

THE ARCHITECTS' JOURNAL

FINE ARTS



standard contents

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

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No. 3398]

[Vol. 131

THE ARCHITECTURAL PRESS

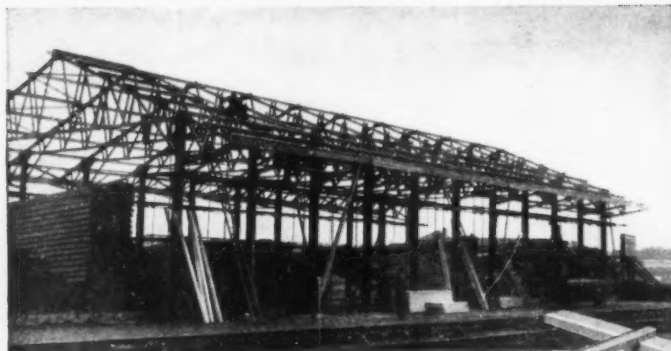
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★A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to I one week, II to Z the next. In all cases where the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

ILA	Institute of Landscape Architects.	1, Park Crescent, Portland Place, W.1.	Museum 3473
I of Arb	Institute of Arbitrators.	Hastings House, 10, Norfolk Street, Strand, W.C.2.	Temple Bar 4071
IOB	Institute of Builders.	48, Bedford Square, W.C.1.	Museum 7197
IQS	Institute of Quantity Surveyors.	98, Gloucester Place, W.1.	Welbeck 1859
IR	Institute of Refrigeration.	Dalmeny House, Monument Street, E.C.3.	Avenue 6851
IRA	Institute of Registered Architects.	68, Gloucester Place, W.1.	Welbeck 9966
ISE	Institution of Structural Engineers.	11, Upper Belgrave Street, S.W.1.	Sloane 7128
JFRO	Joint Fire Research Organisation (DSIR & Fire Offices' Committee).	Fire Research Station, Boreham Wood, Herts.	Elstree 1341/1797
LDA	Lead Development Association.	18, Adam Street, W.C.2.	Whitehall 4175
LMBA	London Master Builders' Association.	47, Bedford Square, W.C.1.	Museum 3891
MAFF	Ministry of Agriculture, Fisheries and Food.	Whitehall Place, S.W.1.	Trafalgar 7711
MOE	Ministry of Education.	Curzon Street House, Curzon Street, W.1.	Hyde Park 7070
MOH	Ministry of Health.	23, Savile Row, W.1.	Regent 8411
MOHLG	Ministry of Housing and Local Government.	Whitehall, S.W.1.	Whitehall 4300
MOLNS	Ministry of Labour and National Service.	8, St. James's Square, S.W.1.	Whitehall 6200
MOS	Ministry of Supply.	Shell Mex House, W.C.2.	Gerrard 6933
MOT	Ministry of Transport.	Berkeley Square House, Berkeley Square, W.1.	Mayfair 9494
MOW	Ministry of Works.	Lambeth Bridge House, S.E.1.	Reliance 7611
NAMMC	Natural Asphalte Mine Owners and Manufacturers Council.	14, Howick Place, Victoria Street, S.W.1.	Victoria 1600 & 6477
NAS	National Association of Shopfitters.	2, Caxton Street, S.W.1.	Abbey 4813
NBR	National Buildings Record.	31, Chester Terrace, Regent's Park, N.W.1.	Welbeck 0619
NCBMP	National Council of Building Material Producers.	10, Storey's Gate, S.W.1.	Abbey 5111
NEFMAI	National Employers Federation of the Mastic Asphalt Industry.	21, John Adam Street, Adelphi, W.C.2.	Trafalgar 3927
NFBTE	National Federation of Building Trades Employers.	82, New Cavendish Street, W.1.	Langham 4041/4054
NFBTO	National Federation of Building Trades Operatives.	Federal House, Cedars Road, Clapham, S.W.4.	Macaulay 4459
NFHS	National Federation of Housing Societies.	12, Suffolk St., S.W.1.	Whitehall 1631
NHBRC	National House Builders Registration Council.	58, Portland Place, W.1.	Langham 0064/5
NPL	National Physical Laboratory.	Head Office, Teddington.	Molesley 1380
NRDB	Natural Rubber Development Board.	Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
NSAS	National Smoke Abatement Society.	Palace Chambers, Bridge Street, S.W.1.	Trafalgar 6838
NT	National Trust for Places of Historic Interest or Natural Beauty.	42, Queen Anne's Gate, S.W.1.	Whitehall 0211
PEP	Political and Economic Planning.	16, Queen Anne's Gate, S.W.1.	Whitehall 7245
RCA	Reinforced Concrete Association.	94, Petty France, S.W.1.	Abbey 4504
RIAS	Royal Incorporation of Architects in Scotland.	15, Rutland Square, Edinburgh.	Fountainbridge 7631
RIB	Rural Industries Bureau.	35, Camp Road, Wimbledon, S.W.19.	Wimbledon 5101
RIBA	Royal Institute of British Architects.	66, Portland Place, W.1.	Langham 5533
RICS	Royal Institution of Chartered Surveyors.	12, Great George Street, S.W.1.	Whitehall 5322/9245
RFAC	Royal Fine Arts Commission.	5, Old Palace Yard, S.W.1.	Whitehall 3935
RS	Royal Society.	Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts.	6, John Adam Street, W.C.2.	Trafalgar 2366
RSH	Royal Society of Health.	90, Buckingham Palace Road, S.W.1.	Sloane 5134
SBPM	Society of British Paint Manufacturers.	Grosvenor Gardens House, Grosvenor Gardens, S.W.1.	Victoria 2186
SE	Society of Engineers.	17, Victoria Street, Westminster, S.W.1.	Abbey 7244
SFMA	School Furniture Manufacturers' Association.	30, Cornhill, E.C.3.	Mansion House 3921
SIA	Society of Industrial Artists.	7, Woburn Square, W.C.1.	Langham 1984/5
SIA	Structural Insulation Association.	32, Queen Anne Street, W.1.	Langham 7616
SNHTPC	Scottish National Housing.	Hon. Sec., Robert Pollock, Town Clerk, Rutherglen.	
SPAB	Society for the Protection of Ancient Buildings.	55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association.	28, King Street, Covent Garden, W.C.2.	Temple Bar 5006
TDA	Timber Development Association.	21, College Hill, E.C.4.	City 4771
TPI	Town Planning Institute.	18, Ashley Place, S.W.1.	Victoria 8815
TTF	Timber Trades Federation.	75, Cannon Street, E.C.4.	City 5040
WDC	War Damage Commission.	6, Carlton House Terrace, S.W.1.	Whitehall 4341
ZDA	Zinc Development Association.	34, Berkeley Square, W.1.	Grosvenor 6636

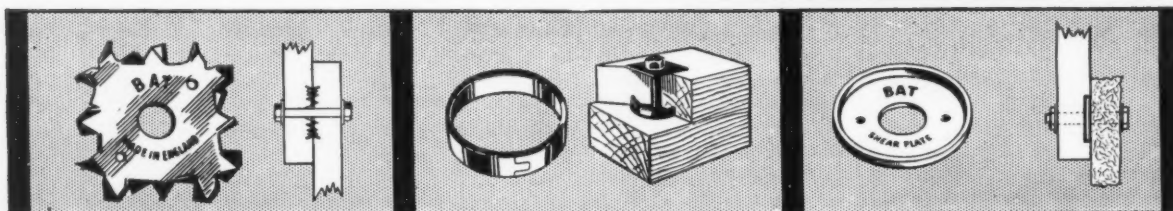


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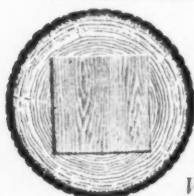
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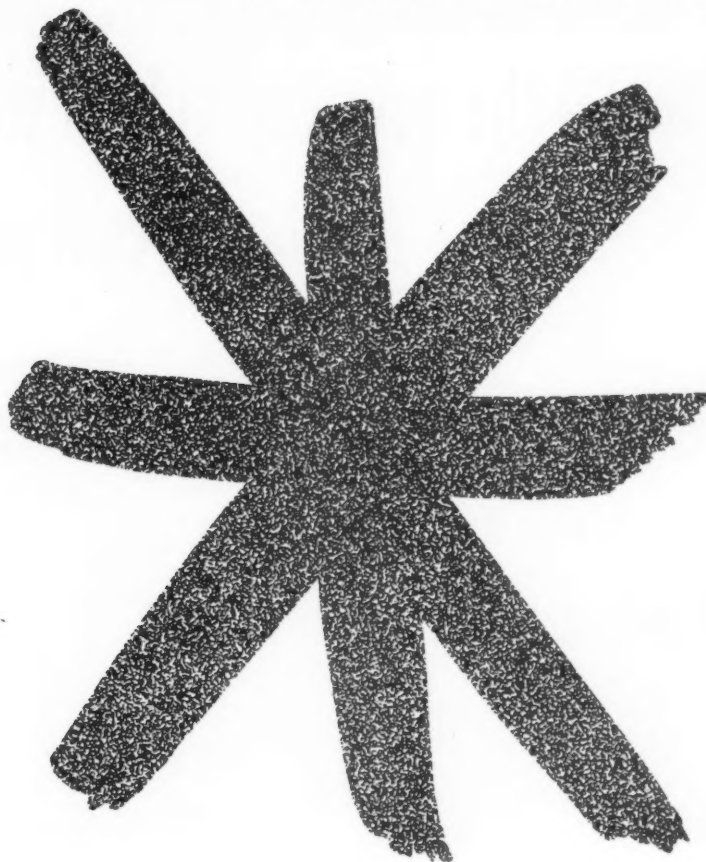
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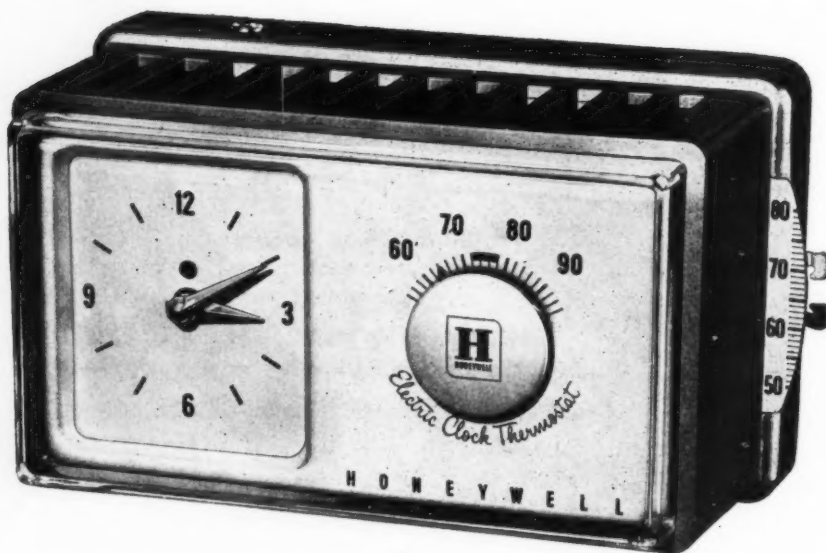
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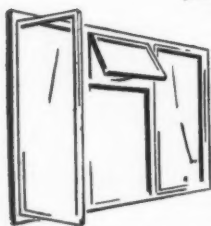
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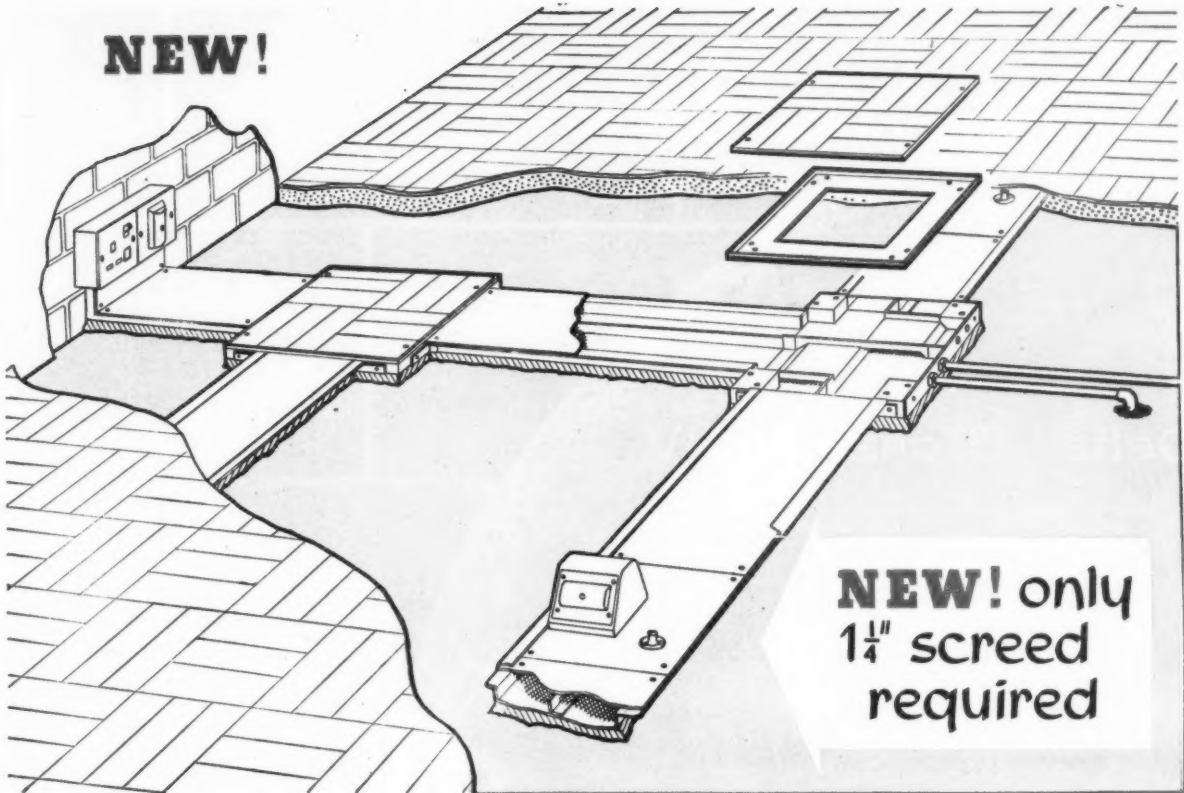
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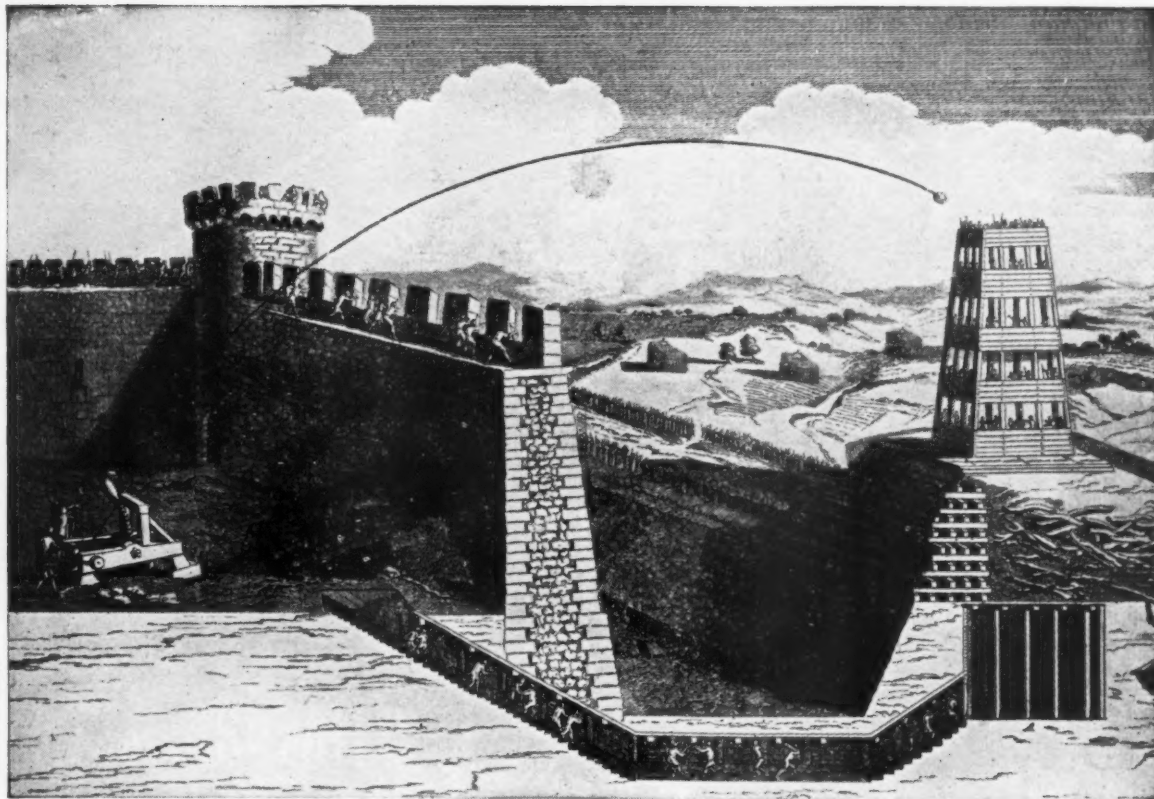
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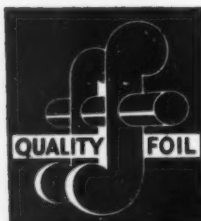
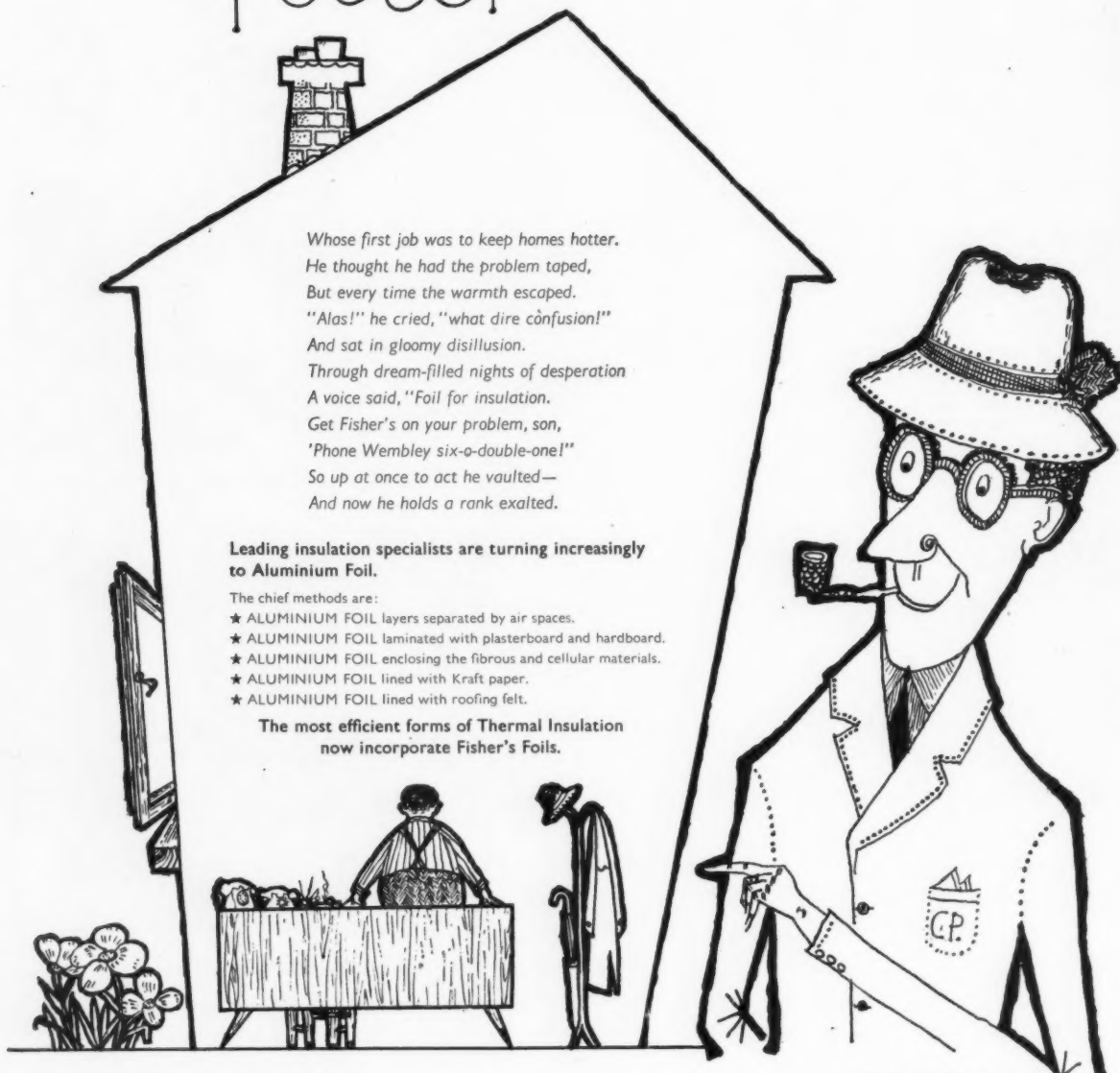
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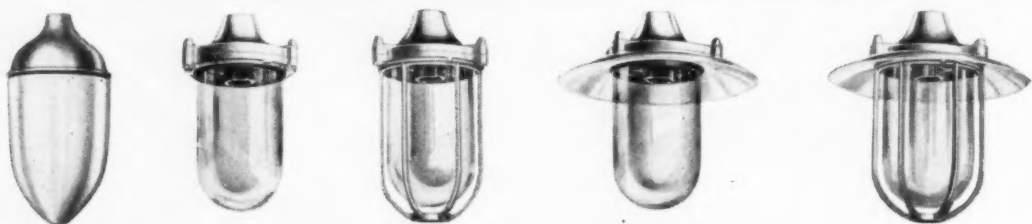
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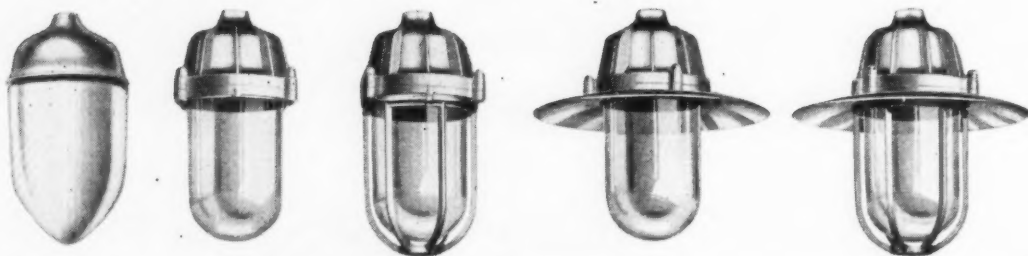
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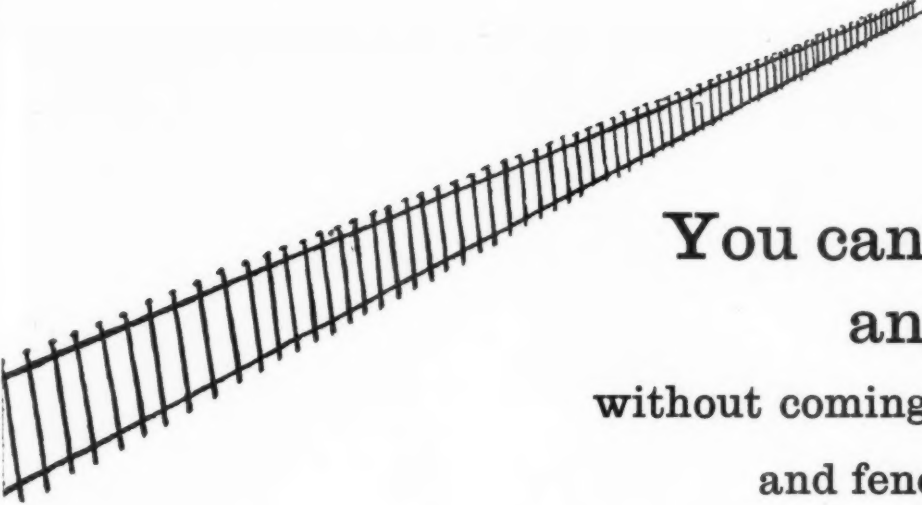


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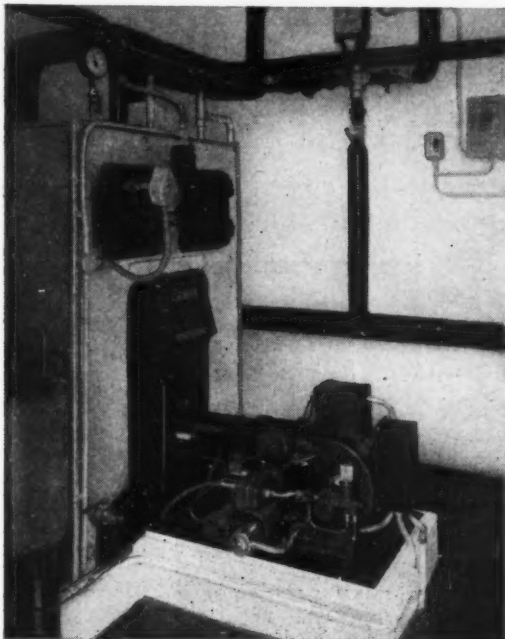
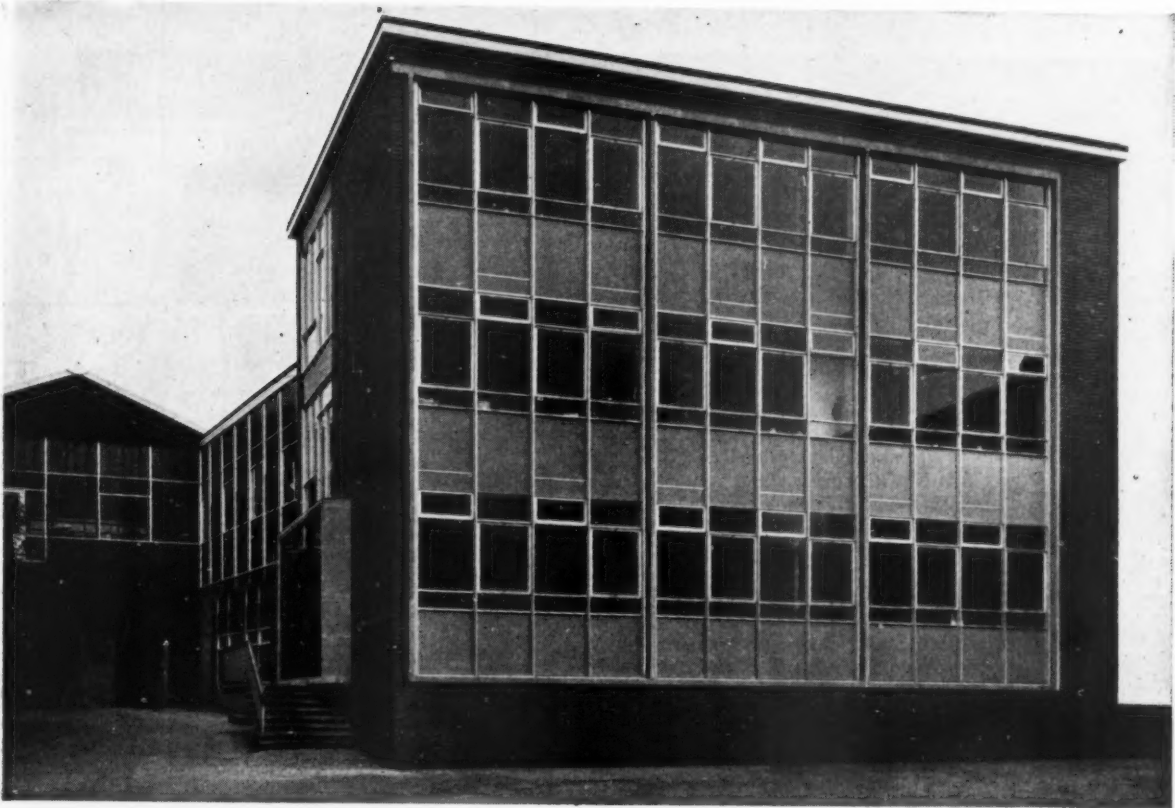
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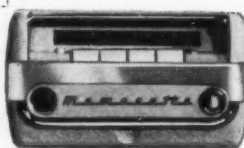
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Architectural detail

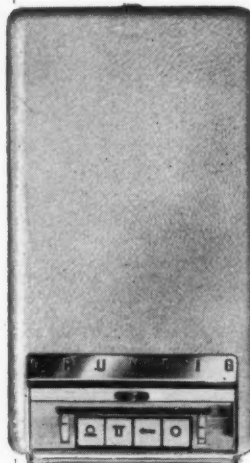
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ARCHITECT'S OFFICE PLEASE NOTE

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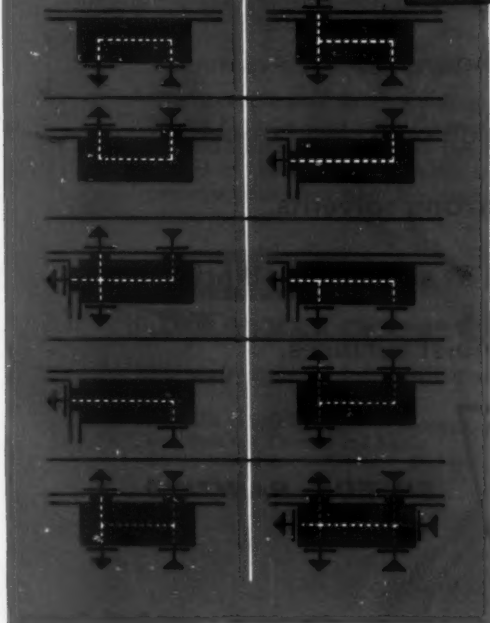
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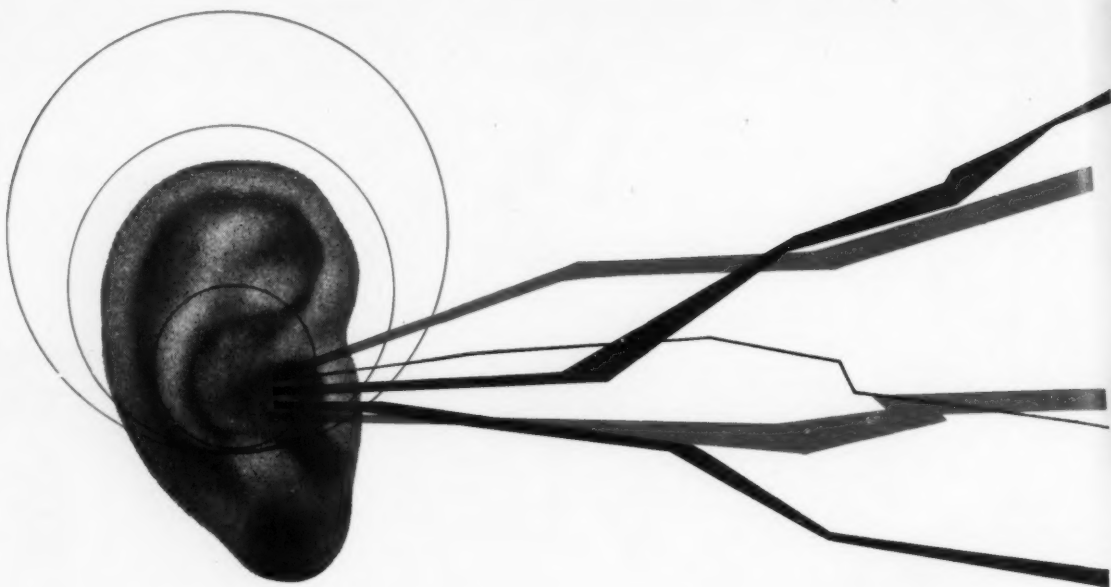
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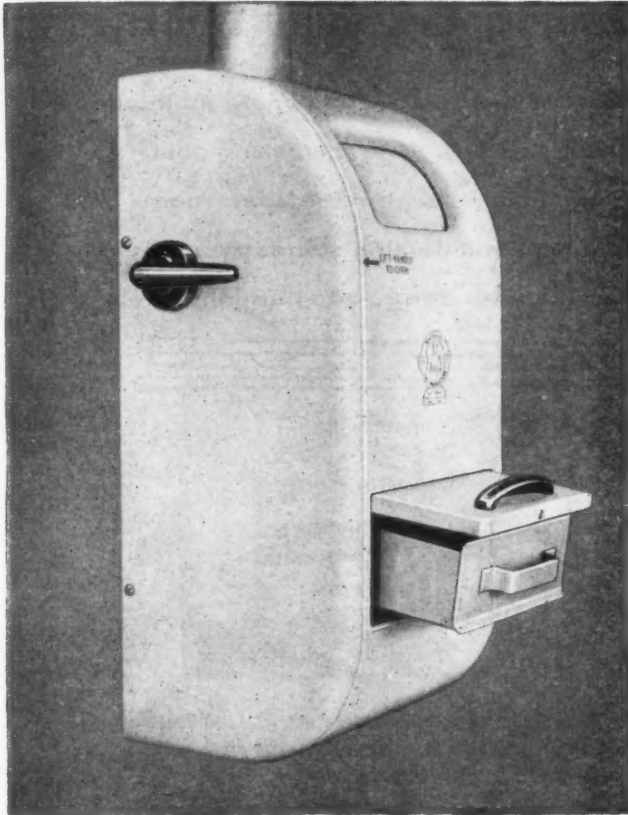
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above: Standard surface-mounted Bunnie



right: Flush-mounted Bunnie

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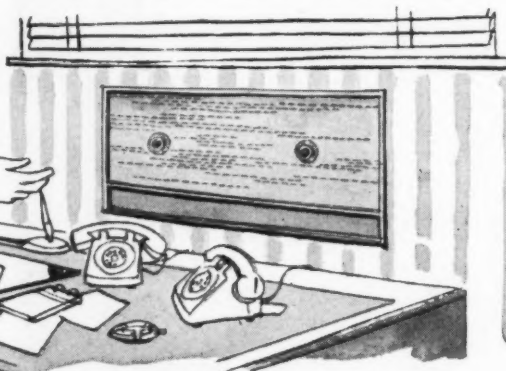
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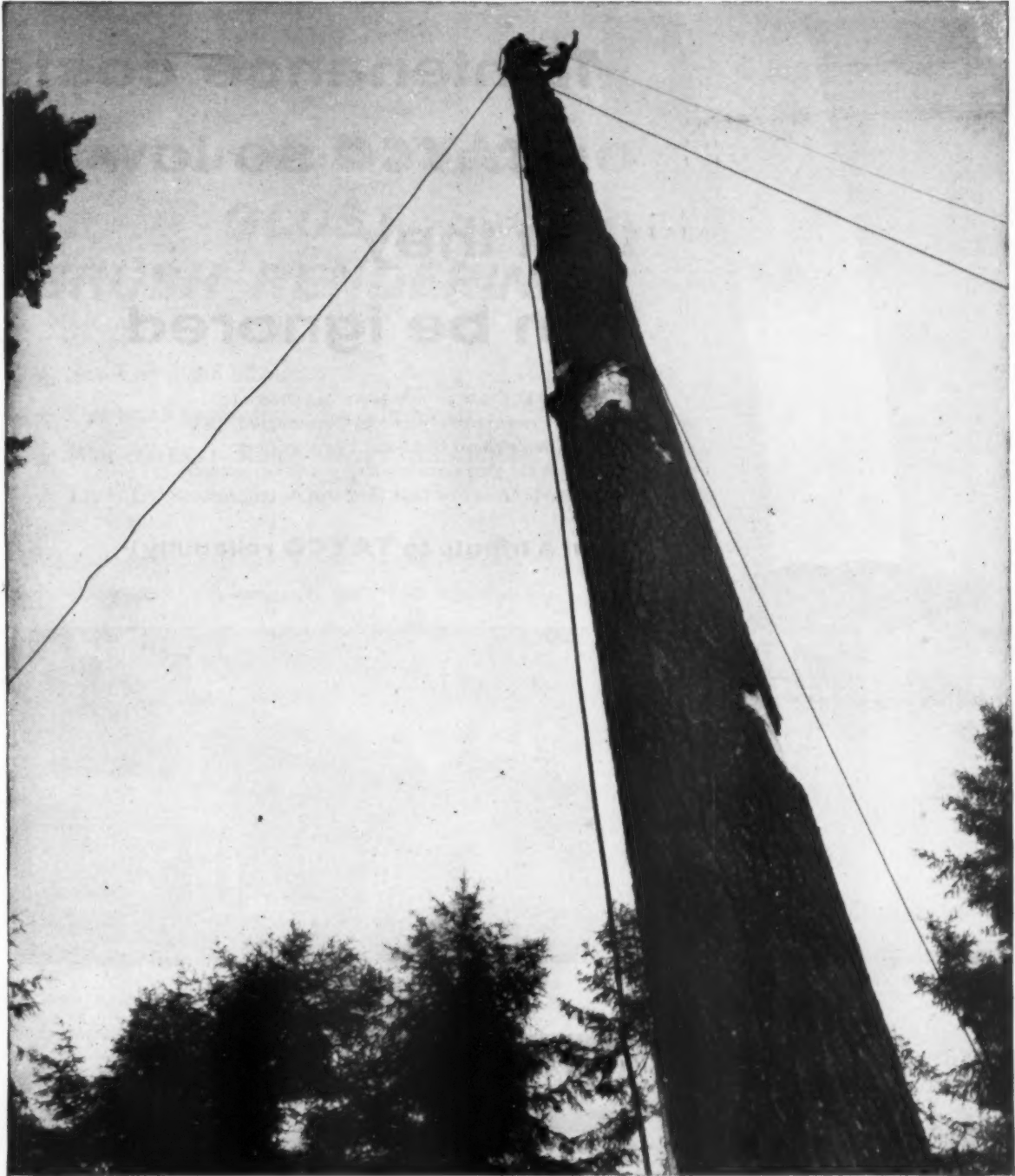
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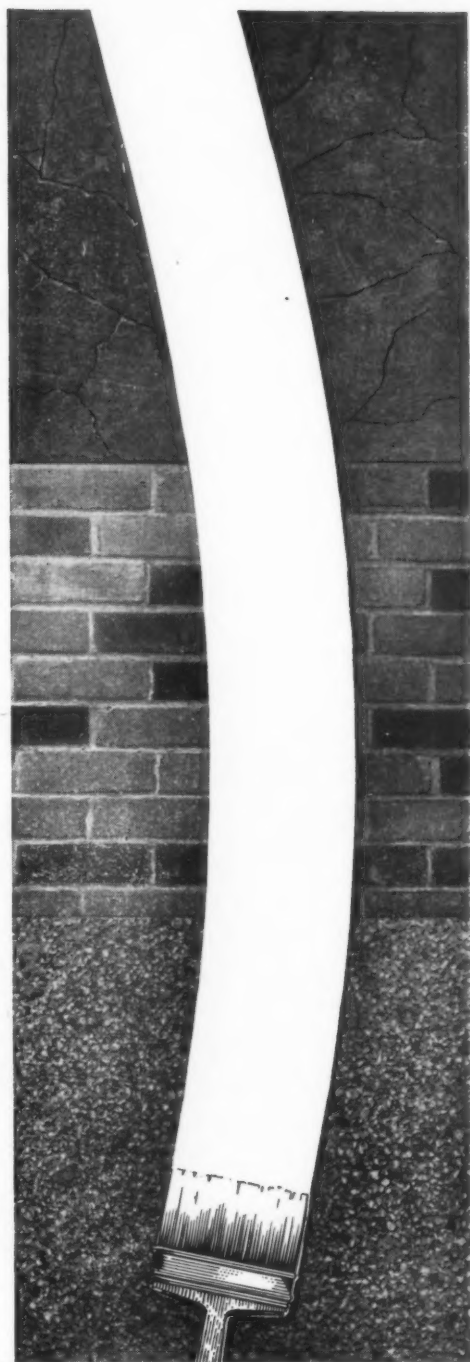
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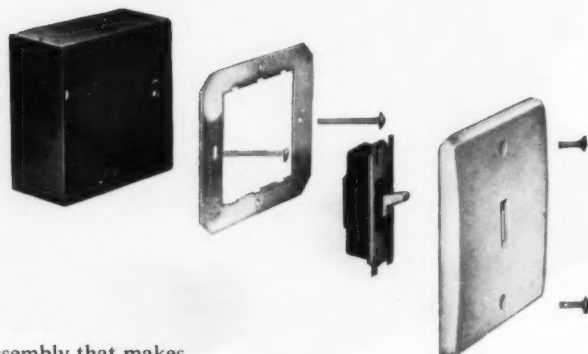
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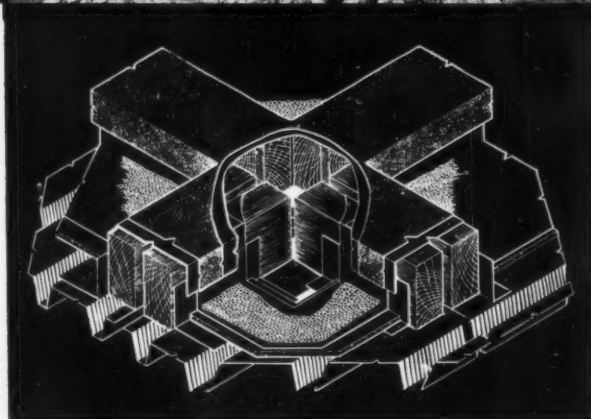
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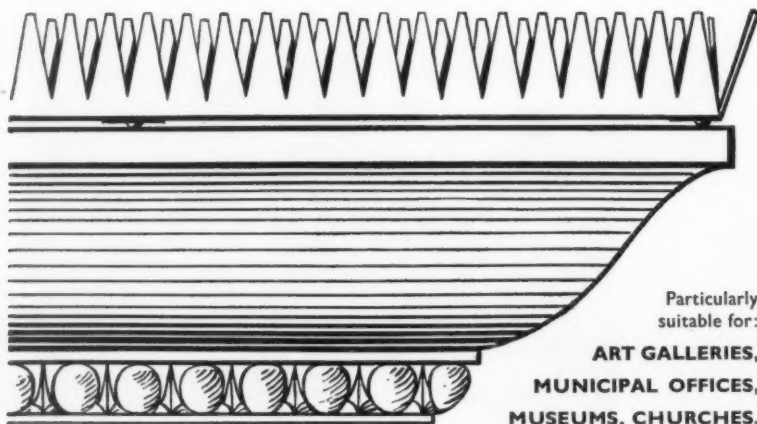
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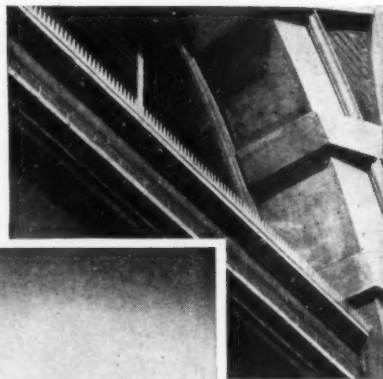
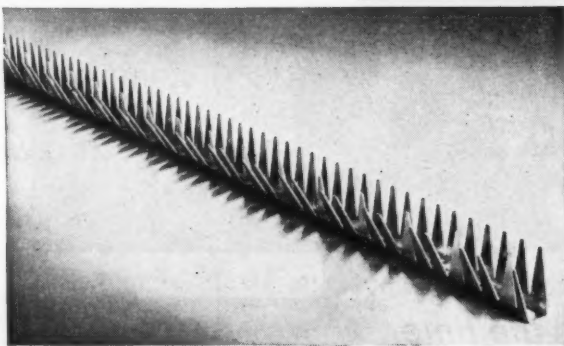


