

THE ARCHITECTS' JOURNAL



standard contents

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

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Architectural Appointments
Wanted and Vacant

No. 3047]

[Vol. 118

THE ARCHITECTURAL PRESS

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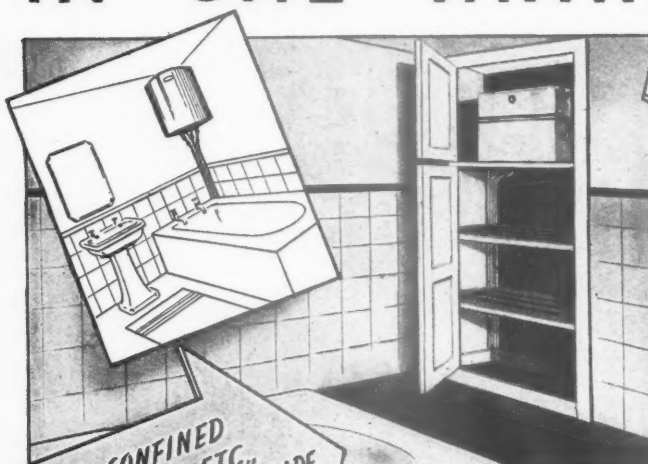
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* A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts.	
ABS	Architects' Benevolent Society, 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians, 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain, 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association, 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction, 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association, 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council, 68, Portland Place, W.1.	Langham 8738
AScW	Association of Scientific Workers, 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
BAE	Board of Architectural Education, 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council, Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre, 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, 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association, Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association, 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association, 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association, 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education, 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors, 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council, 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade, Millbank, S.W.1.	Whitehall 5140
BRDB	British Rubber Development Board, Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
BRS	Building Research Station, Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association, 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution, 28, Victoria Street, S.W.1.	Abbey 3333
BTE	Building Trades Exhibition, 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society, C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Newport 5491
CAS	County Architects' Society, C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association, 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice, Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association, Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne, Dolderal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design, Tilbury House, Petty France, S.W.1.	Abbey 7080
CPRE	Council for the Preservation of Rural England, 4, Hobart Place, S.W.	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 Architect and Surveyors, 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
FASSC	Federation of Association of Specialists and Sub-Contractors, 5, Arundel Street, Strand.	Temple Bar 6633
FBI	Federation of British Industries, 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission, 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries, 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District, Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders, 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders, 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England, Buckingham Palace Gdns., S.W.1.	Sloane 2837
GC	Gas Council, 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group, 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre, 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors, 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts, 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers, Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society, 32, Victoria Street, S.W.1.	Abbey 5215

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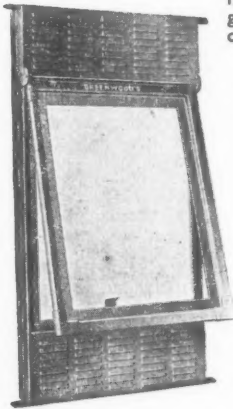
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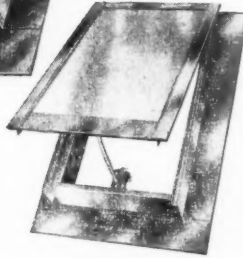
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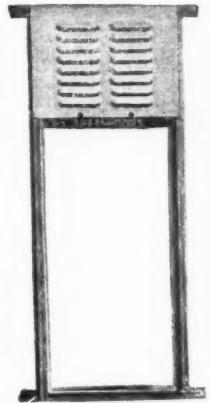
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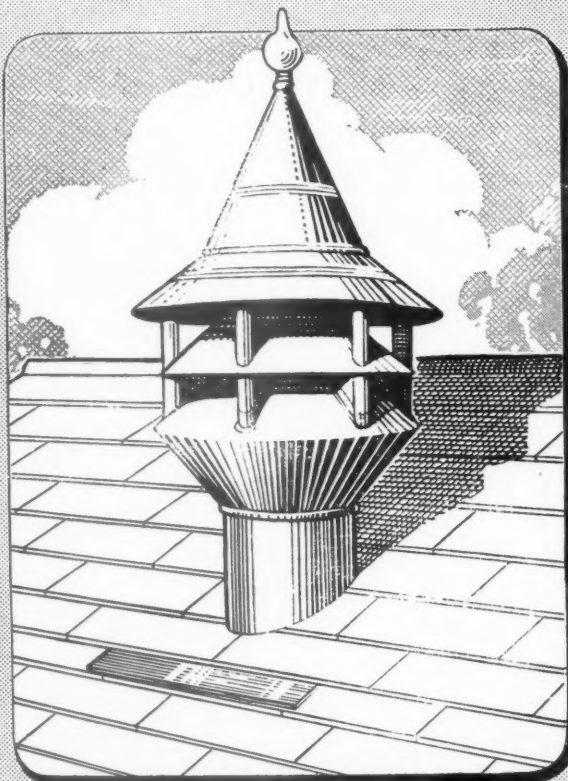
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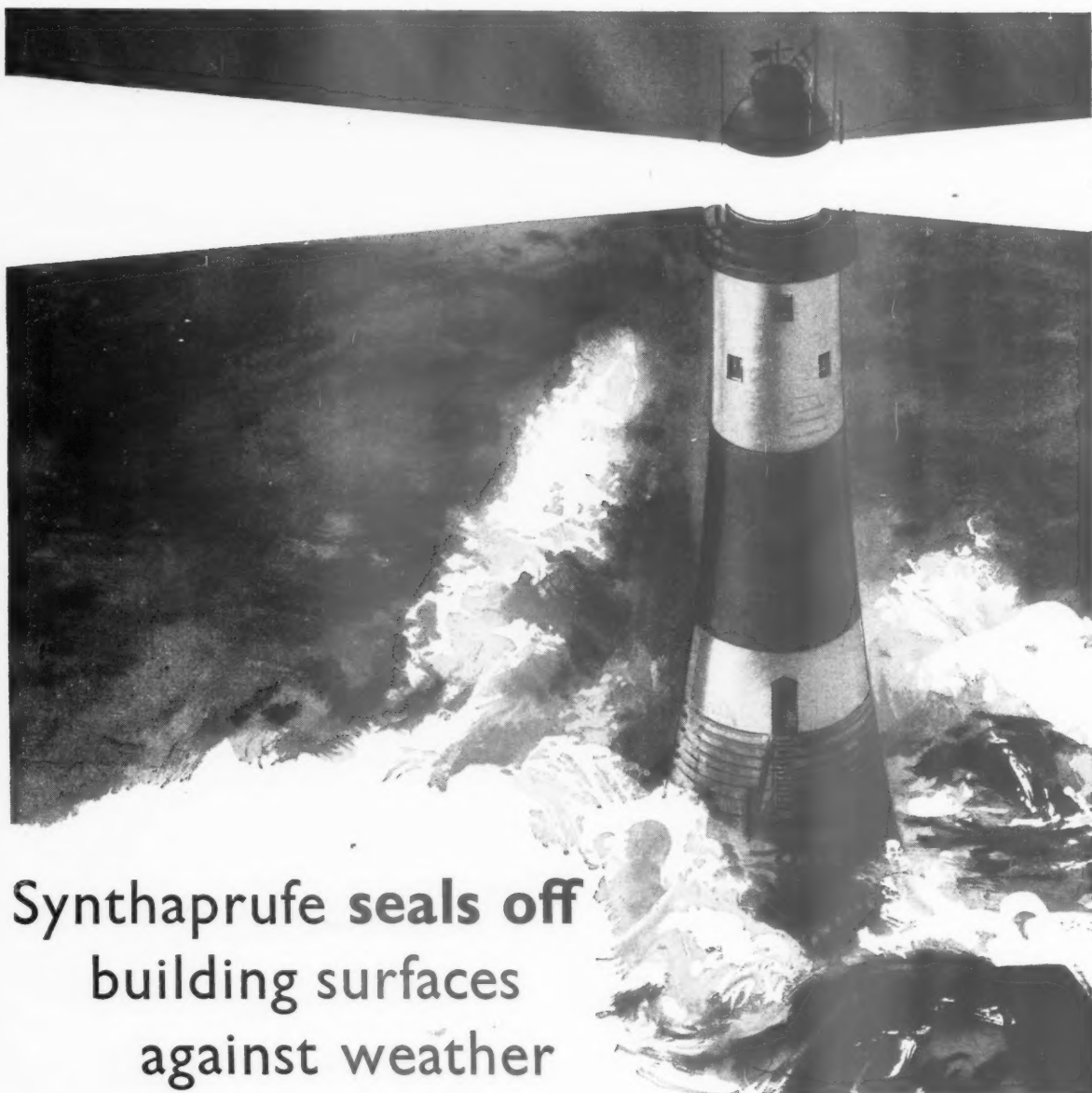
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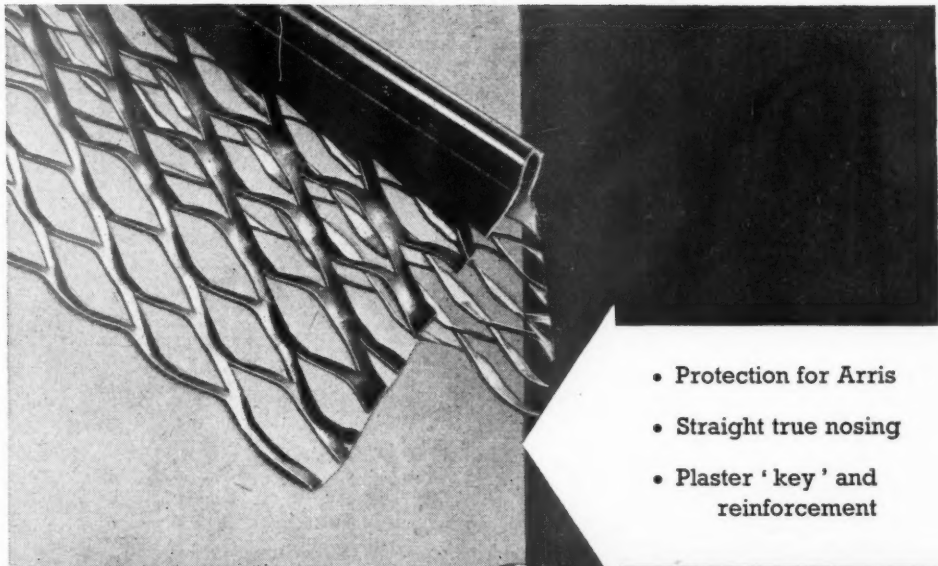
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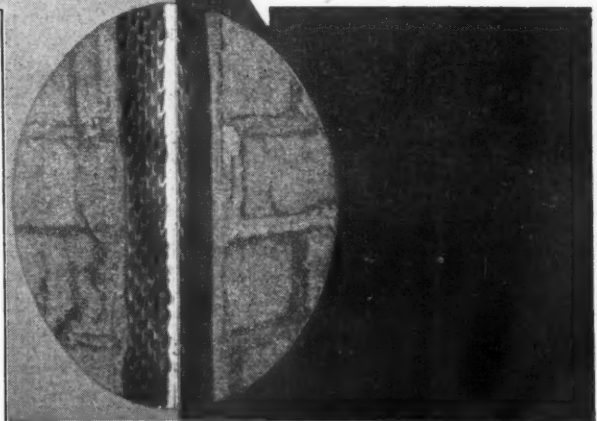


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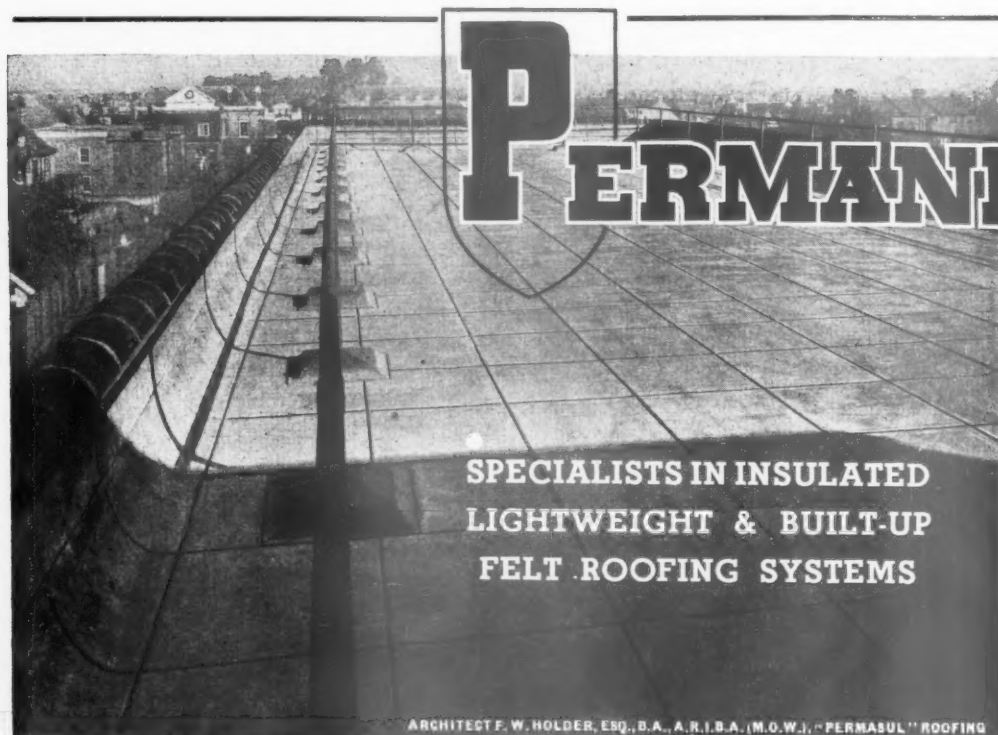
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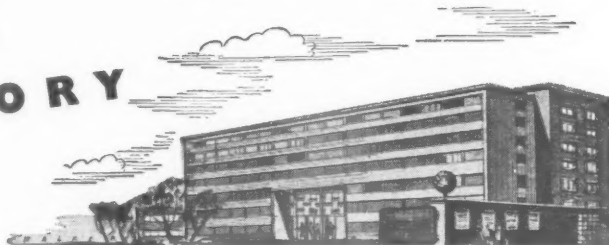




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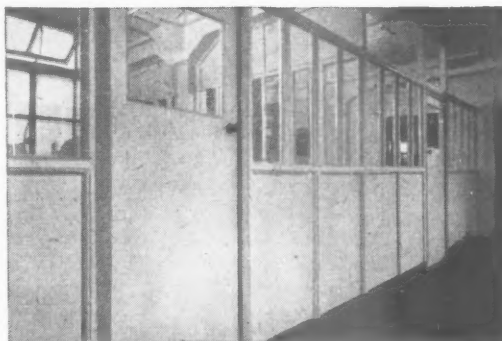
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NORTHERN GAS BOARD: 30, Grainger Street, Newcastle-upon-Tyne, 1. Newcastle-upon-Tyne 26101.

NORTH WESTERN GAS BOARD: Bridgewater House, 60, Whitworth Street, Manchester, 1.

Manchester Central 8121.

NORTH EASTERN GAS BOARD: Bridge Street, Leeds, 2. Leeds 32571/8.

EAST MIDLANDS GAS BOARD: Beverley House, University Road, Leicester. Leicester 23201/5.

WEST MIDLANDS GAS BOARD: 6, Augustus Road, Edgbaston, Birmingham, 15. Edgbaston 3616.

WALES GAS BOARD: 1 and 2, Windsor Place, Cardiff. Cardiff 28621.

EASTERN GAS BOARD: 2, The Abbey Garden, London, S.W.1. Trafalgar 5373/7.

NORTH THAMES GAS BOARD: 30, Kensington Church Street, London, W.8. Western 8141.

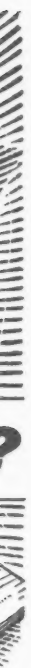
SOUTH EASTERN GAS BOARD: Katharine Street, Croydon, Surrey. Croydon 4466.

SOUTHERN GAS BOARD: 164, Above Bar, Southampton. Southampton 76362.

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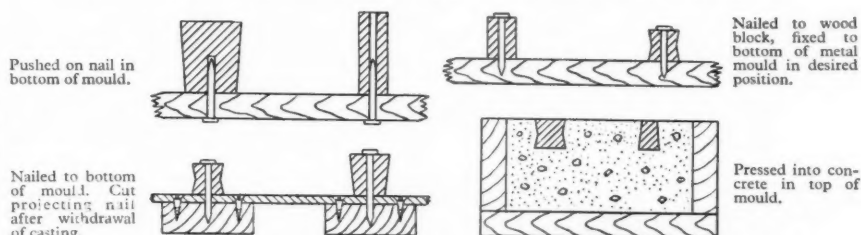
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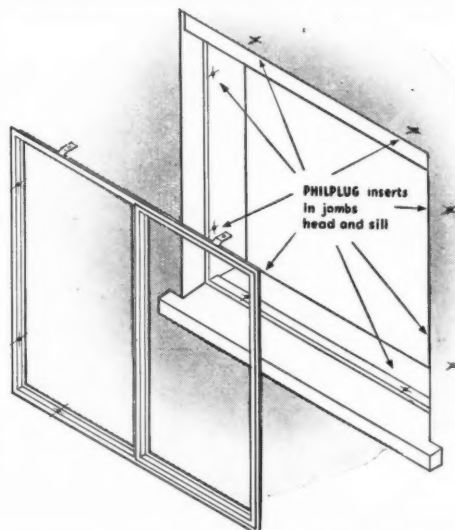
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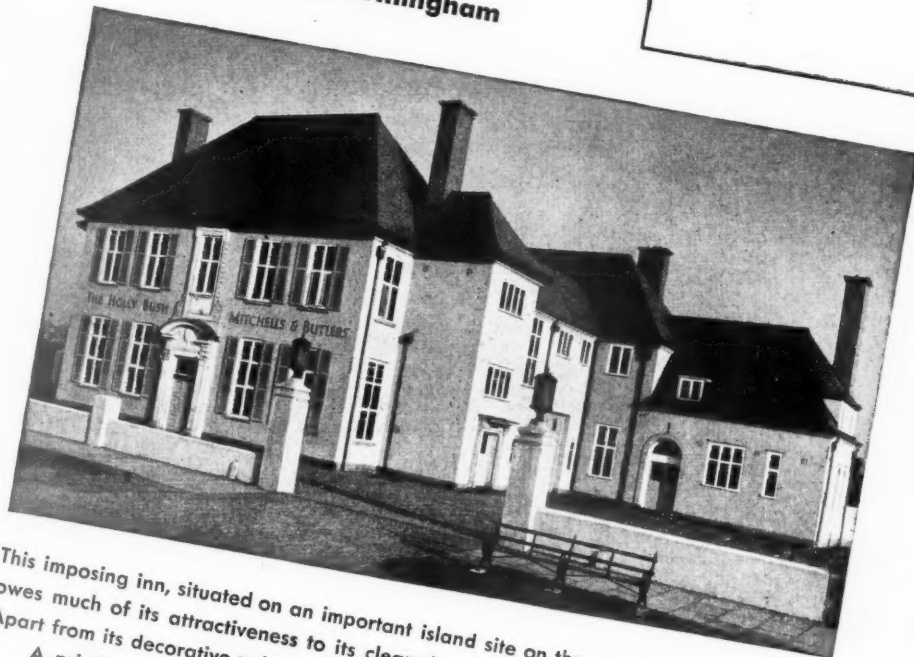
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**POLISHED ALUMINIUM FOIL
BONDED TO
GYPSUM PLASTERBOARD**

Insulating GYPROC WALLBOARD AND

Insulating GYPROC LATH

FOR

THERMAL INSULATION AND FIRE PROTECTION

These are standard GYPROC products with a thin sheet of *polished aluminium foil* firmly bonded to one side, giving laminated materials that combine the valuable heat reflecting properties of aluminium foil with the fire resistance properties of gypsum plaster-board.

THERMAL INSULATION

The thermal conductance of *Insulating GYPROC Wallboard* and *Insulating GYPROC Lath* (including 1" cavity) is 0.42 B.Th.U./sq. ft./hr./°F. difference in temperature.

The materials are fixed with the metal foil side against the framing members, which should be of sufficient thickness to provide an air space of not less than $\frac{3}{4}$ " to ensure that the maximum heat insulation efficiency is obtained.

FIRE RESISTANCE

Insulating GYPROC Wallboard and *Insulating GYPROC Lath* possess "surfaces of very low flame spread," being classified in the Class I Group for Surface Spread of Flame—British Standard 476.

The gypsum core of these materials resists the penetration of fire until the hydrated character is completely destroyed and the aluminium foil adds to the fire resistance by retarding the escape of water vapour from the core.

Insulating GYPROC Wallboard is supplied in standard sizes of dimensions 3 ft. and 4 ft. wide ; 6 ft.-12 ft. in length, and $\frac{3}{8}$ in. and $\frac{1}{2}$ in. thick. It is available with square edges or recessed edges, the latter to ensure flush jointing.

The unfoiled surface presents an excellent interior wall or surface finish for direct decoration.

Insulating GYPROC Lath is supplied in standard sizes of dimension 16 ins. wide and $\frac{3}{8}$ in. thick, in lengths 32 ins., 42 ins., 45 ins., 48 ins. and 54 ins.

The unfoiled surface presents a perfect base for PARISTONE Browning Plaster, or GYPSTONE Board Finishing Plaster.

Makers of PARISTONE Browning Plaster (Haired, Unhaired and Metal Lathing Grades), PARISTONE Wall Finishing Plaster, CRETSTONE Concrete Bonding Plaster, GYPSTONE Board Finishing Plaster, ZONAPLAX Vermiculite Insulating Plaster (Undercoat and Finishing Grades).

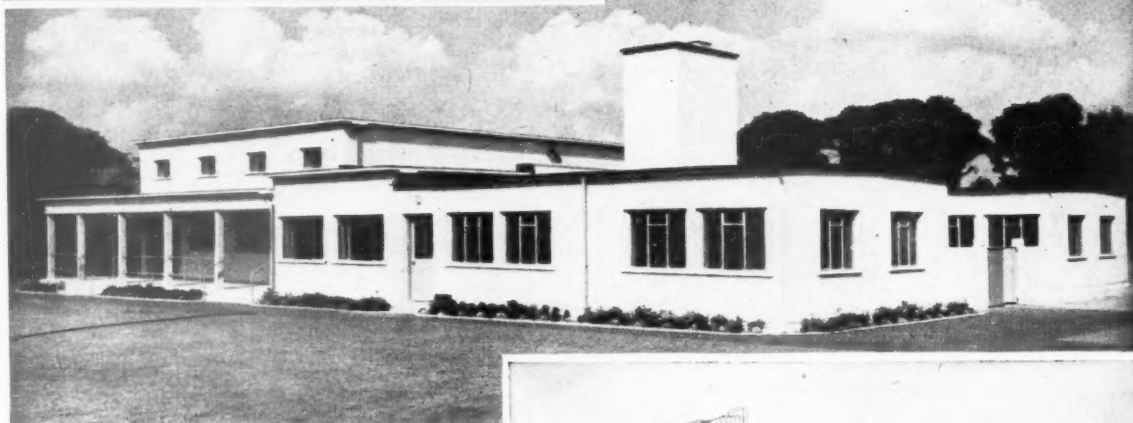
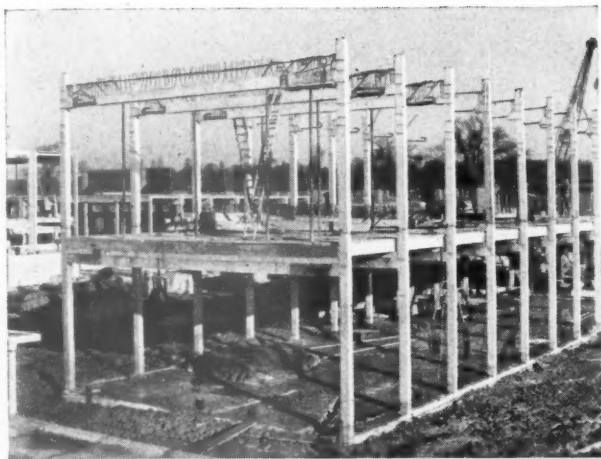
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Head Office: Westfield, Upper Singlewell Road, Gravesend, Kent. Telephone: Gravesend 4251-4 Telegrams: Gyproc, Gravesend. Glasgow Office: Gyproc Wharf, Shieldhall, Glasgow, S.W.1. Telephone: Govan 2141-3. Telegrams: Gyproc, Glasgow. Midland District Sales Office: East Leake, near Loughborough. Telephone: East Leake 231. London Office: Morris House, 1-5 Jermyn Street, London, S.W.1. Telephone: Whitehall 8073-4. IW 1

A happy combination of two types of construction

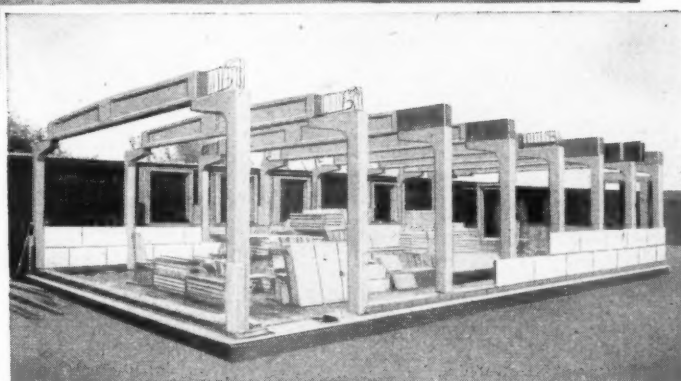
Left: The frame of an Orlit General Purpose multi-storey structure in course of erection.

SPORTS PAVILION FOR COURAGE & CO. LTD.
Leonard Pickford, F.R.I.B.A. Architect to Courage & Co. Ltd.
G. Norman Middleton, Dip.Arch. (Abdn.) A.R., I.B.A.,
Divisional Architect.



TWO types of Orlit construction were used in this building; in the fore-ground standard single-storey buildings are shown, and in the background is the General Purpose construction.

The Orlit system allows the architect full scope for his faculties of design, while at the same time providing the economic advantages, both in time and money, of prefabrication.



Above: A standard Orlit single-storey 24' 0" span structure in course of erection.

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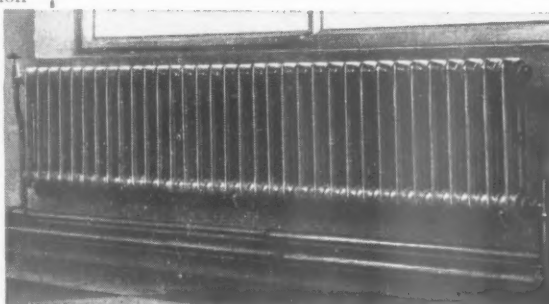
THE SCOTTISH ORLIT COMPANY LTD., Sighthill Industrial Estate, Edinburgh 11. Tel: Craiglockhart 2287



Crane is proud to have supplied heating equipment for this admirable building—representative of the best achievement of the building industry—and prouder still of the fine reputation of Crane radiators, valves and fittings which led to their being specified. Crane's part in the Centre is one more indication of its outstanding position in central heating—a position it has won by the never-varying efficiency, dependability and good design of Crane radiators and heating equipment.

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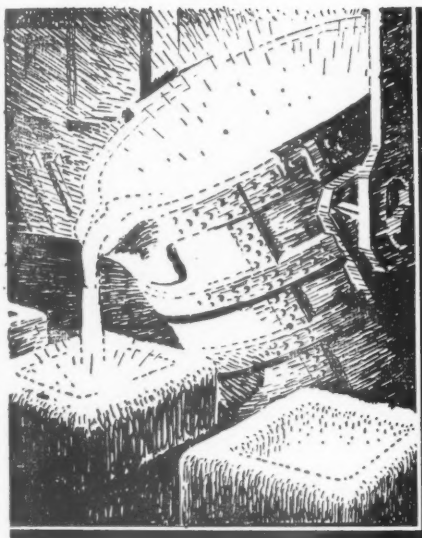
Illustrated is one of the Crane two column Pall Mall legless radiators installed in the Centre. The four column radiators selected were of this same fine design which harmonises well with the contemporary decor.

OWNERS: The Building Centre. ARCHITECT FOR THE RECONSTRUCTION WORK: Gontran Goulden Esq., A.R.I.B.A. MAIN CONTRACTORS: Bovis Ltd. HEATING ENGINEERS Troughton & Young (Heating) Ltd.

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Cargo Fleet Iron Co. Ltd.

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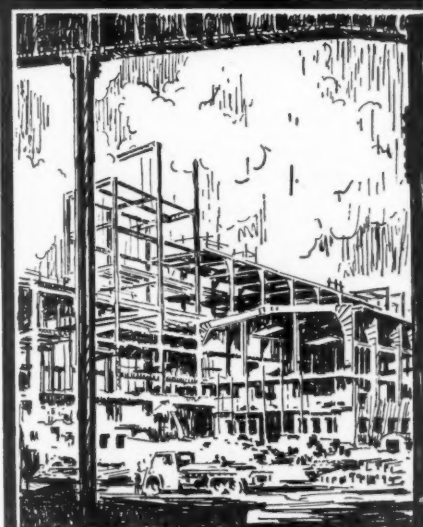


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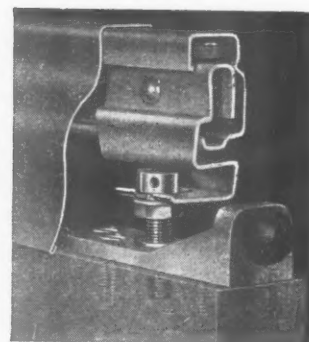


ELLARD

SLIDING DOOR GEAR ESTATE FOR INTERNAL DOORS



ELLARD "Estate" Sliding Door Gear has again been specified for a large housing estate. The photograph on the left shows an interior of a typical two-bedroom type house on the People's Houses Estate, Canterbury, Kent. ELLARD "Estate" Sliding Door Gear combines smooth effortless action with pleasing appearance, and offers maximum economy in use of space.



