

# THE ARCHITECTS' JOURNAL



## standard contents

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

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Architectural Appointments  
Wanted and Vacant

No. 3179] [VOL. 123

THE ARCHITECTURAL PRESS

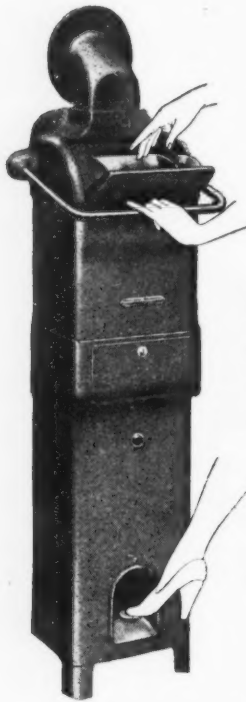
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★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ig one week, Ih to Z the next. In all cases where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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhamstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 8738
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	
BC	Building Centre. 26, Store Street, Tottenham Court Road, W.C.1.	Reliance 7611, Ext. 1706
BCC	British Colour Council. 13, Portman Square, W.1.	Museum 5400
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Welbeck 4185
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Ealing 9621
BDA	British Door Association. 10, The Boltons, S.W.10.	Redditch 716
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Fremantle 8494
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Temple Bar 9434
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Glasgow Central 2891
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Chancery 7772
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Langham 2785
BRS	Building Research Station. Bucknalls Lane, Watford	Trafalgar 8855
BSA	Building Societies Association. 14, Park Street, W.1.	Garston 2246
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 0515
BTE	Building Trades Exhibition. 32, Millbank, S.W.1.	Mayfair 9000
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Civic Centre, Newport, Mon.	Tate Gallery 8134
CAS	County Architects' Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Newport 65491
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Chichester 3001
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Sloane 5255
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Reliance 7611 Ext. 1284
CIAM	Congrès Internationaux d'Architecture Moderne. Dolderal, 7, Zurich, Switzerland.	Radlett 5616
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.	
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Reliance 7611
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1.	Whitehall 0540
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Trafalgar 8855
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	Regent 4448
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Association of Specialists and Sub-Contractors, Artillery House, Artillery Row, S.W.1.	Abbey 7232
FBBDO	Fibre Building Board Development Organization, Ltd. 47, Princes Gate, Kensington, S.W.7.	Kensington 4577
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd., Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GBPA	Gypsum Building Products Association, 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 16, Hanover Square, W.1.	Mayfair 5454
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 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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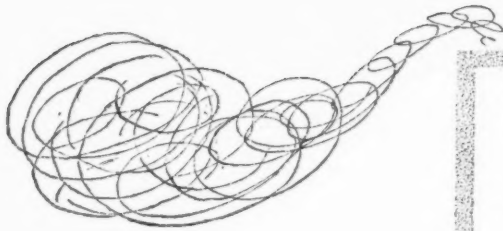


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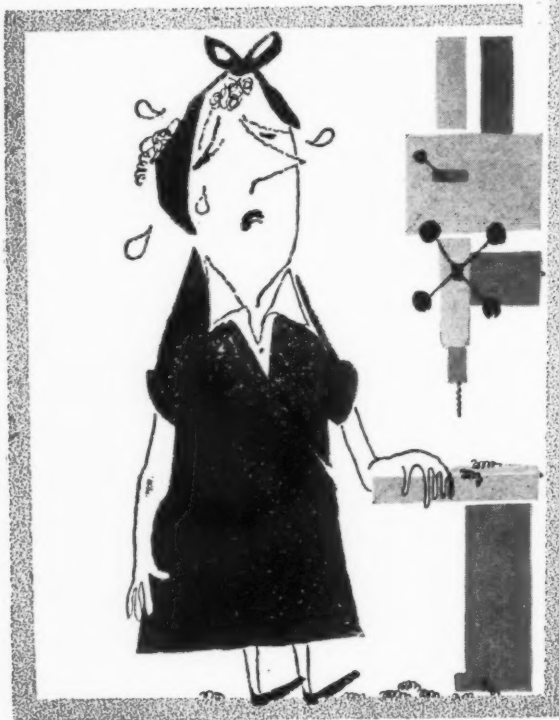
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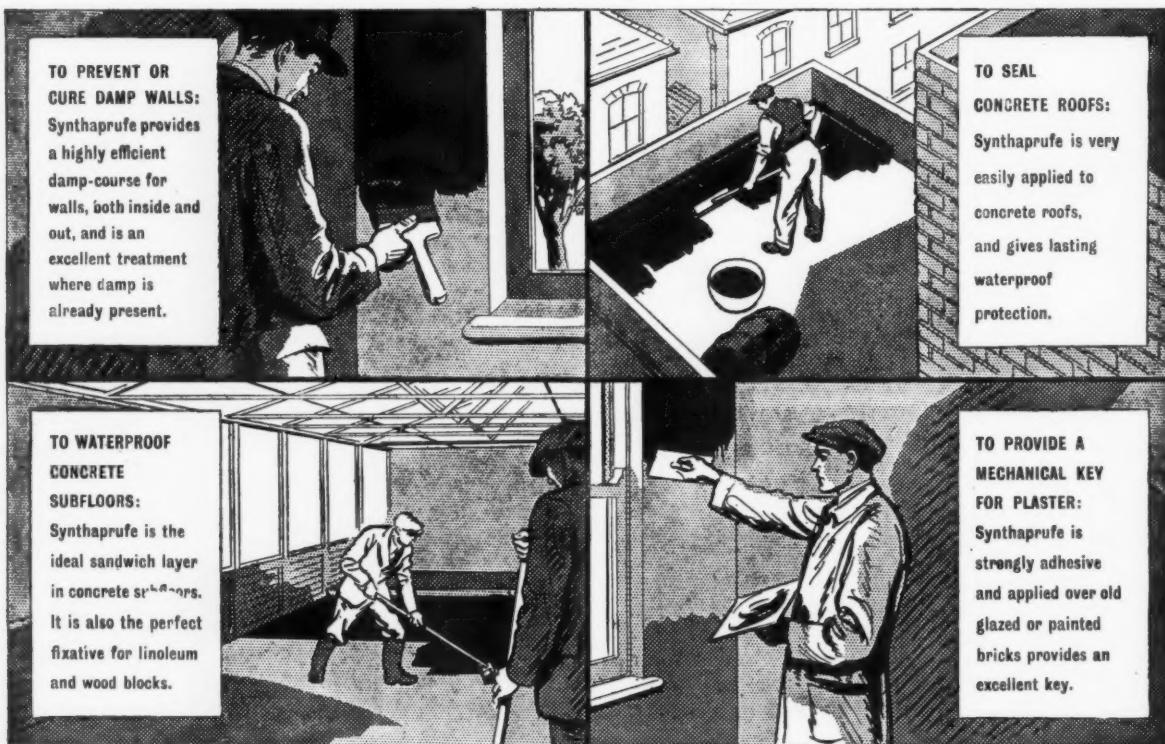
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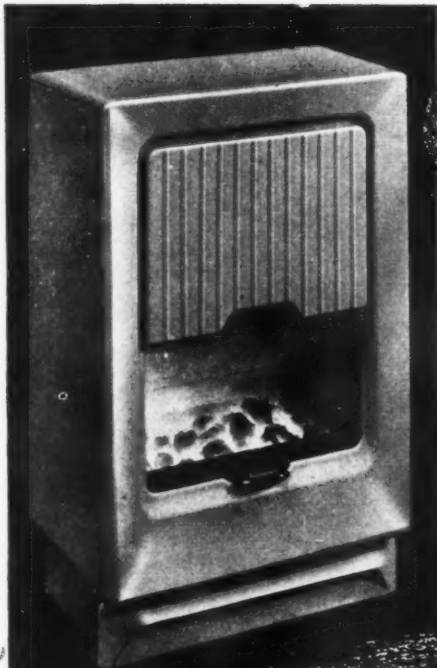
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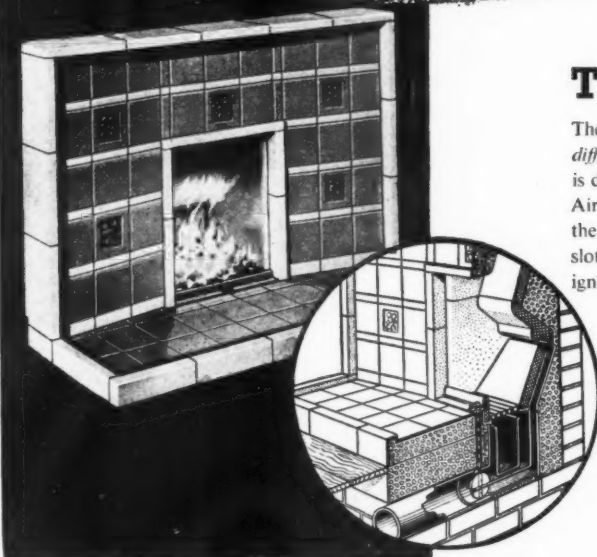
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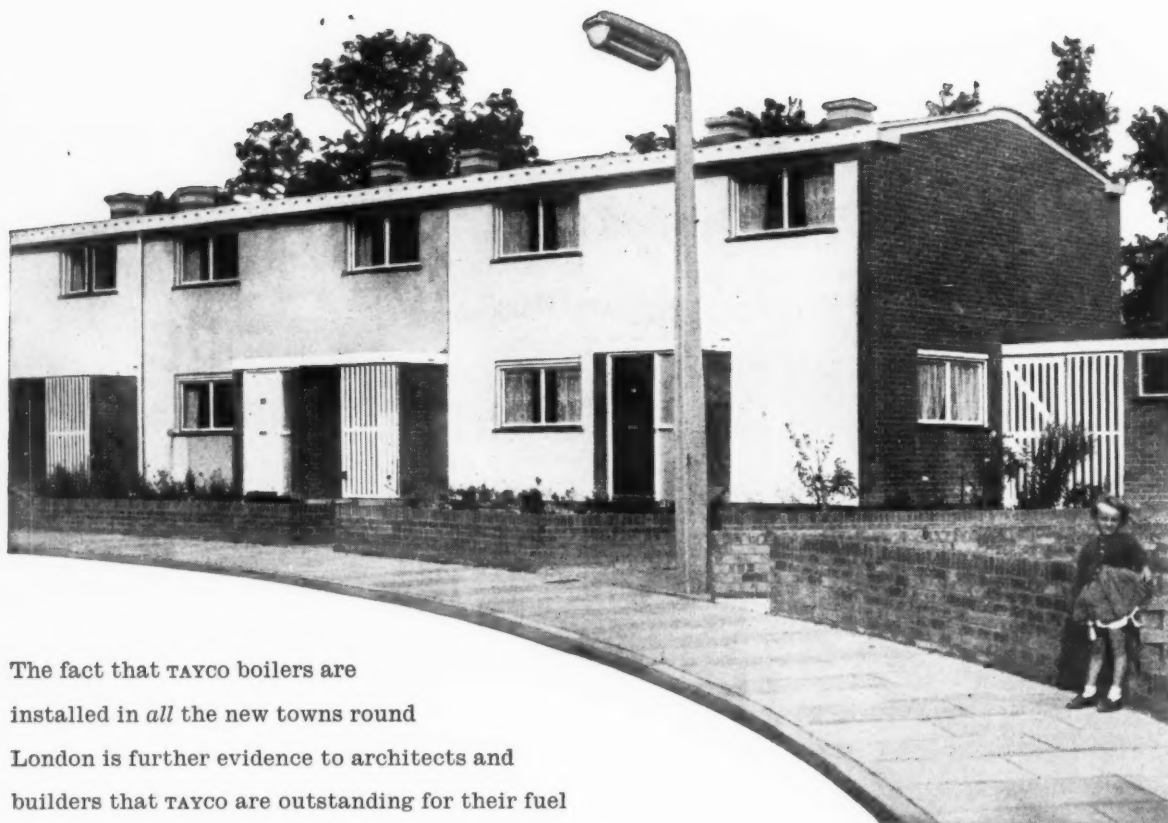
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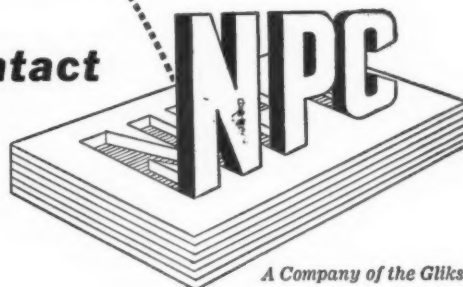
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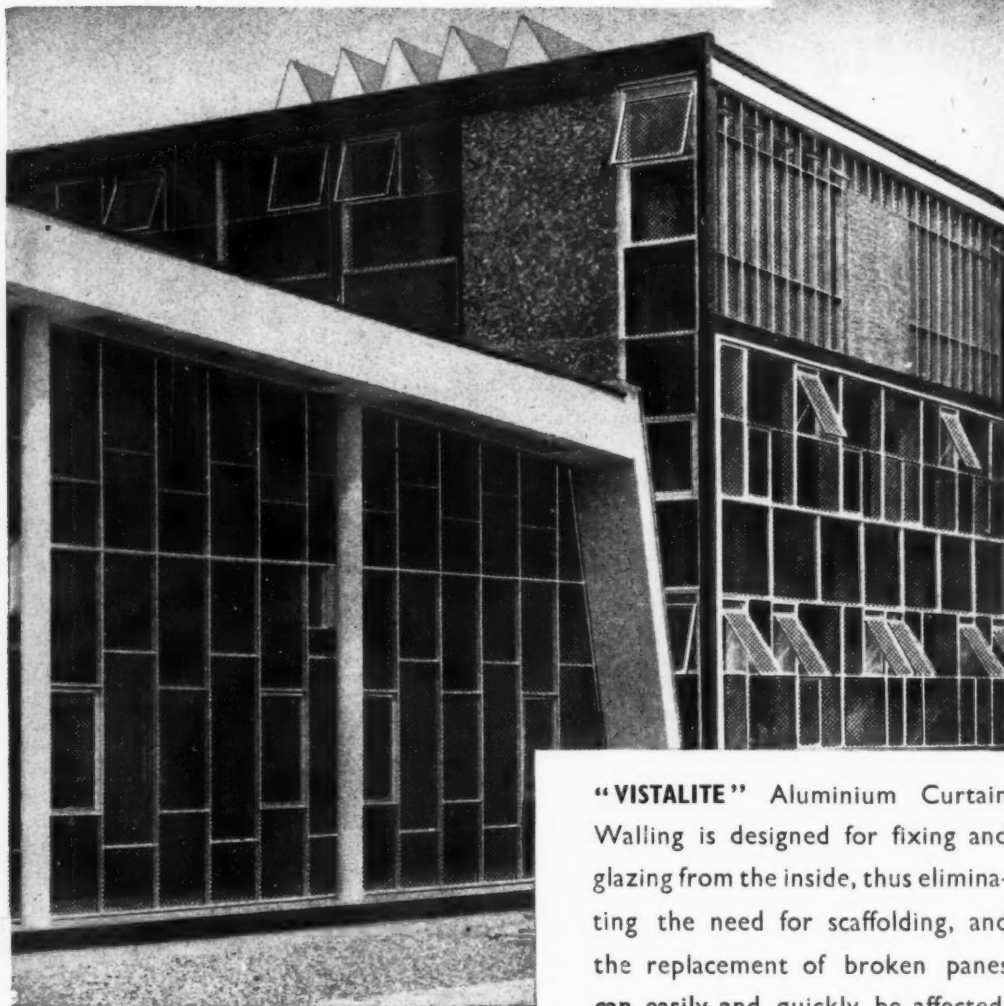
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# ELECTRIC LIGHTING

## INDUSTRIAL INTERIORS

Although the illumination required for industrial purposes covers a very wide range, the specified values can be reduced to comparatively few groups which cover the whole range of likely industrial activities. The reason for this is that significant increases in visual acuity require an illumination increase of at least 50% and, at the higher levels, 100%. Thus, for instance, while an increase from 10 to 15 lm./sq. ft. gives a significant improvement in visibility at that level of illumination, an increase from 100 to 200 lm./sq. ft. is required to give an equally significant improvement at the higher level of illumination, i.e. for finer work.

The Illuminating Engineering Society's Code for the Lighting of Building Interiors gives illumination values for a wide range of industrial processes related to their relative visual demands. Table 1, based on this Code, is a guide to the application of the basic illumination levels for each category of operations or processes.

### Essential Requirements

The lighting installation must satisfy the following requirements which are set out in order of priority:

- Sufficient and suitable light on the work, having regard to the size, contrast and movement involved, and the angle of elevation of the work face—i.e. horizontal, vertical, or an intermediate angle.
- Sufficient and reasonably uniform general illumination to provide safe and easy movement of operatives and goods, and to prevent excessive illumination differences between working points and other areas.
- Brightness of general surroundings, ceilings, walls, machinery, benches, etc., to provide a cheerful environment, to reduce contrast between light sources and backgrounds, and to prevent the formation of strong shadows.
- The selection, placing and control of light sources to enable natural lighting to be supplemented by artificial lighting when necessary, in order to ensure optimum visual conditions throughout the factory at all times.

Ideally, the satisfaction of these requirements necessitates the planning of the artificial lighting in conjunction with the natural lighting, and it is only by taking into account the characteristics of each as they affect the efficiency of the building as a whole, that the most satisfactory results can be obtained.

### General Lighting — Filament Lamps

The great majority of industrial lighting fittings are of the reflector type (see L.2) and for medium illumination values up to 30 lm./sq. ft. they are usually arranged in a symmetrical pattern as far as conditions permit, the maximum permissible spacing being determined by the distribution characteristics of the reflectors used. The maximum spacing of dispersive reflectors is  $1\frac{1}{2}$  times their height above the working plane; for concentrating reflectors it is equal to their height above this datum, which is usually taken at 2' 6" from the floor. The distance between end reflectors and walls should not exceed half their normal spacing. Spacing may be reduced or fittings may be raised with advantage in many cases, but if the fittings are lowered without a corresponding reduction in the spacing, the illumination will become patchy.

**TABLE 1 ILLUMINATION REQUIREMENTS**

Nature of Work Process or Material	Illumination (Lm./sq.ft.)	Typical Processes	*Typical Locations
Rough or routine work. Large detail. Medium to light material of good contrast.	7	Fuel handling. Rough foundry work and forging. Non-critical machine supervision. General maintenance. Stores, packing and dispatch. Tile and brick making.	Coal and ash handling plants. Bulk stores. Dyeing shops. Packing rooms. Boiler, battery, switch, etc. rooms. Smiths' shops. Casting and charging floors. Saw mills.
As above but work rather more skilled or critical.	10	Buffing, polishing. Type casting. Rough core making, moulding and casting. Winding and winding (Cotton).	Plating & Tinning Shops. Rolling Mills. Cotton warping sheds. Carpet finishing sheds.
Ordinary work usually involving workers' inspection. Medium detail and contrast.	15	Ordinary assembly and inspection; trimming, finishing, painting. Bench and machine work. Pattern making. Knitting machines. Clothing stores and despatch.	Clothing stockrooms. Medical centres. Dairies. Food preparation floors. Flour mills. General paint shops. Turbine halls. Heavy erection and machine shops. Wool preparation sheds.
Fairly critical work, fairly small detail or poor contrast.	20	Medium inspection. Fine core making and moulding. Cotton and rayon weaving, light colours. Garage repairs. Laundry work. Printing machine operation. Fairly small bench and machine work. Rough grinding.	Cabinet making shops. General machine, fitting and assembly shops. Sorting areas. Repair shops. Laboratories. Laundries. Printing works, monotype, linotype, and composing rooms. Wool warping sheds. General offices.
Skilled work small detail, or dark material.	30	Medium assembly. Hand typesetting (up to 6 pc.). Sewing—dark work. Fine painting and finishing. Weaving—fine woollens, dark cotton and rayon.	Medium weaving sheds—woollen. Cutting, sewing and garment-making rooms. Boot and shoe machine rooms. Drawing offices.

(continued overleaf)

Table 1 (Illumination requirements)—continued from page 1

Nature of Work Process or Material	Illumination (Lm./sq.ft.)	Typical Processes	Typical Locations
Fine, or critical work, very small detail, very poor contrast or very dark material.	50	Small inspection and assembly. Grading (flour etc.). Textile mending and inspection (dark). Engraving. Medium instrument work. Fine worsted weaving. Small bench and machine work. Medium grinding.	Food inspection and grading rooms. Stone and machine engraving rooms. Tool rooms. Burling and mending rooms.
Very fine, exacting work.	100	Very small assembly inspection, bench and machine work. Die sinking. Watch, jewellery and instrument making.	Precision equipment works.
Minute work	200	Minute inspection and assembly, bench and machine work.	

Typical locations shown are those in which asymmetrical or localised general illumination of the recommended values would normally be provided. In areas where processes are mixed, or the illumination required is very high, general lighting of an intermediate value may be provided with supplementary localised or local lighting for the more exacting visual tasks.

**TABLE 2** MINIMUM MOUNTING HEIGHTS of Tungsten filament lamps in open industrial fittings

Wattage	Minimum mounting height above floor
60	8 feet
100	9 "
150	9 "
200	10½ "
300	12 "
500	14 "
750	17 "
1,000	20 "
1,500	24 "

Note: If, for special reasons, lamps are mounted lower than the heights given above, diffusing cover glasses or other suitable means should be employed to reduce the intrinsic brightness of the light sources.

Table 2 gives the minimum height of lighting fittings in relation to the wattages of tungsten filament lamps.

#### General Lighting — Fluorescent Lamps

Fluorescent lighting layouts very often take the form of rows of fittings placed end to end. The light distribution from fluorescent fittings more than 5' above the working plane, is similar to that from dispersive reflectors using tungsten filament lamps; the maximum spacing/mounting height ratio of 1½ to 1 applies to the spacing of the rows, however close the longitudinal spacing of the lamps may be. The maximum distance of the end rows or fittings from walls should, in this case, be half the distance between the rows of fittings. With fluorescent fittings the longitudinal spacing is measured from the lamp centres; the minimum spacing is therefore the length of the individual fittings, unless they overlap.

#### General Localised Lighting

Where the working areas are well defined and require medium to high uniform illumination (such as continuous benches, conveyors, machine lines, etc.) the general lighting may be localised with respect to these areas, at just sufficient height to light adequately the gangways and other less critical areas by their "overspill". Fluorescent lightings lend themselves admirably to this arrangement by virtue of their low heat radiation, low brightness and linear form. Lighting fittings used in this way should give a good proportion of upward light to help in offsetting the higher diversity of illumination, as well as for reasons already given.

#### Local Lighting

Where very high values of illumination are required for individual tasks tungsten filament or fluorescent local lighting may be provided as a supplement to the general lighting. Such local illumination should never exceed the square of the illumination in the same interior as measured in lumens per square foot.

Where complete benches, conveyors, or machine lines require such high values (of the order of 50 lm./ft.<sup>2</sup> or more) the local lighting may take the form of deep-skirted fluorescent reflectors suspended over, or frame-mounted on, benches, etc., in continuous lines at the lowest convenient height. The shielding must be sufficient to conceal completely from direct view the lamps nearest the worker. Provision for escape of light upwards will greatly assist the general lighting; but where the tops of fittings are less than about 5' 6" from the floor, and top openings would be visible to people standing or walking, closed-top fittings should be used.

#### Uniformity Not Necessarily Essential

The foregoing lighting arrangements will satisfy most industrial conditions, but many variations are possible, and often necessary. Absolute symmetry or uniformity of illumination is not necessarily required so long as variations in illumination levels are not noticeably large. In general, the provision of ample illuminations on walls, ceilings and the sides of machinery and plant will permit of considerable diversity of illumination over the main working area, without ill effects.

