

# THE ARCHITECTS' JOURNAL



## standard contents

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

## NEWS and COMMENT

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No. 3374]

[Vol. 130

THE ARCHITECTURAL PRESS

11 and 13, Queen Anne's Gate, Westminster

W.1.

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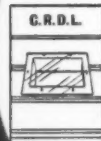
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Registered as a Newspaper.

★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to I one week, I1 to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. L. Stevenson, College of Art, Hope Street, Liverpool 1.	Langham 5533
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Victoria 0447-8
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Whitehall 9737
ACGB	Arts Council of Great Britain. 4, St. James's Square, S.W.1.	Mayfair 7501/8
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Langham 5861
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 5721
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Museum 5400
BC	Building Centre, 26, Store Street, Tottenham Court Road, W.C.1.	Welbeck 4185
BCC	British Colour Council. 13, Portman Square, W.1.	Ealing 9621
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Redditch 716
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Fremantle 8494
BDA	British Door Association. 10, The Boltons, S.W.10.	Hunter 1951
BE	Building Exhibition. 11, Manchester Square, W.1.	Temple Bar 9434
BEDA	British Electrical Development Association, 2, Savoy Hill, W.C.2.	Glasgow Central 2891
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Chancery 7772
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Langham 2785
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Trafalgar 8855
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Garston 4040
BR	Building Research Station. Bucknalls Lane, Watford.	Mayfair 0515
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 9000
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Fremantle 8494
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, A.R.I.B.A., Borough Architect and Director of Housing, Town Hall, High Holborn, W.C.1.	Holborn 3411
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	Welbeck 9966
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 1781
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Covent Garden 3008
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), Stafford House, Norfolk Street, W.C.2.	Whitehall 6711
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Regent 0221
FC	Forestry Commission. 25, Savile Row, W.1.	Sloane 1002
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Ilkeston 623
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ulverston 201
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Chancery 7583 (6 lines)
FMB	Federation of Master Builders. 33, John Street, W.C.1.	Whitehall 3902
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Langham 4341
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Monarch 8888
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Sloane 4554
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Belgravia 3081
GG	Georgian Group. 2, Chester Street, S.W.1.	Whitehall 2881
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Belgravia 3755
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Grosvenor 6186
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Whitehall 4577
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Temple Bar 7676
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Abbey 5215
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Sloane 8266
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 1601/3158
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square	Mayfair 7086
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 100, Park Street, Grosvenor Square, W.1.	

## Seven symbols of progress



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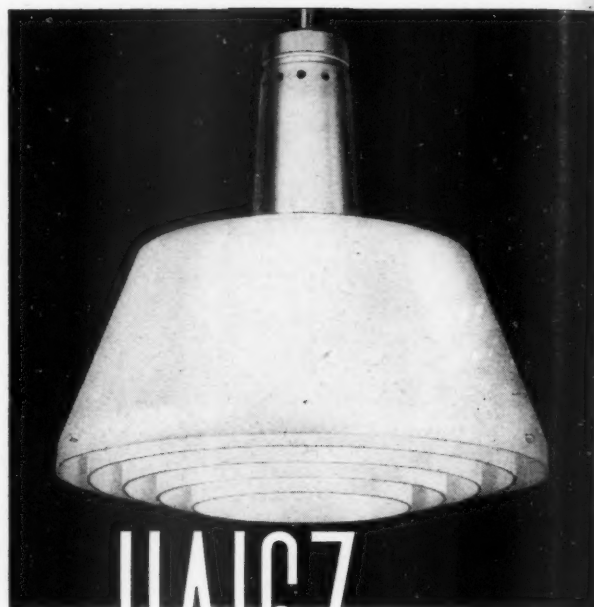
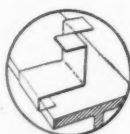
Please write for full particulars.

For purposes of illustration, the Thermacoust slabs shown in the picture have been cut down from standard slabs, and only one end of a purlin is shown.

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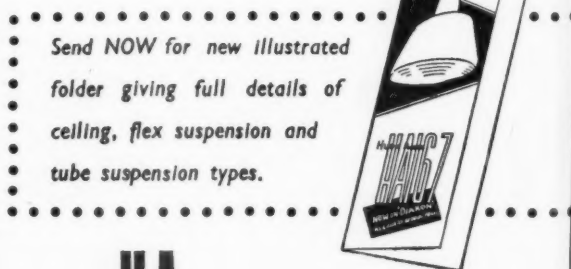
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# Cold Facts



#### Contract

New Aeration Plant, Hanley Sewage Works, Stoke-on-Trent.

#### Engineers

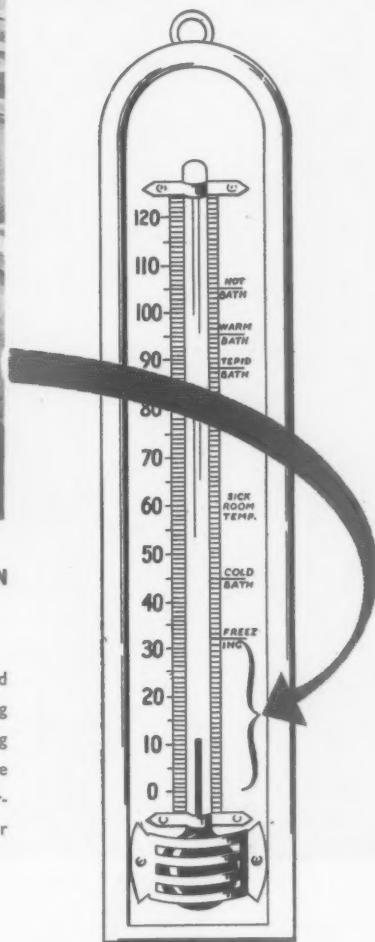
City of Stoke-on-Trent, Sewage Purification Department.

#### Contractors

Messrs. C. Cornes & Son Ltd., Hanley, Stoke-on-Trent.

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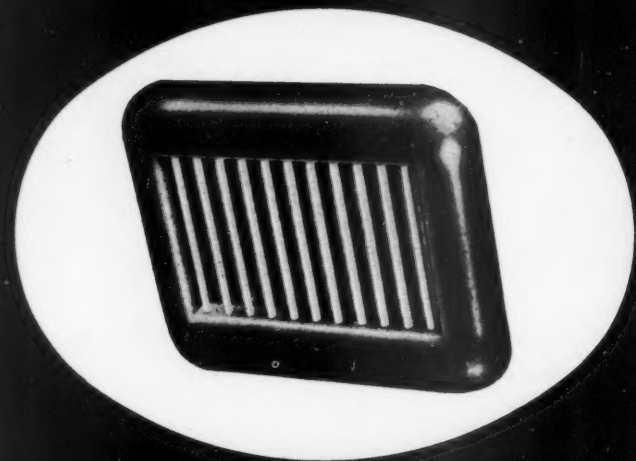
102 Kensington High Street, London, W.8.

'Phone: WES. 0444

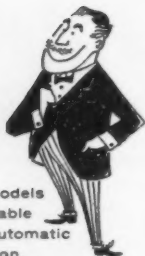
Albany Road, Chorlton-cum-Hardy, Manchester, 21. 'Phone: CHO. 1063



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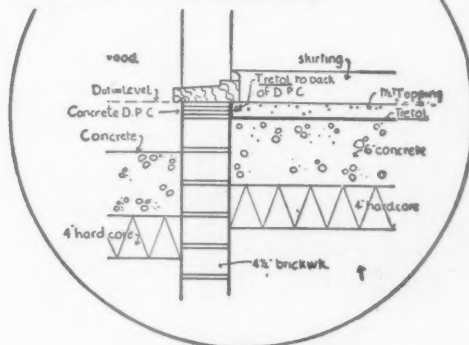
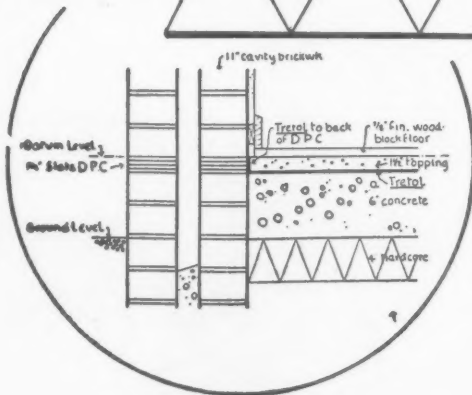
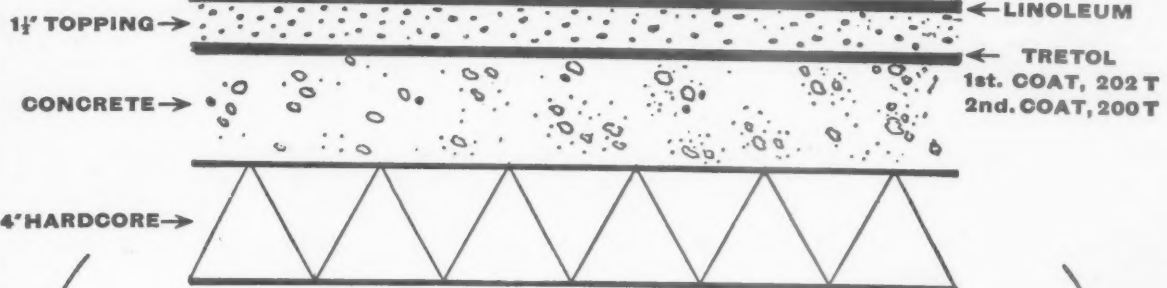
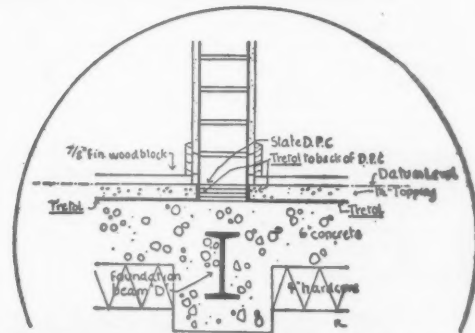
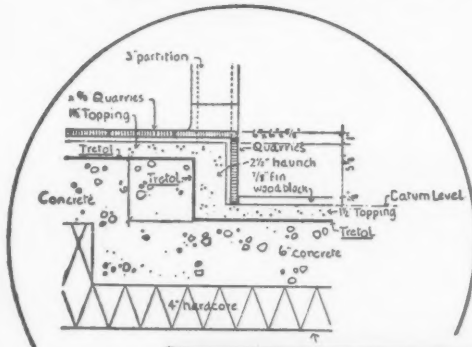
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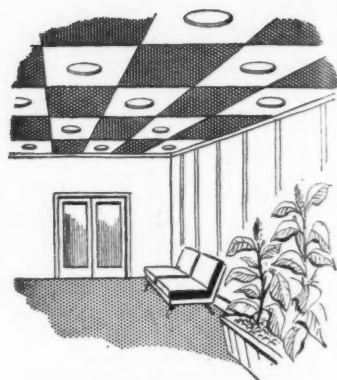
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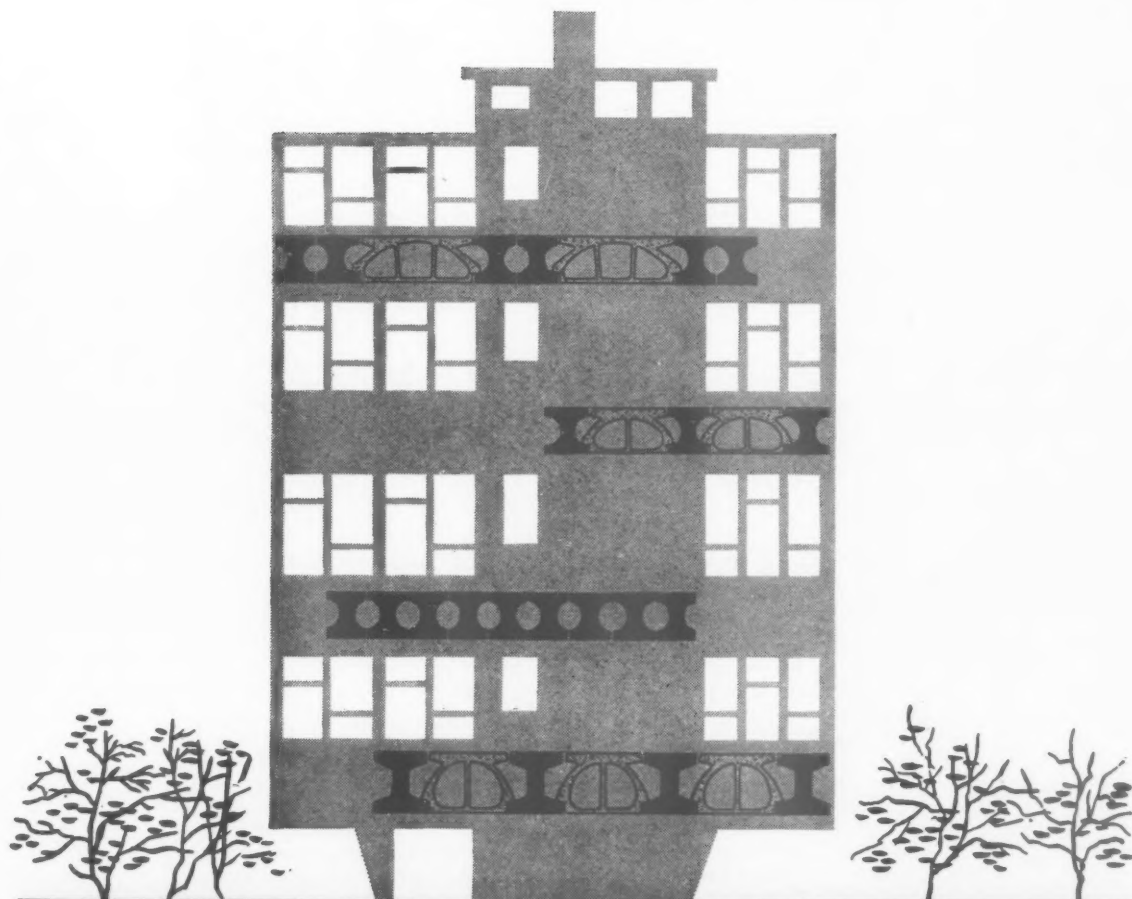
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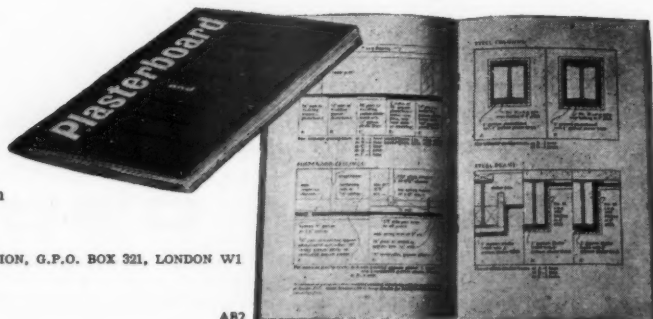
All plasterboard has an incombustible core of Gypsum, which contains 20% combined water. During a fire this water is gradually released in the form of vapour, which provides an effective barrier to the fire's progress.

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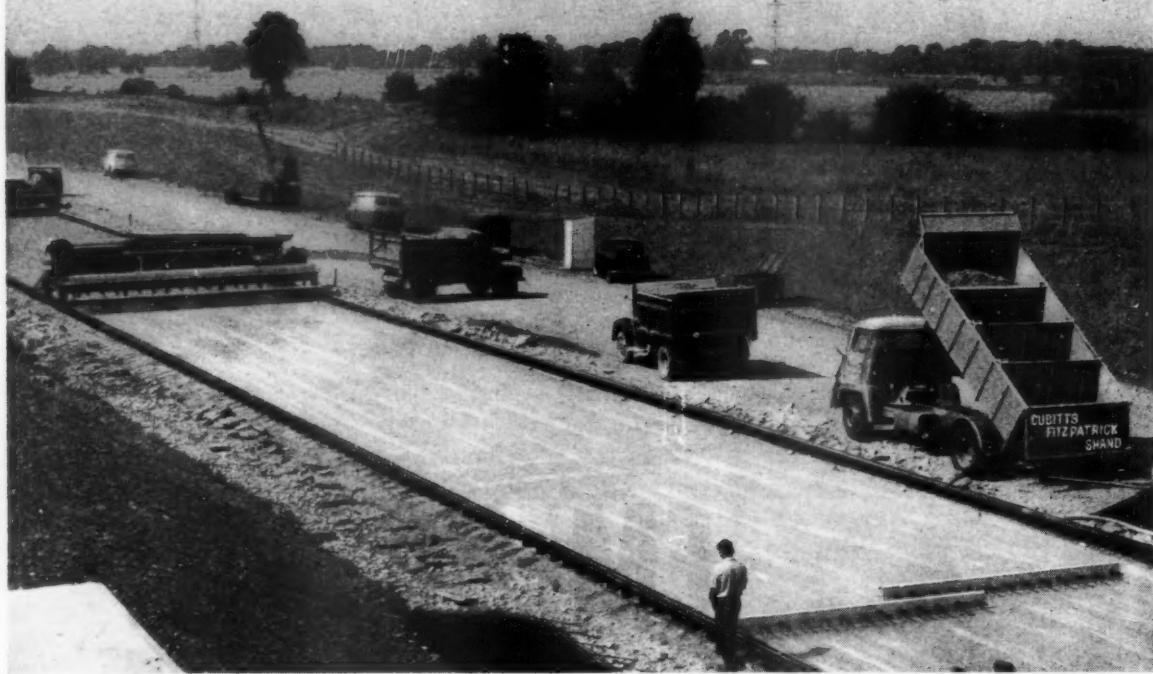
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The 11" slab of reinforced pavement quality concrete was cast straight on to the 'Visqueen' full width sheet which had been unreeled over a 1½" level sand blinding from a giant mobile dispenser. This unit was automatically pulled along 120 ft. ahead of the concrete train by the sub-grade compactor. By mechanising the whole road-making operation, Cubitts-Fitzpatrick-Shand laid up to 1,320 linear ft. of completed carriageway per day—an all-time British record.

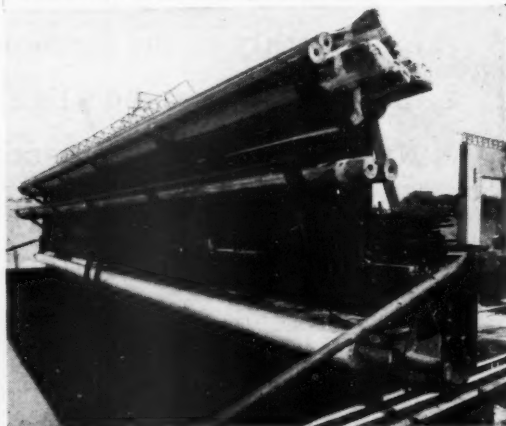
26 ft. wide 'Visqueen', tough and shatterproof, helps to speed up motorway construction. British Visqueen Limited invite enquiries for their special wide width sheeting suitable for other projects in the road construction programme.

### BRITISH VISQUEEN LIMITED

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▲ SUBSIDIARY COMPANY OF IMPERIAL CHEMICAL INDUSTRIES LIMITED

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Contractors: Cubitts-Fitzpatrick-Shand.



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EXPERIENCE COUNTS



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Architects: Farmer & Dark*

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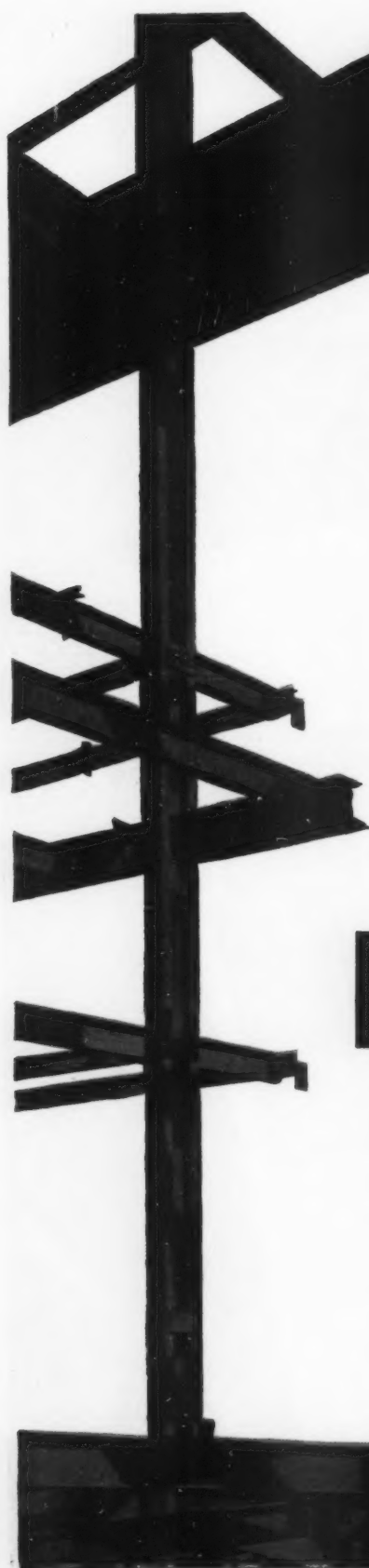
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Architects: Elliott, Cox & Partners, F.R.I.B.A., F.R.I.C.S.,  
L.R.I.B.A., A.I.A.S., A.R.I.B.A.*

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*Eric de Maré*

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9877

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Telegrams : Sprinkler, Manchester