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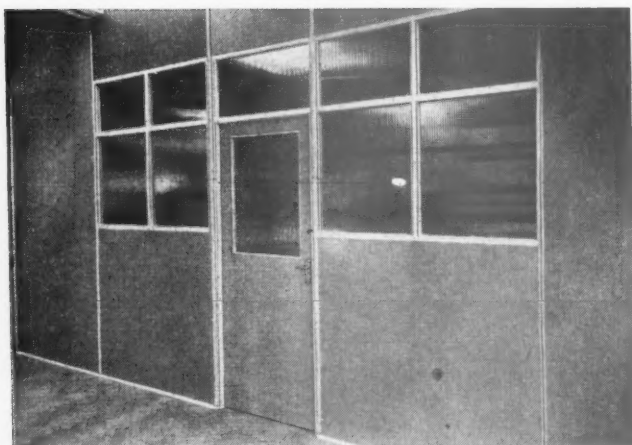
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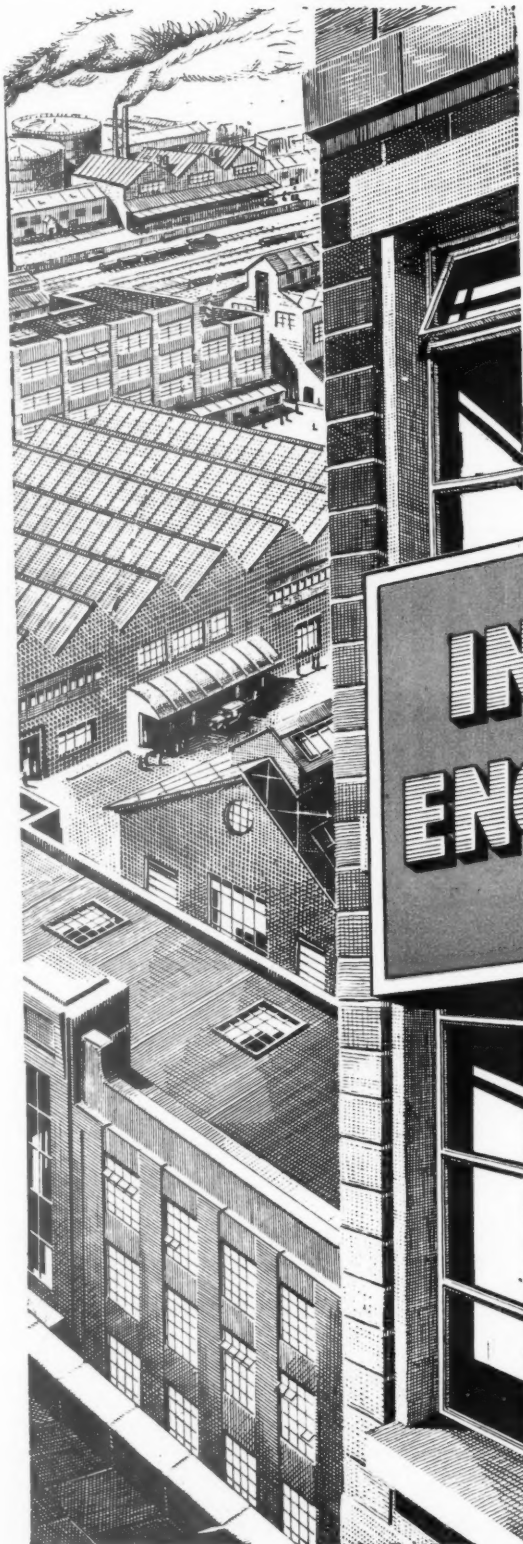
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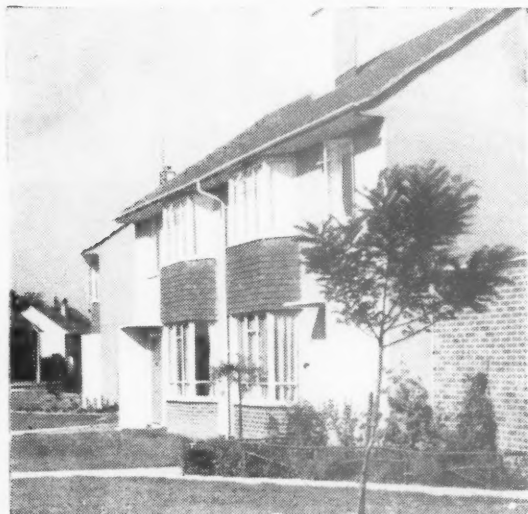
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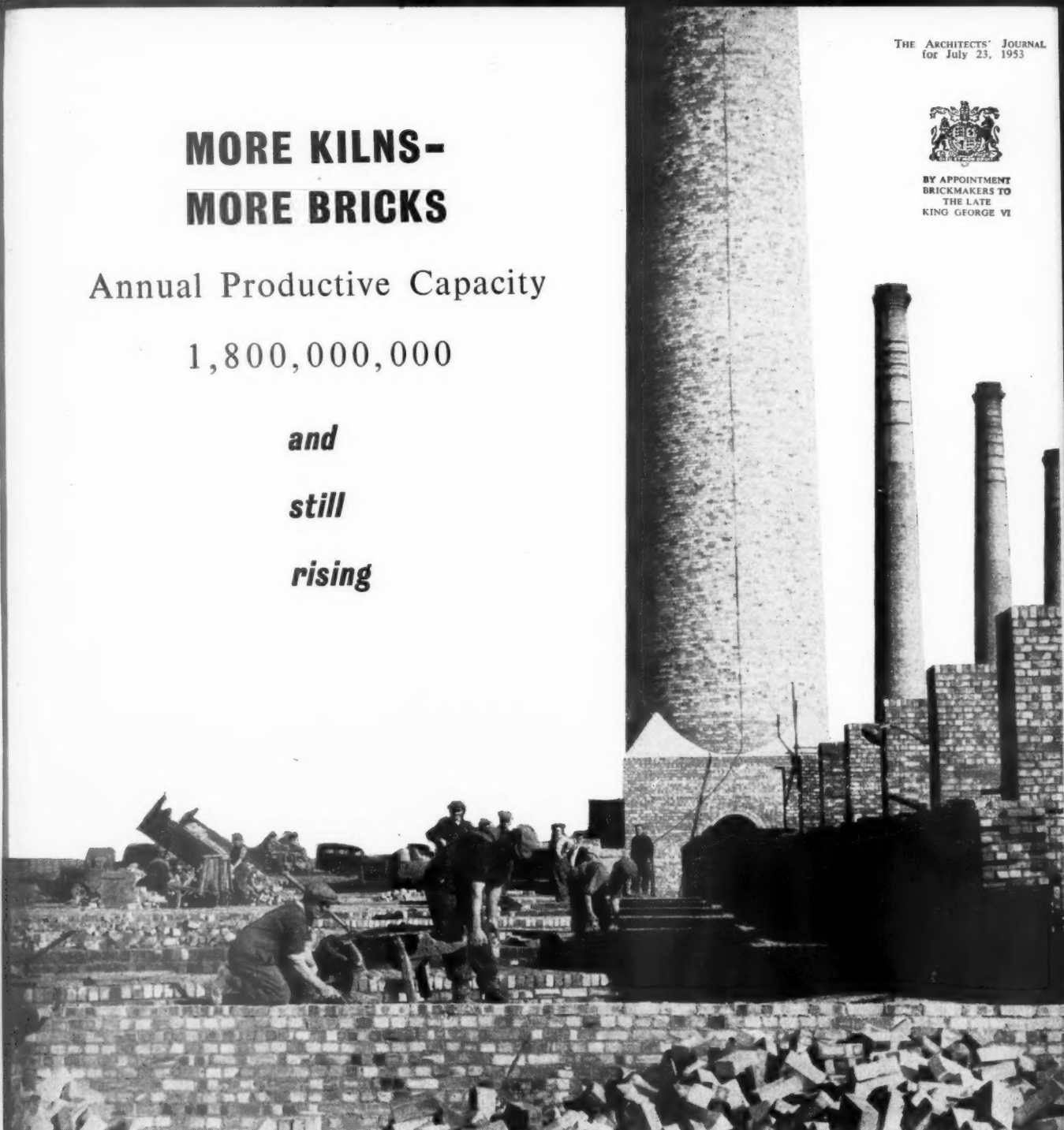
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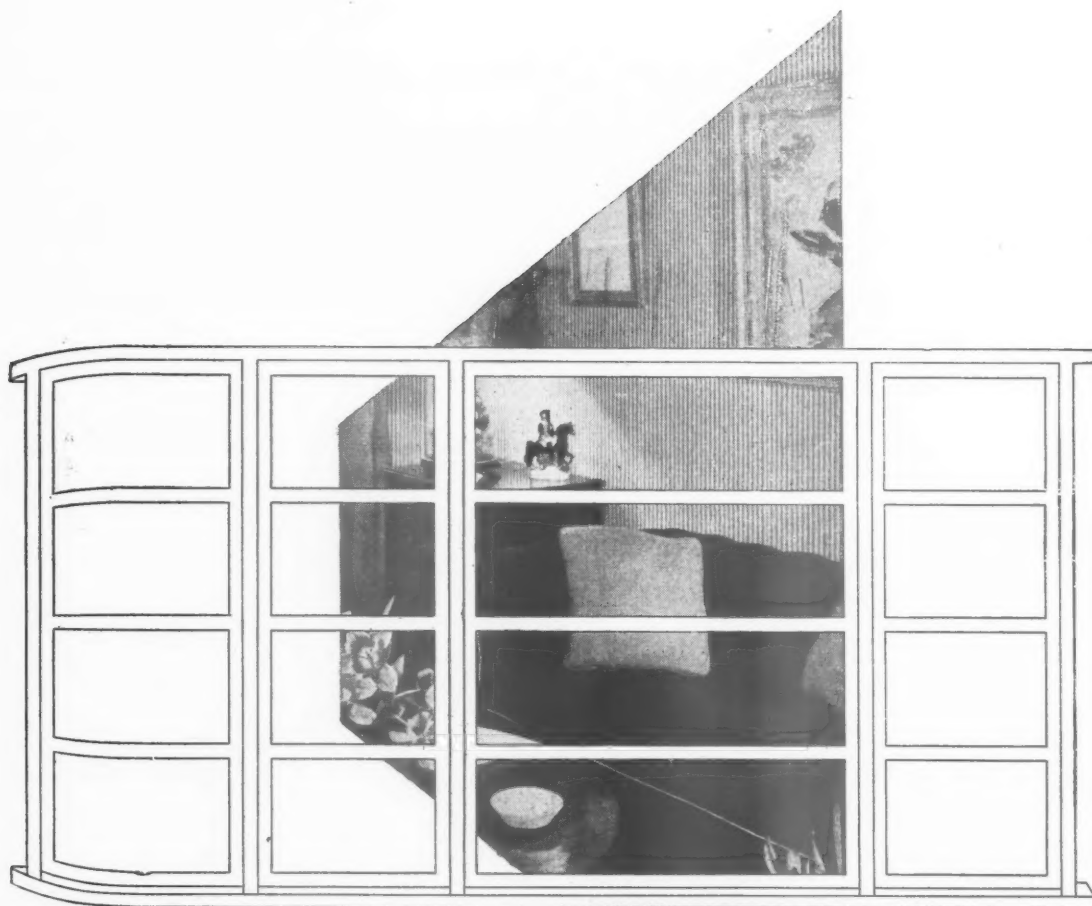
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Finlock forms the eaves and gutters (says Mr. Fin)

... and saves £15 per house! (says Mr. Lock)



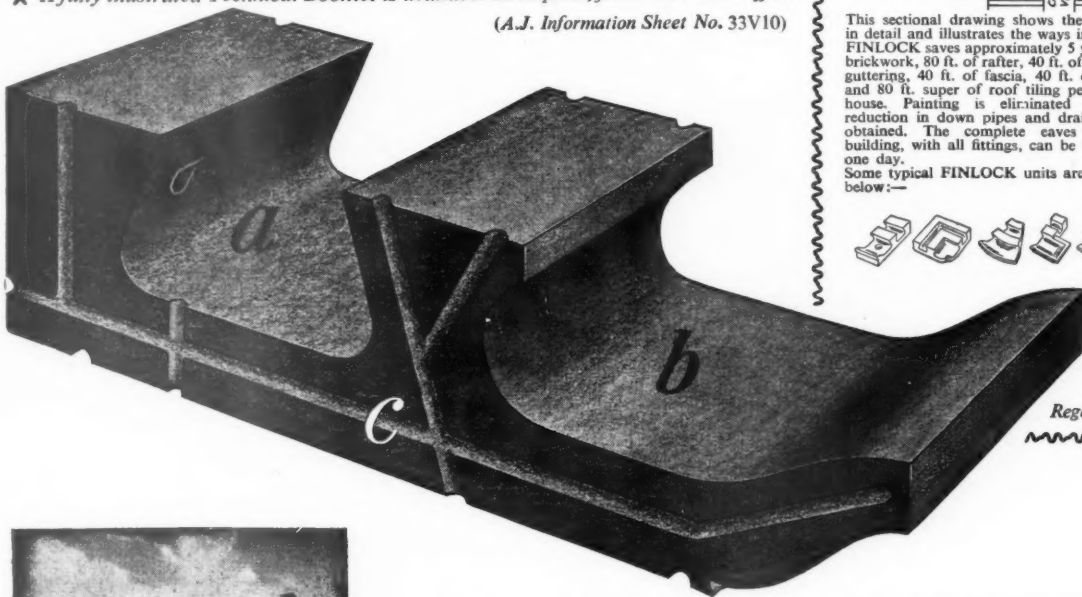
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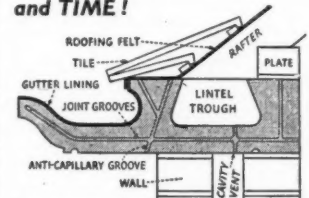
On the illustration below "a" shows the trough in which lintels can be cast *in situ* if required, "b"

shows the large sectioned gutter channel which permits laying without fall. Strong enough to walk in and to withstand all building stresses. Completed by a "FINLOCK" waterproof mastic after laying. "c" indicates the jointing grooves.

★ A fully illustrated Technical Booklet is available on request, from our Head Office
(A.J. Information Sheet No. 33V10)



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Over 300 local authorities are now using Finlock.

* The buildings shown are in accordance with the winning design in the £1,000 low cost housing competition organised by "THE BUILDER". By courtesy of J. L. Womersley, Esq., A.R.B.A., A.M.T.P.I., late Borough Architect for Northampton.

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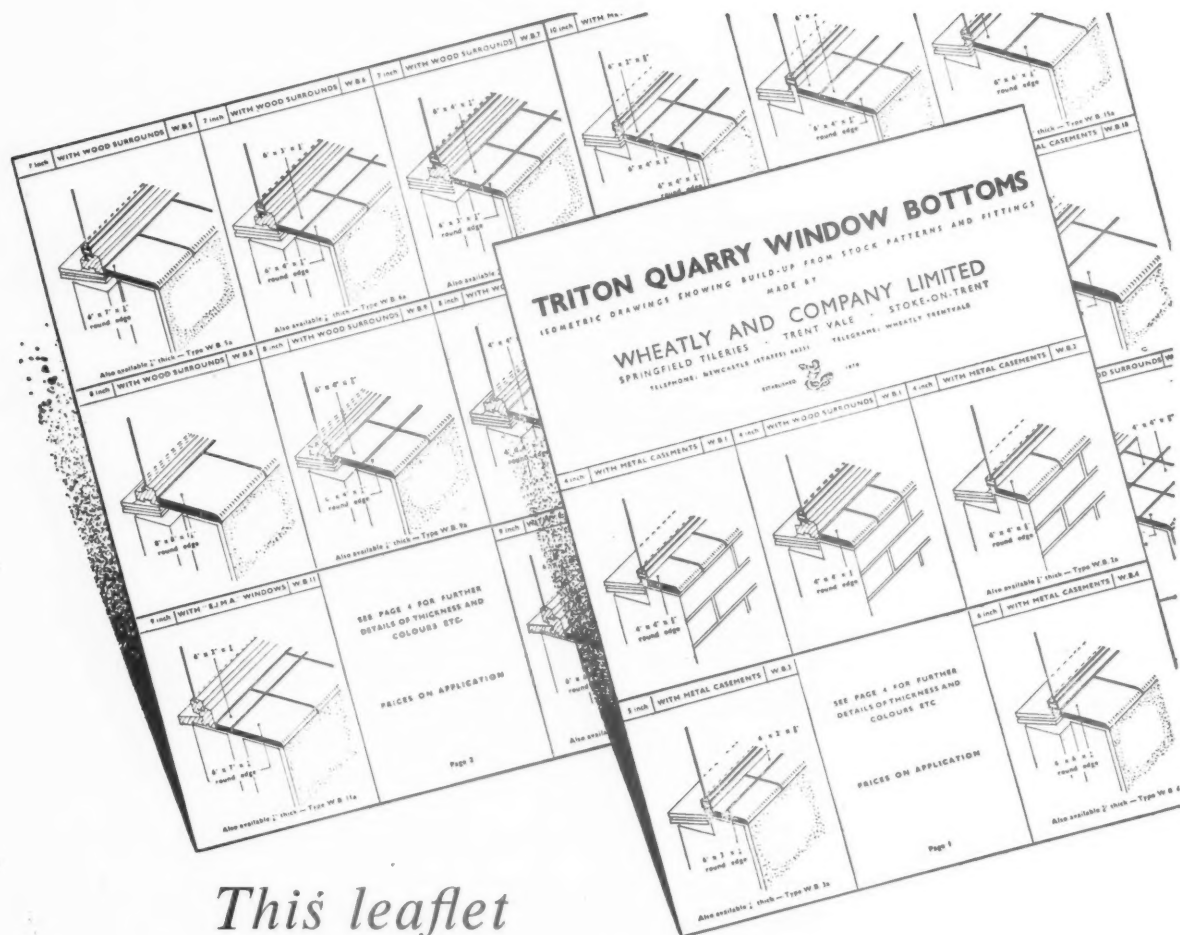
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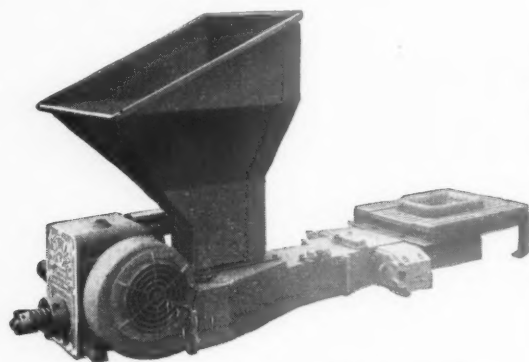
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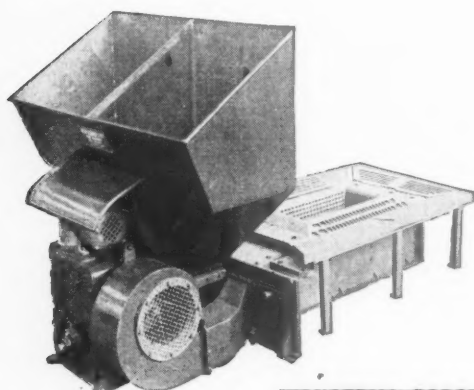
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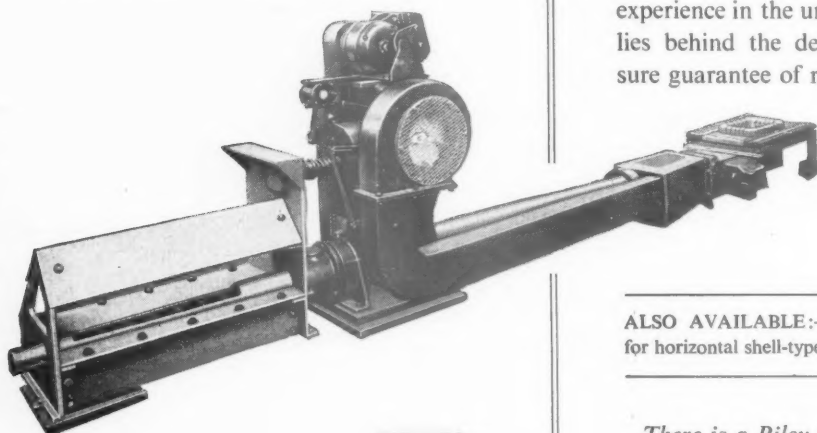
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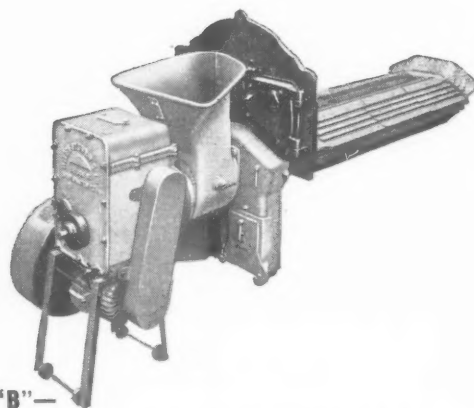
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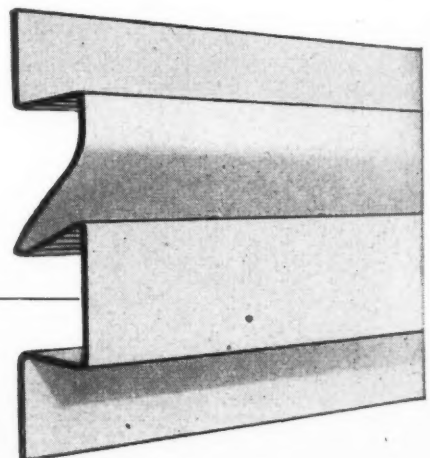
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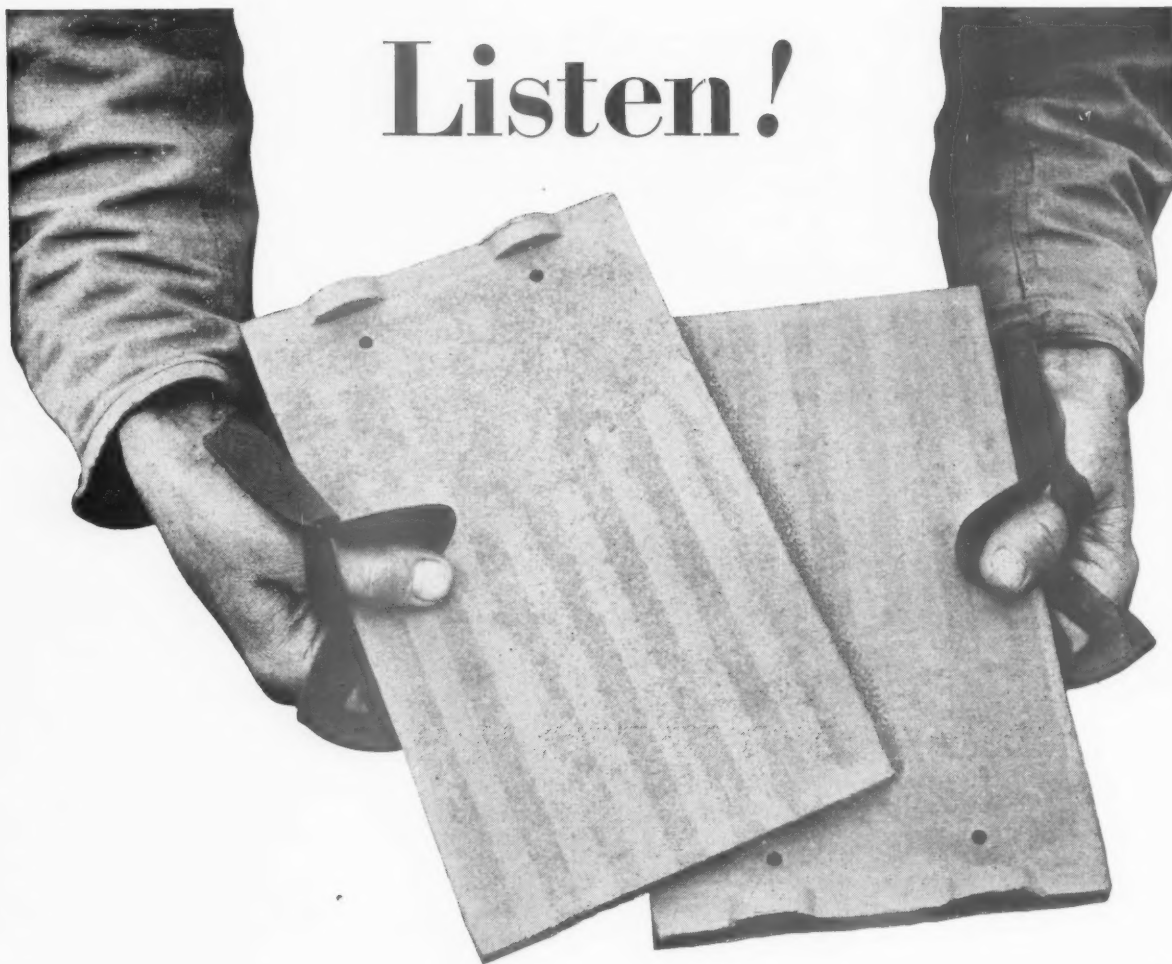
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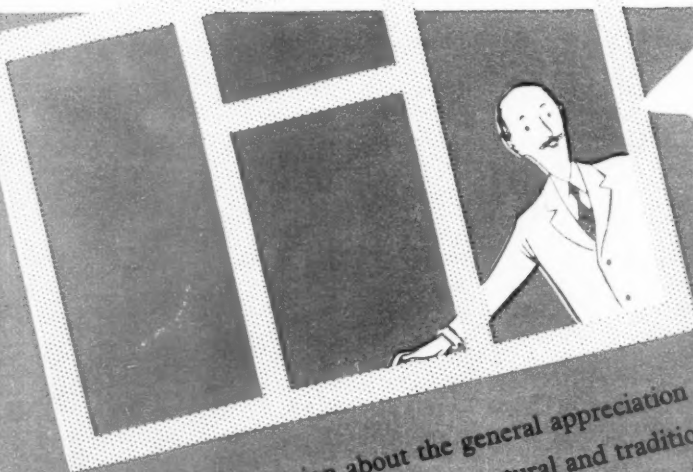
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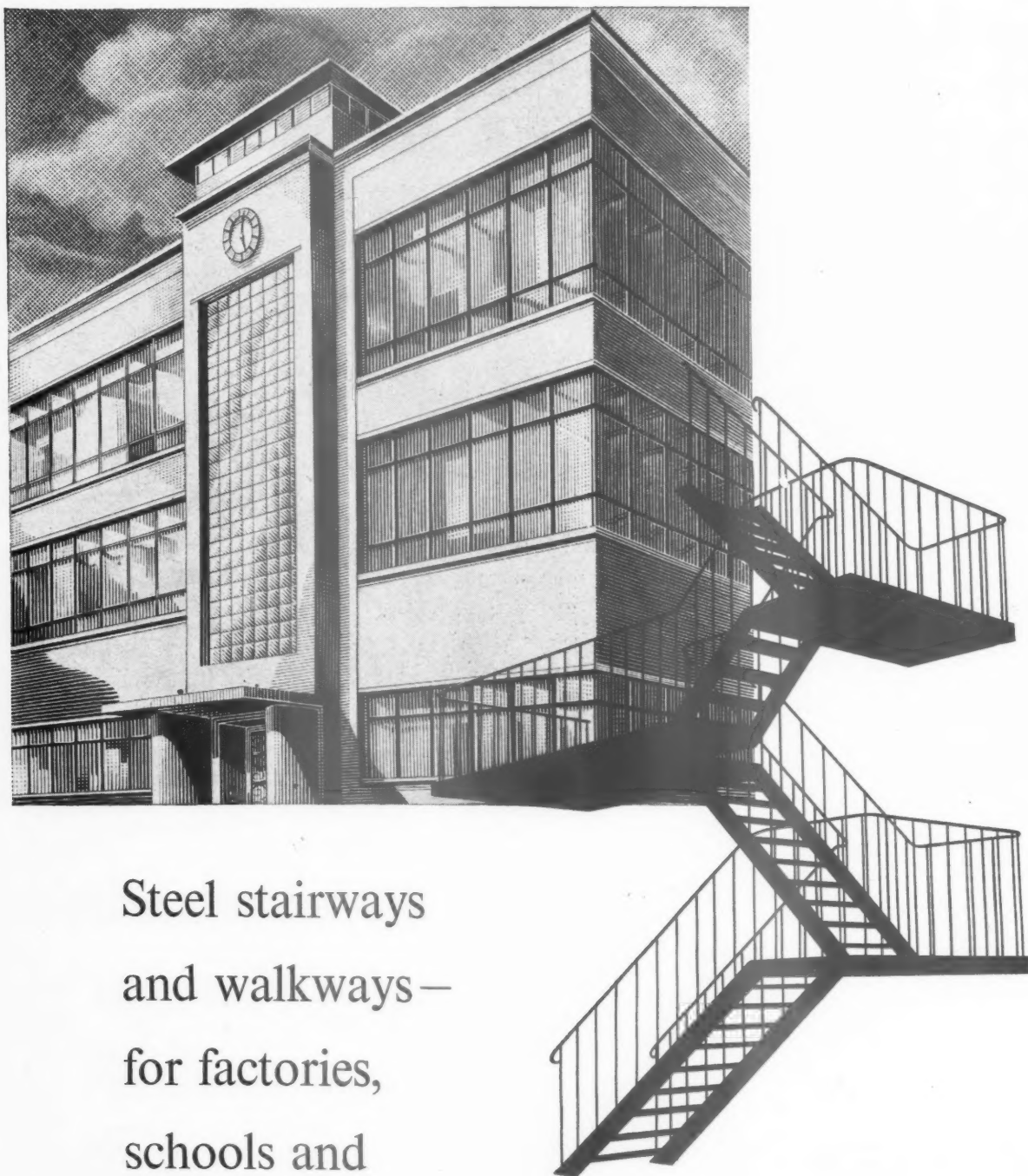
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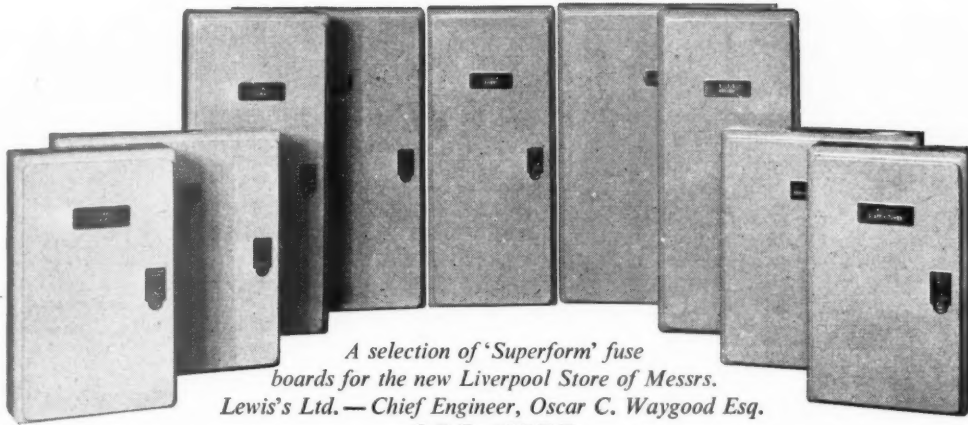


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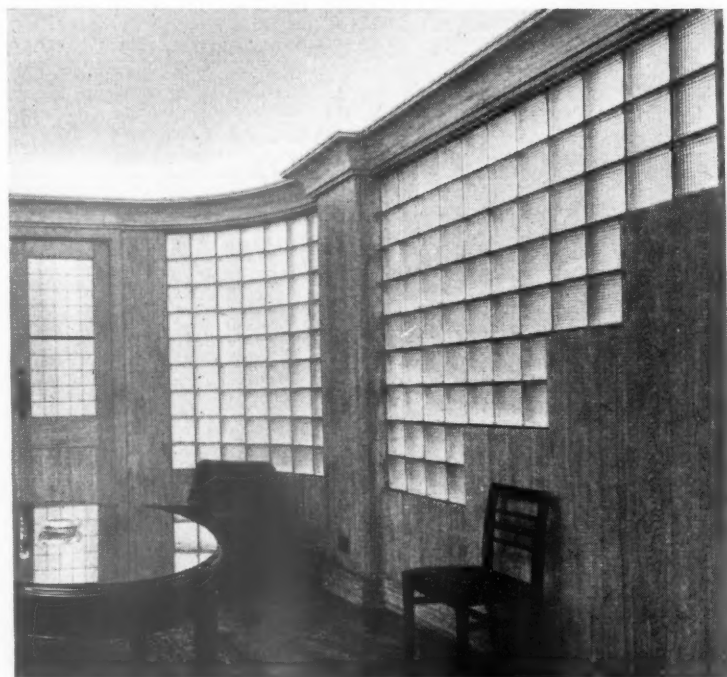


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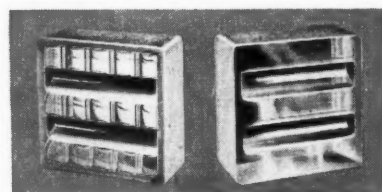
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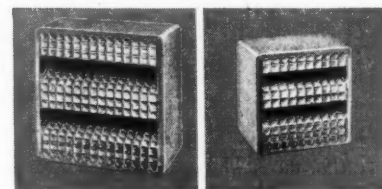
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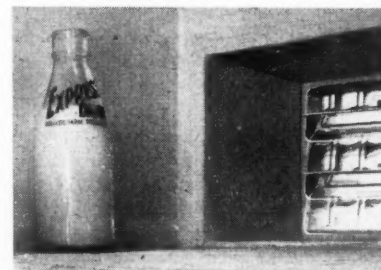
'Ventiblock' Type 32—
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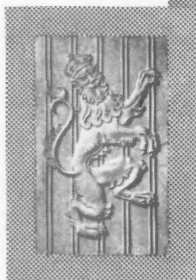


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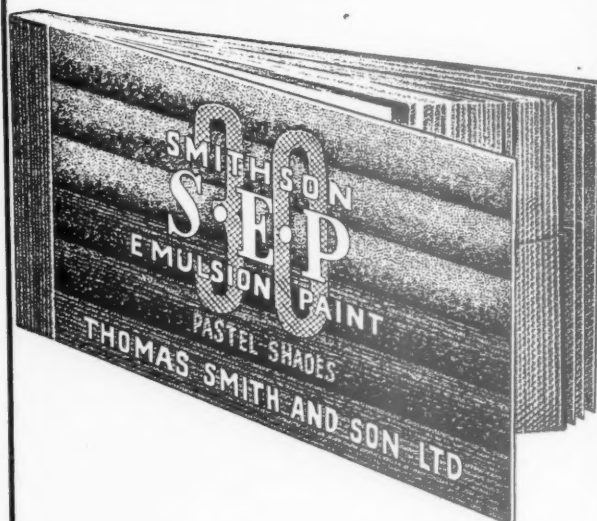
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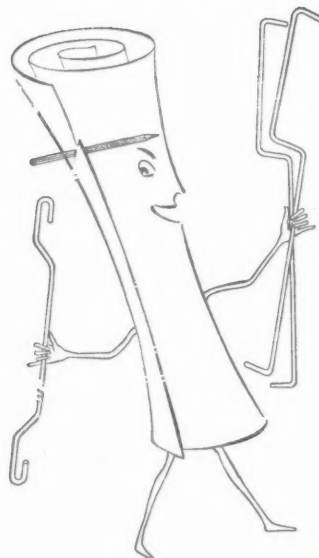