For further information apply to

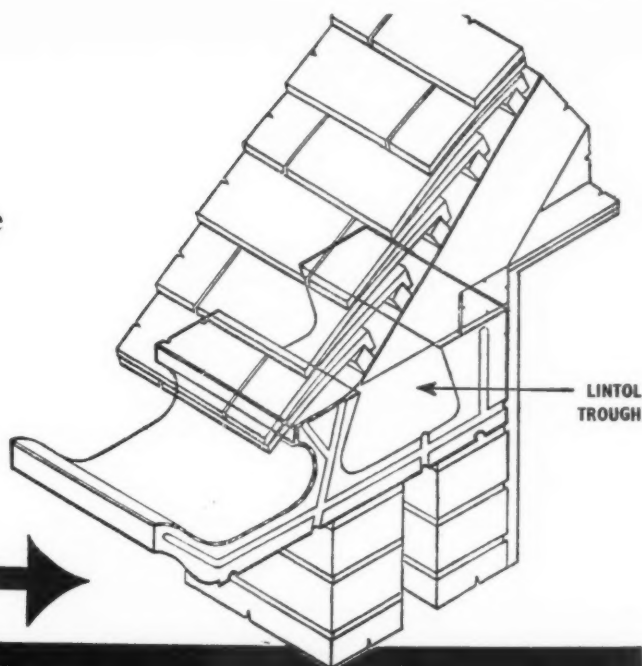
**L.5**

**British Electrical Development Association**

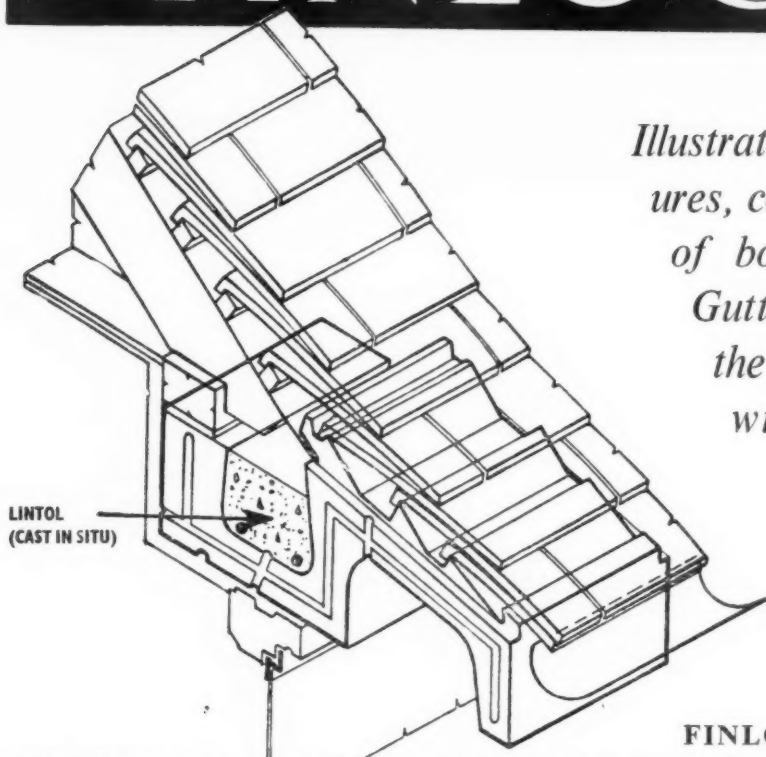
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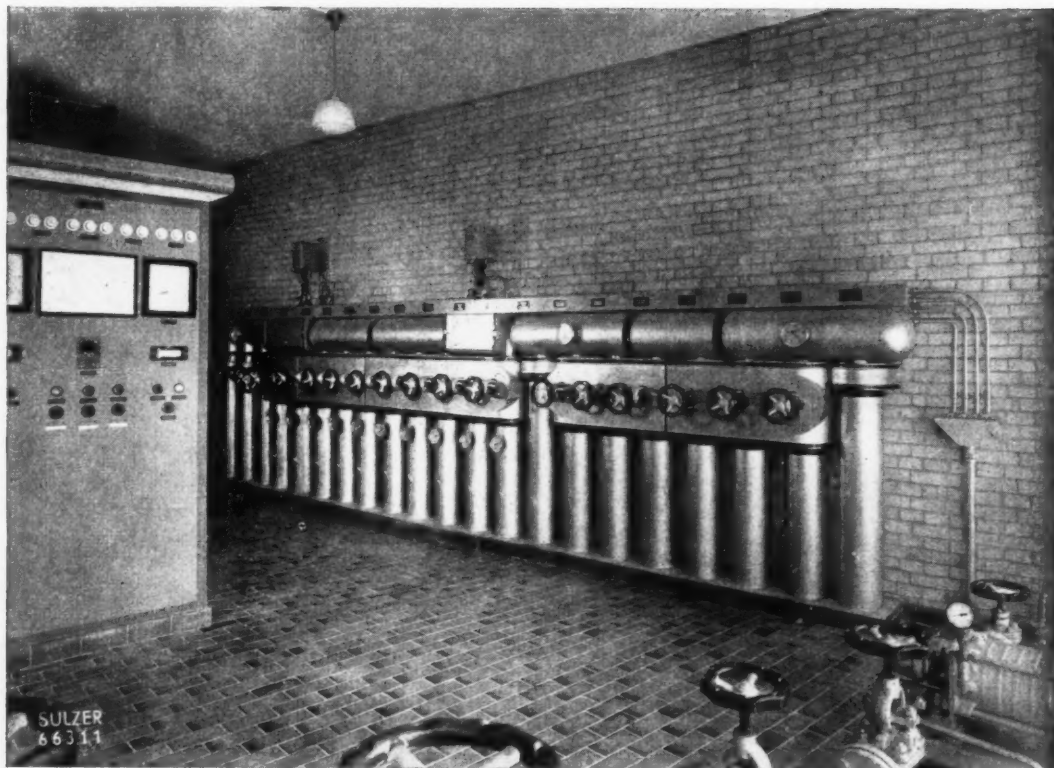
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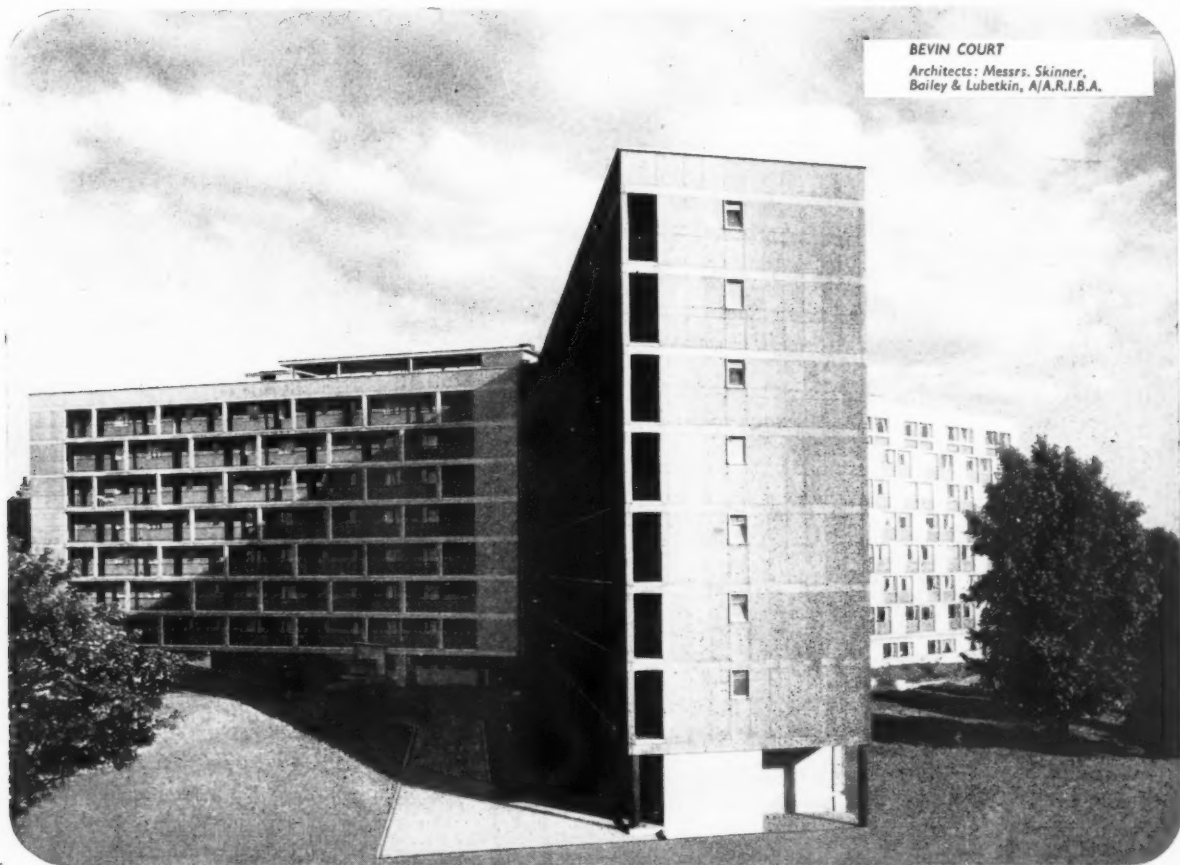
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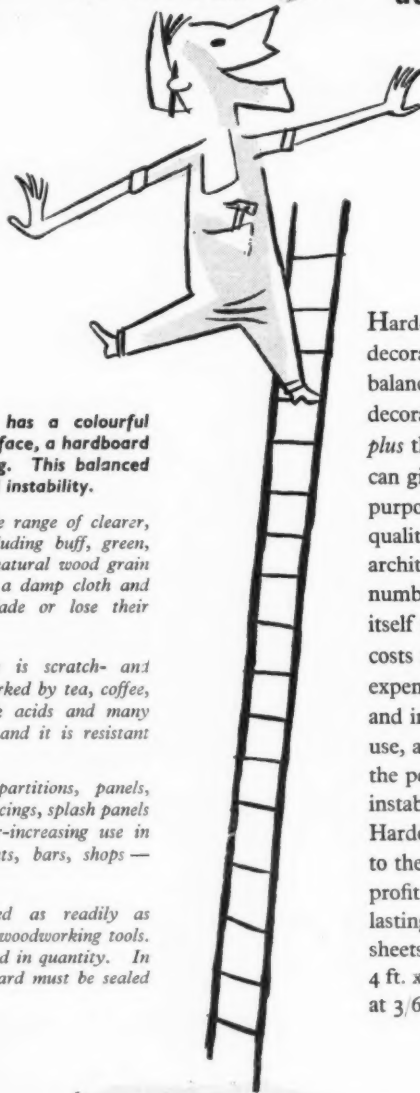
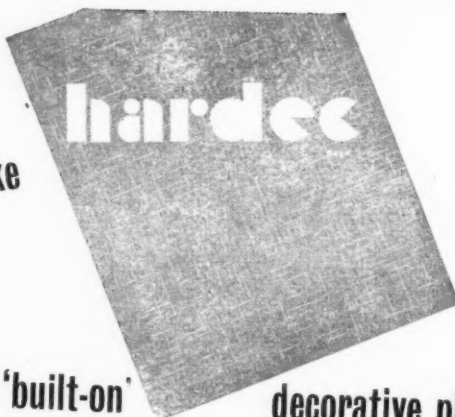
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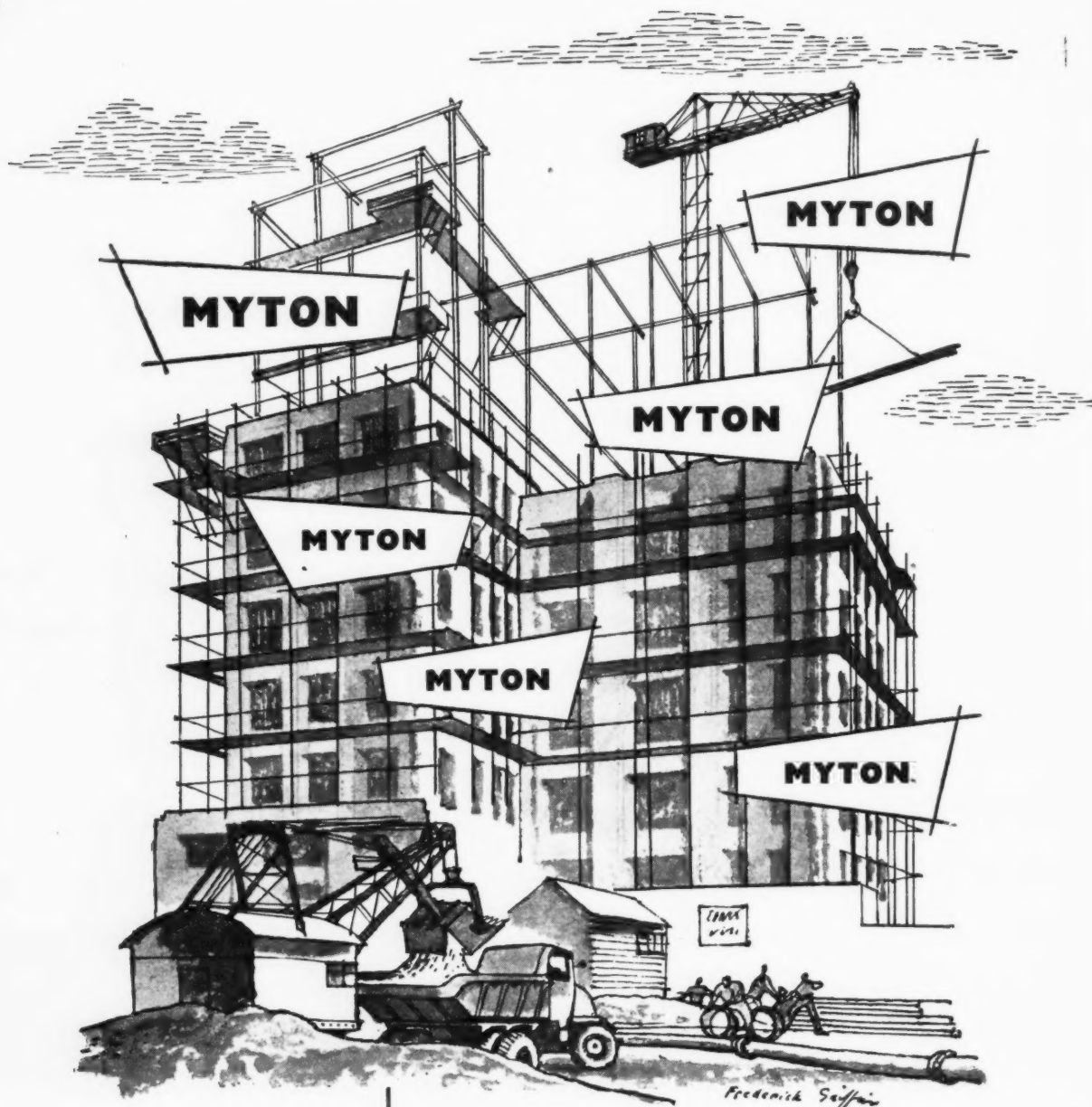
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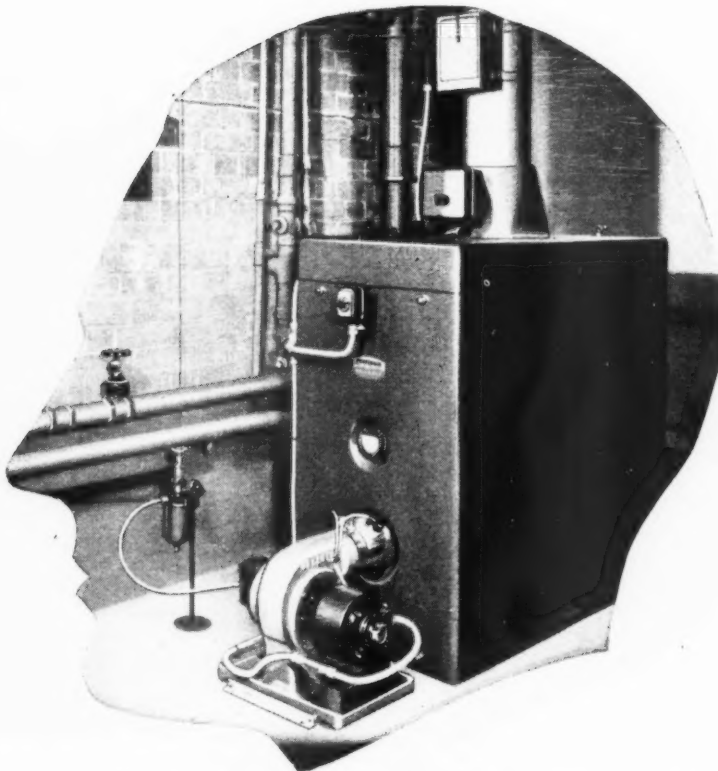
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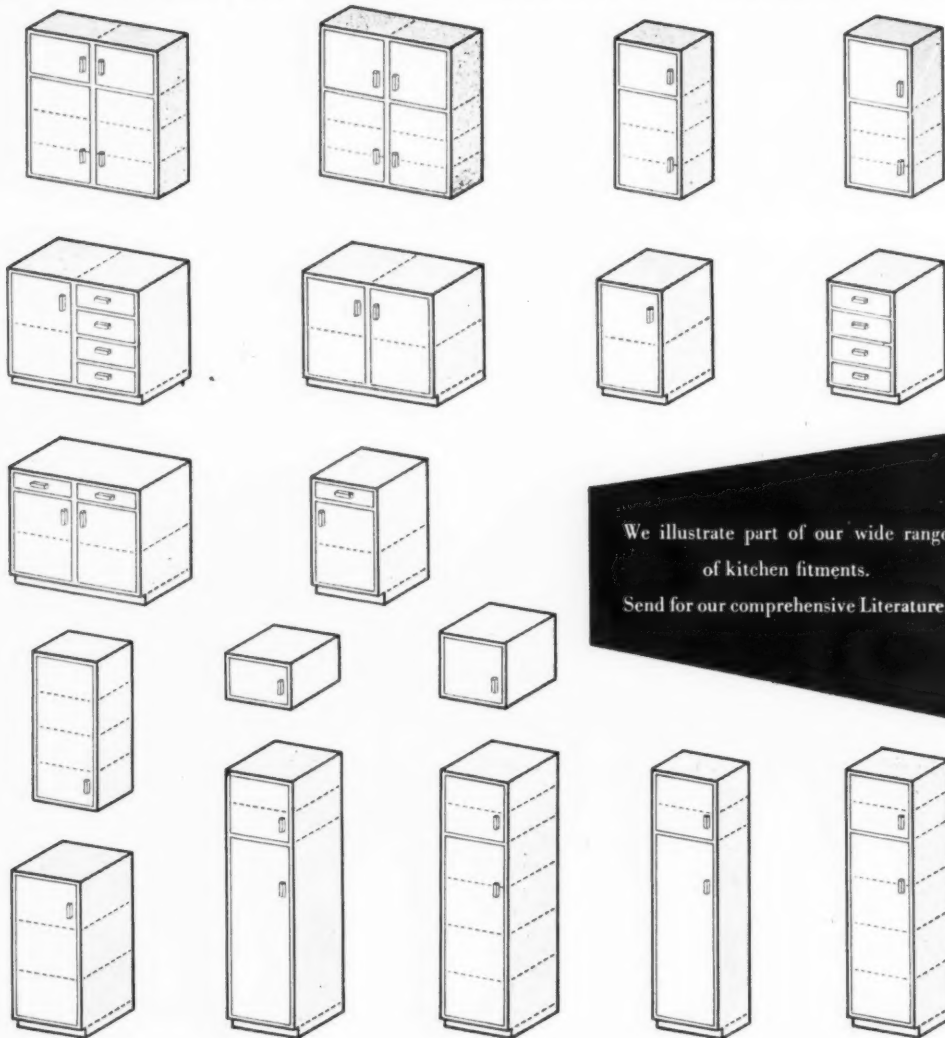
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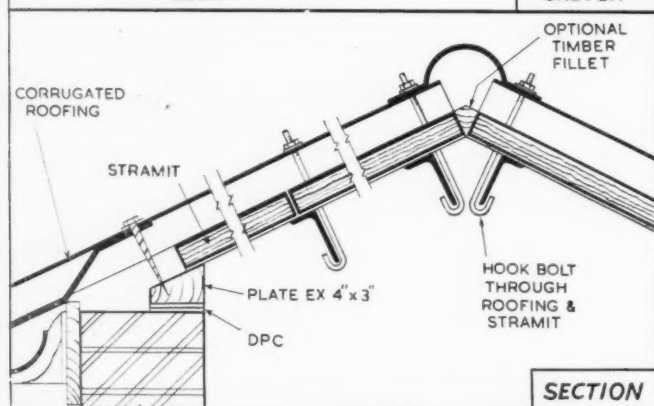
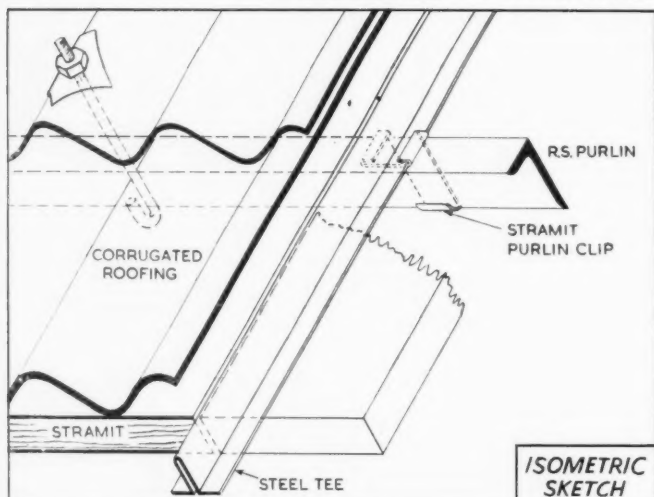
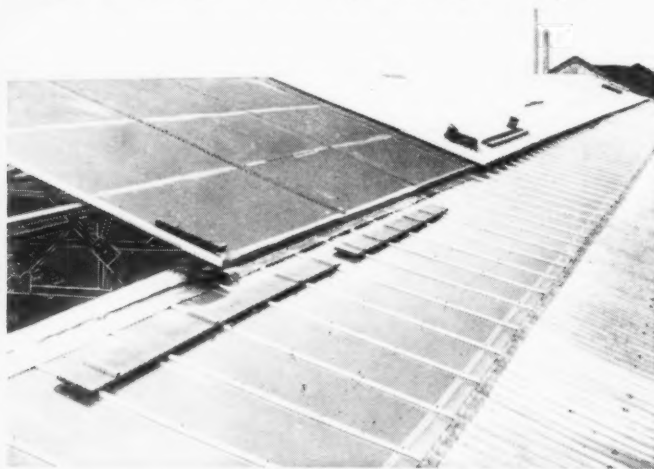
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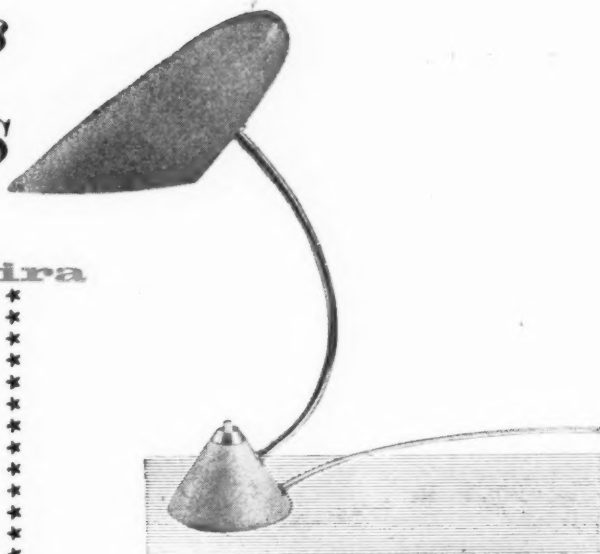
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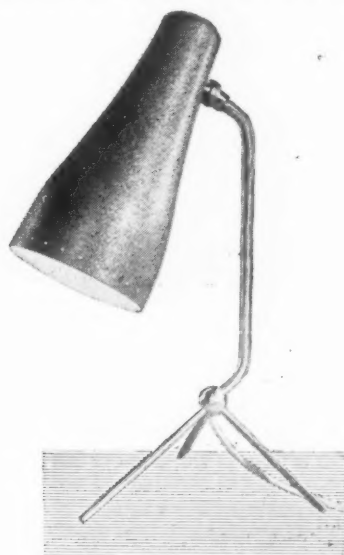