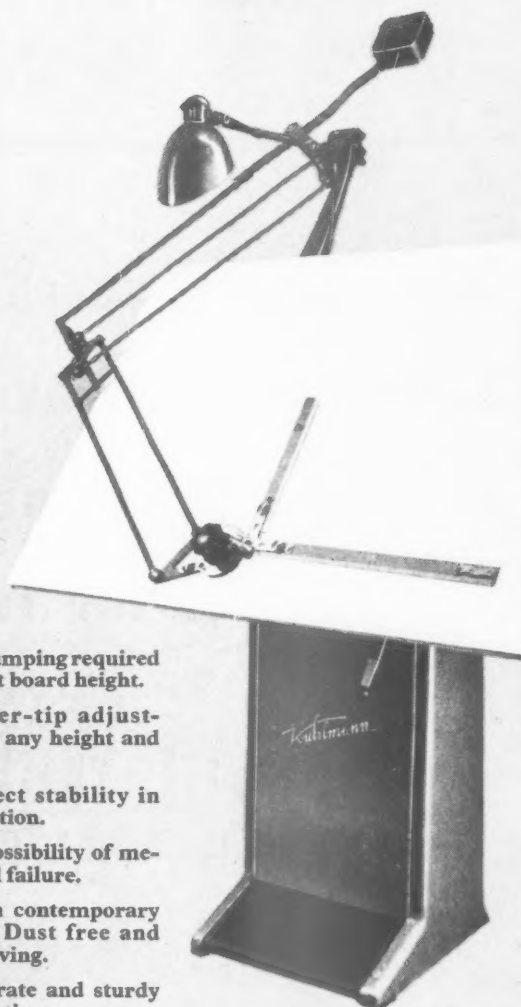
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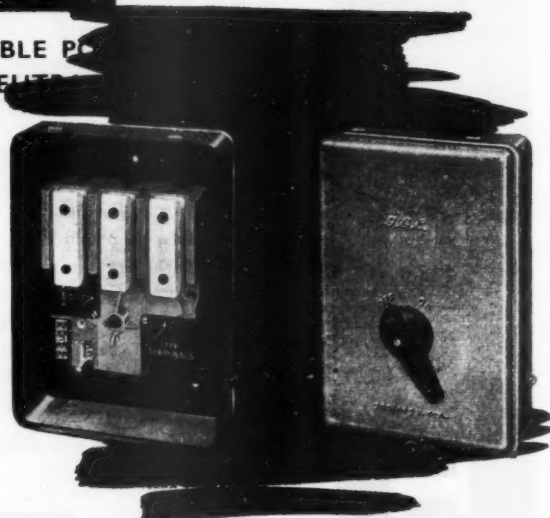
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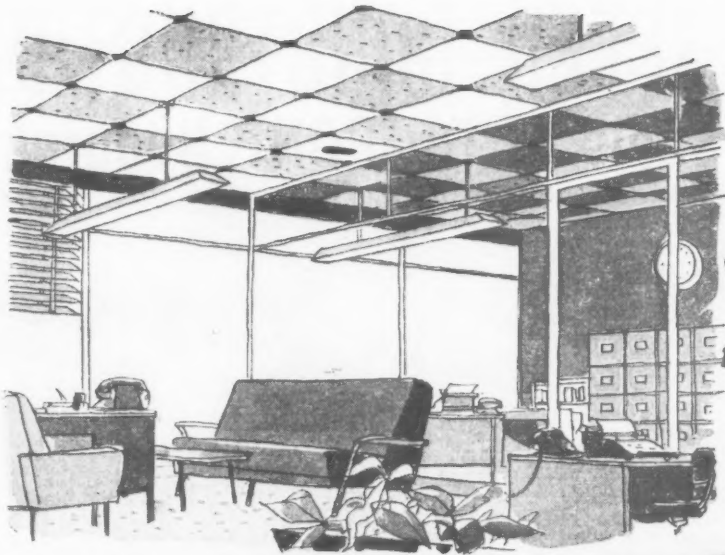


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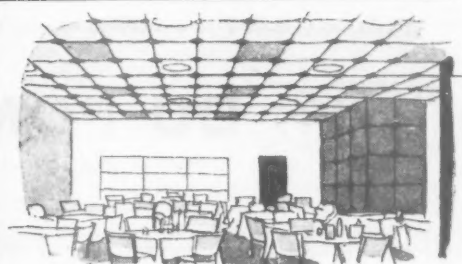
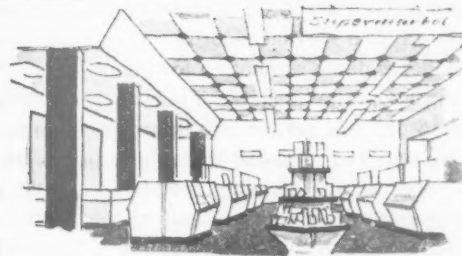
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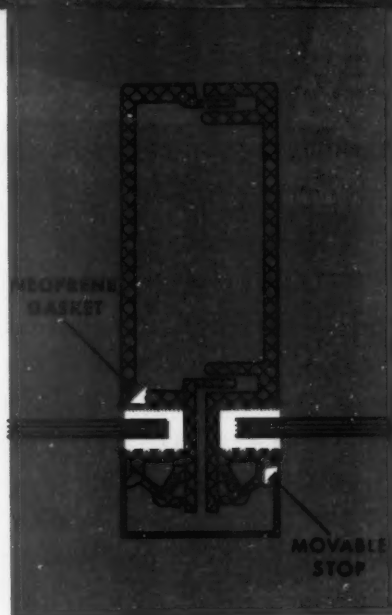
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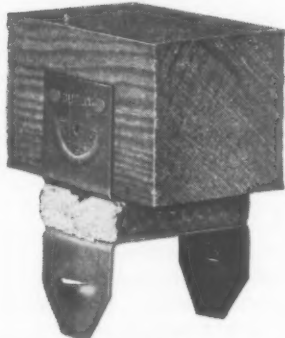


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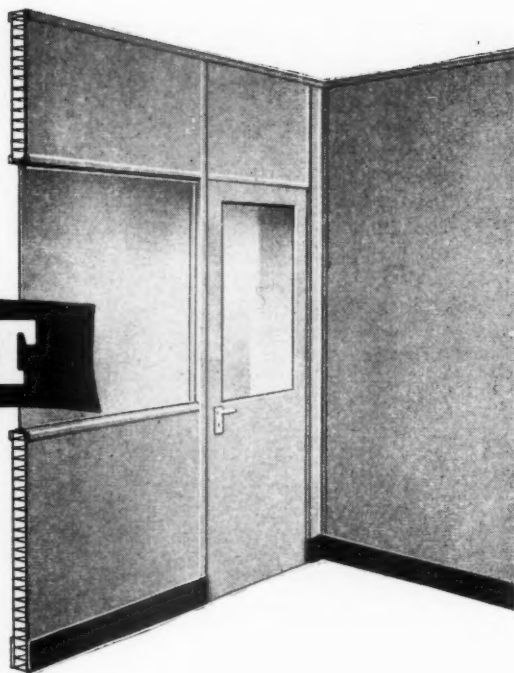


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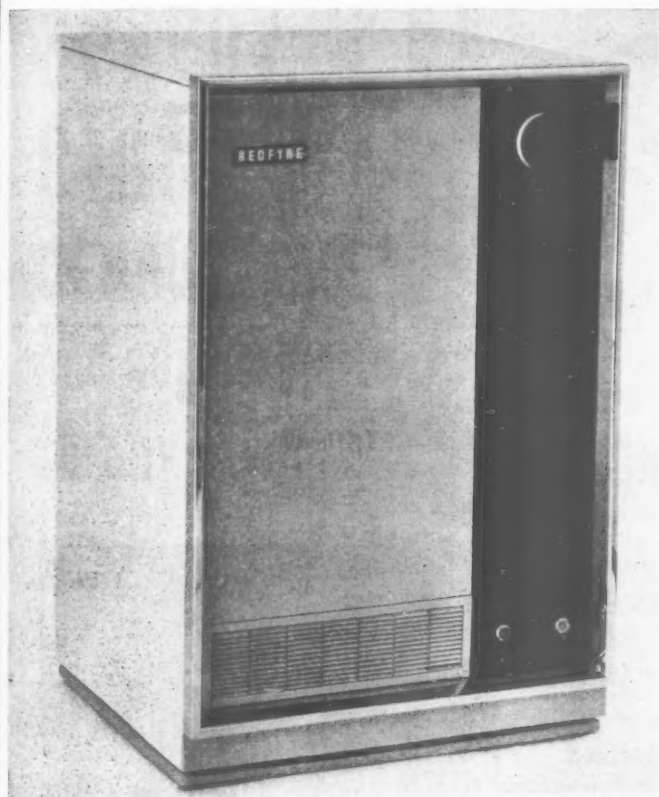
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GU 6

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The householder can select the temperature he needs on the temperature scale. Then the Redfyre Centramatic regulates the burning so as to keep the water automatically at the selected temperature. (Incidentally, the control apparatus of the Centramatic is as pretty a piece of precision engineering as you could hope to see.)

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#### Easy to install and service

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#### A few more facts

The Redfyre Centramatic can produce up to 50,000 B.Th.U.'s per hour—enough for radiators plus heated towel rails, plus ample hot water for the kitchen, plus *continuous* hot baths. In other words it is ideal for the three, four or five bedroom house. A point to remember is that because the Centramatic has the benefit of electric ignition, it is still efficient and economical when worked at less than its full capacity.

#### Two sizes available

The Centramatic described here is the Centramatic 50. But there is also available a larger version, the Centramatic 80, with an hourly output of 80,000 B.Th.U.'s. It has all the good points of the Centramatic 50, is cylindrical in shape (22" diameter by 54" high) and compact for its output. **Centramatic 50 £128 (no extras)**  
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Full technical specifications of the Redfyre Centramatic oil-fired boilers are available on request. Please write to Newton Chambers Ltd., Redfyre Products, Thorncliffe, Sheffield.

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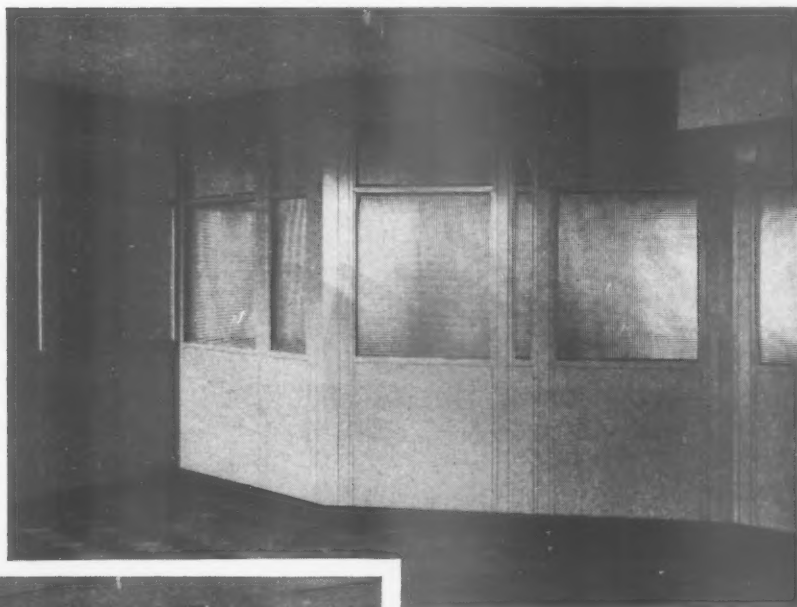
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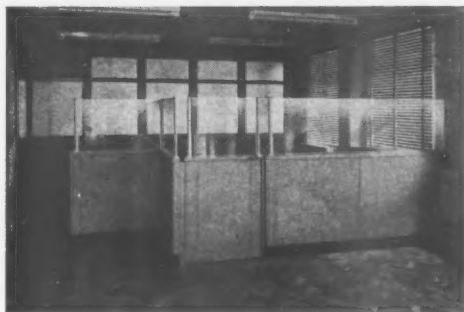
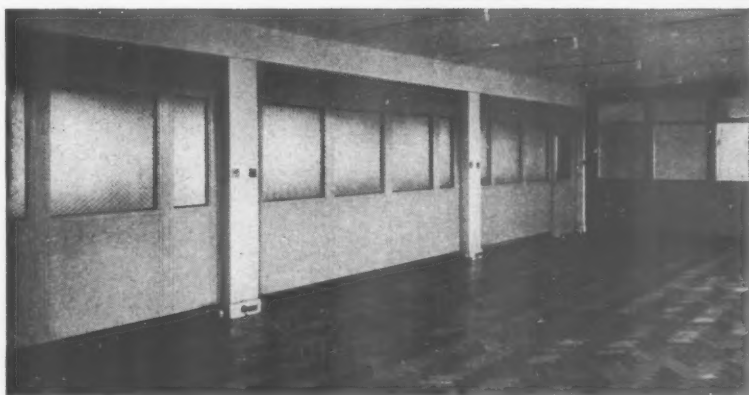
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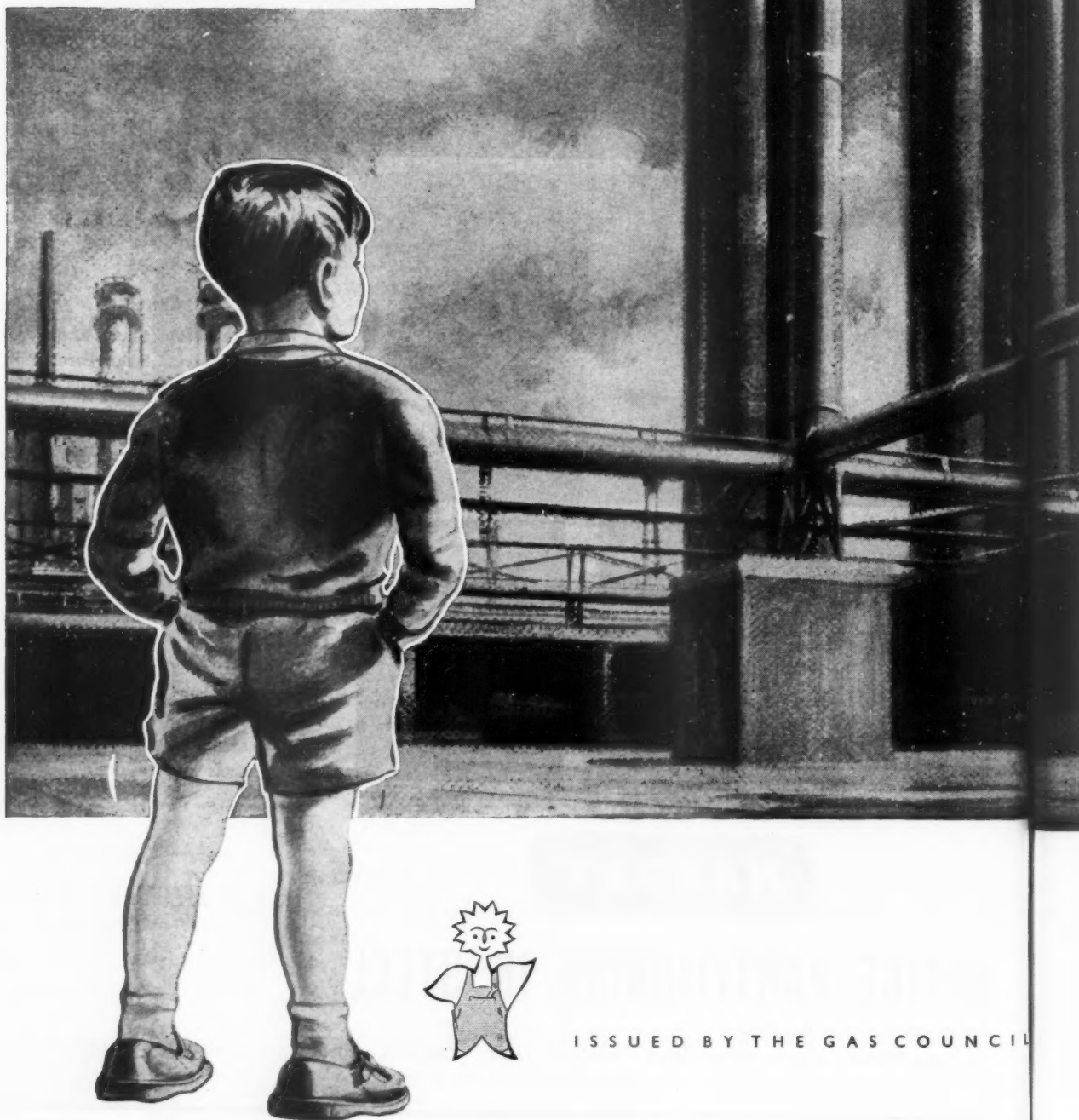
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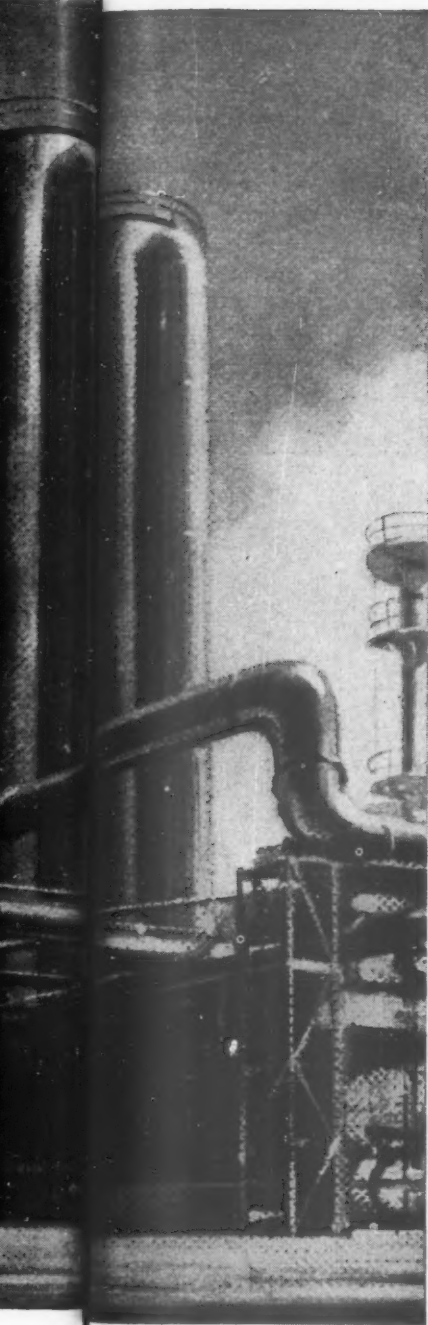


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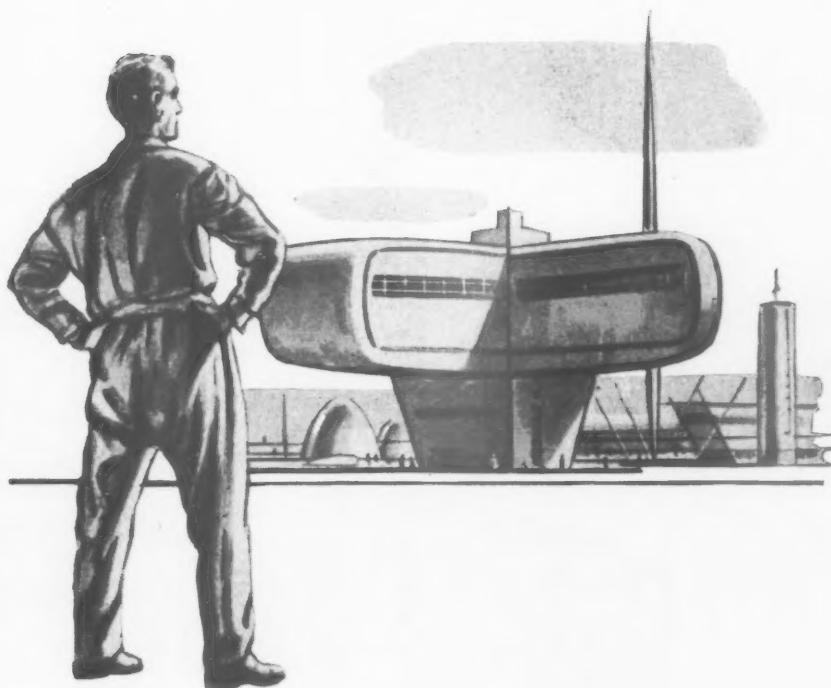


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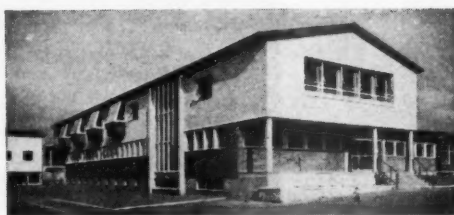


