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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 Ig one week, Ih to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Royal 1826
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5533
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James's Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 5861
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Tate Gallery 8134
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, A.R.I.B.A., Borough Architect and Director of Housing, Town Hall, High Holborn, W.C.1.	Holborn 3411
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611 Ext. 1284
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland	
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DOT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266

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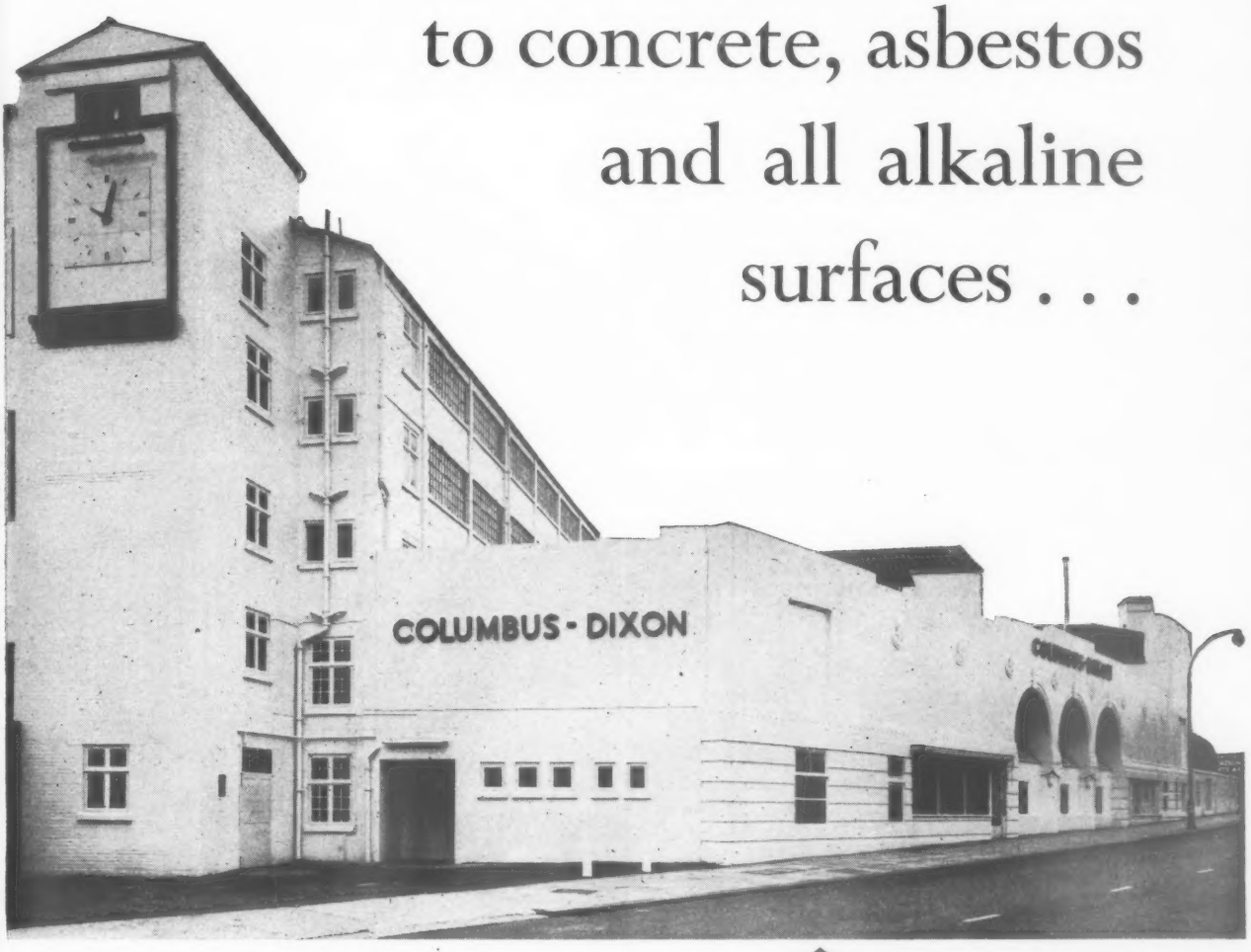

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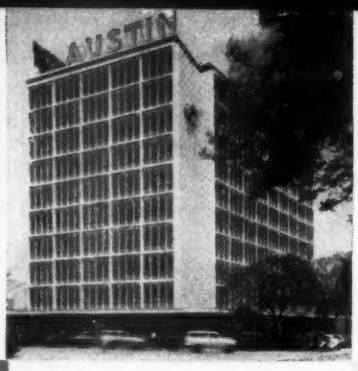

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Boulle-Lagesse & Schaub

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GOVERNMENT OFFICES · VICTORIA
Architects:
Provincial Government
Architectural Department

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Walker, Harwood & Cranswick

K.L.M. BUILDING · CURACAO
Architect:
Alec Van Ness

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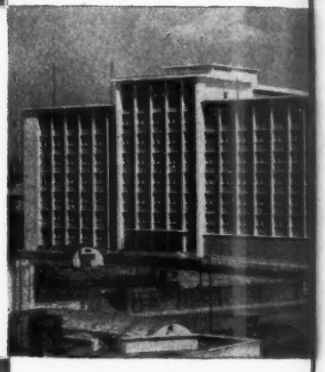
HONG KONG
Architects:
P. W. D. Hong Kong



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Architect:
Ng Keng Siang

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MADRAS
Architect:
B. R. Manickam

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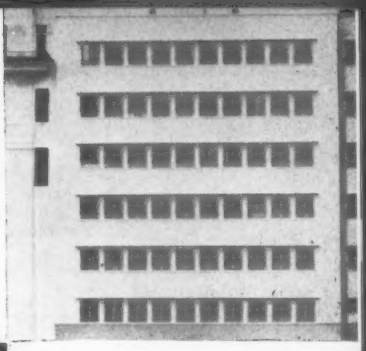

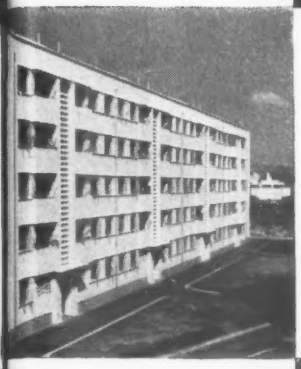

WORKING CLASS FLATS
HONG KONG
Architects:
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JOHANNESBURG
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K. E. F. Gardiner &
MacFabgden

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Architect:
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BARCLAYS BANK
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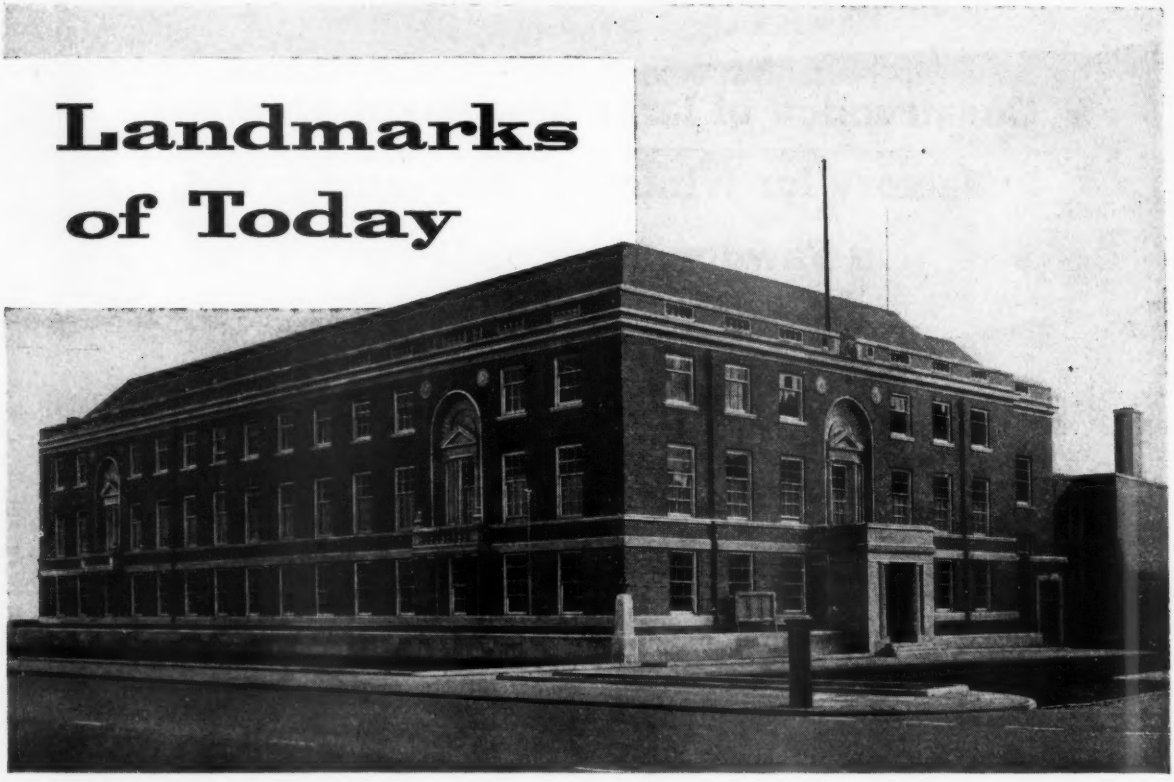

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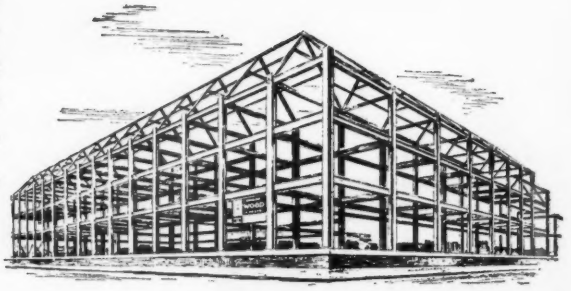

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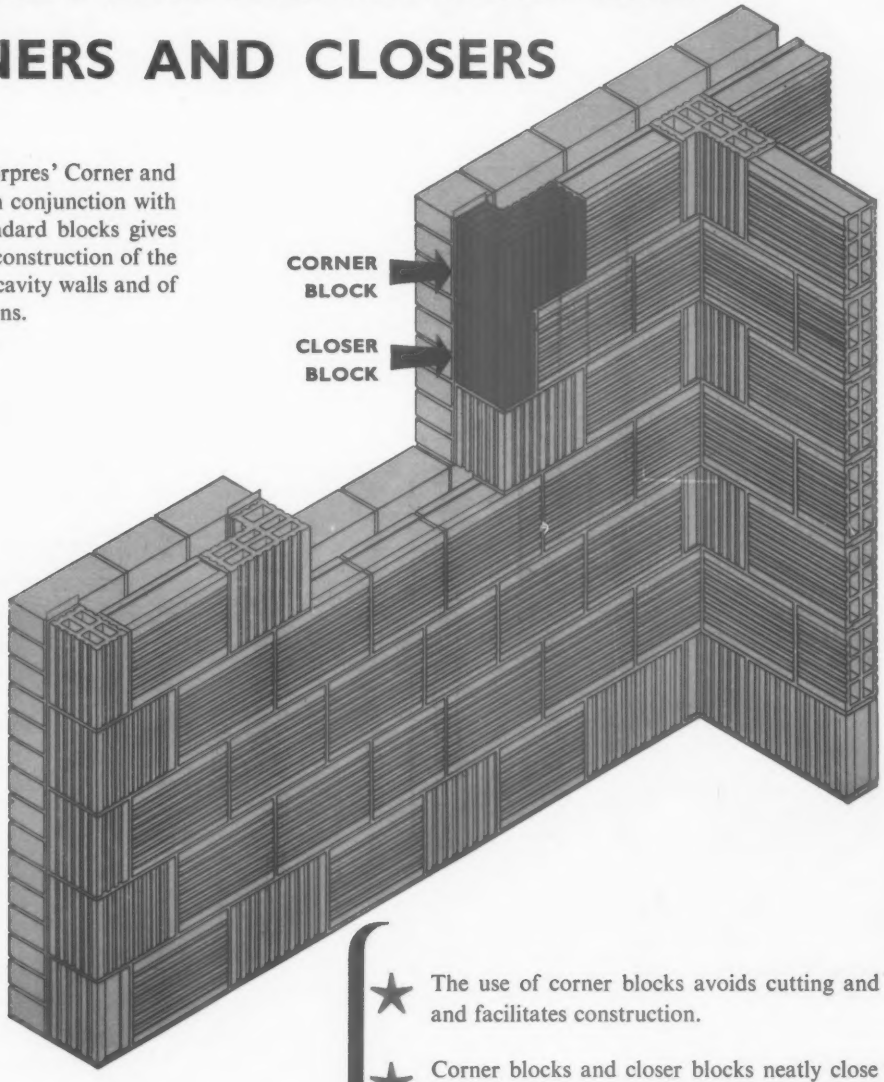

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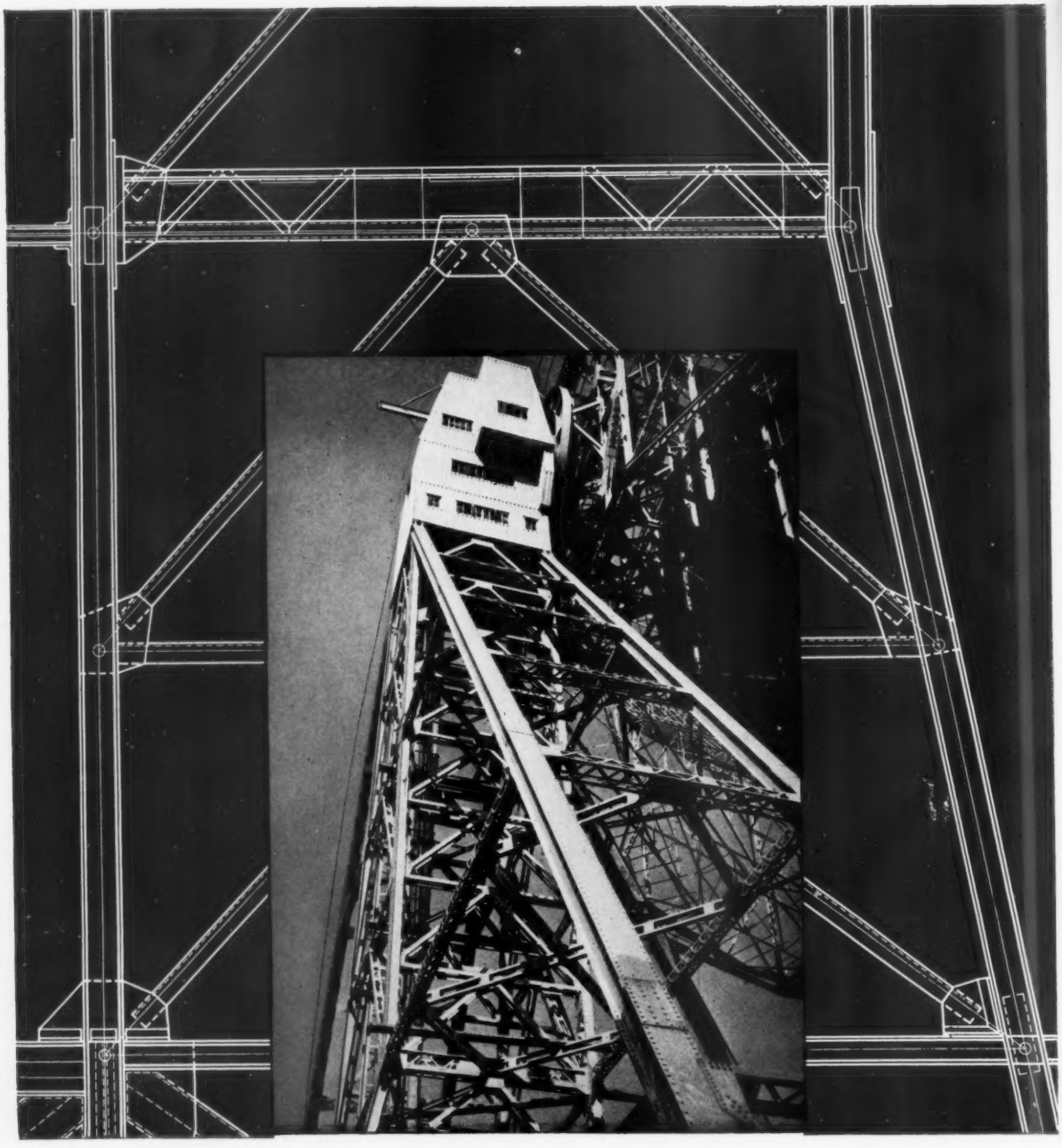

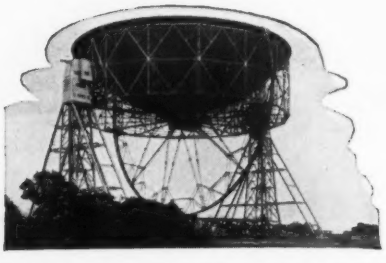

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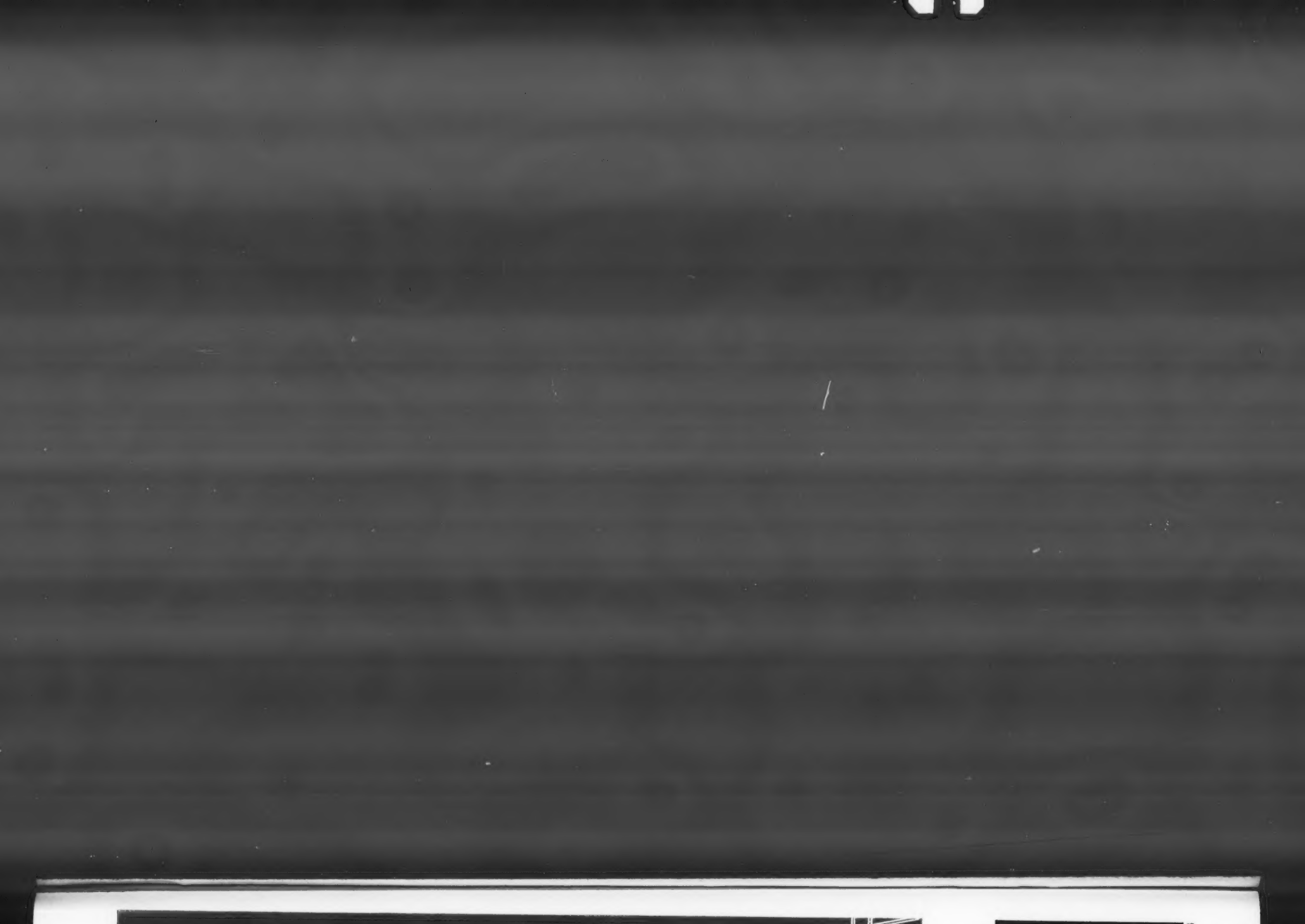

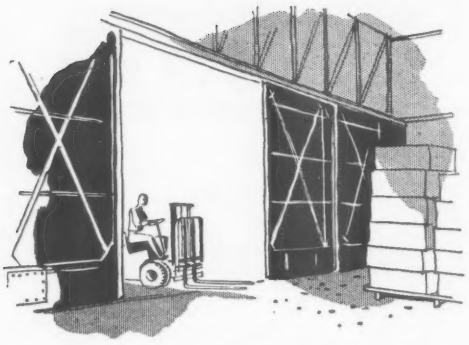

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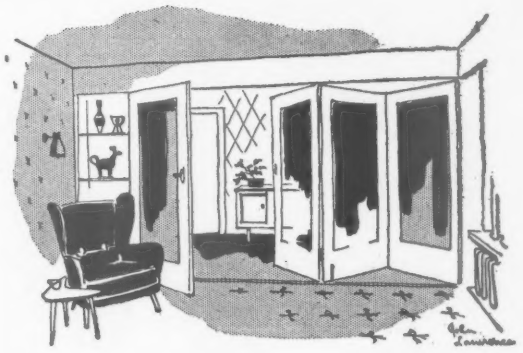

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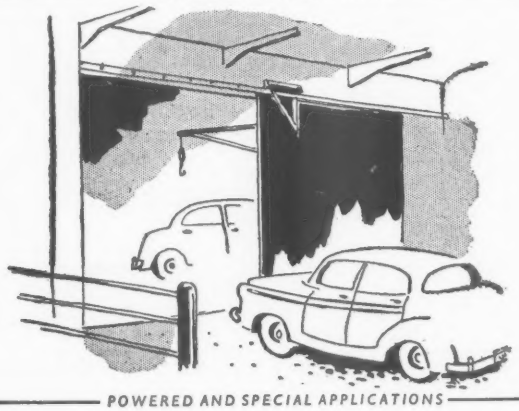

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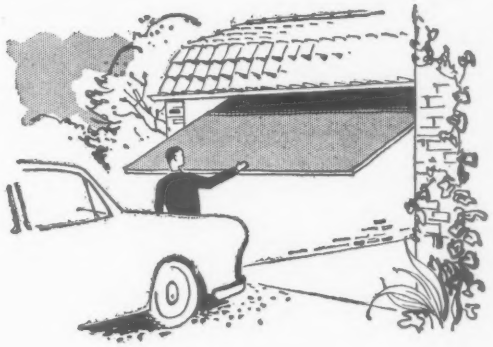
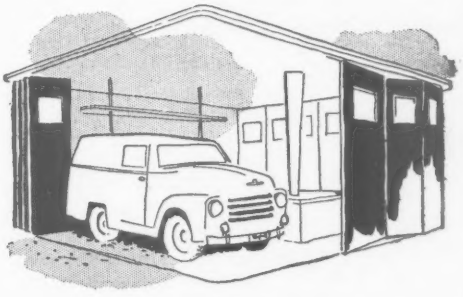


THE UPOVER



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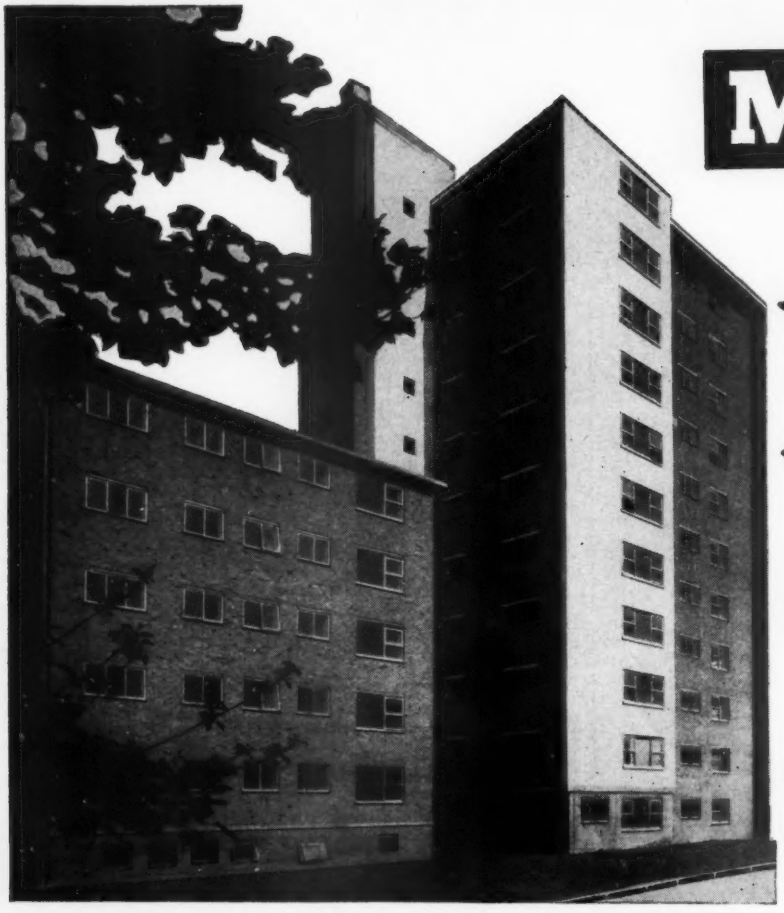

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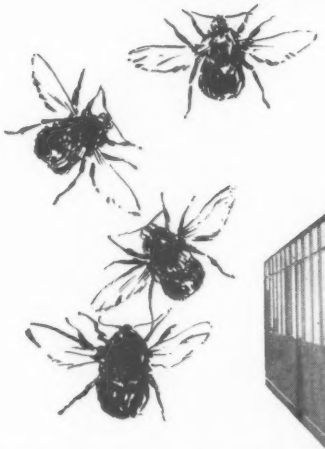

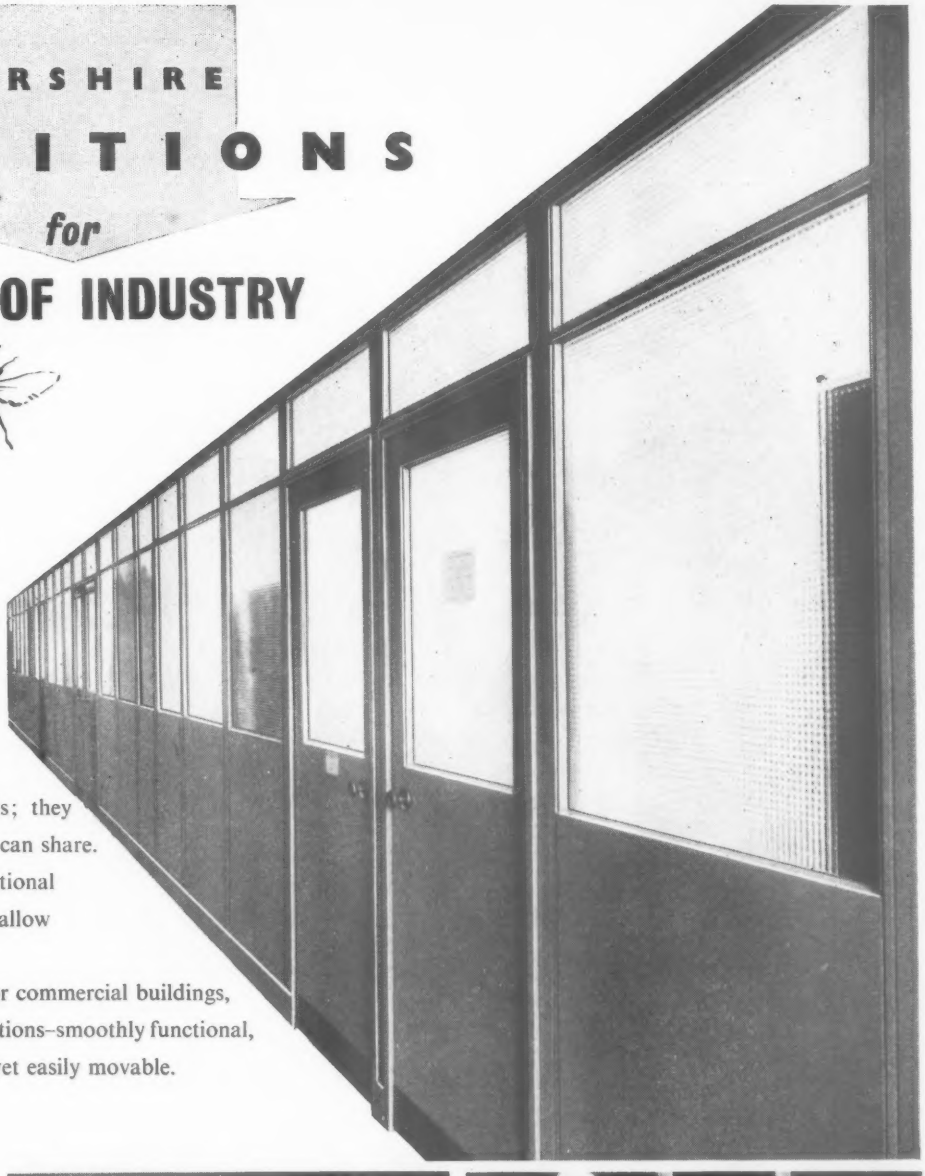

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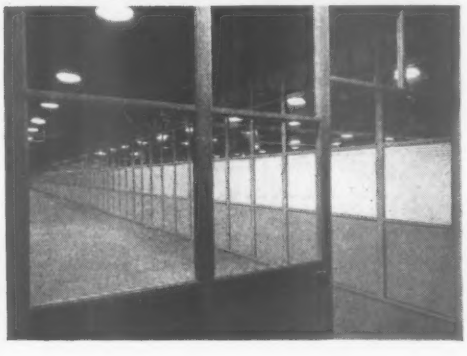

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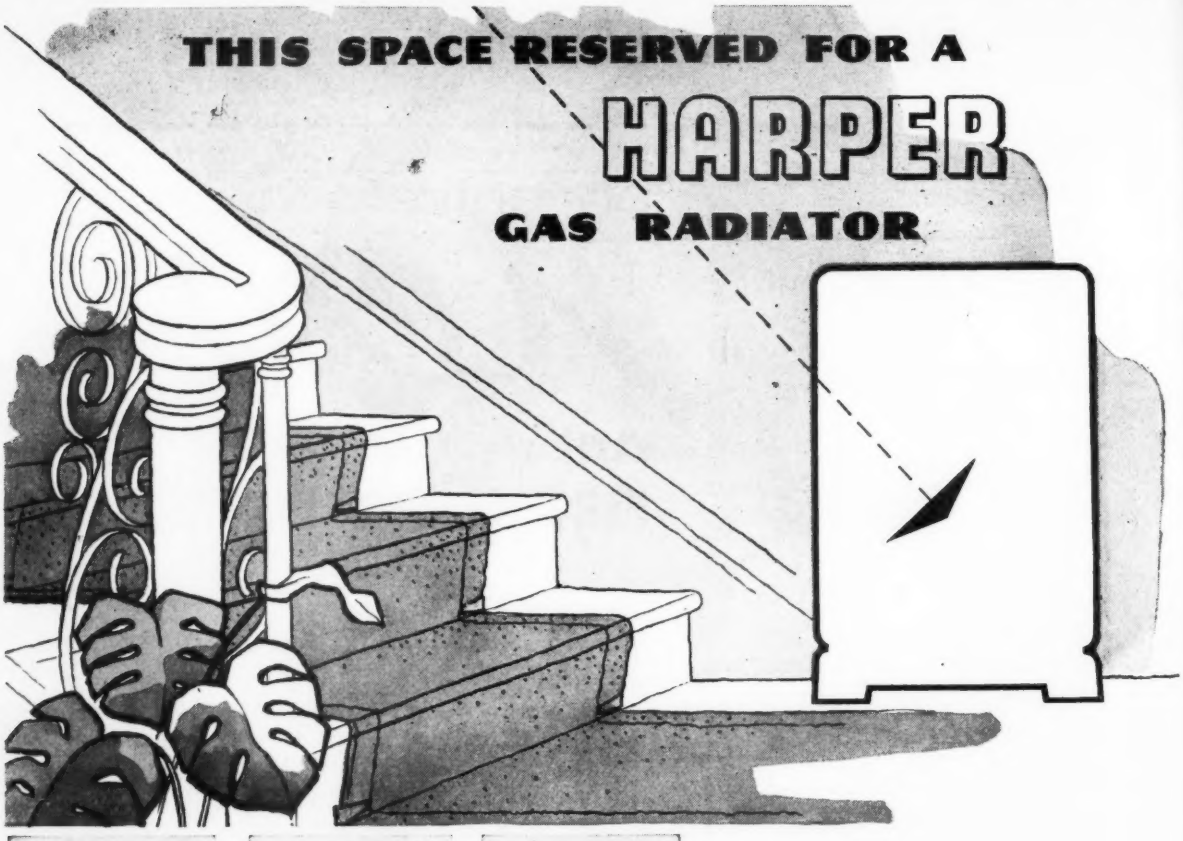
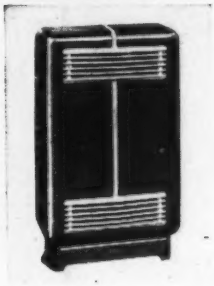
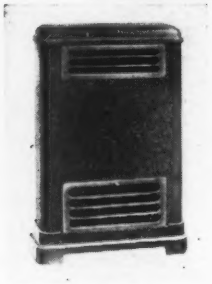




Model No. 3161

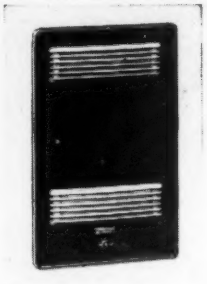
Finish—Base and body heat resisting coinage bronze paint. Baffle vitreous enamelled. Louvres cream vitreous enamelled.
Burner—Cast iron with luminous bray jets. ¼in. gas inlet, can be fitted for R.H. or L.H. feed.
Governor—Constant pressure.
Gas consumption—18 cu. ft. per hour at 2½in. W.G.
Maximum output per hour: 8,100 B.Th.U. at 500 c.v.
Dimensions: Height 29½in. Width 17½in. Depth 7in.
Weight 42lb.



Model No. 3160

Finish—Heat resisting coinage bronze. The top louvre and the door (which has concealed hinges) are cream vitreous enamelled. Gas consumption: 2 cu. ft. per hour.

Dimensions: Height 25in. Width 16½in. Depth 6½in.
Weight: 31 lb.



Model No. 300

Its graceful lines and pleasing finish blend with any surroundings.

Finish—Front panel, heat resisting coinage bronze paint. Baffle. vitreous enamelled. Louvres, vitreous enamelled.

Burner—Cast iron with luminous bray jets. ¼in. gas inlet.

Governor—Constant pressure.

Gas consumption—18 cu. ft. per hour at 2½in. W.G.

Maximum output per hour—8,100 B.Th.U. at 500 c.v.

Dimensions—(a) Panel: Height 27½in.; Width 17in. (b) Overall dimensions required for recess. Height 24in.; Width 12½in.; Depth 3½in. to 4½in. Series of three nautilus flue blocks, type S.1.

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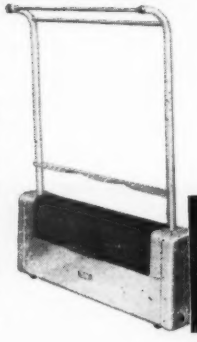
Easily installed, compact and economical. A single luminous burner keeps bathroom towels warm and dry. A governor controls gas consumption (4½ cu. ft. per hour.) Finished in ivory and green. Provision is made for screwing to the floor although it is stable enough to stand unsupported.



