The Architects' JOURNAL for May 8, 1958

THE ARCHITECTS' JOURNAL

standard contents

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

No. 3297] [Vol. 127

THE ARCHITECTURAL PRESS

9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1. *'Phone: Whitehall 0611*

Price 1s. 0d.

Registered as a Newspaper.

★ 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 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447–8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 78, Wimpole Street, W.1.	Welbeck 2915
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
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 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266

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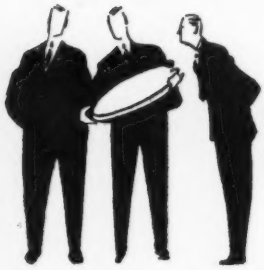

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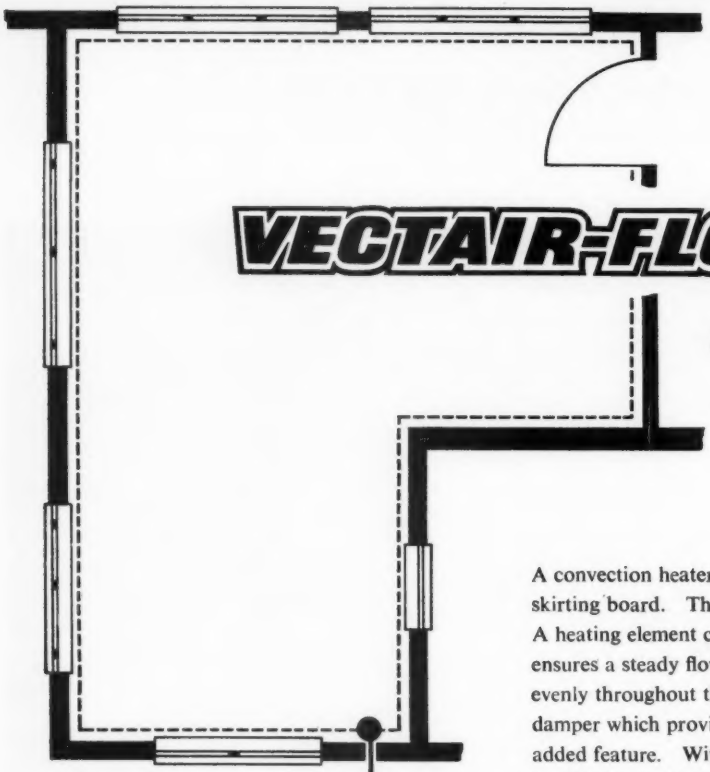

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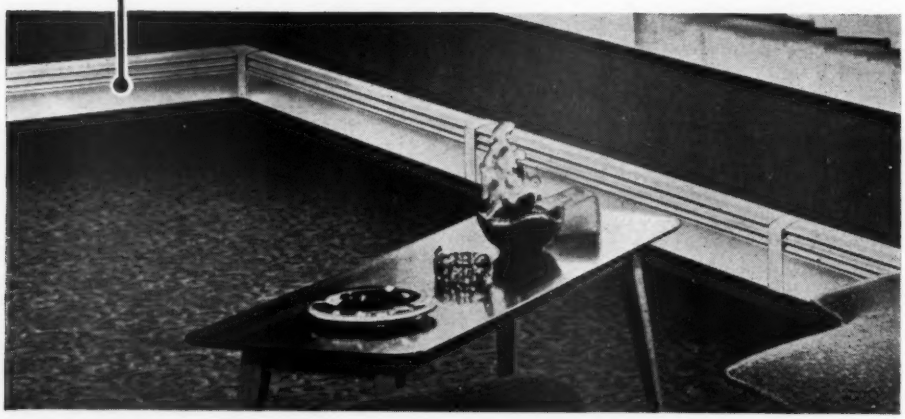

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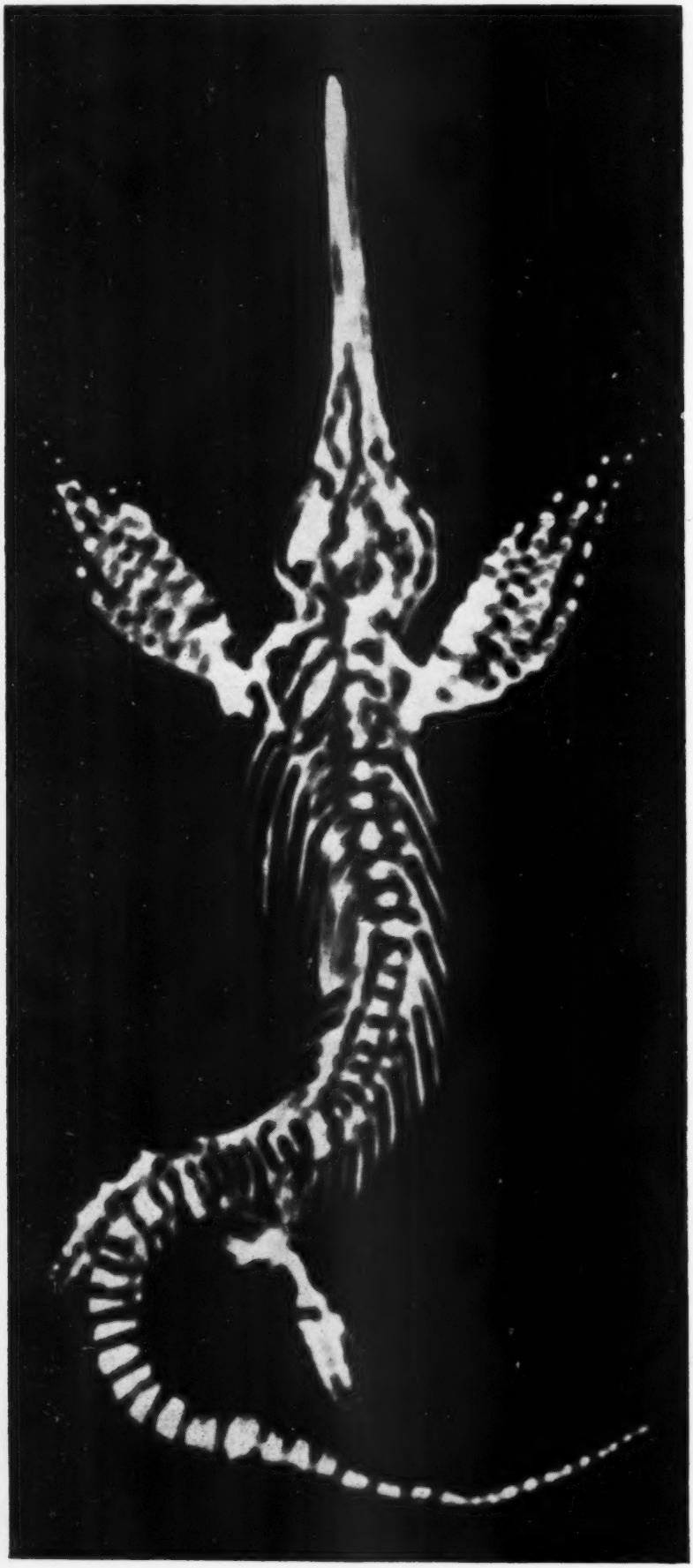

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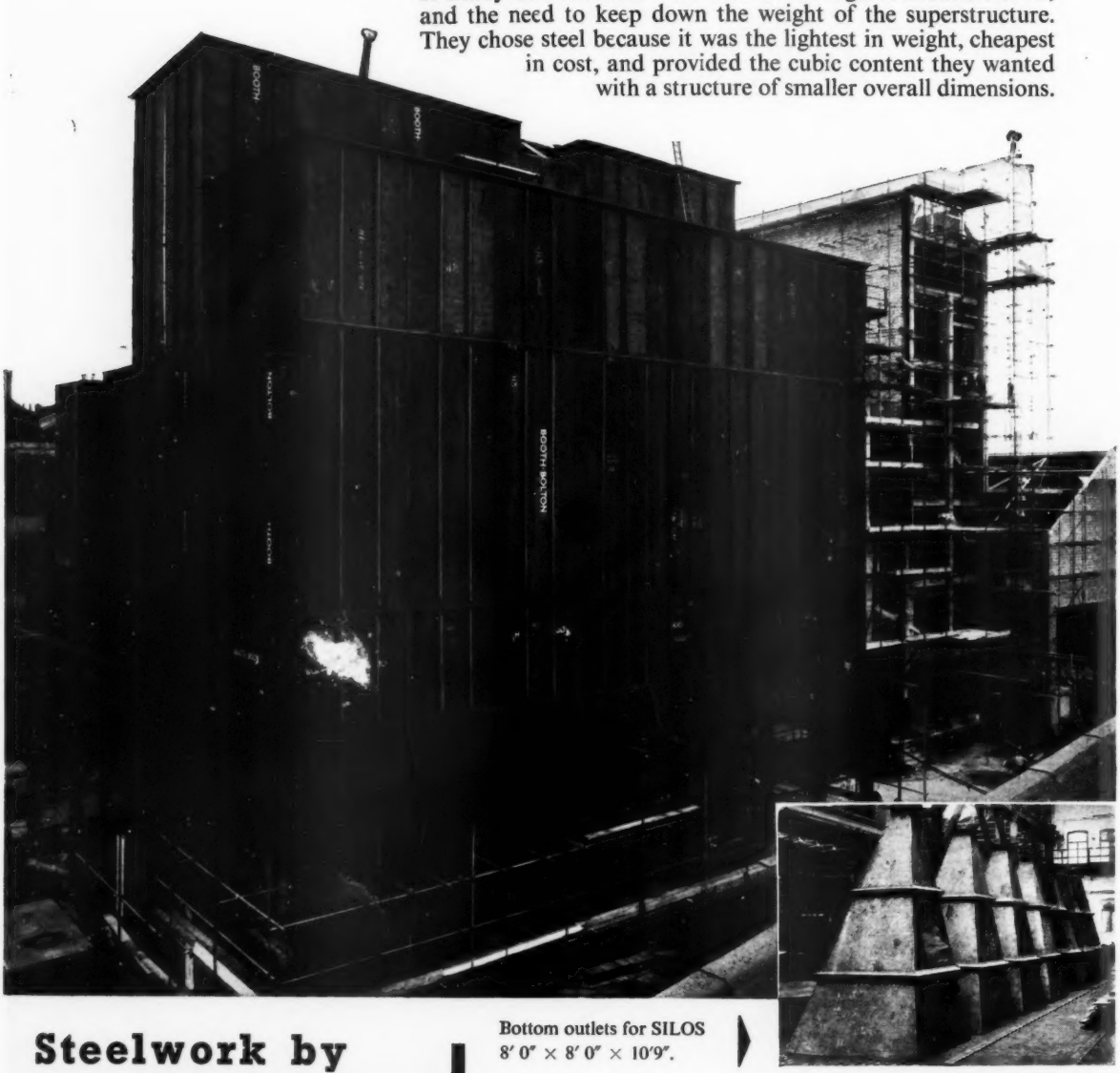

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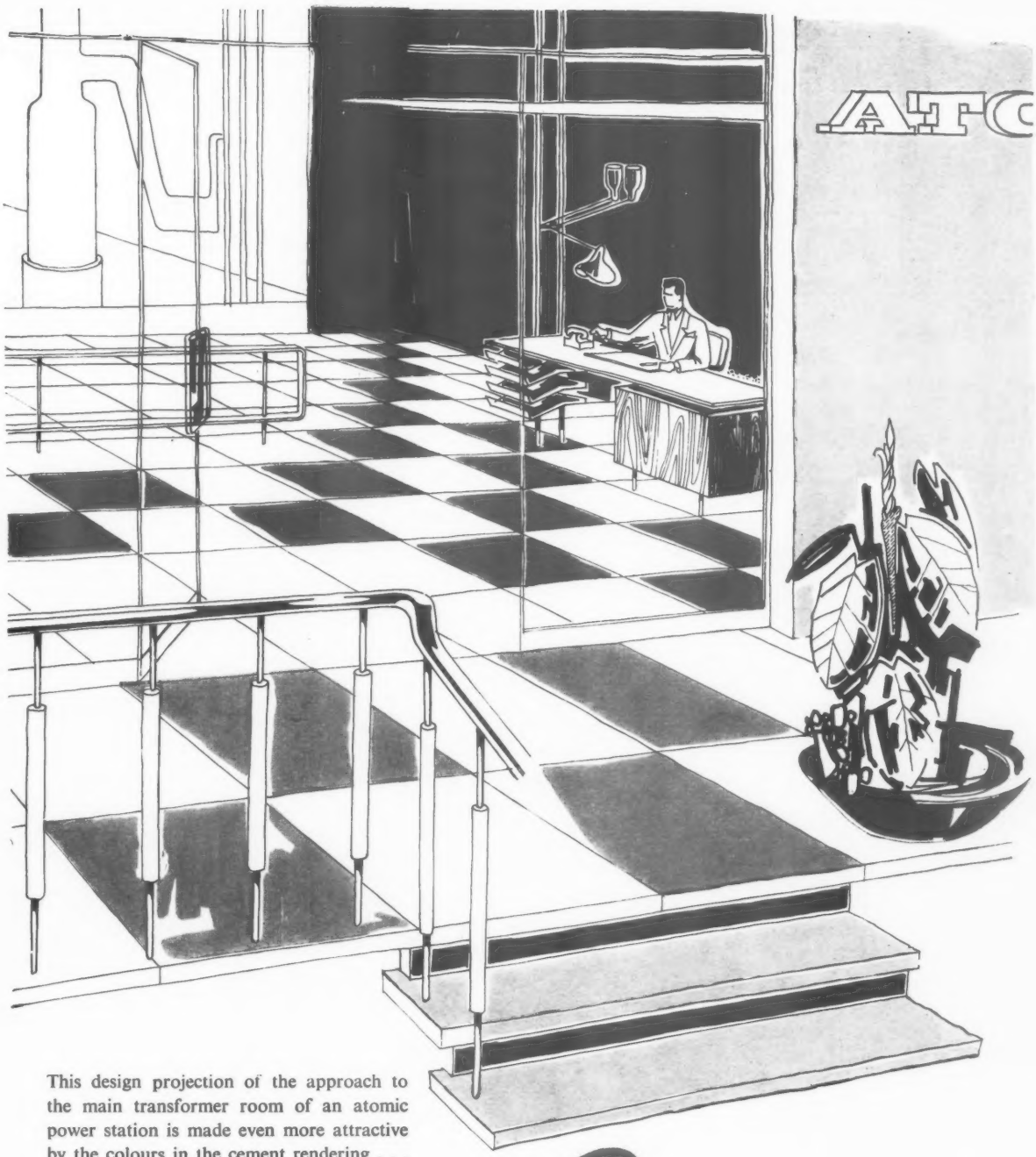

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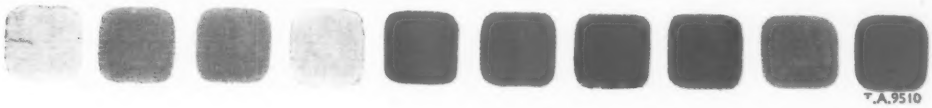

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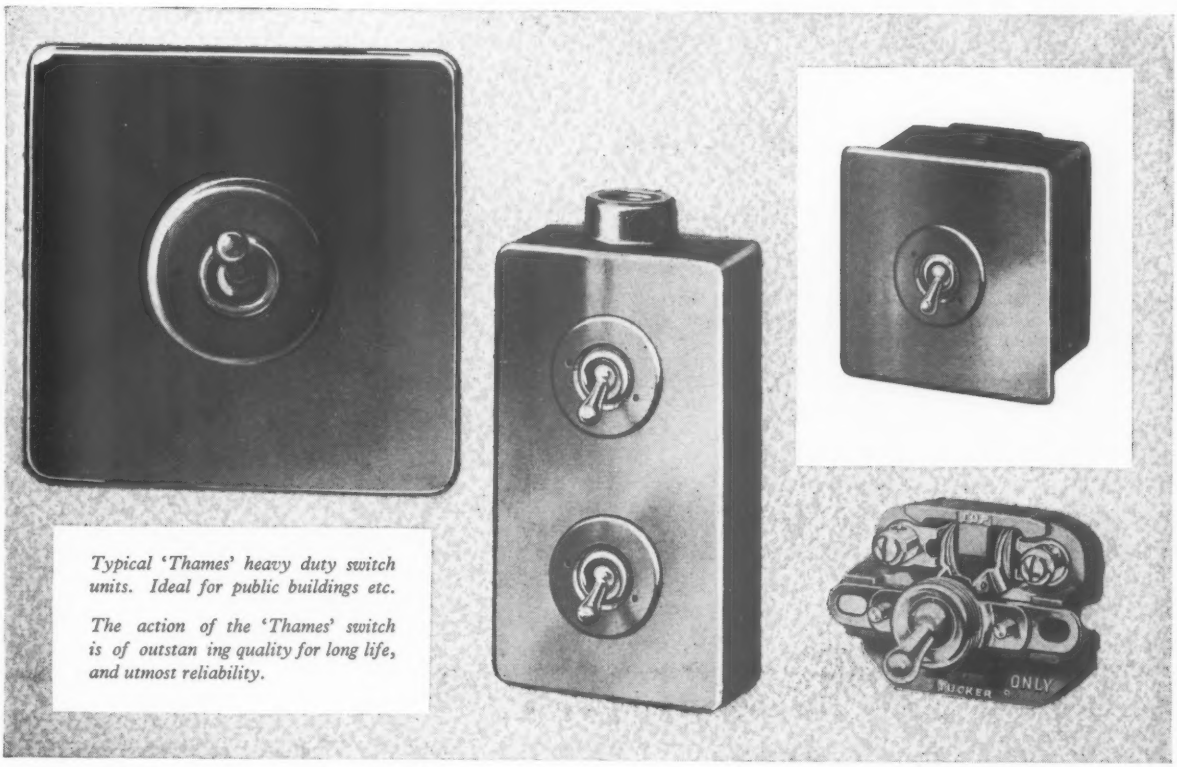

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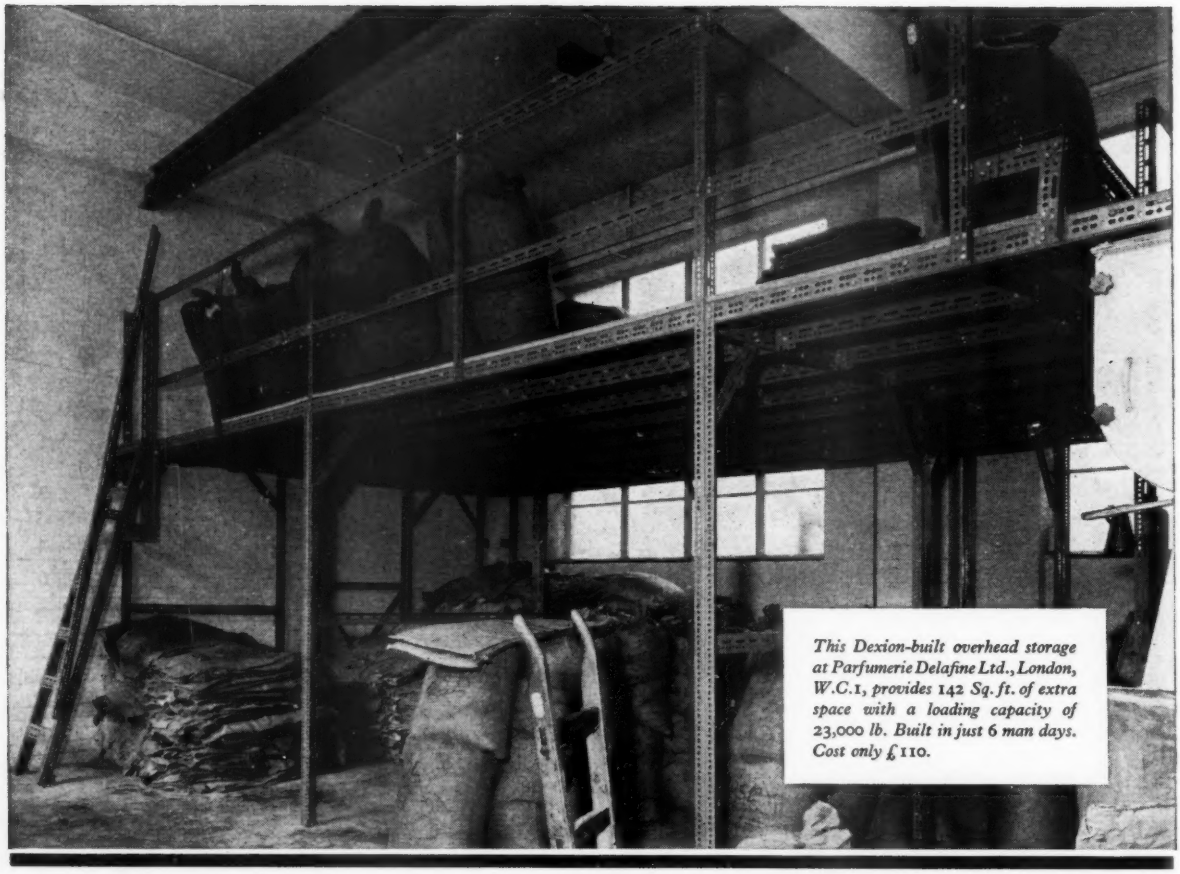

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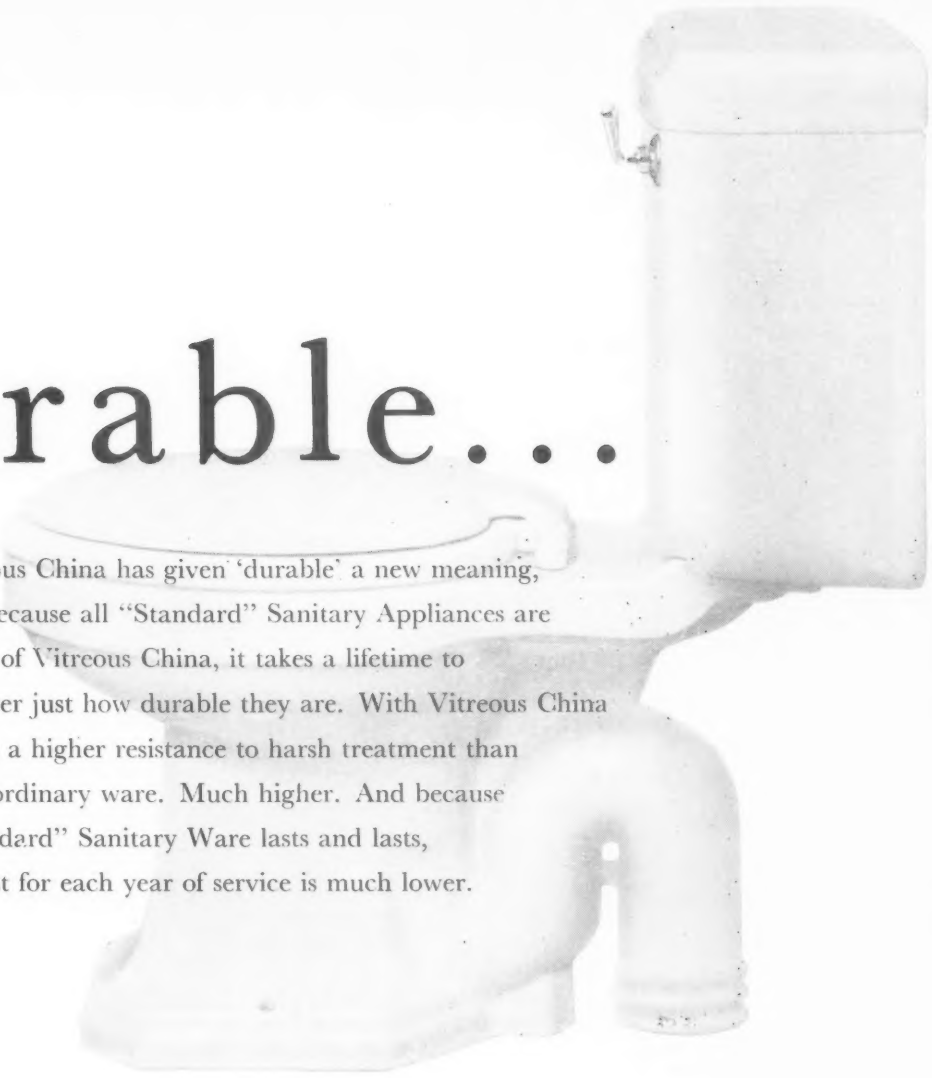

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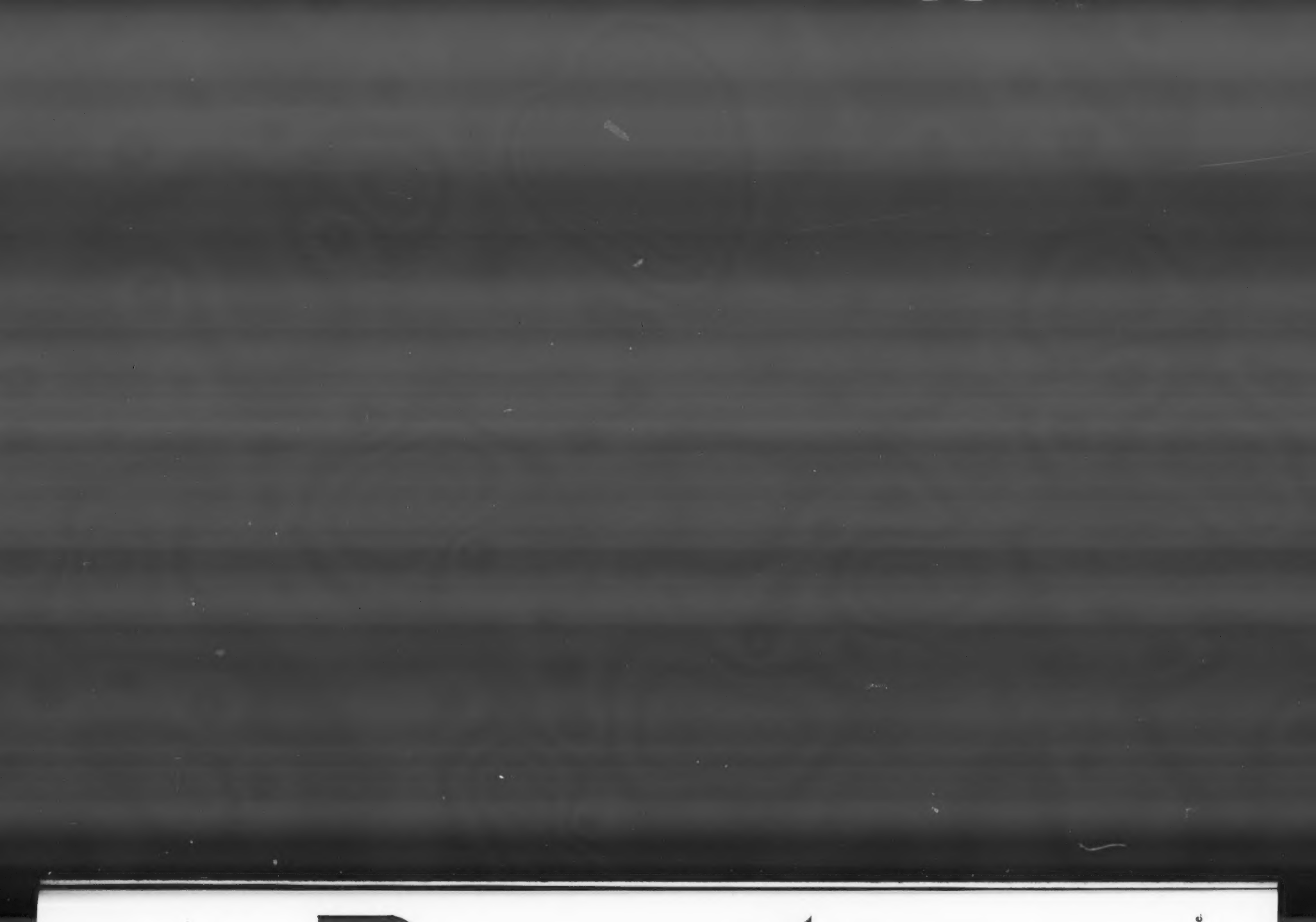

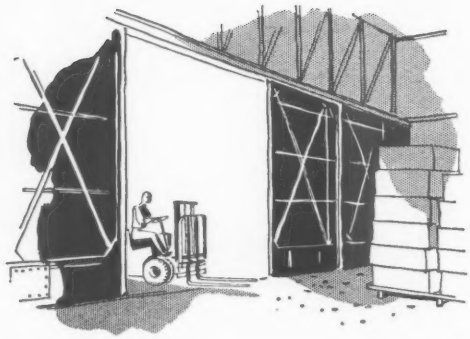

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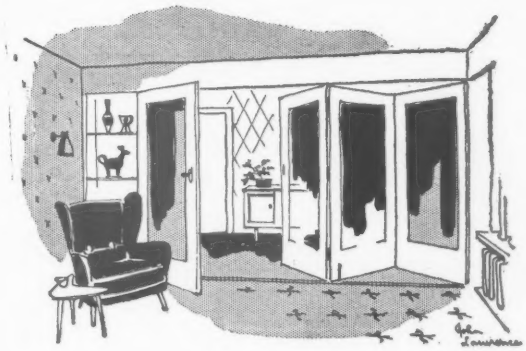

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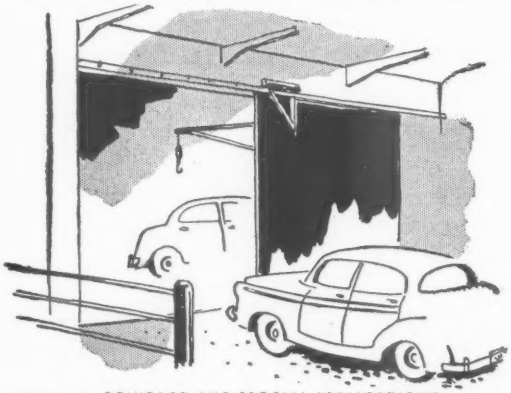

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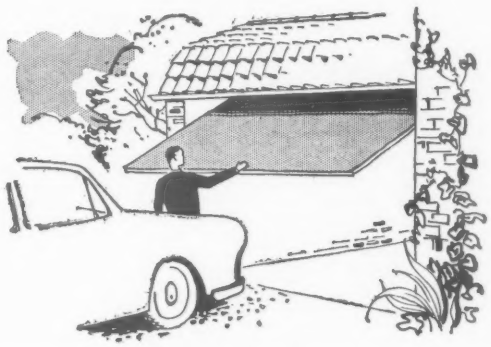

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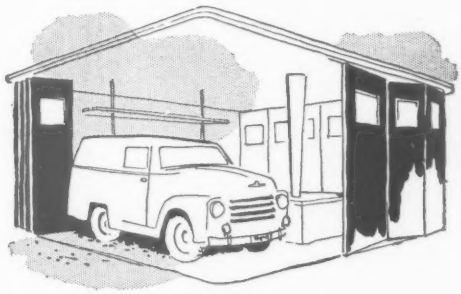

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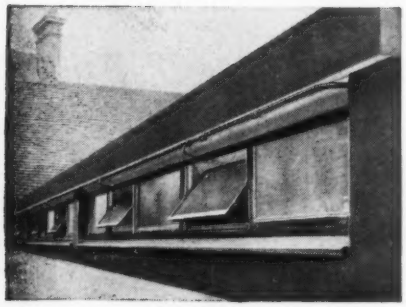

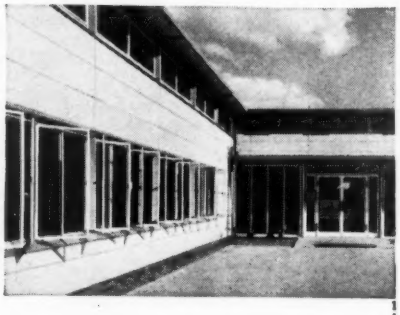

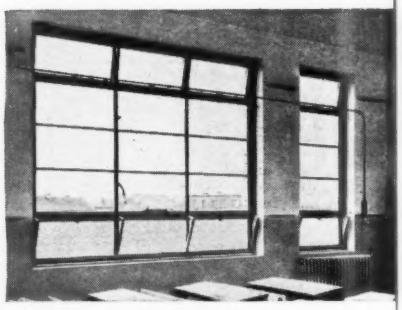

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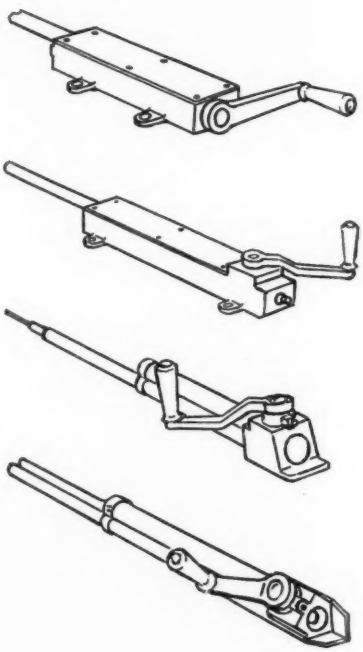

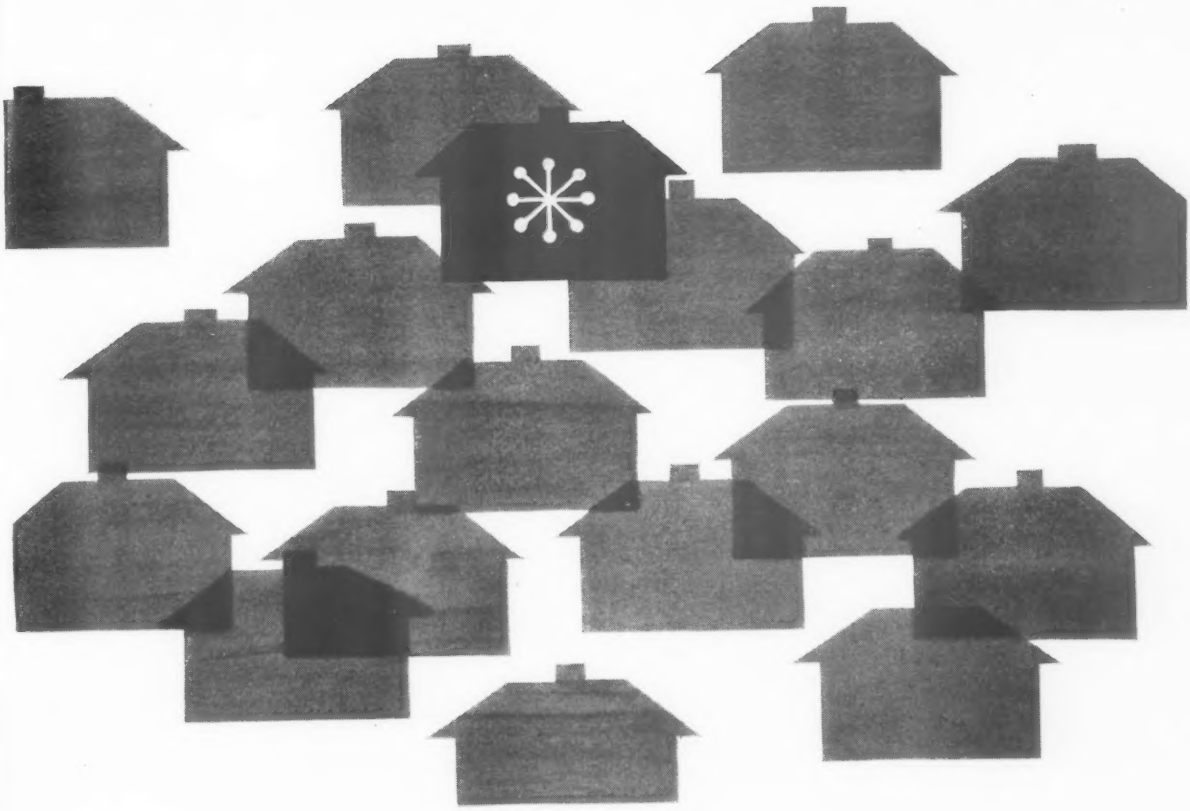

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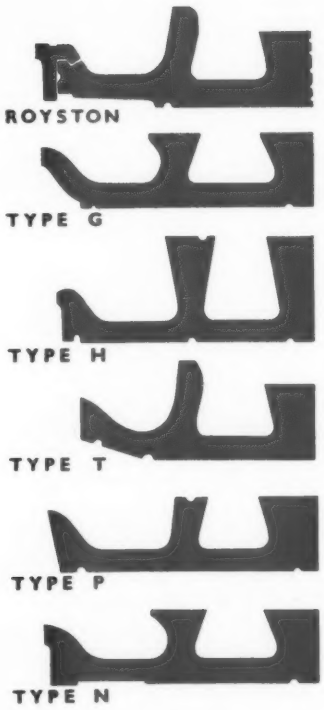

It is possible to build an extra house in every sixty or so—by using Finlock Gutters. Reason :

★ It is cheaper to convey rainwater at eaves lev l than underground.

★ By fixing the whole of the eaves with one simple unit, five expensive items are redundant.

Why not send us your Site Layout so that we can make specific recommendations.

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WITH THE 20 YEAR GUARANTEED LINING

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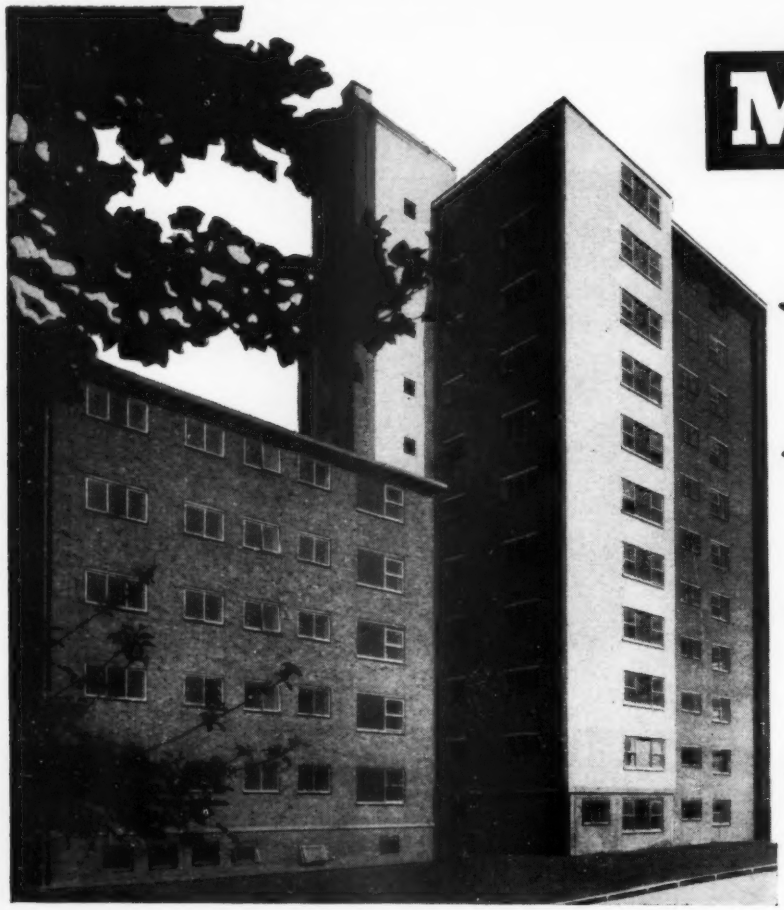
Phone : Tunbridge Wells 3396 (4 lines)



ARCHITECTS: MESSRS. REDGRAVE & CLARK, A.R.I.B.A., F.R.I.B.A

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ART STONE CLADDING

FOR THESE FLATS AT ROYAL LEAMINGTON SPA

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Manufacturers of: Flags, Kerbs, Ready Mixed Concrete and Reconstructed Stone, Bricks, etc.