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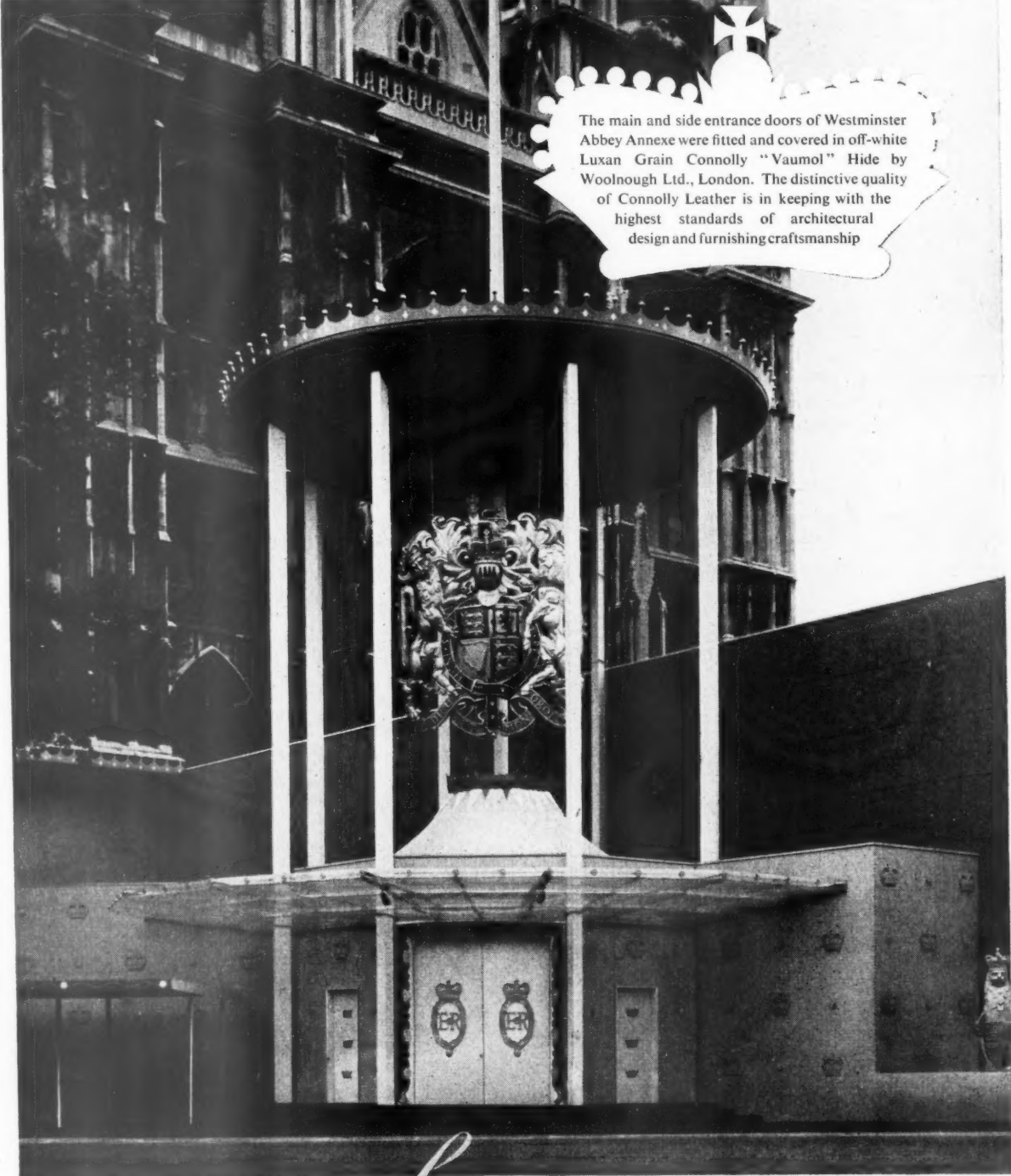
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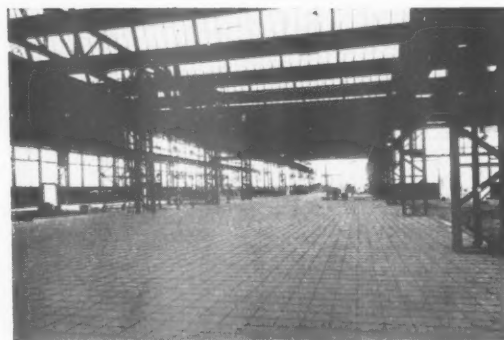
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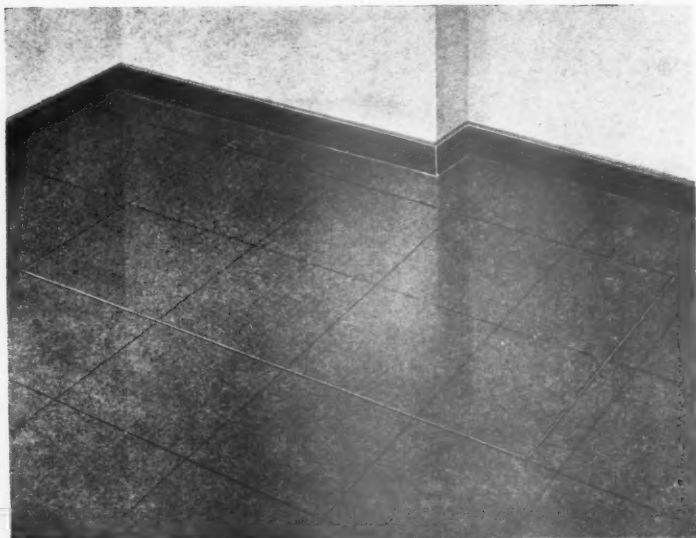
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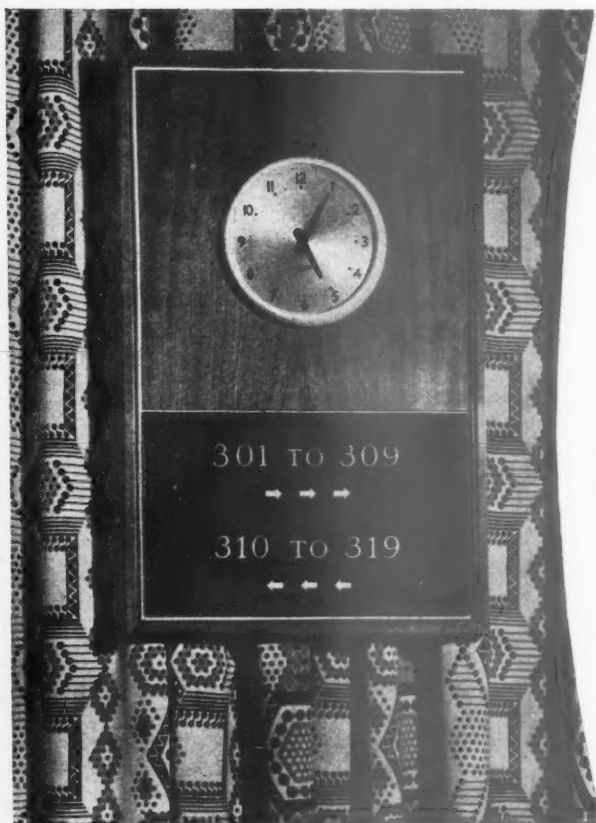
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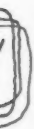
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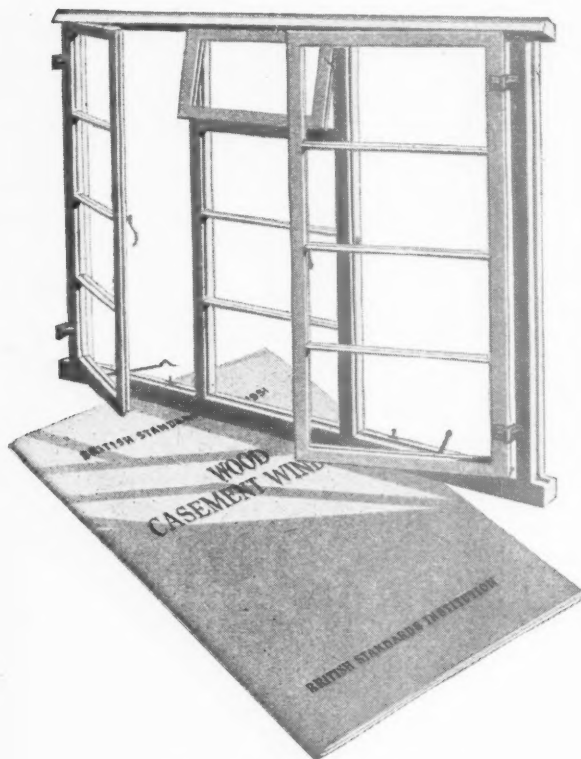
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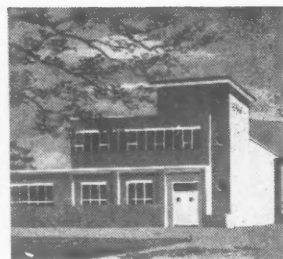
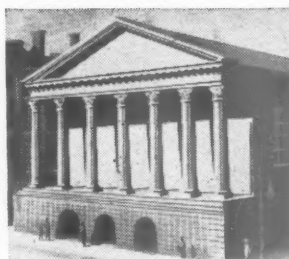
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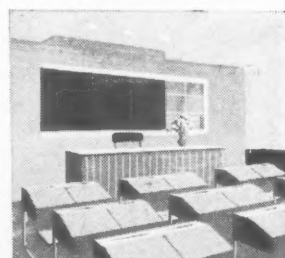
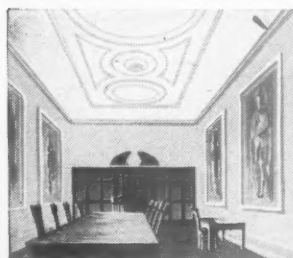
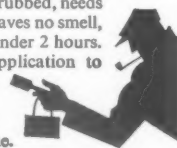
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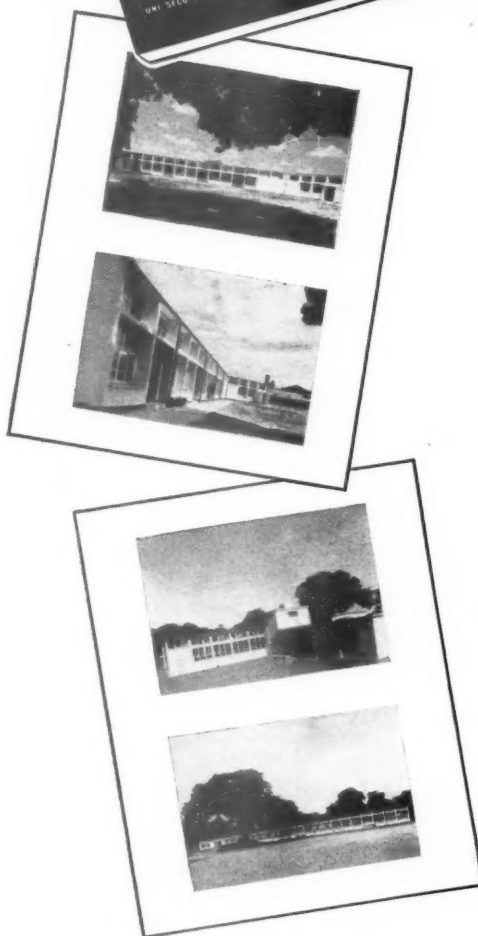
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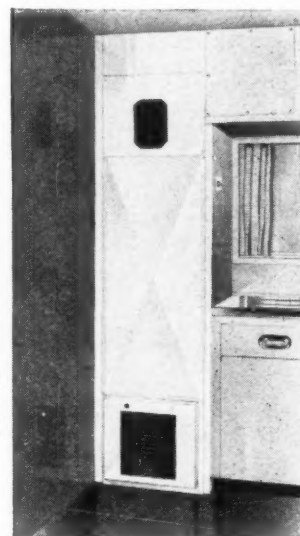
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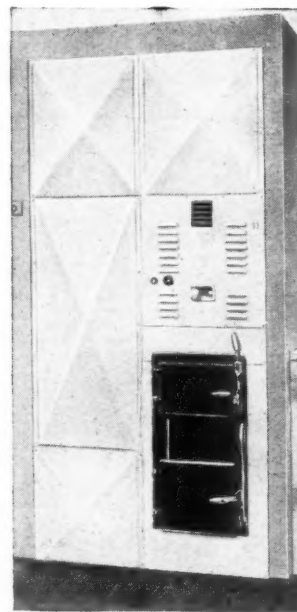
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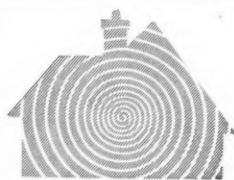


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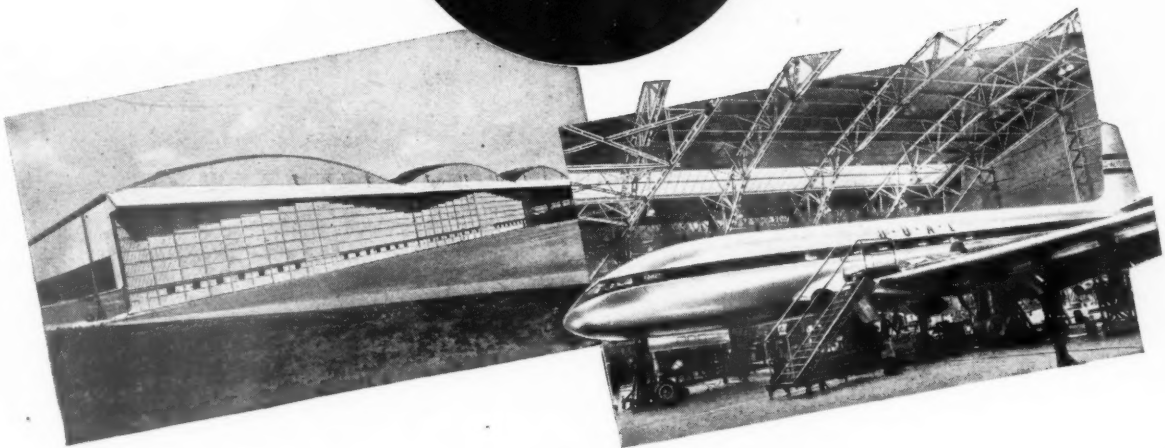
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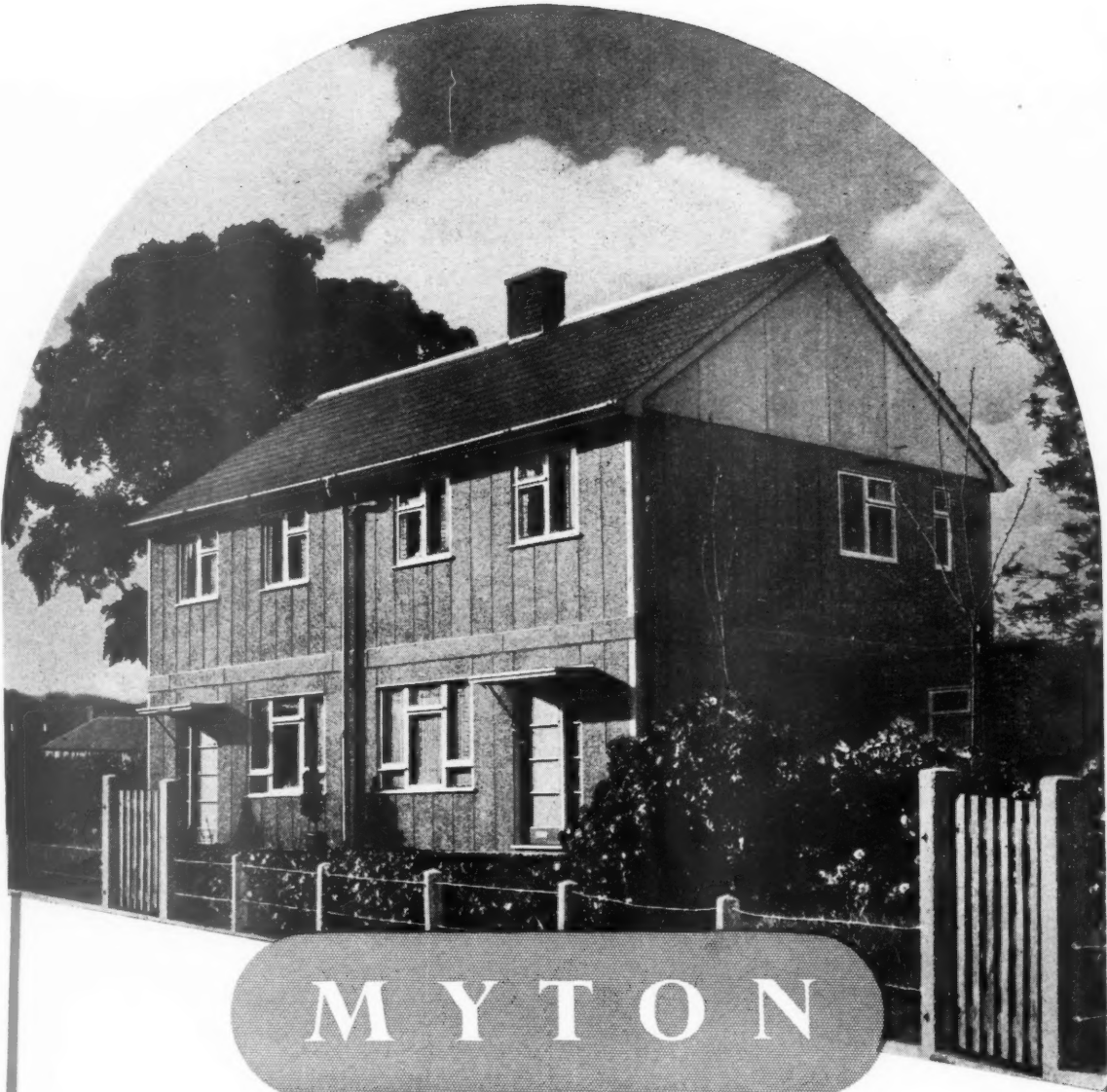
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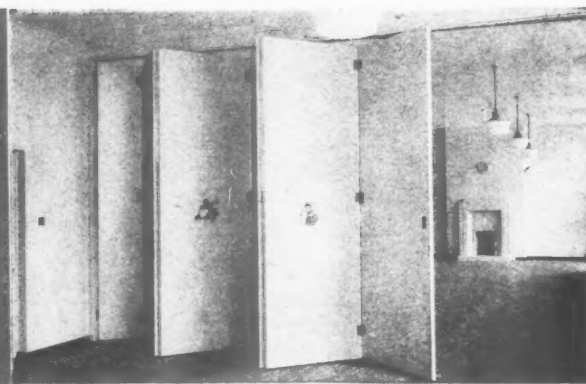
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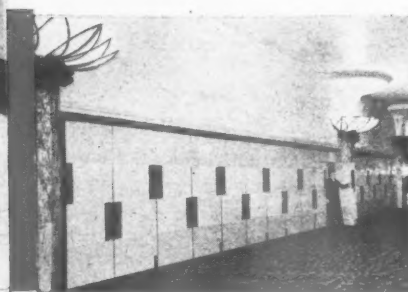
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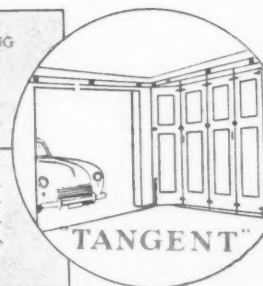
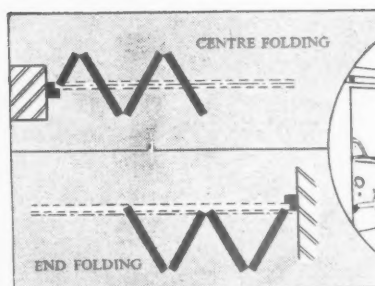
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THE NEW TOWNS FAILURE?

ASTRAGAL has already agreed with the *July Architectural Review's* condemnation of many features of the New Towns. He has been prepared to find that not everyone feels the same, and here are some extracts from a letter written him by an architect directly concerned with the New Towns.

*

"As it is difficult to tell how fully ASTRAGAL shares the Richards-Cullen views, I shall assume he shares them all. There is much in these views with which most architect-planners of new towns will agree. The slow start, the concentration on house building and the elaborate "fairness" to ensure that the New Towns had no advantage over local authorities and several disadvantages from which local authorities are free—

these and several other things are sad and have greatly handicapped the development of new, live communities.

*

I take issue with A-R-C on two points. First architects are the products of, and servants of, their times—not dictators of how New Towns should be built. Politicians and civil servants will always forfeit the completion of one job well (especially if of a new kind) in order to dodge complaints of unfairness. Architects cannot change this, singly or as a profession. They would only do themselves out of a job, if they tried. The low density garden city ideal of residential planning, the regulations of the Ministry of Transport, the by-laws of UDC's are widely held or have statutory authority, and architects and town planners must conform with most of them, or do the other thing. And many architects believe in the ideal.

*

Secondly, A-R-C's approach to density is that of a Romantic—heart warming but definitely Romantic. Once one pushes density above about 65 rooms per net acre one has to go for flats, or 3-4 storey houses, or house windows directly adjoining pavements, or alleys, or a mixture of all of them. These things are the raw materials of some of the most charming street scenes in the world. Whether a happy well-integrated society necessarily follows upon charming street scenes is doubtful. Two things are certain: a town of this kind would have considerable though not necessarily intolerable drawbacks for those who lived in it; and any proposal to build it would be turned down flat by every existing official and by 95 per cent. of the intended inhabitants."

*

I can think of several answers to these points, and readers will no doubt be able to think of others. The only one I have space to make at the moment is that my correspondent's description of a densely planned town is neither, to my mind, disagreeable nor romantic, and would surely not be as unpopular as the garden-city fanatics think. The particular argument that needs firmly answering is that higher density certainly doesn't mean making people live in flats. Look at the unnecessary street

widths poured on the New Town architects by local authority regulations and the acres of space wastefully taken up by wide grass verges and sidewalks. By eliminating these alone, New Town's streets could be much denser and more town-like without any change being made in the design of houses.

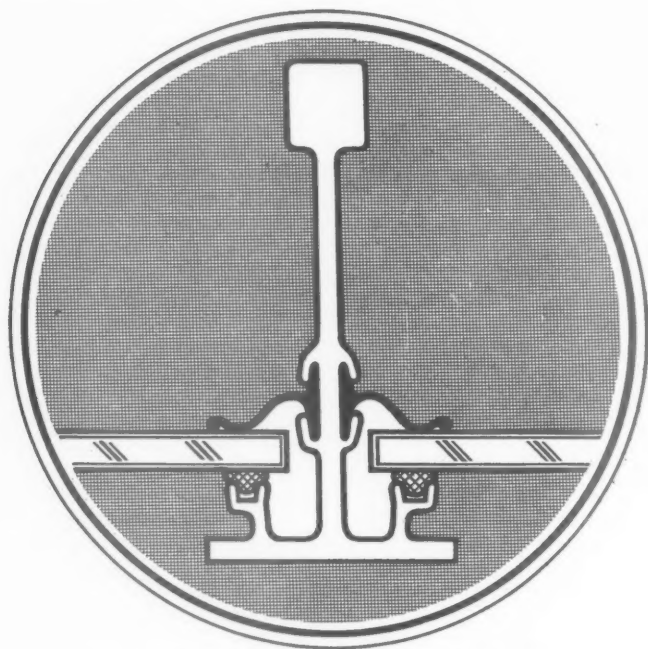
*

No doubt it is well-meaning but not fully considered legislation (rather than architects) which is principally to blame—but architects who are always grumbling because they are not regarded as leaders must occasionally expect to earn their place by doing a little bit of leading. Would it not be possible for some lively group of individuals—of enthusiastic architects and/or students to take over the study of this problem—in a manageable size—and work out some alternatives and publish them? The MARS Group used to do just this sort of thing—and if they are today too busy and beset with responsibilities, surely somebody else could be found to have a go? Certainly there are few problems more urgently in need of fresh—even lunatic—thinking, and it is hard to believe the supply of lunatics in the profession has dried up.

DON'T SHOOT THE PIANIST

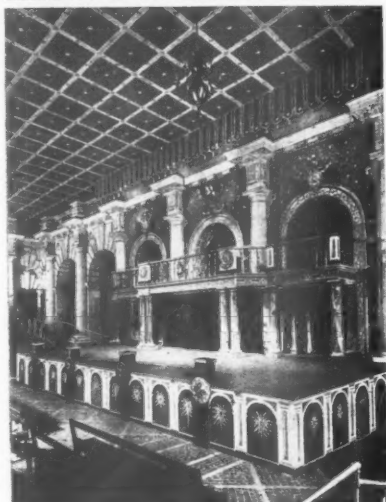
Like most readers of the *Press*, ASTRAGAL always reads the leading article last—if ever. (Similar inhibitions—resentment perhaps against having the relative importance of news items pre-selected by others?—have always encouraged him not to read headlines). It was not, therefore, until a few days ago that his eyes fell upon the leader on Mumford's talk to the AA published in the *JOURNAL* for July 9, and as they fell my goodness:

HOPE'S ALUMINIUM PATENT GLAZING



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This is what happens beneath the suspended roof in the Royal Exchange, shown overleaf in the "problem picture." It is, as some readers will know, Bernard Miles's "Mermaid Theatre." Although its season is shortly coming to a close ASTRAGAL decided to record it in his pages as an example of architect-stage-designer collaboration. The architect was E. L. W. Davies; the designer of the Elizabethan-type stage was Michael Stringer. Top, left, the Royal Exchange before the theatre was installed.

how they bulged in disbelief! "Such tolerance" (of indifferent or cliché-ridden architecture) has gone on long enough" . . . "this is a signal for a purge within the ranks of so-called modern architects . . ."

*

Windy, well-meant but surprising words for a liberal journal. Let's have no talk, please, about decreasing tolerance—the very word purge reeks of witch hunting. Who are to be the unpurged elite, and who is there objective or imprudent enough to choose them? Of course, there are plenty of second-rate architects—there always have been, and of course much so-called modern architecture is no more than an assembly of clichés—so it always has been in any period. Could we not—just for a moment—remember the truth that all bad design is no more than imitation good design, and that those who fail in their attempts are not necessarily scheming blackguards, deviationists, imperialistic hyenas, etc., nibbling away at the foun-

dation of "True Architecture," but merely the fumlbers and the purblind? Is not the traditional reaction to a dropped catch (after the first and inaudible gasp of dismay) the cry of "Hard Luck Sir!" not instant banishment to the pavilion and confiscation of pads? Or is ASTRAGAL, as his arteries harden, softening slightly in the brain as well as in the heart?

GAS AND DESIGN

And yet how quickly the glow of tolerance and sympathy can be chilled; casting aside the JOURNAL for July 9 in virtuous disdain, one picks up a set of booklets recently issued by the Gas Council. Immediately the bile rises, the pupils shrink, the spirits droop. Tawdry, third-rate, stilted and unreadable—the melancholy adjectives stalk sadly by as one by one the pamphlets drop into the waste-paper basket, each one of them part-fathered in the names of all of us, and like all nationalized undertakings, part-produced with our own money.

*

One booklet, called "Gas and Coke in Housing for Special Purposes," and presumably addressed to local authorities and architects, grinds inexorably through twenty-four pages of uninspired text and hack layout. Of the illustrations, some are cut-outs in

pointless wiggly shapes, others are in pages of rectangles of badly composed photographs—all of them on a hideous pink ground, which creates thick dominating borders round each photo. What sort of an approach is this to architects? A second booklet, intended for people building their own houses, is called "Your New House." The regrettable pre-war type villa that is going up on the cover merely sets the note for another sixteen pages of unintelligent layout clichés and garish colour panels. The same criticisms apply to a third booklet entitled "Gas in the Warming of Large Buildings, Part II." I am nearly hysterical with delight at having missed part I.

*

There is no excuse for this low standard of presentation—particularly when, in contrast, the Gas Council advertisements in the JOURNAL and the *Architectural Review* are so orderly and inoffensive. A nationalized industry has a duty to maintain the highest standards, and one would think that for public relations reasons alone it would take a pride in doing so. It is said that nearly every publication of this kind is edited, not only by the Gas Council itself, but by the twelve Area Boards as well. Little wonder that the lowest common denominator eventually emerges.



What is Wrong with this Picture? ...

... Or when is a floor not a floor? This suitably silly-seasonish frontispiece shows a strange view of a building that Londoners know well. The suspended floor, it

should be pointed out, is only a temporary feature. And it is, in fact, not a floor but a ceiling. The answers to your inevitable questions are on page 97.

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RCA AT V AND A

Searching desperately for something he could say pleasant things about, ASTRAGAL finished his week by calling at the V and A, where the Royal College of Art is holding its annual exhibition of work. As he suspected, he was on to a good thing. There is little in this display that is mediocre and much that is superb. Yet the quality of the work on view seems to lie in the craftsmanship, rather than in the design. This is, perhaps, appropriate (though one cannot be sure if the College is training designers or craftsmen). Industry is conservative and industrial design is largely an evolutionary development. But the lack of interest in design is more apparent in the so-called contemporary designs than it is in the derivative ones (silver- and metal-ware get top marks).

*

As a nation we show, perhaps, a pre-occupation with craft-means to the detriment of conceptual design. It all goes back, one fears, to William Morris and the Arts and Crafts Movement. Because of this we should be constantly on the look-out for correctives. The popularity (and export) of our china, cutlery and what-have-you will not survive on craftsmanship alone against the products of Germany and the US. There is a constant need to infuse our rather brittle design tradition with new ideas. I don't mean the latest fashions, but a sense of form and scale—an awareness of the *zeitgeist* in fact. For example the woven fabrics seen at the V and A exhibition, though all tasteful, appear to be "dead." There is pattern and texture, but no vibrancy. Little attention has been paid to the lessons of the post-impressionists and the experiments of the Bauhaus weaving school. This is true of the stained glass, too; it is exemplary, but it lacks brilliance. And although the furniture stands up to close inspection, even under a microscope (ASTRAGAL is never without one), it seems to have been designed in isolation, not with a view to its relationship to other pieces or to its possible surroundings.

*

Come to think of it, that wasn't as pleasant a note as it started out to be. All that can be done at this late stage is to end by thanking you for staying the course, and to hope that next week you will find a more cheerful . . .

. . . ASTRAGAL.

POINTS FROM THIS ISSUE

ASTRAGAL discusses New Town policy	page 95
Final article in MOE development work series	page 111
Aluminium in the building industry	page 119

The Editors

ARCHITECTS AND INDUSTRY

THE Select Committee on Estimates* has stated in its 8th report that evidence submitted to it "overwhelmingly supports" the view that the school building programme cannot be completed unless 50 per cent. of our schools are prefabricated.†

If this ever comes about, much of the design and drawing office work will be transferred from the office of the county architect to the offices of the firms whose prefabrication systems are used, and many of the architects and architectural assistants who now work in county architects' offices will be working in the drawing offices of these firms.

This fact reminds us of S. A. W. Johnson-Marshall's plea, made at the recent RIBA Conference, that the architect "must be allowed [by the Code of Professional Conduct] to be a true partner at policy level" in industrial firms. Otherwise, all the policy decisions affecting the architects and architectural assistants who will be working in the drawing offices of these firms will be taken by non-architects, for, as Mr. Johnson-Marshall put it, if an architect can only be employed by an industrial firm, it is almost impossible for him to attain sufficient authority to be jointly responsible for the product he designs.

SALARIES AND "PROFITS"

If local authorities make a "profit" out of their salaried architects amounting to something like £400 per annum, per head, as was suggested in the article by a local authority architect published in last week's JOURNAL, how much profit does the architect in private practice make?

Since the salaries of employed architects and architectural assistants in private offices are, if anything, slightly lower than those of their counterparts in public offices, one might assume that the private architect makes nearly £500 p.a. out of each of his assistants. We are only too well aware that this is not the case (as a reader points out on page 100).

The reason is that the public office is more "efficient" than the private office; by which we do not mean that it is better organized, or that its staff work is harder, but that it has a continuous, stable programme of work, whereas the flow of work into a private architect's office is, at best, intermittent; it cannot be estimated in advance and it is constantly at the mercy of the licensing authorities. The result is that, unless

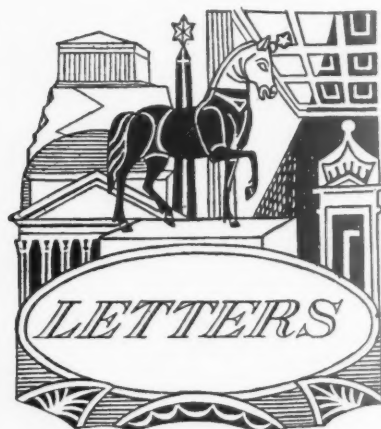
* The Eighth Report of the Select Committee on Estimates: 1952/53. HMSO. 9s.

† Several systems of prefabricated school construction are described and illustrated in an article which starts on page 111

the architect employs his assistants as "casual labour" (and we trust no architects do), he must go on paying their full salaries when he has insufficient work to keep them busy, or when a job is held up awaiting one or other consent.

The "efficiency" of the private architect's office would be improved if there were more continuity in government policy for the building industry—long-term decisions on the size of the building programme and on the order of priorities for different types of building—as recommended by the UNO Housing Sub-Committee, in its recent report on the cost of house construction (summarized in last week's JOURNAL), and by Professor Bowen in the pages of the JOURNAL time and time again.

This would give the private architect the comparatively steady, if small, flow of work that would help him to raise the "efficiency" of his office and the salaries of his staff, to say nothing of his own income.



C. Wooster, A.R.I.B.A.

R. H. James, Production Consultant

L. Carlton Edwards, A.R.I.B.A.

Salaried Architects

SIR,—Like most employed people I believe that my profession's salary scales are too low, but care must be taken not to weaken a good case by disregard of facts.

There appear to me to be four points overlooked by your contributor (AJ: July 16).

(1) There is obviously no point in an authority having its own department if it is to cost as much as commissioning private architects.

(2) The fees required by a private architect to carry out one project must be sufficient to cover his expenses when he has no project to carry out. Local authority architects, on the other hand, need never be without work because authorities can programme their projects.

(3) Here Professor Bowen should soon be able to help, but I believe it to be a fact that salaries paid by private architects are not so different from those paid by authorities: and there is a lot to be said for established employment when one is salaried.

(4) If principals in private practice gain more than their opposite numbers in public service in theory, it must be remembered that private architects through no fault of their own sometimes go bankrupt, but employed architects need never do so, and that to try to ensure a steady practice a private architect may never desist in the evenings and at weekends from trying to catch jobs. Not many are in the enviable position of having jobs fall in their laps.

The salary scale suggested (AJ: July 16) is clearly an improvement on existing conditions, but could private architects afford to pay similar salaries within their present earnings? If not, the supply of staff would greatly exceed demand, and the scale could not be maintained.

Surely the only long term policy is to control quantity and quality of qualified staff?

C. WOOSTER.

Rickmansworth.