HARPER

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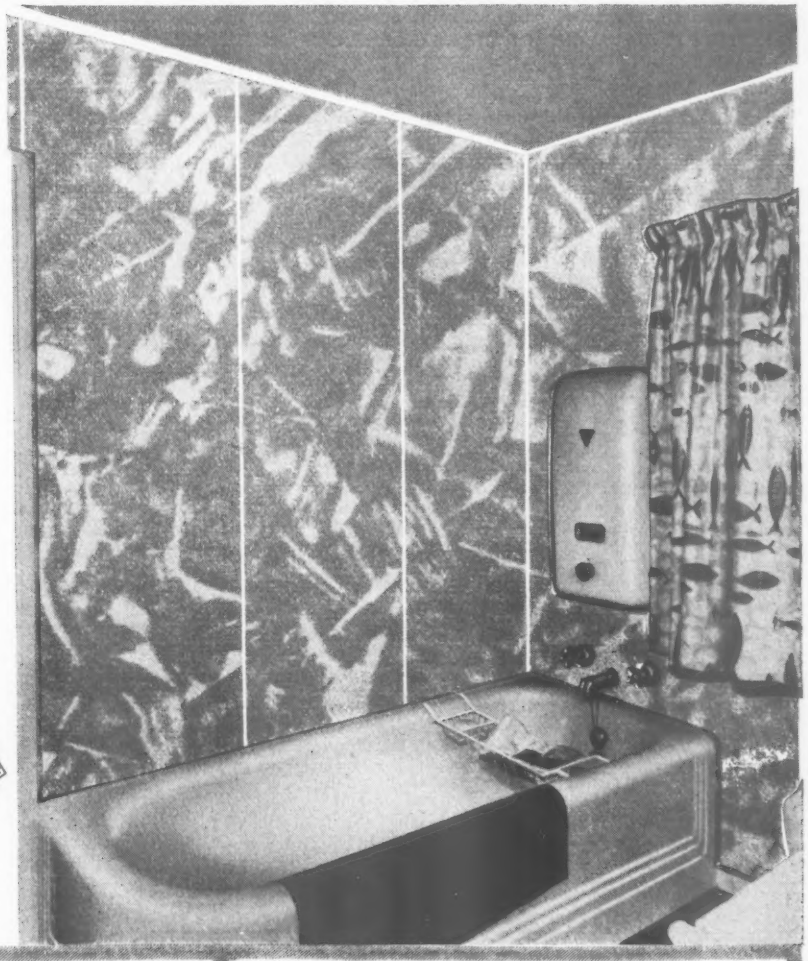
New WARERITE REGD. Wallboard

the low cost, ready-to-fix board for walls and ceilings

Wherever vertical or ceiling surfacings must be moisture resisting, durable and easily cleaned, new colourful WARERITE Wallboard is the obvious and economical choice. Bathroom and kitchen walls, corridors, partitions, cupboard fronts and flush doors are typical applications. WARERITE Wallboard can be screwed or pinned, or fitted into extruded sections.



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WARERITE Specialists are located in 150 cities and towns throughout the country, and supply WARERITE Wallboard from stock.
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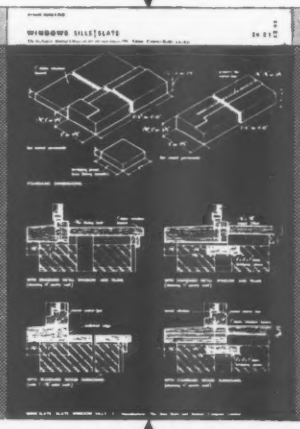

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BUILDER "And yet, to get this strong brick-red shade, I am only using 3 lbs. of this Febtone colour per cwt. of cement."

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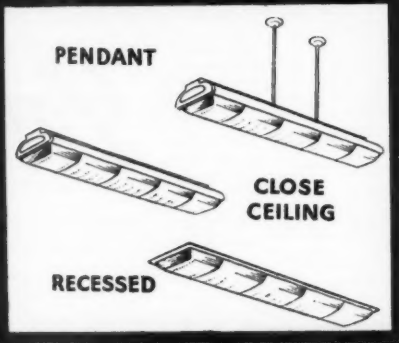

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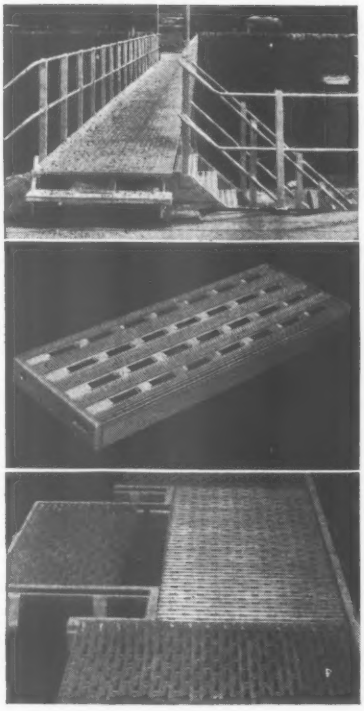
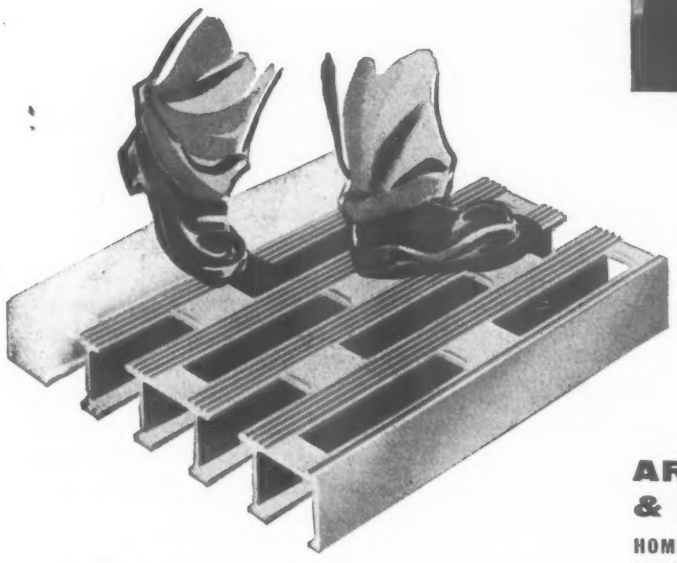


Down-to-earth industrialists have been quick to install Alaflor extruded aluminium flooring. It's outstanding economy and safety cannot be ignored.

Strength and rigidity, in combination with minimum weight and the non-corrosive properties of this aluminium alloy, make maintenance overhead a thing of the past. For safety, Alaflor cannot be bettered, it's spark-resistant and non-skid.

Put Alaflor underfoot for saving and safety's sake.
Literature is available on request.



or feet on ALAFLOR

NOTE: Alaflor is manufactured in 6″ widths and extruded to a maximum length of 24ft. Grating depths from ¾″ to 2″. Available in two types (a) Rectangular (illustrated), size of punch 3″ × $\frac{13}{16}$″ (b) Square, size of punch $\frac{13}{16}$″.

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A tale of two Edwardians

THE CRUMP CONSTRUCTION COMPANY have often boasted that they will build anything from a greenhouse to a generating station.

Perhaps to prove the point, they erected in 1906 a headquarters office in the most flamboyant taste of that unrestrained era.

In this voluptuous temple of Edwardian commerce, the CCC prospered through the years. Then the Edwardian Revival came in the (drape) shape of an office boy called Teddy.

Teddy's *de rigueur* drainpipes alarmed the surviving Edwardians in the firm, but appearances were overlooked until he dropped a forbidden cigarette into a bulging w.p.b. The fire destroyed all the unpaid accounts for building a complete capital city in a remote part of the Commonwealth, and the expense of recovering this information was colossal.

"Teddy must go," said the M.D., "and the Man from Chubb must come. If the building is to be burned down (and it's not a bad idea), let us make sure first that all our records are in proper fire-resisting equipment."

There's a moral in this for architects. If you haven't got a Chubb catalogue (or can't find it), why not ask for the latest one? It makes an excellent door-stop or paperweight, and you never know when you'll have a client who wants the best security there is. Write or telephone Chubb & Son's Lock and Safe Co., Ltd., 175-176 Tottenham Court Road, London W.1. (MUSeum 5822).

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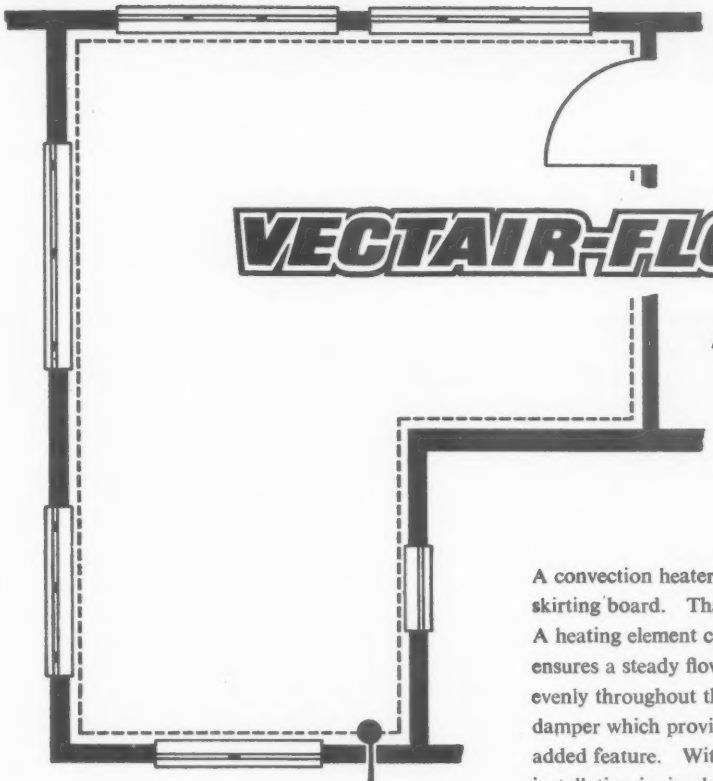

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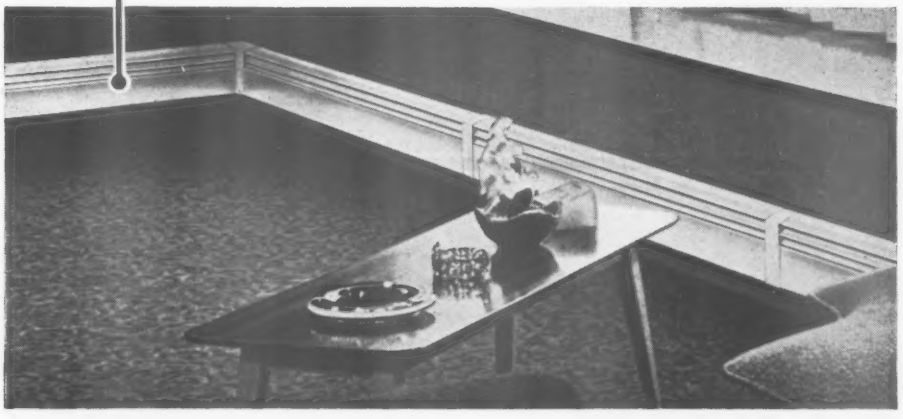
A convection heater which replaces the usual wooden skirting board. That is "Vectair—Floorline" heating. A heating element concealed within the attractive casing ensures a steady flow of warm air, which is distributed evenly throughout the room. A finger-tip controlled damper which provides flexibility of distribution is an added feature. With only three basic units, installation is simple, quick—and cheap. Suitable for use with accelerated two-pipe or series flow hot-water and low pressure steam systems.



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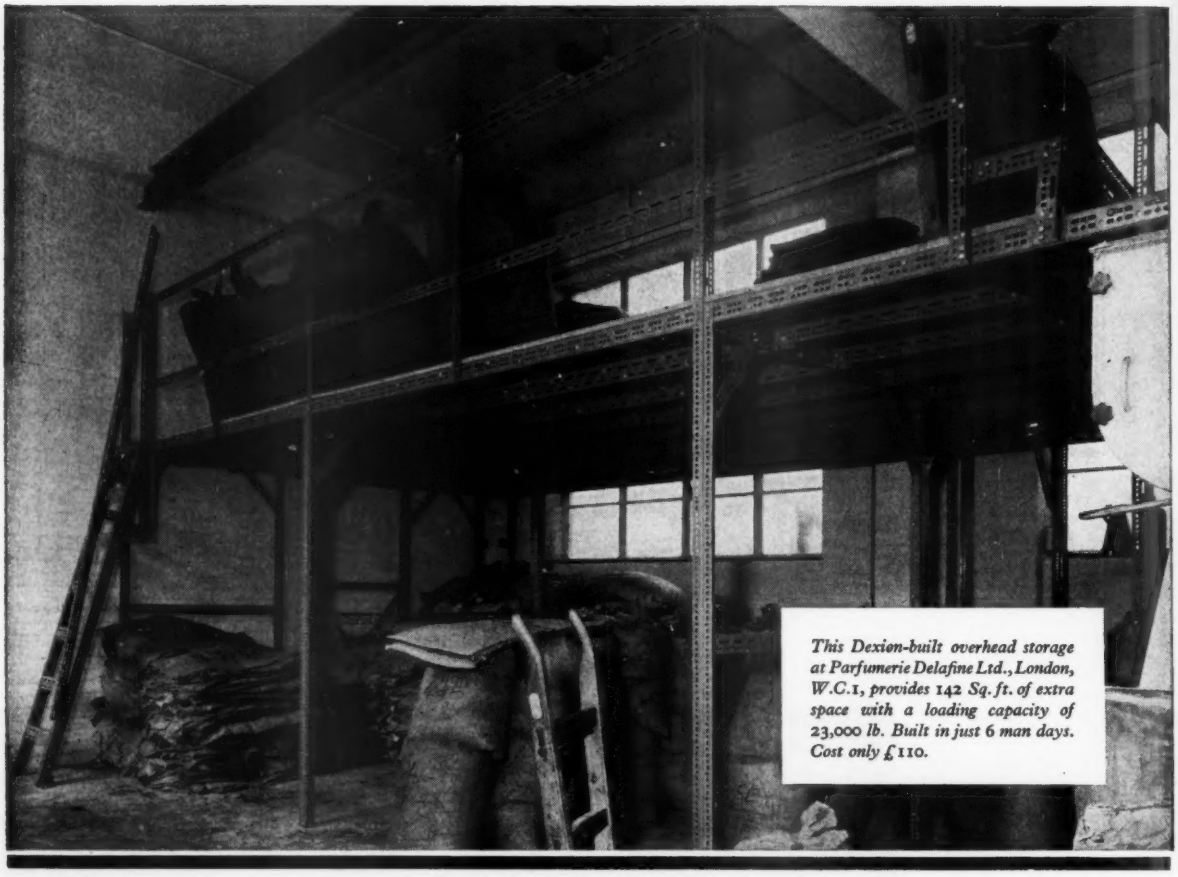

This Dexion-built overhead storage at Parfumerie Delafine Ltd., London, W.C.1, provides 142 Sq. ft. of extra space with a loading capacity of 23,000 lb. Built in just 6 man days. Cost only £110.

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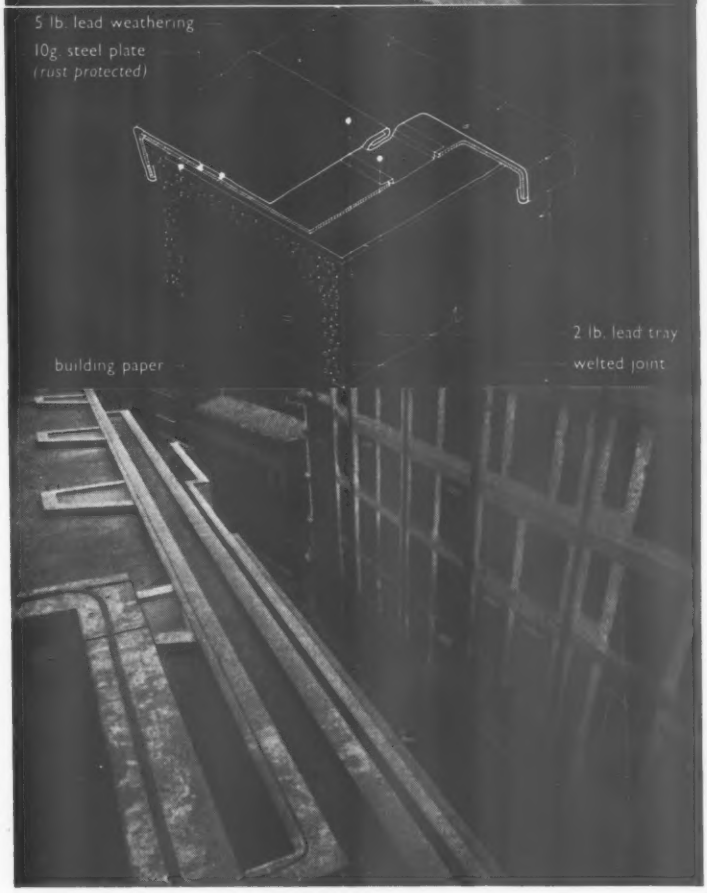

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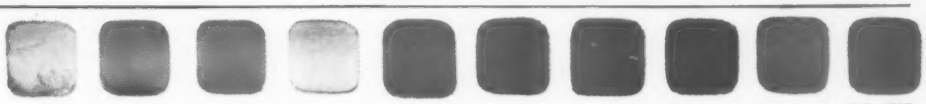

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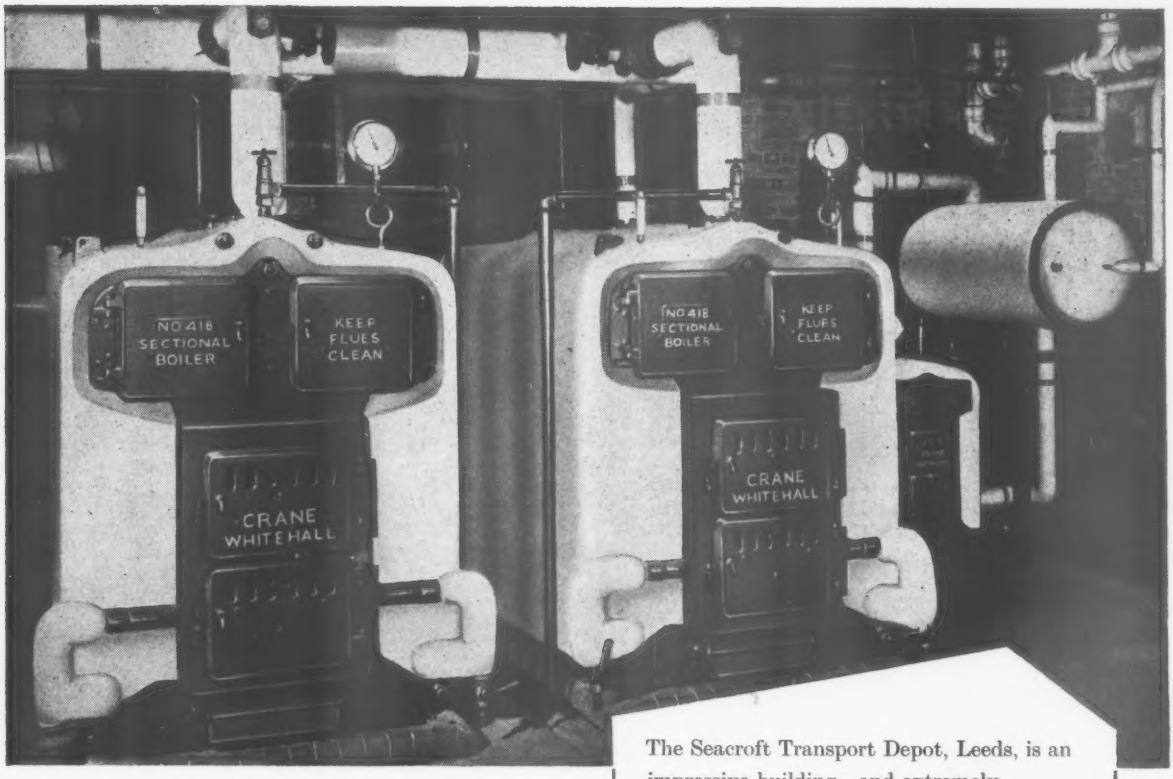

Once again, heating by Crane

The Seacroft Transport Depot, Leeds, is an impressive building—and extremely well-heated. Whitehall Solid Fuel Burning Heating Boilers efficiently provide the heat throughout. And the new canteen has Crane Skirting Heating. Quite apart from the all-over comfortable warmth this gives, it is also advantageous for these reasons. A canteen receives very hard wear—so the heating medium must be sturdily built. Every available inch of space is needed. A free use of the entire floor space without even the obstruction of a radiator is demanded. Crane Skirting Heating meets both these requirements. (The 6 inch Type R skirting heating was used.)

A. B. Findlay, M.I.Mech.E., M.I.P.E., M.Inst.T., General Manager, Leeds City Transport Department.
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LONDON Electric Firm Ltd., specialists in the design and manufacture of Raising and Lowering Gear and Winch Gear, supplied equipment for a number of installations in the New Terminal building at London Airport.

L.E.F. Raising and Lowering Gear is installed with the special light fittings designed by the Architect, Frederick Gibberd in the Passengers Concourse. Special Lifting Gear is also provided for use with the giant loudspeaker. Windows in the Control Tower are operated by a number of small L.E.F. Hand Winches.

These installations in this important new building are further proof of the confidence which architects place in L.E.F. equipment.

If you need advice on Special Raising and Lowering Gear or Winch Gear, or would like details of standard equipment, make your enquiries direct to:

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TIB 91

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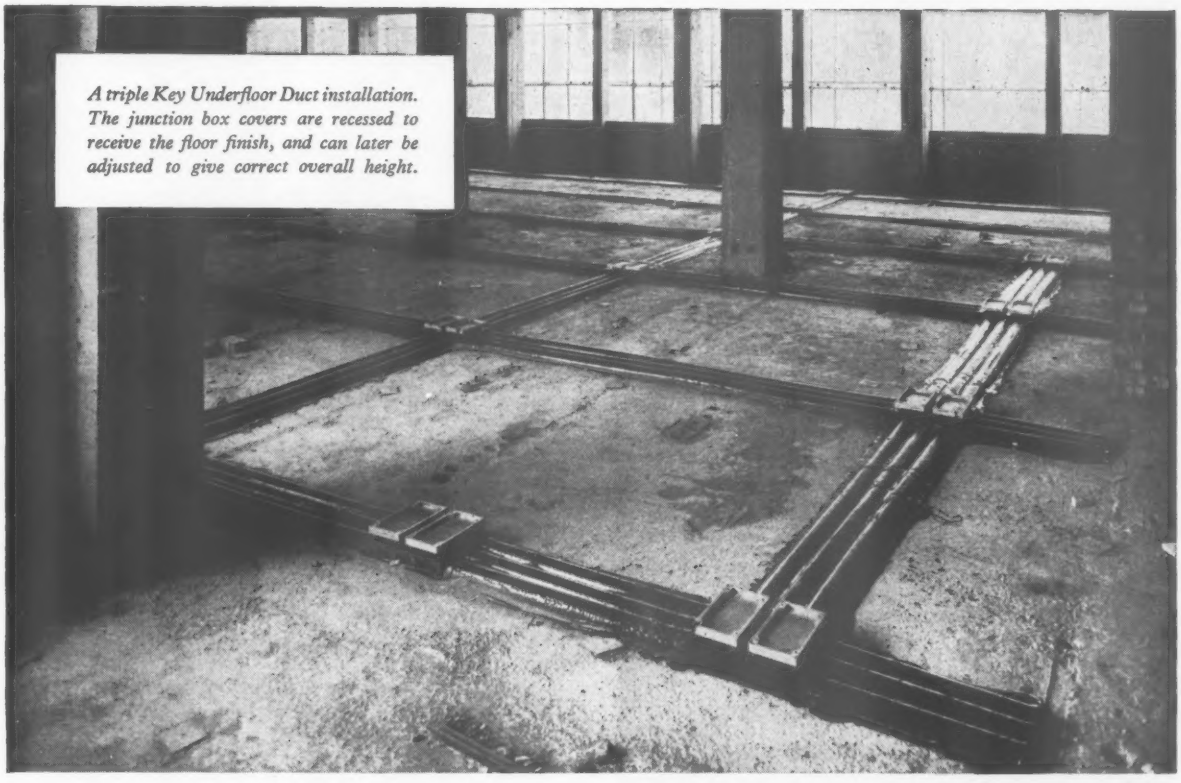
Key Underfloor Duct
solves wiring problems economically



A triple Key Underfloor Duct installation. The junction box covers are recessed to receive the floor finish, and can later be adjusted to give correct overall height.

Electric power and telephone outlets can be installed and added as necessary when Key Fibre Underfloor Duct is used. On a materials plus labour basis the cost of installations is lower than any metal system. Because of their light weight and ease of cutting and fitting, Key ducts can be quickly laid. Since there is no necessity to pre-position outlets, the architect can install an underfloor duct scheme, and later fit outlets to suit the occupant's requirements. The fitting of these outlets is a quick and simple matter and the most complete range of fittings is available for lighting and telephone systems.

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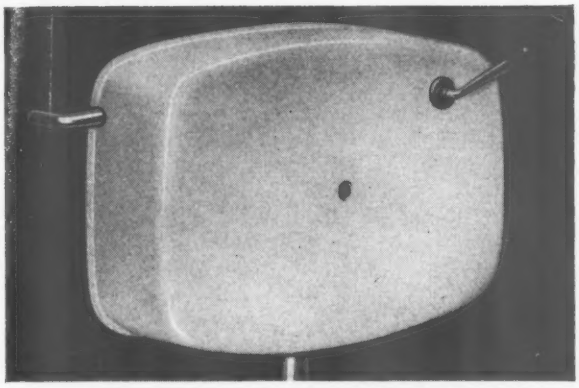
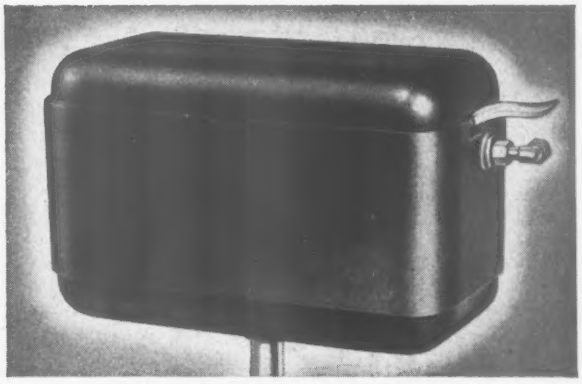


Fordham Panel Model " O ". Projects only 6in. from the wall.



The new Fordham " Raven " in Black Plastic.

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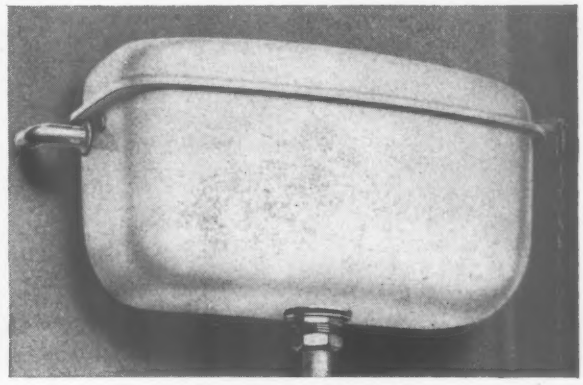

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Look to Fordham for leadership in the design and development of Sanitary Equipment. The new range of Fordham Cleanline Cisterns—accepted by the Council of Industrial Design for " Design Review "—are the most handsome and least expensive cisterns obtainable today. In White or coloured vitreous finishes to match any scheme of decoration, they are available in Ivory, Primrose or Green at the cost of White. The latest addition to the Fordham range is the " Raven " in Black Plastic — superbly efficient, beautifully finished, and at an unrivalled low price. The flushing mechanism on all models is the reliable and smooth-acting Fordham All Polythene Syphon. All fittings are of the usual high Fordham standard.

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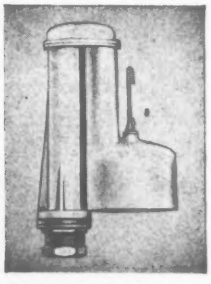
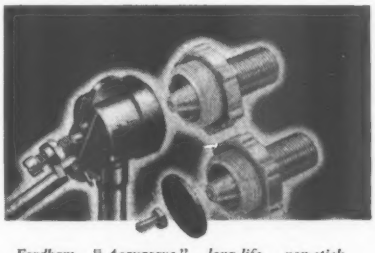


Fordham All Polythene Syphon.



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THE ARCHITECTS' JOURNAL
(Supplement) July 3, 1958

a new and exciting note

in store

and shop décors...

More and more department, chain and other types of store are featuring RYDURA in the decor of their new branches, and in their re-decoration plans for existing shops. RYDURA is shown here as a decoration for the pillars and walls of the Crawley Branch of Boot's Pure Drug Co. (left) (Photo by courtesy of C. St. G. Oakes Esq., Chief Architect); and as a wall decoration at the Darlington branch of Jackson The Tailor (below). RYDURA was used in this store for the entrance, stairs, ground floor and lower ground floor walls.

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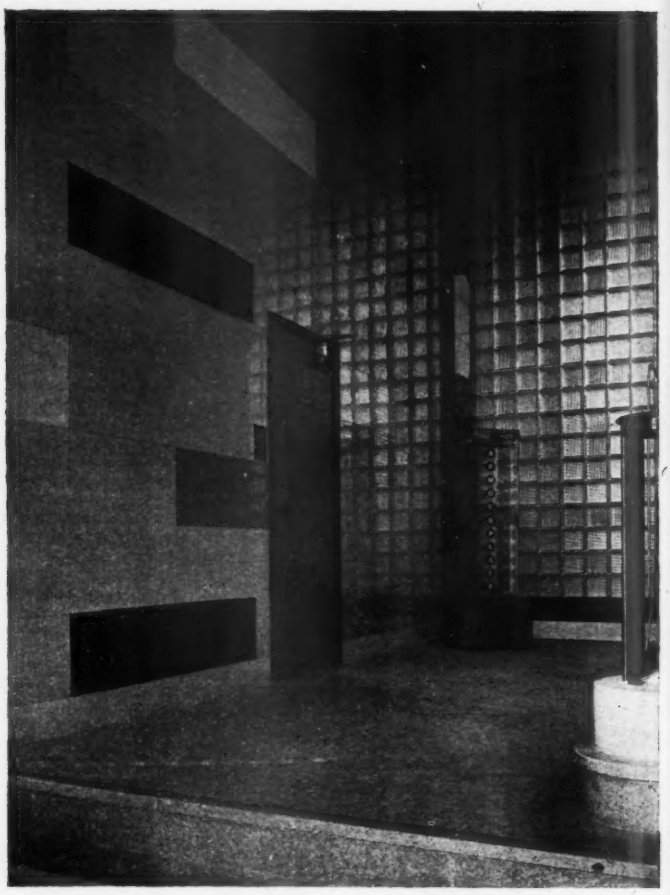

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SEMANCO REG.D mastic

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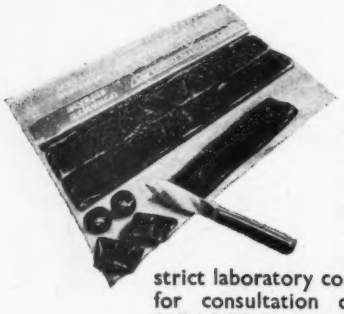
One cwt. is sufficient for approximately 12 sq. yds. Semanco Sealer, 1 gallon will seal approximately 12 sq. yds. two-coat application.
Semanco Pointing Compound. 1 lb. will point approximately 40 lineal feet of joints.



The most keenly priced mastic available for fixing VITROLITE glass panels. Supplied in strip form, the easier and cleaner handling and the speedier application reduces fixing costs.

All Sealanco products are manufactured under strict laboratory control. Our Technical department is available for consultation on fixing problems. *Specification Sheet SPEC/2/57 for Semanco Mastic forwarded on request.*

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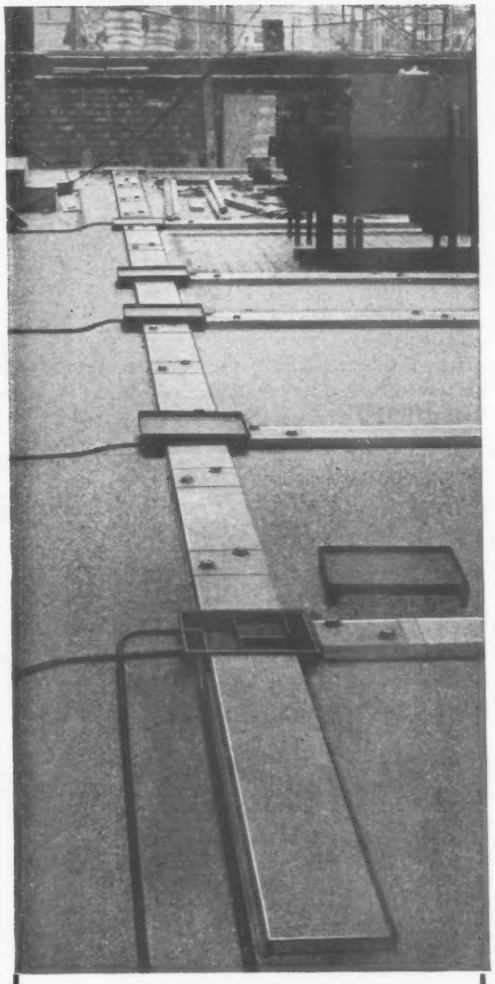

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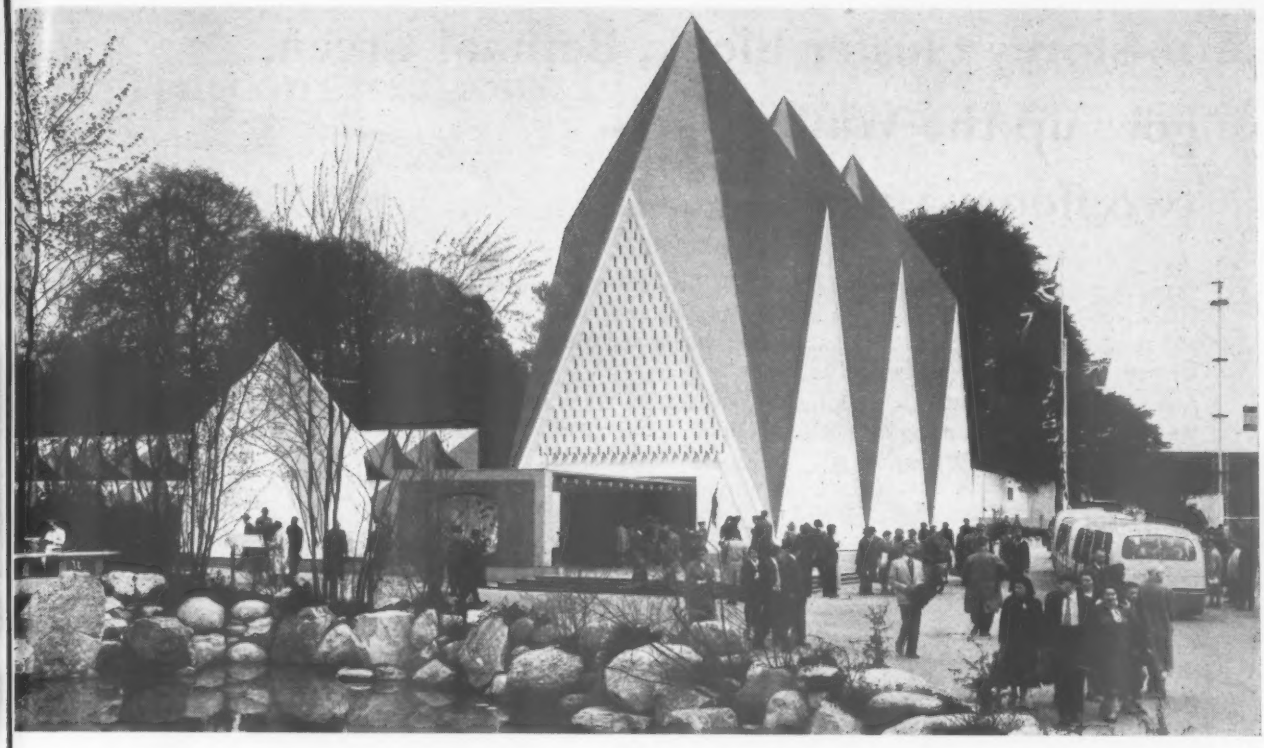

Broughton Moor Light Sea Green Slate at the Brussels Exhibition

Architects: Howard Lobb and Partners

The British Pavilion at the Brussels Exhibition bears the Royal coat-of-arms, carved in 'Perspex' with a surround of Broughton Moor Naturally Riven Light Sea Green Slate. The traditional character of this slate contrasts well with the modern styling of the coat-of-arms. The beautiful texture is illustrated in the close-up of a section of the end wall reproduced at the left.