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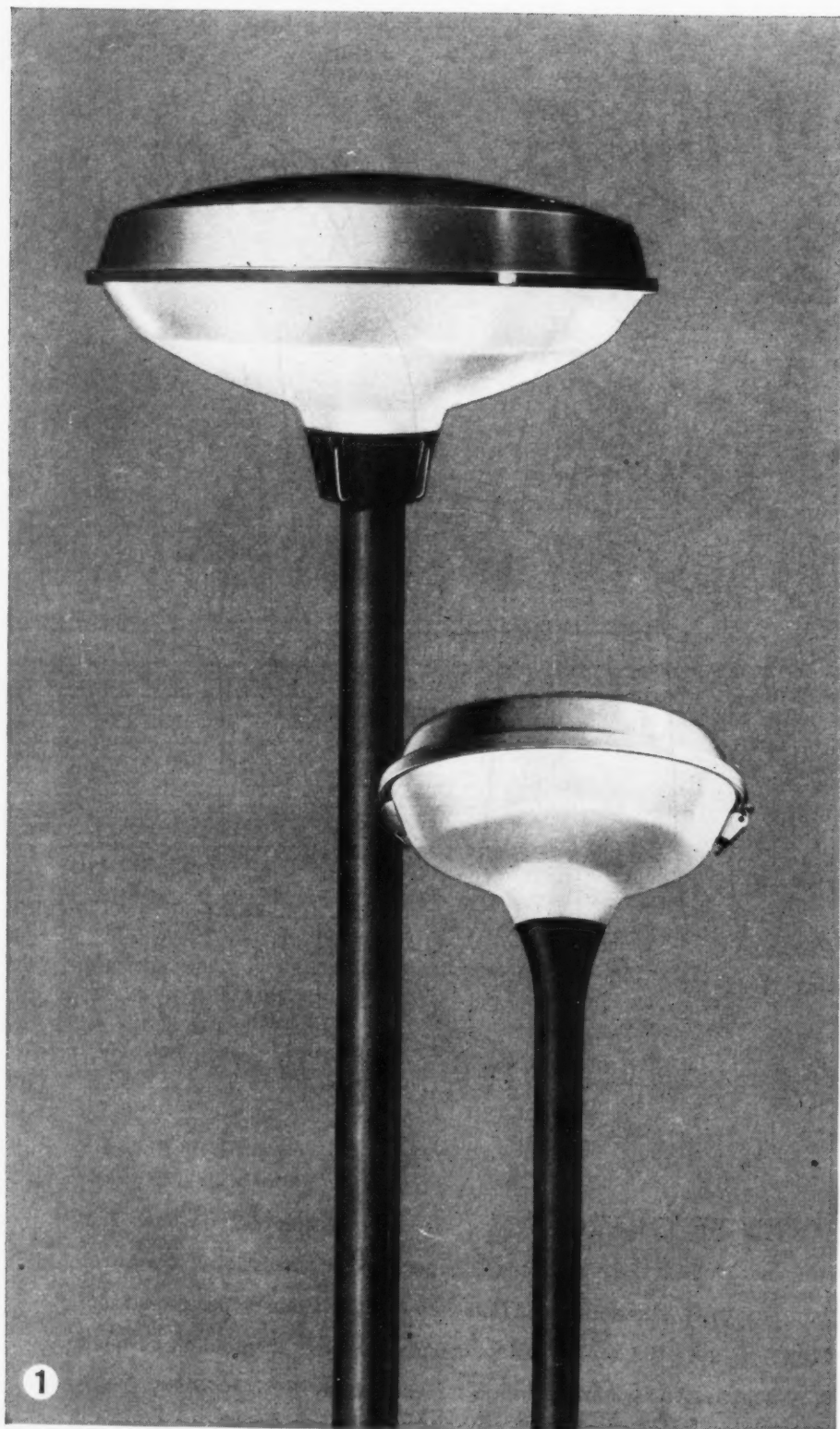
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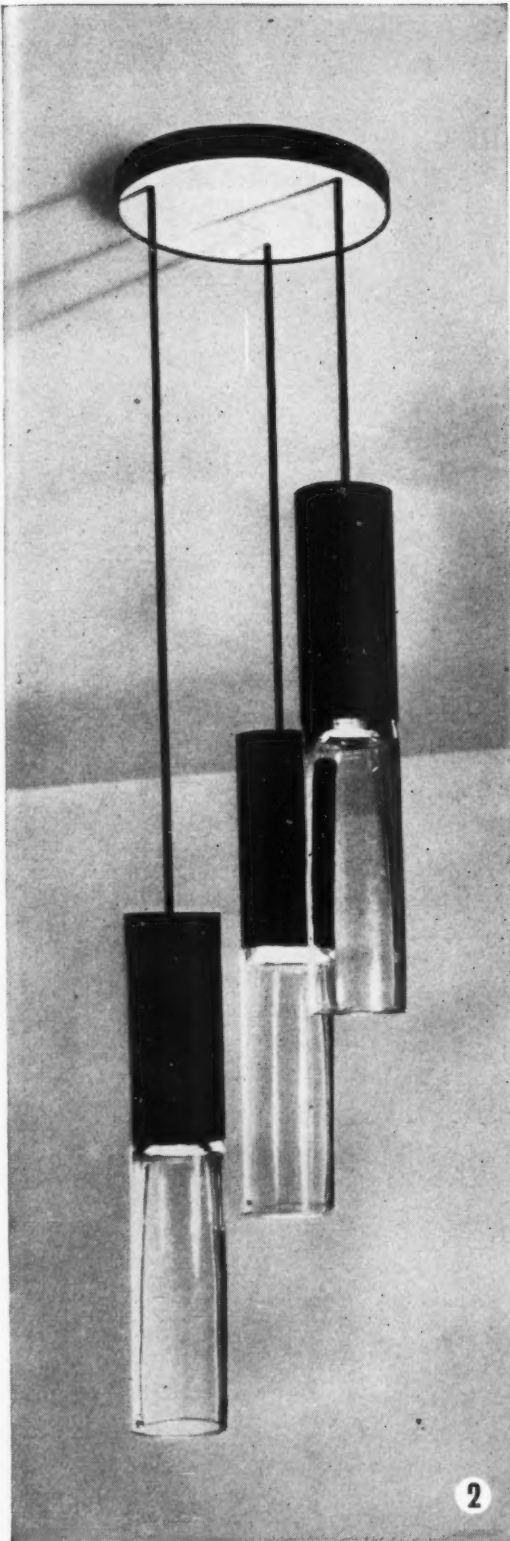
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3



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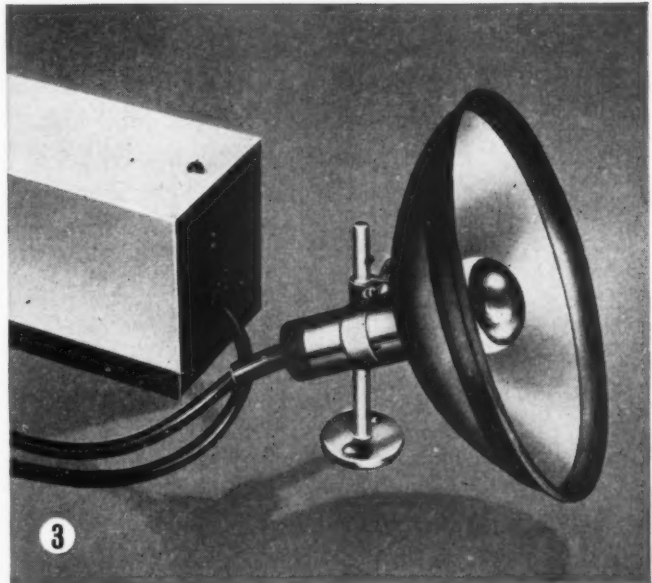
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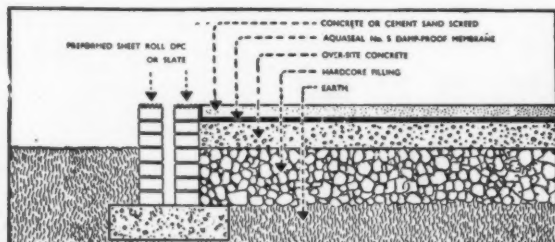
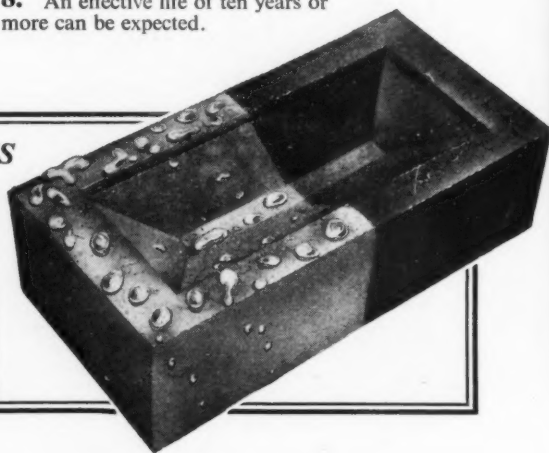
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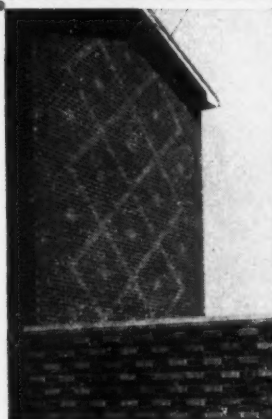
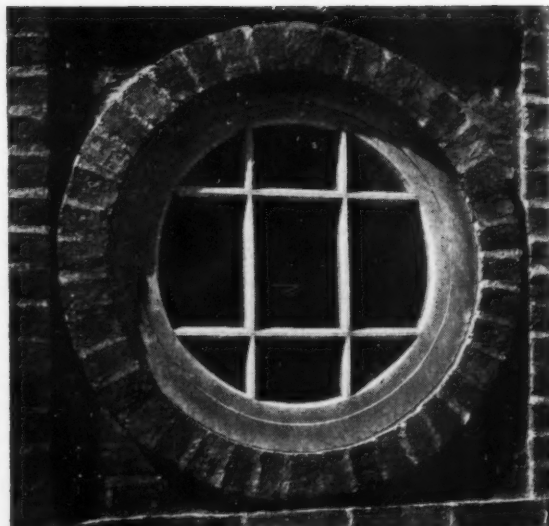
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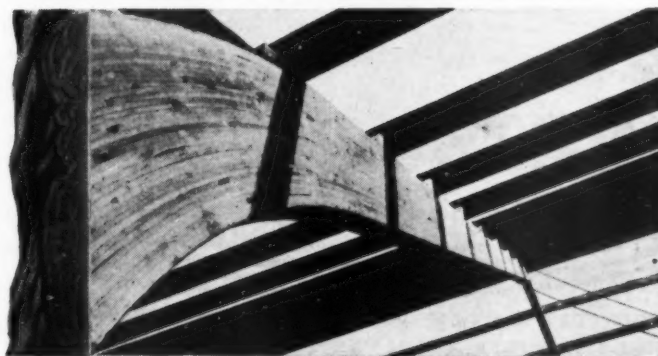
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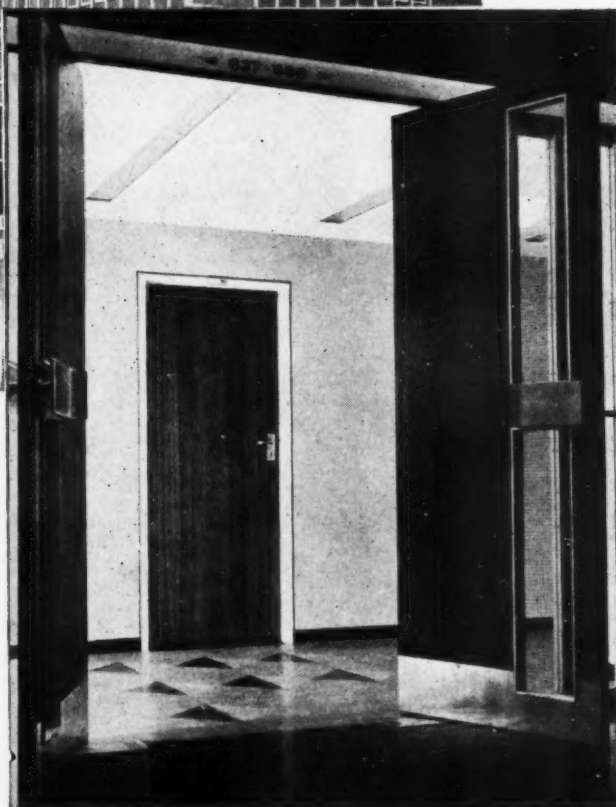
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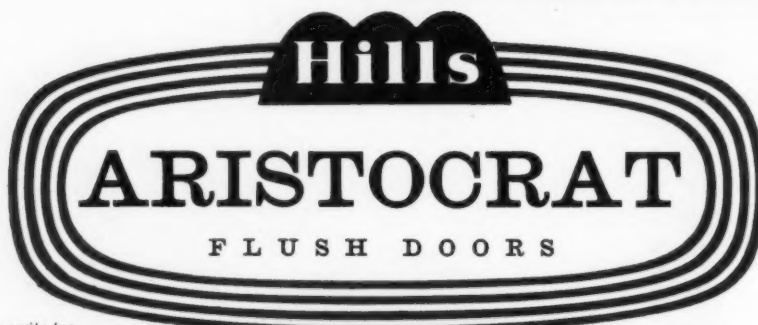
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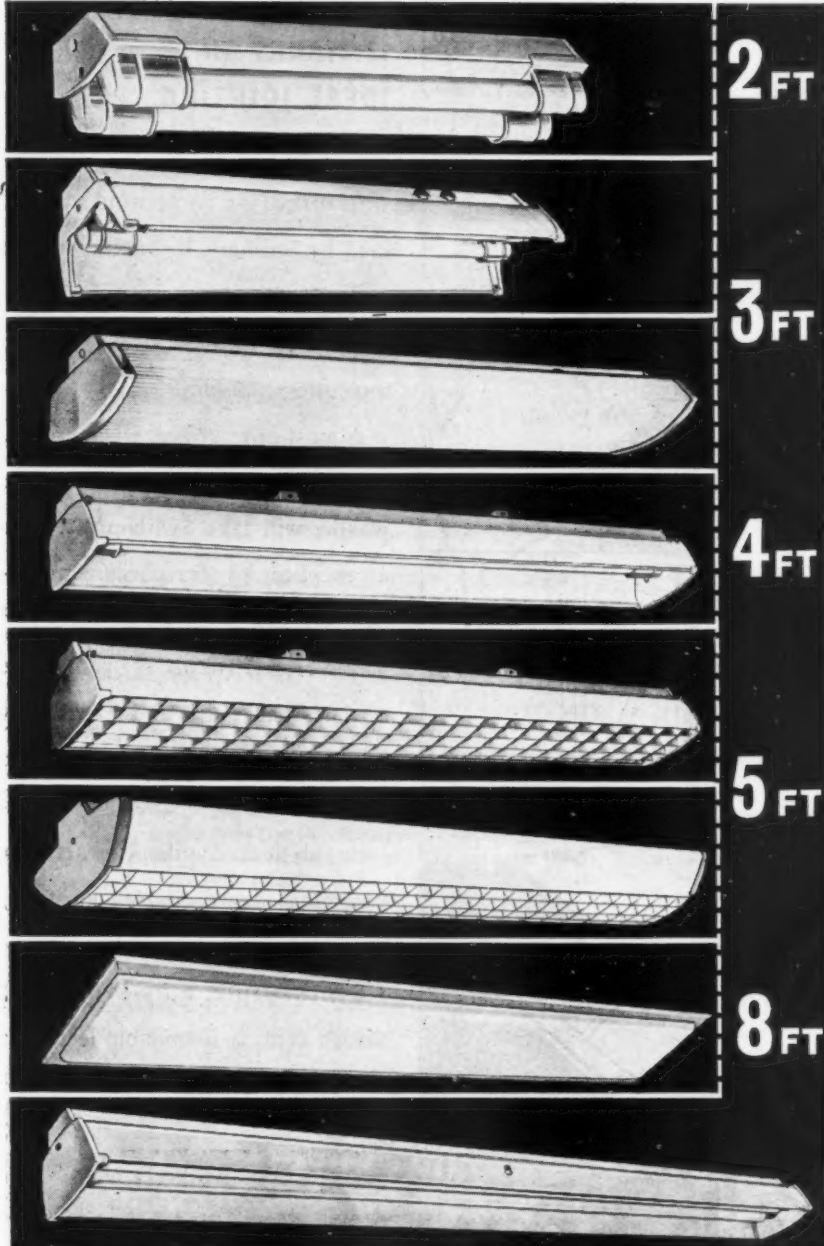
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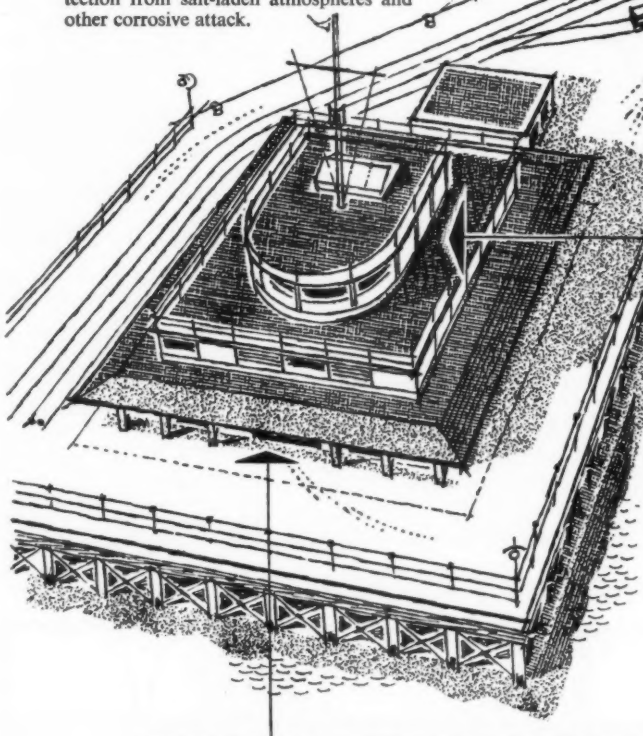
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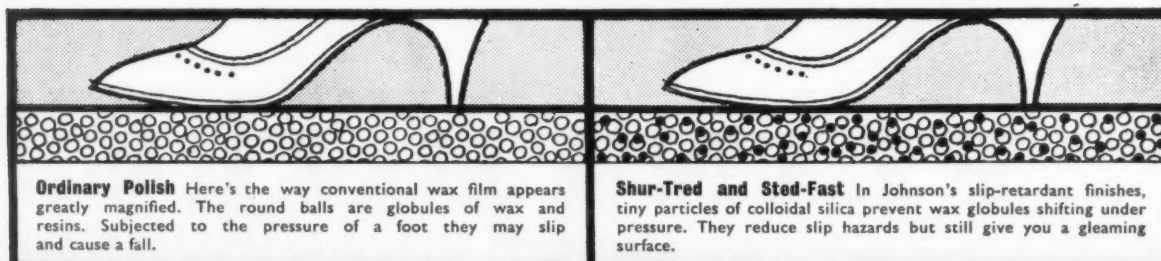
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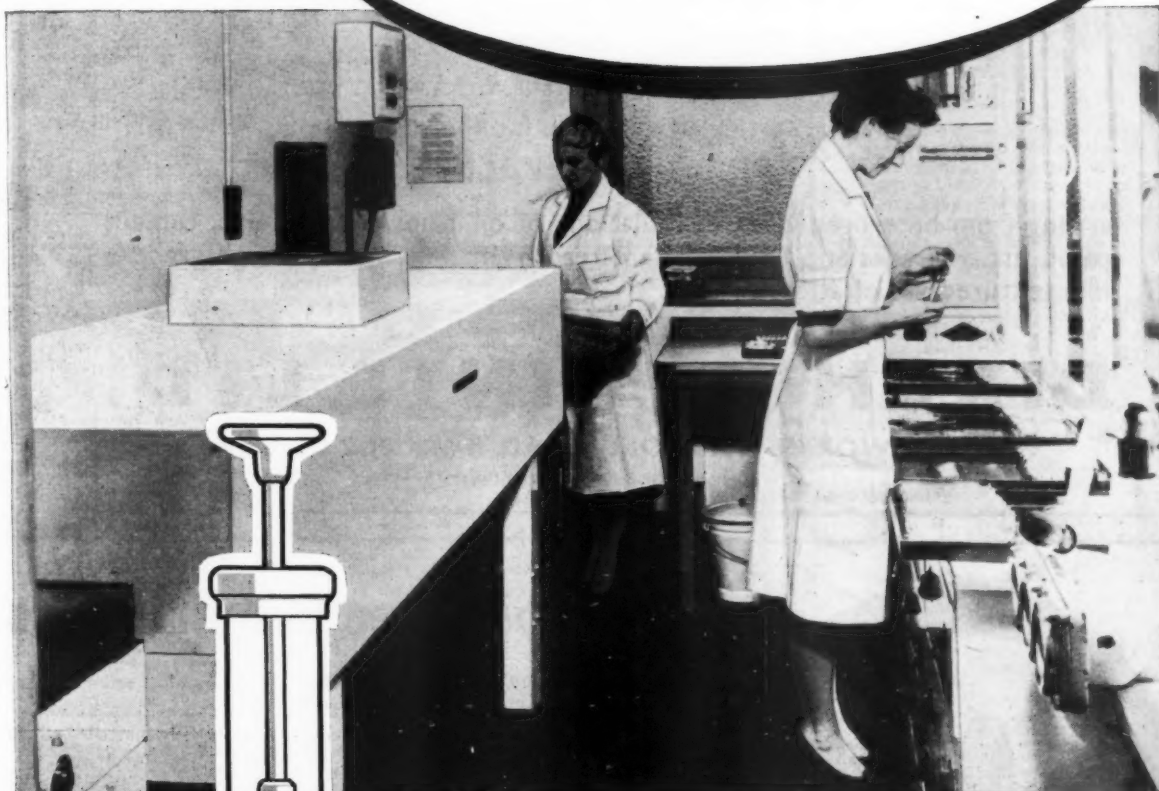
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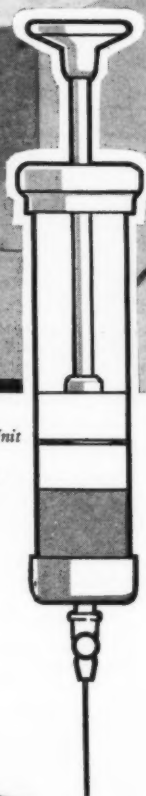
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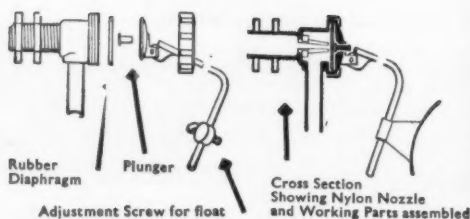
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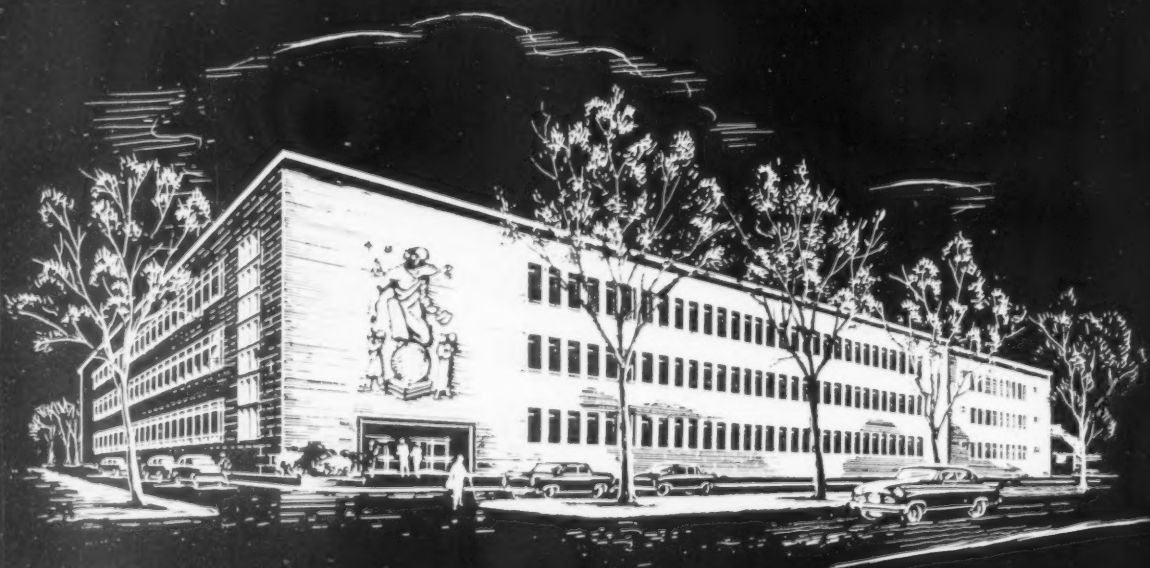
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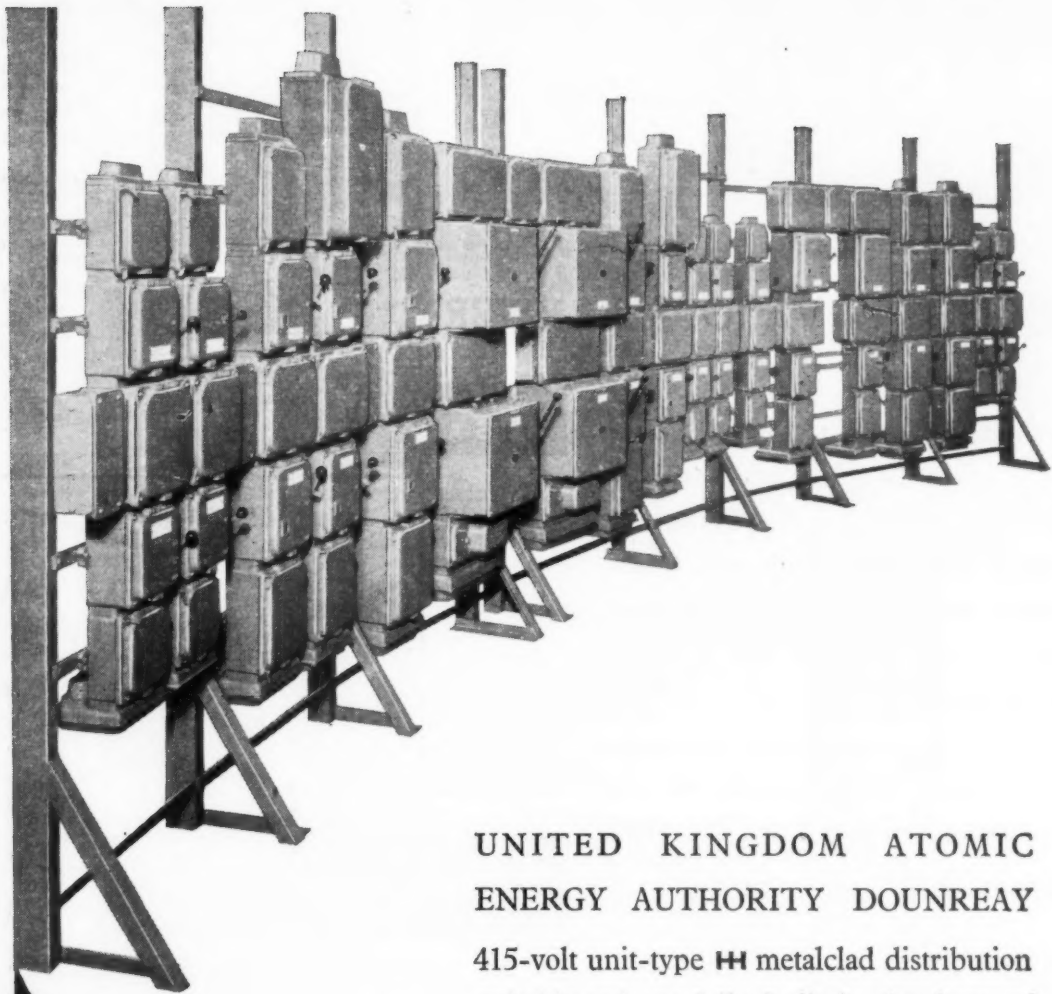
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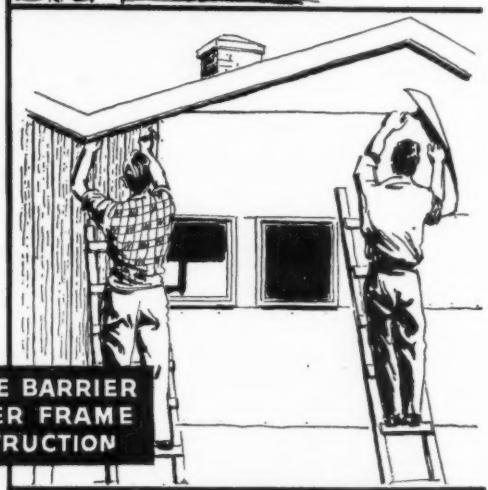
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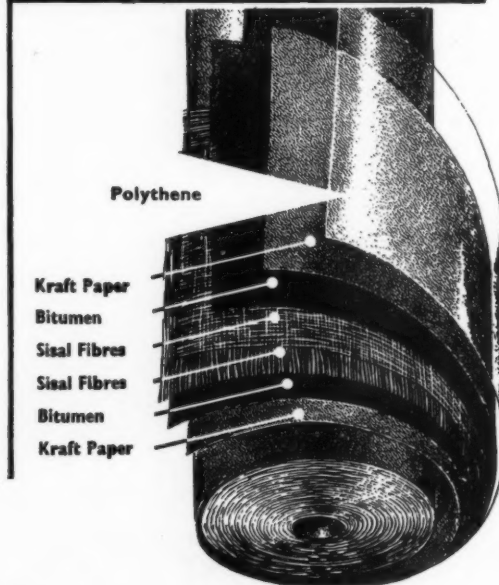
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SARKING UNDER
TILES AND SLATES



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IN TIMBER FRAME
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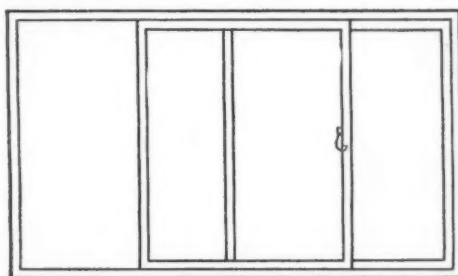


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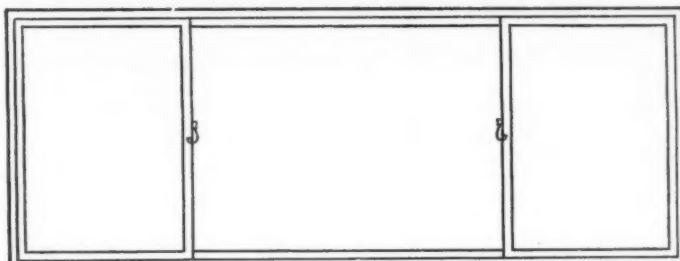
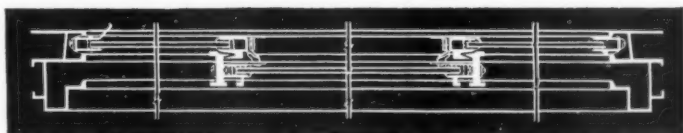
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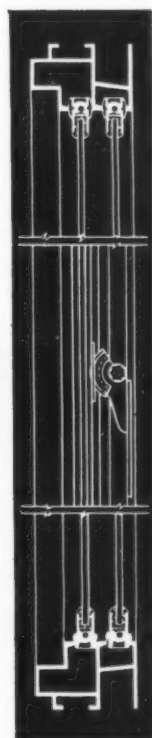
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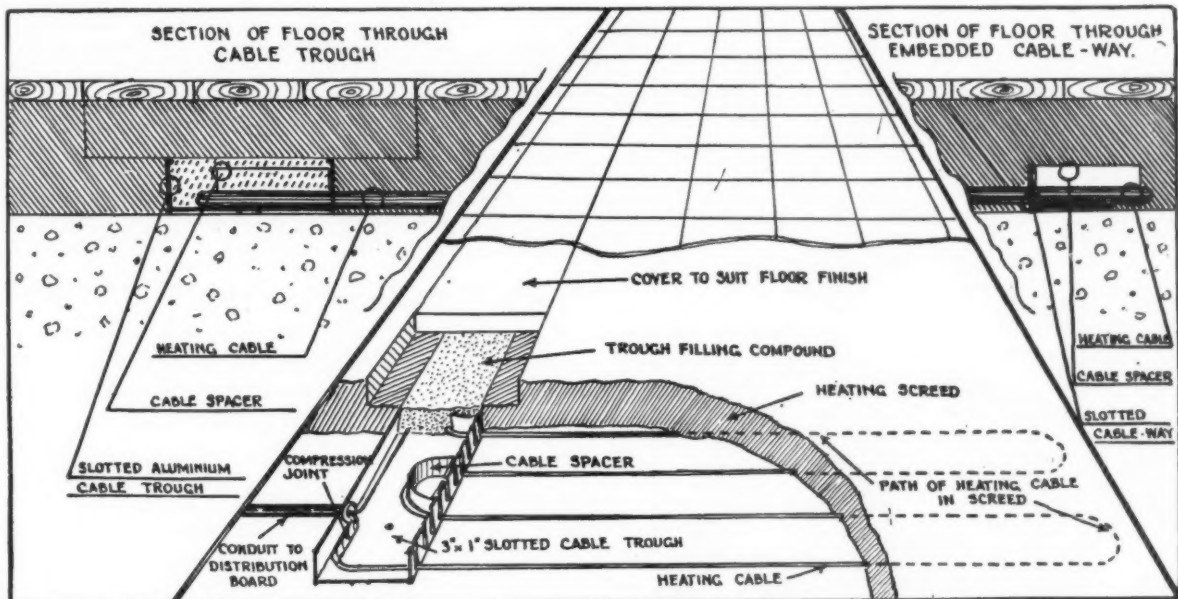
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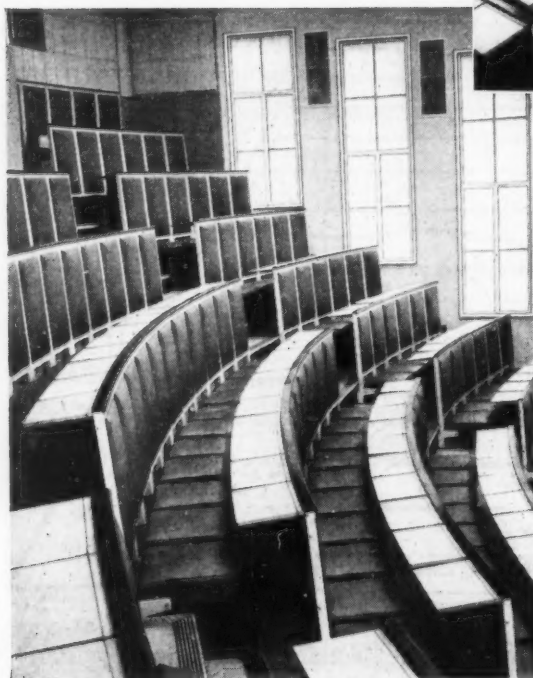
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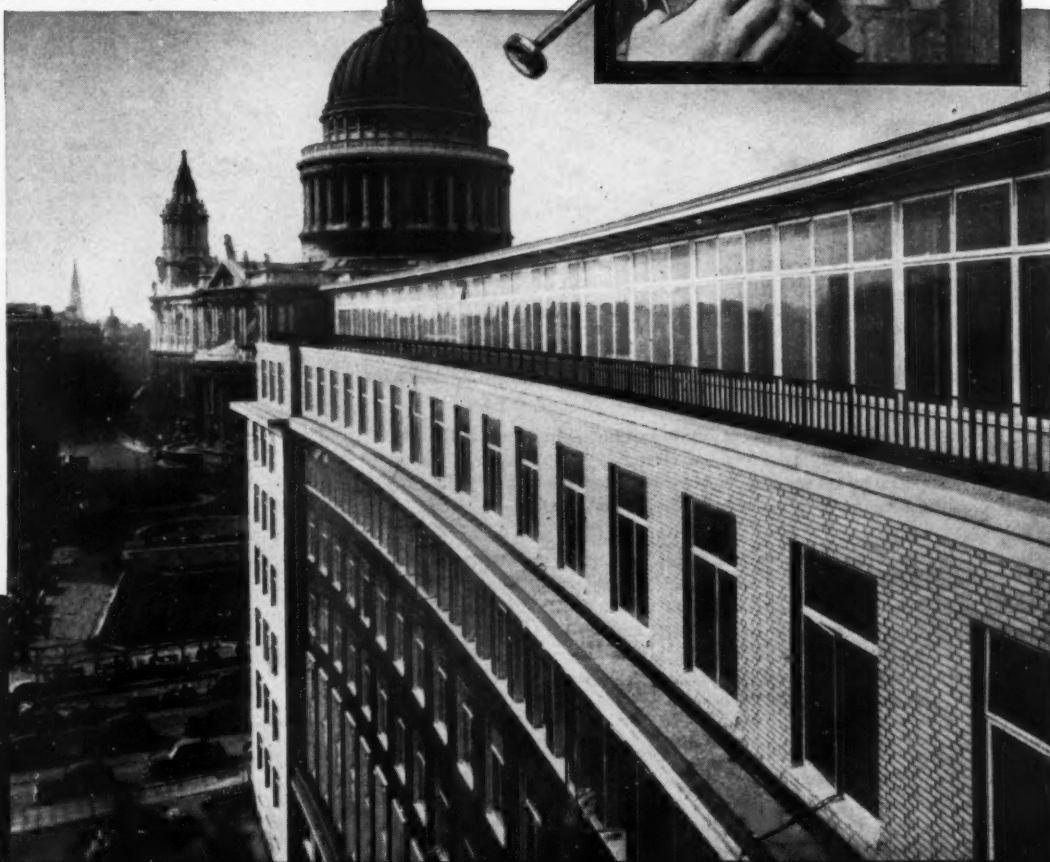
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*SECOMASTIC was used for pointing and sealing at Gateway House, London.
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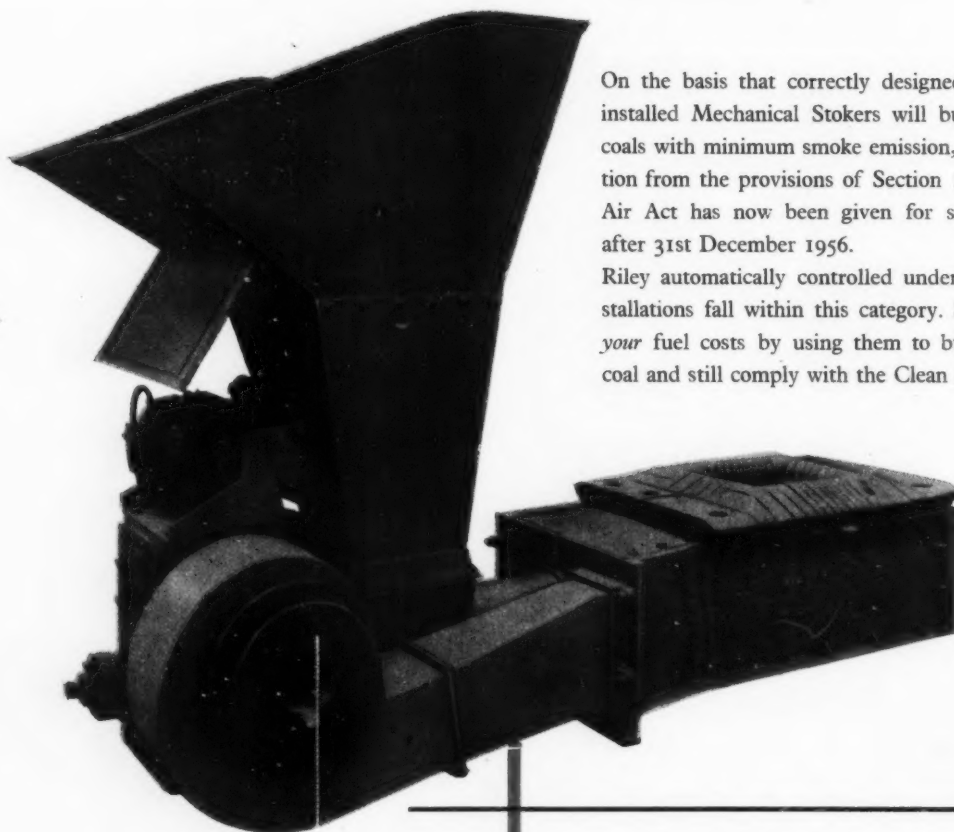
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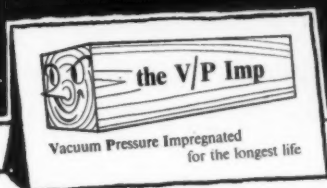
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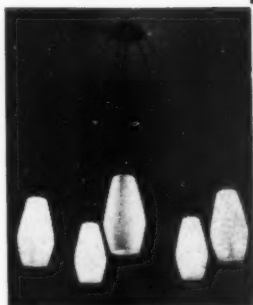
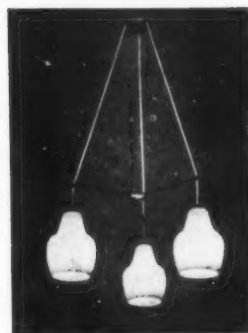
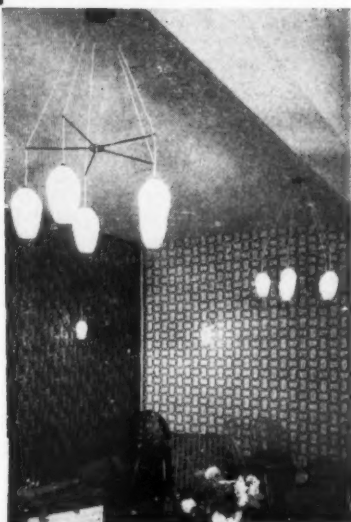
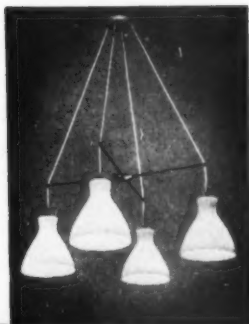
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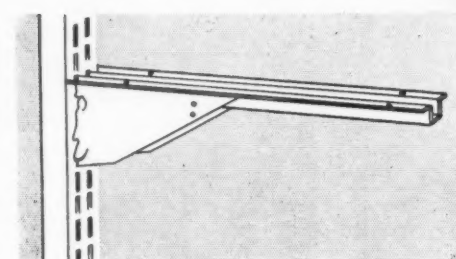
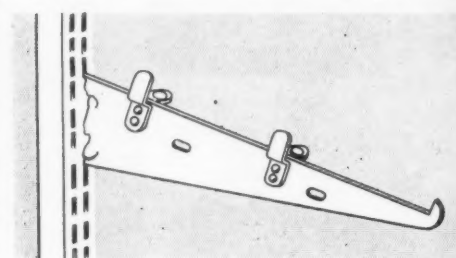
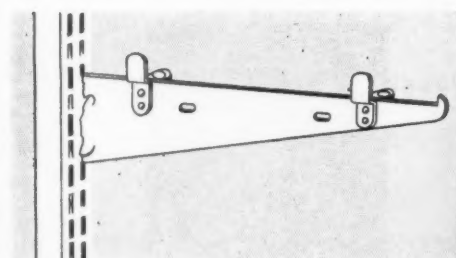
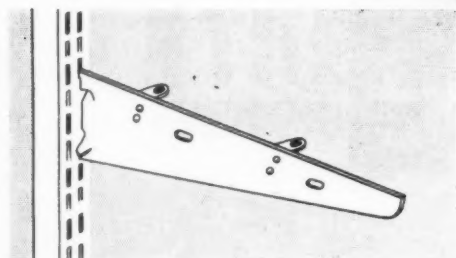
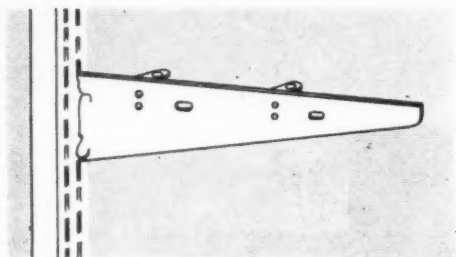
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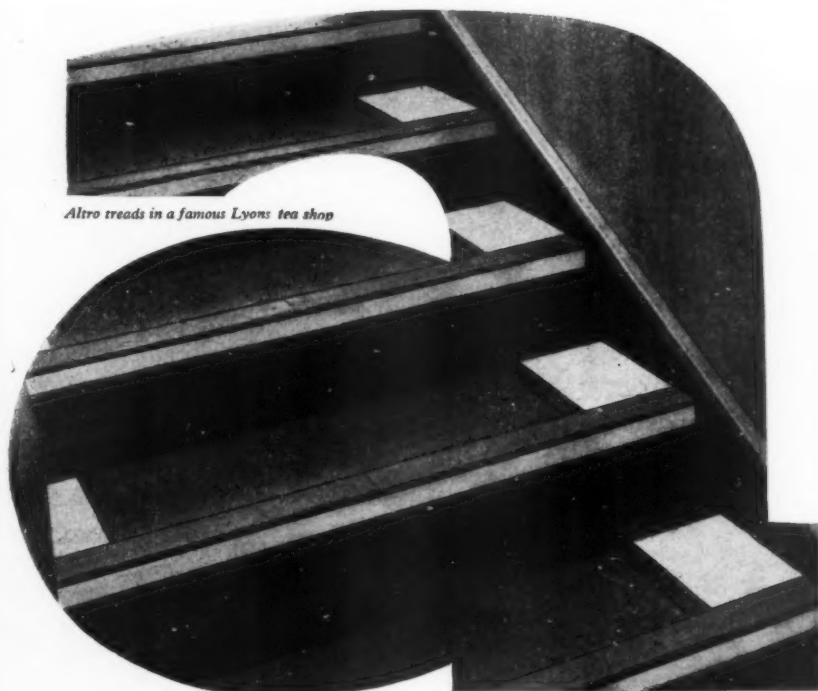
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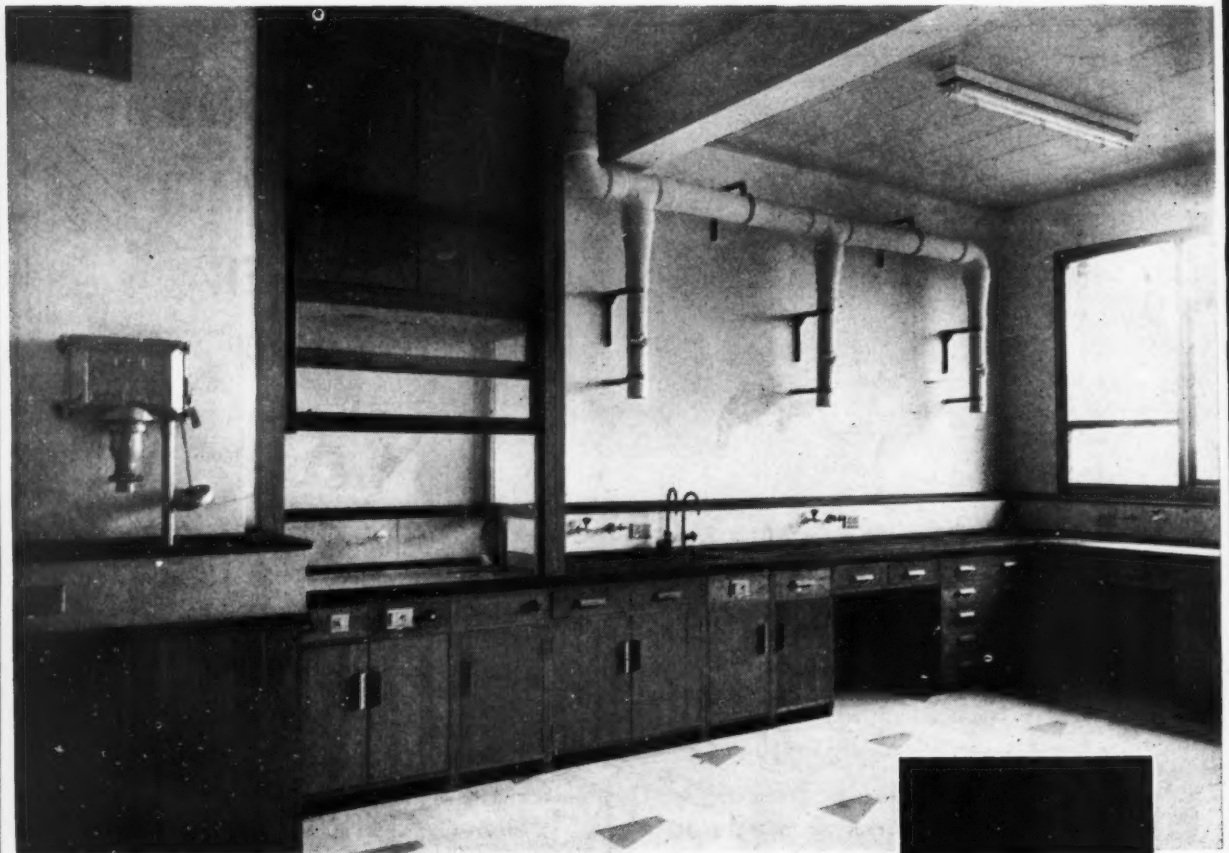
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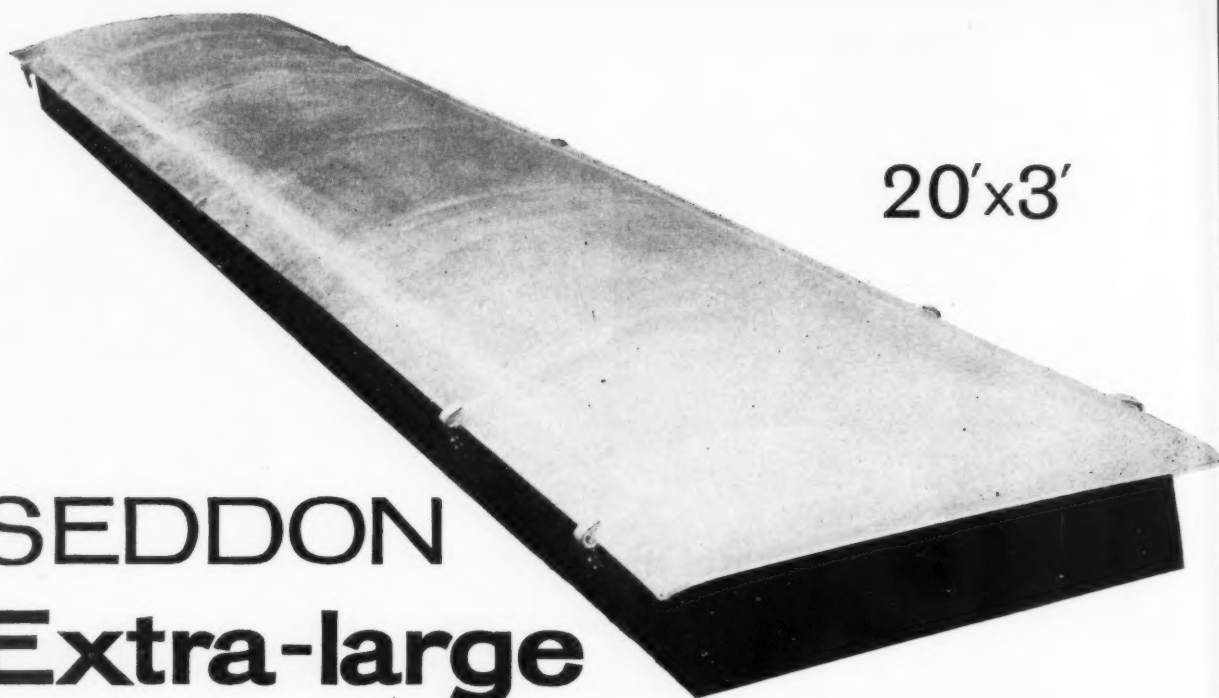
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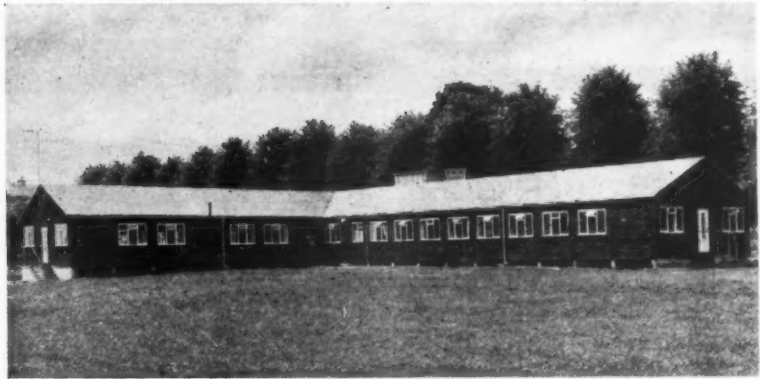
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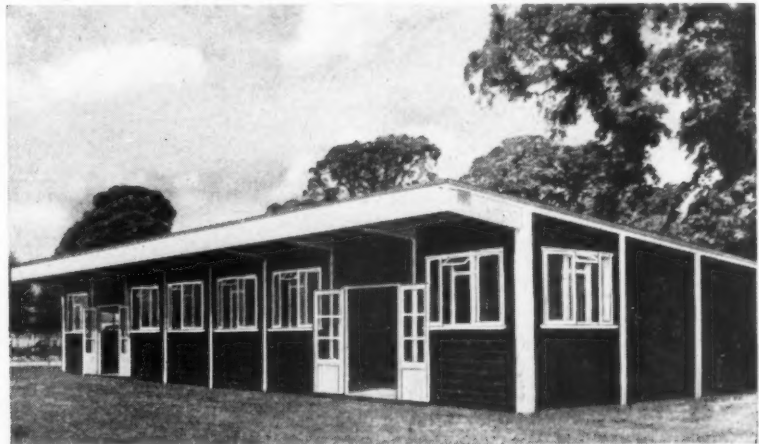
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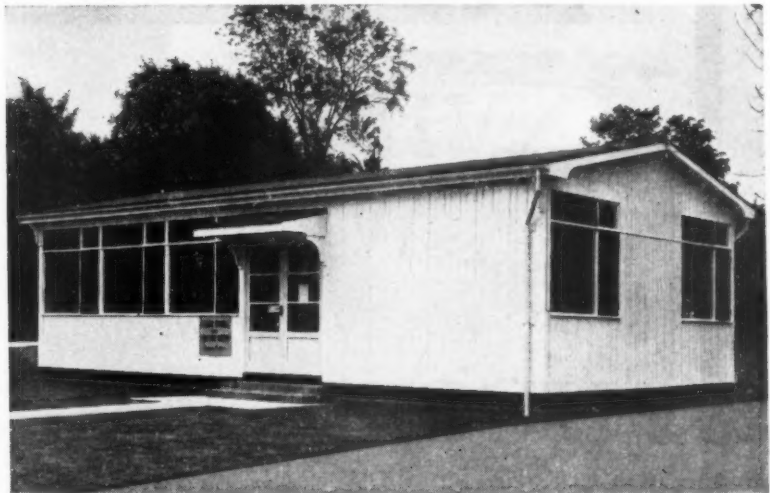
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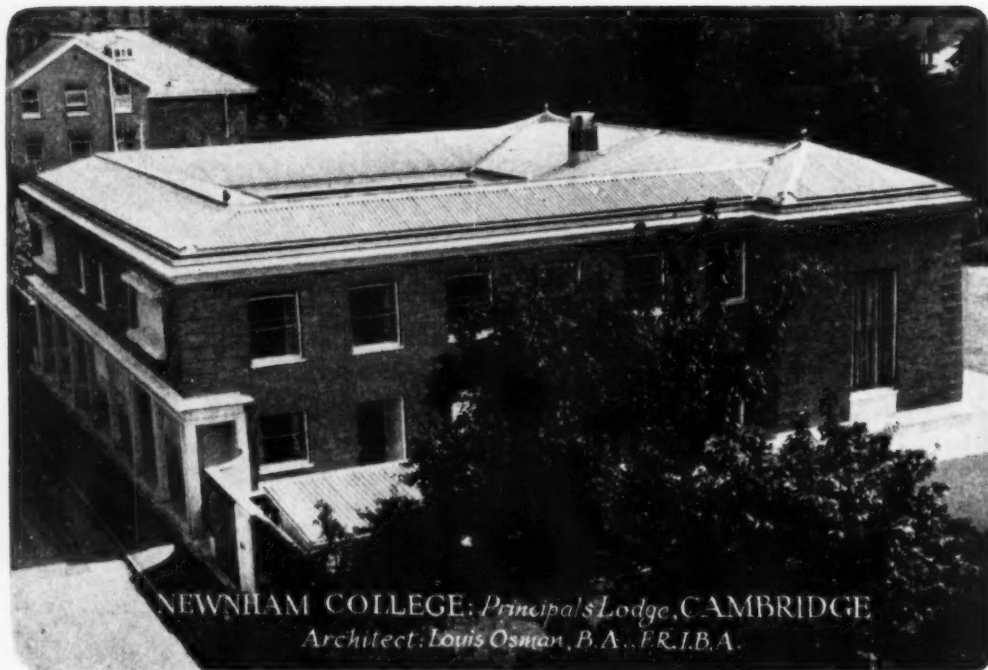
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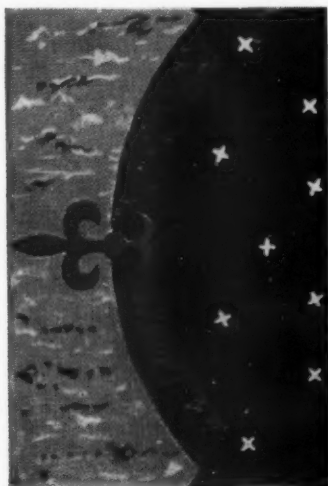
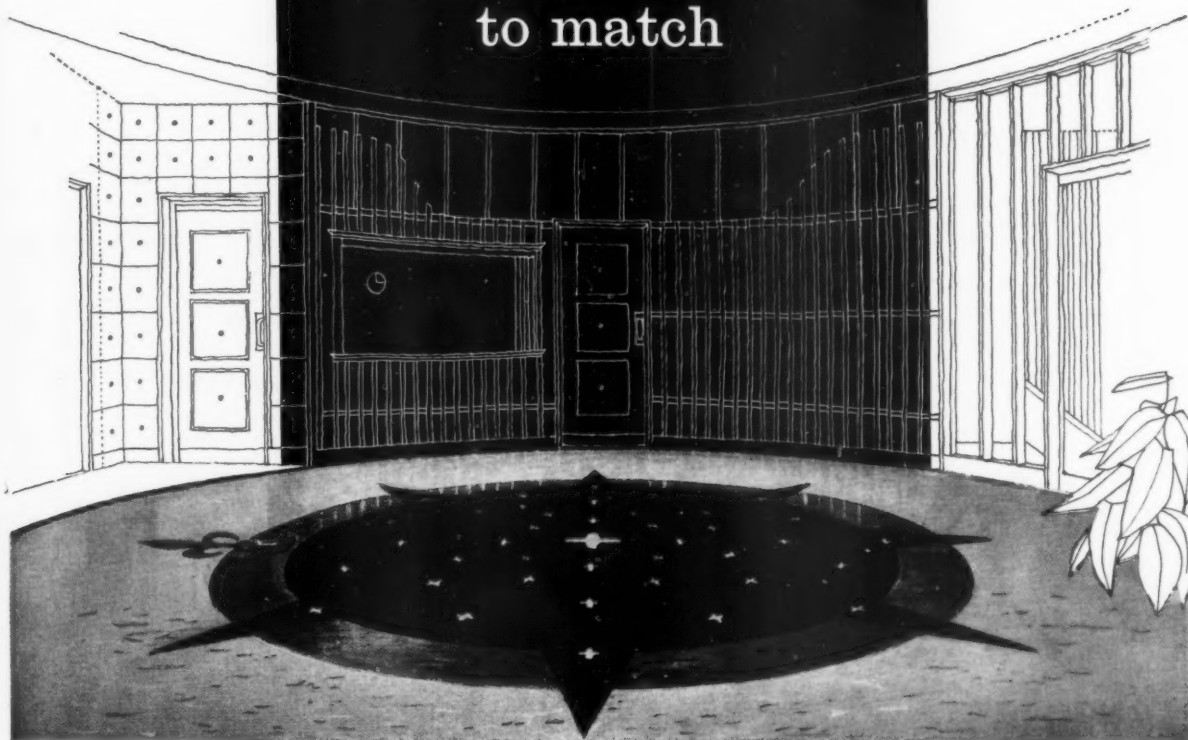
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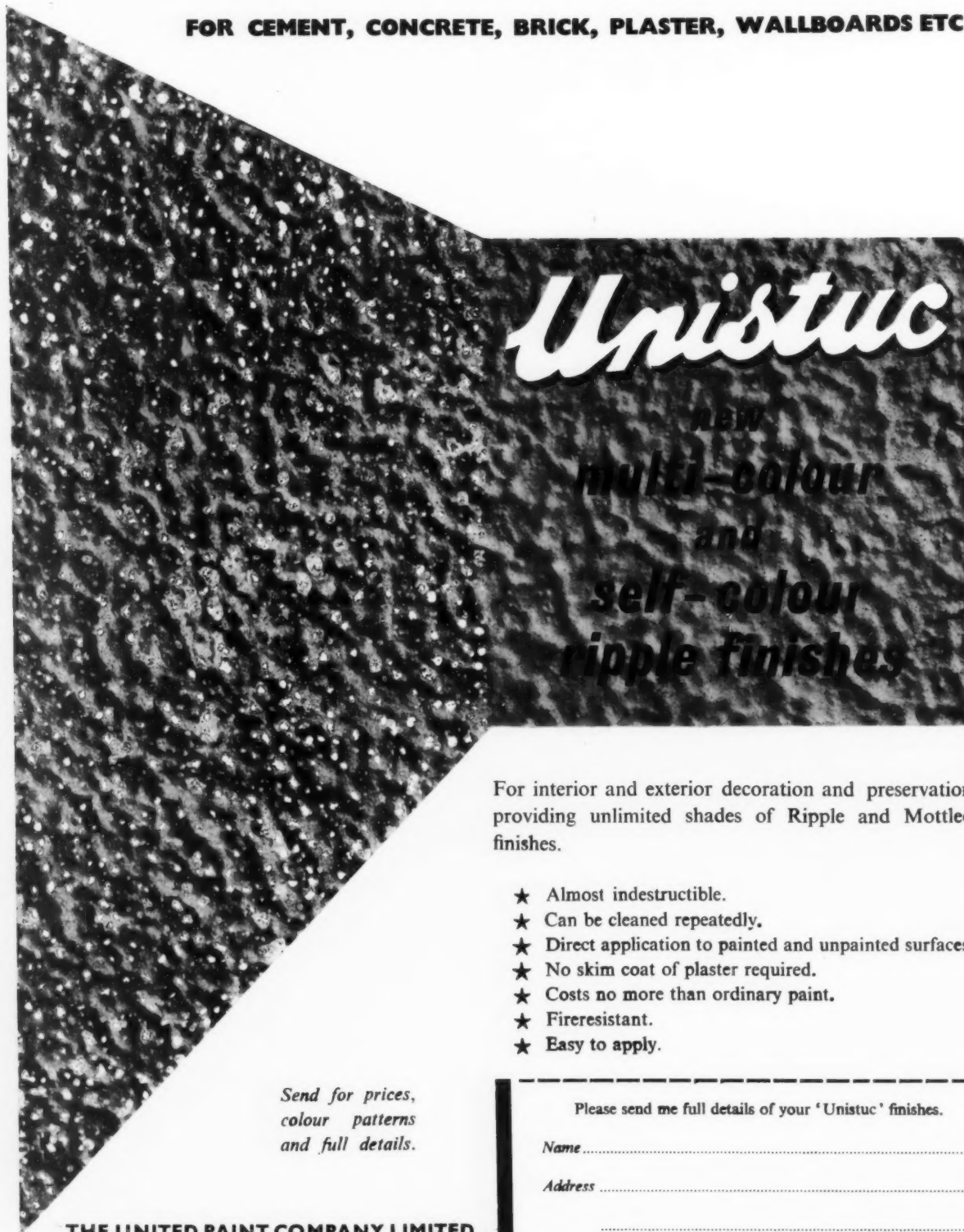
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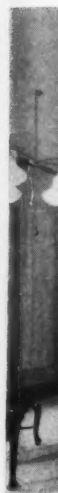
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The Architects' Journal