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Truscon Theorem 3

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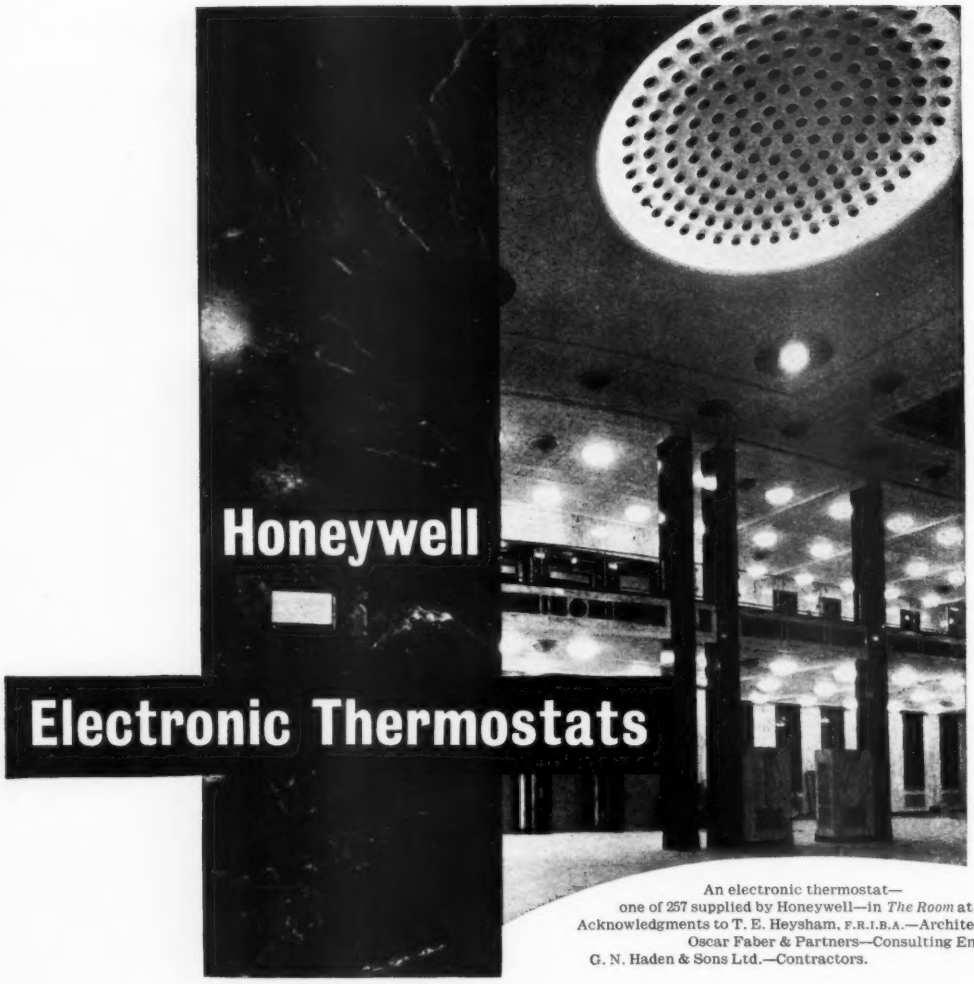
The Trussed Concrete Steel Company Limited, Truscon House, Lower Marsh, London SE.1: Telephone, WATerloo 6922



An electronic thermostat—
one of 257 supplied by Honeywell—in *The Room* at Lloyd's new building.
Acknowledgments to T. E. Heysham, F.R.I.B.A.—Architect
Oscar Faber & Partners—Consulting Engineers
G. N. Haden & Sons Ltd.—Contractors.

underwrite comfort in Lloyd's new building

Signals from Honeywell room, outdoor, and duct thermostats are co-ordinated by electronic control panels to maintain desired temperatures and humidities throughout Lloyd's new building. **Centralised comfort-control** is made possible by a 'graphic' panel: master controls, mounted on a diagram of the entire heating and air conditioning plant, permit centralized control of the plant.

Records of temperatures and humidities in all main areas are continuously plotted on the strip charts of ElectroniK recorders situated in the control room, adjacent to the graphic panel. An ElectroniK Precision Indicator spot checks conditions in areas not covered by the recorders. **Their extreme sensitivity** partly explains why Honeywell controls were chosen for Lloyd's. Other major reasons were the ease of selection permitted by standardized components and the reduction of maintenance needs owing to the absence of moving parts.

Write for further information on Honeywell controls to: Honeywell-Brown Limited, 1 Wadsworth Road, Perivale, Middlesex. PER 5691. Offices in the principal cities of the U.K. and throughout the world.

Honeywell

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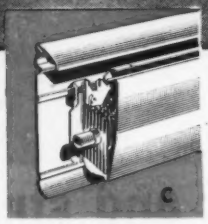

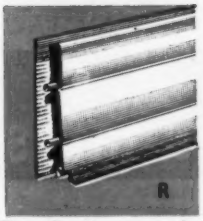

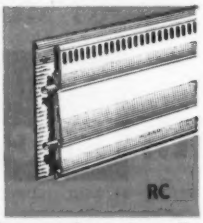

Type C—Recommended for most domestic applications, providing mainly convected heat.

Type R—Institutional model of heavy construction, but shallower from wall to front than Type C, providing mainly radiant heat. Smooth surfaces, free of dust-traps, especially suitable for hospitals and other places where hygiene and cleanliness are vital.

Type RC—Again, an institutional model of heavy construction, similar to Type R but providing a combination of radiant and convected heat.

Copperad **WALLSTRIP** is a skirting-board: a skirting-board that heats. Which means that it places the heat where it is most needed—all along the outside walls at the normal source of loss.

It also means that windows can reach to within 12" of the floorline.

WALLSTRIP allows you the maximum freedom in aesthetic design. No ungainly, heavy equipment is involved. There is nothing to detract from its flowing lines.

For a new building—home, office, school, hall, hospital or institution—**WALLSTRIP** costs no more than conventional central heating. The cost of skirting-board is, of course, eliminated. Moreover, no special equipment is required; it can be installed with the ordinary tools of a heating engineer.

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2 | light without shadows ... naturally

Light transmission and light diffusion are the two major considerations.
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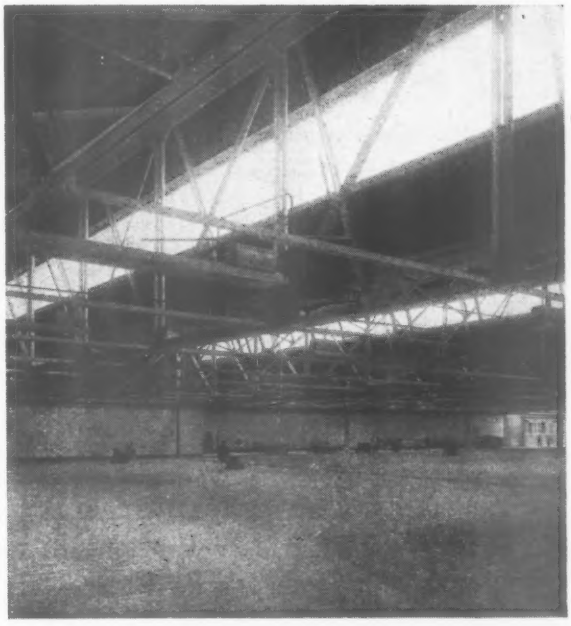

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(wire reinforced)
the non-combustible sheet

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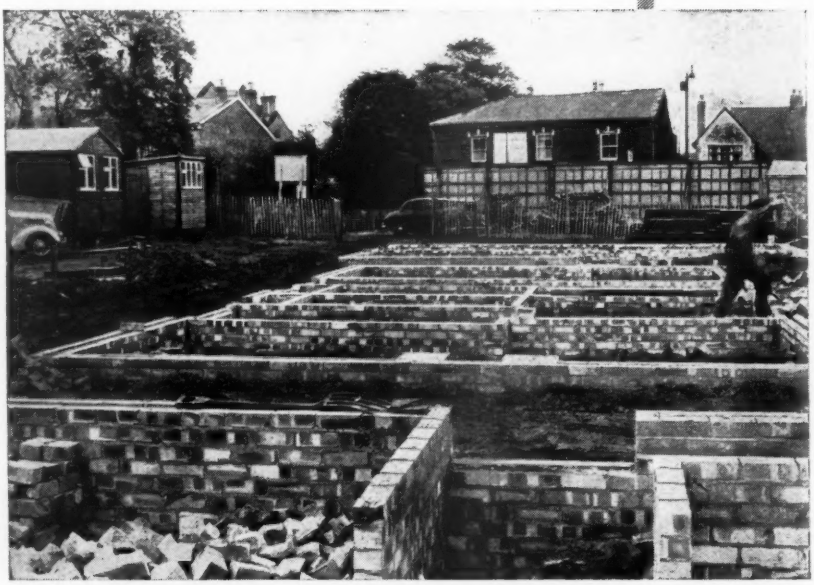
BRICKS AND DOMESTIC ARCHITECTURE

FLETTONS AND FOUNDATIONS

BELOW D.P.C.

In this country where frost rarely penetrates more than a few inches below ground and subsoil moisture conditions remain comparatively uniform the use of 'Phorpres' Flettons for footings is long established practice. Although bricks in footings may be wet they are not subjected to long spells of frost.

Whilst calcium sulphate and magnesium sulphate are present in some soils and other soils are naturally slightly acid, these salts and acids have no effect whatsoever on properly burnt clay bricks. They can and do attack Portland Cement and some limes used in mortar and concrete. For this reason it is good practice in heavily contaminated soils to use sulphate resisting cement to avoid disruption of the mortar.



'Phorpres' Flettons being laid in foundations of the Birmingham Corporation Housing Development at Laurel Road, Handsworth, Birmingham

BETWEEN D.P.C. AND GROUND LEVEL

Practical experience has shown that 'Phorpres' Flettons are entirely suitable for use between D.P.C. and ground level.

Although conditions might in theory seem more severe the building above D.P.C. undoubtedly affords some protection and the conditions obtaining are hardly those of 'extreme exposure' as defined by the Building Research Station.

No case of failure has ever been reported and 'Phorpres' Flettons are specified for foundations by many leading architects and over 400 principal authorities engaged in domestic architecture.

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Free from dust

Obviously the Washington Wall Radiator can be easily cleaned—an essential factor in hospitals and schools, and wherever hygiene is necessary. The stream of warm air caused by convection carries no dust to pollute the atmosphere

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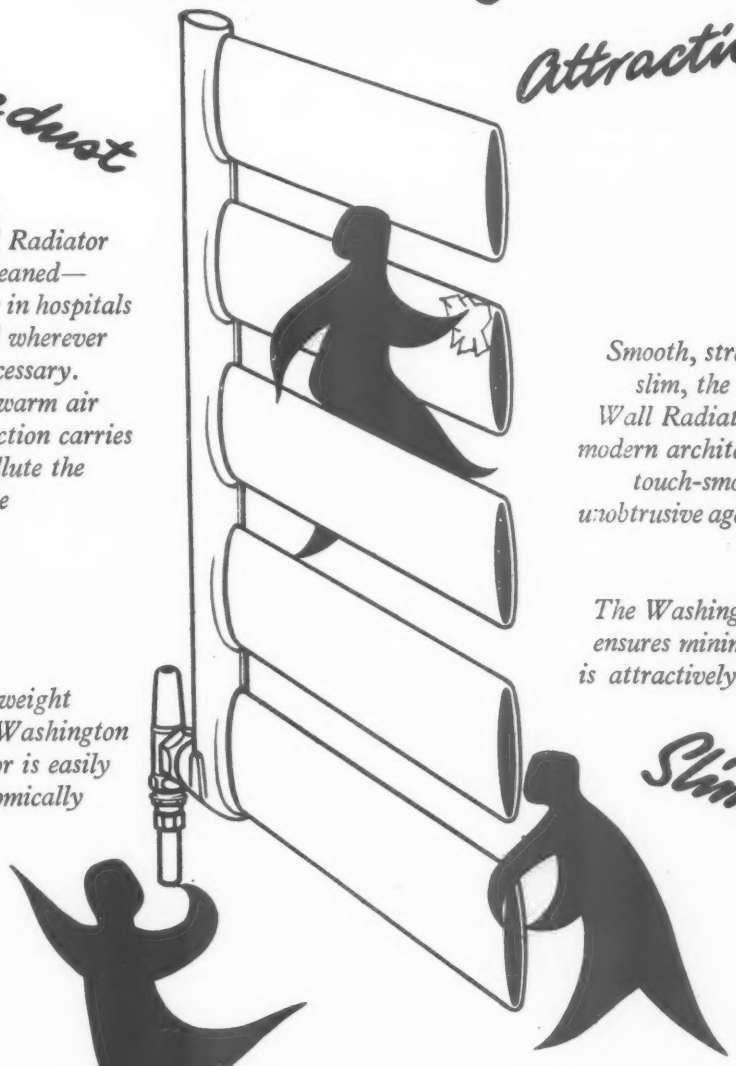
Being of lightweight pressed steel the Washington Wall Radiator is easily supported, economically handled



Attractive

Smooth, streamlined and slim, the Washington Wall Radiator ideally matches modern architectural trends; its touch-smooth finish is unobtrusive against any background

The Washington Wall Radiator ensures minimum projection and is attractively slim in appearance

Slim

...A Revolutionary Wall Radiator

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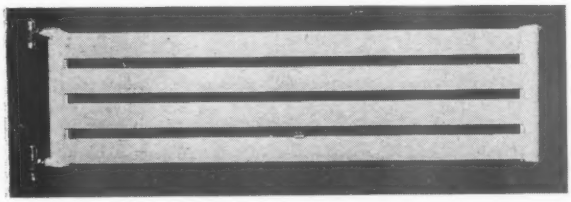

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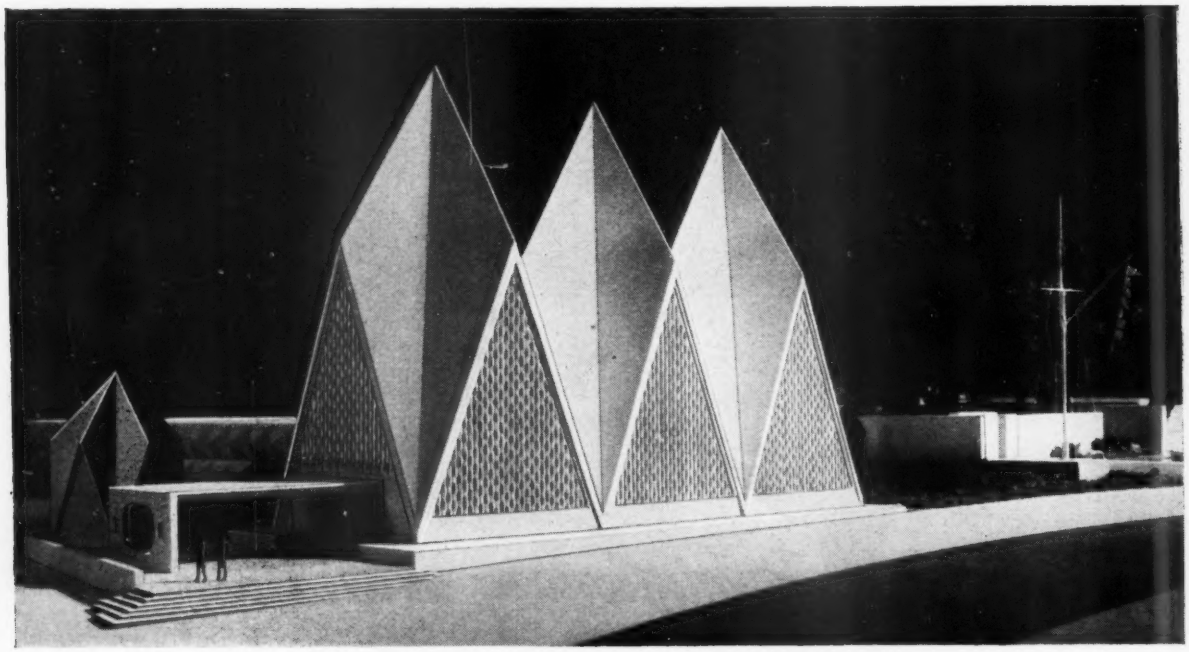
ARCHITECTS: Howard V. Lobb and Partners, FF.R.I.B.A.
CONSULTING ENGINEERS: F. J. Samuely and Partners
HEIGHT: 70′ 0″
BASE: 36′ 0″ square each crystal
COVERAGE: 4,000 sq. ft.
CONSTRUCTION: Stressed-skin plywood panels coach-screwed together



Before you decide...

please do not hesitate to consult the T.D.A. who will gladly supply you with information on the uses of softwoods, hardwoods, plywoods, modern timber design and the names of timber fabricators.

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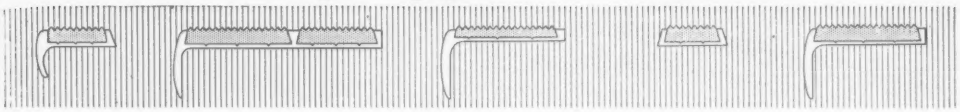
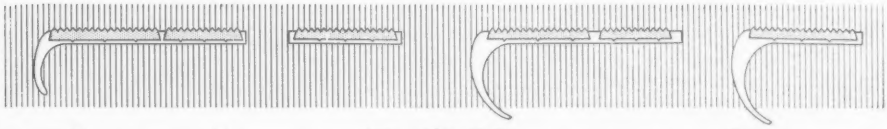
TGA TD125

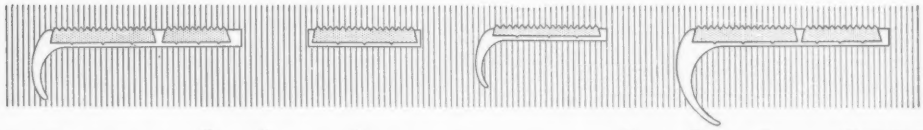
For every type of stair



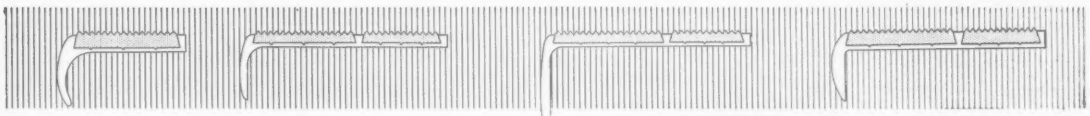
(wood metal or stone)



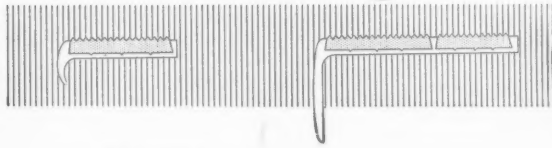
there's a DON non-slip



tread (colour or fabric-filled)



and nosing



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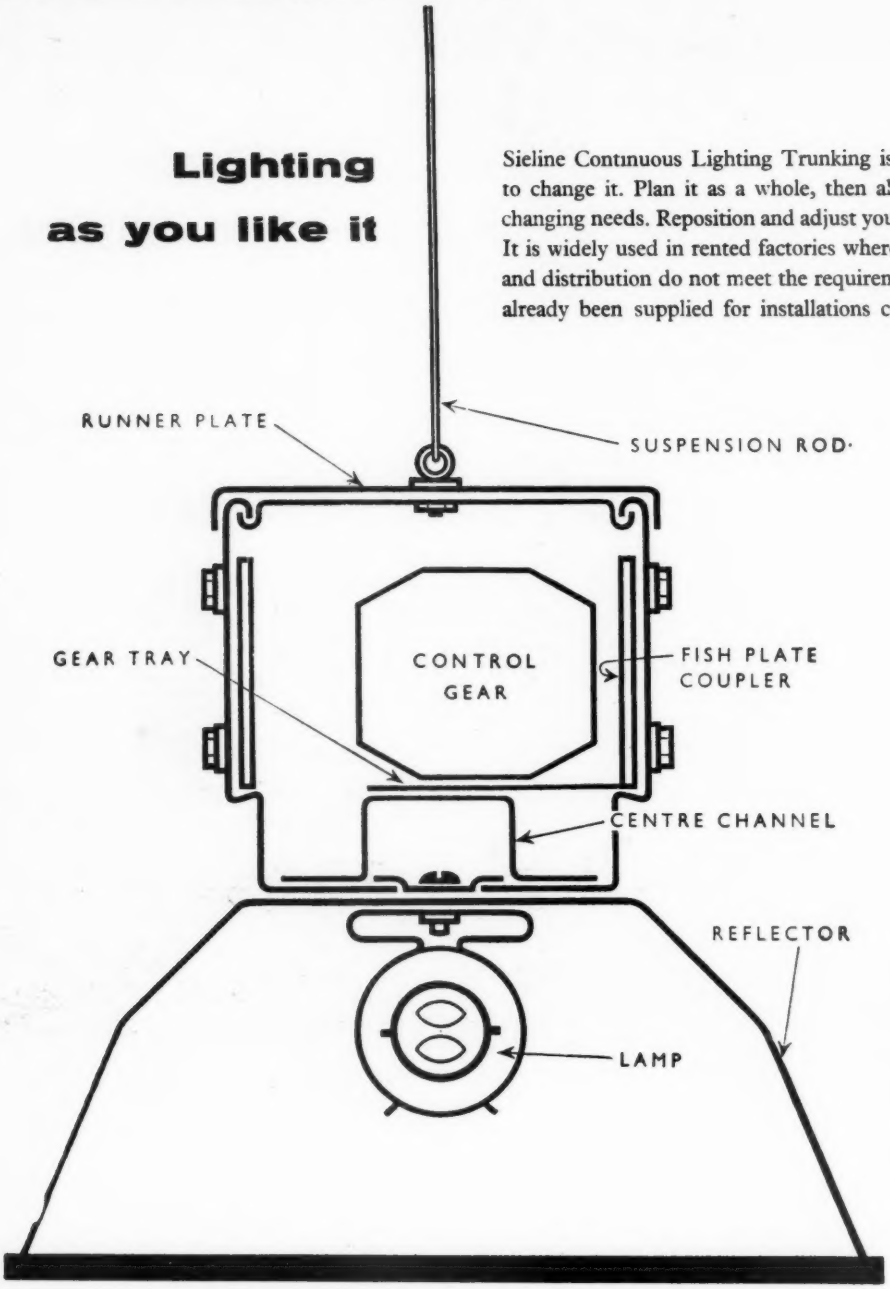
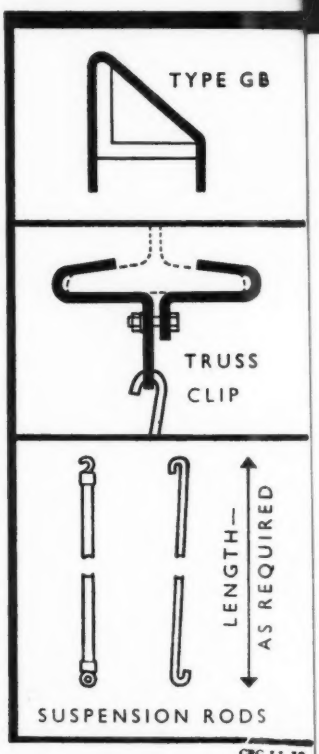


The trunking is delivered in an advanced state of assembly for easy erection. Control gear and lighting units can be spaced at any intervals. A complete range of suspensions (specimens illustrated) provides for erection under any type of roof. If you would like complete information about Sieline Continuous Lighting Trunking, write for leaflet F.22 or get in touch with your local Siemens Ediswan lighting engineer for advice—no obligation.



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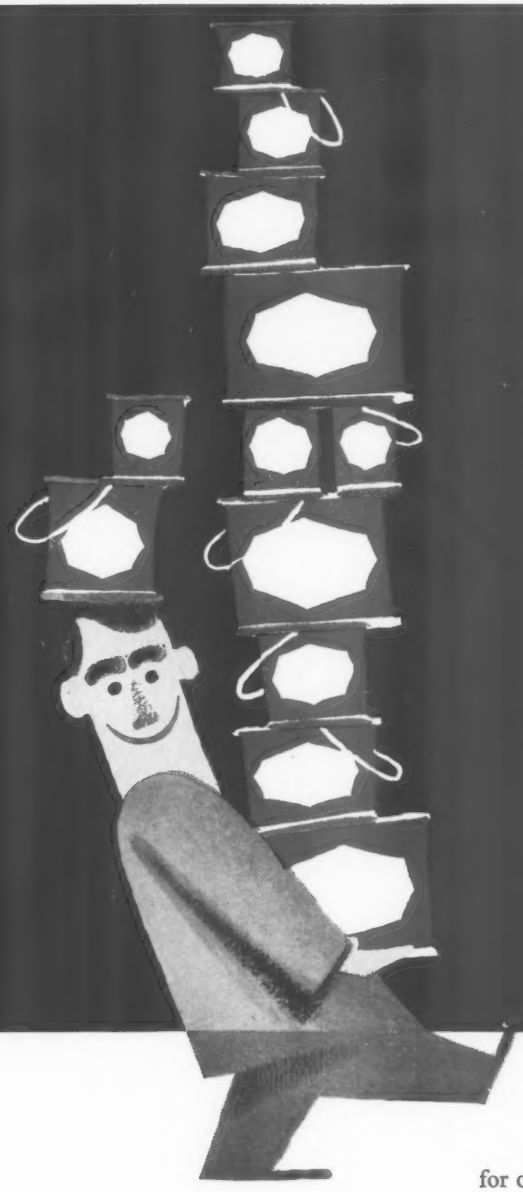

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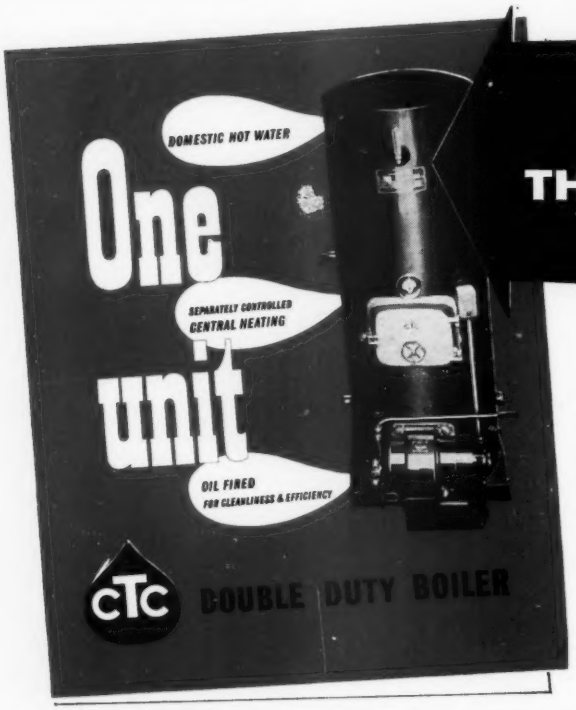

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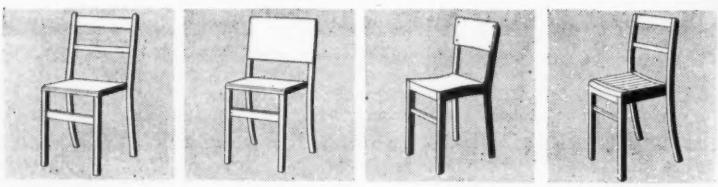
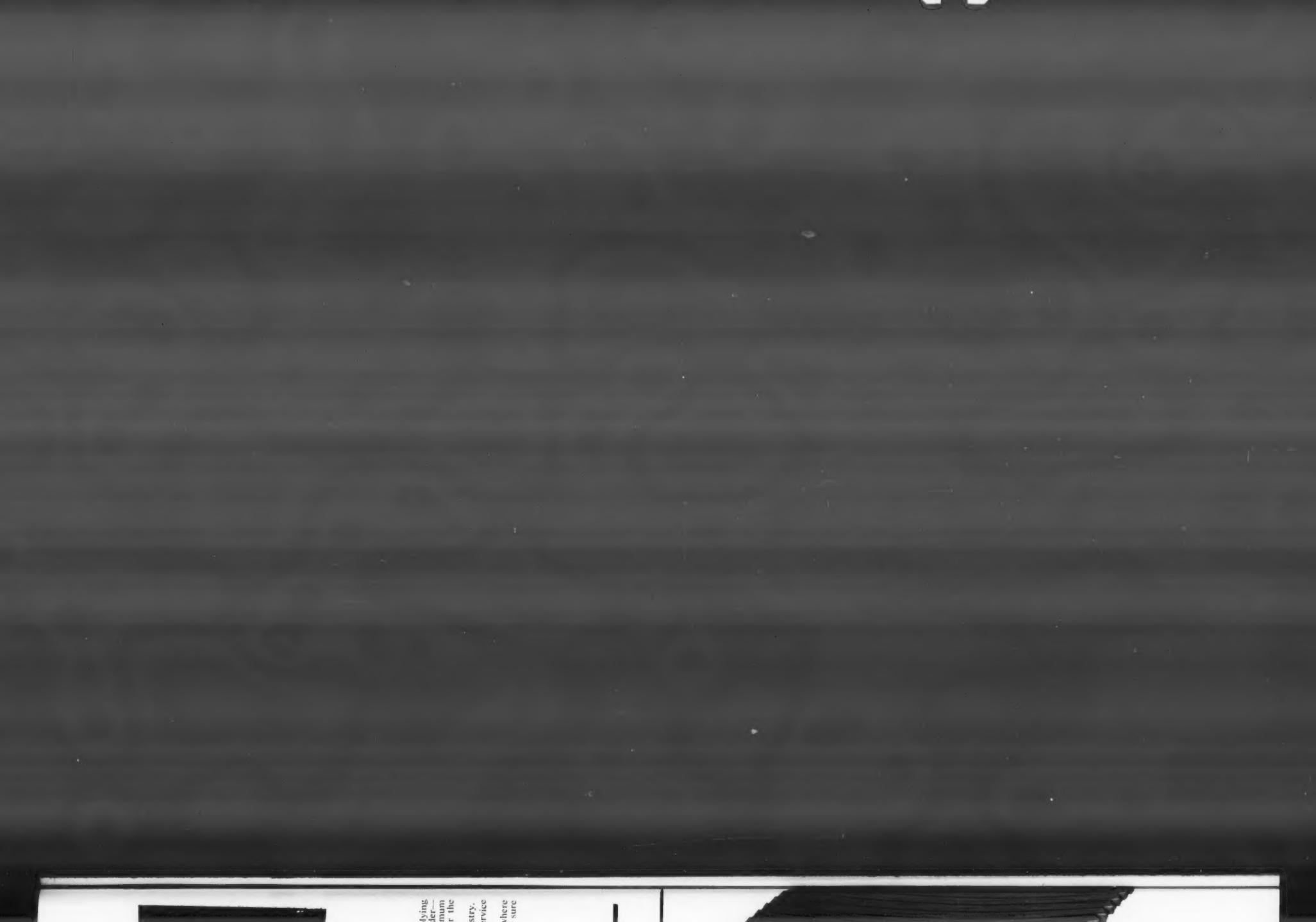


WN2 WN3 WN4 WN5

WN3

Kingfisher *Nesting Furniture*



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Architect: Frank Scarlett, B.A., F.R.I.B.A.

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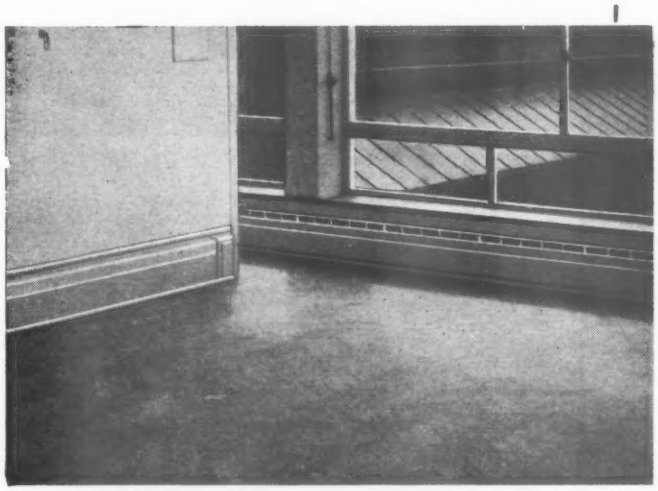
Once again, skirting heating by Crane



Just built at St. Joseph's Hospice, Hackney, E.8 is this new extension for incurables. Its extremely modern design calls for a heating system that will be as unobtrusive as possible. The need for complete freedom in the placing of beds demands all-over heating with no isolated units and no 'cold spots'. Ease of daily ward cleaning is another important factor. For these reasons Crane Skirting Heating Types R and RC have been chosen. Type RC panels are 9-inches high. **Type R, as well as being made in the 6-inch size, has lately been made available in the 9-inch size for situations requiring additional heating surface.** Both types are in two-foot lengths and half sections. Crane is the perfect modern way of heating any building.

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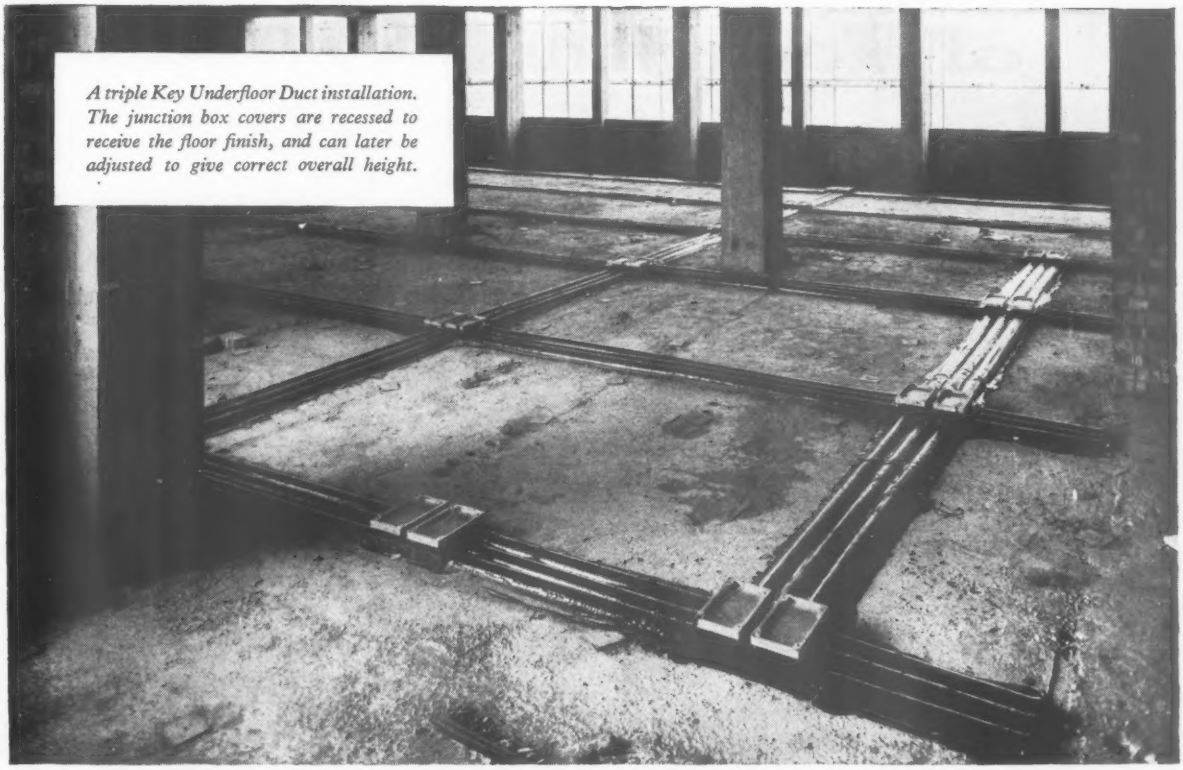

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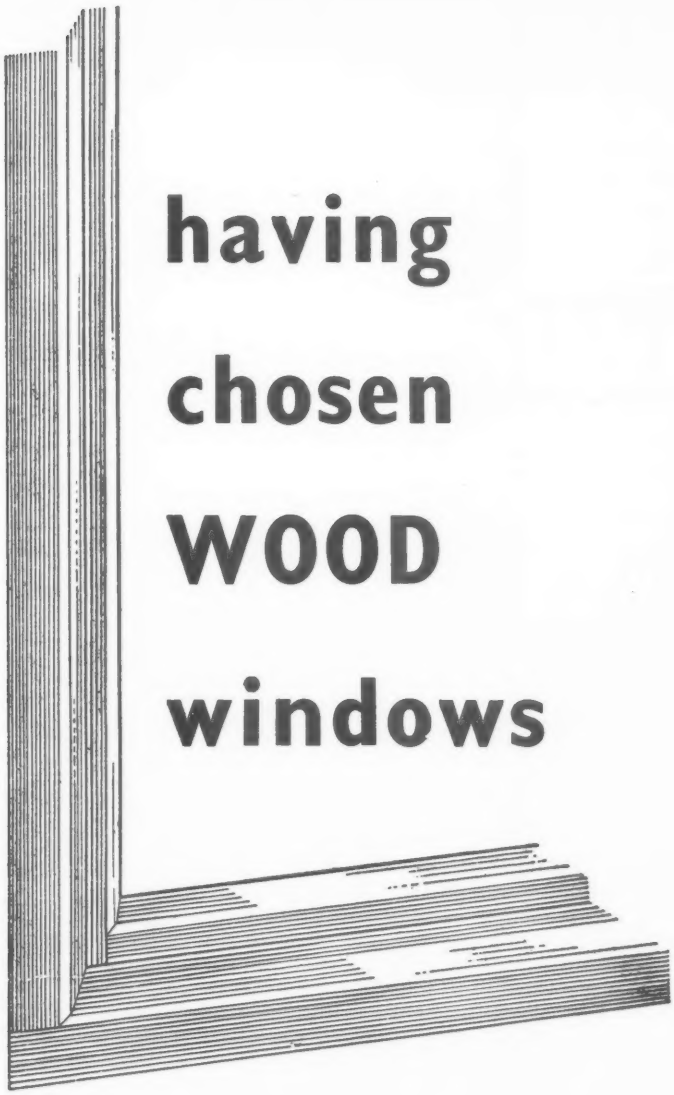

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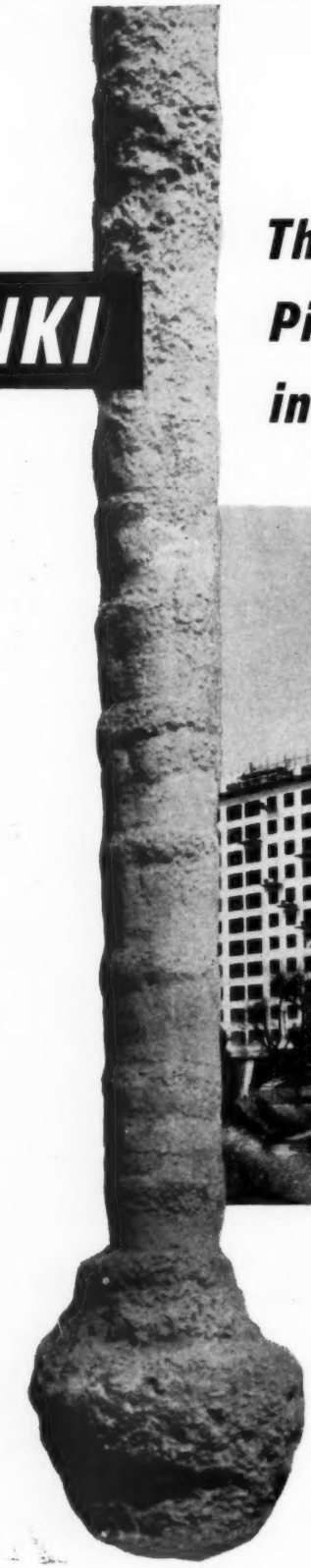

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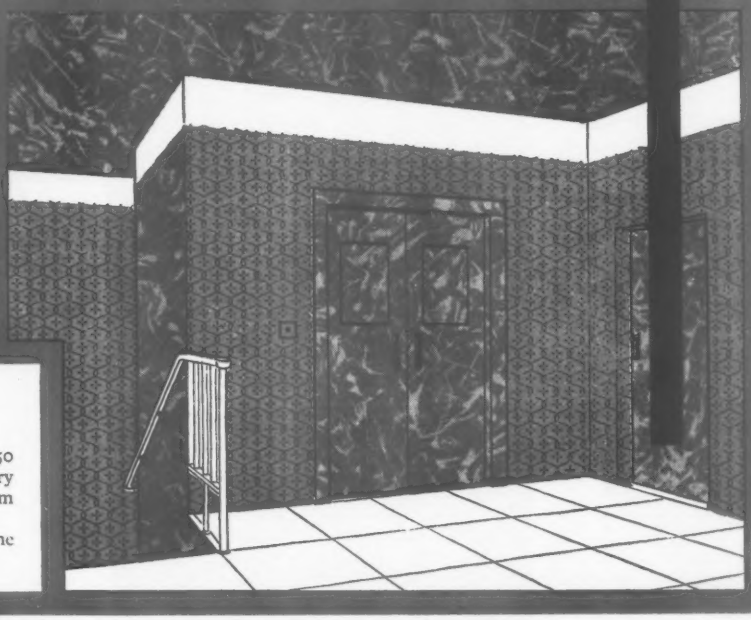