Incentives

SIR,—In your issue of July 9 ASTRAGAL quoted the figures recently published by the MOW of the extent to which incentive schemes are being operated in the building industry. From these he concludes that "a bonus scheme is not too hard to arrange on a big job, but quite difficult when there are only a few men or when it is a question of maintenance work."

It is true, of course, that a bonus scheme is comparatively easy to arrange on a big job, but this is mainly because the site staff is naturally of a higher grade and by its size more elastic and more able to introduce new methods. Further, large projects demand more accurate records of output and costs than smaller ones and hence provide the essential basis for incentive schemes.

It is not generally appreciated, however, that the type of detailed schemes usually employed on big jobs are not necessary on smaller ones and that it is possible to employ very successfully much more simple schemes embracing the whole of the men on the site.

Moreover, recent experience has shown that, tackled boldly, the problem of bonusing maintenance work is by no means difficult to solve. Indeed, there are many classes of routine maintenance and repair work for which very effective incentive schemes can be operated with less trouble than is encountered in any but repetitive housing construction.

There are, of course, classes of work which it is not practicable to bonus, and in some of the smaller firms the intimate relationship be-

tween the employer and his operatives provides conditions under which bonusing on a rigid scheme is unnecessary. There remains, however, a large body of employers who have yet to be convinced of the efficacy of incentive schemes as a means of reducing costs and attracting a good type of labour for the increased earnings. The fact that some builders prefer to pay quite high additions to the plain time rates, merely for the purpose of attracting men to their work, suggests that competition is still anything but keen. It would be a tragedy for the building industry and the national economy if cut-throat competition was brought about by the industry out-pricing itself.

If these extra labour costs could be replaced by bonuses out of savings achieved by an incentive scheme, the building industry would be in a much healthier condition and could meet the future without fear.

The solution appears to be very much one of education. Builders are apt to look upon a costing system as an additional cost rather than as a means of revealing weaknesses in their organizations and providing information on which they can base incentive schemes and, hence, keen tenders.

One of the present weaknesses lies in the supervision of the work. Too often the lack of an incentive scheme, and indeed the failure of quite sound schemes, can be attributed to indifference on the part of the foremen and other supervisory staff. It will be remembered that before the war it was the foreman who was bonused, in one way or another, and it was left to him to get the best out of the men. True, conditions have changed, but I believe that the education of the supervisory staff in methods to suit present-day conditions is the key to the better efficiency of the industry.

Architects can help by encouraging the employment of incentive schemes. There is little evidence to support the contention that such schemes lead to a lower quality of work; on the contrary, properly formulated schemes have been proved to encourage the men to improve the quality of their work.

R. H. JAMES.

London.

Re-planning Hull

SIR,—As a native of Kingston-upon-Hull, your special issue on the re-development of that city (AJ: July 2) was of particular interest to me.

I would like, however, to take up the cudgels in defence of some of the accusations made against it. In the first place, I do not accept the view of the editors that the Queen's Gardens may form a "barrier" between the Old Town and the new. I agree they constitute a "break" in what the editors call "a congested island," but in my opinion that is an advantage.

Why should we perpetuate the overcrowding of our cities by building on every available site? If it is contended that a planning link is an aesthetic necessity, surely this will be provided when the fine new technical college is erected.

What is unfortunate but unavoidable is that those massive buildings—the Dock Offices—prevent a vista of the gardens and Wilberforce monument from the city square, and a view of the city hall from the gardens. It would be a travesty of good planning to use this as a factory site—as at Southampton, and as far as a bus station is concerned, Hull is adequately served by a covered bus terminus more appropriately placed near Paragon station.

The third port had a more severe battering than most cities during the war and lost many of its fine buildings, but it is now recovering, and it is good to see so many of my old colleagues, whose photographs appeared in your fine issue, contributing so ably to its recovery.

L. CARLTON EDWARDS.

Welshpool.

BUILDINGS IN THE NEWS



MOHLG

Housing Progress to be Maintained

Houses are being built at the rate of 300,000 a year, but the supply of bricks and cement prevents any increase on this figure. This was stated in a parliamentary written answer last week by A. E. Marples, Parliamentary Secretary to the MOHLG. He said there had not been any cut in the housing programme. He also stated that he expected to see more houses built for owner occupiers.

Subsidies to Continue

Exchequer subsidies and rate contributions for new houses built by local authorities in England and Wales before June 30, 1954, are not to be changed. The principal subsidies are:—General standard subsidy—exchequer, £26 14s. per house per year for 60 years; local authority contribution, £8 18s. per house per year for 60 years. Special subsidy for houses for agricultural workers—exchequer, £35 14s. per year for 60 years; rates £2 10s. each from the local authority and the county council for 60 years.

NCBMP

Increased Production

Production of cement in 1952 exceeded that in 1951 by 9.8 per cent.—or 900,000 tons; production of bricks went up by 9 per cent.—or 542 million bricks.

These facts were revealed recently by Hugh Molson, parliamentary secretary to the MOW, at an NCBMP luncheon. This year's cement production, he said, was expected to be 400,000 tons (3.6 per cent.) more than last year's. The production of bricks had gone up by 187 million at the end of May this year, compared with the first five months of last year. Tiles were not plentiful.

LMBA

Shortage of Building Apprentices

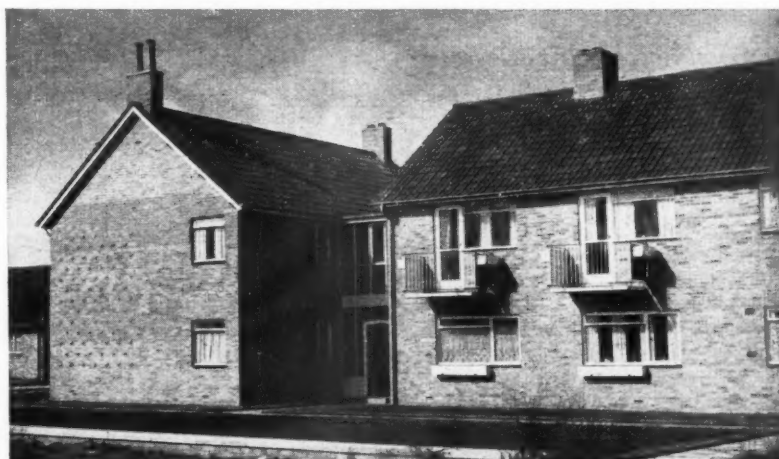
The London area may shortly be faced with a grave shortage of building trade apprentices, according to the half-yearly report of the LMBA, which is being pre-

(continued on page 103)



Offices at Wallsend-on-Tyne

Above, the most recent additions to the Swan, Hunter and Wigham Richardson shipyard offices at Wallsend-on-Tyne, which are being redesigned by stages by Richard Sheppard and Partners. On the left are the time control offices. Above them is a drawing office accommodating 150 draughtsmen; the roof is of north-light shell concrete vault construction. On the right are administrative offices. The first stage of rebuilding was illustrated in the JOURNAL on March 2, 1950.



Flats at Lytham St. Annes

Above, a block of ten flats mainly for single women at Lytham St. Annes, designed by T. Mellor. There are six bed-sitting room types of 290 and 339 sq. ft. and four flats with separate bedrooms and living rooms of 504 and 523 sq. ft. All flats have separate kitchens and bathrooms. The cost per sq. ft. was approximately 42s. These flats form part of the Lytham St. Annes War Memorial Housing Scheme which was illustrated in the JOURNAL on June 21, 1951.



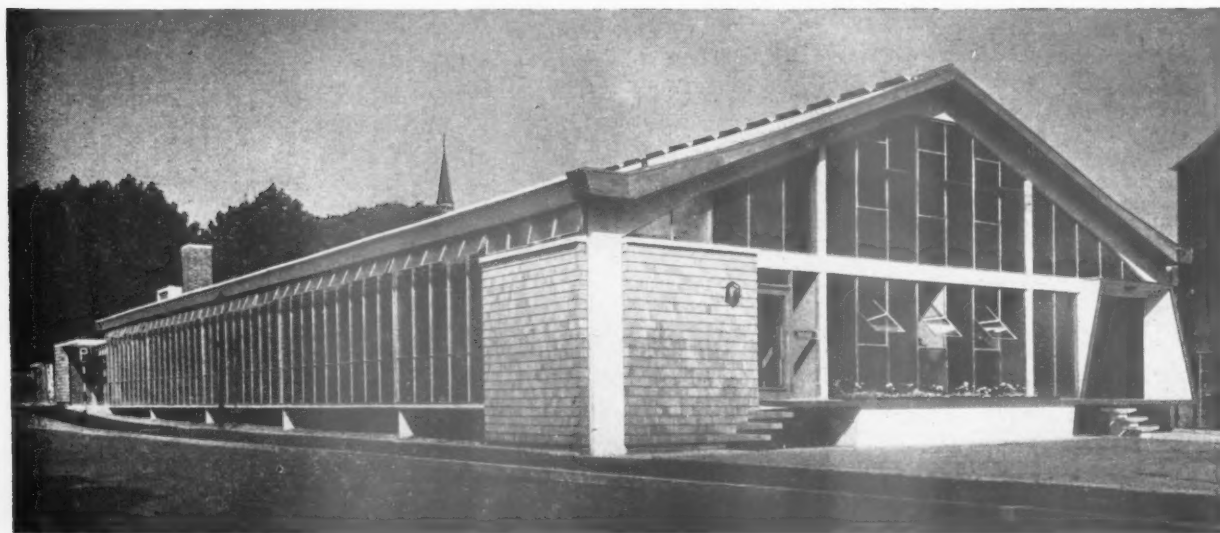
BUILDINGS IN THE NEWS (continued)

Factory at Dover, Kent

Below, the factory for the London Fancy Box Co. at Dover, designed by Louis Erdi. There will eventually be 150 operatives working on the floor area of 9,000 sq. ft. The span of the precast concrete frame structure is 54 ft. The cost was 37s. 6d. per sq. ft. Wood shingles on the near corner were as economical to use as facing bricks.

Secondary School at Feltham, Middlesex

Above, the first post-war school for girls to be completed in Middlesex. It is a four form entry secondary modern school for 560 pupils, at Feltham. The three-storey classroom block on the right is the first in the county. The area per place is 75 sq. ft.; the cost per place is £256. The national average cost per place at the time when the school was designed in 1948 was £320. County architect, C. G. Stillman; area architect, E. Mason; job architect, L. S. Fox. The school will be fully illustrated in a future issue.





Telephone Manager's Office in North-West London

Above, the second post-war telephone manager's office in the London region, serving the north-west area and located at Shoot Up Hill, N.W.2. It is to be opened shortly. It is the first multi-storey continuous frame building embodying prestressed concrete beams in this country. Beams at 12 ft. centres span 46 ft.; they are 2 ft. 5½ in. deep by 1 ft. 3 in., except for the top floor; they were prestressed by the Magnel-Blaton system, the cables being anchored to the external faces of the columns. The floor area is 78,000 sq. ft., of which 13,000 sq. ft. is circulation area. The designers were Eric Bedford, chief architect of MOW, and F. W. Holder a senior architect of MOW.

Cafeteria in the East End of London

Below, a cafeteria seating 80 people in Wickhams Ltd., a store in the Mile End Road, London. It has been redesigned by Carl Fisher. The store has found that its takings have increased by up to 50 per cent. as a result of the redecoration. The seating area is 688 sq. ft. and the serving and kitchen area is 108 sq. ft. The cost of the conversion, including fittings and equipment was about £3,000. This figure includes the special fittings, such as a boiler and refrigerator.



sented at the half-yearly meeting of the association today.

The intake of apprentices during the first half of this year, it is stated, has again dropped, and the position is now extremely serious. The numbers of adult craftsmen will, as a result, decline. Unless there is an increase in the number of apprentices indentured, the building industry will find itself unable to meet its commitments in the building programme which lies ahead.

GLOUCESTER

City Architect

J. V. Wall has been appointed city architect of Gloucester in succession to A. Morgan, who retires next month. Mr. Wall, who is at present the deputy city architect, was formerly in the surveyor's department at Smethwick.

LONDON

Transport Executive Changes

Following the retirement of C. S. Boughton, a principal assistant architect of London Transport, A. V. Elliott and K. J. H. Seymour remain as the two principal assistant architects under T. R. Bilbow who is the chief architect. It was following the recent retirement of P. Croom-Johnson, who was chief engineer, that Mr. Bilbow became directly responsible to one member of the London Transport Executive. Previously the architect was responsible to the chief engineer.

USA

Annual Architects' Convention

Approximately 800 American architects attended the 85th annual convention of the American Institute of Architects at Seattle, Washington, last month. The number attending represents nearly one-tenth of Institute members. The opening and closing theme of the conference was "A New Country—A New Architecture." The first part of the theme was the subject of an address by the president of the Boeing Airplane Co. The convention ended with an address by Pietro Belluschi, dean of the school of architecture, Massachusetts Institute of Technology, on the second half of the theme.

Mr. Belluschi summarized the aims of "a New Architecture" under these headings:—
"First: The exploration of structure as source of form. Nature offers the greatest wealth of forms brought to life and beauty by the intrinsic need of their structure. In this age of scientific and technological advances, infinite possibilities are opening for us to exercise our imaginative powers by observing and by daring to process much of what we see into aesthetic forms.

"Second: Our attempts to more deeply understand human nature and to provide forms which will satisfy man's physical and emotional demands; in short, to make the nature of modern man the reference of our architectural thinking. Since the advent of the common man there has been a growing concern on the part of architects and artists to improve the environment within which the various social groups must spin the thread of their lives. This concept includes the home, the shelter of man and his family, an element full of emotional implications; it includes also the understanding and acceptance of regional architecture as a sympathetic manifestation, and as a recognition of human values peculiar to certain people and places. It also

includes the development of new forms for the larger urban unit—the city, brought about by the growing demands of our machine age.

"Third: The attempts by the very few creative intellects to find visual aesthetic symbols in a world which is in the way of losing the meaning of its destiny, in the many conflicts raised by science. Their rôle is to find new synthesis where there is now confusion. It is clear that our society needs poets as much as it does document writers, discoverers as much as journeymen, singers as much as speakers."

The conference included many talks, the main technical theme dealing with wood—as a natural resource, methods of wood processing, and structural uses of wood. Builders were invited to attend the convention for the first time, as about 600,000 of the USA's million houses per year are built from stock plans without the services of an architect. The Institute this year arranged for one session to be devoted to the house building industry in the hope of improving the design of housing through builder-architect collaboration. Joseph Eichler, a Californian builder, was invited to speak for the industry. A modular co-ordination meeting was also held.

A number of exhibitions were arranged at various places in Seattle as part of the convention. The most important was the Fifth Annual Exhibition of Outstanding American Architecture—work chosen from submissions by Institute members. Another exhibition consisted of work by William Adams Delano, this year's Gold Medal winner. Other exhibitions were held in the various centres in Seattle, including the Art Museum, the public library, the airport and railway station, travel agencies and department stores. A guide book containing illustrations of every important building built locally between 1850 and 1953, was produced for sale at the convention.

The Institute's medal awards were also presented at the convention. They included the Gold Medal (announced in the JOURNAL last week), which is the Institute's highest award; the Fine Arts Medal, which is the highest honour in the fine arts other than architecture, awarded to sculptor Donald Hood; and the Craftsmanship Medal, for craftsmanship in metal, wood, glass, ceramics and allied arts, given to Emil Frei. The annual Honour Awards were also announced. The winning designs were for the General Motors Technical Centre at Warren, Michigan, by Saarinen Saarinen, and Associates, and the North Carolina State Fair Pavilion at Raleigh, Carolina, designed by William Henley Deitrick.

YORK

Meeting of Ancient Monuments Society

The difficulty of finding architects, surveyors, builders and craftsmen, with suitable knowledge in the field of repair and protection of ancient buildings, was one of the concerns of Dr. W. A. Singleton in a paper which he read to the 30th annual general meeting of the Ancient Monuments Society, held recently at York.

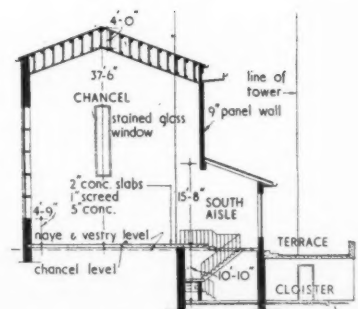
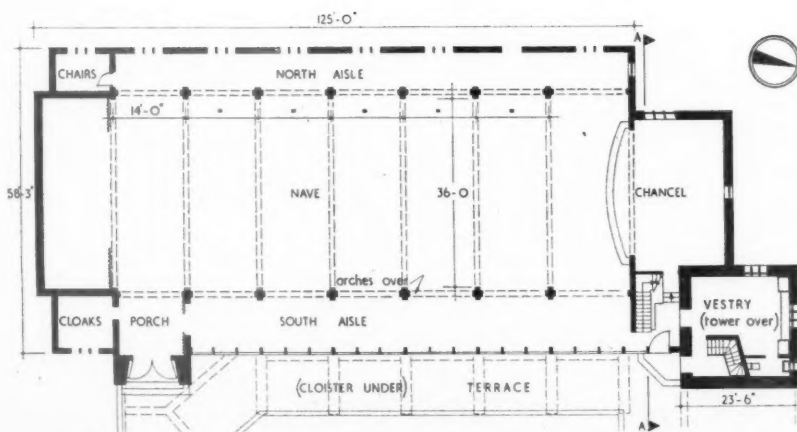
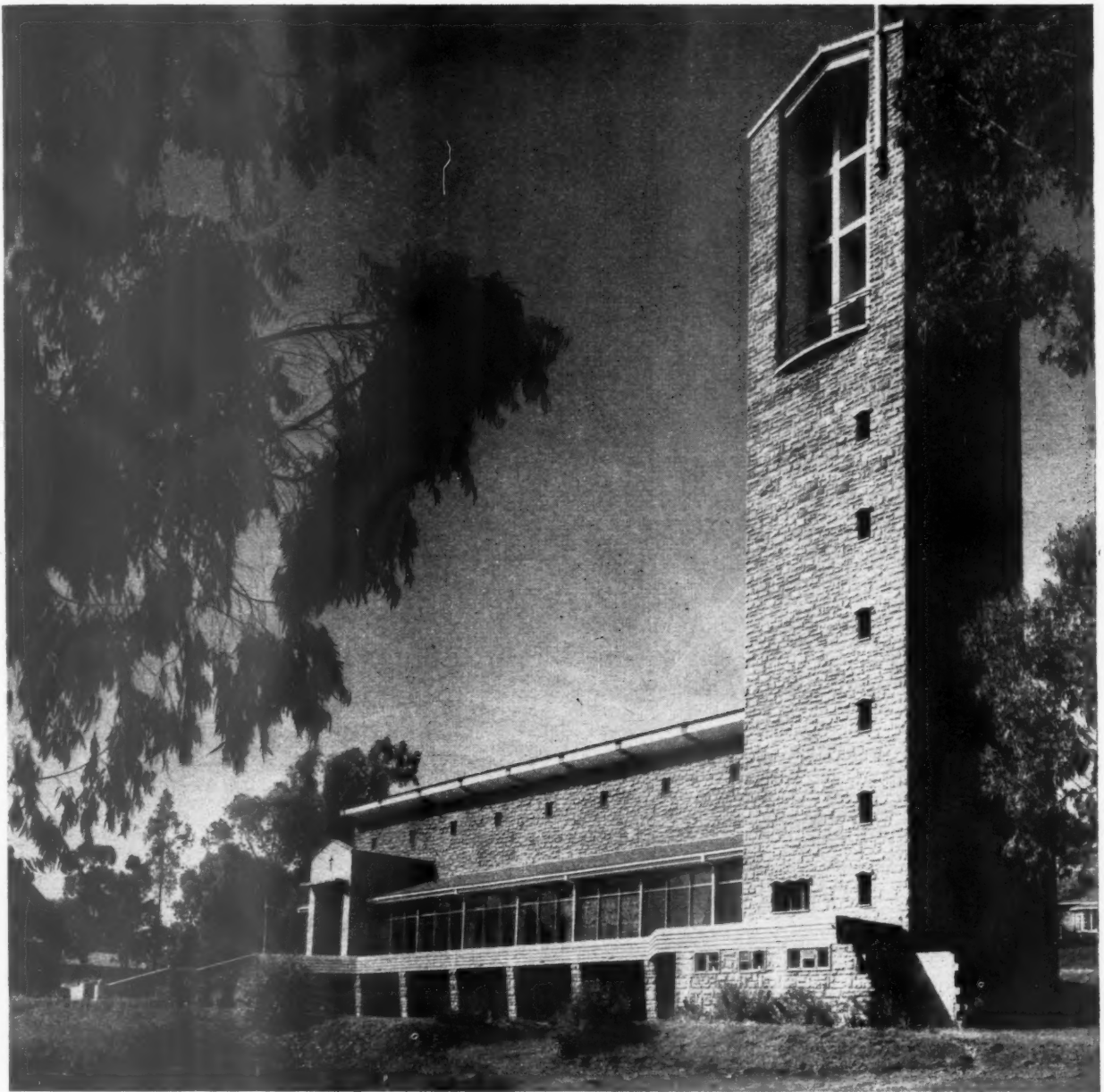
Speaking of the principles to be adopted in the protection and repair of ancient and historic buildings, he said:—"The first essential is to have a real personal and first-hand contact with the structure and materials of the building and get within its 'personality.' This is vitally necessary in order to avoid its destruction and at the same time to repair it sympathetically. The second guiding principle is that of conservation and preservation. As it is impossible to re-create the atmosphere of individual buildings, it is there-

(continued on page 106)

CHURCH AT NAIROBI, KENYA

St. Andrew's Church at Nairobi, Kenya, was designed by Blackburne, Norburn and Partners, for the local Scottish community. The site, which falls from west to east, consists of rock outcrop and laterite. The church is built in line with the contour. There is a considerable amount of under-building and filling. The plan of the church follows the traditional lines laid down by Scottish church ritual. There is seating space for 500 in the nave and room for 200 more in the aisles. The vestry and minister's cloakroom are in the base of the tower, with rooms for general use on the upper floor. Beneath the church are the crypt, chair store, a session house and office. The main structure consists of r.c. parabolic arches 40 ft. high, linked by r.c. beams, designed to withstand earth tremors. Floor: red, grey and black rough surfaced cement tiles; walls, masonry, rough plastered on the inside except at the east end, where fine dressed stone is used; roof, locally made Italian type tiles. Below: left, entrance; right, pulpit and font.





fore essential to preserve and protect as much of the original work as possible. Where repairs and replacements are necessary, these should be so contrived that they in no way result in conjectural imitations of the old work. New work should always be in harmony with the old, but subordinate to it.

"Thirdly, the very common archaeological habit of exposing historical features, for no other reason than that they are historical should be avoided. For example, many mediaeval timber-framed houses, particularly in cities like York, have had their eighteenth century plaster façades removed, thus depriving them of much of their 'personality.' Apart from the fact that many of these façades were very beautiful in themselves, often with fine decorated pargetting, the whole chronological sequence and therefore their authenticity has been lost. In fact, in several cases false Tudor windows have had to be inserted in an effort to restore some sort of the original appearance."

Preservation of Historic Buildings

The Academic Development Committee of the York Civic Trust is organizing two courses on protection and repair of historic buildings. A two week general course will be held, September 7-19, and a course on "Foundation and Wall Repairs," September 21-26. The courses will be held at St. Mary's Hotel, York, and will be fully residential. Requests for prospectuses and all enquiries should be addressed to the Secretary, St. Anthony's Hall, York.

TCPA

Study Tour of France

There are still a few vacancies for the TCPA study tour of France, details of which were announced in the JOURNAL on June 4. The tour is from September 20 to October 5. Details are available from the secretary, TCPA, 28, King Street, W.C.2.

DIARY

Contemporary Architecture in Brazil. Professor Wladimir Alves de Souza. At the BC, Store Street, W.C.1. 6 p.m.

JULY 29

AA Students' Work. Exhibition at 36, Bedford Square, W.C.1. Weekdays 10 a.m. to 6 p.m.; Saturdays until 2 p.m.

UNTIL JULY 30

1953 House and Garden Colours for Summer Living. At the House and Garden Decoration Centre, 16, Grafton Street, W.1. Weekdays, 10 a.m. to 5 p.m.; Saturdays, until 12.30 p.m.

UNTIL JULY 31

Ten Selected "News Chronicle" Coronation House Designs. At Heal's, 196, Tottenham Court Road, W.1. Weekdays, 9 a.m. to 5.30 p.m.; Saturdays, until 1 p.m.

UNTIL JULY 31

Contemporary Brazilian Architecture. Exhibition at the BC, 26, Store Street, W.1. Weekdays, 9.30 a.m. to 5 p.m.; Saturdays, until 1 p.m.

UNTIL JULY 31

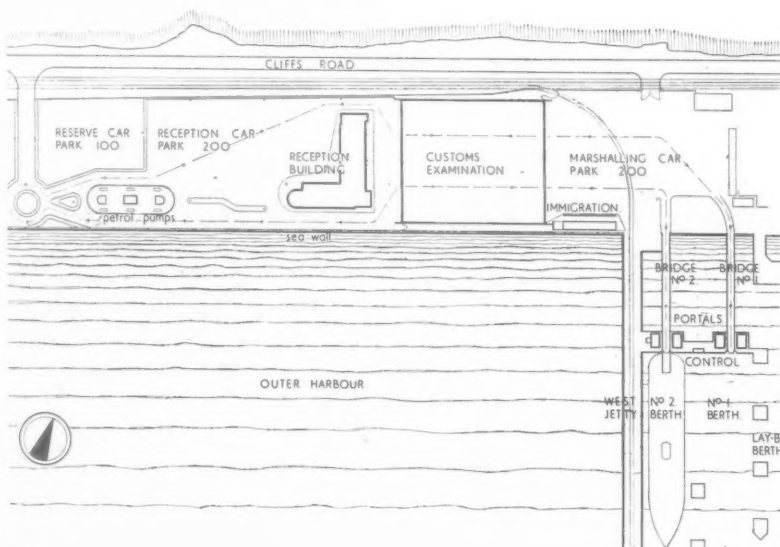
Furnishing to a Figure. At Heal's, 196, Tottenham Court Road, W.1. Weekdays, 9 a.m. to 5.30 p.m.; Saturdays, until 1 p.m.

UNTIL JULY 31

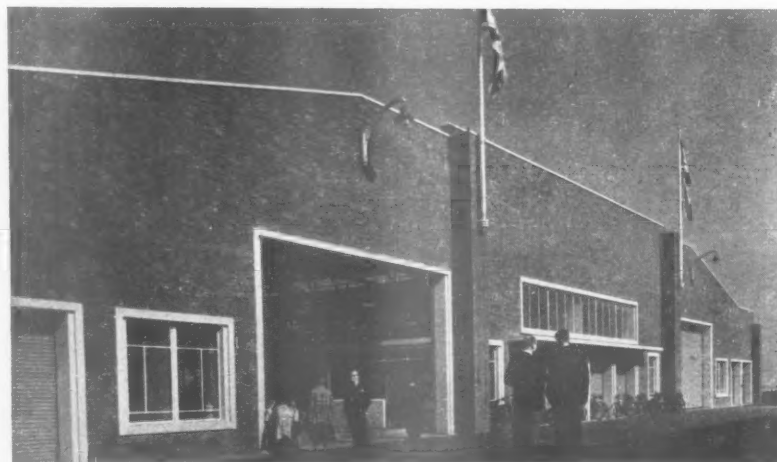
Students Work—the Royal College of Art. Exhibition at the Victoria and Albert Museum. Weekdays 10 a.m. to 6 p.m.; Sundays from 2.30 p.m.

UNTIL AUGUST 9

CAR FERRY TERMINAL, EASTERN

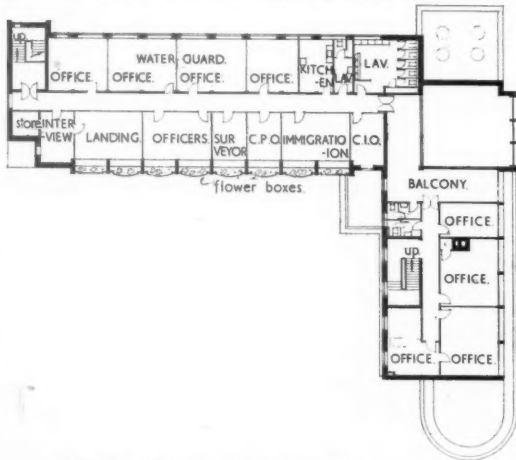
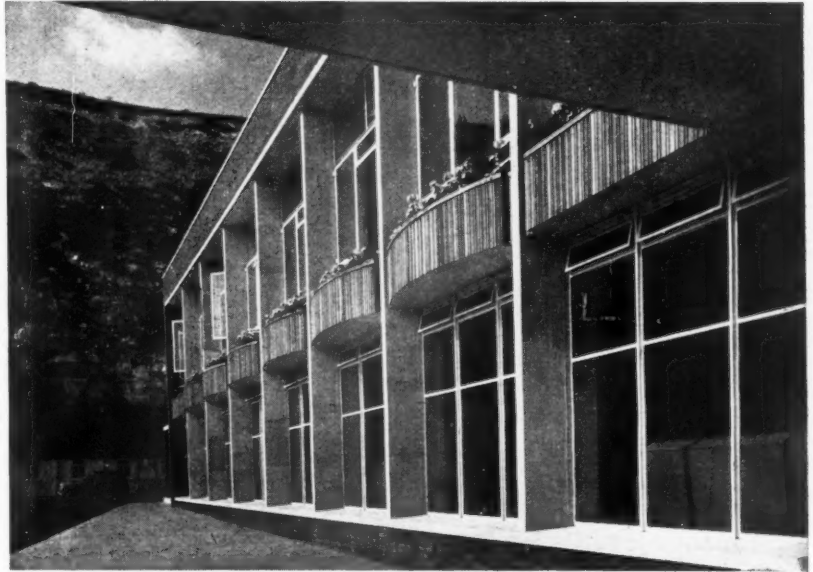
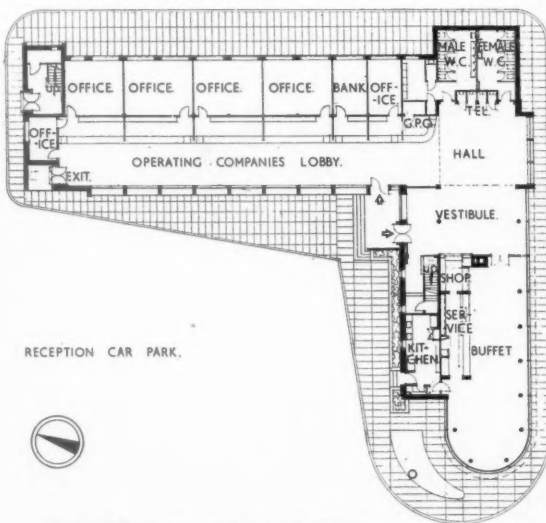


Site plan



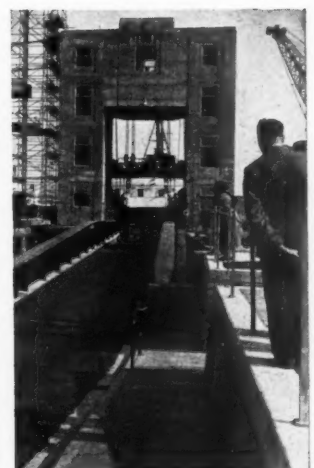
DOCKS, DOVER, KENT, FOR THE DOVER HARBOUR BOARD

This £75,000 terminal (architects, J. M. Wilson, H. C. Mason and Partners) was planned soon after the last war to provide the essential facilities for the rapidly developing traffic of vehicles—cars and coaches—to and from Continental ports. The volume of this traffic rose from 31,336 vehicles in 1939 to 100,993 in 1953 (year ending March 31). The reception building (top, on opposite page) forms a barrier between the customs building (opposite, bottom) and the reception car park, and facilitates the separation of incoming and outgoing vehicles. On the right is the west facade of the reception building, seen from the main entrance, and the photographs below show, top, the bar and buffet, which faces south over the harbour; bottom left, the main entrance hall,

First floor plan [Scale: $\frac{1}{4}$ " = 1' 0"]

Ground floor plan, reception building

showing a wall map of Europe, some 20 ft. square, on which are marked the principal cities and traffic routes; bottom right, one of the twin Portal towers under which vehicles pass, across 140-ft. long bridges, into or from the stern of the steamers. These bridges are hinged at the land end and vessels can be loaded at all states of the tide. The general contractor was R. J. Barwick. Sub-contractors, page 124.