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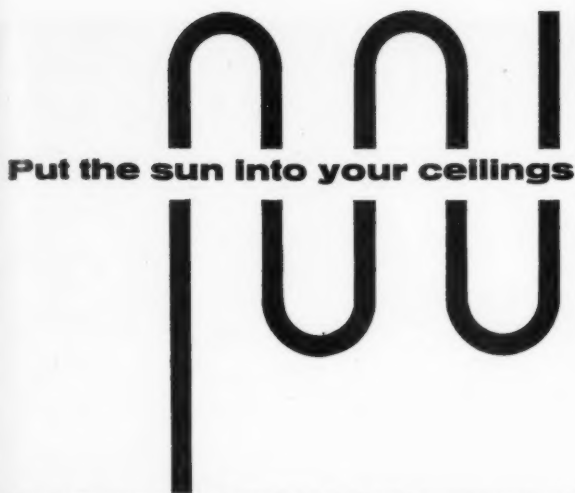
Herbaceous Doom?

It doesn't take a Fellow long to see what's different about each Chelsea Flower Show. Halt at the entrance to the great marquee, draw one deep breath of the intoxicating smell (of trodden turf—all other scents were long since hybridized away), cast one long look from left to right, and it is clear. 1960 marks the doom of the Herbaceous Border. Where once groves of Blackmore and Langdon's delphiniums towered to the canvas, this year we find a bank of orchids stretching into distance and the centre of the tent full of miniature rock gardens and elephantine bedding plants. Apart from one delphinium copse, some superb irises and a small Elysian field of columbines, mulleins and moon daisies, there is not a poppy, a peony, or a lupin in sight.



Derek Lovejoy's garden runs right through—from the I.L.A.'s Garden Layout exhibition.

Their place is taken this year by a display of Alpines—but you know perfectly well you can't grow them, and of the tiny bulbs that come up once and never more; fritillaries, ixias, tiny tulips and strange irises, jolly expensive tiny bulbs most of them. If this trend is a reflection of reality outside, not merely a Chelsea fashion, gardens must be getting very small very quickly, and where they are not, the trend is away from



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Backyard into Patio

This patio garden—one of a series of effective before-and-after shots shown by the I.L.A. in the Garden Lay-out section of Chelsea Flower Show—was designed by architectural student Anthony J. Smith in the small backyard of his ground floor flat in Crawley New Town. Above, the yard as it was, complete with clothes line, seen over the corrugated iron roof of the store shed, and consisting of paving, coarse

grass and a wall. Below: the “lawn” has been simply bricked, a bamboo fence, right, supports a honeysuckle, and the wall a selection of ivies. Narrow beds have been planted with clumps of small bamboo, small rhododendrons, and other glossy and grey leaved plants, including *Senecio* and *santolina*.

Colour is provided by movable pot plants.

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mixed borders and back to a blaze of bedding plants, the most work-making and costly of all forms of gardening.

Certainly this is not the impression of reality one gets from the exceptionally interesting Garden Lay-Out section, of garden designs arranged by the R.H.S. and the I.L.A. Here there are photographs of a few large, grand gardens, an encouraging number of efforts at landscaping by local authorities, such as the L.C.C., Peterlee and other New Town Corporations, and some instructive before-and-after photographs of really small gardens made from sad little backyards, such as the one shown opposite.

Here are all the factors that tend to get left out at Chelsea, the balance of paving, grass and leaves, the permanent setting for whatever flowers you can induce to break out from time to time. Of course the show itself provides wonderful material for such real, small, problem gardens, although it cannot pay heed to the round-the-year qualities of plants, or show them in anything but a blazing mass.

There are the clematis collections, for instance, to guide anyone with a trellis to cover, and the wonderful show of evergreen Irish shrubs, such as *Tricuspidaria*, covered with red flowers like lanterns, pale pink *kalmias* and *escallonias*, for a sheltered place. Even one bulb of the growing repertory of lilies would transform an entire backyard. White azaleas are now to the fore and have a ghostly beauty, though if it is scent you want, stick to the old, yellow, honeysuckle-shaped *Pontica*. Camellias are now so fashionable that nobody needs telling how astonishingly easy they are to grow, in a pot or a box if there's lime in the soil: there were some beautiful later-flowering ones at Chelsea.

This is not a rose year at Chelsea, but Dickson has presented a grand display, heavily be-Floribunda-ed. A new white one, Iceberg, is a lovely addition to the few white roses that we have, and said to grow into a large bush, but is quite scentless: the new scented floribunda, Dearest, a very sharp pink flower. As for Wheatcroft's new—"novelty" must unquestionably be the term—Super Star, it is of the bright blinding colour of luminous socks, and sent me staggering across to the stall full of old roses by Hillier, striped *Rosa Mundi*, the *Chinas* and the *Gallic*, and *Cardinal Richelieu*, a muddy, purplish pink, but at least not luminous.

And then, of course, there are the bedders, Chelsea would not be itself at all without Sutton's Floral Gorge in its midst, that curious, rocky eruption, draped always with hanging swags of lobelia, the ground below packed with nightmare-size gloxinias. One tries to imagine what this place "is," the "real" garden that could reflect its sinister richness and that utterly meaningless passage between the rocks? What's it for, in other words? It is magnificent, but it is not gardening.

SHEILA LYND

The Editors

FIRM BELT, OR SLACK ELASTIC ?

THE population of industrial England is still coalescing round the areas of expanding industries and trade and of plentiful and varied types of employment: London and the Midlands. But, thanks to the car, and mass transport, while central area populations may fall, through being displaced by commerce, the suburban and peripheral populations stay constant in number and the population of outlying villages and farms and hamlets increases in size under ceaseless attack from townsmen anxious to commute and from builders and tradesmen anxious to profit by serving this commuting, or would-be commuting population.

What action does the Government take? None. John R. James, deputy chief technical planner to the Ministry of Housing and Local Government, addressing a meeting of the Town Planning Institute, said that green belts should not prevent the growth of cities. A remark calculated to bring joy to every land speculator and builder. Builders are ceaselessly pressing for more land, the pressure on the much-damaged green belt is enormous. How pathetic that in the face of pressure a Government planner should advocate slackening the belt. Once the buckle of the green belt is released it will never be held. Mr. James should try to create a national planning policy which will relieve, or redirect the population pressures. As a start he might study Lionel Brett's admirable paper on the crisis of urban England, given this week to the RSA, where Brett commends, amongst other measures, the creation of high-density New Towns in the depressed middle ring of cities.

HOW MANY SOCKET OUTLETS ?

For years the electrical industry has been campaigning for more outlets in local authority (and other) houses. This campaign has been justified, but, because it was carried on by a vested interest, it was easy for local authorities and for architects to ignore it. On page 841 of this issue we publish an article reporting an investigation by BRS into the number of sockets provided in local authority houses and the way in which people use them. This report establishes that the present standard is too low. The authors go on to propose a new standard, based on their findings, and to lay down principles for the actual positioning of sockets in rooms. They give the cost of providing the extra sockets and this is small. There is now no excuse for installing too few outlets. Whether we like it or not, many people equate comfort with the possession of a washing machine, a toaster, and a television set. If the houses in which they live do not have enough outlets to enable these appliances to be used properly they are likely to attempt to extend the installation themselves. A high proportion of deaths each year from electric shock is

due to amateur extensions of this kind. The only way in which these risks can be avoided is to install an adequate number of outlets in the first place and to site them intelligently. However, there is one serious obstacle to improvement, which is that many electrical contractors continue to charge a flat sum per socket outlet, and make no allowance for the fact that the cost of installation of each extra outlet goes down as the number on a ring circuit increases. This point has been discussed in some detail in the *AJ* (August 22, 1957, page 291), and a method of overcoming the difficulty suggested, but further progress still depends as much on the electrical contractors as on the housing authorities.



YOU'RE ALL RIGHT, MAC

On June 23 the University of St. Andrews will be the setting for a three-day conference for Scottish architects and for any southerners who care to drop in. I'm glad to hear it will give as much attention to management as to costs. If we all knew more about management we wouldn't have so much trouble with cost control. There's a rumour that we shall soon have the chance of knowing more. There's talk, in fact, of an architects' Sundridge Park. Good.

WHAT, NO DAINTY TEAS?

Meanwhile the layman continues his study of building methods, helped by contractors who are providing roadside comfort for passers-by. Under Cubitts' covered platform on the New Zealand House site they are kept up to date with framed typescripts setting out what's

happened, what's happening and what's going to happen. And at the foot of Ludgate Hill, Myton provides tape-recorded telephone messages about the work in progress. Of course, once a building is more than a hole in the ground nobody seems to care about it. But holes in the ground are more fascinating than ever nowadays. Nobody looking at one could say our building industry isn't mechanized.

EASILY SUEDE

I liked the display by members of the Association of Graphic Designers at the Time-Life building in Bond Street. There's some strong meat here—black and white brutalism, crumbling type-faces, perception-study shapes and portraits of the exhibitors looking beat, hyper-thyroid or ex-Cromer Rep.

*

After seeing this exhibition I was amused to find that the exhibition of the SIA Publicity Design Group (at De La Rue House) is called *The Art of Persuasion*. Do these boys really think they are taste-moulders? To me their work seemed a collection of good old fine art and good-taste graphic design, dating back to the Festival. Still there was evidence on the opening night that someone has confidence in their powers of persuasion. The lunatic fringe who used to come to exhibitions like this dressed as artists came instead as Madison Avenue slickicks.

SLICK ON THE DRAW

Architects, of course, have been in this Persuasion business for years. Just look at the trick perspectives they all use (with the exception of Peter Shephard) to kid themselves and their clients. You may have noticed that Colin Buchanan, in his report on the Monico site, said that Jack Cotton would be building his design but for the uproar created by the publication of a

"reasonably accurate portrayal" of it. The later perspective, as he pointed out, made the Circus "look more open and spacious than it actually appears."

*

Wouldn't it be a good idea if planning authorities asked architects to submit accurate perspectives of their designs? Architects might sometimes be a bit more careful if they were compelled to think of what their buildings would look like next door to other people's.

NUFF SAID

Talking of which, I wonder why so few competition entrants prepare drawings that will be suitable for publication if they win. It was a pleasant change to find that the winner of the Welsh University Hospital competition had included a numbered key. But only if everyone submits a publishable design is it possible for the architectural magazines to show if justice has been done by the assessors.

*

Incidentally, you'll see that the JOURNAL's hospital correspondent (page 825) was not impressed by the winning design. Hospitals are not suitable subjects for competition, but if a competition is held it seems silly that no use is made of the Nuffield Division for Architectural Studies.

DISENCHANTMENT

Architecture, said David Medd at the AA last week, should be made out of schools, not schools out of architecture. He was criticizing the meretricious designs of some famous American architects (and praising the work of others) in a paper about the problems America faces as a country of abundance and extravagance on the one hand, and a country of poverty and simplicity on the other. Many of his freshly-put comments were familiar—such as his warnings about the onrush of Subtopia in America, but his slides were beautiful enough to charm an audience to its knees.

*

Audience reaction was badly represented by the Americo-phile, Colin Rowe, whose rambling vote of thanks was barely polite and was full of references to our familiar English sins and inadequacies. It's certainly true that the architecture of America is flavoured with the ostentation of plenty and free choice, and is often an advertisement (here we go again) for the client. No

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wonder Mr. Medd treated Mies's "iron-belted" buildings, despite their obvious inefficiency, with respect.

OH, MY POOR FOETUS!

If someone asked you exactly what an architect is, what would you say? Would you agree with this definition? "The architect puts things together, the past and the present—the reality and the dream." That's one of the captions by Donne Avenell on Theo Crosby's well-designed propaganda poster exhibition, "Meet the Architect in Your Life." It appears under a picture of an old and a new building, an industrial slum and a city centre project for CIAM X. And it seems to me to be meaningless. The architect certainly puts a new building next to an old one from time to time. But that hardly seems worth saying. I suppose if you've got to make the ordinary laymen interested in architecture there's no point in giving him the straight facts about the profession. They'd be much too alarming, compared with another of Mr. Avenell's safe-sounding phrases "Unborn generations," says a caption, "will live within the framework of the architect's vision."

POTTERS ONE UP

This week's illustration shows what the Civic Trust (architect: Misha Black) have done to reshape and renovate the central area of Burslem, Stoke-on-Trent. I'm told that some of the face-lifting done round the corner by local boys has, in some places, made things worse than they were. But the central scheme certainly looks like a model of what to do with an industrial town, even if the area seems too large and the centrally-placed lavatory block is an inadequate building to provide more definition to the spaces created. No doubt when the trees have grown the whole thing will look better.

I look forward to seeing what the Civic Trust is managing to do at Croydon. If this town can be beautified the Trust is a very remarkable organization.

PRE-RAPHAELITE TUCK-IN

Aesthetes and Socialists, clergymen and artists, architects (1st, 2nd and 3rd generation modern) and slightly homespun looking-Morrisophile ladies, mingled together in the army of over 250 guests attending the garden party at Red House on Saturday last. The

occasion was the centenary of the completion and occupation of the house by William Morris and his bride—Jane Burden the Pre-Raphaelite model.

*

Sir John Summerson, who opened the garden party, congratulated The William Morris Society on its remaining alive. When it was formed "I said the whole thing would be a flop. I was quite wrong," he told his audience, and went on to say that his main feeling about Red House was that it was a young man's house; "Morris," he said, "had lived in it from 26 to 31." "I don't think," Sir John concluded, "any-one over 30 should be here." Certainly there is nothing of the fusty museum about Red House today. Plain white walls in the circulation areas setting off Morris wallpapers and fabrics in the rooms; pine floors, oak stairs and

orange-red brickwork frankly exposed (solid pitch pine lintols over the door openings a 100 years before Rayner Banham); Jean Lurçat tapestry and Tony Holloway mosaic glass hold their own with Dante Gabriel Rossetti and Edward Burne Jones. Morris would have approved of this, as well as of the owners careful and sensitive adaptation of the orchard and garden to modern needs.

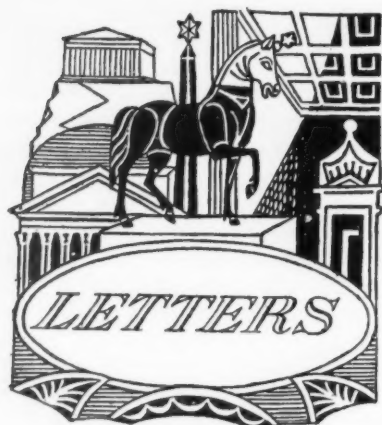
*

With its mature trees (some of which were planted by Morris or his friends) the house and the garden, surrounded by its fine red brick wall, is an oasis: an oasis most competently tended by the architect owners Ted Hollamby and David Gregory-Jones, out of which one walks into the subtopian desert of Bexley Heath.

ASTRAGAL

Two views of the central area, of Burslem, after renovation inspired by the Civic Trust





W. Sinclair Gaudie,

F.R.I.B.A., F.R.I.A.S.

The Electrical Editor

Clive Pascall, F.R.I.B.A.

D. H. Crompton

R. T. Smithson

Publicity Manager, Hickson's
Timber Impregnation Co., Ltd.

Preplanning Raises Prices?

SIR: Your leader of 28/4/60 emphasized, quite rightly, the contractor's plea for full documentation at tender stage. We did this lately, in rather a high degree, for a job worth about £200,000: each of nine selected large contractors was supplied with an indexed set of 86 working drawings and details, photo-reduced to foolscap size and accompanied by a complete set of consultants' drawings, as well as bills of quantities which embodied a particularly full specification.

Two of the nine (neither of them the lowest tenderer) thanked us for the drawings and said they found them useful. Three of the others have so far failed to return the drawings as requested (four months ago).

Of the two tenderers who sent surveyors to see us, one was interested only in obtaining an extension of time, and the other only in getting the names of likely sub-contractors in the area. The difference between the lowest and highest tender was £29,000: the difference between lowest and average was £9,000.

We think that this degree of pre-planning helps us by speeding the site work and saving disputes: but we suggest that it will only begin to reduce costs when the contractors appreciate it and make proper use of it. It would not surprise us, in fact, to find that some of these tenderers got so nervous at the quantity and particularity of the information that they put their prices up.

W. SINCLAIR GAUDIE

Dundee

The Electrical Exhibition

SIR: Some of the points raised by Mr. Nellist in his letter on the A.S.E.E. exhibition require an answer.

Firstly, I do not think that any architect who can conveniently visit the exhibition himself should regard a short review in the A.J. as a substitute. The latter is for the benefit of those who are genuinely unable to go, and to give an opportunity for comment.

The design of fluorescent fittings has improved during the last few years, but the improvement since last year has not, in my opinion, been so marked as to require special comment. I dealt with some aspects of design in detail two years ago, and will do so again as soon as there appears to be anything significant to say.

In the space available it is not possible to deal with more than one subject properly, and if the review were longer, I doubt whether many architects would read it.

As regards plugs and sockets: there are two British Standards governing them—B.S. 546 covering the round pin type rated at 2, 5 and 15 amps, and B.S. 1363 for the 13 amp fused plug range with flat pins. Any others on the market are intended for special purposes, or are individual manufacturers' own systems which are supposed to have particular advantages. I know of only two of the latter, and they are not common in domestic or commercial work.

The whole point about plugs of different amperages is that they should *not* fit the wrong socket, so that varying design of pin and spacing is not due to lack of standardization, it is a basic part of the scheme.

The 2, 5 and 15 amp range was introduced when electricity was generally sold at different rates for "lighting" and "power" and distinctive types of socket were necessary for the two purposes. Further, D.C. distribution was common, and the range had to be suitable for both. At that time round pins were considered the best way of obtaining good contact without making the plug too hard to insert or withdraw.

The 13 amp range was introduced when the tariff structure had changed, and it was no longer necessary to have different sockets for different purposes. Further, D.C. distribution was obsolescent, and the range is intended primarily for A.C. Technical changes also made it appear that flat pins could give a better solution to the problem of designing a reliable plug and socket assembly, and so flat pins were chosen.

The 13 amp plug should now be standard for all new domestic and most new commercial work. The 15 amp plug is still common in factories because it is more robust, while the 2 amp plug is useful in rooms where there is no lighting pendant and it is required to switch table and standard lamps from the door.

I am afraid that I cannot fully understand the basis of Mr. Nellist's complaint. As should have been clear from my review, standardization is such good business that it is extremely difficult to get manufacturers interested in products that will not sell in vast quantities.

THE ELECTRICAL EDITOR

"Where's That Tiger?"

SIR: Without wishing to detract in any way from the excellence of the prize-winning designs of the RIBA/Ideal Home houses, or from outstanding examples of work completed over the last years by Architects such as Taylor & Green, and Eric Lyons, the conditions of the competition were well wide of the mark and there should be, as you state, a second scheme for houses and/or flats of 7/800 sq. ft. to sell at the £2,000/£3,500 level. This means building at £1,550 complete (House £1,250, Site Works £150, Garage £150), say a dozen at a time, or at £1,750 for single units; and, more importantly, at say 8 to the acre on a 30-ft. building frontage for semi-detached and 40-ft. frontage maximum for detached houses. Allowing for land purchase, roads and services costs, and a comparatively modest profit to the developer, this is the market, unless one sets out to alter the whole financing structure, whether Building Society or Local Authority, which, after all, is geared to the average national weekly wage, with only modest increases in repayments for the higher salaried.

CLIVE PASCALL

London

For "Does" Read "Should"

SIR: May I correct an error of fact which appeared in your report of the one-day conference on Daylighting, held at the RIBA? The impression given is that I stated that the LCC now encourages comprehensive redevelopment by offering higher densities where large sites are developed at one time. This is incorrect.

My argument was that since large sites are more "efficient" than small ones, the development of large sites *should* be encouraged more vigorously; and that one way of doing this would be for the Planning Authority to allow a bonus of more floor space (and a correspondingly higher density), where sites are large.

D. H. CROMPTON

Liverpool

Wood: a Better Fire-Risk

SIR: We have read with great interest the article in the May 5 issue of your journal about a timber hangar at Gatwick. We were pleased to note that some acceptance is being given to the idea that timber can be a better fire risk than many other materials of construction. However, we question the wisdom of using untreated timber under such circumstances.

The argument that the building will last one hour before it collapses is sensible, but there is evidence to suggest that impregnation with a flame retardant preservative can save a substantial part of the building too, as well as to provide time for the evacuation of the aircraft.

May we quote the following extract from a publication by the American Institute of Timber Construction. This gives details of the results of serious fires in hangars very

much larger than the one described in your article.

"Fires in the Navy Lighter-Than-Air wood blimp hangars, which are approximately 300 feet wide by more than 1,000 feet long, and 180 feet high with no partitions, give an indication of the effectiveness of fire retardant impregnation of heavy timber members.

"At Brunswick, Georgia, a blimp containing 450 gallons of aviation gasoline was burned in the hangar during refueling operations. The flames reached the fire retardant treated wood sheathing and framing for a substantial period of time and destroyed electrical conduit, but did not damage, except for blackening or slight charring, the wood sheathing and framing.

"At Richmond, Florida, following collapse from hurricane forces exceeding two and a half times those designed for, short circuits or metal sparks started fires in the contents of three ITA wood hangars. It is estimated that in excess of 40,000 gallons of fuel were in the 14 blimps in operating condition, 366 aeroplanes, and 150 automobiles housed therein. Also, there were other high inflammable contents such as blimp bags, dope for blimp bags, etc. The intensity of the fire could be gauged from fusion of glass, melting of copper parts and burning of various other metal parts of planes to ashes, and similar items. It is known that the fire temperatures exceeded 2,000 deg. F. Due to a number of circumstances, the fire fighting was not a significant factor. The treated wood burned to ashes where flame was fed by the aviation gasoline, but the fire stopped in the wood members directly at the edge of the gasoline pools even though the framing members were badly shattered in falling nearly 200 feet and their untreated interior was thereby exposed to the fire."

Specifying authorities are naturally loath to commit themselves on the probable effect of very high temperature fires on wood structures and it is only from evidence of the type quoted that the immense value of flame retardant impregnation can be gauged.

R. T. SMITHSON

London

DIARY

Tall Buildings in New York. Talk by Ely Kahn, RIBA Yerbury Foundation, 66, Portland Place, W.1. 6 p.m.

JUNE 2

The Architecture of New Roads. Course at the Institute of Advanced Architectural Studies, Micklegate, York

JUNE 3-7

"Motropolis" Discussion. Association of Building Technicians, London Branch, at the Building Centre, 26, Store Street, W.C.1. 6.30 p.m.

JUNE 3



RIBA

A Tour of South America

The RIBA propose to arrange a series of architectural tours of foreign countries, the first tour being South America. The itinerary tentatively suggested includes: Rio de Janeiro, Sao Paulo, Brasilia, Caracas, Maracaibo and possibly Mexico City, Miami and New York. Those interested should write to the Secretary, UK Committee, IUA, 66, Portland Place, W.1.

LCC

Crystal Palace Recreation Centre

The LCC has accepted the tender of M. J. Gleeson (Contractor) Limited for the construction of the Crystal Palace Recreation Centre on 36 acres of the old exhibition ground at a cost of £1,919,614. The centre will be run by the Central Council of Physical Recreation, with financial help from the MOE, the LCC and others; and its aim will be, by the training of coaches and leaders and providing competition facilities to encourage athletics up to Olympic standards.

BELFAST

Survey and Plan by Robert H. Matthew

A survey and comprehensive plan for the future development of Belfast will be carried out by Professor Robert H. Matthew at the request of J. L. O. Andrews, the Northern Ireland Minister of Health and Local Government. Professor Matthew will first produce an early interim report on the suitability of sites for house building. The Minister stated that he had the widespread support of the local authorities likely to be affected, and the Belfast Corporation has suggested that an independent planner be engaged.

ILA

Designing for Pleasure and Hard Wear in the Landscape

This symposium which the ILA held at the RIBA on May 24 was well described by Mr. Deedes, MP, in his opening speech as an exercise in consumer research in urban environment.

The speakers all dealt with various aspects of the problem of designing a landscape which will not only stand up to the wear of urban crowds, but will also give them active pleasure. Miss Margaret Willis (LCC) gave the findings of a sociologist on the use of open space in high density development. A series of excellent slides, showed the trend of LCC development from the early examples of flats with dreary tarmac on one side and fenced-off grass on the other, to the more recent attempts to design the whole ground-space for maximum use. Careful space division, the use of different levels, well-sited paths and good looking fencing (where this is essential) have enabled children's play-space, and sitting areas for adults to be combined with pleasant views from the flat windows. The omission of living rooms from the ground floor and the provision of quiet interior cloisters for old people were shown as solutions to the recurrent problems of noise and lack of privacy. Problems which have not, however, yet been solved.

Throughout the talks, there was an emphasis on the problem of children in towns. The huge size of modern towns has robbed children of their natural playgrounds and substituted the lethal hazard of traffic for the harmless adventures of the countryside. Their plight is therefore one of the most urgent problems of urban environment, and valuable suggestions for saving them from either death by traffic or delinquency through boredom, were made by David Randall of Crawley New Town. He gave the results of research into the casual play habits of children, and the slides which he and Bodfan Cruffydd showed illustrated an attempt made at Crawley to provide a "play as you go" landscape throughout the town. The usual attempts at preventing the children from using walls and trees as play equipment have been replaced by positive design which accepts this use and ensures that the landscape will stand up to it. Interesting devices are the covering of humped tree roots with setts and the provision of an additional coping between a wall and adjacent planting to take the occasional footfall from the children running along the wall-top. Woods in the town are opened up to the children on a system of rotation, which allows time for natural regeneration. The result of this positive attitude is less damage, more enjoyment and a more interesting and robust landscape. The pattern evolves of



A tree mound, covered with setts in a paved area near the Tilgate neighbourhood shopping centre, Crawley. Designed by Ray Miller and Bodfan Gruffydd, the landscape architect of Crawley Development Corporation.

a network of three systems; traffic, pedestrians and children. The last two intermingle but are differentiated; the easy path for adults, the wall-top or meander for children; the playcourt and the quiet sitting space. Although little was said on traffic segregation it was implicit in all the examples shown, whether the town square at Vallingby, full of bathing babies, or that at Stevenage, busy with shoppers, or the small shopping precincts at Crawley. There was some criticism from the body of the hall that fundamental issues were being avoided and that the whole concept of urban living and the grouping of dwellings should be questioned instead of palliatives being applied to the typical new town layout. In response Mr. Gillespie from Cumberland explained their plan for complete segregation of the traffic and the conception of high density areas all within ten minutes walk of both the town centre and the open country. Adults and older children will be expected to find their recreation areas outside the closely built-up housing. These recreation areas are to be carved out of the sheltering woodlands which will surround the town. This suggests a far more effective landscape in terms of appearance and use than the intermingling of low density housing and open space common in the earlier new towns, with the resulting monotony and long distances from both periphery and centre.

It was felt that these fundamental problems of the pattern of open space its relation to density and the grouping of buildings and the segregating of traffic, could only be solved by working parties on which all the professions concerned would be represented. The meeting therefore passed a resolution asking that invitations should be sent to all relevant professions, to set up a committee for research into the full use of urban open space for the enjoyment of living.

Whatever may result from such research, the basic problem of adjusting the ecology of the landscape to the accommodation of crowds, will remain, and the experiments carried out by the LCC and Crawley will provide a valuable basis of information on which to build.

SYLVIA CROWE

AA

1960-61 Council

The result of the ballot for the election of the Officers and Council of The Architectural Association for the session June 1, 1960 to May 30, 1961 is as follows:— President, Edward Playne; vice-presidents, J. M. Austin-Smith, Anthony Cox; hon. secretary, G. Epstein; hon. treasurer, John Lacy; hon. editor, Leo de Syllas; hon. librarian, Hilton Wright; past president, H. T. Cadbury-Brown.

Ordinary Members of Council: John D. Broadbent, Dargan Bullivant, James Cubitt, Erno Goldfinger, Denys Lasdun, Leonard Manasseh, Peter Moro, Peter Newnham, Geoffrey Powell, J. M. Richards.

BIRMINGHAM

Deputy Architect Appointed

Raymond J. Ash, the deputy city architect of Newcastle upon Tyne has been appointed deputy city architect of Birmingham, succeeding J. R. Sheridan Shidden, who has been appointed city architect of Leeds. Mr. Ash has also worked at Coventry on central area redevelopment.

BID

Reasons for Brick Shortage

Past President of the Building Industry Distributors, AGP Lincoln, speaking at the AGM on May 23, said that the Government policy of turning the tap on and off was only partly responsible for the brick shortage. "There is another reason," he said. "A large brick maker (you all know to whom I refer) will in times of comparative plenty, instead of stock-piling against a time of higher demand as they should, spread their area of activity and because of their lower costs put many small makers out of business. When, however, scarcity occurs, they contract their area of activity again, leaving a greater scarcity than before."