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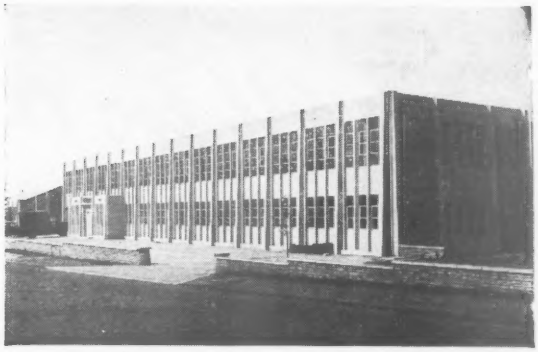

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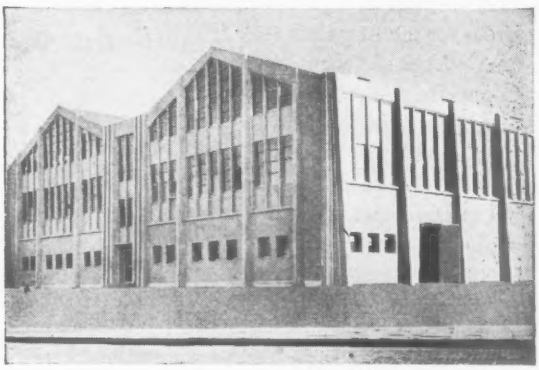

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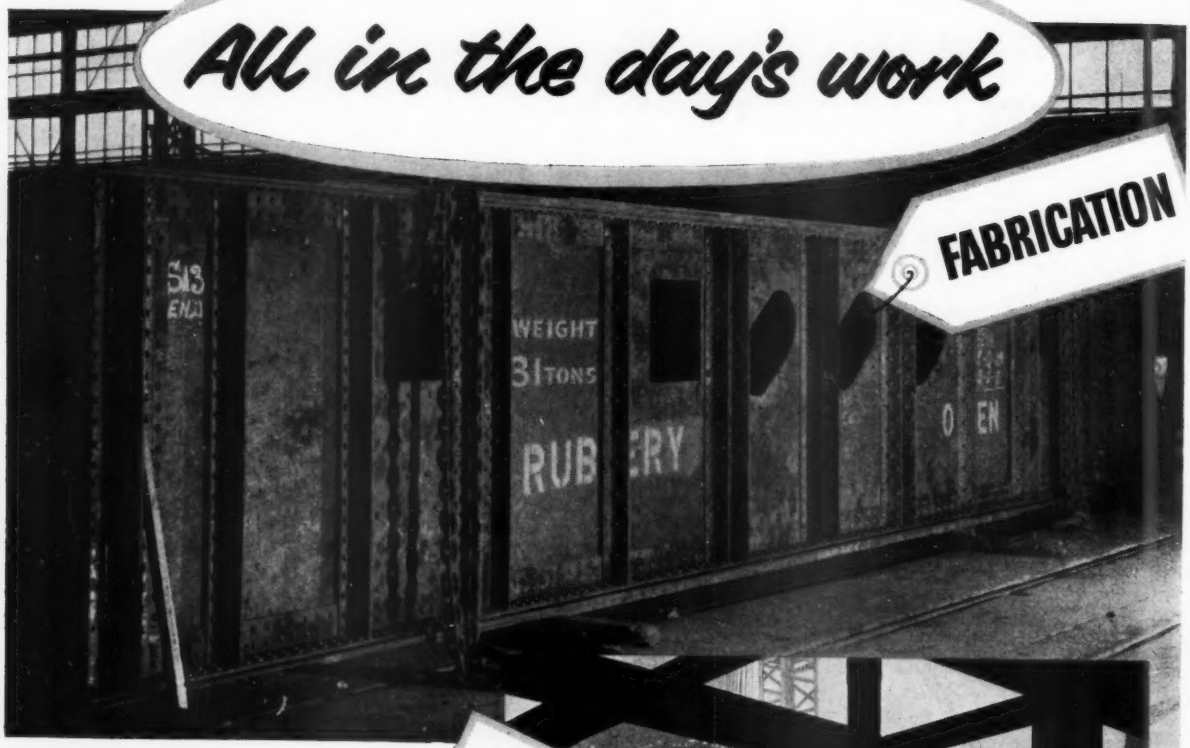

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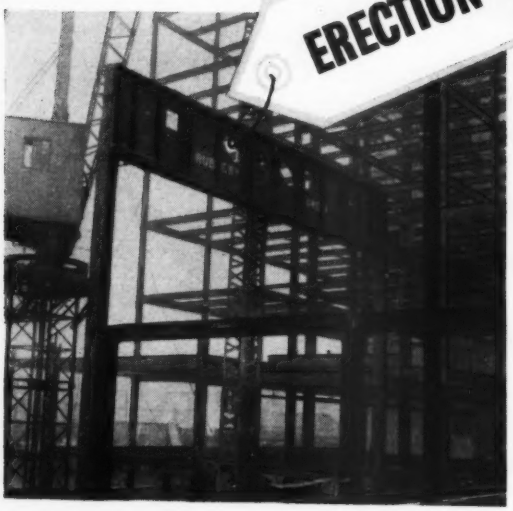

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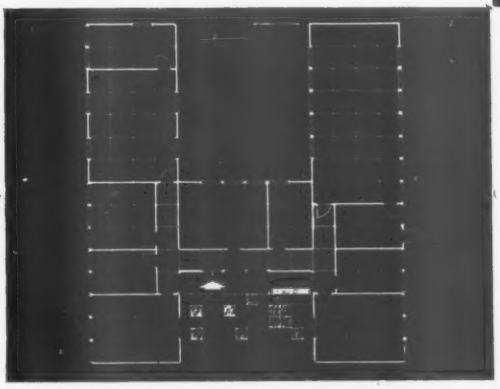

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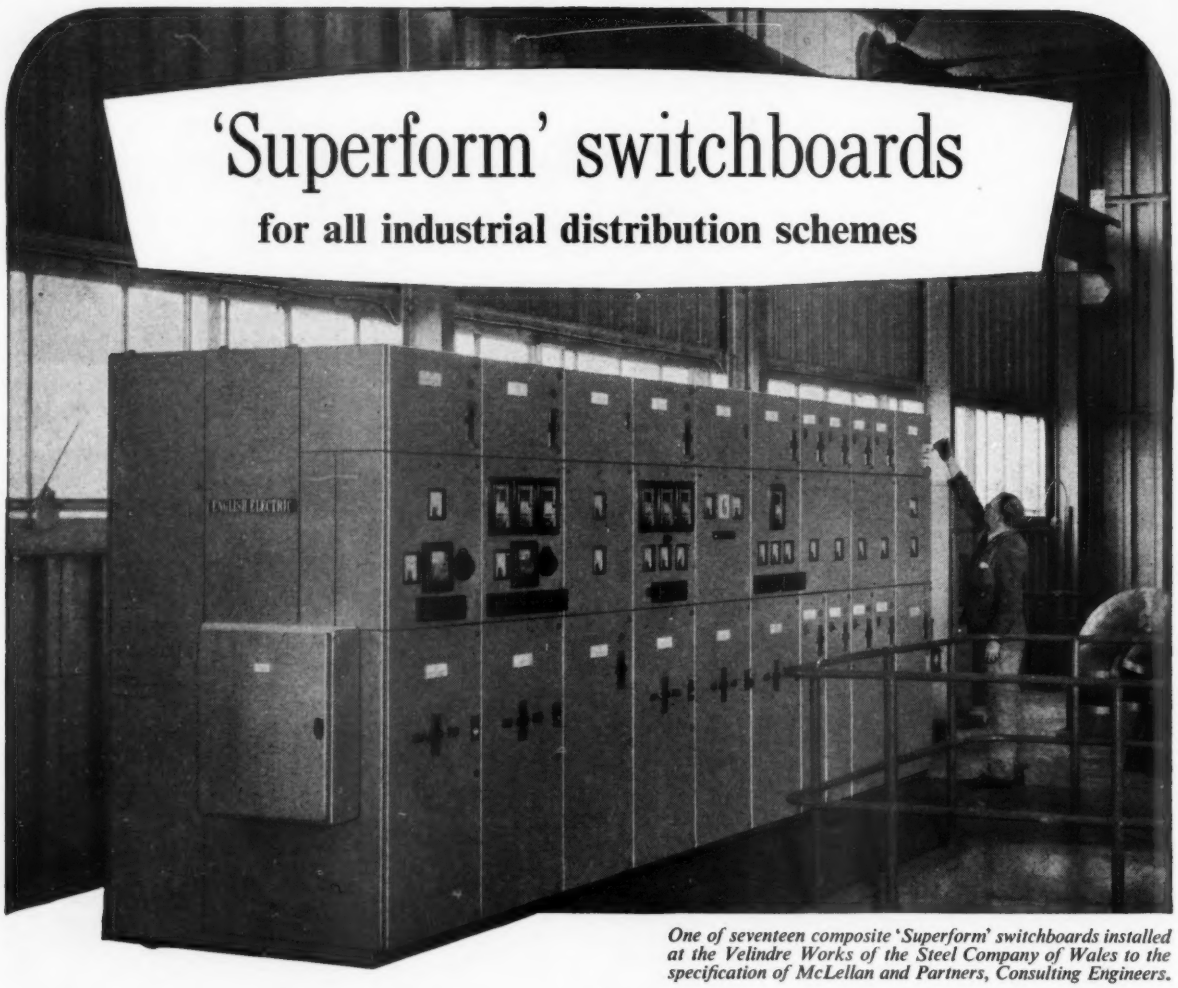

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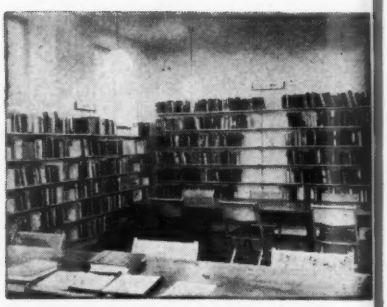

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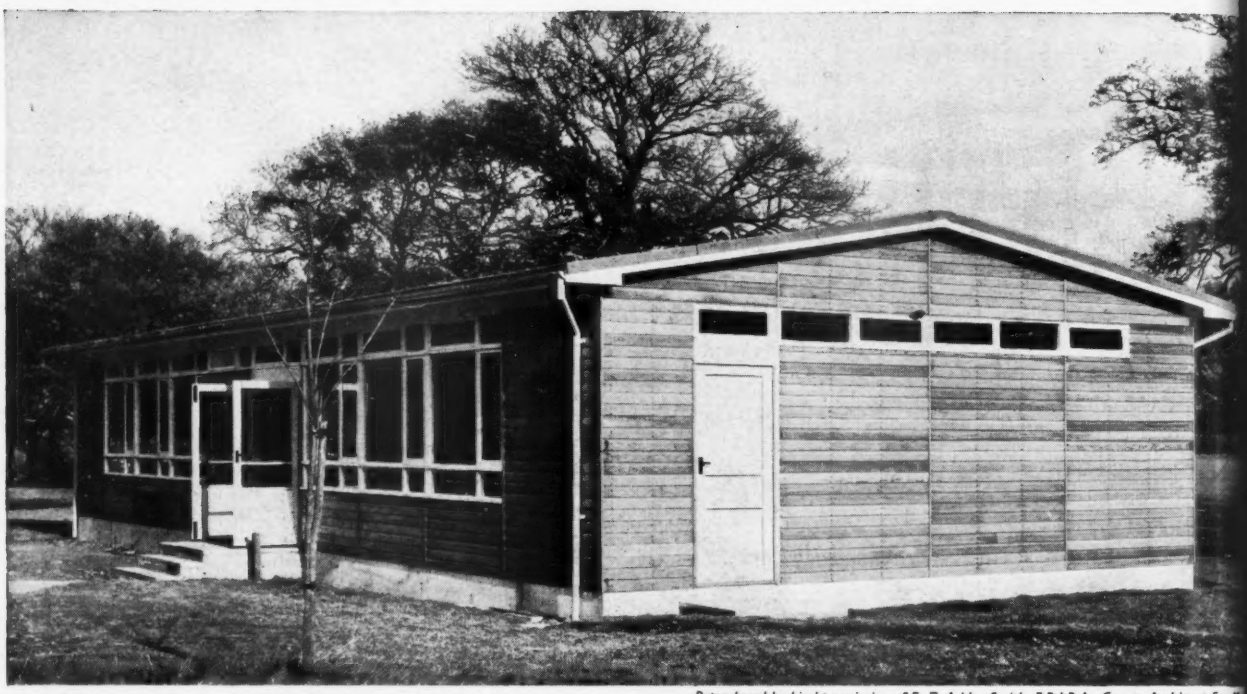

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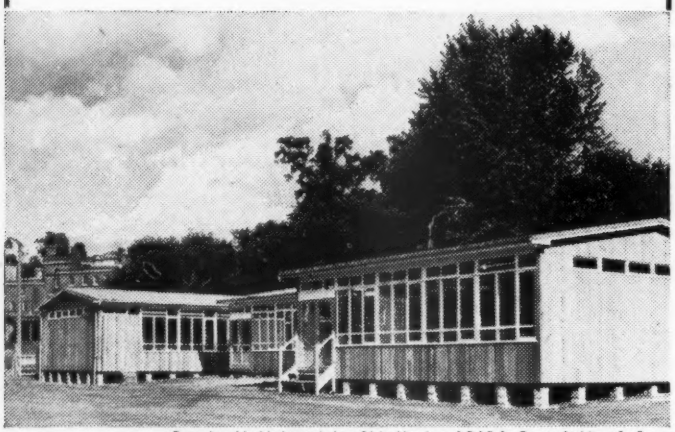

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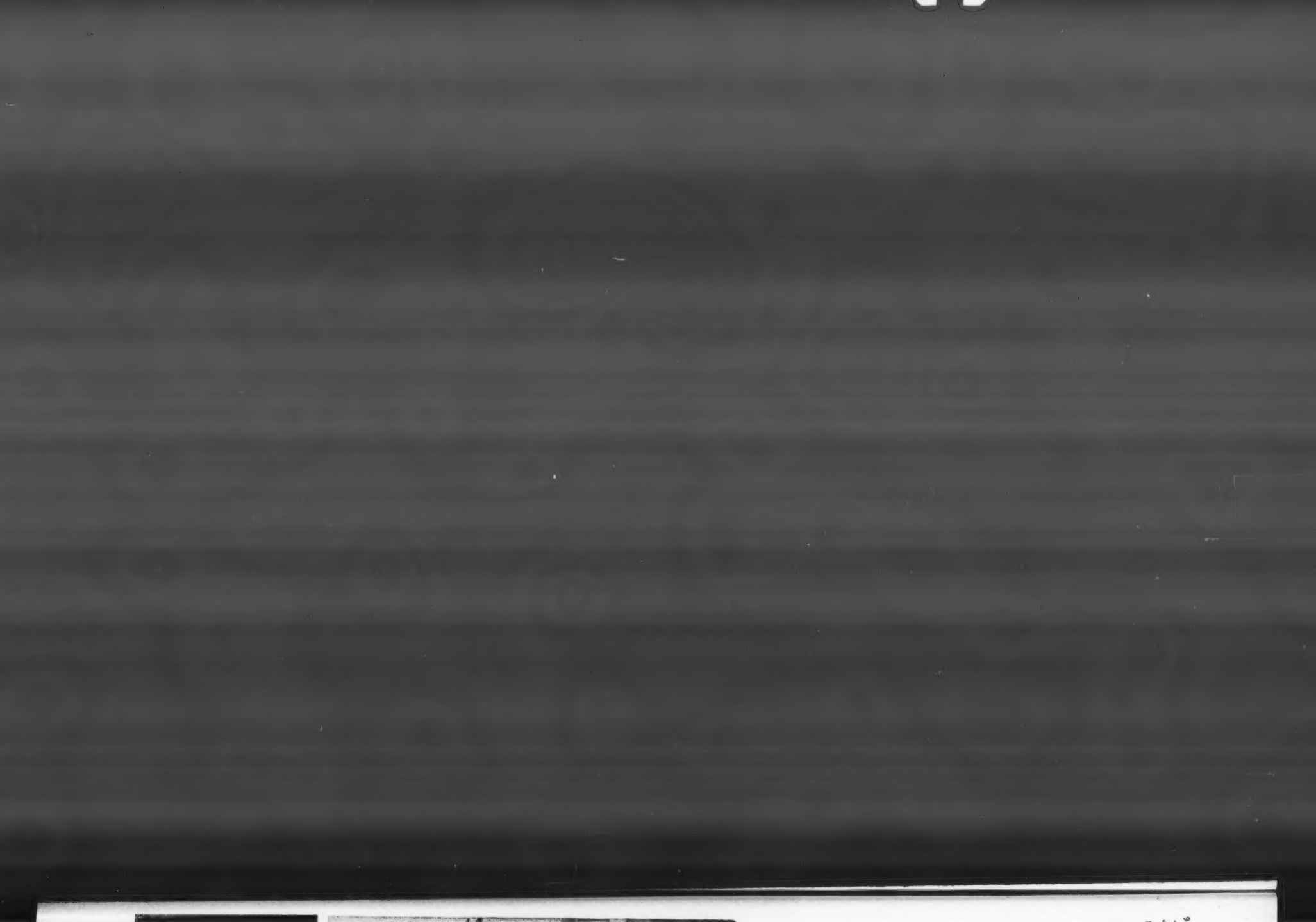

Southside Canteen, Royal Ordnance Factory, Euxton, nr. Chorley, Lancs.

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NOT QUITE ARCHITECTURE

A NEW MYSTIQUE

Management is the new o.k. word in building circles. Prominent builders plead for it at annual meetings, the technical press is invited to films about it, building research men and the architects who associate with them say that the profession may decline without it. But no one knows exactly what it is.

*

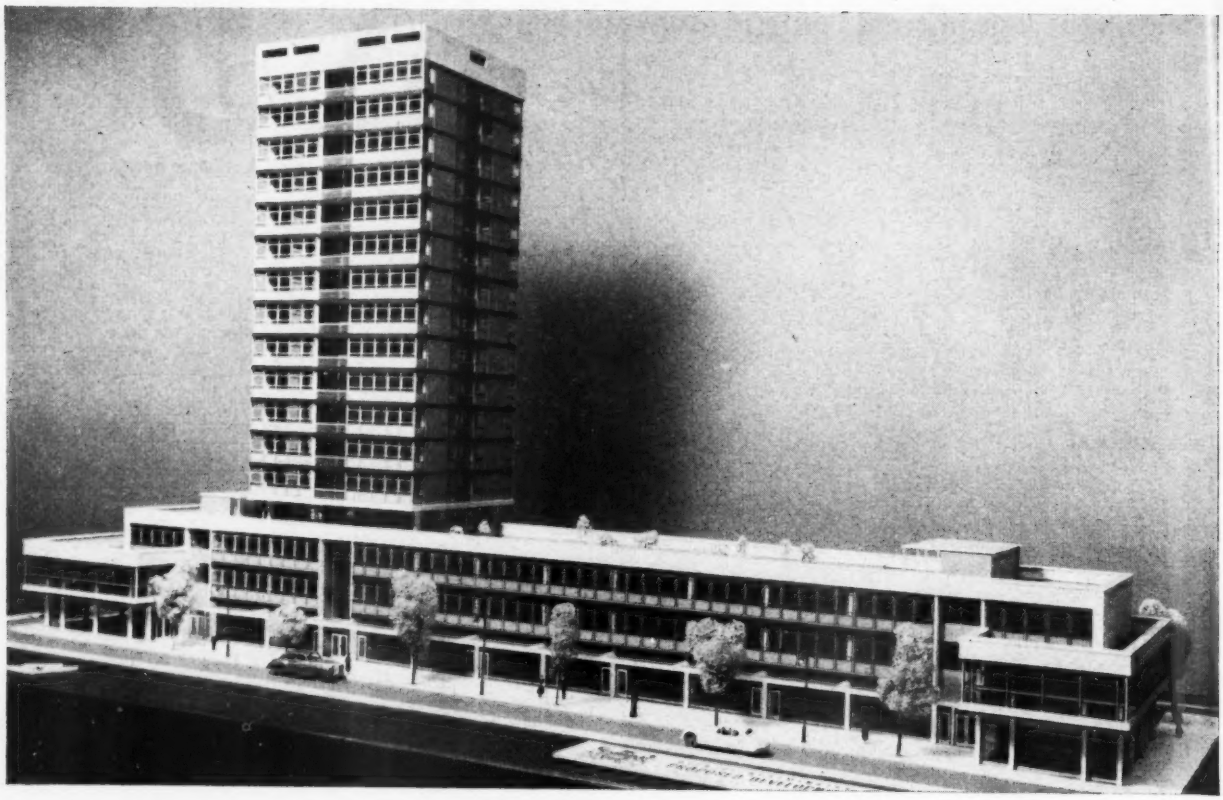
If you say to a management man "Ah, yes, time and motion study!" you are told that this is only one of the *tools* of management and anyway it is a term no longer used. The really important thing is the *philosophy* of management and if you ask what this is, you hear sonorous phrases like "capacity for leadership," "moral integrity," "clear thinking," and so on. This seems a little ambitious so you ask what field management covers, and you are given a long list: general management, financial management, design management, marketing management, production management . . . and so on. The list is so comprehensive there seems little left for anyone else to deal with. Indeed it soon becomes evident that *everyone* is a manager of some sort—company director, housewife, ganger; and that every task—the use of a screwdriver, the channels of promotion in BOAC, the way in which the office boy is asked to empty the wastepaper basket, qualifies for the critical scrutiny of the management expert. There is no escape.

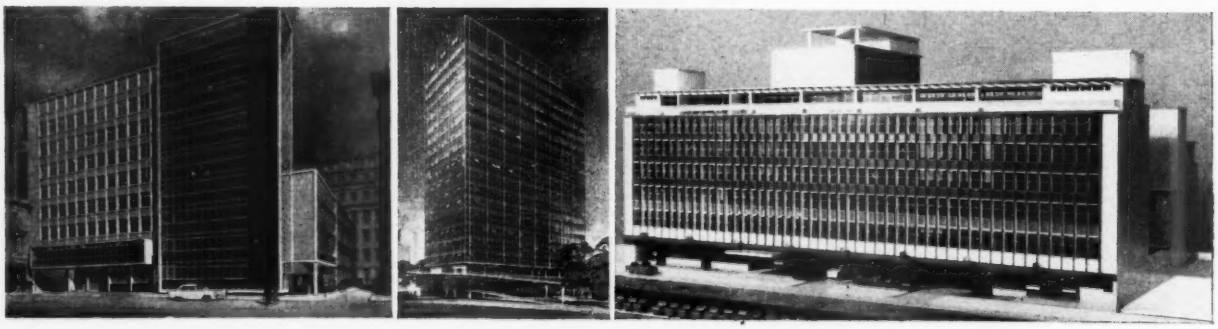
*

But what can this scrutiny do for us? It can improve output, reduce frustration, increase harmony and bring about an enhanced sense of purpose. Fewer men can do more work more happily and be paid more justly and promptly for it, etc. . . . It is at this point one begins to suspect that something has gone wrong.

*

The idea of, say, planning in advance the manner in which a particular job is to be done appeals both to commonsense and to the need for order. But the idea of trying to bring about a joyful, dedicated, integrated clockwork smoothness throughout a whole industry induces only a rather numb cynicism. One gets the feeling that, before anyone could do anything about it, a few valu-





Neutral Nets or Emasculated Eclecticism?

This year's architectural room at the Royal Academy exhibition shows an even greater diversity of architectural standards than in previous years, as readers can see for themselves on pages 682-686. More numerous than usual, as a building type, are designs for blocks of offices, of which a selection are shown here. The most conspicuous feature, and a welcome one, is the use of the glazed curtain wall as a neutral net to form an unaggressive background to the urban scene. How much more preferable is such an approach for buildings in central areas (which, through high site costs, are bound to be multi-storeyed) than to attempt a watered-down neo-classical design such as the proposal, left, for offices on the old Carlton Club site in Pall Mall, which can only sit uneasily out of scale beside its neighbours. Owned by the City Acre Property Investment Trust and to be occupied by the Hawker Siddeley group (another example of the indifference to contemporary design of an influential group of manufacturers) this building has had its exterior designed by Donald H. McMorran, A.R.A., but the architect for the whole is Armstrong Smith, staff architect to the investment trust, with Messrs. Dale & Simpson and Messrs. Fitzroy Robinson & Partners acting as consultants. Top, design for the redevelopment of Berwick Street, Soho, by Leonard C. Holbrook. Above, left to right: City office building by Alan D. Knapton; office development on Route 11, Moorfields, by Lewis Solomon, Kaye & Partners; and redevelopment in Berners Street, W.1, by Slater & Uren.

able new techniques have become blown up into a vast mystique. Such happenings are not unknown. When the early psychoanalysts revealed the existence of subconscious motives they began to speak as if they had uncovered the only *real* motives. Nearer home, the modern architects of the 1920's and 30's sometimes wrote (and spoke) as if functionalism was the solution to social and economic as well as to architectural problems. All new discoveries save the world.

*

It is not difficult to see how management expertise got out of hand. If you start to reorganize one task, this is bound to reveal the inadequate organization of the other tasks connected with it, so you extend your attention to the whole complex of tasks. But you can't stop there, for in reconsidering the manner in which tasks are performed you are compelled sooner or later to study the people who do them. This leads to education. The boundaries of your field are constantly extending and the aspects of your field constantly multiplying, so you cannot conscientiously stop to draw breath until you reach religion.

*

The aim all along has been worthy enough —to recognize that everything is connected with everything else—but if you have ended up by including pretty well the whole of human endeavour, knowledge and motive under the title "management" then something is wrong somewhere.

*

Management experts are generally likeable fellows. They have done wonders for bandage-packing, the galvanizing of storage tanks and the calculation of bonus rates, but one is always a little apprehensive of their "philosophy." Not only because it appears to lack spiritual insight, but because it obscures the value of the analytical and creative techniques which are "merely the tools" of management.

*

Perhaps the way management "philosophy" appears to us architects is rather like the way our mystiques appear to the layman. Indeed I have seen the same baffled scepticism on architects' faces listening to management men as on clients' faces listening to architects. Clients may appreciate our skill in contriving a compact plan, but not our aim to "reveal organic structure" (or whatever it may be). Just as we might appreciate the management expert's skill with our filing systems or drawing office programme but not his efforts to persuade us into "correct management attitudes" (or whatever it may be).

*

Everyone needs to belong to a mystique and the essence of a mystique is that it remains mysterious. Perhaps the truth is that, unknown to themselves even, the management experts don't want us to penetrate the mysteries of management "philosophy." And for that matter, perhaps the most disconcerting client of all might be the one who *did* have an inkling about "organic structure." I have no moral to offer.

JOHN CARTER

The Editors

EDUCATION: PRODUCERS AND CONSUMERS IN ACTION

THE Oxford Conference may well go down in British architectural history as an event which presaged a turning point in the quality of architecture several years later: for it is on the standard of education that any profession ultimately depends for the contribution it makes to the civilization of its time. Many of the more thoughtful minds in the profession have been increasingly concerned with the condition of architectural education, and in a leading article which appeared on the day before the Conference began we pointed out what a very important contribution it could make at this time. Although we suggested that the educational needs of the building industry as a whole required examination so that architectural education could be more fully integrated with the associated disciplines in the industry, we did set out a number of proposals which could form a crash programme for immediate improvement.

It is very heartening to be able to report, from comments we have heard, that all these proposals were actually discussed at a mature and reasoned level, and that recommendations are to be made along the lines we suggested, which will propose that the standard of entry be raised, the External Examination be abolished, that the Schools should be either in Universities or institutions of University standard, that all courses should be full time, or at most alternating with office experience, that some form of intermediate standard might be desirable for those not intending to become fully qualified architects, and that post-graduate work is most important both for teaching and practice.

We hope very strongly that the profession will endorse these important and very necessary recommendations.

It is a happy coincidence that the students have also been having a conference, and that the representatives of 22 schools, having expressed concern about the present condition of architectural education, should have decided to set up BASA (the British Architectural Students Association), a report on which appears on another page.

The sense of responsibility which the students showed is most impressive, and they should be given every encouragement and assistance by the profession.

GOOD KNIGHTS SLEEP?

Sir Hugh Casson, judging from his spirited reply to the JOURNAL Editors in last week's issue, is convinced that there is no background group of "architect knights and the semi-retired" (to use the JOURNAL's phrase) "perfunctorily controlling" the RIBA. Other members of the RIBA Council think that there are, or at any rate were. Anyway, it is pretty obvious that the running of the RIBA cannot depend on an executive committee, despite its name, which consists of 15 men with very dissimilar viewpoints who meet comparatively infrequently. The only alternative to a "background caucus" is no caucus at all—which is, perhaps, an even worse situation.

BREUER EVEN COYER

When Marcel Breuer gave a talk on the new UNESCO building the other evening, the TUC hall was filled with an audience of the kind that is usually described as large and distinguished. ASTRAGAL wondered if some of the large and distinguished people present remembered how Breuer was treated when he was here 20 years ago. There is no complete work left from the small commissions he was given at that time. Yet surely no other emigré architect appealed so much to designers in England. The great charm and elegance of his work was very different from the crude manifestations of our own modern movement.

*

In his talk Breuer gave much too modest an account of how the UNESCO project was carried out. It is a pity he did not tell us how he coped with all the difficult committees concerned. However, Jack Pritchard, in proposing the vote of thanks, said that Breuer was a magnificent collaborator, which must account greatly for the success of the operation.

*

A pleasant, if somewhat nostalgic, evening—particularly as we shall see even less of Breuer now that his commuting between the Rotterdam store, Paris and New York is nearly at an end.

LEAD-ING KINDLY LIGHT

"Why worry" said a pale yellow brochure, as it plopped into my in-tray. As a matter of fact I was not, but I have been ever since. "Your house is shabby?" it went on: "Ring London's lead-ing service" (their hyphen—not mine). It seems that these people will transform your windows, and give your home a "new look" with the charm and beauty of leaded lights. Just what "new look" means here is only one of the disturbing questions raised by this document. And what is this statement that leaded windows give "maximum" privacy, while admitting more light than "out-of-date net curtains?" A little objective testing at BRS, or somewhere is called for.

*

The really worrying thing is that this product has the *Good Housekeeping* Seal. There is no doubt that consumer research organizations can only protect consumers against sharp practice on the part of manufacturers, and not against dull practice on the part of those responsible for their visual education. If a man wants to cover a picture window with leading—and examples of this have been seen—all that any research body can do is ensure that he is making a fool of himself with reliable equipment.

*

There is just one encouraging thing. "Guaranteed for 15 years," says the pamphlet. "They will last a lifetime." So perhaps the whole sad business is intended only for fogies with a 15-year lease of life.

The gilded effigy of Richard II at Westminster Abbey, made in 1395: one of the new series of picture postcards referred to in ASTRAGAL's *note. "Wish you were Here".*

WISH YOU WERE HERE

Architects who return from Abroad with pockets full of magnificent postcards often feel ashamed, and rightly so. ASTRAGAL, who doesn't mean what you mean, can never understand how British picture postcards manage to be quite so dreary. Even in a place as

The fact that so many voting members of the RIBA Council are not elected by the membership makes it all the more necessary that those who are elected are the best possible men for the job. The best candidates are not necessarily those with the best-known names, and to enable every candidate to state where he stands, and why he stands, the JOURNAL once again invites candidates for the RIBA Council to send us short election addresses, no longer than 200 words, for publication in our issue of May 22. The deadline for receiving copy is Wednesday, May 14. Those who think, rightly or wrongly, that the electorate should know what they look like are asked to send recent, untouched, photographs as well. Soon, we hope, the RIBA Council will realize that it is their duty to publish the views of candidates for office. Until then we shall attempt to do their duty for them, in the interests of democracy.

famous architecturally as Bath you cannot find many good local views, and the meagre selection of pictures you can buy in Westminster Abbey gives no indication that the building contains some of the best mediæval sculpture anywhere.

*

But things are looking up. Thanks to Edward Carter, previously of the RIBA library and UNESCO, the Gordon Fraser Gallery has now issued postcards of Cambridge, Bath, Gloucester, St. Paul's, Westminster Abbey and Hampstead (an attempt to capture the intimate atmosphere of a locality that cannot claim as much tourist value as the others). Each of these has a series of cards; so has the Royal Festival Hall. (What other modern building would qualify for such treatment?)

*

Most of the photographs—particularly the close-ups—are very good (photographers include famous names like Eric de Maré and Helmut Gernsheim). There is a splendid series of details of the Westminster Abbey monuments. Inevitably, general views of, for example, St. Paul's look fairly like other general views of St. Paul's. Reproduction is not up to the best Continental standards, but it is far better than we usually get in this country. ASTRAGAL is sure that these cards will sell—at sixpence a time—in large numbers.

PPRA FOR MGM?

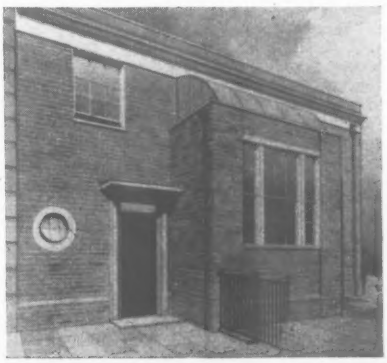
Architects really *are* men of distinction. There can be no further doubt about it after the *affaire* Greffi. You hadn't heard of this *affaire?* But if you made the mistake of re-reading *A Farewell to Arms* before seeing the recent film of it, you will have at least suspected that something was going on, from the way the part of Count Greffi had been suppressed from the film. Now that Mr. Selznick's memoranda on the subject have been published, we know that no actor was sufficiently distinguished to play the part, and that among those men of distinction, like Bertrand Russell, who were approached, but declined to try, was Frank Lloyd Wright, who even went so far as to read the script before declining.

*

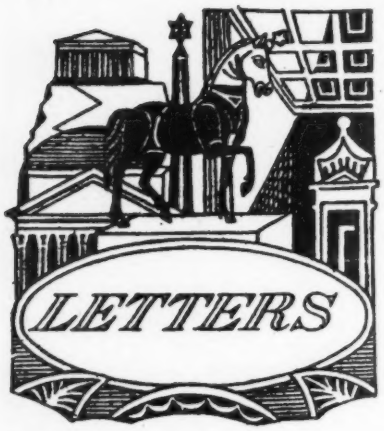
There's glory for you. But don't rush out and ring up you-know-where just because you have a long, tatty, knitted waistcoat and have heard that Rex Harrison will be leaving the part after a year.

ASTRAGAL

Marcel Breuer (right) who spoke to AA members last week on his Unesco building, met an old friend at the reception beforehand in Crofton Gane (left), who gave him his first job in England in 1936. This was for an exhibition house (jointly with F. R. S. Yorke) at the Bristol Royal Agricultural Show in which Gane, a furniture manufacturer, displayed his products. See "Breuer even Coyer."



Two designs for this year's Royal Academy exhibition showing the catholic taste of the selectors who chose, left, a neo-classic building too trivial for its important surroundings, and below, commonplace modernity. (Left, new rectory St. Bride's, Fleet Street, by John R. Stammers; below, hotel at Burnley by H. Hubbard Ford.)



Eric Heaf, A.R.I.B.A.

R. Furneaux Jordan

R. Lucas,
Director Trussed Steel Co. Ltd.

C. S. Colbeck

H. H. Ballin,
Director ATLAS Lighting Co. Ltd.

A. L. Gray, F.R.I.B.A.

"Fourth Dimension"

Frank I. Jenkins,
Acting Secretary Society of Architectural Historians

Plan For Education

SIR,—Now is the time to stop deploring or defending the faults or merits of architectural education and to state and examine the alternatives. Here is an immediate remedy for the schools.

Abolish those grandiose programmes which encourage impressive but superficial designs without allowing time for full consideration. Two complete building designs with full working drawings, specification, cost study and site programme in five years is ample to show a student's ability. Let the rest of the time be concentrated on short, strictly limited programmes of the more detailed aspects of construction, function or æsthetics. Short programmes of great variety linked to current lectures and with plenty of time in between for criticism, discussion and experiment will bring enthusiasm to the students. Stop marking. It only makes the student over-cautious and timid. Replace it by a simple indication of satisfactory or unsatisfactory progress. The lecture syllabus must be continually revised and all subjects correlated.

More radical changes will require a complete alteration of the whole educational system. We must define the end product, ascertain the most suitable raw material and then evolve a production process.

The end product is the architect, either as an individual thoroughly and patiently considering all aspects of his designs and therefore limited by time in ambition and quantity, or as a member of a team in a government or private office specializing in a part of the design process. The schools must produce these architects, not frustrated geniuses or permanent assistants.

The GCE and similar examinations are not designed for the selection of architects. The potential architect should be selected by a series of special tests. The suitability of these tests will be proved by using qualified architects, successful and failed students as guinea-pigs. These tests should be very thorough for they should be the last. Let the student then prove his value at the drawing board, in discussion and on the site.

The making of an architect should not be limited in time. The studies should be clearly defined and liberally criticized, and some should be organized by the students. The only compulsion should be the students' enthusiasm. There must be no demarcation into years, rather the whole school should be vitally aware of itself and its relationship to other fields of study. Each should be a centre of architectural theory, development and experiment. Specialization by the advanced students should be encouraged. The staff should direct, not discipline. The students should be expected to do practical work either on their own account or with architects, engineers, builders and manufacturers. The student should apply for his qualification when advised to do so by his tutors, personally submitting his own selection of his work, first to the staff of his school and then, to ensure uniformity, at an interview with independent examiners. Degrees of qualification should take the form of recommendations to specialize.

On this framework can be built the future of architecture in this country.

ERIC HEAF.

Sheffield.

"Resignation"

SIR,—I agree with the statement in the letter from Cleeve Barr and Anthony Cox (AJ, May 1) that resignations from the RIBA will do little good in the present crisis. I regret, therefore, that the publication of their letter coincided with the unimportant announcement of my own resignation. In fact, that resignation is more apparent than real. I am reverting from the status of Fellow to that of Associate and my "resignation" is effective only between one RIBA Council meeting and the next. This, so far as I am concerned, is an economy rather than a protest, the advantage of Fellowship over Associateship being apparently nil. I am sorry to bore your readers with a small and personal matter. I don't quite know why the RIBA ever asked you to make the announcement; it would have been simpler to wait a few weeks and then, if they must, announce my reversion to Associateship. As it is, a false impression has been given which I wish to correct.

R. FURNEAUX JORDAN.

London.

Truscon Plate System

SIR,—I have read your article on the Millpool Flats (AJ, April 17) and was very disturbed at your cost comments on page 589—I quote: "It is perhaps interesting to compare the concrete frame elements in this scheme at 14s. 9½d. per sq. ft. with the flatted factory for the same authority (AJ, February 20) at 13s. 9½d. per sq. ft. The latter was also an 8-storey block, but with differing beam spans and without the concrete lift walls and balconies. The approach to these two schemes has been different, but the ultimate costs are similar overall."

My Company designed and built the Millpool r.c. structure on the Truscon Plate System, which we know is economic, nevertheless, we have had several approaches from outsiders who have read the article. They say in effect, "We thought the Plate System was economic, but apparently one can build a flatted factory with heavy floor loadings at 1s. less per sq. ft."

The cost comments I have no doubt are incorrect, and indeed harmful, for the following reasons:

1. The flatted factory price is calculated on a total floor area, whereas, the Millpool flats have been taken on the net habitable area only.

2. The flatted factory price does not include consulting engineers' fees. Millpool does include design costs.

3. Reinforced concrete lift walls are not in the flatted factory price but are included for Millpool.

4. The preliminaries in the flatted factory analysis are much higher than Millpool—this appears to be so, because the Millpool r.c. frame figures include costs of r.c. specialist preliminaries, such as tower cranes, portasilo, mixers, etc.