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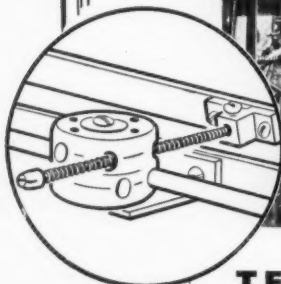
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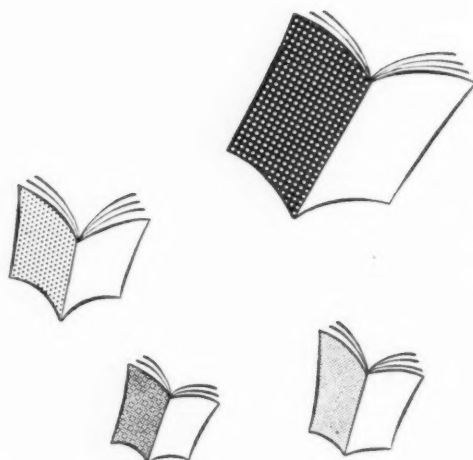
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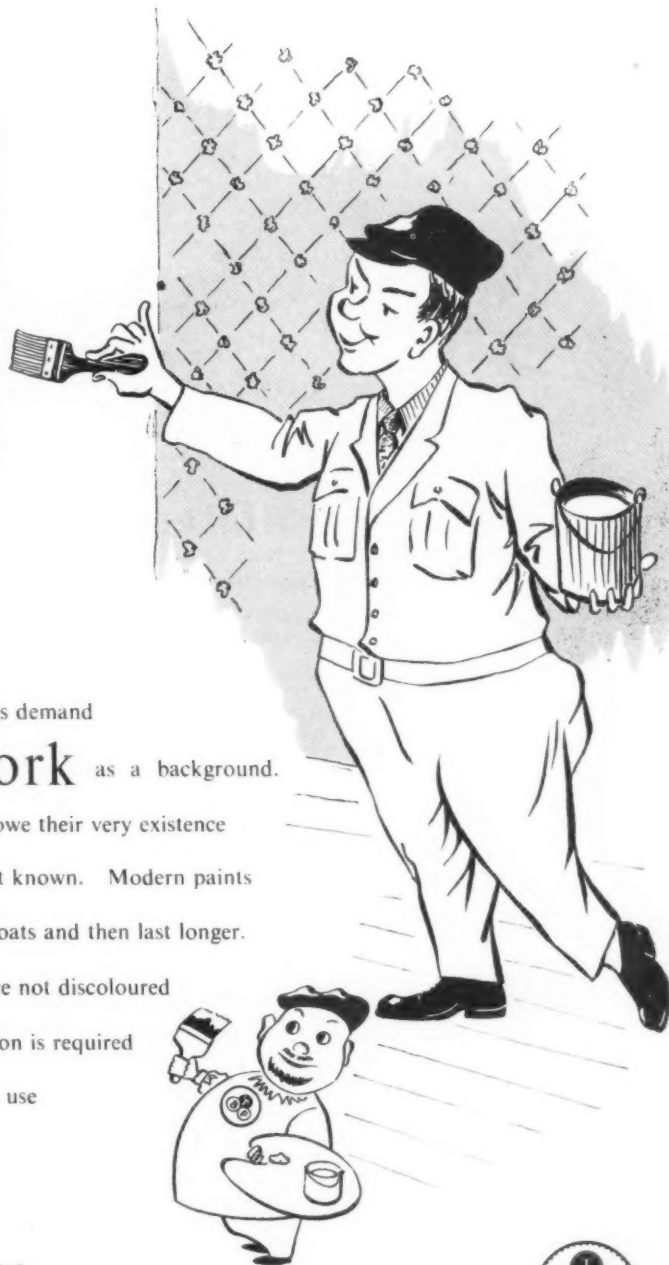
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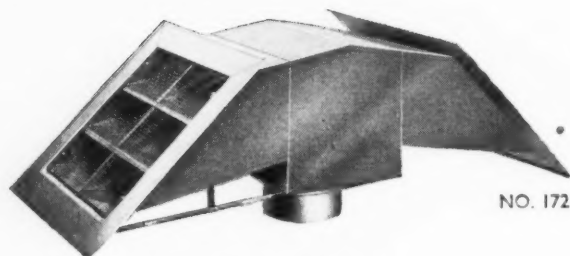
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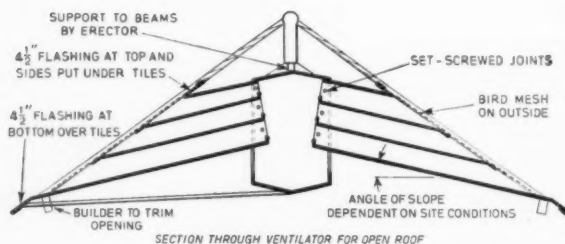
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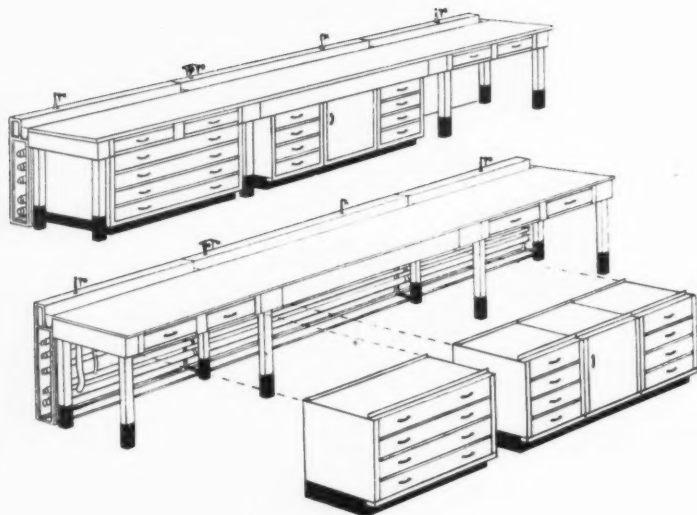
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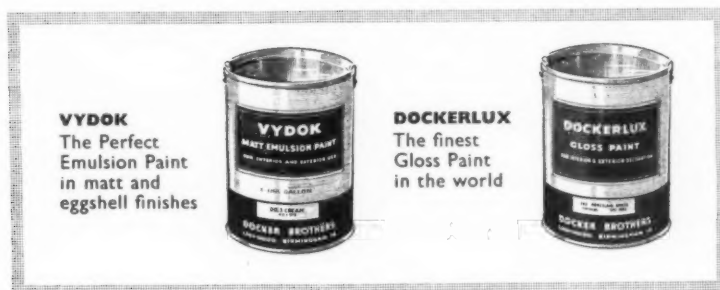
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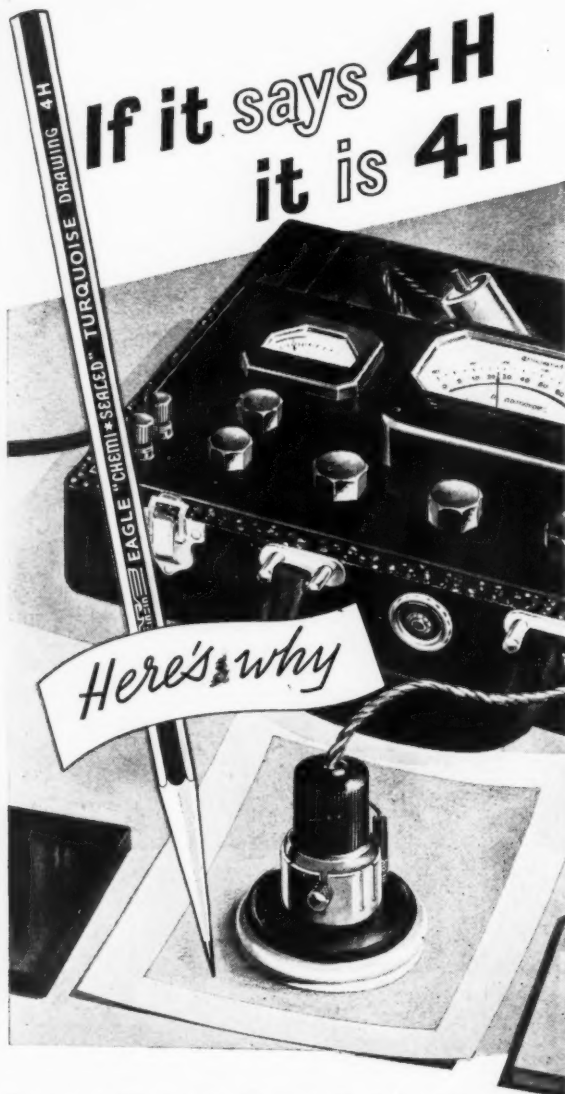
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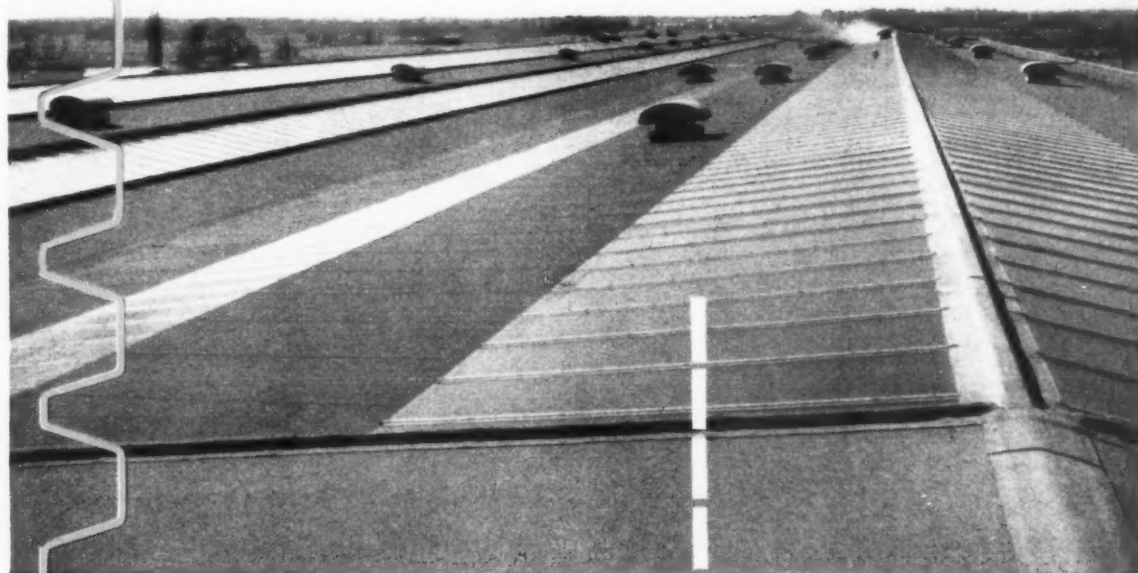
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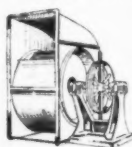
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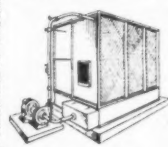
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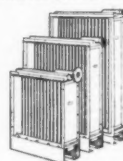
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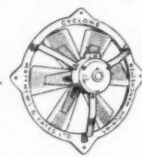
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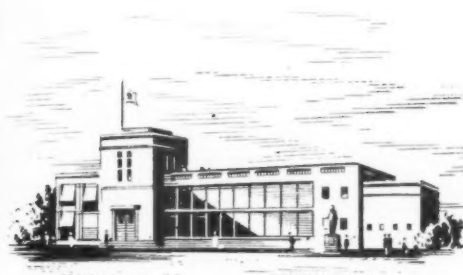
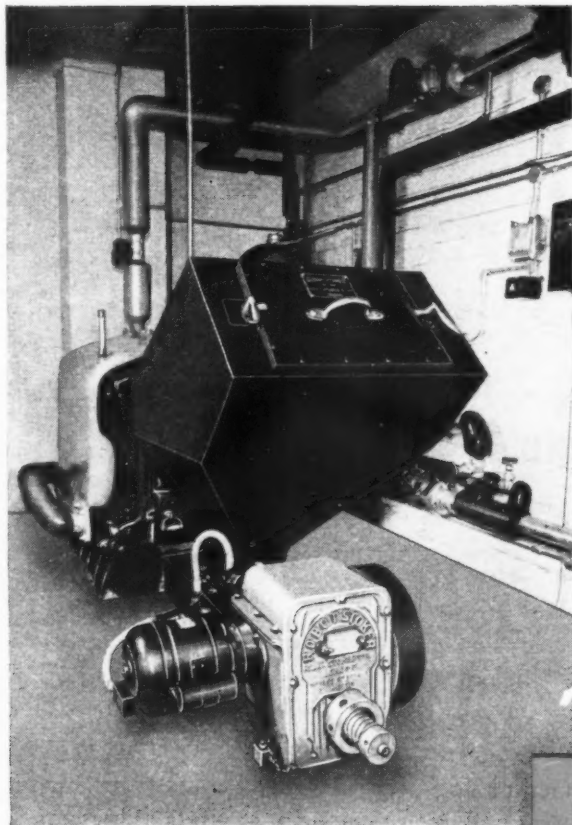
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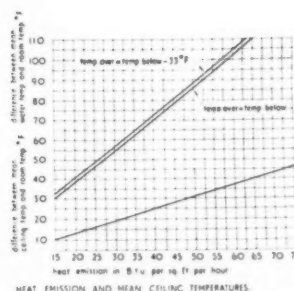
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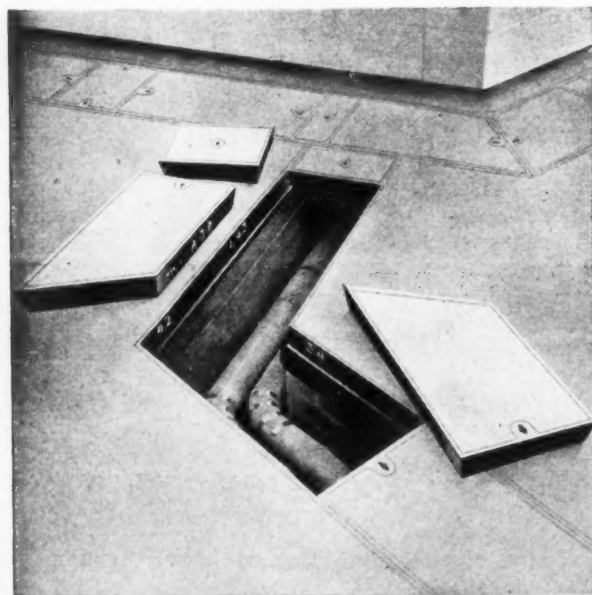
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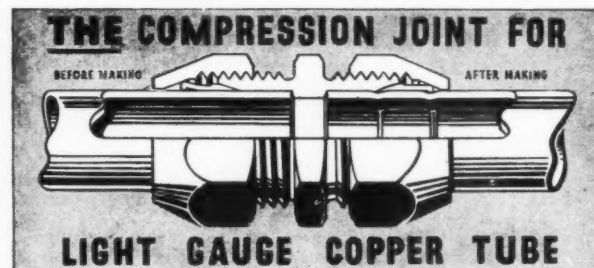
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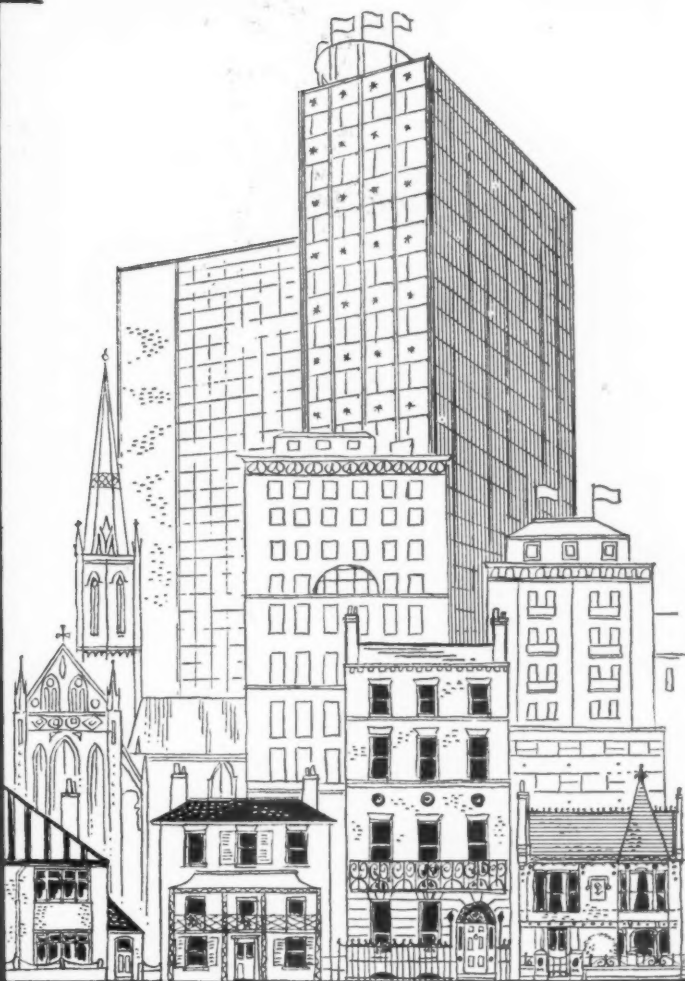
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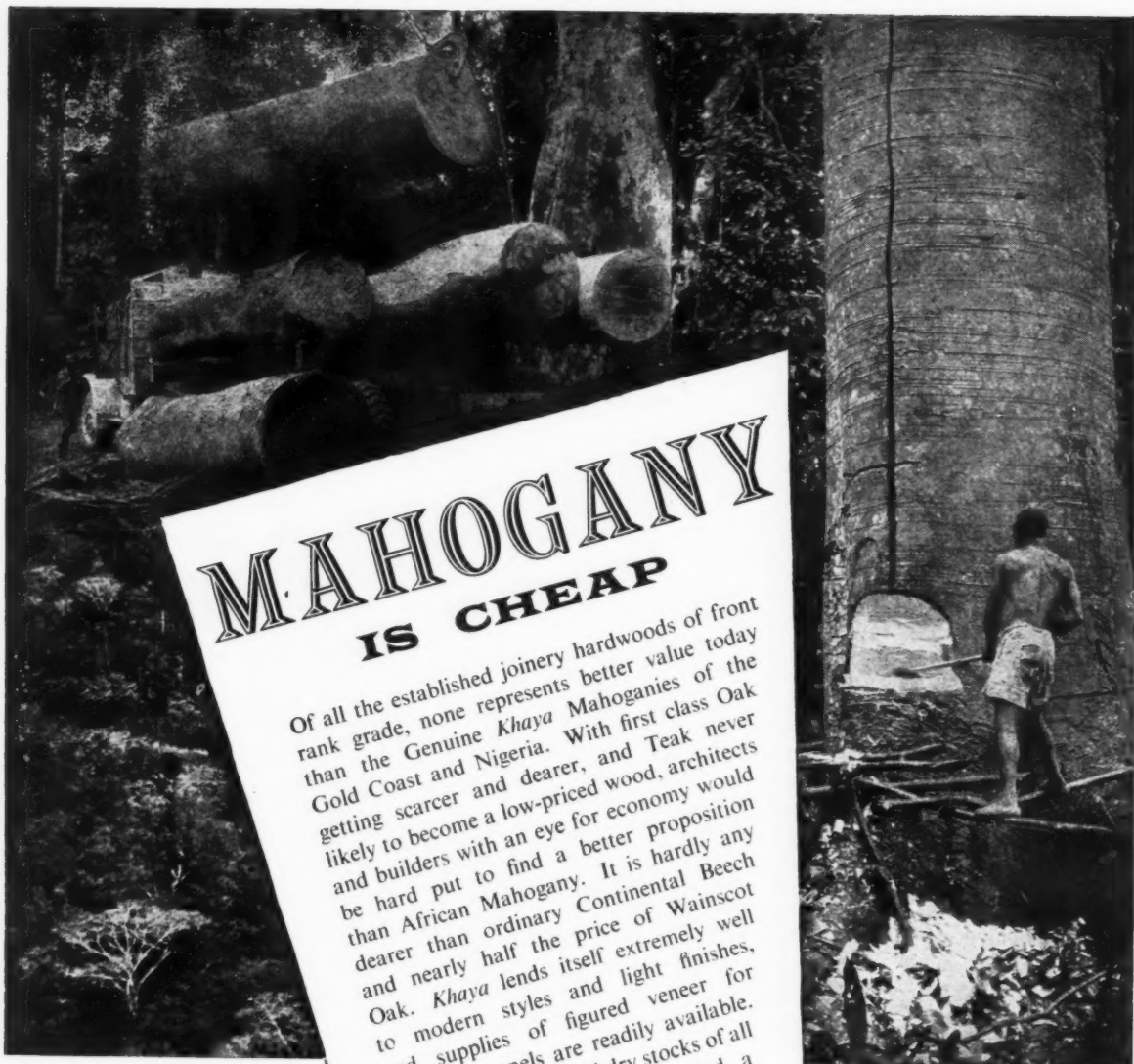
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No. 3179 February 2, 1956 VOL. 123



## THE WINTER OF OUR DISCONTENT . . .

A confirmed admirer of York, its ham, its chocolate, its Minster, its summer schools, and the rest, ASTRAGAL is always glad to get his nose into a book about that ancient city. The latest to come his way is called—rather dauntingly—*City of our Dreams*,\* but this curious title explains itself by the fact that this was originally one of those "Future Perfect" visionary books that came out in the war when drastic re-planning was felt to be a post-war certainty. What has kept the book alive, however, and made a second edition worth-while, is the very full photographic coverage of York's past and present, and practically every building of note or notoriety is in these pages.

Visions of the future have been dismissed to the last section of the book now, and a very mixed bag they are. They are all of them within the scope of what are called municipal improvements, and though some are remarkably imaginative, most are as depressing as might be expected—stock solutions like flower-beds, water-gardens, opening up and laying flat in all directions—Subtopia in fact. The most gruesome suggestion is that of rendering permanent the waste of empty nothingness by Cliffords Tower, and arting it up with a water-garden around the base of the mound.

## COOKING IN THE LIVING ROOM

There was a lively discussion about kitchens the other night at the ICA. Fello Atkinson, who spoke in violent support of American kitchens, pointed out that Frank Lloyd Wright had brought the kitchen into the living area as long ago as the early 1900s, while Mies van der Rohe, in the most advanced European house to date, namely, the Tugendhat of the thirties, had closed the kitchen off firmly behind walls and pantries, although the house had a completely open plan elsewhere. This, said Mr. Atkinson, was largely a "social problem" (i.e., the existence or non-existence of servants in Europe and in America). If you capitalized a cook, he said, the figure was around £10,000, with no tax benefits, whereas you could get a very good kitchen for £1,000, and for this you could get tax benefits for mortgage payments.

After Fello Atkinson came "Joe" Chamberlin, who described in great detail, with illustrations, the kitchens being provided in his Golden Lane

flats. One problem, he said, was that the average council tenant wished for a middle-class kitchen of 30 years ago, while building bye-laws virtually prevented any such development of the kitchen as part of the living area. And because of ever-increasing costs the kitchen was getting smaller and smaller. Misha Black—an excellent chairman—was quick to emphasize the point that there seemed to be a sixty-year gap in kitchen planning, since Mr. Atkinson had said American kitchens were thirty years ahead, while Mr. Chamberlin had said local authority kitchens were thirty years behind.

Jane Drew, the third speaker, virtually stole the evening with a very refreshing defence of the American kitchen and female-saving devices. She pointed out that though she was very fond of good food she would far prefer to read a book than cook, and she could see no reasons why kitchens should not have things like plants, pictures and easy chairs in them. She gave, as an illustration of what women felt about the whole question of mess in the kitchen, the story of a survey in California. This showed that foremost among all the equipment in the kitchen which the majority of women wished to keep was the Waste Master, which is not allowed in much of the London area. The only expert cook on the panel, Elizabeth David, did not have much to say about kitchens, except to suggest they should be comfortable and no different from other rooms.

There was very little time for discussion afterwards—a pity, because it could have gone on interestingly for many hours. ASTRAGAL suggests that





## This window is cutting heat losses in half

Modern architectural design no longer accepts the traditional hard-and-fast division between house and garden. By using double glazing, it is easy to bring the outside world into view without making sacrifices to warmth. Tests have shown that double panes halve heat losses. They help to eliminate down draughts

and restrict condensation. Due to the double mass of glass, sound insulation is an additional benefit. In fact, whether the specification is for home, office, shop or factory, where heat conservation is desirable, two glasses are always better than one . . . especially if they are working together.

## For wide windows and warmth . . .

# DOUBLE-GLAZING

P I L K I N G T O N   B R O T H E R S   L I M I T E D



For further information on the use of Glass in building, consult the Technical Sales and Service Department, St. Helens, Lancs. (Telephone: St. Helens 4001), or Selwyn House, Cleveland Row, St. James's, London, S.W.1. (Telephone: Whitehall 5672-6). Supplies are available through the usual trade channels.

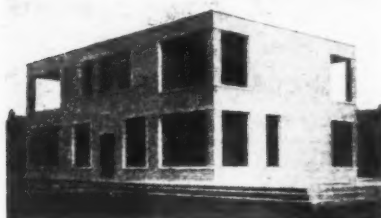


DG.18

someone—perhaps even the ICA—might run an exhibition of architect-designed kitchens, possibly in collaboration with some of the big equipment people, so we can all see how poor British standard equipment is, compared with American, or even foreign stuff.

## HOT NEWS

The rather formidable house illustrated on this page contains a secret. It stands on Staple Hill, Bristol, and has been designed by Leslie Gardner, managing director of the Western Detail Manufacturing Co. Ltd., a firm which is quietly hatching a revolutionary system of heating. "This is the absolute real thing," Mr. Gardner is reported to have said to the *Western Daily Mail*. "It will not only completely transform the structure of houses to be built in about five years' time, but it will also change to a certain extent the interior of the buildings." Intrigued, ASTRAGAL got on to Mr. Gardner on the 'phone. As patents have not yet been taken out, Mr. Gardner was understandably cagey, and the interview was conducted like a guessing game.

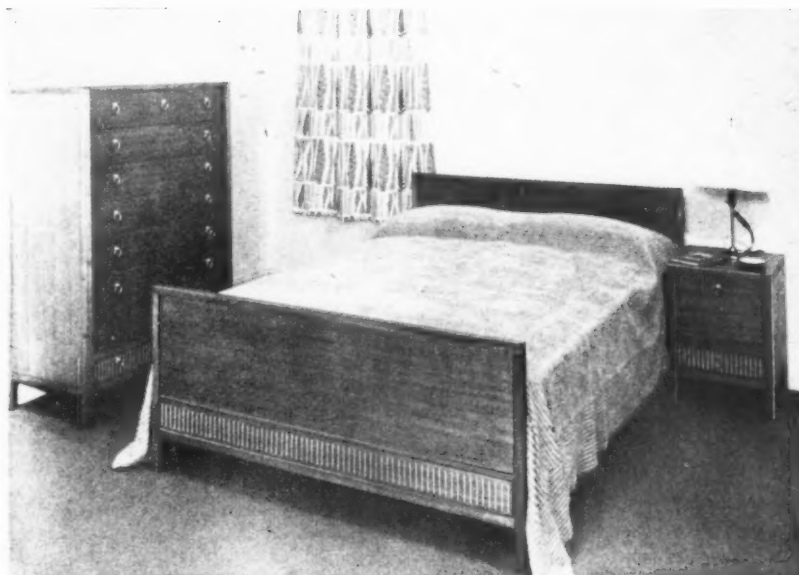


The system is not solar heating (as generally described in the Press) but atmospheric heating. Heat is extracted from the atmosphere by means of a very high vacuum, yet the principle involved is not that of the heat pump: the system does not depend on storage heating to maintain comfort conditions though heat can be, and is, stored: the medium for heating is conditioned air, but the large areas of glass are used to control inside temperature.

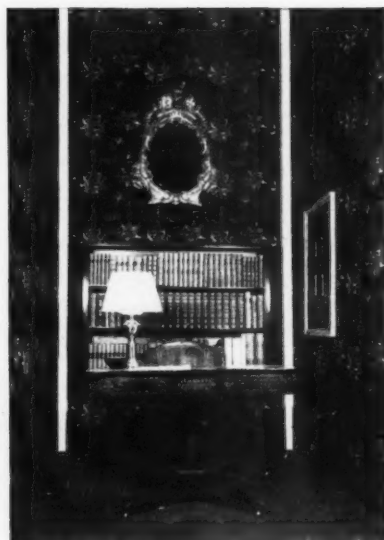
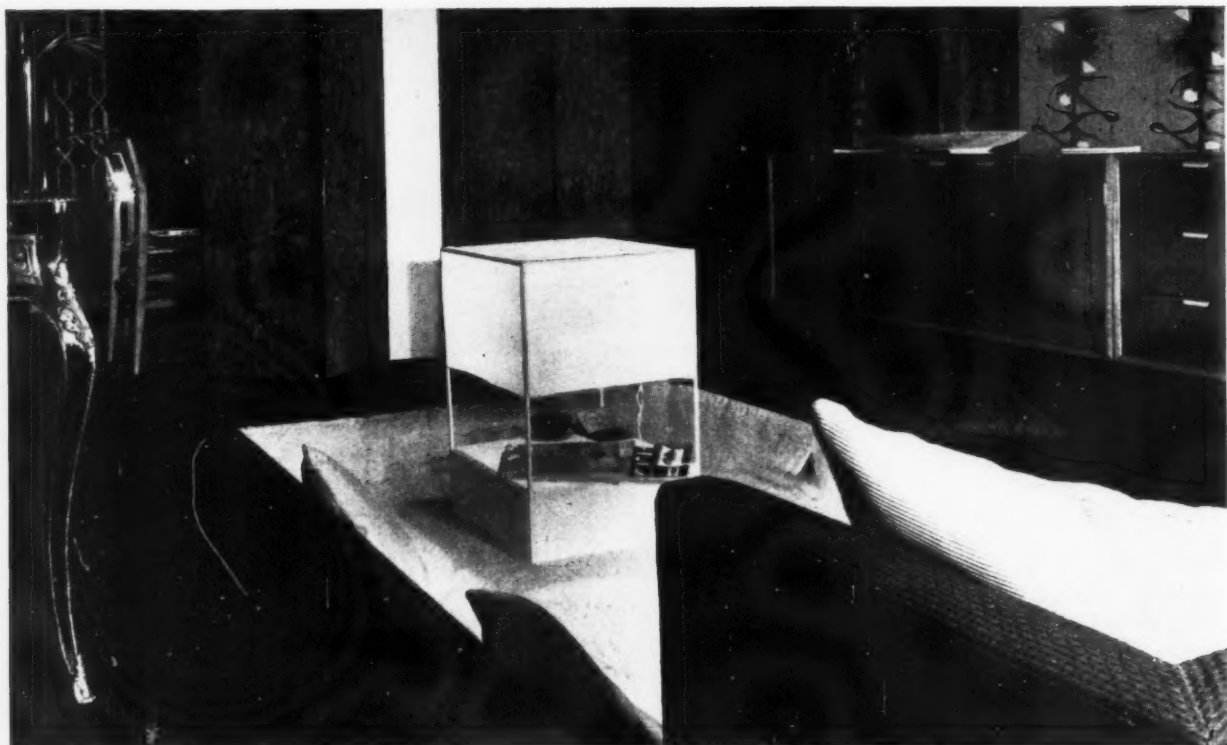
\* \*

ASTRAGAL feels a little nonplussed by all this, but is resigned to being kept in suspense until about next month when the truth will out. In the meanwhile, Mr. Gardner is in a position not unlike that of Noah before the flood rains began.

ASTRAGAL



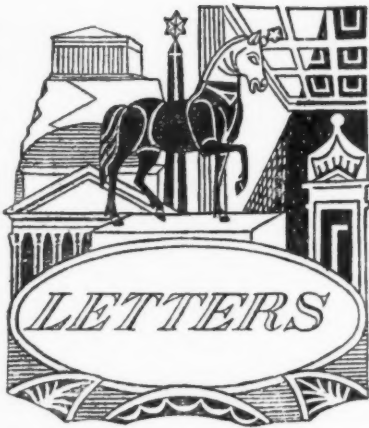
There is so much ghastly good taste at the annual British Furniture Exhibition, Earls Court, that ASTRAGAL usually escapes to the refreshing reality of the Earls Court Road before he has found the exhibits of the best manufacturers. This year, however, he was glad to find that most of the well-designed furniture was exhibited in a group of stands (known as the "D Group") on the first floor. Not all the furniture shown in this section was of an equally high standard of design, but the idea is a good one—provided everyone doesn't try to get into the act next year. Above, some of the new furniture shown for the first time at Earls Court. Top: a table by Ernest Race Ltd., to match their well-known Roebuck chair beside it, and a new Race armchair. Centre: some of the bedroom furniture, designed by architects Ward and Austin—who also did the overall "D" section design—for Loughborough Furniture. Bottom: left, a complete assembly of unit furniture designed by Peter Hayward for W. G. Evans & Sons Ltd.; right, a sideboard by Gordon Russell Ltd.



## Flat '56

"We hold no responsibility for this" said the Sanderson salesman apprehensively, and almost apologetically. "We commissioned Sir Hugh Casson and the Royal College of Art to design the flat, the fabrics and the wallpapers, and from there Sir Hugh took over." The result, shown in part above, is a typical masterly Casson exposition of the arts of exhibition with sufficient competent handling of space to provide an object lesson to all students of architecture. The sophistication of this flat, which is patently more a background to new fabrics than a home, makes a stimulating contrast with the exhibition alongside, designed by the Sanderson Acquired Chromatics Group in the accepted near-contemporary idiom of present-day exhibition designers. Top, is the living-room of Sir Hugh Casson's flat, with a settee and sunk, white-carpeted well forming the focal point. This is lit by a combined

table and lamp, centre, with a yellow cube shade. The white television screen beyond is covered by cloth-surfaced doors, red in colour and with a gold-stencilled pattern. Beyond, again, is the dining area, with white Italian chairs (from Woolland Bros.) standing out against the green carpet. On the right are Hille storage units. The wall paper behind them is a black and white design on a grey ground, by Geoffrey Clarke. Above, left, the music room, with, from left to right: wall paper by Kenneth Rowntree; a black on green fabric by Mary Kessell and a paper by Ironside; Centre, a sun room, with furniture (from Peter Jones), wood strip blind (Sandersons) and fabric, right, by Katerina Wilezynski. Right, a 9 ft. by 6 ft. by 16 ft. high library. It is crowned by a white plaster vault, reminiscent of the Phillip Johnson bedroom. The black wall paper, with white and green line motif is by John Drummond. The assistant architect for Flat '56 was Timothy Rendle.