Finely rubbed, sanded and frame sawn finishes are also supplied and technical pamphlets showing typical methods of fixing Broughton Moor stone are available as follows: 1. *Flooring;* 2. *Facings;* 3. *Coping;* 4. *Cills;* 5. *Riven Face Slabs.*

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16-storey cluster block, Bethnal Green, goes up the Wates way— two floors a week

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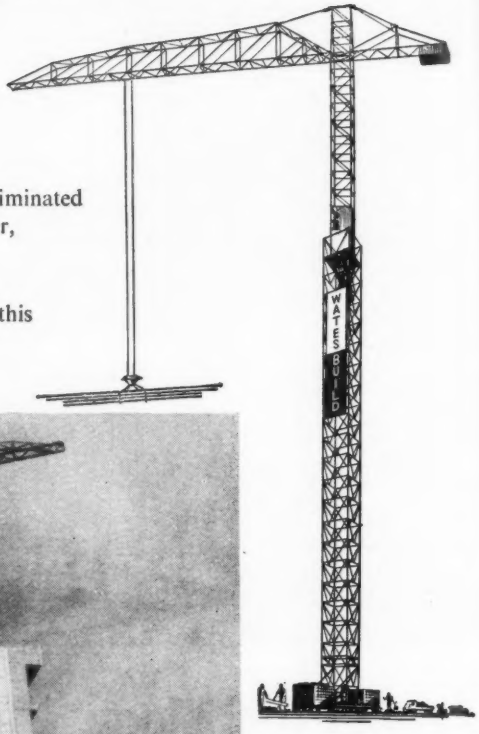

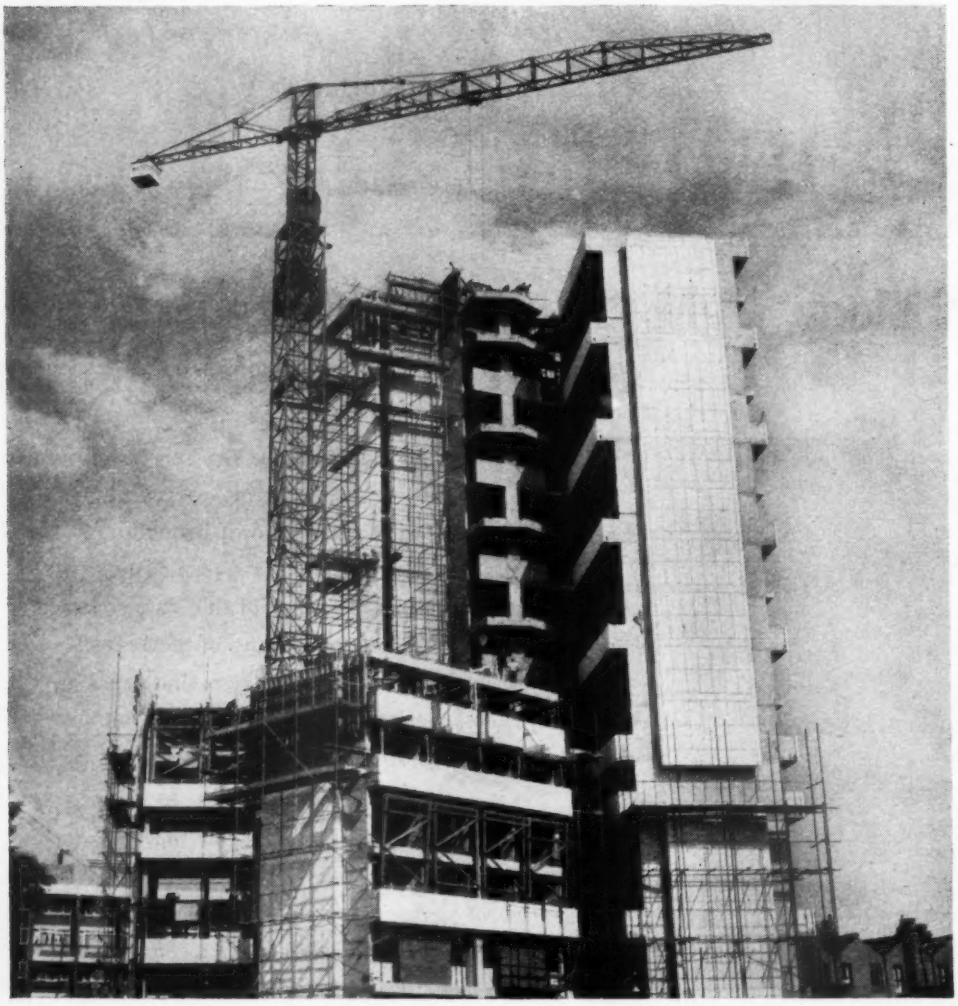

This 16-storey cluster block will contain 56 maisonettes and eight other units; on the same site two 6-storey slab blocks of 96 maisonettes and flats are also under way.

Architects:
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"Yes, don't see the point myself."

"Oh! I can see the point — they try and make one each time — I've been following it."

"Oh?"

"Yes, the first was about Granada TV Studio in Manchester — and how quickly they designed and built the framework — six weeks I think."

"I remember."

"In the next one — they've made rather a name for themselves in flats — they tried to emphasise that they still do heavy work."

"Big factories and so on?"

"That's it — and then they had the two site labourers placing Truscon floor units — how light they were to handle."

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NOT QUITE ARCHITECTURE

HIGHLY TO FALUTE

(FROM THE ADDRESS BY CLOUGH WILLIAMS-ELLIS AT THE AGM OF THE CPRE)

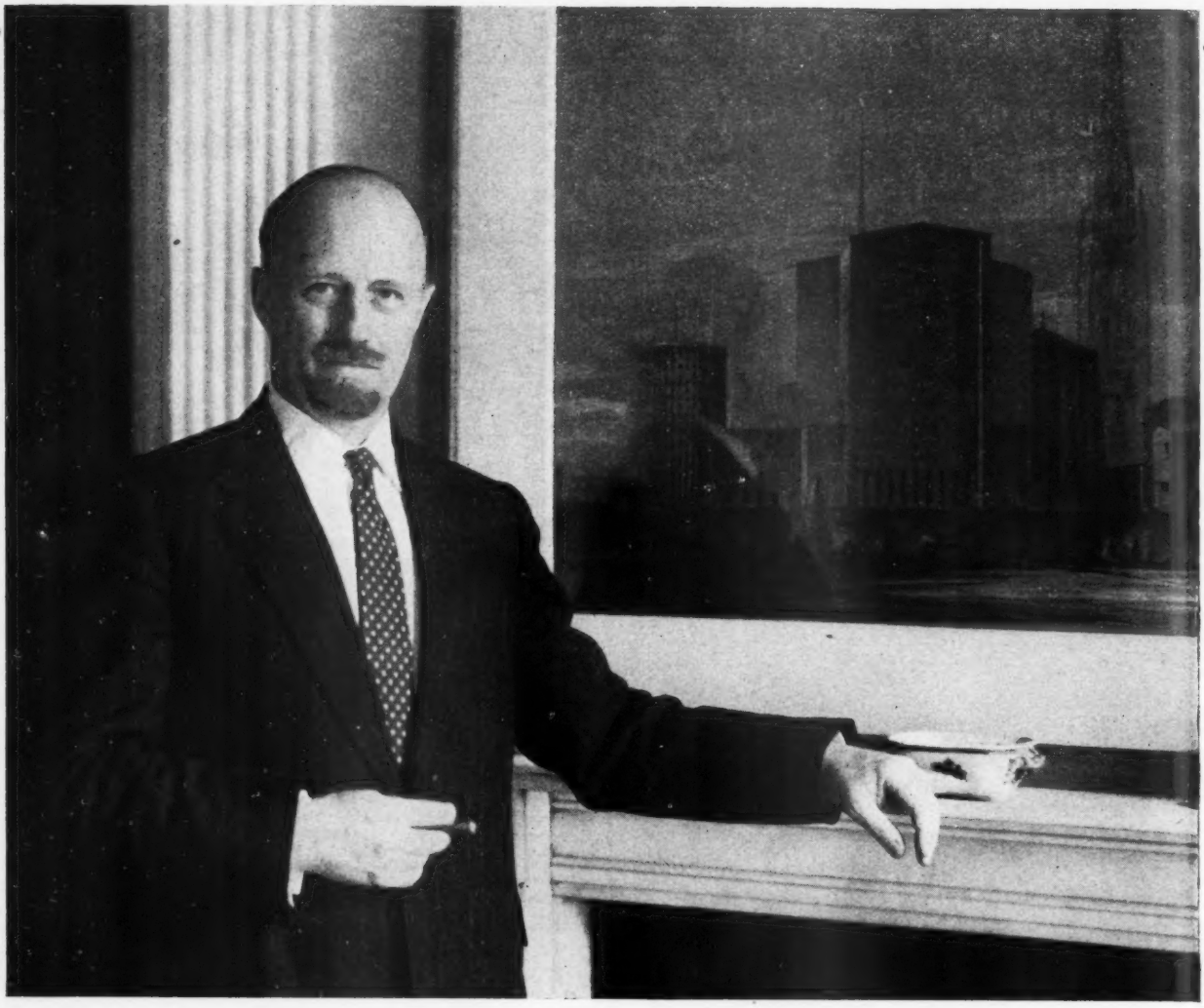
We have to face it that we are and ever shall be a minority movement; there can be no dictating or attempted bossing around; only steady steadfast pressure on our fellows and those who govern us in what *we* deem the right direction. *We*—we who *do* know more than most, just because we care more and have therefore thought, read, discussed, seen, and understood more which is the answer to those neutrals who shrug off any responsibility for what happens and say, "It's just a matter of taste." The elect must accept that responsibility.

For public taste is, of course, the product of pressures—cultural, economic—commercial—even of fashion—and it is a test of our intelligence and subtlety to see that our own pressure-potential is so applied that Public Taste responds in the way we would wish and does not react against us through our being too vehement, too "Holier than thou" . . . too dismal, or too anything else.

*

The CPRE must not appear as merely a crotchety fault-finding scold—a "Calamity Howler"—but rather as an ever-helpful, serene, wise friend. In my early days as an ardent if somewhat irresponsible CPRE hotgospeller, I own that I myself tended to "cry havoc and let loose the dogs of war"—to hold up the Philistine to derision and to prophesy doom and damnation—with as my favourite text Milton's "Farewell Happy Fields where joy forever dwells, Hail Horrors." Maybe it was right as shock tactics then, but not, I think, now.

Perhaps Lewis Mumford, whose planning and amenity Jeremiads and dirges have echoed round the world, is less despairful than they might suggest, as in a letter I got from him the other day he wrote: "The only epitaph I have ever wanted for my grave is:



The Popular President

No one would deny that Basil Spence is a popular choice for president of the RIBA. And his popularity with the architectural profession is equalled by his popularity with clients and the general public. It is many years since the profession had as president someone with such a deservedly well-known name. By his work on the big post-war exhibitions he developed his design skill and established his fast-growing reputation. But the act which put him firmly before the public eye was the winning of the Coventry cathedral competition in 1951. To the general public an architect is the man who designs cathedrals, and Spence is now the household name (and face, for he has appeared on television) which supersedes Lutyens and Scott. Oddly enough, he once worked for Lutyens. Oddly, because he is now nothing if not a modernist, and his training at the Edinburgh and Bartlett schools would not necessarily so dispose him to be. His critics today would call him a contemporary eclectic. Certainly his designs are not confined by any limiting theory of structure or technique. For all his attention to function, and he does, and openly professes to, follow its dictates, he is also very much an artist, and a sculptor of building form. Apart from a few schools and churches, the bulk of his work—civic buildings, and designs for seven universities—is still only under construction, but its quality can be judged by the brilliance of his sketches. Brilliance, indeed, describes the man. He designs fluently, speaks fluently, is capable, sincere and almost too tender-hearted. He is also, and this will not come amiss in a president, a little bit of a showman. He is big enough to accept criticism, but he is jealous of the architect's role. When the lay committee of a large local authority criticized the appearance of one of his buildings he reminded them that he was the architect and he would brook no interference. They accepted the stricture, and the fact that they have given him no more work is their loss, not his. How will he match up to what the profession, in its somewhat embarrassing state today—requires of its president? He is young, and the first of the younger architects to replace a man from the " missing generation "; the architects killed in the '14–18 war. He is energetic. He sees his role as president as much a duty as it is an honour. He knows his own limitations, and realises that the real strength of a president lies in the support which he can get from his honorary officers and those near him on the Council. His choice here is likely to be sound and shrewd. It will be made known at his first Council meeting as President, next week. Basil Spence epitomises the phrase " the world is his oyster." He has done more than most architects, and he has the energy, and the years, to do much more. His presidency is no political appointment. He is there by virtue of his work as an architect. He has risen fast, but we hope and trust that he knows the way to make a united, efficient, profession, and to make it rise fast too, and fully serve its fellow-men. But, without doubt few presidents have faced a more difficult task.

"This man was a fool,
None of the evil things he predicted came to pass."

"I could die happy at any time with that assurance." So surely could we all.

When we were demanding comprehensive town and country planning regulations through legislation, I was not the least clamorous of the agitators. And now we have got it, it's up to us to make it work as well as ever we can—with all its imperfections—until we can persuade enough of our fellows to demand a revised version in the light of new interest, new knowledge and experience. But however good our code, our laws and bye-laws and regulations, the end-product—the good order and good looks of our towns and country—will still be a matter of individual interpretation—as thousands of housing estates and every sort of other development bear all too-eloquent witness. Officially all correct, too many have no other impact than of utter boredom. Where there might and should be a joyful singing, all you get is a dismal yawn.

*

Where is our sense of style, of site, of occasion, of hopeful experiment and of gay adventure? Stifled, I say, by too rigid a local application of necessarily general directives—departmental and official distrust of individual ingenuity and initiative—a timid reluctance to let talent and enthusiasm "have a go."

Amongst that now curbed talent there is some near genius and certainly some brilliance that is near amateur—as was shown before everything got so tightly codified and officialized, when new ideas were not only allowed to bubble up, but were welcomed even to the point of adoption and execution, and when planning and design were still an adventure—still FUN.

*

We have to recognize that to millions of our fellows our amenity views still mean little or nothing—that if we can only jolly along a small fraction of them into our way of thinking, it is in fact no small thing. Discussing this lately with a nimble-witted correspondent I got a brisk come-back that was a healthy reminder that we have to deal with life as it actually is:

"Pomona loves the orchard
And Liber loves the vine
And Clough he loves an old facade
And an unspoilt sky-line
But the Octopus wants gas works
Electric wires on high
And light and drains and telephones
God help me . . . so do I!"

AND it served me right! I was no doubt being a bit high falutin' and forgetting that—inevitably—those sort of conveniences are just what most people naturally do count as "Amenities."

And rightly—only, we are concerned that they should enjoy these blessings free of the curse of ugliness. We want them to have all these good things and more—but with GRACE. We must meet the common man's common desires with sympathy and practical help and guidance.

Which is better—though harder—than just highly to falute!

The Editors

THE SECRETARYSHIP OF THE RIBA

WHAT is the role of the secretary of the RIBA? Is it to administer the headquarters so that it is a smoothly running machine? Or is his role that of policy maker? Is he there to advise the president and officers, as well as to carry out their orders? The profession is slowly realising that if it is going to keep its end up, if it is going to remain the leader of the building team in fact, and not just in name, if it is not going to be jockeyed out of position by the jostles and shoves of the surveyors, engineers, builders and planners who are at its heels, it must improve its efficiency. The simple way to achieve that is by education. Education takes three forms. The long-term form is by improving the standard of brain power of the new entrants to the profession, ensuring that they are as clever, or preferably, cleverer, than the entrants to the other professions and ensuring that the architectural schools are equipped with the curricula and the staff to ensure that the architects' basic training matches what society requires from him. Another form of education concerns the existing generation of architects. They must be provided with a mechanism by which they can be kept up to date with scientific advances, new techniques, and new ways of organizing building. The last form of education concerns the non-architect, the client, the politician, the central or local government official, the Press. These in turn have to be taught how to make the best use of the architect so that mankind can profit as fully as possible from his work.

However, none of these forms of education can be undertaken without having that essential preliminary—a detailed knowledge of the existing state of information. To obtain that information a great deal of staff-work has to be done.

The original role of secretary of a society was largely to administer it, collect subscriptions, keep a list of members, arrange functions, and so forth. When architecture was an art practised by the few for the few, a secretary-administrator was all that was necessary. Now, the needs are much more complex, as architecture becomes a social art. The secretary of a society must be able to provide the precise facts upon which a council can form a policy.

It therefore follows that the secretary of the RIBA must be more than an efficient machine-minder. He must be as intelligent, hard-working, and enterprising as the profession can afford (and it is probably not affording enough). But no single brain can provide the profession with the answers it needs. He must be very ably supported by a team of secretaries of education, and of professional relations and of public relations. It is with this bigger picture in mind that the RIBA should select the man who could be a soporific or a stimulant to the profession. Incidentally, Peter Trench, the talented new Director of the NFBTE, will undoubtedly be a stimulant and he has great familiarity with the industries problems. The RIBA should look for similar qualities in the man to succeed C. D. Spragg next year.

DARK BLUE CRITIC

Oxford and Cambridge have long held reputations for being outposts of visual barbarism—or, at least, indifference. How pleasant it is, therefore, that barely a week passes nowadays without some architectural controversy or incident—even if it is only a laundry van on the roof of the Senate House. This week's news from Oxford is that the month-old Design Society has nearly 150 members, a full lecture list and a proposed exhibition of new college architecture. Even more revolutionary is the appointment of an architectural correspondent to an undergraduate magazine. He will be a busy and a clever man if he manages to unravel all the rumours about new buildings in Oxford, and who is to design them. ASTRAGAL sends his best wishes to this new recruit and looks forward to re-publishing his more sensational findings and criticisms.

NO LITTLE MIESES?

Professor Mies Van de Rohe is giving up teaching. This is not surprising. Not because he is 72, but because for some time he has wanted to give more time to his practice. It is, of course, in his own work that his fame rests. As a teacher he is an enigma. During his reign as director of the department of architecture, the Illinois Institute of Technology has turned out many architects. But they all tend to be as blindly "Miesian" as Wright's students are "Wrightians."

It is amusing to hear rumours of the rigorous pedagogic hoops through which his students have been put—the measured drawings, the endless details of brickwork, the discouragement of early design, particularly as Mies (like so many outstanding architects) didn't have much formal training himself. Perhaps great architects don't make great teachers; perhaps they dominate their pupils too much, and inhibit them. On the other hand their traditional master-apprentice attitude may produce a great number of really competent practitioners from which the occasional genius will emerge a decade or so later. We must wait and see.

GAUDI NIGHT

Gaudi should be admired, but not "revived." That is what Professor Henry-Russell Hitchcock told an AA audience last week in a lecture illustrated by some fascinating slides. Gaudi's work, he said, might well have stimulated (though not *inspired*) such architectural trends as can be seen at Ronchamp and in the buildings of the younger South Americans. His highly-personal architecture was of great interest to us in our search for a richer, more plastic, architecture.

•

Like Ruskin, Henry-Russell Hitchcock both analyses the past and divines the future. It is always rewarding to hear him. Not only because of his erudition, nor his great ability to place an architect and his work in their proper perspective: but because he enters the creative spirit of a work of art and communicates it in almost lyrical terms to his audience. That is something few architectural historians can do.

REFORM THE REFORMERS

Let's have a campaign for the reform of annual general meetings of worthy societies. Can't these gatherings be used (as the RIBA's is used) for the serious purpose of discussing and improving the societies' work? Last week the CPRE managed to rush through its business, under the chairmanship of the Duke of Norfolk, in 70 minutes dead—and dead is the right word, apart from the lively address by Clough Williams-Ellis (reported on page 1).

•

Nobody attempted to discuss the pertinent questions raised by this speaker (such as "Why are we so few?")—except for Michael Dower, the youthful and enthusiastic planner who spends his spare time demolishing eyesores in National Parks. He believed that youth was ignoring the CPRE because its title suggested, wrongly, that its purpose was a negative one. He didn't even get a dusty answer. The Duke, who prides himself on getting through meetings in record time, brought the proceedings to a close before anybody on the platform could say a word. Not that anybody wanted to say a word. If the CPRE and other middle-aged bodies want to regain their earlier enthusiasm, they should try to encourage some discussion and controversy—even if it means upsetting some of the thoughts that sit quietly under the flowerpot hats of the older members.

NOT-SO-ANCIENT MONUMENTS

Talking of preservation, take a look at the picture on this page of the old Bessemer-Goransson works in Sweden. This was the first place in the world where Bessemer steel was commercially produced, a century ago, and—as the picture shows—the remains of the plant are decently preserved as a top-rank monument of Western Culture.

*

I mention this because the current annual report of the Ancient Monuments Board is the first that specifically takes note of equivalent sites and buildings in England. The report lists five—yes, folks, a whole five!—that are already scheduled, and seven that the Science Museum thinks worth adding to the list. Quite apart from the paltry number of monuments involved (scandalously small when you think that we

The remains of the original blast furnace near Sandviken, with a replica of the old convertor where ingot steel was first produced on an industrial scale using the Bessemer method, See above.

invented the Industrial Revolution), what worries me is the condition of some of the monuments already scheduled.

*

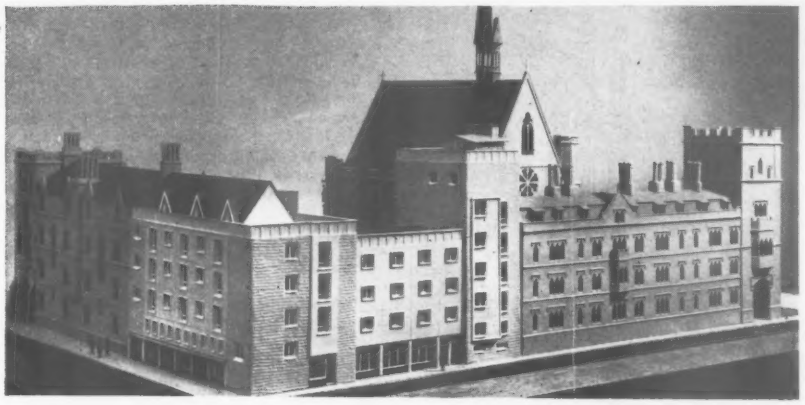
The Iron Bridge at Coalbrookdale, deprived of the loving care of the toll-collector now it is nationalized, gets tattier every year. More and more litter accumulates, and more and more of its iron work is broken off by small boys and souvenir hunters. The contrast with the neat upkeep of, say, Buildwas Abbey—to pick a more obvious ancient monument in the same part of the world—is depressing. Couldn't some interested body, such as BISF or AIF, conscious of their glorious industrial past, adopt this early iron masterpiece? And while they are about it, couldn't they also take over Abraham Darby's Furnace, just up the Dale, which is on the Science Museum's list? If this is impossible, perhaps they would be good enough just to kick up old Harry—or should one say old Hugh? The Dales should certainly be in Hugh Molson's diary.

HOW HISTORICAL NEED YOU GET?

ASTRAGAL agreed with the main thesis in Professor Pevsner's talk to the ICA on *Art History for Art Students*. At its lowest level, said the Professor, Art History was an exercise for the mind; at its highest level it was an extension of the artist's conception of the possibilities of his art. But the talk left some open questions, and the subsequent discussion opened a few more. Is it true, for instance, that there is more resistance to the teaching of history in architecture schools than in art schools? The most dogged (downright shaggy-dogged) attempts to contradict the Professor came from art students, and the only architectural student who spoke appeared to be in favour of history.

*

An even bigger question was barely scratched in the course of the whole evening—*how* should art-history be taught to students who are not going to be art-historians? Much of the opposition to the subject may well arise from the way it is taught, but there are problems of method and presentation over and above such qualities as enthusiasm and competence in the teacher. This problem does not appear to exist for Professor Pevsner, who more or less admitted that he relies on his own enthusiasm to get the message across. But the problem *has* been considered in connection with some parts of the revised AA curriculum. A pity, then, that the talk was so strikingly ill-attended by those who teach architectural history for architectural students. Are they all so convinced they know exactly what they are doing, and how to do it?



Above, two views of the proposed Exeter College, Oxford, extension, which unites the Turl Street and Broad Street frontages of the college. The coarse framing of the windows, the variety of wall surfaces, roof treatments and heights, the faint replica of the existing towers result in the architecturally commonplace. The design would barely merit comment, were it not that the site is so important, and the architects no less a firm than Brett, Boyd and Bosanquet. Even when allowance is made for the paralysing effect of designing in a great university city it is a most unsatisfactory design from such an eminent firm of architects. The Royal Fine Art Commission, the College announces, approved to the design. A surprising fact.

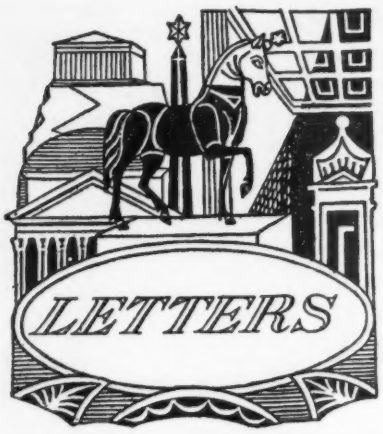
BOARD SCHOOLS

Did you ever wonder about the history of the Board Schools of the 70's—those towering masses which dominate the roofscapes of inner suburban London? You'll find some surprising facts about them in the current *Architectural Review*, where David Gregory-Jones tells what the London School Board did after its establishment in 1870. After finding that 5 per cent was too much to pay for private architectural services, it handed over the whole programme to E. R. Robson, the architect to the Board. Mr. Robson, whose salary of £1,000 a year compares very nicely with that of his successors, turned out drawings at the rate of a school a week. By 1876 a staff of fifteen (earning £12 to £200 a year) had 170 schools completed or under construction.

*

This was a pretty good achievement, as Herts and the LCC would agree, and Mr. Gregory-Jones makes out a good case for regarding the buildings as architectural monuments of some character. But they were surely not, as he suggests, suitable for children—unless, of course, he shares the 19th century belief that anything good for a child is also unpalatable to a child.

ASTRAGAL



John Smith, A.R.I.B.A.

Isabel A. Bold, A.R.I.B.A.

Roger C. Walker, Brian Evans, James Tomkins, James L. Grove,
Students R.I.B.A.

R. K. Miller

Edward H. Hartry, A.R.I.B.A.

P. G. Kelsey, A.R.I.B.A.

Donald Stout

Erno Goldfinger, L.R.I.B.A.

R. Furneaux Jordan, A.R.I.B.A.

M. H. Sharp, J. Cheetham, K. Thomson, A. Moss,
A.A.R.I.B.A.

The Bartlett School

SIR,—In considering the protest of the students at the Bartlett against the educational policy enforced by their school's directorate one or two points emerge that are worthy of further discussion.

For example, have students any right to question the principles of the system of education they are receiving? This would seem to be a fundamental issue, for if they lack the right to criticize, then by their present action, the students at the Bartlett are guilty of a grave misdemeanour and are subject to what is picturesquely described as "disciplinary action." In other words they should be given the stick like naughty boys in a prep. school.

That, of course, would be laughable were it not so likely to happen in this particular case. For until it is generally accepted that a truly responsible architect is one who as a student was prepared to behave responsibly and accept responsibility, and that implies if necessary questioning the wisdom of his elders (the sacred prerogative of youth) then the profession will continue to be cursed with just the sort of recruits that it needs least. It should be established therefore, that in making their protest the students were demonstrating unequivocally their feeling of concern over their own education and that the protest itself was a legitimate action.

Now if you or I, Mr. Editor, having an interest in the development of architectural education, visit a school, are appalled by what we see, and in a subsequent article say so, then what we say may be dismissed as "tripe" by the school authorities. We are, you see, "crack-pots," and nothing need be done to remedy a situation that we have criticized. But when 108 out of 110 students in a school agree that "the approach of the School is considered to be outmoded and incompatible with present-day architectural thought and practice" and say so, then the authorities would be advised to carry out the called for impartial investigation. For the fact that there is something wrong can no longer be denied and a charge of juvenile irresponsibility levelled at the students can hardly be justified.

In this particular case such a charge would be monstrously unfair, for the students have acted calmly and responsibly; the petition to the Provost of the College is polite and firm and lacks rancour; the reticence to publicize their cause is commendable; and the call for the views of former students can be readily understood. On the students' side there would seem to be little hysteria. It is those of the establishment who have succombed to apoplexy, if the threat of "reprisals" has any substance.

The Board of Architectural Education now has the unenviable and perhaps embarrassing task of considering the students' complaints. The situation is not one to be glossed over despite the fact that with the wider publication of the dispute coinciding with the end of the academic year a thorough investigation will be difficult to carry out now and by the autumn memories may be blunted when the students return. But a thorough investigation is urgently required and the Board, however reluctant, should not refrain from seeking information on the internal affairs of any school when such a clear call is made for them to do so. If the Oxford Conference and its report really mean anything then the Board must act now. The Bartlett dispute is no longer a purely domestic issue if the idea of the desirability of having architectural schools within universities is not to be discredited.

Furthermore, should the Bartlett authorities refuse to introduce any of the urgent reforms that might be recommended then the Board should, without hesitation, withdraw "recognition" until the school is once again a fit centre of education.

Finally, should any of the students be victimized for their part in the controversy it should be remembered that they are all, compulsorily, Probationary or Student members of the RIBA and as such ought to be able to look to the Institute for protection.

JOHN SMITH.

London.

SIR,—Much publicity has been given to the dissatisfaction felt by many students with regard to the education they receive at some recognized schools of architecture. They complain particularly that their classical training is out-dated. Personally I have never felt that my (also somewhat classical) training was inadequate, and I feel obliged to give my reasons.

The word education gives a clue. "*Educate*"—to lead out, implies the bringing out of latent talent, and a leading out of ignorance into knowledge. It does not claim to inspire. Students should realize that architecture as such, whether ancient or modern, cannot be taught. All that training can do is to teach the required techniques, and to develop a critical faculty which will enable the student to form his own standards of judgment.

That the schools cling largely to the study of classical rather than other types of architecture, is inevitable. In classical buildings the answers to visual problems are very directly resolved, and may be analysed by rule of thumb. These analyses should merely teach the student how to use his eyes. As rules, they do not exist for the creator of a work of architecture, who, being a true artist, should have the power of creating a satisfying building mainly by instinct.

The training in the major schools of architecture is amply sufficient for the real architects. Where the schools do fail us is in their selection of suitable students. In this technical age, it is now more important than ever that those training to be architects should be artists. Mere technicians will always be frustrated in a field which is still, and always will be, held by artists, even though they be few.

ISABEL A. BOLD.

London.

SIR,—Our general uneasiness regarding the state of architectural education in this country has been confirmed by the recent petition of the Bartlett students, and we are concerned that the need for such action has arisen.

It is hard to believe that the troubles are wholly internal and the RIBA must accept its share of the responsibility. These conditions would not have occurred under the progressive and imaginative policy which we are entitled to expect from the leaders of our profession. Most architects would regard the teaching methods described by the Bartlett students as anachronistic. Does the Board of Architectural Education share this view? If not, it must be assumed that the RIBA is in agreement with the present situation. We are tempted to ask if the Board consists of men suited to the control and development of our education.

The question is all the more serious because the discontent is not confined to one centre. Students in every school will look for a clear statement of policy from the RIBA in response to the Bartlett students' appeal. They must not be disappointed.

ROGER C. WALKER,
BRIAN EVANS,
JAMES TOMKINS,
JAMES L. GROVE.
(3rd year students).

Birmingham.

The Part-Timers

SIR,—As one who is in a position to speak from experience of both part-time and full-time architectural education, I feel I must answer W. W. J. Trollope's rather sour letter in the issue of June 19, in which he refers to getting rid of the surplus of architects by eliminating those who obtain their qualifications by part-time studies—"those with the guts," as he says.

I can only say from experience that to do the job properly, in the matter of education, there is nothing to beat a full-time education at a good school, of which there are obviously many, and his snobbish remark about those not able to afford a proper training places him completely out of touch with present-day schemes of financial aid for poorer students of proven intelligence and ability. I personally was able to make use of such a scheme during my period as a full-time student of three years.

R. K. MILLER.

Sussex.

SIR,—Raising the level of entry to the profession is no solution in itself. It should be used as a means of allowing the raising of intensity, scope and standard of training. In architectural schools on the continent, especially in countries where the architect's professional and social standing is high, the curriculum is much broader and students have to work longer and harder than in any English school I have heard of.

This also solves the much disputed ques-

tion of evening classes. The point is not whether it is fair to cancel what for some people may be the only way of becoming an architect; what we must ask instead is whether by such means it is at all possible to become even remotely proficient. So far I have never heard anybody complaining that one cannot become a surgeon or physician by attending evening classes for four or five years, while working as an orderly in a hospital. The fact that this seems possible for architects is a gloomy reflection on our status.

EDWARD H. HARTRY.

Teddington.

"An Objectionable Practice"

SIR,—I was most interested in "County Planning Officer's" letter (AJ, June 5), which expressed very neatly the situation as it stands in many small offices today.

Architects in private practice in areas where there is little or no industry, are amongst those most affected as their practice is almost entirely dependent upon domestic work.

So far as on can see, nothing is being done to help these architects, who, being bound by the Code of Conduct, cannot compete with the individuals to whom County Planning Officer refers. More often than not the building owner receives a false impression of the Scale of Charges, which does not help the profession in general or the particular architect. It is, exactly as stated by County Planning Officer, "an objectionable practice."

P. G. KELSEY.

Goole.

Is BoT A Square?

SIR,—What made you print Mr. Banham's irresponsible and ill-tempered article (AJ, June 19)? I admit such official circulars as that from the Board of Trade which is Mr. Banham's butt are always a little comical, but, if you yourself will look at it afresh, it surely says nothing that is untrue or ridiculous. It says that "Corb and Frankie," as Mr. Banham calls them with gate-crashing familiarity, in their latest buildings are exciting, adventurous, surprising, exotic and bizarre, which they are, that they are successful in Iraq, which they are, and that certain architects in Britain, if encouraged, might overcome their restraint and do likewise, which is not inconceivable. Mr. Banham chooses to call it Colonialism when the Board of Trade in this circular refers to Le Corbusier and Gio Ponti as "foreign architects." The circular went to British architects, so what is wrong? What is wrong, is that Mr. Banham likes to use the term Colonialism because it has become a dirty word of *caoutchouc* meaning like Fascism and Communism and Imperialism. The demagogue uses it, and Mr. Banham uses it.

Demagogy also are his further two arguments which in any case handsomely contradict and exclude each other. The first is that the Board of Trade rather than send round foolish circulars should do what the German government did sixty years ago and appoint a man of the calibre of Herr Muthesius to live for a time at Paris, Rio, Taliesin and Milan so that the work of the architects there would be made known and could inspire work here. His implication is clearly that this would be the intelligent thing to do and that the Board of Trade would not be intelligent enough to do it, although in Germany everything up to the Bauhaus came out of it. There are two answers to this. One is that Muthesius went to study a sensible, straightforward, simple style which to that extent was imitable, whilst a present-day Muthesius would find it hard to make a message for the architectural schools and the private client of the architect out of the Guggenheim Museum and Ronchamp. So what was wise in the German government in 1900, would be unwise in the British in 1958.

The second answer is given by Mr. Banham himself in his last paragraph which makes nonsense of his boost of German wisdom. He now uses another quality of caoutchouc meaning, Englishness. The Rolls Royce is English, tailfins are un-English. Therefore England must not try to compete with the tailfin boys, whose pop art suddenly turns out to be in the same category as "Corb and Frankie." The Board of Trade, just admonished to pay for an explorer to teach the English Corb is now told that this would be useless. But, would he have expected the design for the Sydney Opera House to come out of Denmark? If Danishness is as impermanent as that, why not Englishness? Besides, if my eyes don't deceive me, Mr. Banham himself has quite spectacular tailfins.

DONALD STOUT.

London.

Brasilia

SIR,—I have read with great interest your "Not Quite Architecture" on Brasilia (AJ June 26) and although I am in sympathy with certain of the views expressed, I must say I cannot agree with the writer's general attitude.