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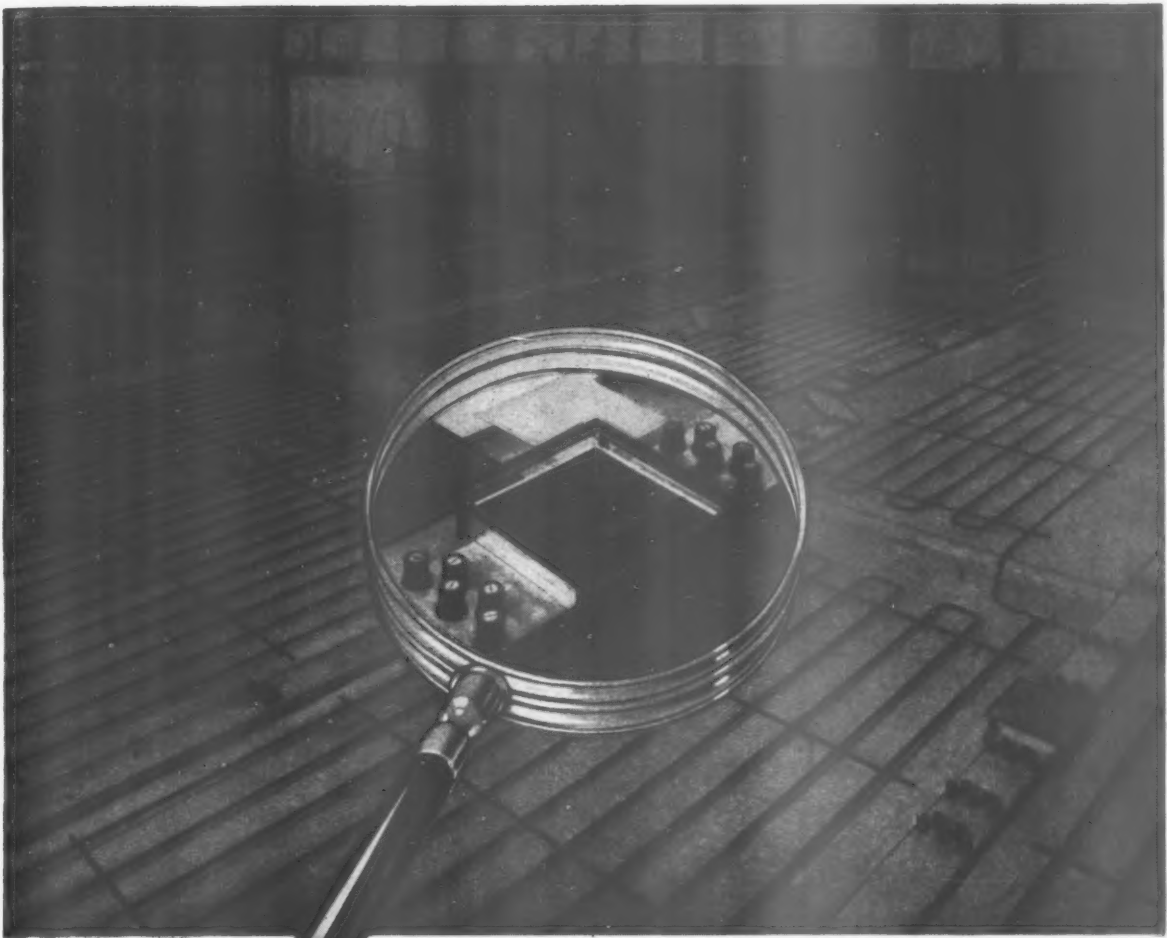
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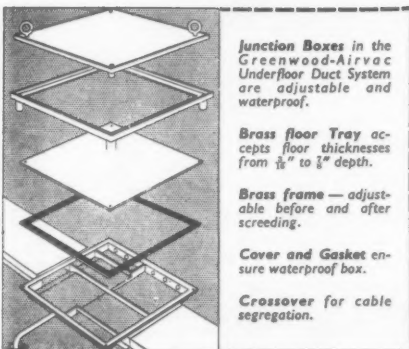
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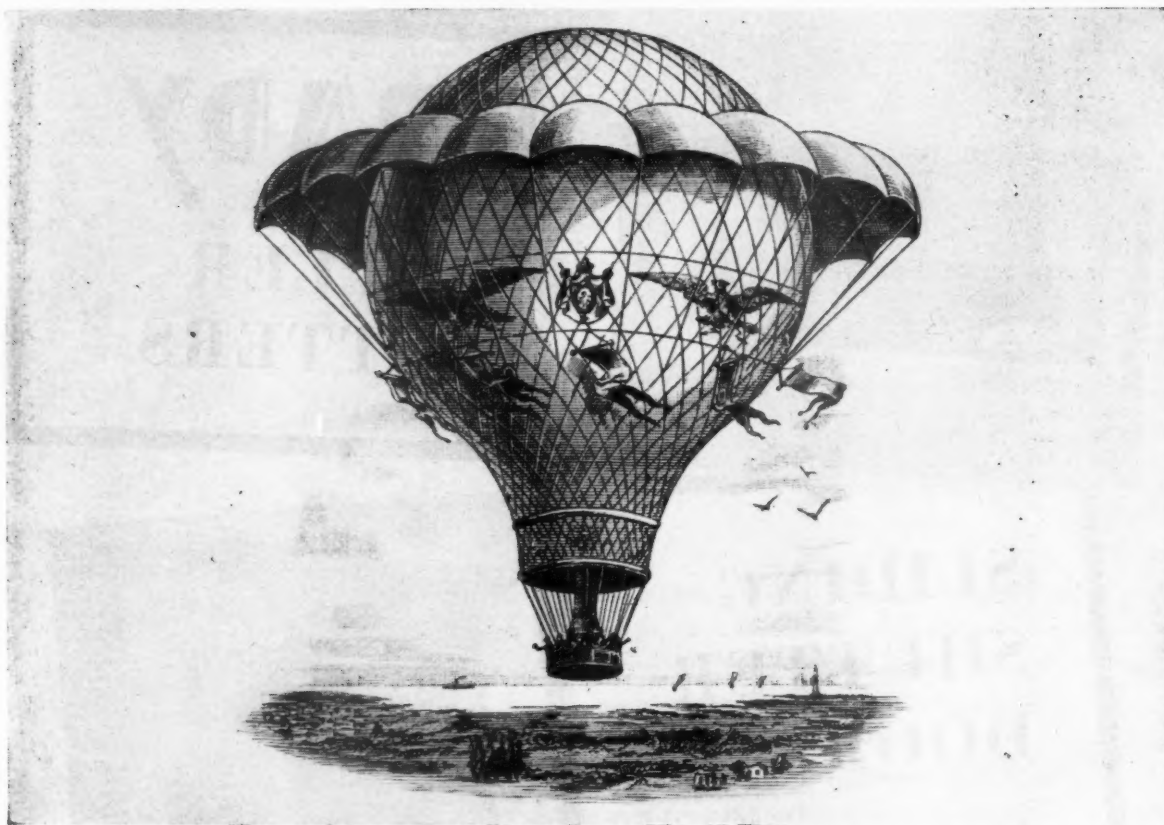
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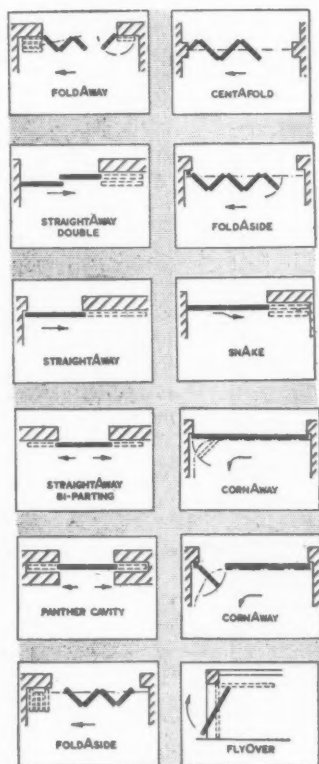
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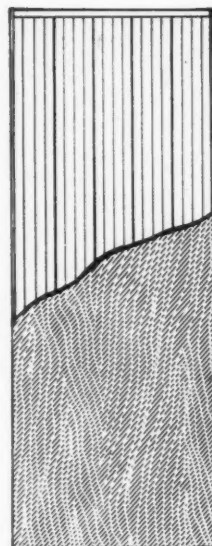
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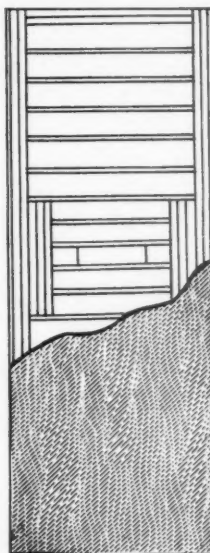
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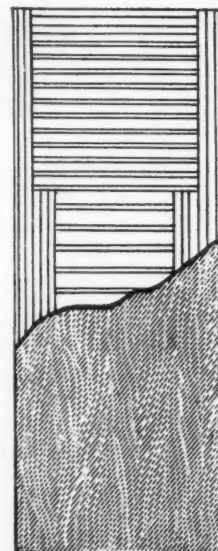
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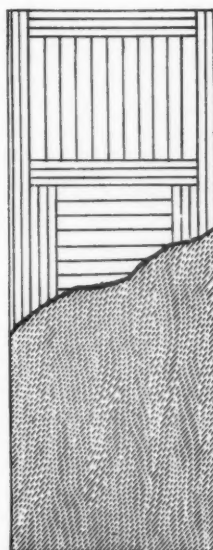
THE GOLDHANGER



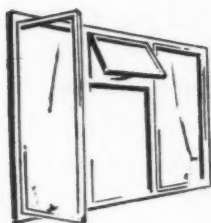
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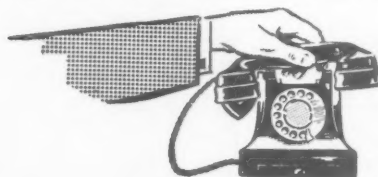
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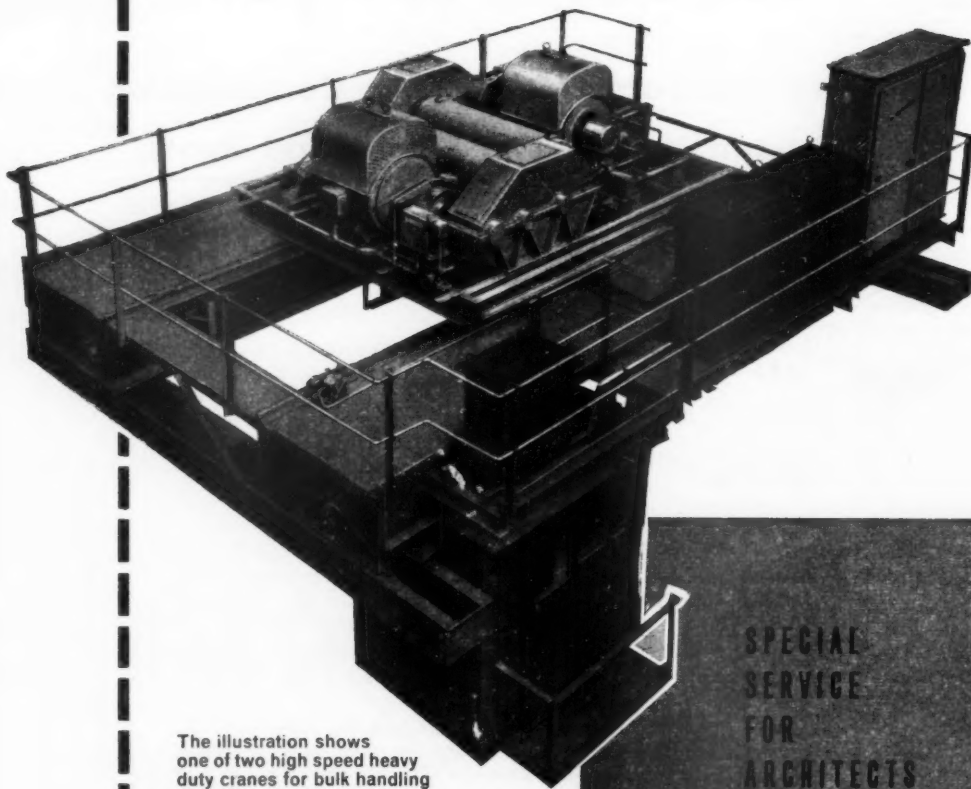
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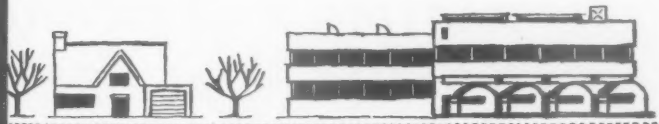
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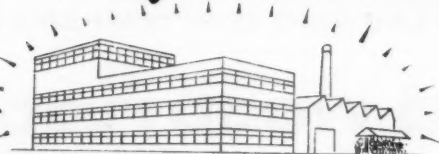
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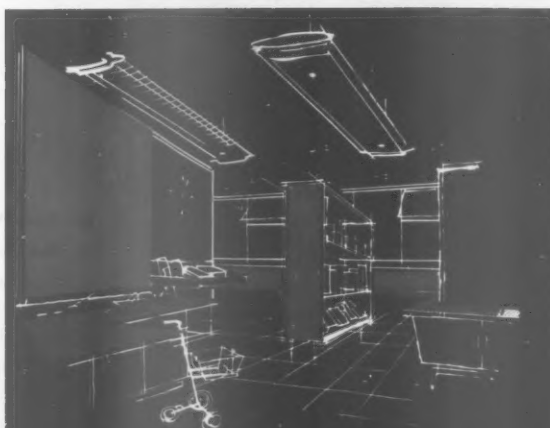
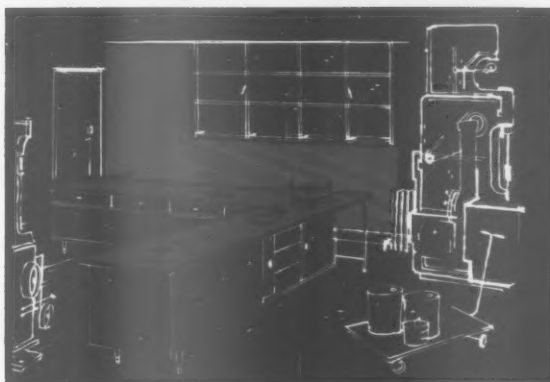


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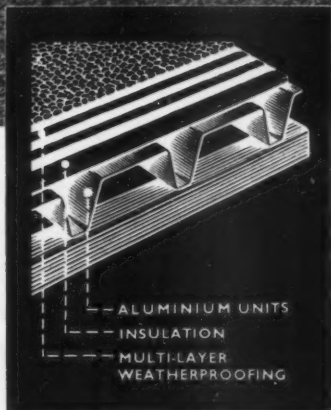
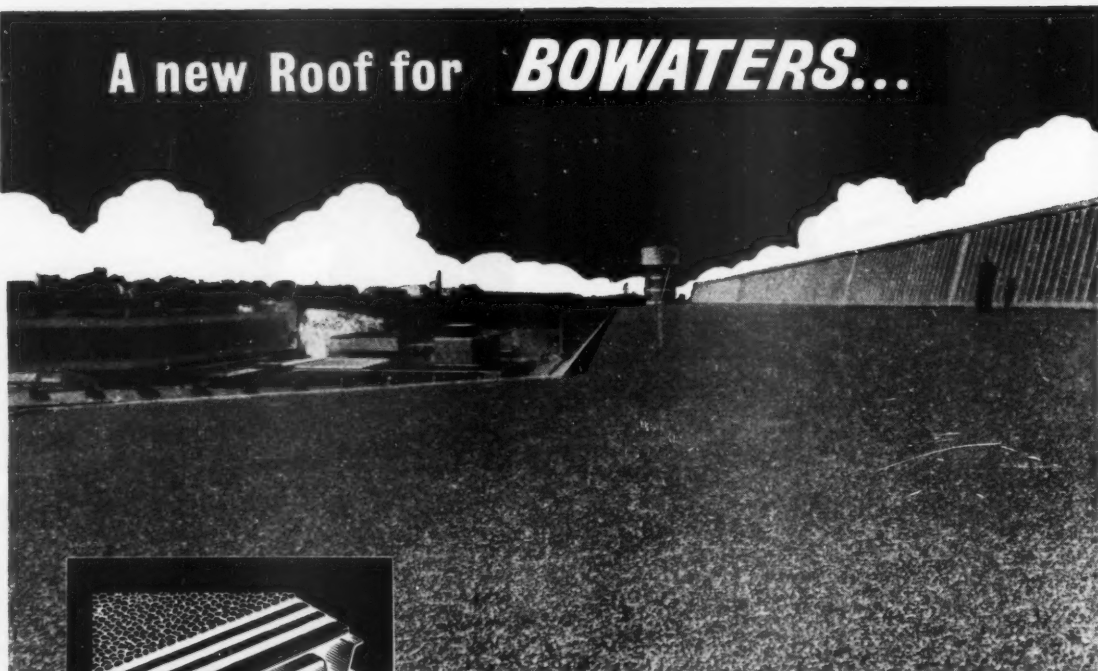
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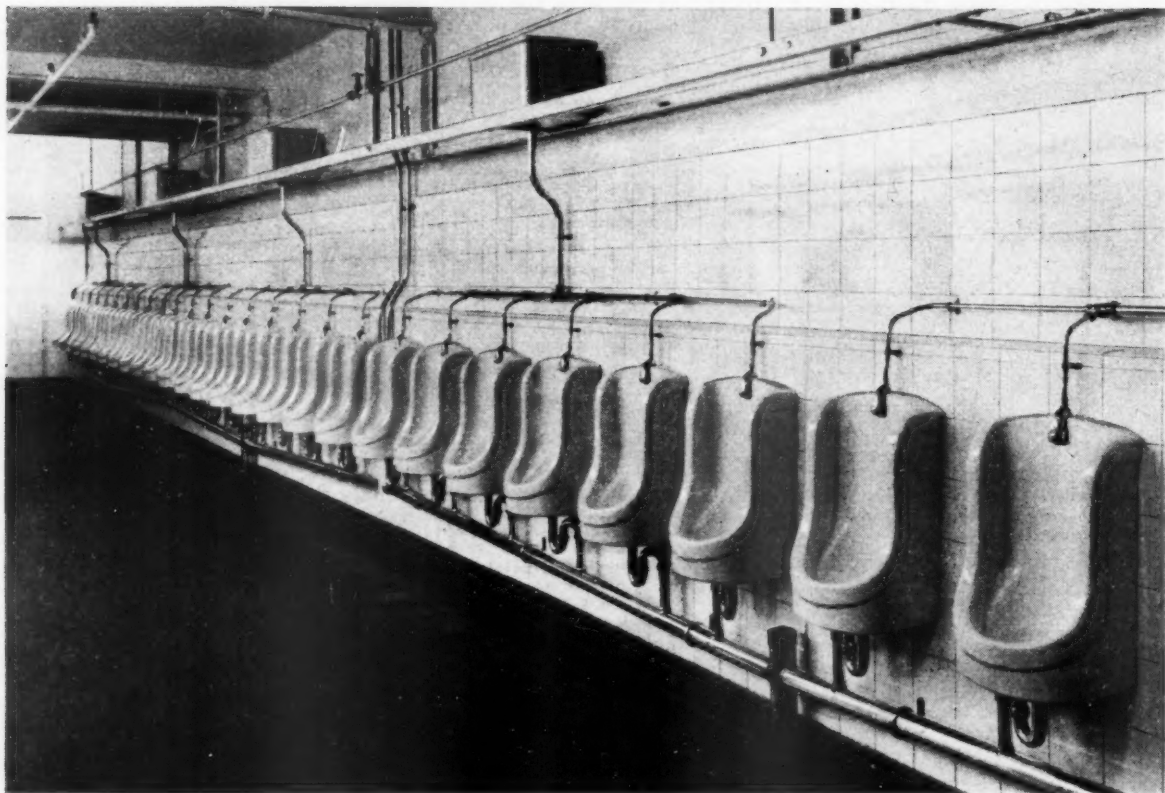
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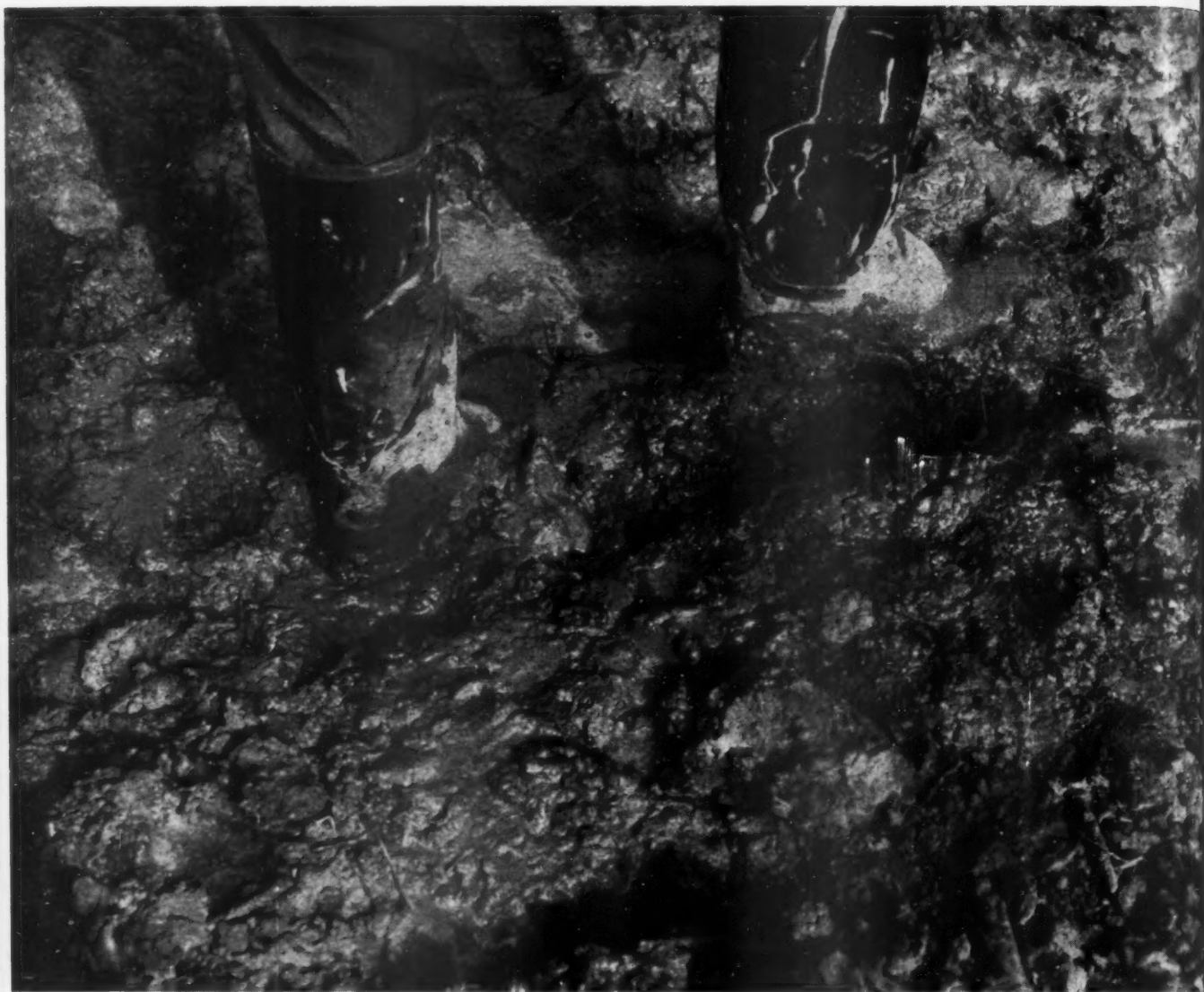
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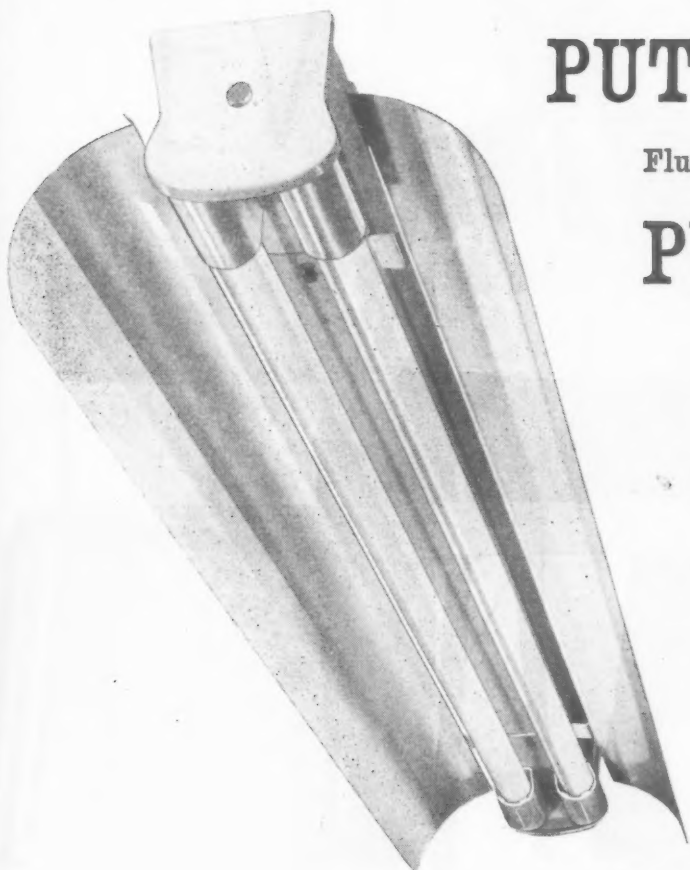
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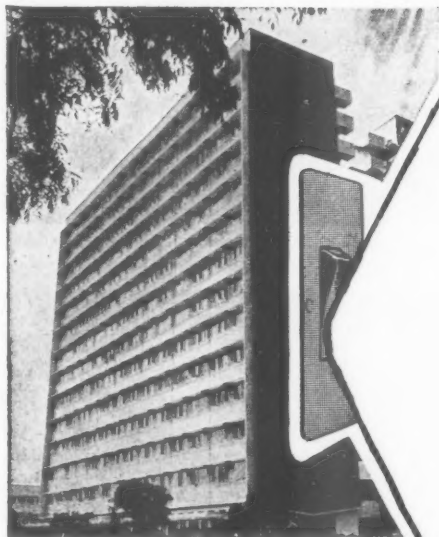
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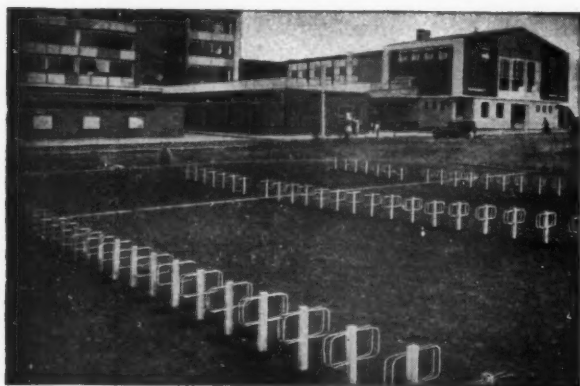
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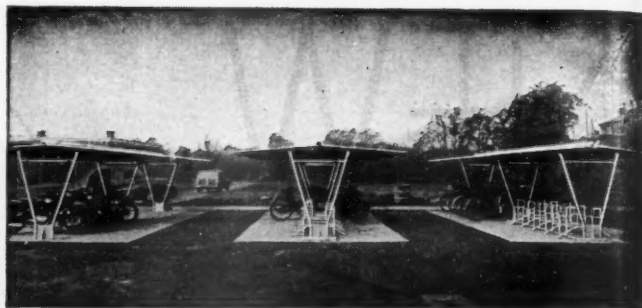
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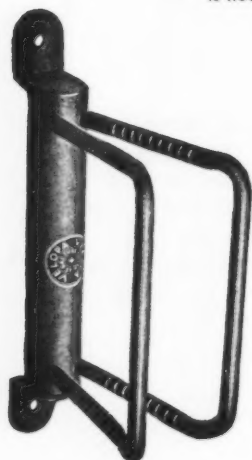
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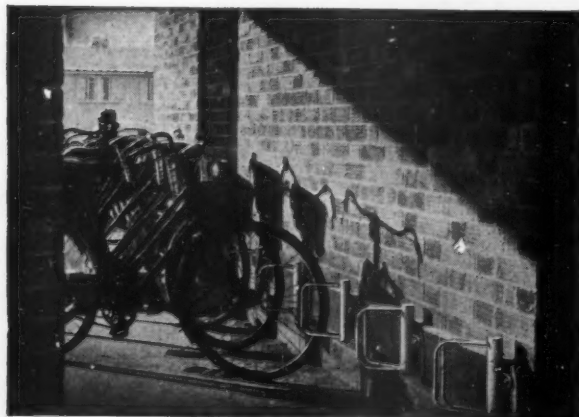
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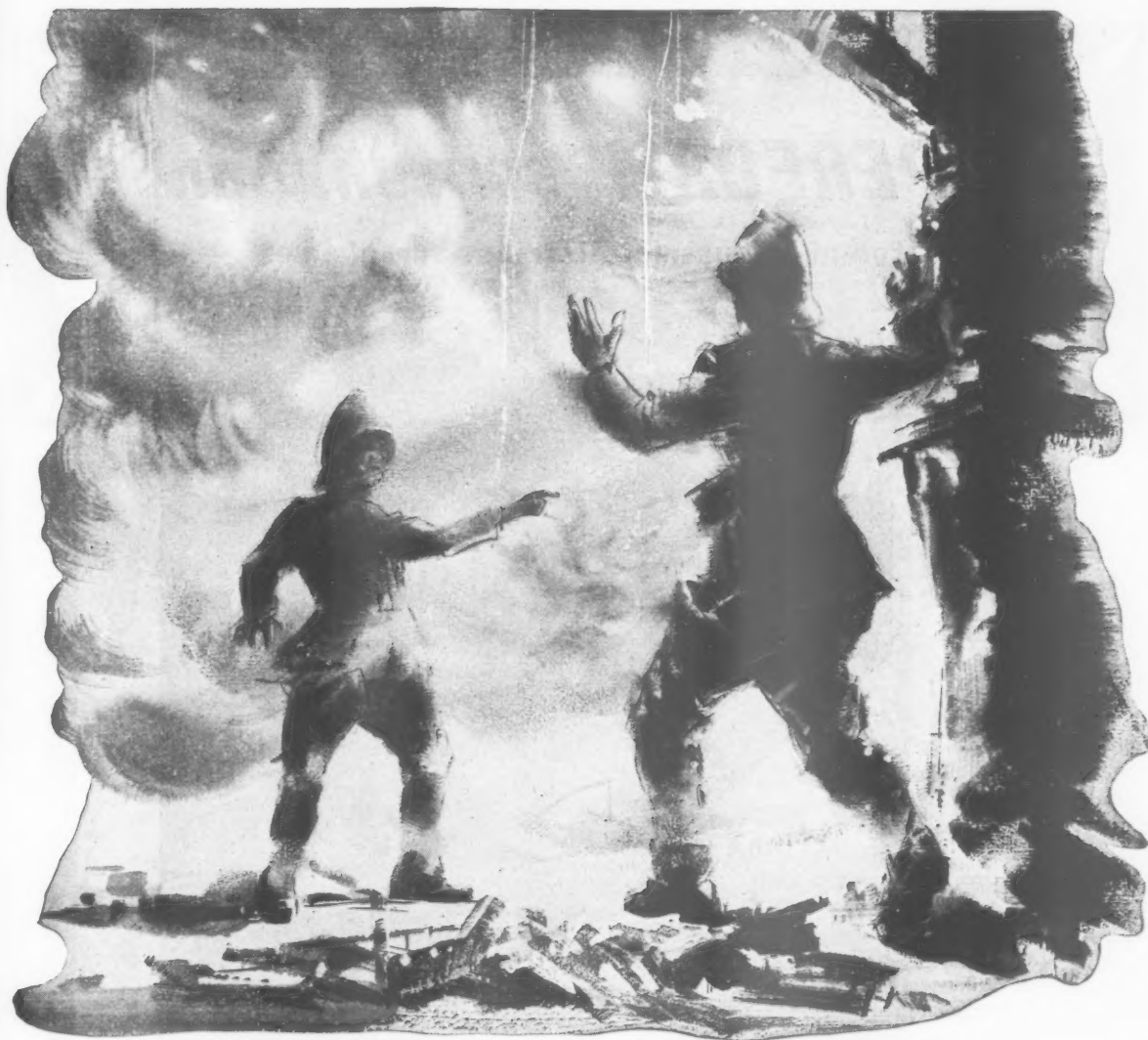


