. London weighting).

(*b*) ARCHITECTURAL ASSISTANT, A.P.T. I or II (£530—£610 or £595—£675 p.a., plus London weighting of £20 or £30 p.a., according to age).

Qualifications required: Posts (*a*) preference will be given to A.R.I.B.A. or equivalent and with experience in the design and construction of multi-storey dwellings; (*b*) R.I.B.A. Intermediate standard, and at least two years' drawing office experience. Application forms from Town Clerk, Town Hall, S.W.6. Closing date: 15th August. 1880

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

The Board are engaged on a number of new building projects, including a new hospital at Welwyn, and the following staff are required to fill new posts on the establishment created to deal with the increased work:—

(*a*) ASSISTANT ARCHITECTS. Good experience of design and construction necessary, preferably in hospital work. Salary scale: £640 × £25 (4) × £30 (4) × £35 (2)—£930, plus £20—£40 London weighting. Improved scale awaited.

(*b*) ARCHITECTURAL ASSISTANTS. To give technical assistance to professional officers. Salary scale: £480 (age 21 and over) × £20 (7) × £25 (2)—£670, plus £20—£30 London weighting. Improved scale awaited.

Applicants for (*a*) above must be Associate Members of the R.I.B.A., and for (*b*) must have Inter. R.I.B.A. Commencing salary above minimum may be paid to successful candidates according to appropriate experience since qualification. Posts are subject to Whitley Council conditions and are superannuable.

Apply, stating which post and giving age, qualifications (with dates) and experience, with names of two referees, to Secretary, North West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, by 20th August, 1956. 1881

LINDSEY COUNTY COUNCIL
PLANNING DEPARTMENT

Applications are invited for the following appointments:—

(*a*) SENIOR ASSISTANT (Architectural), A.P.T., Grade IV (£710—£885).

(*b*) JUNIOR ASSISTANT, A.P.T. Grade I (£530—£610).

Both appointments at Headquarters—Lincoln. Candidates for (*a*) should be suitably qualified and have some experience in redevelopment schemes, layouts and architectural control. Officer to provide own car for official journeys, for which an allowance will be paid at essential user's rate for car not exceeding 10 h.p. or 1,199 c.c. (Application of latest N.J.C. rates under consideration.) Candidates for (*b*) must have trained in planning, architect's or surveyor's office, and be good draughtsman, with experience in field surveys.

Superannuation and N.J.C. conditions of service as approved by the County Council. Canvassing will disqualify. Relationship to any member or senior officer of the Council to be disclosed in writing by applicants.

Applications, with particulars of age, training, experience, and names of two referees, to County Planning Officer, The Castle, Lincoln, not later than 17th August, 1956. 1852

GOVERNMENT OF SIERRA LEONE
SENIOR ARCHITECT—PUBLIC WORKS DEPARTMENT

To prepare plans and specifications for buildings of all types, and to take charge of the Architectural, Quantity Surveying and Town Planning Sections of the Public Works Department.

Contract appointment for two tours of 18-24 months in first instance. Salary £1,857 p.a., plus gratuity £37 10s. for each 3 months' service.

Free passages for officer, wife, and two children, or £75 allowances for each of two children maintained outside Sierra Leone.

Seven days' leave for each month of resident service. Quarters, if available, at low rental.

Candidates must be A.R.I.B.A., with not less than 10 years' experience since election and, preferably, A.M.T.P.I. in addition. Write Director of Recruitment, Colonial Office, London, S.W.1, giving age, qualifications and experience, quoting BCD.112/15/014. 1901

COUNTY COUNCIL OF RENFREW

Applications are invited for the appointment of SENIOR ARCHITECTURAL ASSISTANT in the County Engineer's Department (A.P.T., VI-VII, £805—£925). Applicants must be Registered Architects and Members of R.I.B.A. and/or R.I.A.S. Previous L.A. experience would be an advantage. The appointment is superannuable. Applications, stating age, qualifications and experience, together with recent testimonials, should be sent immediately to the County Clerk, P.O. Box 12, Paisley. 1900

(AMENDED ADVERTISEMENT)
BOROUGH OF GOSPORT
ARCHITECTURAL ASSISTANT

Applications are invited for the above appointment, at a salary in accordance with the N.J.C. Special Grade for Architectural Assistants (£690, by increments of £30 to a maximum of £840 per annum). Commencing point to be in accordance with experience and ability. Applicants should have passed Parts I and II of the R.I.B.A. Final Examination or its equivalent, and should have had at least 5 years' experience (including training). The appointment will be subject to the following:—

(1) The National Scheme of Conditions of Service.
(2) Medical examination.
(3) The Local Government Superannuation Acts.
(4) One month's notice on either side.