*Basil Spence, F.R.I.B.A.*

*Frank Woodcock*

### Spence Answers Hitchcock, Criticizes Smithsons

SIR,—I have read the remarks attributed to Henry-Russell Hitchcock in *THE ARCHITECTS' JOURNAL* and especially relating to that "vast monumental project . . . that would have been exciting if it had been built in 1925."

After the first unkind jolt, and after the effort of trying to swallow the implication that one is old-fashioned, I realized that an important principle was involved in his criticism. Perhaps it is not surprising that I take leave to disagree with Mr. Hitchcock, but does it matter if, 500 years from now Coventry Cathedral was rebuilt in 1925 or 1955? Does it matter now that the Parthenon was built in B.C. 438 and not B.C. 468, or that Santa Sophia was built in A.D. 537 or A.D. 567, or that St. Paul's Cathedral was built about 200 years after St. Peter's, Rome, was begun? To me not one jot. It is the quality of these buildings as architecture that matters.

There is no doubt that history tells us that there are certain constants in all great architecture whenever it is built—what then is the virtue of being slap up to date, to be a member of the current fashionable movement?

Firstly, the great essential of pioneering, secondly, it brings publicity, and thirdly, it gives self-confidence and sometimes arrogance, and if one is a leader of a movement it must bring great self-confidence which should help the artist provided he does not become over-confident. Some pioneer buildings built between the wars, then thrilling, exciting, like a shot in the arm, are horrible now as they did not carry with them the constants, especially the quality of material.

The Parthenon, by modern standards, was a very conservative building designed to a formula centuries old, and largely disregarding the latest structural developments, as some historians say that the Greeks knew of the arch at this time. The aim of the builders of the Parthenon was beauty in all its grandeur and the significance of the Greek Temple Form for its own sake.

Furthermore, I believe that copyist architecture is lazy and comparatively easy to do, and it is doomed from the start as it is already stillborn but, on the other hand, Mr. Hitchcock's criticism is typical of many American statements when they have no architectural history to speak of, with great emphasis on newness for its own sake impregnated with a short-term building policy.

**THE PRINTING TRADE DISPUTE.** *The Editors very much regret that owing to the dispute in the printing trade, which has led to the practices of working to rule and limiting overtime among members of the London Typographical Society, there are fewer editorial pages than usual in this issue of the JOURNAL. They also regret that it may be necessary to restrict the size of issues while the dispute continues, and that the new-style JOURNAL—which many subscribers will have heard about—cannot be produced until the dispute is settled.*

### The Editors

### A NATIONAL HOUSING POLICY REQUIRED

**I**T is encouraging to learn that the Labour Party now agrees with the Conservatives over the necessity for operating systems of rent rebates for the poorer tenants on local authority housing estates. The original Socialist policy of house building would, if carried out to the full, have ended in, virtually, nationalized housing. The Conservative aim, of everyone owning his own house, is equally unrealistic. While individual productivity, or earning power, is so low, or house-building so expensive, or of such high standards (take your choice of alternatives), partially subsidized housing is inevitable, and right.

Now, having got political agreement, why cannot local authorities and the Government hold a national housing survey to settle once and for all: the degree of under-occupancy, the size of the slums, the rate of deterioration in existing housing, and, not least, what constitutes, today, minimum housing standards and what is the maximum time such sub-standard housing can be tolerated. Then, with some facts available, the parties might agree on abolishing rent control, and organize a logical national housing policy.

### HOPE FOR THE CITY

Professor Richardson attempts to decry the proposals of the New Barbican Committee by calling them the products of "big business." The careful reporting which this committee's appeal to the Minister of Housing and Local Government against the rejection of this scheme by the City receives in the national dailies shows the extent to which the New Barbican scheme has caught the attention of the general public. Kadleigh, Horsbrugh and Whitfield, far from seeming to represent big business, appear as unpaid, imaginative Davids fighting the Goliath of officialdom. One victory they have already secured. They have compelled the City to prepare, in conjunction with the LCC, a three-dimensional plan for the area. Whatever the outcome of the ministerial enquiry, they will have had two triumphs to their credit. They have ensured that the last major blitzed area in the City will be comprehensively planned and rebuilt—if not by their scheme, by another, and they have interested the public in a major post-war issue. It is to be hoped that the lessons to be learnt on the value of comprehensive planning will inspire all architects,



planners and local authority councillors to look again at their own town centres, whether partially blitzed, or merely obsolescent, and ensure that imaginative and *comprehensive* plans for rebuilding are made.

The City's plan for the area, it should be noted, makes use of some of the new ideas of the New Barbican plan, though not to such extremes. It recommends, where possible, that excavation should be to two storeys depth (as against four in the New Barbican scheme), and that a pedestrian level should be formed two storeys above ground level (contrasting with the four-storey-high podium of New Barbican). What remains to be seen is whether the official scheme can maintain the advantage it at present has of planning flexibility in the fourth dimension, time, and whether a case can be made out for obtaining the economies of erection so obvious in the private proposals. To have site excavations occurring only once, to a plan, to have services and ducts laid only once, to have roads laid once, and not constantly re-excavated, to have foundations standardized, pumping, shoring and pile-driving co-ordinated, to have party-wall troubles, site-settlement and underpinning eliminated; these are some of the virtues of a co-ordinated comprehensive redevelopment. These economies in time, trouble and cost, oddly enough, are part and parcel of the private scheme. Can they be made part of the official scheme as well, while avoiding the obvious danger of the private scheme: that of becoming, with the passing of time, an enormous, irreparable, white elephant.

I am convinced that a church designed to-day cannot be the spearhead of an architectural movement as in some periods. The conditions are all against it, industrial buildings, stadia (new Crystal Palace especially), railway stations, great dams and exhibitions have taken on this task.

I aimed, in my design, to give the Church of England a building of quality woven round the Prayer Book, standing for permanence and continuity of Faith and taking due regard of the 15th century Cathedral standing alongside.

Finally, as Henry-Russell Hitchcock referred to it, I would like to say a word about the Smithsons' design which they submitted for the competition. I think it has a great impact and is to me a brilliant piece of work, but for conditions other than those set for the competition.

I know that in the industrial atmosphere of Coventry, the concrete face takes on a disgusting appearance in five years, what about fifty or five hundred? And all the mullions of their design are pre-stressed concrete. I know also that the Church is not a rich body and simply could not afford to keep a building with so much glass adequately heated all through the winter, day and night as is necessary in a Cathedral. Again I know that the Church could not afford to keep those vast glass areas cleaned—even commercial concerns find this difficult (for example the Lever building in New York).

My last criticism is concerned with a lack of understanding of ritual—a Cathedral is built round the Altar and the ceremonies that take place there, and especially the great ceremony of Holy Communion, when each and every member of the congregation must feel part of that ceremony and concentrate on its meaning. This cannot happen in a clear glass house especially in England

—but again perhaps the dirt on the glass would give the necessary feeling of enclosure, and it must be remembered it is much easier to design in a spectacular way when one ignores vital facts.

BASIL SPENCE.

London.

## Unconditional Surrender

SIR.—The "collaboration" between the teams of the architect and of the builder so attractively mapped out by Mr. O. J. Masterman in your issue of December 8, 1955, seems on inspection to be founded on the unconditional surrender of the former. The architect will be respectfully conducted to a gilded captivity in the ivory tower appropriate to his artistic temperament. Specialists and consultants (his evil counsellors) will then be quietly strangled by their new master.

Mr. Masterman's every reference to nominated specialists is derogatory. This is not helpful, because it breeds the same attitude on the other side and a suspicion that defeats his object. He has a valid point in asserting the builder's new skill and experience in management: but, if it is to be given the chance he wishes, he must offer some guarantee to the other parties concerned. Otherwise it might fairly be pointed out that he has made an admirable case for the placing of work directly with separate trades by an architect advised by a "management" consultant serving at a fixed fee. This would be in line with the modern contractor's use of non-nominated sub-contractors, whether properly so-called or for labour only sub-contractors for the balance.

FRANK WOODCOCK.

London.

We showed Mr. Woodcock's letter to Mr. Masterman, who makes the following reply: Well, it just goes to show!—how differently the same words can be read by different people.

Mr. Woodcock says that my every reference to nominated specialists is derogatory. I'm frankly puzzled, because I wrote in no derogatory vein and on re-reading and looking for the words that caused this criticism I cannot find them.

All the rest of Mr. Woodcock's letter charms by its delightful phrasing and lively imagery, so I do hope he will make clear where he stands and which words he sees as derogatory to specialists.

The point I tried to make was that the builder cannot be expected to run his site properly without effective control of all sub-contractors, any more than specialists can be expected to serve two masters. How my plea that the builder should be enabled to serve the architect more effectively by being made part of his team at the outset (instead of too late) can engender the idea of quiet strangulation in a gold and ivory captivity defeats me, but I greatly envy Mr. Woodcock his facility with metaphors.

## NEWS

### In Brief

An exhibition of industrial and graphic art, the work of eight British designers, is touring the United States. The designers, all Fellows of the SIA, whose work is shown, are: Misha Black, Lucienne Day, Robin Day, Abram Games, Milner Gray, W. M. de Majo, Ernest Race and Hans Schlegler.

Brussels is to hold an exhibition called "Habitation 56," following Sweden's Helsingborg exhibition "H55." It will take place from May 19 to June 3, 1956, and will cover building equipment, interior decoration, furnishing and town planning.

The Board of Architectural Education call attention to the fact that the Examination in Professional Practice and Practical Experience consists of a written paper and an oral examination on that paper and on the certificate(s) of practical experience. Each section of the examination, i.e., the written paper and its oral examination and the oral examination on the certificate(s) of practical experience carries 100 marks, 50 marks constituting a pass. As it is essential for candidates to pass in both sections, the importance of the proper completion of the certificate(s) of practical experience will be appreciated.

Misha Black is visiting Colombo during January at the invitation of the Government of Ceylon to consult with them on the general planning of the Second Colombo Plan Exhibition which will be held in that city during February-March 1957. He has also recently been appointed to advise the Birmingham Chamber of Commerce on the visual improvement of the British Industries Fair in Birmingham.

The Federation of Registered House-Builders elected the following officers for 1956:—President: Frank Russon (Birmingham). Senior Vice-President: C. R. Setter (Bristol). Junior Vice-President: Idris W. Owen (Stockport). Immediate Past President: George W. Reed (London).

A \$5,000,000 contract for the erection of more than 750 bungalows at nine air stations throughout the UK has been awarded by the United States Air Force to the London firm of Unity Structures Ltd. This contract, which is scheduled to be completed by the end of 1956, comprises 3- and 2-bedroom bungalows specially designed by the consultant architects for Unity Structures Ltd., and originators of the Unity system of construction, Kendrick Findlay & Partners, L.R.I.B.A.



## HEALTH CENTRE

at GOOSEACRE, WELWYN GARDEN CITY, HERTS.

designed by C. H. ASLIN, county architect

PATRICIA A. TOWNSEND, assistant architect

consultants (structural) OVE ARUP and PARTNERS

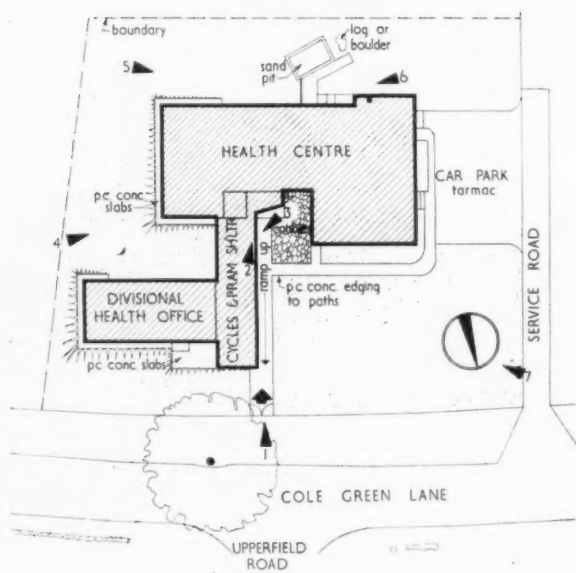
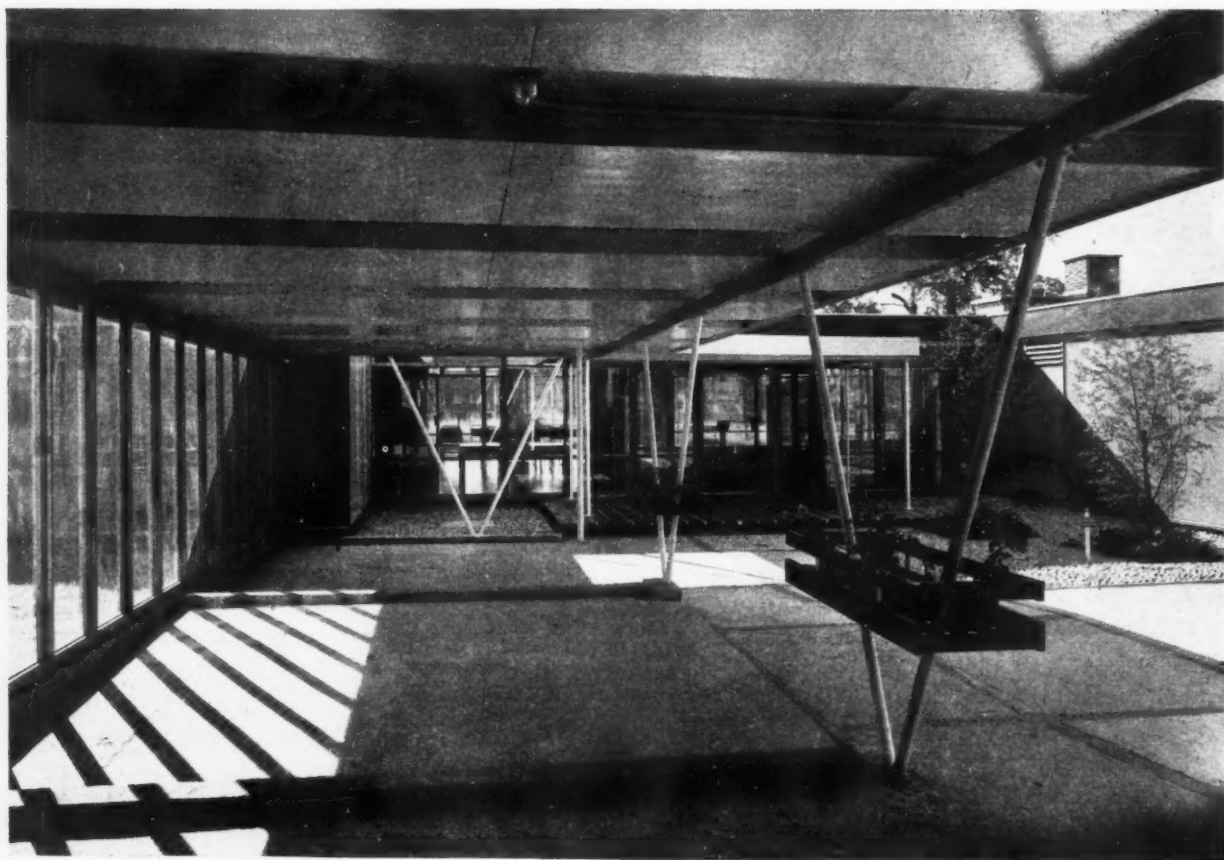
(electrical) T. BOTTOMLEY, county architects' department

quantity surveyor E. F. MARTIN, county architects' department

The Gooseacre Health Centre, Welwyn Garden City, was designed to provide facilities in accordance with Part III of the Health Act, 1946, for a neighbourhood unit of 15,000. In addition it houses a schools dental unit and, in a separate block, the Divisional Health Office. It was constructed with the Punt prefabricated system of standard timber components, using both the Mark I and Mark II versions.

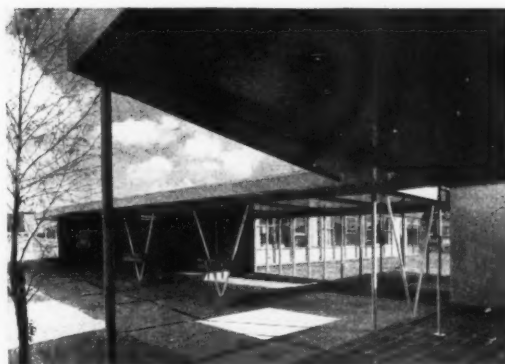
The main entrance from Cole Green Lane.



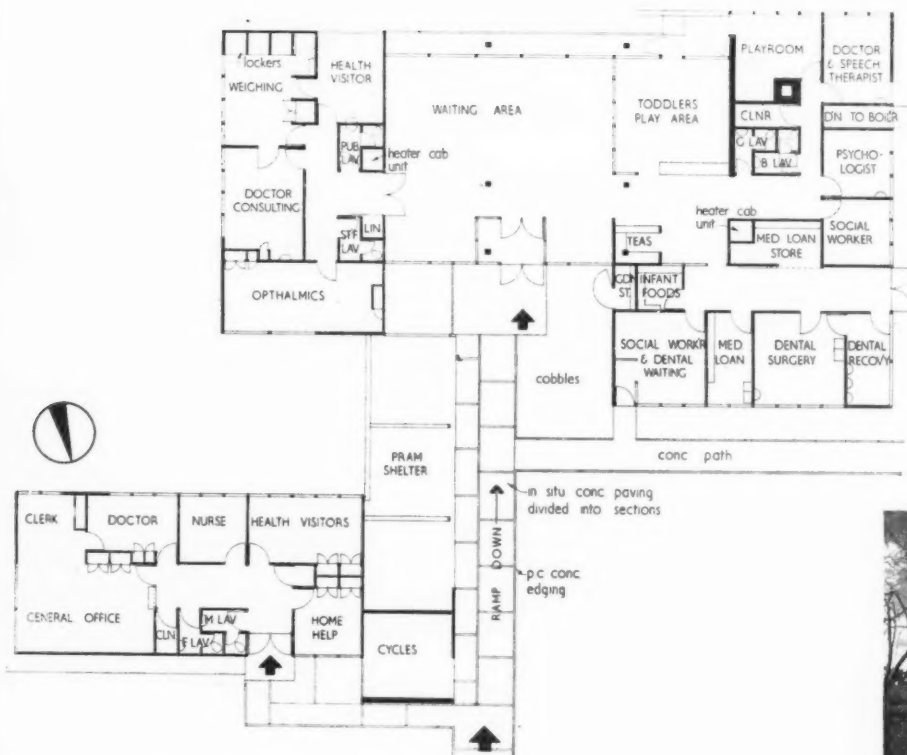


Key plan showing photographic viewpoints

Viewpoint 2, the central waiting area of the main block seen from the pram shelter which is divided into three bays approached from the ramp. The glazed screen, which gives shelter from the wind, links the main block to the office block. The V-strut supports provide the necessary wind bracing. The door panels are painted dark red (Munsell 7.5 R/3/12).



The pram shelter (viewpoint 3) from the main entrance showing the Divisional Health Office of the Mid-Herts Area beyond. The ramp is of panels of *in situ* concrete 6 ft. 8 in. wide subdivided by blue brick paviors. All external soffits are cut and shaped from flat asbestos sheets. The plywood panels below the windows of the office block are painted grey-green (2.5 GY 6/2).

Ground floor plan [Scale:  $\frac{3}{4}$ " = 1' 0"]**HEALTH CENTRE**

at WELWYN GARDEN CITY

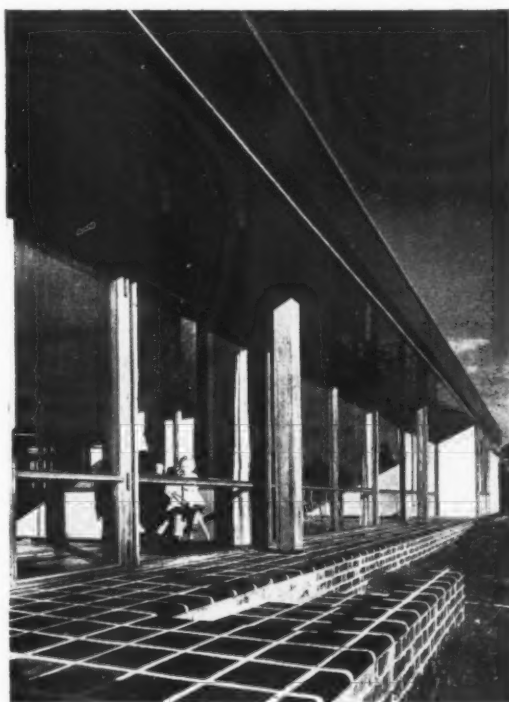
designed by C. H. ASLIN

county architect

Above: the divisional health office is in the smaller block to the left, and is a separate entity from the health centre, which lies beyond and is approached down a gentle ramp from Cole Green Road. The centre section of the main block, where columns are shown on plan, is constructed in the Mark I version of the Punt system. The remainder is in the Mark II version.



Viewpoint 4, above, the glazed screen and main block from the west showing the standard external wall panels framed with pitch pine and faced with vertical cedar boarding on building paper. These panels have an external face of  $\frac{1}{8}$  in. hardboard and an internal core of "egg-box" softboard stuffed with glass fibre. Above right, viewpoint 5, the south elevation showing the floor to ceiling glazing of the waiting space and toddlers' play area. The panels in the foreground are faced with resin-bonded plywood as an alternative to vertical cedar boarding. The deep fascia around the building is also of resin-bonded plywood. The projections from the roof are the tank house and boiler flue. Right, viewpoint 6, the terrace on the south side showing the free-standing columns of the Mark I version of the constructional system and the horizontal sliding windows. The terrace is paved with 8-in.  $\times$  8-in.  $\times$  1 $\frac{1}{4}$ -in. purple-blue quarry tiles. The return wall at the end is pale green (2.5 GY 8/6).





Above, viewpoint 7: the dental and medical loan departments from the north west, showing secondary entrance to dental waiting and social workers room on the right. Green and grey-green (2.5 GY 7/10 and 2.5 GY 6/2) were used on the panels below the windows. Below: the main waiting area with the health visitor's desk in the alcove



beyond the draught lobby. Beyond the desk is the tea bar from which waiting mothers can obtain tea. The toddlers' play area has been provided for young children accompanying their mothers. As no supervision is provided it is divided from the waiting area by a glazed screen. The construction of this centre part of the block is of the Mark I, beam and column, version of the system. Floors are thermoplastic tiles. Ceilings are of alternate 40-in. square panels of ordinary and perforated hardboard. Below: looking back from the tea bar across the toddlers' play area to the waiting space. Over the play area all ceiling panels are perforated to provide increased sound absorption. The sand pit can be seen beyond the terrace. The low cupboard fitment, which separates the play area from main circulation, and forms a counter in the foreground is for the storage of toys. The panels below the screen and the cupboard doors are painted red (10R 5/14) and the back of the cupboard unit dark red (75R 3/12). The far wall is pale green (2.5 GY 8/6).



Below  
tea bar  
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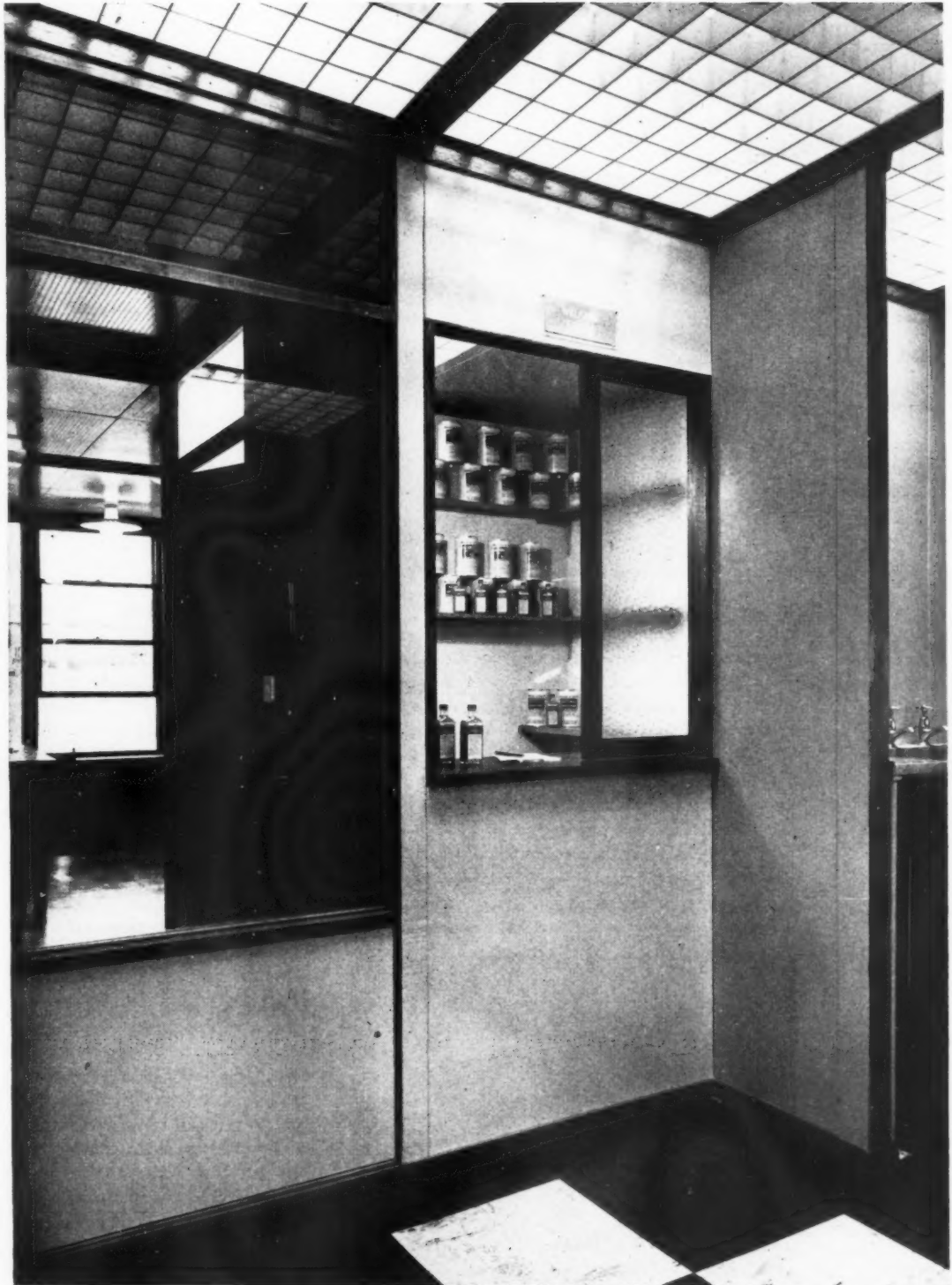
Below : Welfare foods are issued from a store between the tea bar and the dental waiting room which is seen through the glazed screen on the left. The dental waiting room also serves as an office for the social worker. This photograph shows the 3 ft. 4 in. square roof light units which can be inserted as required in the roof structure. The louvres are of plywood painted pale grey (N 8).