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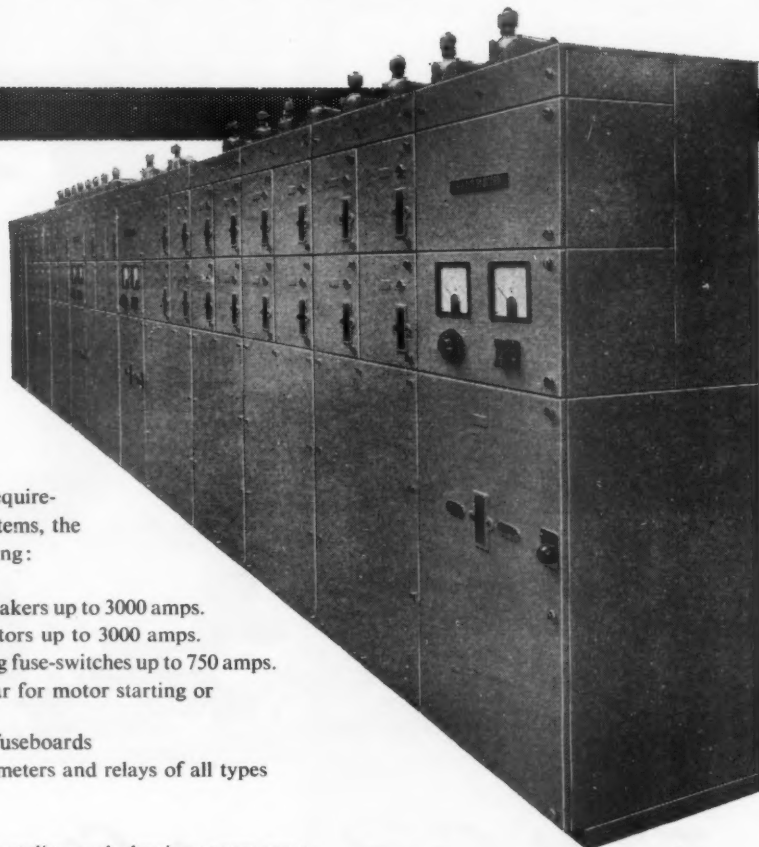


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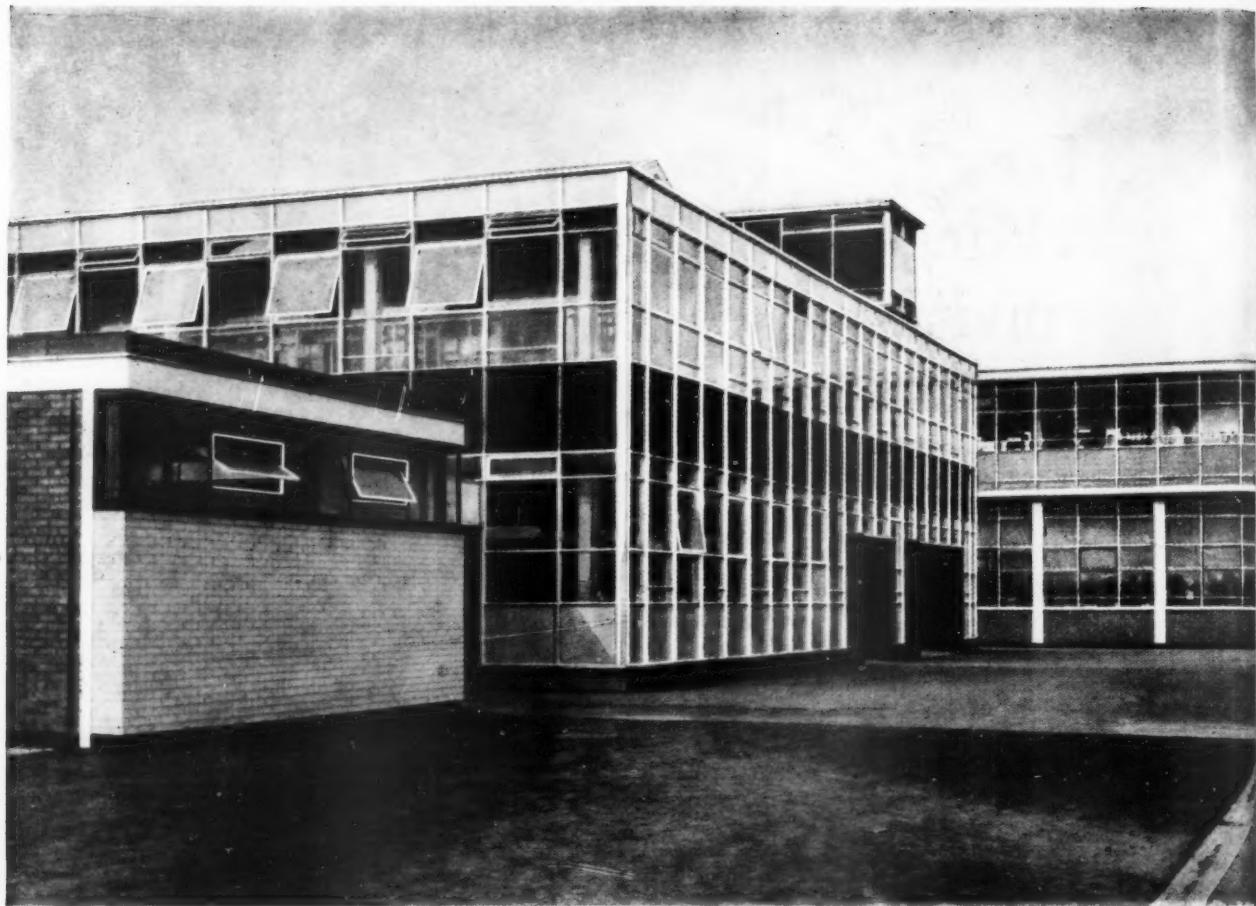
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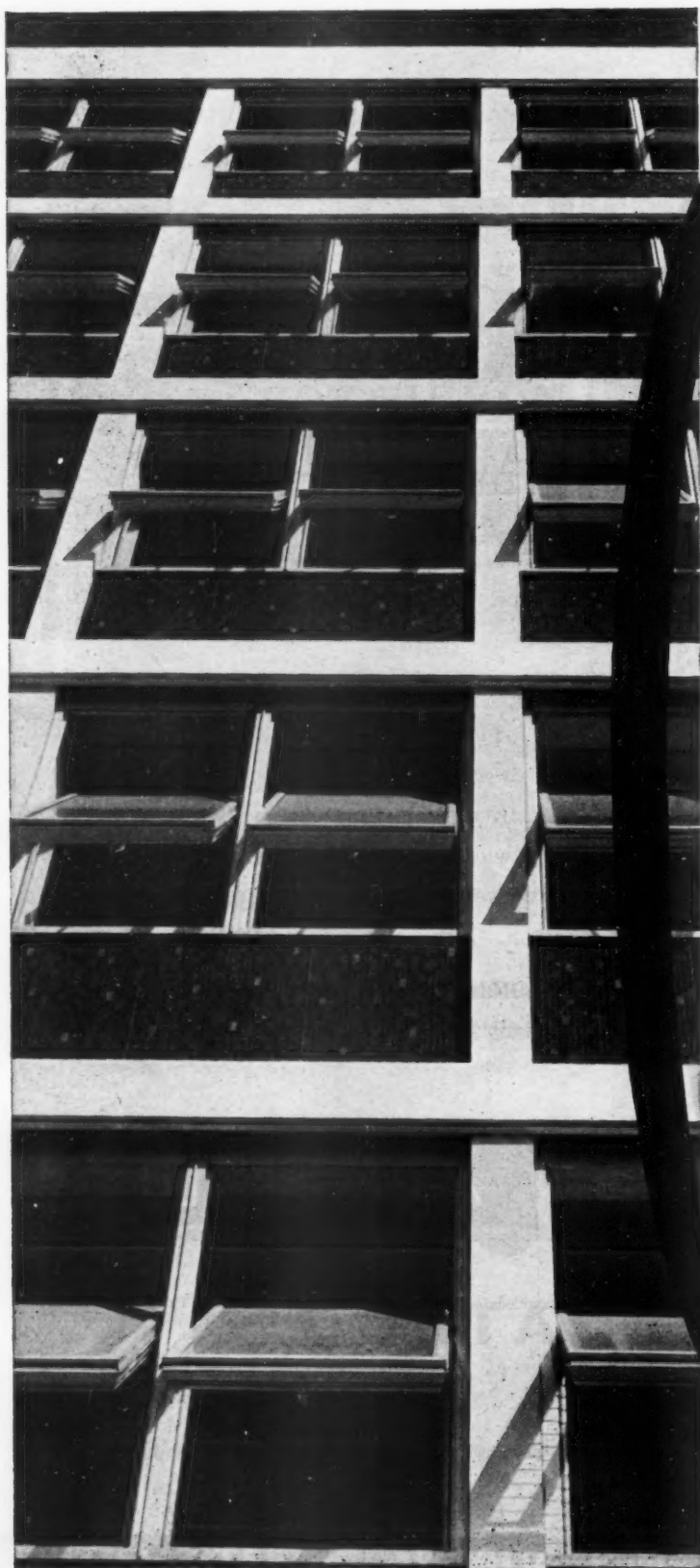


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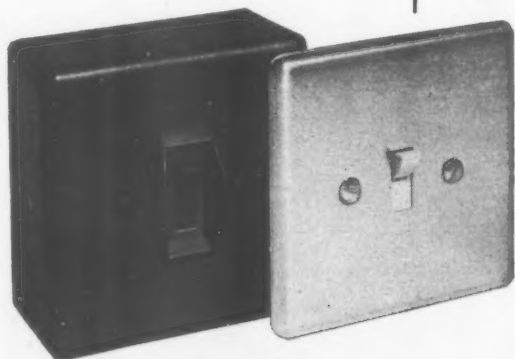
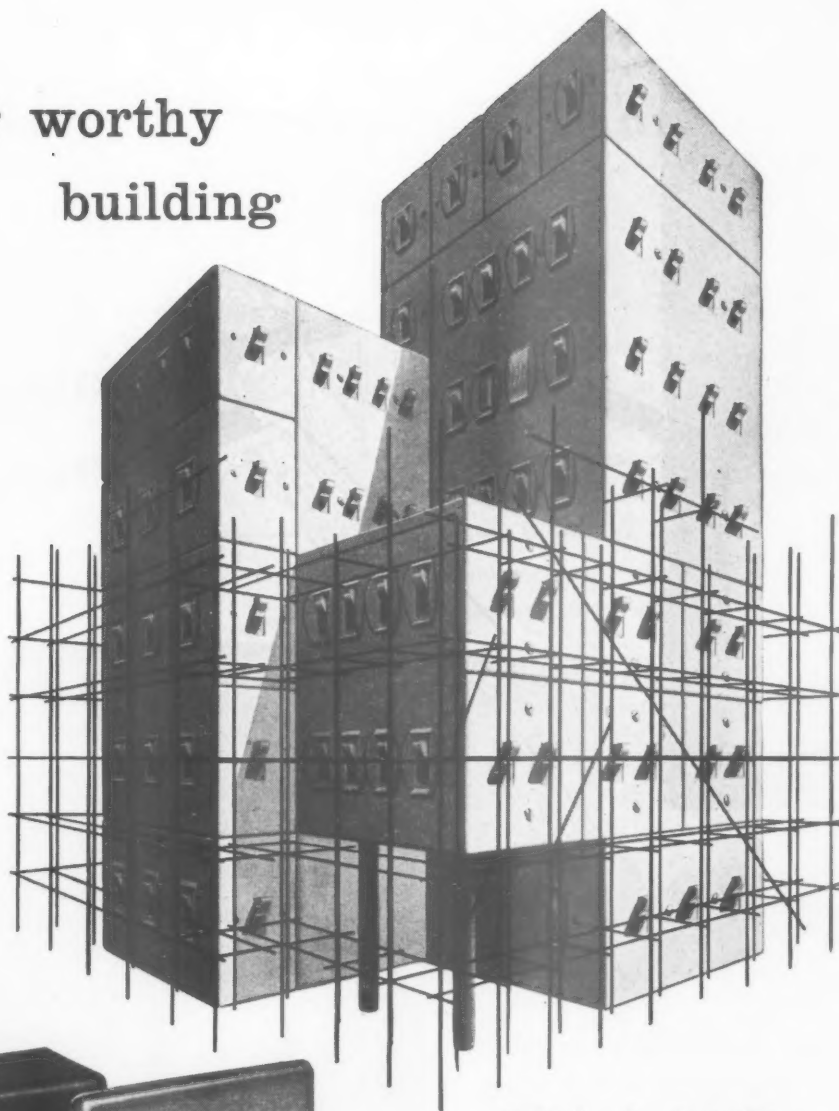
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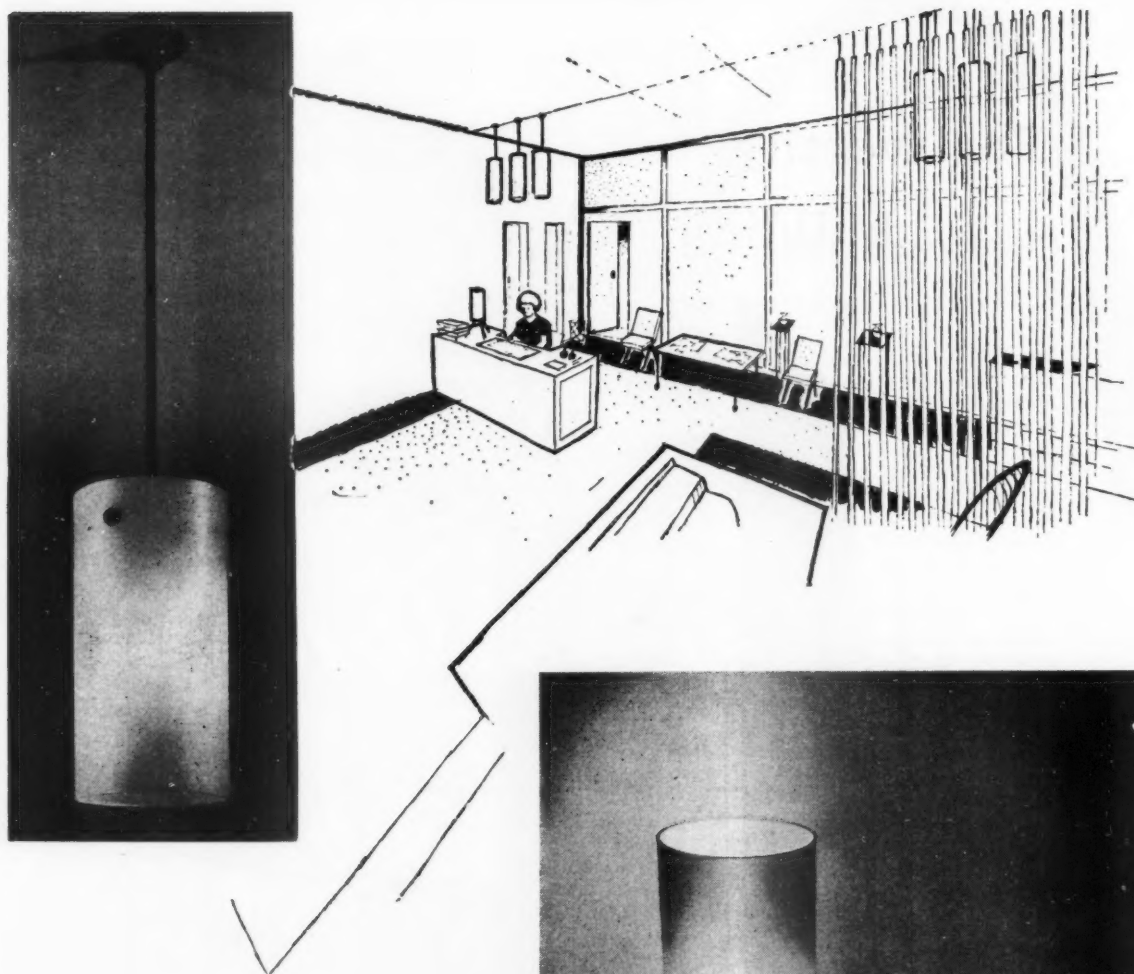
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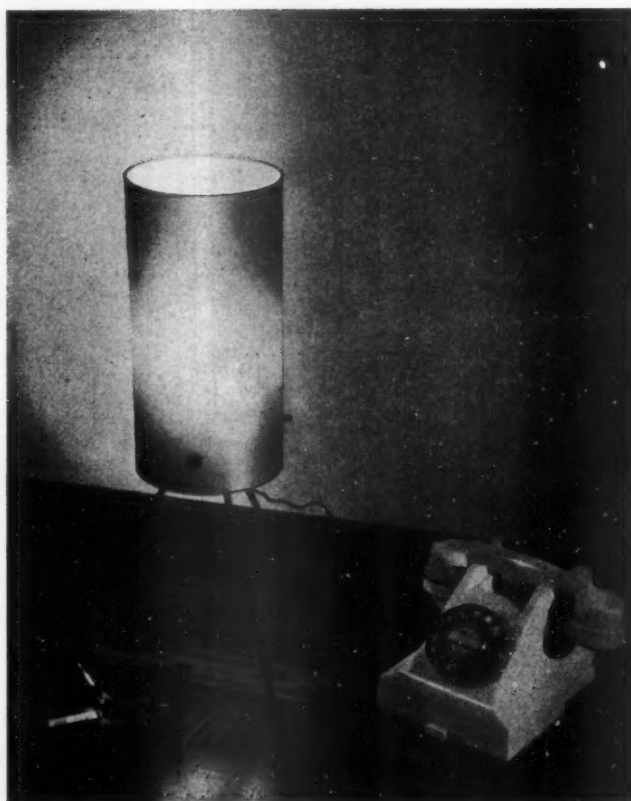
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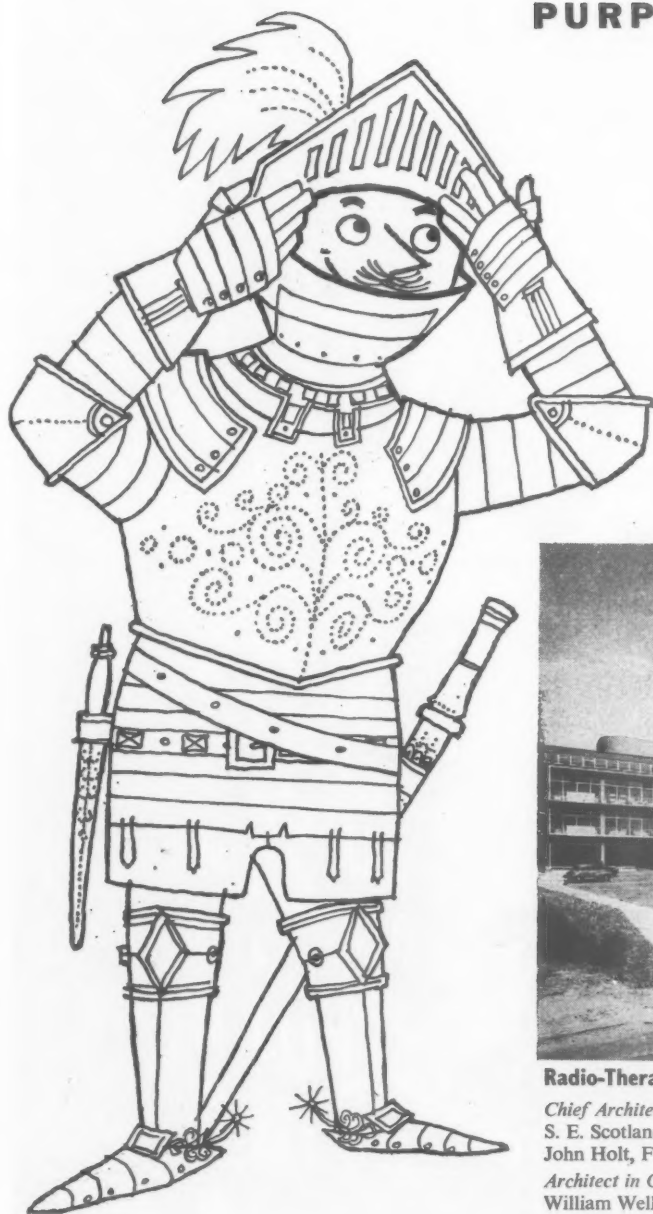