Housing accommodation, if necessary, will be made available for the successful applicants.

Applications, giving age, details of experience, and the names and addresses of two referees, should reach the undersigned not later than Saturday, 18th August, 1956.

EDWARD ADDENBROOKE,
Town Clerk.
Town Hall, Gosport, Hants. 1872

CENTRAL ELECTRICITY AUTHORITY
EAST MIDLANDS DIVISION

Applications are invited for the following positions within the Division:—

SENIOR DRAUGHTSMAN (MECHANICAL), Generation (Construction) Department. (Vacancy No. 151/56.)

Candidates should have experience in one or more of the following:—

(i) Design and layout of Power Station equipment, including turbo-alternators, boiler plant, coal and ash plant, and general station auxiliaries.
(ii) H.P. and L.P. steam and feed pipework. Condensing plant and feed heating systems.
(iii) Conveyor plant, coal handling systems, and material handling of station auxiliary equipment.

Salary will be in accordance with Grade 5 (£700—£800 per annum) or Grade 4 (£810—£910 per annum) of Schedule D of the National Joint Board Agreement.

Closing date for receipt of applications: 9th August, 1956.

The appointment will be pensionable within the terms and conditions of the Central Electricity Authority and Area Boards (Staff) Superannuation Scheme.

Applications should be submitted on the official form AE5/ACT, which may be obtained from the Divisional Establishments Officer, Central Electricity Authority, P.O. Box 25, Barker Gate, Nottingham, and returned to the undersigned. Please quote Vacancy Number.

L. F. JEFFREY,
Divisional Controller.
1879

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications are invited for the position of ASSISTANT SENIOR ARCHITECT (Development) (salary in range £1,410—£1,692), in the Housing Division. The present duties are: (1) The co-ordination of technical standards, information and development work throughout the Housing Division; (2) the direction of the work of a small design group and of the Materials and Information Sections of the Division.

Further particulars and application forms, returnable by 17th August, 1956, from the Architect (AR/EK/ASA/3), County Hall, S.E.1. (1442) 1906

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Applications are invited for the post of ASSISTANT GOVERNMENT TOWN PLANNER (Temporary) in the Department of Town and Country Planning, Ceylon, in the scale of £1,000—5 of £40—£1,200 per annum.

Further particulars and forms of application may be obtained from the office of the High Commissioner for Ceylon in the United Kingdom, 13, Hyde Park Gardens, London, W.2.

Applications for the above post should reach the High Commissioner for Ceylon in the United Kingdom on or before Thursday, 23rd August.

13, Hyde Park Gardens, W.2.
27th July, 1956. 1907

COUNTY BOROUGH OF HASTINGS

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

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(*b*) ARCHITECTURAL ASSISTANT, A.P.T. III (£640—£765 p.a.), Inter. R.I.B.A.
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THE PROVISION OF HOUSING ACCOMMODATION WILL BE CONSIDERED IF REQUIRED.

Applications, stating age, qualifications, present and previous appointments and salary, and the names of three referees, to be sent to the Borough Engineer, 37, Wellington Square, Hastings, not later than 17th August, 1956. Canvassing will disqualify.

N. P. LESTER,
Town Clerk.
Town Hall, Hastings. 1876

BEDFORDSHIRE COUNTY COUNCIL

Applications are invited for the posts of ASSISTANT ARCHITECT, A.P.T. Grade V (£795—£970), and ARCHITECTURAL ASSISTANTS, A.P.T., Grade II (£595—£675) and A.P.T. Grade I (£530—£610), in the County Architect's Department. Application forms from County Architect, Shire Hall, Bedford, to be returned by 20th August, 1956. 1871

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QUANTITY SURVEYING ASSISTANT required for Borough Architect's Department, A.P.T. III (£640×£25—£765), plus London weighting £10—£30, according to age. Minimum qualification Intermediate R.I.C.S. or equivalent and studying for Final. Financial assistance and time off for studies. Alternate Saturdays free.

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Applications, stating age, experience, qualifications and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester, 4. 3871

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(Salary range £550 to £820 per annum.)
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