Lucio Costa's plan is a brilliant synthesis and quite evidently capable of implementation. It has a number of characteristics with which I am in the utmost sympathy:

1. It is a linear plan in scale with modern urban transport;
2. It is capable of expansion to the east, west, north and south which is another of its modern characteristics.

No village, town (may it be "new") or city can be termed "modern" if it has not in it a "built-in" means of expansion. Cities grow or die and it is the tragedy of post-war British town planning—in a country of expanding cities—to have thought to put the clock back and conceive towns as static finite units. It is also a tragedy of British town planning, where so much has been done for the development of the social side of urban life (housing, schools, neighbourhood units, etc.) that the arteries of this life, the transport system, the roads, have been ignored or neglected.

London, which also has a linear east-west axis (see the Henard analysis), is mocked into a system of circular bye-passes (which, incidentally, do not function), or renaming of streets ("A" ring, "B" ring, etc.).

Costa's plan is an outline plan, a "*plan Directeur*," oh, horror: a "Master Plan," and it is not the scope of the Brasilia exhibition to tackle the economic and sociological basis of this plan.

As to the wisdom of having a capital administrative city divorced from the teeming crowds of the commercial capital of the Brazilian Federation, there are at least two outstanding examples of this: Washington and Canberra, not to mention Peking. It is also interesting that this is to be an inland city, the capital being moved from the port of Rio, as Petrograd was moved to Moscow and Istanbul to Ankara. The aeroplane is taking over from the sailing ship, and the motor car from the sedan chair.

ERNO GOLDFINGER.

London.

Fuller Understanding

SIR,—The hullabaloo in the AJ over Buckminster Fuller's incomprehensibility does not, surely, justify either polemics or emotion. The simple fact is that the American and English languages have, for two hundred years, been drifting further and further apart. The drift is, of course, likely to be most marked in philosophical and technical spheres.

Americans lecturing in England should, like other foreigners, either learn English or be provided with an interpreter. Buckminster Fuller cannot be blamed for using his own language, nor we for failing to understand it.

R. FURNEAUX JORDAN.

London.

The *RIBA Journal*

SIR,—Now that there seems to be a good chance of the RIBA setting its house in order, our recent inclination to resign has been somewhat tempered.

Among the many points which require immediate attention by the new Council, we consider one of the most important is the question of the *RIBA Journal*. Cannot something be done to make this into an outstanding magazine, one that an architect would not feel ashamed of letting a client see? It is the only magazine to reach every architect in the Country, and yet probably very few other publications, including trade literature, reach the waste paper basket so quickly.

There should in the light of this vast circulation be no difficulty in providing a maximum income from advertisers, once the latter were assured that the magazine is widely read. We would suggest there is an urgent need for a magazine on the lines of certain issues of *L'Architecture D'Aujourd'Hui, i.e.*, each month specializing in good examples (from the U.K. and abroad) of a particular building type. The standard of format, photography and critical analysis of work illustrated must be, of course, second to none.

It appears that there is now a unique opportunity of completely scrapping the existing *RIBA Journal* and starting from scratch. If this is not done we feel that receipt of the *Journal* should be no longer obligatory and the Annual Subscription suitably reduced.

M. H. SHARP,
J. CHEETHAM,
K. THOMSON,
A. MOSS.

Manchester.

DIARY

The Competition of Ideas at the Brussels Exhibition. Talk by James Gardner at a joint meeting of the Art Workers' Guild and the SIA. At the Art Workers' Guild, 6, Queen Square, W.C.1. 6.30 p.m. for 7 p.m. Refreshments. Complimentary tickets of admission from Mrs. Nelson, 15, Cranley Gardens, S.W.7 (Kensington 5806). JULY 9

Exhibition of Students' Work. At the Polytechnic School of Architecture, Surveying and Town Planning, Little Tichfield Street, W.1. Monday to Friday, 10 a.m.-5 p.m. JULY 11 TO 25

Regional Planning. Talk by Percy Johnson-Marshall. TCPA Meeting at the Planning Forum, 28, King Street, W.C.2. 6 p.m. JULY 14

Japanese Art Treasures. Exhibition at the Victoria and Albert Museum. Monday, Wednesday, Friday and Saturday, 10 a.m. to 6 p.m.; Tuesday and Thursday, 10 a.m. to 8 p.m. Sunday, 2.30 a.m. to 6 p.m. UNTIL AUGUST 17

BERLIN

The Prize-winners

The following are the prize-winners in the international competition for the reconstruction of the centre of Berlin:

First (DM 20,000, or £2,500), Friedrich Sprelngelin, Fritz Eggelin and Gerd Pempelfort, architects, of Hamburg and Hanover. Second (two prizes of DM 20,000 each), (*a*) Egon Hartmann, of Mainz, and W. Nickel, of Gelsenkirchen, and (*b*) Professors H. Scharoun and Wils Ebert, Berlin. Third (three prizes of DM 10,000 each), (*a*) Peter Smithson, in association with Alison Smithson and Peter Sigmonde-Wonke, London (*b*) R. G. Rummler, G. F. Kern and H. J. Schroter, Berlin, and (*c*) B. Fleischer and Hermann Kreidt, Berlin. Four fourth prizes were also awarded, to entrants from Germany, France, Austria and Italy. There were 149 entries, of which 11 were British.

BRASILIA

Percy Marshall Analyses Costa's Project

Percy Johnson-Marshall treated the audience at the ICA last Thursday to one of his inimitable quickfire talks abounding with enthusiasm and numerous fine colour slides. After an introduction by the Brazilian Minister-Counsellor, Percy Marshall took us through the history of the birthpangs of the new capital which apparently lasted a century and a half. But once the decision had been taken to build the new Brasilia on the Central Plateau in the State of Goias things began to move rapidly.

President Kubitschek—a great patron of the arts and a connoisseur of modern architecture—who is backing the scheme to the hilt, appointed as Chief Administrator "not a retired General but his Chancellor of the Exchequer who is a killer." Niemeyer who became City Architect was made responsible for all public buildings; he suggested that a competition be held for the master plan of the new capital and Lucio Costa was awarded the first prize for his brilliant thumbnail sketch. Work began a few months ago and (according to Percy Marshall) it's all going to be finished by 1960!

Before analysing Costa's project in more detail the speaker gave us a brief but highly descriptive exposé of Brazilian architecture of the past two or three decades. Le Corbusier's visit to Brazil in 1936 acted as a catalyst and "Niemeyer was created." Some breathtaking colour slides certainly proved the speaker's point that Brazilian architects have got something British architects haven't got—a fine climate, wealthy patrons, beautiful materials, but tremendous vitality, inventiveness and complete lack of inhibitions are equally self-evident. He praised Brazilian architects for not being as detached as their British counterparts, and for being part of the people and the country.

Percy Marshall then proceeded to comment on the proposals. While supporting enthusiastically such major decisions as the opening up of the Central Plateau by locating the new capital there he was rather critical of the lack of a regional plan to support this decision; he would have preferred to see a plan on the lines of TVA. The Brazilians, who in this case (as in many others) put the cart before the horse, prefer to build the new capital first and devise their regional plan afterwards. Socially, the speaker felt, there might be a danger in building a town almost exclusively for 500,000 civil servants and he drew unflattering parallels with Canberra and Washington. Legal controls will be strict and "there will be no nonsense about freedom from planning controls." (Since Costa and Niemeyer will be the bureaucrats to exercise these controls perhaps angry young Brazilian architects won't feel quite so despondent as their British counterparts.) But the speaker's confidence in planning controls seemed to be contradicted by his worry lest the new capital should get out of hand: "the danger is not that Brasilia won't be a success but that it will be too successful."

When questioned about financial aspects the speaker quoted those Brazilians who claim that Brasilia isn't going to cost anything really since the Government who bought all the land will recoup themselves by selling the leaseholds of the building sites. About the design of the project Percy Marshall felt that Costa had conceived a very beautiful and highly imaginative design but he wondered whether the 500,000 Cadillacs all meeting at the intersection of the two main axes will not cause some congestion in spite of flyovers, cloverleaves and what-have-you. The individual buildings which have so far been designed and partly built all display fine sculptural qualities and an air of monumentality peculiar to the Brazilian Grand Manner.

But those who had hoped to get answers to some of the pertinent questions raised in this JOURNAL last week may have felt a little disappointed. The speaker could not help us with the scale so we are still in the dark whether Brasilia is 2 or 20 miles across. We still don't know what the building programme and order of priorities are (though this should not worry us unduly if it's all going to be built within two years anyhow); but I am glad to say that nobody took up the JOURNAL'S tactless question why they started with the Presidential Palace!

Percy Marshall's lecture was so stimulating and entertaining that one could not resist sharing his enthusiasm and admiration for this great project.

W. G. B.

BUILDING ORDERS

A Recovery in 1st Quarter

Figures published by the Ministry of Works show that new orders to the value of £339 million were obtained by the building and civil engineering industries in the first three months of this year. Although the value of new orders for the first quarter of 1958 (£339 million) was approximately £30 million lower than the figure for the corresponding period of 1957, it was higher by £40 million than that for the immediately preceding quarter; the largest increases were shown in the private enterprise housing and public authority non-housing fields, in which the value of new orders obtained rose by £9 million and £28 million respectively. The value of local authority housing, at £50 million was £27 million less than a year ago and £22 million less than private enterprise housing.

The final figure for the total value of new building and civil engineering work carried out during the quarter, at £335 million, is somewhat higher than the provisional figure of £330 million published last month. The figure for the corresponding period of 1957 was £337 million, and allowing for changes in costs, which rose slightly during the period, it appears that about 1 per cent less work was done in the first quarter of 1958 than in the same period of 1957.

TCPA

Single Planning Authority for London

The Town and Country Planning Association has recommended a single town planning authority for greater London, in its evidence to the Royal Commission on Local Government in Greater London. This Planning Authority should have executive powers, and be responsible for deciding:

(*a*) the permitted limits of urban development within region and reservations for green belts around and between these urban areas;

(*b*) the distribution and permitted limits of population and employment, and the balance of employment, within these urban areas and the region as a whole;

(*c*) important lines of communication in the region;

(*d*) the location of major developments, such as power stations, airfields, etc.

The arrangement the Association prefers is to establish a number of councils in the area, smaller than the LCC but with similar powers. These councils would then appoint people to a Joint Planning Board for the entire area. This Board would have its own headquarters and expert staff. It would raise its income through precepts on the next tier councils.

EUROPEAN HOUSING

Below 1956 Level

Comparison of the number of dwellings built in 1957 and in 1956 shows that the expansion of dwelling construction which was general in the years 1955-56 has halted in many European countries. This can be seen from the figures supplied in the latest Quarterly Bulletin of Housing and Building Statistics for Europe published by the Secretariat of the United Nations Economic Commission for Europe.

The information given in the Bulletin shows that the largest number of dwellings were built in the Soviet Union and Western Germany—approximately 10 per thousand inhabitants. These countries are immediately followed by the Netherlands, Norway and Sweden, with a production of eight to nine dwellings per thousand inhabitants, and then Denmark, Finland, France, the United Kingdom and Switzerland, with six to seven whereas Belgium, Hungary, Italy, Poland and Czechoslovakia built four to five per thousand inhabitants.

Eastern Germany, Ireland, Portugal, Spain and Yugoslavia had the least building, though, except for Ireland, their housing needs are very great. The Bulletin also reports that housing construction has nevertheless continued to increase in certain western European countries, such as Denmark, France, Italy, the Netherlands, and Sweden, and in most of the countries of eastern Europe.

The statistics indicate a levelling-off in the other western European countries, such as Belgium, Finland, Ireland, Norway, Portugal and the United Kingdom, or even a fairly pronounced drop, in Spain, Switzerland, and Western Germany.

Some idea of the prospects for 1958 can

be gleaned from the figures supplied by the Bulletin for building permits and work in progress. These figures suggest that there is still some expansion in Italy, Norway and Sweden, whereas the tendency is definitely downward in most western European countries—particularly western Germany, where there has been intensive construction in recent years.

All the countries of eastern Europe expect some increase in dwelling construction.

The figures for apparent consumption provide a more accurate gauge for measuring building activity in general, which shows an increase in 1957 in most countries. This increase is considerable in eastern Europe, whereas there is a marked drop in Finland, the United Kingdom, and western Germany. For the first time, the Bulletin gives information on the apparent consumption of cement.

The Bulletin also provides information on building costs, which have increased slightly in most countries except France, the United Kingdom and western Germany, where they have gone up considerably, and in Portugal, where they have decreased.

RIBA

Bronze Medal Awards

The following awards of Architecture Bronze Medals have been made:

London: Brunel House (Flats for Chelsea Borough Council), 105, Cheyne Walk, Chelsea, by Edward Armstrong and Frederick MacManus. *Liverpool:* New Heays High School for Girls, Heath Road, Liverpool, by Herbert Thearle and Laurance Bennett Thearle, in collaboration with Ronald Bradbury, Liverpool City Architect. *Essex, Cambridge and Hertfordshire:* Seed Warehouse, Witham, Essex, by Chamberlin, Powell and Bon.

Swiss Exhibition

An exhibition of Swiss architecture is to be shown at the RIBA in the first half of October, 1959, in connection with the "Swiss Fortnight," being organized by the Swiss Government.

Scottish Competitions

After consultation between the Royal Incorporation of Architects in Scotland and the Competitions Committee of the RIBA, the following arrangements have been approved:

Competitions for buildings in Scotland, which are to be confined to architects practising in Scotland should be left to the RIAS to deal with as at present. Competitions for buildings in Scotland which are to be open to architects practising outside Scotland should continue to be dealt with by the RIBA but there should be consultation with the RIAS on any points of difficulty, and further, the President of the RIBA should confer with the President of the RIAS on the nomination of an Assessor or Assessors for such competitions.

RIBA Representatives

Among new appointments of representatives made by the Council of the RIBA are: Percy Johnson-Marshall to the Central Panels Committee (in place of Herbert Taylor, resigned); Edward Mills to the British School at Rome (in place of R. E. Enthoven, whose term of office has expired), and J. C. Eastwick-Field to the Codes of Practice and BSI Committees on the Definitions and Nomenclature of Timber.

TPI

New President

U. Aylmer Coates has been elected President of the Town Planning Institute for 1958-59 in succession to B. J. Collins. Mr. Coates, who is a Fellow of the RIBA, is County Planning Officer for Lancashire.

NOEL TWEDDELL

Joins Civic Trust

Noel Tweddell, who has been the Architect-Planner of Basildon New Town since its inception in 1949, has resigned his post to take up the position of Deputy Director to the Civic Trust in London and undertake architectural and planning work on his own account.

The Corporation have appointed A. B. Davies, at present Deputy Chief Architect-Planner, to succeed Mr. Tweddell. The changeover took place on July 1, 1958.

THE GERMAN VIEW

On British Concrete Work

Members of the Executive Committee of Deutscher Beton-Verein (German Concrete Association) have been visiting Britain during this week. Speaking at a dinner on their last evening in London Dr. Minetti, Chairman of Deutscher Beton-Verein, said that there were a number of things which had struck the party as being of particular interest.

Firstly, there was the extensive use of precasting techniques—a far wider use than was found in Germany. This gave speed of construction, clean sites and a very high standard of concrete quality.

Secondly, they had been very impressed by the multi-storey housing schemes which they had seen and, particularly, the use of exposed aggregate cladding and the emphasizing of the concrete frame. Then they appreciated and admired the lead which Britain had built up in the peaceful uses of atomic power.

A final impression was that competition between contractors in Britain was, perhaps, less intense than in Germany.

UNSUCCESSFUL TENDERS

Should an Architect Tell?

In a High Court action last week by a firm of architects claiming payment of £300 as fees for professional services rendered, Mr. Justice Slade had to decide whether the architects were in breach of duty in informing a successful builder tendering for the erection of a house the amounts of the other tenders—which were higher—before the builder signed a binding contract.

The judge held that there was no breach of duty and entered judgment for Frederick Leslie Hasker and Ruthven Oliphant Hall, architects, of Welbeck Street, London, W., for £300, with costs, against Eric T. Johnson, of Moor Hall, Ninfied, Sussex, who engaged them.

Plaintiff's case was that they contracted with Johnson in 1955 to prepare plans and specifications and receive tenders for the erection of a house in the grounds of Moor Hall. Messrs. S. A. Webb and Sons, builders, submitted the lowest tender of £6,305 but subsequently withdrew it and the work was abandoned.

The defence was that in alleged breach of duty Mr. Hall, before making any binding contract with Messrs. Webb informed them of the amount of of other tenders, which were much higher. They refused to contract at the amount of their tender and in consequence the plaintiffs' services were valueless. Defendant counterclaimed for damages. Plaintiffs denied breach of duty.

Giving judgment, Mr. Justice Slade said four builders tendered for the contract. Webb's, at £6,305, was the lowest and the next lowest was £7,463, £1,158 higher than Webb's. The other two tenders were for £8,221 and £8,815. Mr. Hall thought Webb's might have made an estimating mistake and he got in touch with Webb's asking if this was so. The dogmatic reply from Webb's was that "they never made mistakes."

It was defendant's case that the plaintiffs should have gone no further than that and that Mr. Hall, in subsequently informing Webb's by letter, of the amount of the other tenders, was a breach of duty.

His lordship said he had had the advantage of hearing the evidence of Duncan Scott, F.R.I.B.A., and other professional witnessses of similar standing, and he was satisfied that it was a custom or practice in the profession in certain circumstances to disclose the amounts of tenders to competing tenderers. It was in the interest of all parties to have a satisfied builder making a reasonable profit margin, and it had been said that in the end one usually got more or less what one paid for.

There had been no evidence from Mr. Webb as to why he had withdrawn his tender, but he informed Mr. Hall, four days after the amounts of the other tenders had been disclosed to him, that there had been a discrepancy of £673 in his tender, due to a £250 figure having been added instead of subtracted and a mistake of £173 having been made in the estimate for drainage.

Holding that there had been no breach of duty by plaintiffs and dismissing defendant's counterclaim for damages, with costs, the judge said: "I think it is a perfectly proper and reasonable custom to disclose tenders to the unsuccessful tenderers so they may reconsider their commitments, allocation of plant, etc. I think it is equally reasonable to disclose the tenders to the successful tenderer so he may check his estimates and see that he has not made a mistake."

SURVEYOR SLANDERED

Architect to pay £40

Sheriff Aikman Smith, at Aberdeen, has awarded £40 damages to Mr. Douglas Elliot Scott Turnbull, burgh surveyor and sanitary inspector of Turriff, in an action in which he sued James Munro, architect, Turriff, for £500 damages for slander. In his judgment the Sheriff found that four of the statements made by Mr. Munro to Dr. David S. Hogg, of Turriff, regarding Mr. Turnbull, were false and calumnious.

These statements were: "He is not a qualified architect, he is just a quack"; "He made a mess of St. Congan's housing scheme"; "I suppose you think you can get a job done cheaper, but you will not. He will be dearer in the long run"; and "His work is not good."

The Sheriff, in a note to his findings, states it was abundantly clear that Munro was aggrieved by the fact that the Burgh Council had allowed Mr. Turnbull to undertake private work and that his motive in seeking an interview with Dr. Hogg was business animosity. The Sheriff said it seemed to him that the defender's conduct reflected more discreditably on the defender himself than on the pursuer's character and reputation.

The result of this action was that the pursuer's character and reputation had been vindicated. On the question of damages, the Sheriff stated that the pursuer had, he thought, some reason to be injured in his feelings by the suggestion that he was a "quack." He was, after all, a man of 54, with many years of responsible work behind him. The Sheriff stated, however, that in his opinion this was not a case which justified a very large award and he considered that the sum of £40 was quite sufficient. He found the defender liable in costs.

Peter Scher takes up the proposal of a new Faculty of Building, made by Percy Johnson-Marshall, and suggests that what is wanted is a Faculty of Art, Science and Technology. But he argues that the place to begin acquainting architects and future artists with science and technology, and engineers with the arts, is the school: those who are to practice in any branch of the visual arts should take an "A.S.T." course at "A" level G.C.E.

A NEW FACULTY OF SCIENCE, ART AND TECHNOLOGY

Some Ideas on Architectural Education

Students arriving at universities and colleges to study for arts or science degrees have usually spent their last two or three years at secondary school, after passing G.C.E., in fairly specialized study of those subjects they intend to pursue. Most students also have to pass G.C.E. at "A" level in those subjects as a condition of entry to university or college; that is to say, the *Intermediate* qualification of an arts or science degree. When these students take their final degree examination three years later their fellow-students of architecture will be taking their Intermediate examination.

At present although would-be architects are only required to have G.C.E. at "O" level, they do not immediately enter schools of architecture but generally stay on at secondary schools. There they either do not specialize at all or specialize in subjects not directly concerned with their future studies—some even obtain G.C.E. at "A" level although they do not yet need it to begin a recognized course.

The route to an A.R.I.B.A. may lie through a Diploma, B.A. (ARCH.), B.SC. (ARCH.), or a B.ARCH. The attachment of schools of architecture to arts or science faculties is surely an extremely inconvenient anachronism, not to say embarrassingly ambiguous if both are possible. The *status quo* and the RIBA requirements in architectural education make it necessary for all courses to start from scratch. On the one hand no previous training at school can be theoretically appropriate for every type of degree available, and on the other hand no course can make very specialised conditions for students entering it in case it cannot find candidates.

Ignoring red herrings, let me state that whatever architecture is—art, science, both or neither—the study of architecture is bound to be independent of the traditional arts and science faculties.

Percy Johnson-Marshall has suggested a new Faculty of Building (AJ, June 6, 1957). By approaching the subject from another direction I would also propose a new Faculty, which for the moment I shall call the Faculty of A.S.T. (Art, Science and Technology).

As I have said, all courses at recognized schools have to be similar, despite appearances, and all start from scratch. Therefore, there is no reason why they should not all have the same conditions of entry making earlier specialization possible. Just as the specialized study leading to normal arts or science degrees begins immediately after G.C.E. at "O" level, so can the study for architecture. There should be no question, of course, of reducing the standard of general education of pupils.

The following subjects, which are essential to architecture are already taught in many secondary schools: mathematics, elementary structural mechanics, draughting technique and conventions, art in all media and handicrafts, physics of heat, light, sound, electricity, chemistry (properties of materials). history (including that of the arts and architecture), English. Here is the basic preliminary course for architects, and in it one recognizes the "Art-Science-Technics" ingredients from the Bauhaus, from Percy Johnson-Marshall's Faculty of Building, etc., and many other theorists. However, I would propose that it belongs not in the University, College or Bauhaus, but in school, where at the moment some pupils get some bits of it anyway. These subjects themselves do not form a course but expanded with other suitable subjects and given a coherent plan by expert educationists they form a basis which is *already established*.

Now the proportion of secondary school pupils who wish to become architects in Great Britain must be fairly small and before such a course is planned one should consider what other future specialists might be able with profit to share it. This is difficult, for few professions enjoy the schizophrenia of architects who have such balanced pretensions to both science and art. I am diffidently going to select those I think who could most appropriately modify their outlooks and profit by the change. I will select two groups of "volunteers," one from the artistic camp and one from the scientific camp.

Artists

It is often said that contemporary art hardly ever finds a suitable setting or a welcome place in contemporary architecture. What is more, this saying springs from many architects' personal experiences.

Now while an architect's training does try to teach him about the other visual arts, their historical and contemporary relationships with architecture, while he even practices, in some degree, drawing, painting, modelling, etc., no fine art courses appear to require or even encourage their students to make a corresponding effort to understand architecture. Though this could and should happen in their student work I am certain its value would be enhanced if art and architecture students shared a common and relevant secondary school background. In other words, let those who intend to practice in all branches of the visual arts take an A.S.T. course from G.C.E. at "O" level to G.C.E. at "A" level.

I must add that I personally think that twentieth century science and technology have an enormous influence in fertilizing nearly all that is most valuable in our arts. Though I say that here to reinforce my theory for a new faculty I really think it is basically the most important reason for acquainting artists deliberately with science and technology.

The natural consequence of this, of course, would be for schools of art, etc., to insist on their students having G.C.E. at "A" level in A.S.T. subjects as a condition of entry, thus raising *their* standards and status too. By the term artists I mean here not only painters and sculptors but also commercial artists, display artists, theatre designers, artists working in films and television, illustrators, and those who become the designers of individual and mass-produced objects of all kinds.

Engineers

Engineering will provide the other group of people to join the architects. Engineering differs from art partly because only some engineers do work directly related to architecture and perhaps only a few know in advance the way in which they will specialize. It has so long been automatic to say that engineers have no understanding of matters apart from their calculations (especially "æsthetic") that engineers themselves actually believe and act on it, being pointedly uncritical or glumly embarrassed about all forms of art and architecture.

The engineers who most need enlightenment will be for our purposes, the structural engineers, traffic engineers, engineers in every branch of product design, plant designers, heating, ventilating, lighting, acoustic, sanitary, and electrical engineers.

I have now mentioned a fair number of professionals who in company with architects would be able to take an A.S.T. course at secondary school as a preliminary to their specialized training. There will be others, but already this is enough to justify the great reorganization needed to establish this new branch of learning. The elements of the course could be fairly numerous, students having some subjects in common and some to choose from according to their own particular bias.

The professional and teaching bodies concerned would, of course, have to work out this scheme carefully and in detail. The aim is to add a third basic gateway at "Inter" level into the institutions of higher education because the existing "Arts" and "Science" Inters are not suitable for architects and many other specialists, including some "artists" and "scientists." By passing G.C.E. at "A" level in the appropriate subjects the student obtains an A.S.T. "Inter" and the minimum for entry to the school of art, architecture, and engineering (of certain kinds).

Three important objects are served in this way:

(*i*) The standard of entry to almost all these professions and particularly architecture is raised—if only to the level of most other university courses;

(*ii*) The students will have begun the *right* kind of specialization earlier—if only at the same time as most other established university courses—thus not wasting valuable learning time, and

(*iii*) The excessively long undergraduate courses in architecture can be shortened.

I would stress parenthetically that these are educational aims and I do not imply that the raised standard of education is a means for reducing the numbers in the profession. I believe this must be done, but discussion of this is outside the scope of this article, except to say that raising the standard of entry for this end would not only be utterly wrong but probably quite unsuccessful.

My new university faculty of A.S.T. is of course a more generalized form of Percy Johnson-Marshall's Faculty of Building, which, with existing and proposed faculties of technology, and schools of arts and crafts, it would absorb. Once a university created a faculty of A.S.T. for itself local recognized schools of architecture, art, and polytechnics, would qualify for membership.

I must admit, however, that the faculty was born to justify the "Inter" course and exam outlined above. The reorganization of universities as I have said before seems to me a virtually unrealizable dream and anyway comparatively unimportant. It is the attainment of the three objects of higher standard of entry, earlier specialization, and a shorter course which I consider to be of vital importance and the utmost urgency.

CRITICISM

by J. M. Richards

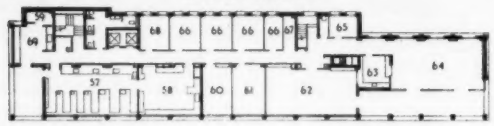
NEW BUILDING in GORDON SQUARE
for the UNIVERSITY OF LONDON
designed by BOOTH, LEDEBOER and PINCKHEARD

The external treatment of a building that serves more than one purpose always presents awkward problems, especially when the spaces required by the different purposes are different in scale. Here is a case in point. This building houses the Institute of Archaeology and the Institute of Classical Studies and provides examination halls for the use of all departments of the university. The two Institutes require for the most part smallish rooms (offices, seminar rooms, small laboratories, etc.) plus one or two fairly large laboratories, a common room and a library for each and a lecture hall shared by both. The accommodation for examinations consists of nothing but six large halls, seating in all 650 students.

The building occupies the whole of the north side of Gordon Square, the frontage to which is shared by the two institutes and the examination halls. A wing at right-angles, with a frontage to Taviton Street, is devoted to examination halls only. The two uses on the Gordon Square side are differentiated by the change (above ground-floor level) from small, rectangular,

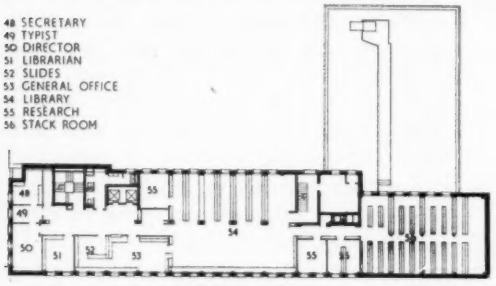
The Gordon Square front. The Taviton Street wing, occupied by examination halls, is on the right.

57 PLASTER ROOM
58 METALS & LECTURE ROOM
59 IMPREGNATOR
60 STAFF ROOM
61 SMALL SEMINAR
62 LARGE SEMINAR
63 PANTRY
64 COMMON ROOM
65 REST ROOM
66 SOCIETY SECRETARY
67 SEMINAR STORE
68 ANKARA SOCIETY
69 LABORATORY



Sixth floor plan

48 SECRETARY
49 TYPIST
50 DIRECTOR
51 LIBRARIAN
52 SLIDES
53 GENERAL OFFICE
54 LIBRARY
55 RESEARCH
56 STACK ROOM

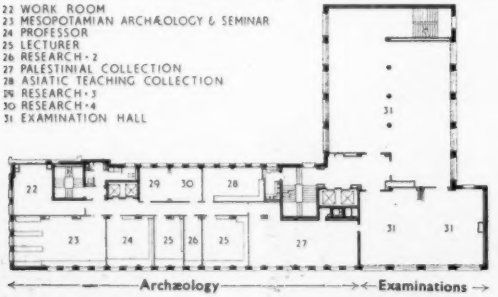


Fifth floor plan

32 RESEARCH - 8
33 SEMINAR
34 PROFESSOR
35 SECRETARY
36 RESEARCH
37 RESEARCH 11
38 PHOTOGRAPHIC STUDIO
39 OFFICE
40 PRINT ROOM
41 NEG DEVELOP
42 DARK ROOMS
43 NEG STORE
44 RESEARCH - 9
45 RESEARCH - 10
46 EXAMINATION HALL
47 LOADING ROOM

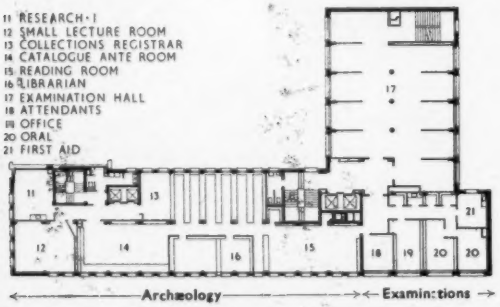
Fourth floor plan

22 WORK ROOM
23 MESOPOTAMIAN ARCHÆOLOGY & SEMINAR
24 PROFESSOR
25 LECTURER
26 RESEARCH - 2
27 PALESTINIAL COLLECTION
28 ASIATIC TEACHING COLLECTION
29 RESEARCH - 3
30 RESEARCH - 4
31 EXAMINATION HALL



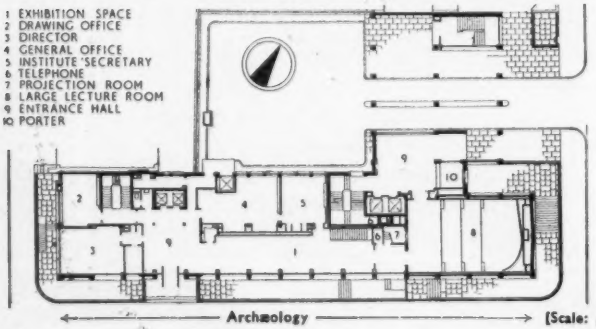
Second floor plan

11 RESEARCH - 1
12 SMALL LECTURE ROOM
13 COLLECTIONS REGISTRAR
14 CATALOGUE ANTE ROOM
15 READING ROOM
16 LIBRARIAN
17 EXAMINATION HALL
18 ATTENDANTS
19 OFFICE
20 ORAL
21 FIRST AID



First floor plan

1 EXHIBITION SPACE
2 DRAWING OFFICE
3 DIRECTOR
4 GENERAL OFFICE
5 INSTITUTE SECRETARY
6 TELEPHONE
7 PROJECTION ROOM
8 LARGE LECTURE ROOM
9 ENTRANCE HALL
10 PORTER



Ground floor plan

domestic-scale windows to large square windows; but the internal arrangement is not in fact as simple as this fenestration suggests, since on the three top floors the Institutes spread across the whole front, and on the first floor in place of one examination hall there are several smaller rooms for oral examinations. On the main frontage, therefore, only the big windows on the second and third floors express big halls behind. On the fifth floor, above these big windows, is the library of the Institute of Classical Studies which for some reason not clearly apparent is lit only from the other side.

Whether a street façade ought faithfully to represent the spaces behind is a matter of opinion; the foregoing explanations simply illustrate the difficulty of doing so. Assuming it was impossible to plan the building to avoid its different uses having to interlock in this confusing way, I would say that the architects were probably right in giving priority to a general conformity with the rhythm and character existing in Bloomsbury. It was for this reason, presumably, that they decided on a solid wall-and-window treatment rather than a treatment suggestive of a framed structure. Accepting this, my only criticism of the windows is that the smaller ones lighting the institutes (which are spaced two to each structural bay) have a not very happy (and not very Bloomsburyish) proportion of solid to void. They give the impression of being rather tightly packed horizontally.

The planning of the building is well managed in view of the complex accommodation problems I have already referred to. The ground floor has a spacious entrance hall, where good finishing materials are notably well used, and this hall is continued by a wide corridor, along the street front of the building, leading to the lecture hall which both institutes share. The corridor has been designed for use as a small exhibition gallery, with screens and wall-cases, giving it an agreeable and interesting character, but one wonders why the screens, shown at right angles to the windows in the photograph on the facing page have been hinged so that they can also be swung back across the windows. They were in this position when I visited the building, obscuring the light and showing their backs from outside.

Ground floor entrance hall serving the two institutes.

From the entrance hall, looking along the exhibition corridor towards the lecture-hall. The entrance doors from Gordon Square are on the right.

Lecture-hall, looking towards the platform.

The wood-panelled lecture-hall is a particularly successful interior, simple in treatment, calm in colour and well detailed. The rather confused-looking ceiling lighting shown in the photograph above is, in fact, not so obtrusive, the larger lights being for general use and the smaller being spot-lights to give enough illumination for note-taking when the hall is darkened. Another thoughtful detail is the sliding shutter that conceals the cinema screen when not in use, avoiding the uncomfortable effect of a lecturer silhouetted against a staring white background.

The upper floors (first to fourth, Institute of Archæology; fifth and sixth, Institute of Classical Studies) are planned like an ordinary office building with rooms on either side of a central corridor and non-structural partitions to allow the room-spaces to be thrown together if required. One corridor wall coincides with the centre row of columns, giving deeper rooms one side than the other. The rooms are well proportioned and lighted. At the top floor the walls are set back behind the structural columns, and at either end of the building are further recessed to provide an open terrace. This is an ideal position for the social life of the institutes and at the Taviton Street end, opening on to the terrace, is the common-room of the Institute of Classical Studies. The common-room of the Institute of Archæology, however, instead of occupying the equivalent position at the other end, has been relegated to the basement in a rather gloomy position, and its place taken by another laboratory. The only advantage of this is that this laboratory is particularly well lighted, having clerestory lights (see photograph) on the opposite side from the main large windows. The decision to use this space for a laboratory was made, I believe, by the clients after the architects had designed the building with both common-rooms at the top.

Among several well thought-out details in the main block, I have space to mention only one: the standard specimen-cabinets which the architects have devised

Upper floor laboratory, showing clerestory as well as side-wall lighting.

Terrace outside the sixth-floor common-room of the Institute of Classical Studies.

Standardized storage units: left, in the basement; right, in one of the study-rooms to which the same drawers can be transferred as required.

for the various basement storage spaces, consisting of wooden trays of various depths sliding into adjustable steel skeleton frames. The same frames are fitted in the study-rooms and laboratories upstairs, so that the drawers of specimens required for study at any given time can be stored there close at hand.

The examination-hall wing also struck me as being sensibly planned, good points being the provision of ground-floor space under cover where students can foregather while waiting to go in to the examinations and in the intervals between them, and the well thought-out circulation. On arrival students go straight down the stairs to the cloakrooms. They there find notices telling them in which hall their particular examination is taking place and can reach the hall direct by lift. An escape and exit stair from the far end of the hall leads direct to the street.

The examination halls themselves are somewhat characterless as interiors, but the only positive point of design I would question is the provision of windows glazed right down to the ground, the lower panel of which is then wasted by filling it with almost opaque material.