OFFICES

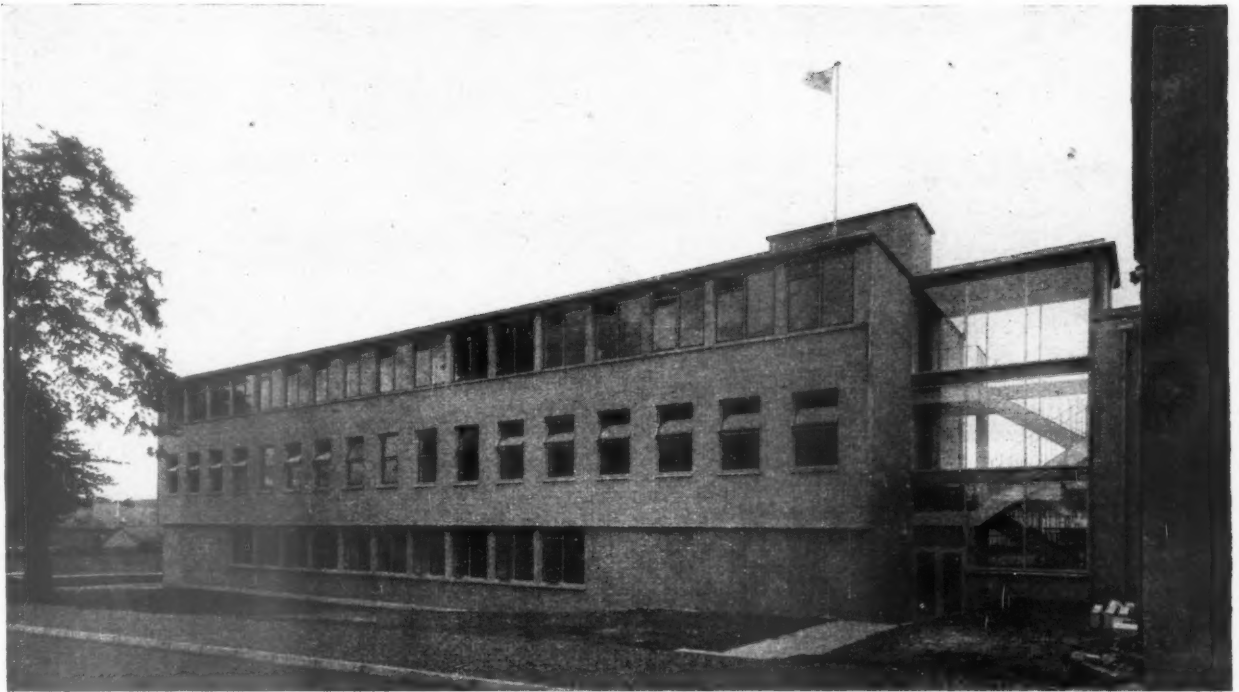
at THE WHINS, ALLOA, CLACKMANNAN, SCOTLAND

designed by EGON RISS, Production Architect, National Coal Board, (Scottish Division), J. B. BELL, principal assistant architect and I. T. BRAND, assistant architect

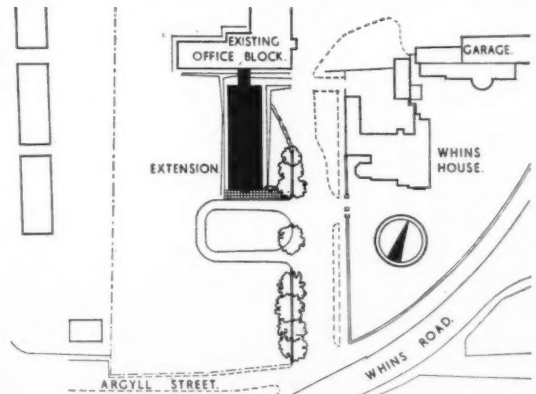
This office block for the Scottish Division of the National Coal Board is an extension to an existing block. It is the first part of a proposed development of the Alloa area headquarters.

From the south-east.





Above, from north-east, showing covered staircase linking the old block to the new. Below, the waiting space inside the main entrance.



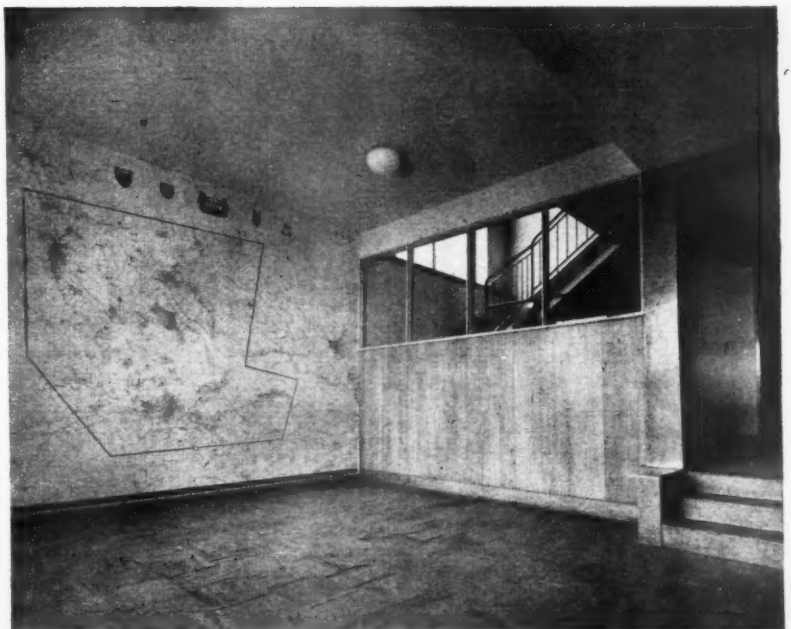
Site plan

SITE.—The only available site adjacent to the existing office block, to which the new block is joined, lay to the south. It slopes towards the main road.

PLAN.—The block has three floors. Each floor has a central access corridor flanked by offices on either side. The new block is linked to the old by a staircase enclosed in glass. This has prevented any restriction of light in the old offices. The lavatories on each floor of the new block are in a central position near this staircase. The offices of the chief surveyor and the chief planner who work in the building each has a glazed wall overlooking a drawing office.

CONSTRUCTION.—Structural frame: reinforced concrete with continuous beams at ground floor level and *in situ* ribbed concrete floors and roof. External panel walls are of 13½-in. cavity brickwork (4½-in. cavity); the 9-in. by 9-in. structural columns are concealed in the thickness of the inner skin and cavity and thus provide a flush wall finish internally. Internal partitions are of 4½-in. brickwork.

General contractors were James Laidlaw and Sons Ltd., for sub-contractors see page 124.





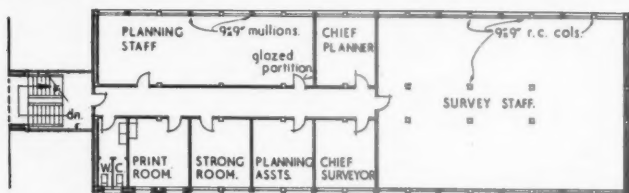
From the south.

OFFICES

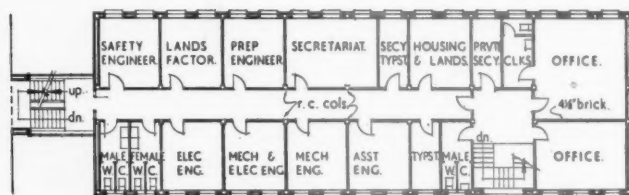
at THE WHINS, ALLOA, CLACKMANNAN,

SCOTLAND

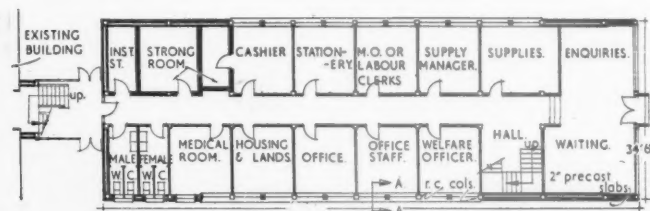
designed by EGON RISS



Second floor plan

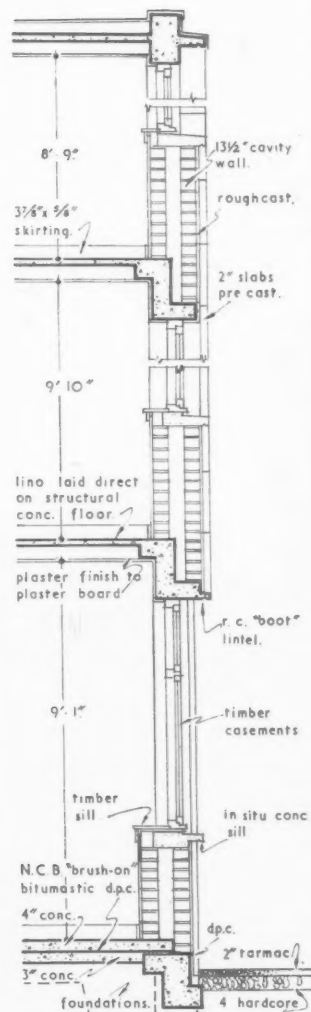


First floor plan



Ground floor plan [Scale: $\frac{1}{8}$ " = 1' 0"]

Below, exterior and interior of covered staircase link.



Section A-A [Scale: $\frac{1}{4}$ " = 1' 0"]





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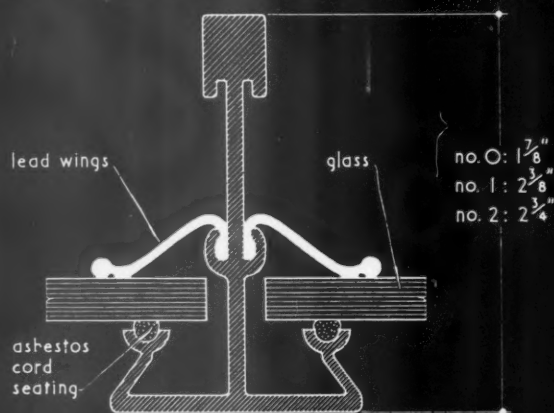
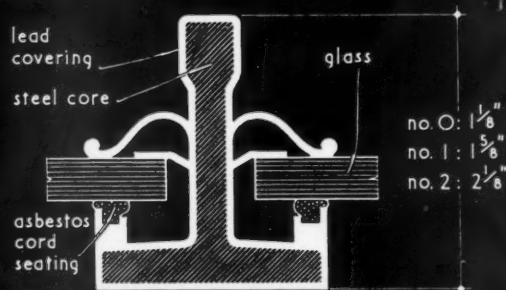
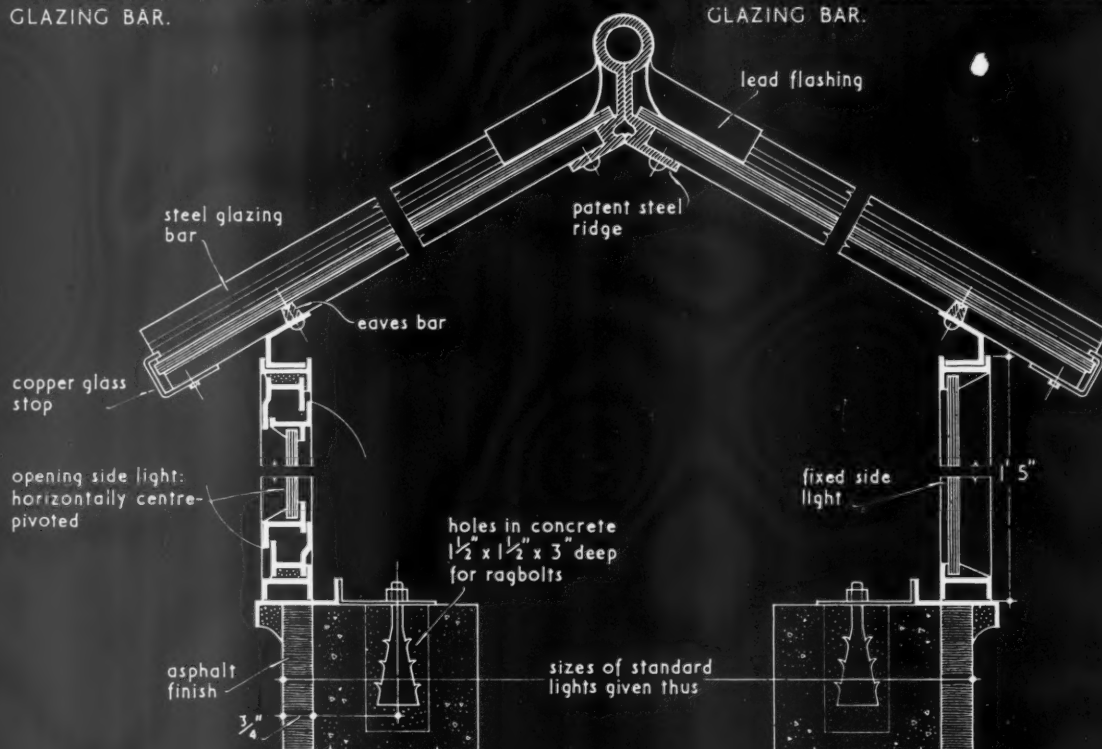
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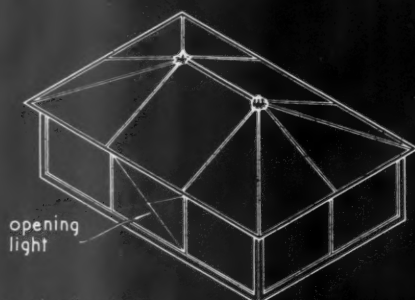
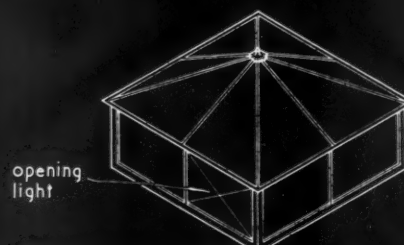
ROOFLIGHTS | METAL

24.J2

The Architects' Journal Library of Information Sheets 425. Editor: Cotterell Butler, A.R.I.B.A.

F.S. DETAIL OF ALUMINIUM ALLOY
GLAZING BAR.F.S. DETAIL OF LEAD-CLOTHED STEEL
GLAZING BAR.

SECTION THRO' TYPICAL STEEL LANTERN LIGHT SHOWING FIXING TO CONCRETE CURB.

STANDARD 6'-0" x 4'-0"
LANTERN LIGHT (hipped ends).STANDARD 4'-0" x 4'-0"
LANTERN LIGHT (hipped ends).

24.J2 HEYWOOD'S STANDARD LANTERN LIGHTS

This Sheet describes Heywood's standard lantern lights which are available in aluminium alloy and galvanised steel. The drawings on the face show details of construction and the method of fixing to a concrete curb. Sheets 24.M3 and 24.N3 show the application of the glazing bars to a northlight roof structure and a glazed panel in a roof of corrugated sheeting.

Material and Construction

The entire framing of the lantern lights, including opening lights, and the glazing bars are in aluminium alloy or galvanised steel. Steel glazing bars are lead-clothed.

Lantern lights can be supplied with hipped or gable ends. Any opening lights are situated in the vertical framing (their number and size for each type of lantern light are indicated in the table below). They may be horizontally centre-pivoted or bottom-hung to open inwards. They may be fitted with spring catches and operated by cord or long-arm or with remote control gear.

Sizes

The following table gives the standard sizes of lantern lights, measured by the overall curb sizes as shown in the drawing on the face of the Sheet. They are also available in special sizes.

Type	Size	Number of opening lights per side*
SL 44	4 ft. 0 in. × 4 ft. 0 in.	1 single pane
SL 64	6 ft. 0 in. × 4 ft. 0 in.	1 single pane
SL 84	8 ft. 0 in. × 4 ft. 0 in.	1 double pane
SL 104	10 ft. 0 in. × 4 ft. 0 in.	2 double panes
SL 124	12 ft. 0 in. × 4 ft. 0 in.	2 double panes
SL 66	6 ft. 0 in. × 6 ft. 0 in.	1 single pane
SL 86	8 ft. 0 in. × 6 ft. 0 in.	1 double pane
SL 106	10 ft. 0 in. × 6 ft. 0 in.	2 double panes
SL 126	12 ft. 0 in. × 6 ft. 0 in.	2 double panes
SL 88	8 ft. 0 in. × 8 ft. 0 in.	1 double pane
SL 108	10 ft. 0 in. × 8 ft. 0 in.	2 double panes
SL 128	12 ft. 0 in. × 8 ft. 0 in.	2 double panes
SL 1010	10 ft. 0 in. × 10 ft. 0 in.	2 double panes
SL 1210	12 ft. 0 in. × 10 ft. 0 in.	2 double panes

* Opening lights are situated on the long sides of rectangular, and on the opposite sides of square, lantern lights.

Fixing

The top of the curb should be provided with holes, $1\frac{1}{2}$ in. square by 3 in. deep, to receive ragbolts. The fixing holes are spaced at 2-ft. centres along the side of the curb beginning 1 ft. from each end.

Further Information

The manufacturers maintain a technical advisory department available to answer questions dealing with this subject generally.

Compiled from information supplied by :

W. H. Heywood & Co. Ltd.

Head Office : Bayhall Works, Huddersfield.

Telephone : Huddersfield 6594 (5 lines).

Telegrams : Glazing, Huddersfield.

London Office : 54, Victoria Street, S.W.1.

Telephone : Victoria 2994.

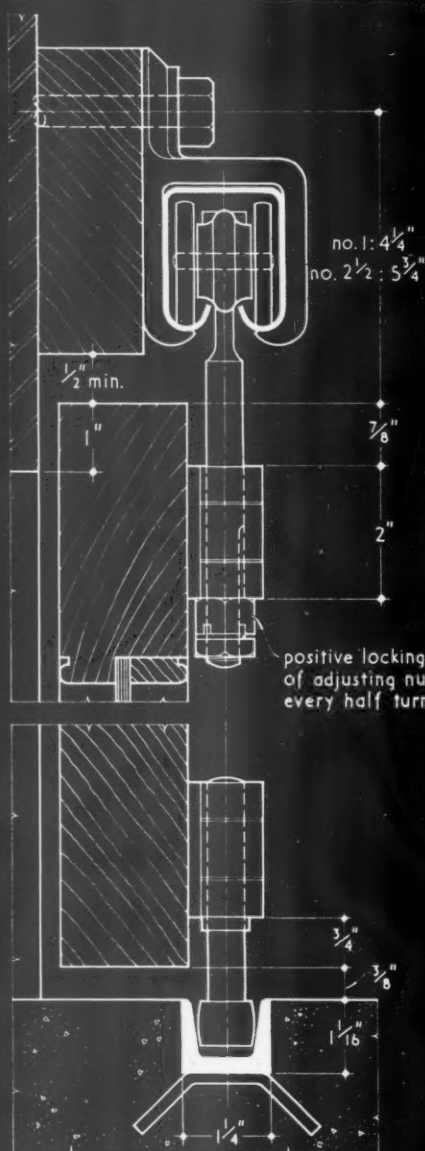
Branch Offices : Belfast, Birmingham, Bristol, Coventry, Dublin, Glasgow, Leicester, Liverpool, Manchester, Newcastle-upon-Tyne, Nottingham, Plymouth.

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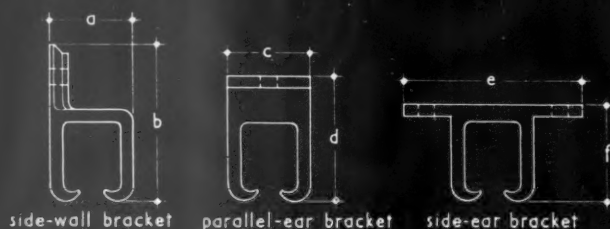
The Architects' Journal Library of Information Sheets.

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

The Architects' Journal Library of Information Sheets 426. Editor: Cotterell Butler, A.R.I.B.A.

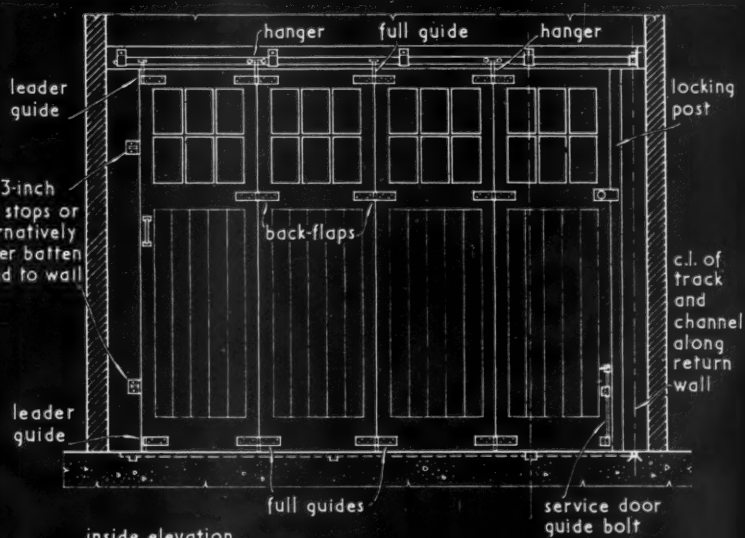


TYPICAL VERTICAL SECTION.



track no.	wt. of 1 leaf	a	b	c	d	e	f
1	100 lb. max.	$2\frac{3}{8}$ "	$4\frac{5}{16}$ "	$2\frac{3}{8}$ "	$3\frac{9}{16}$ "	$5\frac{1}{8}$ "	$2\frac{13}{16}$ "
2½	150 lb. max.	$2\frac{3}{8}$ "	$6\frac{1}{8}$ "	$2\frac{3}{8}$ "	$4\frac{7}{8}$ "	$5\frac{3}{4}$ "	$4\frac{3}{16}$ "

TYPES OF BRACKET AND DIMENSIONS.



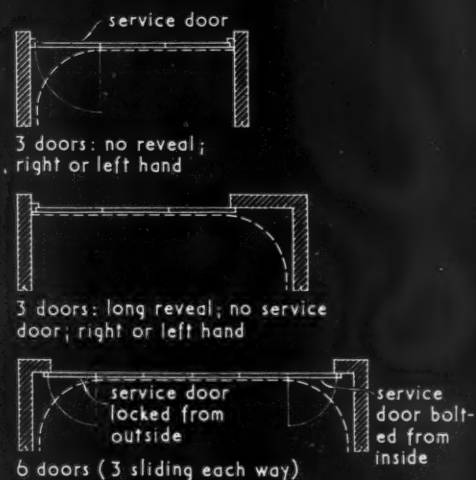
inside elevation



TYPICAL 4-DOOR SET

size of opening	8'-0"	9'-0"	10'-0"	12'-0"	14'-0"	16'-0"
o/a. size of doors	8'-2"	9'-2"	10'-2"	12'-2"	14'-2"	16'-2"
no. of leaves	3	4	4	4	6	6

NO. OF LEAVES FOR DIFFERENT OPENINGS.



TYPICAL ARRANGEMENTS.

COBURN SYSTEM OF SLIDING DOOR GEAR NO. 34: GARAGE DOORS.

Manufacturer: The British Trolley Track Co. Ltd.

23.Z1 COBURN SYSTEM OF SLIDING DOOR GEAR No.34: GARAGE DOORS

This Sheet describes the Coburn system of sliding door gear no. 34, for garages. The drawings on the face of the Sheet show typical installations using gear suitable for doors not exceeding 150 lb. per leaf in weight. The principle of operation for doors weighing up to 300 lb. per leaf is similar but the fittings used are larger. The sizes of brackets covering the range from 100 lb. to 150 lb. are given in the lower left hand table on the face of the Sheet. For smaller doors (not exceeding 75 lb. per leaf in weight) a different type of gear operating on a single T top track is available. Extra heavy gear is also available for very large doors.

Design of Doors

Doors of 3 or 4 leaves have only two trolleys which facilitates the initial adjustment when the doors are fitted and, in use, ensures an equal loading on each where the track is not absolutely level. Intermediate joints in the doors are fitted with horizontal guide wheels running on the sides of the track. A special feature of the no. 34 gear is the swivel movement of the four-wheeled trolley for negotiating the bend of the track.

Handing: The doors can be arranged so that the leaves slide either to the left or to the right or some in each direction. The hand is determined by the direction in which the doors slide when viewed from the outside.

Number and width of leaves: Any number of leaves, square or rebated can be used. The numbers given in the centre right hand table are recommended. Leaves can be unequal in width, but should not be more than 6 in. wider than the radius of the bend.

Service door: The first leaf under the bend must act as a service door unless the depth of the reveal is at least 3 in. greater than the radius of the bend (see the second diagram of typical arrangements on lower right of sheet). The service door is hinged to the other leaves and travels round the corner with them.

Fittings

Track: Best quality cold-rolled mild steel.

Trolley: The trolleys are in malleable iron with lathe-turned steel wheels and are fitted with ball

bearings. They are attached to the top hinge of the door.

Top guides: These are brass-bushed hard fibre wheels running on steel pins.

Brackets: Grey cast iron, fixed at not more than 3-ft. centres.

Back-flaps: These are of malleable iron and form the intermediate hinge of the door.

Bottom guides: These are fitted with gun-metal rollers and are attached to the bottom hinge of the door.

Channel: Mild steel fitted with braces for fixing to concrete.

Finish

The track can be supplied japanned black, Parkerized, sherardized or galvanised.

Where necessary all parts of the fittings are sherardized.

Ordering

A rough sketch plan giving the following particulars should accompany all orders and enquiries for the sliding door gear.

Clear opening and depth of reveals.

Number of door leaves and hand.

Height and finished thickness of each leaf.

Type of fixing bracket, i.e., for face or soffit fixing.

Whether locking gear, handles or other furniture are required.

If the return walls are not square to the opening a template giving the actual angle should be provided.

Further Information

Questionnaire forms for ordering or enquiring and full-size drawings of the gear are available.

Compiled from information supplied by:

The British Trolley Track Co. Ltd.

Address: Coburn Works, 53, Copperfield Street,
London, S.E.1.

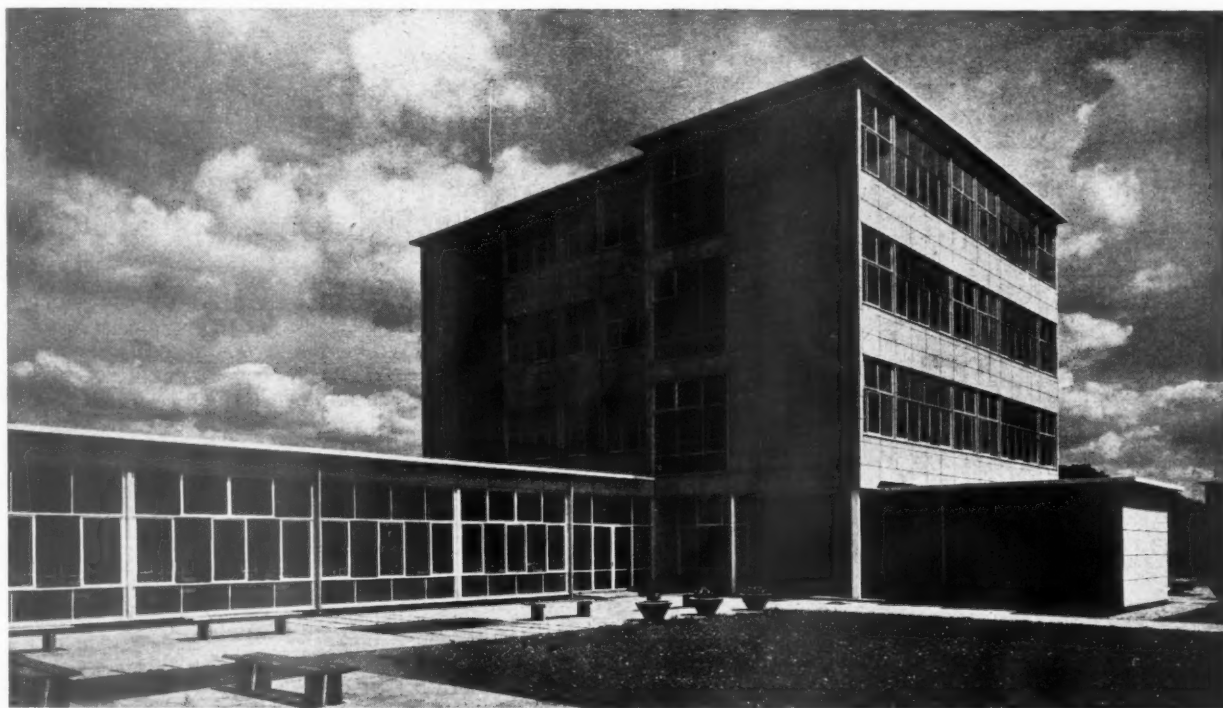
Telephone: Waterloo 4311 (3 lines).

Telegrams: Troltrack, Sedist, London.

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The Architects' Journal Library of Information Sheets.

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



In this, their sixth and final article on MOE development work, John Stillman and John Eastwick-Field describe fields of development other than that at Wokingham, which formed the subject of their previous articles. They make an appraisal of the role of prefabrication in school building and say that, if the Select Committee's suggestion that 50 per cent. of our schools will have to be prefabricated becomes a reality, far-reaching changes may take place in the structure of the architectural profession. The article concludes with 3 pages of photographs of the completed Wokingham school, which we publish to supplement the numerous progress and detail photographs which accompanied earlier articles in this series. The photograph above is a view of the Wokingham school from the south-west.

MOE DEVELOPMENT WORK: 6 : CONCLUSIONS

By John Stillman and John Eastwick-Field

THE completion of the prefabricated school at Wokingham—the first to be built as a result of the MOE's development work—has coincided with the publication of a report on the national school building programme. The committee which prepared this report* writes of overcrowding, lack of sufficient school buildings, heavy transport costs, shortage of teachers and rapidly deteriorating and even dangerous school buildings.

It is clear that quicker building methods should be used on schools. Miss Horsbrugh, the Minister of Edu-

cation, estimates that prefabrication reduces school building time by one third. And the committee already referred to has this to say in its report: "It has been stated quite categorically that the school building programme cannot be completed unless 50 per cent. of the schools are built by prefabricated methods, and your committee accept this fact which the evidence overwhelmingly supports."

So the Wokingham experiment, which has been described in several articles in the JOURNAL,* becomes more important than ever as a lesson to local

authorities. We may expect to see this system of construction (the Hills system) on a large scale. However, the MOE has begun to apply the same principles to other materials and other sources of production. And it is these variations that we are going to discuss this week.

The Wokingham school was planned on a 3-ft. 4-in. grid, a module which was thought to offer more advantages than any others, particularly in respect of economy and flexibility of planning. Among the other systems encouraged or developed by the Ministry (briefly described below), grids of 4 ft. and 6 ft. 4 in. have been used. It seems that no one can decide on a universally

* The Eighth Report of the Select Committee on Estimates: Schools: 1952/53. HMSO. 9s.

* Oct. 16 and Dec. 4, 1952, and Jan. 8, March 12 and May 28, 1953.

acceptable grid which would permit components of modular size to be available for use in conjunction with one another. One argument in favour of a grid system is, of course, that it should encourage standardization in the manufacture of components. It is a pity, therefore, that the MOE should choose to use a number of unrelated grids. (It is a pity, too, that when the MOHLG uses a grid it chooses one of yet another dimension.)

Each of the prefabrication systems developed is covered by patents held by the manufacturers, and even if grids were the same size, it is unlikely that the manufacturers would sell components separately. If they did this architects would be able to get competitive estimates for components—just as they do for bricks, concrete blocks, and other materials of standard size. But at present competition is restricted to the prefabricated systems *versus* traditional building.

Many people who used to think of prefabrication as something cheap, temporary, and even shoddy, have been led—by the success of the Hills system of constructions in the hands of Hertfordshire CC, the LCC, and

The inside of a typical industrial drawing office where prefabricated buildings are designed. If a large extension of the use of prefabricated methods of school building takes place, the amount of work done in the architect's office will be reduced, and many more architects may have to find employment in commercial drawing offices. (See Leader on page 99.)



others—to think of it as something essential to good design. They are wrong, of course, although one can certainly say that an architect who uses a standard prefabrication system has a discipline imposed on him which makes it difficult for him to produce a bad design.

MAINTENANCE

Will the cost of maintenance of prefabricated buildings be excessive? The Select Committee on Estimates has said: "One unknown factor relating to prefabrication is that of maintenance costs; there was a general fear that these would be high, although all witnesses were agreed that it was still too soon to form considered opinions and that longer experience would be needed before any conclusions which might be of benefit could be formed. Your Committee realize that maintenance costs must always play an integral part in deciding method of construction. Where a choice of constructional methods exists the long term charges are a vital part of the initial decision. It is false economy to erect a school at a low price if the initial saving will be more than offset by running costs. Your Committee recommend that the Ministry of Education should ask all local authorities to report upon the maintenance of prefabricated schools after a reasonable period, perhaps in 1958. This would be a valuable guide to the future planning of the school building programme."

THE MINISTRY'S FOUR SYSTEMS OF CONSTRUCTION

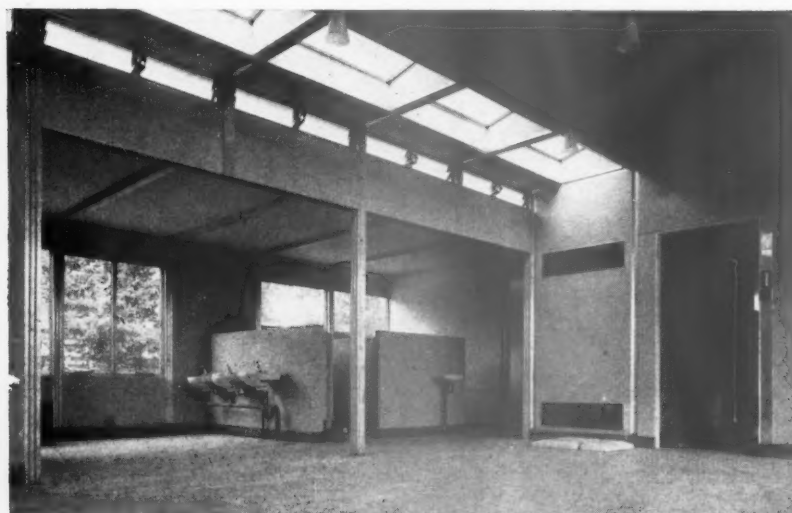
The MOE's architects have now developed four systems of prefabricated school construction, including the one used at Wokingham. Following is a list of school buildings begun or completed:—

Hills Construction. Steel frame on 3-ft. 4-in. grid, faced with concrete slabs. Wokingham (completed). **Hills Construction.** As above but modified. Broad Lane, Coventry (under construction).