If proper adjustments are made for these points, we have the following comparisons:

(*a*) The flatted factory

	s.	d.
Price quoted	13	9½
Add design costs, say		10
Add part preliminaries, say ...		6
	15	1½

(*b*) The multi-storey flats

			s.	d.
Price quoted			14	9½
Deduct: For adjustment to total floor area ...	2	5		
Reinforced concrete lift walls		10		
			3	3
			11	6½

Thus we have 11s. 6½d. against 15s. 1½d., which is a very different matter from 14s. 9½d. to 13s. 9½d.

Frankly I do not think that a proper comparison can be made with two such diverse buildings, but if such an attempt is made, the above figures are more realistic.

R. LUCAS.

London.

The Editors reply: We are sorry that the cost comments have caused misunderstanding. Far from implying that there was little to choose between the two jobs, the comment was intended to point out that although the price figures were similar, they should not be compared directly because of differences between the jobs, *e.g.*, lift walls, etc. We agree that the comment might more usefully have drawn attention to different floor areas taken in each case, although it is common practice to use *net* areas for flats and this is noted in the published analysis. We would not expect architects or surveyors in preparing target figures for cost planning to take published, or any other cost information "cold" without adjustments for items such as preliminaries and design costs, although this might sometimes be difficult because specialist sub-contractors do not usually give such information in detail.

Cost Analysis

SIR,—I was very interested to read your correspondence regarding the merits of approximate estimating by the foot cube and foot super methods. There is no doubt that both have their advantages and disadvantages, but it has been most interesting for the last year or two studying the comparisons published in your JOURNAL.

It would be of very great value if in your Summaries at the end of each weekly Cost Analysis a figure could be given of the approximate cost per foot cube. In this way one is provided with an interesting comparison between the two methods of approximate estimating.

C. S. COLBECK.

Bristol.

The Editors reply: We use the floor area unit to express costs because it is a more sensitive measure of accommodation than volume. For example, of two houses with the same floor area, one might be 11,000 and the other 14,000 cubic feet—thus cubic foot estimates for one based on the cost of the other might be more misleading than

foot super estimates. Further comparisons of cube and super prices which suggest the unreliability of the former can be found in MOE Building Bulletin.

ASEE Exhibition

SIR,—I have read with interest and a degree of disappointment your review of the Annual Exhibition of the ASEE, on pages 572 *et seq.* in the April 17 issue of the ARCHITECTS' JOURNAL. Disappointment because I feel the review is not quite up to the usual high standard of your journal.

To start with—ASEE stands for the Association of Supervising Electrical Engineers and not Associated Society of Electrical Engineers. There are one or two more indications of laxity as to facts which I should have thought could have been avoided.

Referring to the lighting side, I am surprised that the new development of modular ceilings which was offered by three or four firms, and which to my certain knowledge created a very considerable amount of interest amongst architects, should have been dealt with in three lines on page 575, whereas the major part of the article was devoted to fittings ranges which have been on the market for a very considerable time.

The advantage to the wholesaler of being able to make up a large number of fittings out of a small number of component parts is cancelled out to a great extent by the need to handle four or more parcels to fulfil a single order and, in our experience, one has to guard against giving the contractor too much assembly work to do, otherwise the installation costs will go up substantially. This is the reason why the Atlas Atlantic range of fittings is offered as complete fittings although in the process of production the fullest advantage is taken of rationalization—it is by no means half-hearted as stated by your contributor.

Finally, I feel I must comment on the footnote. The battery of Strand Electric Spotlights in the entrance foyer were not intended as an exhibit of spotlights but were part and parcel of what was considered a successful lighting design for the entrance foyer which used diffuser panels in parts and coloured shadows—from these spotlights—on abstract shapes in others. The acknowledgment in the catalogue was to the lighting design and not to the manufacturer of the equipment.

H. H. BALLIN.

London.

"Iniquitous Habit"

SIR,—In your issue of April 24, you ask if readers agree with Brian Whateley's criticisms of the JOURNAL. Having been a reader for nigh on 30 years, I must on the whole agree with him, particularly regarding his comments on the ratio of advertising/reading matter. I fully appreciate that it is the advertisements which pay for the magazine, but the present preponderance is, to say the least, most monotonous, and I wonder how many readers so much as glance at them.

There are two further criticisms I would add to Mr. Whateley's list. One is the iniquitous habit of charging double for "Special" issues, all of which appear to contain at least twice as many advertisements as usual and only about 25 per cent. more reading matter. Surely, the additional advertising more than pays for the extra news items. My other complaint concerns the so-called "Working Details." A more blatant misnomer for these sheets would be hard to find. The photograph usually depicts quite an interesting subject, but after examining the example of precise engineer's draughtsmanship on the back, one is invariably still wondering how the thing is made. Hardly one of these detail drawings can be considered complete, and if such a drawing were issued to a Contractor as a "working detail," I dread to think of the number of queries which would be received

A. L. GRAY.

London.

The Editors reply. As Mr. Gray is aware, the number of advertisements we publish enable us to keep the price of the JOURNAL low, and in fact only one special issue—the New Year Number—is charged at double price, and then only to non-subscribers. Mr. Gray can be assured that large numbers of readers study our advertising pages from the fact that enquiries about advertisements now average 2,500 a week. It has never been intended that Working Details could be issued to a contractor. We agree that often some information is missing, but we include (when the architect is able to provide the information) all that can be presented within the limits of a drawing 7½ in. by 10½ in.

Timber Housing

SIR,—The schemes submitted to the BCLMA are certainly, with two or three exceptions, in a class above the usual run of speculative buildings, but the plans are, nevertheless, conspicuously lacking in subtlety, and often in any consideration of how people are to live in them. There are doors which are too near the first or last tread of a stair; open galleries encroaching on privacy; w.c's opposite the stair head; drying cupboards opening in the bathroom; coal bins far from the house; in one case the entrance hall, hall, kitchen and dining room are linked by doors which are immediately opposite each other; in another case all movement to and from bathroom and w.c. involves passing the front door; in short, a total lack of feeling for what Frank Lloyd calls the fourth dimension. Your criticism picks out No. 101—the Barefoot plan—as the best, but in this case any praise is really due to Mr. John Voelcker, as can be seen from a glance at the AJ of September 19, 1957, when his plan with bedroom spine which he did for CIAM was published.

"FOURTH DIMENSION."

Suffolk.

Architectural Records

SIR,—I am certain that members of the Society of Architectural Historians, Great Britain, will warmly welcome the foundation of a Victorian Society recently announced in the JOURNAL (April 10). Such a body has a valuable function to perform and in its work it can rely on the whole-hearted support of the Society of Architectural Historians.

Your readers may be interested to learn that at the first meeting of the latter society held in Durham in 1956, it was resolved to establish an index and drawings collection relating to buildings carried out between 1860 and 1939. As Secretary to the Society, I should be pleased to receive a note of any building of architectural merit belonging to this period which may be in danger of demolition to add to our records. Information should include the address of the building, its architect(s), the date of its erection and, if possible, a photograph (or photographs). Some of the material, which will eventually be available to architects and *bona fide* scholars and catalogued in the Society's annual publication, *Architectural History*, might well be of interest to members of the Victorian Society to whom we should be pleased to supply duplicates of the relevant records.

FRANK I. JENKINS.

Manchester.

STUDENTS

National Organization Is Formed

The British Architectural Students' Association held a most successful first general meeting at Brentwood, Essex, on April 24-25, 22 schools being represented by 40 delegates. There are about 1,000 students in the schools represented, which were: Architectural Association, Aberdeen, Bartlett, Belfast, Birmingham, Brighton, Cambridge, Cardiff, Cheltenham, Durham, Hammersmith, Kingston, Leicester, Liverpool, Northern Polytechnic, North Staffordshire, Nottingham, Oxford, Plymouth, Portsmouth, Regent Street Polytechnic, Southend.

The following were elected office bearers: President: Jeremy Mackay Lewis (Liverpool); Hon. Secretary, John W. Crosby (Liverpool); Hon. Assistant Secretary, Philip Allison (Northern Polytechnic); Hon. Treasurer, Jeremy Hodgson (Brighton); Hon. Editor, George Kassaboff (AA); Hon. Publicity Secretary, Paul Power (Regent Street Polytechnic). These officers form the Executive, together with Hector McDonald (Aberdeen), Frank Johnson (North Staffordshire, co-opted representative of Allied Societies) and Charles Gaskin (Leicester, immediate past-president, of the provisional organization).

The meeting, in the course of a day and a half, got through a great deal of organizational work, and made preparations for the work that has to be done to bring all architectural students in the country into the association. A constitution was adopted, according to which membership is open to individual architectural students, and to architects as associate members. But the basis of the Association is the existence in each school of architecture of a representative student body. The Association will be governed by a Council consisting of delegates from the constituent student bodies, with an executive.

The meeting also endorsed the aims adopted by the preliminary conference held in September 1957 (at which only eight schools were represented), of which the most important are the representation of architectural students, the promotion of their educational interests, presenting their views, securing recognition by architectural bodies, and correlating the interests of the various students' societies.

The preliminary conference had already attributed the failure of past student bodies to organisational weaknesses, and one of the primary aims of the BASA is to employ a permanent secretary to ensure continuity in the work. This, in its turn, depends upon securing a full membership, a continuing income and some initial capital. The executive is expected to reach

Two photographs of the inaugural Conference of the British Architectural Students' Association: one serious, one less so. Report, page 679.

early decisions on a money-raising campaign. It is intended, however, to achieve the maximum of publicity for the association by means that do not involve spending money, and to make its financial policy one of "restraint and modesty."

Members of the Executive are going to contact Allied Societies and schools; it is intended to hold Council meetings at places outside London for a start, and preferably in towns where the school is not affiliated to BASA. Special efforts will be made to enlist part-time as well as full time students. Information about the BASA can be got from the Hon. Secretary, J. W. Crosby, 5, Mossley Hill Drive, Liverpool 17.

FLATS FOR AGED

Ministry Booklet

Mr. Henry Brooke, Minister of Housing and Local Government, has asked housing authorities in a circular to tell him their plans to provide more flatlets for old people, along lines suggested in a new Ministry handbook *Flatlets for Old People* (HMSO 2s.). The types and groupings shown in the handbook have been specially designed to show how flatlets providing a good standard of comfort and convenience can be built at relatively low cost. "This is important," says the circular, "because the problem of local authorities is to provide suitable accommodation for elderly people which is also within their means."

The Minister believes that the handbook will be "of immediate practical value" from this point of view, as well as in helping authorities to make their resources go further. He also points out the scope for experiment, welcomes collaboration between authorities and the Ministry in trying out new ideas, and hopes that further examples will be published as experience grows.

The widspread need for dwellings in which elderly people can live and look after themselves is emphasized, says the handbook, by the fact that nearly one-eighth of the population is over 65 years of age. The handbook illustrates the type of flatlet (bed-sitting room, kitchen and shared bathroom and w.c.) which the Ministry considers particularly suited to this demand, and estimates the cost per unit at from £830 to £925, according to the type of scheme adopted.

ILA

Pylons and Landscape

In a talk on "Transmission Lines and the Landscape," at the Institute of Landscape Architecture on April 17, Brian Hackett, while discussing the disease of "pylonitis," said it was also necessary to respect the views of those who were able to catch exciting moments in the pylon landscape. At another meeting a member of the audience had pointed out that there was something rather fine about transmission lines traversing the barren Northumberland moors in seven league boots.

In his view the local electricity supply pole feeding isolated farms or individual houses was more often a landscape problem than the cross country pylon. If they did not fall closely into the patterning of the agricultural landscape, as by and large telephone poles did, they irritated anyone with landscape sensitivity. At this small scale a matter of a few feet might make all the difference between the obtrusive and the unobstrusive, and Mr. Hackett urged that the line of the poles should be fixed, not entirely by the line engineer, but on the advice of someone with an eye for what looks right. He wondered, too, how serious to the profit and loss account would be the planting of 50 trees in a "special character" village. It would be better still if lines could run with the hedgerows, in which case tree planting would be unnecessary.

The cross country transmission line, being away above the scale of the humanized landscape, could not be expected to follow the man-made pattern, but it should follow the large-scale pattern set by nature, following round hills instead of crossing diagonally over them. A lot of the difficulties with pylon lines had arisen, he thought, because the Electricity Authorities had not consulted and collaborated from the very beginning with other specialists.

SPEC. HOUSING

Maintenance Schemes

The value to the architect of organizing joint maintenance schemes for privately developed housing was stressed by G. Paulson Townsend, a director of Span Developments Ltd., in a recent talk at the Housing Centre. Joint maintenance schemes for the buildings and the open spaces, freed the architect to produce schemes which included common parts and common gardens.

In the joint maintenance schemes of Span Developments Ltd., flats are sold to individual purchasers on long leases. The joint maintenance scheme had to provide for maintenance, cleaning and lighting of the common parts of the buildings, the upkeep of the gardens and grounds, if any, and for the upkeep of the structure, apart from the interior of each flat which is usually the sole responsibility of the individual flat owner. In addition, fire insurance and insurance against third party risks should be brought into the scheme, and such items as heating of entrance halls, window cleaning, communal television aerial systems and porterage, etc., may be included.

These schemes had to start with the creation of some sort of agency which will collect the members' subscriptions and carry out the work of maintenance. In the case of Span Developments' schemes this took the form of a Residents Society to which all the flat owners must belong, and which could be a private or public limited liability Company, or it can be formed as a Society under the Industrial and Provident Societies Acts. In the case of the private Company the individual membership was limited to 50: there might be some minor disadvantages in using a public company, but in fact they themselves have schemes running on each basis. They had found that the Income Tax Inspectors accepted the fact that these companies were non-profit making, but usually after a tussle. This was very important as the annual subscriptions were geared to build up reserves for decoration and structural maintenance, and in the years where expenditure on these items is not incurred, there was a profit.

To enable the Residents Society, in whichever form constituted, to carry out its functions, and as far as possible, to make sure that it did so, the Residents Society had to be tied in with the lease of the property. The lessee also agrees not to sublet the flat furnished for longer than six months and not to let it unfurnished. The Society agreed to keep the buildings in structural repair, to carry out repainting externally every three years, clean, light and possibly heat the entrance halls, maintain the gardens and external fences and walls in good order, to keep the buildings insured against fire, and to keep the lessor the society and each of its members insured against all third party risks. The lessee agreed to pay the society the agreed annual contribution, which in the case of their developments usually worked out about £40 per annum, but could of course be changed in an upward direction by an appropriate vote at a general meeting of the Society. The lessee also undertook not to dispose of the flat to anyone unless the purchaser became the registered holder of the appropriate share in the society, usually of £10.

COMPETITION RESULT

R.c. Factory Building

The results of the competition organized by the Cement Marketing Co. Ltd. for the design of a reinforced concrete factory building have been announced as follows:

First prize (£1,000): Joseph Mendleson and John Henry Charles Lamb, of Joseph Mendleson and Partners, London, in association with Z. L. J. Woloszczuk and R. Wilcox, of Chamberlain and Partners, consulting engineers.

Second prize (£500): E. H. Eames, P. G. Frome, P. Drew, P. H. Saunders and J. D. Morris, also in association with Chamberlain and Partners, consulting engineers.

Third prize (£250): Cyril John Bromley, Paul Sutherland Buckhurst, Gary Valentine Hansen, and John Richard Peverley (students); K. Szmidt, consulting engineer.

The assessor was Edward D. Mills, assisted by Ove Arup and Partners and Leslie W. Clark. It is hoped to publish the winning designs and the assessor's report in the issue of May 22.

SCHOOL COSTS

London Conference

The adoption of the team approach—already tried and proved in Britain—in the building of new schools in British territories overseas won general approval at a study conference of education and building experts which has just concluded in London.

The conference—on school building programmes overseas—was organized by the MOE and the Colonial Office, and was attended by administrative and technical officers from the colonies working in this field, as well as three representatives of the Federation of Malaya and a visitor from

Turkey, making 32 participants in all. The other overseas territories represented were: Antigua, Barbados, British Honduras, Brunei, Hong Kong, Jamaica, Kenya, Mauritius, Federation of Nigeria, Northern Nigeria, North Borneo, Northern Rhodesia, Nyasaland, Sarawak, Sierra Leone, Somaliland, Trinidad and Tobago, Uganda, Windward Islands and Zanzibar.

The object of the conference was to study how, by careful analysis of educational needs and use, the cost of building schools and of their maintenance can be reduced and considerable saving of space can be achieved; how school buildings should reflect the functional needs of the students; and how the best results can be realized by the "team" approach—collaboration of administrator, architect, quantity surveyor and builder from the very inception of a building scheme.

Some 20 lecturers, all experts in the field, addressed the conference and led the discussions.

Points which came out during the conference were:

(*i*) The value of the "development group" approach (administrators, architects, quantity surveyors, etc.) as adopted by the MOE in the UK. The objects of these development groups are to try out new forms of design based on changes in teaching requirements; to develop, with manufacturers and others, building methods, components and techniques; and to study the application to school building of knowledge resulting from research into buildings and materials.

(*ii*) The emphasis, in many schools today, is laid on practical activities; the class is often broken down into smaller working groups. This calls for additional small work-spaces, new teaching materials, aids and equipment. The school is no longer a machine for giving lessons but a social unit concerned with all-round development.

(*iii*) The early planning of building programmes, which indicate the number and kinds of schools to be built, enables professional and technical skills to concentrate on the two main factors which determine whether or not value for money is obtained—the amount of space needed to provide a workable building and the amount of money needed for each unit of space to ensure an adequate quality of building.

(*iv*) The better utilization of space can effect considerable savings, *e.g.*, a corridor can be both a circulation area and an additional teaching space, an entrance hall can be also a gym. In several cases the total area per child in primary and secondary schools in the United Kingdom has been cut by 40 per cent, but the amount of teaching space has been maintained or even slightly increased.

(*v*) The study of cost analysis has shown where the money goes and enabled a far greater control to be exercised than hitherto. By application of design and cost standards the MOE had at 1956 reduced the money cost per place in secondary schools by 20 per cent compared with 1949—although building costs had risen 50 per cent.

(*vi*) Although many overseas territories lacked the expertize available in the UK, the method of attacking school building programmes adopted by the MOE Architects' and Building Branch was thought to be relevant to their problems also.

AESTHETIC PLANNING CONTROL

Minister's Statement to RIBA Symposium

We print below a statement made by Henry Brooke, the Minister of Housing and Local Government, at the RIBA Symposium, "Design Pays." A report of the conference will appear next week.

I am grateful for your invitation to open this symposium. I call it a friendly gesture, for I suspect that lurking in all your minds today is the question "Is the Minister on our side?" So I had better say at once that I *am* in favour of good design! Perhaps my recent decision on a famous cowshed has shown that I am even in favour of eccentricity. It was Frank Lloyd Wright who said that there are only two constants in architecture: the law of gravitation and the eccentricity of the client.

Of course I am in favour of good design; and I hope my Department has been of some assistance in raising the standard of local authority building since the war to a level which is generally competent and which does quite frequently rise now to a lively style with distinctive character. But the key issue, I know, and the reason perhaps why I have been pushed first into this morning's line of battle, is this contentious question of planning control. In plain language, can design pay when it may lead to difficulty with a local planning authority who are unfamiliar with anything but the stock plans of the speculative builder? What you want to know is, are my Department and I prepared to back good design and allow scope for experiment and fresh ideas, or are we ready to see them stifled by heavy-handed planning control?

There is no doubt that under the Planning Acts local planning authorities have power to withhold consent from the design of houses and other buildings—or, what is perhaps even more exasperating for the architect and his client, to insist on alterations to them. The crucial question is, does this do more harm than good? Does it hopelessly impede progress in design, or can it be made to serve the interests of good design, by preventing the shoddy and the plain ugly, and the endless repetition of catch-penny gimmicks from a builder's pre-war pattern book?

Believe me, I have no special love for the labour which planning control brings to my Department and me. But I am certain that there are solid benefits to the nation by the use of these planning powers. A good and sensible planning officer, who is often an architect himself, can help the average speculative builder by suggesting better layouts and other improvements. But a planning officer, and the committee to which he is responsible, ought to be very chary of forcing their ideas on to an unwilling architect and client in cases where they really have nothing to support their views except personal prejudice.

The other advantage in this planning machinery is the protection it gives to good neighbourliness. There is a positive duty, I say, to protect places where the existing buildings blend well together. In those places a radical departure can look quite awful. It works both ways; it throws the existing scene into confusion, and it can give the new buildings an isolated and rather forlorn look; not many modern houses look their best amidst an overwhelming company of neighbours in an older tradition. Even more so is there a case for æsthetic control where a developer wants to put up something (whatever the style) that is of much poorer quality, than the neighbouring property.

If you will grant these arguments of mine that a case exists for retaining this element of control over the external appearance of buildings, the next question is, how do we exercise it? We want to make it serve and not frustrate the interests of good design. Equally we have to administer it in a fair and liberal way. We must allow scope for personal choice; we cannot use it to impose too rigorous a conception of good design.

I have no wish to set myself up as a dogmatic arbiter of taste. But I see no escape from the problem of defining the border line between the really bad and the not so bad as to matter. So far we have found it quite impossible to formulate any guiding standards of taste and design, so we have to work at it from another angle.

Our first principle is to let the individual have what he wants, unless there is a very good reason to stop him. We do not encourage the apparently prejudiced or over-fussy planning authority. I hope that Ministers' decisions on planning appeals over the years have made it quite clear that this is our policy; and the tendency has been towards greater freedom rather than less.

Secondly, however, successive Ministers have made it plain in appeal decisions that a planning authority is quite justified in rejecting a design which is blatantly out of keeping with neighbouring buildings, where those are worth protecting, or with the landscape—we still get cases where a developer wants to plonk off-the-peg suburban penny plain in the middle of the countryside.

Thirdly, though we have to be very careful here, the local authority may be justified in refusing permission when it has tried to be constructive and helpful to a developer with a poor design and has met with no practical response at all.

Fourthly, I am always reluctant to dismiss an appeal on the grounds of design where that was *not* one of the issues raised by either side at the inquiry. Very occasionally I must do so, but only where the design is so poor and mean that I think house purchasers ought to be protected from exploitation by a developer totally indifferent to his responsibilities.

Of course you may be gentle with me and say that you do not complain against me but against the whole system as it operates through the length and breadth of the country. It is a very difficult task for local authorities, however well advised they may be by their professional staff. But the years have taught me to have confidence in local government and in the general good sense and fair-mindedness of local authority members, whatever exceptions there may be. At the present stage of things, new ideas among developers are almost totally outside the experience of local authorities in many parts of the country. No wonder they are a bit taken aback when a really novel design lands like a sort of flying saucer on their laps.

DIARY

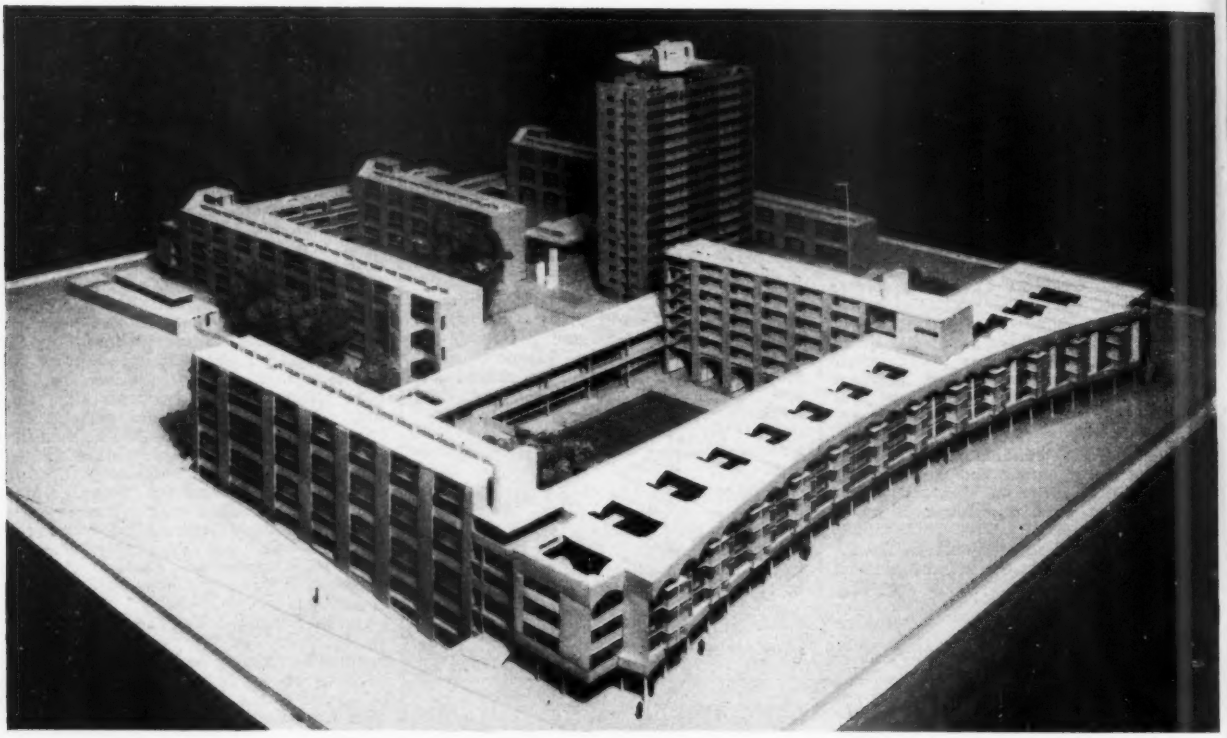
Private Enterprise. Talk by Leslie Bilby and Eric Lyons. TCPA meeting at the Planning Centre, 28, King Street, W.C.2. 6.30 p.m. MAY 12

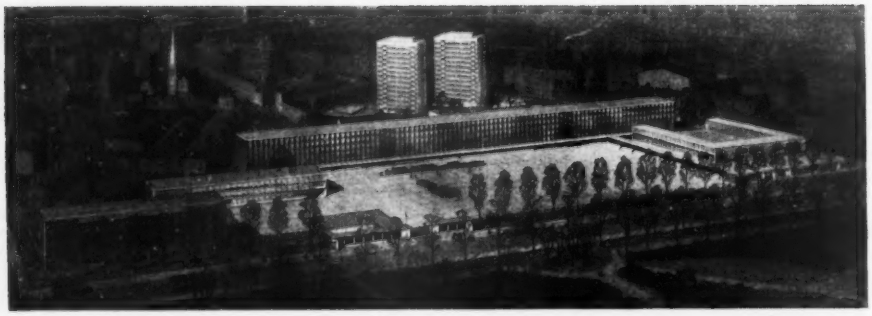
Photographs by Eric de Maré. Exhibition at the AA, 34, Bedford Square, W.C.1. Monday to Friday 10 a.m.-6 p.m., Saturday 10 a.m.-1 p.m. MAY 12 TO 30

Inigo Jones and the Restoration of St. Paul's. Talk by Canon W. M. Atkins at a library group meeting. At the RIBA, 66, Portland Place, W.1. 6 p.m. MAY 19

BUILDINGS IN THE NEWS AT THE ROYAL AC

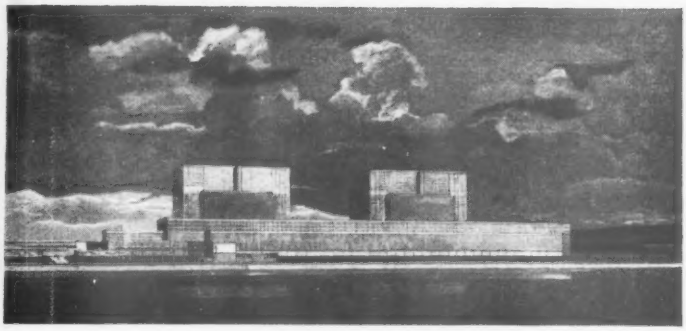
The Royal Academy is still such an extraordinary mixture of the good and the bad, of buildings of national importance and of none, that it is difficult to present them in any logical arrangement. This is not surprising, as there does not seem to be any consistency or any standard in the selection of drawings or models. But on this page we are illustrating a number of projects that are important in themselves, for whatever reason.

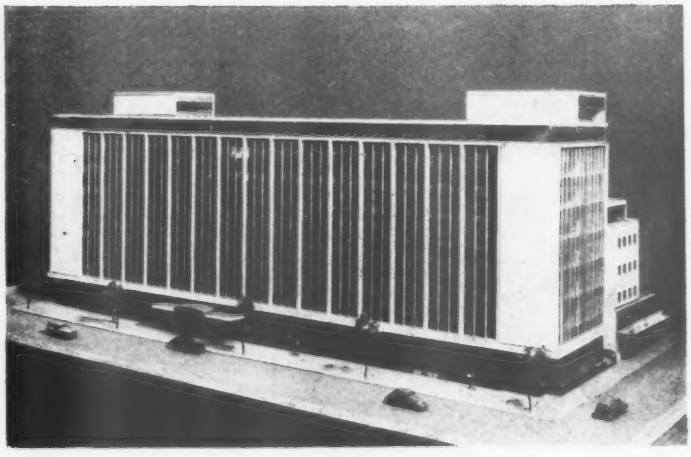


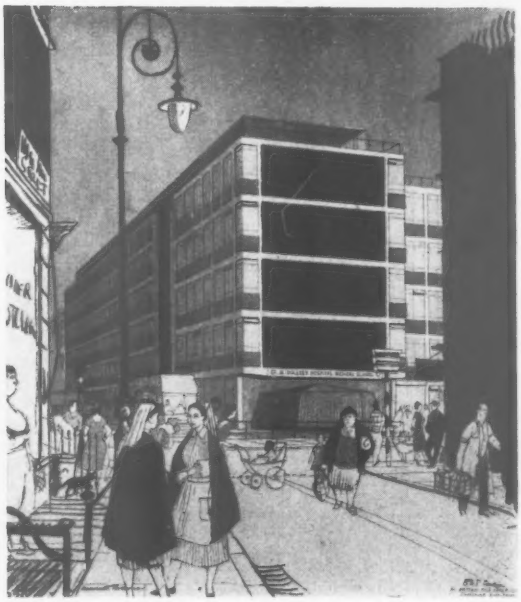


Above: the Golden Lane housing estate in the City, by Chamberlin, Powell and Bon, is the only distinguished housing in the exhibition; most of the blocks are well known, but this shot shows the west block that will complete the scheme. Left, proposed rebuilding of Chelsea Barracks, by Tripe and Wakeham. Below, Frederick Gibberd's Civic Centre at Harlow illustrates very well the need for plans to accompany the perspective.

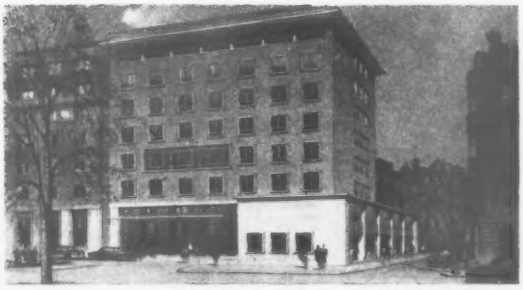
ACADEMY'S EXHIBITION





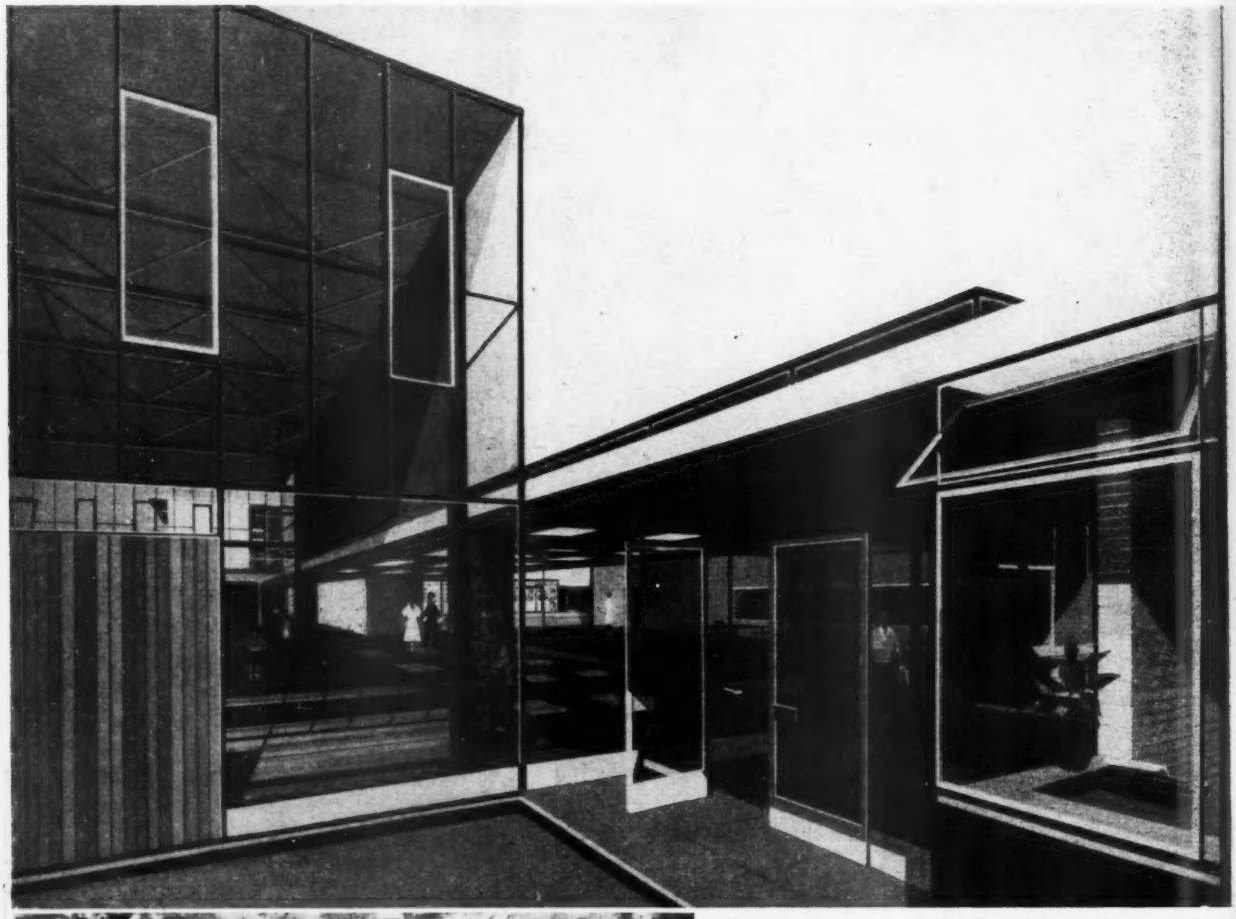


Above left, Basil Spence's revised design for Queen's College, Cambridge, has lost two storeys. Above, Kenneth Browne's sketch of Easton and Robertson's Medical School for Middlesex Hospital. Left, Frederick Gibberd's atomic power station at Hinkley Point. Below a design for a controversial site: Trehearne, Norman and Preston's College of General Practitioners, Lincoln's Inn Fields.

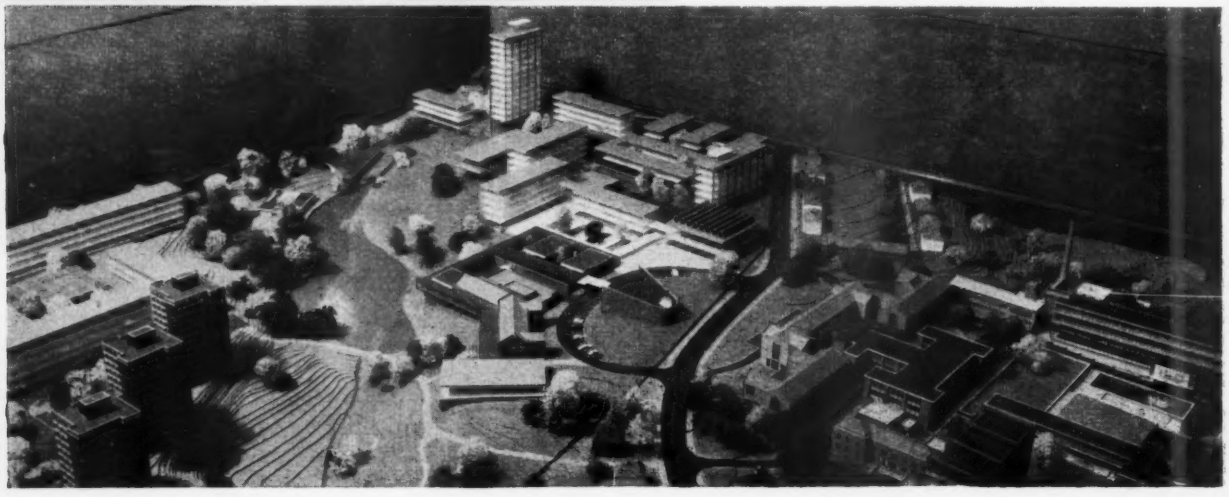


Left above, food factory at Wigan, by E. D. Jefferiss Mathews and Partners, is one of the few industrial buildings shown. Left, Lewis Solomon, Kaye and Partners' design for an office block to replace the Stoll Theatre. In the absence of a plan one cannot tell whether it includes a new theatre or not. Above, the BBC extension, Portland Place, by Fitzroy Robinson and Partners, architects; Sir Howard Robertson, consulting architect.

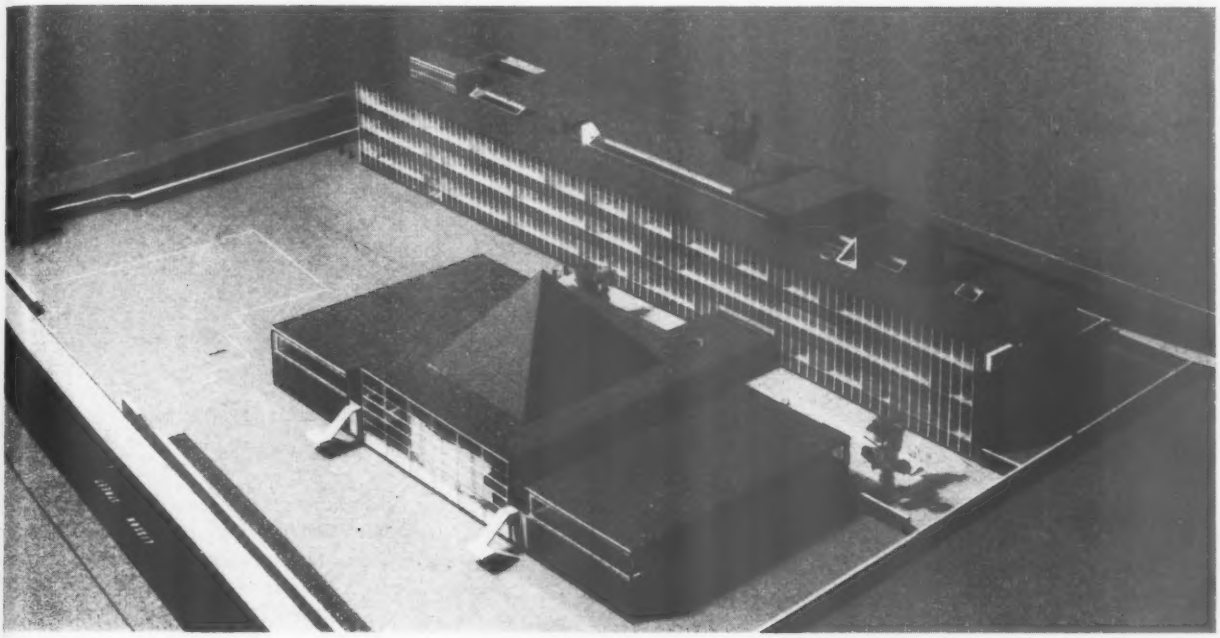
SCHOOLS AND UNIVERSITY BUILDINGS AT TH



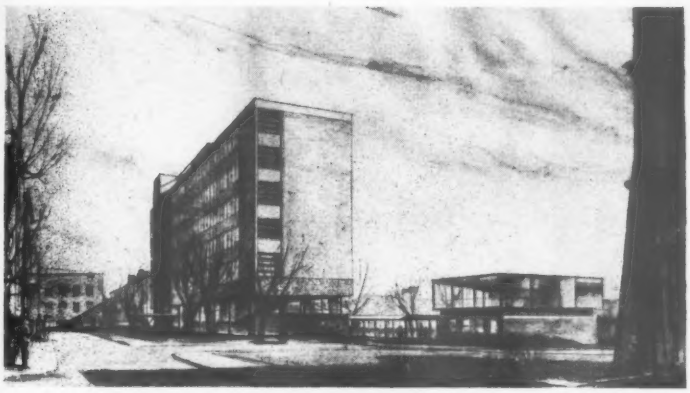
Recently there has been a heightened interest in the quality of University architecture. The samples on view at the Academy are, however, still rather a mixed bag, good, bad and indifferent. Architects' Co-partnership are welcome newcomers to the Academy, with their new building for St. John's, Oxford, which has been illustrated previously, as have some of the other designs shown, including Hugh Casson's Birmingham project. Comparatively few schools are shown; the one above is the Gravesend Gordon (Westcourt) Secondary School for Girls: by Elie Mayorcas. Left, extension to Kingsley Hall, Dagenham, Essex: Edward D. Mills. Below, model of Basil Spence's proposed development at Southampton University.