LOBATO

Technocratic Planning in Lisbon

It is well known that our democratic safeguards (committees, consultations, public enquiries, persuasion rather than direction etc.) ensure that town planning laws and procedure are administered fairly and equitably in this country, with the inevitable result of long delays and compromise solutions. It is equally well known that Salazar's Portugal

has for the past 28 years not been concerned with democratic processes in the same way as we are. It was therefore with some interest that one looked forward to Senhor Lobato's lecture at the RIBA on "Planning and Controlling City Growth." It transpired, however, in the end that more power does not necessarily produce better results.

Senhor Lobato first explained the main regional problems of Portugal and some common sense proposals to solve them: half of the total population is concentrated in two industrial regions, one of which is Lisbon, and only 12 per cent of the population live in the rural areas. There is a natural increase of 56,000 people per annum and 40,000 emigrate each year. The second economic plan which started last year, aims at counteracting this unbalance by stopping the flight from the country into the towns and reversing it: more diversified industries will be established in the rural areas and the smaller towns.

A belt of dormitory towns has sprung up around Lisbon in the past 30 years and the plan provides for local employment in these towns and for new roads inter-connecting them and linking them to the capital. A railway network completes the traffic system. By 1970, Portugal's population will have increased to 10 million, while the population of Lisbon will reach 1,200,000 and greater Lisbon 2 million, i.e. one-fifth of the country's population. As in London and Paris, about one-tenth of the capital's population travel into and out of the centre daily (i.e. 100,000 people at present in the case of Lisbon) and a system of radials and ring roads has been devised to cater for that traffic. The main emphasis is on public transport and Senhor Lobato hoped that thus the number of private cars could be kept down to a minimum. The Lisbon Plan provides for four concentric rings of densities; within these rings neighbourhoods and communities are being built with their own industry, shopping, schools and other social equipment. With regard to car parking, as in London and Paris, developers are obliged to build their own car parking provisions. However, as far as parking in housing estates was concerned, Senhor Lobato was quite happy to see all the cars parked on the service roads.

The whole approach to zoning, densities and neighbourhood structure appeared rather rigid and lacking in original thought. Some of the proposals were open to serious criticism like the wrapping of residential neighbourhoods round the huge new airport. (It might have been a good idea to ask the unfortunate people who have to suffer the roar of jet planes day and night in their homes near London airport whether in their experience this was good planning.)

Senhor Lobato tried to blind us with science when he produced diagram after diagram on densities, plot ratios, light angles, etc., etc. It was all very involved and difficult to follow but in any case, the proof of the pudding is in the eating. When Senhor Lobato showed slides of layouts and buildings, illusions vanished quickly that maybe these complex graphs and calculations will produce better results than we can achieve with our more

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empirical approach. Senhor Lobato showed us proudly a roundabout which had been doubled in size to take 2,000 cars per hour (there was not a single underpass for pedestrians, not even a zebra-crossing). Throughout the talk there was no mention of precincts, pedestrian segregation or similar ideals which make life more pleasant and safe in a metropolis. We were left with the comforting impression that Lisbon's planners and engineers are as out of date in their approach as some of their English

counterparts.

The housing layouts were mostly rigid and uninteresting. There was one particularly disturbing picture showing an important arterial road developed as a corridor street, lined on both sides with 10-storey residential slab blocks, rather reminiscent of the "Stalin Allee" in East Berlin but less spacious and imposing. Senhor Lobato capped it all by announcing that the traffic in this road has almost doubled since this scheme was built. Landscaping was practically non-

existent and the general impression was that of mechanical formulas having been applied with little imagination and skill. The architectural qualities of the buildings varied from good to mediocre.

The over-all impression Senhor Lobato created was that the regional policies he advanced were sound and workable but that his ideas on city planning were too much dominated by mathematical formulas at the expense of imaginative urban design.

W.G.B.

Who must pay up when the building on an adjoining site falls down through nobody's fault? In this article our Specialist Editor 17 (Legal) discusses a recent case which has established that, unless the bills of quantities or specification state to the contrary, the contractor is only liable for damage done by his fault and that damage not his fault is the liability of the building owner. A case is made out for drastically revising the appropriate section of the RIBA form of contract.

INSURING AGAINST LOSS OF SUPPORT

A Recent Case

Under modern building contracts the contractor usually undertakes obligations which, although they may be connected with it, are quite separate from the building work as such. An example is the common undertaking to insure the work against fire, or to insure himself or the building owner against risks arising out of the carrying out of the works. The extent of these obligations of the builder obviously depends on the terms of the contract between himself and the owner, but obligations to insure can give rise to a lot of difficulty.

The standard RIBA form of contract for use with quantities deals with insurance in Clauses 14 and 15. (The form without quantities is substantially the same.) Clause 14 obliges the contractor to be liable for and indemnify the employer against "any liability . . . or proceedings whatsoever in respect of any injury or damage to any property real or personal" arising out of or in the course of the execution of the works, provided that the same was due to the negligence of the contractor. This obligation, it is to be noted, depends on negligence.

By Clause 15, "without prejudice to his liability to indemnify the employer under Clause 14 hereof, the contractor shall effect such insurance . . . as may be specifically required by the Bills of Quantities. . . ."

The contract between the employer and the contractor is not, therefore, completely constituted by these terms in the RIBA form. One has to go on to look at exactly what is set out as to insurance in the bills of quantities and it will be the RIBA form *plus* the bills of quantities which will constitute the whole contract as to insurance.

Usually, unless specifically instructed by the employer, the architect who inserts the insurance clauses in the bills of quantities is inclined to use the same clauses as his firm have adopted over and over again. Even now, over 10 years after the repeal of the Workmen's Compensation Acts, there are, apparently, firms which have clauses requiring contractors to insure against this liability.

One sympathizes with the architect's con-

servatism, for the question of the legal liabilities which can arise from the building and demolition of property can give sufficient headaches to lawyers, without expecting that architects should be expert in them too. But, because a contract seems similar to others which have passed off previously without incident, it is tempting for the draftsman of bills of quantities to treat the insurance terms as if they always gave a general and comprehensive protection to all concerned. In fact, very necessary cover for an employer may be omitted without any great lack of care on the part of employer, architect, or builder, and the omission may render the employer liable for heavy damages. A vivid illustration of this was revealed in a case before the Court of Appeal in 1958.

In that case—*Gold v. Patman & Fotheringham Ltd.*—the defendant firm contracted to erect a building on the plaintiff's site. The standard RIBA form was used, providing for insurance in these terms of Clauses 14 and 15 which have been partly set out above. But when one turned to the insurance clauses in the bills of quantities they began "the contractor shall insure and make payments in connexion with the following National Insurance Acts, Unemployment Insurance Acts, Lord Campbell's Act, the Fatal Accident Acts, . . . Insurance of adjacent properties against subsidence or collapse"—all (and this was the unfortunate result)—apparently obligations by the contractor for himself and not for the owner. In parenthesis, it may be noted that the Court of Appeal found this list of statutes "not very illuminating . . . and, in any view, there is some duplicity, for the Fatal Accident Acts and Lord Campbell's Acts mean the same thing (and) . . . Unemployment Insurance 'Acts' do not exist. . . ."

Work went ahead and, when the piling operations were in progress, the contractor (entirely without negligence) caused subsidence to and collapse of adjoining properties. This led to considerable damage. Those owners sued the plaintiff. The plaintiff thereupon sued his contractors (the defendants) and alleged that they were in breach of

contract because, though they had covered their own liability by insurance, they had not covered his.

He failed. The Court, looking at the bills of quantities, said that, since the earlier items there mentioned (Fatal Accidents Acts, etc.) were for the contractor to cover, why should one, in going on to the last item, "Insurance of adjacent properties against subsidence or collapse," say that the obligation to insure was, for the first time in the list, an obligation to insure, not the contractor himself, but the owner. There were no words to show such a change of obligation. Looking at the RIBA form and these unfortunately drawn bills of quantities together, the Court decided that there was a clear indication that the contractor's obligation to indemnify his employer was to stand independent of his own insurance. It was Clause 14 which dealt with indemnity, the contractor's liability under that arose only if he had been negligent, he had not been negligent, and he was therefore under no liability to his employer for the subsidence.

Since, therefore, the obligation to indemnify under Clause 14 in the RIBA form depends on negligence it is important that the clauses in the bills of quantities should provide for indemnity in all cases where legal liability may arise from negligence. One interferes with the support enjoyed by adjacent land at one's peril; liability is not dependent on negligence. The attitude of English law towards liability has varied, a period of strict liability—an "unmoral" period—being followed by a period of fault liability—a "moral" period—such as the nineteenth century. Today the pendulum probably swings back to the so-called insurance idea—that liability should be imposed not so much, as Lord Denning said a few years ago, on a basis of culpability but on a basis of "on whom the risk should fall."

At any rate, the rule of absolute liability for loss of support is old and well settled. Furthermore, in 1876, in *Bower v. Peate*, a case where the defendant ran coal mines under the plaintiff's house, it was established that if a man orders work to be done on his land which might injure an adjoining owner

he is bound to see that it is done safely and he cannot relieve himself of any responsibility by employing someone else as a contractor. If, say, a man cannot rebuild his house carefully without doing damage to adjoining property he is not at liberty to do so. As the case, *Bond v. Norman*, showed in 1939, it is not even a defence to say that support was withdrawn while acting in compliance with a clearance order under the Housing Acts.

It is established that a building owner is not liable for mere failure to act, i.e., for allowing his building so to fall into disrepair that his neighbour loses support. In *Sack v. Jones*, in 1925, the plaintiff and the defendant were separated by a party wall which was leaning towards the defendant and causing serious fractures as it "pulled" against the plaintiff's house. The plaintiff's action failed. "Neither party," declared the learned judge, "is subject to any liability if, by reason of natural decay or other circumstances beyond his control, his half of the wall falls down or otherwise passes into such a condition that the easement thereof becomes impossible or difficult to exercise."

If, however, a part of a building falls upon another's ground there may be liability at law for nuisance or trespass and, in 1940, in *Bond v. Nottingham Corporation*, it was confirmed that an aggrieved building owner

is not obliged to sit by and watch his building deteriorate; he can enter the offending land and take necessary steps by repairs to continue support for his building. There must be many buildings being erected today where there is a risk of subsidence or of the vibration of large modern machines causing damage to adjoining property. Gold's case suggests that it is in these cases particularly that insurance protection is needed.

What should the architect do? Subject to the qualification that the RIBA form is copyright, there is no reason why it should not be modified in Clause 14 to impose on the contractor liability to indemnify the employer against this risk. In many cases the contractor will have an annual policy which is endorsed to give the required indemnity and the architect should then check to see if the level of indemnity is high enough. If not, a separate endorsement may well be required.

Sometimes the risk of loss of support is a risk which can really only be adequately covered when a lot of detailed information is available and supplied to the insurance company. Contractors may, therefore, object that they have difficulty in obtaining high cover. In Gold's case it was submitted that a contractor would be in difficulty in knowing what to tender if he had to insure the owner against risk of subsidence. Normally, before

tendering, he would not survey the property for subsidence risk. If he simply insures himself he has no practical difficulty of this kind, for his premium is based on his past record and the number of men he employs. This argument did not impress the Court, for the judgment records "we should not have been deterred by the difficulty of effecting an insurance from finding that the obligation to insure the owner had been placed on the contractor by the contract if the words used had produced that result." Perhaps one result of this decision in the Court of Appeal will be that the RIBA form will be amended. Amendments to this form have already resulted from judgments in the Court, and, indeed, a recent amendment to Clauses 14 and 15 arose from the decision in a case, *Archdale v. Comservices*, in the Court of Appeal in 1954.

Meanwhile the need for caution remains and architectural firms applying insurance clauses in the bills of quantities which have been taken for granted for a considerable time should consider whether they do ensure an indemnity for the clients in those cases of damage (and they are not limited to loss of support but include the escape of "dangerous things," like water, which are brought on to the land "at one's peril") where he may be legally liable for the acts of his contractor though no negligence be involved.

Many British architects will be visiting Scandinavia this summer: some may be thinking of a longer stay. In this article Robert Stokes describes the procedure for taking a job in a Scandinavian architect's office.

WORKING IN SCANDINAVIA

I meet many British architects as they travel through Scandinavia and they appear to consider their visits well worth while. Whether their visits are long or short, the students especially seem to glean a tremendous amount of information in a very quick and systematic manner. But many of the speedier visitors wonder whether a considerably longer stay would not yield a richer reward, by giving a chance to study the methods and techniques employed by the small offices here which turn out such an enormous quantity of meticulously detailed designs. It is my belief that it would and I do not hesitate to encourage anybody who wonders about the chances of getting a worth-while appointment with a Danish architect here in Copenhagen. Nor is this as difficult in practice as it might appear.

One is certainly not a pioneer in coming to Scandinavia to work in an architect's office. Many young Swiss, German, French, Italian and English architects are arriving throughout the year, looking for the chance to get a job so as to feed themselves whilst really getting to know the architectural and building conditions which nurture such high standards of design and workmanship. To speak English gives one a considerable advantage over, for example, a Frenchman who can speak only a little English and German.

The fluency with which English is spoken by most Danish and Swedish people, especially

by the young architects in Copenhagen or Stockholm, makes the language barrier so slight that it is usually the metric system that causes difficulties in the first few days of working. But this "tenths" business is, of course, simplicity itself—particularly when compared with the trouble my Danish associates had in understanding " $\frac{1}{4}$ in. scale" when we started a new design for a building in England.

A work permit is needed before one is allowed to start work, and that is only issued for a specific appointment against a written application from the employer-to-be. This is a routine well understood by Danish architects and I have made successful applications in Sweden also. There is an unfortunate delay, by law, of six weeks before a permit can be issued but it is usual to get verbal permission from the authorities within a few days. In any case, to secure an appointment, one can always start work without being paid. Some architects will pay you for this time later on, when the permit has been issued.

Jobs are most quickly found by visiting offices—without telephoning first, I would suggest—and taking along drawings which illustrate your competence as a detail draughtsman, exactly as one would go about getting a first job in England. If you cannot be taken on at the first few offices you try you will find they are very helpful in recommending offices nearby which need staff.

Once acquired the job can be retained by renewing the permit every three or six months, depending on the country in which one is living. Denmark issues six-month permits.

The salary paid will obviously depend on one's qualifications and previous experience but Danish salaries compare closely, and often favourably, with rates in English, private practice. In Copenhagen the cost of living and taxes are also similar, but in Sweden one can expect a considerably higher salary together with more taxation and more expensive living which bring the salaries down again to quite near the Danish value. I was certainly well paid whilst working in Sweden and jobs are more plentiful there than in the rest of Scandinavia.

The Swedes have such an enormous building programme that architects are in great demand. Many young Danish architects work in Sweden purely for the large salaries (and the cheaper cars), but a British architect would find the work sufficiently interesting as it is so different to our own. To work on one of the large housing projects in northern Sweden would be fascinating but one would have to be able to withstand severe winters.

Opportunities for working in Norway and Finland are much rarer. If one has ambitions to work in either of them it would be best to linger a while in Copenhagen or Stockholm first, in order to gain a little experience of Scandinavian languages and conditions.

ROBERT M. STOKES

COMPETITION FOR MEDICAL TEACHING CENTRE AT CARDIFF

The results of the £10,000 competition for the design of a new Medical Teaching Centre for Wales to be built on a 53-acre site at the Heath, Cardiff, have now been released by the promoters, the Board of Governors of the United Cardiff Hospitals and the Welsh National School of Medicine. The assessors, Sir Percy Thomas, P.P.R.I.B.A., F.R.S. Yorke, F.R.I.B.A., J. H. Forshaw, F.R.I.B.A., Provost A. Trevor Jones, M.D., F.R.C.P., and Dr. A. R. Culley, M.D., have selected S. W. Milburn & Partners in association with M. Harding and J. Surtees as the winners of the £5,000 first prize. The second prize of £3,000 goes to Charles B. Pearson & Son (Charles E. Pearson in association with George R. Lovell and Peter P. Lund) and the third prize of £2,000 to Farms & Partners. The designers were asked to provide for a hospital of 650 beds, capable of extension to 800 beds, a medical school, dental hospital and school, out-patient and casualty departments, residential accommodation for doctors, nurses and medical students. A JOURNAL representative who studied the entries states:

On the whole, the result of the competition is disappointing. The assessors have done little to further hospital planning by choosing three pedestrian schemes whose only virtue is that they have produced a workable hospital and no more; and possess little if any architectural merit. This is the first hospital competition since the war and it was hoped it would have been of international importance. Although the conditions were detailed to the point of being restrictive, no advances or even trends in hospital planning are evident in the winning designs. Whilst many competitors scarcely progressed beyond drawing bubble diagrams with a T-square, and were certainly too overwhelmed with the complex planning to consider the architectural implications, a number of interesting and stimulating designs were submitted and it is regrettable that none of these is represented among the first three.

Many of the designs submitted used the full permitted ten storeys and only few attempted low-storey schemes. Few avoided the "cliff"-like ward block and many had not considered the problems of overshadowing (shadows were not permitted on the competition drawings). Competitors found it difficult even with multi-storey schemes to avoid covering a large portion of the site, paying little attention to existing woodland, and even less to using it to positive advantage in their schemes.

The winning scheme went a long way towards solving problems of internal circulation although entrances to the hospital are a long way from the site entrances. By means of two-floor entrance halls casualties, visitors and out-patients have been separated and yet well controlled, though all waiting spaces are internal without even the benefit of courtyards. The hospital block is situated on the west side of the site leaving the centre of the site open, a "contemporary" style staff dining room straddling an oriental lake. The T-shaped wards have been linked to the teaching wings behind them giving compact circulation at the expense of light wells some eight storeys high and an apparently over-generous and dispersed number of lift banks. It seems doubtful whether three lift banks are economical, each one serving one ward per floor, and this does not seem to agree with the replies to questions which stated that two wards per floor should be served.

Although the drawings are only 32nd scale, the elevations are sufficiently detailed to show absence of architectural character and lack of cohesion among the various buildings.

The scheme placed second is one of the variations from the usual ward plan, being an inverted T, although it has unresolved problems of overlooking and would be difficult to nurse. The staff housing in this scheme has some interesting courtyard planning.

The third scheme has the disadvantage of end entry wards in a multi-storey block and has heavy site coverage, presumably to avoid overshadowing. Some of the departments such as X-ray are not in ideal positions, but the dental hospital is compact and well planned.

It is regrettable that with a competition for a building of this size and importance the assessors in their report did not commend, let alone comment on, any of the other 37 entries. The least anyone who has spent about a year on a design can expect is to be told why his scheme has failed. The schemes were all much of a muchness and it is not possible that the three winners were so outstanding as to make their selection obvious. Even the comments on the winning designs are sketchy and the reasons for their selection thin. Extracts from the assessors' report are on the following pages. All the entries will be exhibited in the main conference hall of the Ministry of Health, Savile Row, W.1, from July 7-14.

Cardiff Competition: FIRST PRIZE DESIGN BY S. W. MILBURN & PARTNERS, M. HARDING, & J. SURTEES

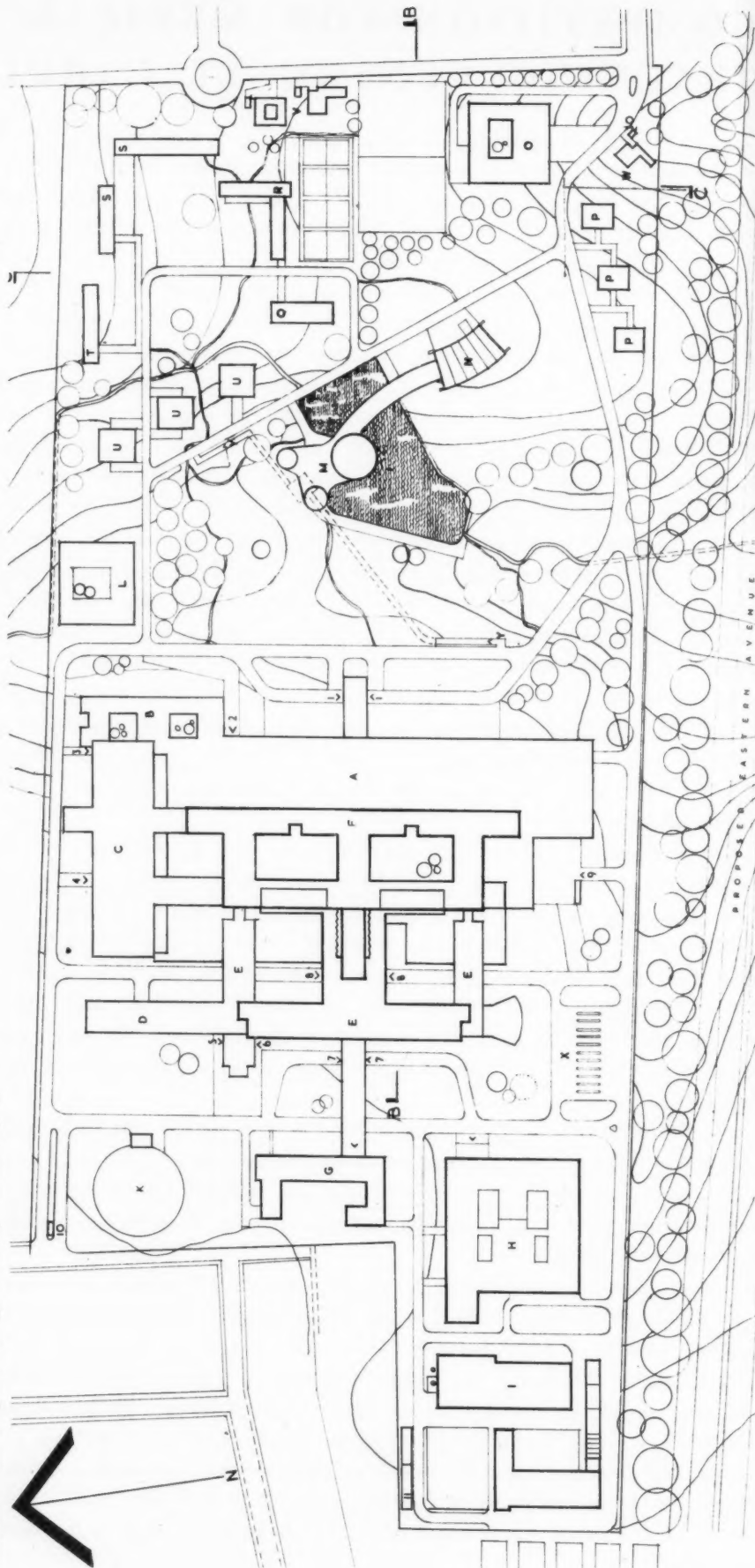
Extract from the assessors' report:
Forty designs have been received and all have been subjected to extensive and detailed examination. We realize that the principles laid down in the conditions presented the competitors with problems of unusual complexity, and we are convinced that the competitors as a whole have given thoughtful study to the manifold and diverse activities inherent in a comprehensive solution. We can say with sincerity that the Schemes produced have completely justified the competition. Certain of the designs show great merit,

and many of them illustrate in a practical way the subtle relationship between the care of the sick and the study of medicine. Of these we consider three schemes worthy of the conception which the promoters had in mind, and we make awards as follows:

To S. W. Milburn and Partners in association with M. Harding and J. Surtees. First Premium £5,000.
To Charles B. Pearson and Son. Second Premium £3,000.
To Messrs. Farms & Partners. Third Premium £2,000.

SITE PLAN

- | | | | |
|---|--|----|--------------------------------------|
| A | Outpatients | S | Night Nurses |
| B | Paediatric Department | T | Sisters and Staff Nurses |
| C | Maternity Department | U | Student Nurses |
| D | Administration | V | House Governor and Engineers' Houses |
| E | Special Departments and Academic Accommodation | W | Lodge |
| F | Ward Units | X | Bus Station |
| G | Medical Officers | Y | Subway Service to Staff Kitchen |
| H | Dental Hospital | 1 | Outpatients' Entrance |
| I | Boiler House and Laundry | 2 | Nurses' Entrance |
| J | Engineers' Department | 3 | Paediatric Entrance |
| K | Helicopter Landing and Car Park Under | 4 | Maternity Entrance |
| L | Nurses' Training School | 5 | Admin. and Medical School |
| M | Nursing and Domestic Staff Dining | 6 | M.O.'s Entrance |
| N | Recreation Hall | 7 | Visitors |
| O | Students' Halls | 8 | Admission and Casualty |
| P | Senior Nursing Staff | 9 | Stores |
| Q | Domestic Staff | 10 | Enquiry Office |
| R | Domestic Staff | 11 | Greenhouses and Potting Shed |



Extract from the assessors' report: We are much impressed with the spacious layout of this scheme and we believe the author has a

Extract from the assessors' report: We are much impressed with the spacious layout of this scheme and we believe the author has a fine appreciation of the magnificent qualities of the site, especially in the intelligent use of the contours. The attractive approaches to the various buildings and the thoroughfares within them are designed for the ease of patients, visitors and staff.

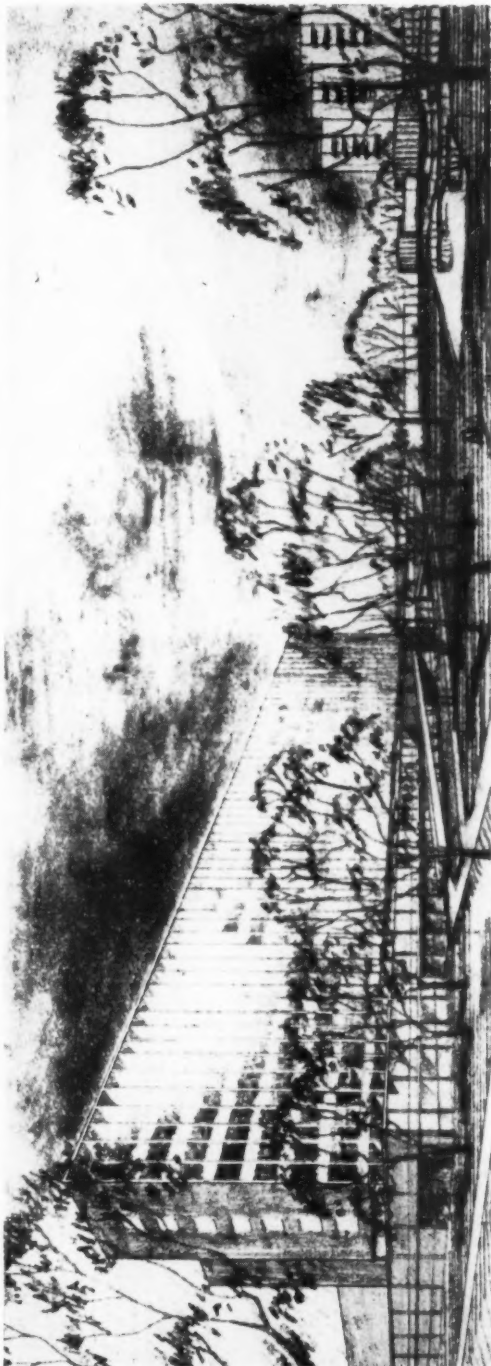
The planning of the main hospital building is compact, combined with a dignity and simplicity which harmonize well with the open freedom of the park-like setting. We think that for an acute hospital in this location the south-easterly aspect of the wards is appropriate.

The general relationship of the various departments is well conceived, and the much desired integration of medical school and hospital is imaginatively achieved with seemingly effortless ease, and thus shows that the fundamental concept of the scheme has been grasped. The specialized departments and the wards conform to modern ideas with ample flexibility, and the provision for future extensions preserves the essential relationships. The dental hospital is conveniently placed and maintains the general simplicity of the design.

The nurses' accommodation is well sited and planned, and their recreational facilities form a pleasant and attractive group, providing a refreshing contrast in environment. The general site layout and the features of the buildings lend themselves to the installation of efficient engineering services with good provision for maintenance.

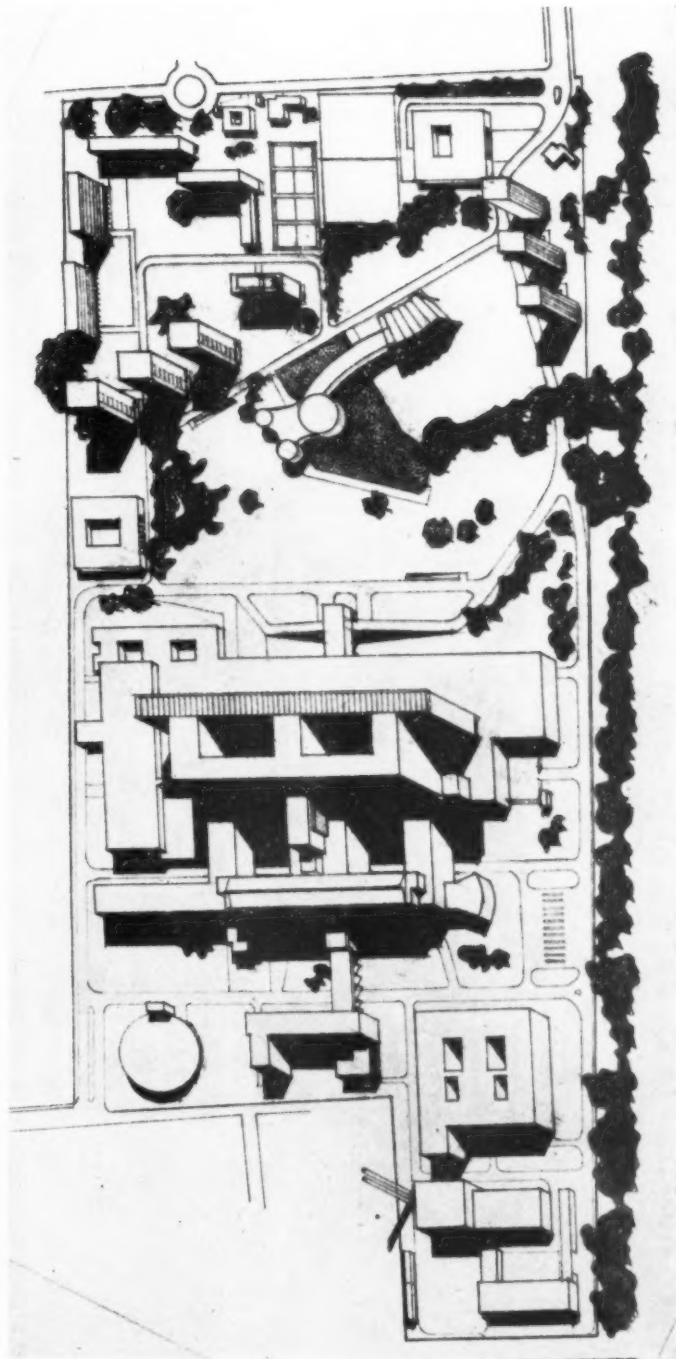
The Author estimates the total cost at £7,996,000. We have carefully checked the cube figures and the prices, and we consider that the work could be carried out within the terms of the conditions of the competition.

From the competitors' report: The most important planning matter has been to provide wards with a S.E. aspect as sheltered as possible from disturbance from traffic noise. To achieve this and make the best use of a magnificent site, the main hospital block with the integrated medical school has been designed as a seven-storey-high building with a horizontal single-storey platform for admis-



Perspective looking north-west.

Axonometric drawing of site.



Cardiff Competition : FIRST PRIZE DESIGN BY S. W. MILBURN & PARTNERS, M. HARDING, & J. SURTEES

sion, in-patients, out-patients and various ancillary departments for registration, pharmacy, almonry, X-ray and physiotherapy treatment. On the N.E. side is a two-storey wing for the children and obstetrics department. The S.E. part of the site has been planned to accommodate staff homes and hostels, students' union and staff houses. Advantage has been taken of the Wedal stream to and from an artificial lake flowing through the nurses home and staff dining building. Much thought has been given to keeping, as far as possible, the different types of traffic such as food supplies and stores, the approach of visitors, movement of in-patients, etc., on different floor levels and the planning of the hospital building and the teaching school on the site has largely helped in solving this problem by the sloping contours.

GROUND FLOOR

Pathology: 7. Lecture Theatre; 8. Projection room; 11. Post-mortem room; 12. Post-mortem preparation room; 13. Post-mortem changing rooms; 14. Body store and chapel; 15. Workshops; 16. Cold room; *Administration and Casualty Department:* 1. Entrance hall; *Admission Unit:* 2. Waiting room; 3. Examination rooms; *Casualty Unit:* 4. Waiting room; 5. Records office; 6. Consulting room; 7. Examination rooms; 8. Records room; 9. Examination rooms; 10. Waiting room; 11. Treatment room; 12. Examination room; 13. Dark examination room; 14. Dressing rooms; 15. Dark examination room; 16. Theatre preparation; 17. Operating theatres; 18. Specimen room; 19. Sterilizing room; 20. Surgeons' changing room; 21. Nurses' changing room; 22. Recovery; 23. Plaster room; 24. Dental room; 25. Linen store; 26. Equipment store; 27. Medical officers'; 28. Medical officer's bedroom; 29. Sisters' room; 30. Records room; 31. Reception; 32. Reception Records; 33. Discharge bay; 34. Office; 35. Student dressers; 36. Store; 37. Cleaner, X-Ray; 38. Student room; 39. Radio-diagnostics; 40. Changing cubicles; 41. Dark room; 42. Ambulance drivers; 43. Resuscitation room; 44. 8 wards; 45. Duty room; 46. Slicce room; 47. Kitchen; 48. Test room; 49. Sterilizing room; 50. Linen store; 51. Examination room; 52. Waiting room.

Our Lady's Department for Outpatients: 1. Waiting room; 2. Waiting room; 3. Nurses' office; 4. Patients' office; 5. Office; 6. Office; 7. Reception; 8. Reception; 9. Reception; 10. Reception; 11. Student dieticians; 12. Nurses' changing; 13. Staff room; 14. Equipment store; 15. Linen room; 16. Ambulance officers; 17. Ambulance drivers' room; 18. Ambulance room; 19. Screening room; 20. Chiropodist; 21. Waiting room; 22. Cleaners; 23. Waiting room; 24. Main teaching; 25. Examination rooms; 26. Leggists' room; 27. Examination room; 28. Waiting room; 29. Test room; 30. Specimen toilet; 31. Utility room; 32. Examination room; 33. Patients' waiting room; *Ophthalmology:* 23. Examination; 36. Waiting room; 34. Consultants; 35. Examination; 36. Special examination; 37. Orthoptic; 38. Treatment; 39. Sterilizing; 40. Recovery; 41. Utility; 42. Laboratory; 43. Equipment store; 44. Waiting room; 45. Main teaching; 46. Consultants; 47. Examination room; *Audiometry:* 47. Examination room; 48. Examination room; 49. Treatment; 53. Sterilizing; 54. Recovery; 55. Utility; 56. Special test room; 57. Equipment store; 58. Waiting room.

changing; 28. Staff room; 29. Staff changing; 30. Superintendent Physiotherapist; 31. Research laboratory; 32. Linen room; 33. Equipment store; 34. Cleaners; *Occupational Therapy*; 35. General work store; 36. Workshop; 37. Woodwork shop; 38. Woodwork store; 39. Domestic work; 40. Workshop; 41. New work store; 42. Metal fabricating; 43. Electrical; 44. Office; *School of Physiotherapy*; 45. Teachers' reading room; 46. Gymnasium and class room; 48. Classrooms; 49. Students' common room; 50. Students' library; 51. Rest room; 52. Stores; 53. Cycle store.

isolation room; 11. Office; 12. Records; 13. Cleaners; 14. Alarms.

Department of Physical Medicine: 1. Waiting room; 2. Patients' waiting room; 3. Consulting room; 4. Examination room; 5. Registers; 6. Examination room; 7. House Officer; 8. Electro-myography room; 9. Urine test; 10. Specimen toilet; 11. Consultant's office; 12. Secretary; 13. Clerk; *Physiotherapy Department:* 14. Gymnasium; 15. Changing; 16. Treatment rooms; 17. Treatment rooms; 18. Treatment rooms; 19. Utility room; 20. Waiting room; 21. Physiotherapy room; 22. Changing room; 23. Pool bath; 24. Whirlpool and wax baths; 25. Rest room; 26. Patients' changing; 27. Physiotherapists' room.

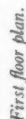
Academic Accommodation: 1. Professor; 2. Assistants; 3. Seminar room; 4. General office; 5. Seminar room; 6. General office; 7. Preparation; 8. Washing room; 9. Workshops; 10. Storage; 11. Chief technician; 12. Storage; 13. Demonstration.

Pantry: 13. Demonstration.

Obstetrics—Academic: 1. Professor; 2. Assistants; 3. Secretary; 4. General Office; 5. Seminar room; 6. Laboratory; 7. Clinical laboratory; 8. Preparation room; 9. Dark room; 10. Workshop; 11. Storage; 12. Chief technician; 13. Pantry.

Obstetrics—Clinical: 2. Waiting room; 3. Counting room; 4. Main clinic; 5. Cubicles; 6. Test room; 7. Waiting room; 8. Test room; 9. Linen room; 10. In-

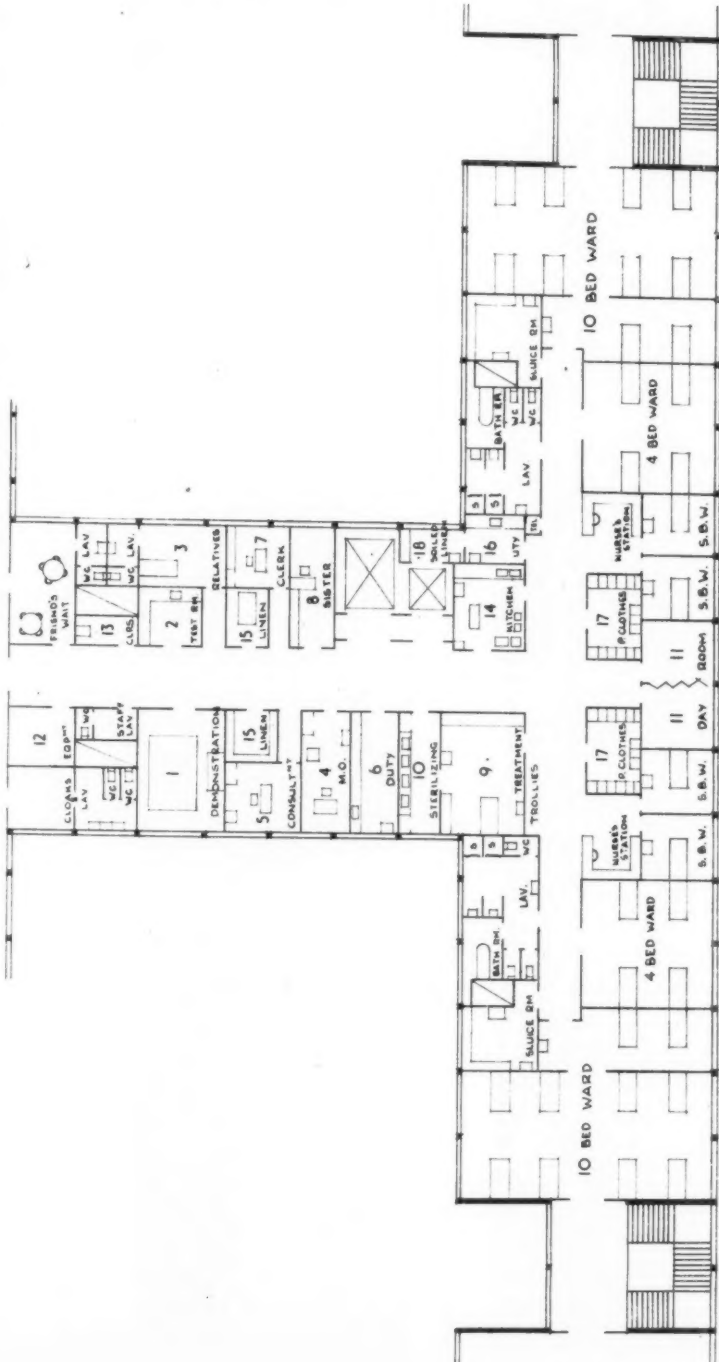
Ground floor plan.



FIRST FLOOR

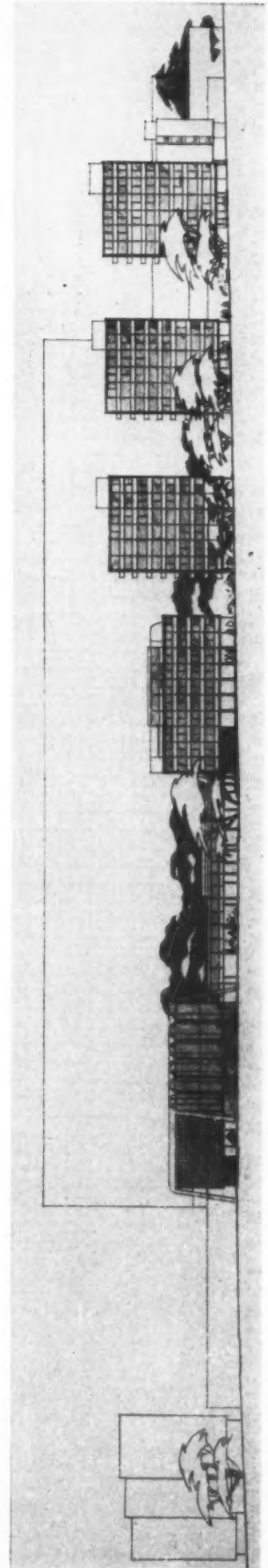
Cardiology Outpatients' Department: 1. Waiting room; 2. Main teaching consulting room; 3. Examination; 4. Registrar's; 5. Registrar's examination; 6. Test; 7. Specimen toilet. **Joint Diagnostic and Research Unit:** 8. Ambulatory room; 9. Gas analysis laboratory; 10. X-ray room; 11. Diagnostic radiology; 12. Electronic recording; 13. Photographic dark; 14. Basal metabolic rate recording; 15. Screening; 16. Routine electro-cardiography room; 17. Records and general office; 18. Staff room; 19. Workshop; 20. Research workers; 21. Laboratories; 22. Sterilizing. **Department of Pathology—Main Department:** 1. Conference room; 2. Patients reception and waiting suites; 3. Pathology reception; 4. Reception; 5. Reception; 6. Pathology common room; 7. General stores; 8. Students laboratories; 9. Museum; 10. Office; 11. Staff room; 12. Pathology; 13. Waiting; 14. Professor's office; 15. Professor's laboratory; 16. Secretary; 17. Assistants; 18. Research workers; 19. Chief technician; 20. Pathology laboratory; 21. Technicians; 22. General stores; 23. Special store; 24. Pathology; 25. Waiting; 26. Professor's laboratory; 27. Technicians; 28. General stores; 29. Special store; 30. Pathology; 31. Professor's laboratory; 32. Waiting; 33. Secretary; 34. Assistants' rooms; 35. Research workers; 36. Clinical bacteriologist; 37. Main laboratories; 38. Virus laboratories; 39. Chief technician's laboratory; 40. Technicians; 41. Medium preparation; 42. Sterilizing; 43. Incubator; 44. Refrigerator; 45. Centrifuge; 46. Small class; 47. Office; 48. Stores; 49. Patients cubicle. **Clinical Chemistry:** 50. Waiting; 51. Head of department; 52. Laboratory; 53. Secretary; 54. Assistant; 55. Research workers; 56. Chief technician; 57. Chemistry laboratory; 58. Stores; 59. Technicians; 60. Waiting; 61. Head of Department; 62. Laboratory; 63. Haematologist; 64. Secretary; 65. Assistants; 66. Research workers; 67. Chief or senior technician; 68. Haematology laboratory; 69. Emergency pathology laboratory; 70. Cleaning; 71. Technicians.

Public Health Laboratory—Main Services: 1. Media; 2. Washing up; 3. Sterilizing; 4. Outfit; 5. Entrance; 6. Main laboratory; 7. Main laboratory; 8. Food laboratory; 9. Tuberculosis laboratory; 10. Veterinary laboratory; 11. Research laboratories and offices; 12. Clerical office; 13. Library and conference; 14. Store and workshop; 15. Toilets; 16. Animal house; 17. Tuberculosis reference laboratory.

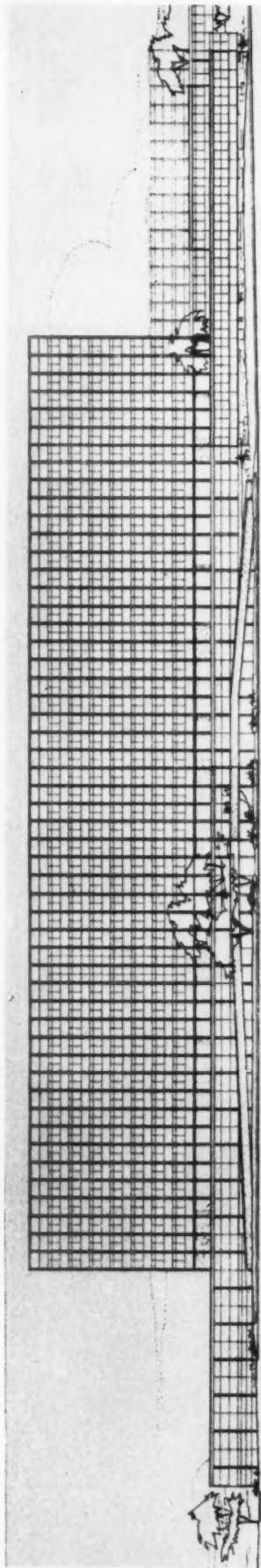


Typical ward unit plan.