Bristol Aluminium Mark IA. Aluminium frame and cladding. 4-ft. module. Limbrick Wood, Coventry (completed). **Bristol Aluminium, Mark II.** Steel frame, aluminium cladding, multi-storey, 4-ft. module. Green



Limbrick Wood County Primary School, Coventry, an example of a system of prefabricated aluminium construction developed by the Bristol Aeroplane Co. in conjunction with the city architect's department, Richard Sheppard & Partners and the MOE. This system is known as the Mark I and is suitable only for single-storey schools. Above, general view of school under construction. Below, interior view showing the incorporation into the system of forms of top lighting and warm-air heating and other items of equipment first developed by the MOE for use at the Wokingham school.



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frame; c
module.

Brockh
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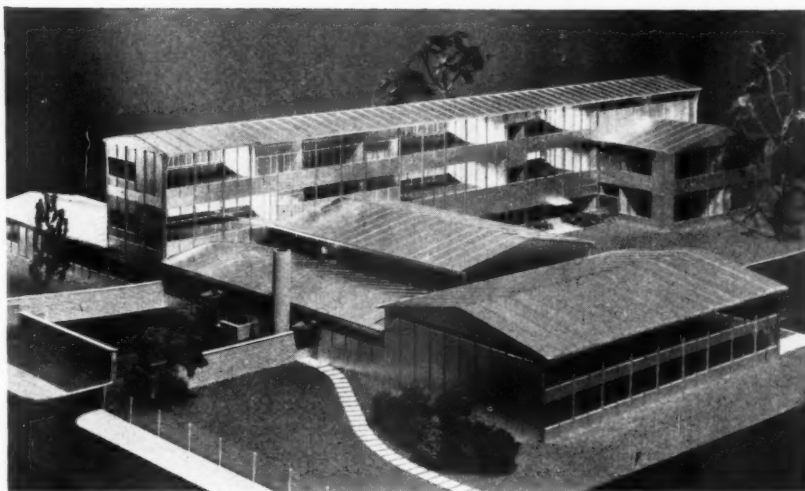
Farm, Coventry (just starting on site).
Prestressed Concrete Co. Ltd. & Gilbert-Ash Ltd. Prestressed concrete frame; concrete cladding. 3-ft. 4-in. module. Worthing (just starting on site).

Brockhouse Engineering Co. Ltd. Cold rolled steel frame with stone faced concrete and asbestos cladding 3-ft. 4-in. module. Belper, Derbyshire (started on site, May, 1953).

The notes and illustrations which follow give some information on those systems for which information has been made available.

THE BRISTOL ALUMINIUM SYSTEMS

Nearly 500 Mark I Bristol aluminium schools have been built in this country in the last five years. The system of construction used was originally designed by Richard Sheppard & Partners in conjunction with the Bristol Aeroplane Co. Ltd. In the present development work the architects and manufacturers have collaborated with the MOE Development Group. Those engaged on this work have been concerned, firstly, with making modifications to the system to meet the changed educational and financial requirements for single-storey schools (Mark I modified becomes Mark IA), and, secondly, with designing a new system (Mark II) for the construction of multi-storey buildings to meet the needs of secondary education.



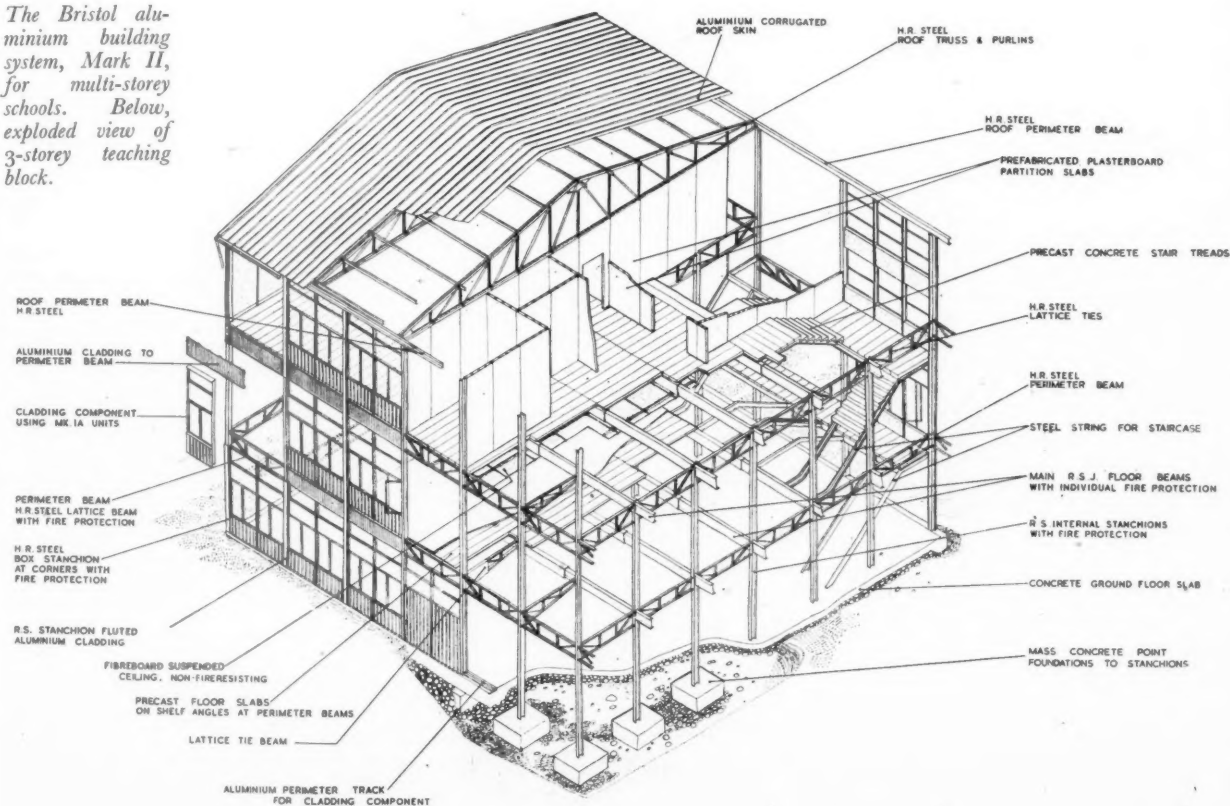
Model showing application of Mark II system to typical secondary school building. The first 2 multi-storey schools built on this system will be erected in Coventry this autumn

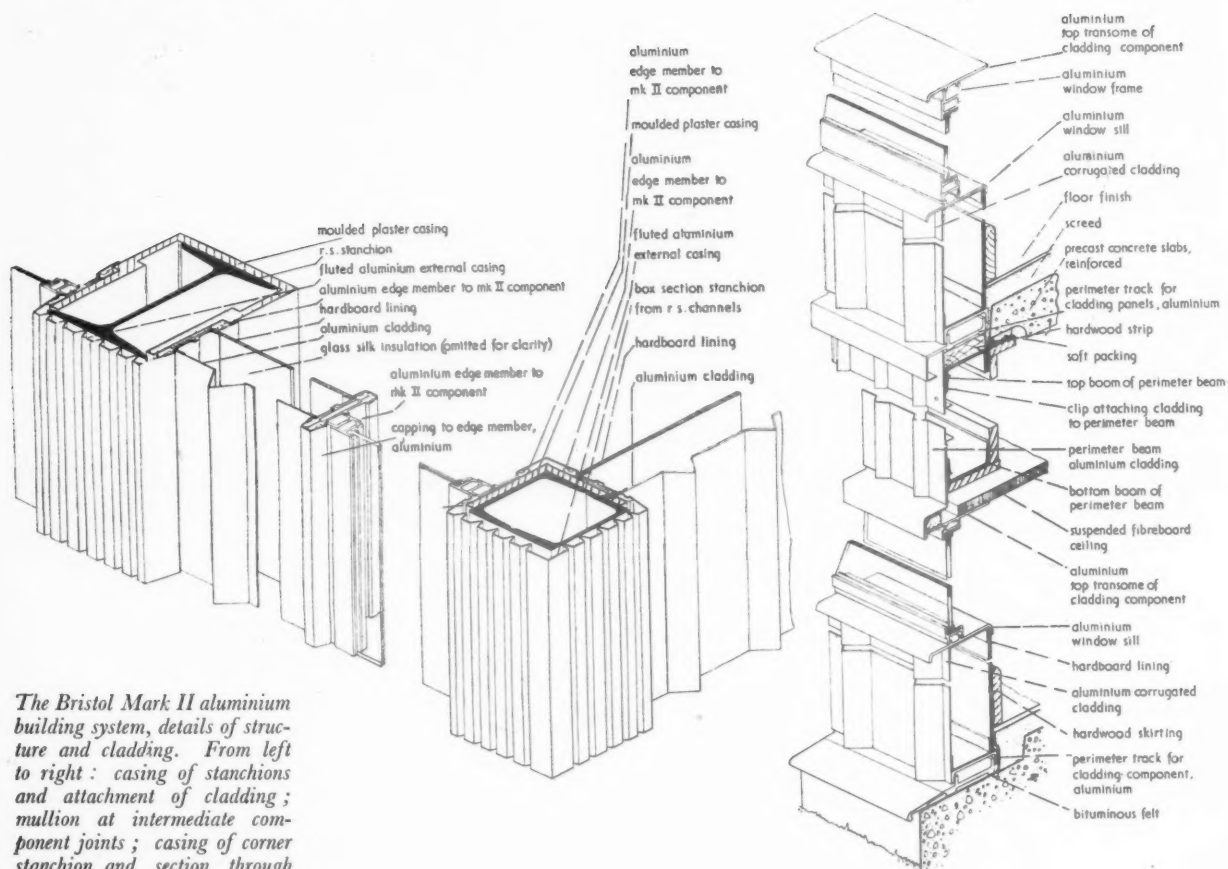
The Bristol school started as a development from the production of aluminium prefabricated bungalows (a Government-sponsored scheme to keep the aircraft industry in being after the war). The majority of the components used are of aluminium alloy and, as the raw material comes from Canada, dollars have to be found for its import. (The cost rose sharply when the pound was devalued.) The system, which is,

perhaps, more fully prefabricated than any of the others described below, involves more factory labour, which is generally more highly paid than building labour.

Doubt has been expressed as to the extent to which aluminium alloy is affected by corrosion where it is exposed externally in frames and panels. Where it is painted—the external wall sheeting, for instance—maintenance costs have to be

The Bristol aluminium building system, Mark II, for multi-storey schools. Below, exploded view of 3-storey teaching block.





The Bristol Mark II aluminium building system, details of structure and cladding. From left to right: casing of stanchions and attachment of cladding; mullion at intermediate component joints; casing of corner stanchion and section through external wall.

taken into account. But we can set against these possible disadvantages the fact that aluminium alloy is an excellent material for prefabrication. As the components are so much lighter than their equivalent in steel or concrete, they are relatively easy to transport and erect, and are unlikely to be damaged before erection. The single material may be used almost universally for structural members, doors and windows, and roof and wall sheeting.

The Mark I Bristol system was based on a 4 ft. grid, but as 12 deg. aluminium pitched roofs were used over the wider spans and 1 deg. pitched roof over the corridors, building blocks had to be fairly regular. The plans drawn up were not dissimilar to those for systems based on a standard bay width only.

The newly developed Mark IA Bristol system has a flat roof of strawboard and roofing felt over corridors to give more flexibility and concentration in planning. The vertical module has been maintained at 1 ft. 1½ in. Classrooms can now be reduced to a height of 9 ft., and top lights can be substituted for the clerestory over the corridor. The wind brakes, which also acted as sun baffles, have now been omitted.

The Mark II Bristol system for buildings up to four storeys includes, for the first time, a steel frame, and uses a constant depth beam for various spans

(in this case 2 ft. 3 in.) which seems to be characteristic of all the multi-storey systems. Unlike the Wokingham system of construction, however, the majority of the floor beams used are normal, rolled steel joists (heavier in steel but requiring less fabrication). The maximum spans for floor beams are 28 ft. and for roof beams 48 ft., all within the standard depth.

It is interesting to note that the cost of the supply and erection of the components for the fabric of the building, (excluding the foundations, services, fittings and decorations) amounts to approximately half the net cost of the school.

The erection of components for the aluminium schools already built has been carried out by the associated company, Gilbert-Ash Ltd., and in many cases this company has been appointed the general contractor for the whole scheme.

THE PRESTRESSED CONCRETE SYSTEM

The prestressed concrete system, which embodies a light framework of precast, post-tensioned reinforced concrete units, is designed to permit four-storey construction. Its development has been undertaken by Gilbert-Ash Ltd. and Prestressed Concrete Co. Ltd., in conjunction with the MOE.

The module for this system is 3 ft. 4 in. The roof and floor structure consists of a series of primary beams made up of 3 ft. 4 in. long precast units (see photo on p. 115), which are put together and tensioned on the ground before being lifted into position, and secondary beams (of a similar construction) which are erected in 3 ft. 4 in. lengths and tensioned afterwards with wires threaded through tubes in the lower members. Each of the 3 ft. 4 in. precast units can be lifted by one man. A typical assembled primary beam weighs approximately half a ton and can be lifted by a 30 cwt. crane.

On the structural grid so formed, square "unreinforced" concrete slabs with a dished soffit are inserted and grouted in to complete the structure of the floor and roof. The slabs are 2¼ in. thick at the edges and 1¼ in. thick at the centre.

When the beams are made up they can span 33 ft. 4 in. for floors and 40 ft. for roofs. There are special deeper beams to span 50 ft. over the hall and the gymnasium.

The columns are precast and prestressed and are noticeably slender for concrete work; in fact, the whole of the concreting is especially light and accurate, and a tolerance of no greater than ⅛ in. is aimed at.

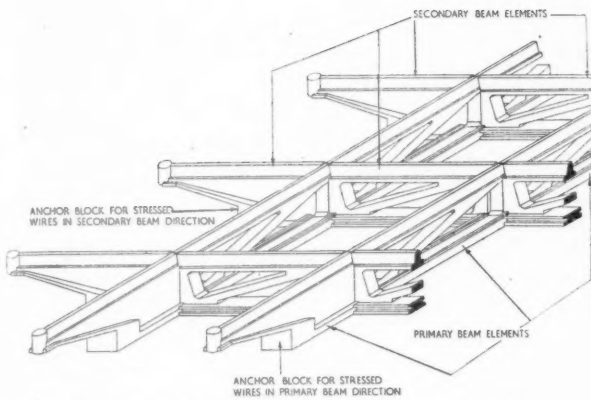
The columns, which have a cap supporting the special end units of the

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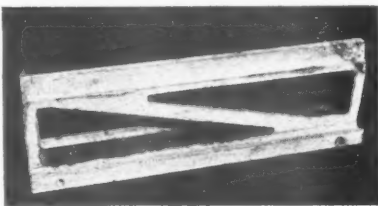
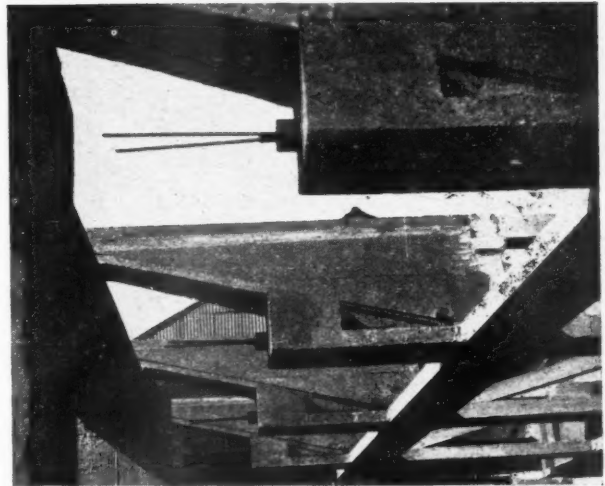
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MOE prestressed concrete development work. The drawing above shows part of the floor and roof structure; the end units of the beams rest on enlarged heads of slender prestressed concrete columns, or in slots in boundary beams (not shown in the drawing). Right, part of mock-up, showing the ends of the beams, resting here on an R.S.J., not part of the system. The ends of the prestressing wires and cones can be seen in the spaces provided for the prestressing jacks. Below, one of the 3 ft. 4 in. precast units which when assembled end to end and post-tensioned, form the primary beams.



beams (see photo top right), are rebated to receive external precast concrete slabbing units and an internal lining, both of which fit between the columns.

The cladding slabs are 6 ft. 8 in. and 10 ft. long and the normal depth is 1 ft. 8 in. These slabs are dowelled into the posts to form a rigid joint so that they

may give the necessary bracing to the structure. The slabs are finished with an exposed aggregate. (It is intended that three different finishes will be obtained by the use of different aggregates.)

It is clear that concrete facing slabs are likely to become part of modern construction, and that architects would be wise to take note of improvements in their quality and appearance.

FURTHER DEVELOPMENT WORK

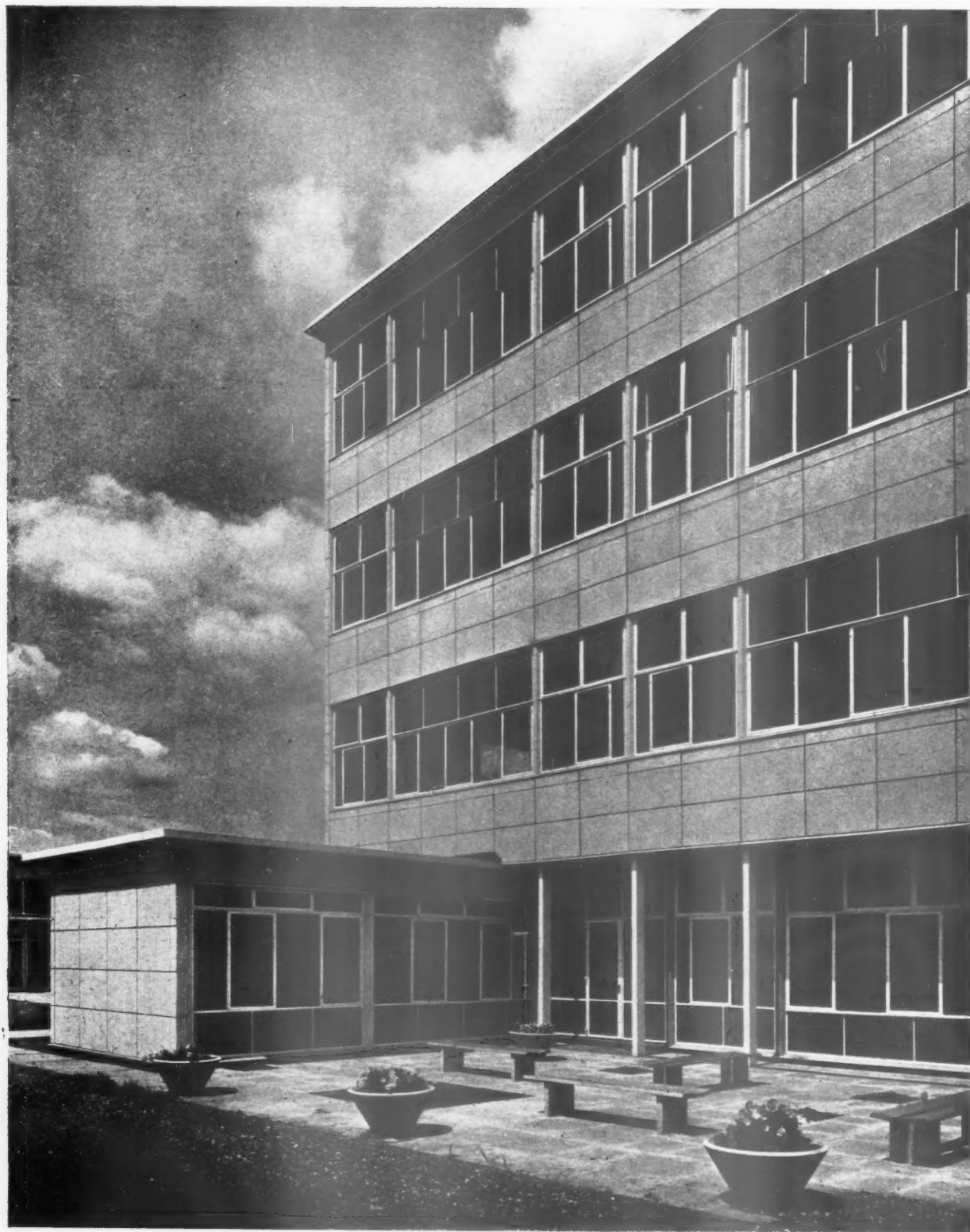
It is likely that the MOE's Development Group may now investigate further the design of some of the important components required in schools, such as heating and lighting fittings and parti-

tions, and also pre-planning and site organization, with a view to reducing costs and improving output. This work would not necessarily be restricted to prefabrication, for traditional forms of building will continue to be used.

The MOE had hoped that the larger local education authorities would undertake their own development work. There has not yet been much evidence of this happening, but we must call attention to an example of an apparently successful and acceptable system in which timber—the best of all materials for prefabrication—is used. The system, which was developed by Vic Hallam Ltd., in consultation with Sam Morrison & Partners, a firm of private architects, was described in the JOURNAL for June 18. A prefabricated timber school, designed by F. Hamer Crossley, the county architect for Derbyshire, was described and illustrated in the same issue.

General view from the north of the MOE experimental secondary modern school at Wokingham. The main entrance is near the centre of the photograph, under the 4-storey block. On the left is the administration block; on the right, the kitchen and boiler house; on the extreme right, the end of the gymnasium.





MOE DEVELOPMENT WORK

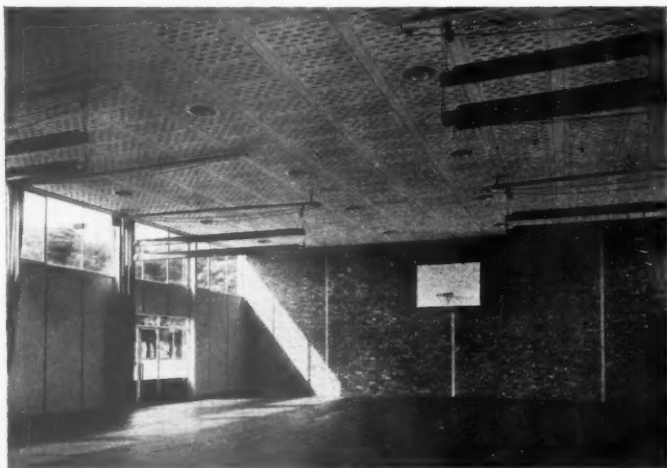
Secondary Modern School, Wokingham

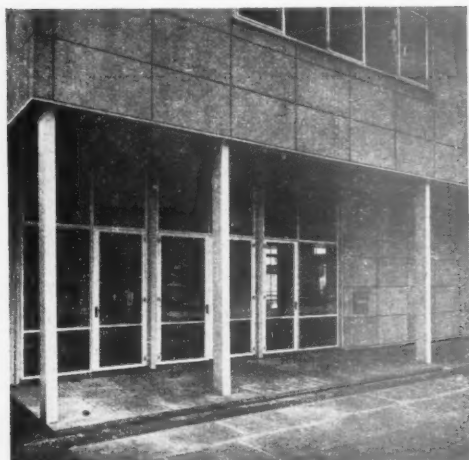
Close-up of the 4-storey classroom block, faced with exposed aggregate concrete slabs. In the foreground is the "library classroom" that leads off the library.

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Above, looking at the terrace outside the craft rooms, through the link to the science room. The terrace, which is partially enclosed, is intended for use as outside teaching space. The paving is of blue brick paviors. Right, typical classroom in 4-storey block; note the lighting from 2 sides, the low window sills, the studded rubber flooring and the vermiculite concrete ceiling panels. Below left, the gymnasium, with slotted fibrous-plaster ceiling panels, and specially designed, recessed, lighting fittings. Note the lack of wall bars, the departure from the regulation rectangular shape (of 70 ft. by 40 ft.) and one of the few uses of brick-work in the building—used here because it is not marked by balls. Below right, mural in entrance hall by Fred Millett, representing "summer."



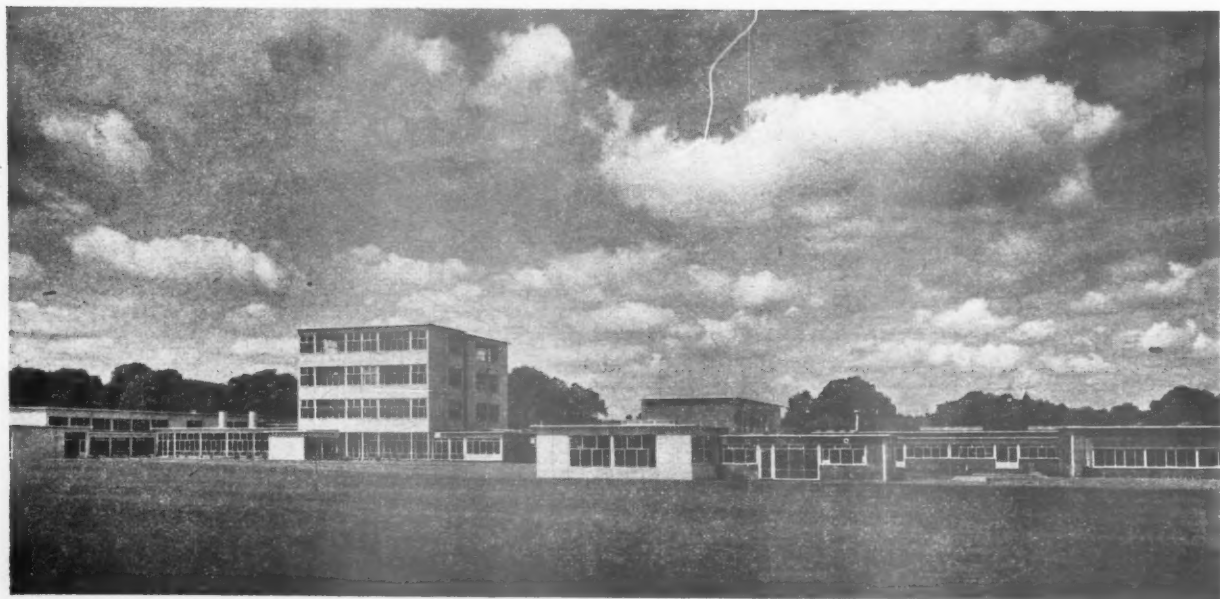
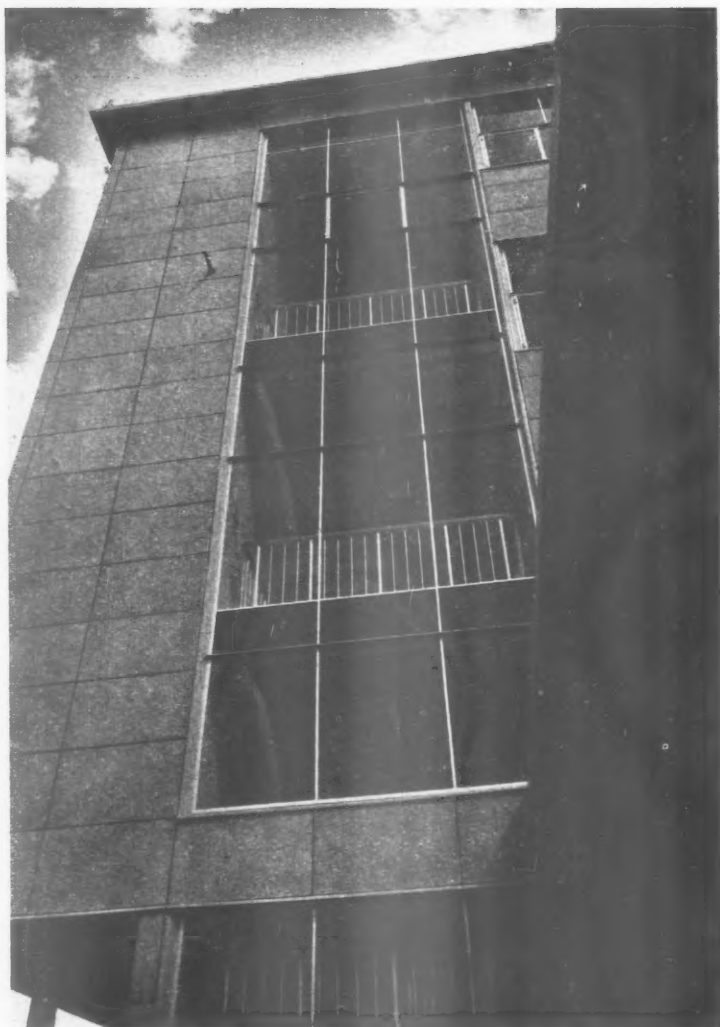


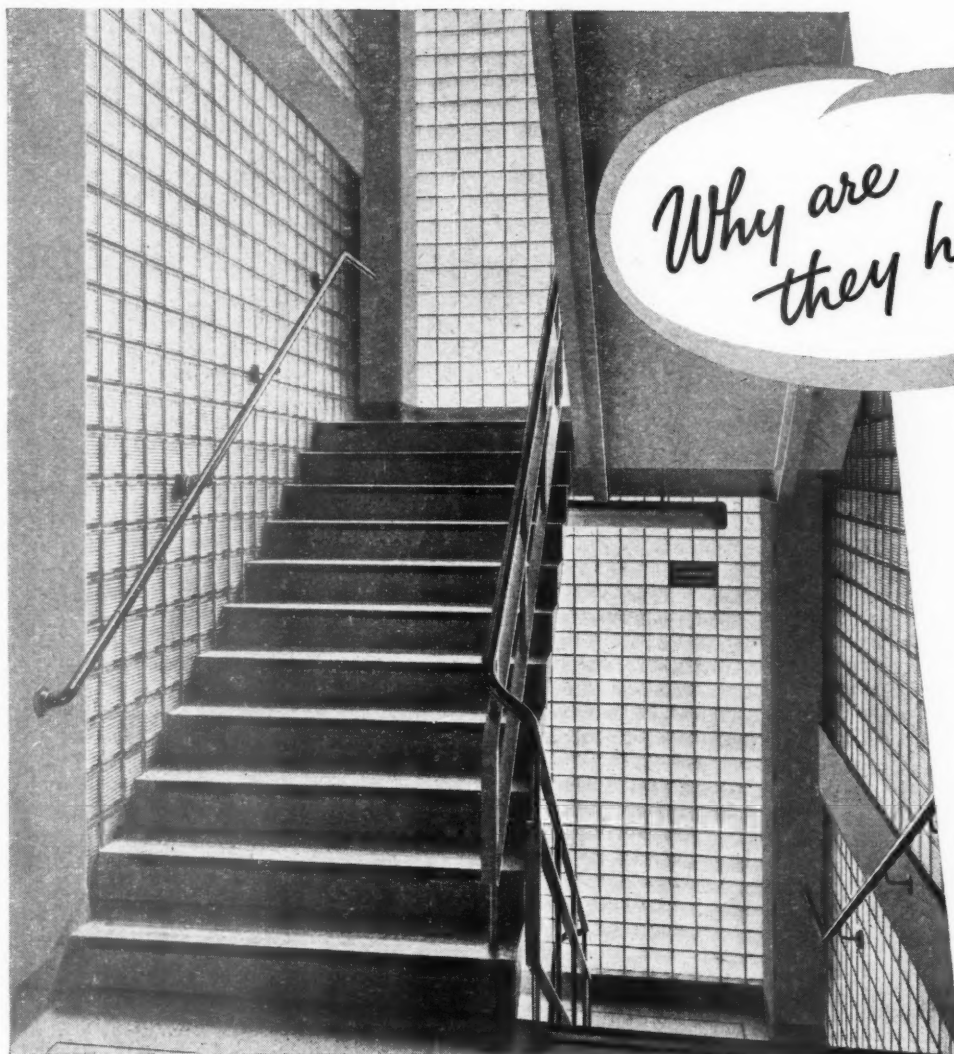
MOE DEVELOPMENT WORK

Secondary Modern School, Wokingham

Above, close-up of main entrance, which has not been specially emphasized and which is to be used by staff, visitors and children. Right, the staircase window of the 4-storey block. Below, general view of south of school, seen from across the playing fields, showing, from left to right, the gymnasium, the dining room, the four-storey classroom block, with the entrance and library on the ground floor, the crafts block, with the workshop in the background, and the science rooms, with the greenhouse on extreme right.

The general contractors for the Wokingham School were Gilbert-Ash Ltd.; lists of sub-contractors appeared on Dec. 4, 1952, p. 690, Jan. 8, 1953, p. 60, and May 28, 1953, p. 688.





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TECHNICAL SECTION

What makes one system of construction cheaper than another? Why, for example, was it recently cheaper to build some 6-storey blocks of flats in Birmingham of no-fines concrete, with an r.c. frame, rather than to have used an r.c. frame with brick in-filling? Can we assume that, because the *price* of a particular building, built in a particular way, is less than that of a similar building differently built, the *cost* is less?

To return to the Birmingham example, can we assume that, because the firm that tendered to do the job in no-fines was able to quote a lower figure than any firm intending to do the job traditionally, no-fines is more economical for 6-storey flats (in the Birmingham area) than traditional construction?