THE ROYAL ACADEMY'S EXHIBITION

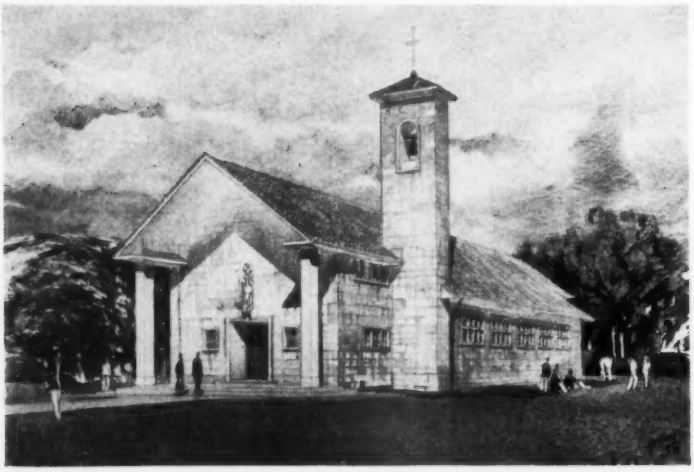


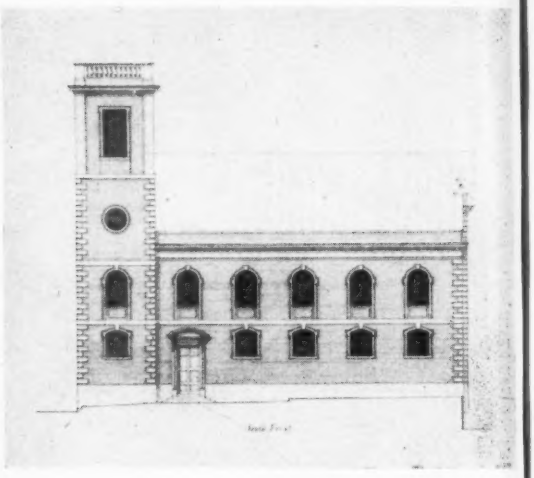
Above, County Complement to St. Marylebone Grammar School: Leonard Manasseh and Partners. Below, Instituteof Mathematics, Liverpool University: Westwood, Sons and Partners. Right, new buildings, Nottingham University: Donald H. McMorran, A.R.A.



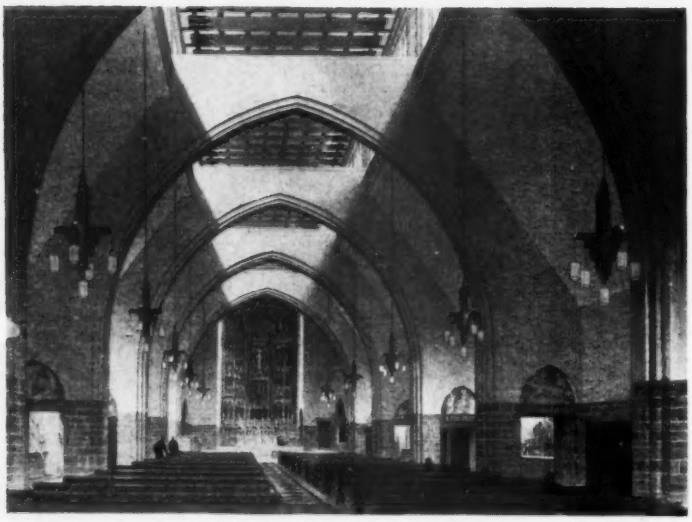
The eclecticism of Sir Howard Robertson manifests itself in the Physics Department, Reading University (centre right) and the Library, University College of North Staffordshire (below) which does not look as if it is by the same hand. Right, the Oriental Institute at Oxford, also by Sir Howard Robertson.

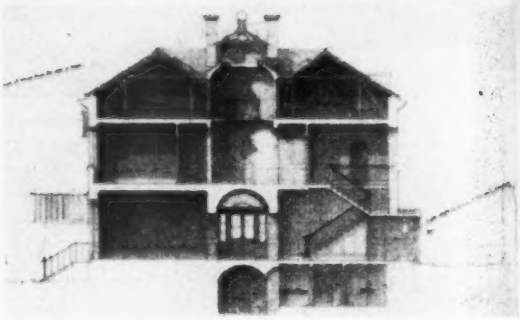
WORK BY THE ACADEMICIANS AT THE R.A. EXHIBITION

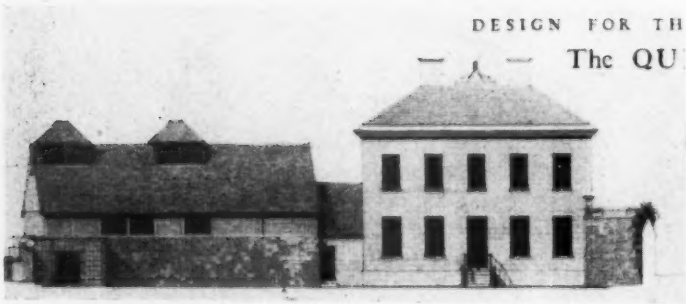




The curious character of the Royal Academy is very largely due to the fact that R.A.*s and* A.R.A.*s are entitled to hang pictures or designs without having to pass the hanging committee. This page contains a sample of work contributed mainly by architectural Academicians and Associates. Other Academicians, it should be remembered, include Basil Spence and Sir Howard Robertson. We wished also to publish Sir Albert Richardson's designs for a new distillery and village in Morayshire, but he refused permission. Above left, the Chapel, County Grammar School for Boys, Lewes: Sir Edward Maufe,* R.A. *Above, rebuilding of St. Andrew by the Wardrobe after war damage: Marshall Sisson,* A.R.A. *Left, Kensington Central Library: E. Vincent Harris,* R.A. *Below left, Church of Our Lady of Mount Carmel and St. Simon Stock, Kensington, and below Wilkinson House, Peckham Rye, for London Homes for the elderly both by Sir G. Gilbert Scott,* R.A., *Son and Partner.*







Above and left, Raymond Erith's design for the Provost's Lodgings at Queen's College, Oxford. Raymond Erith is not a member of the Royal Academy, but is, perhaps, more entitled to be one than many of the R.A.*s because of the expert scholarly, academic quality of his work. Unique, in that he is probably the only architect alive who works entirely within the design idiom of the eighteenth and early nineteenth centuries, his designs are preferable, in the eyes of the modern architect, to the eclecticism of the Royal Academicians.*

CRITICISM

The designer and a client reply

The Editors regret that they are unable to publish replies, which they had asked for, from the Central Office of Information, or from the architects for the British Pavilions at the Brussels Exhibition, to the criticism by J. M. Richards published last week. Charles Hadfield, Controller (Overseas) of the COI, has informed us that there are difficulties about "co-ordinating" a reply between the many people involved in the time available, adding that the COI does not consider any reply to be called for at this stage. Howard V. Lobb and Partners, architects for the Government Pavilion, associate themselves with this statement. Edward D. Mills and Partners point out that the criticisms of the British Industry Pavilion mainly concerned policy matters outside their control as architects. We are therefore publishing the replies received from James Gardner (left), chief designer of the Government Pavilion and co-ordinating designer for the whole site (expressing, also, the views of John Lansdell, display designer of the British Industry Pavilion), and from W. P. N. Edwards, a director of the FBI.

James Gardner writes :

While many of the points raised in J. M. Richards's article last week concern matters of policy rather than design, John Lansdell and I think that his criticisms as a whole were based on a very common misconception of the proper design approach to exhibition and exhibition architecture. This is a subject that deserves more discussion and we therefore welcome this opportunity to put forward our point of view.

It seemed to me that the article considered the British Pavilions solely in terms of exhibition building and then proceeded to criticize them, contents and all, in terms of contemporary architectural taste. To my mind this is neither valid nor illuminating except in a very restricted sense. Frankly, architecture is only one aspect of the business of exhibition. For every intelligent architect or engineer who can be fascinated by steel cantilevers and prestressed concrete beams there must be a thousand ordinary people with tired feet who want to be amused, informed and, above all, interested by the exhibits on display—and these include, I suspect, even architectural journalists on their off duty days. I feel personally that exhibitions and exhibition architecture cannot be discussed, designed or ultimately much fun unless the needs and interests of this audience are considered the final justification and first concern of the whole show.

This does not mean that design must be scaled down to some vulgar level; rather it is a matter of painstaking consideration of boring practical details such as lighting, eye level, and circulation, and, of course, making sure that visitors look at the exhibits which are the only reason for having an exhibition in the first place. Where the elegance or daring of a structure becomes an end in itself the result is invariably fabric without function—unless architectural swank can be considered a valid function in its own right; and when this happens the exhibition ground is merely a mausoleum for great stranded whales of buildings. This may look interesting enough in the pages of glossy magazines but is frankly arid and boring to the general public.

To come back to Brussels, it is true enough that with the money at our disposal we could not have attempted a building in the style, say, of the technically impressive German Pavilion next door. Our problem was to design a simple and economical structure that would house our exhibits in varied settings and also look sufficiently curious to entice people inside to look at them. But, emphatically, even if we were to start all over again with unlimited funds I should still recommend the same approach, and merely hope to do it better.

Suppose for the moment that we had decided in principle to emulate the Yugoslavs or the Germans or the Austrians and make our pavilion a smart glass-walled box leaping over fountains and flower beds. To begin with it is interesting to speculate whether the British could in fact produce a pavilion in this international style and to comparable standards of refined detailing and finish while retaining a national character of its own. Even if this were possible it is still doubtful whether it would have any advantages: there seems no point in doing what a lot of other people are doing unless either (*a*) one feels there is no alternative, or (*b*) one is confident that one can do it slightly better, which in this case I don't. Finally, I am still to be convinced that a glass box or a series of glass boxes or a plastic drum is in fact a good way of housing varied exhibits. There is always the danger that the formal shape will arbitrarily determine the lighting and layout of the exhibits rather than the other way round. It is difficult to avoid dull arrangements in boxes or chaotic arrangements in drums. Controlled circulation and lighting is generally impossible. The tempting conclusion is that one should throw in one's hand and fill the pavilion with the familiar space frames, enlarged photographs, low display tables, abstract forms and silhouetted glass objects that it so clearly demands as its logical complement.

This is why, quite independent of money considera-

tions, we chose to go right ahead in the other direction and rely on dramatic lighting, colour, animation, sound and a frankly eccentric building shape for our effects. Richards said in his article that "to remind himself of how effective a technique based on absolute simplicity can be, a visitor need only look at the German and Yugoslav Pavilions nearby." This is quite instructive. Both these particular pavilions are excellent in their workmanship and finish, and coherent and dignified in their general design: and yet, somehow, they give an effect that is cold, inhuman and frankly rather uninviting. One look through the beautifully proportioned glass walls and a glimpse of the carefully selected objects arranged in space on tasteful stands, and the visitor passes on.

The British Industry Pavilion has been criticized for its overcrowding, narrow gangways and two-storied stands (criticisms which, incidentally, take no account of the obvious economic situation); it has also been criticized for its lack of coordination (again ignoring the fact that it had to house 5,000 sq. ft. of atomic power in close proximity to 150 sq. ft. of Bovril or bicycles). It is interesting to note, therefore, that this "jungle" in contrast with other pavilions gives an impression of vigour and excitement which does in fact attract and hold the interest of the public. In the British Government Pavilion the conventional clinical approach to exhibition design was purposely abandoned in favour of something unconventional and experimental, basing everything on the conviction that the Pavilion's first job was to interest the public in the exhibits, and above all the science exhibits, rather than in fashionable architectural or display techniques. Having seen people going through the pavilions during their first week I believe that this approach has paid off.

W. P. N. Edwards writes:

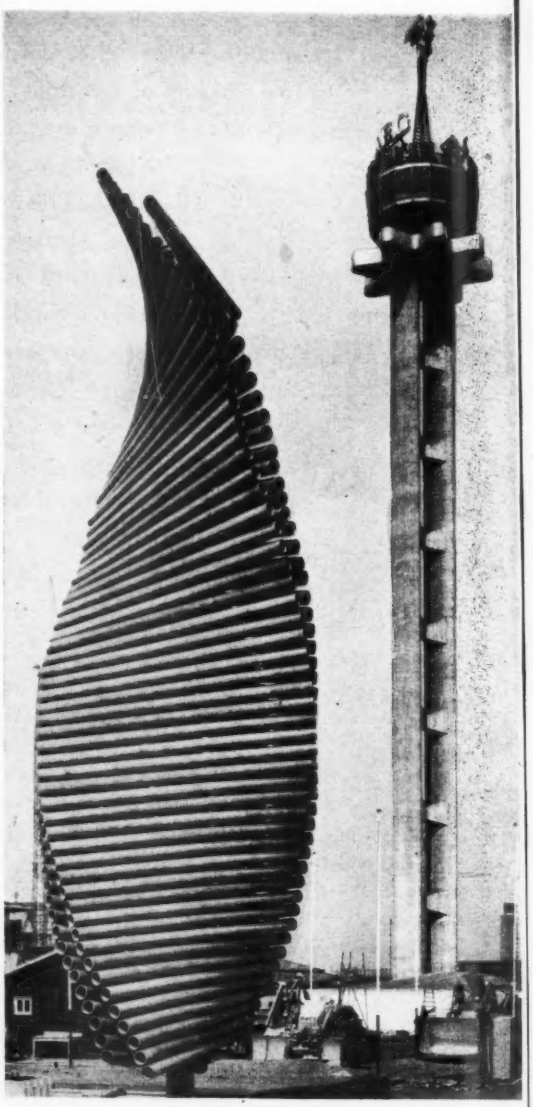
It is hard to understand why Mr. Richards is so opposed to commercial firms taking part individually in the British exhibit at Brussels. If the £2½ million which industry has spent altogether could have been made available in advance, the FBI's task in organizing the British industrial section would have been much easier. As it was, the FBI had to take a very bold decision and assume a considerable risk when it decided two years ago, at the request of the Government, to take on the job of building the British Industry Pavilion and then having to recoup itself by selling the space inside.

But what matters is the final result, and, above all, the impact it makes upon visitors to the exhibition. On this, our experience of the first two weeks is sufficient to show that the fine quality of the products shown in the British Industry Pavilion and the ingenuity which has gone into their display is making a profound impression upon overseas visitors. I am reliably informed that the Russians have told the Belgian authorities that, in their view, the British have put on the best display of industrial progress in the whole exhibition.

We regret to announce that the Architect's Department of the LCC does not intend to reply to the criticism by J. M. Richards published on April 17.

NEW WINDOWLESS

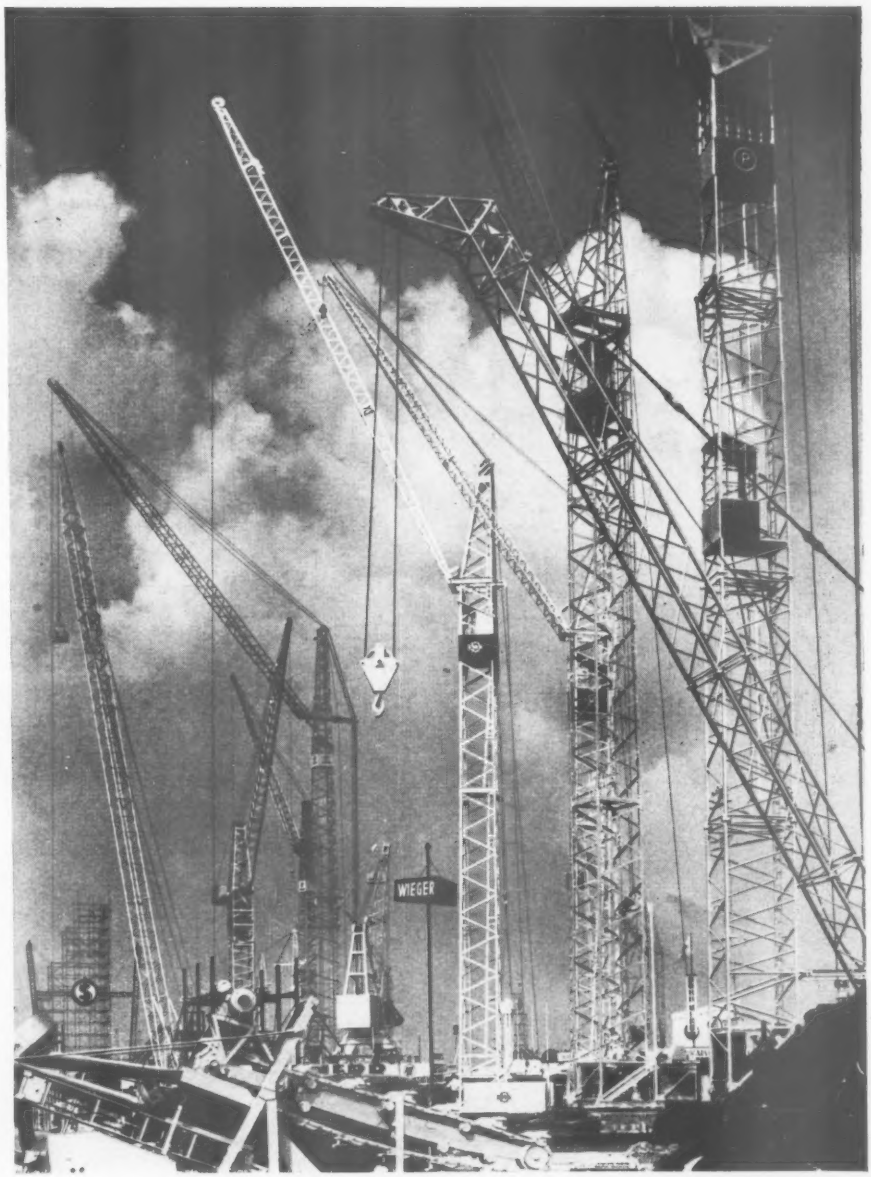
Unlike our BIF, the German Industries Fair at Hanover has grown steadily since it started in 1950. It is the equivalent of our radio, electrical, office equipment, mechanical handling and building exhibitions rolled into one and the impact of such a comprehensive display is considerable. The indoor exhibition area is just under three million square feet, and there is an additional one and a half million square feet of open-air exhibits. The buildings are all permanent. The earlier buildings are of light, factory construction. The new buildings are unusual in being windowless. The most important, shown on the right, is Hall 12. It is 165 ft. high, with five exhibition floors, and a restaurant which is the only part glazed. Clad with metal panels, this hall was built and occupied in about three months. It will be further illustrated in a



EXHIBITION HALL AT HANOVER FAIR

future issue of the JOURNAL. *This hall, with new single and two-storey buildings alongside, is occupied by the electrical industry who have taken a ten-year contract so that their stands are permanent. These buildings are used for only ten days in the year. Apparently, the saving in stand fitting costs for the exhibition over a ten-year period makes this economically possible. The stand design at the Fair is sensible and furnished with meticulous care. There is an absence of gimmicks and it is easy to see what is displayed at first sight. Left, a sculptural effect is achieved by a manufacturer of steel tubes. In the background is the A.E.G. observation tower with an external lift. Built of concrete, it has a cog-wheel shaped balcony which, if not visually pleasing, is practical because it provides a large perimeter length for sightseers. Visitors, travelling to the Fair along four-lane roads organized into an excellent one-way system which varies with the time of day to suit the greatest traffic flow, first see the high Hall 12 block from miles away across the plain, and then a forest of tall building cranes, right, which make a far more exciting display than any vertical feature could. In the open-air section mechanical excavators and grabs are displayed at work. A group of these, working like playful prehistoric monsters making mud pies is a sight to be remembered. The general grouping of exhibitors is good and this makes comparisons easy, which greatly simplifies the task of the busy visitor. The representatives on the stands were able to answer questions efficiently and courteously and no stand visited failed to produce someone who spoke English. The same cannot, unfortunately, be said of exhibitions in this country. The atmosphere at the Hanover Fair is a mixture of excitement and efficiency—an atmosphere created by a powerful industry that knows what it wants to do and intends to do it.*

JOHN REID



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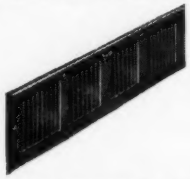

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PROGRESS PICTURES OF GATWICK AIRPORT

The new airport at Gatwick, Sussex, designed by Yorke, Rosenberg and Mardall, is due to be opened by the Queen on June 9, and work to complete the buildings and level and layout the ground is proceeding at a spanking rate. The progress shot (on the left) of the new fly-over on the London-Brighton road gives an indication of how much still remains to be done. In the background, on the right, is the new railway station. Below, the south elevation of the control tower and the single-storey telecommunication block, a reinforced-concrete framed structure with brick and glazed infilling panels. The general contractors are Gilbert-Ash Ltd.

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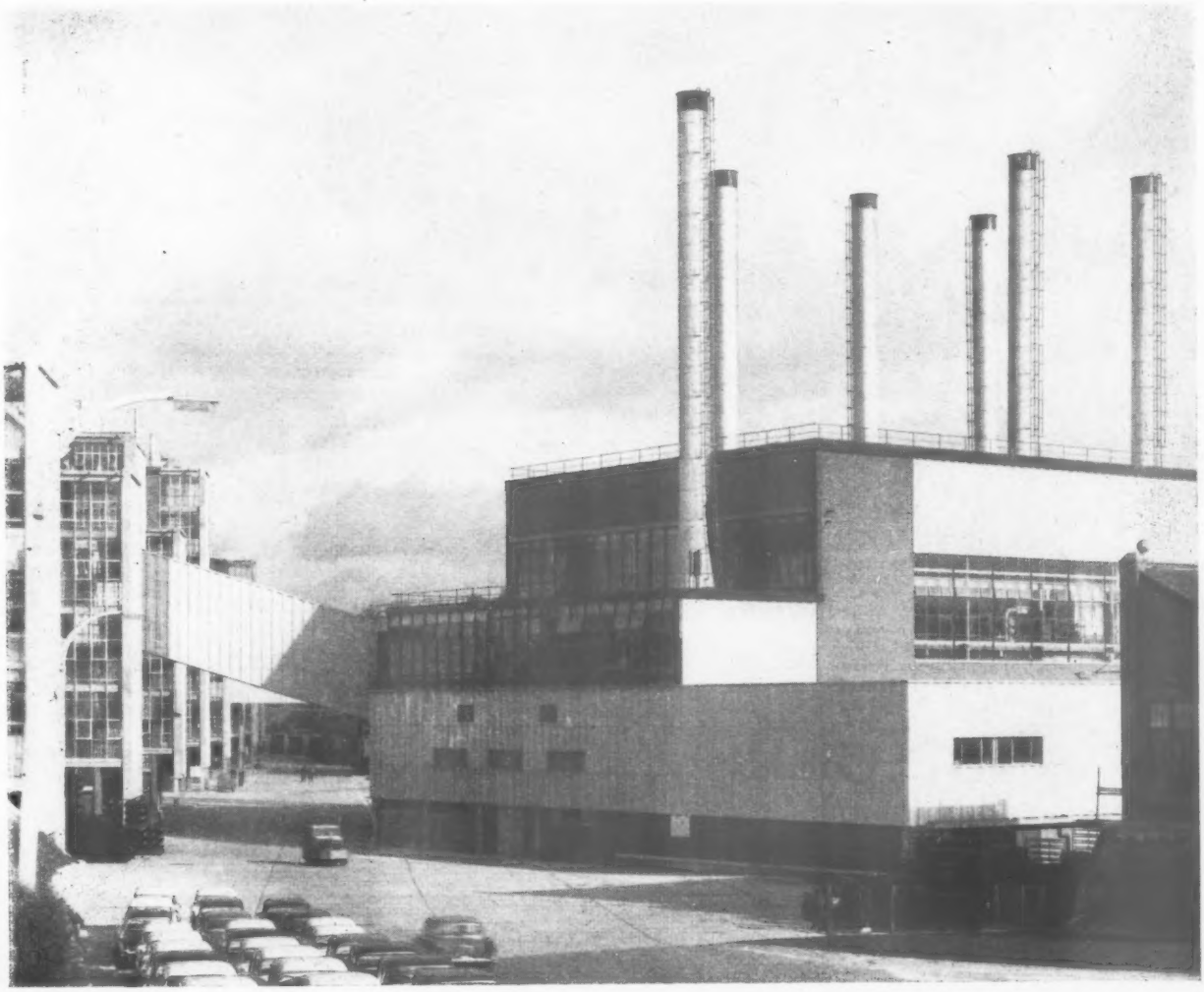
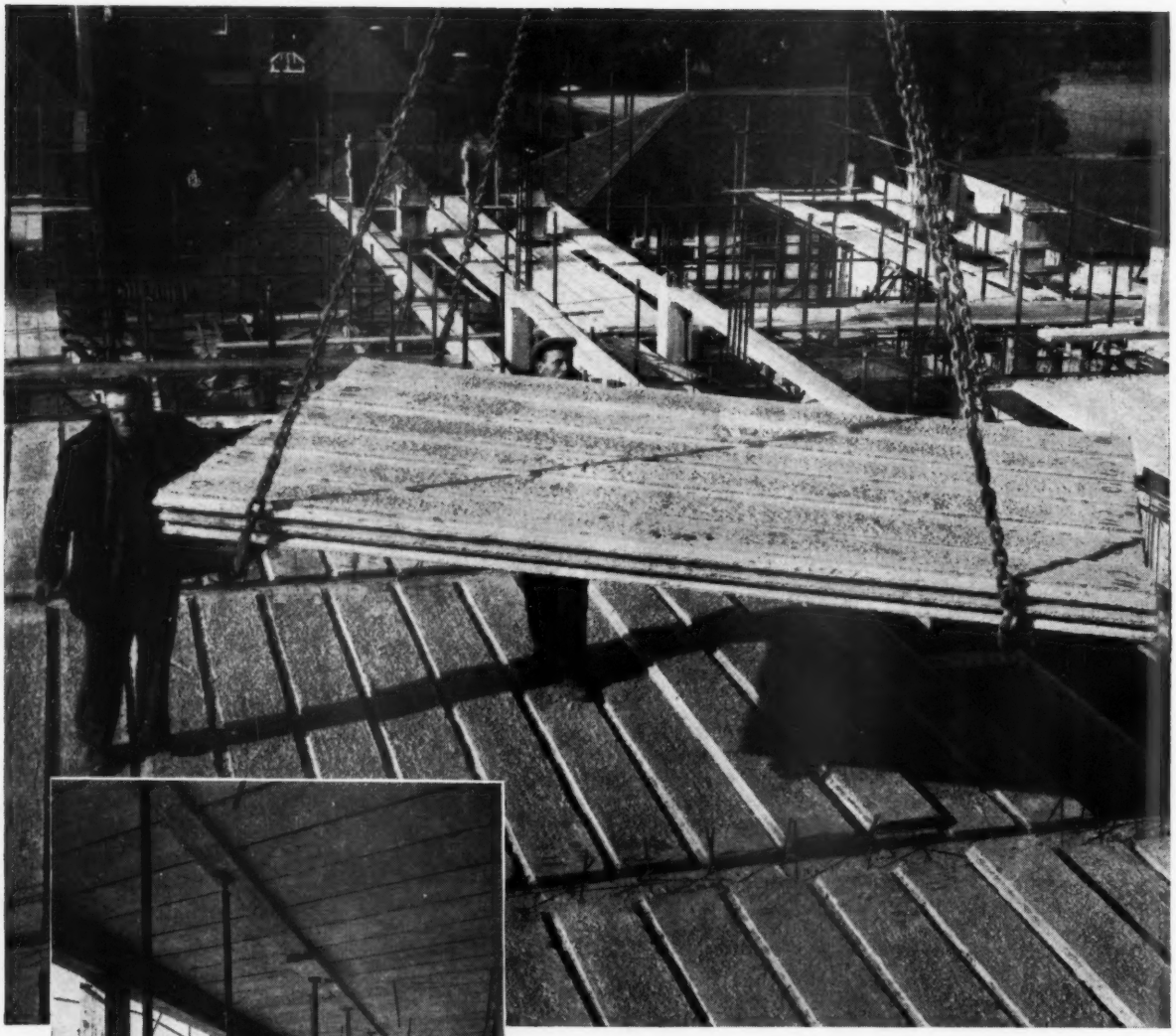
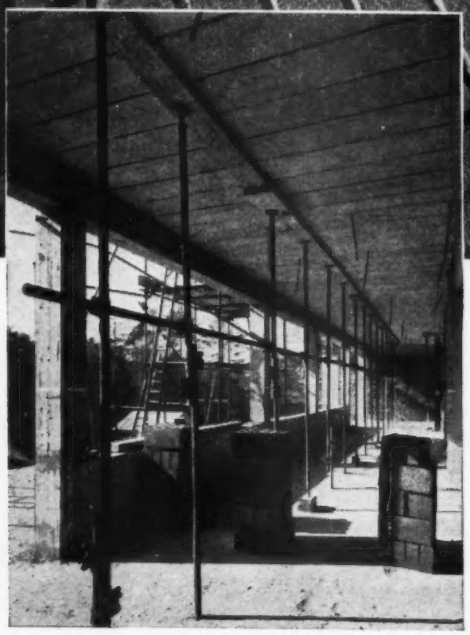
NEW BUILDINGS FOR VAUXHALL MOTORS AT LUTON, BEDS.

Vauxhall Motors have now virtually completed a £36 million expansion programme for their factories at Luton and Dunstable, started in 1954 with the objective of roughly doubling their potential output. This has included £1½ million on site development, and £13 million on buildings, the architects being Howard, Souster and Fairbairn. Shown above is a general view of the new 1½ million sq. ft. production building at Luton, with the press shop in the foreground, and the assembly lines beyond. Multi-storey planning has been adopted for the latter, mainly because of the restricted nature of the site, but this has also facilitated production flow. Below is a close-up view of the boiler house, with 140-ft. high chimney stacks.







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CON. 109a

technical section

THE INDUSTRY

From the industry this week Brian Grant describes a new range of switches, refrigerated shelving and some new oil-fired boilers.

Switch assemblies

Crabtree have just announced a "Closegang" range of switches, to which a brief reference was made in the JOURNAL of April 17. The BS flush box is at present available only in one size but, in common with other manufacturers, Crabtrees have for some years produced a two-gang box, and the new range provides a further development of these standard fixing centres; in addition to the one- and two-gang boxes it will include what might be described as four- and six-gang boxes. The small size of the switches makes it possible to double the capacity of the standard boxes, which can thus accommodate four, eight or 12 switches. These may be one, two way intermediate or push switches in 5 amp. ratings, or one and two way 15 amps. With a limited number of components it is therefore possible to build up a control panel to meet almost any requirements in either domestic or commercial installations. The photograph shows a protected type surface assembly in which the plates are deeply recessed to the depth of the switch dolly. The one- and four-gang switches were shown at the recent ASEE Exhibition, and the six- to 12-gang units will be available within a week or two. (*J. A. Crabtree & Co. Ltd., Lincoln Works, Walsall, Staffs.*)

Refrigerated shelving

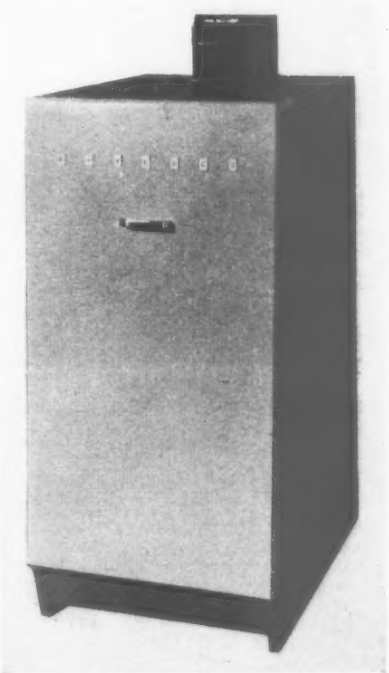
The illustration on the right shows the GVE refrigerated shelf which will cool 114 half-pint bottles. The shelf unit can be fitted to any existing bar shelf not more than 1½ in. thick, the refrigerated unit being bolted underneath and needing only 11 in. clearance. The whole assembly is very easy to install and the temperature may be set anywhere between 30 and 60 deg. F. Price is £87 10s. (*G.V.E. Ltd.*, 231, *Strand, London, W.C.*2.)

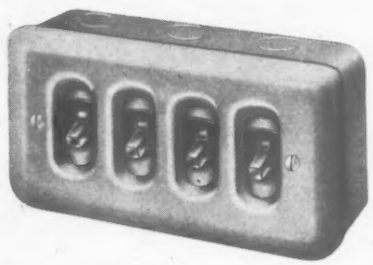
Oil-fired boilers

The photograph on the right shows the smallest of the new range of Kayenco oil-fired boilers, which are made in 11 sizes with outputs varying from 65,000 to 500,000 B.t.u. per hour at prices from £158 to £392. The smallest size should provide adequate space heating and hot water for a four-bedroom house. These new models are a development of the firm's previous Hikon range, but are considerably neater and are supplied with all controls completely wired up. (*Frederick Kay (Engineering) Ltd., Nashleigh Works, Chesham, Bucks.*)

Accelerator pumps

When considering central heating boilers it is always worth bearing in mind the current habit of using small diameter pipes for the radiator circuits in conjunction with an electrically-driven accelerator pump. These pumps are almost completely silent in opera-





Left, one of new "Closegang" range of switches by J. A. Crabtree & Co., Ltd., with a protected type of surface assembly. Above, a Kayenco oil-fired boiler, by Frederick Kay (Engineering) Ltd., with an output of 65,000 B.t.u. per hour; the price is £158. Below, the GVE refrigerated shelf unit, which will cool 114 half-pint bottles.

technical section

tion and can be mounted in any convenient part of the main pipe run, whether horizontal or vertical. CTC Heat Ltd., have a glandless pump in which the armature is cooled by the circulating water and which has a motor rated at either 15 or 30 watts. Five sizes of impeller have been standardized and the pump will circulate the heated water at rates up to 10 gallons a minute, depending on the resistance of the pipework. The pump needs no lubrication and the motor and impeller can be removed in a few minutes for inspection or changing. (*C.T.C. Heat Ltd.*, 17, *Sloane Street, London, S.W.*1.)

INFORMATION CENTRE

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

7.64 practice
THE COST OF FLATS

RICS Cost Research Panel (The Chartered Surveyor, March, 1958).

In the March issue of *The Chartered Surveyor*, the Cost Research Panel of the Institution publishes a lengthy paper on "Factors affecting the relative cost of multi-storey housing"—reprints of which can be obtained from the RICS, 12, Great George Street, S.W.1. The paper is one of a series published as a background to the forthcoming report on the same subject related to the cost of 2-storey housing. The quantity surveyors have been increasingly active in cost investigation since 1955, and this, with previous papers on similar subjects, is to be welcomed as evidence of their determination to make up for lost time and equip themselves as cost advisors.

This study takes three different sizes of balcony access and staircase access flats in slab blocks and applies to them relative cost indices based on cost records of the MOHLG. The indices are broken down into four element groups—foundations, superstructure, finishings and fittings, lifts. Various tables and graphs show how the costs of each type and size of flat varies according to the number of storeys, from 3 to 12. Actual costs are not given, one particular flat is set at 100 and all others are related to this. The designs are theoretical, not actual ones, in order, it is stated, that the cost comparisons made shall not be confused by the variables that attend actual buildings.

Unfortunately, the welcome extended to this work must be qualified. The two main criticisms are that the problem which this investigation was intended to throw light upon, is nowhere clearly explained and that the text explaining and interpreting the figures is confusing. To clarify the latter we have attempted in our own words a brief summary:

Floor area

Balcony access: As you increase the floor area of a flat, the cost per flat of substructure, superstructure and lifts increases proportionately to the increase of floor area. But in finishings and fittings, the cost increases at a smaller rate than the increase in floor area.

Staircase access: As you increase the floor area of a flat, the cost per flat of substructure, superstructure, finishings and fittings increases at a smaller rate than the increase of floor area, but the cost of lifts remains constant.

Number of storeys

Balcony access: As you increase the number of storeys, the difference in cost per flat, between large and small flats becomes more marked.

Staircase access: The above difference becomes *less* marked. As you increase the number of storeys the cost per flat increases rapidly up to the 6th floor (where the increase is greatest), after which it flattens out. To add another floor to a 5-storey block would cost only 2 per cent. more than building a separate 3-storey block (with three times the accommodation). Above 12 storeys, the average cost per flat of adding another storey might be less than the average cost per flat of the 12-storey block. The same is true for balcony access flats but you would have to add a greater number of storeys to reach the same result.

Cost distribution

Differences between balcony and staircase access flats in the way cost is distributed among the element groups are greater for 3-storey than for higher blocks. Lifts take a bigger share of the total money in small staircase access flats at 6 storeys than in any other size or type of flat or number of storeys.

These are some of the conclusions culled from the text. Other inferences can, of course, be drawn from a direct study of the tables and graphs. Throughout the paper, the cost of lifts is repeatedly emphasized as a major addition to the total—they enter at 6 storeys, rendering that height an exceptionally expensive one to use. Indeed, looking at the graphs, one's feeling is that we should build up to 4 or 5 storeys and above 11 or 12, but never in between—an interesting parallel to conclusions that have been drawn from sociological-aesthetic studies of residential development.

There is a warning in the paper that since the study is a theoretical one its findings should be applied with "great caution." This warning could be reinforced by comparison of this paper with that on the same subject by C. N. Craig of BRS in the *RIBA Journal* for April 1956. The RICS paper shows broadly that the higher the block of flats, the more costly they are, but Craig's figures (of actual schemes) showed that some 6 storey blocks cost more than some 12 storey ones—a wide scatter that is also true of individual element groups, especially lifts. At all storey heights lifts varied from £50 to over £150 per dwelling and the number of dwellings served per lift varied from 14 to 62. We quote these figures, not to suggest that the RICS study is misleading—it follows a well respected method of throwing light on a problem—but to suggest that much more explanation should have been given of the cost data used. We are only told that the cost indices "have been set at a level at which a variety of alternatives of reasonable standard can be found." The alarmingly wide scatter of *actual* costs implies that the setting of reasonable standards is complicated and involves judgments of quality that should have been explained.

A second criticism is that although cost per sq. ft. and cost per dwelling are both used as units of comparison throughout the paper, the relation of these two units to each other is not made clear.

A third criticism is that services (excluding central heating) are put into the element group: finishings and fittings. Cost analyses of tall blocks have shown that services installations probably change in cost with change in number of storeys from causes rather different from those affecting finishing and fittings. But more important than this, many architects experienced in flat design think that there is greater scope for future economies in the cost of services than in any other element group, for services have yet to be scrutinized in the light of the functionalist approach. It may be that the cost data of the MOHLG did not allow services to be separated, but it is unfortunate that we cannot see what happens to services costs, when for example, number of storeys is increased or plan arrangement varied, etc.

These criticisms betoken a danger signal that the JOURNAL has sounded before—that the RICS Cost Research Panel should not go too far with its work without architect-guidance. Architects can make more effective use of new cost information than anyone else connected with building, not only because they are the designers but because they have to relate technical and cost decisions with questions of function, quality and purpose. It is perhaps only a slight simplification to suggest that in cost research the architect's job is to say *what* he wants to know, and *how* the knowledge should be presented; that the scientist's and surveyor's job is to provide the answers. In practice of course, the two stages would not and should not be so clear cut as this—collaboration is the real way.