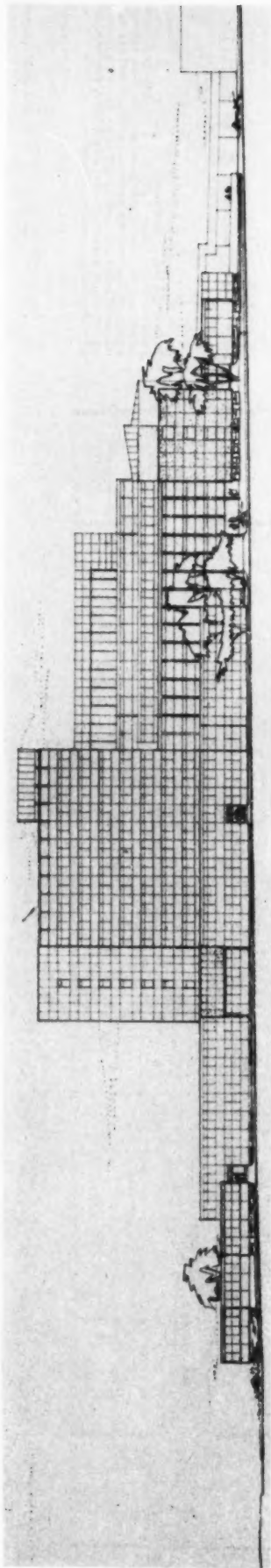
East elevation.



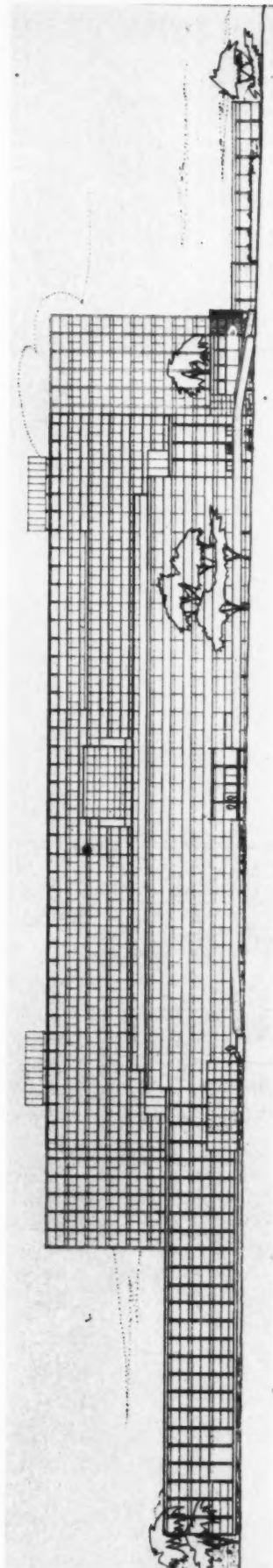
Cardiff Competition : FIRST PRIZE DESIGN BY S. W. MILBURN & PARTNERS, M. HARDING, & J. SURTEES



South-east elevation.



North-east elevation.



North-west elevation.

SECOND PRIZE DESIGN BY CHARLES B. PEARSON & SON

main hospital block.

provision for maintenance

Extract from the assessors' report: This design also makes good use of the site. We think, however, that the external communications links could be improved. The hospital building forms a simple and compact plan, and the integration of the medical school departments with the hospital is generally excellent. The dental hospital is conveniently placed and the link-up with the medical school is satisfactory.

The detailed planning of the various specialized and clinical departments is well thought out, but the integration of school and hospital is so arranged as to infringe slightly on working conditions.

The provision for future extension is weak

in this plan, and if placed as suggested would jeopardize the integration of departments. The design, however, has possibilities within it for a better solution of this problem of extension.

Although the nurses' residential accommodation is well sited, the courtyard pattern would result in conditions unattractive to those in the lower storeys.

While we consider this design solved most of the many problems satisfactorily, there are some features which could not be accepted.

The general site layout and the features of the buildings lend themselves to the installation of efficient engineering services with

reasonable provision for maintenance.

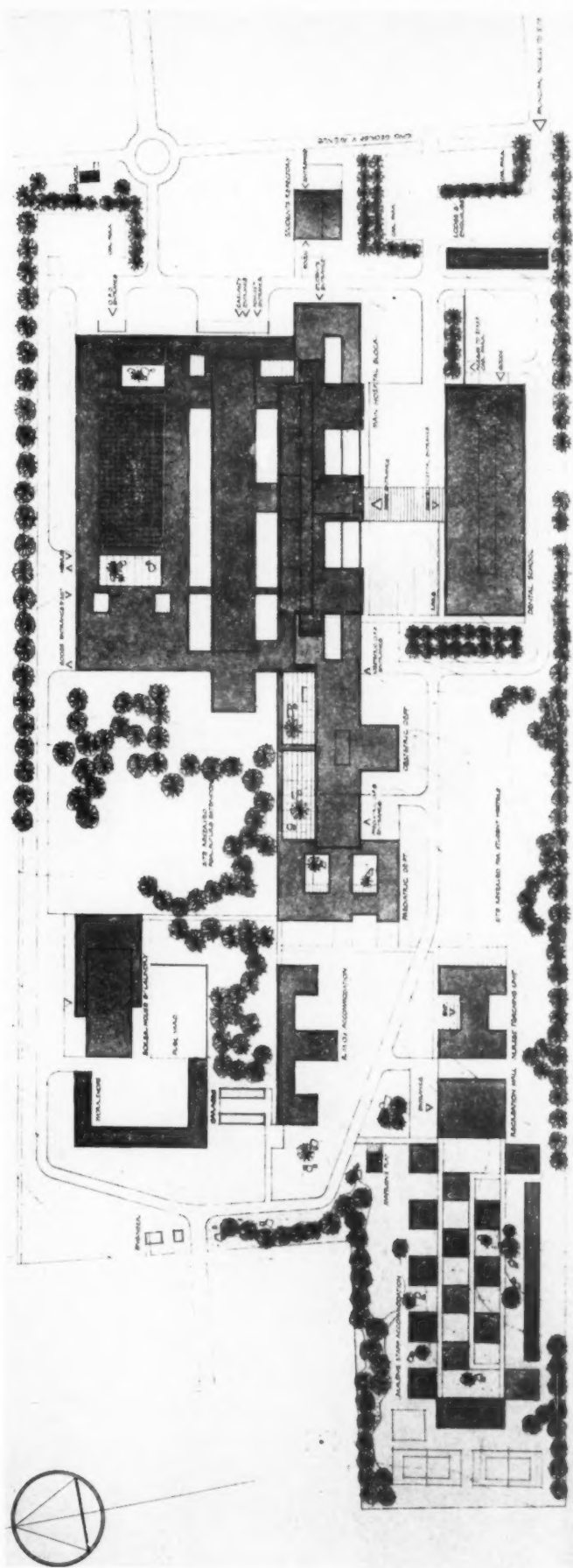
The Author estimates the total cost at £7,682,000. We have carefully checked the cube figures and the prices, and we consider that the work could be carried out within the terms of the conditions of the competition.

From the competitors' report: The approach to the design has been the integration of as many hospital departments and wards together, with teaching facilities in one large hospital building, with the exception of the obstetric and paediatric departments, which are planned in a wing off the

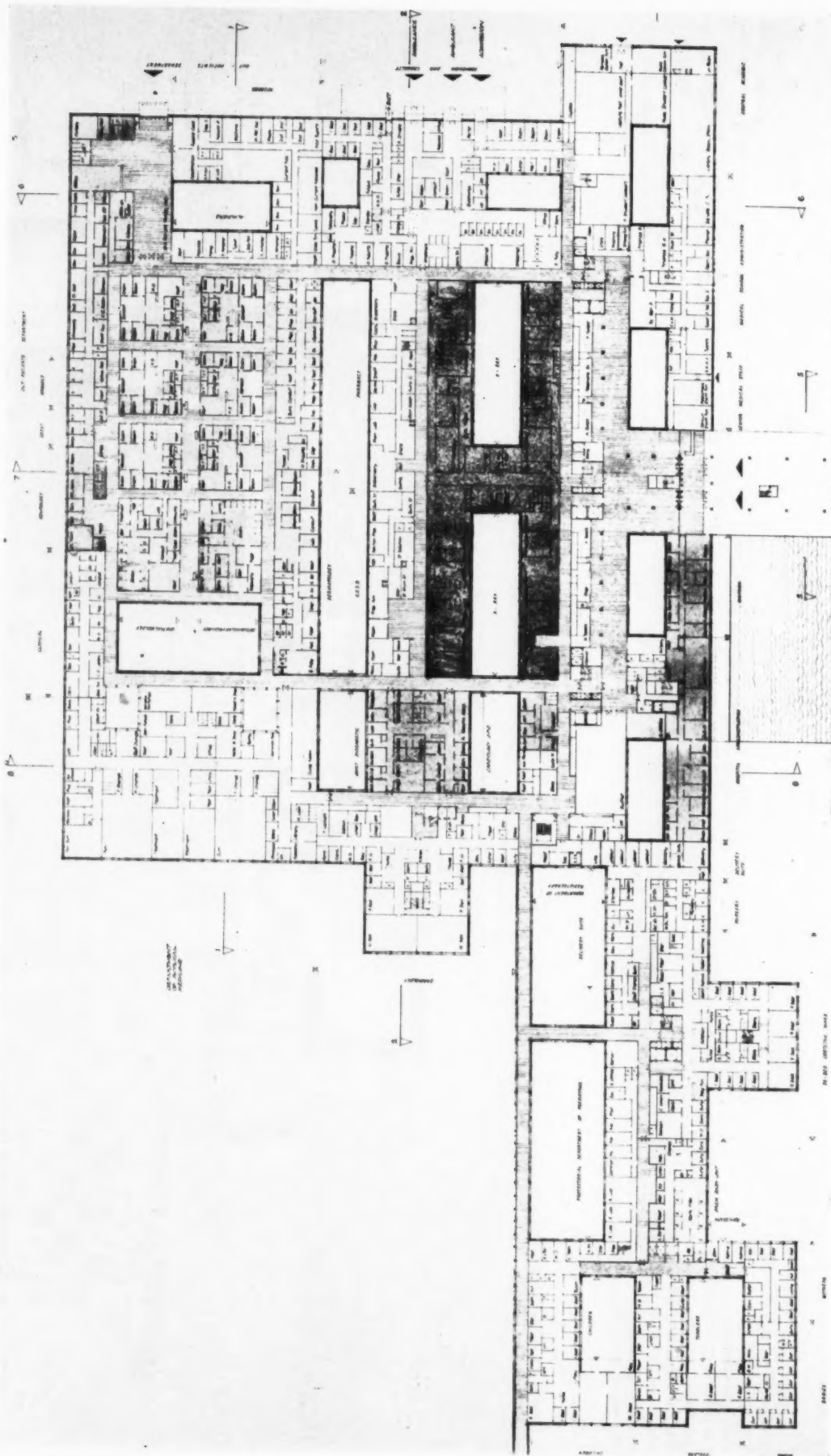
main hospital block.

The following detached buildings are, however, connected to the main hospital block by means of closed corridors or subways, i.e. the dental school and the R.M.O.'s residency and the boiler house and laundry. The following buildings are completely detached from the main hospital block, i.e. the students refectory, nurses teaching accommodation, recreation hall, nurses quarters, workshops, garages and two houses for the governor and engineer. A detached flat has been sited for the matron and the lodge is combined with an enquiry office, bus shelter and public toilets adjacent to the main entry into the site.

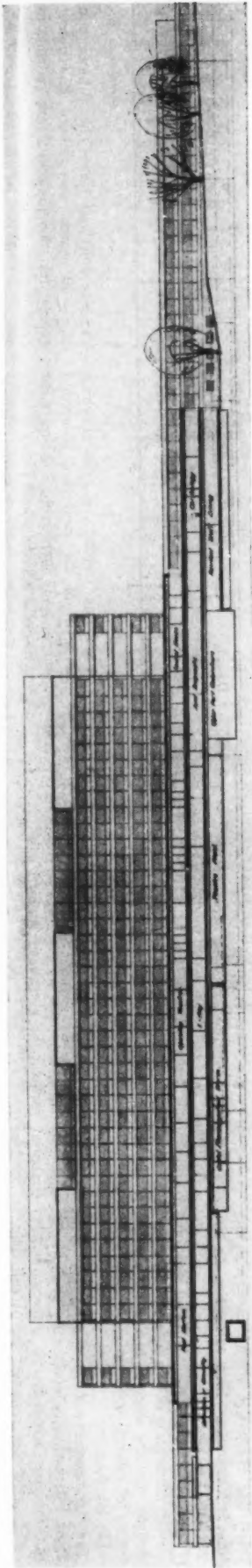
Site plan.



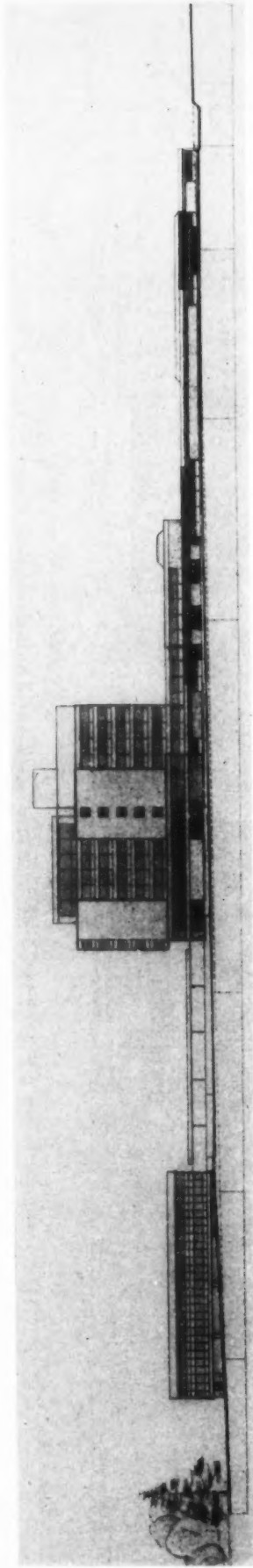
Cardiff Competition : SECOND PRIZE DESIGN BY CHARLES B. PEARSON & SON



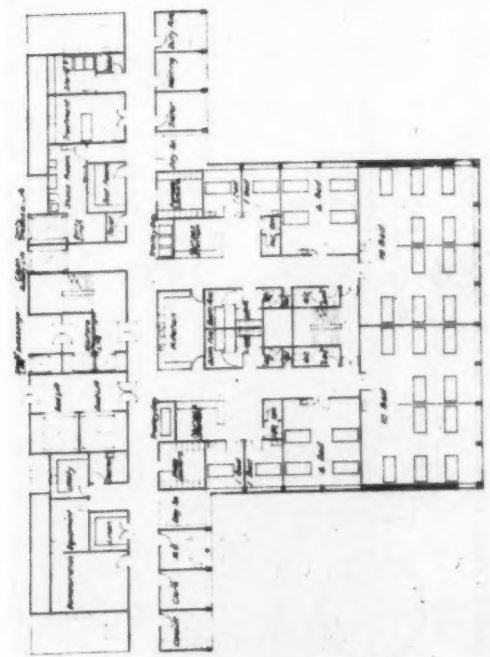
Ground floor plan.



East-west section.

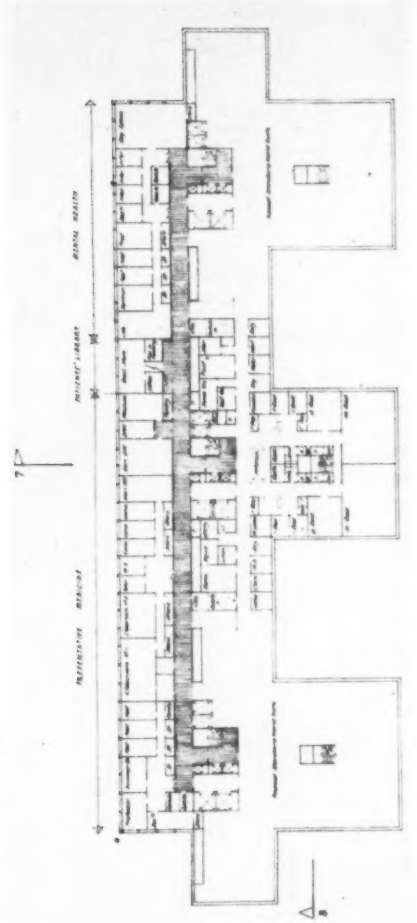


East elevation.

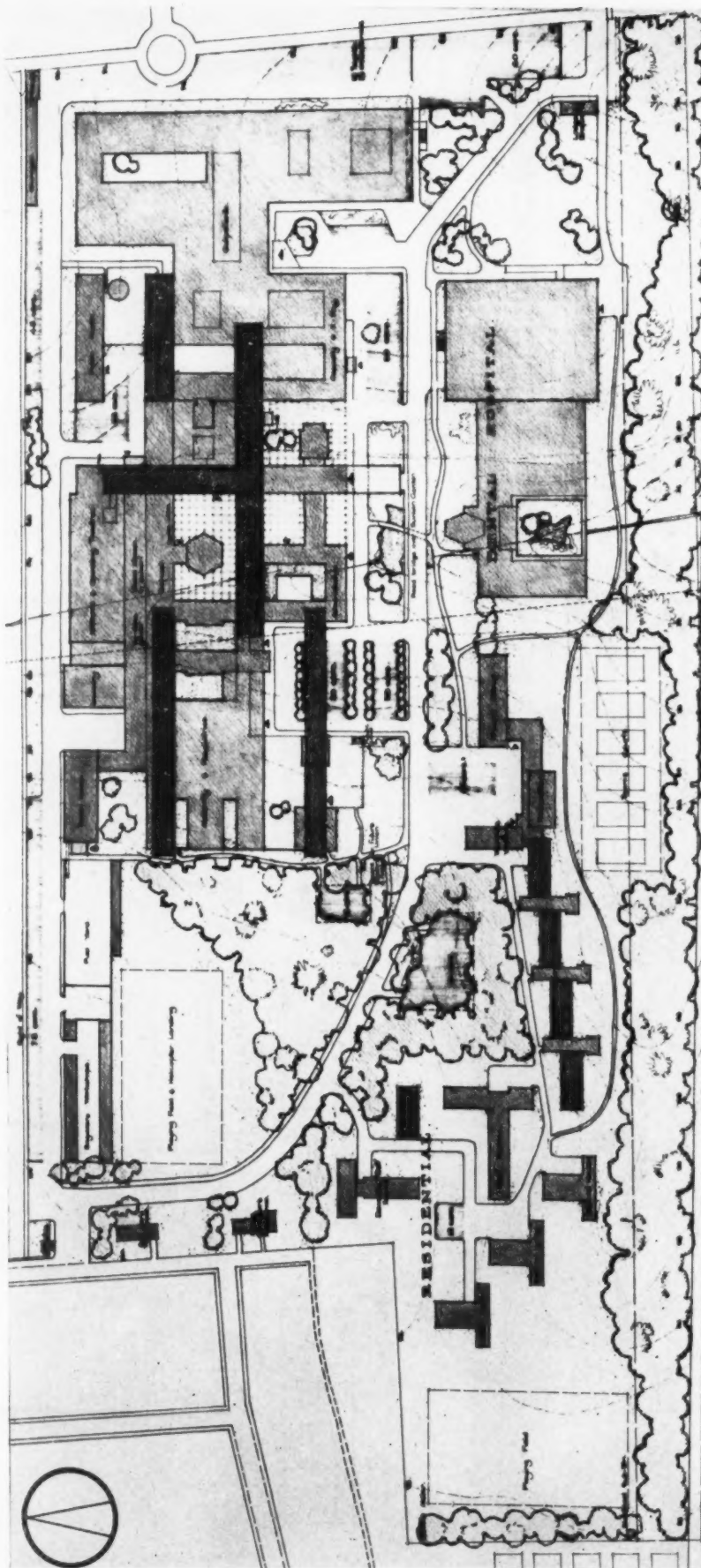


Left: typical ward unit plan.

Below: typical upper floor plan.



Cardiff Competition: THIRD PRIZE DESIGN BY FARMS & PARTNERS



Site plan.

Extract from the assessors' report: In some ways we do not consider that this design makes the best use of the site, but it is an interesting alternative arrangement, and the links and communications across the site are good.

The planning of the main hospital building, though efficient, is not so direct as in other designs, and the attempt to solve the difficulties of internal communications is somewhat involved.

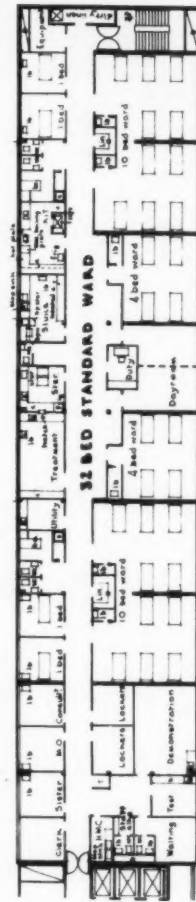
The arrangement of the specialized and clinical departments is generally convenient, but the detailed design is not completely satisfactory: for instance, the overall shape

of the wards presents difficulties in achieving that complete flexibility so necessary. The dental hospital is well placed, but it is unnecessarily generous in space.

From the competitors' report: This design provides the required accommodation in three main groups of buildings.

1. The teaching hospital and medical school, the dental hospital and the nurses residential and teaching accommodation.

2. The dental and teaching hospitals are sited astride the shallow valley through which the Wedal stream runs at each side of the central parkway or boulevard running east and west.

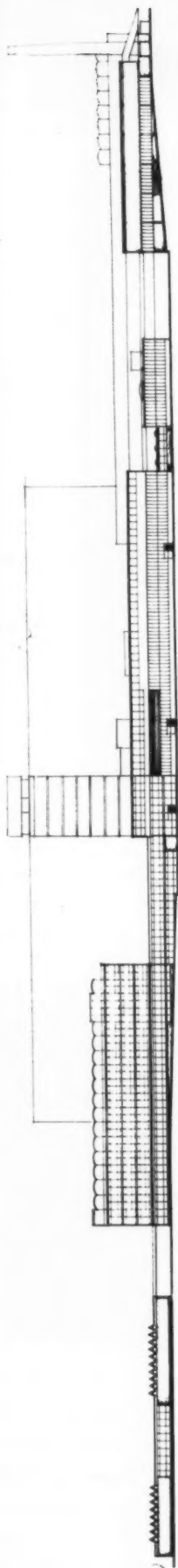


Standard ward plan.

3. The teaching hospital and medical school to the north of the boulevard is accommodated in a T shaped block rising eight storeys above a podium which is two storeys high at the centre and one storey high at

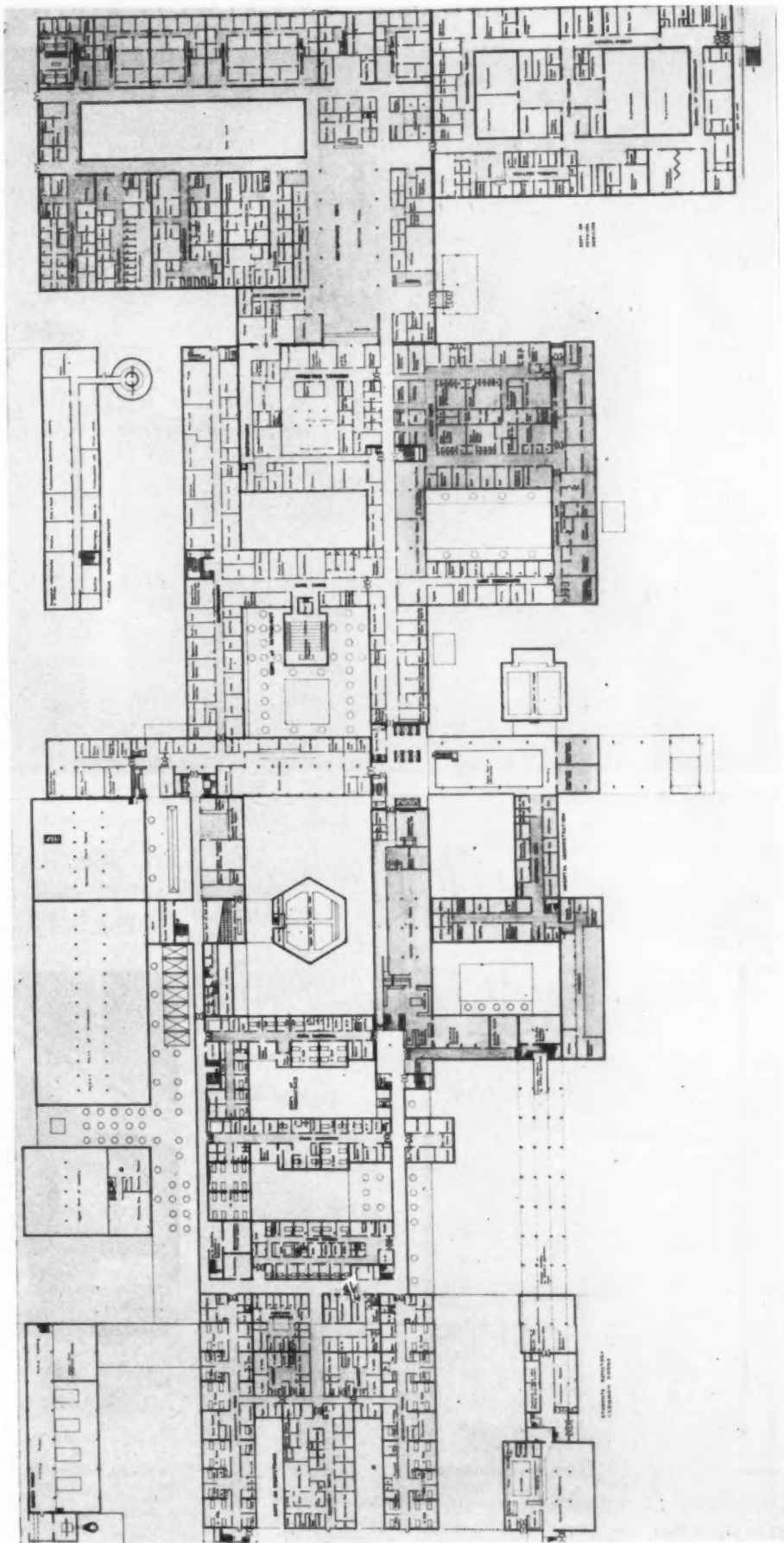
the east and west ends. The T block contains all wards and school departments except for the maternity and paediatrics department.

high at the centre and one storey high at

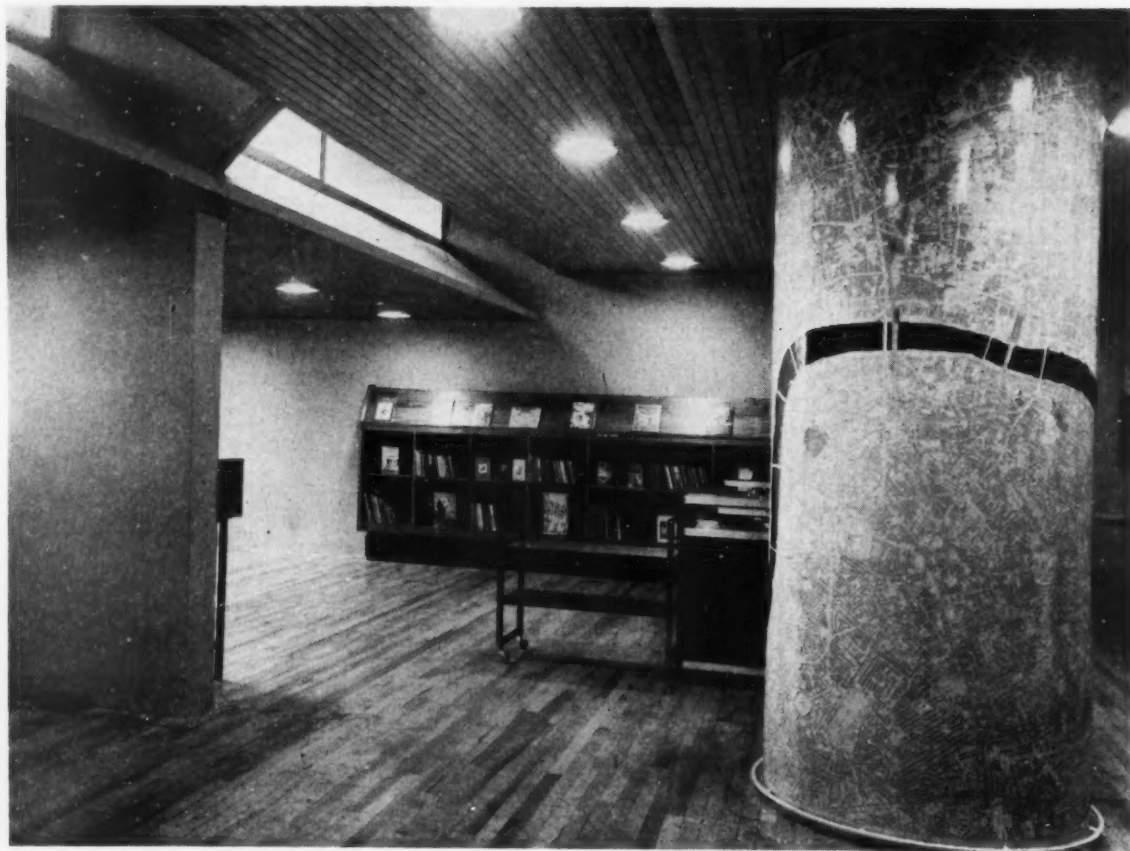


North elevation.

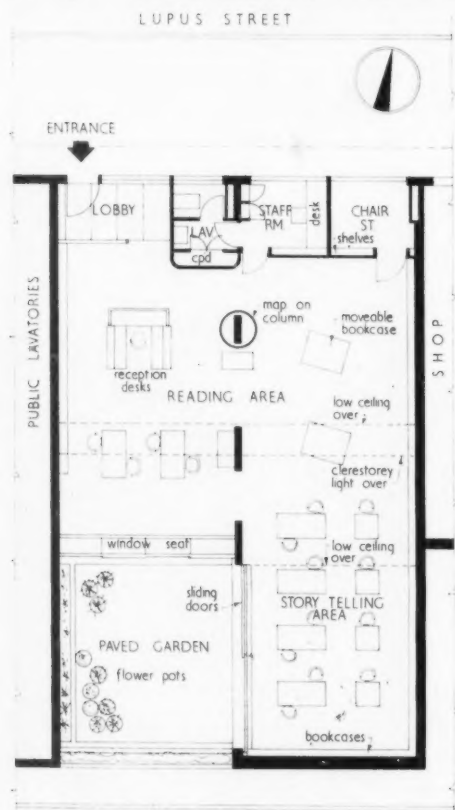
First floor plan.



CHILDREN'S LIBRARY IN PIMLICO



Looking west in the reading area, showing a map of London on the column.



Floor plan [Scale: $\frac{1}{16}'' = 1' 0''$]

This small library for children to house four thousand books has recently been finished. It has been built in the two 17-ft.-wide ground floor bays of a seven-storey building



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in Churchill Gardens Housing Estate. These two bays were originally intended for shops and above them are three tiers of two-storey maisonettes. The architects, Powell and Moya (assistants: Robert Huddleston and J. A. Griffiths), were asked to provide a library and reading room for children of the district to contain about four thousand books in shelves which should not exceed 4 ft. 6 in. in height above the floor. The library space had to be able to be divided into different sections; general reading and reference, small children's section (picture books etc.), with a space for group story telling and class visits. There had to be space for a movable reception desk and a control point for the lending section, storage space for chairs not in use, a small work room for repair of books and unpacking and a staff cloakroom. The design problem was essentially one of conversion and addition rather than of a new building. It was decided that one of the chief aims was to provide a children's library with a cheerful atmosphere, and to avoid the character of an overpowering institution. The colouring however, is generally restrained and it was felt that the covers of children's books were the best and most natural way of giving bright and stimulating colours.

The size required for the library made it necessary to build over half of the "back yard" area. It was therefore possible to build it round a small, 17-ft.-square, partially enclosed and sheltered garden. Sliding glazed doors open onto this garden, which can become an extension to the general reading and reference area and can also be used in summer for "story hour."

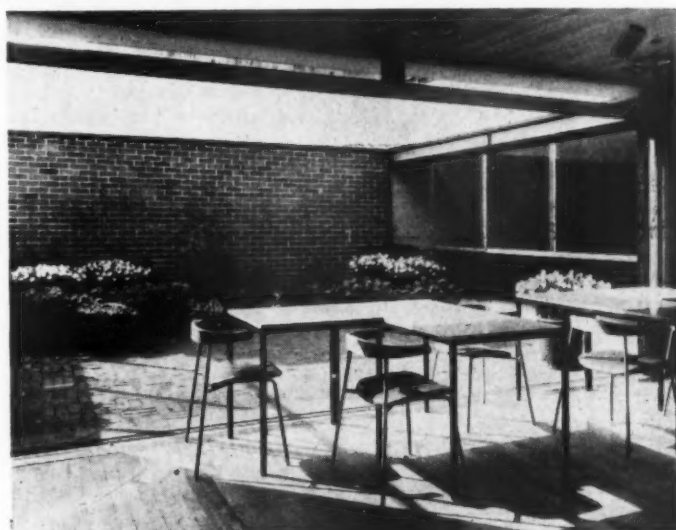
The suspended ceilings are at different levels, dictated in part by the existing structure and in part in order to define and emphasize spaces used for different activities. In the neighbouring shops in the same building it was necessary to provide a fairly high ceiling (10 ft. 6 in.) but it was felt that this would be too high for the library where the scope for natural lighting from the south is far greater than in the shops with their cloakrooms in the south. The suspended ceilings give varying heights of 9 ft. in the front, 6 ft. in the middle and 8 ft. near the garden and are arranged to give a domestic scale to the spaces enclosed. The library can be easily rearranged if so desired since the fixed bookcases are supplemented by bookcases on wheels which can be moved to any part of the room and can so act as screens.



Looking south inside the Library.



Looking across to the story-telling area from reception desk.



The paved garden from the story-telling area.

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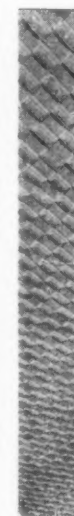
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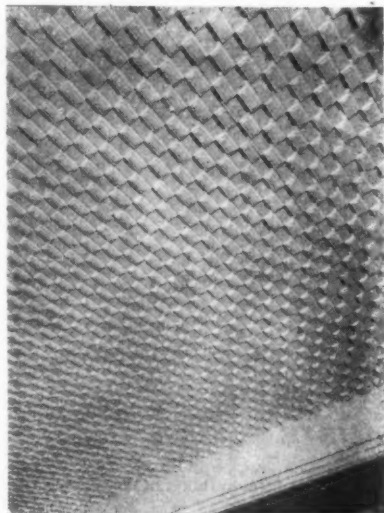
Petraden

THE INDUSTRY

This week Brian Grant describes a new acoustic tile, a manual for pitch fibre pipes, additional fittings for pitch fibre pipes, new glass blocks, and baths for the aged.

Acoustic tiles

If anyone is getting a bit tired of the panelled type of acoustic ceiling there is a new type of tile which gives an impression of being monolithic. The tiles are dry jointed, and, with the appropriate type of ceiling construction, can be removed, if necessary, for access to cables or ductwork. The tiles are made of gypsum plaster in a standard size of 2 by 2 ft., and can be decorated with any emulsion, oil, or water bound paint. The individual rectangles of the pattern are quite small, about 4 by 1½ in. (*Petradene Ltd., 7/8, Hobart Place, London, S.W.1.*)



Petradene acoustic tiles.

Pitch fibre pipes

The Pitch Fibre Pipe Association was formed as long ago as 1957 and has recently issued a manual (loose leaf to A4 size) setting out the general advantages and properties of pitch fibre pipes, with notes on methods of laying and on costs: the latter would appear to err on the side of caution, for there is no mention of the fact that concrete haunching is not generally necessary with these pipes and gives a considerable saving in over-all costs. The section dealing with pipe fittings shows only a selection of those available, at least one manufacturer having a much wider range, and at the moment the data sheets deal only with pipes for drainage. Further sheets are to follow in due course, and will presumably deal with other aspects such as conduit, under floor ducts and perforated land drain pipe. So far it is fair to say that the manual has been planned with a good deal of thought and should steadily improve as further sheets are added. A good start. (*The Pitch Fibre Pipe Association of Great Britain, 27, Chancery Lane, London, W.C.2.*)

Pitch fibre pipe fittings

The Union range of pitch fibre pipe fittings has recently been enlarged by the addition of a number of new fittings and the complete series is shown in a new leaflet. The more important new fittings are the double junctions, in two angles and sizes, a saddle for connecting 4 in. pitch fibre to 6 in. earthenware, and a considerably increased variety of knuckle and medium radius bends. (*Union Fibre Pipes (Great Britain) Ltd., Tolpits, Watford, Herts.*)

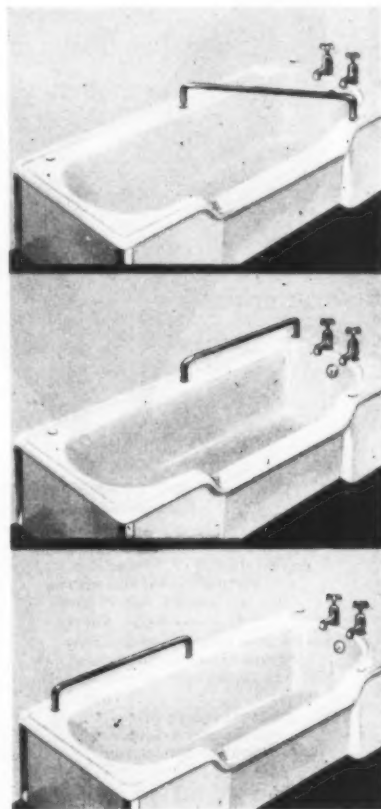
Glass blocks

Pilkingtons have just added four new patterns to their range of Insulight glass blocks. Type P.B.4 is a prismatic light directing block which throws part of the incoming light on to the ceiling, whence it is reflected into the depth of the room and at the same time helps to keep the apparent brightness of the blocks low and uniform even under bright sunlight. P.B.5 is smooth outside with a large Flemish pattern on the inner faces to give high light transmission and slight diffusion. P.B.6 has a boomerang shape with arms extending along two adjacent sides of the block, the inner surfaces carrying a light-diffusing Morocco pattern.

The boomerangs are on opposite corners of the two sides of the block and create light and shade effects within it. All these blocks measure 7½ in. square, with a thickness of 3½ in., and there is also a P.B.32 half-size block so that there is plenty of opportunity for design variations. (*Pilkington Bros. Ltd., St. Helens, Lancs.*)

Baths for the elderly

Allied Ironfounders have just introduced a new Vogue model bath intended for the elderly, the infirm, or the very young. It is shallower than normal, and has a low side, and the larger than usual width of roll makes a reasonably comfortable seat. There is also a chromium plated handrail, adjustable to three positions, one partially across the bath. Nine colours are available. (*Allied Ironfounders Ltd., 28 Brook St., London, W.1.*)



Allied Ironfounders Vogue model bath.

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the Atlanta flat bottom helps to prevent slipping... ensures comfort. Particularly suitable where a shower is to be fitted.

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the low sides make the Atlanta safer for young and old. It can be fitted to give an overall height of only 16".

Taps

can be fitted centrally, or on either corner to facilitate installation and maintenance.

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the Atlanta is supplied with or without overflow... with or without hand grip. The feet can be adjusted to accommodate all types of trap, including the Bilston "Wasteflo" pre-fabricated waste, trap and overflow unit. Also available with the Bilston O.P. Hand Grip specially designed to meet the needs of the elderly or infirm.

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HOUSE
TYPE

SFB File No. (63)

UDC No. 621.32

M

26: SERVICES AND EQUIPMENT

socket outlets in public authority houses

N

The following paper, by J. Crisp, Assoc. I.E.E., and K. J. Noble, B.Sc., of BRS, gives an account of a study of the electrical provision in 120 houses distributed on two estates, one belonging to a local authority and one to a development corporation. This study shows that the existing outlets provided are too few. The authors go on to suggest what would be a reasonable provision in the house types investigated and give the cost. They also derive from their study certain principles for the siting of socket outlets within each type of room.

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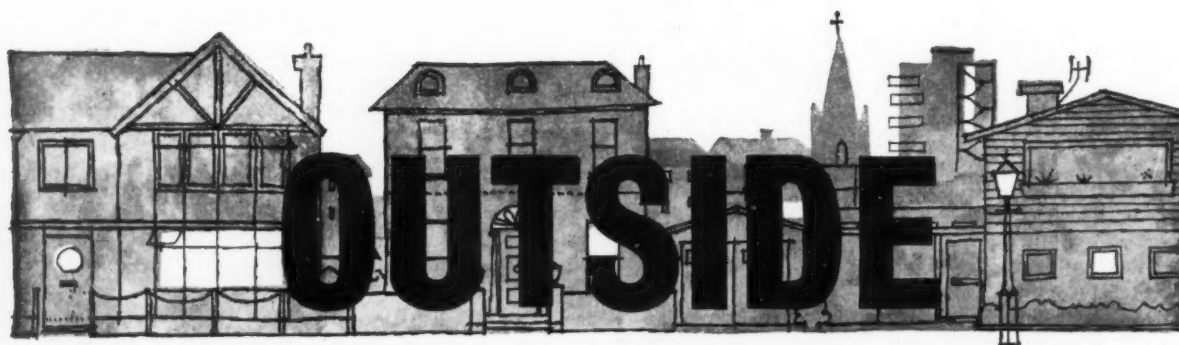
KEY

- AREAS USED FOR CIRCULATION AND SOME FURNITURE
- CONSUMER'S COMPOSITE UNIT
- INSTALLED SOCKET OUTLETS, AS EXISTING
- FUSED SPUR BOX, FSB
- COOKER CONTROL UNIT / WITH SOCKET OUTLET NOT ON RING CIRCUIT
- FIXED PANEL FIRE
- PROPOSED MINIMUM SOCKET OUTLETS TO REPLACE EXISTING

Fig. 1. Plans of the five house types surveyed showing the existing and recommended electrical provision. Shaded areas in ground floor plans are areas where appliances were seldom found.



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technical section

As part of its research programme on user studies in housing, the Building Research Station has carried out an investigation into the provision of socket-outlets in houses of the type usually built by Public Authorities. The study has included a consideration of technical and economic aspects in addition to an appraisal of user behaviour, experience and opinion. In all, 120 houses were visited and discussions held with the officials concerned. During each visit socket-outlet positions were noted (in some cases tenants had made modifications to the original provision); the items of electrical equipment, their positions in the

rooms and the method of connection to the socket-outlets were recorded; and interviews were held with tenants to assess the acceptability of the existing provision.

The 120 houses were selected at random from four housing estates belonging to a Local Authority and a Development Corporation. Two groups of 20 houses of similar plan were chosen from one estate, and four groups of 20 houses each of different plan from three other estates. These groups are designated in the text by M₁, M₂, N, O, P and Q, the Groups M₁ and M₂ having the same house plan.

Table 1. Number and type of appliance possessed by tenants in 120 houses in five house types spread over four housing estates

Appliance	Number possessed per household	Number of tenants having relevant appliance in six groups of twenty houses in each						Total number of tenants possessing appliances	Total number of appliances
		M ₁	M ₂	N	O	P	Q		
Fire (including all types)	One	12	13	12	6*	10	15	68	141
	Two	3	4	4	14*	2	1	28	
	Three	1	1	—	—	—	—	2	
	Four	—	—	—	—	—	—	—	
	Five	1	—	—	—	—	—	1	
	Six	1	—	—	—	—	—	1	
Blanket	One	2	—	4	—	1	—	7	18
	Two	—	2	1	—	—	1	4	
	Three	1	—	—	—	—	—	1	
Fan	One	—	—	—	—	1	—	1	1
Table standard	One	3	6	5	7	7	10	38	211
	Two	2	6	4	4	6	2	24	
	Three	5	4	3	3	3	—	18	
	Four	6	2	2	1	1	—	12	
	Five	—	—	—	1	—	—	1	
	Six	—	1	2	—	—	—	3	
Floor standard	One	13	10	6	8	4	2	43	49
	Two	1	1	—	1	—	—	3	
Television	One	18	20	13	14	15	17	97	101
	Two	1	—	—	1	—	—	2	
Radio	One	12	13	15	14	13	10	77	96
	Two	5	1	—	—	1	1	8	
	Three	—	—	—	—	1	—	1	
Radiogram	One	9	10	6	5	5	10	45	45
Record player	One	2	2	4	3	1	1	13	13
Projector	One	—	1	—	—	1	—	2	2
Iron	One	20	20	20	19	20	19	118	122
	Two	—	—	—	1	—	1	2	
Vacuum	One	19	18	19	18	14	14	102	106
	Two	1	—	—	—	—	1	2	
Washing machine or wash boiler	One	9	13	10	5	8	5	50	50
Kettle	One	7	9	9	9	5	4	43	43
Refrigerator	One	5	5	3	1	2	3	19	19
Sewing machine	One	4	—	7	3	2	2	18	20
	Two	1	—	—	—	—	—	1	
Toaster	One	3	3	2	2	2	1	13	13
Percolator	One	—	2	—	1	—	—	3	3
Clothes dryer	One	1	—	1	—	—	—	2	2
Clock	One	4	5	6	7	3	2	27	55
	Two	1	1	2	2	1	1	8	
	Three	1	2	—	1	—	—	4	
Hair dryer	One	9	8	7	2	6	5	37	37
Razor	One	5	5	4	4	6	3	27	27
Drill	One	4	4	3	6	2	4	23	23
Soldering iron	One	2	—	5	3	2	4	16	16
Toy train set	One	2	3	—	1	—	1*	7	7
Aquaria	One	—	—	—	1	1	—	2	4
	Two	—	—	—	—	—	1	1	
Cocktail cabinet	One	—	—	—	—	1	1	2	2
Infra-red lamp	One	1	—	—	—	—	1	2	2

* In the O houses a fixed panel fire in bedroom 1 was provided by the public authority responsible for the estate.