Unfortunately, we cannot. Unless we know the various tenderers' profit margins, and unless we have methods of judging the firms' efficiency and their employees rate of output, we cannot tell whether or not a low price means an economical job from the point of view of the nation's resources.

While the private client is mainly concerned with the price he has to pay, the local authority "client" should be equally concerned with the national economy. Do we need, therefore, a new method of costing and a new form of tender, in which the figures for materials, labour, plant, overheads and profit are all stated separately, so that the architect and the quantity surveyor can properly compare the economy of different methods of construction and the efficiency of the tendering firms, as well as the contract prices?

This week's
survey

12 MATERIALS : METAL the use of aluminium in building

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

At the end of last month, ADA held, in London, a one-day symposium on the use of aluminium in the building industry. Some of the points made in the three papers presented at the symposium (by Robert H. Matthew, G. H. Friese-Greene and E. G. West) have been incorporated by J. McHardy Young (an engineer with considerable experience in the use of aluminium) in the article, which commences below, that he has written specially for readers of the JOURNAL. The article will be continued in next week's issue.

Aluminium, which forms the basis of most light alloys used today, is the third most abundant constituent of the earth's crust. The metal is extracted from the ore bauxite by electrolysis, which was first used fifty years ago and made the production of the metal a commercial proposition.

The first uses of the metal in building were for purely decorative purposes (e.g., Eros) or for cladding—instead of

copper or zinc (e.g., the Church of St. Giocchino at Rome). Even in its "commercially pure" form aluminium's inherent virtues of lightness and freedom from corrosion were apparent. However, "pure aluminium" has a comparatively low tensile strength—a disadvantage that metallurgists overcame by heat treatment and by "alloying" aluminium with other metals. They produced a series of alloys which were



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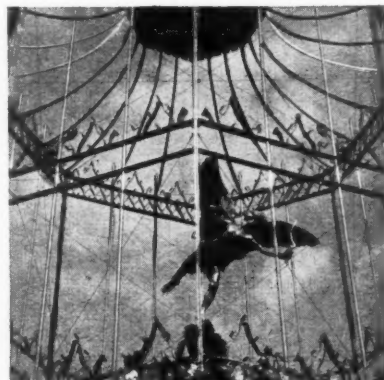
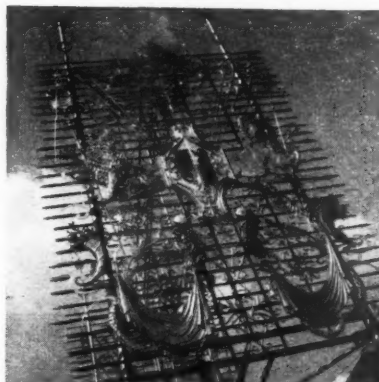
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light, resisted corrosion and had a tensile strength comparable to that of steel.

Subsequent improvements in the manufacture of aluminium alloys included the introduction of the extrusion process in which billets of the metal are forced through a die by a ram. By this method are produced many sections which would be almost impossible to produce in any other way. Hollow sections can be extruded as well as solid sections, and any shape that can be included in a circle of 14 to 16 in. diam. can be extruded.

The use of light alloy sections in the period between the two world wars was confined either to decorative fittings (such as doors and window sections, cornices, balustrades and shop fronts) or to jobs where the primary need was to reduce dead weight. The first application to bridge work was in 1933, when the original floor system of the Smithfield Bridge, Pittsburgh, weighing over 1,000 tons, was replaced by 340 tons of light alloy, thus prolonging the life of the bridge. Other early examples of the application of light alloy to structural work are the refuge at the summit of Mt. Blanc, where ease in transport was the primary consideration, and the Botanical Gardens Conservatory at



Decorative uses of aluminium: left, the heraldic feature in Parliament Street designed by Robin and Christopher Ironside (co-ordinating architect, Sir Hugh Casson), of cast aluminium, supported on a part steel, part aluminium framework; right, Eros, Piccadilly, also of cast aluminium, in its Coronation "cage" of cast, forged, and sheet aluminium, designed by Sir Hugh Casson.

Washington, D.C. But these are merely examples of straightforward replacement of steel by light alloy; the designers had not had much experience in the use of the new material, and it is a common fault to apply traditional methods to new materials.

POST-WAR DEVELOPMENTS

At the end of the second world war, when there was less demand for light alloys for aircraft, etc., the manufacturers, who had expanded their output, had to find new markets. The domestic utensil industries and the motor industries helped here. But there was, at this time, a world-wide shortage of steel, and the building industry had to find an alternative material. As a result, in the five years immediately following the war 260,000 tons of light alloys were used in the building industry, which is now the second largest user of them.

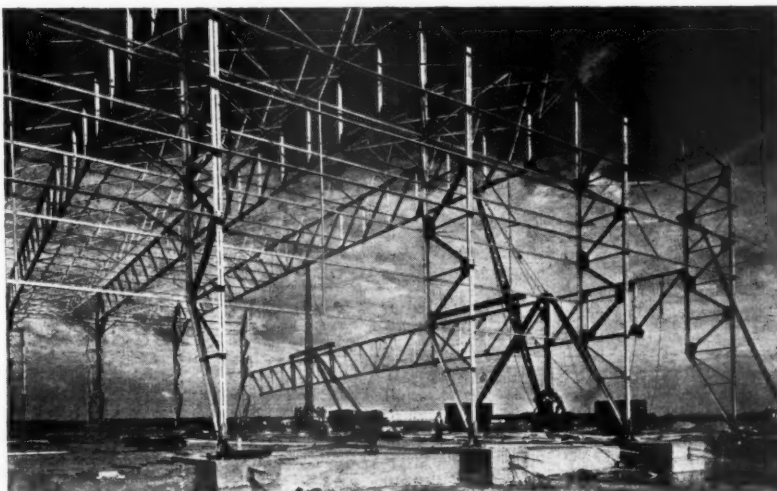
Light alloys were first used in the

building industry on prefabricated structures—partly because houses had to be built quickly and partly because mass production firms were seeking new markets. While the aluminium "prefab" experiment proved to be expensive, the lessons learned from it led to the success of other projects, such as the development of prefabricated schools by the MOE and local authorities. The experiment also made the building industry "aluminium-minded." Too much so, in fact, for in the immediate post-war years attempts were made to use light alloys where they were neither economical nor suitable.

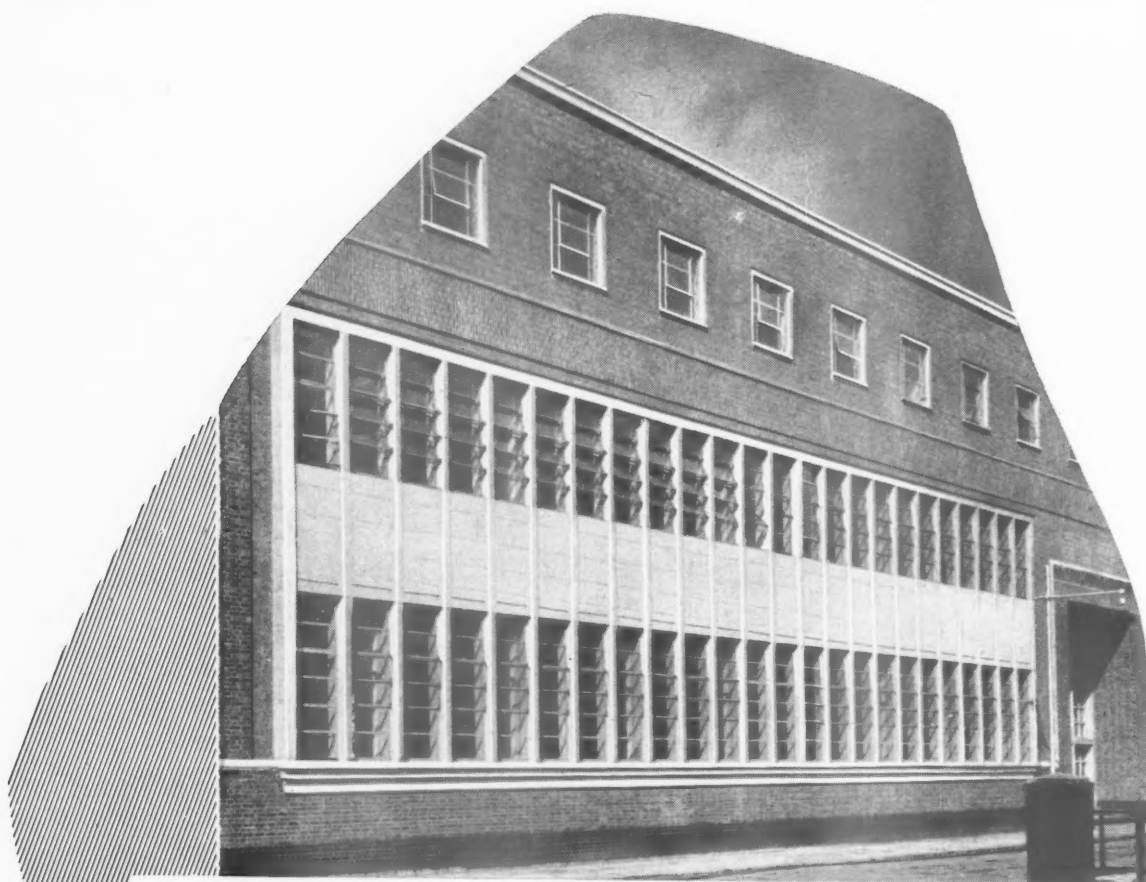
It was soon apparent that only by a new approach to the problems of design could the high cost of light alloys be offset and an economical structure produced. (A replacement of steel by equivalent sections in light alloy is the worst mistake that can be made.) Because of this the design of light



Above, one of the earliest uses of aluminium—the sheet aluminium covering of the semi-cupolas of the church of St. Giocchino, Rome. Below, an important stage in the development of the use of aluminium—a 2-store aluminium prefab.



The Comet hangar at Hatfield. Two-pin aluminium portal frames, spanning 200 ft. and carrying aluminium north-light trusses at 10 ft. centres.



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alloy structures has been restricted to a few specialist firms—but knowledge of light alloy technique will, of course, become more general. Since the cost per unit volume of light alloys is more than three times that of structural mild steel, efficient light alloy structures can be produced only by design methods based on the special virtues of the material. And until there is a great reduction in the cost of the material, light alloys should not be used for such things as medium-span roof trusses. Light alloy roofs are economical for both small and large spans, but not for medium spans. (In the case of small spans, weight is reduced because the metal is less thick and the sections are more nearly the ideal shape for structural purposes. The minimum thickness of steel sections is much greater than that of light alloy, and the sizes of steel truss members are often determined by the sizes of rivets or bolts.) For spans up to about 25 feet, light alloy roofs are economical, especially if they can be mass-produced or if they are required for transportable buildings. The advantage of using light alloy for large span roofs—say 200 ft. and over—whether in the form of trusses, space frames, portals or domes, is that self-weight, which may be the decisive factor in the design, is reduced.

A recent example of the long span light alloy roof is the hangar for the Comet airliner at Hatfield. This has a clear span of 200 ft. and it has been said that the weight is one-seventh of that of the corresponding steel structure* (the contract was obtained in competition with steel firms).

The application of light alloys to the smaller span roof has resulted in the

production of prefabricated units for special purposes (especially when the units have to be transportable), e.g., greenhouses, poultry arks and other agricultural units.

SPACE FRAMES

One of the most efficient units used in light alloy structures is the space frame, which utilizes the versatility of the material to the full. One example of this type of construction is the building designed for Anglo-Iranian Oil Company, consisting of three 50-ft. bays, 300 ft. long. The main trusses were spaced at 25-ft. centres and the purlins and main framing were "space frames." On a more recent example—the factory roof at Duxford, designed by Ove N. Arup and Partners—the roof units spanning 42 ft. could be handled by two men. Another recent example is the dome at the Ford Rotunda, Dearborn, USA. Space frames here were fabricated in units in the form of an octahedron. They were assembled to form sections of the dome which were then cantilevered out from a central erection tower to meet the perimeter. It is of interest that the thickness of the individual members was only 0.05 in. and that the dome was covered with a plastic material of the same thickness, thus reducing the load on the walls to a minimum.

The outstanding example of space frame construction is, however, the Dome of Discovery of South Bank Festival fame. This structure was interesting for another reason; it was an example of intelligent composite design—the dome itself was constructed of light alloy, while the ring girder and its supports were of steel. Composite construction of this kind is worth the attention of anyone engaged on design in the building industry. One thing to remember is that it is bad practice to



Part of Dome of Discovery during construction, showing the composite nature of the framing—i.e., aluminium alloy roof members and steel ring girder and supports.

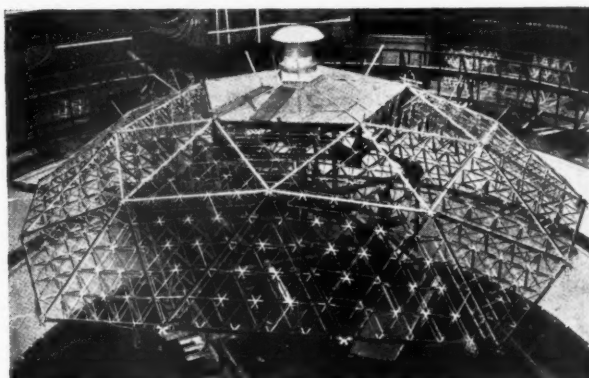
use light alloy for columns, etc., when these can be built more cheaply in steel, concrete or brickwork.

Part of the building industry has acquired enough knowledge about the design and fabrication of light alloy structures to satisfy present needs. But this material will be increasingly used in the future and I propose to deal, next week, with three ways in which it will be developed:—(1) For structures in which light alloys are the most economical material on the basis of prime cost or on that of overall cost including that of maintenance; (2) for structures in which light alloy, while not the most economical material, is most suitable owing to special conditions—such as reduction in dead weight or exposure to climatic or industrial atmospheres; (3) for decoration or for cladding or sheeting.

The 93-ft. dome of the Ford Rotunda, Dearborn, USA, consisting of aluminium space frames fabricated from octahedron-shaped units, and weighing less than 8 tons.



The aluminium space frames used over the stores of the Aero Research factory at Duxford (designed by Ove Arup and Partners).



* To be competitive the weight of a light alloy structure should not be more than one-fifth to one-sixth of the steel structure.



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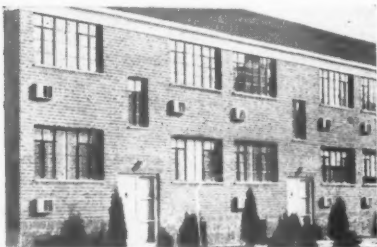
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THE INDUSTRY

From the Industry this week, Brian Grant reports on air filters, gas heating by independent units, testing for the position of reinforcing rods, metal windows, and the architectural problems of using room air-conditioners and other gadgets needing wall terminals.

Not long ago the *Architectural Forum* [USA] published two illustrations of buildings with room air-conditioner outlets protruding from them. One was an eyesore; the other, reproduced below, was of a block of flats on Long Island where some thought had been given to the placing of the outlets. It occurs to me that there are now any number of extra items which tenants are liable to add to existing equipment—water heaters, extract fans, balanced flue space heaters, and now room air-conditioners—all of which need some opening to the air. Most of the terminals are not particularly decorative, and it is all too likely that the tenant will fix his gadgets where he finds them most convenient, without paying the slightest attention to the deplorable effect on the appearance of the building. There is no obvious answer to this particular problem, as architects can hardly be expected to allow for all possible whims of unknown tenants, but the more equipment installed when the building is built, the less the tenant is likely to install himself. Apart from this, possibly un-realistic, solution, there are two things that can be done: firstly, the architect might suggest to the building owner that he should not allow tenants to fix new terminals without the architect's consent; secondly, manufacturers might be encouraged to make the terminals of their fittings as simple and unobtrusive as possible.

The simple design of the terminals to the Colt range of "Inflow Units" is, therefore, to be commended. These units have reversible electric fans for inflow or extract, with heater elements as required, and Colts have evolved an ingenious form of universal connector for their square-section trunking, so that the air stream can be projected at any angle from vertical to horizontal, in any



of four directions. This also allows for variations in roof pitch when the terminal is fitted in the roof instead of the wall. (Colt Ventilation Ltd., Surbiton, Surrey.)

AIR FILTRATION

The control of dust is an important problem not only in the air conditioning plant

of public buildings, but also in many industrial processes—sometimes, simply because a clean atmosphere is desirable, but often on account of safety, for many fine dusts from such ordinary things as sugar or starch can form highly inflammable mixtures which may be a considerable hazard.

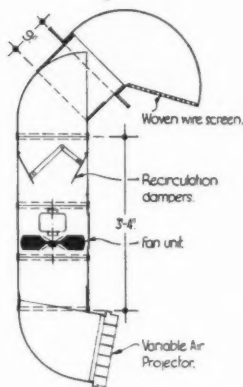
In a recent handbook from John Yuille, Ltd., the whole question of air filtration is dealt with very thoroughly. It is pointed out, with the aid of facts and figures, that there can be no such thing as a universal filter, since the medium used must depend largely on the size of the particles of dust to be removed. The firm produces the "Metwul" range of filters, which are made in several types of standard panel and can be built up to the required size. The filtering medium used depends on a number of factors—the particle size and the physical characteristics of the dust, its concentration, and the air velocity through the filter.

The filter normally consists of two pads (separated by an air space), consisting of a "wool" made from brass, copper, aluminium or some similar material. The "wool" has finely serrated surfaces and the dust adheres to the multiplicity of metal surfaces. The filter will not clog provided it is cleaned at regular intervals.

The handbook points out that the efficiency of the filter is lowest when it is new and generally at its best when resistance has reached the point when cleaning or shaking is necessary. A regular schedule of inspection should be drawn up, but a possible alternative is to install a draught gauge which will indicate the pressure drop across the filter bank and give warning when the resistance has built up to a predetermined top limit. The handbook provides a great deal of useful information and will show even the least interested that there is more in filter design than meets the eye. (John Yuille (Metal Works) Ltd., Scottish Industrial Estate, Hillington, Glasgow, S.W.2.)

HEATING BY GAS

The Gas Council has already published Section I of its booklets on the warming of large buildings. The recently published, second, instalment deals with independent units as opposed to central plant. Both methods, of course, have their advantages, but it should be remembered that independent heaters can have just as high an efficiency as a large boiler, that there are no circulation losses and that the time lag in warming up is small. It is possible, too, to provide the required heat in the most desirable form, whether convected or ra-



Section through Colt's "Inflow Unit" with roof outlet. Also available with wall outlet and with built-in air heater.

diated, while thermostats can be easily arranged.

The booklet gives plenty of useful advice on the choice of unit, whether flued or flueless, and there is a large selection of illustrations showing the installation of various types of heater in restaurants, clubs, churches, hospitals and shops. There are also some useful diagrams showing the percentages of radiant and convected heat given out by different types of appliance. (The Gas Council, 1, Grosvenor Place, London, S.W.1.)

REINFORCING RODS

Some readers may remember seeing a small electrical instrument for measuring the cover over reinforcing rods which was shown on the CCA stand at the last Building Exhibition (see also *Information Centre* item 17.84: 28.2.52). At that time, the meter was still experimental, but it is now in production and for sale. It is easily portable and can be used from mains supply or with a 6-volt accumulator. No particular skill is required in using it, and the depth of cover is read direct from a dial, the search head also showing the direction in which the reinforcing rods are running in the concrete. The price is £36 and, although the instrument, which is known as the "Covermeter," is unlikely to become standard equipment in architects' offices, it is useful to know that such an instrument exists if it should become essential to check a contractor's workmanship or to locate reinforcing rods on an alteration job. (Koletric Ltd., 73, Uxbridge Road, Ealing London, W.5.)

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

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Buildings Illustrated

Reception Building and Petrol Filling Station. Car Ferry Terminal for the Dover Harbour Board, Dover, Kent. (Pages 106-107.) Architects: J. M. Wilson, H. C. Mason & Partners. Chief engineer, Dover Harbour Board, J. W. Sutton, O.B.E., M.I.C.E., M.I.M.E.C.E. Resident engineer, Dover Harbour Board, W. T. Allen, M.B.E., B.S.C.E.N.G., A.M.I.C.E. Quantity surveyors: Martin Sheffield & Bristow. General foremen: V. Stone and A. Amos. General contractors: R. J. Barwick. Sub-contractors: constructional steelwork, Palmers Hebburn Co. Ltd.; bricks, Hammill Brick Co., through The Builders' Materials' Association Ltd.; artificial stone, Empire Stone Co.; panel heating, hot water and ventilation, G. N. Haden & Sons Ltd.; electrical installation, Troughton & Young Ltd.; electric light fittings, Troughton & Young Ltd., and Utility Lamp & Fittings Co. Ltd.; metal windows, Henry Hope & Sons, Ltd.; counters, screens and joinery, R. J. Barwick; bar and shop fittings, D. Burkle & Son Ltd.; terrazzo work, Art Pavements & Decorations Ltd.; asphalt tanking and roofing, Val de Travers Asphalte Paving Co. Ltd.; reinforcement and fabric, The British Reinforced Concrete Engineering Co. Ltd. (reception building), Twistell Reinforcement Co. Ltd. (petrol filling station); pavement lights and interior screen, Lensecrete Ltd.; flush doors, Jayanbee Joinery Ltd.; ironmongery, Adrian Stokes Ltd. (reception building), Nettlefold & Moser Ltd. (petrol filling station); presentation key, Adrian Stokes Ltd.; metal balustrades, etc., William Pickford Ltd.; sanitary fittings, Adamsez Ltd.; mirrors, D. Burkle & Son Ltd., and W. N. Froy & Sons Ltd.; plastering, Jarratt Ltd. (reception building), Gaskill & Borle (petrol filling station); Venetian blinds, J. Avery & Co. Ltd.; rubber flooring, Semtex Ltd.; tiling work, Carter & Kernshan Ltd.; kitchen accessories, Staines Kitchen

Equipment Co. Ltd.; furniture and curtaining, Maple & Co. Ltd., and G. H. Burgess & Co. Ltd.; paint, supplied by W. & J. Leigh Ltd.; painting, Clarke Bros. Ltd.; metal partitions, The Ayrshire Dockyard Co. Ltd.; marble plaque, J. Whitehead & Sons Ltd.; block partitions, Kimolo and Phorpres; petrol pumps installation, Ezzo Petroleum Co. Ltd.; glass, Pilkington Bros. Ltd.; glazing, Faulkner & Greene Co. Ltd. (reception building), Folkestone Glassworks (petrol filling station); cacti and succulents, West End Flower Shop; veneers, Richard Graefe Ltd.; stone paint, Silixine Paints Ltd.; cork slabs, Cork Insulation & Asbestos Co.; French polishing, Roberts & Stacey; hardwood, Wm. Mallinson & Sons Ltd.; under floor ducting, Key Engineering Co. Ltd.; public address system, Ardente Acoustic Laboratory Ltd., installation by E. R. Longley; tyre pressure indicator, Tecalemit; roller shutters supplied by Arthur L. Gibson Ltd.

Office Block for the National Coal Board, Alloa Area, Scottish Division, at The Whins, Alloa, Clackmannan, Scotland. (Pages 108-110.) Architect: E. Riss, F.R.I.B.A.; Principal assistant architect: J. B. Bell, A.R.I.B.A.; Assistant architect: I. T. Brand, A.R.I.B.A. General contractor: James Laidlaw & Sons Ltd. Sub-contractors: asphalt, Rock Asphalt Co. Ltd.; artificial stone, G. W. Bruce Ltd.; glass, James Thow Ltd.; central heating, G. N. Haden & Sons Ltd.; "Ideal" boilers supplied by G. N. Haden & Sons Ltd.; electric wiring, David Reid & Co.; electric light fixtures, Merchant Adventurers of London Ltd. (special fluorescent), General Electric Co. Ltd. (fluorescent), F. Thomas & Co. Ltd. (ceiling light); plumbing, James Young; sanitary fittings, Shanks & Co. Ltd.; stairtreads, North British Rubber Co.; door and window furniture, Fletcher, Parker & MacAlpine; plaster, Thomas & Bell; metalwork, Barony Construction Co.; terrazzo, tiling, Toffolo Jackson & Co.; painter, A. Fraser.

JOURNAL for July 16, 1953: *Floor Heating by Hot Air* (page 90); inflatable rubber tubes by Ductube Ltd.; 42-ft. Prestressed Precast Concrete Floor Units (page 91); "Bison" beams by Concrete Ltd.

Announcements

C. F. Bishop, a director of Thos. W. Ward Ltd., is to retire from the board of the company on June 30, although he is to remain with the company for some time.

At a recent meeting the following firms were elected to membership of EJMA. Thos. Hinds, Sons & Wyborn, Sussex; Trade Joinery Ltd., London, S.W.9, and S. Keeling Co. Ltd., Stoke-on-Trent.

Two telephone numbers of British Insulated Callender's Cables Ltd. have recently been changed. Their Derby depot is now: Derby 43697 and Southampton branch is now: Southampton 76176/7.

A. D. Richards, 10, Trafford Avenue, Elsternwick, S.4, Victoria, Australia, would be pleased to receive trade literature.

The Engineer and Surveyor, Easington Rural District Council, Council Offices, Easington, Co. Durham, would be glad to receive trade literature in connection with the Council's scheme for the development of Crimdon Park as a seaside pleasure resort.

Merediths Ltd., softwood importers, have opened a new office at Ocean Chambers, 54, Lowgate, Hull, (Tel.: Central 15097). Charles Hurd has been appointed manager of this branch.

All sections of the MOW, Bournemouth are now housed at Pine Court, Gervis Road East, Bournemouth. The telephone number remains unchanged as Bournemouth 7235/9.

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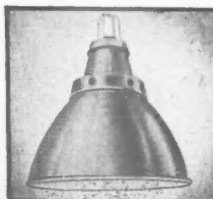


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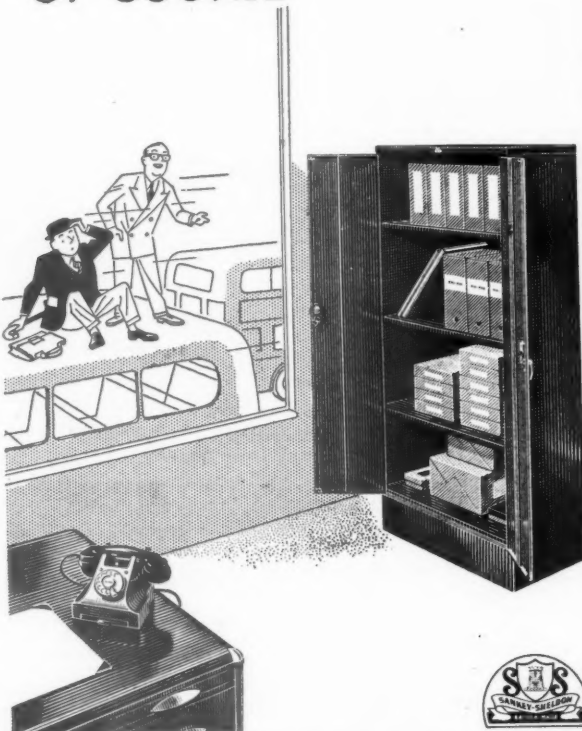
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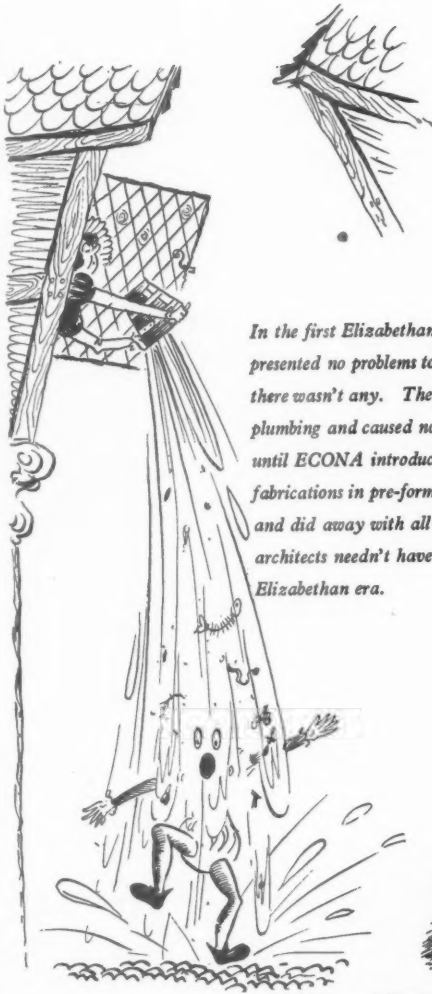
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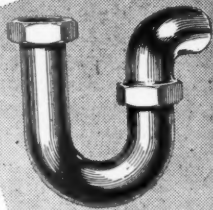
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AN APPROACH TO PLANNING

By T. H. B. Burrough, F.R.I.B.A.

This is the latest addition to the Architects' Library. The author has important things to say on three-dimensional planning and the "new aesthetic", and his book will prove useful and stimulating to the young architect and student. The examples given cover a wide field, and a wealth of apt illustration is provided. 21/- net.

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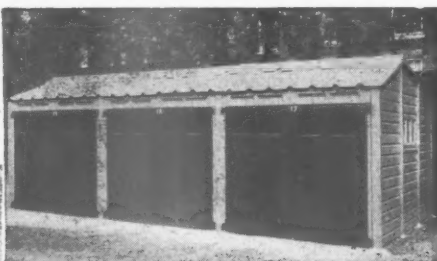
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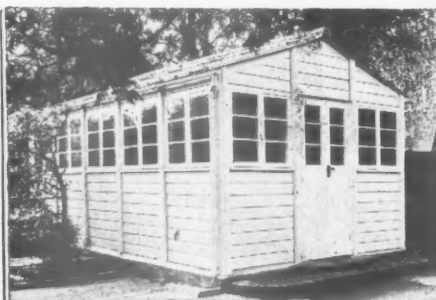
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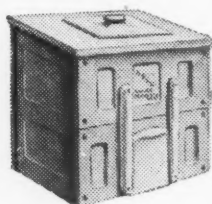
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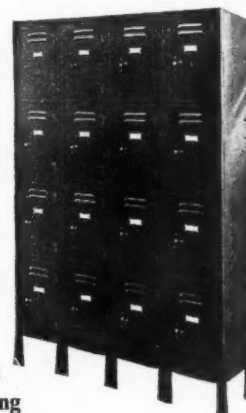
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A selection of Architectural Press BOOKS

Plastics in building. By Joseph B. Singer, B.Sc.(Arch.), A.R.I.B.A.

HERE FOR THE FIRST TIME is a comprehensive text-book giving up-to-date information on the practical application of plastics in the building industry—information of the greatest importance not only to architects but also to builders and their operatives. The author who is an architect and scientist and is recognized as a leading authority on his subject, has divided the book into four parts. Part 1 deals with the history and general outline of the plastics industry; part 2 with plastics for exterior work; part 3 with plastics for interior work; and part 4 with the future possibilities of plastics in building. Under these headings are discussed the uses of plastics for walls, roofs, glazing, floor coverings, heat and sound insulation, plumbing and sanitation, furniture, electrical equipment and lighting, etc. In addition there is a glossary of trade terms, a bibliography and general index. *Bound in full cloth boards. Size 8½ ins. by 5½ ins. 176 pages, including over 50 line diagrams and 30 half-tone illustrations. Price 18s. net, postage 5d.*

The Modern Factory. By Edward D. Mills, F.R.I.B.A.

A BOOK for architects and industrialists. Its purpose is to help solve the many present-day problems of factory layout, planning, design and construction. It discusses, among much else: siting and layout; the factory estate; design and structural techniques; warehouse accommodation; industrial laboratories; welfare buildings. *Bound in full cloth boards. Size 9½ ins. by 7½ ins. 190 pages, including frontispiece and 42 pages of plates; many line drawings, a bibliography and an index. Price 30s. net, postage 8d.*

Exhibition Design. Edited by Misha Black, O.B.E. Contributors: Misha Black, O.B.E., Basil Spence, F.R.I.B.A., James Holland, F.S.I.A., Adrian Thomas, Richard Guyatt, Lynton Fletcher, M.A., J. Mortimer Hawkins, M.I.E.S., H. F. Clark, A.I.L.A., Dorothy Goslett, Austin Frazer.

THE PURPOSE of this book is to show what are the essential qualities of a good exhibition, and how to achieve them. It contains over 270 illustrations—photographs, drawings and plans—of well-designed recent exhibitions grouped under 'Trade Fairs', 'Public Exhibitions', 'Propaganda Exhibitions', 'Travelling Exhibitions', and 'National and International Exhibitions'. The technique of exhibition design is covered comprehensively and in detail. Each chapter is written by an expert in his own field. The mass of information the book contains will be of value equally to the professional exhibition designer and to the exhibition promoter. *Bound in full cloth boards. Size 9½ ins. by 7½ ins. 190 pages; over 280 illustrations. Second, revised, edition. Price 25s., postage 9d.*

Town and Country Planning Textbook. Edited by APRR. Foreword by Professor W. G. Holford.