## HEALTH CENTRE

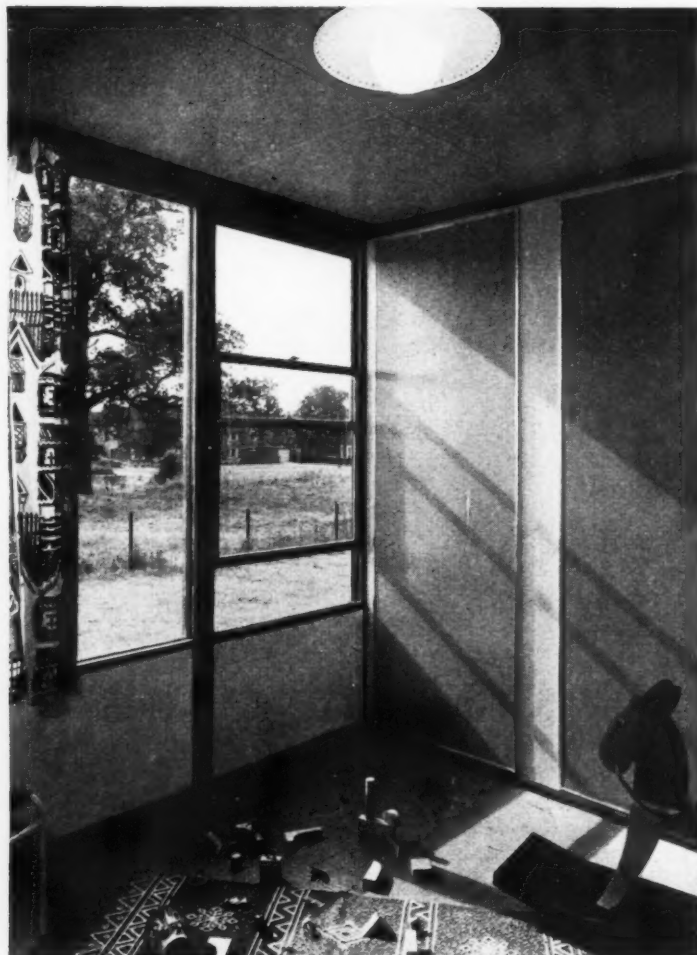
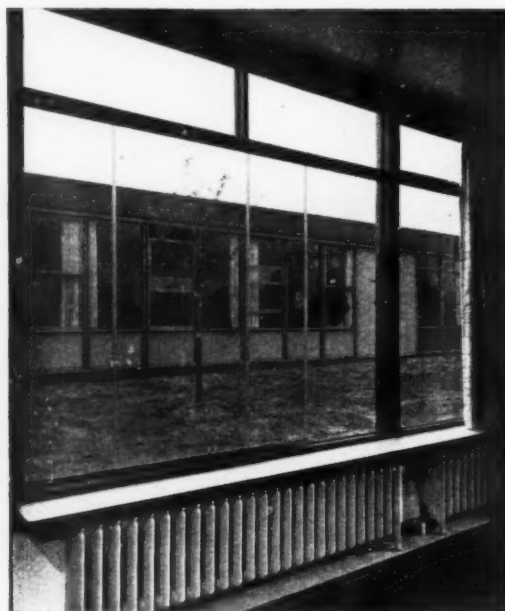
at WELWYN GARDEN CITY

designed by C. H. ASLIN

county architect







The maternity and infant welfare department (top left) consists of three intercommunicating rooms. In the foreground is the doctor's consulting room. The weighing room for both ante-natal and infant welfare sessions is beyond. Two of the three adult changing cubicles can be seen at the far end. Through the door to the right and across the lobby is the health visitor's consulting room. White, pale grey, and a pale yellow green (pale green—Munsell 25GY 8/6) have been used throughout these rooms. The standard 40-in. wide wall or floor cupboard has been designed for most offices and consulting rooms to provide lockable general storage and open shelves. The carcass is polished mahogany



and the framed plywood doors are painted various colours. The doors in this photograph are dark red (7.5R 3/12) and the wall eau de nil (7.5 6-Y 9/4). The internal partitions are standard panels 40 in. wide framed in softwood and faced with hardboard painted. The windows of the ophthalmics room (above left) are horizontal plate glass sashes set in a brass frame with roller bearings on the bottom edge. The other edges are unframed. One vertical meeting edge has a colourless plastic cover channel which acts as a draught excluder. The thumb screw catches are designed to press the glass forward and seal it against the frame rebates when closed. Where radiators are used they are housed under windows and below wide framed plywood sills lined with insulation board on the underside. The child guidance section (above right) includes accommodation for a doctor and a speech therapist, a psychologist and a psychiatric social worker. In addition there is a play therapy room, which is fitted with a low sink and sand tray. The wall on the right is faced with three mild steel radiant heating panels with low pressure hot water pipes behind them which also heat the adjoining consulting room. The ophthalmics room (left) is 23 ft. long and has a sight testing screen at one end operated by switches at the other end of the room. The walls surrounding the screen and the far end wall are painted matt black. The ceiling is white and all other walls stone colour (5Y 8/2).

**HEALTH CENTRE**

at WELWYN GARDEN CITY

designed by C. H. ASLIN

county architect

**CLIENT'S BRIEF: his stated requirements**

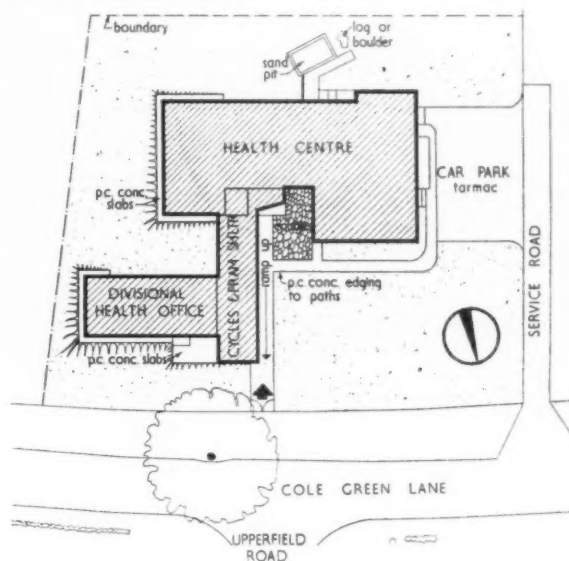
A health centre providing Part III facilities in accordance with the Health Act, 1946, for a local population of 15,000, together with certain specialist services to serve the total population of the town, and a divisional health office from which the County's health services in the mid

Herts area would be run. It was required that (a) the waiting area be designed to provide space for evening lectures, (b) the toddlers' play area and the pram shelter be easily visible from the Waiting Area as no special supervision could be provided (c) the dental suite should have

through circulation and be a separate unit, and (d) the medical loan unit should be capable of being run separately from the main part of the health centre and have easy access from delivery vehicles.

**SITE: topography, surroundings, access, planting**

The site has a slight slope from north to south. It is part of an open space reserved in the main for part of a neighbourhood centre. A plot of land on the east boundary is reserved for possible future health service needs. Foot access to the site is from Cole Green Lane on the north boundary and the temporary service road to the west of the site will probably be developed to give access to a larger public car park as more of the neighbourhood is built. There was no existing planting on the site, and a hedge and informal groups of small trees and shrubs are being planted to give a degree of privacy.



Site plan.

**PLAN: general appreciation**

The divisional office accommodation is planned as a separate block and is linked to the health centre by the pram shelter which also forms a covered way. The two blocks run approximately with the contours and the difference in floor levels between them, which was dictated by the fall in the site, is taken up in the Pram Shelter which has three "parking bays." The boiler house forms a basement under the

southwest corner of the building, which is at the lowest part of the site. The health centre is divided into three main units: maternity and child welfare, school health services and child guidance, which are all accessible from the waiting hall. A medical loan unit has a separate entrance from the car park, and this also serves as the exit from the dental suite. The social worker's room, which is used as such only for

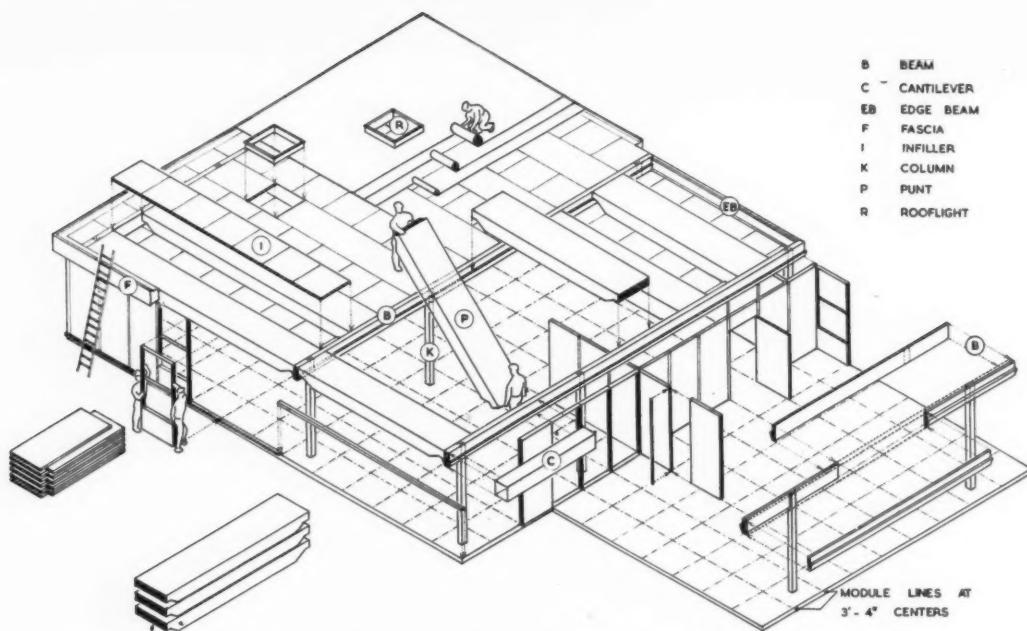
the first hour of the day, adjoins the dental suite and has its own external entrance so that it can be used as a separate waiting room for this wing. There is a wide corridor in this wing to facilitate handling of large items of medical loan equipment and delivery of welfare foods which are served through the waiting room from the hatch-counter in the foods store.

**MAIN CONSTRUCTION: general appreciation**

The building is constructed of prefabricated light weight timber components on a 40-in. grid. The roof "punts" are light-weight plywood boxes incorporating a ceiling finish

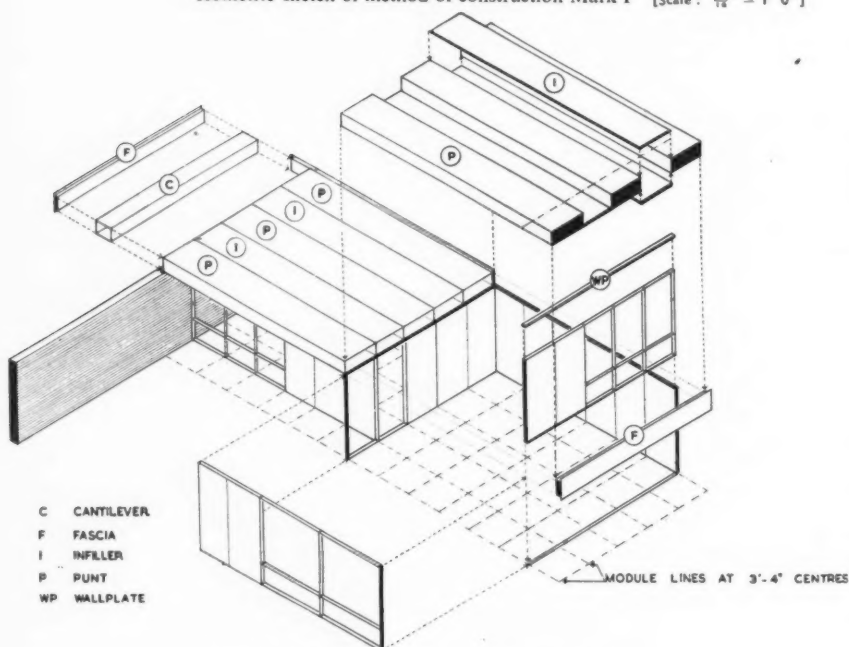
and spanning a maximum of 23 ft. 4 in. They are supported on 3-in. thick prefabricated timber framed wall panels (Punt Mark I) in the waiting hall which has laminated timber beams

in the depth of the ceiling, these being supported on columns (Punt Mark II).

Isometric sketch of method of construction Mark I [Scale:  $\frac{1}{4}'' = 1' 0''$ ]

Above: in this version of the system the punts are supported on beams and columns which are erected on a concrete slab. This gives considerable freedom in planning as all panels are independent of the structure, each unit being standardised to the 40 in. module and to a floor to ceiling height of 8 ft. The beam can span up to 20 ft. with a maximum cantilever over columns of  $1\frac{1}{2}$  modules. The beams are manufactured in two halves and are overlapped and bolted together on site to form a continuous member.

The punt units are placed in alternate modules with infiller units between. Rooflights may be inserted in any module square.



Isometric sketch of method of construction Mark II

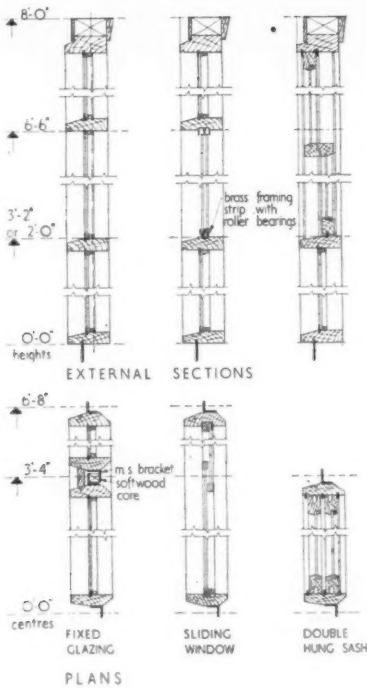
Left: in the Mark II version the punts are supported by load-bearing panels which eliminate beams, columns and cantilever units. On the other hand freedom of planning is to some extent limited. The panels are supported on an extruded aluminium chassis plate which gives an accurate datum from which to build. A weak concrete filling is finished to this datum, prior to the erection of the building, which supports the internal load-bearing panels and floor-finish.

	cost per sq. ft.	s	d
preliminaries and insurances		3	2.42
contingencies		2	0

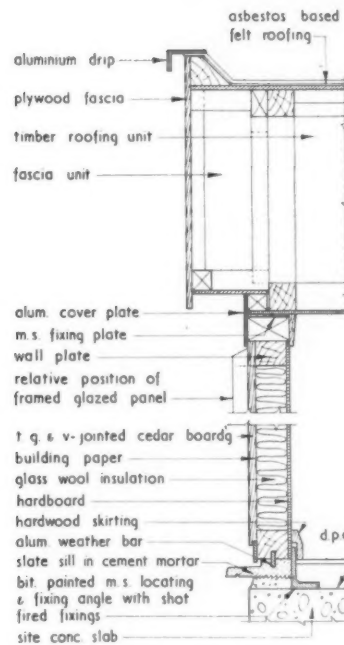
## STRUCTURAL ELEMENTS

Work below ground floor level	Location	Materials	Finish	Reasons and comments
Reinforced concrete edge beam	Perimeter of site slab and under load bearing partitions	Basement in double skin brickwork with asphalt tanking between	Fair-faced brick in boiler house	Site slab and edge beam have light reinforcement because of the variable nature of the soil. Site slab thickened under internal load bearing partitions

work below ground floor level 6 7.70



Left: typical plans and sections of external walling  
[Scale:  $\frac{1}{4}'' = 1' 0''$ ]



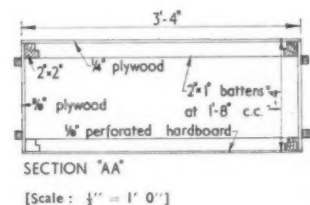
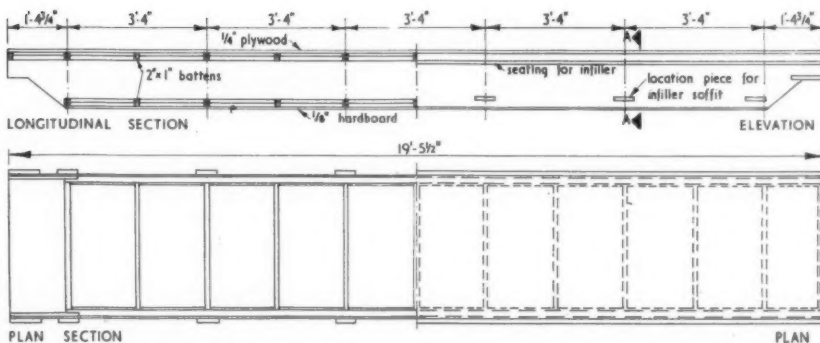
Left: section of external cedar-faced panel  
[Scale:  $1'' = 1' 0''$ ]

External walls and facings	Location	Materials	Finish	Reasons and comments
Prefabricated floor-to-ceiling panels in 3 ft. 4 in. and 6 ft. 8 in. (nominal) lengths	Throughout	Insulated pitch pine framed panels with internal facing of $\frac{1}{4}$ -in. hardboard and internal facing of (a) vertical cedar boarding, (b) resin impregnated plywood sheets both backed with building paper	Internal: painted, External: clear cuprinol	External panels sit on a slate sill and are fixed to and located by a continuous galv. m.s. angle shot fired to the concrete edge beam

external walls and facings 7 3-61

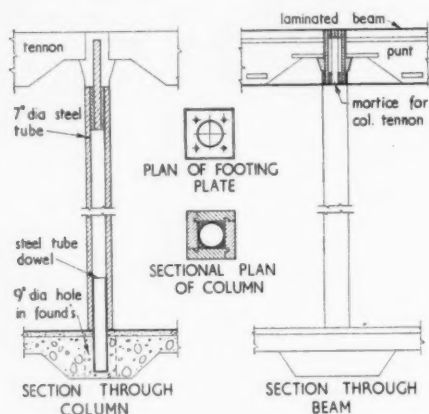
Frame or load bearing element	Location	Materials	Beam spans	Column grid	Reasons and comments
Panels as described above and for internal partitioning	At intervals throughout to support ends of punt type roof units		Roof units span 20 ft. and 23 ft. 4 in.		
Columns and beams	Beams in depth of waiting hall roof supported on freestanding "off module" columns	Laminated timber beams and timber box stanchions	10 ft. and 20 ft.		Columns and beams are used in the waiting hall because of the greater span required
Framing to pram shelter and entrance canopy	At open sides and ends to pram shelter and to entrance canopy	M.s. channel supported on "V" or straight m.s. tubes			"V" type supported used to provide bracing as the pram shelter is independent structurally from the two main blocks

frame or loadbearing element 8 7-9

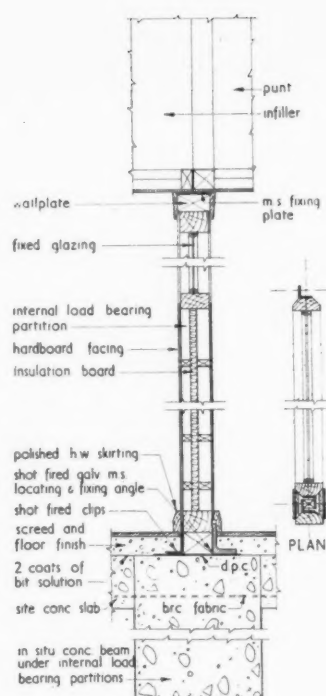


SECTION "AA"  
[Scale:  $\frac{1}{4}'' = 1' 0''$ ]

Details of typical Punt roof unit [scale:  $\frac{1}{4}'' = 1' 0''$ ]



Above: sections and plans of columns  
[Scale:  $\frac{1}{4}" = 1' 0"$ ] Right: sectional plan of  
internal loadbearing wall [Scale:  $\frac{1}{4}" = 1' 0"$ ]



Roof construction	Location	Materials	Finish	Reasons and comments
40-in. wide and 16-in. deep prefabricated structural punts with 40-in. wide non-structural infillers between	Throughout, except in pram shelter	Softwood framing and battening; $\frac{1}{4}$ -in. exterior grade plywood skin; hardboard soffits forming 40-in. square ceiling panels	Two layer asbestos-based bituminous felt covered with granite chips	Non standard 4-ft. wide by 6-in. deep units with asbestos type soffits and 2-ft. wide infillers are used for economy over short spans of pram shelter and entrance canopy

#### roof construction (including ceiling)

10

8-47

Roof lights	Location	Materials	Finish	Reasons and comments
40-in. square	In internal lavatories, stores, circulation areas and in waiting hall	Aluminium frames plywood egg crate diffusers at ceiling level	Painted internally	Lighting and ventilating with permanent vents internal areas and to give even distribution of light in waiting room

#### rooflights

0

8-86

Windows	Location	Materials	Finish	Reasons and comments
Spring balance sashes	Generally sashes, with sliding in waiting area and larger rooms	Pitchpine framing. Sliding are unframed and run on ball bearings in metal tracks	Clear synthetic lacquer to frames	
Horizontal sliding, 6 ft. 8 in. wide				
Top hung fan lights				

External doors	Location	Materials	Finish	Reasons and comments
Outward opening single swing		Pitchpine framing, glazed and with plywood panel infill below 2 ft.	Frames clear lacquered. Panels painted	The framing is the same section as for window panels and the door is braced in lower panel

#### windows and external doors

4

3-09

Glazing	Location	Materials	Finish	Reasons and comments
	General	32-oz. glass		To suit area of panes, georgian wire for safety
	Sliding and large fixed panes	$\frac{1}{4}$ -in. polished plate		
	Doors and below 2-ft. sill and rooflights	$\frac{1}{4}$ -in. georgian wired polished plate		

#### glazing

0

9-01







## WORKING DETAIL

STAIRCASE: OFFICES AT BRISTOL

*Leonard Manasseh and Partners, architects*

STAIRCASES: 22



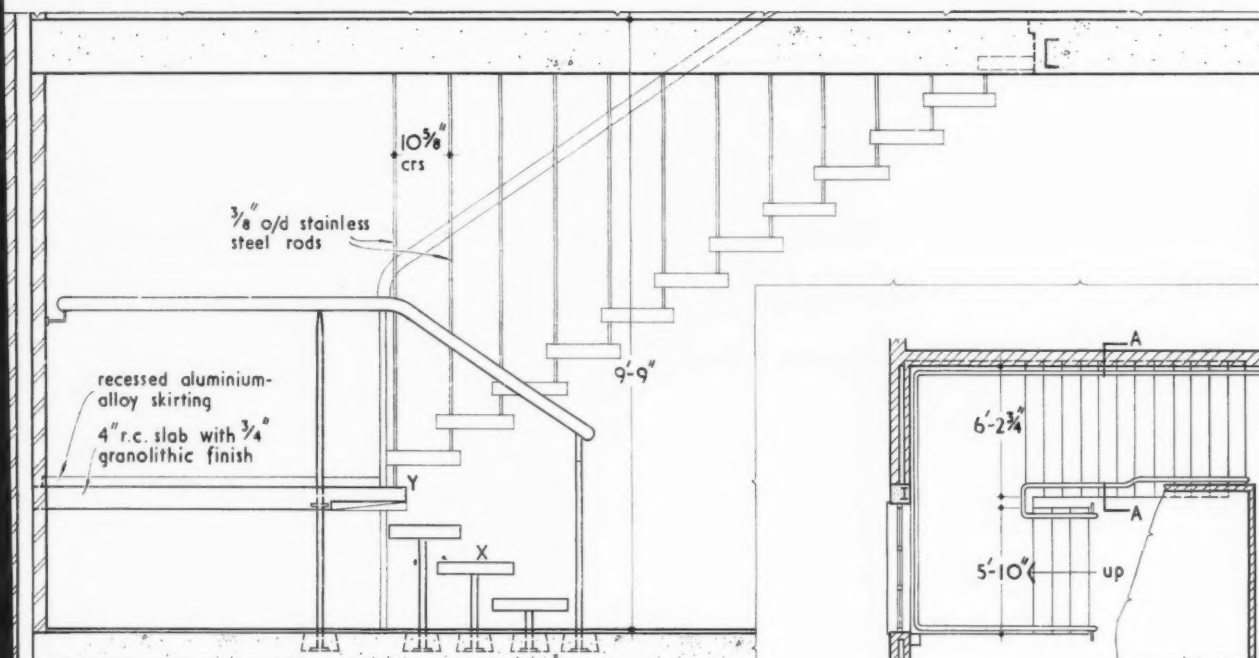
*The treads on the lower flight are each screwed to two 1½-in. m.s. tubes. Those on the upper flight are run into the staircase wall at one end and at the other are supported on two ¾-in. stainless steel rods suspended from the bottom flange of an r.s.j. Threads at both ends of each rod enable the treads to be adjusted for height. The polished mahogany handrail is strengthened with an m.s. core of T-section. All visible concrete surfaces were rubbed down with a stone when green, the ends of treads and landings being painted white.*

# WORKING DETAIL

STAIRCASE: OFFICES AT BRISTOL

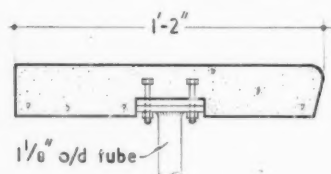
Leonard Manasseh and Partners, architects

STAIRCASES: 22

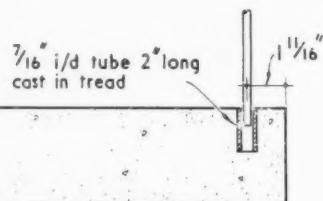


ELEVATION OF STAIRCASE, scale 3/8" = 1'-0"

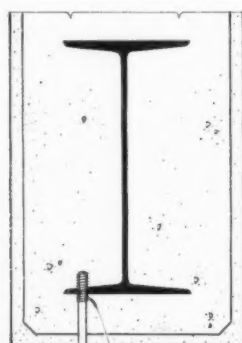
KEY PLAN, scale 1/8" = 1'-0"



DETAIL OF TREAD AT 'X'.

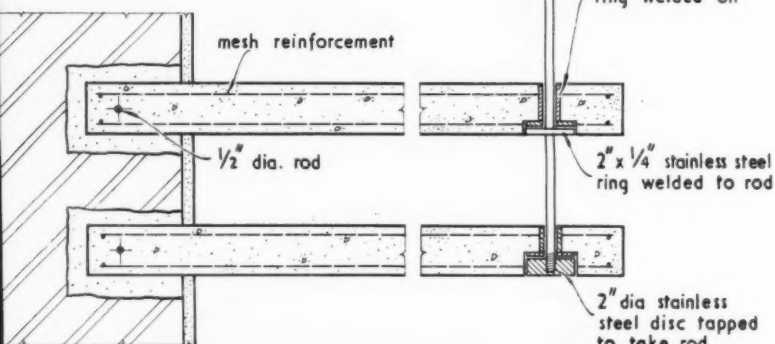


DETAIL AT 'Y'.