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Senior Architect to the Ministry of Works.

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technical section

The plans of the five house types are given in Fig. 1 and the positions of the socket-outlets provided are shown in the plans. It is convenient to divide each room into areas A, B, C, and D in which appliances were found. On the ground floor, areas are shaded where appliances were very seldom found; these were used for circulation and some furniture, and flexible cable trailing across these areas was therefore undesirable. Appliances tended to be placed near walls and particularly near the fireplace. Shaded areas are not included on the first floor since they will depend primarily upon the position of the bed, for which there is usually more than one possible position.

The numbers of socket-outlets provided in the living/dining room type houses were six socket-outlets in M₁ and M₂, seven in N and nine in O. In the through living room type houses there were seven socket-outlets each in P and Q (see Fig. 1). Socket-outlets in all houses were of the 13 amp. 3-pin type, and were wired to a ring circuit and connected to a control unit comprising a main switch and fuses. In the N, O, P and Q houses a fused spur box was also connected to the ring circuit to serve an immersion heater. These houses all had a cooker control unit fitted in the kitchen on which another socket-outlet was provided which was not on the ring circuit.

In the M houses, no provision had been made to serve an immersion heater and only "sealed off" circuit wiring had been installed in the kitchen for a cooker

if required. It was interesting to note that eight out of 40 tenants had had installed an immersion heater complete with separate circuit wiring and main fuses, and 12 out of 40 tenants had had installed a cooker control unit on which there was a socket-outlet available (not on the ring circuit).

Results

Table 1 gives the number and types of appliances possessed by tenants in the houses studied. The amount of equipment compared with that of even a few years ago is surprisingly high and is indicative of both technical advances and the rising standard of living.

The percentages of tenants using various numbers of appliances in each of the rooms of the houses are shown in histogram form in Fig. 2, and the percentages of tenants of different house types using various appliances in particular rooms are given in Table 2. It will be noted that some of the items in Table 2 are likely to be in fairly permanent positions, e.g., television sets, whilst others are easily transportable and quite likely to be used in various parts of the room or moved from room to room, e.g. fires, lamps and razors; it should also be noted that in Fig. 2 some of the items, when in the same room, are unlikely to be in use at the same time. These are all factors to consider when deciding the socket-outlet provision. As a result of the studies made in existing houses a suggested scale of provision has been prepared for each of the house types, and the suggested positions for the socket-outlets are shown by a cross in Fig. 1. This takes into account not only the requirements of users but also economic and safety considerations. It is convenient to consider each room separately in relation to appliances and socket-outlet provision.

Living room: Study of the living room plans for the M, N and O houses show that a fireplace is in all cases placed against the dividing wall between the living and dining room, with door access to the hall on an adjacent wall. In the M and O houses there was also access from the living room to the dining room, thereby creating a traffic lane across the room that affected appliance positions. In the N houses, this traffic lane did not exist. It was found that in the M houses where only one socket-outlet was provided, about one quarter of the tenants wanted additional socket-outlet provision in area C and about half the tenants wanted an additional socket-outlet somewhere in area A or B.

In the N houses, where twin socket-outlets were provided in area B, about half the tenants would have preferred one socket-outlet on each side of the fireplace, and about half wanted another socket-outlet provided in area A. In the O houses, where three socket-outlets were provided, about one third of the tenants would have liked one socket-outlet on each side of the fireplace, instead of two on one side. Apart from this fact, the number of socket-outlets in the living room of the O houses was generally acceptable; only four out of twenty tenants desired four socket-outlets.

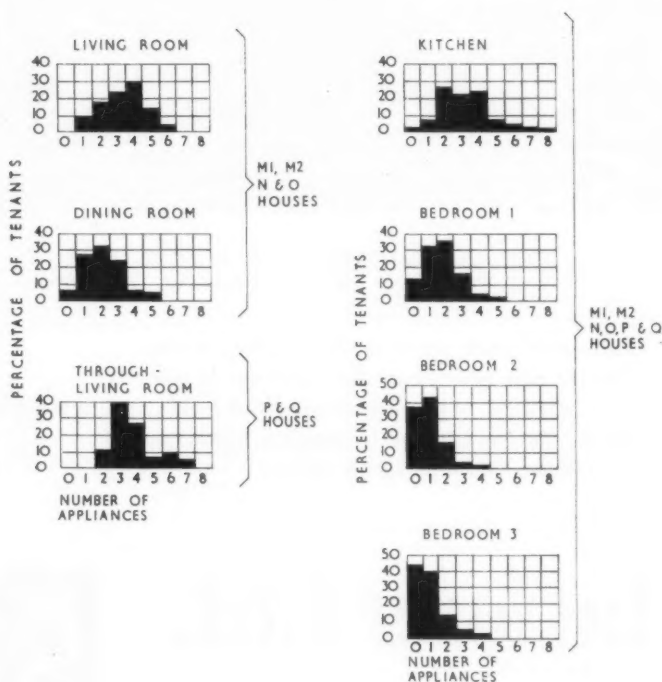


Fig. 2. Graphs plotting the percentages of tenants against the number of appliances used in each room.

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This photograph shows an uninterrupted view of the interior of the new 600,000 cu. ft. cold store for T. Wall & Sons (Ice Cream) Ltd., at Gloucester.

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General Contractors: John Laing & Sons Ltd., London N.W.7.

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technical section

In deciding the positions of socket-outlets, regard needs to be paid to the convenience of the user, the plan characteristics of the room (and possibly adjacent rooms) and installation economics. On the last point the average net cost per socket-outlet will vary according to the total number fitted in the house. For example, where a twin socket-outlet replaces a single socket-outlet the additional cost should not be more than 12s. The cost of one socket-outlet fitted back to back with the socket-outlet in an adjoining room should not be more than 17s. 6d. for the addition, while for three socket-outlets (twin socket-outlets back to back with a single socket-outlet) the cost should not be more than £1 10s. 0d. for the two additions.

The suggested minimum socket-outlet arrangements for living rooms in the M, N and O houses are given in Fig. 1 and they illustrate some of these cost aspects and how they should be taken into account with the planning of the room and the placing of appliances. For example, in the living rooms in the M houses (Fig. 1) appliances were not used in the area between the fireplace and the dining room door access because the space was too small, and although the cheapest installation would have been a twin socket-outlet to the left of the fireplace back to back with one socket-outlet in the dining room this arrangement would have been less acceptable to the tenants. There are two alternatives: the first is to provide a twin socket-outlet on the right of the fireplace and the second, a single-socket outlet, on each side of the fireplace. Although both should give satisfaction, only one of forty tenants actually asked for the second alternative and since the first alternative is cheaper, it is to be preferred.

Fourteen out of eighty tenants in the three house types used an electric clock in the living room. Since an electric clock is required for continuous use, the most satisfactory connection is from a suitably fused connector box. Clocks were found in several rooms

and in different positions within rooms, and there is no objection to their more economical connection to a standard socket-outlet, provided the clock is protected by a suitably rated fuse in the plug top to which it is connected.

Dining room: The variety of appliances used by eighty tenants in the dining room of the M, N and O houses, Fig. 2 and Table 2, would seem to justify the provision of at least two socket-outlets. Whether these are placed together (for economy) or arranged separately depends on the room plan, for example, the number of doors in the dining room in each of the house types varies and the N house is the only one with a fireplace. Such factors affect circulation areas and the acceptable positions for appliances. A suggested socket-outlet provision for the dining room in the three house types is shown by a cross in Fig. 1. *Through living room:* The fireplace in the through living rooms of the P and Q houses is situated in the centre of the spine wall with door access on each side of the hall and kitchen respectively, a typical arrangement for through living rooms. In the P house it was found that although most appliances were used in areas C and D (where socket-outlets were placed) there was a wish to place appliances in areas A and B. The preference for a socket-outlet on each side of the fireplace was again expressed, rather than two on one side. Five out of twenty tenants wanted a socket-outlet in the corner near the party wall in area A and four others had improvised arrangements to enable appliances to be used in that area. Three tenants wanted a socket-outlet in the corner near the party wall in area B, and one tenant a socket-outlet in either area A or B. The most suitable solution would seem to be four socket-outlets placed as shown in Fig. 1.

In the Q house appliances were used in areas A, B, C and D but mostly in areas B and C. The solution likely to be most satisfactory using four socket-outlets is shown in Fig. 1.

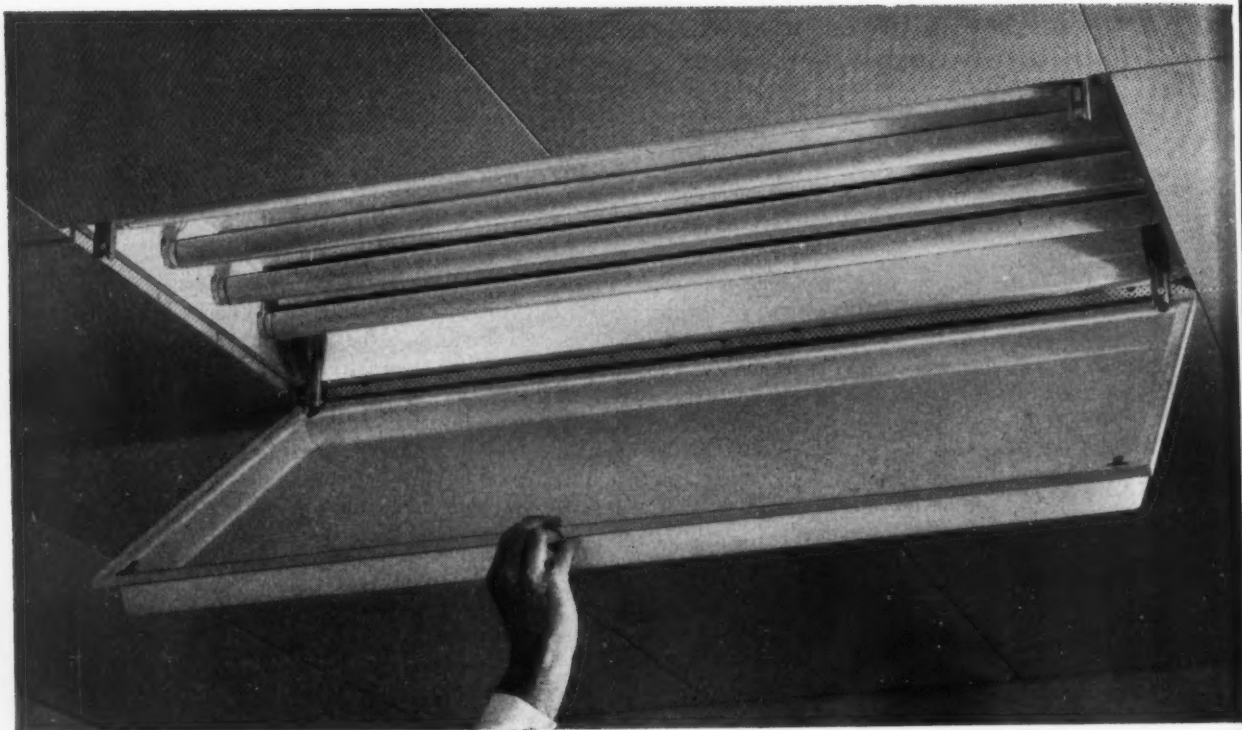
Table 2. Distribution of types of appliances. Percentage of tenants of different house types using various appliances in particular rooms

Appliance	M ₁ , M ₂ , N and O HOUSES		P and Q HOUSES	M ₁ , M ₂ , N, O, P and Q HOUSES			
	Living room	Dining room	Through living room	Kitchen	Bedroom 1	Bedroom 2	Bedroom 3
Fire	54	53	63	37	51	33	34
Blanket	—	—	—	—	9	4	3
Table standard	28	10	30	—	75	40	34
Floor standard	49	5	15	—	—	—	—
Television	75	13	80	—	1	—	—
Radio	27	47	55	18	7	4	2
Radiogram	32	5	38	—	2	1	—
Record player	13	—	5	—	—	1	1
Iron	12	32	38	94	—	—	—
Washing machine or wash boiler	—	—	—	42	—	—	—
Kettle	—	—	—	35	1	—	—
Refrigerator	—	1	—	15	—	—	—
Sewing machine	5	13	10	1	—	2	2
Toaster	—	1	—	11	—	—	—
Clock	18	9	10	13	12	—	2
Hair dryer	6	14	10	16	8	1	—
Razor	6	6	8	13	3	1	—
Drill	—	—	—	17	—	—	—
Soldering iron	—	—	—	11	—	—	—

Vacuum cleaners are not included in this table, as are appliances shown in Table 1, which are few in number. Some appliances are used in more than one room, e.g., fires, table standards, sewing machines, etc.

ALLOM HEFFER

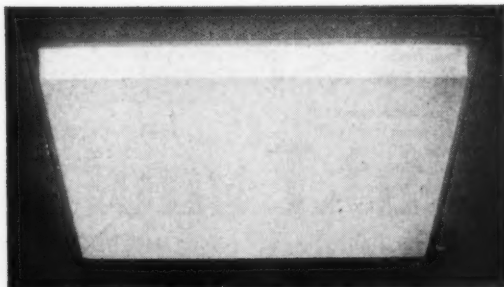
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technical section

Kitchen: The provision of socket-outlets in kitchens presents a special problem since much of the electrical equipment and many of the activities differ from those elsewhere in the house. Consideration in design should also take into account the increasing use of electrical appliances; the presence of a socket-outlet on the cooker control unit should not be regarded as a reason for reducing the number of socket-outlets to be provided elsewhere.

Socket-outlets should be placed, where possible, in free areas so that they are readily accessible for use; for example, many tenants in the M houses expressed dissatisfaction with the position of the socket-outlet in area C (Fig. 1) on the grounds that it was too near the cooker.

About 40 per cent of the tenants had either wash boilers or washing machines. These were kept underneath the draining board adjacent to the sink. It was suggested that a suitable location for socket-outlets for these appliances in the M and N houses would be on the free wall space in area B near to the door leading from kitchen to dining room. In this position, the control (preferably a switched socket-outlet) would be more readily accessible for tenants possessing washing machines not fitted with a switch. Two socket-outlets, only one switched, might be usefully installed here. The larder is awkwardly placed in the M houses and it might be desirable to carry flexible cable from the washing machine over the larder door. In the M house it is suggested that a socket-outlet should be provided on the wall space on the right hand side of the room near the side door (area C) for connection to refrigerators, etc. In the N house where there is no side door, this could be provided in area D near the work top.

In the O house the arrangement of kitchen fittings and limited wall space presents a difficult problem. An improvement to the existing socket-outlet provision (Fig. 1) would be to place a switched socket-outlet on the larder wall near the larder door at a lower level than the draining board which might serve for the connection of appliances such as washing machines, and another socket-outlet fitted near the boiler which might serve fire and clocks, etc.

A study of the free areas and traffic routes in the P and Q houses suggests that the solutions indicated in Fig. 1 are likely to prove satisfactory.

Bedrooms: It can be seen from Table 2 that for all bedrooms, socket-outlet provision is required mostly for fires and table standards. Both these appliances are liable to be in use at the same time, yet are unlikely to be used close together. Since tenants' opinions vary with regard to positions of beds, a reasonable solution is to provide two socket-outlets in positions diagonally opposite to one another in all the house types. Exceptions to this, might be in bedroom 3, in which a single socket-outlet or twin unit will suffice. One socket-outlet position usually suitable is on the left or right of the window. A good general rule for positioning a second socket-outlet is to select a point on the wall opposite the window, either near

the door or at the corner of the room on the same wall away from the door. The latter position should only be selected if it appears from the room plan that it is unlikely that furniture will be placed in that corner. One or other of the positions selected for the socket-outlet on the door wall will then determine on which side of the window the other socket-outlet should be fixed.

In all three bedrooms of the P house, objection was taken by some of the tenants to the position of the socket-outlets near the middle of walls, positions which were usually hidden by furniture.

In bedroom 1 in the O house, the public authority concerned had installed a wall-mounted fixed panel fire. Seven of the 20 tenants in these houses said that the fixed fire restricted the placing of furniture and they would have preferred a socket-outlet near the window.

In placing socket-outlets in bedrooms, consideration should be given to using them as points for spur connections to supply socket-outlets in other parts of the house, to economize in wiring.

Hall and landing: In none of the 120 houses had provision been made for a socket-outlet in the hall or on the landing. Tenants using vacuum cleaners in these areas had to connect them to a socket-outlet in one of the rooms or adopt the undesirable practice of plugging into a ceiling pendant light fitting. Many tenants said they would like to have a socket-outlet in the hall or on the landing. It seems that for low cost housing one socket-outlet to serve both hall and landing should be sufficient. Whether this single socket-outlet is in the hall or on the landing will depend on circumstances; if the hall is large enough to accommodate an electric fire, it would be preferable to place the socket-outlet in the hall.

Store: Eighteen out of 80 tenants in the N, O, P and Q houses (with an internal store) wanted a socket-outlet in the store for use with drills and soldering irons. In these house types it would not be expensive (about £1 5s.) to install a socket-outlet immediately beneath the consumer's composite unit (cross in Fig. 1).

Installation detail

Consumers' composite unit: In the N, O, P and Q houses the ring circuit wiring for the socket-outlet installation terminates in a consumers' composite unit fitted in the store; the unit was fixed at a convenient height and was readily accessible. In the M houses the consumers' composite unit, together with the electricity supply authority's incoming cable, cut-outs and house service meter, was fitted in an unlighted cupboard underneath the staircase (see Fig. 1). The position of the composite unit was inconvenient for fuse replacement, and access to the cupboard was often difficult; four tenants also expressed a wish for a light in the cupboard.

Technically, the consumers' composite unit in these houses would be better if fitted in the hall behind the front door (see Fig. 1) thereby facilitating meter reading and servicing. A still more attractive arrangement

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technical section

would be a consumers' electricity supply control unit conforming to B.S. 1454:1948 consisting of a sheet metal cupboard built into a wall to accommodate both the consumers' composite unit and the supply authority's cut-outs and meter; this, however, would entail additional expense (of the order of £5).

Immersion heater: In the M houses, no fuseway was provided on the consumers' composite unit to connect an immersion heater for supplementary water heating, but eight tenants out of 40 had arranged to have immersion heaters fitted, together with the associated circuit wiring and an additional main switch and fuse unit fitted.

In the N, O, P and Q houses, immersion heaters (2 kW.) were installed by the Public Authority in all houses; they were connected by a switched fused spur box to the ring circuit.

Since there is an increasing tendency in domestic dwellings to use electrical appliances with heavier loads, e.g., washing machines with 3 kW. heating elements and 3 kW. fires, etc., which may possibly be in use at the same time, it is better not to connect an immersion heater to the ring circuit. At the planning stage a 15 ampere circuit way could preferably be included in the consumers' composite unit from which wiring could be installed as a separate circuit to a fused spur box or socket-outlet to connect an immersion heater, if required.

Switched socket-outlets: In the M and N houses no socket-outlets were switched, whereas in the O, P and Q houses the socket-outlets were switched in the kitchen, but not elsewhere. A few tenants said they would prefer all the socket-outlets switched, and a few said they would like a switched socket-outlet for use with such appliances as electric irons. Fused plug tops of the 13 ampere 3 pin type incorporating switches are available, and these should meet the need of tenants who desire a switched control. The switched plug top has the virtue that it is attached to the appliance and is thus available for use at any socket-outlet position.

The installation cost for a switched socket-outlet is about 1s. 6d. net more than for an unswitched socket-outlet and the extra expense seems hardly justified.

Height of socket-outlets on the ground floor: The socket-outlets were fixed at the usual mounting height of 6-9 in. from the floor in the M, N and Q houses (excluding those in the kitchen which were fixed at 3 ft. 6 in. from the floor).

In the O and P houses, on grounds of economy, the

architect had arranged for socket-outlets in the living and dining rooms to be fixed at a height of 3 ft. from the floor instead of the usual mounting height of 6-9 in., thereby effecting a saving of about 3s. 6d. per socket-outlet for conduit wiring and cutting away brickwork. Judging from tenants' opinions the height of socket-outlets is not a matter of much importance. For example 90 per cent of the tenants in the M, N and Q houses found the low position as provided acceptable, whereas 90 per cent of the tenants in the O and P houses found the high position acceptable. In kitchens where plug tops are likely to be frequently removed, it is established practice to place socket-outlets at a height of about 4 ft. 6 in. to avoid stooping.

Costs

The suggestion for socket-outlet provision so far made is a total of fifteen for each of the five house types studied, which is a minimum requirement. This compares well with standards of socket-outlet provision recommended in Post-war building studies No. 11:1944 and with the Housing Manual 1949 which unfortunately have not been followed.

A summary of net costs (based on prices for September, 1959) for the existing provision made in these houses and the net cost of the minimum provision suggested, together with the net cost of a higher standard of provision referred to later, is given in Table 3.

The estimates for the socket-outlet installation provide for an ironclad consumers' composite unit complete with fuses for two lighting, one water heating, one ring and one cooker circuit. They also provide for the installation of the ring circuit (in the floor of the first floor) and spur wiring in TRS or PVC cable with ECC using close joint conduit buried flush in the walls to protect the TRS or PVC cable and terminating in pressed steel boxes to accommodate the socket-outlets. They also provide for the installation of flush mounted 13 ampere, 3 pin shuttered socket-outlets (1 switched) mounted on cream or white bakelite plates. The estimates do not include circuit wiring or associated accessories for lighting, water heating or the cooker.

The above cost summary illustrates the economic advantage of the ring circuit in reducing the cost per point from 50s. to about 37s. as the number of socket-outlets increase. Prices might, perhaps, be still further reduced for large projects having repetitive house plans.

Table 3. Socket-outlet Provisions and Costs

House type	NUMBER AS EXISTING			Estimated cost £ s. d.	MINIMUM NUMBER AS SUGGESTED			Estimated cost £ s. d.	HIGHER STANDARD			Estimated cost £ s. d.
	Socket-outlets	Fused spur box			Socket-outlets	Estimated cost			Socket outlets			
M ₁ and M ₂	6	—		17 5 0	15	32 0 0		19	34 10 0			
N	7	+	1	20 0 0	15	33 5 0		19	35 15 0			
O	9	+	1	23 0 0	15	32 15 0		19	35 5 0			
P	7	+	1	20 0 0	15	33 15 0		18	35 10 0			
Q	7	+	1	20 15 0	15	32 5 0		18	34 0 0			
Average per house	8			20 4 0	15	32 16 0		18	34 15 0			
								19	35 3 0			

technical section

Higher standards of provision

The scale of provision of 15 socket-outlets suggested is a minimum. With such a scale, it will be clear from the number, distribution and use of appliances likely to be found in various rooms that the use of multiple adaptors will at times be necessary with some of the socket-outlets, however well placed they may be. For example, near the fireplace in the living room it is quite possible that a television or radio set, electric fire, table or floor standard and a clock may be in use at the same time. Multiple use at one of the socket-outlets in the dining room and the principal bedroom is also possible.

There is no objection on purely electrical grounds to the limited use of multiple adaptors provided they are correctly fused and used with plug tops which themselves are correctly fused for the appliance to which they are connected. Multiple adaptors are, however, bulky, and frequent insertion and withdrawal of plugs may result in a loosening of the socket-outlet unit. The installation of twin socket-outlets where single socket-outlets are likely to be used with multiple adaptors is therefore to be preferred. Thus, in the example just quoted, one could usefully replace by twin socket-outlets each of the single socket-outlets in the living room near the fireplace, one of the single socket-outlets in the dining room and one of the single socket-outlets in the principal bedroom. This would be welcomed and would not entail much extra cost for the extra outlets shown in Table 3 and 4.

Still higher scales of provision would include the further replacement of single socket-outlets by twin outlets and/or an increase in the number of positions (*e.g.*, in the living room).

Conclusions

The results of this investigation suggest that the minimum scale of socket-outlet provision for houses of the type studied should be about 15. Although this will not obviate the need in some cases for multiple adaptors, it will represent a considerable improvement on the existing less generous provision which in some of the houses visited, resulted in the tenants making their own arrangements which were not always satisfactory. The minimum distribution amongst rooms which is likely to be satisfactory is shown in Table 4.

Table 4. Minimum Socket-outlet Allocation to Rooms: Higher Standard of Provision in Brackets

Location	House Type				
	M	N	O	P	Q
Living room	3 (5)	3 (5)	3 (5)	—	—
Dining room	2 (3)	2 (3)	2 (3)	—	—
Through living room	—	—	—	4 (6)	4 (6)
Kitchen*	3	3	2	3	3
Store	—	1	1	1	1
Hall	1	1	1	—	—
Landing	—	—	—	1	1
Bedroom 1	2 (3)	2 (3)	2 (3)	2 (3)	2 (3)
Bedroom 2	2	2	2	2	2
Bedroom 3	2	1	2	2	2
Total	15 (19)	15 (19)	15 (19)	15 (18)	15 (18)

* Excluding socket-outlet on cooker control unit.

In deciding for any room where the socket-outlets should be placed certain general principles might with advantage be followed.

Socket-outlets should be so placed that flexible cable to the likely appliances will for the main part follow walls, in order to avoid circulation areas. In general it will be found that in some small rooms where one socket-outlet will suffice it is preferable to place it near the window. In rooms where two socket-outlets are adequate, these are best placed near diagonally opposite corners, the diagonal chosen depending on the extent to which the room plan is likely to influence the placing of furniture and equipment.

For Public Authority houses, three or more socket-outlets are envisaged only for living rooms and kitchens. For living rooms in living-dining room houses, with a fireplace, it will usually be an advantage to provide one socket-outlet on each side of the fireplace, the third socket-outlet being preferably placed near the window on the side away from the door. In through living rooms, with a fireplace, where four socket-outlets are suggested, one socket-outlet is again placed on each side of the fireplace, the two remaining socket-outlets being preferably placed in the corners of the room opposite the fire and near the windows.

In general, in kitchens, it will be found that three socket-outlets, in addition to a socket-outlet (reserved for a kettle) on the cooker control unit, are desirable. In placing these the only general principles which can perhaps be given is that they should not be fixed too near the sink and should be so distributed that the flexible cables to appliances are unlikely to interfere with traffic routes.

Once, using such principles, rough positions of socket-outlets have been determined, the exact positions chosen should have regard to the proximity of other socket-outlets in neighbouring rooms in order that economic advantage can be taken of reductions in wiring, common wall chases, etc. (some examples are given in the paper).

Consideration needs to be given both to the safety of the individual and the avoidance of electrical damage to appliances. An adequate socket-outlet provision (both scale and distribution) will diminish the likelihood of unauthorized persons tampering with the installation and should reduce the accident hazard associated with flexible cables placed in awkward positions.

Three-pin fused plug tops are used with socket-outlets on ring circuits and when fitted with the appropriate fuse these prevent electrical damage to the appliance; when multiple adaptors are used they also should be fused.

Appliances which are designed to be earthed, in order to avoid possible danger to the individual through electrical faults, should be correctly wired to three-pin plug tops; this is often neglected.

Although flats were not included in the present study, there is no reason to suppose that socket-outlet provision for rooms in flats should be different for corresponding rooms in houses.

working detail

SLATE FACING: HOSPITAL IN SWINDON

Powell and Moya, architects.

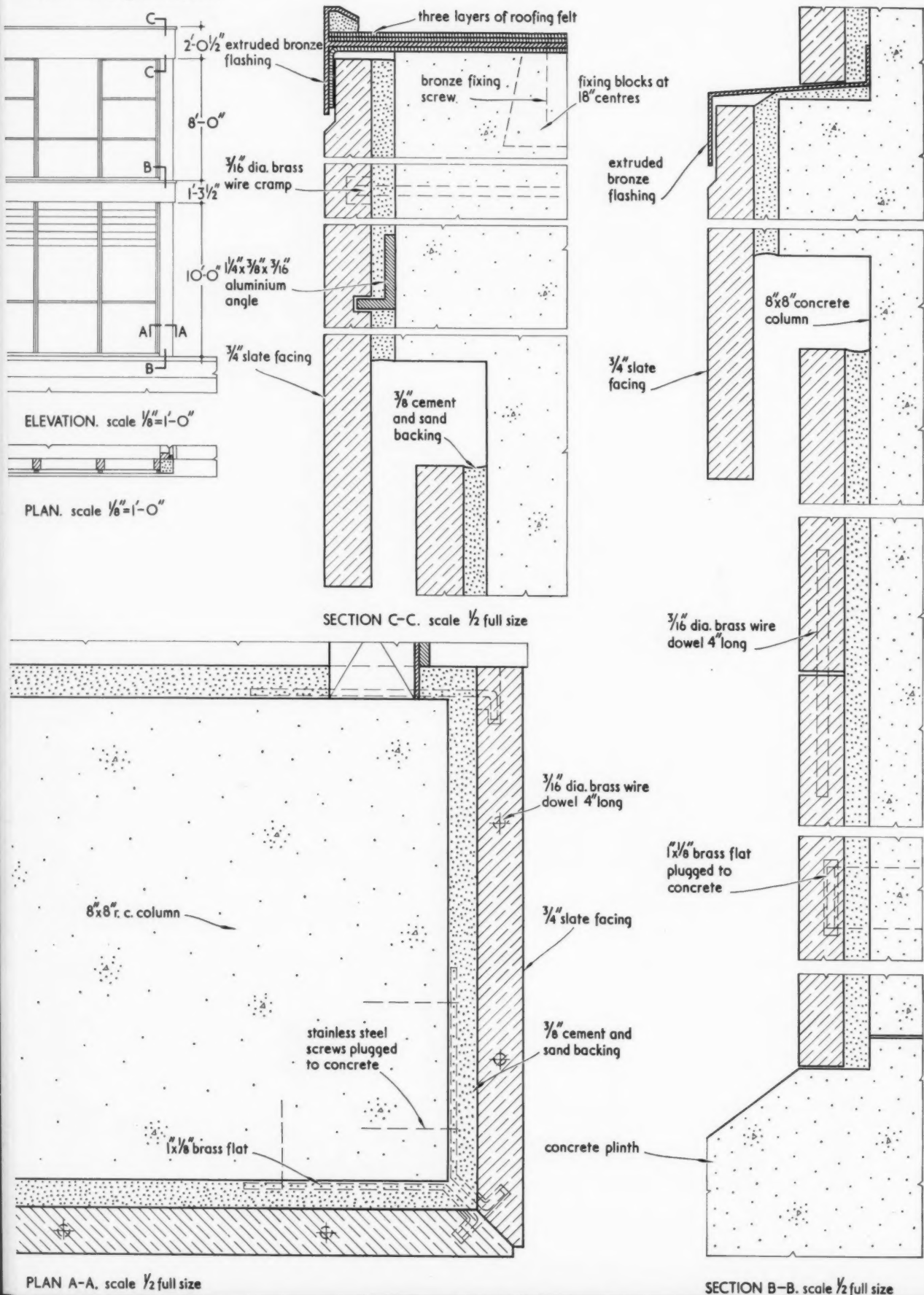


This detail is concerned with the slate fascias and column cladding and the attendant flashings. Note the recession of the slate to receive the flashing, a refinement made necessary by the smoothness and precision of the slate. The facing to the horizontal string at first floor level (Section B-B) is restrained by cramps similar to those used on the fascia (section C-C).

working detail

SLATE FACING: HOSPITAL IN SWINDON

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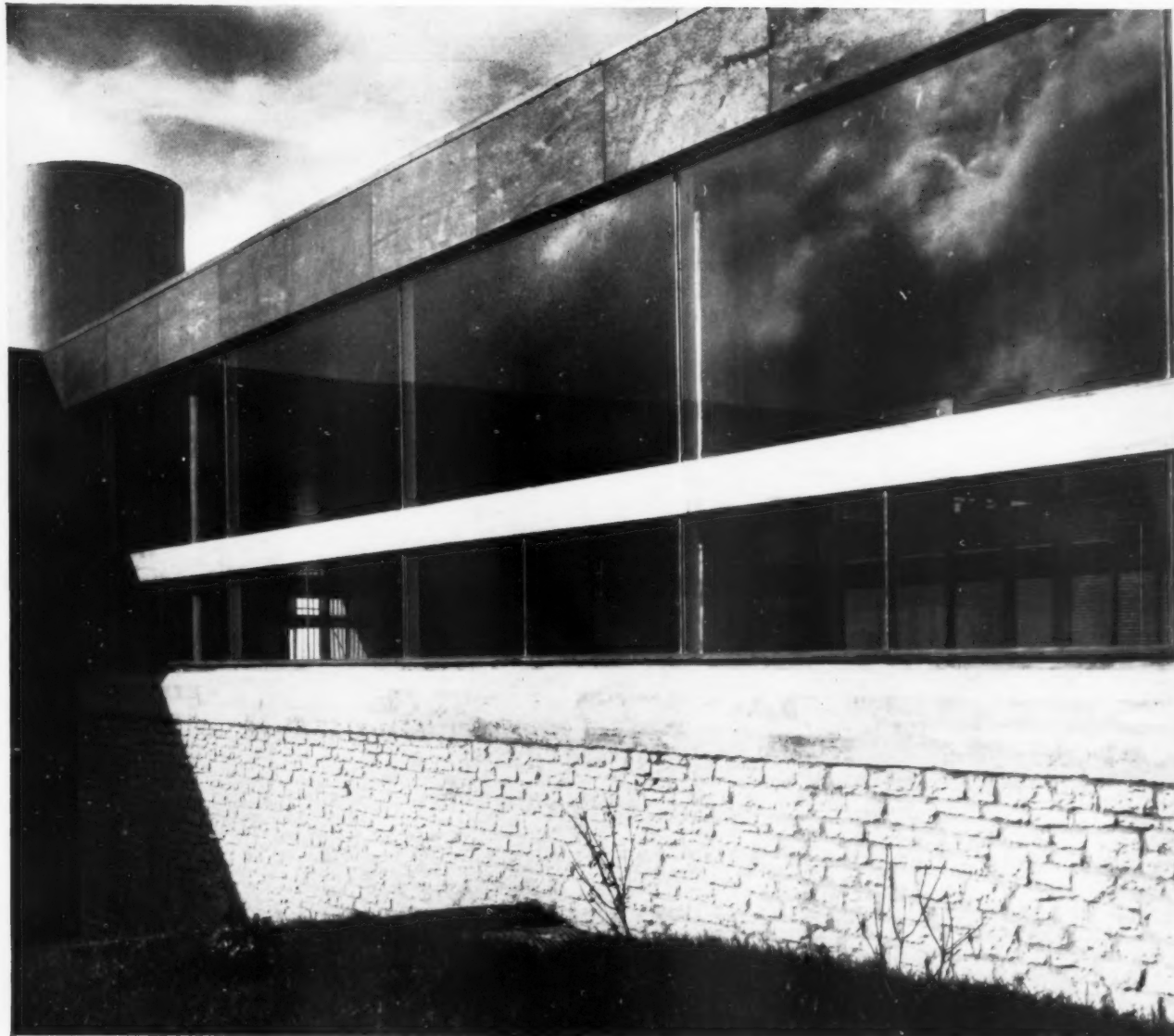


working detail

WALLS AND PARTITIONS: 96

GLAZED WALL: HOSPITAL IN SWINDON

Powell and Moya, architects.

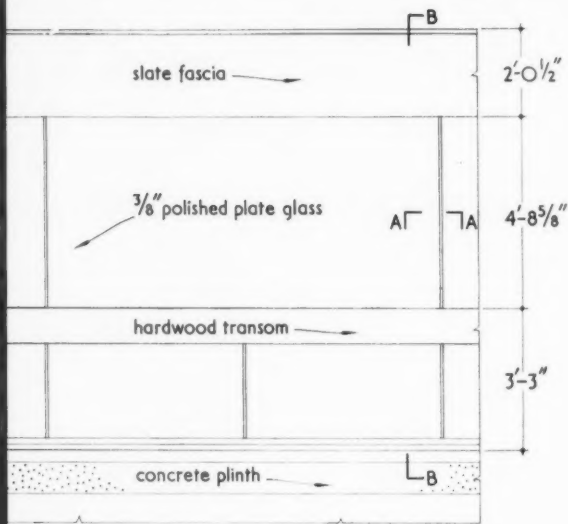


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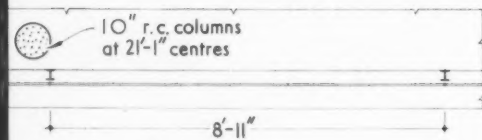
working detail

GLAZED WALL: HOSPITAL IN SWINDON

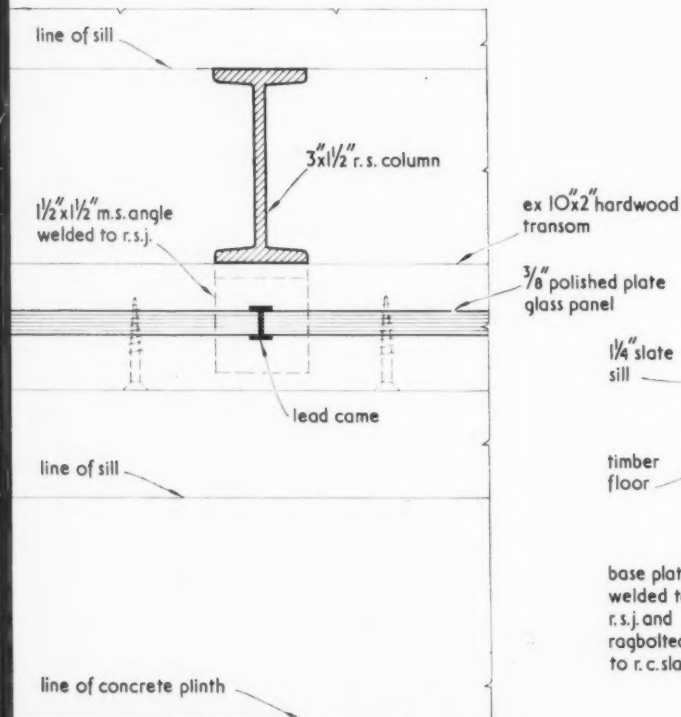
Powell and Moya, architects.



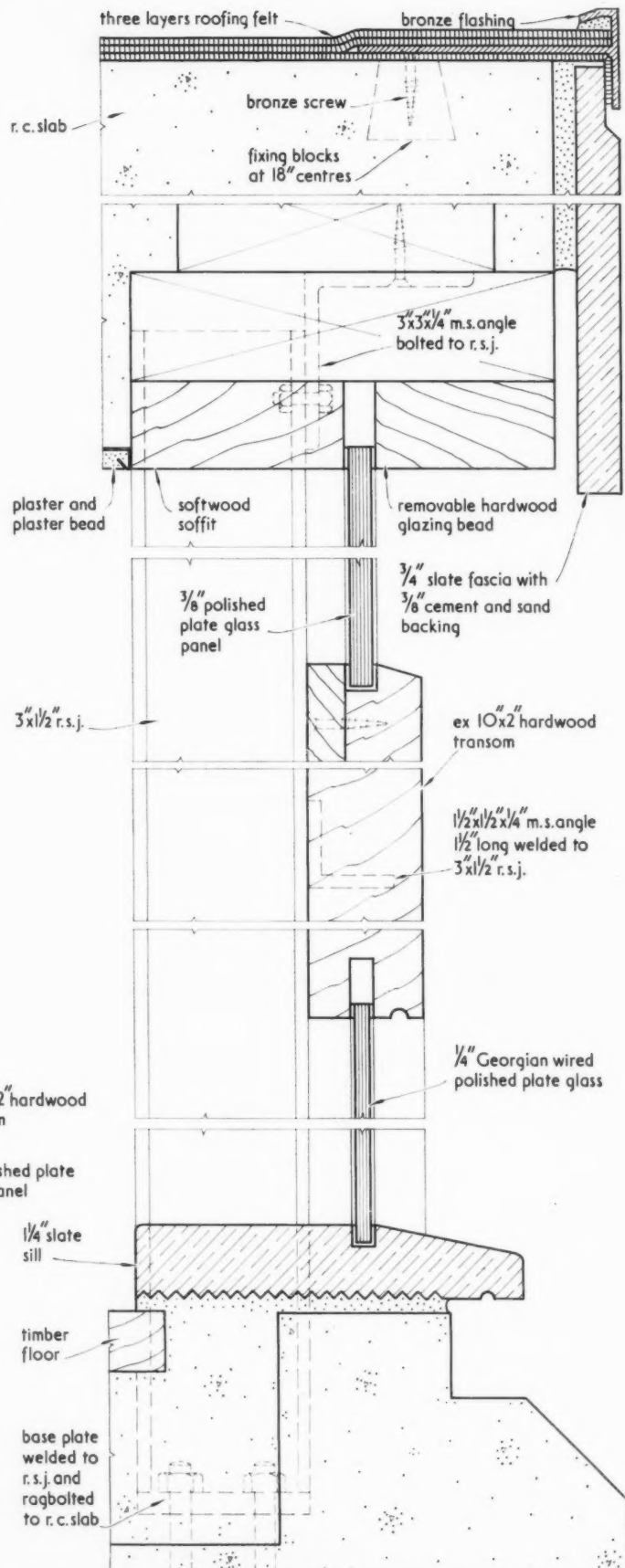
ELEVATION. scale 1/4" = 1'-0"



PLAN. scale 1/4" = 1'-0"



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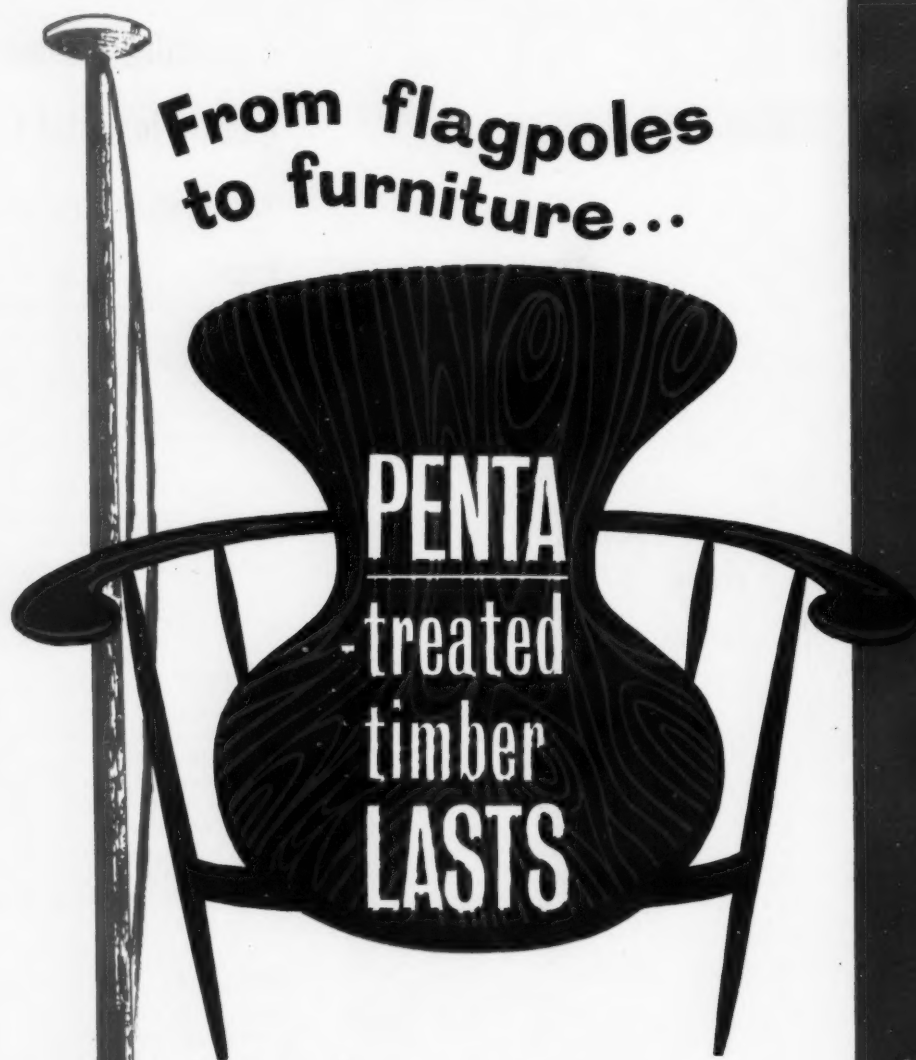
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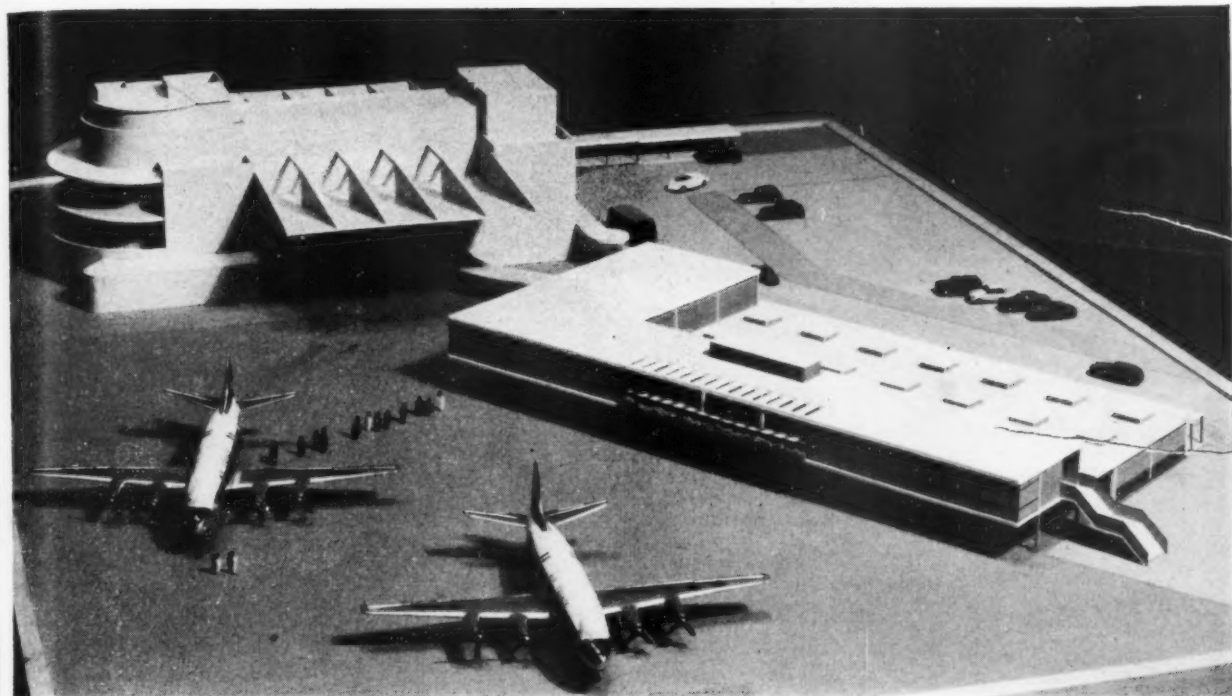


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The new Passenger Handling Building at Birmingham Airport, designed by Norman & Dawbarn, of which the model is shown above, is now under way, and expected to be completed within 21 months. The new building (in the foreground above) consists of a reinforced concrete frame, partly one and partly two storeys high, with largely glazed walls. Beyond is seen the existing Airport building.