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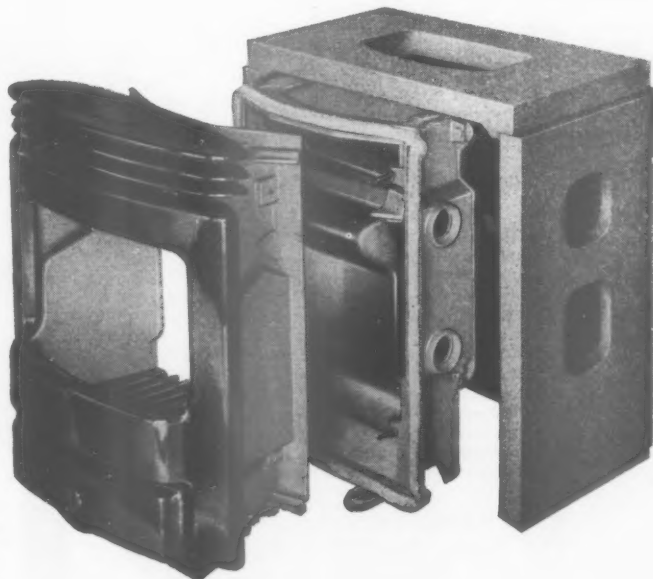
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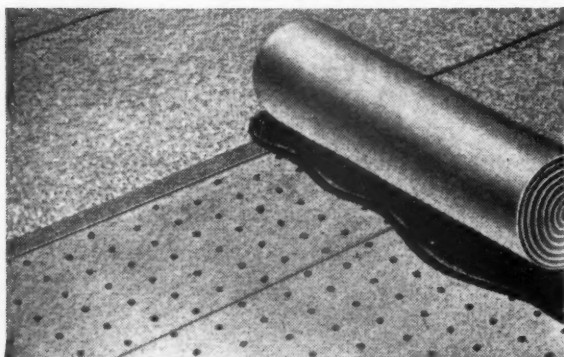
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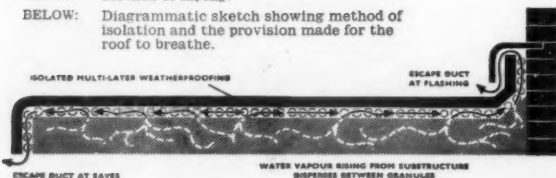
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ABOVE: Method of laying.

BELOW: Diagrammatic sketch showing method of isolation and the provision made for the roof to breathe.



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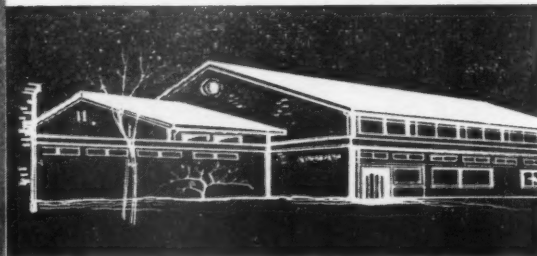
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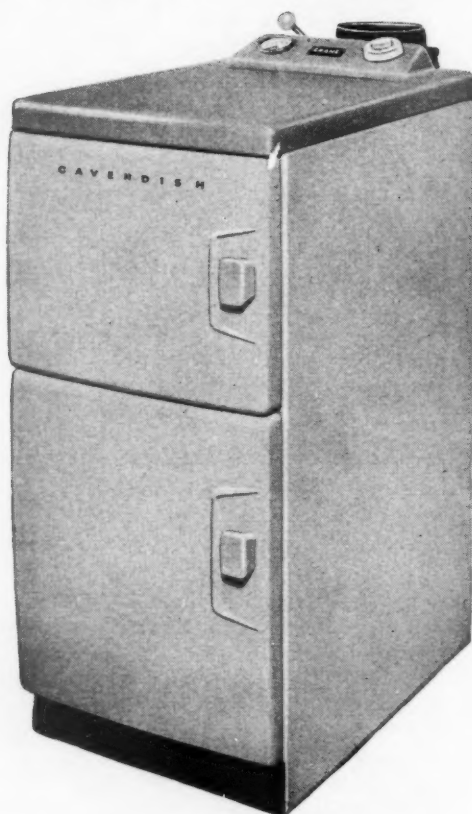


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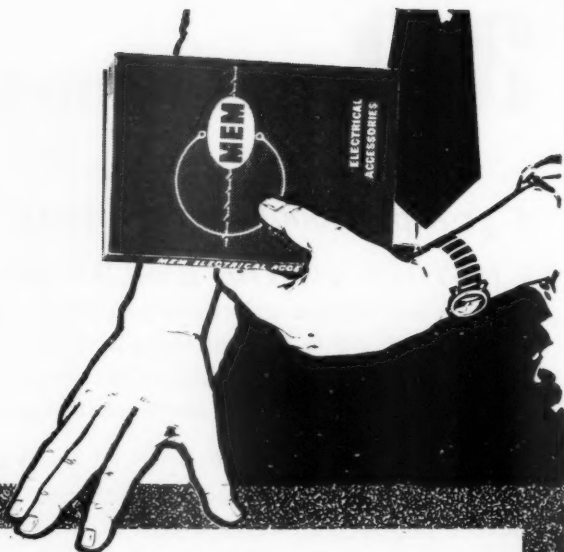
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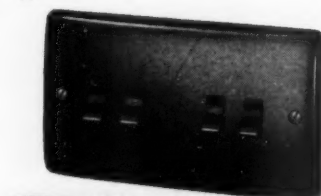
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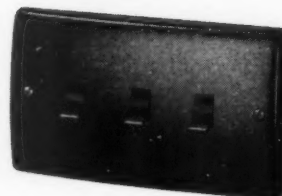


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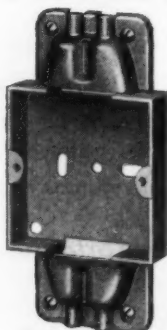
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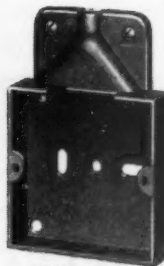
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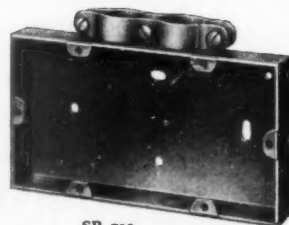
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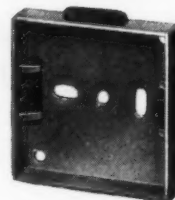
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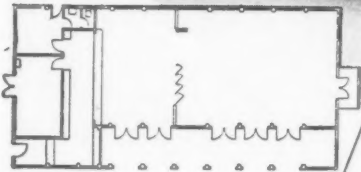
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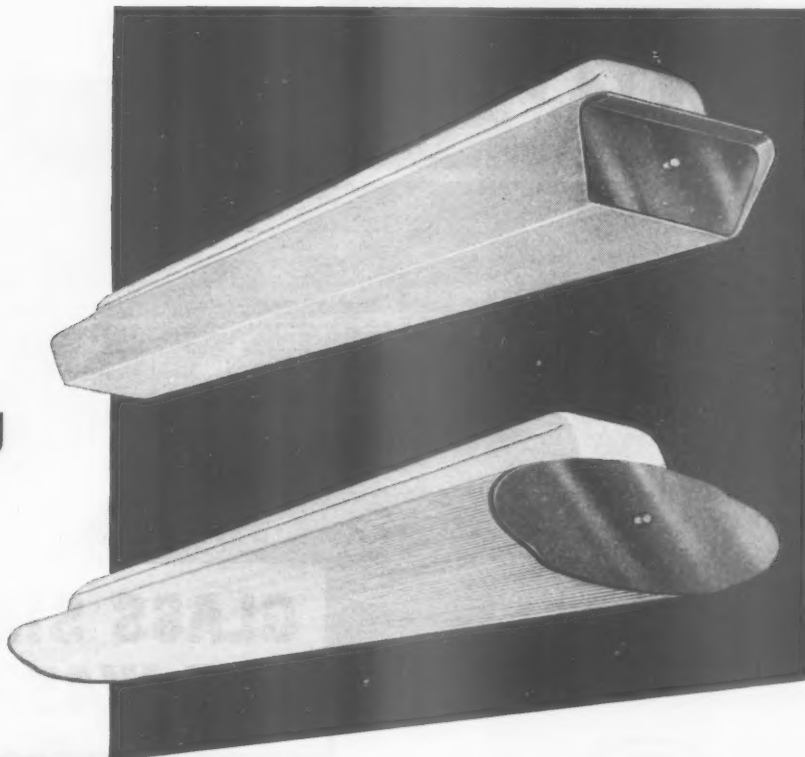


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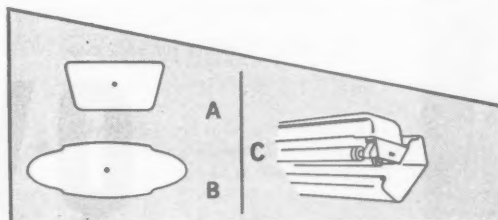
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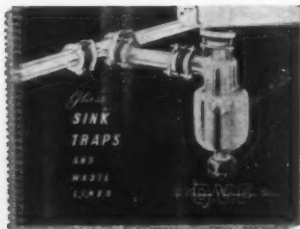
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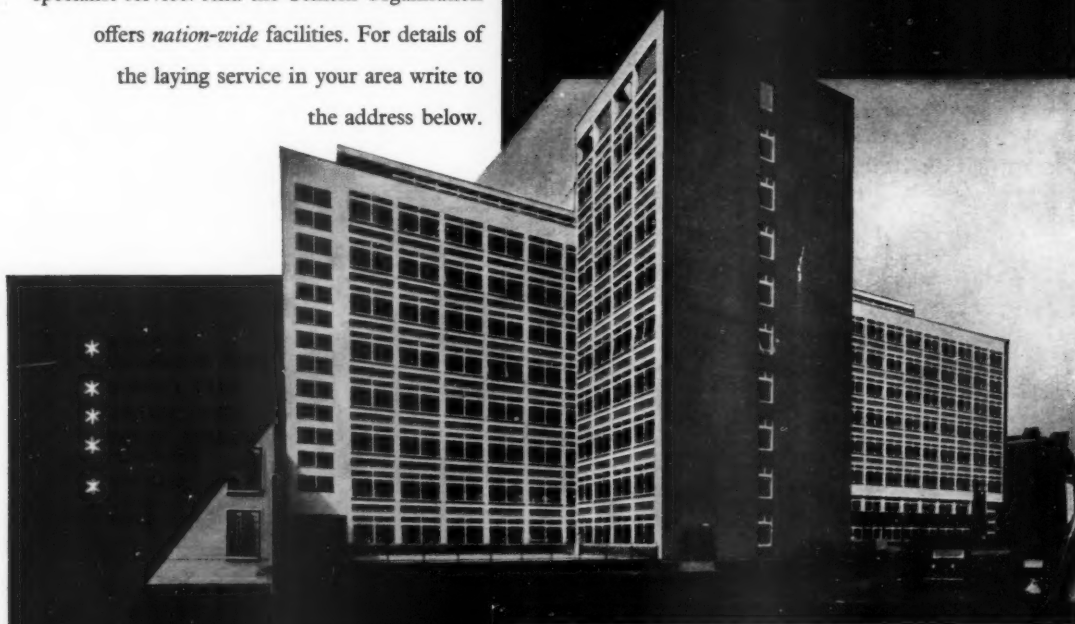


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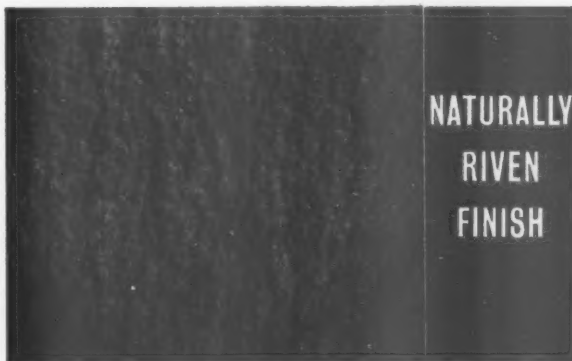
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### The Architects' Journal

No. 3374 Vol. 130. December 17, 1959

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### NOT QUITE ARCHITECTURE

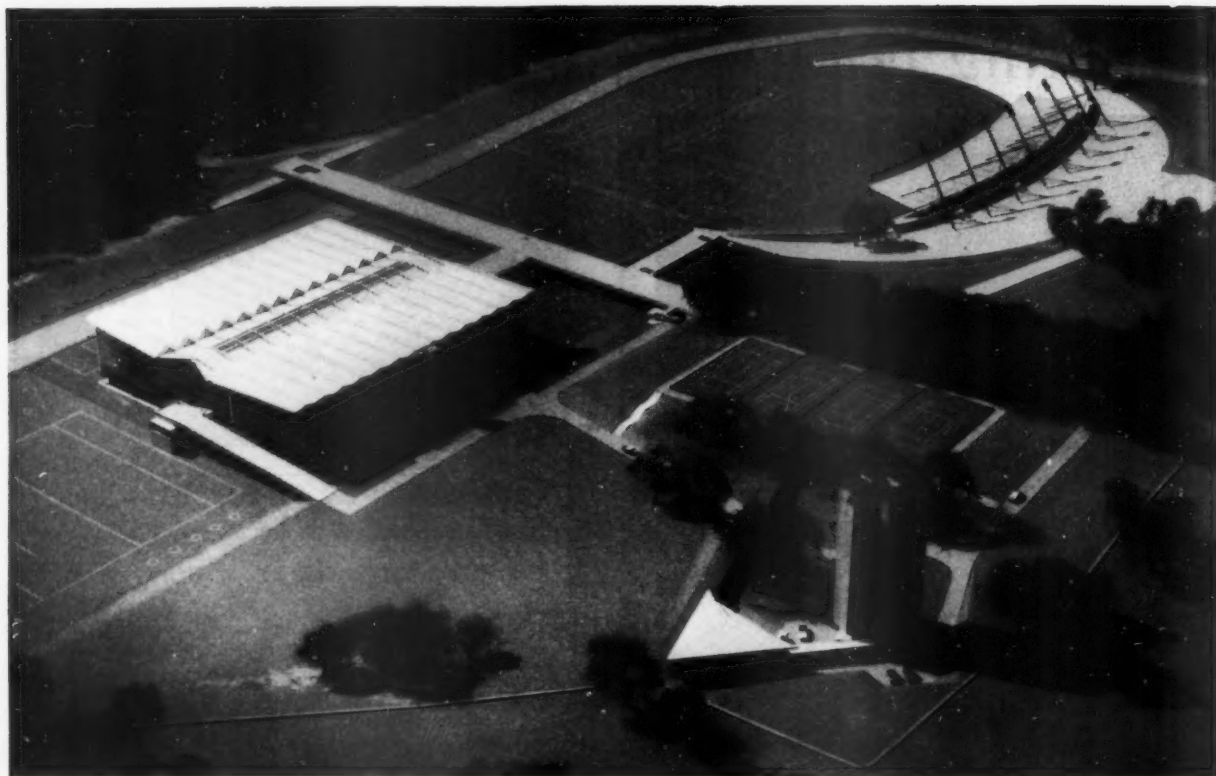
### First Time on Any Stage

Outside Jack Bond's the other day was an Elite with the familiar registration CB 23. Familiar, but I couldn't place it. I had just rejected the idea that it might be the editor of the AJ, when two Bayswater hipsters, draggin' on down toward Whiteley's, spotted the number and one said, in audible quotations, "The courts all love the way he drives!"

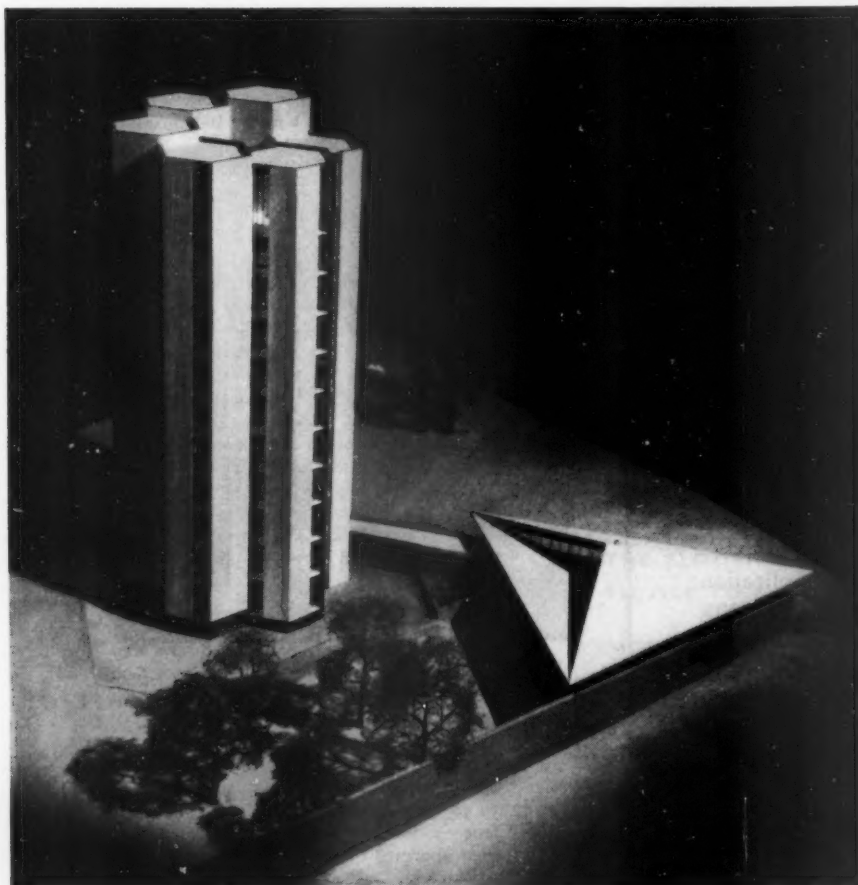
Then I got it, and flash-backed to one of the rare occasions when I was paying attention when history was made. Usually I am looking the other way, or, if I am concentrating, it doesn't happen. This cuts both ways; I saw Moss just fail to win the Italian GP in 1954, but on the other hand I stopped Corb stepping under a taxi in Picadilly. But on a certain night, also in 1954, I was looking and listening when an epoch was made.