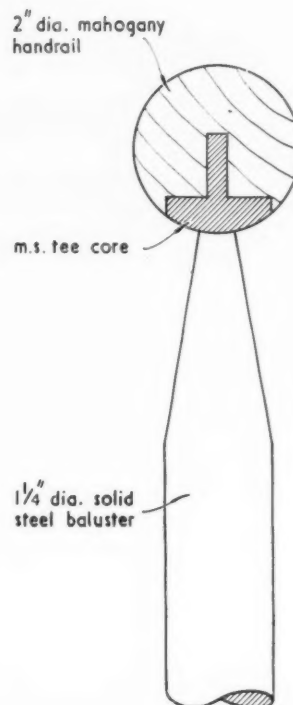


rod threaded and screwed into tapped hole in flange of r.s.j.

7/16" i/d tube 2 1/2" long with 2" dia. ring welded on



SECTION A-A, scale 1/2" = 1'-0"



DETAIL OF HANDRAIL, scale 1/2 full size



## WORKING DETAIL

ENTRANCE DOORS: OFFICES AT BRISTOL

*Leonard Manasseh and Partners, architects*

DOORS: 24



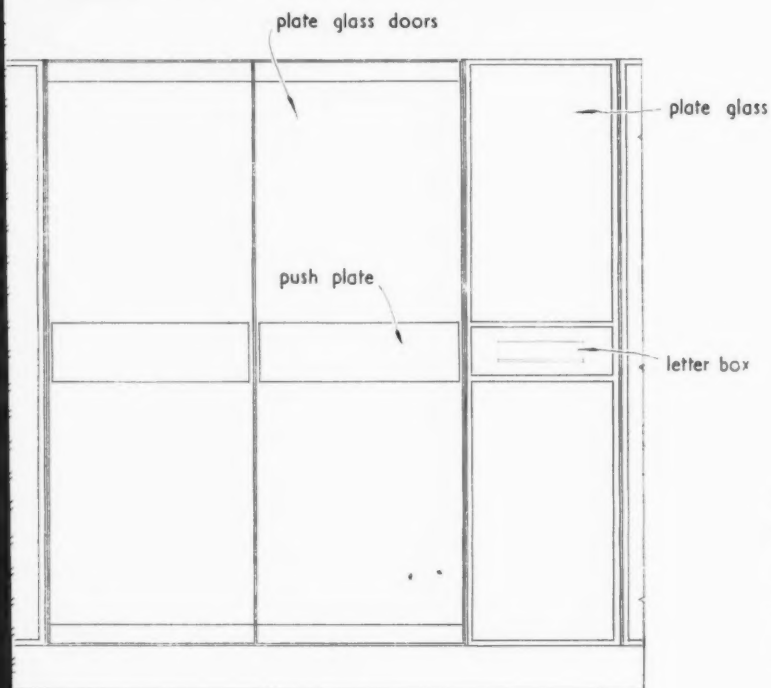
*The glazing to right and left of the doors is framed in standard metal framing painted black. This framing and the pivots which hold the head of each door are screwed to blocking pieces which in turn are scribed into and screwed to a 7 in. by 3½ in. m.s. channel forming part of the main structure. The letter-box plate, the name plates and the angle trim on the jambs are all of satin-finish aluminium, the top and bottom plates of the door are satin chrome on brass. The fixing of the name plates required special drillings in the glass.*

# WORKING DETAIL

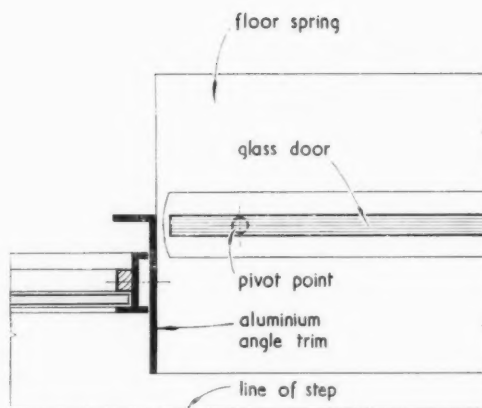
ENTRANCE DOORS: OFFICES AT BRISTOL

Leonard Manasseh and Partners, architects

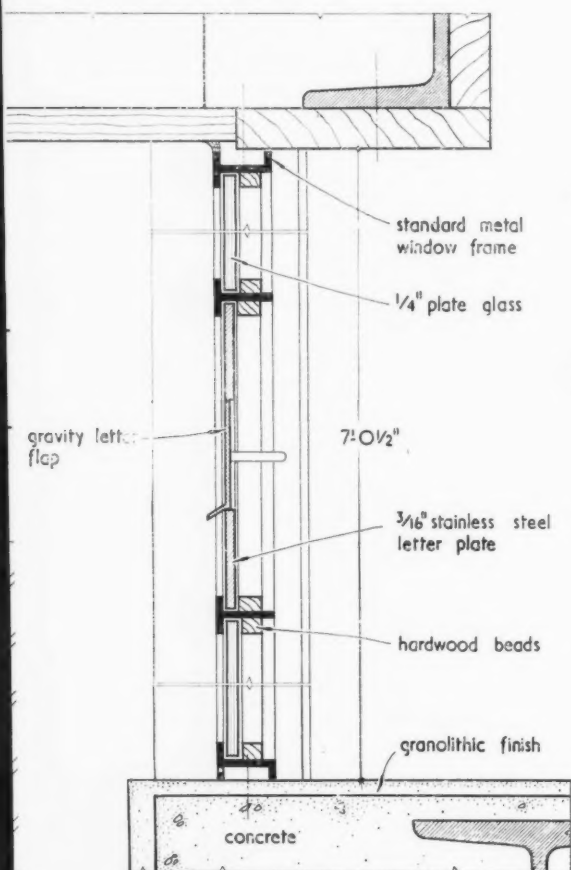
DOORS: 24



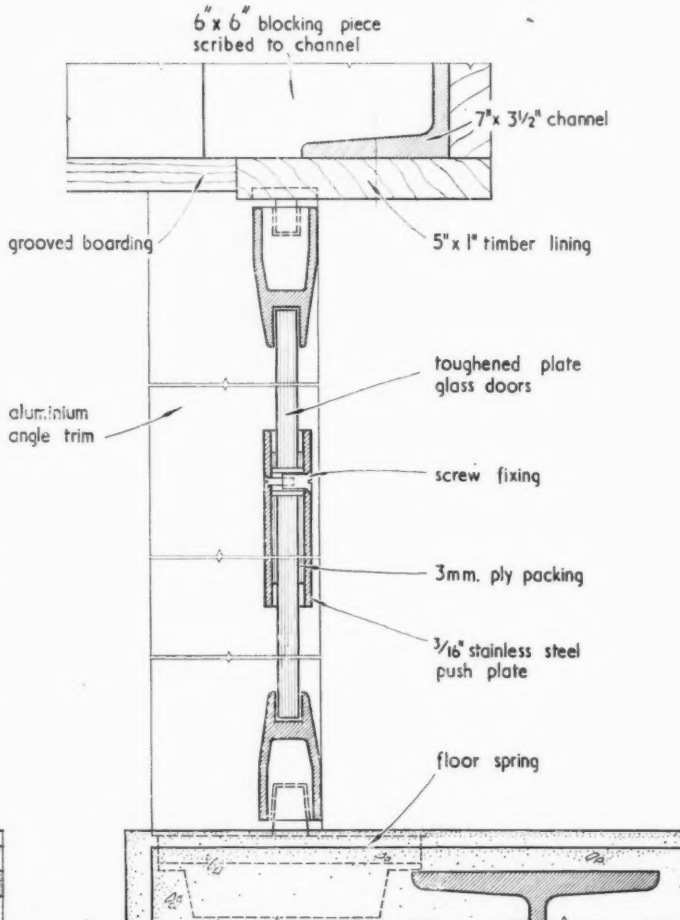
ELEVATION OF ENTRANCE scale  $\frac{1}{2}" = 1'-0"$



PLAN OF DOOR FRAME. scale  $\frac{1}{4}$  full size



SECTION OF SIDE PANEL. scale  $\frac{1}{4}$  full size



SECTION OF DOOR. scale  $\frac{1}{4}$  full size



**PAR**

*Interna*

40-in. h.  
non-str

9-in. b

*Screen*

Glazed

*W.C.*

As int

*Intern*

As int

*Ironm*

Lever

**FIN**

*Floor*

Ther

Gran

Quar

*Wall*

Sheet  
wall p

*Ceilin*

40-in  
soffit

*Deco*

Paint



## PARTITIONING

<i>Internal partitions</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	<i>s</i>	<i>d</i>
40-in. long structural and non-structural panels	Generally	Softwood framed, faced with hardboard	Painted	Structural panels are located at 20-ft. and 23-ft. 4-in. intervals to support ends of punt roof units		
9-in. by 4½-in. brick	Continuation of boiler house walls	Facing bricks	Plastered and painted on one side	Two walls of the boiler house are carried up to roof level and form the supports for the tanks on the roof		
<hr/>						
<i>Screens</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Glazed	Between toddlers' room and waiting hall	Georgian wired glass in pitch-pine framing and with hardboard panels below 2-ft. sill	Bottom panels painted	To allow for indirect supervision of toddlers room from waiting areas		
<b>internal partitions and screens</b>					<b>5</b>	<b>10·74</b>
<hr/>						
<i>W.C. doors and partitions</i>						
<i>As internal partitions</i>						
<hr/>						
<i>Internal doors and built-in cupboards doors</i>						
<i>As internal partitions</i>						
<b>w.c. doors and partitioning internal doors and built-in cupboard doors including sliding gear to three doors</b>					<b>2</b>	<b>11</b>

<i>Ironmongery to doors and windows</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Lever handles to doors	Throughout except entrance doors	Aluminium alloy purpose made bent plywood, pull handles	Satin			
<b>ironmongery to doors and windows</b>					<b>7</b>	<b>8·8</b>

## FINISHINGS

<i>Floor finishes</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Cost per sq. yd.</i>		
Thermoplastic tiles	Health centre	Laid on screed over waterproof membrane	Sanded and polished	20s. 0d.	Floors were chosen generally for low cost and ease of cleaning	
Granolithic wood block	Office Block			25s. 2d.		
Quarry tiles	Lavatories, cleaners rooms and outside entrances	Bedded direct on to floor slab		31s. 8d.		
<b>floor finishes</b>					<b>2</b>	<b>10·86</b>

<i>Wall finishes</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Sheet facing material is integral with the wall panels	Generally throughout	Hardboard	Painted			
<b>included in external and internal walls</b>						

<i>Ceiling finishes</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
40-in. square panels which form the soffits of the roof units and infillers	Throughout except for concrete roof to boiler house	Hardboard	Painted	50 per cent. of the panels are perforated hardboard, except in the toddlers' room where all panels are perforated to provide increased sound absorption		
<b>included in roof construction</b>						

<i>Decorations</i>	<i>Location</i>	<i>Paint types</i>	<i>Munsell or other ref.</i>	<i>Colour scheme and comments</i>		
Paint	Throughout internally and under windows externally	Eggshell finish pigmented lacquer; gloss finish ditto in lavatories and behind lavatory basins	2·5 GY 6·2 2·5 GY 8·6 2·5 GY 7/10 5·0 Y 6/2 5·0 Y 8/2 7·5 GY 9/4 10·0 R 5/14 7·5 R 3/12 N7, N8, and black and white	The aim was to produce a clean, cheerful appearance with stimulating colours only in a small number of selected positions. Colour were selected largely from the green/yellow range and have been used in conjunction with white in the consulting suites		
<b>decorations</b>					<b>1</b>	<b>2·03</b>

## FITTINGS

<i>Cupboards and shelving</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	<i>s</i>	<i>d</i>
Kitchen cupboards and toy cupboard	Tea servery and toddlers' play area	Hardwood framing, framed hardboard panels and doors	Polished hardwood, painted hardboard; plastic counter tops in tea rooms	The front wall of the tea servery is made up of cupboard units with a counter to the waiting hall		
<b>cupboards and shelving</b>					<b>0</b>	<b>5.86</b>
<i>Other fittings</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Curtain track	Behind ceiling fillet over most of windows and to changing cubicles					
<b>other fittings</b>					<b>0</b>	<b>2.99</b>

## SERVICES

<i>Plumbing: external</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Flashings	To rain water sumps, roof lights, tank casing, etc.					
<i>Rain water disposal</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Roof sumps draining to r.w.p.'s.	Internal r.w.p.'s., generally in stores and lavatories	Aluminium alloy box heads in depth of roof units and ditto single length r.w.p.'s.	Natural			
<b>plumbing: external</b>					<b>0</b>	<b>3.14</b>
<i>Plumbing internal: waste disposal</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Straight or trapped wastes connecting to trapped gulleys	Exposed waste to floor galleys generally internally located	Copper wastes	Painted	Prefabricated compression jointed waste unit used only to dental recovery bowls		
<i>Hot water storage</i>	<i>Location</i>	<i>Materials</i>	<i>Capacity</i>	<i>Reasons and comments</i>		
Direct cylinder	Boiler house	Galv. m.s.	100 gals.	Main h.w. feed not carried across to office block		
Gas-fired multi-point	Office block, over entry position of gas main		20 gals.			
Electric storage heater	Dental recovery		20 gals.			
<i>Cold water storage</i>	<i>Location</i>	<i>Materials</i>	<i>Capacity</i>	<i>Reasons and comments</i>		
Tank	On roof adjacent to chimney stack	Galv. m.s. painted internally with drinking water quality bitumastic solution	250 gals.			
<i>Plumbing: sanitary fittings</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>		
Sinks, lavatory basins, dental bowls, slop hopper, w.c.'s	As required by users	Fireclay generally. Aluminium alloy combined sink and drainer in tea servery and medical loan office		Fireclay drainers used for dental and minor ailment work for reasons of hygiene. Aluminium used for the same reason		
<b>plumbing: internal</b>					<b>2</b>	<b>5.22</b>
<i>Heating installation: heat exchanger type</i>	<i>Location</i>	<i>Criteria temp.</i>	<i>Air change type</i>	<i>Reasons and comments</i>		
Hospital type radiators	Located under windows in all rooms, except where described	65	2 per hr.	Convenient and economic method of heating small rooms		
Heater cabinets providing forced warm air by a thermostatically controlled fan	Two in waiting area	60	2 per hr.	Suited to larger area required for evening functions when consulting rooms not in use		
Radiant heating panels	Child guidance rooms above boiler house	65	2 per hr.	Experimental in connection with modular wall panels		
<i>Boiler type and capacity</i>	<i>Location</i>	<i>Heat load and fuel type</i>	<i>Stoking method</i>			
Sectional c.i. boiler	Basement boiler house	300,000 BTU per hr. Coke	Manual			

<i>Water heater type</i>	<i>Location</i>	<i>Fuel method</i>	<i>Stoking method</i>	<i>s</i>	<i>d</i>
Domestic type boiler	Basement boiler house	Coke	Manual		
heating installation				5	6·01
<i>Drainage: type of system</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Separate systems to separate sewers					
<i>Drain types</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Soil drains	Under floor slab to connect to external runs	S.g.sw. encased in concrete under building		Internal gulleys and w.c.'s have rodding access and internal manholes are double seal	
Surface water					
				drainage	1 8·82
<i>Gas installation</i>	<i>Location</i>	<i>Materials</i>	<i>Finish</i>	<i>Reasons and comments</i>	
Testing equipment	In external trench and in floor screed to tests cubicle				
				gas installation	0 2·19
<i>Electric installation: source and fitting type</i>	<i>Location</i>	<i>Illumination level</i>	<i>Quality</i>	<i>Reasons and comments</i>	
Tungsten (a) general dispersive with opal glassware and pierced metal reflector or louvre	Waiting and consulting rooms, offices, ophthalmics, dental corridors	7-10 ft. candles	As required by users	Low surface brightness and good cut-off angles	
Batten lamp holders with reflector	Stores, toilets, etc.	6-ft. candles		Suitable for low wattage lamps.	
Prismatic bulkhead	Boiler house and pram shelter	2-ft. candles		Directional and weatherproof	
Fluorescent twin 4 ft., with diffusing louvre	Over dental chair	50-ft. candles		High intensity without glare	
<i>Wiring and switching types</i>	<i>Location</i>	<i>Materials</i>	<i>Reasons and comments</i>		
Mains wiring	In service ducts	Paper insulated, lead covered single wire armoured and cable	Withstand high ambient temperature and possible rough usage		
Circuit wiring	In roof space and conduit built into wall panels	Polythene, insulated p.v.c. sheathed cable	Ease of running and part installation at factory		
Main switching	Store in office block, medical loan store and boiler house	Ironclad switch fuses with h.r.c. fuses, 500v. rating			
Circuit switches	Microgap a.c. with bakelite plates. A.C. in weatherproof cases	Office block and health centre. Boiler house			
<i>Power supply type</i>	<i>Location</i>	<i>How distributed</i>	<i>Reasons and comments</i>		
415/240 volt a.c., 3 phase, 50 cycle		Sections of building balanced on different phases. 3-phase to boiler house for motive power	Efficiency with low maintenance		
				electrical installation	1 11·68
<i>Paved areas</i>	<i>Location</i>	<i>Materials</i>	<i>Reasons and comments</i>		
Infilling	Adjacent to main entrance	Cobble stones set in screed on concrete bed	Contrast in texture with concrete paths in position		
				paved areas	0 10·63
total net cost per sq. ft. of floor				63	7
This net cost excludes external works and drains beyond last manhole					

## THERMAL INSULATION

<i>Type</i>	<i>Location</i>	<i>U-value</i>	<i>Reasons and comments</i>
Bitumen bonded glass wool	All roof units and cedar board external wall panels	0·23	
Eggcrate insulation board on either side of insulation board core	External panels except as described above	0·20	

## SPECIAL ACOUSTICAL TREATMENT

Sound absorption material	Location	Absorption coefficient	Reasons and comments
Perforated hardboard	50% of ceiling panels in each room and 100% in Toddlers' play area		

Sound insulation	Location	Insulation standard	Reasons and comments
Insulation board eggcrates on either side of central core	All internal panels and in selected positions in roof space	45 decibels	Insulation board diaphragm introduced in depth of roof units where consulting room walls run at right angles to roof units to prevent possibility of sound leakage over in this condition

## TIME SCHEDULE

Tender date	Contract signed	Work commenced	Work completed	Type of contract	Comments
23.3.54	May, 1954, and June, 1954	June, 1954	March, 1955 (office block occupied December, 1954)	Lump sum	Contracts were let for (a) all separate work below ground level and all site works; (b) superstructure, installations and finishes

## RATIOS

Area of enclosing walls	28	Area of windows (including external doors)	71
Total floor area	37	Total floor area	203
Area of solid wall	132	Total roof area	505
Total floor area	203	Total floor area	566

## COST ANALYSIS

Total ground floor area of superstructure	6213 sq. ft.	Tender cost of foundations and basement	£3392 15s. 3d.
Total floor area (excluding basement)	6213 sq. ft.	Tender cost of external work	£1075 17s. 8d.
Total floor area of basement	288 sq. ft.	Gross total cost	£21, 743 os. od
Storey heights of basement	9 ft. 0 in.		
Total depth of basement below ground level	8 ft. 4 in.	Gross cost per foot super of floor	£3 6s. 11d.
Tender date	March 23, 1954	Area including basement	6501 sq. ft.
Tender cost of superstructure, installation and finishings	£17,274 7s. 1d.	Gross cost per foot cube, including basement	5s. 11d.

## COST COMMENTS

Unless one is familiar with the "Punt" system of construction this analysis may appear a little strange at first sight and should be treated with a certain amount of caution. The cost of the frame is shown as 8½d.; but as the constructional notes show, a "frame" in the usual sense is used only in the waiting hall and pram shelter. Over the remainder of the building the ends of the roof "punts" are carried on load-bearing prefabricated wall panels. The elements "external walls" and "internal partitions" include therefore a proportion of cost normally attributable to the "frame" element. Note, too, that the external and internal wall elements also carry their own internal wall finishes—an integral sheet facing of hardboard. Ceiling finishes, normally shown as a separate element,

are included with the roof element as these also are an integral part of the punt system of construction. In order to compare the punt system, therefore, with any other form of prefabricated construction, all of the structural elements must be taken into account, i.e., external walls, frame, roof including rooflights, windows and external doors, glazing internal partitions and internal doors, amounting to 33s. 3½d. per foot super of floor area.

It will be interesting to compare this with a more traditionally constructed health centre, and to assist in this possible comparison the architect has included several ratios which may be required when making comparisons of individual elements of buildings with differing plan shapes and storey heights.

One might have expected the costs in this analysis to reflect the speed of erection which is possible with this prefabricated form of "dry" construction, until perhaps one realises the relatively small amounts of factory produced units needed to construct a building of this size. A final comment on looking at the analysis relates to the cost of 6s. 6d. per foot super of floor area for the foundations. This looks rather expensive considering the relatively light superstructure to be carried. It is no doubt due to a combination of circumstances resulting from building on made up ground, the inclusion in this element of a tanked boiler house, and the fact that the foundations were constructed under a separate contract from the superstructure.

## CONTRACTORS

Architects: C. H. Aslin, C.B.E., P.R.I.B.A., County Architect, Patricia A. Townsend, B.Arch (Wales), A.R.I.B.A. Consultants: structural: Ove Arup & Partners; electrical: T. Bottomley, County Architects' Department. Quantity surveyor: E. F. Martin, County Architects' Department. The "Punt" system of roof units and wall panels was designed by Ove Arup & Partners, in conjunction with the County Architects'

Department and C.D. Productions Ltd. Clerk of Works: F. L. Green. General contractors for site slab, site works, boiler house and drainage: Crook Bros. Ltd., for superstructure, installations and finishes: C. D. Productions Ltd. Sub-contractors: Roofing felt: Permanite Ltd. Glass: James Clark & Eaton Ltd. Thermo-plastic flooring: Hollis Bros. Composition block flooring: Granwood Flooring Co. Ltd. Water-

proofing material: Tretol Ltd. Central heating, hot water and boilers: Weatherfoil Heating Systems Ltd. Electric light fixtures: Falk Stadelman & Co., Hume Atkins & Co. Ltd., Nettle Accessories Ltd. Coaspegs: A. J. Binns Ltd. Slate sills: Bow Slate & Enamel Co. Ltd. Paint: Joseph Freeman, Sons & Co. Ltd.



## TECHNICAL SECTION

The new British Standard colour range\* which is just out has taken a long time to appear, but it was worth waiting for. It is now nearly four years since the Paint Industry Colour Range Committee approached the RIBA for help in deciding a range of 50 to 60 colours for use by government departments, and since the RIBA rising to the occasion persuaded all concerned to develop the range for the benefit of all users and to publish it as a British Standard. The "101 colours" as they are commonly called (for they have now been in use by government departments for a year and more) owe much to MOE'S Archrome range, published in 1953. For though their original purpose was to help the paint industry with the problem of stocking, they are chiefly notable for the fact that, like those of the Archrome Range, they set out to help the architect to make a good use of colour. This realised, it is important to notice what the new Standard does not attempt to do: it does not define the colours in the sense of laying down what departures from them would be permissible, it is concerned only with the colours of *paints*, not with the colours of such building elements as tiles and plastic sheets; and though it states in what finishes the colours can be reliably manufactured, it does not specify paint quality. The architect is still badly at a loss in each of these respects. It is to be hoped that the new Standard will receive such a rousing welcome from the profession that the sponsors will be encouraged to put right these other outstanding deficiencies.

\* BS. 2660: 1955, Colours for Building and Decorative Paints. BSI, 7s. 6d.

### THE INDUSTRY

*From the Industry this week Brian Grant reports a daylight factor meter, the Garchey refuse disposal system, a range of proofed plywood, a range of hand-painted tiles, a prefabrication system and a water heater installation.*

#### MEASURING DAYLIGHT FACTOR

The Ministry of Education now demands a minimum daylight factor of 2 per cent. for all classrooms, and the BRS has designed a small portable daylight factor meter which is now in production and on sale. The meter consists of a small photo-electric cell connected to a sensitive micro-ammeter, the cell being protected by a hinged louvred mask which restricts the illumination to the desired zone of sky when readings are being taken out of doors. The meter is quite simple to use, the first step being to place it horizontally at an open window so that the photo cell, covered by the mask, has an unobstructed view of the sky. The pointer of the ammeter is then adjusted by means

of a variable resistance to a datum mark on the scale and the instrument is then standardized at the prevailing sky brightness and no further adjustment is necessary. The meter is then taken to the point within the building where the daylight factor is to be measured and the louvred mask is swung back; the daylight factor is then read directly from the meter scale. The scale has been calibrated to read between 0 per cent. and 5 per cent. daylight factor and gives adequate accuracy for practical purposes with skies of normal brightness. Other scale ranges are provided for conditions where higher daylight factors may be expected and also to enable reading to be able to be made with skies whose brightness is less than normal. The price of the meter is £18 7s. 6d. complete in leather carrying case. (Evans Electroelenium Ltd., Harlow, Essex.)

#### REFUSE DISPOSAL

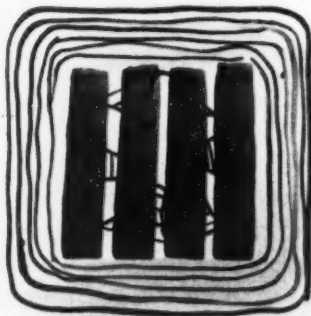
Most readers of this journal will already have heard often enough of the Garchey system of refuse disposal, which was first used on a large scale in a series of flat blocks at Drancy, near Paris. The first installation in this country dates from 1938, when Mr. Livett used it in his Leeds blocks at Quarry Hill. Since the war there have been further installations in Birmingham, Newcastle and London, and the sole patent rights for the system, both in this country

and abroad, have now been taken over by the Matthew Hall group of companies, who have also produced several further associated patents. The system deals with all normal household refuse, including tins and bottles, and the refuse receiver can be installed either as an integral part of the sink unit or as a separate unit near the sink, which would discharge by a normal trapped waste into the refuse receiver. Refuse, after being discharged from the receiver by the sink waste water, passes into a vertical cast-iron stack pipe and to a sealed collection chamber, which is preferably common to several stacks. From the collection chamber surplus waste water flows away through an overflow pipe to the nearest drain and the refuse is emptied at regular intervals by suction, after which it is dried in a centrifugal water extractor and then incinerated, the heat produced in a large scheme enabling a saving to be made in the fuel consumption of the heating plant.

The first cost of the Garchey system is naturally higher than for individual dustbins or vertical rubbish chutes, but savings can be made on a two-pipe plumbing system if the Garchey stacks receive wastes from baths and basins and rainwater from the roofs. The working of the system is clearly set out in a booklet recently published by the Matthew Hall Group of Companies, Dorset Square, London, N.W.1.



Above: the portable daylight factor meter, designed by the BRS for Evans Electroelenium. Below, one of the range of hand-painted tiles produced by the Queen Elizabeth Training College for the Disabled.



#### PROOFED PLYWOOD

A range of plywoods impervious to fungi, wood-boring insects and also to marine borers, is now being marketed under the name of Thames Celply. Each lamination of the plywood is treated with a mixture of copper sulphates and chromates before

being glued and bonded together, with the result that all the wood fibres are immune from attack and the finished plywood can be cut and shaped without losing its resistant qualities, the raw edges being as strongly repellent to termite and fungus growth as the surface. This plywood was originally produced to a Ministry of Supply specification for War Office pontoons for use in extreme tropical and arctic climates, and it also satisfies the weather-resistance and boil-proof tests of British Standard 1203. The plywood is supplied in thicknesses from  $\frac{7}{8}$  in. to 2 in. and in sizes up to 9 ft. x 30 ft. (Thames Plywood Ltd., Barking, Essex.)