THIS BOOK PROVIDES the only comprehensive textbook available for students of town and country planning, and at the same time a complete reference book for the practising planner and for other professional workers in allied fields. Compiled under the editorship of both the Association for Planning and the School of Planning, it covers the entire new syllabus of the Town Planning Institute. It affords an opportunity of systematic study in physical planning, and is divided into sections on 'Geography', 'Planning Survey', 'Social Survey', 'Transport', 'Industry and Power', 'Law and Economics', all of which are contributed by leading experts. *Bound in full cloth boards. Size 8½ ins. by 5½ ins.; 634 pages; a good bibliography. Price 42s., postage 11d.*

Switzerland Builds: Its Architecture Modern and Native. By G. E. Kidder Smith. Introduction by Siegfried Giedion

THIS IS THE ONLY BOOK ever published in English recording the development and contribution of one of the chief sources of authentic contemporary architecture. Sixty pages are devoted to a fascinating survey of native types, the simple functional quality of which is in complete sympathy with the contemporary forms that follow. In the design of churches Switzerland stands alone; in her philosophy and building of schools, foremost in Europe; and the public buildings generally rank with the world's finest since the war. Mr. Kidder Smith is 'amongst other things, a photographer of genius' says THE ARCHITECTURAL REVIEW. *Bound in full cloth boards. Size 11½ ins. by 8½ ins.; 234 pages; 40,000 words; 6 pages in full colour; nearly 500 monochrome illustrations. Price 50s., postage 1s. 1d.*

Sweden Builds: Its Modern Architecture and Land Policy, Background Development and Contribution. By G. E. Kidder Smith. With an Introductory chapter on Land Usage by Sven Markelius.

THIS BOOK BEGINS with a description of the Swedish native building types and the Swedish wood tradition. This serves as an introduction to a comprehensive and beautifully illustrated survey of contemporary Swedish architecture. Every aspect of this new movement is examined, from housing

to the latest aeroplane hangars, from site-planning of the new suburbs to tram and bus shelters. Houses (prefabricated and otherwise), schools, churches, hospitals, concert halls, cinemas, public buildings, sports buildings, museums, shops, restaurants and factories are magnificently illustrated and fully discussed. The book ends with some hitherto unpublished illustrations of recent Swedish bridge architecture. *Bound in full cloth boards. Size 11½ ins. by 8½ ins.; 280 pages; 7 pages in full colour and nearly 700 monochrome illustrations from photographs and drawings. Price 50s. net, postage 1s. 1d.*

A Pocket Guide to Modern Buildings in London. By Ian McCallum.

THIS IS A NEW GUIDE BOOK intended for all interested in modern architecture. After outlining the development of architecture over the past century Mr. McCallum illustrates and describes the most significant modern buildings within 7 miles of Charing Cross, and gives full directions for finding them. *Bound in stiff board cover. Size 5½ ins. by 4½ ins. 128 pages with 36 illustrations, 5 maps, a bibliography and 3 indexes. Price 3s. 6d. net, postage 2d.*

High Victorian Design: a Study of the Exhibits of 1851. By Nikolaus Pevsner.

DR. PEVSNER here examines the problems of the critics' *voite-face* and of the change in taste since 1851. Then the Crystal Palace itself was disliked by critics such as Ruskin, the exhibits praised and admired by critics and public alike. Now the exhibits are scorned but the building itself is highly praised. Dr. Pevsner seeks to explain the reasons for the taste of 100 years ago by a study of 120 exhibits (all illustrated) from the 1851 exhibition. *Size, crown 8vo., bound in full cloth boards. with 162 pages containing over 120 illustrations. Jacket designed by Gordon Cullen. Price 12s. 6d. net, postage 4d.*

Parliament House: the Chambers of the House of Commons. By Maurice Hastings, Ph.D.

TO UNDERSTAND the traditional plan adopted for the new Chamber of the House of Commons we have to go back to 1547 when the King's chapel of St. Stephen's became the home of the Commons. Dr. Hastings makes a brilliant and learned reconstruction of this place where so many high events and great Parliamentarians moved; he also describes Barry's Chamber and that opened in 1950, designed by Sir Giles Gilbert Scott, showing how the choir-stall seating plan has continued unchanged through the centuries. *Bound in full cloth boards. Size 8½ ins. by 5½ ins. 200 pages with 78 illustrations. Price 12s. 6d. net, postage 6d.*

English Panorama. By Thomas Sharp, M.A., D.Litt.

THE FIRST carefully studied and original account of the evolution down the centuries of the English scene in town and countryside, this book ends with a penetrating analysis of the problems of town and country planning which now confront us. First published in 1936, it has now been revised with much new material and is almost entirely newly illustrated. *Bound in full cloth boards. Size 8½ ins. by 5½ ins. 148 pages, with over fifty half-tone and line illustrations. Price 12s. 6d. net, postage 6d.*

The Unsophisticated Arts. Drawn and described by Barbara Jones.

WHAT IS UNSOPHISTICATED ART the vernacular art of England? Barbara Jones has made it her pleasure to seek and find it, describe and explain it, draw it and photograph it in many places, likely and unlikely, for many years past: it is the art of the fairground showman, the painter of canal boats, the week-end bungalow owner, the toy maker, the wedding cake baker. The range of her search is best shown by a short list from the book's thirteen chapters: Taxidermy, Seaside Tatting, Toys, Festivals. . . . *Bound in full cloth boards: Coloured tops. Size 9½ ins. by 7½ ins. 192 pages with over 200 illustrations in colour, half-tone and line. Price 25s. net, postage 8d.*

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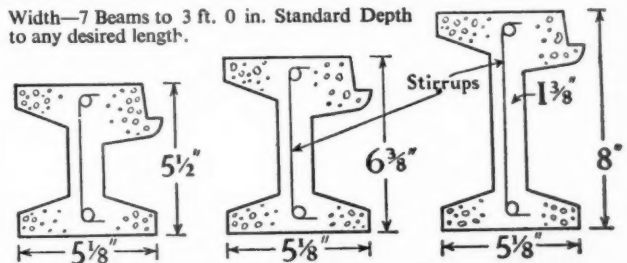


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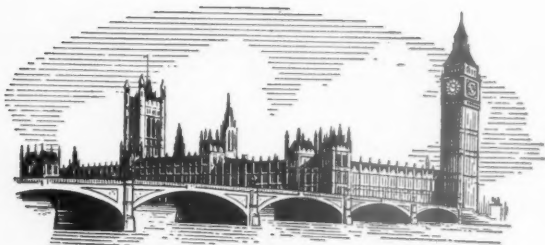
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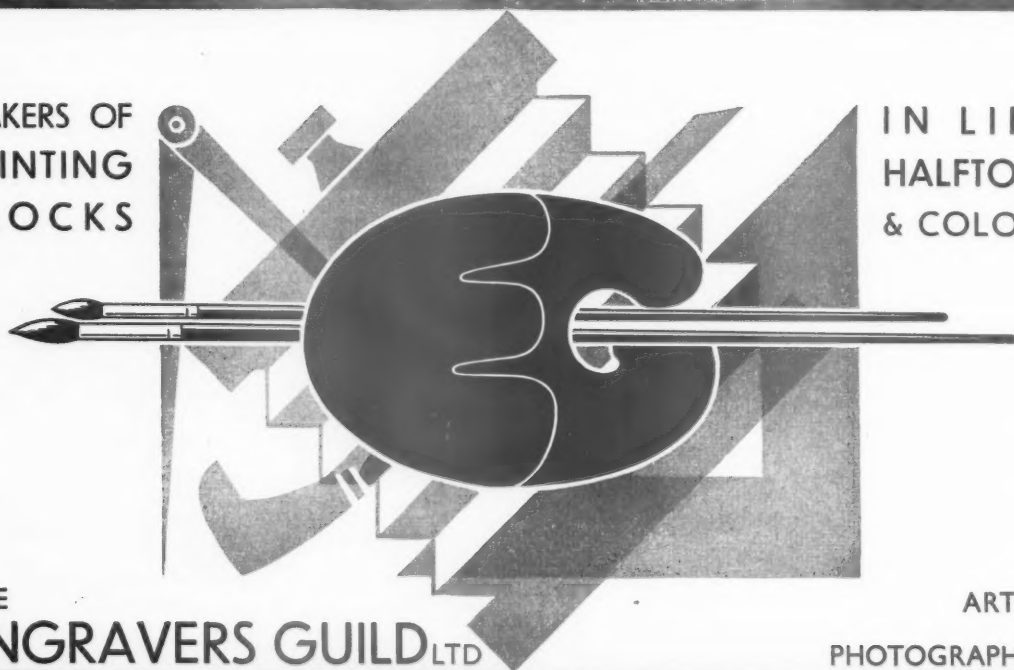
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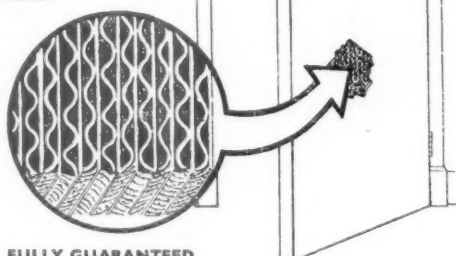
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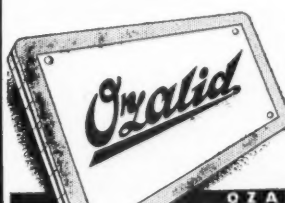
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Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

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

LONDON COUNTY COUNCIL.

ARCHITECTS' DEPARTMENT.

Vacancies for ARCHITECTS (A.R.I.B.A.), up to £696, in Housing Schools and General Divisions.

Particulars and application forms, returnable by 31st July, from Architect (AR/EK/A/2) County Hall, S.E.1 (741) 9159

STAFFORDSHIRE COUNTY COUNCIL.

EDUCATION COMMITTEE.

Applications are invited for the appointment of an ASSISTANT ARCHITECT at a salary in accordance with Grade V/VI (£595 to £735 per annum); commencing salary according to experience.

Applicants should be Associates of the R.I.B.A.; preferably with experience in construction of all types of school buildings.

The County Council are prepared to grant a lodging allowance of 25s. per week for a period of six months where a candidate is married and has to continue to remain in his home outside the County whilst seeking housing accommodation.

Applications should state age, qualifications, training, present and past employment, enclose copies of two recent testimonials, and be submitted to A. C. H. Stillman, F.R.I.B.A., Education Architect, Green Hall, Lichfield Road, Stafford, to be received no later than 28th July, 1953.

T. H. EVANS.

Clerk of the County Council. 9172

GOVERNMENT OF WESTERN AUSTRALIA.

EDUCATION DEPARTMENT.

PERTH TECHNICAL COLLEGE.

SCHOOL OF ARCHITECTURE.

Applications are invited for the position of LECTURER-IN-CHARGE, School of Architecture, Perth Technical College.

The Diplomas of the School, which are accorded full recognition by the R.I.B.A. and R.A.I.A. are awarded as a result of two years' full-time study above the Matriculation standard and completed by three years' part-time study whilst students are in the employ of practising Architects. The School has a full-time staff of four, augmented by a number of specialist Lecturers.

Applicants should be graduates of a recognised School of Architecture and be members of the R.I.B.A. or R.A.I.A. or hold such other qualifications as may be deemed equivalent; foreign travel and experience will be an additional recommendation.

The duties of the appointee will include the control and development of his Department, and lecturing (within his field) in subjects to the level of the final examinations of the R.I.B.A. Subject to Departmental approval, limited consultative practice is permissible.

Present salary range £A1,322-£A1,407 p.a., which is varied with the cost of living; appointment will be within this range, dependent upon experience. Subject to medical examination, a superannuation scheme or equivalent insurance cover is requisite.

Information should be supplied concerning general and Architectural training, age, marital status, and teaching experience (if any), also period required to finalise arrangements before departure. A reasonable allowance for sea transport will be made subject to an undertaking being given to remain in the service of the Department for a period of 3 years.

Applications in triplicate, and including a recent photograph, addressed as under, will be accepted until 30th September, 1953.

The Superintendent of Technical Education, Perth Technical College, Perth.

Western Australia. 9148

CITY OF WAKEFIELD.

CITY ENGINEER'S DEPARTMENT.

QUANTITY SURVEYING ASSISTANT.

Applications are invited for the above superannuable appointment on Grade A.P.T. II (£495 to £513) to £540.

Applicants should have a good knowledge of Building Construction and Quantity Surveying.

Applications endorsed "Quantity Surveying Assistant," stating age, qualifications, present and previous appointments, and details of experience together with the names of two referees to be sent to me not later than 7th August, 1953. Canvassing will disqualify.

W. S. DES FORGES.

Town Clerk. 9196

MINISTRY OF WORKS.

Vacancies exist in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS with recognised training and fair experience. Vacancies mainly in London and Risley (Nr. Warrington). Successful candidates will be employed on wide variety of Public Buildings including Atomic Energy and other Research Establishments, Telephone Exchanges and Housing.

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Write stating age, nationality and full details of training and experience, to Chief Architect, W.G.10/C.A.2, Ministry of Works, Abell House, John Islip Street, London, S.W.1. 8760

METROPOLITAN BOROUGH OF FULHAM.

ASSISTANT QUANTITY SURVEYOR.

Housing & Public Buildings Dept. A.P.T. V.V.A. £595-£685 p.a., plus London weighting; £30 p.a. over 25 years. Main duties "taking-off" for large blocks of flats and other public buildings, measurement of works on site, and finalising accounts. Preference given to applicants who have passed the Final R.I.C.S. (Quantities) exam. or equivalent. Forms from Town Clerk, Town Hall, S.W.6. Closing date: 5th August, 1953. 9207

ARCHITECTURAL TRAINEE, HOUSING & PUBLIC BUILDINGS DEPT., FULHAM BOROUGH COUNCIL.

Excellent opportunity for boy 16/17 years. £170-£185 p.a. Details from Town Clerk, Town Hall, S.W.6. Closing date: 5th August. 9206

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BOROUGH ARCHITECT'S DEPARTMENT.

JUNIOR QUANTITY SURVEYOR, Grade III/IV/V. Salary £525 to £645 per annum, commencing at £525, and national conditions of service. Qualifications: R.I.C.S. Intermediate Examination standard. Experienced in abstracting and billing, measuring on site, preparation of final accounts, and taking off quantities for small building works.

Permanent staff appointment, subject to one month's notice and pensionable subject to medical examination.

Form of application obtainable from and to be returned to the Borough Architect, The Council House, not later than 12th August, 1953. Canvassing disqualifies.

E. H. NICHOLS.

Town Clerk. 9184

HOLBORN BOROUGH COUNCIL, Borough Architect's Department, require JUNIOR ARCHITECTURAL ASSISTANT. R.I.B.A.

Intermediate or equivalent necessary. Salary: £515-£590, according to experience.

Apply, with two referees, to Town Clerk, Town Hall, High Holborn, W.C.1, by 29th July, 1953.

C. F. S. CHAPPLE.

Town Clerk. 9203

LANCASHIRE COUNTY COUNCIL—

PLANNING DEPARTMENT.

PLANNING ASSISTANT (ARCHITECTURAL) (£465-£545) required at Preston. Candidates should be studying for, or possess, an architectural qualification. Salary, within Grades I-V, will be according to qualifications and experience.

Applications giving experience, qualifications, present salary and two referees to County Planning Officer, East Cliff County Offices, Preston, by 5th August, 1953. 9185

CITY OF BIRMINGHAM EDUCATION COMMITTEE.

COLLEGE OF ART AND CRAFTS.

Principal: Meredith W. Hawes, A.R.C.A., N.R.D. BIRMINGHAM SCHOOL OF ARCHITECTURE.

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(SECOND ADVERTISEMENT).

Applications are invited from Chartered Architects for appointment as PART-TIME LECTURER for 16 hours weekly.

The salary will be two-thirds of the Burnham (Further Education) Scale 1951 for Lecturers £940 by £25 to £1,040. The person to be appointed must have had first hand experience of site supervision and have knowledge of site organisation, working drawings and specifications. A knowledge of Quantities will be an advantage. The successful applicant will be required to take up duty as soon as possible.

Forms of application may be obtained from the Principal, College of Art and Crafts, Margaret Street, Birmingham, 3, on receipt of a stamped addressed foolscap envelope and must be returned not later than ten days after the appearance of this advertisement.

Persons who replied to the first advertisement in May should not submit a second application. If they desire their original application to be brought forward, they should send a written request to that effect to me at the College of Art and Crafts.

E. L. RUSSELL.

Chief Education Officer. 9189

BRITISH ELECTRICITY AUTHORITY.

EAST MIDLANDS DIVISION.

Applications are invited for the following positions within the Division:—
CIVIL ENGINEERING DRAUGHTSMEN,
CONSTRUCTION DEPARTMENT.

Vacancy No. 22/53
Candidates should have experience in design and detail of re-inforced concrete structures, piled and slab foundations for heavy plant, culverts, cable subways, etc., for general building construction drainage and sanitation schemes, associated with office and administrative buildings.

The salary will be in accordance with Grade 5 (£567-£671 per annum) or Grade 6 (£433-£567 per annum) of Schedule D of the National Joint Board Agreement.

ENGINEERING DRAUGHTSMEN

(MECHANICAL).

CONSTRUCTION DEPARTMENT.

Vacancy No. 44/53
Senior Draughtsmen are required in the Mechanical section of the Construction Department at North Wilford Power Station. 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) n.c.r. 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 and conditions of service will be in accordance with the National Joint Board Agreement Grade 5 (£567-£671 per annum) and Grade 6 (£433-£567 per annum) of Schedule D according to experience.

ENGINEERING DRAUGHTSMEN

(ELECTRICAL).

CONSTRUCTION DEPARTMENT.

Vacancy No. 61/53
Candidates should have experience in the preparation of layouts and diagrams for the installation of E.H.T. and L.T. Switchgear, transformers, E.H.T. and L.T. cables; knowledge of protective gear systems would be an advantage. The salary will be in accordance with Grade 5 (£567-£671 per annum) or Grade 6 (£433-£567 per annum) of Schedule D of the National Joint Board Agreement.

The appointments will be pensionable within the provisions of the British Electricity Authority and Area Boards Superannuation Scheme.

Applications should be submitted on the appropriate form which may be obtained from the Divisional Establishments Officer, British Electricity Authority, Barker Gate, Nottingham, and should be returned to the Divisional Controller.

L. F. JEFFREY.

Divisional Controller. 9183

KENSINGTON B.C. require on permanent establishment CHIEF ARCHITECTURAL ASSISTANT. Salary £815-£1,025 p.a., plus London Weighting. No housing provided. Applicants must be associate members of R.I.B.A., with experience of municipal housing schemes. Applications stating age, qualifications, experience, etc., with names of two referees to reach Town Clerk, Town Hall, Kensington, W.8, by 5th August, 1953. 9197

METROPOLITAN BOROUGH OF

SHOREDITCH.

CHIEF ASSISTANT ARCHITECT.

Applications are invited for the above appointment. Salary: A.P.T. VIII (£790-£965). Subject to medical exam., Council's Supn. Scheme and N.J.C. Conditions.

Applicants must be Corporate Members of R.I.B.A., with considerable experience in multi-storey housing, including administration of contracts.

Applications, stating age, training, and details of experience, and giving three referees, to arrive by 17th August, 1953.

C. A. JAMES.

Town Clerk. 9208

Town Hall, Old Street, E.C.1.

July 1953.

BRITISH ELECTRICITY AUTHORITY.

EAST MIDLANDS DIVISION.

Applications are invited for the following positions within the Division:—
CIVIL ENGINEERING DRAUGHTSMEN
CONSTRUCTION DEPARTMENT.

Vacancy No. 22/53
Candidates should have experience in design and detail of re-inforced concrete structures, piled and slab foundations for heavy plant, culverts, cable subways, etc., for general building construction drainage and sanitation schemes, associated with office and administrative buildings.

The salary will be in accordance with Grade 5 (£567-£671 per annum) or Grade 6 (£433-£567 per annum) of Schedule D of the National Joint Board Agreement.

ENGINEERING DRAUGHTSMEN

(MECHANICAL).

CONSTRUCTION DEPARTMENT.

Vacancy No. 44/53
Senior Draughtsmen are required in the Mechanical section of the Construction Department at North Wilford Power Station. 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 and conditions of service will be in accordance with the National Joint Board Agreement Grade 5 (£567-£671 per annum) and Grade 6 (£433-£567 per annum) of Schedule D according to experience.

ENGINEERING DRAUGHTSMEN (ELECTRICAL) CONSTRUCTION DEPARTMENT

Vacancy No. 61/53 Candidates should have experience in the preparation of layouts and diagrams for the installation of E.H.T. and L.T. Switchgear, transformers, E.H.T. and L.T. cables; knowledge of protective gear systems would be an advantage. The salary will be in accordance with Grade 5 (£567-£671 per annum) or Grade 6 (£433-£567 per annum) of Schedule D of the National Joint Board Agreement.

The above appointments will be superannuable within the provisions of the British Electricity Authority and Area Boards Superannuation Scheme.

Applications should be submitted on the official form which may be obtained from the Divisional Establishments Officer, British Electricity Authority, Barker Gate, Nottingham, and should be returned to the Divisional Controller. Please quote Vacancy Number.

L. F. JEFFREY,
Divisional Controller. 9219

BOROUGH OF OLDBURY. APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the undermentioned appointments in the Architect's Section of the Borough Surveyor's Department:—

(a) ASSISTANT ARCHITECT, Grade A.P.T. V(a) (Housing).

(b) ASSISTANT ARCHITECT, Grade A.P.T. V(a) (Education).

Applicants for the above appointments should be qualified members of the R.I.B.A. and preferably having previous experience with a local authority. Candidates for (a) should be experienced in the layout of contemporary housing schemes, the design and construction of municipal houses, flats and shopping centres and capable of administering building contracts.

For appointment (b) candidates should be qualified to take charge of the maintenance of education and public buildings, including the preparation of estimates, working drawings and specifications and administration of building contracts.

The appointments will be subject (a) to the

conditions of the service of the National Joint Council for Local Authorities Administrative, Professional, Technical and Clerical Service, (b) to the Local Government Superannuation Act, 1937 and (c) to the successful candidate passing a medical examination.

Applications giving particulars of age, experience, etc., together with the names of two referees, should be addressed to the undersigned not later than Saturday, 8th August, 1953.

Housing accommodation will be made available to married applicants if required.

KENNETH PEARCE,
Town Clerk.

Municipal Buildings, Oldbury. 9218

CITY OF CARLISLE. APPOINTMENT OF ASSISTANT QUANTITY SURVEYOR.

Applications are invited for the post of Senior Assistant Quantity Surveyor, Grade VI, £670-£735, for education, general and housing work. Applicants should be R.I.C.S., Final standard. Housing may be provided.

Application forms from the City Surveyor, 18, Fisher Street, Carlisle, to whom they are returnable by 15th August, 1953.

H. D. A. ROBERTSON,
Town Clerk.

The Town Clerk's Office, 15, Fisher Street, Carlisle. 9214

BOROUGH OF BRENTFORD AND CHISWICK. APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for this appointment in the Borough Engineer and Surveyor's Department, at a salary according to Grade VI of the A.P.T. Division of the National Scheme (£670-£735 p.a., plus London weighting), commencing 1st year. Forms (containing further particulars and conditions) obtainable from the undersigned, by whom applications must be received not later than the 7th August, 1953.

W. F. J. CHURCH,
Town Clerk.

Town Hall, Chiswick, W.4. 9215

BIRMINGHAM AND DISTRICT SUB-AREA require SENIOR DRAUGHTSMEN in the Architectural and Constructional Section of the Engineer's Department. Thorough technical training and practical experience required in the design of new buildings and alterations to existing buildings. Should be capable of preparing complete working drawings for Service Centres, Sub-stations, foundations for heavy plant, etc. Appropriate qualifications desirable. Salary £567/£780 (N.J.B. Schedule "D," Grades 5 or 4) according to qualifications and experience.

Apply within 14 days, stating age, experience, salary and position to: Emil Braathen, Manager, Midlands Electricity Board, Birmingham and District Sub-Area, 14, Dale End, Birmingham, 4. 9216

LINDSEY COUNTY COUNCIL. COUNTY ARCHITECT'S DEPARTMENT. Vacancy on permanent staff for QUANTITY SURVEYOR, Grade A.P.T. V(a) and VI. £625-£735 for persons holding the Final R.I.C.S. Commencing salary not higher than third step of V(a) according to experience.

N.J.C. Conditions of Service. Canvassing will disqualify. Relationship to Member or Senior Officer of the Council to be disclosed in writing with application.

Applications stating age, qualifications and experience, with names of two persons to whom reference can be made to be sent to me not later than 28th July, 1953.

A. RONALD CLARK,
A.R.I.B.A., A.M.T.P.I.,
County Architect.

County Offices, Lincoln. 9217

Tenders for Contracts

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

BOROUGH OF BASINGSTOKE.

SOUTH HAM SITE.

ERECTION OF NINE SHOPS AND MAISONNETTES.

Tenders are invited for the erection of Nine Shops and Maisonnets together with ancillary Stores and Garages.

Bills of Quantities and Form of Tender may be obtained from the Borough Architect, Eric Almond, Dipl. Arch. A.R.I.B.A., Municipal Buildings, Basingstoke, on payment of a deposit of £2 2s. 0d. returnable on receipt of a bona fide tender.

Tenders must be received by the undersigned not later than first post on Tuesday, 4th August, 1953.

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

It may be noted that tenders will shortly be invited for other works in the immediate vicinity of these shops, comprising 42 dwellings in 3 Storey flats.

MEIRION O. JONES,
Town Clerk.

Municipal Buildings, Basingstoke. 9146

WELTON RURAL DISTRICT COUNCIL.

TENDERS FOR HOUSING.

The above Council invite Contractors who are desirous of submitting a tender for the erection and completion of the following:—

One pair of houses at Grange de Lings.

One pair of houses at Cold Hanworth.

Four houses at Snelland.

To send in their names to the Architects, Messrs. Wm. Saunders & Partners of 24, Castle Gate, Newark on Trent, or 14, Mercer Row, Louth, Lincs., from whom copies of the Specifications and Bills of Quantities and Conditions may be obtained on payment of 43 3s. 0d. which will be returned on receipt of a bona fide tender.

Housing in Denmark since 1930



by Eshjorn Hiort, M.A.A., Secretary-General of the Federation of Danish Architects. Translated by Eve M. Wendt.

THIS IS A BOOK for all those who are in any way concerned with housing: it describes the extremely interesting development of Danish housing during the past twenty-two years. It is a readable, authoritative illustrated work on the subject published at the instance of the Danish Housing Ministry. In preparing it the author received much support and assistance from the State, the Municipality of Copenhagen, the Joint Organization of Social Welfare Housing Societies and a number of individual housing societies. There are chapters on The Social Development of Housing; The Economics of Housing; The Technical Aspects of Housing; Dwelling Forms and Design; and Reconstruction and Slum Clearance. The book also contains numerous statistics in tabulated form and includes three appendixes. It is illustrated with photographs, line diagrams and plans. Size 10 ins. by 7 ins. 112 pages illustrated with 33 halftones and 40 line diagrams and plans. Price 21s. net, postage 8d.

The Architectural Press, 9-13 Queen Anne's Gate, London, S.W.1

The Council do not bind themselves to accept the lowest or any tender received and acceptance is subject to the approval of the Ministry of Housing and Local Government.
Sealed and endorsed tenders, on forms supplied, must reach the undersigned not later than 12 noon on Thursday, the 6th August, 1953.

F. FOSTER,
Clerk to the Council.
Council Offices,
31, Clasketgate, Lincoln. 9186

Architectural Appointments Vacant

4 lines or under, 7s. 6d.; each additional line, 2s.
The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she is, or the employment is, excepted from the provisions of the Notification of Vacancies Order, 1952.

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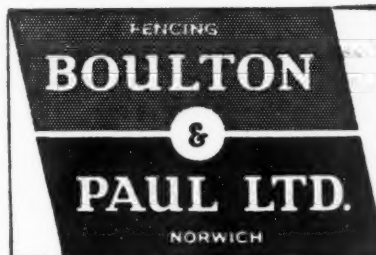
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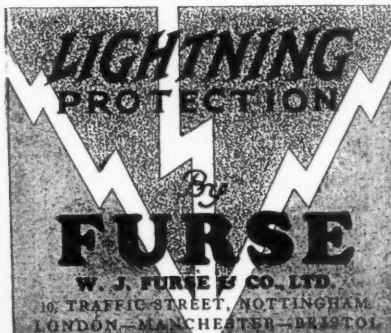


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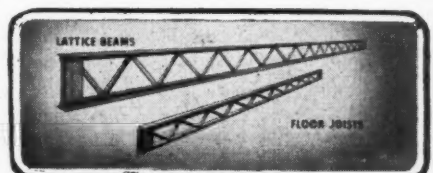
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
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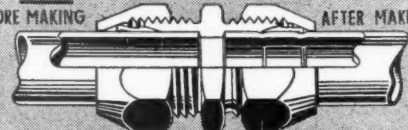
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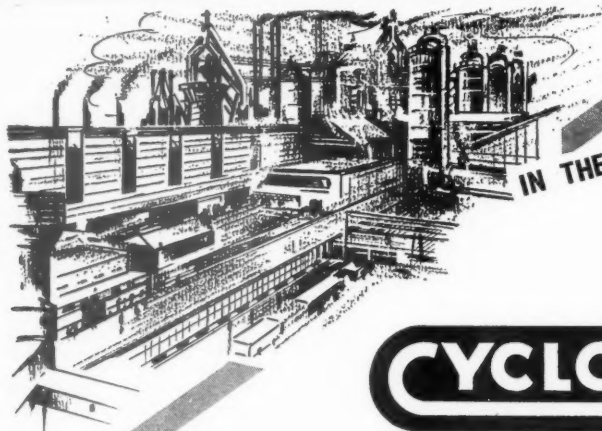
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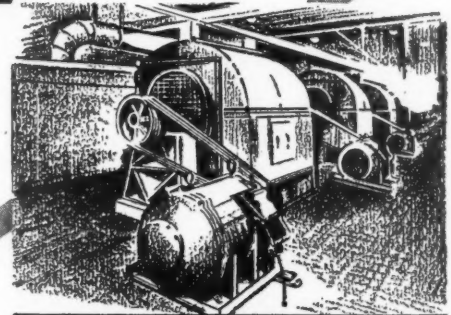
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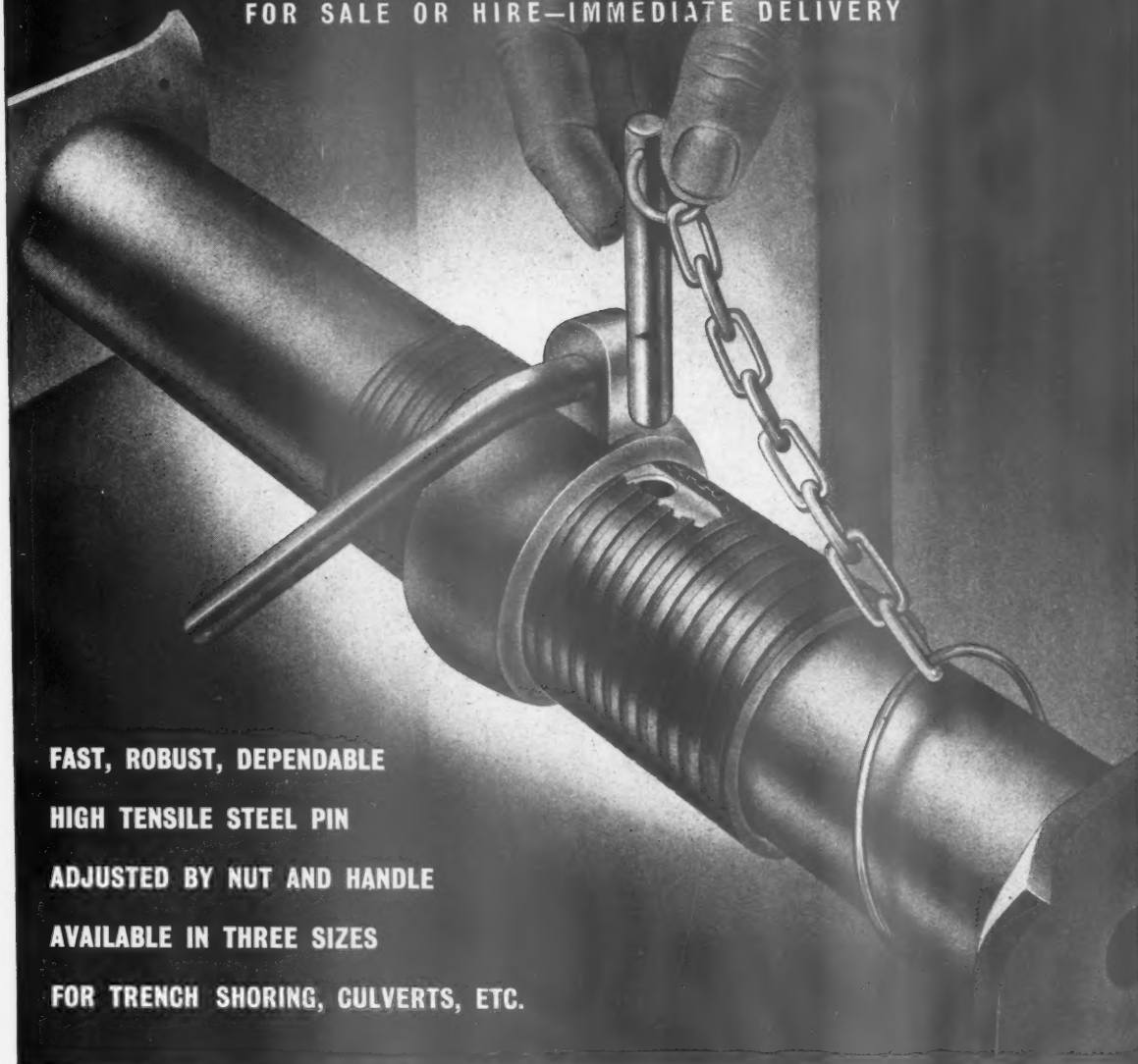
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