F

technical section

7.65 practice
COST INDICES

Indices of Building Costs: Multi-storey and traditional housing (RICS Journal, April, 1958).

This paper, third in the series sponsored by the Cost Research Panel of the RICS, presents a method of adjusting costs for housing according to changes in labour and material prices. Hitherto, the only indices available were for building as a whole, and if applied to one particular building type would give a misleading answer because the proportion of labour to material costs in any one trade or any one element vary from building to building. A more precise and particularised index has long been needed and the Cost Research Panel are to be congratulated on their painstaking attempt to provide one.

A basic theoretical design of flats was assumed, the amounts of material in each trade were calculated and priced. Labour costs were calculated by deducting material prices from unit rates in a sample priced bill of quantities and were weighted according to the varying labour content of different operations performed with each material. For sub-contractors work which normally appears in bills of quantities as an indigestible lump sum and attendance item specialist firms gave information.

Prices were worked out for each quarter of the years between 1950 and 1957, taking account of tool money, holidays with pay and other additions to basic hourly wages. Costs of plant, says the report, were ignored "as this involved prohibitive difficulties" yet changes in output per man hour which partly depend on the use of plant were accounted for. This, if I have understood it, seems a risky omission.

A table is shown giving proportions of material and labour per trade, *e.g.*, for flats, Painter and Glazier take 4.9 per cent of the total, of which 3.0 is labour, 0.8 is glass and 1.1 is paint. A second table gives trade price changes from 1950 to 1957 and a third puts side by side the proportions of total cost taken by each trade out of a total which is 100 for 1950 and 143.2 (flats) and 138.8 (houses) for 1957.

Comments in the paper on all these figures are that the cost differences between two and multi-storey housing have remained fairly constant over the years, that work requiring steel has risen more sharply than other work; that fluctuations of lead and copper prices show in plumbing costs; that trades which use a small number of materials show the most erratic price changes. On labour, the report says that improvement in productivity (26 per cent since 1950) has more than offset the fact that the wage curve is steeper than the building cost curve.

A table at the end of the report shows that for flats, the cost of Electrics, Painting and Plastering have risen least in the last seven years, and Lifts, Floor finishes, Windows and Heating have risen most (electrics 24 per cent; lifts 72 per cent). This table is headed "Design Component Cost Indices"—the "components" being such things as plastering; joinery; windows; doors and balustrades, etc., which implies the quaint notions quantity surveyors cherish as to the architects' mode of thinking when he designs. Although this paper is to help with price-time adjustments, some of the information has a wider significance. The table showing distribution of labour and material separately, among trades, could help the designer's search for labour economy. For example, we can now see that Services—which in flats compete with Frame for the lions share of total cost and which so far have been sheltered from penetration by the functionalist design approach has a labour to materials ratio of about 1:2. Of materials, tanks, sanitary fittings and electrical materials take by far the largest share (6.5 per cent out of 11.4 per cent). Of labour, heating and plumbing together and electrics and gas together take about equal shares (5.5 per cent). That this is hardly the finding one would expect, proves the value of having it.

Three criticisms of the paper must be made. One that since the figures are broken down into trades it would have been useful to have some guidance on how to use them to adjust element prices in cost analyses. Secondly that the paper is not as easy to understand as it might be. Some explanations are so wordy that one loses the thread; others are so cryptic (*e.g.* "costs of plant were ignored") as to leave one groping. Does this mean literally what it says or are plant costs included in the figures in some indirect way?

The third criticism is that although the report recognizes the need to explain how the figures were arrived at, the explanations given are not wholly clear. Materials prices are explained at some length but labour and productivity—which affect building prices so much more, are dealt with too summarily. One can infer from the report that productivity factors have been obtained by dividing the total materials used, by the labour force employed in a certain period—a measure which can show a more economical use of material as a drop in productivity. These criticisms do not, however, detract from the great value of this work by the Cost Research Panel. This third paper in their series preparing the way for their main report, is the best that the Panel has so far published.

7.66 practice
COST PLANNING

Building Economics: Cost Planning. (BRS Digest 109, HMSO. 3d.)

This digest discusses *Initial Costs* (planning economy and structural economy) and *Annual Costs* (maintenance service, heating and lighting). It is more in the nature of a brisk and rather breathless chat on the subject, than of a diligent research paper; indeed it hardly comes up to even the cynical definition of BRS as a body which gives you all the information short of an answer. The section on "Initial Costs" mentions ratios of external wall to floor; of circulation to gross floor area and of lift prices per dwelling; suggesting reasonable target figures for design. Following paragraphs say that design should fully exploit the characteristics of materials, should not use them wastefully or without considering fluctuating market prices. It tells us that r.c. is cheaper than steel, that shuttering should be simple and repetitive and that we should design for plant to work continuously at a steady rate. The last paragraph in this section quotes ranges of factory costs (highest roof cost 2½ times the lowest, etc.) to suggest that the cost of the clients' stated planning needs should be compared with the advantages they offer.

The section on "Annual Costs" on the other hand, plunges straight into what, for the architect, will be relatively unknown territory: running costs. It begins by suggesting that selection of materials in design should be on the basis that it is worth spending up to £1 initially to save 1s. a year in annual costs on a 60-year life building. For example, hardwood instead of softwood to save painting costs. It points out that a roof covering which took 2·5 per cent. of its initial cost every year for repairs, and had to be renewed after 14 years' life, would be more expensive than a permanent covering costing 25 per cent. more initially and costing twice as much in annual upkeep.

Similar considerations apply to building staff wages. It is worth spending £10,000 more initially to save one liftman—at £9 12s. per week; grass in the long run is twice as expensive as concrete paving; the savings on narrower estate roads may be offset by the extra cost of longer walks for dustmen, grocery boys and hand as opposed to mechanical road sweeping, etc. It is at this point that we begin to see how out of touch with architectural practice BRS has become in the last few years.

The next paragraphs show a table of factory costs, broken down into element groups—the figures combine annual charges with construction costs (converted into their annual equivalents) and show "functional" costs of heating and lighting. Finally, there is a page headed "The interests of owners, users and the community," which mentions that taxation favours high running costs, that expensive land implies high building for the private developer, but not for the local authorities, whose land cost is subsidized; and that although electrical floor heating is cheap to install it costs the community more in the long run.

This is a curious Digest, its aim being more to convert than to inform. It presents an approach to architectural design that is all too rare—and for lack of which the profession forfeits a large measure of public confidence. Better architectural design awaits the provision of more comprehensive and precise criteria for the choice of plan, method, material and detail. This Digest attempts to put the less widely recognized of these criteria before the architect. But while the intention of the document is admirable its method of putting the message across is deplorable. It is a re-

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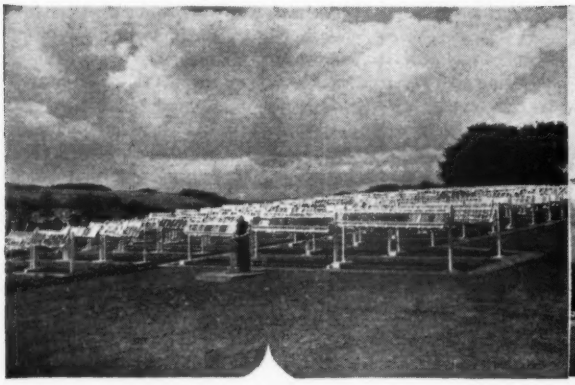
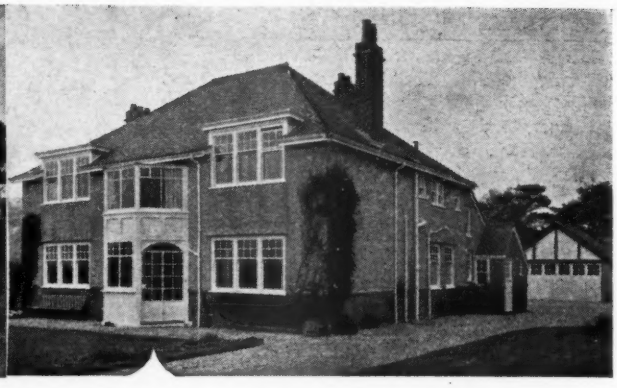


A house on the Hampshire coast.



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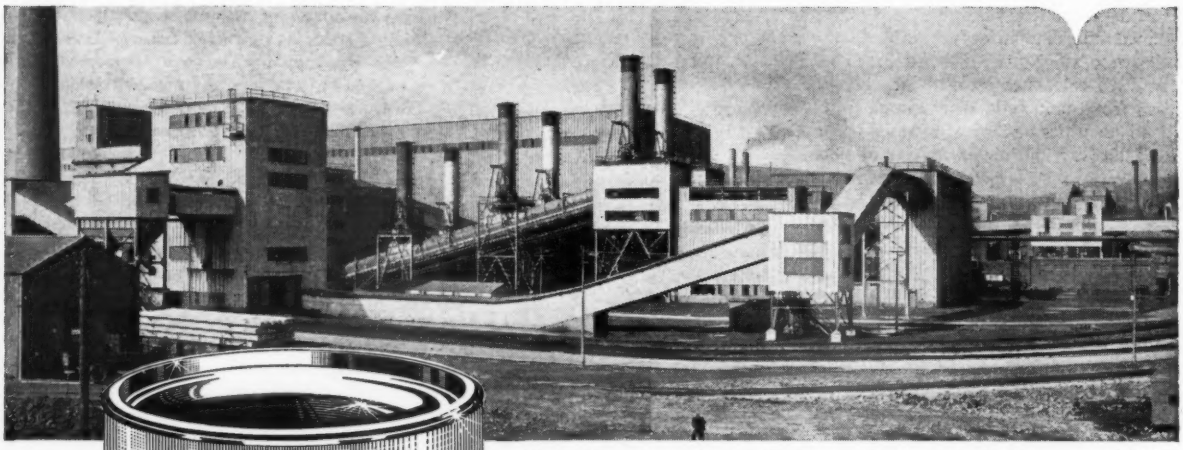
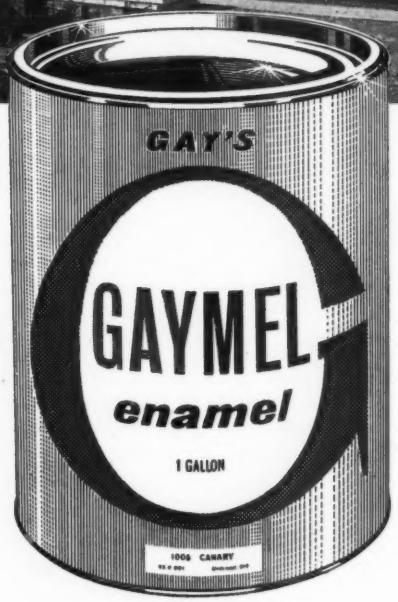


The Ore Preparation Plant at the Margam Works of the Steel Company of Wales.



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technical section

current characteristic of documents from those who have become engrossed in their own specialization and have lost sight of the complex of which they are part, that they intersperse unexceptionable banalities with remote obscurities. It is ineffective to tell us that materials should not be used wastefully—but we do need to have the capitalization of annual costs explained. It is not sufficient merely to inform those you are trying to teach that it is worth adding £10,000 to capital expenditure to omit one boiler stoker; or that the omission of glazing from a factory roof would save £600 annual costs. Architects will be irritated by laborious descriptions of the obvious; baffled by cryptic references to the unfamiliar. A "child's guide" would have been far more effective: explanation of the unfamiliar by means of comparative hypothetical case histories and much more expressive use of graphs and diagrams. How, for example, can the average architect know whether his design allows a concreting team or a gang of electricians to work continuously at *optimum* output? How is he to calculate the effect of fluctuating copper prices on plumbing costs?

Let us hope that BRS will soon change its cold shoulder attitude to the architectural profession—and begin to publish *information* on matters of this kind for the guidance of those who probably have in their hands a greater control over building costs than builders, specialists, engineers, or clients. The aim, as I have said, is admirable. Let following Digests make good the aim by leading the architect by the hand through the steps that to him will be new.

10.165 design: building types
THEATRES AND CINEMAS

Architetture per lo Spettacolo. Roberto Aloi (Ulrico Hoepli, Milan. L.12,000). This handsome book is one of a series devoted to different building types illustrated by examples drawn from all over the world and commented upon in four languages (one of which is English). "Lo spettacolo" is interpreted in the widest possible sense, to cover such outlying types as open air theatres, radio and television studio theatres, and the assembly halls of civic centres and of high schools. This wide casting of the net is at first sight disconcerting; but on reflection seems justified as it corresponds to the varied fortunes which the theatre has undergone in the last 20 years. No other building type has suffered so much by the uncertainty begotten by violent and continual technical change. We have seen the legitimate theatre overtaken by the cinema, the cinema by television; and, as a result of the economic instability this has bred, we have seen every kind of experiment in theatre ownership: governments, universities, municipalities, schools and even large commercial firms have all come forward to offer their broad shoulders for carrying what is recognized to be an essential social function.

This book begins with a long and splendidly illustrated essay on the development of theatre design from the Greeks to Gropius' Total Theatre (1927) and Luigi Vietti's Mega Teatro Project (1935), and then proceeds to give coverage—photographs, plans, occasional detail drawings and (always) the basic data—of virtually all the important entertainment buildings which have been built since about 1930, including among them important projects like the Gropius team's auditorium in the Civic Centre at Tallahassee and van der Rohe's National Theatre project for Mannheim. Though the serious architect reader with a theatre to build will find himself wanting more technical information (reverberation times are nearly always missing), the total effect of the book is very impressive. The examples are nearly always well chosen, the photographs are splendid (there are among them some in colour which take your breath away) and they give the impression that those who commission buildings in this class have a good idea of what they want from modern building and usually get it. It is not easy to pick out specific examples. New to your reviewer and particularly deserving of study were Milan's three experimental theatres: the San Erasmo (1952) by Carminati and De Carli, the Piccolo Teatro (1952) by BBPR and Zanuso, and the Alle Maschere (1955) by Canera, Grilletto and Lattuada. Perhaps it was their example which encouraged the publishers (who are also Milanese) to give us this interesting book. It will be the best reference for many years to come.

18.196 construction: theory
REINFORCED CONCRETE COLUMNS

Safe loads and properties for square tied columns to C.P. 114 (1957). A. d'O. Smith. (Obtainable from the Author, 17, Grosvenor Road, Richmond, Surrey. 3s. 9d.)

The safe load and properties of section are tabulated for square columns with mild steel or Tentor bars, the columns ranging from 12-in. square to 24-in. square, and the reinforcement from 0.8 per cent to about 4 per cent. In each case a safe axial load is given for 1:2:4, 1:1½:3 and 1:1:2 concrete, the equivalent area, and section modulus for 2-in. and 1½-in. cover. This involves about 400 cases with mild steel and 150 with Tentor Steel and will guide the inexperienced designer to the answer fairly quickly. Further tables dealing with rectangular columns and eccentrically loaded columns are to be published.

19.214 construction: details
FACTORY ROOFS

Condensation in Sheeted Roofs. A. W. Pratt. (National Building Studies Research Paper No. 23. HMSO 3s. 6d.).

Though a "Research Paper" and therefore intended "mainly for those engaged on research or development work" this is of interest to architects, particularly as it goes to the trouble of giving practical recommendations. The paper presents the results of tests lasting three winters on the behaviour of 14 northlight roofs. The tests were carried out at BRS by the author with the assistance of the Metal Fixing Association. The results tend to confirm current practice. They concern four points. The first is the need to supply a vapour barrier on the warm side of the insulation. This should have a diffusance of not less than 0.005 lb./ft.² h atm and can be supplied either by (i) a good coat of paint (which should be *brushed*, not sprayed), preceded by the sealing of the joints with a good adhesive or sealing compound; or (ii) by spraying with a plastic film—a method which seals both surfaces and joints together; or (iii) by lining with aluminium foil. On this last it was pointed out that the current practice of using foil-backed insulated plasterboard fixed so that the foil is on the cold side of the lining is incorrect since the moisture merely penetrates the plasterboard and condenses against the foil. If this method is used it can be corrected by laying 1-in. thick glass wool quilt on the top side of the foil.

The second point is the value of ventilating the cavity. It was suggested that this might be done by spacing the roof sheets at the overlap by about ¼ in. This has little effect on the U value of the roof but may permit snow to enter the cavity and is in any case not so effective as a vapour barrier.

The third point concerns over-roof insulation. This achieves its purpose by preventing the excessive cooling of the cladding and is a useful remedy for an existing roof as it causes no disturbance to work going on below. In this case, the cladding itself normally provides the "vapour barrier"; but it is important that the holes punctured in it for fixing the insulation should themselves be vapour proof. In the experiments ½-in. fibreboard was sandwiched between corrugated metal sheet and a protective layer of roofing felt and bitumen and was found to be only partly successful. It is suggested that the amount of insulation should be double.

The last point concerns exposed metal surfaces on the underside of the roof. These should be brushed with anti-condensation paint or sprayed with asbestos fibre. Where the latter is used (it should *not* be used where sterile conditions are required) the surface should be well ventilated.

CLASSIFICATION FOR TECHNICAL ARTICLES AND INFORMATION CENTRE

1 Sociology. 2 Planning: General. 3 Planning: Regional & National. 4 Planning: Urban & Rural. 5 Planning: Public Utilities. 6 Planning: Social & Recreational. 7 Practice. 8 Surveying & Specification. 9 Design: General. 10 Design: Building Types. 11 Materials: General. 12 Materials: Metal. 13 Materials: Timber. 14 Materials: Concrete. 15 Materials: Applied Finishes & Treatments. 16 Materials: Miscellaneous. 17 Construction: General. 18 Construction: Theory. 19 Construction: Details. 20 Construction: Complete Structures. 21 Construction: Miscellaneous. 22 Sound Insulation & Acoustics. 23 Heating & Ventilation. 24 Lighting. 25 Water Supply & Sanitation. 26 Services & Equipment: Miscellaneous. 27 Furniture & Fittings. 28 Miscellaneous.

building illustrated

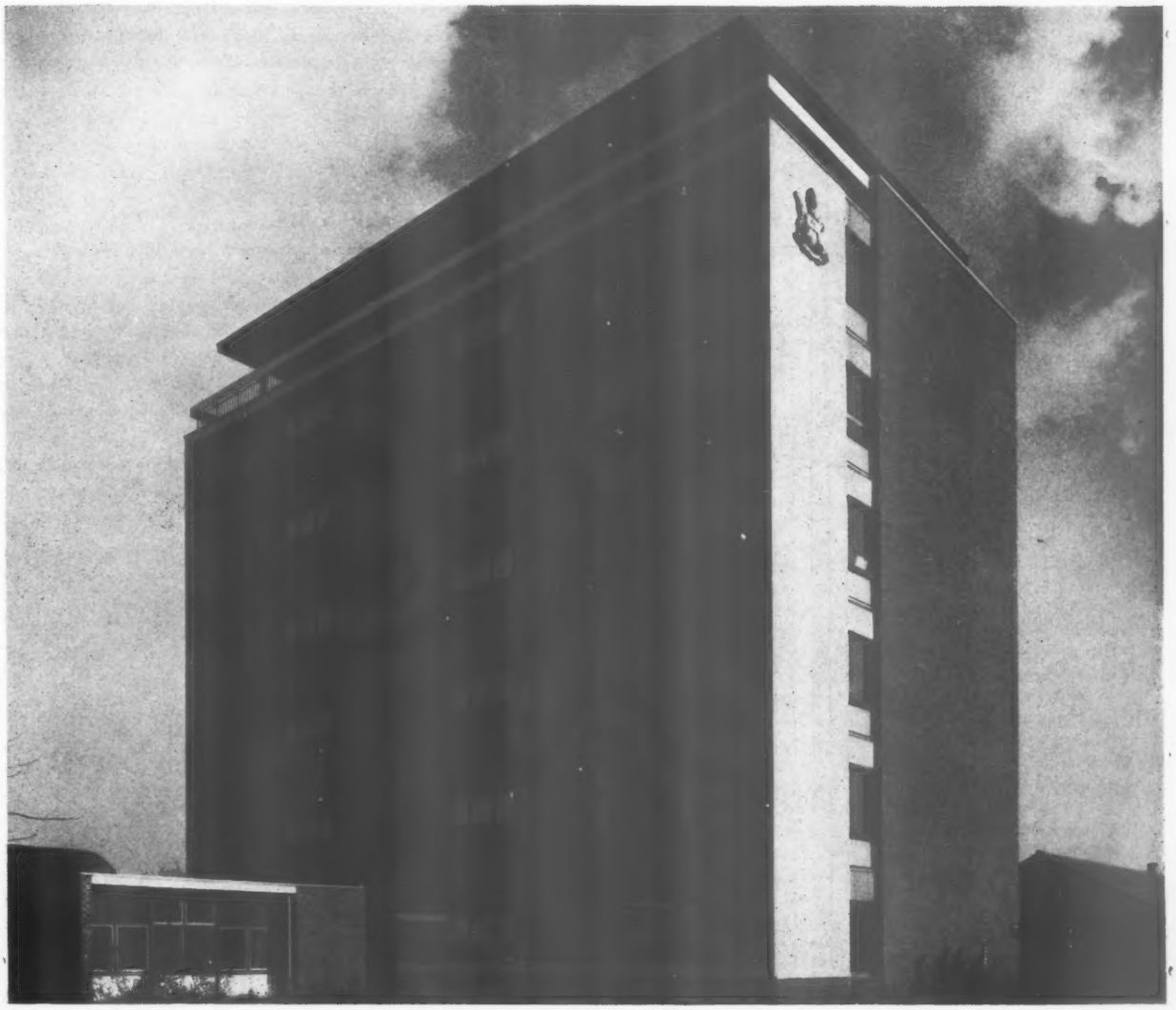
College of Further Education in William Street, Slough, Bucks.

COLLEGE OF FURTHER EDUCATION

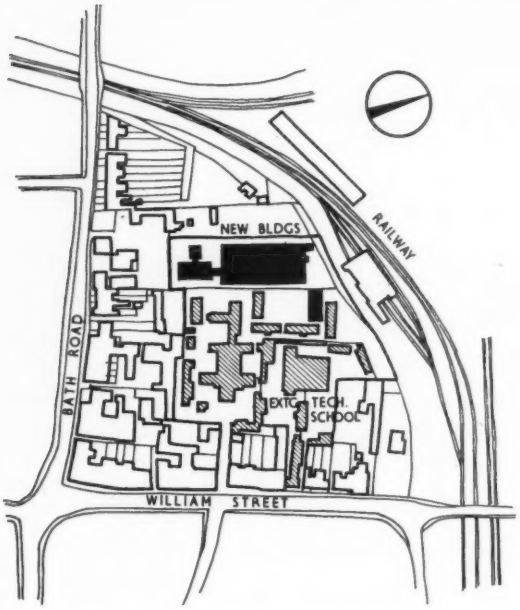
in WILLIAM STREET, SLOUGH, BUCKS; designed by F. B. POOLEY, county architect; J. C. BARKER, deputy county architect; A. R. WALKER, assistant county architect; T. J. RIDLEY, assistant in charge; consulting engineers (services) A. H. BARKER and PARTNERS; quantity surveyors D. R. NOLANS and CO.

The buildings illustrated here form, with some earlier buildings adjoining, the first two stages of a three-stage scheme for a College of Further Education. Phase II, cost analysed this week, consists of a single-storey workshop block for heat engines, and a six-storey teaching and laboratory block.

Viewpoint 1: *the 6-storey science block from the south-west. The single-storey building on the left is the staffroom.*



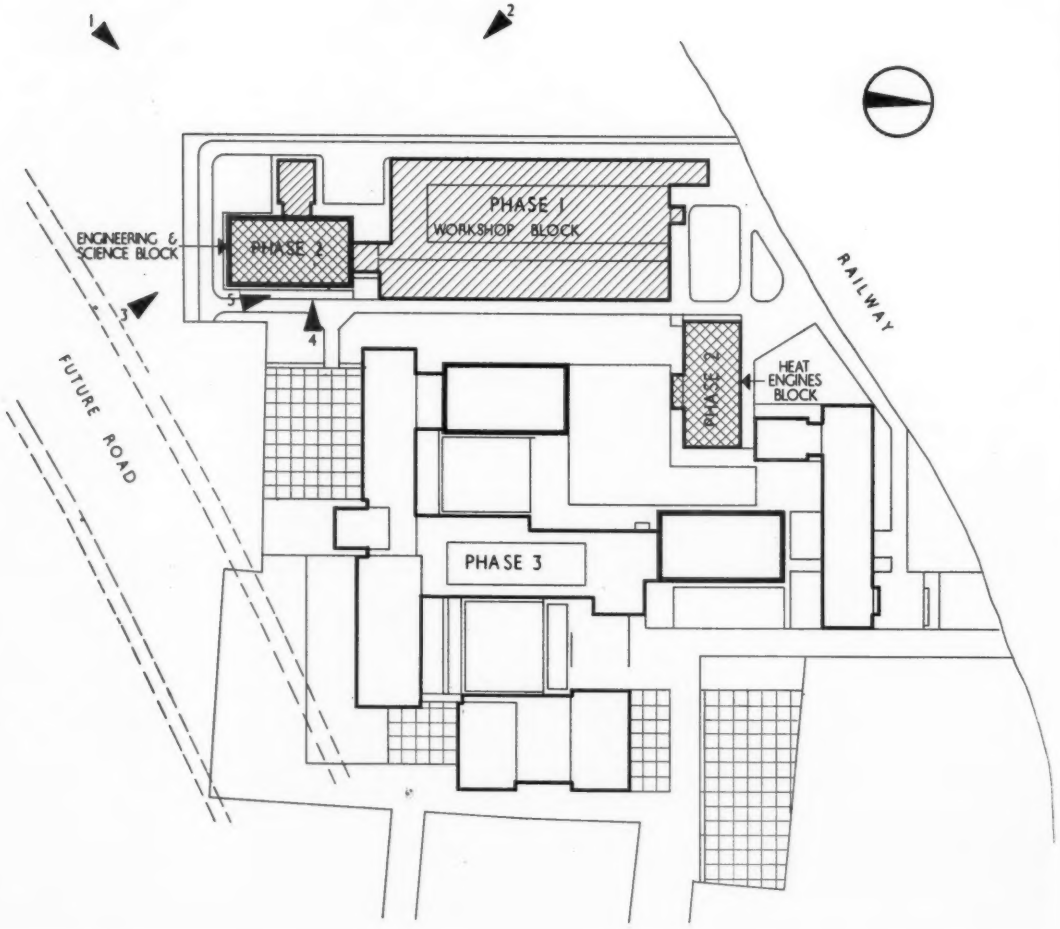
building illustrated



Left, block plan, showing the Phase I and II buildings already completed and the existing Technical School which occupies the rest of the site, in relation to the centre of Slough.

A perspective sketch showing the character of the scheme when completed; the viewpoint is taken from the future main road.

Below, site plan, showing the complete scheme and the projected main road on to which the Phase II 6-storey block, administration block and assembly hall will face. Phase III will include two further 6-storey blocks, similar in character to that already completed. The arrows indicate the photographic viewpoints.



The science block has a steel frame with three rows of columns; a row immediately inside the timber curtain walls which form the east and west faces, and another down the centre of the building giving two equal spans. East-facing and west-facing rooms are therefore generally of equal width, a fact which surprisingly is belied by the end elevations, where the proportions of brick and stone facings give an impression of wide rooms facing east and narrow rooms facing west. The arbitrary articulation of these end walls is further brought out when it is realized that, although at the south end the "flash-gap" contains genuine windows and corrugated aluminium panels (viewpoint 3, above), that at the north end consists of rendered panels (viewpoint 2, below). Here there are three facing materials —brick, rendering and stone slabs—in three different planes, all backed up by the same brick inner skin to give a normal plastered plane surface to the room behind. The organization of the external faces of the building into a number of simple planes is however successful in giving character to what would otherwise be a rather squat block of building; one only wishes it could have been achieved without this deception.

analysis

CLIENT'S BRIEF

These buildings form the second instalment of the College of Further Education and, with the first instalment, provide for nearly all the needs of the Engineering, Building and Science Departments of the College. The first phase consisted of a single-storey workshop block: the second phase comprises a small single-storey workshop block and a six-storey block containing laboratories, drawing offices and classrooms.

SITE

The site, in the centre of Slough, is within the triangle formed by the Bath Road, William Street, and the main railway line to the west of England. Much of the site is occupied by the existing College buildings, which are gradually being replaced by new development. Access to the site is at present via College Road from William Street, but since a new main road is proposed, which will link the Bath Road and William Street and form the southern boundary, access will later be from this road.

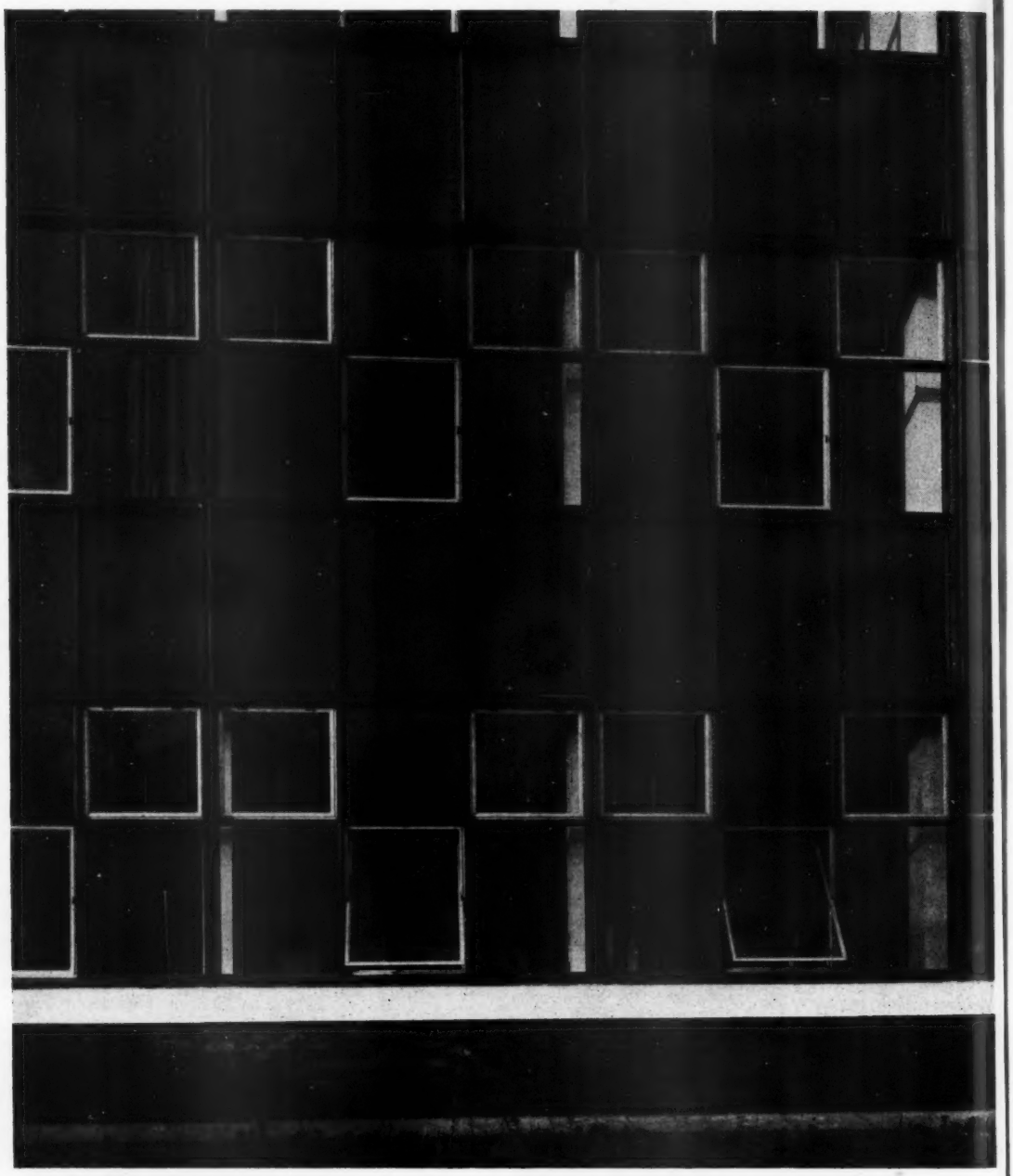
PLAN

The buildings erected to date form only part of the final College, and their layout has of course been determined by the master plan for the whole College, as well as by the presence of existing buildings and the required departmental breakdown of accommodation. Ultimately the College will consist of three six-storey blocks linked by either single- or two-storey buildings.

MAIN CONSTRUCTION

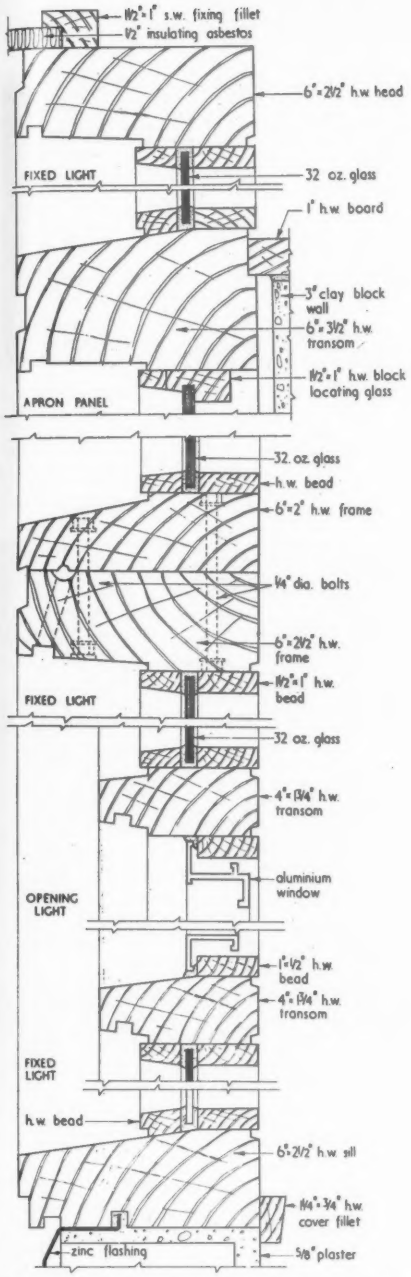
The single-storey heat engines block has load-bearing walls, and the wood-wool roof is supported on r.s. beams, to which are bolted steel frames for the monitor rooflights.
A steel frame has been employed throughout the multi-storey block: the floors are of prestressed units bearing on the main steel beams, with woodwool spanning between the units to act as shuttering for the structural concrete topping, which has been given a trowelled finish so that it was possible to omit the conventional screed floor finish. Concrete casing to beams and stanchions has been omitted and the one hour fire resistance required achieved by encasing the stanchions with an asbestos based board, the same board being used for suspended ceilings. This suspended ceiling construction allows the removal of any panel at any time, so that access to services within the ceiling void can be had easily when required.
The north and south walls are of cavity construction, the inner leaf being brickwork and the outer leaf either facing brick or artificial stone slabs.
The east and west elevations of the block are formed by timber curtain walling, each facade being approximately 90 ft. long × 80 ft. high. The steel frame is on a 10-ft. bay and storey heights are 12 ft. 6 in., and the curtain wall is built up with timber frames 10 ft. wide × 12 ft. 6 in. high. These frames are bolted to each other and to rustproofed steel tees, running vertically at 10-ft. centres, which are fixed to the structural steel frame. The frame units are sub-divided by mullions on a 3-ft. 4-in. module (this was determined by planning requirements) and by transoms. The "dead" glazed and opening light sections of the frames are sized and divided to provide the necessary degree of ventilation, to reduce all glass sizes to 32-oz. sheet, and to allow the windows to be cleaned from inside the building.
At each floor level a hollow pot fire stop sill wall is provided inside the curtain wall: this and the suspended ceiling are concealed behind a coloured glass infill panel.

building illustrated

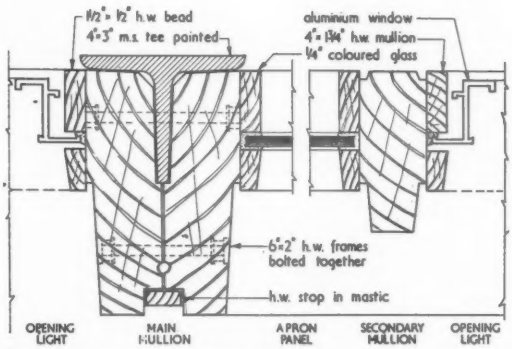


The hardwood-framed curtain walling to the east and west elevations is designed on a 3-ft. 4-in. module, and consists of completely framed-up units measuring 10 ft. wide by 12 ft. high, bolted together at column centres (viewpoint 4, above). Fixed lights are glazed directly into the framing with hardwood beads, opening lights consist of independent aluminium windows let into the framing, and apron panels are of coloured cast glass backed up with a hollow-pot fire-stop wall.

The low brick wall at the base of the curtain walling is set forward to accommodate a wide gutter which catches rainwater running down the face (viewpoint 5, left).



Section through timber curtain walling [Scale: ½" = 1' 0"]



Plan of timber curtain walling [Scale: ½" = 1' 0"]

analysis

	Single-storey block	*Multi-storey block*
cost per sq. ft.	s d	s d
preliminaries and insurances	5 8	5 8
contingencies	1½	1½

STRUCTURAL ELEMENTS

Work below ground floor level — 6 5 — 1 10½

Single-storey block: strip foundations of mass concrete.
Multi-storey block: r.c. pad foundations under stanchions, ground beams under walls.

External walls and facings — 6 10 — 5 11¾

11-in. and 1-ft. 6½-in. cavity walls of Sussex and Dorking grey-brown hand-made facings, with Staffordshire blue engineering bricks below curtain walls and slabs. Precast artificial stone slabs, Clipsham stone faced. Rendering of scraped finish on fletton brickwork, to upper structure above main roof only.

Ratio: $\frac{\text{solid wall}}{\text{floor area}} =$

single-storey block, $\frac{0{\cdot}89}{1}$

multi-storey block, $\frac{0{\cdot}33}{1}$

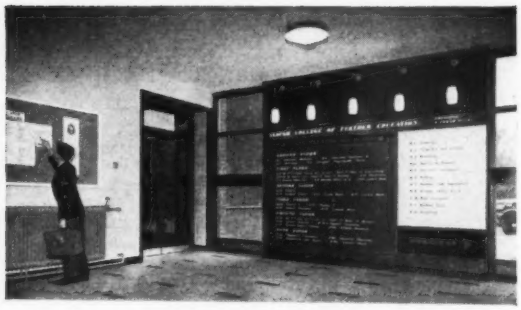
Frame or load-bearing element
Single-storey block: load-bearing brickwork and r.s. beams with 40-ft. span. — 5 3½
Multi-storey block: steel frame. R.s. stanchions and beams with bolted connections. Beam span, 23 ft. 4 in. — 9 2½

Upper floor construction — 3 6½
Patent prestressed concrete floor with integral screed floor finish. Prestressed units at 2-ft. 4-in. centres with woodwool spanning between, covered with concrete topping.

Staircases — 4 0½
Two staircases of *in-situ* reinforced concrete, with hardwood treads with non-slip nosings.
Height from floor to floor: 12 ft. 6 in.
Width between landings: 7 ft. 11 in.
Width of stairs: 3 ft. 6 in. between hand-rails.
Total rise: 75 ft.