The reader will have gathered, however, and should certainly do so by looking at the photographs, that the interior detailing, finishes and furnishing throughout this building are of unusually good quality. In fact it is a building whose best points are seen only by going inside. The outside has, in my view, a number of weaknesses apart from a general dullness of character, which however I would not condemn without knowing more about the part it is to play in the redevelopment of Bloomsbury as a whole and where (if, as I hope, a three-dimensional master-plan is now being made) the accents are intended to be.

The weaknesses I refer to occur at the top and bottom of the building, and are simply defects of aesthetic judgment about which others, including the architects, have the right to disagree. The ground-floor lecture-hall at the corner of Gordon Square and Taviton Street does not require windows and the spaces between the columns have therefore, quite logically, been filled in with panels faced with slate. But I find this insensitively done, with the result that the spaces look merely temporarily blocked up. Furthermore the slate facing at the end of the main block passes in front of the centre column, disguising its existence and suggesting a greater span than in fact exists, throwing

that end elevation out of scale. It would be interesting to know how the architects justify this. At the top I find the same insensitive treatment, both of the recessed panels and of the very heavy projecting stone member that crowns the whole structure.

But criticism, I suppose, should be relative not absolute. To put such faults in their proper perspective one only has to turn one's back on this building and look across the square to the other new buildings that London University has been putting up along Malet Street. These have been getting progressively more commonplace and trivial in design, and the latest specimen, only just finished, at the corner of the square itself (destined, ironically enough, for the use of the Warburg Institute) sinks far below the standard of architecture that a great university should aim at. Compared with this the building on the north side of the square, reviewed in this article, represents a real step forward.

Left, recently completed building for the Warburg Institute. Architects, Adams, Holden and Pearson.

The Structures of Eduardo Torroja *by Eduardo Torroja (F. W. Dodge Corporation, New York) is the latest in what might be called the canonisation series in which the work of a single engineer is exalted for all to honour. Unfortunately, the itch to iconoclasm is irresistible to some; justice to Torroja demands that his image be removed from the pedestal on which it has been placed before someone, maddened by the incense-laden air, takes a swing at it. In this review A. J. Harris, a civil engineer, first examines what Torroja has done, and then considers why, in his view, this very fine engineer does not qualify for a place in the somewhat dubious "architectural calendar of saints."*

BOOK REVIEW

An Engineer's Engineer

Eduardo Torroja operates on the other side of a sort of curtain—there are few countries in Europe of which we know and comprehend so little as present-day Spain. But we can perhaps venture to say that there is less building and civil engineering work carried out in Spain than in this country and that what there is is less industrialized, meaning that it is itself less mechanized and is supported by smaller and less highly developed ancillary industries. Under such circumstances, a man of talent and vigour can still make a powerful personal imprint.

He has been well served by this book. The illustrations illustrate, the contents are diluted by few never-to-be-constructed projects and those few are published for clear and adequate reasons. He has written the text himself in a wryly humorous style and it has the supreme merit of revealing something of what passed through his mind during the process of design. Students and all those crammed to repletion with the structural "how" and hungry for knowledge of the structural "why," should go to it; imitate nothing, forget the conclusions, but grasp the argument.

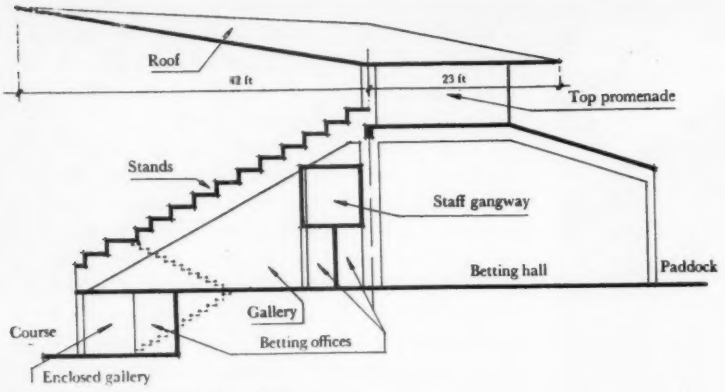
The first thing to note is the wide range of structural materials which Torroja uses. We find works in mass, reinforced and prestressed concrete, in structural steel, brickwork, masonry and timber—only aluminium is missing. The second thing to note is that these materials are often combined in unfamiliar and intimate ways. We are far from the world of the partisan camps of concrete and steel. In the Tordera bridge, for example, we have a bare steel bottom boom and diagonals; a concrete deck forms the top boom. Logical enough, and to be frank, common enough these days—but not so in 1939; Torroja moreover worked it out very neatly and avoided that combination of proliferating secondary members and knobbly riveted joints which makes the usual steel truss bridge look like the Unknown Political Prisoner.

Again, the Esla viaduct needed steel falsework; it also needed steel reinforcement; what more simple than to combine the two and embed the falsework in the concrete rib, thus extending powerfully the technique invented by his countryman Ribera. A major structure this, with a main span of 690 ft. Not, alas, a very lovely one, but that was not Torroja's fault.

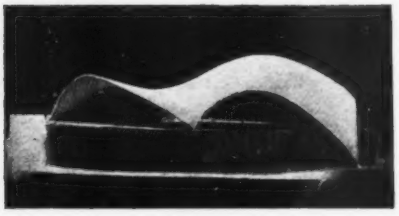
Yet again, the slender steelwork cantilever at Las Corts stadium springs directly from a substantial reinforced concrete framework. The temptation in this country would be to carry either the steelwork down to the ground or the concrete into the cantilever; how refreshing to see a man using materials with such impartiality! It is startling incidentally to see this roof discharging its rainwater straight into the void, even if a drainage well is provided beneath—far beneath.

His combination of hollow bricks and lightly reinforced concrete is used with a flexibility which constitutes a major departure from the hollow pot floor which it so closely resembles; indeed he uses it almost as if it were Nervi's ferro-cimento. He uses three layers of hollow tiles; the first, jointed with plaster of Paris needs, he says, not formwork but only a "guide"; the plaster set, he uses this layer as former for the other two layers which are embedded in portland cement with mild steel reinforcement. For steeply pitched shell roofs, this is obvious enough, for the roof of a water tower somewhat less so, but for a bridge foundation caisson floated into place it is startling.

Such eclecticism has its dangers, of which the chief is a sound mediocrity in the use of each material. Progress in any medium is usually made by the fanatic whose passion



Section through the Zarzuela Grandstand.



Model of shell for the Tachira Club.

it is to extend the limits of the structural medium of his choice; the man who adopts what he thinks is the obvious material, usually leaves the limits where they were. Now Torroja has built major structures entirely in steel and entirely in concrete; what are they like?

Steel first. One feels that this is his second string, though two structures would be outstanding anywhere. The first is the shell roof where, for the sake of economy, a concrete shell has been replaced over the modest span of 45 ft. by a triangulated steelwork structure forming a cylindrical lamina and made up from short lengths of 3½-in. r.s.j. welded together. This job, carried out in 1948, foreshadows developments in this country. The other is a sort of Lamella hangar roof at Cuatro Vientos which is of extreme elegance. In all the steel structures illustrated, assembly is invariably by welding.

What about concrete? In a book of this nature, no account may be expected of the minor tactics of concrete structures—mixing, placing, formwork, strengths, etc., matters which are nevertheless an integral part of design. On the other hand the general conception of structural form is very well covered and many useful indications of erection procedure and behaviour in service are given, if bombardment can be regarded as service. It seems fair to say that Torroja makes brilliant use of ordinary means.

He is most inspired in his concrete shell structures. Now, concrete shells have a curious history, a history which throws light on Torroja's work. Concrete shell roofs, by which is meant roofs consisting of concrete membranes which are at the same time covering and structure, seem first to have been built in France between 1905 and 1910, and by 1920 their use in that country was common. The forms were various; the conoidal shape was popular, as was the tied cylindrical shell, but many other types were used. Let us mention the corrugated shell hangars at Orly in 1925; these with a span of over 300 ft. may be regarded as the culmination of the pre-mathematical age, for shortly afterwards Finsterwalder produced an exact method of analysing the special case of freely spanning cylindrical shells. It is paradoxical to claim this as a disaster, but such in a way it was. The method was in fact an approximation; a war of doctrine waged fiercely around the matter. It became more significant to make a correct analysis than to build a roof; any shape other than the cylindrical raised such complex problems of analysis that only, it seemed, an engineer utterly regardless of his responsibilities could undertake it. There lay the disaster; there is an infinite variety of inherently stable shapes of shell and the inhibition of all but cylindrical shells with perhaps an occasional dome was retrograde. Torroja ignored this tyranny and pursued his own line of development. We find here description and details of those classical shell structures which have become part of the background of our minds; the market hall at Algeciras, the Fronton Recoletos, the Zarzuela grandstand, works which make their author seem a friend of our youth.

He is well equipped to break out of the mathematical marshland. His contributions to the analysis of shells are notable; when analysis fails his laboratories provide a ready means of falling back on the designer's second best, the making and breaking of models. The combination of his techniques of analysis and model testing has enabled him to design the latest of his shells, the project for the clubhouse at Tachira in Venezuela, with a freedom which is inevitably alarming; alarming in its apparent wilfulness and independence of structural or functional needs, alarming too in its cost, since doubly curved structures of this degree of complexity are not cheap to form. Mathematics are now catching up and it looks as if any shape at all may one of these days become amenable to analysis; will shells then be designed with a sculptor at one hand and an electronic computor at the other? Perhaps, in which case we are within reach of the completely organic roof in which structural necessities become less and less exigent. First, however, we must concentrate on the remaining problem, not without its importance, of how to build shells cheaply. Such is the perversity of things that if we solve it, a new set of

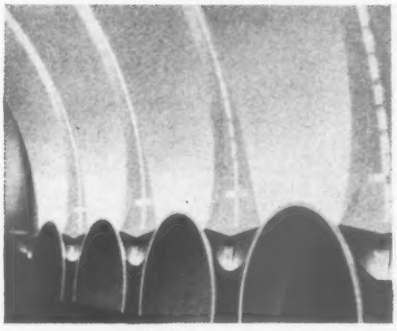
The Pergola at Costillares.

restrictions to design, economic this time, will take the place of the old.

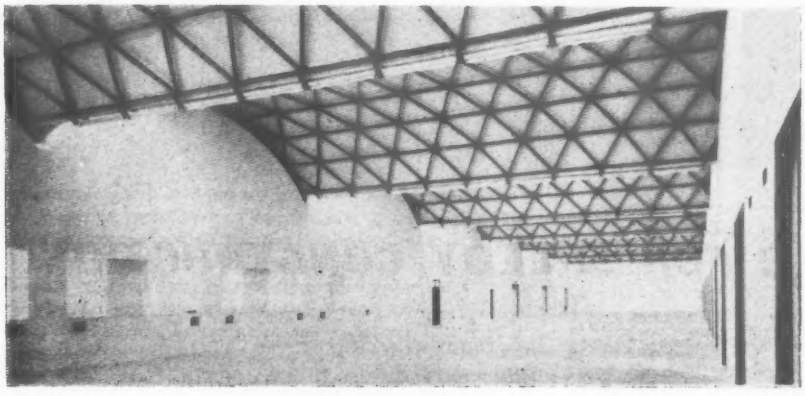
An intriguing point is the use by Torroja in many of his structures of spiral curves. He mentions that the profile of the pergola at the Costillares building is a Bernouilli's lemniscate and that the soffit of the shell in the church at Pont de Suert is a logarithmic spiral; there is a suspicion of the use of exotic curves elsewhere, notably in the arch of the Aire viaduct, whose curve is certainly neither parabolic nor elliptic.

The interest of these curves may be explained as follows: two points on a curve define its direction, three its curvature and four its rate of change of curvature. Now the eye grasps immediately the direction of a curve, is consciously sensitive to its curvature and is unconsciously sensitive to changes in curvature. A sharp break in line is immediately obvious; a sharp change in curvature, as when an arc of a circle leads into a tangent or even into an arc of different radius leaves an uneasy impression. The effect is not marked in very flat curves, but when the change of direction is large, the curves commonly used, the ellipse and the parabola, are not really very attractive. Now in the curves to which Torroja refers the curvature changes regularly, which gives them their use in highway and railway engineering as transition curves; mathematical folklore has it that they are found in nature in seashells and in art in the curves of furniture of the better periods—indeed they come naturally to the untrammelled hand. Are they of general use, or are they a mathematical curiosity of the golden number type? Certain it is that the parabola with its identity with the bending moment diagram of a uniformly distributed load (loads in practice never are) has enjoyed an unjustified popularity; a curve which is easier on the eye may replace it with advantage in the sort of haunched beam which prestressing is making so popular for large continuous spans.

As to the last section of the book which deals with a number of churches and chapels built in concrete shells or in timber and masonry, an architect should pronounce on these; suffice it to say that seldom have pointed arches looked less Gothic.



The Pont de Suert Church.



Above, a triangulated shell roof. Below, the Tordera Bridge.

The lasting impression of this book is of sound engineering applied to widely differing works using the full gamut of engineering materials in an economic climate very different from ours. Torroja is a complete engineer, the master of the instruments of his art, perhaps with a preference for the 4H chisel-pointed pencil to the Easiflo pen; an engineer's engineer.

What is he doing in this *galère?*

Looking at the current names of power we find that they include engineers of widely different capabilities and achievements, with one thing in common. They may be great innovators or users of familiar techniques, they may have built much or little, they may have built cheap or dear, all have developed new structural shapes for the use of the architect. These new shapes need not be numerous; Maillart and Nervi each developed two oft-repeated structural forms. Note, too, that new shapes for engineering use do not qualify; who remembers the originator of the arch dam, the buttress dam, the tear-drop reservoir, the hyperbolic cooling tower, the cable suspension bridge? As for Messrs. Pratt, Warren & Whipple, their popular trusses may have gained them the eponymous fame of the 4th Earl of Sandwich, but they share his personal oblivion.

Does Torroja qualify? His achievement is more that of a man who takes familiar shapes and uses them with freedom and skill. His shells are quite outstanding; they are also all different. If he does not qualify, does it matter? Does a place in this architectural calendar of saints represent any reality? It certainly represents fame; will that fame be one which lasts? It is doubtful. It is a reasonable prediction that a century from now it will be as difficult to distinguish a Torroja from a work from the hand of Joe Binks, the overworked chief designer of that firm around the corner as it is now to tell a Telford from a Rennie or a Mozart from a Haydn; in the meantime, the true innovations, the seminal works may be found to be quite other.

BISON WIDE SLAB FOR SPEEDY CONSTRUCTION

AS USED IN THE FLATS AT HARTINGTON ROAD, LAMBETH

The BISON Wide Slab is cast in one piece up to 7 ft. 2 in., as shown in the cross-section above. It is designed for normal loads and spans, the width being dependent on the lifting capacity of the crane. Almost any type of tower or climbing crane which can lift one ton at its maximum radius is suitable. Units for floors up to three storeys can be fixed by most types of mobile cranes and many contracts are carried out by Concrete Limited in this way.

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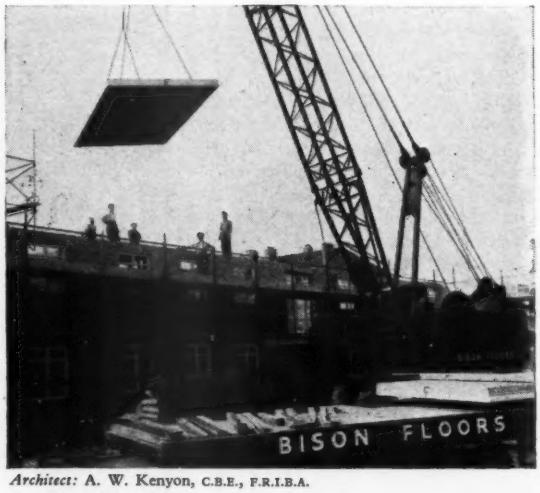

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technical section

THE INDUSTRY

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Shredding up rubbish

Motor driven shredders in the position normally occupied by the sink trap are not new, but have not, so far as I know, been very widely used in this country, tending to be seen mainly at exhibitions and in the houses of the sales staff of the companies producing them. However, now that many domestic boilers are designed to burn only limited types of fuel, and are liable to become temperamental when fed with cabbage stumps and chop bones, the demand for these fittings may well increase. The latest is made by Hotpoint, and sells at £37 10s. plus p.t.

(new rate) of £8 4s. 7d. It is driven by a ½ h.p. motor (say 200 watts) and will deal with 3½ pints of scraps and small bones at a time with a water flow of about two gal. The cutters are stationary and the scraps are flung against them centrifugally by the rotating impeller: fingers cannot be trapped as the motor cannot be switched on until the cover is in position. (*The Hotpoint Electric Appliance Co. Ltd., Crown House, Aldwych, London, W.C.2.*)

BRIAN GRANT

10 DESIGN: BUILDING TYPES
warehousing 4

In this, the fourth and last article in this series,* the author, A. B. Waters, discusses the handling of goods outside the warehouse, and considers in turn the arrangements which must be made for the despatch of goods by rail and by road. On the all-important issue of whether or not to have a raised floor and loading bank, he points out that the fork truck has made the raised loading bank no longer essential, but shows how a good case can still be made for it on occasion and concludes that each case must therefore be assessed on its merits.

The handling of goods with a warehouse, mainly by means of pallets and fork lift trucks, has been described in detail in the first and third articles in this series. Of equal importance is the handling of incoming and outgoing goods. The full benefit of palletization is derived only when goods are palletized at the factory as soon as they are manufactured and continue to be handled as unit loads until they are in the hands of the consumer.

Methods of transport

Goods may be transported by any of the normal means, but by far the most common in this country are road and rail, and these are the only ones to be considered in detail in this article. For fairness' sake, however, we make a passing mention of water transport, if only because an attempt is being made by British Transport Waterways to foster an increased use of our canals. To remind readers of this we show in Fig. 1 the Cadbury Waterside Depot at Birmingham, though this

Fig. 1. Cadbury waterside depot, Birmingham.

* Previous articles in this series appeared on April 24, June 5, and June 12 1958.

technical section

Fig. 2. BR covered van for carrying palletized goods.

Fig. 3. Fork lift truck unloading pallets from covered van.

Fig. 4. Loading a lorry with goods from a rail wagon using a movable platform.

handles only a small fraction of the firm's total volume of traffic. Of much greater significance than the canals in this connection is the fact that palletization is being used increasingly in transit sheds and warehouses at the docks. The whole question of the international adoption of palletization which this poses must regrettably be left outside these articles.

Railway transport

British Railways have developed rolling stock especially for carrying palletized goods, the recommended sizes of pallets being 32 in. × 40 in., 36 in. × 40 in. and 40 in. × 40 in.

The ordinary standard covered van may be used, the pallets being placed in position with plywood shields between them which are packed with straw mattresses to prevent movement of the load.

The covered van designed for carrying pallets is illustrated in Fig. 2. It has a central doorway of a width equal to half the length of the van. The floor is strengthened to take a 6 ton load, to enable a pallet truck to be used inside the van. Movable partitions, held in position by movable posts are used to form separate compartments and the load is secured against movement either by mattresses or by an expanding shield*. Sliding doors are used for ease of opening when the van is alongside the railway platform. The gap between the van and the platform is covered by a bridge plate over which the pallet truck can work to take goods from inside the wagon on to the platform, where they are deposited in a place from which they can be picked up by the fork lift truck for final placing in the stack.

The use of a raised loading bank can be avoided if the goods are unloaded direct from the van with a fork truck, either direct (Fig. 3) or with a pallet truck working inside the van (Fig. 2). The movable platform used by British Road Services (Fig. 4) enables a lorry to be loaded direct from a railway wagon using a pallet truck only.

The normal height of a railway platform is 3 ft. 6 in. above the top of the rail, and this, and other clearances to be observed in railway work, are given in Fig. 5. It is desirable to put a canopy over a rail loading bank, so that goods are protected from the weather during unloading. This canopy can be extended with advantage to cover the rail siding as well (see photograph of Perry Barr Warehouse of SPD Limited†). The canopy must be provided with a continuous ventilator to allow smoke to escape if a steam engine is being used for shunting.

The dimensions to be observed in laying out rail sidings are given in Fig. 6. Information regarding railway construction is contained in HMSO publication *Requirements for Passenger Lines and Recommendations for Goods Lines of the Minister of Transport in regard to Railway Construction and Operation*. The Engineering Department of the appropriate Region of British Railways should always be consulted in the early stages of a project to construct a siding.

Road transport

It is worth while emphasizing that the full advantages of palletization are derived only if goods are handled as unit loads (*i.e.*, on pallets) throughout, and if all goods handled in a warehouse are palletized in this way. It will be appreciated that if unpalletized goods are delivered to a warehouse where palletization is used, the individual cases must be unloaded singly and placed on pallets before the goods can be stacked. This is necessarily a slow process, and delays the turning round of vehicles. In this context it is worth noticing that palletization effects an economy not only in ware-

*A double board with springs between.

† Fig. 1 in warehousing 2 (AJ June 5, page 865).

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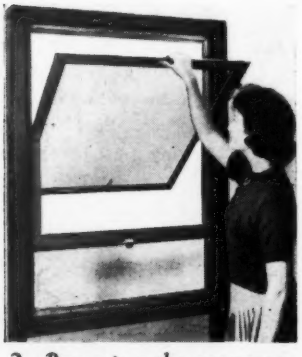

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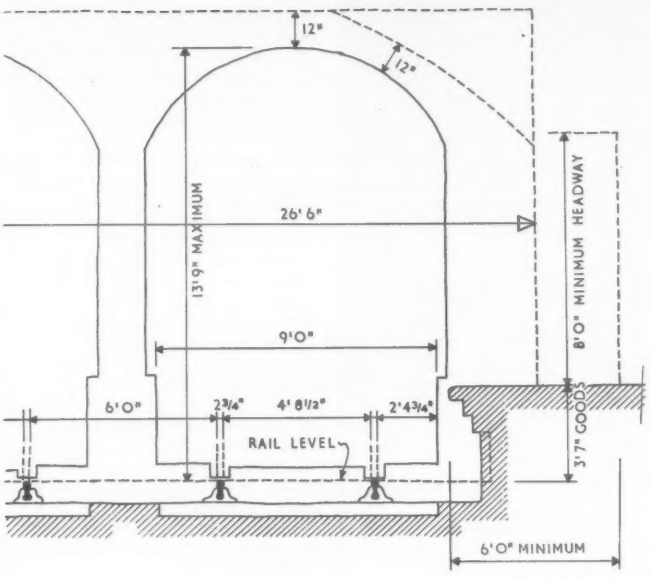

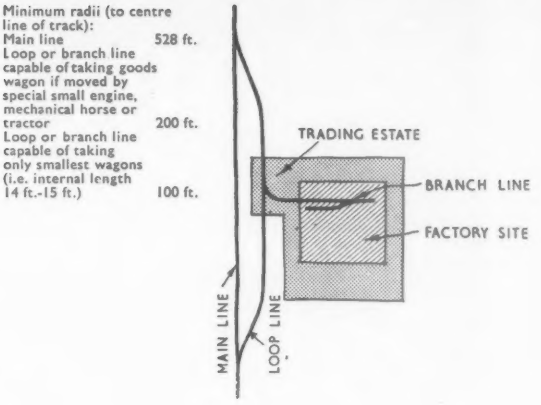

Fig. 5. (left). Clearances to be observed in railway work.

Fig. 6. (above). Layout of railway sidings.

house space and in handling within the warehouse, but also in transport, since fewer vehicles will be needed to transport the same quantity of goods.

Incoming goods

The ordinary lorry with a flat bed can be used to carry palletized loads, which in this event must be sheeted. Many manufacturers use vehicles of special design to carry goods between factory and distribution warehouse, generally with roller shutters on the two sides to permit side loading. An example of this type of vehicle is that used by W. & R. Jacob (Liverpool) Limited for the transport of biscuits, illustrated in Fig. 7. British Road Services use a vehicle with a simpler body (Fig. 8) which has a solid roof and ends, with curtains at the sides.

A palletized road vehicle can be unloaded with a fork lift truck operating at road level, providing there is sufficient space available. With heavy loads it is desirable to unload from each side alternately, so that the springs can come up evenly as the load is taken off. For this operation a clearance of 12 ft. is necessary on each side and at the tail board end of the vehicle. Such unloading should be done under cover, and there must be sufficient height to enable a man to get on top of an open lorry to unsheet it. Goods can be taken into the warehouse on the fork truck if the floor is at road level, or placed on the loading bank in a warehouse with a raised floor. Alternatively, in the latter case, a lorry with a strengthened floor can be off-loaded with a pallet truck, using a bridge plate, if the bed of the lorry is level with the loading bank. The difficulty of doing this will be appreciated when it is known that not only is there no standard tail board height, but that this height can vary as much as 4 in. as the springs recover when the load is taken off.

Dock levellers

One way of overcoming this change in height is to use a "dock leveller." This is a device that automatically adjusts the height of the lorry to the dock, when the floor below the lorry must be able to move up and

Fig. 7. Octopus used by W. & R. Jacob (Liverpool) Ltd.

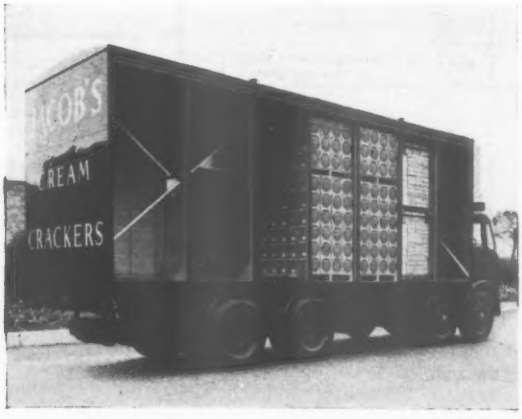

Fig. 8. BRS covered vehicle for carrying palletized loads.

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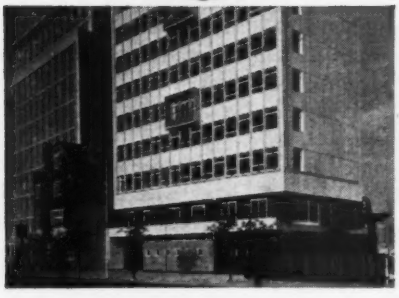

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technical section

down, or adjusts the height of the dock to the lorry, by having a movable section in the dock which rests on the bed of the lorry and can move with it. Two varieties of the latter type call for mention. The Wayne Dock-o-matic is a hydraulically-operated tilting ramp hinged to the loading dock and adjustable to all lorry tailboard heights. This was illustrated in the AJ Information Sheet 35.Z1, published May 1, 1958.

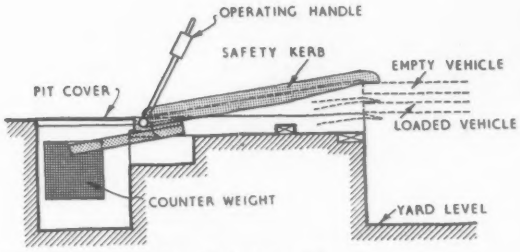

Fig. 9. Counterbalanced dock leveller.

The Autoramp, manufactured by Dienst Limited, is illustrated in Fig. 9. This uses neither electrical nor hydraulic gear, but is counterbalanced by a ballast box. A dock leveller working on a similar principle, but without the operating handle, is marketed by G. Hunter (London) Limited.

With a fixed height loading dock it is better for the dock to be below the tailboard. A reasonable height is 3 ft. Ramping up to a vehicle is better than ramping down, because in the latter case the ramp may need to be extended well into the vehicle. It also permits the doors to be opened after the van has been reversed into position.

Despatch

Goods despatched from factory to warehouse or distribution depot may be transported by rail or road. Loading into a rail truck is the reverse of the process of discharging which has already been described, and is similarly carried out with the fork truck and the pallet truck. Goods which have to be transported by rail from a factory which is not rail-connected may be taken in a railway container which can be loaded at the factory and placed complete on a flat wagon at the railhead. Alternatively the pallets can be taken by road to the railhead, where the loading is a similar operation. Loading into road vehicles at the factory again is similar, and there are few problems since the goods are loaded in bulk.

Despatch of goods from distribution depot

The preparation for despatch of goods from a distribution depot will obviously depend upon individual requirements, but there are certain principles which have to be followed. In most cases there is no question of bulk loads, and a van load for distribution consists of a number of different commodities arranged in a number of different loads for delivery to individual retailers. For this reason it is necessary to lay out each vehicle load so that it can be placed in the delivery van for removal in the correct order as the journey is made.

The loads are laid out (assembled) in the assembly area, which must be adjacent to the outgoing side of the warehouse to enable the vehicle to be loaded without further movement.

The dimensions of the assembly area will have to be suited to each case and require a good deal of study if the area is to be assessed correctly. It will depend upon the type of goods to be despatched, method of packing, size of vehicles used and other factors which will be governed by the method of operation used by the firm concerned. In many cases the methods have been established, but where they have not the architect must make his own observations, so that in consultation with the warehouse manager the most convenient and most economical space can be determined. A long time may have to be devoted to such a study, and various methods tried out, especially if mechanical handling is being used for the first time. The architect is well fitted by his training in planning to carry out this kind of observation, which forms the basis for the successful planning of any building. (In the hands of the specialist it is called method study.)

After the load has been assembled it must be loaded into the van. A portable conveyor* is used for this purpose, a gravity conveyor being suitable if the inclination is downwards and a powered conveyor if the inclination is upwards.

Raised loading bank or floor level with ground

Traditionally a warehouse had a raised ground floor, so that goods could be offloaded at tailboard height. If the building is rail-connected, or if it is regularly served by road vehicles of known height, there are advantages in having a raised bank on the incoming side, when clearly a raised loading bank should be used on the outgoing side (assuming a level site). To construct a raised floor on a level site is, however, an expensive operation. Heavy loads have to be carried and either a suspended floor must be used or a wall provided round the perimeter of the building of sufficient strength to take the thrust from solid filling. If it is accepted that incoming goods are to be offloaded with a fork lift truck, the raised loading bank is unnecessary; indeed it is undesirable since it restricts the movement of the fork truck, which requires a single level if the goods are to be handled from the unloading point into the stacking area without transferring to a second truck. On the outgoing side the raised loading bank is equally unnecessary, since a powered conveyor can be used for quite steep slopes.

The new warehouse at Mansfield for W. & R. Jacob (Liverpool) Ltd. has been designed on this basis (Fig. 10). Biscuits are delivered in the Octopus eight-wheeled van (Fig. 7), which is off-loaded by means of a fork truck, and stacked. Outgoing loads are loaded into vans by means of a powered conveyor.

British Road Services have also concluded that raised loading banks are unnecessary and are constructing their new depots with level floors throughout.

*See warehousing 3 (AJ June 12, page 905).

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technical section

There seems to be an overwhelming case in favour of the level floor, but it is unwise to make generalizations, and both the Express Dairy Co. (London) Ltd. and SPD Ltd. favour the use of raised loading banks for loading delivery vans with palletized loads.

In an article in *Mechanical Handling* (June 1956) in which fork truck operation at the South Morden Bottling Depot is fully described, R. Harvey, the Transport Director, states:

1. A fork truck operating directly from floor level necessitates a lift of from 4 ft. to 5 ft. Operating from a loading bank at vehicle floor height, the lift is reduced to about 6 in. or 7 in. Since the major proportion of a day's fuel or electricity consumption is used in lifting and stacking, loading from the higher level is an economy.
2. Loading a vehicle from the ground is a much slower operation than loading from a bank.
3. Crates of milk bottles are not self-locking in stacks, and may therefore be unstable. When lifted to a height of 4-5 ft., the topmost crates are above eye level and the truck operator cannot know if the load is off balance (his first knowledge is a tremendous crash). When operating from a bank, with a lift of 6 in. to 7 in., the operator can see if the load is secure.

The plan adopted by the Express Dairy Co. employs recessed loading bays, so that a vehicle can be loaded from either side or at the tailboard.

Palletized loading of delivery vehicles

Emphasis has continually been laid on the need to preserve unit loads, and ideally a load palletized at the factory should not be broken down until it reaches the consumer. This cannot always be achieved in practice, and where palletized loads are used in delivery the pallets may have to be loaded in separate orders, and in the correct sequence for deliveries, at the assembly area.

The next problem is to find a suitable method of loading pallets into a delivery van, which involves using a delivery van of special design.

Materials that can safely be delivered from sheeted, open vans present no problem, and side-loaded vans, carrying four pallets, have been in use for many years by Pepsi-Cola and other firms in the soft drinks industry (see Fig. 11).

Fig. 10 (left). Plan of Jacobs warehouse at Mansfield. [Scale: $\frac{1}{32}$" = 1' 0"]

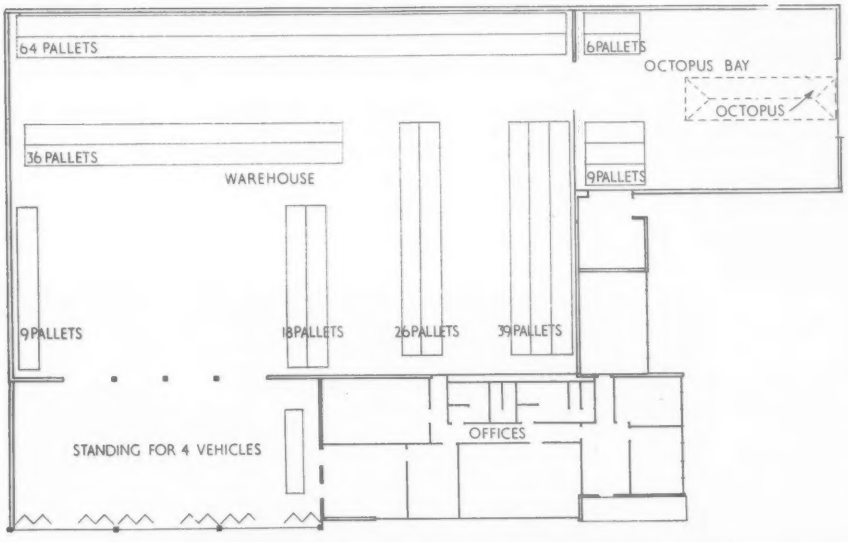

Fig. 11 (below left). Side-loading pallets for the delivery of Pepsi-Cola.

Fig. 12 (below). Unit load for delivery being placed in van by pallet truck working over a bridge plate (SPD Ltd.).

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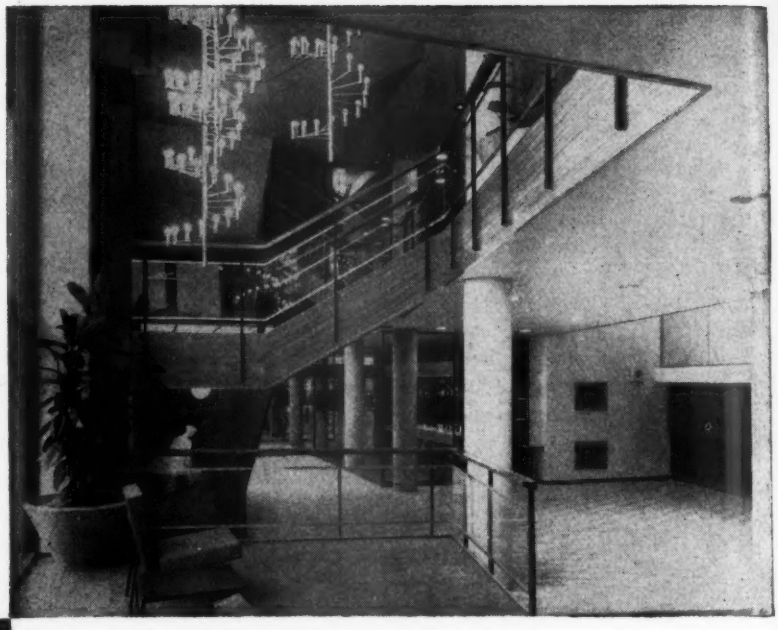

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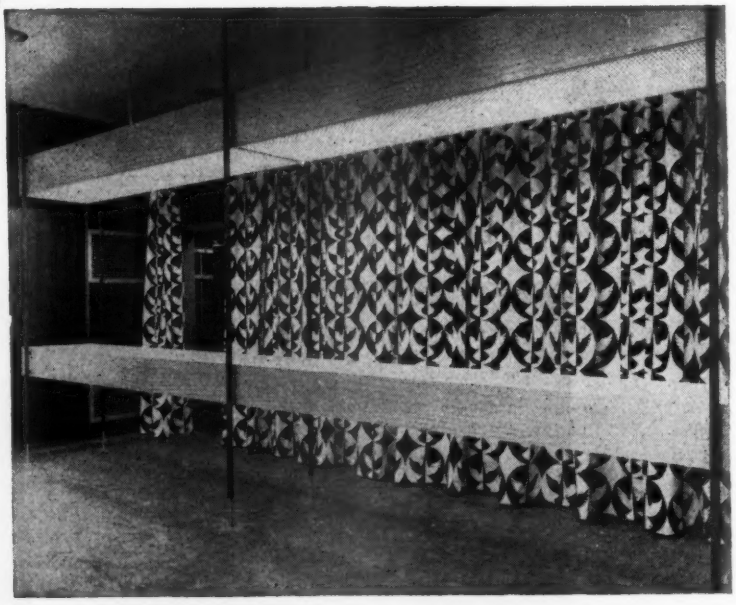


technical section

Covered vans present a different problem. One method of loading a van from the rear is to use sliding trays fitted one above the other, so that when a pallet has been placed on the uppermost tray it can be moved to the front of the van, and this process is repeated until the van is loaded. An objection to this is that the space taken up by the trays reduces the pay load of the vehicle. As an alternative, post pallets fitted with castors can be used, which after being placed on the vehicle with a fork truck are pushed into position within the vehicle by hand. A third method now used by SPD Ltd. employs delivery vans 7 ft. 6 in. in width which can accommodate six pallets which are loaded in the van on a pallet truck (Fig. 12) and it is proposed to use 5½-ton vehicles which will carry eight pallets, because of the extra body length. Loading by this means has reduced the loading time to 15-20 minutes for one man instead of 45 minutes for two men.