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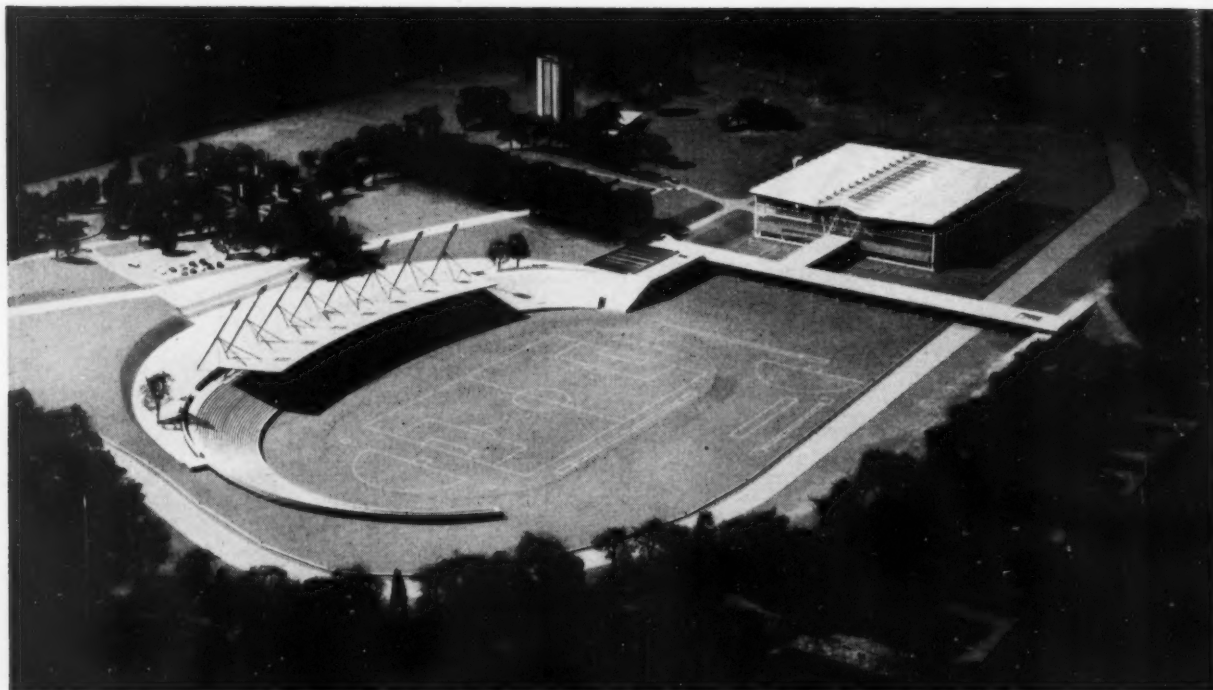
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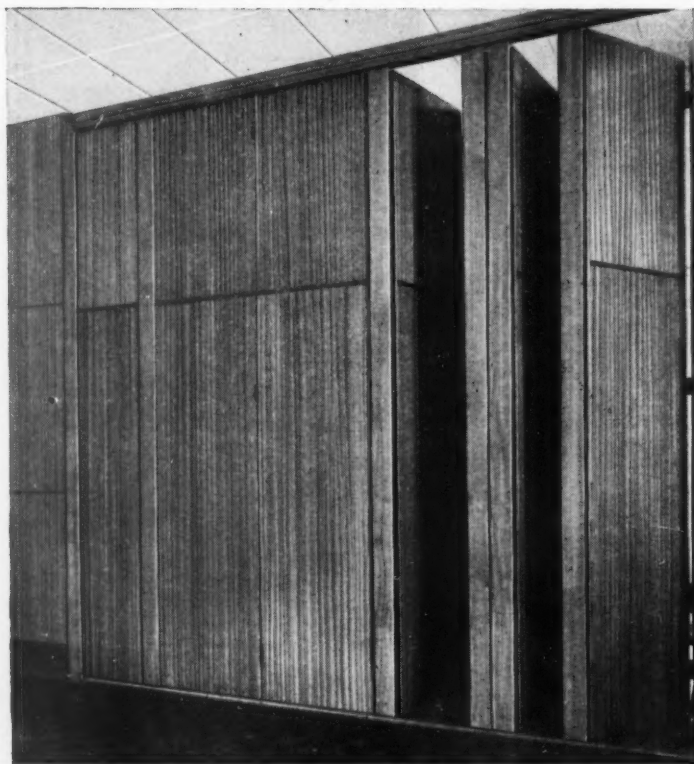
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Construction is about to begin of the National Recreation Centre at Crystal Palace. The scheme, designed by the Architects Department of the LCC (chief architect, Hubert Bennett), will occupy 36 acres of the old Exhibition grounds and will cost nearly £2 million. It will include a main sports hall, shown right, surrounded by games pitches, and an arena with stand for 12,000 spectators, left.



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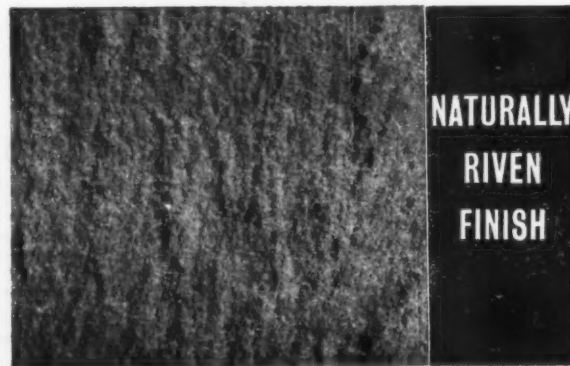
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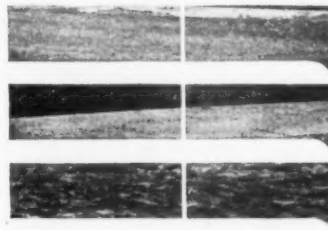
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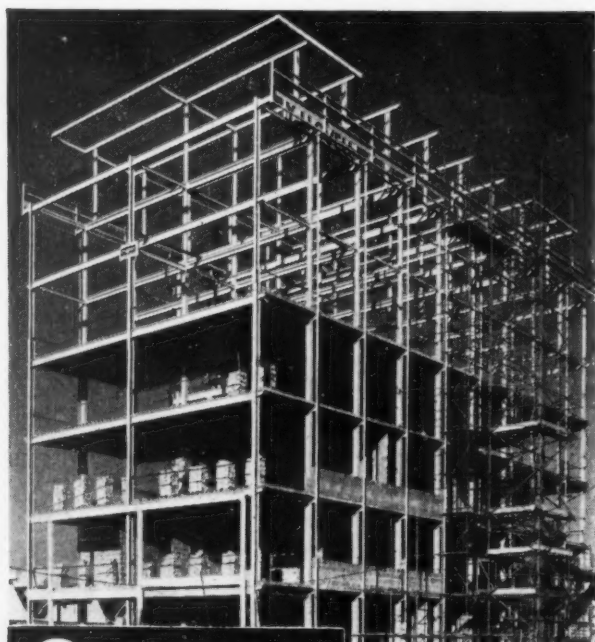
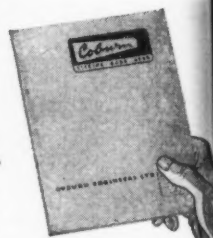
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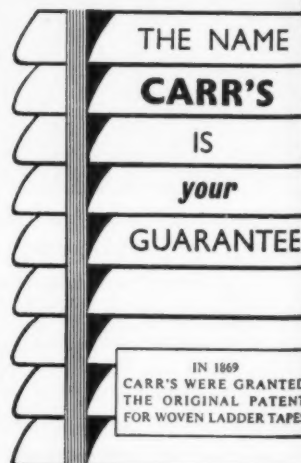
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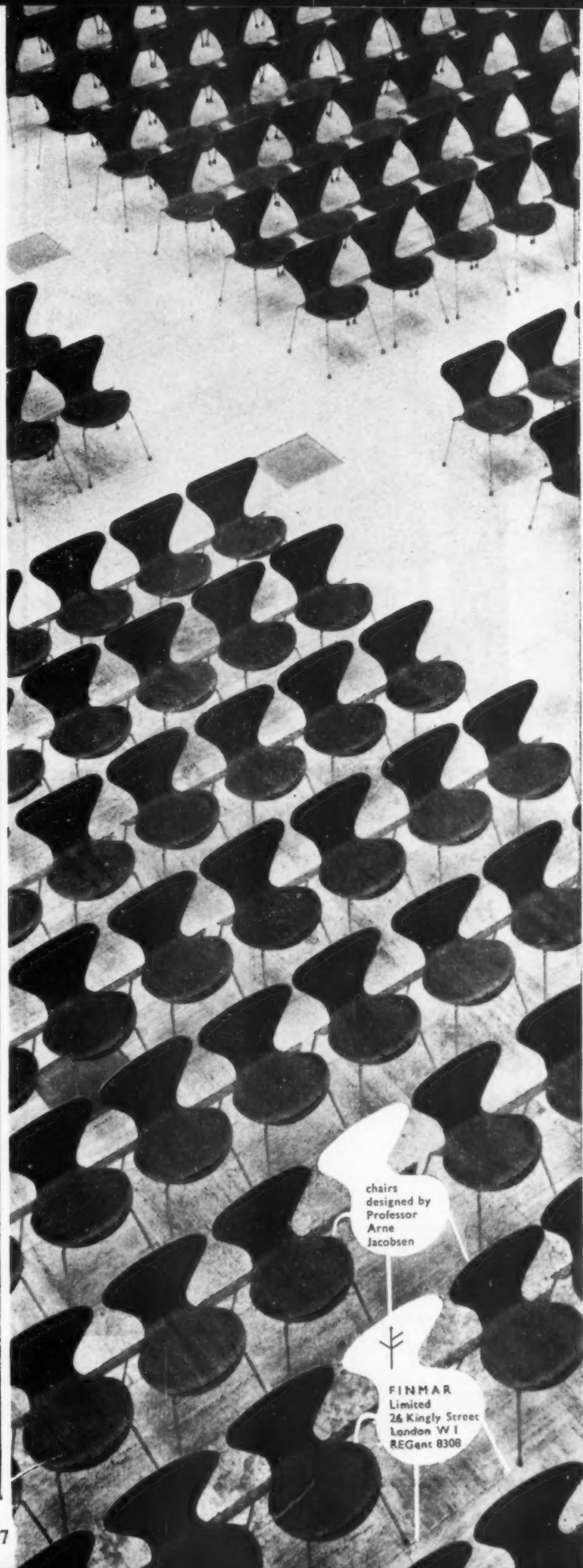
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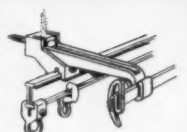
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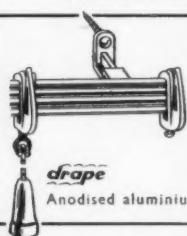
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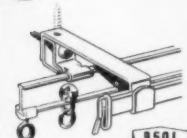
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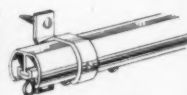
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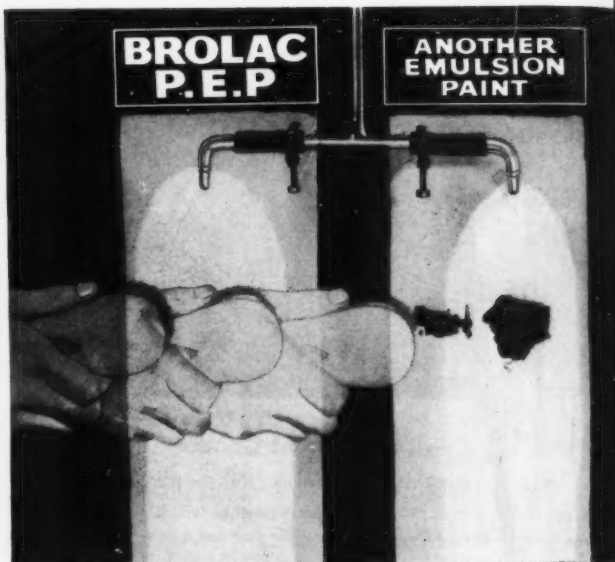


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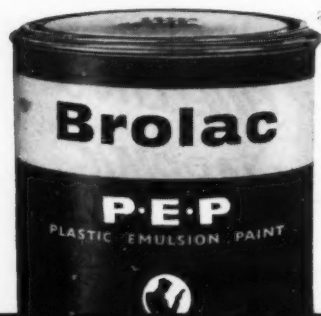


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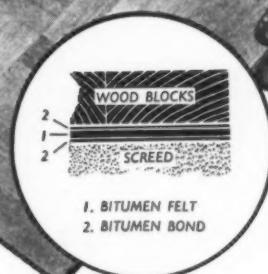
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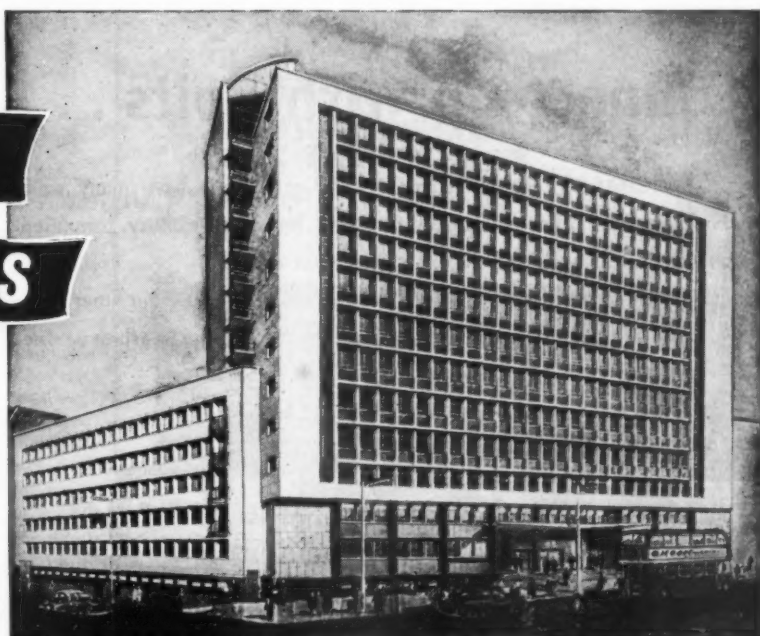
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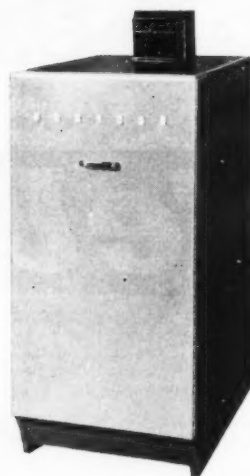
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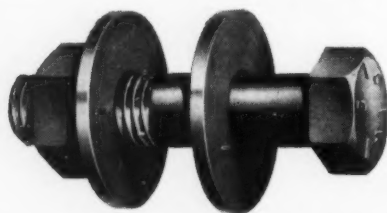
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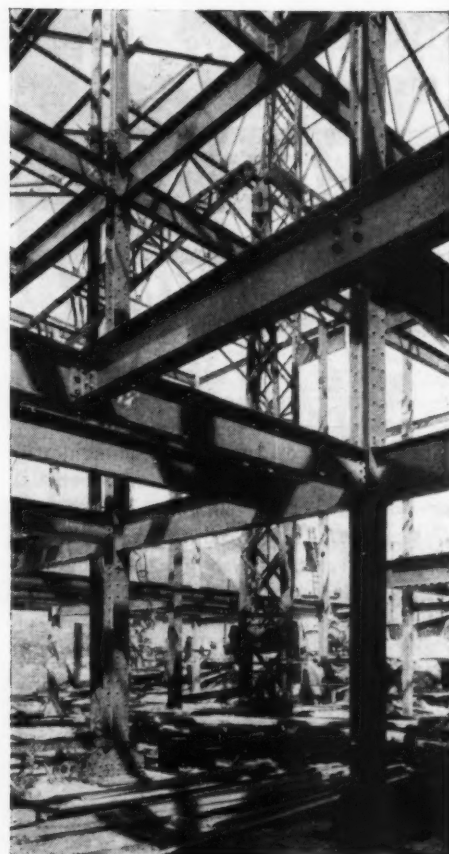
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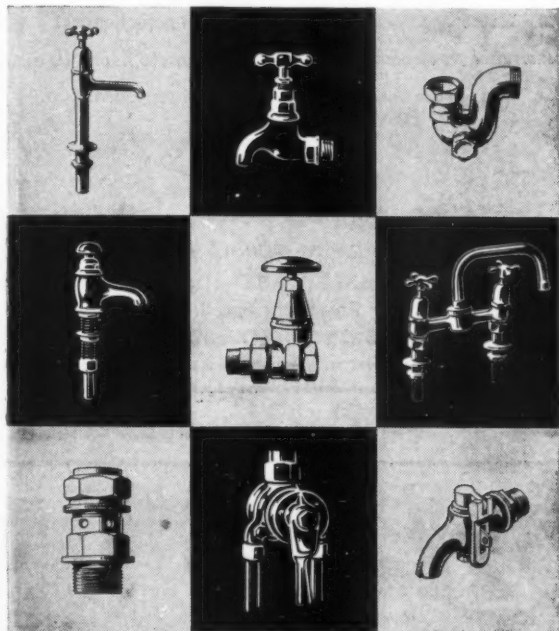


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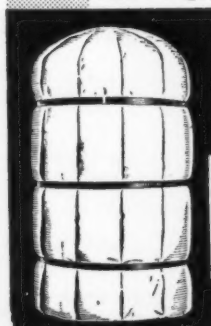
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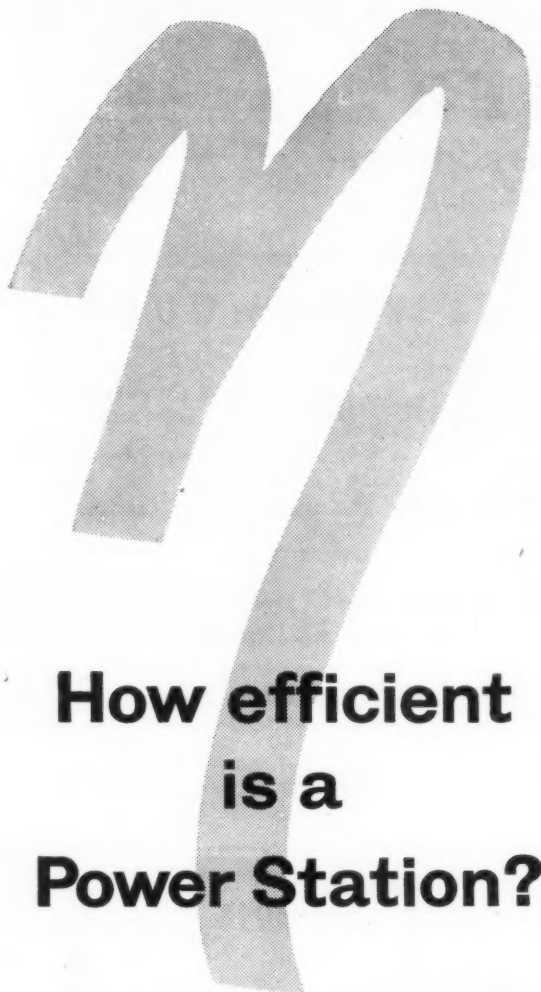
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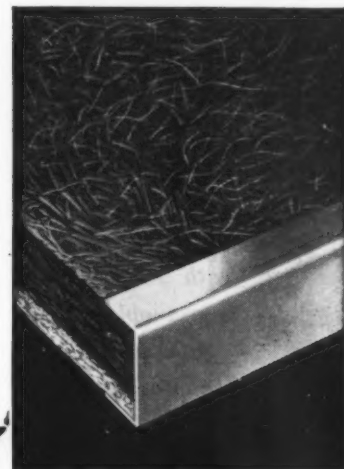
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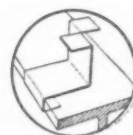
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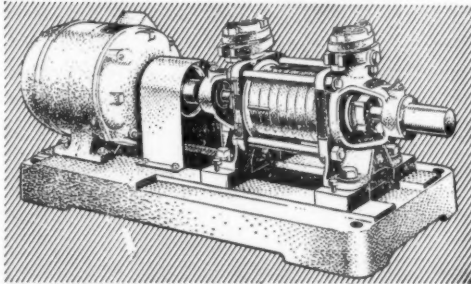
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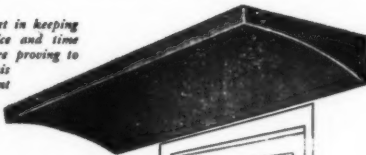
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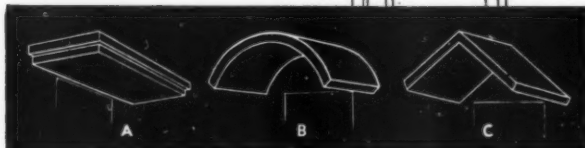
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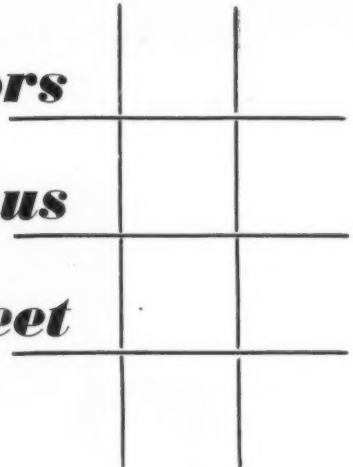
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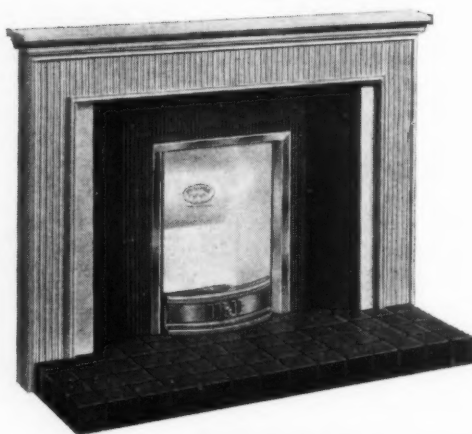
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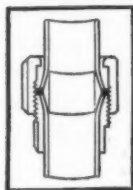
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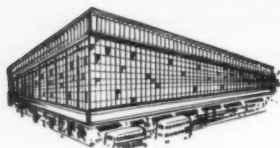
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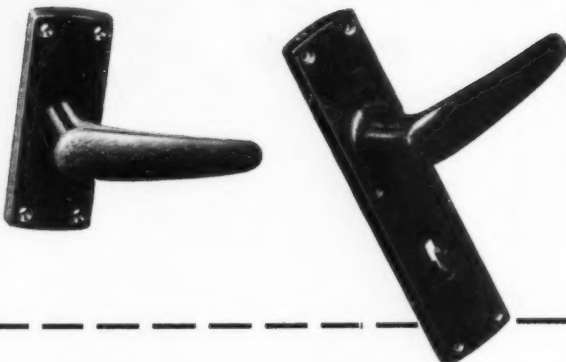
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HOSPITAL DESIGN

APPOINTMENT OF ARCHITECTS

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD

(Regional Architect: F. A. C. Maunder, R.S., Dip. Arch., F.R.I.B.A. A.M.T.P.I.)

For many years the hospital building programme has been impeded by lack of finance. The position has now changed, and the capital programme in this region which extends for about 50 miles north and west of London, has been greatly expanded. The programme already includes complete new hospitals, and there are likely to be more in the years to come. This country is able to benefit from the experience of other countries, whose hospital building programmes have so far been ahead, and the opportunity which now arises to lead the world in this field of design could scarcely be surpassed.

The Board's architectural staff is being increased to meet the need for expansion, and the Board are seeking both senior and newly-qualified architects. Planning a new major hospital, which is virtually a self-contained community, or integrating the new with the old calls for imagination and a wide range of architectural skills, and those with ability who become experienced in this work are assured of a successful career whether they remain in official or transfer to private practice at home or abroad. The Hospital architect is required to integrate landscape, furnishing and works of art, in the comprehensive design of future hospitals, and consultant specialists will be appointed as required.

Architects in the more senior grades will be required to travel at home or abroad to study hospitals and other noteworthy architecture at the expense of the Board and without prejudice to annual leave. Other grades will be encouraged and assisted to study and travel appropriately. The work of all officers will be duly acknowledged professionally.

The Board's Architect's Department, since it was established in 1948, has acquired a specialised knowledge which it can pass on to new entrants of talent and initiative. The Department is being re-organised to provide for an administrative directorate of three, under the Regional Architect. The Deputy Regional Architect will, in particular, promote and co-ordinate constructional design, and two senior Principal Assistant Architects will be responsible for the operational and technical management of the Department and external consultants.

Executive design will be delegated to two main architectural groups headed by Assistant Regional Architects, each assisted by two Principal Assistant executive architects. Each group will consist of about twenty architects and every member will have an opportunity for individual as well as group activity. There will be a designated architect or architects for each project, who will be joined in a professional consortium with a doctor, engineer and hospital administrator.

All posts are permanent and pensionable. The Board has modern offices and a five-day week is normally worked. Conditions of service are determined by a Whitley Council for professional and technical staff. It is hoped that successful candidates will take up their duties at an early date so that they may take part in organised courses of study and travel before the autumn.

APPLICATIONS ARE INVITED FOR THE FOLLOWING APPOINTMENTS. All applicants must be registered architects.

DEPUTY REGIONAL ARCHITECT: Salary £1,965 × 100 (4)—£2,365, plus £50 London Weighting. First or good second class graduate (or professional equivalent); must possess mature architectural experience, with special aptitude for applied design; have high administrative and organising ability, and preferably research experience (Ref. 818).

ASSISTANT REGIONAL ARCHITECTS (2): Salary £1,825 × 75 (2) × 100 (2)—£2,175 plus £50 London Weighting. High graduate or professional status in design; must provide creative leadership in the executive architectural groups, and will be responsible for projects of considerable magnitude. Particular skill in analytical and formative planning is essential. Previous hospital building experience is not essential (Ref. 819).

PRINCIPAL ASSISTANT ARCHITECTS (2): Salary £1,665 × 50 (1) × 75 (2) × 85 (2)—£2,035 plus £50 London Weighting. Good graduate or professional status. Must possess good all round ability and experience adequate to manage a project of up to £2M in value from inception to completion, with collaborative assistance in design, or a group of projects of equivalent value. Will work closely with an Assistant Regional Architect and be responsible for the work of an architectural group of about ten architects (Ref. 820).

SENIOR ASSISTANT ARCHITECTS: Salary £1,300 × 60 (5)—£1,600 plus £50 London Weighting. Good graduate or professional status, and at least three years' experience in architectural practice. Responsibility for executive work of an increasingly advanced order is offered to candidates with ability, initiative and ambition (Ref. 821).

ASSISTANT ARCHITECTS: Salary £905 × 35 (1) × 45 (6) × 50 (2)—£1,310 plus £40-£50 London Weighting. These posts offer excellent opportunity for young architects, including those just qualified, to enter this opening field of practice. There is ample opportunity to gain experience in a wide and absorbing range of work. Candidates of ability and especially those holding an honours degree should have no difficulty in obtaining early preferment in their career (Ref. 822).

APPLY, stating age, qualifications (with dates) and experience, with names of two referees, to the Secretary, North West Metropolitan Regional Hospital Board, 40 Eastbourne Terrace, London, W.2, by 13th June, quoting appropriate reference number. Candidates applying for more than one grade are asked to submit a separate application for each grade. Mr. Maunder will be pleased to answer telephone enquiries. AMB. 8011, Ext. 313.

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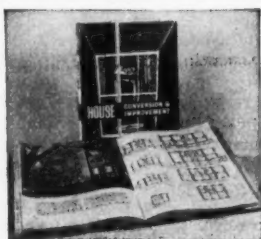
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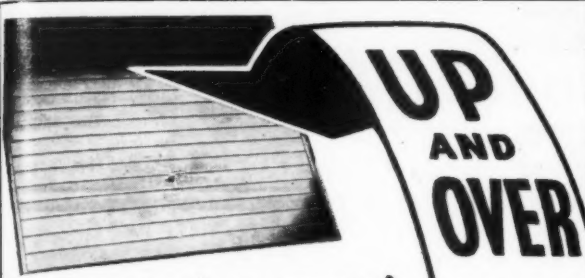
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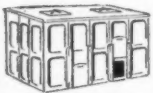
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- (c) Assistant Architect—Grade C, APT III (£880—£1,065). A.R.I.B.A. required for the above posts.
- (d) Architectural Assistants—Grade D, APT I/II (£610—£880). Inter R.I.B.A. required.
- (e) Assistant Planning Officer—Grade B, APT V/VI (£1,220—£1,390). A.R.I.B.A. and A.M.T.P.I. required.
- (f) Assistant Planning Officers—Grade C, APT III (£880—£1,065). A.R.I.B.A. and A.M.T.P.I. required.
- (g) Statistical Planning Officer—APT V (£1,220—£1,375). A.M.T.P.I. or appropriate University Degree required, plus experience in research work related to collation of statistical material and investigation of problems connected with population, housing, industry, employment, etc.
- (h) Exhibition Designer—APT IV (£1,065—£1,220). This post is concerned with the design of exhibitions of various kinds in connection with the new town, and a high standard of draughtsmanship, including ability to prepare perspectives, is required. The applicant should also be able to assist with architectural or similar work in the office.
- (i) Assistant Landscape Architect—APT II (£765—£880). Inter I.L.A. required.

Commencing salary within the above grades will be fixed according to qualifications and experience. Assistance with housing in appropriate cases. Five-day week. Local Government Superannuation subject to medical examination.

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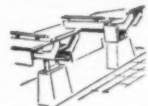
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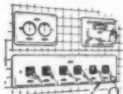
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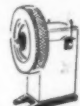
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CLASSIFIED ADVERTISEMENTS

Owing to the Whitsun holiday the issue of June 9th will go to press one day earlier than usual. All advertisements for this issue must reach the publishers not later than first post Thursday, June 2nd.

Advertisements should be addressed to the Advertisement Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post 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.

AIR-MAIL SERVICE available on request. In response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appointments Vacant, we have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 6s. for four weeks (1s. 3d. for each additional week) and prepayment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

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EAST SUSSEX COUNTY COUNCIL
Applications are invited for the appointment of an ASSISTANT ARCHITECT Special Grade, £785-£1,070, on the permanent staff of the Architect's Department.

Applications, giving the names of two persons to whom reference may be made to be sent to the County Architect, County Hall, Lewes, by the 8th June, 1960. 1331

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

Applications, stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, forthwith. Canvassing will disqualify. Any candidate who is related to member or officer of the Council is required to disclose the fact.

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London, S.E.16.

THE UNIVERSITY OF MANCHESTER
Applications are invited for the post of LECTURER IN ARCHITECTURE from candidates with professional membership of the Royal Institute of British Architects and not less than three years' of practical experience. Salary on a scale (at present under review) £900 to £1,650 per annum; initial salary according to qualifications and experience. Membership of the F.S.S.U. and Children's Allowance Scheme. Applications should be sent not later than June 25th, 1960, to the Registrar, the University, Manchester, 13, from whom further particulars and forms of application may be obtained. 1470

**BOROUGH OF LEYTON
(in the County of Essex)
COMMITTEE FOR EDUCATION
APPOINTMENT OF ARCHITECTURAL
ASSISTANT**

Applicants are invited for the permanent appointment of Architectural Assistant, Grade A.P.T. II £765-£880 per annum, plus London Weighting. The successful applicant will be employed by the Essex County Council, and will work in the School Architect's Section of the Borough Engineer & Surveyor's Department, Town Hall, Leyton, E.10: five-day week is operated.

Details and forms of application from the Borough Education Officer, Education Offices, Kirkdale Road, Leytonstone, E.11, to whom they should be returned within 10 days from the appearance of this advertisement.

D. J. OSBORNE,
Town Clerk. 1382

ARCHITECTURAL ASSISTANT
Applications are invited from suitably qualified persons for the above post which is on the staff of the Board's Architect. The Department is engaged on an extensive programme of new industrial and commercial building, interior design, showrooms and exhibition work, and offers the opportunity of working on unique projects in commercial and industrial design.

The salary for the appointment, which is pensionable and subject to medical examination, will be within the range of £946-£1,071 per annum.

Applications, stating age, qualifications and experience, together with the names of two referees, should be addressed to the Industrial Relations Officer, West Midlands Gas Board, 6, Augustus Road, Edgbaston, Birmingham, 15. 1383

HEREFORDSHIRE COUNTY COUNCIL
Applications are invited for the following posts:

(a) THREE SENIOR ASSISTANT ARCHITECTS, A.P.T. Grade IV (£1,065 to £1,220 per annum).

(b) ONE ARCHITECTURAL ASSISTANT, A.P.T. Grades I (£610 to £765), II (£765 to £880), III (£880 to £1,065) or Special Scale (£785 to £1,070) according to ability, experience and qualifications. Prospect of immediate promotion to Grade IV on election A.R.I.B.A. in approved cases.

(c) ONE ARCHITECTURAL ASSISTANT, A.P.T. Grade I (£610 to £765). Prospect of immediate promotion to Special Scale on passing Parts 1 and 2 of R.I.B.A. Final examination. Superannuated posts, subject to medical examination and one month's notice, either side. Separation allowance to married men for limited period in certain cases (£25s. per week and fare home every two months).

Interesting and varied programme. Five-day week.

Hereford is situated in the beautiful Wye Valley. Application forms from County Architect, Bath Street, Hereford, to be submitted by 15th June 1960.

Please state clearly whether form for (a), (b) or (c) is required. 1374

**GLOUCESTERSHIRE EDUCATION
COMMITTEE
CHELTENHAM SCHOOL OF ARCHITECTURE
PITTVILLE PUMP ROOM, CHELTENHAM**
Head of School: IAN H. ASHOTT,
Dip.Arch.(Birm.) A.R.I.B.A.

The School has recently moved into studios on the upper floors of Pittville Pump Room—Cheltenham's finest Regency building—situated in Pittville Park. A vacancy has occurred on the full-time staff for a STUDIO INSTRUCTOR. Applicants for this post should hold recognised qualifications and should have had some years of professional experience.

Salary in accordance with the Burnham technical scale, Grade B-£700 x £27 10s. to £1,150 p.a., plus additions for appropriate training, qualifications and teaching or office experience. Further information can be obtained from the Head of the School, to whom application forms must be returned by Thursday, 16th June, 1960. 1363

**COUNTY BOROUGH OF DEWSBURY
BOROUGH ARCHITECT AND BUILDINGS
SURVEYOR'S DEPARTMENT**

Applications are invited for the following appointments within the scope of the grades stated:

(a) PRINCIPAL ASSISTANT ARCHITECT (Housing and General Section)—A.P.T. Grade V (£1,220-£1,375 p.a.).

(b) ASSISTANT ARCHITECT (Education Section)—A.P.T. Grade IV (£1,065-£1,220 p.a.).

Applicants should be A.R.I.B.A. The appointments will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts. Housing accommodation may be made available if required.

Applications, stating age, education, qualifications, full particulars of training and experience, together with copies of two recent testimonials, should be sent to the undersigned not later than Wednesday, 15th June, 1960, in envelopes endorsed "Appointment of Architect."

A. NORMAN JAMES,
Town Clerk. 1469

Town Hall,
Dewsbury,
23rd May, 1960.

**MIDDLESEX COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT**

The County Council has decided to enlarge substantially the staff of this department and it is proposed to make a number of appointments in each of the following grades:

ASSISTANT ARCHITECT, A.P.T. V, £1,220-£1,375, plus London weighting up to £45.
ASSISTANT ARCHITECT, A.P.T. IV, £1,065-£1,220, plus London weighting up to £45.
ASSISTANT ARCHITECT, Special Grade, £785-£1,070, plus London weighting up to £45.
JUNIOR ASSISTANT, A.P.T. I, £610-£765, plus London weighting up to £40.

The department has in hand a large and interesting programme of works for School Buildings, Technical Colleges, Old People's Homes, Fire Stations and other County Buildings which will be designed under the direction of Mr. Whitfield Lewis, F.R.I.B.A., the County Architect. Organisation is on a group basis and full scope will be given to Architects who show design ability.

Appropriate professional qualifications are required for all posts and commencing salaries will be assessed according to qualifications and experience. Appointments will be to the established staff subject to medical fitness, and prescribed conditions.

Application forms (s.a.e.) from The County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1 (s.a.e.), returnable by 15th June. (Quote C.585.A.J.) 1376

NORFOLK EDUCATION COMMITTEE
Applications are invited for the post of ASSISTANT ARCHITECT. Candidates should have experience in the planning and erection of large buildings. Salary scale—Special Grade (£785 to £1,070) or A.P.T. III (£880 to £1,065).

Forms of application from the undersigned to be returned within 14 days of the date of this advertisement.

F. LINCOLN RALPHS,
County Education Officer,
Stracey Road,
Norwich, Norfolk. 1542

COUNTY BOROUGH OF BURNLEY
Applications are invited for the appointment of CHIEF PLANNING ASSISTANT in the Borough Engineer & Surveyor's Department at a salary in accordance with Grade IV of the National Scales (£1,065-£1,220 per annum).

Candidates must have had considerable experience in all aspects of Statutory Planning, Interim Development Control and Planning procedure in general, and should be Associate Members of the Town Planning Institute. Administrative experience or an additional professional qualification will be an advantage.

Housing accommodation will be provided. Forms of application may be obtained from the Borough Engineer, 22/24, Nicholas Street, Burnley, to whom they should be returned not later than Saturday, 18th June, 1960.

C. V. THORNEY,
Town Clerk. 1538

**ARCHITECT
ARCHITECTURAL ASSISTANTS AND
QUANTITY SURVEYOR
required by:
NATIONAL COAL BOARD
EAST MIDLANDS DIVISION**

The complement for Architectural staff having been recently reviewed, applications are now invited for the following superannuable posts on the staff of the Divisional Chief Architect at 69, Lower Parliament Street, Nottingham:

(a) ARCHITECT.
For this vacancy we are seeking a young qualified Architect. The commencing salary will be within the scale £815 x £30-£1,125.

(b) ARCHITECTURAL ASSISTANTS.
We require two Architectural Assistants who should preferably have passed the Intermediate R.I.B.A. and/or have had some practical experience. The commencing salary will be within one of the following scales, depending on qualifications and experience: £715 x £25-£850, £595 x £25-£710.

(c) QUANTITY SURVEYOR.
We have a vacancy for a young Quantity Surveyor who should be an associate of the R.I.C.S. and have at least one year's subsequent practical experience in all aspects of the work in a Quantity Surveyor's Office. The commencing salary would be within the scale £815 x £30-£1,125.

Applications, giving details of age, qualifications and experience, to:-

DIVISIONAL CHIEF STAFF OFFICER,
NATIONAL COAL BOARD,
EAST MIDLANDS DIVISION,
SHERWOOD LODGE,
ARNOLD, NR. NOTTINGHAM,

quoting for (a) S.V.1055, (b) S.V.1057, (c) S.V.1041. 1551

**BOROUGH OF KING'S LYNN
HOUSING ARCHITECTS' DEPARTMENT**
Applications are invited for the appointment of
ASSISTANT QUANTITY SURVEYOR, Grade
A.P.T. II (£765-£880 per annum).

Candidates should have passed the appropriate Intermediate examination, and be able to assist in the preparation of Bills of Quantities, Valuations and measurement of works in progress and settlement of Final Accounts.

Consideration will be given to the provision of housing accommodation. The appointment is superannuable and subject to the National Scheme of Conditions of Service, and to Medical Examination.

Applications, giving age and full particulars of experience and previous appointments, and naming two referees, should be addressed to G. Holmes, A.R.I.B.A., Housing Architect, Clifton House, Queen Street, King's Lynn, not later than Friday, 17th June, 1960.

Canvassing disqualifies.

E. W. GOCHER,
Town Clerk.

Town Hall,
King's Lynn,
Norfolk. 1337

**LONDON COUNTY COUNCIL
HAMMERSMITH COLLEGE OF ART AND
BUILDING**

Required in September for new posts due to expansion of work:-

LECTURERS for:-

(a) **CONSTRUCTION** in Surveying, H.N.C. Building, and Structural Engineering Courses. Should have experience in modern constructional techniques and hold suitable professional qualification preferably R.I.C.S. and able to teach.

(b) **BUILDING AND QUANTITY SURVEYING.** Qualified in Building or Quantity Surveying section of the R.I.C.S., preferably with teaching experience and able to offer Land Surveying and subsidiary subjects.

(c) **STRUCTURAL ENGINEERING.** Qualified to teach design and allied subjects for Final Examination of Institute of Structural Engineers. Teaching experience not essential.

GRADE "B" ASSISTANTS for:-
(a) **SCIENCE AND MATHEMATICS.** Should hold a degree of British University and with ambition and interest to obtain knowledge and experience of building science.

(b) **STRUCTURAL ENGINEERING.** Qualified to teach subjects to Graduateship examination level of Institute of Structural Engineers.

(c) **BUILDING AND QUANTITY SURVEYING.** Member of R.I.C.S. and able to teach Surveying, Construction and subsidiary subjects.

(d) **BUILDING.** Qualified to teach Builders' Book-keeping and general building subjects in O.N.C. and O.N.D. Courses and have professional building experience. Teaching experience desirable.

(e) **BUILDING CONSTRUCTION.** and other general building subjects for H.N.C. courses. Suitable qualification and experience needed.

Salary Scales:-
1. Lecturers: £1,370 x £35-£1,550.
2. Grade "B" Assistants: £700 x £27 10s.-£1,150 with possible additions for training and qualifications; increments within scale for approved experience.

London allowance of £38 or £51 (all posts).
Application forms and further particulars from Secretary at College, Lime Grove, W.12, to be returned by 20th June, (1371.) 1472

SOUTH WESTERN ELECTRICITY BOARD
Applications are invited for the following permanent pensionable position at Electricity House, Colston Avenue, Bristol.
ENGINEERING DRAUGHTSMAN (CIVIL).

Salary within Grade 6-£620 to £20 to £740 per annum—of Schedule "D" of the N.J.B. Agreement.

Candidates should have a working knowledge of Reinforced Concrete Design and up-to-date methods of Building Construction.

Thirty-eight-hour five-day week. Two weeks annual holiday, rising to three weeks and three days after qualifying service. Excellent sick pay and superannuation schemes. Canteen, sports, and social facilities.

Applications to be made on standard form obtainable by post card only from the Establishments Officer, South Western Electricity Board, Electricity House, Colston Avenue, Bristol, 1, to be returned by Thursday, 16th June, 1960. 1556

**CITY AND COUNTY OF THE CITY OF
EXETER**

Applications are invited for the appointment of **PRINCIPAL ASSISTANT ARCHITECT** to take immediate responsibility for the Housing Section of the Department. Salary within A.P.T. Grade IV, i.e. £1,065 to £1,220 per annum.

Applicants must be Associate Members of The Royal Institute of British Architects and must be thoroughly experienced in the design of housing layouts, houses and flats, etc., and fully competent to administer Contracts from inception to completion.

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

Applications, stating age, qualifications, previous and present appointments and salaries, and the earliest possible date when available, should be sent to H. B. Rowe, F.R.I.B.A., A.M.I.Struct.E., City Architect, Municipal Offices, Exeter, not later than the 16th June, 1960. 1552

**LINDSEY (LINCOLNSHIRE) COUNTY
COUNCIL**

ARCHITECTS' DEPARTMENT
Owing to the re-organisation of the department which is not yet complete, the following vacancies exist:-

(a) **SENIOR QUANTITY SURVEYOR, Grade**
A.P.T. IV (£1,065-£1,220).

(b) **FOUR ARCHITECTURAL ASSISTANTS,**
Grade A.P.T. III (£880-£1,065).

Applicants for (a) should be A.R.I.C.S. and (b) experienced with a sound knowledge of construction, to complete the middle section of a team.

Commencing salary within the grade dependent upon experience. N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any Member or Senior Officer of the Council.