In a fit of vicarious parental emotion we had taken a BA finalist out for an evening's unwinding in the middle of her exams. The object of the exercise was a monster concert of British Jazz at the RFH, with some festival-winning French group thrown in for sparkle. In fact, the Gallic combo was tedious and unmemorable, except that the trombonist bore an uncanny resemblance to Wells Coates, and the drummer had a face so hatchet it looked like two profiles stuck together with no head in between. Also his cymbals collapsed during a solo spot.

The historical and memorable parts were strictly from Britain. As I recall, the Ken Collyer band was billed, but the buzz had gone round that the group had split just before the concert. Sure enough, Mr. C. appeared only as a soloist, making sad, nervous trumpet in persil-white shirt-sleeves, and gathered the kind of applause that used to go to early modern architecture in England—solidarity with the motive, rather than approval of the product.



## The King George VI Memorial Hostel



The LCC is proposing to go ahead with the construction of the National Youth and Sports Centre at Crystal Palace. A design was first illustrated in the JOURNAL for December 2, 1954. Since then the design by the LCC Architects' Department has been amended. The original low hostel block now takes the form of an eleven-storey tower, left, with 46 single and 46 double rooms and three flats. At its foot is a two-storey building containing a common room, dining room and kitchen. This block is planned as a memorial to King George VI, from whose memorial funds of £100,000 has been contributed towards the cost. There have been further minor changes: the roof over the stadium has been altered: canted spars carrying lights help support a flat deck over the spectators in place of a more elaborately guyed and trussed roof; the main sports hall is now further east of the approach bridge (beneath which is a covered running track) and the end elevations are more open; and the tennis courts are now terraced into the hillside between the hostel and the hall. The cost is estimated at £2,185,000.

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Sundry other acts followed, including the inimitable and inevitable George Melly, rendering dirty blues with his expressive knees. And then on shambled the remains of the dismantled Collyer combo, looking like fugitives from an RAF canteen in spite of their spit-new uniform lounge suits. "Louts to a man" I observed appreciatively, apparently shocking our guest (who is now a pillar of architectural society in Cambridge).

Then they played. I can't remember what, because I was too busy watching the effect on the audience. With an authority that I have seen exercised in the RFH only by Schwarzkopf, they took the serried ranks of teenagers firmly in hand and just plain galvanized them. By the end of the second number, which was certainly the famous *Chimes*, there was no doubt about it—the Chris Barber band had come to the front from back of nowhere as certainly as, on a certain Easter Monday at Goodwood, Mike Hawthorn had (and, by George, I was looking that time too).

But there was more to it than just the liberation of Trad from the monopoly of a certain old Etonian and a certain mad Irishman. In the middle of the Barber act, one of the boys came up to the mike and, backed by a spare guitar and the bass, made with an old Scots number in a crazy cracked mountain-boy voice. Name of Donegan; the style of singing tagged by a word that was new to 98 per cent. of the audience—Skiffle.

I know that all the Poly students, broken down abstract painters, grounded glider pilots, singing dustmen and long-distance fretwork champions who later rode skiffle into the ground, will tell you that Lonnie Donegan is the man who ruined skiffle by commercializing it, but the fact remains that without him and a certain night when the sweet smell of promise hung on the conditioned air like the fragrance of fresh-minted folding money—without that combination of man and occasion and massed audience, skiffle would never have become the compulsive, do-it-yourself art-form that it was all through the middle Fifties, and most of these boys would still have been tracing eighth-scales or peddling matches in East Finchley or Newport Pagnell.

So let's have it on record. Skiffle did not well up mysteriously from the collective subconscious of a half-beat generation, as visiting US sociologist sentimentalists seem to imagine. It was started by a man with a known name on a date that can be fixed by going through the back files of the *Melody-Maker*. Thank you.

But where was I, in the name of History, on the day that Guy Oddie first produced the phrase *New Brutalism*?

REYNER BANHAM

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\* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous.

## The Editors

### A MINISTER THINKS BIG

TO hear a Minister of Transport proclaiming that traffic is not merely a road engineering problem, and that we must come to terms with the motor car without letting it destroy our way of life or grind our amenities out of existence, is a tonic indeed. And when the Minister, Mr. Marples, said that this problem was put best by the ARCHITECTS' JOURNAL in *Motropolis*, we can hardly repress a cheer. More important, however, was the Minister's practical proposal that a long-term study group, consisting of architects and planners should be appointed for a *full-time*, long-term study not merely of the road programme but of the whole problem. "I believe," he said, "that something like that should be set up before it is too late, and disaster overtakes us as it has done some American cities."

The sooner this suggestion is acted upon, the better. Not only the Ministry of Transport, but the Ministry of Housing and Local Government (as the planning Ministry) and possibly the Board of Trade (responsible for the location of industry) should be associated with it. The government should cut through its establishment red tape, and engage the best men from all the professions concerned to form a research group to be charged with a task of immense urgency and importance.

### NON-TRADITIONAL NO GOOD?

BRS's latest study can be described as contentious and misleading. Special Report No. 30 in the National Building Studies Series, entitled "A Study of Alternative Methods of House Construction,"\* came out last week. It is a report on an investigation of the building of 412 houses by five contractors. These houses were of four different types. One was traditional and the others incorporated a variety of alternative methods of construction. The object was to find out if the use of these newer alternatives (most of which involved a transference of labour from site to factory) led to cheaper building.

The principal innovations to be tested in this way were storey-height plaster partitions, timber framed plasterboard faced panels used for both internal partitions and ceilings, pre-

\* HMSO. 7s. 6d.

fabricated first floor panels, trussed rafter and trussed purlin roofs, the hanging of doors on their frames in the factory, prefabricated plumbing and building in no-fines concrete. The main conclusions of the tests were as follows: any savings in site labour made by prefabricating wall and ceiling panels were more than off-set by the extra cost of plastering the remaining, awkwardly shaped, surfaces, by the high overheads occasioned by factory production and, in some cases, by the higher cost of the materials used. Both the trussed rafter and the trussed purlin roofs proved more expensive (by 7 and 14 per cent., respectively) than the traditional roof they were designed to replace (though, as the report points out, the fact that these could dispense with internal support might have realized a saving in partitions). The pre-hanging of doors was not a success as most had to be re-hung on site; and pre-painting did not make a final coat unnecessary. Prefabricated plumbing systems saved site labour, but were more costly in materials. Lastly, the no-fines technique cost almost as much in materials and factory labour as the final erected cost of the whole traditional house.

All these conclusions are of interest, but whether they can be used to justify the general moral which BRS draws from them is another matter. This moral is "that, in general, economy in house building can best be sought in the evolution of traditional processes rather than in the introduction of radically different principles of construction." The basic flaw in the experiment is that the type of house plan chosen is the plan which has been evolved with traditional techniques in mind. It is not really surprising that non-traditional techniques show to a disadvantage in such circumstances. Time and again the field work behind the report brought to light items which would have been designed differently if the nature of the technique had been taken into account. Thus "hole-in-the-wall" type windows are evidently the wrong form if you are using storey-height inner skin panels. But criticism goes deeper than this. If you are going to extend prefabrication to the structural parts of a house, would it not be more logical to turn to a lightweight single storeyed building as is done in America? To build a between-the-wars semi-detached house by this means is like building a hansom cab in a motor cycle works; it can be done, but is it worth it? This BRS study is useful in giving us a check against extravagant manufacturers' claims, but it is of little value in determining the basic merits of prefabrication. BRS has had great success in recent years in rationalizing traditional techniques; but the right exploitation of non-traditional techniques is equally, if not more, important and it is very wrong to use incomplete evidence of this kind as the excuse for neglecting it. The BRS effort lacks that quality of imagination which is essential to any research organization. One last point. The field work which formed the basis of this study was finished in December, 1956: why do we have to wait so long for the published result?



#### NOT ENOUGH RESEARCH

A report made by the Committee on Scientific Manpower shows that the building industry is just as backward in scientific research as we all knew it was. In 1956 the industry, which was then employing 3,800 scientists and engineers, estimated that the figure would increase by 30 per cent in three years. They were 21 per cent too high in their estimate. And local authorities, who hoped for a 25 per cent increase (largely in civil and structural engineers) were also too optimistic by 21 per cent. (Incidentally, if you like statistics you may be interested in the following breakdown of that figure of 3,800: civil and structural engineers, 3,332; chemists, 19; geologists, 50; mathematicians, 3; physicists; metallurgists, 3.)

The Committee doesn't attempt to explain why the industry or the local authorities aren't getting their share of scientists and engineers, though it does mention economic difficulties and unattractive conditions. Salaries have something to do with it. They don't compare favourably with those offered in more go-ahead industries. And then, of course, there is the sad fact that building research is woefully small in proportion to the industry's production.

#### LOOK ON MY WORKS . . .

To a packed house at the RIBA Sir

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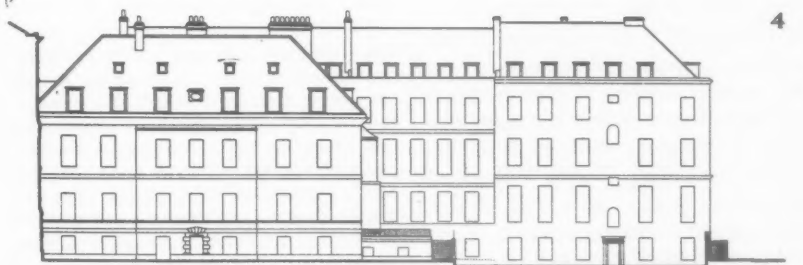
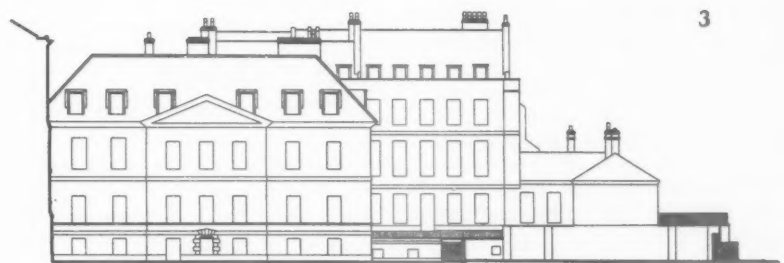
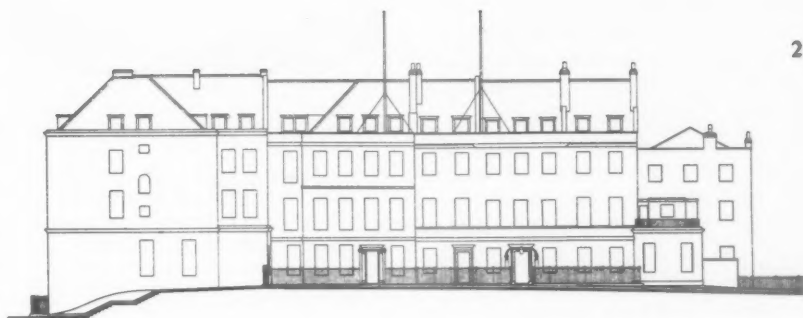
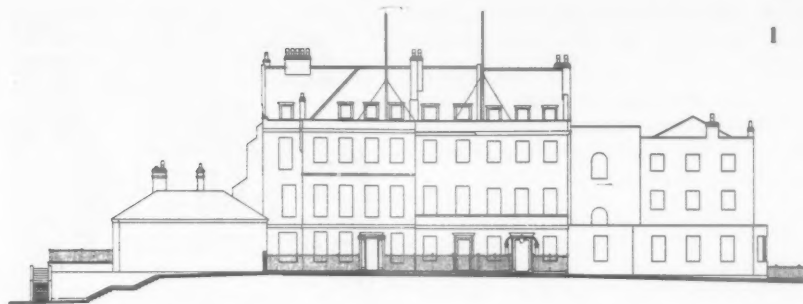
William Holford gave another of his usual smoothly competent and stimulating talks last week. His subject (not always so perfectly illustrated) was Brasilia—the new capital city in South America of which Sir William shared in the creation by helping to choose the winning city plan in a competition a few years ago. In a little over two years the city has made remarkable progress. J. M. Richards brought back photographs of the hotel and the president's palace which were published in the JOURNAL of November 6, 1958. Since then the Supreme Court Building has nearly been completed and a considerable number of slab blocks of flats and terrace houses—enough to house 90,000 people. Holford spoke admiringly of the road plan, which does cater for the motor-car, of the residential squares walled with trees, of the immense enthusiasm which the project has engendered amongst Brazilians, and, more surprisingly, of the Free City, the unplanned, unserved sprawl of shacks which lies on the outskirts. This Holford found a stimulating change from the planned order of the new city. A sort of architectural *nostalgie de la boue* which comes over the most surprising people as the Piccadilly controversy shows.

\*

Brazil, Sir William emphasized, has like Elizabethan England, a people with a great spirit of adventure, and great extremes of wealth and poverty. To ASTRAGAL, Brasilia seems to be painfully near to echoing so many great city-moving ventures of the past. Let's hope the ordinary people, who apparently have such faith in this venture, are not being misled.

#### NEW LINE ON HOOK

The LCC is to prepare a detailed master plan for its New Town—with an ultimate population of 100,000—at Hook in Hampshire. Will it contain any new ideas on town planning? It is no secret that the LCC Housing Committee, which is responsible, curiously enough, for the project, likes two-storey, low-density development in its town development schemes. But the proposed site is hemmed between other built-up areas and anyway, I don't suppose the Ministry would be keen on yet another scattered new town near London. The more one looks at the site chosen the clearer it



The first and third elevations are of the front and rear of Downing Street respectively. The other elevations show Raymond Erith's proposals for rebuilding. As can be seen No. 12, on the left, which was burnt down in 1879, is being rebuilt to its full height, and No. 10 is being extended by adding three floors over the single-storey wing on the right. An enclosed courtyard, now built over in No. 10, is to be restored and the Soane dining room in No. 11 is to be extended to reach the terrace in the rear. On the elevations facing Horse Guards Parade Erith has removed the pediment on the rear of No. 10, a decision for which it would be interesting to know the reason. The reconstruction of Downing Street and the restoration of Treasury old Buildings (Soane's Judicial Block in Downing Street and Kent's Treasury) is estimated to cost £1,250,000.

seems that the Ministry and the LCC might do well to think again—in terms of a new town, or even a new city, right outside the overdeveloped south-east quadrant.

#### BE MORE BENEVOLENT

The Victorian theme brought out the best in everybody concerned with last week's ABS Ball—the nine-piece band (the Temperance Seven, who are said



to be one over the eight), the students who decorated the Grosvenor House ballroom (some of the nudes lacked Victorian modesty, though) and the advertising copywriters who made the menu highly rewarding (with a profit of some £3,000) and very entertaining.

\*

If you didn't buy a ticket for the ball I hope you won't forget that the ABS doesn't mind how or when it gets gifts. I'm glad to hear that the RIBA Council is supporting Basil Spence's suggestion that the Institute should collect a voluntary additional subscription of five shillings a year for the ABS, provided that administrative difficulties can be overcome. But is this five shillings subscription really enough when you consider that it is voluntary and that only 10 per cent. of RIBA members contribute directly to the ABS? A lot of people in the profession are doing pretty well just now, so let's aim at a higher figure for contributions.

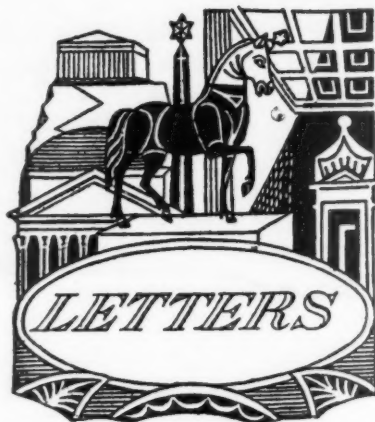
#### AT LEAST WE'LL HAVE PICTURES

All over the country towns and villages are being spoiled by road widening. Yes, I know we've got to have better roads, but in the end these towns and villages will be by-passed—so isn't it rather sad that we should destroy some of their best buildings in the meantime? I was reminded of this imbecile, stop-gap demolition by the 18th annual report of the National Buildings Record, which has many pictures of buildings threatened or destroyed—including some thatched cottages in Newton St. Cyres, Devon, which are to be pulled down to widen the main Exeter-Barnstaple road.

\*

I'm glad to see that the architectural records of England and Wales are now equal to those of other European countries. But how odd that the Crown Commissioners should evict the NBR offices from Chester Terrace next year, to make way for private tenants. Let's hope, however, that this results in the half a million photographs and drawings being housed in more suitable premises.

ASTRAGAL



*W. Sinclair Gauldie, F.R.I.B.A.*

*Stanley Milburn, F.R.I.B.A.*

*Geoffrey Salmon, A.R.I.B.A.*

*J. L. Smith, A.R.I.B.A.*

*Paul Ritter, A.R.I.B.A., A.M.T.P.I.*  
*Secretary Institute of Registered Architects*

*J. D. C. Churchill,*  
*Assistant Secretary, London Transport Executive*

#### A Note of Reality

SIR: The argument for and against the architect-director in contracting has been conducted on such a starry-eyed plane that I can't resist sounding a note of brutal reality.

The use *ad nauseam* of the words "building team" is hypnotising us into the cosy belief that the builder's one object is to give our clients the best possible job and all he needs is a full set of drawings and a helping hand. The client, on the other hand, expects the contractor to be after profit (honest or otherwise)—hence the justification for these expensive watchdogs, the architect, the surveyor and the clerk of works.

If he is mistaken, should we not tell him so, and gracefully withdraw when site operations commence?

If he is right (and even a slight acquaintance with the contractual underworld suggests that he is not wholly wrong) then we ought to stick by him even if our ethical hair-shirt does tickle a bit.

It could be fun, of course, to have a finger in the contractual pie (and a fat expense-account) but there is also a mild pleasure, masochistic if you like, in living up to a higher code of conduct than the jungle-ethic of the "business" world.

The most remarkable inference of all, by the way, is that we are such ineffectual watchdogs that it does not really matter which

side we are on. Put *that* into the public's head and see where it gets us.

W. SINCLAIR GAULDIE

Dundee

SIR: I am writing to support and congratulate Mr. John G. Fryman upon the views he expressed in his letter to you, published in the AJ for November 26, 1959. The opinion expressed in this letter upon the difficult question as to whether architects should become directors of building organizations, together with the President of the RIBA's proposal for the formation of a Super Council would, I think, in course of time, go a very long way towards solving this problem, and greatly assist the movement taking place in this country to provide better architecture.

STANLEY MILBURN

Sunderland

#### What is an Architect?

SIR: If one is to pursue the line of thought indicated in your leading article of November 19 on the report of the Oxford Architectural Education Conference, inevitably the enormous and slightly staggering question must be asked—"What is an architect?" It is, as you say, imperative to take a wide view. How then can education in the whole building field be related or balanced unless we have a clear idea of what the men we are educating are supposed to be doing? Your proposals to evolve a "better breakdown of responsibilities" and a "better co-ordinated building team" are old saws which are becoming blunt with grinding. What we surely must find out and determine before the engineers, builders and surveyors do it for us, is our own actual and potential economic and social value to the community which we want to serve. You are surely in a far better position to promote wide and radical discussion on this than any RIBA or other Committee. When can we expect you to begin?

GEOFFREY SALMON

London

#### Master and Pupil

SIR: I regret that I lost the thread of Mr. Pyke's reasoning about half way through his letter (AJ, December 3), but I take his conclusion to be a suggestion that the traditional master/apprentice (or pupil) method of training has advantages over the present school system.

I do not doubt that to study under the guidance of such men as Bramante, Inigo Jones, Lutyens, Gropius or Jacobsen is the best way of discovering whether or not one has any talent for architecture, but I do not think there are enough "masters" in the world to cope with today's training requirements.

I am sure that Mr. Pyke appreciates that a large number of principals at present practising, including some of the more eminent ones, are merely business administrators who have perhaps lost touch with the personal creation of architecture. The system of articulated pupillage killed itself by the practice



of some "masters" in misusing it as a means of obtaining keen, cheap labour, and in any case it always has been rare for an apprentice to be allowed to "prove" himself whilst serving articles. Too few modern "masters" know their job well enough to be able to impart sufficient knowledge to others.

J. L. SMITH

Brighton

## Radburn Layout

SIR: The critic of my Housing Centre talk on Radburn should remember that this was merely an epilogue to my Radburn exhibition, in which all the facts and figures he asks for were displayed, and all the literature containing them immediately available. Thus I have no desire to learn how to present material "with less dash" (or might we call it "enthusiasm") even if the logic of the talk escaped the critic.

Far from my "conceding" that most of the British Radburns had failed, I spent much time pointing out the shortcomings of the examples, in contrast to the basic idea, and my plea was not to "throw out the baby with the bathwater" in further development. After all, my research during the past 10 years has been aimed at diagnosing the weaknesses of the existing Radburn schemes so that I might be in a position to show how they can be avoided.

The critic's own fact and figures about my talk hardly show a good example: knowing why some of the slides were upside-down, I can give him the exact figures: it was not "every slide" but nine out of 74.

PAUL RITTER

Nottingham

## Motropolis

SIR: To those who live from day to day with the traffic congestion problem, Mr. MacEwen's article in the "Motropolis" issue of the ARCHITECTS' JOURNAL may not bring to light any novel ideas with the important exception that architects should be included in the team appointed to tackle the urban congestion problem. It is refreshing, however, to have the various aspects of this intractable problem stated forthrightly in proper relation to each other. The broad conclusions that the author draws from his analysis are sound, but he stops short of advocating solutions.