Planning for motor vehicles

Space requirements for motor vehicles will obviously be determined by the overall size of the vehicle and its manœuvrability.

Particulars of vehicle sizes are listed in the publication *British Commercial Vehicles for the World* which is produced by the *Commercial Motor* in association with the Society of Motor Manufacturers and Traders Ltd.* This lists chassis sizes and gives turning circles, but does not refer to body sizes, which are built to the requirements of the individual user. In assessing the space to be allowed for a vehicle it is not enough to know the turning circle, since the overhang of the body must also be allowed for. The actual space occupied by a vehicle is referred to as the "swept area," and this can only be determined exactly if actual body dimensions are known. It is a mistake to plan for exact requirements since changes must inevitably occur in body design, and some overall scheme must be adopted.

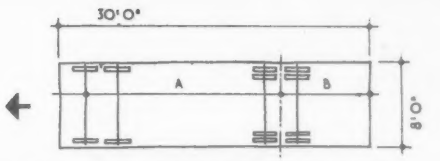
Permissible overall sizes are given in the Regulations contained in *The Motor Vehicles (Construction and Use) Regulations* 1955 published as Statutory Instrument 482.1955. This recognizes the following classes of vehicle:

4 axle vehicles. 24 tons gross vehicle weight. Rigid 8-wheeler. Articulated 8-wheeler.

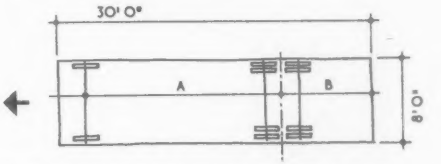
3 axle vehicles. 20 tons gross vehicle weight. Articulated 6-wheeler.

2 axle vehicles. 14 tons gross vehicle weight. Rigid 4-wheeler.

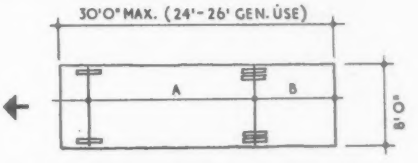
These are illustrated diagrammatically in Fig. 13, together with the maximum sizes of such vehicles. The regulations also limit the amount by which the body overhangs the chassis to half of the axle spacing. This is also shown in Fig. 13, while in Fig. 14 are a number of simplified elevations of seven types of vehicle actually in use. From the above information it will be seen that while vehicles can operate satisfactorily in a space calculated on their turning circles in a roadway where the body can safely overhang the kerb, within buildings or where pedestrians are to be considered it is the swept area that determines the space requirements, Fig. 15.



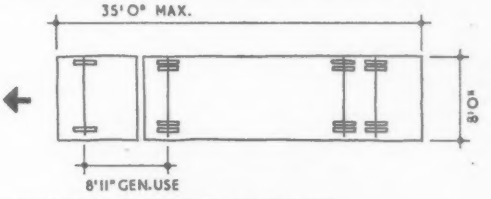
Rigid 8 wheeler (4 axle vehicle) Gross Vehicle Weight 24 tons. Turning circle 75 ft. diameter.



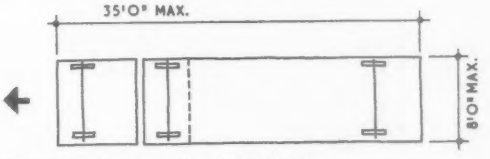
Rigid 6 wheeler (3 axle vehicle). G.V.W. 20 tons. Turning circle varies, max. 75 ft. diameter.



Rigid 4 wheeler (2 axle vehicle). G.V.W. 14 tons. Turning circle 60 ft.



Articulated 8 wheeler (4 axle vehicle). G.V.W. 24 tons.



Articulated 6-wheeler (3 axle vehicle). G.V.W. 20 tons.
8 tons Commercial Load = 12½ tons G.V.W. 10 tons CL = 14 tons G.V.W.

Fig. 13. Limiting sizes of vehicles permitted by Ministry of Transport Regulations.

In arranging the extent of the forecourt over which vehicles are to operate, allowance must be made for vehicles to move on one lock if speed of movement is to be maintained. Vehicles backed up to a building for tailboard loading are almost universally spaced at 10-ft. centres. This means that a vehicle cannot start to turn when driving forward until it is clear of the one next to it or any other obstruction, such as a stanchion supporting a canopy over the loading position.

A useful guide for the clear space required in front of any obstruction is, for rigid as distinct from articulated vehicles:

Vehicle length	Distance clear of obstruction
20 ft.	30 ft.
24 ft.	36 ft.
30 ft. or more	50 ft.

* Bowling Green Lane, E.C.1 (Terminus 3636).

LIGNACITE

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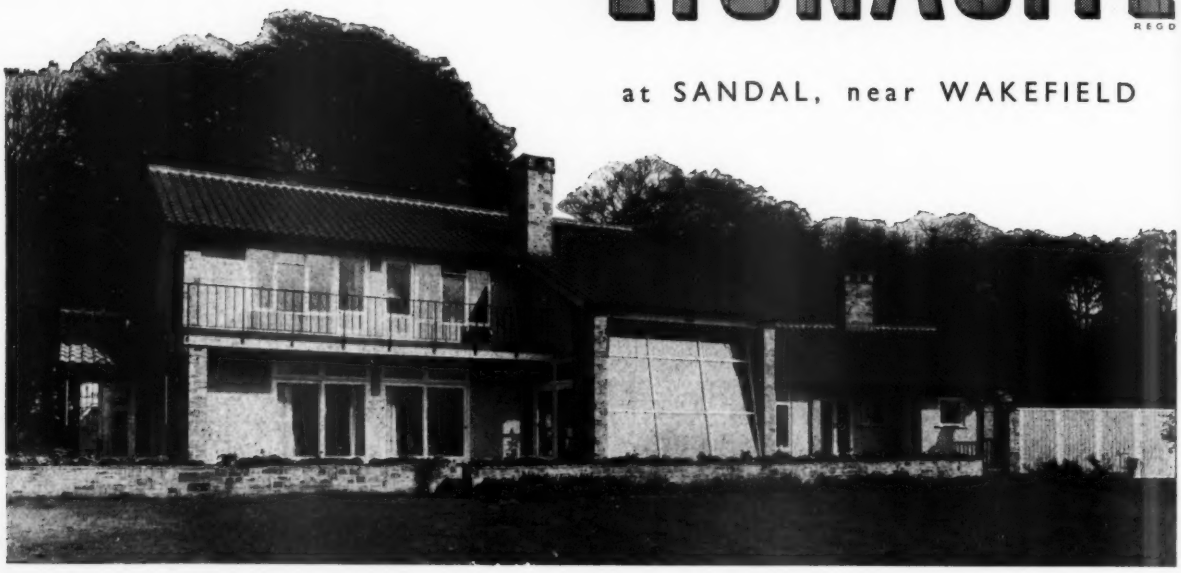
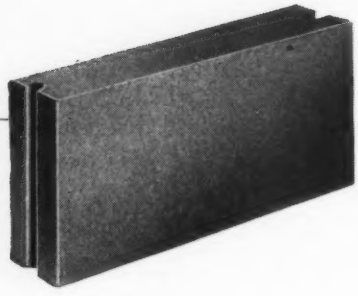
at SANDAL, near WAKEFIELD





Residence for I. Donner Esq., at Sandal, nr. Wakefield.
Architects: Messrs. Gillinson & Barnett, A.A.R.I.B.A., Leeds.
Quantity Surveyors: Messrs. Wakeman, Trower & Partners, Leeds.
General Contractors: Messrs. Horace Stringer, Skelmanthorpe.
Lignacite Blocks were specified for the Inner Leaf and Partitions throughout.

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technical section

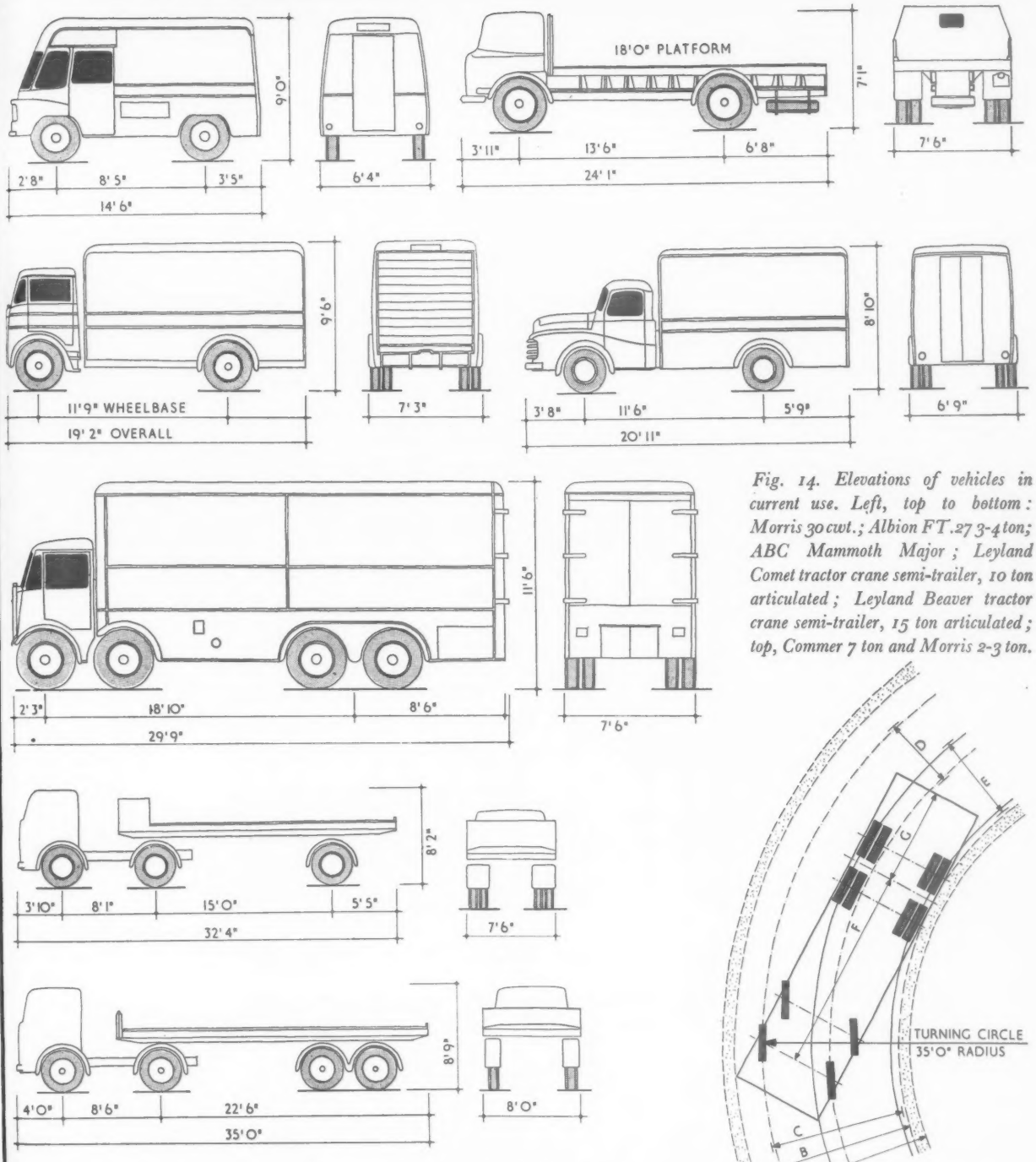


Fig. 14. Elevations of vehicles in current use. Left, top to bottom: Morris 30 cwt.; Albion FT.27 3-4 ton; ABC Mammoth Major; Leyland Comet tractor crane semi-trailer, 10 ton articulated; Leyland Beaver tractor crane semi-trailer, 15 ton articulated; top, Commer 7 ton and Morris 2-3 ton.

A (road width): 16 ft. 3 in.
B (swept area): 14 ft. 3 in.
C (kerb width over tyres): 12 ft.
D (width over hubs): 7 ft. 11½ in.
E (width over tyres): 7 ft. 11 in.
F (wheel base): 17 ft. 9 in.
G (overhang): 8 ft. 6 in.
N.B. Dimension G must not exceed 50% of dimension F.

Fig. 15. Diagram showing "swept areas" for a typical rigid eight-wheeled vehicle measuring 30 ft. by 8 ft. which is the maximum allowed under the present regulations.

Less space is required for manœvring of articulated vehicles. These also show economy in operation, since the trailer portion can be detached for loading and unloading, while a trailer already loaded can be hooked up to the same power unit.

Regulations do not impose any limit for the height of a vehicle (apart from passenger vehicles, which are limited to 15 ft. high) but clearly this is controlled by practical considerations. A vehicle which exceeds 12 ft. in height is unusual (the Guinness tanker, which looks enormous, is 12 ft. 4 in. high to the top of the highest manhole cover) and in practice a clear height of 13 ft.

technical section

for door heads or canopies is sufficient for most cases. British Road Services use canopies of this height for general purposes in their own depots, with part of the canopy raised to a height of 15 ft. for higher vehicles, but 15 ft. is regarded as a maximum.

Some economy can be made in the turning space required in front of a loading dock if a saw-tooth pattern is used. Two examples are given: a grocery warehouse at Nottingham (Fig. 16) and Berger's Paint Warehouse at Chadwell Heath (Fig. 17). In the former case the ends of the enclosure are open, and the distance from the front of the loading dock to the enclosure is 33 ft. In the latter example openings are placed in the enclosing front wall, one to each pair of van positions. Columns between openings are at 30-ft. centres, but the effective dimension for entry is that shown at right angles to the path that the vehicle must take.

Although the "saw-tooth" loading dock results in a saving of space to the front, the length of the loading dock must be increased, and in the examples shown the length of dock per vehicle is 18 ft. and 17 ft. respectively, instead of the more usual 10 ft. for vehicles at right angles to the dock.

Dock levellers of the counterbalanced type have been installed in the Berger warehouse.

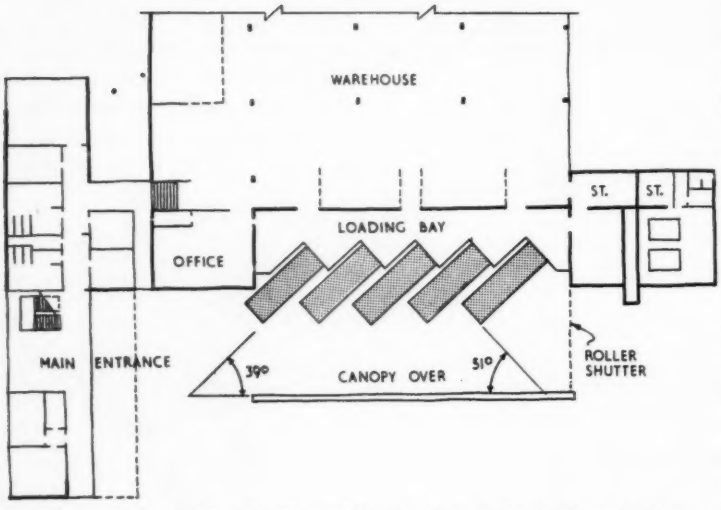


Fig. 16. Plan of loading bay at Nottingham (architects J. M. Austin-Smith & Partners) [Scale: 1/8" = 1' 0"]

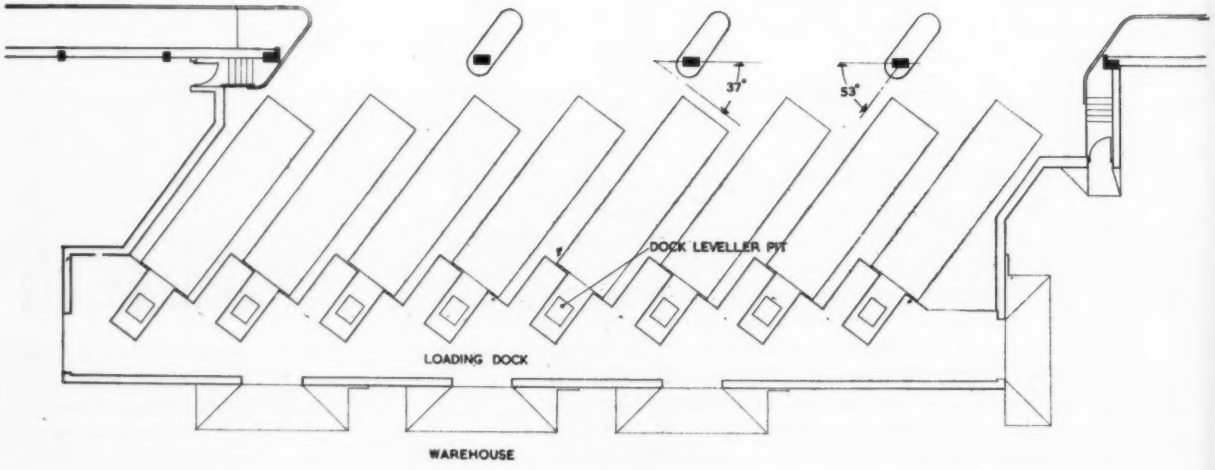
Fig. 17. Plan of loading bay at Chadwell Heath (architects Stanley Beard, Bennett & Wilkins) [Scale: 1/8" = 1' 0"]

Siting of warehouses

The siting of warehouses generally and of distribution depots in particular is an important matter, if unnecessary mileage is to be avoided. It is also desirable to avoid congested routes, which can be equally wasteful of time and fuel. A study of the area to be served will determine its "load centre" and the warehouse should be sited as close to that as possible. The site should be directly accessible from a main road, preferably a ring road in the case of a depot close to a large town. If the depot is to be rail-connected, nearness to a main line may be the deciding factor. Thereafter the normal factors in the selection of a site must be considered, but economy in travelling distances may outweigh additional costs in building on a site which might for other purposes be regarded as unsuitable. The site area must be adequate, to allow sufficient space for the easy movement of vehicles. This is illustrated by the block plans of buildings referred to in this series. Reference should also be made to the Heinz Warehouse at Cardiff, by Grenfell Baines and Hargreaves, illustrated in the JOURNAL for March 28, 1957 and Farrands' Warehouse at Nottingham by J. M. Austin-Smith & Partners, illustrated in the JOURNAL for April 18, 1957.

Acknowledgments

The author acknowledges the assistance he has received from many sources, including the manufacturers of equipment who have readily made available material for illustrations. In particular mention should be made of British Road Services, SPD Ltd., Fry-Cadbury, W. & R. Jacob (Liverpool) Ltd., The Dunlop Rim & Wheel Co. Ltd., Pepsi-Cola, The Express Dairy Co. (London) Ltd. and the Editor of *Mechanical Handling*. Unless otherwise stated, the architects for the buildings illustrated were Llewellyn Smith and Waters.



building illustrated

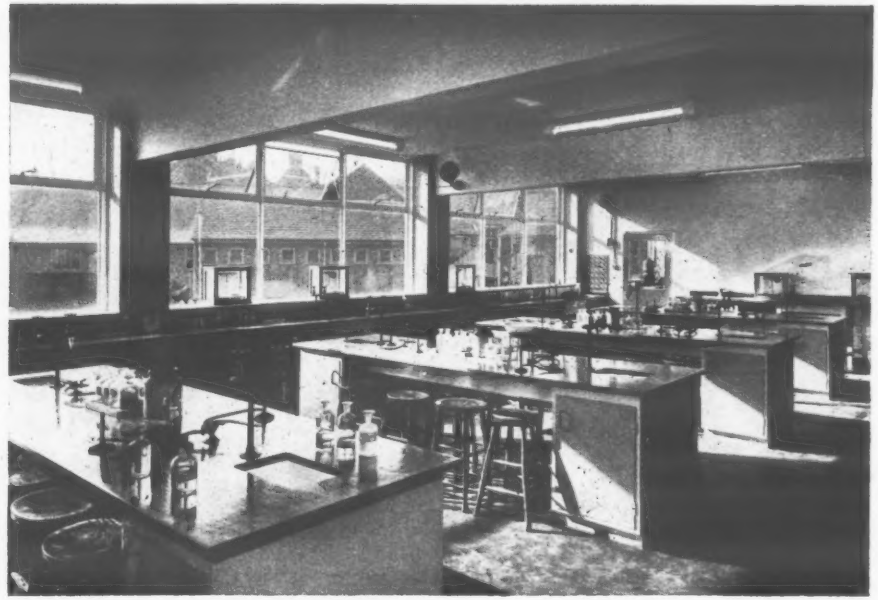
LABORATORIES

1. at WESTCLIFF HIGH SCHOOL FOR BOYS, SOUTHEND-ON-SEA; designed by P. F. BURRIDGE, borough architect; P. G. LOUTSIS, chief assistant architect C. D. OGDEN, assistant architect; quantity surveyors REEKS and MANN

2. at MAGDALEN COLLEGE SCHOOL, OXFORD; designed by BOOTH, LEDEBOER and PINCKHEARD; quantity surveyors WAKEMAN, TROWER and PARTNERS

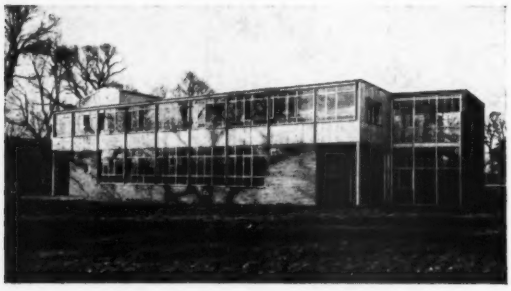
Pressure on school space, perhaps the newly discovered urgency to train more technologists, is producing buildings of the kind illustrated this week. (A similar science block for a school at Sherborne, Dorset, was published on November 21, 1957). Both provide broadly the same facilities, both are outside the London area and both are two storey buildings, but one is considerably larger than the other.

Laboratory interiors of Westcliff (left) and Magdalen (right)—steelframed and load bearing brickwork buildings respectively. Notice the difference this makes in the sizes of structural members. Magdalen was designed with the utmost economy, hence the fair face brick walls, softwood joinery, linoleum floor and overhead unit heaters as compared with plaster, hardwood and forced air heating of Westcliff.

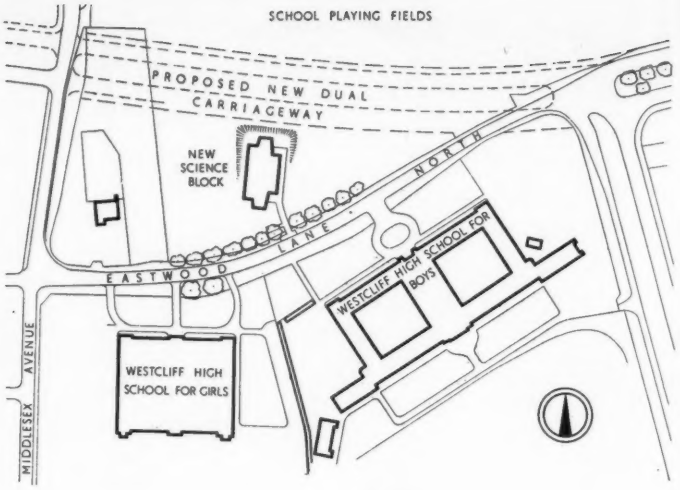


building illustrated

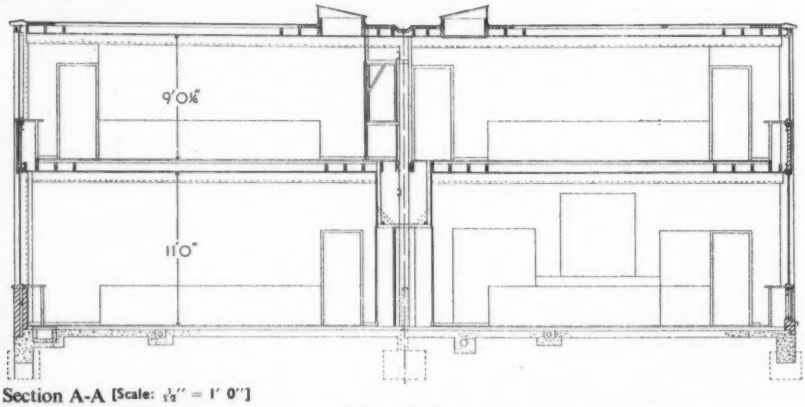
Westcliff High School



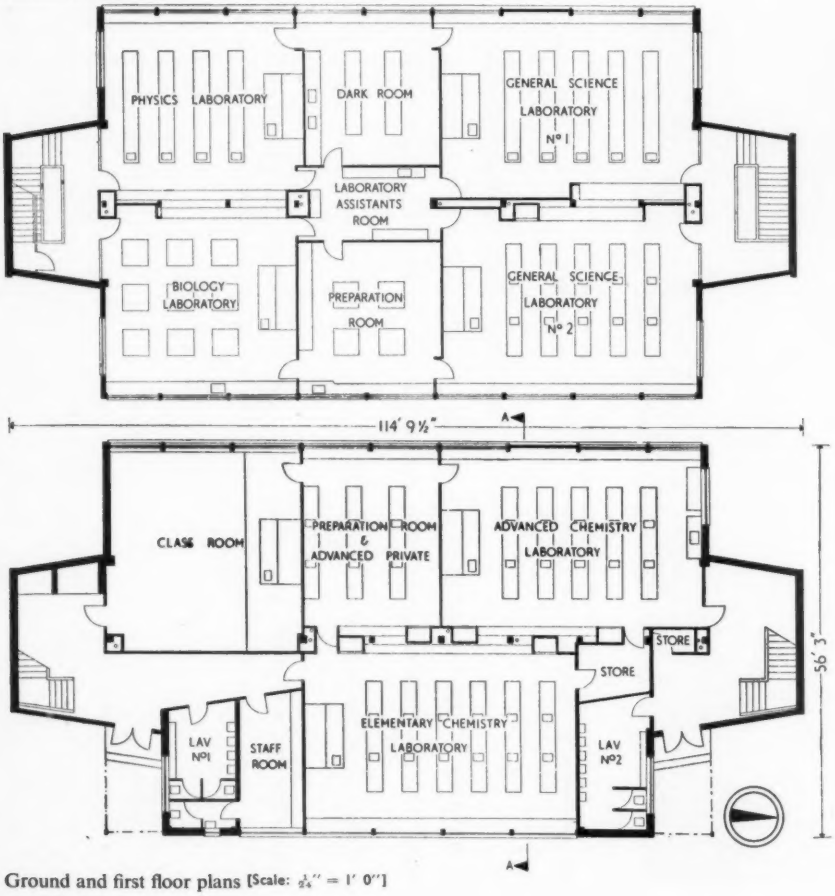
The east elevation. This steel-framed building has cavity walling up to first floor and timber framing with 2-in. strawboard and boarded facing above.



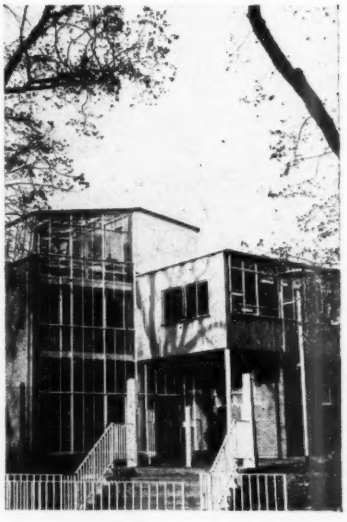
Site plan



Section A-A [Scale: $\frac{1}{16}$" = 1' 0"]



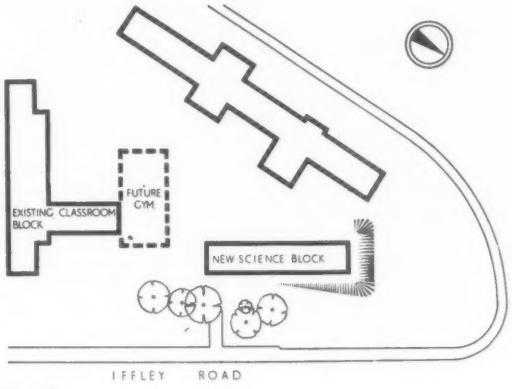
Ground and first floor plans [Scale: $\frac{1}{16}$" = 1' 0"]



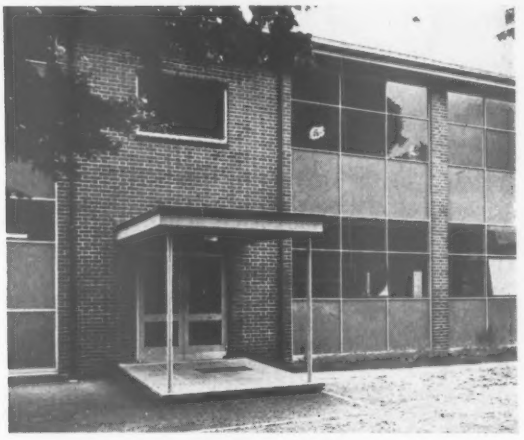
Staircase at the south end which extends a storey higher than the rest of the building to house a conservatory.

building illustrated

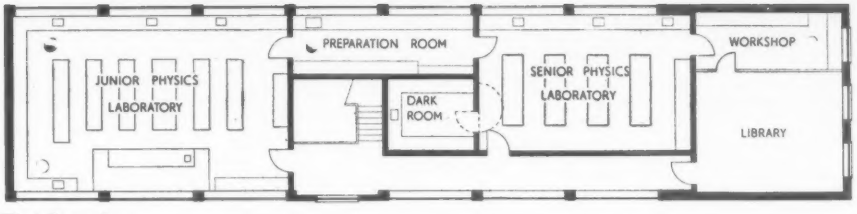
Magdalen College School



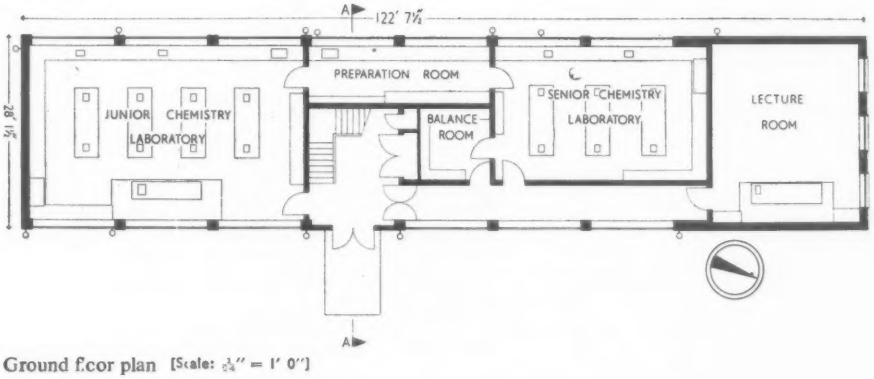
Site plan



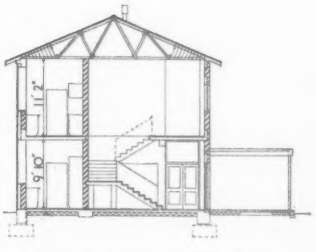
Two views of the science block at Magdalen College School. Below, the south-west elevation. The structure consists of blue Stafford piers, concrete floors and timber roof with asbestos slates. Above, the north elevation with an appropriately simple but generous canopy over the entrance.



First floor plan



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



Section A-A [Scale: $\frac{1}{16}$" = 1' 0"]

analysis

Westcliff High School

Magdalen College School

CLIENT'S REQUIREMENTS

The provision of the new science building was recommended by the Education Committee in March, 1954, and included by the Ministry of Education in the authority's school building programme for 1955–56. It was designed to enable the school to be increased from a 4 form-entry to a 5 form-entry, to cater for the increased number of boys requiring grammar school education, and to improve the facilities for science teaching in the school. Former laboratories in the main school building have been converted into additional classrooms. The new Science block provides six laboratories, two preparation rooms, one dark room and one classroom demonstration room with capacity for about 240 boys, and accommodation for a teaching staff of 12.

Laboratories for senior and elementary physics and chemistry with preparation rooms, balance room, dark room, workshop, lecture room and library. The new science block forms part of a development scheme in connection with which a classroom and changing room block has recently been completed. It was essential that the building be designed with the utmost economy consistent with functional efficiency.
The school caters for 400 boys and the capacity of the laboratories is as follows: Junior chemistry, 32 boys working in pairs, Junior physics, 30 boys working in pairs, Senior chemistry and Senior physics 16 boys, working singly.

PLANNING AIMS

The site is on the edge of large playing fields on the north side of Eastwood Lane. Road diversion is proposed which will make the site of the science block continuous with the school. On the ground floor are elementary and advanced chemistry laboratories with preparation and private study and store rooms, lecture room, masters' common room, lavatories and cloakrooms. There are two general science rooms on the first floor as well as physics and biology laboratories, a dark room and laboratory assistants' room. Services have been grouped in a large duct below first floor level in the centre of the building, together with fume cupboards and storage units.

A grant was made by the Industrial Fund for the Advancement of Science in Schools, and the general recommendations of the Fund were followed in planning.

(Figures in the following cost analysis are based on final contract price.)

cost per sq. ft.	s	d
Preliminaries and insurances	5	1½
Contingencies	5	1
Work below ground floor level	3	5¾
6-in. concrete slab on 3-in. concrete blinding layer. Concrete beams and stanchion bases. Two coats of patent damp proof membrane. Bituminous felt, lead-covered damp proof course to walls. Half brick wall in stock bricks in outer casing to ground beams. Stanchion bases, 3 ft. 3 in. deep below ground level.		

cost per sq. ft.	s	d
Preliminaries and insurances	5	2½
Work below ground floor level	3	11½
Reinforced concrete ground beams, brick piers and concrete bases at 13-ft. 6-in. centres; concrete strip foundations to brick walls, 4-in. concrete subfloor with floor ducts formed with 4-in. concrete sides and bottoms, with bituminous damp proof course.		

STRUCTURAL ELEMENTS

Frame or load-bearing element	8	0½
Steel columns and beams. No concrete casing, but concealed in wall and floors		
External walls	3	6¾
11-in. hollow wall consisting of half brick outer skin and 4-in. lightweight concrete block inner skin. Also walls consisting of 2-in. strawboard covered with reinforced waterproof building paper and western red cedar vertical boarding externally, all on wood framing. Approximately half of gross wall area is taken up by windows and glazing. Cost includes additional stone copings. Ratio: solid wall / floor area = 0·3737 / 1		
Windows	5	4½
Metal windows and sills. Cost includes two entrance doors which are incorporated with composite types and work in connection with them. Ratio: windows / floor area = 0·3728 / 1		

External walls	5	6½
13½-in. solid brick walls to end elevations and returns; piers in Staffordshire blue bricks. Ratio: solid wall / floor area = 0·74 / 1		
Windows	13	2¼
Galvanized steel windows and grids. Cost includes work to openings, *i.e.*, upstand beams, lintels, sills, reveals, curtain tracks and roller blinds. Ratio: windows and external doors / floor area = 0·31 / 1		

analysis

Westcliff High School

External doors — 1
Access door to roof only here. Other doors included with windows.
Ratio: $\frac{\text{doors}}{\text{floor area}} = \frac{0{\cdot}0017}{1}$

Upper floors — 1 8¼
7-in. × 2-in. wood joists with 7-in. × 3-in. trimming members.
1-in. fibreglass quilt fixed with 1½-in. × 2-in. wood battens on top side
Span: 10 ft. Area: 554 sq. yd. Superload: 60 lb. per sq. ft.