Applications, giving age, qualifications, experience, present post and salary, and the names of two persons to whom reference can be made, to be sent to the County Architect, County Offices, Lincoln, not later than 15th June, 1960. 1549

**UNIVERSITY OF EDINBURGH
DEPARTMENT OF ARCHITECTURE**

Applications are invited for two posts of **RESEARCH ARCHITECT** to work under Professor Robert Matthew on a 30-acre housing scheme for Cumbernauld New Town. A keen enquiring mind and good design ability are more important than experience, although some work done on housing would be an advantage. Salary £950 per annum. The successful candidates will require to take up duty on 1st September, 1960. They may be given the opportunity of undertaking study for the degree of Master of Architecture. Architects who have already shown an interest in this project may again apply if they wish to be considered for the posts.

Further particulars may be obtained from the undersigned, with whom applications, giving the names of two referees, should be lodged not later than 15th June, 1960.

CHARLES H. STEWART,
Secretary to the University. 1564

**NEWCASTLE REGIONAL HOSPITAL BOARD
EXPANSION OF ARCHITECTURAL
DEPARTMENT**

**P. H. KNIGHTON, M.B.E., A.R.I.B.A.,
REGIONAL ARCHITECT**
Arising from the number of major projects (totaling about £12m.) to be carried out in the Newcastle Region as part of the Hospital Expansion Programme, the Board intends to add considerably to its Architectural Department in Newcastle.

The salary scales offered represent a considerable improvement on those hitherto applicable and are the result of a new National agreement recently reached.

The work is of a high-class and varied nature and offers ample opportunity for gaining experience in both highly-specialised hospital structures and many types of ancillary general and domestic buildings. Possession of hospital experience is not essential. The work will involve all stages from sketch plans to supervision of construction and a car mileage will be paid.

APPLICATIONS are invited for the following (superannuable) posts:-
ASSISTANT ARCHITECTS (£905 x £35 (1) x £45 (6) x £50 (2)-£1,310).

Applicants must be registered architects. The commencing salary will be fixed within the Grade by reference to relevant experience and to age.
ARCHITECTURAL ASSISTANTS (£625 x £30 (3) x £35 (1)-£900).

Inter R.I.B.A. and some practical experience.
ARCHITECTURAL DRAUGHTSMEN (£475 x £25 (6) x £30 (2)-£685).

Applicants should have had 3 years' previous experience in an architect's drawing office and be neat and quick draughtsmen.

Evening study facilities are available at King's College of Durham University in Newcastle.

Applications, stating age, qualifications, past and present appointments, present salary and details of experience and training, together with the names of three referees (of whom at least two should be architects) should be forwarded to the Secretary to the Board, Benfield Road, Newcastle upon Tyne, 6, not later than 9th June, 1960. 1561

**METROPOLITAN BOROUGH OF ISLINGTON
BOROUGH ENGINEER AND SURVEYOR'S
DEPARTMENT**

Applications are invited from persons not more than 50 years of age for the following appointments on the permanent staff:-

(a) **TWO SENIOR ARCHITECTURAL ASSISTANTS**-Grade A.P.T. V (£1,220-£1,375 p.a.).

(b) **TWO ARCHITECTURAL ASSISTANTS**-Grade A.P.T. III (£880-£1,065 p.a.). All plus appropriate London weighting.

Applicants for:-
(a) Should be Associate Members of the R.I.B.A. with considerable experience including the design and construction of multi-storey housing.

(b) Should have passed the Intermediate Examination of the R.I.B.A. and be suitably experienced.

Application forms, returnable by first post on Monday, the 13th June, 1960, obtainable from Mr. C. N. Cowney, Borough Engineer and Surveyor, Town Hall, Upper Street, N.1.

H. DIXON CLARK,
Town Clerk. 1528

COUNTY OF ESSEX

COUNTY PLANNING DEPARTMENT

Applications invited for following posts:-
(a) **SENIOR PLANNING ASSISTANTS, A.P.T. Grade IV (£1,065-£1,220).**

Section Heads are required in the Development Control Sections at Area Offices at Chelmsford, Colchester and Wanstead.

Candidates must be Corporate Members of the Town Planning Institute or other appropriate professional institution and have had considerable experience in development control work in the office of a large local planning authority.

(b) **SENIOR PLANNING ASSISTANTS,**
Special Grade (£785-£1,070).

(i) In the Detailed Design Section at Headquarters. The person appointed will be required to undertake duties in regard to elevational control and housing layouts and redevelopment work and should have aptitude for and experience in work of this nature. Candidates should be Corporate Members of the Town Planning Institute or Royal Institute of British Architects or be well-advanced in their studies towards this end.

(ii) In the Survey and Research Section at Headquarters. Candidates should be Graduates in Geography or Economics with Statistics as ancillary subject. The person appointed will be required to assist in the analysis, presentation and reporting upon survey material relating to population, housing, employment and minerals. Preference will be given to a person already experienced in this work and possessing requisite initiative.

(iii) In the Development Plan Sections of Area Office at Braintree, Chelmsford and Romford.

(iv) In the Development Control Sections of the Area Offices at Epping and Romford. Candidates for posts (b) (iii) and (iv) should be Corporate Members of the Town Planning Institute or other recognised professional institution, or be well-advanced in their studies to this end. They must have had suitable experience in Plan or Control work in the office of a large local planning authority.

(c) **PLANNING ASSISTANTS**-(£610-£765).

Vacancies exist in the Area Offices at Chelmsford, Romford and Wanstead. Candidates should have had experience in the work of a local planning authority, or be qualified in Economics, Geography or Landscape Architecture, and also be prepared to train and study for a qualification in planning.

Five-day week; medical examination; superannuation. Day release facilities in appropriate cases.

Applications, with names of three referees, to be sent to the County Planning Adviser, at Broomfield Place, Broomfield, Chelmsford, Essex, by 18th June, 1960. 1562

GHANA CIVIL SERVICE

**VACANCIES EXIST IN THE PUBLIC WORKS
DEPARTMENT FOR ARCHITECTS**

Duties: To design, prepare working drawings and supervise the construction of new Government buildings such as quarters, offices, hospitals, schools, law courts, etc., and also at times to carry out duties as an executive architect responsible for the organisation of direct labour works, and perform administrative duties.

Qualifications: Candidates must: (i) have passed Parts I and II of the Final examination of the Royal Institute of British Architects; or (ii) be Licentiates of the R.I.B.A.; or (iii) be Associate members of the R.I.B.A. by the Institute's special examination; or (iv) have a qualification which is recognised as exempting from Parts I and II of the RIBA examination. Salary in range £1,180-£2,080 p.a. Entry point in salary scale depends on age and experience.

Appointments are on contract terms for three years each of 15-18 months. Gratuity £150 p.a. Free passages for officer, wife and up to 3 children under 18 years and in addition an education allowance for children when not resident in Ghana, and attending full-time school of £100 a child for up to 3 children under 18 years. Accommodation at low rental. Interest free advance for car and car maintenance allowance may be granted. Generous leave on full pay. Income Tax at low local rates.

For application forms, please send postcard to the Director of Recruitment, Ghana High Commission, 248/250 Tottenham Court Road, London, W.1. 1563

BRACKNELL DEVELOPMENT CORPORATION

Applications are invited for the post of **ARCHITECT**, salary range £1,163-£1,390. Applicants must be Corporate Members of the R.I.B.A. Superannuation schemes, medical examination. Housing available.

Apply by 20th June, 1960, giving age, education and qualifications, experience and appointments held (with dates and salaries), and names of two referees, to General Manager (A). Bracknell Development Corporation, Farley Hall, Bracknell, Berks. 1550

GOVERNMENT OF ADEN

ARCHITECT, PUBLIC WORKS DEPARTMENT
Required to design and supervise construction by contract of public buildings, housing and schools.

Contract appointment. Salary range £1,232-£2,004 per annum plus gratuity. Free passages. Children's allowances. Furnished quarters at moderate rent. Home leave.

Candidates must be A.R.I.B.A. Write Director of Recruitment, Colonial Office, London, S.W.1, stating full names, age, qualifications and experience, quoting BCD 112/2/03/E2. 1483

ROYAL COUNTY OF BERKSHIRE
ASSISTANT ARCHITECT—Special Grade, £785—£1,070. Candidates should have had good architectural training and possess energy, ability and initiative.

Opportunities for obtaining a good general experience exist in this County, and in particular work is now in hand on new Police Divisional Headquarters, Courts and Colleges of Further Education.

There is a number of staff houses and flats, some of which become available from time to time, and assistance up to 75 per cent. is given with removal expenses.

Application forms and particulars of the Department can be obtained from J. T. Castle, A.R.I.B.A., A.M.T.P.I., County Architect, Wilton House, Parkside Road, Reading. Closing date Tuesday, 14th June, 1960. 1548

WORCESTERSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
RE-ADVERTISEMENT

Applications are invited for:—
 (1) SENIOR ARCHITECT, Grade A.P.T. IV (£1,065—£1,220 per annum).

(2) ARCHITECTURAL ASSISTANT, Grade A.P.T. III (£800—£1,065) or Special Grade (£785—£1,070) according to qualifications and experience.

(3) TEMPORARY CLERK OF WORKS, salary at the rate of £16 10s. per week, for Halesowen area.

Application forms and further particulars should be obtained from L. C. Lomas, F.R.I.B.A., County Architect, 14, Castle Street, Worcester, not later than 16th June, 1960. (Z.280.) 1546

BANFF COUNTY COUNCIL
requires
ARCHITECTS

to fill the following vacancies within the County Architect's Department.

(a) SENIOR ASSISTANT. Salary Scale £1,120—£1,400—£1,200.

(b) ASSISTANT ARCHITECT. Salary Scale £795 × £35—£1,075.

Applicants for both posts should be A.R.I.B.A., preferably with experience in school building, and should hold current driving licences. Consideration will be given to housing successful applicants and a car allowance will be applicable to the senior post. Applications, stating age, qualifications and experience, etc., together with the names and addresses of three referees, should be lodged with the undersigned within 14 days of this advertisement.

A. M. WILSON, A.R.I.B.A.,
 County Architect.
 13, Cluny Square,
 Buckie. 1545

BOROUGH OF BASINGSTOKE
 A SENIOR ASSISTANT is required in the Architect's Department for housing and general work in this rapidly expanding town.

Applications are invited from Associates, R.I.B.A. who have had considerable housing experience; salary range £785—£1,070 according to experience. House or flat available. N.J.C. conditions. Post pensionable. Medical examination.

Details giving age, training, experience, etc., and names and addresses of three referees to be sent to the Borough Architect, Eric Almond, Dipl. Arch., A.R.I.B.A., Municipal Buildings, Basingstoke, Hants., by the 16th June, 1960.

L. WOMERSLEY,
 Town Clerk. 1566

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

Applications are invited for the undermentioned posts:—

ASSISTANT ARCHITECT in the Harrogate Divisional Office. Special Grade (£785—£1,070) or A.P.T. III (£880—£1,065).

Applicants should have experience in the maintenance of buildings and of works of minor adaptations and improvements.

JUNIOR ARCHITECTURAL ASSISTANT in the Huddersfield Divisional Office. A.P.T. I (£610—£765).

Applications, stating age, qualifications, experience, present position and giving names and addresses of two referees, to be sent to the undersigned not later than Tuesday, 21st June, 1960.

A. W. GLOVER, F.R.I.B.A.,
 County Architect.
 Bishopgarth,
 Westfield Road,
 Wakefield. 1495

BOROUGH OF BRENTFORD & CHISWICK
APPOINTMENT OF ASSISTANT ARCHITECT
 Applications are invited for this post on Special Grade (£830—£1,115 p.a.).

Preference will be given to candidates who have passed the examination for A.R.I.B.A. Commencing salary will be according to qualifications and experience.

The Council may be prepared to assist in the provision of housing accommodation.

Applications to Borough Engineer & Surveyor, not later than 11th June, 1960.

W. F. J. CHURCH,
 Town Clerk.
 Town Hall,
 Chiswick, W.4. 1529

GELLIGAER URBAN DISTRICT COUNCIL
APPOINTMENT OF SECOND ASSISTANT ARCHITECT

Applications are invited for the appointment of a Second Assistant Architect in the Department of the Council's Engineer and Surveyor.

The Council has an extensive programme of housing work in hand including the construction of multi-storey flats and the duties of the post will be varied and interesting.

A suitable officer could anticipate early promotion in the Department.

The appointment will be subject to the National Scheme of Conditions of Service and the passing of a medical examination.

The salary payable will be within the range of A.P.T. I to the Special Grade, depending upon qualifications and experience, but it is considered that this post is one which is most suited to a young qualified officer.

Consideration will be given to housing accommodation in a suitable case.

Applications, stating age, qualifications, and experience together with the names and addresses of two referees, must be received by me not later than Monday, 13th June, 1960.

D. W. C. MORGAN,
 Clerk.
 Council Offices,
 Hengoed, Glam.
 20th May, 1960. 1530

WANSTEAD AND WOODFORD
CORPORATION
SENIOR PLANNING ASSISTANT, A.P.T. IV
 (£1,065—£1,220 plus London weighting)

Applicants must hold the Final Examination of the Town Planning Institute and additional architectural or engineering qualifications would be advantageous. Applicants will be preferred who have experience in urban redevelopment with a local authority in addition to routine development control. Starting salary will be fixed in accordance with the experience of the successful applicant. A casual user car allowance is payable. Housing accommodation will be made available but a subsistence allowance will be paid for a limited period pending the availability of accommodation.

Forms are obtainable from and are to be returned to L. S. Jeffery, Borough Engineer, Surveyor and Planning Officer, Municipal Offices, High Road, London, E.18, by the 15th June, 1960. 1516

COVENTRY
 Imaginative ASSISTANTS required for several interesting projects. Architectural posts within salary ranges:—

£785—£1,070.
 £880—£1,065.
 £765—£880.
 £610—£765.

(Indicate for which applying.)

Housing accommodation in approved cases. Removal expenses loan available. Five-day working week. Canteen facilities. Application forms from: Department of Architecture and Planning, New Council Offices, Earl Street, returnable 10 days publication. 1465

THURROCK U.D.C. (Engineer & Surveyor's Dept.) require ARCHITECTURAL ASSISTANT, under Architect to the Council. Salary—A.P.T. I/II (£610—£880 p.a.). Good architectural experience necessary. Applicants must be capable of preparing working drawings in all categories and should have passed the Intermediate Examination of the R.I.B.A. The Council have interesting projects in hand, including an Indoor Swimming Bath. Appointment pensionable.

Applications, stating age, qualifications, and experience, and quoting two referees, to Clerk of the Council, Council Offices, Grays, Essex, by 7th June, 1960. Canvassing disqualifies. Relationship with members or Senior Officers of the Council must be disclosed. 1464

NORTHAMPTONSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications for posts at Grade A.P.T. III (£880—£1,065) or A.P.T. II (£765—£880) are invited from candidates with either of the necessary qualifications:—

(a) As BUILDING MAINTENANCE SURVEYORS, or

(b) As ARCHITECTURAL ASSISTANTS with some ability and experience in design for the major building programme.

*For these posts a car travelling allowance will be payable in accordance with the County Council's approved scale.

A weekly sum of 25s. by way of temporary additional salary will be payable, subject to review quarterly, to a married officer unable to find a house locally.

Details, giving age, education, qualifications and experience, with a copy of a recent testimonial, should be sent in an envelope marked "Staff", to the County Architect, County Hall, Northampton, by 11th June.

J. ALAN TURNER,
 Clerk of the County Council.
 County Hall,
 Northampton. 1517

METROPOLITAN WATER BOARD
ARCHITECTURAL STAFF

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

(a) ASSISTANT ARCHITECTS. Salary scale £1,090—£1,210 per annum.

(b) TECHNICAL ASSISTANT. Salary scale £790 (at age 21)—£945 per annum. Commencing salaries within the above scales according to age and experience.

Applicants for posts (a) must be corporate members of the Royal Institute of British Architects and should have had experience in the design, preparation of plans and working drawings and specifications for the erection of houses and offices.

Applicants for post (b) must have passed the Intermediate Examination of the Royal Institute of British Architects.

These are permanent pensionable posts offering interesting work with good conditions of service.

Further particulars and forms of application from the undersigned (quoting ref. AJ and position applied for) to be returned by 16th June, 1960.

S. D. ASKEW,
 Clerk of the Board.
 New River Head,
 Rosebery Avenue, E.C.1. 1513

EAST RIDING OF YORKSHIRE COUNTY
COUNCIL

Applications are invited for the appointment of ASSISTANT ARCHITECTS on the staff of the County Architect.

The salary will be in accordance with Grade A.P.T. IV of the N.J.C. Scales (£1,065 to £1,220 per annum).

Applications, giving particulars of qualifications, experience, age, past and present appointments with salaries, together with the names of three referees, should be sent to the County Architect, County Hall, Beverley, not later than Saturday, 11th June, 1960.

Assistance towards removal, lodging and travelling expenses may be granted.

THOMAS STEPHENSON,
 Clerk of the Council. 1471

EASTERN ELECTRICITY BOARD
NORTHMET SUB-AREA

SENIOR DRAUGHTSMAN, CIVIL ENGINEERING & BUILDING SECTION

124/60.R.
 (Ref. 968)

Candidates should have had experience in the preparation of drawings and calculations for reinforced concrete for building and civil engineering work required for 33/11kV substations and be capable of carrying out site surveys and supervising staff. Possession of the Ordinary National Certificate (Building) or equivalent qualification will be an advantage.

Salary: N.J.B. Schedule D, Grade 5 (£830—£940) inclusive of London Allowance.

The successful candidate will be required to contribute to a superannuation scheme and may be required to undergo a medical examination.

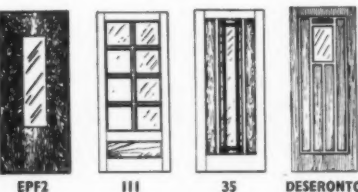
Apply by letter to the Manager, Eastern Electricity Board, Northmet Sub-Area, Northmet House, Southgate, London, N.14, by 9th June, 1960. AER.

20th May, 1960. 1463

FOR DOORS IN SCORES

BRYCE WHITE

Architects and Builders have over forty different styles of Bryce White doors to choose from, including Fire Check doors to B.S.S. 459, Part III, for every type of opening. In addition, Bryce White make doors to specific requirements. Either way, it's a prompt, personal service. Contact Bryce White for doors—write for our new illustrated literature.



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Also at Southampton • Bristol • London

BOROUGH OF MACCLESFIELD APPOINTMENT OF DEPUTY BOROUGH ARCHITECT

Applications are invited for the appointment of **DEPUTY BOROUGH ARCHITECT** on Grade A.P.T. IV—£1,065 to £1,220 (under review).

Applicants must be members of the R.I.B.A. and should have had experience of the architectural work of a Local Authority.

Application forms and particulars may be obtained from the Borough Architect, 3, Jordan-gate, Macclesfield, to whom they must be returned not later than 16th June, 1960.

WALTER ISAAC,
Town Clerk.

Town Hall,
Macclesfield. 1457

NORTHAMPTONSHIRE COUNTY COUNCIL COUNTY ARCHITECT'S DEPARTMENT QUANTITY SURVEYOR, SPECIAL SCALE "B"

(rising to £1,485 per annum)
Applications are invited from Associates of the R.I.C.S. who have had experience in cost analysis and particularly interim cost control. The successful applicant will take the responsibility of second-in-command under the Chief Quantity Surveyor for the quantity surveying and accounting sections.

A car travelling allowance will be payable in accordance with the County Council's approved scale.

A weekly sum of 25s. by way of temporary additional salary will be payable, subject to review quarterly, to a married officer unable to find a house locally.

Details, giving age, education, qualifications and experience, with a copy of a recent testimonial, should be sent in an envelope marked "Quantity Surveyor" to the County Architect, County Hall, Northampton, on Friday, 10th June.

J. ALAN TURNER,
Clerk of the County Council.

County Hall,
Northampton. 1462

INVERNESS COUNTY COUNCIL invite applications for appointments in the County Architect's Department as follows:—

(1) **ONE FIRST ASSISTANT ARCHITECT**—Salary Scale £1,040—£1,120 per annum.
(2) **ONE SECOND ASSISTANT ARCHITECT**—Salary Scale £795—£1,075 per annum.

Applicants for both appointments must be fully qualified. Appropriate placing on salary scales will be given in accordance with qualifications and experience. Housing accommodation may be made available if required. Applications, together with the names and addresses of three referees, to the County Clerk, County Buildings, Inverness, by 15th June. 1489

BOROUGH OF REDCAR APPOINTMENT OF CLERK OF WORKS

Miscellaneous Grade IV, £590 × £20—£650
Applications are invited for the above appointment to supervise all types of building and engineering works.

Applicants must have worked in a supervisory capacity.

Housing accommodation will be provided and the Council will consider contributing towards removal expenses.

Applications on the forms obtainable from the undersigned must be returned before noon on Monday, 13th June, 1960.

HUGH CALDWELL,
Town Clerk.

Municipal Buildings,
Redcar. 1506

ST. HELENS EDUCATION COMMITTEE APPOINTMENT OF TECHNICAL ASSISTANT (ARCHITECTURAL)

Applications are invited for the post of Technical Assistant (Architectural) in the office of the Education Building Surveyor. This is a newly created post and will offer opportunities for interesting work on school minor projects. Applicants should have had drawing office experience in an architectural office and be suitably qualified.

Salary within the Special Grade of the A.P.T. Division (i.e. £785—£1,070). The commencing salary will be fixed at a point within the scale commensurate with qualifications and experience.

Further particulars and application forms may be obtained from the undersigned and should be returned not later than 18th June, 1960. Canvassing will disqualify.

N. F. NEWBURY,
Director of Education.

Education Office,
St. Helens. 1500

BOROUGH OF WOKINGHAM ARCHITECTURAL COMPETITION FOR NEW TOWN HALL

Registered Architects are invited to submit designs for the new Municipal Offices and Public Halls. The Assessor is Mr. Clifford Culpin, O.B.E., F.R.I.B.A., M.T.P.I.

Premiums are £1,000, £500 and £250. Conditions will be available from the 24th June, 1960 and applications for them will be received up to the 8th July, 1960.

Last day for submitting designs is the 17th October, 1960. Applications for Conditions, Schedules of Accommodation, Site Plan etc., should be made to The Town Clerk, Town Hall, Wokingham, Berkshire, accompanied by a deposit of £2 2s.

L. GODDARD SMALLEY,
Town Clerk.

Town Hall,
Wokingham, Berks. 1569
June 1st, 1960.

BUCKINGHAMSHIRE COUNTY COUNCIL Applications are invited for the following appointments in the South-East and North Bucks Area Offices of the County Planning Department:—

(a) **ONE SENIOR PLANNING ASSISTANT**, Grade A.P.T. IV (£1,065—£1,220), to work at Slough.

(b) **ONE PLANNING ASSISTANT**, Special Scale (£785—£1,070), to work at Amersham.

(c) **TWO DRAUGHTSMAN / PLANNING ASSISTANTS**, Grade A.P.T. I (£610—£765), one to work at Slough, one to work at Bletchley.

Candidates for post (a) must be Corporate Members of the Town Planning Institute and preference will be given to those holding an additional recognised qualification. They must have had considerable experience covering both county problems and urban development.

Candidates for post (b) must be Corporate Members of the Town Planning Institute with considerable experience in all aspects of statutory planning, development control and planning procedure.

Candidates for posts (c) should have had training in a Planning, Architectural, Surveying or Engineering Office.

The commencing salary for each appointment will be according to qualifications and experience.

The appointments are supernumerary and subject to medical examinations.

A weekly allowance of 25s. and return fare home, once every two months, may be paid for six months to married officers of the Council unable to find housing accommodation.

Forms of application may be obtained from the County Planning Officer, County Offices, Aylesbury, to whom completed applications must be returned by Friday, 24th June, 1960.

R. E. MILLARD,
Clerk of the County Council.

County Hall,
Aylesbury. 1456
May, 1960.

MONMOUTHSHIRE COUNTY COUNCIL Applications are invited for the appointments of:—

(a) **SENIOR ASSISTANT ARCHITECT** in charge of the Maintenance Organisation of the County Architect's Department. Salary in accordance with A.P.T. Grade V (£1,220—£1,375 per annum).
(b) **SENIOR ASSISTANT ARCHITECTS** to be engaged on the Council's Education Building Programme. Salary in accordance with A.P.T. Grade V (£1,220—£1,375).
(c) **ASSISTANT ARCHITECTS**. Salary in accordance with A.P.T. Grade IV (£1,065—£1,220 per annum).

The posts will be subject to the provisions of the Local Government Superannuation Acts. Forms of application and particulars of the posts and conditions of service may be obtained from the County Architect, Queen's Hill, Newport, to whom all applications, together with the names of at least two referees, must be returned not later than Tuesday, 21st June, 1960.

VERNON LAWRENCE,
Clerk of the Council.

County Hall,
Newport. 1447
Mon.

WILLENHALL URBAN DISTRICT COUNCIL ARCHITECT'S DEPARTMENT

E. E. BARRINGTON, A.R.I.B.A.
Applications are invited for the following posts for work on an interesting and varied programme:—

ARCHITECTURAL ASSISTANT—Grade A.P.T. II (£765—£880).

JUNIOR ARCHITECTURAL ASSISTANT—Grade A.P.T. I (£610—£765).

The appointment will be subject to the Local Government Superannuation Acts, the National Scheme of Conditions of Service and to termination by one month's notice on either side. Housing accommodation is available and two-thirds of removal expenses will be reimbursed by the Council.

Applications, giving details of experience and qualifications (stating for which appointment application is made), together with the names and addresses of two persons to whom reference may be made, should reach the undersigned not later than 24th June, 1960.

JOHN R. RIDING,
Clerk of the Council.

Town Hall,
Willenhall. 1455
Staffordshire.

NORTH THAMES GAS BOARD AN ARCHITECTURAL DESIGNER (Male or Female) is required for work in connection with the design of new showrooms and the remodeling of existing showrooms and shopfitting, furniture, etc. Candidates should be capable of carrying out sketch designs, working and detail drawings with the minimum of supervision.

Preference will be given to candidates who have completed part or whole of the qualifications for A.R.I.B.A.

The appointment will be permanent and pensionable and the starting salary for a male would be in the region of £848 per annum in A.P.T. Grade 8, according to age and experience.

Applications, stating age and giving full details of experience, should be sent to the Staff Controller, North Thames Gas Board, 30, Kensington Church Street, W.8, quoting reference AJ/873. 1451

SURREY COUNTY COUNCIL Applications invited for following appoint- ments:—

ASSISTANT ARCHITECTS in the salary range of £785—£1,220 p.a. plus £45 p.a. London Allowance. Commencing salary will be in accordance with qualifications and experience.

ARCHITECTURAL ASSISTANTS, GRADE II (£765—£880 p.a. plus up to £40 p.a. London Allowance, according to age). Must be of good general training, preference given to those who have passed Intermediate R.I.B.A. Candidates will be appointed at the appropriate point within the scale according to age and ability.

Full details, present salary and three copy testimonials to County Architect, County Hall, Kingston, as soon as possible. 1446

GOVERNMENT OF NORTHERN IRELAND ASSISTANT QUANTITY SURVEYOR

Applications invited from Corporate Members of the Royal Institution of Chartered Surveyors (Quantity Surveyors) for an unestablished post in Chief Quantity Surveyor's Branch, Ministry of Finance. Experience in "taking off" for large building works essential. Salary scale £805—£1,250, entry point according to age and experience. Prospects of permanent and pensionable appointment. Preference for ex-Servicemen. Application forms, obtainable from Director of Establishments, Room 271, Stormont, Belfast, to be completed and returned by the 22nd June, 1960. 1446

GOVERNMENT OF NORTHERN IRELAND ASSISTANT ARCHITECT CLASS II

Applications invited for unestablished post in Chief Architect's Branch, Ministry of Finance. Candidates must be Registered Architects by examination with at least two years' experience in an Architect's office in preparing working drawings. Salary scale £805 (at age 25)—£1,095 (age 34 and over)—£1,250. Prospects of promotion and pensionable appointment. Preference for ex-Servicemen. Application forms, obtainable from Director of Establishments, Room 271, Stormont, Belfast, 4, to be completed and returned by 16 June, 1960. 1254

ARCHITECTURAL ASSISTANTS REQUIRED BY MINISTRY OF WORKS

For employment in London and Provinces. Keen and enthusiastic assistants of Intermediate R.I.B.A. standard are required for the design of interesting and varied types of buildings in all parts of the world.

The salary range is from £570 (at age 21) to £900, London (slightly less elsewhere). Starting pay according to age and experience.

Five-day week. 34 weeks leave annually.

Good prospects of promotion and permanency.

Permanent posts are pensionable and the pension scheme is non-contributory. Apply, giving details of age, training and experience, to—E. Bedford, Esq., C.B., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, Abell House, Room 427, John Islip Street, London, S.W.1. Interviews will be held at the above address and at Regional offices where possible. 1255

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

The Council require **SENIOR ARCHITECTS** in salary grades A.P.T. IV (£1,065—£1,220) and Special Grade (£785—£1,070) for their extensive and interesting building programme which includes schools, colleges, old people's and children's homes, clinics, ambulance, fire and police stations, and other public buildings. Architects appointed will be employed at the Central Office in Wakefield solely upon capital works dealing with building projects from sketch plans to completion.

Applications are also invited for the under-mentioned posts at the Central Office:—

JUNIOR ARCHITECTURAL ASSISTANTS

Grade A.P.T. II (£765—£880).

Grade A.P.T. I (£610—£765).

Applications to be submitted as soon as possible on forms to be obtained from and returned to the undersigned.

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

Bishopgarth,
Westfield Road,
Wakefield. 6607

LONDON COUNTY COUNCIL ARCHITECT'S DEPARTMENT DESIGNER

Unusual scope is offered to a Designer interested in basic studies in furniture and interior design. He is needed to work on a large and varied programme of furnishing for schools, colleges, old people's homes, residential hostels, etc. Special emphasis is given to interior planning and the anthropometrical and functional requirements of furniture and fittings.

Salary up to £1,135 (under review), with probable maximum of £1,250.

Application form, returnable by 30th June, 1960, from Hubert Bennett, F.R.I.B.A., Architect to the Council (EK/AJ/1328/6), County Hall, London, S.E.1. 1450

COVENTRY Enthusiastic imaginative ARCHITECT required in Housing Division. Programme includes residen- tial redevelopment and multi-storey work. Salary within £1,065—£1,220.

Housing accommodation in approved cases. Removal expenses loan available. 5-day working week. Canteen facilities. Application forms from Department of Architecture and Planning, Council House, Earl Street, returnable 10 days publication. 1558

LANCASHIRE COUNTY COUNCIL

Applications are invited for the permanent appointment of ASSISTANT ARCHITECTS within the Salary Scale £750-£1,070. There is a large and varied programme and the successful applicants will be encouraged to deal with smaller projects from sketch plans to completion, and assist more Senior Architects on major projects. A wide experience will be gained and opportunities afforded by the promotion scheme within the office.

Forms of application and details on the organisation of the Department may be obtained, on application, from the County Architect, P.O. Box 55, County Hall, Preston. 1519

ARCHITECTS

SALARY £1,775 to £2,075 p.a.

The Design of Hospitals is now a complex problem involving research, clear thinking, logical planning, and a sense of aesthetic environment.

A post of ASSISTANT REGIONAL ARCHITECT is available in Oxford for a man of these qualities. Further particulars may be obtained from W. J. Jobson, E.R.D., F.R.I.B.A., Regional Architect.

Applications to be received not later than 12th June, 1960, by the Secretary, Oxford Regional Hospital Board, 43, Banbury Road, Oxford. 1518

CHISLEHURST AND SIDCUP URBAN DISTRICT COUNCIL

APPOINTMENT OF ARCHITECTURAL ASSISTANT

Architectural Assistant required in Engineer and Surveyor's Department. Salary A.P.T. II (£765-£880 per annum) plus London weighting. Preference to candidates with R.I.B.A. (Inter.) examination.

Housing accommodation available. Applications, giving age, training, qualifications and experience, and names of two referees to the Clerk, Council Offices, Sidcup Place, Sidcup, Kent, by 17th June, 1960. 1559

COUNTY BOROUGH OF NORTHAMPTON

Applications are invited for the following appointments in Special Grade (£785-£1,070): (a) ASSISTANT ARCHITECT; (b) TOWN PLANNING ASSISTANT.

Full particulars and application forms, returnable by 17th June from Borough Architect & Town Planning Officer, Guildhall, Northampton. C. E. VIVIAN ROWE, Town Clerk. 1557

SHEFFIELD REGIONAL HOSPITAL BOARD

Applications are invited for the posts of ASSISTANT ARCHITECTS on the Board's Headquarters staff. Candidates must be Registered Architects and have passed the requisite examinations. Salary scale £905-£1,310 per annum.

Appointment is subject to Whitley Council terms and conditions of service, to the National Health Service (Superannuation) Regulations and to one month's notice on either side. Applications, stating age, qualifications, experience and names of two persons to whom reference may be made, to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood Road, Sheffield, 10, not later than 13th June, 1960. 1565

PAISLEY TECHNICAL COLLEGE

(Central Institution)

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

Applications are invited for the position of LECTURER IN BUILDING to commence duties on 1st September, 1960. Duties will include lecturing in O.N.C. and H.N.C. Courses and for the examinations of Professional Bodies. Salary Scale: £1,050 x £50-£1,700.

Applicants should have one or more of the following, or similar, qualifications: R.Sc. (Tech.), A.R.C.S.T., A.R.I.B.A., A.I.O.B., A.R.I.C.S.

Further particulars and form of application may be obtained from H. N. Henry, Principal, Paisley Technical College, George Street, Paisley. 1541

CITY AND COUNTY OF NEWCASTLE UPON TYNE

CITY ARCHITECT'S DEPARTMENT

The City Architect will be pleased to receive applications for the following appointments in the Department in connection with the New Town Hall project:

SENIOR ASSISTANT ARCHITECTS in the A.P.T. Division Grade V (£1,220-£1,375 per annum), and A.P.T. Division Grade IV (£1,065-£1,220 per annum).

These posts will offer ideal opportunity for Architects wishing to work on an important building involving finishes of high quality. Work has just commenced on the first three blocks of the New Town Hall, and the whole project is estimated to cost in the region of £3,500,000. A high standard of design ability and an appreciation of age and experience in good quality building work is essential.

Application forms and full particulars may be obtained from George Kenyon, A.R.I.B.A., A.M.T.P.I., City Architect, 18, Cloth Market, Newcastle upon Tyne, 1. Applicants should state the Grade applied for when requesting particulars.

Closing date for receipt of completed applications: Monday, 27th June, 1960.

JOHN ATKINSON, Town Clerk.

Town Hall, Newcastle upon Tyne, 1. 1501

25th May, 1960. 1501

LONDON COUNTY COUNCIL

ARCHITECTS' DEPARTMENT

ARCHITECTURAL DRAUGHTSMEN

Unqualified ARCHITECTURAL ASSISTANTS required in Housing Division. Candidates must have drawing board experience in an architect's office. Preference to those proposing to qualify by evening study though others considered. Full programme of new work and opportunities for promotion. Starting salaries according to age and experience. Form and particulars from Hubert Bennett, F.R.I.B.A., Architect to the Council (EK/AJ/1359/6), County Hall, S.E.1. 1498

THE NORTH WESTERN ELECTRICITY BOARD

THIRD ASSISTANT ENGINEER

(CIVIL ENGINEERING)

SUB-AREA ENGINEERING DEPARTMENT, OLDHAM

Applicants should be suitably qualified and have had experience in preparing sketch schemes, working drawings and specifications for commercial buildings, including Service Centres and supervision of work on site.

Salary scale: £1,025-£1,085 p.a. Grade L.10. N.J.B. Conditions.

Applications must be made on a form to be obtained from the Manager, No. 3 Sub-Area, The North Western Electricity Board, Union Street, Oldham, and returned to him so as to be received not later than 18th June, 1960. 1570

COUNTY BOROUGH OF BARNESLEY

BOROUGH ENGINEER AND SURVEYOR AND PLANNING OFFICER'S DEPARTMENT

APPOINTMENT OF CHIEF PLANNING ASSISTANT

Applications are invited for this appointment on Grade A.P.T. IV (£1,065-£1,220) with an Essential User Car Allowance.

Applicants should be suitably qualified and should have had considerable planning experience including development control and redevelopment work.

The appointment will be subject to (a) the Scheme of Conditions of Service for A.P.T.C. Staff, (b) any other general Conditions of Service in operation within the Corporation from time to time, (c) one month's notice on either side, and (d) to the Local Government Superannuation Acts for which purpose the successful candidate will be required to pass a medical examination.

Housing accommodation can be provided, if necessary, and 50 per cent. of removal transport expenses will be paid in approved cases.

Applications, stating age, present and previous appointments, qualifications, experience, etc., together with the names of two persons for reference, should reach the Borough Engineer, Town Hall, Barnsley, by Friday, 17th June, 1960.

Canvassing will disqualify. A. E. GILFILLAN, Town Clerk. 1571

Town Hall, Barnsley, May, 1960. 1571

WORTLEY RURAL DISTRICT COUNCIL

(Population approaching 50,000)

APPOINTMENT OF SENIOR ASSISTANT ARCHITECT

Applications are invited from persons of suitable experience and qualification for the above appointment at a salary in the range A.P.T. Special, £785 to £1,070 per annum. Housing accommodation is available if required.

There is a considerable amount of varied and interesting work to be done and the successful applicant will be given many opportunities. Applicants should submit their application in writing to the undersigned with the names of two persons to whom reference may be made, not later than noon on Friday, 17th June, 1960.

ADRIAN M. KELLY, Clerk. 1473

Council Offices, Grenoside, Sheffield. 1473

FAREHAM - HAMPSHIRE

A vacancy occurs in the Architects' Section of the Engineer and Surveyor's Department, Fareham Urban District Council, for a SENIOR ARCHITECTURAL ASSISTANT approaching Final R.I.B.A. standard, responsible, with initiative and a modern approach to design.

Fareham is a thriving South Coast town, the office friendly and informal, and the design standard, mainly of housing, is thoroughly progressive.

A.P. & T. Grade II. N.J.C. Conditions. Superannuation. Medical examination.

Please write for full details to Engineer and Surveyor, Westbury Manor, West Street, Fareham, Hants.

Closing date: 13th June, 1960. 1476

COUNTY OF CORNWALL

ARCHITECT'S DEPARTMENT

Applications are invited for the following permanent appointments:

SENIOR ASSISTANT QUANTITY SURVEYORS, Grade A.P.T. IV (£1,065-£1,220) and ASSISTANT QUANTITY SURVEYORS, Grade A.P.T. II (£765-£880).

Applications, together with the names of two persons to whom reference may be made, should be sent to Mr. F. K. Hicklin, County Architect, County Hall, Truro, not later than Friday, 10th June, 1960.

E. T. VERGER, Clerk of the County Council. 1467

15th May, 1960. 1467

DRAUGHTSMAN (ARCHITECTURAL) required by ADEN GOVERNMENT to W.D. on contract for four of 18-24 months in first instance. Salary according to qualifications and experience in scale (including Pay Differential) £1,040 rising to £1,844 a year. Supplementary Pay Differential of £96 to £144 a year payable to officers with dependent children. Gratuity at rate of 12½ per cent. of total salary drawn. Outfit allowance £60. Free passages for officer and wife. Free passages for up to four children and allowance of up to £288 annually for cost of education in U.K. Quarters available at reasonable rental. Candidates, over 23, must possess G.C.E. or equivalent and have had five years' approved drawing office experience and be capable of preparing all working drawings for general building designs. Knowledge of estate layouts and ability to do simple new designs desirable. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, qualifications and experience, and quote M2B/51033/AG. 1482

NOTTINGHAMSHIRE COUNTY COUNCIL

COUNTY ARCHITECT'S DEPARTMENT

APPOINTMENT OF ASSISTANT ARCHITECTS

APT Special Scale

Applications are invited from students who have passed the Final Examination of the R.I.B.A. or the Diploma Examination of a recognised School or from qualified Architects to work on the County Council's Major Building Programmes. Architects in the respective groups carry out in turn the design, organisation and supervision of projects as Job Architects through all stages of the job. The salary range is £785-£1,070; commencing salary to be offered will be in accordance with ability and experience. Starting date by agreement. Forms of application may be obtained from the County Architect, County Hall, West Bridgford, Nottingham, to whom they should be returned as soon as possible.

A. R. DAVIS, Clerk of the County Council. 1560

Tenders Invited

36s. per inch; each additional line, 3s. including forwarding replies 2s. extra

EXETER CITY COUNCIL

ERECTION OF MARKET, CORN EXCHANGE AND BASEMENT, CAR PARK, FORE STREET, EXETER

GENERAL BUILDING WORKS

CONTRACTORS desirous of tendering for the

above work should forward a deposit of FIVE GUINEAS to the undersigned not later than the 13th June, 1960.

Bills of Quantities, etc., together with instructions for tendering will then be supplied, and plans will be available for inspection at the office of the undersigned.

The deposit will be refunded on receipt of a bona fide tender which is not subsequently withdrawn, and on the receipt of the documents.

Canvassing of members of the Council will disqualify.

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

HAROLD B. ROWE, F.R.I.B.A., A.M.I. Struct.E., City Architect.

Municipal Offices, Exeter. 1308

CITY OF CARLISLE

CONSTRUCTION OF CIVIC CENTRE

Contractors with suitable experience are invited to apply to be placed on a list of selected tenderers for the construction of the first phase of the Civic Centre Scheme comprising municipal offices (multi-storey construction), civic suite and council chamber. Tenders will be on a fixed price basis and the Corporation have in mind the completion of this phase of the scheme within a period of approximately two years. They also expect to be able to enter into a contract within a few months' time.

Messrs. Charles B. Pearson & Son, 24, Loxford Street, All Saints, Manchester, 15, and Lancaster. Applications to be placed on the list to be received by me not later than 12 noon, 10th June, 1960.

H. D. A. ROBERTSON, Town Clerk. 1466

15, Fisher Street, Carlisle. 1466

Architectural Appointments Vacant

3s. per line; minimum 12s. Box Number, including forwarding replies, 2s. extra

TWO ARCHITECTURAL ASSISTANTS required—Intermediate R.I.B.A. standard—

who have had good office experience. Salary £600-£1,000 according to experience. Housing accommodation could be provided. Reply, giving particulars of age and experience and salary required, to: Francis W. Keyworth, L.R.I.B.A., 20, Park Road, Melton Mowbray, and 31, Friar Lane, Leicester. 8776

ARCHITECTURAL ASSISTANTS required in

busy Bloomsbury office with varied practice. Good salary and prospects for suitable applicants. Five-day week. Write giving particulars of age, qualifications, experience, etc., to Box 910, c/o 7, Conic Street, W.C.1. 8815

LARGE SCALE Development in London and

Industrial Buildings in Home Counties. High office blocks and residential flats. Four ASSISTANT ARCHITECTS required. Senior and Intermediate standard. West End Office. Five-day week. Good salaries and bonuses. Box 8096

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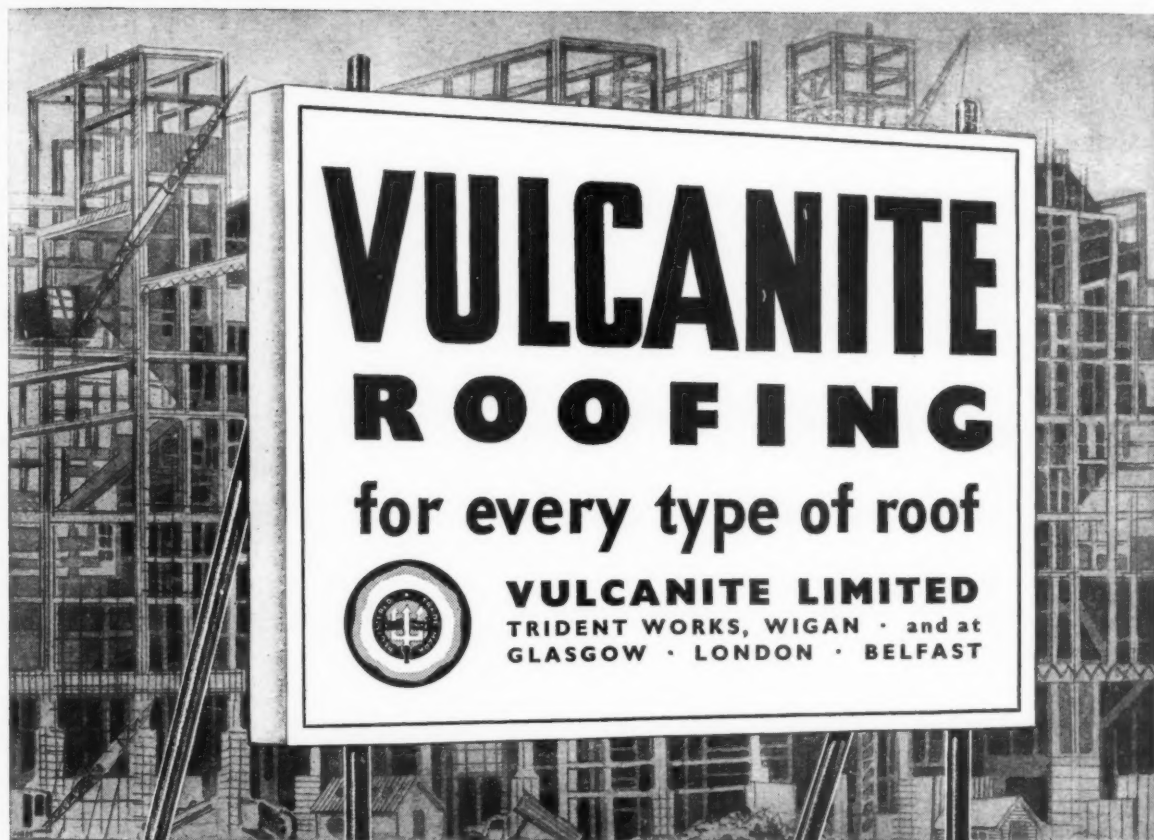
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