Nobody will disagree with Mr. MacEwen when he points out that before we can design the new road system we need there must be research. Before we know the basic facts of traffic flow and thus make confident predictions of future demand, we cannot be sure whether urban motorways are the correct solution to the urban congestion problem. Until the answer to this fundamental question is found, there is obviously no choice but to press on with what is in fact present policy, namely, improving the roads we have got. Whether fast enough progress is being made is another question. It is no doubt legitimate to point to the USA which is so much farther along the road to a completely car-based civilization than this country, and to imply that what has happened there will happen here unless

we take avoiding action. It should be remembered, however, that in considering private versus public transport in the United States, circumstances there differ from circumstances in this country in a fundamental respect, namely the basis of the respective fares systems. In the United States, public transport fares derive from the flat fare, a single charge irrespective of distance travelled. This system may have worked well in the early days when cities were small and compact. At the present time, however, when cities have expanded and spread outwards far beyond their confines of a century ago, distances travelled have lengthened and the fare has had to be increased to a level which makes a short journey very expensive. The flat fare in American cities is on average about 20 cents, equivalent to 1s. 5d. In London, the passenger gets 8 miles of travel for that sum.

In American cities short distance traffic has consequently been driven away. By contrast, in London 45 per cent. of Central Bus traffic is at the minimum fare for distances up to 1 mile. The American people have got out of the habit of using their public transport for the myriad odd short journeys that the Londoner thinks nothing of making by bus or tube even if he is a car owner. To be seen on a bus or the tube in this country is not considered a sign of social inferiority as it is supposed to be in the USA.

In these circumstances the Englishman is probably more open to persuasion in accepting, in the common interest, reasonable restraints in the use of his car, even to using public transport instead, at any rate so far as regular journeys in towns are concerned. The obvious example of restraint in the public interest is abolition of free street parking. Even in America, as the author shows, the proportion of motorists who would readily switch to public transport if convenient facilities at reasonable cost could be provided is relatively high.

Mr. MacEwen does not, however, help his case by implying, inadvertently no doubt, that the 650,000 odd new vehicles registered in the first half of this year were all cars and commercial vehicles. The number includes over 30,000 agricultural tractors and similar vehicles rarely used on roads, and nearly 200,000 motor cycles, motor scooters, three-wheelers, etc. But it is not new registrations which matter but the growth in vehicles currently licensed. In May 1959, these were 8 per cent. more than in May 1958, admittedly a substantial but hardly a dramatic growth in a year.

He is certainly going too far in suggesting, in the context of commuter travel to and from the central area, that public transport is being given "another push towards the grave" as more and more people turn to the car or scooter. Over nine-tenths of central London workers are brought in by public transport. It is, however, true that the number of central London workers who use personal transport to get to and from work is growing and that this growth is largely at the expense of traffic brought in by bus; the process was given a fillip by the bus strike of 1958. The main reason is

growing street congestion caused in large part by the increase in the number of cars. A primary cause of congestion is indiscriminate street parking, and this state of affairs will continue so long as we are prepared to indulge the small motoring minority who commute to work by car in central London in this way. Time will be bought if the means which are being introduced for abolishing free street parking and clearing the car commuter from the streets prove effective.

This argument admittedly only holds good for the central area. Similar solutions will be necessary for the growing problem of congestion in the main suburban centres outside central London.

The bus will be unable to pull its full weight until traffic congestion is eliminated. The first thing is to create conditions in which the private motorist is able to use his car or scooter in a way that causes no inconvenience to the general public. This means that for some journeys now made by car it would be preferable for him to leave his car at home and use public transport. In this way the "balance between the capacity of the road system and the number of vehicles on it" referred to by Mr. MacEwen might be brought about. Once this balance has been achieved it will then be possible to see how far the road system is inadequate for present-day purposes, and what sort of improvements and additions are necessary, allowing for future growth of traffic.

The author refers to the suggestion in the London Roads Committee report that public transport will be called upon to carry additional passengers as motorists find it more difficult to park their cars and asks how public transport is to do its job, going on to suggest that it will have to be "reconstructed." I would only remind him that, when petrol was rationed after the Suez affair in April, 1957, and the volume of road traffic was reduced more nearly to what the streets could bear, the buses were able to run more regularly and more speedily. The additional traffic of erstwhile motorists that they were called upon to carry was conveyed without difficulty and without increasing the scheduled service.

In conclusion, however, these thoughts do not imply any fundamental disagreement with the author's conclusions. As a transport man I would add a corollary, perhaps implicit in the second conclusion, that not only should full use be made of public transport in cities but also that town planning should actively encourage this end. But in matters of such crucial importance, I am convinced that it would, even at this late hour, be prudent to hasten slowly. Before launching out into vast expenditure on urban road expansions we must first be certain that we have got the right answer. We must first ascertain the facts. While this essential fundamental research is going on we should devote all available resources to improving the roads we have in the certainty that the money spent will not be wasted.

J. D. C. CHURCHILL

Assistant Secretary,

London Transport Executive



## RIBA

### Competition by Tender

News released at the monthly RIBA press conference, held last week in the President's absence by Vice-President A. G. Sheppard Fidler, included the following:

#### Competition by Tender

An *ad hoc* meeting was held at the RIBA in November to consider the increasing practice among some authorities of offering valuable sites to competing financial developers and accepting in virtually all cases the highest bid—a practice which it is felt puts good architecture in jeopardy. The meeting was attended by R. G. Covell, C. H. Elsom, J. H. Forshaw, F. Collins, S. Greenwood, W. F. Howard and A. E. T. Matthews. It is hoped that at a further meeting they will be joined by Hubert Bennett (Architect to the LCC) and the LCC Valuer.

Various opinions expressed at this meeting are to be further discussed by the *ad hoc* committee. It seems that the committee is hoping to find a solution by devising a new form of competition, and is to meet again to explore this more thoroughly. The Committee is also considering how "competition by tender" affects the Code of Practice, and any new form of competition would not only have to be acceptable to local authorities but would require the revision of the Competition Regulations.

#### Visit to Canada

Basil Spence has been invited by the University of Manitoba to attend the Annual Assembly of the Royal Architectural Institute of Canada at Winnipeg next May, and to take part in the opening ceremony of the University's new School of Architecture. The RIBA Council has approved the necessary expenditure, which falls well within the sum of £1,000 budgeted for overseas liaison.

#### The "Higher Council"

An informal lunch party to be attended by the Presidents and Secretaries of the other professional bodies concerned with land use is to be held on January 12, 1960, to dis-

cuss Basil Spence's suggestion, made in his Inaugural Address, that a Higher Council of these professions should be formed to discuss the problems created by the motor-car.

#### University Planning

A deputation from the RIBA, led by Sir Leslie Martin, has met the University Grants Committee to explain the views of the RIBA on Schools of Architecture in Universities. Particular stress was laid on the cases of Nottingham and Bristol, and the UGC promised to give the RIBA case the most careful consideration in their forward planning.

#### Hospital Conference

A Hospital Conference is being arranged from May 23 to 27 next year, with the assistance of the Ministry of Health, the Nuffield Foundation, the King Edward Trust and the Regional Hospital Boards. It is intended to form an introduction for architects who have not previously designed hospitals but may well be doing so in the next few years. It takes the place of a proposed symposium on high buildings which has been postponed to the next session.

#### Level of New Work

The results of the inquiry into new work for which private architects have been appointed, for the third quarter of 1959, show a considerable improvement compared with 1958. New commissions for private housing were more than doubled, and those for industrial building showed a considerable improvement. Commissions for offices and banks have been at a low level this year, other commercial buildings show signs of an increase, and more work is reaching private architects from local authorities.

#### Reception

A reception is to be held at the RIBA in the spring of next year.

#### Housing Standards

The RIBA is to present evidence to the Central Housing Advisory Committee of the MOHLG, which is reviewing housing standards. Answers to a questionnaire received from the Committee were prepared by the RIBA Design and Planning Committee, and in the light of a discussion at the last Council will be revised before submission.

## LANDSCAPE DESIGN

### Changes at Durham

Brian Hackett, Senior Lecturer in Landscape Architecture in the Department of Town and Country Planning in King's College, Newcastle, University of Durham, has been offered the Chair of Landscape Architecture at the University of Illinois, USA, and has been given leave of absence by the University for two years. During Mr. Hackett's absence, Peter Spooner, Senior Lecturer in the University of Sydney, Australia, who is the holder of the Durham Diploma in Landscape Design, will take over Mr.

Hackett's duties in the Department at King's College.

## GLAZING MATERIALS

### Their Optical Properties

A day's meeting, convened by BRS, and with Dr. J. W. T. Walsh in the chair, was held last month to discuss the optical properties of glazing materials. The key issue, discussed by speaker after speaker, was the almost total lack of information for the architect on the many diffusing materials now available and the many technical difficulties hampering the scientists from providing such design data.

The first speaker was Dr. B. H. Crawford, who outlined the elaborate and expensive process by which a diffusing material was tested in the laboratories, and confessed that he was very uncertain whether the tests had any practical significance. This point was echoed by J. G. Holmes, of Holophane Ltd., who cited the practical case of a totally enclosed light fitting which might be made of a material with a transmission factor of 87 per cent., and yet would probably only let out about 70 to 75 per cent. of the light. A theoretical value for transmission factor was, under such circumstances, useless, and he was quite sure the same thing applied when diffusing glazing materials were used in buildings.

John Page, of the Department of Building Science, Liverpool, pointed out that BRS had achieved successes in its work in other fields on the translation of laboratory results into practical information. He suggested that BRS should allocate funds and manpower for work on diffusing materials on the same scale as they had done for house heating, and advocated the use by architects of modern techniques (as developed by BRS) for solving particular problems involving the use of diffusing glazing material. Speakers from BRS stressed the fact that measurements could quite easily be made for the purpose of predicting the level of daylight in the completed building, and that the architect could obtain a reasonably accurate impression of the appearance of the interior. Dr. Hopkinson and P. Petherbridge, both of BRS, suggested various ways in which design information on these materials could be put in a form readily usable by the architect, by a simple classification of the various types or by developing such devices as protractors or tables for calculations.

J. B. Collins, also of BRS, asked the architects present to state what they felt to be the priorities in terms of design information. David Moizer said that there were really two major items: first, what levels of daylight would these various materials provide in comparison with ordinary glass, and second what degrees of scatter of sunlight would they achieve? The general consensus of opinion in the discussion was very definitely that there is an urgent practical problem to be tackled, and that BRS were the right people to do it.

Other aspects of these materials were also discussed during the day, and one or two

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The photomontage above shows the model of the LCC and the City of London's proposals for the Tower Hill area superimposed on an air view of the Tower. Photograph copyright Aerofilms Ltd and the LCC.

interesting points were made. Dr. C. A. Chaplin, of the LCC, said that in the London area ordinary glass in roofs (particularly greenhouses) tended to be attacked by acid, so that dirt was permanently impregnated into the surface, causing a lasting loss of light. The only remedy he could suggest was very regular cleaning, say once a week, to prevent this etching from starting. J. S. Beard of the Admiralty reported that he had been watching the possible changes in the amount of light transmitted by corrugated, resinated glass-fibre sheets, and that in some cases in three or four years there had been a serious deterioration, with considerable yellowing. There was a wide variation, however, in the samples tested.

G. J. Langdon Thomas, of Fire Research, described some of the problems in testing these new materials. When submitting p.v.c. sheet to one of the standard tests, for instance, by placing it in front of a radiant heat source, one got a pool of melted plastic on the floor almost at once. Presumably, because of this, it should be classified as AA (the best), although you could hardly say that such behaviour was visualized when the standard tests were framed. Nevertheless, the very low melting point of p.v.c. sheet when used for factory roof glazing had one important advantage, that it was a simple and effective way of providing vents for the escape of smoke in case of fire.

## TOWER HILL

### LCC—City Scheme

A serious effort has now been made by the LCC and the City Corporation to rescue the area adjoining the Tower of London from the dereliction and the congestion of parked cars and lorries that afflict the visitor. In preparing the scheme illustrated above, the paramount consideration was the creation of a pedestrian precinct around the Tower, and maintaining traditional views of the

Tower itself. A new road from Lower Thames Street to Tower Hill (north of the Tower) allows parts of Lower Thames Street and Tower Hill to be closed to through traffic. A pedestrian subway will enable passengers from a proposed new underground station to reach the Tower without crossing Tower Hill.

A wide pedestrian concourse bordered by shops and gardens slopes down from Trinity Square to the river, terminating in a large viewing space with restaurant by the entrance to the Tower. Extensive three-level coach and car parks are envisaged west of the concourse under a podium, approached from Lower Thames Street. Above the podium rises a five-storey S-shaped office block shaped, it is said, to preserve views of the Tower. The 16-storey tower at the west end is on the lowest part of the site.

The rest of the layout, part of which is still subject to modification, includes a new setting for the Roman Wall, north of Tower Hill, and a mechanical car park for 500 cars at the rear of an eight-storey office building on the Minories (top right, in picture).

## Order form for Motopolis

The Minister of Transport, speaking in the House of Commons last week, said that the problem of the motor vehicle in cities was best put by the ARCHITECTS' JOURNAL. The issue for October 1, 1959,

to which he referred was called *Motopolis*. Reprints are now available at the price of 1s. 6d. each, post paid.

Orders should be posted to the ARCHITECTS' JOURNAL, Sales Department, 9-13, Queen Anne's Gate, S.W.1.

Please supply \_\_\_\_\_ copies of *Motopolis* at 1s. 6d. each, for which I enclose a cheque/postal order for £      s.      d.

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## HARVARD

### Arts Centre by Corbusier

Le Corbusier has accepted a commission to design the new Visual Arts Centre for Harvard University. He will plan a centre to make the practise of the visual arts—drawing, painting, sculpture and other shopwork—a major activity for undergraduates. It will incorporate the present studio courses for undergraduates, in which students work under the guidance of Mirko Basaldella, the sculptor.

## HC

### Annual Conference

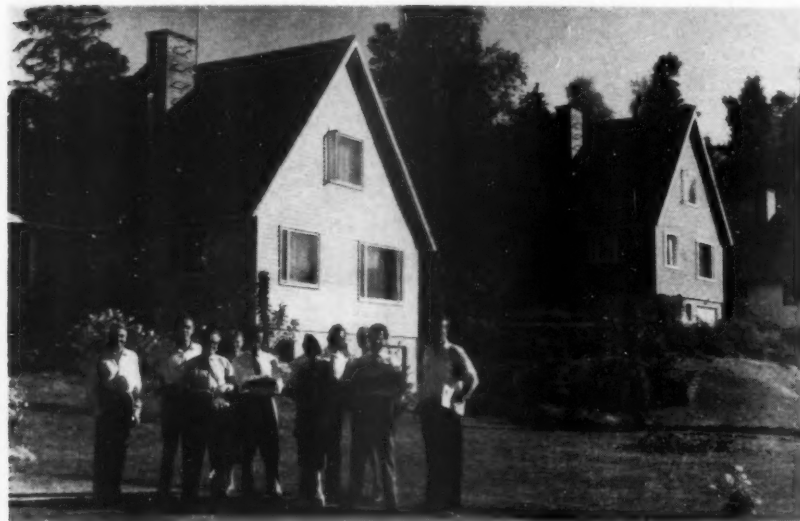
The annual Housing Centre Conference has been fixed for Wednesday, Thursday and Friday, July 6 to 8, 1960, and will take place as usual at County Hall, London. The agenda is expected to take the following lines—Housing Standards: Minimum, Recommended, Future; Influence of Standards on Management and Social Aspects; Stanning.



*R. W. G. Bryant, of Coventry Architects' Department, contributes this account of a recent visit to Finland as one of the British team attending a seminar on "Social Aspects of Housing," run by the European office of the United Nations Technical Assistance Organisation.*

## HOUSING IN FINLAND

*By R. W. G. Bryant*



*Above, detached houses at Tapiola, Helsinki. Below, flats at Hertoniemi—a satellite town on the eastern side of Helsinki, opposite Tapiola.*



Of all the interesting things one saw and heard, it is not easy to sort out a coherent account—there was so much. The proceedings of the seminar will in due course appear as a UN publication, so there is no point in attempting to summarize them in any detail.

There we were, 40 representatives from 14 countries of Western Europe, and Yugoslavia and Israel. It was a pity there were no East Europeans or Russians. We were superbly looked after by the Ministry of Social Affairs—nothing was too much for the Finns to do for us. They fielded a strong team of their own experts—though the choice must have been limited by the fact that the working language was English. The seminar took over, in toto, a delightful holiday hotel by a little lake in the woods, 20 miles outside Helsinki—two neat and unassuming modern buildings and the inevitable sauna house by the lake, with every detail designed in the excellent taste that one associates with Finland.

One's dominant feeling about this study group was that housing is a problem knowing no frontiers—that men of goodwill everywhere are thinking about it, and drawing similar conclusions. Those of us who had to act as rapporteurs, when we split up to discuss the main papers, found no difficulty in producing agreed statements, despite the diversity of the membership.

But given that housing is a social problem—not simply one of economics, there are widely different ways of tackling it. We in Britain could and should look much more to Continental experience in this respect. In many other European countries the spec. builder is an unknown animal—dwellings for owner-occupation are commonly built by co-operative societies and non-profit making organizations. Isn't this well worth thinking about under British conditions?

Could we not bypass the spec. builder and his obsolete stereotypes? The small builder will neither be pushed nor persuaded, and what can one do with builders who have never heard of the Building Research Station? The larger organizations common on the continent can and do employ competent professional advice.

Socially, too, we suffer in this country from the unfortunate cleft between subsidized local authority tenants and unsubsidized owner-occupiers. Swedish local authorities gave up building houses years ago, precisely because of snobbery in reverse, thus fostered. There was a good lady in a suburb of Manchester the other day, who actually appealed for a reduction in rating assessment on the ground that there is a social stigma attached to living in a council house. This sort of thing is hardly known in countries where housing is dealt with on a more rational basis. The Labour Party has been clearly barking up the wrong tree—its denunciations of rent decontrol did not impress the electorate. It must depend in future on the votes of owner-occupiers. Therefore, even on narrow political calculations, to say nothing of reason and commonsense (which do have a certain importance in public affairs, however unobtrusive), it is not in the interest of the Opposition to support the totally artificial distinction between sub-

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dized tenants and unsubsidized owners. Finland is the only one of the Scandinavian countries not ruled by social democrats, but their housing policy is similar to that followed elsewhere in Scandinavia. Most of the new housing is being built by housing associations and private agencies other than spec. builders. But the programme is backed by the State, and State assistance is available equally, where requisite, to owner-occupiers and tenants.

Helsinki, for example, is penned in its peninsula; with a glorious proscenium of sea and islands that any city could envy. The physical disposition of the suburbs being built for the rapidly growing population almost plans itself in this setting—satellite townships on the mainland to the north and west—the latter two groups connected to the city centre by bridges and causeways. Later there will be a metropolitan railway on the lines of the Stockholm Tunnelbana, in tunnel only for a relatively short distance in the city centre.

At Ruohivuori, beyond the eastern bight of the sea, the "Haka" housing co-operative is building a suburb of normal Scandinavian multi-storey type, with the pedestrian precinct shopping centre that is now almost conventional. But both in design and in the way in which its building has been organized, the most interesting scheme is Tapiola, 6 miles to the west of Helsinki, across two bridges and the intervening island of Lautasaari, itself built up.

Tapiola is a satellite township, with an ultimate population of 15,000 in three neighbourhood units. So far only the eastern unit is complete. As in the early stages at Harlow, the neighbourhood centre functions as the town centre, pending completion of the latter.

It was conceived and is being built by the Finnish Housing Foundation (Asuntosäätiö), which was set up by the Confederation of Trades Unions, the Mannerheim League, the Family Welfare Association and other bodies. It is as if the TUC were to join with NALGO, the British Legion, the National Council of Social Service, and such others to build a small New Town. Is there anything in that which wouldn't fit in with the British way of life?

The Foundation was backed by Arava—the State organization for housing finance, which makes loans at 1 per cent. This form of State assistance is fundamentally different from our way, which relates only to local authority housing. Arava loans are available for housing to be owner-occupied as well as for renting. Therefore, the Finns do not have the cleavage between owner-occupiers and tenants that bedevils public attitudes to housing policy in this country.

The Foundation acquired an area of virgin forest, and in 1953 held a national competition for the design of the township. The winner was Aarne Ervi, and he, assisted by Tapani Nironen and Olli Kuusi, produced the final master plan.

As roads and services were laid in, the Housing Foundation became possessed of valuable building land, which is being leased to individual developers or "companies." These are really housing co-operatives, and they each employ their own architects for

the group of dwellings involved. Variety in design is thus achieved, on very much the same lines as the procedure in Harlow New Town. The housing companies own the buildings in a group, and each occupier owns a certain number of shares, entitling him to a specified flat or house.

The housing companies hold shares in the so-called "supply company," which owns the district heating plant (essential in the Finnish climate), the day nursery, shops, cinema, and so forth. This company undertakes several public services that would normally be expected to fall within local authority responsibility. But Tapiola is in a small rural authority area, outside the boundaries of Helsinki. The Housing Foundation has therefore ploughed back its developers' profit into Tapiola in the form of communal facilities. These have been adequate from the start—the first-comers have not had to wait years for them, as has too often happened with us. For example, the Children's House, a day nursery (and a very charming one, too) was used as a primary school for two years until the first permanent school was ready. It is a question whether it is equitable to have made this sort of facility a charge on the housing development—but the Housing Foundation has naturally had to operate within the framework of Finnish legislation and institutions. In this country, such facilities would be provided by the local authority concerned, or not at all.

Dwellings are not sold freehold, but on lease, and the leasehold arrangements include provision for upkeep and maintenance of shared amenities, on the lines of the arrangements adopted by Span, for example, at Blackheath and Richmond. The whole area is carefully landscaped and the inhabitants contribute to the upkeep. Even where there are individual gardens, for example, attached to terrace houses, the planting is part of the overall landscape scheme.

The district heating plant in the eastern neighbourhood centre will function as a stand-by, at times of peak demand, when the main heating plant at the township centre is completed. It supplies hot water as well as space heating, and occupiers are charged according to the amount they consume.

Tapiola is a place of distinction, wherein everything, down to the smallest detail, exemplifies thoughtful design and refinement of taste. The Finns call it a "garden city," but it is not based on Welwyn or Letchworth—to transplant that idiom to the shores of the Gulf of Finland would be quite wrong. Still less is it simply another layout of Scandinavian-style high flats. There are, in fact, few high buildings. There are tall point blocks, existing or planned, in the neighbourhood and township centres, and lower blocks of flats, but a substantial proportion of the housing is detached or terraced. The Finns do not suffer from our English semi-detached complex. The largest detached houses, for the "upper crust" have basements, with garage, heating plant, sauna, and utility room. The living accommodation above conforms to the standard usual in this country for houses in the upper price brackets.