Staircases — 2 9½
2-in. × 11-in. hardwood twice rounded, and twice splayed treads.
2-in. teak tongued and grooved landings in 11-in. widths. Steel strings. Metal balustrading. 2½-in. × 1¼-in. moulded teak handrail.

No. of staircases:	Two	One
Widths:	4 ft. 8 in.	3 ft. 2 in.
Total rise:	23 ft. 10 in.	8 ft. 8 in.

Roof construction — 2 0
Flat roof, area 615 sq. yd.
6-in. × 2-in. wood joists with 6-in. × 3-in. trimming members.
2-in. strawboard fixed on top.

Roof lights — 1 7¾
Metal skylights on 2-in. × 9-in. wood curbs with hardboard linings internally, glazed with ¼-in. Georgian wired cast glass
No. of lights: 14
Total area: 301 sq. ft.

Glazing — 1 5¼

Type of glass	*% of total*	*Comment*
24-oz. c.s.g.	20	Panes up to 8 ft.
32-oz. c.s.g.	35	8 ft. to 18 ft.
⅛-in. reeded glass	12	Obscured
¼-in. p.p. glass	20	Over 18 ft.
¼-in. Georgian wired p.p.	10	Doors, sidelights, borrowed lights.
¼-in. prismatic glass	3	

Note: glazing to roof lights and patent glazing not included here.

Total of structural elements 26s 7½d

Magdalen College School

External doors — 2¾
Softwood doors and frame, painted.

Upper floors — 4 2¾
5-in. suspended reinforced concrete floors and beams; cast *in situ*; wrot formwork to soffits.
Span: 12 ft. 9 in. Area: 3,056 sq. ft. Superload: 60 lb. per sq. ft.

Staircases — 1 0
Reinforced concrete cast *in situ* with granolithic treads and risers.
Wrought iron balustrade and hardwood handrail.
No.: one
Width: 4 ft.
Total rise: 10 ft. 5 in.

Roof construction — 3 2¾
Timber framed, (cost includes brick gable walls above plate level).
Area: 4,263 sq. ft.

Glazing — 8
Generally ¼-in. polished plate

Total of structural elements 28s 1d

PARTITIONS AND FITTINGS

Internal partitions — 1 8¾

Type of partition	*Area of each type*
2½-in. light concrete blocks	138 sq. yd.
4-in. ditto.	107 sq. yd.
8-in. ditto.	11 sq. yd.
2½-in. plaster board	466 sq. yd.

Screens (borrowed lights) — 1
6-in. × 1½-in. or 4½-in. × 1½-in. moulded softwood lining and mullions with glazing beads for glass.
Number of lights: 5.
Total area: 202 sq. ft.

Internal partitions — 1 11½
Brick, 9-in. and 4½-in., and small area of hollow clay block

analysis

Westcliff High School

	s	d
Internal doors Plywood faced both sides, flush doors, constructed in accordance with BS459 (mainly 2-in. thick) with softwood linings, stops and architraves. Number of single: 33. Number of double: none.		7½
Ironmongery BMA finish.		3¾
Fittings Shelving, fire extinguishers, tanks in biology lab. cloakroom fittings and notice boards. All these amount to only a small proportion of the required fittings, which were dealt with under a separate contract.		10
Total of partitions and fittings	3s	6¼d

Magdalen College School

	s	d
Internal doors One pair framed and glazed One pair 2-in. flush 11 single doors, 2-in. flush complete with frames, linings, lintels, and work to openings.	1	3
Ironmongery		5¼
Fittings Laboratory and demonstration benches, workshop benches, fume cupboards, tables, benches, cupboards shelving, blackboards, seating in lecture room.	18	11¼
Total of partitions and fittings	22s	7¼d

FINISHES

Floor finishes — 4 6½

Type of finish	*Area in sq. ft.*
2-in. precast granolithic	45
Quarry tiles on screed	342
Hardwood block flooring on screed	3,348
Hardwood strip flooring	4,986
Thermoplastic tile on screed	1,080
Asphalt	414

Wall finishes — 1 4½
Cost includes plastering to wall with any expanded metal lathing or plasterboard necessary, and wood and tile skirtings to match the floor finishes above.

Ceiling finishes — 1 9½
Plasterboard and setting coat to ceilings and clay lathing, plastering and cradling to beams. Also aluminium finish to ceilings over porches.

Roof finishes — 1 3¼
Asphalt (5,535 sq. ft.). 20 s.w.g. aluminium corrugated sheeting on tank room roof (220 sq. ft.)

Decorations — 1 5½
Ceilings, 2 coats distemper. Walls, 2 coats emulsion paint generally, but about 12 per cent. of walls have 3 coats, and 8 per cent. is papered.
Woodwork and metalwork, 2 coats enamel paint internally and 3 coats externally, except hardwood, which is wax polished.

Total of finishes — 10s 4¼d

Floor Finishes — 3 5½

Type of finish	*Area in sq. ft.*	*price per sq. yd.*
Lino on screed	5,040	23s 1¼d
Grano (in entrance hall, landing and corridors)	792	12s 11d

Wall fiishes — 5½
Fairface brickwork.

Ceiling finishes — 8½
Fairface concrete on ground floor. Plasterboard and skim on first floor.

Roof finishes — 1 9
Asbestos-cement slates. Cost includes fibreglass quilt over ceiling joists.
Area: 4,263 sq. ft. of slating.

Decorations — 1 11½
Partly emulsion paint, partly oil-bound distemper; woodwork and metalwork, oil paint, gloss finish.

Total of finishes — 8s 4¼d

SERVICES

External plumbing — 1½
2-in., 4-in. and 6-in. diameter cast-iron socketed rainwater pipes to BS460, with 4½-in. × 3½-in. heavy pressed steel for gutters, to BS1091.

External plumbing — 4½
Cast iron gutters and downpipes

analysis

Westcliff High School

Hot and cold water installation — 5 2

The plumbing generally is with copper service and waste pipes and cast-iron soil and ventilating pipes. Special polythene waste plumbing is used for laboratory sinks.
Hot water service provided by gas multipoint and sink heaters. (Cost given under gas installation below).

Sanitary fittings — 1 0¼

Type of fitting	*No. of each type*
15-in. × 15-in. × 9-in. laboratory sinks	8
Sink, 30 in. × 18 in. × 10 in.	1
Wall type drinking fountain	1
Lavatory basins, 20 in. × 16 in.	11
Slop hopper suites	2
Low level w.c. suites	5
Urinals, 5-stall, 3 ft. 6 in. high	2

Heating and ventilation — 8 8½

The heating supply is an extension from that in the existing school building. It is by forced air cabinets and vectairs. Mechanical ventilation is provided to the fume cupboards.
Internal temperatures: 62 deg. F. generally, 57 deg. F. in lavatories.
Air change: generally 3 changes; corridors and lavatories, 2 changes; laboratories, 4 changes.
" U " of timber walls 0·15
" U " of roof 0·17

Gas installation — 1 7

Cost covers the main up to the building (approximately 159 ft. run), and multipoint and sink heaters.

Electrical installation — 6 2

Cost includes the main up to the building (approximately 90 ft.).

Type of point	*No. of each type*
Light fittings	120
Switch points	31
Power points	45
Meter switches to fuseboards	1
Distribution boards	3

Total of services 22s 9¼d

Drainage — 11¼

Separate soil and surface water systems. The drains are connected to those of the existing school. Cost covers those in immediate vicinity of science block (approximately 440 ft. run of drain and 6 manholes).
Soil water drains, BS stoneware pipes; surface water drains, seconds quality stoneware pipes.

Other elements not shown above — 5¾

Patent glazing and wood framing to conservatory roof and walls.
Area, 418 sq. ft.; glazing bars at average 23-in. centres.

Total per sq. ft. of floor area:
£42,230 6s (excluding external works) / 10,762 sq. ft. (measured inside external walls) = **78 5¾**

Magdalen College School

Hot and cold water installation — 3 4

Galvanized tubing. Water heating by unit electric storage heaters.

Sanitary fittings — 1 2

Laboratory sinks and fittings

Heating and ventilation — 4 3½

Electrical convector and unit heaters.
Int. temp. 62 deg. F. Air changes, 2
" U " of walls (panels) 0·22
" U " of walls (solid walls) 0·27.
" U " of roof, 0·22.

Gas installation — 1 3

No. of points, 88

Electrical installation — 7 11¾

Cost includes light fittings.

Type of point	*No. of each type*
Lighting	69
13-amp, socket outlets	29
Convectors and unit heaters	31
Extract fans in fume cupboards	4
Low voltage D.C.	42

Total of services 18s 9¾d

Drainage — 2 0¼

Separate soil and surface water drainage.

External works — 1 3¾

Total per sq. ft. of floor area:
£27,212 (excluding external works) / 6,111 sq. ft. (measured inside external walls) = **89 0¾**

analysis

SUMMARY

WESTCLIFF HIGH SCHOOL

Ground floor area: 5,060 sq. ft.
Total floor area: 10,762 sq. ft.
Type of contract: Corporations General conditions of contract with Bills of Quantities.
Tender date: January 1956.
Work began: June, 1956.
Work completed: August, 1957.
Tender price of foundations, superstructure, installations and finishes: £42,230 6s. 0d.
Tender price, external works: £2,911 17s. 5d.
Total: £45,142 3s. 5d.

MAGDALEN COLLEGE SCHOOL

Ground floor area: 3,056 sq. ft.
Total floor area: 6,111 sq. ft.
Type of contract: RIBA (with quantities)
Work began: February 1957.
Work completed: September 1957 (except fittings and equipment for chemistry laboratories, which were ordered at a later date and handed over for occupation in December 1957).
Tender price for foundations, superstructure, installations and finishes: £28,598.
Final contract sum: £27,212.
Tender price for external works: £400.
Final contract sum: £400.
Total tender price, £28,998.
Total contract price: £27,612.

COST COMMENTS

Publication of these two science blocks tempts a comparison including the Sherborne school (See AJ, November 21, 1957). They all serve the same purpose, and are all two storey but differ in size—so we might be rash and see what effect size has on cost. But for quantity surveyor readers, we should give the following warnings: Sherborne and Magdalen both occurred in the Spring of 1957, but Westcliff was a year earlier. Magdalen analysis shows final account figures, but the other two, tender figures. The preliminaries price for Sherborne is about three times that of the others. Lastly the buildings do not use the same form of construction and may not serve *exactly* the same purposes. We may now study the following table with proper caution. Perhaps the most surprising thing of all is that work below ground is about the same for all three. It may be noted that an article in the April issue of the *Architectural Review* on cost analysis also revealed a startling constancy of foundation costs among a wide diversity of building types (about 5s p.f.s.).

The next group in the table suggests that the cost of the building carcase tends to go down with increase in area. The methods of construction, were: Sherborne, P.s. pre-cast concrete; Magdalen, 13½-in. walls, *in situ* floors and timber roof (no frame); Westcliff steel frame, cavity and timber walls, timber floors and roof.

Roof costs on the other hand appear to increase slightly in cost as area increases—although the differences are small and may well be due to other factors.

The next group—the internal divisions of the buildings—is remarkably constant but the last group, services (excluding electrics and gas) appears to increase with size although in Sherborne and Westcliff heating is by forced air from plants in the existing schools and in Magdalen is by electric convectors.

The remaining items are single elements picked out for the remarkable correspondence between Sherborne and Magdalen. At Westcliff the fittings are not in the building price; there are three staircases but only one in the other two buildings. Decorations appear to follow very similar specifications in all three buildings.

	Sherborne	*Magdalen*	*Westcliff*
Floor area in sq. ft.	3,470	6,111	10,762
	s d	s d	s d
Cost per sq. ft. (excl. drains and ext. works)	100 1¾	87 0½	77 0¾
Work below ground level	3 9½	3 11½	3 5¾
Frame, ext. walls, windows, glass, upper floors	29 1½	23 10½	20 2½
Roof, rooflights and finishes, portion of ceiling cost	5 0½	5 4	5 10
Partitions, doors, wall finishes	3 8½	3 8½	3 9½
Heating, hot and cold water, san. fittings	7 4½	9 2½	14 10¾
Fittings	18 5¾	18 11½	10
Staircases	1 0	1 0	2 9½
Decorations	1 11	1 11¾	1 5¾

CONTRACTORS

WESTCLIFF HIGH SCHOOL: *General contractor:* Hosking & Son (Essex) Ltd. *Sub-contractors—Reconstructed stonework:* Byfords Block & Stone Co. Ltd. *Plastic letters:* Ward & Co. *Concrete staircase:* F. Bradford & Co. Ltd. *Metal windows:* The Crittall Mfg. Co. Ltd. *Tile flooring:* Marley Tile Co. Ltd.

MAGDALEN COLLEGE SCHOOL: *General contractor:* Hinkins & Frewin Ltd. *Sub-contractors—Windows and windogrid:* Henry Hope & Sons Ltd. *Roofing:* The Manchester Slate Co. Ltd. *Door furniture:* Parker, Winder & Achurch Ltd. *Light fittings:* Falk Stadelmann & Co. Ltd. *Convector heaters:* F. H. Biddle Ltd. *Unit heaters:* The General Electric Co. Ltd. *Fans for fume cupboards:* Woods of Colchester Ltd.

working detail

WINDOWS: FLATS IN LONDON S.W.1

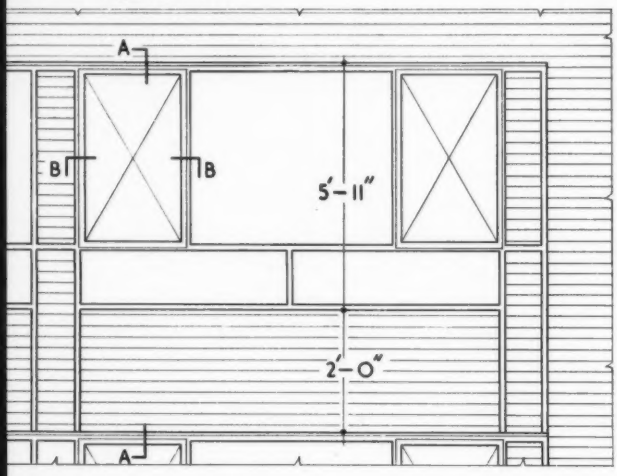
Walter Segal, architect

This very individual window treatment employs a prefabricated timber framing (of gurjun) of a type which recalls the subframe of a curtain wall. This is applied to the brick face and secured to it by ties. It will be noticed that the brick panels are of two colours—which again brings out the analogy with the glass curtain and gives an effect of lightness which is unusual in a brick-faced building. This arrangement of the window framing is economical, and gives an extra wide sill and uninterrupted reveals.

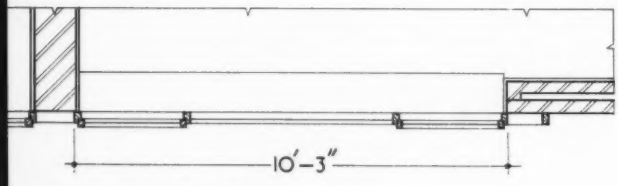
working detail

WINDOWS: FLATS IN LONDON S.W.1

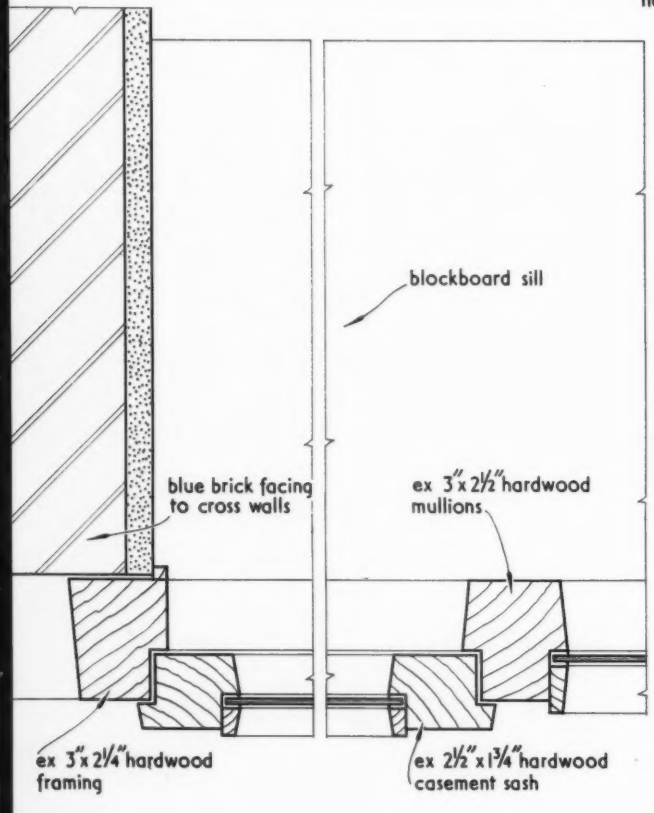
Walter Segal, architect



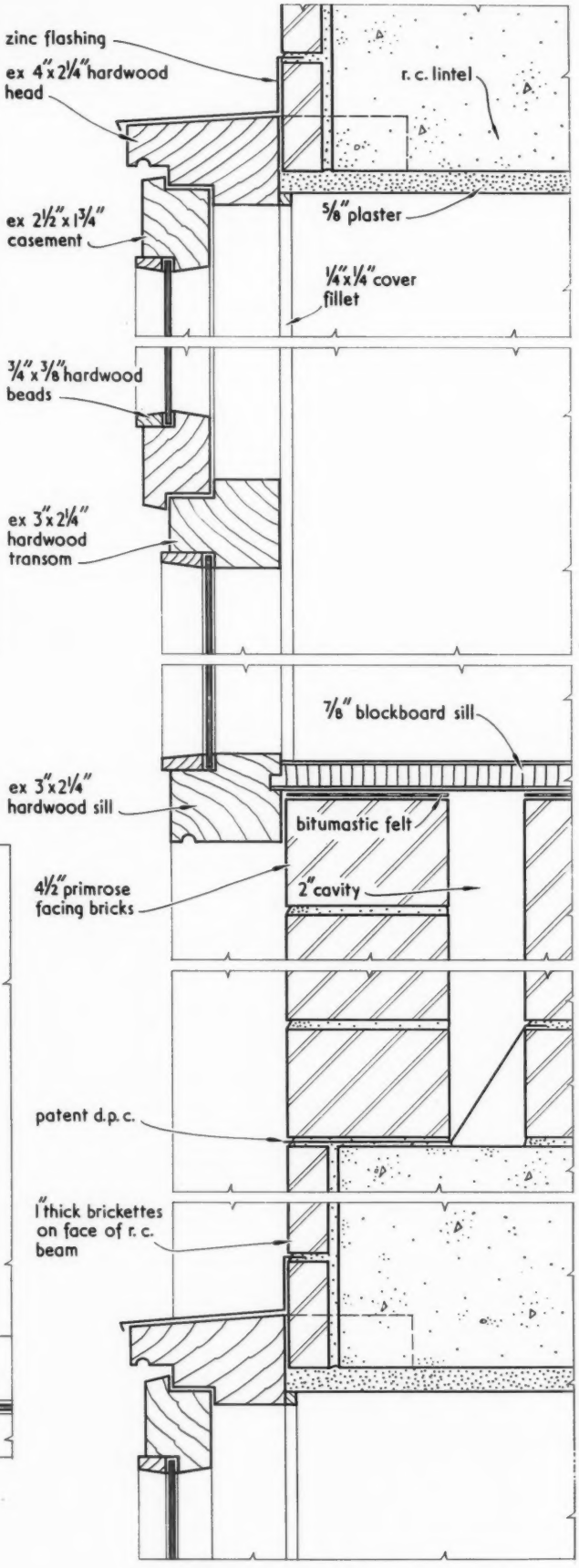
ELEVATION. scale 1/4" = 1'– 0"



PLAN. scale 1/4" = 1'– 0"



SECTION B – B. scale 1/4 full size



SECTION A – A. scale 1/4 full size

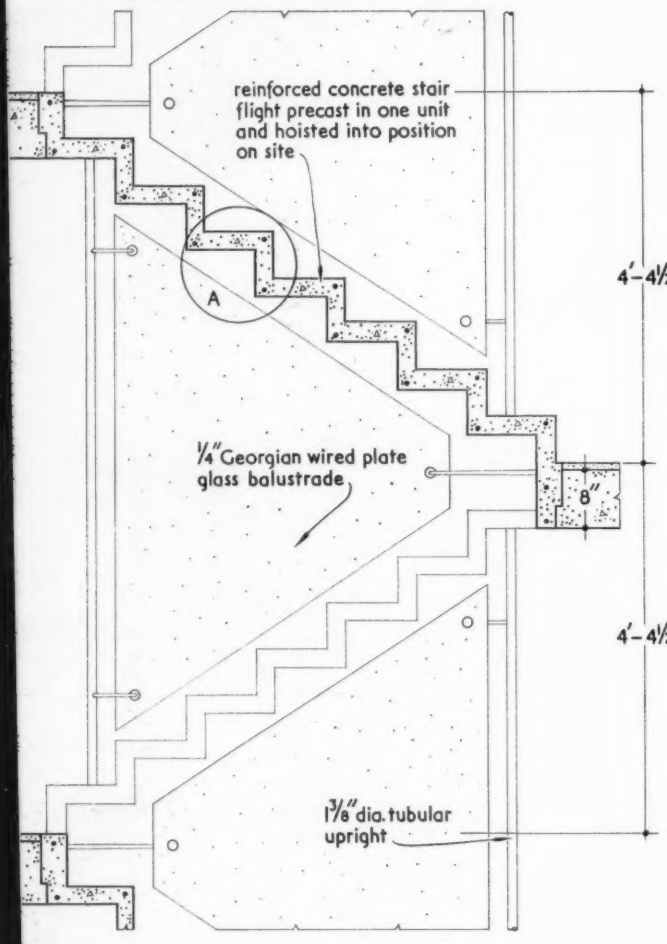
STAIRCASE: FLATS IN LONDON, S.W.1

Walter Segal, architect

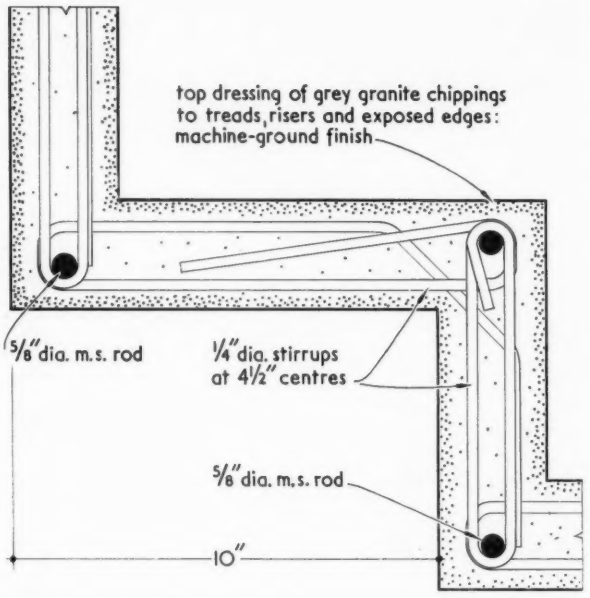
This is an exceedingly neat and economical way of closing the spandrel between flights. The precast concrete stair flights are faced with grey granite aggregate and the faces of risers and treads and of the stair edge are machine ground.

STAIRCASE: FLATS IN LONDON, S.W.1

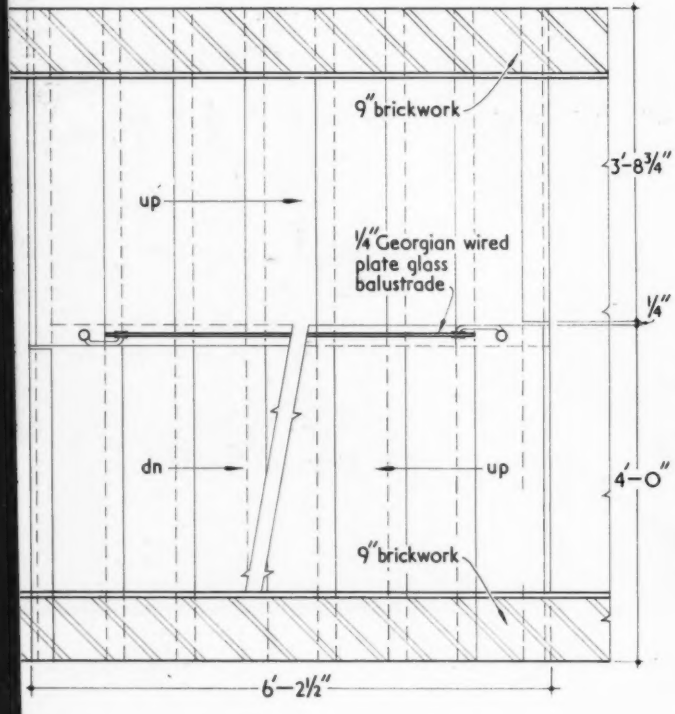
Walter Segal, architect



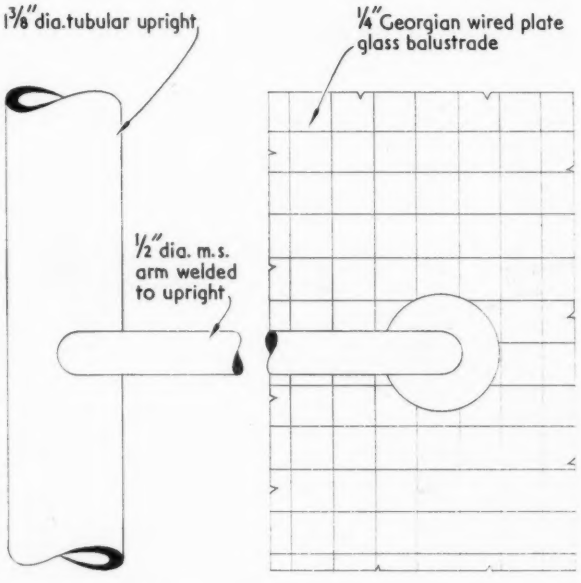
ELEVATION. scale ½" = 1'-0"



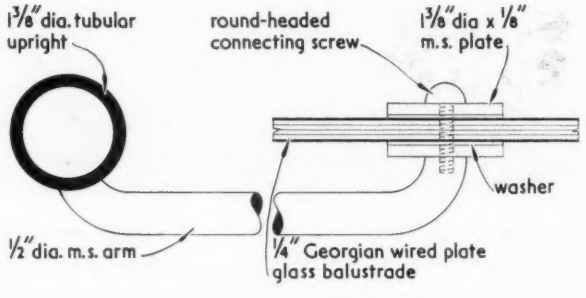
DETAIL AT A. scale ¼ full size



PLAN. scale ½" = 1'-0"



ELEVATION OF BALUSTRADE FIXING.

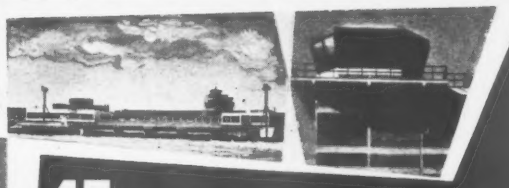


PLAN OF BALUSTRADE FIXING. scale ½ full size

METAL WINDOWS and CURTAIN WALLING by AYGEE

Est. 1881

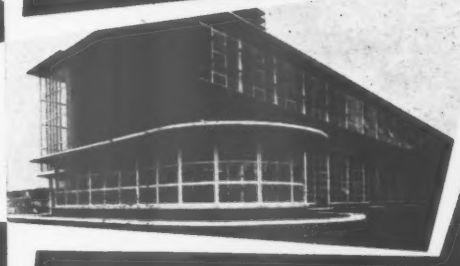
5 AIRPORTS & AERODROMES



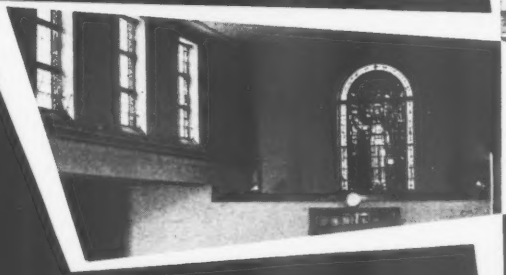
45 OFFICE BLOCKS & SHOPS

33 POWER STATIONS & FACTORIES

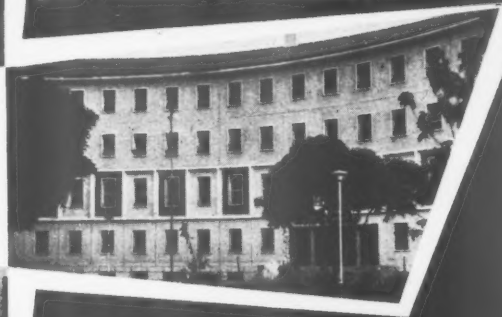
8 PUBLIC BUILDINGS



36 SCHOOLS & COLLEGES



15 CHURCHES & SYNAGOGUES



18 MINISTRY & GOVERNMENT BUILDINGS

7 OVERSEAS PROJECTS

Illustrated are some recent projects by our Metal Window and Curtain Walling Division

HERCULES HOUSE:
Architect, R. N. Wakelin, F.R.I.B.A., of O. Campbell-Jones & Sons, F.R.I.B.A.;
Contractors, Richard Costain Ltd.

ALEXANDRA PALACE:
Architects, Hillier Parker May & Rowden;
Contractors, Aygee Ltd.

UPPER CLAPTON CONGREGATIONAL CHURCH:
Architects, Spalding, Myers & Attenbrow, F/A.R.I.B.A.;
Contractors, C. R. Price Ltd.

KUWAIT WORKSHOPS WATER DISTILLATION PLANT:
Architects, Farmer & Dark, FF.R.I.B.A.;
Contractors, Richard Costain Ltd.

LONDON AIRPORT:
Architect, Fdk. Gibberd, C.B.E., F.R.I.B.A.;
Contractors, Taylor Woodrow Construction Ltd.

GATWICK AIRPORT:
Architects, Yorke, Rosenberg & Mardall, FF.R.I.B.A.;
Contractors, Turriff Construction Corporation Ltd.

MARCHWOOD GENERATING STATION:
Consultant Engineers, Sir Wm. Halcrow & Partners, MM.I.C.E.;
Architects, Farmer & Dark, FF.R.I.B.A.;
Contractors, Staverton Builders Ltd.

LANGDON CRESCENT SCHOOL:
County Borough Architect, East Ham;
Contractors, W. & C. French Ltd.

H.M. EMBASSY, CAIRO, CHANCERY OFFICES:
Architect, Ministry of Works:

AYGEE LTD.

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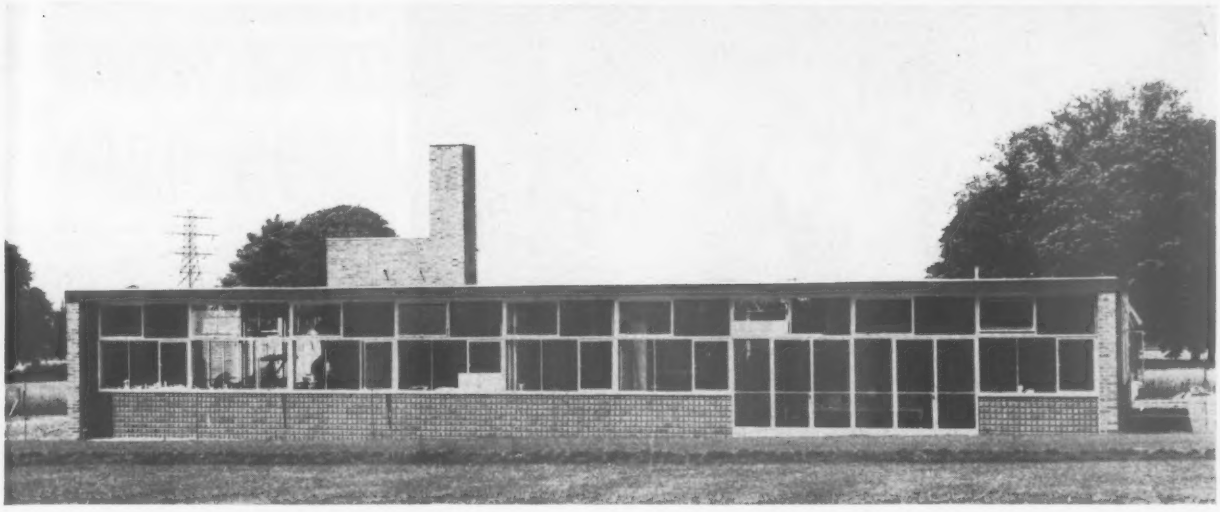
OCCUPATIONAL THERAPY UNIT AT CAMBRIDGE



An occupational therapy unit for Fulbourn Hospital, Cambridge, designed by Hughes and Bicknell (assistant, D. Harding) has recently been completed for the East Anglian Regional Hospital Board. The steel frame building has welded steel lattice girders, and a 2½-in. woodwool roof deck on steel tees. Under the galvanized steel windows is a panel of blue paving bricks laid on edge. Within, the workspace is divided into three sections by light glazed partitions, for light work by women, light work for men, such as basket and rug-making, and carpentry and other noisy activities. A centrally-placed office for the therapist makes supervision easy. Storerooms for material and work in progress are next to the workrooms and a large showcase in the entrance space enables the work of the department to be displayed. General contractor, H. Holland Ltd.

ATOMIC ENERGY EXHIBITION STAND AT HANOVER

Britain's nuclear techniques, and her ability to sell for export either a nuclear power station or the smallest nuclear instrument, were the subject of this exhibition stand for the United Kingdom Atomic Energy Authority at the Hanover Trade Fair, designed by Ian Bradbery, M.S.I.A. *and built by Conran Contracts. A tight budget necessitated a design using economical materials which would be easy and quick to erect, so the stand was planned with a demountable floor of 4-ft. × 2-ft. teak veneered flax board, uprights of Columbian pine and prefabricated ceiling panels in various standard sizes to which the light fittings were fixed.*

Announcements

PROFESSIONAL

Sergei Kadleigh, A.A. (HONS.) DIPL., A.R.I.B.A., HON.A.R.C.A., has moved to 63, Abingdon Villas, London W.8 (Western 4402).

TRADE

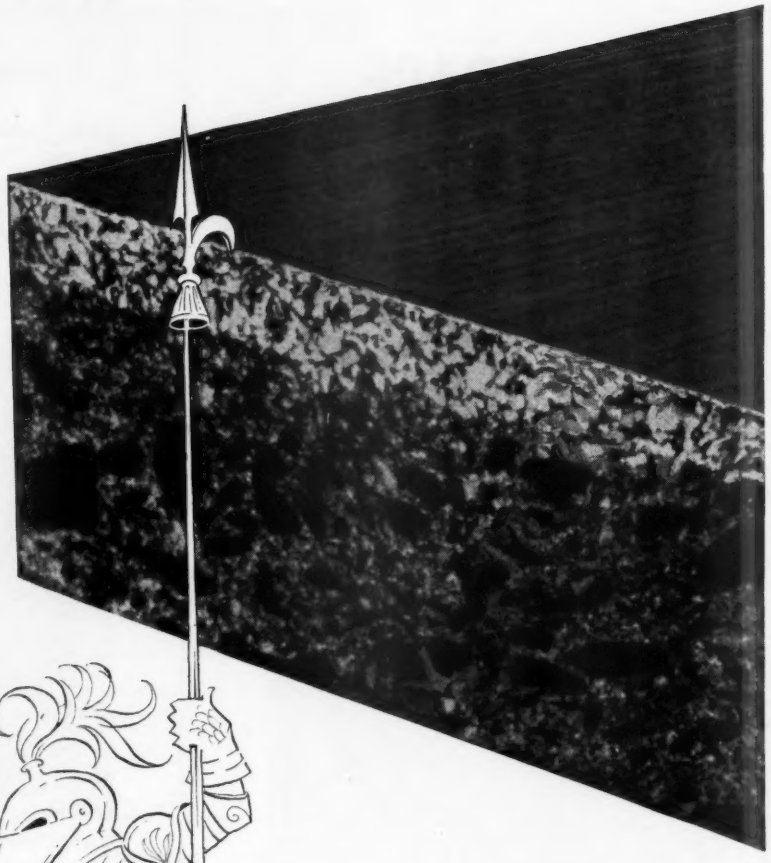
The new chairman of the Association of Supervising Electrical Engineers is J. H. K. Pendry, of Fulham, London.