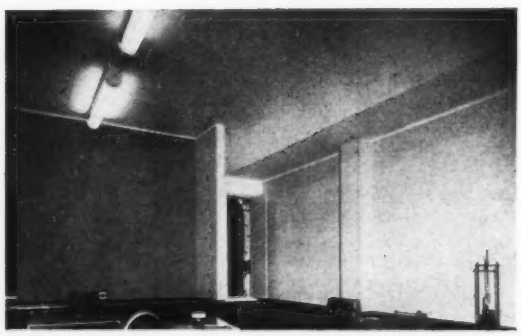
Roof construction
Single-storey block: steel purlins and woodwool slabs finished with 3-layer felt, and chippings to flats, mineralized finish to monitor roofs. — 4 11½
Multi-storey block: timber purlins and compressed straw slabs, finished 3-layer felt and chippings. — 1 0

building illustrated



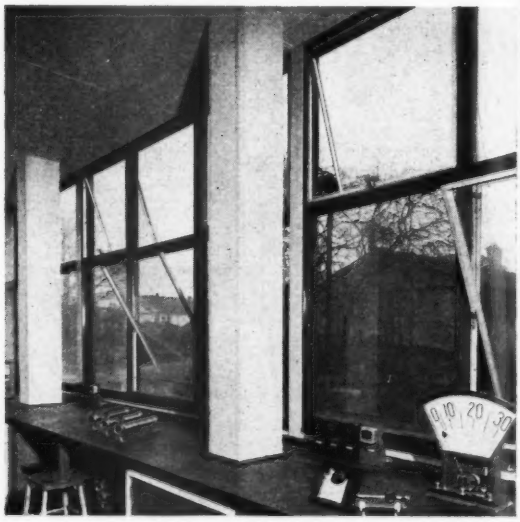
The entrance hall is in the form of a single-storey glazed link between the 6-storey block and the Phase I workshop. Above is the interior of the entrance hall with its large and clear board giving the whereabouts of each department. The floor is of terrazzo tiles.

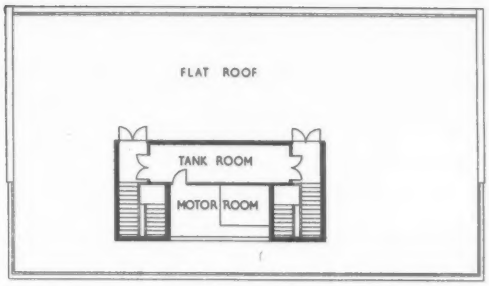
The short corridor on each of the upper floors is served by two staircases and a lift; the stairs are separated from the corridor by smoke-stop glazed screens, one of which may be seen above. The dark panels on either side of the lift recess are access panels to vertical service ducts. These ducts, and others at the ends of the building, link up with a horizontal duct running along the north-south axis, concealed by the suspended ceiling in the corridors and boxed out in the laboratories and classrooms as shown below.



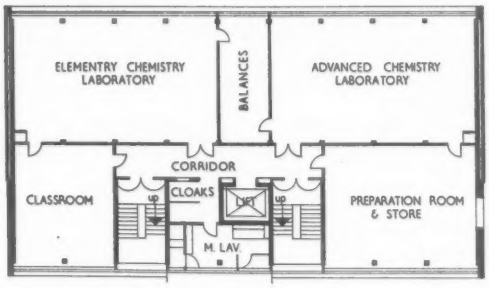
The arrangement of services in horizontal spine ducts has allowed considerable freedom in the layout of laboratories, where almost every piece of equipment is linked with services. Above, a chemistry laboratory. Below, some typical benches in the foreground and fume cupboards against rear wall below the service duct.

The waste of space which often occurs when columns are planned a short distance inside exterior walls has been largely overcome by placing benches under the windows (below).

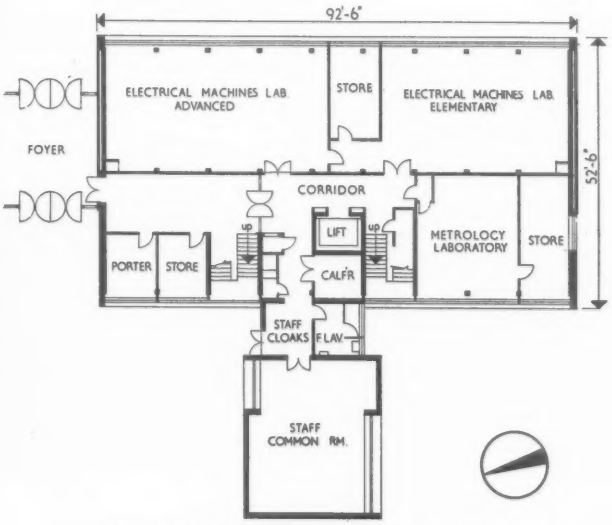




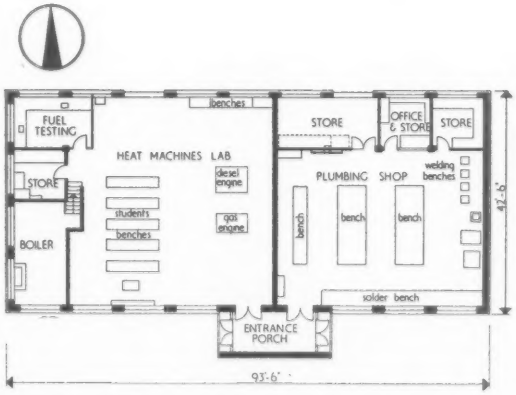
Roof plan



Typical upper floor plan



Ground floor plan, multi-storey block [Scale: $\frac{1}{32}$" = 1' 0"]



Ground floor plan, single-storey block [Scale: $\frac{1}{32}$" = 1' 0"]

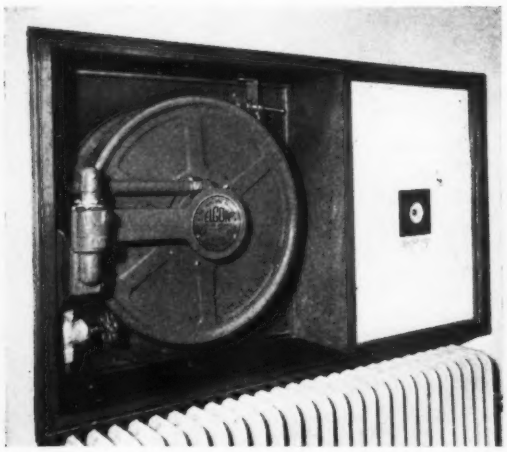
analysis

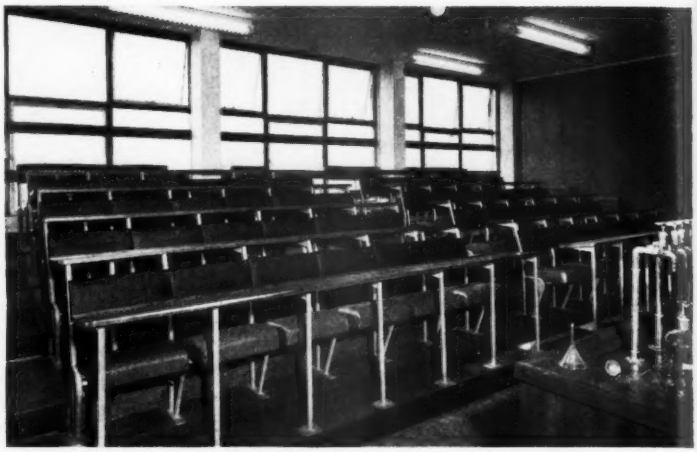
	Single-storey block s d	*Multi-storey block* s d
Roof lights Monitor type roof lights to single-storey block, bolted to timber frames. Timber, painted, lights glazed with Georgian wired glass. Number of roof lights: two rows. Total area: 770 sq. ft.	4 6	
Windows *Single-storey block:* steel windows and opening lights. Ratio: $\frac{\text{windows}}{\text{floor area}} = \frac{0{\cdot}39}{1}$	1 1	
Multi-storey block: timber curtain wall. Hardwood frame units, finished 3 coats of boat varnish. Anodized aluminium opening lights. Cost includes external doors. Ratio: $\frac{\text{windows}}{\text{floor area}} = \frac{0{\cdot}30}{1}$		10 10½
External doors *Single-storey block:* sliding folding doors of 2-in. softwood, ledged, framed, braced and battened, finished prime and 3 coats of paint. And some glazed and panelled doors with 2-in. hardwood frames, fully glazed. Ratio: $\frac{\text{doors}}{\text{floor area}} = \frac{0{\cdot}05}{1}$	6	
Multi-storey block: cost given under " Windows " above. Glazed and panelled doors with 2-in. hardwood frames, fully glazed. Ratio: $\frac{\text{doors}}{\text{floor area}} = \frac{0{\cdot}002}{1}$		
Glazing ¼-in. polished plate in large windows in south elevation and foyers. 32-oz. sheet for curtain wall. ¼-in. Georgian wired polished plate for smoke stop screens and fully glazed doors.	9	10½

PARTITIONING

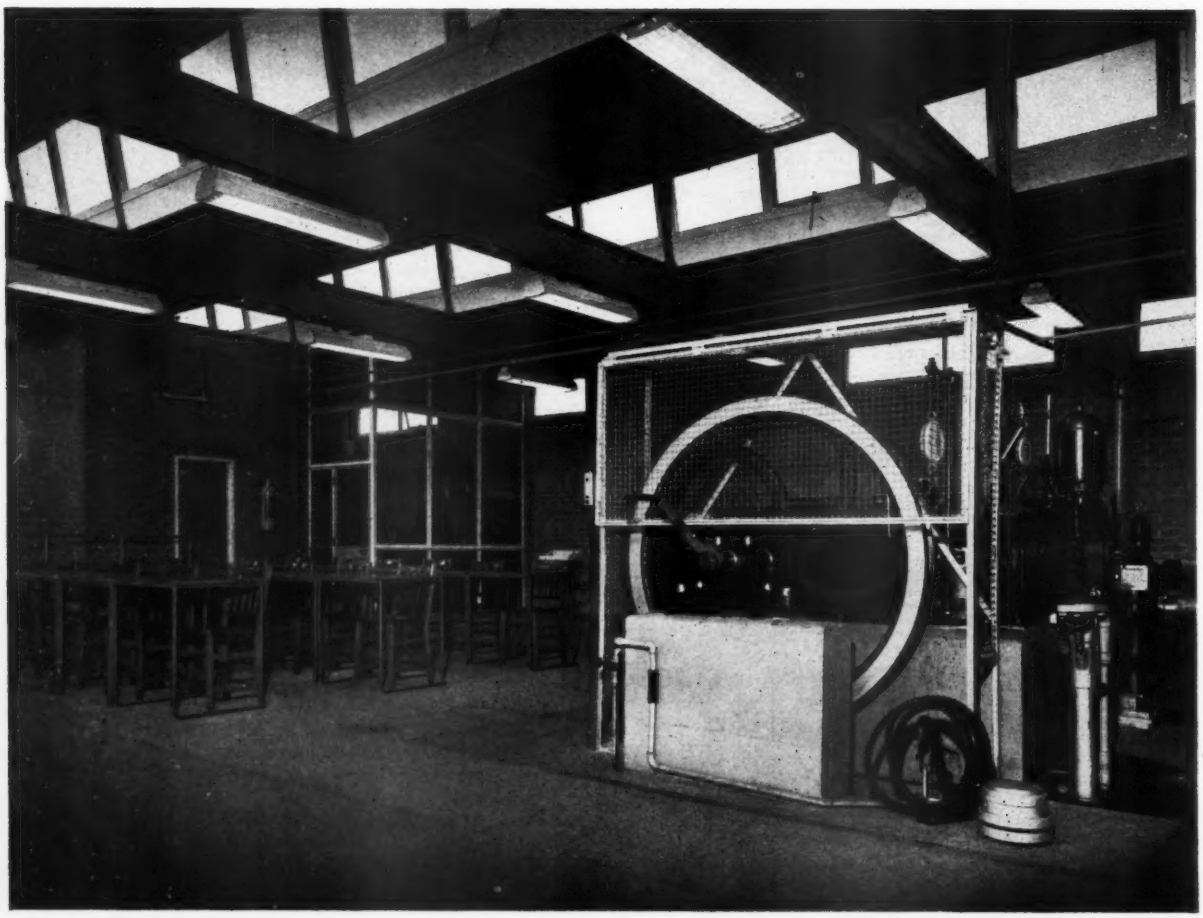
Internal partitions 4-in. hollow clay pots generally. 4½-in. and 9-in. brickwork for services core, staircases, lift shaft, etc. Both ⅝-in. plastered.	2 0	1 3
Screens Hardwood smoke stop screens to staircases, oiled and waxed, in multi-storey block. Glazed steel screens in single-storey block.	6½	4½
W.c. doors and partitions Blockboard in hardwood frames, blockboard finished prime and 2 coats of paint; hardwood, oiled and waxed.		2
Internal doors Semi-solid core flush plywood-faced doors, and half-glazed doors throughout. Timber finished prime and 3 coats of paint.	1 6	10½

building illustrated





Above left is one of the fire hose reels which ensure prominence for the fire hose alarm, with which they are combined. In the lecture room (above right) the seating is raked downwards from the level of the window sill towards the opposite wall, an arrangement which though fitting in conveniently with the general plan of the building, puts the lecturer in a position where he faces the glare of the windows and sees his audience in silhouette. Below, a view of the interior of the heat engines block, which is lit mainly by monitor rooflights carried on r.s.j.s. spanning 40 ft. The walls are of fairfaced brickwork and the floor is granolithic.



analysis

	Single-storey block	*Multi-storey block*	*Single-storey block* s d	*Multi-storey block* s d
Number of single doors	4	66		
Number of double doors	3	15		
Hardwood smoke stop doors (cost included under " Screens ")	—	12		
Ironmongery Silver bronze.			6¼	7

FINISHINGS

Floor finishes

Type of finish	*Location*	*Area in sq. ft.*	*Cost per sq. yd.*	*Single-storey block* s d	*Multi-storey block* s d
Single-storey block:				3 6	
Wood blocks	Workshop	1,540	40s.		
Quarry tiles	Stores	440	50s.		
Granolithic	Elsewhere	1,780	17s. 6d.		
Multi-storey block:					3 1½
Terrazzo tiles	Foyer	900	51s. 6d.		
Linoleum	Corridors, etc.	2,700	27s.		
Thermo-plastic tiles, ⅜-in.	Classrooms, etc.	4,320	26s. 10d.		
Thermo-plastic tiles, ⅛-in.	Stores, etc.	630	16s. 3½d.		
P.V.C.	Labs and lavatories	12,600	32s.		
Granolithic	Stores, etc.	990	17s. 6d.		

Wall finishes
Single-storey block: fairfaced brickwork 1 4
Multi-storey block: ⅝-in. plaster, finished 2 coats emulsion paint or wallpaper. 2 5
Asbestos board column casing, for fire protection to r.s. stanchions.

Ceiling finishes
Single-storey block: Painted woodwool
Multi-storey block: Removable ⅜-in. asbestos board panels, finished 2 coats of emulsion paint. Chosen to protect steel-work from fire, and for giving accessibility to services in ceilings. 3 1½

Decorations 2 0 1 7
Doors and softwood, prime and 3 coats gloss paint, B.S. 101 range.
Walls and ceilings (multi-storey block only) 2 coats emulsion. BS 101 range.

FITTINGS

Cloak rooms 2
Silver bronze hat and coat hooks by lavatories and in teaching rooms (multi-storey block only).

Laboratory fittings 3 0 5 7¾
Hardwood tops, softwood otherwise. Hardwood oiled and waxed. Softwood stained and varnished.

SERVICES

Plumbing: external 2½
Flashings and eaves trims of self-finished aluminium. 1 4

Rainwater disposal 2 2½
Cast iron downpipes, painted, external in single-storey block, in ducts in multi-storey block.

Plumbing: internal 1¼ 1 9
Polythene one-pipe system in ducts for lavatories and laboratories. Selected for resistance to chemical attack.

Cold water installation
Cost included under heating installation, below.
Cold water supply tank on 6th floor of multi-storey block; galvanised steel; capacity 1,200 gallons. Also heating feed and expansion tank; galvanised steel; capacity 200 gallons.

Sanitary fittings 2½ 8½

Type of fitting:	*Single-storey block* Number in each block:	*Multi-storey block*
Lavatory basins	1	18
Laboratory sinks	3	33 (sinks and receivers)
W.c.s (high-level cisterns)	—	10
Slab urinals (each 6-ft. long)	—	3
Cleaners' sinks	—	6
Drinking fountains	—	5

Heating installation 9 3 7 5½
Cost includes costs of boiler and hot and cold water installation.
Low pressure hot water system. Plant in boiler room, calorifier in multi-storey block.
Criteria temperatures: 62 deg. F. in main rooms, 60 deg. F. in corridors.
" U " values of walls and roof: 0·25 throughout.
The cast iron sectional, oil-fired boiler also serves Phase I building; rated at 1,302,000 B.Th.U.s per hour.
Ventilation system: natural ventilation, except in metrology laboratory, where there is a temperature control plenum.

Drainage system 1 0¾ 1 0¾
Separate system. Surface water taken into soakaways. Surface water drain not available—good draining capacity of sub-soil.
Salt-glazed ware generally, cast iron under buildings.

analysis

	Single-storey block s d	*Multi-storey block* s d
Gas installation Cost included in heat installation, above. Main supply to points in laboratories.		
Electrical installation	11 5	7 1
Tungsten in classrooms, fluorescent in drawing offices and laboratories. Fittings chosen to comply with MOE regulations. Illumination level: labs. and classrooms, 15 f.c.; other rooms, 10 f.c.; corridors, 3-6 f.c.		
	Single-storey	*Multi-storey*
Tungsten	21	142
Fluorescent	26	158
Wiring and switching types Main distribution: v.i.r. in trunking throughout. Sub-main distribution, sheathed with p.v.c. Plastic flush wall switches.		
Power supply type 415/240 v. 3-phase.		
Lifts One passenger lift in multi-storey block. Capacity, 3,000 lb., 20 persons. Speed, 200 ft./min. Motor room on 6th floor.		4 4
Total cost per sq. ft.:		
Single-storey block £13,923 / 3,760 sq. ft. =	74 0¾	
Multi-storey block £118,561 / 27, 815 sq. ft. =		85 3
Paved areas Concrete roads and parking areas round buildings, of concrete on hardcore. Other paved areas of concrete paving slabs, cobbles and gravel.	9¾	

FIRE PRECAUTIONS

Structural: Steel frame clad with asbestos board casings and ceiling panels, giving 1 hour's resistance.
Hose reels; alarm bell system; foam, soda, acid and CO_2 extinguishers, as applicable. Internal fire stop wall to sill height inside curtain wall.
Planning: All round access for fighting. Two staircases with separate exits provide means of escape.

SUMMARY

Floor area: Single-storey block, 3,760 sq. ft.; multi-storey block, 27,815 sq. ft.
Date of tender: October, 1955.
Date of completion: April, 1957.
Net cost: £132,484.
External works: £2,924.
Gross cost: £135,408.
Accommodation: general and practical classrooms, 76·23 per cent., staff rooms and circulation, etc., 23·77 per cent.

COST COMMENTS

It might appear that these two analyses would provide a comparison of single- and multi-storey work, but their differing functions result in differing cost targets.
Workshop block: It would appear that local industry dictates the service requirements for teaching workshops (*e.g.* printing, aeronautical, electrical, etc.) Hence the architect is left with very little money to spend on elements other than services (which take 23s. 6¼d. out of a total cost of 74s. 0¾d. per square foot). For example, " External walls and facings " at 6s. 10d. per sq. ft. of floor area, with a ratio of 0·89, can be calculated at $\frac{\text{6s. 10d.}}{0{\cdot}89}$ = 7s. 8d. per sq. ft. of wall, which is very economical. Finishings have also been kept to a minimum, *e.g.* fair face brickwork. It should be noted that " Internal Partitions " contains walls which are load bearing. " Preliminaries " are roughly the same for workshop and laboratory blocks, no doubt because the priced bill showed a lump sum. But actual apportionment might well be different because of the effect of height on plant, insurance costs, etc.
Science block: It has been found possible to afford a much better external finish and the cost per sq. ft. of wall of the solid walling can be calculated at 18s. 2d., compared with the workshop's 7s. 8d. The curtain walling at 10s. 10d. per sq. ft. of floor area represents the surprisingly high unit cost of 36s. 2d. per sq. ft. without glazing. (As this analysis is taken from a priced bill, not a final account, it may be that this represents a P.C. sum for work not fully detailed at tender stage.) " Staircases " and " Lift " costs indicate that almost 10 per cent. of the cost goes on vertical circulation. The upper floor construction with its integral screed finish seems to have been an economical proposition, although one might have doubts regarding the floor layer's attitude to the loss of his traditional screed and the question of sub-floor protection before the arrival of the floor layer.

SITE ORGANIZATION

Site labour and equipment: Labour was organized on the site by a general foreman, trades foremen, key personnel and local labour.
2-tool mobile compressors were used for breaking out old concrete in air-raid shelters and concrete floors of existing buildings. 10 RB excavator was used for six weeks, and a ¾ y.c. linear dumper for five months. 1 Junior Vibrosail compactor. 10/15 cwt. 2-barrow platform hoist with 90-ft. mast, for six months. 1 Saga hoist. 1 Fix Rammer PSN size 1A gun for shooting bolts into brickwork and fixing cramps into steel stanchions. 14:10 Diesel Mixer, 5:3 mixer. Scaffolding, approx. 20,000 tubes, 5,000 fittings.
Sub-letting: Glazing; cast-iron drainage; painting; plastering and granolithic floors; asphalt tanking.

CONTRACTORS

Clerk of works: H. H. Groves. *General contractors:* Taylor Woodrow Construction Ltd. *Sub-contractors: Partition blocks:* Phorpres, London Brick Co. Ltd. *Glass, double-glazing and armourglass:* Pilkington Bros. Ltd. *Patent flooring:* Pierhead Engineering Division (The Unit Construction Co. Ltd.). *Central heating and gas fitting:* Weatherfoil Heating Systems Ltd. *Electric wiring:* Rashleigh Phipps & Co. Ltd. *Electric light fixtures:* Atlas Lighting Division of Thorn Electrical Industries Ltd. *Boilers:* Ideal Boilers and Radiators Ltd. *Stairtreads, nosings:* Small & Parkes, Ltd. *Floor coverings:* Semtex Ltd. *Telephones, internal:* General Telephone Systems, Ltd. *Suspended ceilings and column casings:* Tentest Fibre Board Co. Ltd. *Flush doors:* Leaderflush Ltd. *Signs:* Ward & Company. *Paint:* Goodlass, Wall & Co. Ltd. *Blackout blinds:* J. Avery & Co. Ltd.

working detail

WINDOW: THEATRE IN HELSINKI

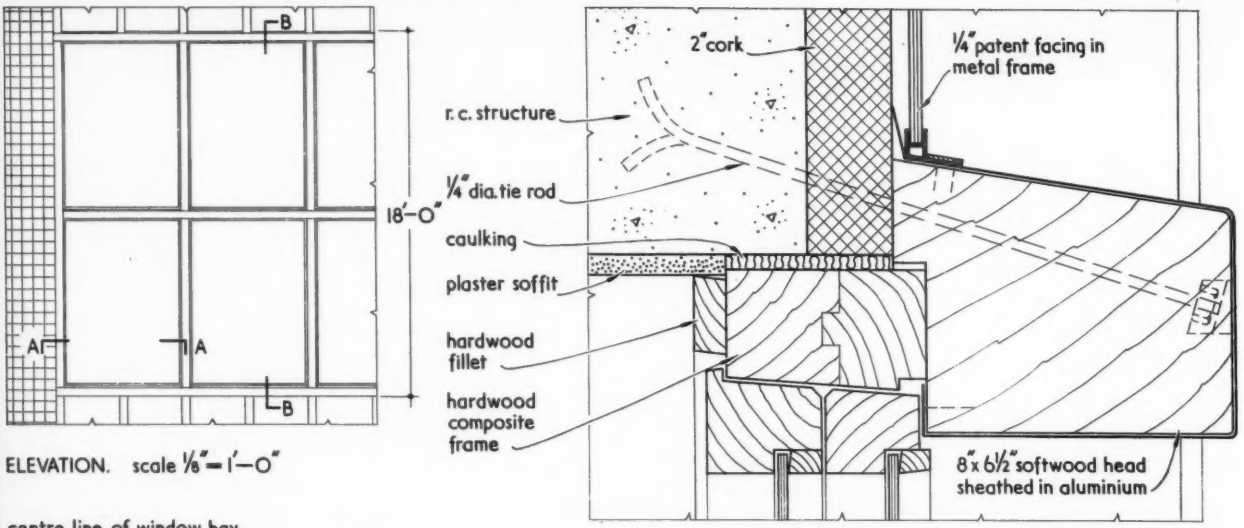
Heikki Siren, architect (material supplied by Imre Weöres)

To avoid painting the wood, mullions, head, sill and transom are clad in aluminium. Note on the drawing the unusual method of attaching the head and sill members to the concrete structure.

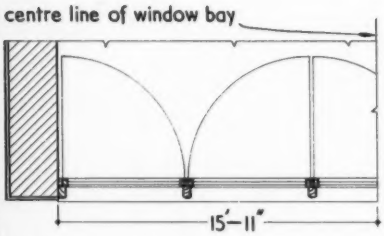
working detail

WINDOW: THEATRE IN HELSINKI

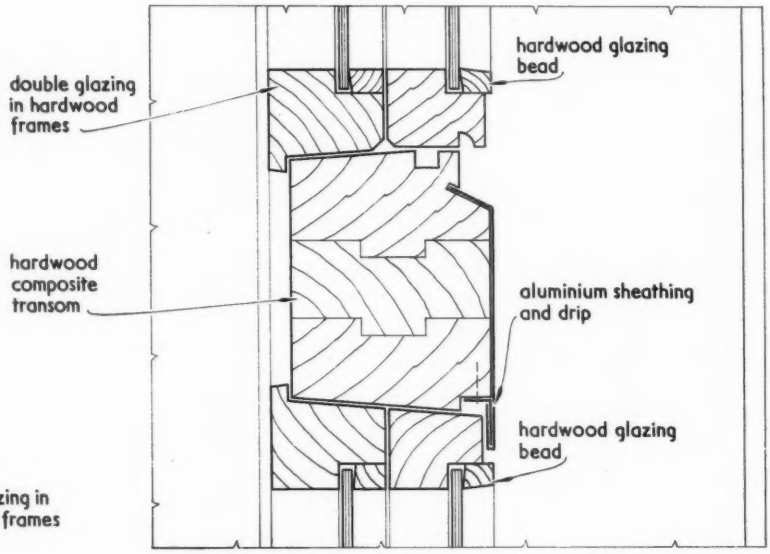
Heikki Siren, architect (material supplied by Imre Weöres)

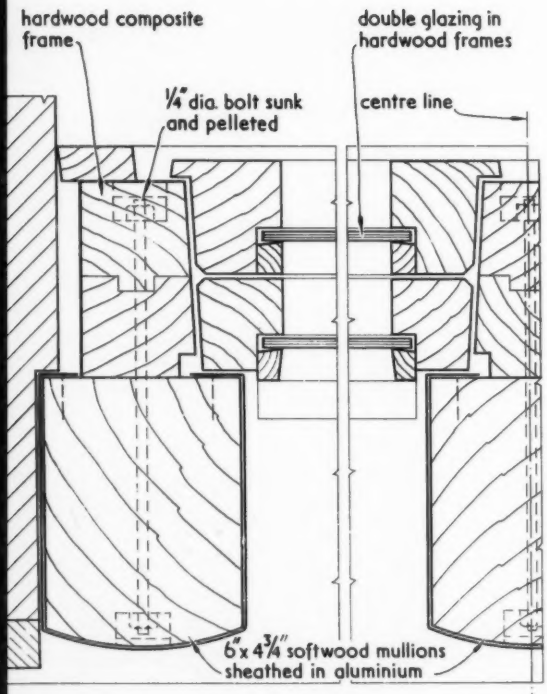


ELEVATION. scale ⅛" = 1'-0"

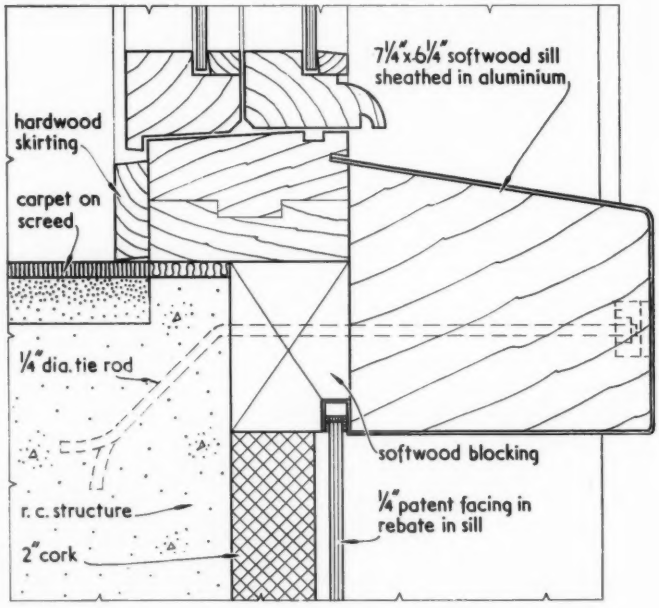


PLAN. scale ⅛" = 1'-0"





PLAN AT A—A. scale ¼ full size



SECTION B—B.

note: figured dimensions in feet and inches are approximate

working detail

SLIDING WINDOW : HOUSE AT GENTOFTE, DENMARK

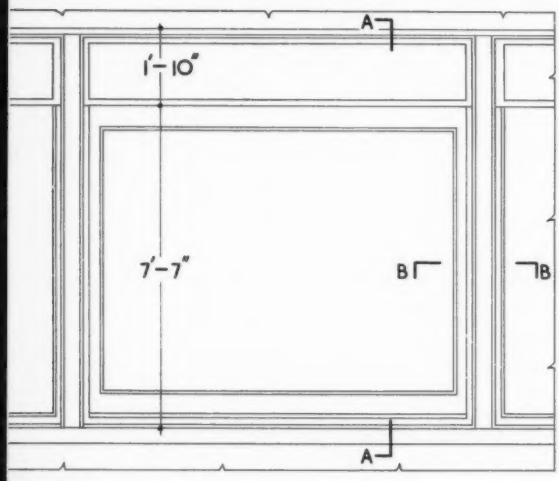
Eva and Nils Koppel, architects (material supplied by John Whalley)

The unusual proportions of this facade are due to the fact that behind the painted asbestos fascia board there is a deep (but thin) r.c. beam. The facade represents, therefore, a translation into reinforced concrete of a design which in England would have been carried out in timber alone.

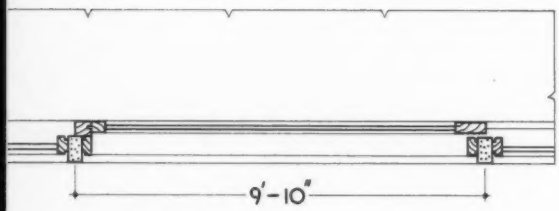
working detail

SLIDING WINDOW: HOUSE AT GENTOFTE, DENMARK

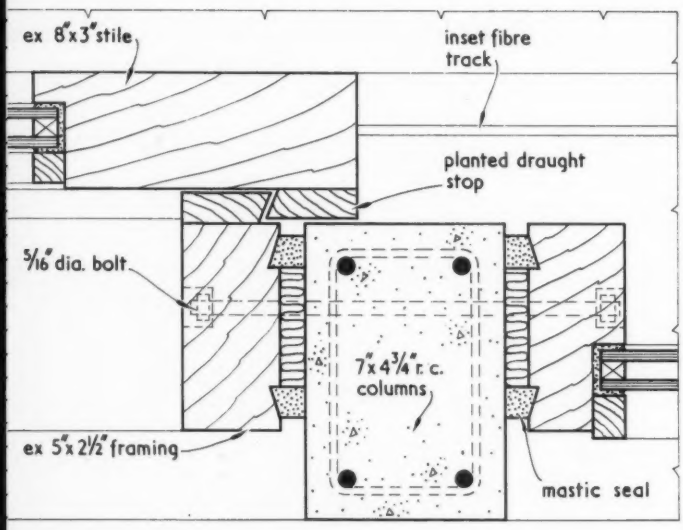
Eva and Nils Koppel, architects (material supplied by John Whalley)



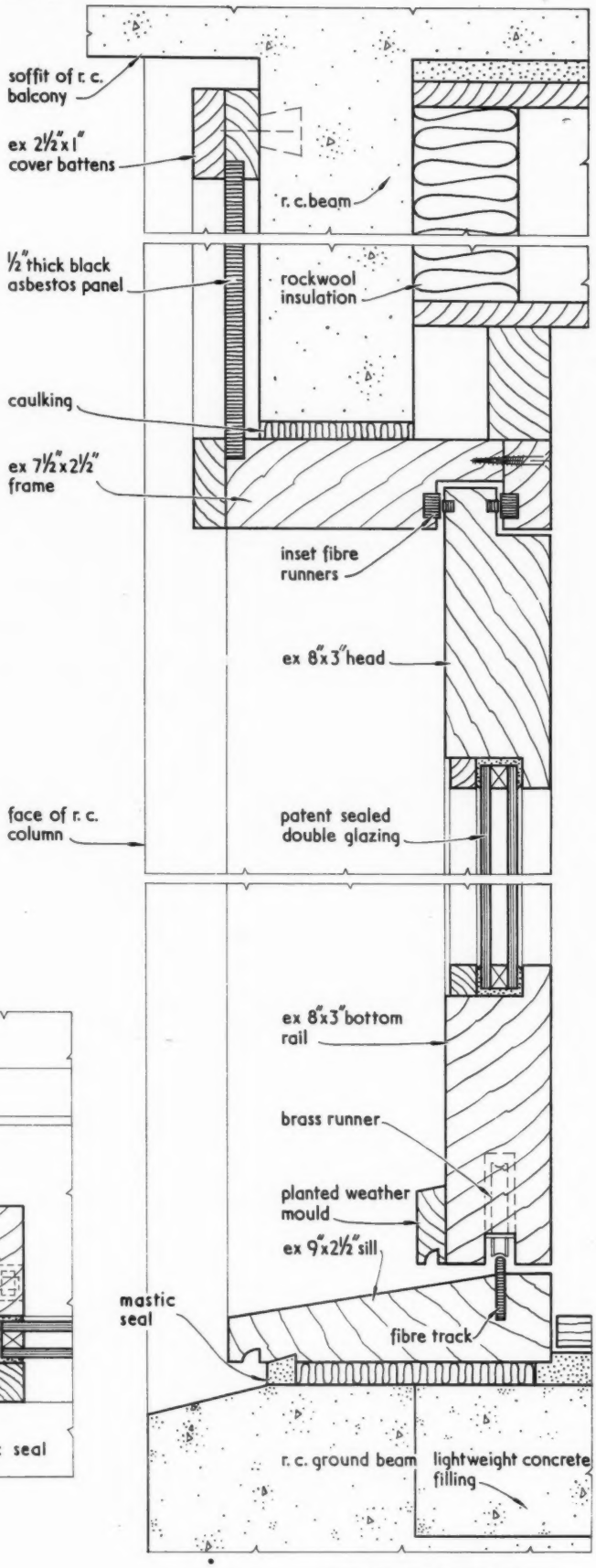
ELEVATION. scale ¼" = 1'–0"



PLAN. scale ¼" = 1'–0"



PLAN AT B–B. scale ¼ full size



SECTION A–A.

note: figured dimensions in feet and inches are approximate

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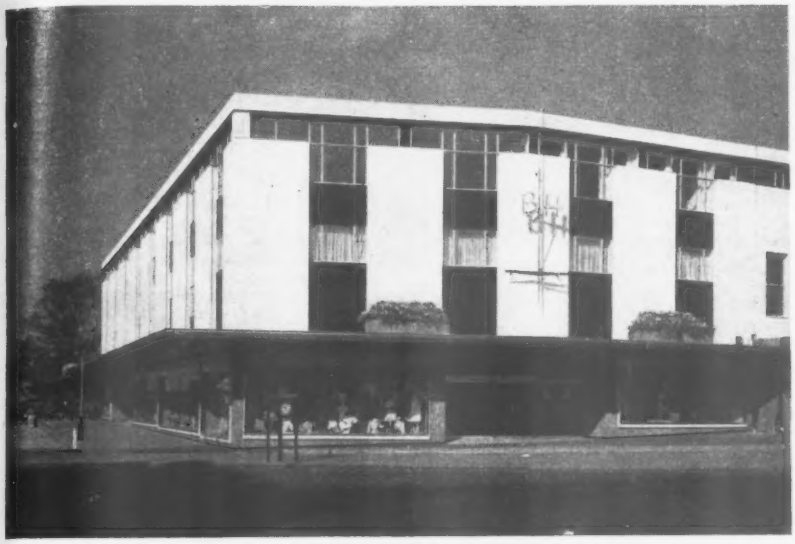
DEPARTMENT STORE AT SOUTHAMPTON



The new Bourne & Hollingsworth store at Bargate, Southampton, designed by W. H. Saunders & Son is entirely an in-situ *concrete structure, with external facings of Portland Stone (to conform with local authority requirements) and panel infilling of polished blue-black Welsh slate. The vertical features, shop windows and canopy fascia are in satin-finished stainless steel and shop fronts are of Napoleon and beige marble. The flower boxes shown in the photograph were temporarily placed in position for the opening. The building was erected in 9½ months, including all shopfitting. General contractors: Gilbert-Ash Ltd.*

Announcements

PROFESSIONAL

F. Hamer Crossley, DIP. ARCH. (L'PL), F.R.I.B.A., would like all further correspondence addressed to the County Architect, County Offices, Matlock, Derbyshire.

M. W. Smith, A.R.I.B.A., A.A.DIPL., M.T.P.I., has now moved to 21, Moreton Avenue, Harpenden, Herts, and is working for the Borough Architect's Department at Luton.

Davis, Belfield and Everest, Chartered Quantity Surveyors, have now opened an office at 13, St. John's Street, Cambridge (telephone: Cambridge 51198). The office will be under the personal supervision of V. Bugg, A.R.I.C.S., and trade catalogues would be welcomed.

D. George Porter, B.ARCH., A.R.I.B.A., A.N.Z.I.A., A.M.T.P.I., and Lewis E Martin, A.A.DIPL. (HONS.), A.R.I.B.A., A.N.Z.I.A., have taken into partnership, Bruce H. Falconer, PH.D., B.E., D.I.C., A.M.I.C.E., A.M.N.Z.I.E., A.M.ASCE. They will continue in the meantime to use the title of Porter and Martin but will describe themselves as Registered Architects, Civil Engineers and Planning Consultants, practising, as before, at 219, Lambton Quay, Wellington, C.1, New Zealand.

TRADE

Under a scheme of reorganization Carter & Co. Ltd. will now function simply as a holding company owning and controlling the subsidiary companies of the Carter Group. To make this fully effective, the tile-making side of the business carried on at the White Works and Architectural Potteries at Hamworthy will become a new subsidiary company known as Carter Tiles Ltd.

Pestcure Ltd., specialists in dry rot and woodworm eradication, have moved to larger offices at 1a, Cavendish Square, W.1, from their previous premises at 30, Cavendish Square.

F. Hills & Sons Ltd., Norton Road, Stockton-on-Tees, have appointed a further new distributor of Duramel, the plastic-faced plywood—Bristow & Copley & Co. (Coventry) Ltd., 106/112, Foleshill Road, Coventry.

The Association for Consumer Research Ltd. has now moved to 7, Great James Street, London, W.C.1, and Caspar Brook has been appointed full-time director of the Association from June 1.

From April 21, the address of the Hull Branch Office of British Insulated Callender's Cables Ltd., will be 49, Mytongate, Hull (telephone: 16470 and 16367).

John Macaulay, a Glasgow sales representative of Turners Asbestos Cement Co. Ltd., left on April 9 for East Africa. He will be travelling in Kenya, Uganda, Tanganyika for a month surveying the market for pressure pipes. Mr. Macaulay is well known to water engineers all over Scotland, having been a Scottish representative of Turners Asbestos Cement Co. Ltd., Pressure Pipe Department, for 25 years.

BX Plastics Limited have pleasure in announcing that they are extending the manufacture of Expandable Polystyrene at their Brantham Works. This material will be marketed solely by British Resin Products Limited, Devonshire House, Piccadilly, W.1, and Expanded Plastics, Limited, Mitcham Road, Croydon (a subsidiary of Expanded Rubber Co. Ltd.) under the trade name "Polyzote."

J. A. Crabtree & Co. Ltd., are holding an exhibition of their products at the Griffin Hotel, Leeds 1, from May 5 to 9. They will be exhibiting particularly their Type B-15 and B-26 air break contactor gear and Type D-6 manual starters together with auxiliary equipment and limit switches.

The Guild of Public Pharmacists has arranged for an open discussion on "The Planning and Management of the Pharmaceutical Department," to be held at 5.30 p.m. on Wednesday, May 7, in the Conference Hall at Olympia during the week of the International Hospital Equipment and Medical Services Exhibition.