#### DECORATIVE TILES

Because of the high cost of plant, tile production in England is restricted to about six major concerns. However, by purchasing unglazed white biscuit tiles from any of the larger manufacturers it is possible to paint and refire them as is the practice of the pottery section of Queen Elizabeth's Training College for the Disabled. As a result a range of thirty 6 in. x 6 in. hand-painted decorated tiles are on sale at 5s. 6d. each and the College will undertake to reproduce architects' designs at no extra cost, provided the main elements remain fairly simple and colours are within the pallet range of the pottery. These tiles are very resistant to heat but are intended for internal wall use only: it is hoped in the future to extend production to external tiles. (Queen Elizabeth's Training College for the Disabled, Leatherhead Court, Surrey.)

#### PREFABRICATION SYSTEMS

In the Seco system of prefabrication, all components are factory made, so that the only wet operation necessary is the provision of foundations and site concrete. The latest system of construction is the Mark

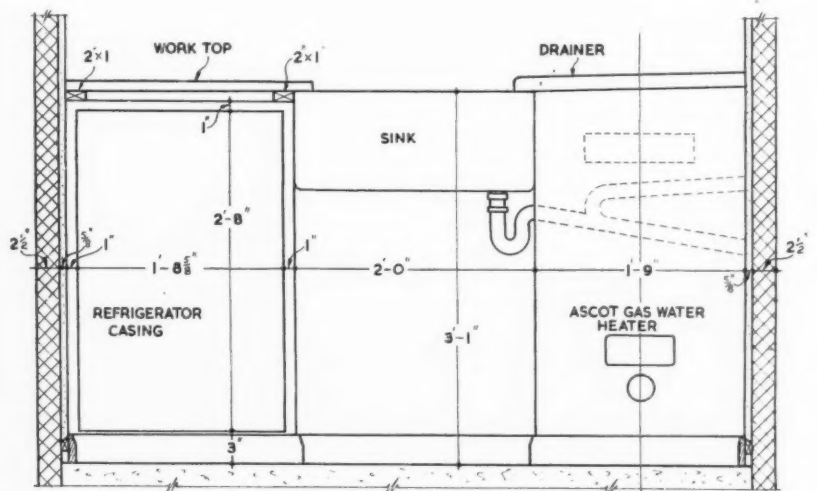
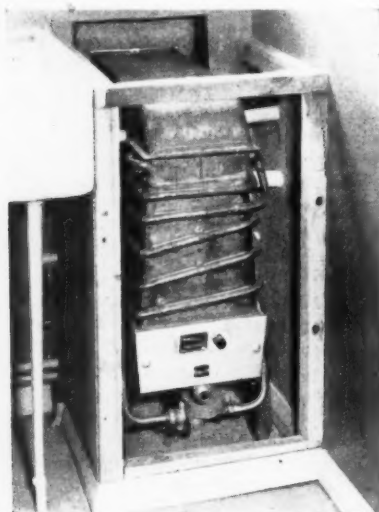
VIII version, which continues to make use of the standard wall and roof panels made of a timber frame faced on both sides with asbestos cement and with a wood-wool core. The panels are made in two thicknesses, 3 in. and 1½ in., having "U" values of 0.13 and 0.29

The system is based on a planning grid of 3 ft. 4 in. and in the simplest form of construction the walls and partitions carry the weight of the roof, spans up to 13 ft. 4 in. being possible. Where larger spans and heights are required, resin-bonded plywood beams and columns are centred on intersections of grid lines, the external walls being placed outside the grid at a distance of 3 in. The maximum span of the plywood beams is 26 ft. 8 in. at a maximum spacing of 13 ft. 4 in. Both single- and multi-storey steel framed construction systems are also employed, still based on a grid of 3 ft. 4 in., but with the external walls placed 3 in. outside the grid. (Seco Ltd., 11, Upper Brook Street, Park Lane, London, W.1.)

#### WATER HEATER INSTALLATIONS

A minor difficulty in the installation of Ascot balanced flue-gas water heaters is that in the small kitchen there is not always enough external wall area owing to the size of the window. Ascot's have now evolved a method of installing this type of heater underneath the draining board, the projection of the heater being only 17½ in. from the inner face of the normal 11-in. cavity wall. As can be seen from the illustration, the whole installation can be made very neat, the body of the heater being hidden behind a non-combustible panel made of a material such as Speaker's D type wallboard, only the gas control cock and the pilot lighting port being visible. Detailed installation drawings are available from the manufacturers. (Ascot Gas Water Heaters Ltd., 255, North Circular Road, London, N.W.10.)

Below left: the Ascot gas water heater installed, with the covering panel removed. The drawing below shows how the heater fits into the complete kitchen unit.

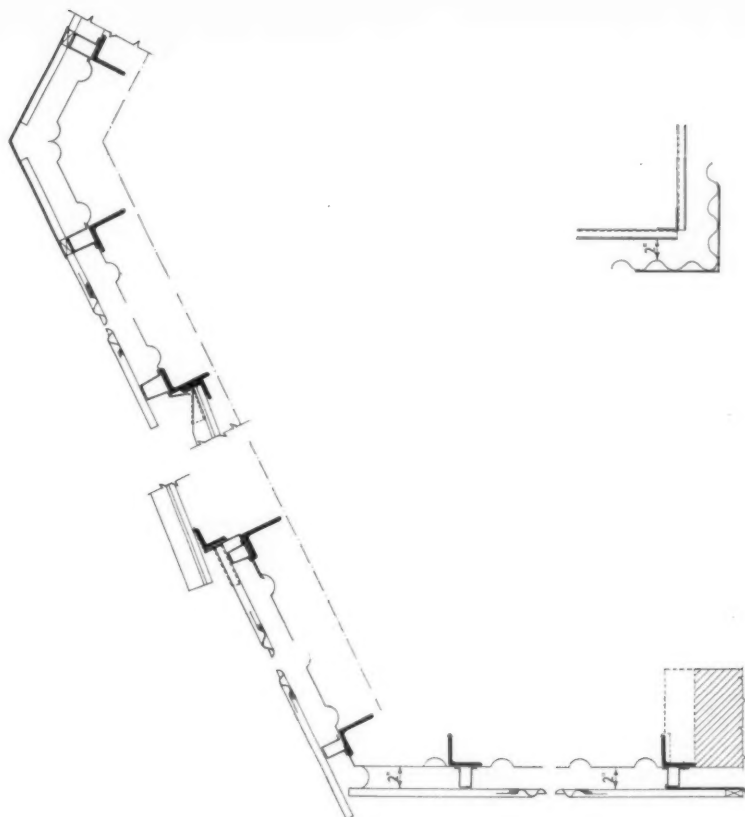
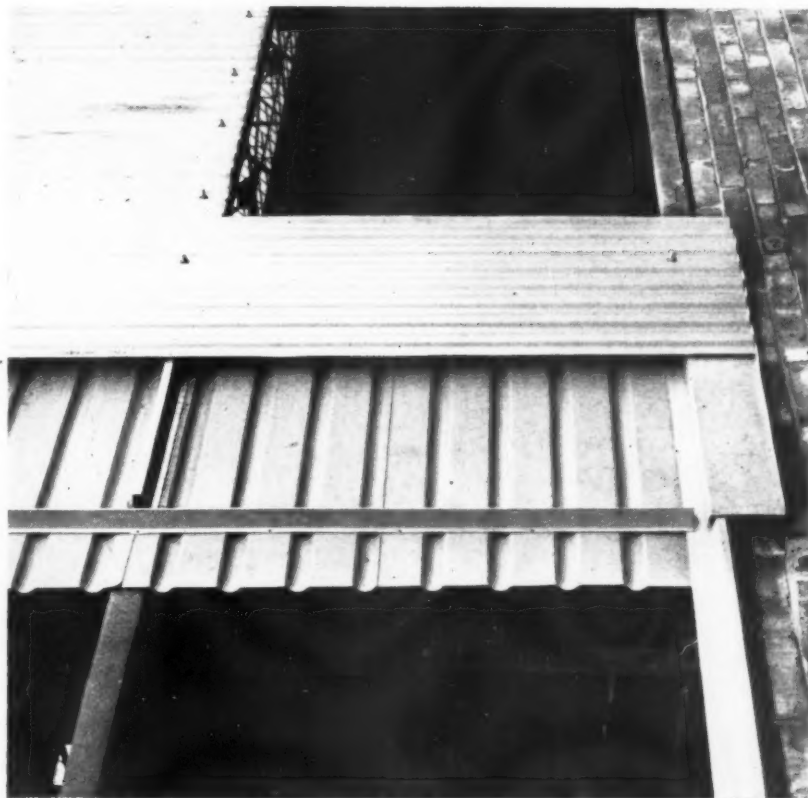


## THE DIALINDRE SYSTEM: DOUBLE SKIN ALUMINIUM CLADDING ON A FACTORY AT WARRINGTON

The British Aluminium Company has recently put into operation two new extrusion presses of 3,500 and 5,000 tons capacity in a new factory at Latchford Locks, near Warrington. The building is a straightforward steel-framed structure, but makes use of an interesting form of double skin aluminium cladding, evolved by Messrs. Freeman Morrison Ltd., and known as the Dialindre system. In this instance the outer skin is 3 in. pitch corrugated sheet of 20 s.w.g. with the corrugations

running vertically, the inner skin being 24 s.w.g. Mansard sheeting with the corrugations horizontal. The two skins are separated by folded aluminium distance pieces to give a 2-in. air space; the "U" value of this form of construction is about 0.27. The spacers are riveted to the inner skin and the external sheet is fixed with hook bolts. In this building it has been used for the vertical cladding of the main factory, and also for the walls and roof of the tool room. The inner

skin of the cladding has been given a chemical dip and is a greenish-grey colour. Another interesting development is the use of aluminium cored/aluminium sheathed cables which show a cost saving over the more usual copper/lead, varying from 6 per cent. in the smaller power sizes to as much as 45 per cent. in the larger paper-insulated sizes for burying direct in the ground.



Typical section [Scale: 1/4" = 1' 0"]

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

## ENQUIRY FORM

I am interested in the following advertisements appearing in this issue of "The Architects' Journal." (BLOCK LETTERS, and list in alphabetical order of manufacturers names please.)

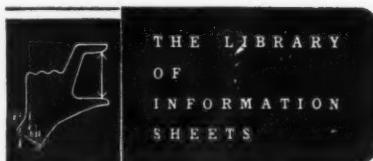
.....

Please ask manufacturers to send further particulars to:—

NAME .....  
PROFESSION or TRADE.....

ADDRESS.....

22.56



## REFERENCE BACK

15.B1, 15.C1-4, 22.D1-5, 27.F1, 28.D1, 28.E10—Readers are asked to note that the word "Lloyd" should be deleted from these Sheets wherever it occurs and replaced by "Bowater."

22.D1-5—The systems described on these Sheets are now known as Bowater System of Board Fixing B.T.1, B.T.4, B.T.3, B.P.1 and B.T.2 respectively.

The manufacturer is now "Building Boards Division, Bowater Sales Company Limited" and the telephone number Mayfair 8080.

## Announcements

### PROFESSIONAL

David Baker, A.R.I.C.S., and Donald Wilkins, A.R.I.C.S., Chartered Quantity Surveyors, have commenced practice at 143, Cannon Street, E.C.4. (Tel.: MANSion House 5500.)

James A. Roberts, A.R.I.B.A., has moved to new offices in Channele House, 86, New Street, Birmingham, 2. (Tel.: Midland 4315-6.)

### TRADE

The Adamite Co. Ltd. has moved to 94-98, Petty France, S.W.1. (Tel.: ABBey 5911-5; Telegrams: Excellence, Sowest, London.)

H. S. Oddie, F.I.O.B., has been elected to the Board of the Leyland Construction Co. Ltd., and will shortly assume the office of Managing Director. R. Mitchell, Chartered Accountant, has also been elected to the Board.

W. H. Heywood & Co. Ltd., Patent Glazing and Roofing Engineers, Bayhall Works, Huddersfield, Yorkshire, have appointed C. Crossan as Area Representative for Gloucestershire, Somerset and South Wales. His office address is "Cornwall House," The Promenade, Clifton. (Tel.: Bristol 38649.)

Further supplies of the four "Information for the Handyman" leaflets published by FIDOR have been printed. Sets are now available on request from the FIDOR offices, 47, Princes Gate, S.W.7. The titles are: "New Doors for Old," "Brighten up Your Kitchen," "Modernize Your Bathroom," and "Some External Uses of Fibreboard." "Types and Applications of Board and Fibreboard for Flooring" and "Carpet Underlays" will also be available shortly. FIDOR also publishes a standard handbook entitled "Fibre Building Boards," dealing with most aspects of the material, including methods of fixing, joint treatments, etc. It contains an appendix of tables and concentrated information. Price 5s. 6d. post free.

S. Barlow, manager of the Bridge & Constructional Works of Dorman Long (Bridge & Engineering) Ltd. at Middlesbrough, has been appointed General Manager of the structural activities of that company, comprising Sales, Britannia Constructional Works, London (Nine Elms) Constructional Works, Erection and Stockyard Departments. E. Ibbotson, who is Chief Structural Engineer at Britannia Constructional Works, has been appointed Manager of these works.

# The Perfect Combination . . .

The best is often achieved only by a combination of two things. Such is the case with NACOFELT roofing where good material and skilled laying go hand in hand—where every curve, every angle and every detail is built-up as one unbroken surface by Neuchatel craftsmen.

The proof of this perfect combination is to be seen on buildings all over the country.

FOR FELT ROOFING—SPECIFY



**SPECIALISTS FOR 80 YEARS IN ASPHALTE**  
for Tanking, Flooring, Roofing and Roads, and Approved Laying Contractors for Accotile Flooring.

## THE NEUCHATEL ASPHALTE COMPANY LIMITED

58 VICTORIA STREET, LONDON, S.W.1. Telephone No. of Contracting Department RENown 1321  
BRANCHES: BELFAST • BIRMINGHAM • CARDIFF • EDINBURGH • FROME • GLASGOW  
LEEDS • MANCHESTER • NEWCASTLE • OFFHAM (KENT) • PLYMOUTH • PORTSMOUTH





## CLASSIFIED ADVERTISEMENTS

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

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

## Public and Official Announcements

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

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

CORPORATION OF LONDON  
CITY SURVEYOR'S DEPARTMENT

require  
ASSISTANT, R.I.B.A. or R.I.C.S. (Building), Intermediate Standard. Good draughtsmanship essential with sound knowledge of general construction and specification writing, including repairs, alterations and maintenance of existing buildings. Salary £599-£728 according to qualifications and ability. Applications, in writing to City Surveyor, 55/61 Moorgate, E.C.2. 9144

BOROUGH OF NUNEATON  
ARCHITECTURAL ASSISTANT

Applications for this post are invited from suitably qualified persons, not later than 11th February, 1956. Salary A.P.T. Grade IV, £710-£885. Housing accommodation may be provided. Particulars of the appointment can be obtained from me.

T. OLDROYD,  
Town Clerk.

The Council House,  
Nuneaton. 9139

RURAL DISTRICT COUNCIL OF  
PONTARDAWNE  
APPOINTMENT OF SENIOR HOUSING  
ASSISTANT

Applications are invited for the above appointment in the Engineer and Surveyor's Department at a salary in accordance with the N.J.C. Special Grade (£690-£840 per annum).

Applicants should be Registered Architects and have had experience in Local Authority housing including the preparation of plans, supervision of Contracts in progress and the preparation of Final Accounts.

The appointment is subject to the Local Government Superannuation Acts and the successful candidate will be required to pass a medical examination. Housing accommodation will be provided if required.

Applications, stating age, experience, and qualifications, together with names of three persons to whom reference may be made, must reach the undersigned not later than Tuesday, 21st February, 1956.

D. G. MEREDITH,  
Clerk to the Council.

Council Offices,  
Pontardawe, Glam. 9143  
19th January, 1956.

METROPOLITAN BOROUGH OF  
BERMONDSEY  
BOROUGH ENGINEER AND SURVEYOR'S  
DEPARTMENT

Applications are invited from persons under the age of 45 years on the date of appointment, for the permanent appointment of ARCHITECTURAL ASSISTANT, A.P.T. Grade II, £595 to £675 (plus London weighting up to £50 per annum). Candidates should have passed the Intermediate Examination of the R.I.B.A. and have had previous experience in an Architect's office. Experience on Housing Schemes would be an advantage.

The appointment is subject to the National Scheme of Conditions of Service, as from time to time amended and as adopted by the Council. The successful candidate will be required to contribute to a superannuation fund.

Applications, stating age, present salary, present and previous appointments, details of training and experience, together with the names of two referees, should be submitted to the undersigned not later than Friday, 10th February, 1956. Envelopes should be endorsed "Architectural Assistant." Canvassing will disqualify and applicants must state whether they are related to any member or senior officer of the Council.

S. E. FREEMAN,  
Town Clerk.

Municipal Offices,  
Spa Road, 9155  
Bermondsey, S.E.16.

CENTRAL ELECTRICITY AUTHORITY  
SOUTH EASTERN DIVISION

Positions are available for ambitious ENGINEERS in the Electricity Supply Industry, which offers good opportunities of promotion on the generation side mechanical, electrical, civil and chemical engineering. If you are interested, send to the Personnel Officer, Central Electricity House, Lower Ham Road, Kingston-on-Thames, for a brochure giving details of terms, conditions and careers for junior and senior positions. Please quote (T.A.). Vacancies at present offer salaries ranging from £500-£1,215 max. per annum, dependent upon position. 9161

## LEEDS REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of two ARCHITECTURAL ASSISTANTS (one permanent, one temporary). Salary £480-£20 (7) x £25 (2)-£670 per annum.

Applicants must have passed Intermediate examination of the R.I.B.A. Commencing salary dependent upon applicant's age and amount of experience since passing Intermediate examination but will not exceed £560 per annum. Applicant must have had a sound Architectural training and some practical experience in a practising Architect's office is essential.

Applications, giving all relevant particulars, including age, experience, war service, if any, and the names of two referees, should be forwarded to the Secretary, Park Parade, Harrogate, within 14 days. 9175

BOROUGH OF SOLIHULL  
ASSISTANT ARCHITECTS, A.P.T. Grade IV  
(£710-£885)

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

Solihull has a population of 75,000, which is to increase to 110,000 over the next few years, and the appointments are primarily in connection with the large programme of schools and capital work schemes including libraries, crematorium, corporation depot, etc., which are in hand as a result of the rapid expansion of the Borough.

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

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

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

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

Applications, giving the names of two referees, must be sent to Mr. C. R. Hutchinson, B.Sc., A.M.I.C.E., Borough Engineer & Surveyor, 90 Station Road, Solihull, not later than 17th February, 1956.

W. MAURICE MELL,  
Town Clerk.

11th January, 1956. 9174

EAST SUFFOLK COUNTY COUNCIL  
ASSISTANT ARCHITECT

Applications are invited in connection with this vacancy on A.P.T. IV (£710-£885), starting salary according to qualifications and experience.

Applicants must be Associate Members of the R.I.B.A., and have good general experience in the design and construction of modern school buildings, with experience in specification writing, surveying and levelling.

The appointment will be subject to one month's notice on either side and to the provisions of the Superannuation Acts; the selected candidate will be required to pass a medical examination.

Applications, stating age, qualifications, present employment and experience, together with copies of two recent testimonials, must be delivered to the County Architect, Mr. E. J. Symcox, F.R.I.B.A., County Hall, Ipswich, not later than Friday, 10th February, 1956.

Canvassing will disqualify 9171

CITY OF ROCHESTER  
ARCHITECTURAL STAFF

Applications are invited for the following appointments in the Surveyor's Department:

- CHIEF ARCHITECTURAL ASSISTANT, A.P.T. V (£795-£970).
- SENIOR ARCHITECTURAL ASSISTANT, A.P.T. IV (£710-£885).
- ARCHITECTURAL ASSISTANT, A.P.T. III (£640-£765).

(a) is the Senior position in the Architectural Section. Candidates should be Associates of the Royal Institute of British Architects, and administrative ability is essential in addition to a good general experience, particularly in the preparation of drawings and specifications for municipal housing, including shops and flats.

Candidates for positions (b) and (c) should have general experience, including the preparation of drawings and specifications for municipal housing schemes. Preference will be given to candidates who are Registered Architects.

For all positions the commencing salary will be according to qualifications and experience.

There is a varied programme of work, including the redevelopment of clearance areas, and the development of a large area added to the City.

In appropriate cases the City Council will provide the successful candidate with suitable housing accommodation, and will be prepared to refund removal expenses after twelve months' service.

The appointments will be subject to the National Scheme of Conditions of Service, the Local Government Superannuation Acts, and a satisfactory medical examination; one month's notice on either side.

Applications, stating age, qualifications and experience, together with the names and addresses of three persons to whom reference may be made, should be delivered to the City Surveyor, 66 Maidstone Road, Rochester, not later than Thursday, 16th February, 1956.

PHILIP H. BARTLETT,  
Town Clerk.

Guildhall,  
Rochester. 9132  
19th January, 1956.

COUNTY BOROUGH OF NORTHAMPTON  
Borough Architect and Town Planning Officer's  
Department:—

- SENIOR TOWN PLANNING ASSISTANT, A.P.T. V (£795-£970).
- TOWN PLANNING ASSISTANT, A.P.T. II (£595-£675).
- TWO ASSISTANT ARCHITECTS (Special Grade, £690-£840).
- TEMPORARY ARCHITECTURAL ASSISTANT, A.P.T. II (£595-£675).
- DRAUGHTSMAN, A.P.T. I (£530-£610).

Full details and application forms, returnable by 15th February, from Borough Architect and Town Planning Officer, Guildhall, Northampton. C. E. VIVIAN ROWE, Town Clerk. 9172

METROPOLITAN WATER BOARD  
APPOINTMENT OF ASSISTANT ARCHITECTS

There are two vacancies for ASSISTANT ARCHITECTS for appointment to the permanent pensionable staff of the Surveyor's Department. One appointment will be at a commencing salary of £97 15s. 0d. p.a. rising to £1,053 15s. 0d. p.a., and one at £921 15s. 0d. p.a., rising to £987 15s. 0d. p.a. It is a condition of the appointment to and the holding of these positions that the selected candidates must be and continue to be subscribing corporate members of the Royal Institute of British Architects. Applicants should have had experience in the design, preparation of plans and working drawings and specifications for the erection of houses and offices.

Forms of application may be obtained from the undersigned on receipt of a stamped addressed foolscap envelope quoting reference (G.P.S.), and completed forms must arrive not later than 20th February, 1956.

S. D. ASKEW,  
Clerk of the Board.

Offices of the Board,  
New River Head,  
Rosebery Avenue, E.C.1. 9142

## LANCASHIRE COUNTY COUNCIL

Applications are invited for the following vacancies at Liverpool:—

PLANNING ASSISTANT within £690 to £885 dependent on qualifications and experience. Applicants should possess a qualification in Architecture, Surveying, Engineering or Town Planning; planning experience desirable but not essential.

ADMINISTRATIVE ASSISTANT, A.P.T. Grade I (£530-£610). Candidates should have previous Local Government experience and be appropriately qualified.

Applications, stating appointment applied for, age, qualifications, present appointment, experience, etc., and two referees, to the County Planning Officer, East Cliff County Offices, Preston, by 8th February, 1956. 9133

THE LONDON HOSPITAL, Whitechapel, E.1, requires JUNIOR ARCHITECTURAL ASSISTANT, salary £440 to £650 p.a. according to experience, plus London weighting. Post superannuable. Applications, stating age, present salary and brief particulars of experience, to be sent to the House Governor. Accommodation is available in Kensington if successful candidate is a woman. 9156

CITY OF BIRMINGHAM  
CITY ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of ASSISTANT PRINCIPAL ARCHITECT in the Housing Design Section, which is responsible for a large housing programme for suburban and central redevelopment areas, including multi-storey flats of both traditional and new-traditional construction, garages and large shopping centres. The appointment will be within Grade A.P.T. VII (£975-£1,200 per annum), at a commencing salary according to experience.

Applicants must be Associate Members of the R.I.B.A., or hold an equivalent qualification, and should have an extensive knowledge and experience of design, administration, and organisation of housing schemes.

The post is permanent, subject to a medical examination, to one month's notice on either side, and to the provisions of the Local Government Superannuation Acts, 1937/53, and the Birmingham Municipal Officers' Widows' and Orphans' Pensions Scheme.

Applications, endorsed with the heading of the post, stating age, present position and salary, qualifications and experience, together with the names of two persons to whom reference can be made, should reach the undersigned not later than fourteen days after the issue of this advertisement. Canvassing disqualifies.

A. G. SHEPPARD FIDLER,  
City Architect.

Civic Centre,  
Birmingham. 1. 9160

MINISTRY OF WORKS require ARCHITECTURAL ASSISTANTS, with 3 years' training, experience in Architect's office, and of Inter. R.I.B.A. standard. Prospects of promotion and permanency. State salary required, age, details of training and experience, to Ministry of Works, W.G.10 (G), Abell House, John Islip Street, S.W.1. 9167

HERTFORDSHIRE COUNTY COUNCIL  
COUNTY ARCHITECT'S DEPARTMENT

Applications are invited for the appointment of ASSISTANT ARCHITECTS. Salary grade £650-£840. Previous Local Government experience not essential.

Applications, with names of two referees, to County Architect, County Hall, Hertford, Herts., not later than 11th February, 1956. 9165



**GOVERNMENT OF CYPRUS  
ASSISTANT DIRECTOR OF PLANNING  
AND HOUSING**

To be the PRINCIPAL ASSISTANT to the Director of Planning and Housing in the preparation and administration of Town and Country Planning Schemes and Government Housing Schemes and to deputise for the Director where necessary.

Appointment is on contract for a period of two years in the first instance at a fixed salary of £1,650 per annum, plus an overseas allowance of £330 per annum and a variable cost of living allowance, at present at the rate of 9 per cent. of basic salary. A gratuity of £150 per annum is payable on satisfactory completion of contract.

Government quarters are provided, if available, at a rental of 6 per cent. of basic salary if furnished, or 4½ per cent. if unfurnished; or an allowance is granted in lieu. Free passages are provided for the officer, his wife and children, not exceeding four persons besides himself. Leave is granted at the rate of 31 days for each completed month of resident service.

Candidates should be A.M.T.P.I. and should also possess a secondary recognised qualification in Estate Management, Architecture or Engineering, and have had at least seven years' experience with a Local Government authority or the Central Government in the United Kingdom or in a Commonwealth country.

Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1, stating briefly age, qualifications and experience, and quoting reference No. BCD 62/17/02. Closing date for receipt of applications, 2nd March, 1956.

9130

**SURREY COUNTY COUNCIL**

Applications invited for following appointments:

1. ASSISTANT QUANTITY SURVEYOR, GRADE V, £795 × £35-£970 p.a., plus London weighting. Must be A.R.I.C.S. having experience in taking lead of team on large new buildings.

2. ASSISTANT QUANTITY SURVEYOR, GRADE IV, £710 × £35-£885 p.a., plus London weighting. Must be A.R.I.C.S. with experience in taking off.

3. ASSISTANT QUANTITY SURVEYOR, GRADE III, £640 × £25-£765 p.a., plus London weighting. Preference given applicants who have passed Inter. R.I.C.S.

Full details and present salary, with three copy testimonials, to County Architect, County Hall, Kingston, as soon as possible. 9159

**CITY OF PORTSMOUTH  
CITY ARCHITECT'S DEPARTMENT  
ASSISTANT QUANTITY SURVEYOR**

Applications are invited for the permanent post of ASSISTANT QUANTITY SURVEYOR (Grade V, £795-£970).