Honeywell-Brown Ltd. changed its name to Honeywell Controls Ltd. on June 1. On the same date, all head office departments and the London branch office moved from Perivale to new premises in Ruislip Road East, Greenford, Middlesex (telephone Waxlow 2333).

Greenwood's and Airvac Ventilating Co. Ltd. have formed a new company to take over the design, development and marketing of the G-A conduit systems. Known as Greenwood Airvac Conduits Ltd., its address is Carlisle House, 8, Southampton Row, W.C.1.

The new Dundee Sales Branch Office of British Insulated Callender's Cables Ltd., at 2, South Ward Road, Dundee (telephone: 5926/7) was officially opened on June 11.

The British Iron and Steel Research Association's Advice Bureau, operating from 140, Battersea Park Road, London, S.W.11, offers specialist advice on all aspects of rust prevention and amelioration. The Association's Steel User Section, operating from BISRA's laboratories at Hoyle Street, Sheffield, can also provide expert advice on all aspects of steel technology.



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CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

30s. per inch; each additional line, 2s. 6d.

LONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT

Vacancies for (1) **ARCHITECTS**, Grade III, starting salary up to £1,090 a year. (2) **ARCHITECTURAL ASSISTANTS**, starting salary up to £860.

Full and interesting programme of Houses, Flats, Schools and General Buildings.

Application form and full particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council, The County Hall, S.E.1, quoting Ref. AR/EK/21/58. (794) 9376

ARCHITECTURAL ASSISTANTS required by MINISTRY OF WORKS

For employment in London and Provinces on design and detailing work on construction and maintenance of all types of public buildings.

Salary Range £550 (age 21) to £870 p.a. London (slightly less elsewhere).

Five-day week; 3½ weeks annual leave initially.

Starting pay according to age, qualifications and experience. Good prospects of promotion with salaries of £1,015 p.a. and above.

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

Interviews at Regional Offices where possible. Applicants should be of Inter. R.I.B.A. standard. State age, training and experience to Chief Architect, Ministry of Works, Abell House, John Islip Street, S.W.1. 9720

COUNTY BOROUGH OF DARLINGTON BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the Appointment of an **ASSISTANT ARCHITECT**. Salary in accordance with the Special Grade of N.J.C. Scales (£750—£1,030), starting point according to experience.

The Department has a large programme including Secondary and Primary Schools, Housing, Welfare Schemes, and Municipal Offices. Preference will be given to candidates experienced in this class of work, and who are members of the R.I.B.A.

Housing accommodation will be made available, if required.

Applications giving full particulars of age, qualifications, present appointment with salary, previous appointments with dates, and the name and address of three referees to be received by E. A. Tornbohm, A.R.I.B.A., A.M.T.P.I., Borough Architect, Central Buildings, Darlington, not later than first post on Thursday the 17th July, 1958.

H. HOPKINS,
Town Clerk.
9757

LONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT

Vacancies for **SURVEYING ASSISTANTS** in the Building Regulation Division for building control work in connection with applications under the London Building Acts and Bye-Laws as regards compliance with the Council's construction and means of escape standards.

Salaries up to £860, with starting rates according to qualifications and experience.

Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council, The County Hall, S.E.1, quoting Ref. AR/EK/19/58. (773) 9373

URBAN DISTRICT COUNCIL OF EAST BARNET

Applications are invited for the following appointments:—

(*a*) **ASSISTANT ARCHITECT**, Grade A.P.T. II (£725 to £845 per annum).
(*b*) **ARCHITECTURAL ASSISTANT**, Grade A.P.T. I (£575 to £725 per annum).
(*c*) **SENIOR ASSISTANT ENGINEER**, Special Grade (£750 to £1,030 per annum).
(*d*) **DRAUGHTSMAN** (Architectural), Grade A.P.T. I (£575 to £725 per annum).
(*e*) **DRAUGHTSMAN** (Engineering), Grade A.P.T. I (£575 to £725 per annum).

The above salaries will be increased by London weighting of £10, £20 or £30 per annum according to age.

Conditions of Appointment and Forms of Application, returnable by the 14th July, 1958, may be obtained from the Engineer & Surveyor, Town Hall, Station Road, New Barnet, Herts. 9773

NOTTINGHAMSHIRE COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT ASSISTANT ARCHITECT

Applications are invited for a post within the A.P.T. Special Scale (£750 × £40—£1,030). Applicants must be qualified and registered Architects.

Forms of application from W. D. Lacey, County Architect, County Hall, West Bridgford, Nottingham, to whom they should be returned as soon as possible.

A. R. DAVIS,
Clerk of the County Council.
9847

LONDON COUNTY COUNCIL QUALIFYING EXAMINATION FOR THE OFFICE OF DISTRICT SURVEYOR

An examination for certificates of proficiency to perform the duties of District Surveyor will be conducted in London in the week commencing 13th October, 1958. The minimum age limit for candidates is 25.

Possession of this certificate is necessary for appointment to positions as District Surveyor (salary scales £1,500 to £2,900 a year) or as Assistant District Surveyor (salary scale £1,245 to £1,482 10s. a year, plus allowance £59 a year).

Apply to The Architect to the Council (AR/ED/CTB), County Hall, Westminster Bridge, S.E.1, for application forms and further particulars (770). 9328

URBAN DISTRICT COUNCIL OF CORBY APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT

Applications are invited for this appointment from registered architects with considerable experience in design, construction and contract administration as applied to contracts for public buildings and local authority housing.

Salary in accordance with Special Scale (£750 × £40—£1,030), the commencing point to be fixed in accordance with experience and present grading.

Housing accommodation will be made available to the successful candidate, if married.

Forms of application may be obtained from the undersigned, to whom they should be returned by not later than Monday, 7th July, 1958. Testimonials will be required only from applicants selected for interview.

G. B. BLACKALL,
Clerk of the Council.

Council Offices,
Corby,
Northants.
17th June, 1958. 9763

HUYTON-WITH-ROBY URBAN DISTRICT COUNCIL
Population 60,000
ARCHITECTURAL AND HOUSING DEPARTMENT

Applications are invited for the post of **CHIEF ASSISTANT ARCHITECT**. Salary Scale A.P.T. V, £1,175 to £1,325.

Applicants must be members of the R.I.B.A.; must have had a wide architectural experience including the design of multi-storey housing, and must possess administrative ability.

The commencing salary will depend upon the qualifications and experience of the successful applicant.

Housing accommodation will be provided, if necessary.

Applications, stating age, qualifications, details of previous appointments and experience, and giving the names and addresses of two referees to—The Architect, "Grasscroft," Archway Road, Huyton, Lancashire, not later than the 4th July, 1958.

D. WILLGOOSE,
Clerk of the Council.

Council Offices,
Huyton,
Lancs.
20th June, 1958. 9762

BOROUGH OF HEYWOOD APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited from persons who have passed the R.I.B.A. Intermediate Examination for the above-mentioned appointment in the department of the Borough Engineer and Surveyor, at a salary in accordance with A.P.T. Grade II (£725—£845) of the Scale of Salaries.

The appointment will be subject to the provisions of the Local Government Superannuation Acts, to the National Joint Council's Conditions of Service and to one month's notice in writing on either side.

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

Consideration will be given to the provision of housing accommodation.

Applications endorsed "Architectural Assistant," stating age, qualifications and experience and accompanied by copies of two recent testimonials, should reach the undersigned not later than Friday, 18th July, 1958.

Canvassing in any form will be a disqualification.

W. R. PARKER,
Town Clerk.

Municipal Buildings,
Heywood.
23rd June, 1958. 9834

AIR MINISTRY require WORKERS-UP in Quantities Division, London. Must be experienced and competent to Work-up entire Bills of Quantities. Preference holders C. & C. (Quantities), O.N.C. or equivalent technical qualification. Commencing salary and grading according to age, qualifications and experience on salary ranges: (*a*) £695 at age 26 rising to £870 or (*b*) £870 at age 30 or over rising to £1,030. Promotion and pensionable prospects. Five-day week. Over three weeks leave a year. Applicants normally should be natural born British Subjects. Write stating age, qualifications and previous appointments, including type of work done, to P.E. 104, Manager—Professional & Executive Register, Ministry of Labour & National Service, Atlantic House, Farringdon Street, London, E.C.4. No original testimonials should be sent. Only candidates selected for interview will be advised. 9807

PADDINGTON BOROUGH COUNCIL ASSISTANT ARCHITECT (£780—£1,060).

Starting salary according to qualifications and experience of the successful candidate, who should preferably be A.R.I.B.A., with experience in the design and supervision of building works of some magnitude and a knowledge of local authority requirements. Applications should state age, qualifications, present and past appointments with dates, names and addresses of three referees. Applications should reach me by 15th July, 1958 (quoting A.381).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington, W.2. 9833

NEWCASTLE REGIONAL HOSPITAL BOARD APPOINTMENT OF ARCHITECTURAL DRAUGHTSMAN

Applications are invited for the appointment of an **ARCHITECTURAL DRAUGHTSMAN** to a permanent (superannuable) post on the Headquarters' Staff of the Regional Architect in Newcastle. Applicants should have had previous experience in an Architect's Drawing Office and be neat and quick draughtsmen. Commencing salary £425 (at age 21 or over; subtract £20 for each year below 21) × £25 (6) × £30 (2) to £635 per annum. The post offers opportunity for gaining all-round general as well as hospital experience and for doing good class work in an expanding department. Evening study facilities are available at King's College of Durham University in Newcastle. Applications stating age, qualifications, past and present appointments, present salary and details of experience and training, together with the names of three referees (of whom at least two should be architects), should be forwarded to the Secretary, Newcastle Regional Hospital Board, Benfield Road, Newcastle-upon-Tyne, 6, not later than 10th July, 1958. 9837

NOTTINGHAM AND DISTRICT TECHNICAL COLLEGE
BURTON STREET, NOTTINGHAM

Principal: D. A. R. CLARK, M.SC.(TECH.), M.I.MECH.E.

Applications are invited for the full-time appointment of **ASSISTANT**, Grade B in Building Surveying Subjects.

A large new building comes into use in September next for well-equipped Departments of Building and Civil Engineering, Electrical Engineering, Chemistry, Physics and Mathematics, and Mining. Increased accommodation is also available to the Departments of Mechanical Engineering, Arts and Commerce, Printing and Textiles. Research work by both staff and students is being rapidly developed.

Experience in industry, teaching and/or research desirable.

Salary in accordance with the Burnham Technical Scale as follows:—£650 × £25—£1,025 per annum. Additions for Assistants include degree allowance of £75 per annum (or £125 for good honours degree), up to three increments of £25 for training in approved cases and incremental allowance for industrial experience after age 21, and war service.

Further particulars and form of application may be obtained from the Principal, to whom completed forms should be returned not later than 15th August, 1958. 9803

CITY OF BIRMINGHAM CITY ARCHITECT'S DEPARTMENT

Applications are invited for the following permanent and superannuable posts at commencing salaries within the scales according to capabilities and experience.

(*a*) **ASSISTANT ARCHITECTS**, Special Scale, £750 × £40—£1,030.
(*b*) **ARCHITECTURAL ASSISTANTS**, Special Classes, Grade A.P.T. I, £695 × £30—£745.

Scope for progressive design of Schools and Educational Buildings of many kinds, a variety of Civic Buildings, and Housing Schemes, including tall blocks of flats, maisonettes and shopping centres.

Applicants are required to have passed Parts I and II Final R.I.B.A. for posts (*a*) and Inter. R.I.B.A. for posts (*b*) or to hold equivalent qualifications.

Five-day week. Medical examination.

Applications, stating age, present position and salary, qualifications, experience and two referees to the undersigned by 18th July, 1958.

A. G. SHEPPARD FIDLER,
City Architect.

Civic Centre,
Birmingham, 1. 9804

BOROUGH OF STOCKTON-ON-TEES BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of an **ASSISTANT ARCHITECT** with Final R.I.B.A. at a salary within the Special Grade (£750—£1,030).

Forms of application from the Borough Architect, 28, The Square, to be returned not later than the 19th July. Housing accommodation will be available for married applicant.

The department's building programme includes the erection of primary, senior and technical schools, extensive housing work with shops and flats, large estate developments, central area redevelopment and new municipal offices and hall.

JOHN B. HAWORTH,
Town Clerk.

Barclays Bank Chambers,
49, High Street,
Stockton-on-Tees. 9825

COUNTY OF CORNWALL
APPOINTMENT OF PLANNING ASSISTANT

Applications are invited for this appointment in the County Planning Department at Headquarters, Truro, with salary within A.P.T. I (£575—£725).

Candidates must have passed the Intermediate Examination of the Town Planning Institute or other appropriate Professional Institute. Experience in carrying out basic surveys and ability to map and present the information by the use of modern techniques is essential.

The customary service conditions of the Local Government Service will apply and the successful candidate will be required to pass a medical examination.

Applications, together with the names and addresses of three referees, should be addressed to H. W. J. Heck, PP.T.P.I., County Planning Officer, County Hall, Truro, to reach him not later than 19th July, 1958. (No application forms are being issued.)

Clerk of the County Council.

County Hall,
Truro.
26th June, 1958. 9848

Amended Advertisement
BIRMINGHAM REGIONAL HOSPITAL BOARD
ARCHITECTURAL APPOINTMENTS

(*a*) ASSISTANT ARCHITECT, £700 × £25 (3) × £30 (1) × £35 (6)—£1,015, according to age and experience. Applicants must be Registered Architects having passed requisite examinations. Experience of hospital planning and construction an advantage. Sound knowledge specifications essential.

(*b*) ARCHITECTURAL ASSISTANT, £525 × £20 (4) × £30 (1) × £25 (5)—£730. Point of entry according to experience. Inter-R.I.B.A. essential.

(*c*) ASSISTANT QUANTITY SURVEYORS, £700 × £25 (3) × £30 (1) × £35 (6)—£1,015, according to age and experience. Final R.I.C.S. and experience in taking off and preparing bills of quantities and settling final accounts essential.

All appointments superannuable. Apply, naming two referees, to Secretary, R.H.B., 10, Augustus Road, Birmingham, 15, by 14th July, 1958. 9846

CAERNARVONSHIRE COUNTY COUNCIL
DEPUTY COUNTY PLANNING OFFICER

Applications invited for the above-mentioned post from corporate members of the Town Planning Institute holding a recognised qualification in architecture, engineering or surveying. Applicants must be good administrators with a sound knowledge of planning law and practice, and must have had wide practical experience in all aspects of the work of a planning authority, including the preparation of development plans for urban and rural areas. A knowledge of Welsh is desirable. Salary Scale "C" £1,295—£1,515. (This scale is at present under review.) Further particulars and application forms, closing date 21st July, from the Clerk of the County Council, County Offices, Caernarvon. 9823

CITY OF PERTH
ASSISTANT ARCHITECT

Applications are invited for the post of ASSISTANT ARCHITECT in the Burgh Surveyor & Architect's Department, Perth, salary Administrative and Professional Division Grade Va to VI (£805 to £935) according to qualifications and experience. Applicants must be Associate Members of the Royal Institute of British Architects, preferably with experience of Municipal work.

Housing accommodation will be provided and reasonable removal expenses paid.

The appointment is subject to the Local Government Superannuation Act, 1937, and the successful candidate will require to pass a medical examination.

Applications, stating age, qualifications, experience, present salary and particulars of present and previous appointments, with copies of two recent testimonials, to be sent to the Burgh Surveyor, 16, Tay Street, Perth, within 7 days of this advertisement. 9853

CITY OF LEICESTER
CITY ENGINEER'S AND SURVEYOR'S DEPARTMENT
MAINTENANCE SECTION

Applications are invited for the appointment of MAINTENANCE ASSISTANT in the City Engineer's and Surveyor's Department in Grade A.P.T. II, £725—£845 per annum.

The appointment will be subject to the provision of the Local Government Superannuation Acts, 1937 and 1953, and the successful candidate will be required to pass a medical examination.

Applicant should be architecturally trained and have a good knowledge of and be fully experienced in the maintenance of public buildings, surveys, preparation of plans, specification writing, estimating and schedules, etc.

Previous Local Government experience would be an advantage.

Applications, stating age, qualifications, present and previous appointments with salaries, experience and training, together with the names of not less than two persons to whom reference may be made, should reach the undersigned not later than Wednesday, 16th July, 1958.

The Council are unable to assist with housing accommodation.

JOHN L. BECKETT, M.INST.C.E.,
City Surveyor.

Town Hall,
Leicester. 9855

ESSEX COUNTY COUNCIL
ILFORD COMMITTEE FOR EDUCATION

Applications are invited for appointment to the following posts in the Education Architects' Section of the Borough Engineer's Office:—

(*a*) SENIOR ASSISTANT ARCHITECT, A.P.T. Grade III—IV (£845—£1,175 per annum).

(*b*) ASSISTANT ARCHITECT, A.P.T. Special Grade (£750 × £40—£1,030 per annum).

(*c*) ASSISTANT ARCHITECT, A.P.T. Grade I (£575 × £30—£725 per annum) plus appropriate London Weighting in each case.

The posts are superannuable and subject to medical examination.

Commencing salaries will be fixed within the grades according to experience.

Applicants for post (*a*) must be Associates of the R.I.B.A. and have had a minimum of six years' experience in the design and development of school buildings.

Applicants for post (*b*) must be Associates of the R.I.B.A. and have had experience in the design and development of school buildings.

Applicants for post (*c*) must have passed the Intermediate R.I.B.A. examination or its equivalent at a recognised School of Architecture.

Applications should be made on a form to be obtained from and returned to the Borough Engineer and Surveyor, Town Hall, Ilford, together with copies of not more than three recent testimonials, within 14 days of the appearance of this advertisement. 9854

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the post of SENIOR STRUCTURAL ENGINEER in the City Architect's Department in the A.P.T. Division Grade V, at a salary of £1,175 rising by three annual increments of £50 to a maximum of £1,325 per annum.

Applicants should preferably be Associate Members of the Institution of Structural Engineers or the Institution of Civil Engineers.

The officer appointed will be responsible for the preparation of calculations and detailed structural schemes for steel and reinforced concrete framed buildings, and experience in dealing with problems of special foundations will be an advantage.

The above appointment will be subject to the provisions of the Local Government Superannuation Acts, 1937-53, and to three months' notice on either side. The successful candidate will be required to pass a medical examination.

Further particulars and Forms of Application may be obtained from George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle-upon-Tyne, 1.

Closing date for receipt of completed applications: Saturday, 19th July, 1958.

JOHN ATKINSON,
Town Clerk.

Town Hall,
Newcastle-upon-Tyne, 1.
27th June, 1958. 9852

SHROPSHIRE

The appointment of COUNTY ARCHITECT will be vacant in November and applications must be received by 21st July. A high standard of Architectural ability and Administrative capacity are required.

Salary within the scale £2,550 × £105 (2) × £55 (1)—£2,815 per annum with an allowance for travelling and other expenses at present amounting to £440 per annum.

Full particulars from G. C. Godber, Clerk of the County Council, Shire Hall, Shrewsbury. 9822

UNIVERSITY OF AUCKLAND
NEW ZEALAND
CHAIR OF ARCHITECTURAL DESIGN

Applications are invited for the above Chair.

The salary attaching to the position is £2,190 per annum, and an allowance is made towards travelling expenses.

Further particulars and information as to the method of application may be obtained from the Secretary, Association of Universities of the British Commonwealth, 36, Gordon Square, London, W.C.1.

The closing date for the receipt of applications, in New Zealand and London, is 31st August, 1958. 9824

COUNTY BOROUGH OF STOCKPORT

ASSISTANT ARCHITECT required, BOROUGH ARCHITECT'S DEPT. Special Grade £750—£1,030 or A.P.T. III £845—£1,025, depending on qualifications. Commencing salary according to age and experience. Full particulars (age, qualifications, experience, two referees) to Borough Architect, Town Hall, Stockport, by 14th July, 1958, stating if related to any member/senior officer of Council. Post pensionable, subject to medical examination. Canvassing disqualifies. 9805

GOVERNMENT OF NORTHERN IRELAND
ASSISTANT ARCHITECT CLASS II

Applications are invited for pensionable posts in the Chief Architect's Branch, Ministry of Finance. Candidates must be Registered Architects by examination, with at least two years' experience in an Architect's Office in the preparation of working drawings. Salary scale £780 (at age 25)—£1,055 (age 34 and over)—£1,215. Transfer of existing Pension rights may, in certain circumstances, be approved. Preference will be given to ex-Servicemen. Application forms may be obtained from the Secretary, Civil Service Commission, Stormont, Belfast. 9836

EAST RIDING OF YORKSHIRE COUNTY COUNCIL

Applications are invited for the following permanent appointment on the staff of the County Architect.

ASSISTANT QUANTITY SURVEYOR. N.J.C. Scales—A.P.T. Grade III (£845—£1,025).

Applications giving particulars of qualifications, age, experience, past and present appointments with salaries, together with the names of three referees, should be sent to the County Architect, County Hall, Beverley, not later than Friday, 11th July, 1958.

THOMAS STEPHENSON,
Clerk of the Council. 9828

STEPNEY M.B.C. require ARCHITECTURAL ASSISTANTS. Inclusive salary £1,205 p.a. Applicants must possess suitable architectural qualifications and be experienced in design, construction and in the administration of large building contracts. Forms of application from Town Clerk, 227, Commercial Road, E.1. 9821

HASTINGS AND ST. LEONARDS TECHNICAL COLLEGE

HEAD OF DEPARTMENT OF BUILDING required for September. The post involves some teaching in the National and Higher National Certificate Courses and a general supervision of the Department, which also provides Inter. and Final City and Guilds Examination Courses. The grading of the post, at present Burnham Technical Report Grade B plus £100, will shortly be reviewed. Application forms to be obtained from the Chief Education Officer, Wellington Square, Hastings, should be returned within 14 days of this advertisement. 9835

DRAWING OFFICE IMPROVER required in Borough Architect's Department of Holborn Borough Council. Salary £300 p.a. at age 16 to £470 p.a. at age 22. Good experience and opportunity for training. Applications with names of two referees to Town Clerk, Town Hall, High Holborn, W.C.1. 9802

Architectural Appointments Vacant

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra

TREHEARNE & NORMAN, PRESTON & PARTNERS have vacancies for ASSISTANTS. Salary according to experience and qualifications.—Apply: 83, Kingsway, W.C.2 (HOL. 4071). 9569

CO-OPERATIVE WHOLESALE SOCIETY LTD. ARCHITECT'S DEPARTMENT, MANCHESTER

APPLICATIONS are invited for the appointment of ASSISTANT ARCHITECTS with experience of work on commercial and industrial projects, capable of preparing working drawings from preliminary details. Five-day week in operation. Applications stating age, experience, qualifications and salary required to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester, 4. 9585

W. H. WATKINS, GRAY & PARTNERS require ASSISTANTS for interesting hospital work, pension scheme in operation. Write or phone, 57, Catherine Place, S.W.1. Victoria 7761. 9672

ASSISTANT required in busy practice in West End in early twenties, Intermediate R.I.B.A. standard. Excellent opportunities for gaining all-round experience. Holiday arrangements respected. Box 9673.

SENIOR ASSISTANT required for a small private busy practice. Experience in houses and flats essential. Please state full particulars, previous experience, training, etc., and salary required to Box 9727.

ARCHITECT'S ASSISTANT required for the London Office of a firm of Architects with interests throughout the country, must be of Intermediate R.I.B.A. or R.I.C.S. standard. Superannuation scheme. Apply to: Cotton, Ballard & Blow, 5, Baker Street, W.1. 9725

ASSISTANT ARCHITECT required for varied work, should be qualified or near Final standard. Pension scheme available. Write with details training and salary required. T. H. Johnson & Son, F./F.R.I.B.A., 20, Priory Place, Doncaster. 9704

LOUIS DE SOISSONS, PEACOCK, HODGES & ROBERTSON have vacancies in their Welwyn Garden City Office for experienced architectural staff. Write stating age, salary and experience to the above at Midland Bank Chambers, Howardsgate, Welwyn Garden City, Herts. 9694

DRAUGHTSMAN (Architectural). Male Assistant of Intermediate standard to prepare structural schemes and finished projects under supervision required for Drawing Office in large Multiple Firm. Knowledge of shopfitting an advantage. Pension Scheme and Staff Restaurant. Reply stating age, experience and salary required to Box 9713.

LOUIS DE SOISSONS, PEACOCK, HODGES & ROBERTSON have a vacancy for an ASSISTANT, preferably with experience in design and presentation of sketch schemes, etc. Write stating age, salary and experience to the above at 3, Park Square Mews, Upper Harley Street, London, N.W.1. 9768

QUALIFIED ARCHITECT required in the Glasgow office of a major oil company. Applicants must be A.R.I.B.A., capable of administration and controlling work through all stages of development. Must hold a current driving licence. Five-day week. Good pension and life assurance scheme, sickness benefit. Write giving details of age and experience to Box 9856, quoting Q.A. 193.

TWO qualified SENIOR ASSISTANT ARCHITECTS required to work on large overseas project in London Architects' office. Apply stating details of qualifications and experience to Box 9857.

TRIPE AND WAKEHAM have vacancies in London for experienced qualified male ASSISTANTS to work on interesting new projects. Salaries £800 to £1,200. Phone WELbeck 7744 for appointments. 9858

ARCHITECT'S ASSISTANT required about Intermediate standard, experienced in design, working drawings, details and specifications. House available if required. Full details to Ward & Woolnough, 8, South Brink, Wisbech, Cambs. 9859

ARCHITECT'S ASSISTANT with office experience, a sound knowledge of straightforward construction, and ability to produce clear working drawings, required in busy Birmingham office. Pension Scheme. Salary £750. Box 9860.

ASSISTANT required by firm of Architects and Surveyors in Beds. and Herts. General practice. Apply stating experience, salary, etc., to Box 9695.

ARCHITECTURAL ASSISTANT required immediately, Intermediate or near Final with experience, for small expanding office in Holborn. Box 9828.

SIR ALFRED McALPINE & SON LIMITED require an ARCHITECTURAL ASSISTANT in their Design Department. Applicants should be of Intermediate R.I.B.A. standard and capable of producing working drawings and details from sketch schemes. Apply to: Head Office, Hooton, Wirral, Cheshire. 9826

ASSISTANT urgently required for small modern office. N.E. Intermediate-Final standard; office experience and enthusiasm; salary by arrangement. Apply Box 9840.

ARCHITECTURAL ASSISTANTS required immediately for varied work. Salary £650—£850 according to experience. Apply in writing to Llewellyn Smith & Waters, 103, Old Brompton Road, S.W.7. 9839

ARCHITECTS. Senior men required in private office near Five Ways, Birmingham. Hospital experience an advantage. Apply stating age, experience and salary required to Box 9838.

ASSISTANT ARCHITECTS with real ability in contemporary design required for office of Architect, Eastern Region, British Railways, King's Cross Station. Applicants should be able to play a responsible part in the design, administration and site supervision of buildings which are varied and interesting in character. There is also scope for good designers with a special interest in development work.

Starting salary: Post (1) £916; Post (2) £809; depending on qualifications and experience. Five-day week and concessionary rail travel. Permanency with membership of superannuation scheme to suitable applicant after probationary period.

Apply in writing, giving particulars of age, experience and any qualifications possessed to Chief Civil Engineer, British Railways, Eastern Region, King's Cross Station, London, N.1. 9806

ASSISTANT ARCHITECTS required by large Provincial practice in Northern Ireland; general work including Hospitals. Salary by arrangement (up to £1,000). Full details please to W. & M. Given, Coleraine, Co. Londonderry, N. Ireland. 9808

ARCHITECTURAL ASSISTANTS of contemporary outlook required, from about Intermediate standard to recently qualified, for Birmingham City Centre practice mainly concerned with large commercial projects. Five-day week. Congenial working conditions. Good salary by arrangement. Apply in writing giving details of Architectural education, age and experience to J. Alfred Harper & Son, 63, Temple Row, Birmingham, 2. 9819

TWO ASSISTANTS required: Intermediate standard, salary £650—£800; qualified, £800—£1,000. Congenial office and good opportunities. Multi-storey flat schemes and other varied work. Harry Moncrieff, F.R.I.B.A., A.M.T.P.I., Co-operative Planning Ltd., 73b, South Side, Clapham Common, S.W.4. TUL 4871. 9818

ARCHITECTURAL MODELLER required for large models of old and new buildings and landscapes to 1/16th scale. Work might last for a considerable time. Salary £500—£800. Apply with particulars of experience, age, etc., to William Holford & Partners, 80, Bedford Street South, Liverpool, 7. 9815

RILEY & GLANFIELD require male ASSISTANT of Intermediate standard. Work: Church, industrial, housing and public house. Tel. CHA 7328. 9816

ARCHITECT ASSISTANT wanted for small, expanding practice, £700—£800 p.a. Basildon. Good prospects. Write Watkins & Park, 27, Rockleigh Avenue, Leigh-on-Sea, Essex, or phone Vange 2040. 9814

JUNIOR ARCHITECTURAL ASSISTANT required at once by James H. Cox, A.R.I.B.A., Bank Chambers, High Street, Aylesbury. Salary £350—£500 p.a. Write giving full particulars. 9813

PROBATIONER R.I.B.A. with at least three years' experience, required by City Firm. Commencing salary £350 to £500. Apply Box 9749.

CHELTENHAM Architects require experienced ASSISTANT able and willing to take responsibility. Commencing salary about £800, according to capabilities. Box 9714.

TWO ASSISTANTS required by Architects and Designers, one Senior, one Junior (minimum L.R.I.B.A.), Manchester Square area, for new buildings and interiors. Salary dependent on age, qualifications and experience. Apply Box 9766.

SENIOR ASSISTANT required immediately for busy Private Practice near London. Should be Qualified, experienced and preferably car owner/driver. Full particulars and salary required to Box 9765.

QUALIFIED ASSISTANT required by architects, Five Ways, Birmingham. Projects of contemporary and varied nature, but in this instance assistant would be required to commence immediately on large City scheme. J. Seymour Harris & Partners, 3/4, Greenfield Crescent, Five Ways, Birmingham, 15. 9787

EXPERIENCED QUALIFIED ASSISTANT for small busy South West London Office with wide general practice. Unfurnished living accommodation if desired. Please state age, qualifications, experience and salary required. Box 9776.

ARCHITECTURAL ASSISTANTS required in Architect's Department dealing with new office buildings, alterations and adaptations. Write giving details of age, experience and salary required to Chief Architect, Co-operative Permanent Building Society, New Oxford House, Bloomsbury Way, London, W.C.1. 9777

ASSISTANT (30-40 years) for Contracts Manager, Surrey Estate Developers. Thorough background house building, use of level and some experience in dealing with clients. Car allowance or transport provided. Salary about £806. Reply to the Secretary, H. B. Kingston Ltd., 145, London Road, Kingston-upon-Thames. 9797

SENIOR ASSISTANT required to take charge of section in Architects' West End or Finchley drawing offices; the work is of a mixed variety including large blocks of flats, offices, etc. Applicants must be fully experienced and able to take responsibility and meet clients. Commencing salary £1,200 per annum with prospects of an early partnership. Experienced assistants (Intermediate Standard) also required. Write stating age and experience to Box 9849.

ARCHITECTS' ASSISTANTS required, senior and junior, for varied practice. Salary according to qualifications and experience. Write: Beecher & Stamford, F/A.R.I.B.A., 14, Park End Street, Oxford. 9827

ARCHITECTURAL ASSISTANT required of Intermediate standard capable of preparing sketch plans and working drawings, knowledge of Shopfitting an advantage. Please reply in writing, stating age and experience to M. Kenfield, A.R.I.B.A., House Architect, Harrods Ltd., Brompton Road, Knightsbridge 9832

SENIOR and JUNIOR ASSISTANT required at or near Finals and Intermediate. Write, stating age, experience, salary, etc., Ardin & Brookes, 129, Mount Street, W.1. 9830

ARCHITECT required to work on design of new buildings at London Airport and elsewhere. School training and experience in contemporary construction essential. Salary £1,000 per annum or thereabouts. Apply in writing to Frederick Gibberd, 8, Percy Street, London, W.1. 9829

Other Appointments Vacant

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra

THE ACME FLOORING & PAVING CO. (1904), LTD., River Road, Barking, Essex, invite applications from gentlemen with personal established connection with Architects, Consulting and Civil Engineers, also Quantity Surveyors to represent them in the Midlands and the North, to sell Hardwood Block and Strip Flooring and Factory Paving. Please write in confidence to the Managing Director, giving full history, past experience and terms of remuneration. 9796

OUTSIDE SUPERVISOR for Surrey Estate Developers. Ex carpenter and joiner or bricklayer, but conversant all trades. Age 40-45. Salary about £750. Car allowance or transport provided. Apply by letter to the Secretary, H. B. Kingston Ltd., 145, London Road, Kingston-upon-Thames. 9798

SHORTHAND-TYPIST required by Architect's office in Gray's Inn. Commence early August. State age, previous experience and salary required. Box 9751.

SHOPFITTING DESIGNER required by leading shopfitting company in Melbourne, Australia. Preferably single and between 28 and 38, with extensive experience in designing shop fronts and interior fittings; able to take charge of two other draughtsmen. Salary about £1,390 (Austr.) p.a. Passage paid (British). Write with full details to O. W. Roskill, Industrial Consultants, 14 Gt. College Street, London, S.W.1. 9817

WATER COLOUR ARTIST required for employment in the Colour Service Studio, Paints Division, Imperial Chemical Industries Limited, to prepare drawings showing colour schemes for buildings. Exceptional skill in draughtsmanship and a well-developed colouring technique, adaptable to the speedy production of freely drawn and coloured sketches, are essential qualities. Some knowledge of architectural design is desirable. Pensionable post. Apply, giving full particulars of experience, to Paints Division Staff Officer, I.C.I. Ltd., Paints Division, Wexham Road, Slough, Bucks. 9831

Architectural Appointments Wanted

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra

ENERGETIC and widely experienced Associate seeks PARTNERSHIP, or position leading shortly thereto, in live firm with contemporary tendencies. Box 9756.

LONDON Senior Assistant, A.R.I.B.A., Dip. T.P. (36), 10 years qualified, varied experience, seeks responsible post leading to PARTNERSHIP. Own car. Box 9755.

ASSOCIATE, aged 32, educated Sherborne & A.A., 5 years' experience in London practice, in charge of handling projects, now looking for responsible post in provincial practice with view to partnership. S. or S.W. England preferred. Capital available. Box 8228.

ENERGETIC and experienced Associate, after 1 year full-time Freelancing, seeks additional sources of work from home or abroad. Ring Bal. 8362 or write 64, Endlesham Road, S.W.12. 9850

SCHOOL trained Inter., young man with 4 years' varied experience, seeks 5-day week employment in London/Middx. Talented artist and perspectivist. Box 9851.

ASSISTANT, Dip.Arch., five years' total office experience, seeks position in London, commencing £775—£800. Car-owner. Offers. Box 9845.

CHARTERED ARCHITECT (32), holding senior post, eight years' experience, home or overseas, seeks responsible position with commercial or industrial organization. Box 9811.

CHARTERED ARCHITECT, deputy head of department, requires post due to closing down of department. Salary range £1,300—£1,500. Box 9810.

MIDLANDS/BIRMINGHAM AREA. Newly qualified Dip.Arch., Birmingham, seeks post in progressive commercial practice, with scope and reward for initiative. Box 9861.

Services Offered

4 lines or under, 9s. 6d.; each additional line, 2s. 6d. Box Number, including forwarding replies, 2s. extra

"DON" ARCHITECTURAL MODEL MAKERS. We offer the highest grade work with speed and reliability.—Please 'Phone Erith 3843 or Hastings 1366. 1673

FIBREGLASS/PLASTICS ROOFING, CLADDING, PARTITIONING. Manufacturers producing all standard forms are also able to laminate your own decorative patterns, Sanderson prints, etc., in translucent or opaque materials to Specification.—Structural Plastics, Ltd. Eythorne, Dover, Kent. 8734

NAMEPLATES, PLAQUES, CRESTS, etc., in bronze, brass, and plastic; quotations and lay-outs submitted.—Abbey Craftsmen, Ltd., Abbey Works, 109a, Old Street, London, E.C.1. CLE. 3845. 4165

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