Sherwoods Paints Ltd. have opened a new depot at Edgecumbe Place, Plymouth, to assist stockists with prompt deliveries and service.

J. A. Hewetson & Co. Ltd., Marfleet, Hull, and their associate company—Horsley, Smith & Co. Ltd., of Hayes, Middlesex, have established a Woodworm & Dry Rot Eradication Service by the Protim process covering the whole of England and Wales. R. H. Morfitt, A.R.I.B.A., and R. M. Harris, A.F.S. (ENG.), have been appointed as their specialist consultants in this field.

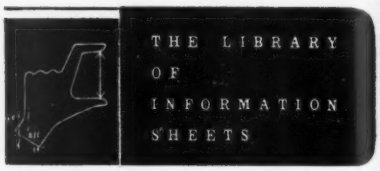
Due to a new policy of concentration of sales effort by the Domestic Appliance Department of Ferranti Ltd., in promoting the all-electric house, the Company will relinquish the manufacture, marketing and servicing of some models in their present range of Domestic Heating Appliances. These appliances are to be manufactured in future by E. K. Cole Ltd. The change will take effect from June 1. Ferranti will continue to make the Fridge-Heater and Electric Panel Fires, but E. K. Cole Ltd. will manufacture, market and service under their own name the Firestreak wall fire, mistral convector, Flamera coal fire, Victor range of lightweight portables and bathroom fires.

Henley's Engineering Sales Department have now moved to 59/62, High Holborn, London, W.C.1, due to re-allocation of office accommodation at their Head Office.

Bernard John Hewlett, Sales Director of Fisher's Foils Ltd. of Wembley, died on April 3, at the age of 49. Mr. Hewlett joined the staff of Fisher's Foils in 1929. During his service with the Company he rose from a junior clerk to Sales Director.

Correction

The name of the curtain wall manufacturers for the secondary school at Balls Park, Hertford (AJ, April 24) was omitted from the list of contractors. They were Quicktho (1928) Ltd., who also supplied the opening windows.



26.E1 *REFERENCE BACK*

Readers are asked to note that on the reverse of the Sheet, heading "Sizes," piles now vary in length from 10 ft. *to* 100 *ft. The last entry in the table under "Max. load subject to length" should be amended to* "100 *tons." Heading "Methods of Driving," sub-heading "Large contracts," delete "Pile frame—Steam hammer." The telephone number of the Head Office is now Skyport* 5222.

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GLASS BENDERS FOR OVER A CENTURY

The index for the Architectural Review for the half-year ending December, 1957 has just been published ; it is reproduced as a supplement to the April issue and is not normally issued separately.

The Architectural Review's new standard binding, with alternate years bound in black and white, and alternate volumes initialled A and R, makes easier the identification of individual volumes, and their proper replacement on the shelf. The binding is buckram, and the price of binding per volume is 25s. Copies to be bound should be addressed, with the appropriate index, direct to the Architectural Press warehouse, Abbey House, 8, Victoria St, London, SW1

APRIL

Triangular wooden church at Les Grés, France, by Rome Prize Winner Michel Marot; from Peter Hammond's article *A Liturgical Brief*, [calling for a new functional approach to church design.

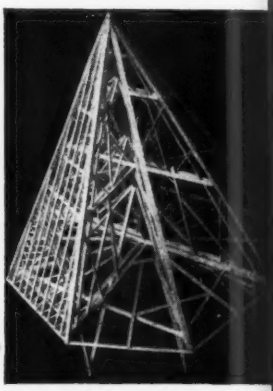
Another church from *A Liturgical Brief*, Klarenbach Lutheran, Dusseldorf, by Wilhelm Kongeter.

House in the Isle of Wight, by Jam Stirling and James Gowan.

MAY

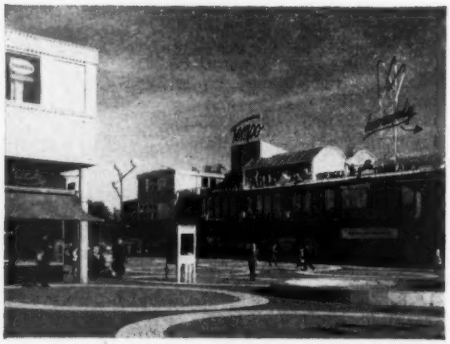
Ove Arup's house in Highgate, by the Danish architect Erhard Lorenz.

Street side clutter, such as will be imposed on any architect's ideal vision if it is built in a town; from Kenneth Browne's article *Streetscape with Furniture*, the street in this case being replanned Notting Hill Gate.

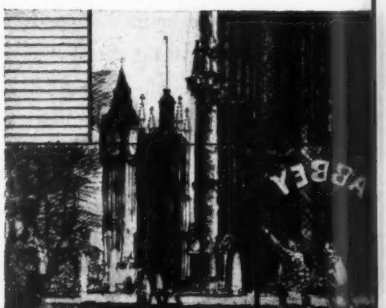


Great Gothic space-frame; Quent Hughes' magnificent model to illustra his article on roof of York Chapter Hou

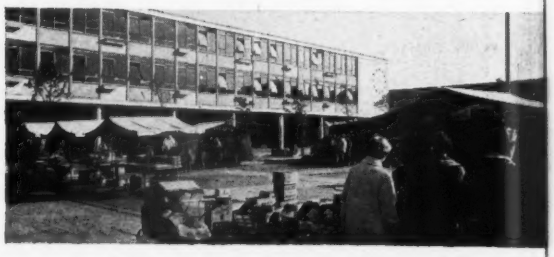
JUNE

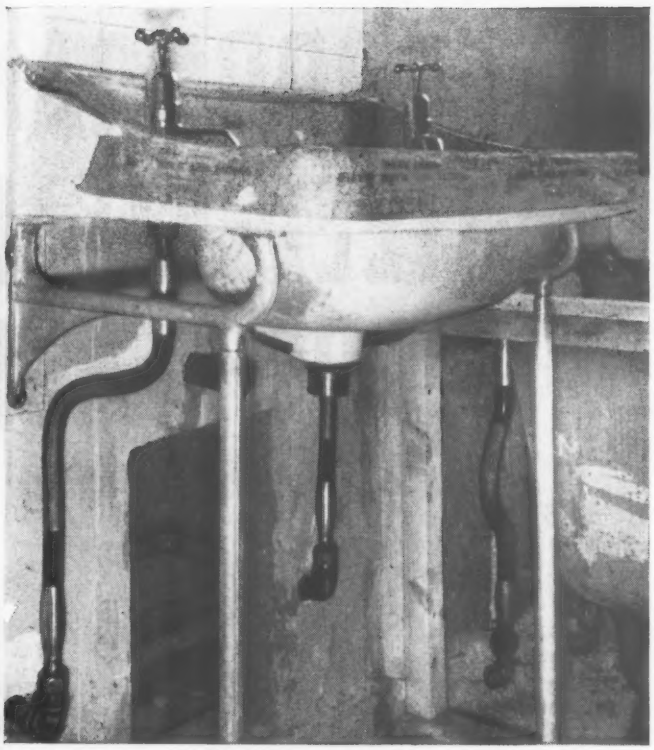


Town centre of Vallingby, above, and the market place of Harlow New Town, right; contrasts in animation from *Hubs Without Wheels*, a survey of two important new town centres.



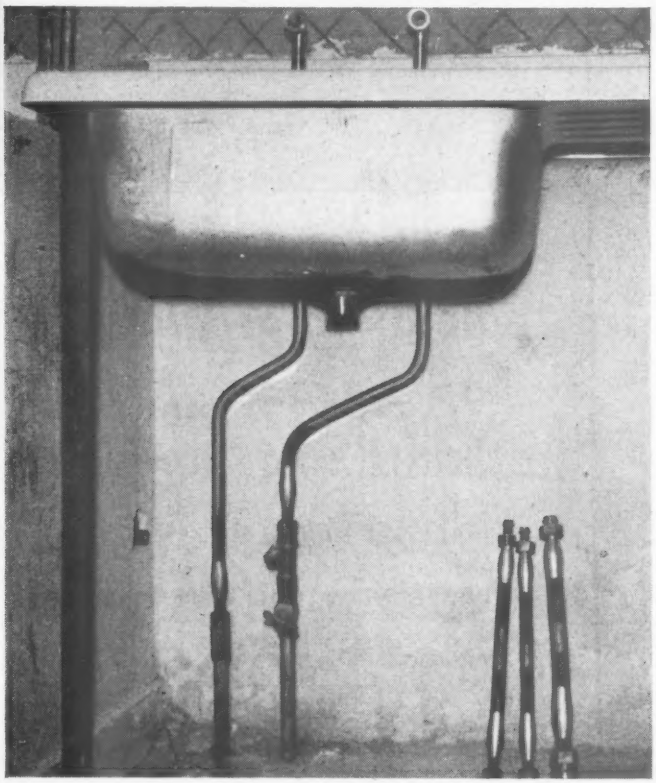
Building development in Victoria Street near the Abbey, touch off again the future of Westminster Precinct. This enfilade of the spires of Westminster highlight Gordon Cullen's proposals in *Westminster Revisited*.





Lead short connections for baths, wash basins and sinks on the L.C.C. Estate of 928 flats at Loughborough Road, S.W.

Architect to the London County Council: Hubert Bennett, F.R.I.B.A.
Contractors: Tersons Ltd. *Plumbing Contractors*: Z. D. Berry & Sons Ltd.



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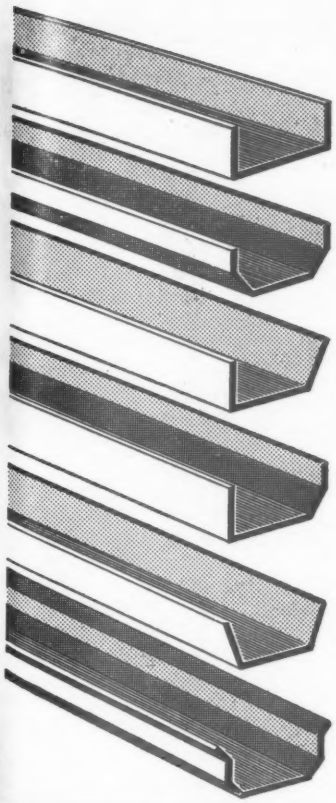
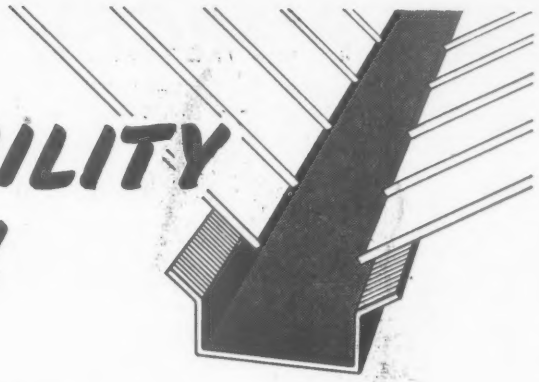


Where DURABILITY is Vital



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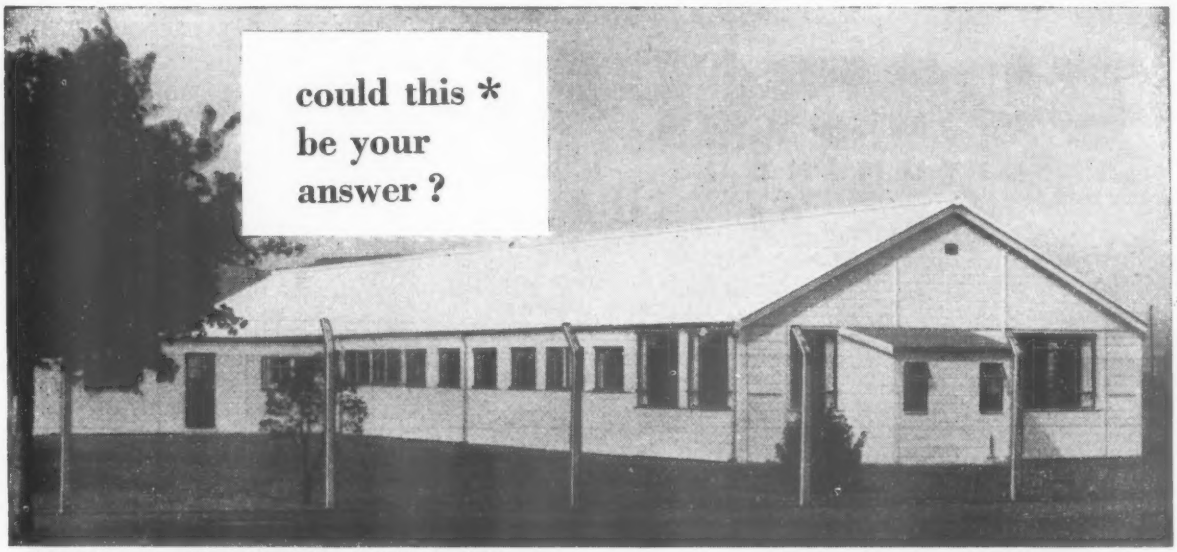

Photograph by courtesy of Hunting-Clan Air Transport Ltd., London Airport.

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(*a*) ASSISTANT ARCHITECTS, Special Grade (£750—£1,030 p.a.).

(*b*) ASSISTANT ARCHITECTS, Grade A.P.T. II (£725—£845 p.a.).

(*c*) ASSISTANT ARCHITECT, Grade A.P.T. I (£575—£725 p.a.).

London weighting, maximum £30 p.a., is payable in addition to the above salaries.

The Council is unable to assist with housing accommodation.

Forms of application and conditions of appointment may be obtained from the Borough Engineer and Surveyor, Town Hall, Dyne Road, Kilburn, N.W.6. Applications to be returned to the undersigned not later than 9 a.m. on Monday, 19th May, 1958.

When writing for application forms candidates must state for which appointment they wish to apply.

R. S. FORSTER,
Town Clerk.
9325

CITY OF SHEFFIELD
CITY ENGINEER & SURVEYOR'S DEPARTMENT
SENIOR PLANNING ASSISTANT
Special Classes Grade

Applications are invited for the position of Senior Planning Assistant, on the Staff of the City Engineer and Surveyor and Town Planning Officer (H. Foster, M.A., M.I.C.E., M.I.Mun.E.). The post is established in the Special Classes Grade (£750—£1,030 p.a.).

Qualifications: A.M.T.P.I., A.R.I.B.A. or A.R.I.C.S.; preference will be given to candidates with Planning and Architectural experience

Consideration will be given to making housing accommodation available to a suitable applicant.

Superannuable post, N.J.C. conditions of service, medical examination.

Applications, stating age, education and training, qualifications, experience, present and past appointments (with dates and salaries), and quoting the names of two referees, should be submitted to the undersigned by the 26th May, 1958.

JOHN HEYS,
Town Clerk.

Town Hall,
Sheffield, 1. 9324

EAST KILBRIDE DEVELOPMENT CORPORATION

Applications are invited for the following posts:—

(1) SENIOR ARCHITECT (Grade I). Salary scale £1,226 per annum, rising by annual increments of £57 to £1,568 per annum. This appointment is in connection with the development of the New Town at East Kilbride, Lanarkshire; applicants should be fully qualified and experienced architects capable of directing and supervising a section of the building work of the Corporation; they should have experience of design and construction of residential areas, industrial and commercial works, and the handling of large contracts.

(2) ARCHITECTS. Salary scale £844—£1,146 per annum. Applicants must be A.R.I.B.A., with at least two years' qualified experience.

(3) ASSISTANT ARCHITECTS. Salary scale £679—£811 per annum. Applicants should at least have passed the Intermediate Examination of the R.I.B.A.

The commencing salary will be in accordance with qualifications, experience, etc.; the appointment is subject to the Corporation's Conditions of Service and Superannuation Agreement; medical examination; a house or flat will be made available if required. Application forms from the General Manager, Torrance House, East Kilbride, to whom they should be returned not later than 19th May, 1958. Canvassing, directly or indirectly, of the members of the Corporation will constitute an absolute disqualification. 9365

STEPNEY M.B.C. require TEMPORARY ARCHITECTURAL ASSISTANTS at the following grades:—

A.P.T. I (£575—£725).
A.P.T. II (£725—£845).
Special Grade (£750—£1,030).

All plus London weighting allowance. Commencing grade and salary fixed according to qualifications and experience.

Applicants should possess suitable architectural qualifications, and for the senior grades be experienced in design, construction, and in the administration of large building contracts.

Applications should be made in writing direct to the Borough Engineer and Surveyor at Nos. 227/233, Commercial Road, E.1. 9392

BOROUGH OF HESTON AND ISLEWORTH
APPOINTMENT OF DRAUGHTSMAN

Applications are invited for the appointment of a Draughtsman in the Architect's Section of the Borough Engineer and Surveyor's Department. Salary grade A.P.T. I (£575—£725 p.a.) plus London weighting.

Candidates must be capable and expeditious draughtsmen and preference will be given to those with architectural experience.

The Council are unable to assist the successful candidate with housing accommodation.

Applications, on forms to be obtained from the Borough Engineer and Surveyor, 88, Lampton Road, Hounslow, must be returned to him not later than noon on 19th May, 1958.

D. MATHIESON,
Town Clerk.

Town Hall,
Hounslow. 9326

BURGH OF KILMARNOCK
BURGH ARCHITECT'S DEPARTMENT

Applications are invited for appointment of SENIOR ASSISTANT ARCHITECT from qualified Registered Architects. Salary, Grade A. & P. VI (£865—£935). N.J.I.C. Conditions of Service. House available for let if required. Apply, giving details of training and experience, with copies of three references, to Burgh Architect, 64A, Bank Street, Kilmarnock, within 10 days.

W. L. WALKER,
Town Clerk.

Council Chambers, Kilmarnock. 9359

SURREY COUNTY COUNCIL

Applications invited for appointment of ASSISTANT ARCHITECT, Special Grade, £750—£1,030 p.a., plus £30 p.a. London allowance. Must be A.R.I.B.A.

Full details, present salary, and 3 copy testimonials, to County Architect, County Hall, Kingston, as soon as possible. 9378

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE
OFFICE OF THE COUNTY ARCHITECT

Applications are invited for appointments in the grades shown below, the salary ranges of which are:—

Senior Grade	£1,240—£1,380.
A.P.T. V	£1,175—£1,325.
A.P.T. IV	£1,025—£1,175.
Special	£750—£1,030.
A.P.T. III	£845—£1,025.
A.P.T. II	£725— £845.
A.P.T. I	£575— £725.
Higher General Division ...	£230— £560.

(*a*) ARCHITECTS:
Senior Grade (£1,240—£1,380). Two vacancies.
A.P.T. V. Two vacancies.

Applicants should be Registered Architects and Associates of the Royal Institute of British Architects, and must possess in an ample degree the professional and administrative ability to undertake responsibility and have had good training and experience in the design and construction of modern buildings.

(*b*) ARCHITECTS—for appointments in the Divisional Office at Doncaster:
A.P.T. V. One vacancy.
Special. Several vacancies.
A.P.T. II. Several vacancies.

Applicants for the post in Grade A.P.T. V should have experience in connection with educational buildings, and should be Associates of the Royal Institute of British Architects, and must possess in an ample degree professional and administrative ability as the candidate appointed will be responsible for taking charge of the Divisional Office in the absence of the Divisional Architect.

(*c*) QUANTITY SURVEYORS:
Senior Grade (£1,240—£1,380). One vacancy.
Special or A.P.T. II, according to experience. Several vacancies.

Applicants for Special Grade should be Associate Members of the Royal Institution of Chartered Surveyors and have had experience in the preparation of Bills of Quantities, measuring for and adjustment of final accounts.

(*d*) TRAINEE SURVEYING ASSISTANTS:
Higher General Division.

Applicants will be considered from age 16 upwards, providing they have the General Certificate of Education in English (or English language), Mathematics or a Science, and one other paper at ordinary level. Older candidates will be considered for Grade A.P.T. I where their experience warrants.

(*e*) HEATING ENGINEERS:
A.P.T. V. One vacancy.
A.P.T. IV. One vacancy.

Applicants must be Associate Members of the Institution of Heating and Ventilating Engineers, and be capable of carrying out the design and detailing of heating, hot water and ventilating installations and preparing the necessary drawings and specifications for schools and other public buildings.

The appointments are subject to the provisions of the Local Government Superannuation Acts, and the successful candidates will be required to pass a medical examination. All appointments will be to the Central Office at Wakefield except those in (*b*) above.

Applications, on forms obtainable from this office, must be delivered not later than the first post on Tuesday, 3rd June, 1958.

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

Bishopgarth, Westfield Road, Wakefield. 9358

IMPROVEMENT TRUST, SINGAPORE

The Singapore Improvement Trust requires a PLANNER in the Planning Department on initial contract for 3 years for duties in connection with development control on Singapore Island.

Applicants must be Associate Members of the Town Planning Institute, and either A.R.I.B.A., A.M.I.C.E., A.M.I.Mun.E., or A.R.I.C.S., or equivalent qualification. Applicants should have had experience in development control in a public authority

Commencing inclusive salary between $1,390 and $1,940 per month (equivalent to £1,946 and £2,716 per annum), according to qualifications and experience. ($ Malayan=2s. 4d. approx.) Increments payable after each completed year of service. No other allowances payable, except duty transport. Strict medical examination. Air passages provided.

Officers appointed will be required to join the Singapore Government's Central Provident Fund. Quarters with heavy furniture provided, if available, at moderate fixed rental. 12 weeks' full pay leave on completion of contract. 10 days' local leave annually.

Applications in duplicate, stating date and place of birth, with details of education, qualifications, training and experience, accompanied by copies of testimonials, to Messrs. Allen & Williams, 8, Clarges Street, London, W.1, by Tuesday, 20th May, 1958. 9376

BOROUGH OF OLDBURY
BOROUGH SURVEYOR'S DEPT.—ARCHITECTS' SECTION

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

(*a*) TWO ARCHITECTURAL ASSISTANTS, A.P.T. Grade I (£575×£30—£725 per annum).

(*b*) ONE ARCHITECTURAL ASSISTANT, A.P.T. Grade II (£725×£30—£845 per annum).

Candidates for appointment (*b*) should preferably have passed the Intermediate Examination of the R.I.B.A. and be capable of preparing working and detail drawings and specifications for work normally undertaken by a Local Authority, mainly housing and education work, and supervising the work on the site.

Candidates for appointment (*a*) should be competent draughtsmen with practical experience, under supervision, in the preparation of working and detail drawings.

The appointments will be superannuable, subject to the National Conditions of Service and to the selected candidates passing a medical examination.

Applications, giving particulars of age, qualifications and experience, and giving the names of two referees, should be delivered to the undersigned not later than Thursday, 22nd May, 1958.

KENNETH PEARCE,
Town Clerk.

Municipal Buildings, Oldbury,
near Birmingham.
28th April, 1958. 9377

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. (799) 9375

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Vacancies for SURVEYING ASSISTANTS (salary up to £860) for preparation of Specifications and Estimates and supervision of Works in connection with maintenance, alterations and minor improvements of Voluntary Schools.

Application form from Hubert Bennett, F.R.I.B.A., Architect to the Council, The County Hall, S.E.1, quoting Ref. AR/EK/20/58. (797) 9374

BOROUGH OF WALTHAMSTOW

Applications are invited for the following appointments in the Borough Architect, Engineer and Surveyor's Department (F. G. Southgate, A.R.I.B.A., M.I.Mun.E., A.M.T.P.I., Borough Architect, Engineer and Surveyor):—

(*a*) ASSISTANT ARCHITECT/PLANNER.

(*b*) SENIOR ASSISTANT ARCHITECT.

The salary for each post will be in accordance with the Special Grade, A.P.T. Division (£780—£1,060, inclusive of London weighting), with the commencing salary according to experience.

Applicants for post (*a*) must be Associates of the R.I.B.A., and will be required to prepare surveys and reports on the re-location of industry within the Borough, and be capable of designing and supervising the erection of new Industrial estates.

Applicants for post (*b*) must be Associates of the R.I.B.A. and have had experience of housing schemes.

Applications, stating age, qualifications, experience and present occupation, together with the names of two referees, one of whom should be the present or former employer, are to be received by the undersigned not later than noon on Friday, 23rd May, 1958, endorsed "Assistant Architect/Planner" or "Senior Assistant Architect."

G. A. BLAKELEY,
Town Clerk.

Town Hall, Walthamstow, E.17. 9390

QUANTITY SURVEYING ASSISTANTS required by Air Ministry Works Directorate in London and Provinces. Grade and commencing salary based on not less than 3 or 5 years' previous experience under Quantity Surveyor or Building Contractor. Approved full time study will count towards 5 years period. Qualifications required O.N.C. (Building) or (Builders Quantities) or equivalent. Duties include abstracting and billing, site measurement and preparation of estimates. Commencing salary and grading according to age, qualifications and experience on salary ranges (*a*) £545 (age 25), rising to £745, or (*b*) £695 (age 26), rising to £870 in London. Salaries somewhat lower in Provinces. Promotion and pensionable prospects. 5-day week, three weeks leave a year. Appointments carry liability for service anywhere United Kingdom or overseas. Applicants normally should be natural born British subjects. Write, stating age, qualifications and previous appointments, including type of work done, to Manager, Professional and Executive Register, Ministry of Labour and National Service, Atlantic House, Farringdon Street, E.C.4, quoting reference PE.105/745. No original testimonials should be sent. Only applicants selected for interview will be advised. 9393

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

COUNTY BOROUGH OF WALSALL
PUBLIC WORKS DEPT.
ASSISTANT ARCHITECT

Applications are invited for the appointment of ASSISTANT ARCHITECT, Special Grade, for Architectural Assistants (£750—£1,030), at a commencing salary of £990 per annum.

Applicants must be A.R.I.B.A. The post is superannuated, and the person appointed will be required to pass a medical examination.

Applications, giving names of two persons to whom reference may be made, and stating age, present position, salary, qualifications, and details of experience, should be submitted to the undersigned not later than Friday, 16th May, 1958.

M. E. HABERSHON,
Borough Engineer and Surveyor.

Council House, Walsall.
25th April, 1958. 9357

METROPOLITAN BOROUGH OF WOOLWICH
BOROUGH ENGINEER'S DEPARTMENT
ASSISTANT ARCHITECT required, Special Grade (£750—£1,030), plus London weighting. A.R.I.B.A. or equivalent essential. Superannuation Scheme. Medical examination.

Applications (stating age, qualifications and experience, and giving two referees) to Town Clerk, Woolwich, S.E.18, by 26th May, 1958.

Canvassing disqualifies. 9395

BOROUGH OF SOLIHULL
QUANTITY SURVEYING ASSISTANT,
A.P.T. GRADE II (£725—£845)

Applications are invited for the appointment of a Quantity Surveying Assistant, A.P.T. Grade II, on the Architectural staff of the Borough Engineer and Surveyor. Applicants should have passed the R.I.C.S. Intermediate examination or its equivalent.

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

Half the reasonable cost of removal expenses will be paid at the end of six months' service and, where applicable, housing accommodation will be provided.

Applications giving the names and addresses of two referees should be forwarded to the Borough Engineer & Surveyor, 90, Station Road, Solihull, Warwickshire, not later than Friday, 23rd May, 1958.

W. MAURICE MELL,
Town Clerk.

The Council House,
Solihull.
29th April, 1958. 9410

COUNTY BOROUGH OF SOUTHEND-ON-SEA
BOROUGH ARCHITECT'S DEPARTMENT

Applications are invited for the post of ASSISTANT ARCHITECT. Salary scale £750, by annual increments of £40 to £1,030.

Candidates must be suitably qualified and experienced.

The appointments will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service as far as adopted by the Council. Medical examination.

Applications, stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, forthwith.

Canvassing will disqualify. Any candidate who is related to member or officer of the Council is required to disclose the fact.

ARCHIBALD GLEN, *Town Clerk.*
9394

HAMPSHIRE COUNTY COUNCIL

SENIOR PLANNING ASSISTANT required in the South-West Area Planning Office at Lyndhurst, Special Grade (£750—£1,030). Candidates should have passed the final examination of the Town Planning Institute or a related professional institution, and have had planning experience with a Local Authority. An architectural qualification would be an advantage. The appointment is pensionable and subject to a satisfactory medical report. In approved cases the County Council assist with removal and other expenses.

Applications, stating age, education, qualifications and experience, together with a copy of one testimonial and the names of two referees, should reach the Clerk of the County Council, The Castle, Winchester, by 23rd May. 9391

COUNTY BOROUGH OF GATESHEAD

Applications are invited for the following posts in the Borough Surveyor's Department, to work under the Chief Architect, upon an interesting programme of educational, housing and multi-storey flats and public buildings:—

(*a*) ASSISTANT ARCHITECTS, Special Grade (£750—£1,030).

(*b*) JUNIOR ARCHITECTURAL ASSISTANTS, A.P.T. I (£575—£725).

Applicants for post (*a*) must be Registered Architects and preferably Members of the Royal Institute of British Architects.

Applicants for post (*b*) must be of Intermediate R.I.B.A. standard, preferably with some office experience.

For posts (*a*) in suitable cases housing accommodation will be made available at an economic rent.

Starting salaries would depend on the qualifications and experience of the applicants.

The posts are pensionable, subject to N.J.C. conditions, medical examination, and one month's notice on either side.

Applications on forms available from the Borough Surveyor, Swinburne Street, Gateshead, 8, must be returned to him within 14 days of this advertisement.

C. D. JACKSON,
Town Clerk.

Town Hall, Gateshead, 8.
30th April, 1958. 9396

CANNOCK URBAN DISTRICT COUNCIL
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Applications are invited for this vacancy in the Architect's Department at a salary within Grade A.P.T. II (£725—£845) per annum, the commencing point to be fixed according to qualifications and experience. Housing accommodation available for married applicants. Further particulars and forms of application are available from the undersigned. Closing date, 26th May, 1958.

H. C. ALLEN,
Clerk of the Council.

Council House,
Cannock, Staffs.
1st May, 1958. 9409

CITY OF OXFORD.

ARCHITECTURAL ASSISTANT required in City Architect and Planning Officer's Department. Salary within range £750—£1,030 per annum, according to qualifications (minimum required A.R.I.B.A.) and experience. Housing accommodation provided.

For further details and application form (to be returned by 17th May) apply City Architect and Planning Officer, Town Hall, Oxford.

HARRY PLOWMAN,
Town Clerk.

Town Hall, Oxford. 9356

ISLE OF ELY COUNTY COUNCIL
PLANNING STAFF

Vacancies for (*a*) SENIOR PLANNING ASSISTANT (salary Special Grade (£750—£1,030)). Duties: mainly work on preparation of Town Maps, etc. Applicants must be A.M.T.P.I. or equivalent. (*b*) PLANNING ASSISTANT (salary A.P.T. I or II or Special Grade (£575—£725; £725—£845; £750—£1,030)). Duties: mainly Development Control work. Salary according to qualifications. National Conditions. Application Form and Conditions of Appointment from County Planning Officer, County Hall, March, Cambs., returnable by 17th May, 1958.

R. F. G. THURLOW,
Clerk of the County Council.
9339

HOLBORN BOROUGH COUNCIL

TWO CLERKS OF WORKS required in Borough Architect's Department, as follows:—

(*a*) One to supervise erection of new Central Library, including reinforced concrete framing; starting August/September. Salary at the rate of £1,000 p.a.

(*b*) One to supervise erection of Multi-storey Flats, including reinforced concrete framing. Salary £15 15s. p.w.

Both to be Members of Institute of Clerks of Works. Applications with names of three referees to Town Clerk, Town Hall, High Holborn, W.C.1. 9372

Architectural Appointments Vacant

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

ARCHITECTURAL ASSISTANTS approaching Final standard required in busy Birmingham office. Excellent prospects and salaries for men with initiative.—Box 9299.

ARCHITECTURAL ASSISTANT required for small expanding practice in W.1. State experience and salary required.—Box 9319.

RONALD WARD & PARTNERS require ARCHITECTURAL ASSISTANTS with contemporary outlook, and willing to use own initiative. Salary range £600 to £900. Congenial working conditions. 5-day week.—Apply: 29, Chesham Place, Belgrave Square, S.W.1. Telephone Belgravia 3361. 9112

J. DOUGLASS MATHEWS & PARTNERS, Chartered Architects, 3, Ebury Street, London, S.W.1, require medium and junior grade ASSISTANTS. Salaries in accordance with experience. Please write giving full details of education and experience. 9294

WANTED, qualified or near qualified ASSISTANTS with practical experience for work on Licensed Premises. Apply: The Secretary, Benskin's Watford Brewery Limited, P.O. Box 105, Watford, Herts. 9266

JUNIOR ARCHITECTURAL ASSISTANT required in Branch Office, Birmingham, to work on a varied and interesting programme of commercial projects. Applications, giving full particulars, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society Ltd., 1, Balloon Street, Manchester. 9269

INTERMEDIATE ASSISTANTS immediately.—Write brief details to Musman & Cousens, 12, Upper Berkeley Street, W.1. 9348

WM. SAUNDERS & PARTNERS, Architects and Surveyors, 24, Castlegate, Newark-on-Trent, require ASSISTANT ARCHITECT. Qualified man preferred.—Write, stating salary, availability, etc. 9321

HARRY S. FAIRHURST & SON have a vacancy for a SENIOR ASSISTANT ARCHITECT in their Manchester office. The work is interesting and varied, including academic, scientific, commercial and domestic buildings, and applicants should be able to take responsibility. Really good presentation draughtsmanship would be an advantage.—Please Write to 55, Brown Street, Manchester. 9331

ARCHITECTURAL ASSISTANT required. Intermediate standard. Busy West-End Architects' office. Commercial work. Good draughtsman essential. 5-day week, vouchers. Good salary, according to ability.—Box 9297.

SHEFFIELD.—Gollins, Melvin Ward & Partners are opening an office on the 19th May in Sheffield, at 281, Glossop Road, and require ARCHITECTURAL ASSISTANTS, to work on new buildings for the University and Technical College in that city. 5-day week. Quarterly bonuses, pension scheme.—Apply in the first place in writing to 15, Manchester Square, London, W.1. 9296

ARCHITECTURAL ASSISTANT, Intermediate standard, required for busy, varied country practice in Hampshire.—Particulars and salary required to Box 9295.

ARCHITECTURAL ASSISTANTS urgently required to staff proposed new offices. 5-day week. Overtime available at basic rates. Applicants must be capable and experienced. Salaries according to ability.—Telephone KNI. 9094 for appointment. 9323

ARCHITECTURAL ASSISTANT required. At least three years' office experience and enthusiastic and hard worker. Interesting and varied work. Write stating age, experience, qualifications and salary required to Chief Architect, Granada Theatres Limited, 149, Regent Street, London, W.1. 9387

TREHEARNE & NORMAN, PRESTON & PARTNERS have vacancies for ASSISTANTS. Salary according to experience and qualifications. Apply: 83, Kingsway, W.C.2 (HOL 4071). 9407

ASSISTANT ARCHITECT required to work with Principal in small but busy office. Neat and quick draughtsman. Able to take responsibility. Reply stating details of training, qualifications and experience, together with salary required to H. Geoffrey Round, A.R.I.B.A., 53, Oxford Street, Weston-super-Mare. 9406

LOUIS DE SOISSONS, PEACOCK, HODGES & ROBERTSON, have a vacancy for a SENIOR ASSISTANT, experienced in design and presentation of sketch schemes, perspectives, etc. Write stating age, salary and experience to the above at 3, Park Square Mews, Upper Harley Street, London, N.W.1. 9397

SENIOR ASSISTANT, qualified or near, with good practical experience required by small, busy office. Good style and speedy draughtsmanship; also experience of building and land surveys desirable. Work varied but includes large amount of estate developments. Details of age, experience and salary required please to Field and Shaw, Chartered Architects, 40, Station Road, North Harrow. Tel. Har. 7502. 9400

JUNIOR ARCHITECTURAL ASSISTANT required in Engineer's office of large Midlands Brewery. Sound knowledge of building construction essential.—State age, experience, and salary required. to Box 9281.

ARCHITECTURAL OR SHOPFITTING DRAUGHTSMAN interested in the design of Supermarkets, required for office in Welwyn Garden City. Salary up to £800 p.a. Travelling allowance paid. London applicants qualify for priority on housing list. Box 9405.

ARCHITECTURAL DRAUGHTSMAN and ASSISTANT BUILDING SURVEYOR required by a well established firm of Surveyors in the City of London. Salary £500 p.a. according to experience. Apply Box 9384.

ARCHITECT. Recently qualified man or one who is near Final is required in the Architect's Department of Richard Costain Ltd. This is a permanent and pensionable post. Applications should be addressed to Senior Personnel Officer, 111, Westminster Bridge Road, S.E.1. 9399

REQUIRED in office of Aylesbury Architect, JUNIOR ASSISTANT—interesting contemporary work—suitable post for assistant just out of articles. Apply in writing giving full details, including age, previous experience and salary required. Box 9386.

ARCHITECTURAL ASSISTANT required approaching or at Intermediate stage, salary by arrangement, one day per week for studies. D. Plaskett Marshall, F.R.I.B.A., 59, Gordon Square, W.C.1. Telephone: MUSeum 7176. 9385

WM. TIMPSON LTD. has vacancy for qualified ASSISTANT to Staff Architect with good knowledge of design and all stages of structural work in Industrial Office and Shop Buildings, site surveys, etc., and with a contemporary outlook. Some experience with a multiple firm would be advantageous. Good salary and excellent opportunity for man with ambition. Age about 30. Write giving full details of age, education and experience, to Staff Director, William Timpson Ltd., Empiric House, Great Ducie Street, Manchester, 3. 9368

WILLIAM HOLFORD & PARTNERS have vacancies for ASSISTANTS. Salary according to age and experience. Apply to 2, Angel Court, Throgmorton Street, E.C.2. 9360

TWO ARCHITECTURAL ASSISTANTS required, one Intermediate and one Final standard. Salaries £500 to £800 according to qualifications. London office experience desirable. Searle & Searle, Chartered Architects, 2, South Square, Gray's Inn, W.C.1. HOLborn 0864. 9367

PERSPECTIVES. Messrs. Harry W. Weedon, F.R.I.B.A. & Partners require on their staff the services of an experienced ARCHITECTURAL PERSPECTIVE ARTIST. The position offers excellent opportunity for man with initiative. Please furnish full particulars of age, experience and salary required to 45-47, Calthorpe Road, Edgbaston, Birmingham. 9371

JUNIOR and INTERMEDIATE ASSISTANTS required in a young, well established practice in Manchester engaged on varied contemporary work. Keen, cheerful types with initiative and ability. Please write to Box 9383 giving brief particulars and salary required.

ARCHITECTURAL DRAUGHTSMAN required by Consulting Engineers. Able to detail cladding and roofing modern industrial buildings. Knowledge of typography and layout advantage. Salary £500—£600 p.a. with Bolton, Hennessey & Partners, 4, Curzon Place, W.1. 9382

BRIGHTON and Hove. SENIOR and JUNIOR ASSISTANTS required for small expanding office. Box 9355.

INTERMEDIATE standard ASSISTANT required in small country practice on south Devon coast. Starting salary about £400 plus (if required) new unfurnished self-contained flat at nominal rent. Rate of advancement directly proportional to productivity. Prospect of responsible position with share of profits for right type, after probationary period. Conscientiousness essential. Write to Alec H. Joy, A.R.I.B.A., Victoria Place, Kingsbridge. 9381

ASSISTANT, preferably qualified, but not essential, with varied experience in private practice required immediately. Full particulars to Naylor, Sale & Widdows, St. Mary's Chambers, St. Mary's Gate, Derby. 9380

ARCHITECTURAL ASSISTANT of 2-5 years' experience required, mainly for industrial work. Apply in writing to Manning and Clamp, 8, The Green, Richmond, Surrey. 9379

Architectural Appointments Wanted

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

ASSISTANT, with 5 years' (post school) experience, requires part-time work. Approx. 3 days per week. Has working space. Central London.—Telephone Reigate 2340 (reg.). 9311

ASSOCIATE seeks post in private practice London area, with prospects. School trained, 10 years' varied experience including last two as junior partner in London firm. Box 9401.

SENIOR ASSISTANT (28), studying for Final, requires position with progressive private Architect's Office (Contemporary) in London area. Box 9404.

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