Commencing salary may be above minimum according to experience.

Applicants must be Associate Members of the R.I.C.S. and be thoroughly experienced in taking off, abstracting and billing of quantities, measurement of work in progress and settlement of final accounts.

Programme of work includes Law Courts, Police Headquarters, College of Art, Schools, etc.

The appointed candidate will be required to act as deputy to the Chief Quantity Surveyor.

Housing accommodation may be provided.

Applications, with full details and names of two referees, must be delivered to the undersigned not later than 12 noon on Monday, 27th February, 1956.

Canvassing will disqualify.

V. BLANCHARD, Town Clerk.

City Council Chambers,  
1, Clarence Parade,  
Portsmouth. 9173

**AIR MINISTRY** Works Designs Branch requires in London and Provinces (with liability for overseas service) ARCHITECTURAL ASSISTANTS experienced in planning/preparation of working drawings and details for permanent and semi-permanent buildings. Salaries up to £850 (men) and £752 p.a. (women). Starting pay dependent on age, quals, and experience. Paid overtime. Long term possibilities with promotion and pensionable prospects, 4 weeks' leave a year. Natural born British subjects. Write stating age, quals, employment details incl. type of work done to any Employment Exchange quoting Order No. Borough 2303. 3788

**HAYES AND HARLINGTON URBAN  
DISTRICT COUNCIL**

Applications are invited for:—

(a) ARCHITECTURAL ASSISTANT (PERMANENT), Grade A.P.T. II, i.e., £560-£640 p.a.; (b) SENIOR ARCHITECTURAL ASSISTANT (TEMPORARY), Grade A.P.T. IV, i.e., £675-£825 p.a., plus London weighting in both cases, 21-25 years p.a., 26 years and over £30 p.a. Candidates for (a) must have passed the R.I.B.A. Inter. Exam., good experience of housing work with a local authority; (b) must be a Registered Architect, have good general experience in design and construction in relation to municipal housing and other works, and capable of supervising large building contracts. The Council is unable to provide housing accommodation for either of these appointments. Further particulars and form of application available from the undersigned, which when completed must be returned as soon as possible.

GEORGE HOOPER, Clerk and Solicitor.

Town Hall, Hayes, Middx. 3712

**COUNTY BOROUGH OF SUNDERLAND.**

Applications are invited for:—

SENIOR ASSISTANT ARCHITECTS—

A.P.T. GRADE V (£795-£970).

ASSISTANT ARCHITECTS—

A.P.T. GRADE IV (£710-£885).

SENIOR ARCHITECTURAL ASSISTANTS—

SPECIAL SCALE (£650-£840).

Commencing salaries will be fixed according to experience.

Particulars of the respective appointments may be obtained from the Borough Architect, Grange House, Stockton Road, Sunderland.

Applications must be addressed to me and received at my office, Town Hall, not later than 14th February, 1956.

Canvassing will disqualify.

G. S. McINTIRE, Town Clerk.

9123

**NORTH EAST METROPOLITAN REGIONAL  
HOSPITAL BOARD.**

11a, Portland Place, W.1.

W. G. Plant, Dip.Arch. (L'pool), F.R.I.B.A., Regional Architect.

The Region comprises East London, the majority of the County of Essex, and parts of the counties of Middlesex and Hertfordshire, with over 130 hospitals, clinics, etc. The Board's offices are 4 minutes' walk from the Regent Street Polytechnic, where facilities are available for evening study in Architecture, Town Planning, Engineering, etc. The Board are engaged in an expanding programme of hospital development, including new hospitals, replanning of existing hospitals, the provision of out-patients' departments, operating theatres, laboratories, nurses' homes, staff homes, occupational therapy centres, patients' accommodation, etc. by new building or by converting and extending existing buildings, and the under-mentioned appointments offer to Architects exceptional opportunities of gaining experience in designing and supervising the construction of hospital buildings; much of the building work is designed and supervised by the Board's own staff, and those appointed will be expected to accept a considerable degree of responsibility.

The appointments available for engineers offer particularly valuable experience in planning and supervising the installation of large scale heating and hot-water systems, conversion of boilers to oil-firing, ventilation of operating theatres, engineering services for laundries and kitchens, all forms of electrical installations, including X-ray and radiotherapy equipment, emergency and main generating plant, etc.

Own car may be used for visiting hospitals, etc., for which adequate mileage allowance paid. Posts pensionable and prospects of advancement good. New entrants to the hospital service in the Senior Assistant grades will commence at the minimum of the salary scale, but in other grades some advancement may be possible on grounds of age and experience. For all positions, previous hospital experience is not essential.

**SENIOR ASSISTANT ARCHITECTS (TWO POSITIONS).**

Salary £920 × £30 (5) × £25 (1) - £1,095, plus London allowance £40-£50. Applicants must be registered Architects, having passed the requisite examinations, and must be good designers, capable of preparing working drawings and specifications for, and site supervision of, all types of building projects, under limited supervision.

**ASSISTANT ARCHITECTS (TWO POSITIONS).**

Salary £640 × £25 (4) × £30 (4) × £35 (2) - £930, plus London allowance £20-£40. Applicants must be registered architects having passed the requisite examinations, and must be good designers, capable of preparing working drawings and specifications for, and site supervision of, all types of building projects, under limited supervision.

**SENIOR ASSISTANT ENGINEER (MECHANICAL).**

Applicants must be Corporate Members of the Institution of Mechanical Engineers, and should possess experience in a senior capacity in the design of boiler plants, steam, heating, hot water and ventilating systems, and have a sound knowledge of all associated mechanical equipment. Salary £920 × £30 (5) × £25 (1) to £1,095, plus London weighting £40-£50.

**ASSISTANT ENGINEER (ELECTRICAL).**

Applicants must be Graduate Members of the Institution of Electrical Engineers and have passed the Institution examination (lately the associated membership examination) or hold exempting qualifications. The post offers opportunities to cover the whole field of electrical engineering in hospitals. Salary £640 × £25 (4) × £30 (4) × £35 (2) to £930 per annum, plus London weighting £20-£40.

**ASSISTANT ENGINEER (HEATING AND VENTILATING).**

Applicants must be Graduate Members of the Institution of Heating and Ventilating Engineers and have passed the Associate Membership examination or hold exempting qualifications. The post offers opportunities to cover the whole field of heating, ventilating and mechanical engineering in hospitals. Salary £640 × £25 (4) × £30 (4) × £35 (2) to £930, plus London weighting £20-£40.

**JUNIOR TECHNICAL ASSISTANT for engineering department.**

The post offers opportunities for a young man wishing to embark on an engineering career in the National Health Service and intending to study and acquire technical qualifications, to gain the necessary preliminary practical experience. Commencing salary according to age on a range

of between £180 at age 15 and £430 at age 26 and over (inclusive of London weighting).

**ASSISTANT QUANTITY SURVEYORS (TWO POSITIONS).**

Salary £640 × £25 (4) × £30 (4) × £35 (2) - £930, plus London weighting £20-£40. Candidates must be Corporate Members of R.I.C.S. (Sub. Div. III Quantities), or in certain circumstances Associate Members of the Institute of Quantity Surveyors. The duties comprise site measuring, taking off, and estimating (all under supervision), working up and final accounts.

**QUANTITY SURVEYING ASSISTANT.**

Salary £480 (at age 21 or over) × £20 (7) × £25 (2) - £670, plus London weighting £20-£30. Candidates must have passed the Intermediate Examination of R.I.C.S. (Sub. Div. III Quantities). The duties comprise generally assisting in the Quantity Surveyors' sections, with some opportunity for taking off under supervision.

Applications, giving age, present salary, qualifications and experience (with dates), together with the names of two referees, to the Secretary, North East Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, within 14 days. 9119

**METROPOLITAN POLICE.**

ARCHITECTURAL ASSISTANTS required for unestablished appointments in New Works Branch of Chief Architect and Surveyor's Department, New Scotland Yard, S.W.1.

**Rates of Pay**

Men: £463 10. 0. (aged 21) × £20 - £523 10. 0. × £25 - £725. Women: £463 10. 0. (age 21) × £15 - £493 10. 0. × £20 - £533 10. 0. × £25 - £645 0. 0. Annual leave 24 days. Conditioned hours 45½ a week, overtime paid for 1½ hours a week.

Apply to Chief Clerk, Chief Architect & Surveyor's Department, New Scotland Yard, S.W.1. 29th December, 1955. 8039

**SURREY COUNTY COUNCIL**

Applications are invited for following appointments:—

1) ASSISTANT ARCHITECT, GRADE IV, £675 × £30-£825 p.a., plus London allowance. Must be Associate Member R.I.B.A.

2) ARCHITECTURAL ASSISTANT, GRADE II, £560 × £20-£640 p.a., plus L.A. Must be of good general training, and preference given those who have passed Inter. R.I.B.A.

Full details and present salary, accompanied by copies of 3 recent testimonials, to County Architect, County Hall, Kingston, as soon as possible. 7051

**BOROUGH OF LUTON.**

**TECHNICAL STAFF.**

Applications invited for:—

(a) SENIOR ARCHITECTURAL ASSISTANTS. Salary A.P.T. V (£795-£970). Fully qualified, experienced in housing, schools and public buildings.

(b) ARCHITECTURAL ASSISTANTS. Salary (General Division to A.P.T. IV (£180-£885), according to qualifications and experience.

N.J.C. Service conditions. Application forms from Borough Engineer, Town Hall, Luton, returnable by 13th February, 1956.

In the case of (a) housing accommodation may be available.

A. D. HARVEY, Town Clerk.

9096

**WAR DEPARTMENT.**

**C.R.E. SHOEBURNESS.**

**DRAUGHTSMAN (M. and E.).**

(1) Vacancies exist on the establishment of the Commander, Royal Engineers, Shoeburness, for ONE DRAUGHTSMAN (Mechanical and Electrical).

(2) In addition to the usual draughtsman's qualifications, applicants should be capable of preparing detailed working drawings.

(3) Applications are invited from persons between the ages of 21 and 50 years.

(4) Salaries payable will be from £463 10s. per annum at age 21 to £635 per annum at age 28 or over, subject to deduction for provincial service ranging from £20 to £30 per annum at the maximum.

(5) Letters of application, giving details of age, experience and qualifications, should be addressed to:—

C.R.E. Shoeburness,

Old Ranges,

Shoeburness,

Essex. 9118

**WAR DEPARTMENT.**

**C.R.E. SHOEBURNESS.**

**ARCHITECTURAL ASSISTANTS.**

(1) Vacancies exist on the establishment of the Commander, Royal Engineers, Shoeburness, for TWO ARCHITECTURAL ASSISTANTS.

(2) In addition to the usual draughtsman's qualifications, applicants should be capable of preparing detailed working drawings and should be able to survey and level.

(3) Applications are invited from persons between the ages of 21 and 50 years.

(4) Salaries payable will be from £463 10s. per annum at age 21 to £635 per annum at age 28 or over, subject to deduction for provincial service ranging from £20 to £30 per annum at the maximum.

(5) Letters of application, giving details of age, experience and qualifications, should be addressed to:—

C.R.E. Shoeburness,

Old Ranges,

Shoeburness,

Essex. 9117

**CITY OF NAIROBI.  
VACANCIES—CITY ENGINEER'S  
DEPARTMENT.**

The following vacancies exist on the staff of the City Engineer's Department. They have (with a few exceptions) been occasioned as a result of reorganisation and establishment increases authorised to meet the progressively increasing volume of work resulting from the rapid growth of the City.

Successful applicants may be permitted to enter the scale at a point commensurate with their experience and qualifications.

**(a) ARCHITECT.**

Permanent Established post. Consolidated salary scale £1,690 × £50—£1,990, plus Special Temporary Allowance, which is at present £135 per annum on the minimum of the scale and £162 per annum on the maximum of the scale.

Applicants for this appointment should hold the qualification A.R.I.B.A., and should have had suitable experience in a senior position in an Architect's Department and be used to the control of subordinate staff, supervision of direct labour and contractors and liaison with Quantity Surveyors.

**(b) ASSISTANT CITY PLANNING OFFICER.** Permanent Established post. Consolidated salary scale £1,690 × £50—£1,990, plus Special Temporary Allowance, which is at present £135 per annum on the minimum of the scale and £162 per annum on the maximum of the scale.

Applicants for this appointment will be required as occasion arises to deputise for the City Planning Officer, and should hold the qualification of A.M.P.L. and should preferably hold an additional qualification in architecture, engineering or surveying. They should have had experience in the office of a Local Planning Authority, particularly in the preparation of development plans, land use surveys, the supervision of interim development, and the control of subordinate staff.

**(c) ASSISTANT CHIEF FIRE OFFICER.**

Permanent Established post. Consolidated salary scale £1,120 × £40—£1,240 × £40—£1,320 × £50—£1,420, plus Special Temporary Allowance, which is at present £88 per annum on the minimum of the scale and £116 per annum on the maximum of the scale.

Applicants for this post should preferably have held a responsible position in a Fire Brigade and should have had wide experience of Fire Brigade work. Preference will be given to those who have passed an examination of the Institution of Fire Engineers.

**(d) ASSISTANT ENGINEERS (I).**

Permanent Established post. Non-Established posts. Consolidated salary scale £1,390 × £40—£1,590 × £50—£1,790, plus Special Temporary Allowance, which is at present £110 per annum on the minimum of the scale and £146 per annum on the maximum of the scale.

Applicants should have a good general experience in Municipal Engineering, covering sewers, drainage, road construction, water supply and street lighting, and should preferably hold the qualification A.M.I.C.E. and/or A.M.I.Mun.E.

Two posts are primarily for sewerage design and construction, one for roadworks, and one for street lighting, but other duties may be allotted from time to time.

**(e) ASSISTANT ENGINEERS (II).**

Permanent Established posts. Consolidated salary scale £1,190 × £40—£1,310 × £40—£1,350 × £50—£1,550, plus Special Temporary Allowance, which is at present £94 per annum on the minimum of the scale and £126 per annum on the maximum of the scale.

Applicants should have good general experience in Municipal Engineering, and should preferably hold the qualification A.M.I.C.E. and/or A.M.I.Mun.E., or parts thereof. One post is primarily in connection with water supply.

**(f) ASSISTANT LAND SURVEYORS.**

Permanent Non-Established posts. Consolidated salary scales £1,390 × £40—£1,590 × £50—£1,790 and £1,190 × £40—£1,310 × £40—£1,350 × £50—£1,550, plus Special Temporary Allowance, which is at present £110 per annum on the minimum of the scale and £146 per annum on the maximum of the scale.

Applicants should be conversant with all aspects of cadastral survey and computations, and for appointment to the higher salary scale must be in possession of Kenya Licensed Surveyors' Certificate.

**(g) PLANNING ASSISTANTS (I and II).**

Permanent Established posts. Consolidated salary scale (Grade I) £1,390 × £40—£1,590 × £50—£1,790, plus Special Temporary Allowance, which is at present £110 per annum on the minimum of the scale and £146 per annum on the maximum of the scale. Salary scale (Grade II) £1,190 × £40—£1,310 × £40—£1,350 × £50—£1,550, plus Special Temporary Allowance, which is at present £94 per annum on the minimum of the scale and £126 per annum on the maximum of the scale.

Applicants for Planning Assistant (I) must be A.M.P.L. and preferably should hold an additional qualification in Architecture, Engineering or Surveying, and should have had experience in the office of a Local Planning Authority.

Applicants for Planning Assistant (II) should have had experience in the office of a Local Planning Authority, and preference will be given to candidates who are Associate Members of the T.P.I.

**(h) ADMINISTRATIVE ASSISTANT (II).**

Permanent Non-Established post. Consolidated salary scale £940 × £30—£1,060 × £30—£1,120 × £40—£1,240, plus Special Temporary Allowance, which is at present £73 per annum on the minimum of the scale and £100 per annum on the maximum of the scale.

Applicants should have good experience of the general routine work of the Administrative Branch of an Engineer's Department, e.g., enquiries, correspondence, stores, wages, costing, etc. Ability to type will be deemed an advantage.

**(i) ASSISTANT HIGHWAYS SUPERINTENDENT.**

Permanent Non-Established post. Consolidated salary scale £1,120 × £40—£1,240 × £40—£1,320 × £50—£1,420, plus Special Temporary Allowance, which is at present £88 per annum on the minimum of the scale and £116 per annum on the maximum of the scale.

Applicants for this post should have considerable experience in the construction and maintenance of tarmacadam roadworks and the handling of labour. Ability to speak Swahili and previous experience in dealing with African labour will be deemed an advantage.

**(j) ASSISTANT BUILDING WORKS SUPERINTENDENTS.**

Permanent Non-Established posts. Consolidated salary scale £1,120 × £40—£1,240 × £40—£1,320 × £50—£1,420, plus Special Temporary Allowance, which is at present £88 per annum on the minimum of the scale and £116 per annum on the maximum of the scale.

Applicants should have good general experience in building and allied trades, and should preferably have served an apprenticeship in a building trade. Ability to speak Swahili and previous experience in dealing with African labour will be deemed an advantage.

**(k) MAINS INSPECTOR, WATER DEPARTMENT.**

Permanent Established post. Consolidated salary scale £940 × £30—£1,060 × £30—£1,120 × £40—£1,240, plus Special Temporary Allowance, which is at present £73 per annum on the minimum of the scale and £100 per annum on the maximum of the scale.

Applicants should have had previous experience of works in connection with the laying and maintenance of water mains and a knowledge of plumbing. Ability to speak Swahili and previous experience in dealing with African labour will be deemed an advantage.

Successful applicants will be required to pass a medical examination before appointment.

Application forms, together with conditions of service applicable to the appointment, are available on request from The East African Office, Grand Buildings, Trafalgar Square, London, W.C.1, and applications on such forms should be addressed so as to reach the Establishment Officer, P.O. Box 5037, Nairobi, not later than Saturday, 25th February, 1956.

**JOHN RISEBOROUGH,**

*Town Clerk.*

*Town Hall, Nairobi.*

*January, 1956.*

*9062*

**DERBYSHIRE COUNTY COUNCIL.  
COUNTY ARCHITECT'S DEPARTMENT.**

Vacancies exist for ARCHITECTS on all grades of the National Joint Council's A.P.T. scales. Pensionable posts. Canvassing disqualified.

Details and application forms from F. Hamer (Crossley, Dip.Arch.(Lpool), F.R.I.B.A., County Architect, County Offices, St. Mary's Gate, Derby. 9064

**INVERNESS COUNTY COUNCIL.**

Applications are invited for the following appointments in the County Architect's Department.

**TWO SENIOR ARCHITECTURAL ASSISTANTS.** Salary scale A.P.T., Grade VI (£750—£815), with placing according to experience and qualifications.

Applicants must be Associate Members of the Royal Institute of British Architects and have a thorough experience in the preparation of sketch plans and working drawings for all local authority building projects.

Housing accommodation may be made available, if required.

Applications, stating age, experience, and qualifications, together with the names of three persons to whom reference may be made, should be lodged with the undersigned not later than 14 days after the publication of this advertisement.

**R. WALLACE**

*County Clerk.*

*9069*

**COUNTY OF THE WEST RIDING OF  
YORKSHIRE.**

**OFFICE OF THE COUNTY ARCHITECT.**

Applications are invited for the appointment of **JUNIOR ARCHITECTURAL ASSISTANT** in the Harrogate Divisional Office, salary range £530—£610, A.P.T. I.

Candidates should be good draughtsmen. The appointment is subject to the Local Government Superannuation Acts, and to the Council's Conditions of Service.

Applications, on forms obtainable from this office, should be submitted not later than Monday, 6th February, 1956.

**HUBERT BENNETT,**

*County Architect.*

*Bishopgarth, Westfield Road, Wakefield.*

*9164*

**Tenders Invited**

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

**BOROUGH OF COLCHESTER.**

**TO BUILDING CONTRACTORS.**

Tenders are invited for the erection of a Crematorium. Bills of Quantities and Form of Tender can be obtained on application to the Council's Architects, Messrs. Duncan Clark & Beckett, 7, West Stockwell Street, Colchester, accompanied by a deposit of two guineas, which will be returnable on receipt of a bona fide tender.

Drawings and other particulars can be seen at the Architects' office.

Applications for bills or quantities and form of tender are to be made to the Architects not later than Monday, 6th February.

**N. CATCHPOLE,**

*Town Clerk.*

*Town Hall, Colchester.*

*25th January, 1956.*

*9082*

**Architectural Appointments Vacant**

*4 lines or under, 7s. 6d.; each additional line, 2s.*

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

**ARCHITECTS' CO-PARTNERSHIP** require a qualified ASSISTANT with experience. Write 44, Charlotte Street, London, W.1, or Telephone Langham 5791.

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

Applications are invited for the following appointments:—

(a) **SENIOR ASSISTANT ARCHITECTS**, with experience of work on commercial and industrial projects.

(Salary range £820 to £975 per annum.)

(b) **ASSISTANT ARCHITECTS**, capable of preparing working drawings from preliminary details.

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

There is a five-day week in operation, and both appointments offer prospects of upgrading.

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

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

**ASSISTANT ARCHITECTS, WORKER-UP,  
AND SHOP FITTING DRAUGHTSMAN.**

Applications are invited from suitably qualified persons. Salary on a scale £485—£945 inclusive of L.W., with placing according to age, qualifications and experience. The posts are superannuable, subject to medical examination. Five-day week in operation. Applications, stating age, experience, qualifications and salary required, to W. J. Reed, F.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 99, Leman Street, London, E.1. 2824

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

Applications are invited for the following appointments in a newly formed Branch Office. Interesting and varied commercial and industrial projects.

(a) **SENIOR ASSISTANT ARCHITECT**, with experience in Store and Shop Design.

(Salary range £820 to £975 per annum.)

(b) **ASSISTANT ARCHITECTS**, capable of preparing working drawings and details from preliminary sketches.

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

Both appointments offer prospects of upgrading.

Applications, stating age, experience, qualifications, and salary required, to G. S. Hay, A.R.I.B.A., Chief Architect, Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester, 4. 3872

**ARCHITECTURAL ASSISTANT AND ASSISTANT QUANTITY SURVEYOR** required for the Birmingham office of a major oil company.

Work is in connection with large-scale development of service stations, involving design of new and remodelling of existing stations. Architectural Assistant of Intermediate standard R.I.B.A., capable of handling jobs with minimum supervision. The work involves a high standard of presentation and understanding of contemporary design. Assistant Quantity Surveyor should be prepared to act on own initiative for the preparation of approximate estimates, interim certificates and final accounts for contracts up to £10,000. Five-day week; good pension and life assurance scheme; sickness benefits and free luncheon vouchers; Social Club. Write, giving full details, stating age, experience and salary required, to Box 6086, quoting ref. Y8943.

**NORTH & PARTNERS, Maidenhead**, have several vacancies for experienced ARCHITECTURAL ASSISTANTS / DRAUGHTSMEN. Work of an extensive and varied nature. Also an ASSISTANT with some experience in specifications, builders' accounts, etc. Excellent salaries to be agreed. Superannuation scheme for permanent staff. 7061

**SCHERRER & HICKS**, of 19 Cavendish Square, W.1 (tel. Museum 1105), require immediately a number of **ARCHITECTURAL ASSISTANTS** with imagination and initiative. The work is varied and covers Research Laboratories, Offices, Housing and Schools. Five-day week. Salary by arrangement. 9124

**EVANS MEDICAL SUPPLIES** invite applications for position of **RESIDENT ARCHITECT**.

Applicants must have experience in the design and construction of industrial buildings, and be fully conversant with Town Planning and By-laws requirements. Duties will include responsibility for maintenance of existing buildings.

Salary according to qualifications and experience. Permanent appointment. Pension Scheme.

Applications should be addressed to:—The Managing Director, Evans Medical Supplies Ltd., Speke, Liverpool 19 9109

**SENIOR** and responsible **ARCHITECTURAL ASSISTANT** with not less than five years' experience in private offices by firm of London Architects off Bedford Square. Relatively small practice with wide variety of high class work. Applications, in writing, giving full details, to Box, 9125.

**BUSY** London Office requires two **ARCHITECTURAL ASSISTANTS**, approximately Intermediate standard or upwards. Also requires one **ASSISTANT** with considerable perspective experience, particularly able to do quick interior colour sketches. Five-day week, good salaries. Lewis Solomon, Son & Joseph, 21, Bloomsbury Way, W.C.1. HOL 5108 or 7082. 9143

**THE UNIT CONSTRUCTION CO.** require an **ARCHITECTURAL ASSISTANT/ DRAUGHTSMAN** for their projects department, which is responsible for the preparation of both traditional and non-traditional designs and schemes for two-storey and multi-storey buildings. This appointment provides great scope for the younger man of ideas and imagination. Good salary and pension, and excellent prospects for the right man. Write in confidence, giving age and full details of experience and qualifications, to the Personnel Manager, Section A.92, The Unit Construction Co., Ltd., 34, St. James's Street, London, S.W.1. 9153

**SENIOR ASSISTANTS**, with adequate experience and contemporary outlook, urgently required in mixed practice in Cheltenham. **JUNIOR** required at Intermediate level. Write, stating experience and salary required, to I. M. Williams, A.R.I.B.A., 58, Bath Road, Cheltenham. 9140

**ASSISTANT** required in busy West End Architects' Office. Applicants should be about Intermediate standard. Interesting and varied practice. Salary £350-£450, according to experience. Excellent prospects. Reply in writing to Donald Hamilton, Wakeford & Partners, 7, Connaught Place, W.2. 9150

**ARCHITECTURAL ASSISTANT**, Grade I, required by the National Coal Board, Lugar, Cumnock, Ayrshire. Salary on the scale £625-£750. Applicants should have Intermediate R.I.B.A., with not less than 3 years' subsequent practical experience in housing design, supervision, surveys, specifications and general work. Applications in writing, stating age, qualifications and experience, and present salary, to Area Secretary, National Coal Board, Lugar, Cumnock, Ayrshire. 9157

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**INTERMEDIATE R.I.B.A. ASSISTANTS** required in Central London Office. Must be good draughtsmen. Knowledge of departmental store and shop construction an asset, but not essential. Write Box 9151, stating age, experience, and salary required.

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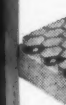
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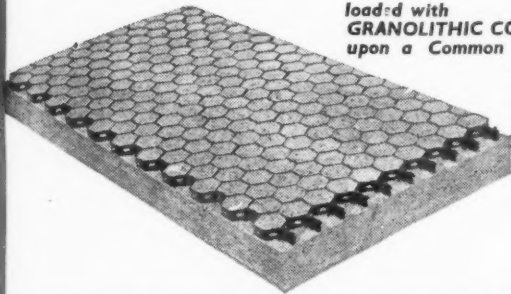


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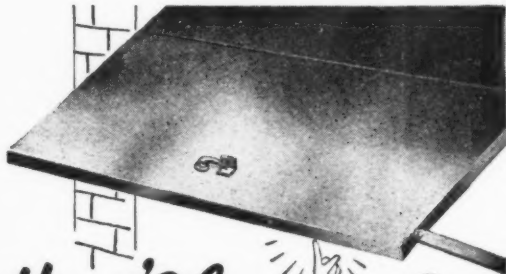
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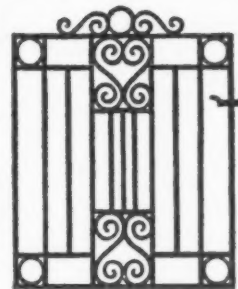
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