To me the most interesting dwellings were

the terraces. Not being inhibited by our obsessive need to present a front parlour to the street, with or without bay window, the Finns have set about designing terraced housing in a rational manner. The best rooms in the house often look to the back, over the private patch of garden. One can't say "private gardens" because horticulture isn't a Finnish addiction—these "gardens" are laid out and landscaped as part of the general scheme. The front elevation of terraces is often occupied, on the ground floor, by the garage door, and front door adjacent. I can see no objection to this eminently sensible arrangement—with careful design it needn't and doesn't look like a mews. Building garages as part of the house at one stroke abolishes our preoccupation with rear access, and the unsightly collection of shacks that disfigure the back areas of so much housing in this country. These Finnish houses are in effect the "store access" type—shown in the Coventry Sociological Survey some years ago to be the best form of terrace.

Another form of terrace in Tapiola is the so-called "weak link" type—two-storeys alternating with one-storey links, wherein are garages, kitchens, and so forth. The main living and sleeping accommodation is in the two-storey portions. Here again, the houses present a modest face to the front—the larger windows are to the rear, and the "façade facing the street protects against outsiders' glances," to quote the official brochure. And there are staggered terraces, too. And everywhere this crisp freshness of outlook expresses itself in design.

I was impressed most of all, however, not with any visual aspect, but by the logical common sense shown by the Finns in dealing with the grim housing situation due to war losses and growing concentration of people in the towns. Here is a small country—tucked away between the Iron Curtain and the Arctic Circle—but we could learn much from it in housing finance and organization, as well as design.

## DIARY

*The Rebuilding of Cities.* Christmas Holiday Lectures for Young People by P. E. A. Johnson-Marshall at the RIBA, 66, Portland Place, London, W.1. Admission by ticket (free). 3 p.m.

DECEMBER 29 TO 30

*Exhibition of Sculpture in Ciment Fondu.* At the Building, Centre, 26, Store Street, W.C.1.

UNTIL JANUARY 2

*The Effect of Industrial Development in Rural Areas.* RICS General Meeting at 12, Great George Street, London, S.W.1. 5.45 p.m.

JANUARY 4

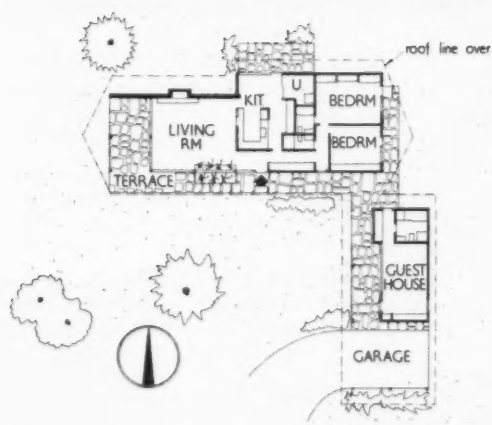
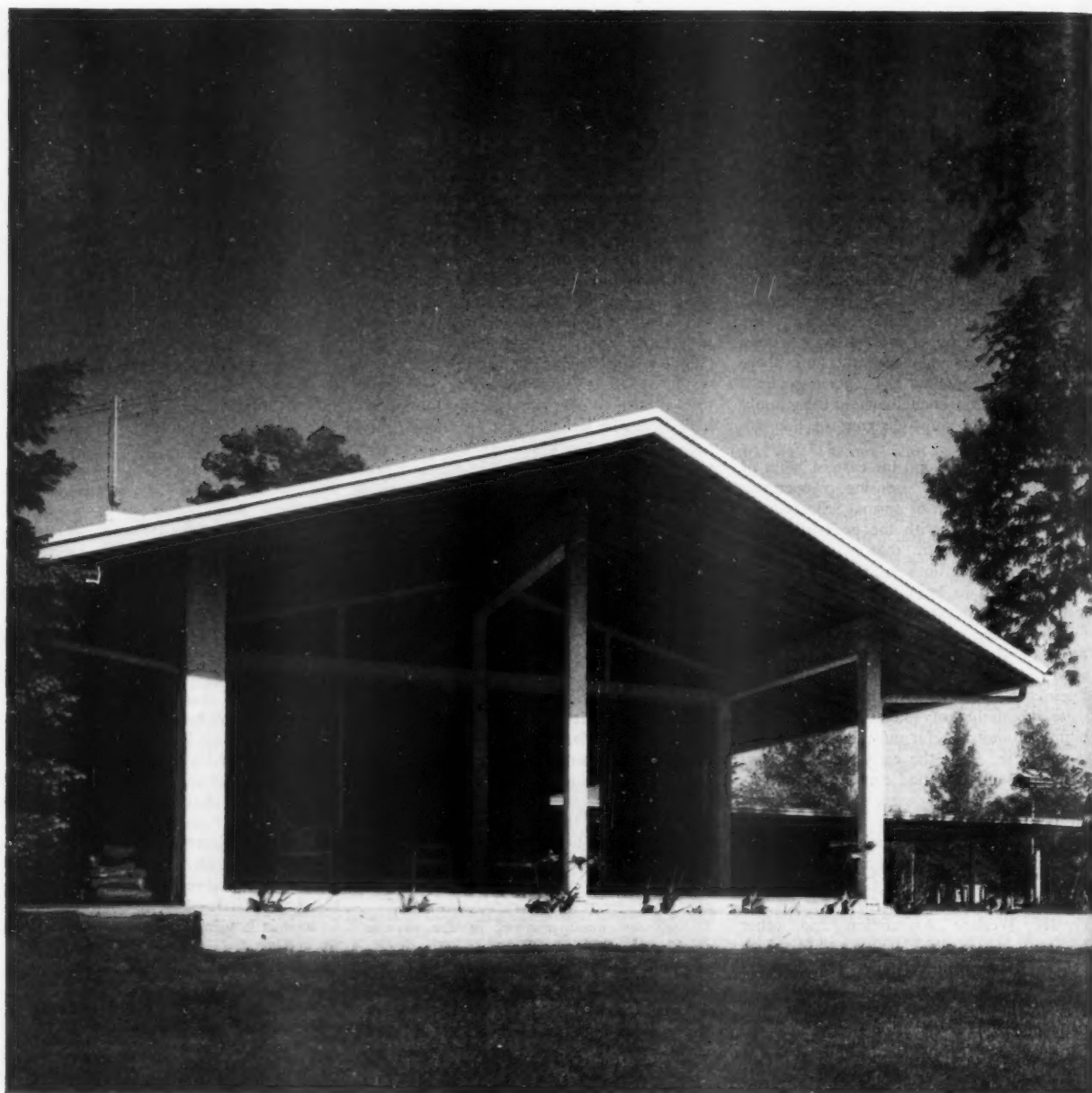
*Architectural Education.* British Architectural Students' Association annual conference at Churchill Hall, Stoke Bishop, Bristol 9.

JANUARY 8 TO 10

*Architectural Project Management.* Course at the Institute of Advanced Architectural Studies, Micklegate, York.

JANUARY 8 TO 12

## HOUSE IN ILLINOIS

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

This house, in Illinois, designed by Roy Binkley for a couple with grown children, was set at right angles to a remodelled cottage, which serves as a guest house. The two buildings are connected by a single roof so that they are visually related, and a patio is formed. The roof of the main house is pitched, while that over the guest house is flat, extending out to the right to form a garage. There is a covered walk from the garage leading past the guest house to the front door of the main house. The site was two acres of established land, with large old trees and an orchard to the back. The owners wanted to remodel the existing cottage into a guest house and to live in it, while the main house was under construction. The remodelled guest house is self-sufficient, as it has its own small kitchen. This gives guests freedom and privacy. The main house has two bedrooms, one of which is large enough to be divided into two rooms should the family ever want a three-



bedroom house. The kitchen functions as a central core, which is accessible from all areas. Adjacent to the kitchen is an informal dining room. The outdoor terrace next to the kitchen serves as another eating area. Sunlight enters the kitchen and two bathrooms through plastic skydomes. The north wall of the living room is a 12-in. common brick cavity wall, painted white. This wall extends along the north wall of the covered terrace, relating the indoor and outdoor areas. Hearth and mantle of the living-room fireplace are slate. The roof extending over both the main house and the guest house is 4 in.  $\times$  6 in. double-tongued and grooved cedar plank.

1 in. of rigid insulation has been laid directly on top of the cedar plank. Marble chips form the surface. 12 ft. to 14 ft. areas are easily spanned by using this 4 in.  $\times$  6 in. cedar plank. Interior walls are vertical boards of 1 in.  $\times$  6 in. tongued-and-grooved cedar, treated with a wood preservative. In contrast, structural framing is painted white. The floor is a graded concrete slab with perimeter hot-air heating. Cork tile floor covering has been laid directly on the concrete slab. There are aluminium frame sliding-glass doors from the living room to the terrace and from the guest house to the courtyard.







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Architect, C. R. Kirby Esq., A.R.I.B.A.*

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*Paul Brenikov has written this report on the study day organised by the British Section of the International Centre for Regional Planning and Development. It was devoted to a topic of vital significance for future planning policy — "The Nature of the Economic Forces Leading to Urban Concentration in Great Britain."*

## CONFERENCE ON URBAN CONCENTRATION

### *The need to Control the Growth of London*

The Barlow Report, presented in 1940, which is still the foundation for a great deal of our current planning policy on the redistribution of industry and population, condemned this process of concentration as undesirable on strategic, social and economic grounds. The purpose of the Study Day was to see how far the economic objections to urban concentration could be said to hold good today and to review the importance and strength of the forces involved. A panel of seven speakers with a Professor of Geography—M. J. Wise of London University—in the Chair, were invited to examine these questions in the light of their own special interests.

The first speaker was Professor Sargent Florence, who, in reviewing the economic advantages and disadvantages of the large urban concentration, claimed that its major assets were its ability to provide for industrial specialism and localization without serious risk of mass unemployment. The accompanying disadvantages however—congestion, higher costs of living administration, long journeys to work and the divorce of the townsman from the countryside—were, he thought, a high price to pay for these benefits.

In some instances the social and cultural amenities afforded by the greatest cities were a further justification for their existence, but where the interplay of economic forces merely produced an overgrown manufacturing complex there was a strong case for cutting them down. To this extent he believed that the Barlow policy of dispersal remained fundamentally sound and ought certainly to be applied to centres like Birmingham which should be encouraged to disperse as much of its industry as was able to move.

A. G. Powell of the Ministry of Housing and Local Government, then presented his own interpretation of the reasons for the current growth of the Midlands and the south-east. This tendency, he suggested, could be explained firstly by the unique geographical advantages of the south-eastern region, which had now become an integral part of the main industrial focus of Europe as a whole; and secondly by the fact that the national network of communications of all kinds was focused on the capital city. Under these conditions the importance of the London centre had become greatly enhanced. Whereas the Midlands and the south-east were developing as the industrial hinterland of this centre, the older industrial concentrations of the north and north-west seemed to lie too far outside its orbit to share in its growth to any great extent. The

Barlow Report and the Abercrombie Plan for Greater London had anticipated some of the consequences of this change of focus, but although they had pointed the way towards a solution they had underestimated the strength of the forces involved.

What was needed now, Mr. Powell suggested, was a revision, not of policy but of the means of implementing it in the light of present conditions. So far as the London region was concerned, this involved the application of a rigorous policy of planned restriction and decentralization over a very much wider area. This, he claimed, was in fact being done. Mere restrictions, however, could not do enough. They must be coupled with a parallel programme of large-scale investment and improvement in the more distant industrial areas. Here he believed that the new Local Employment Bill would give us a powerful means of providing for industrial re-investment on the scale required.

In contrast to the two previous speakers Mr. Brian Anstey declared himself to be completely opposed to the Barlow policy on the grounds that it ignored the reality of land values and sought to supersede the normal operation of the free market in land. This, he maintained, was the basic fault of all planning.

J. H. Westergaard's paper was concerned with the special aspect of the economics of the London Region itself—the mobility of labour as seen through the pattern of journeys to work. Studies of these movements did not support the accepted idea of a confused multiplicity of long-range journeys passing to and fro from all parts of the urban region. The industrial areas, and even some dormitory suburbs, were in fact surprisingly self-contained and the majority of journeys into and out of them were over relatively short distances. It was the concentration of office employment in the central area that gave rise to widespread long-distance movements. He argued, therefore, that on the evidence available further growth of the industrial areas need not necessarily produce a corresponding rise in long-distance movements. Further growth of office employment, on the other hand, could and would do so, and it was here that the main drive for decentralization should be directed.

The question of the most economic size for an urban area was raised by an Oxford economist, G. R. Allen, in the first of the afternoon papers. Arguing from the analogy of the town as a "firm" providing a wide range of services, Mr. Allen maintained that

many towns had been allowed through inefficient management to go well beyond the limits of economic size. There were, he suggested, three main reasons for this; because the real costs of expansion were not certainly known, because this cost was not met by those directly responsible for it and because the wasteful consequences of un-economic size were masked by public subsidies of various kinds. If the real costs of city expansion could be established and charged to the developers this might prove to be an effective means of checking unwanted growth.

This theme was developed by Peter Self in his remarks on public policy with reference to great cities. He argued that the costs of administration were already high and that the level of subsidy needed in many fields—housing and transport for example—was likely to increase still further in the great cities. It was doubtful if we would get a fair return for these additional costs. For example, if office employment in Central London continued to increase at the current rate, very heavy public investment in additional facilities for long-distance commuting would have to be faced. Mr. Self felt that drastic steps must be taken now to check developments of this kind and proposed a special "payroll tax" for offices in Central London to speed the process of decentralization to new and expanded towns.

The last speaker, Professor Colin Clarke, examined the mechanism of the world-wide trend towards urban sprawl and demonstrated some graphical techniques for measuring and analyzing its progress. He emphasized the fundamental importance of low-cost transport facilities and claimed that this had permitted "the biological impulse to move out" to take effect. It was these powerful influences that were changing the form of the great city till it became a city no longer, but an urban region.

At the end of the Study Day, it seemed as if the basic ideas put forward by the Barlow Commissioners had stood up to the test of re-examination surprisingly well. The criticisms made both by the speakers and in the subsequent discussion, centred primarily on the means adopted to control the growth and form of the great city region—an objective which remained both desirable and necessary. It seemed to be agreed that our present methods are clearly less effective than they should be. If the forces making for centralization and concentration in the south-eastern region are now seen to be much more powerful and persistent than was formerly supposed, this suggests that the means of resisting them need to be strengthened.

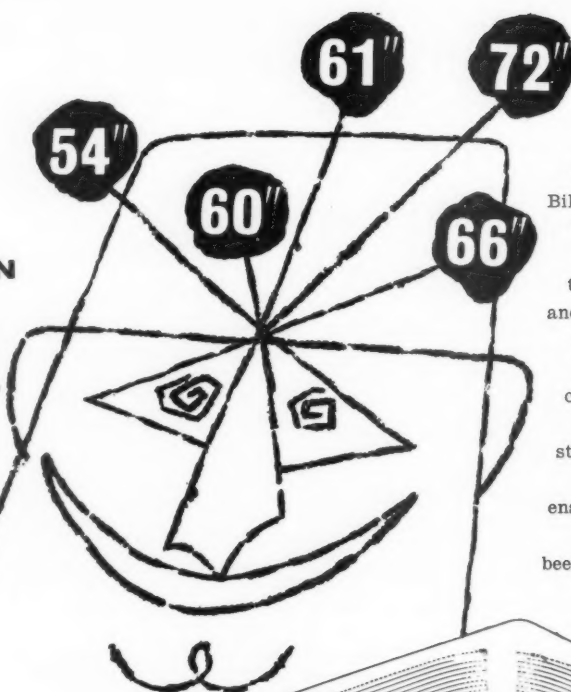
In this context the main point that seemed to emerge was the need to develop a planned policy for improvement and re-investment in the major centres outside London and Birmingham, so that they can act as a more effective counterpoise. To hope for a complete reversal of the national economic trend is clearly not practicable, but this does not mean that the objectives put forward at the time of the Barlow Commission were wrong or mistaken. On the contrary, the need to regulate the distribution of population and industry is as evident and as worthwhile today as it was a generation ago.

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## THE INDUSTRY

*From the industry this week Brian Grant describes a light fitting, which gives a continuous change of light, a hardboard which needs no priming, stainless steel urinals, a U-value calculator and cellular concrete.*

**Variable lighting**

It seems that office and other workers have a tendency to become bored, particularly in offices which have no daylighting. While I suspect that a good deal of this is due to the work they may be doing, the Siemens lighting specialists believe that uniform lighting tends to become monotonous, and have produced the Vitalite fitting, which gives a continuous variation in light output. An aluminium reflector is mounted on bearings below the fluorescent tubes in the fitting, and is connected to a synchronous motor which turns the reflector through a complete revolution every hour, bringing the light intensity to a maximum and back again during that time. The variation in light output is not very large, one quoted installation varying from 32 to 40 lumens per square foot. Various methods of application are suggested, either with the lamps fitted horizontally above a suspended ceiling with the reflector below the tubes, or in a trough cornice to illuminate the ceiling, with the reflector above the tube. (*Lamps & Lighting Division, Siemens Edison Swan Ltd., 38-39 Upper Thames St., London, E.C.4.*)

**A new hardboard**

Escaboard, a new product of the Svenska Cellulosa company, is claimed to need no filling or priming before painting, and no undercoat either, so that there should be a saving of about 30 per cent. It is made in a standard width of 4 ft. and in lengths of 6, 8, 10 and 12 ft.: it sells at 43s. 3d. to 32s. 6d. per 100 sq. ft. according to quantity. (*C. F. Anderson & Son Ltd., Harris Wharf, Graham Street, London, N.1.*)

**Stainless steel for urinals**

The use of acid resisting stainless steel for urinal stalls seems a new idea, but has the advantage that the units are very light in weight and can be easily installed without the need for reinforcing the floor. It is claimed that this type of urinal requires no maintenance beyond regular washing down with soap and water, and the construction is seamless, so that there should be no leakage. The units are made in rows containing from two to six stalls, and can have plain flat backs or deep or medium divisions. Downpipes and fittings are chromium plated and a stainless steel automatic flush is also available. (*Associated Metal Works (Glasgow) Ltd., 30 St. Andrews Sq., Glasgow, C.1.*)

**Roof insulation**

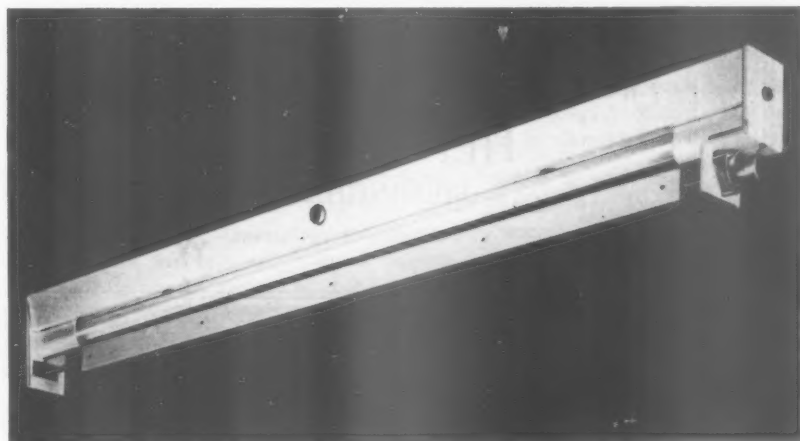
Permanite have just produced a small slide rule calculator for dealing with roof insulation. It provides a quick method of finding the U value of a composite roof structure, allowing for seven different types of roof construction and four different water-proofing systems plus eleven types of extra insulation. Once the slide has been set to the chosen roof construction a small panel shows the U figures for the different types of waterproofing and insulation. Bearing in mind that the Thermal Insulation Act lays down the maximum U values for different internal design temperatures it is very easy

to see the various ways in which the required figure can be obtained. The calculator is free on request. (*Permanite Ltd., 455, Old Ford Road, London, E.3.*)

**Cellular concrete**

Cellular concrete, it seems, was produced in Denmark by Christiani & Nielsen as long ago as 1924, and was introduced to this country the following year. Celcon started here 10 years ago and their enlarged factory at Grays went into production in September of this year, and is now turning out blocks in thicknesses from 2½ in. to 9 in. The basic materials of the blocks are cement, lime and pulverized fuel ash with a special activating agent which produces the air cells throughout the mass. After the blocks have been cut to size they are pressure steam cured in autoclaves and have considerable strength and volume stability. Workability is good, as the blocks can be sawn, cut, chased or nailed without special tools and have a very low conductivity, a 4½ in. brick wall with a 2 in. air space and a 4 in. Celcon block with ½ in. plaster has a U factor as low as 0.17. The blocks weigh only 50 lb. per cubic foot and have a compressive strength of 600 p.s.i. The company is also still making precast cellular concrete roof slabs with steel reinforcement to CP 114. (*Celcon Ltd., Universal House, 60, Buckingham Palace Road, London, S.W.1.*)

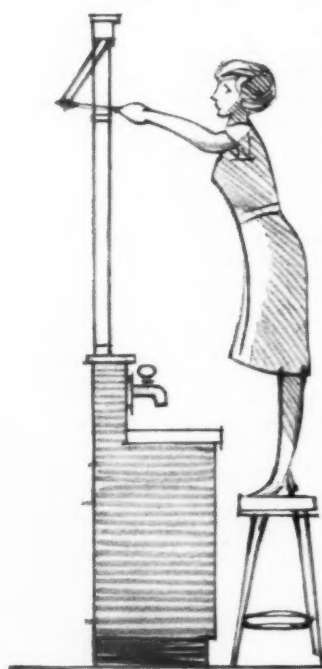
*The new fluorescent light fitting by Siemens Edison Swan Ltd. which has a revolving reflector mounted below the tube to give continual variation in illumination.*



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
*Never perch dangerously on stool or chair to open that window: it is no longer necessary. CABLE CONTROL, operated from the safest, most convenient point, will do it for you in a trice.*



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## 7 PRACTICE

## check list for working drawings

In the October 15 issue we published what we described as a Basic Check List for working drawings, the object of which was to include those items which could be described as applicable virtually to all building types. At the time the Editors offered to pay £5 5s. od. for each item submitted by a reader which, in their opinion, represented a useful addition to the Basic List. The response was enthusiastic and it was not easy to pick the winners, but on page 713 we publish the names of eleven readers who, in the opinion of the Editors, submitted original material and are rewarded accordingly. The Editors now offer £5 5s. od. for each item submitted by a reader which, in their opinion, represents a useful addition to their latest List for traditional housing published on page 715

The nature of many items submitted and the need to get down to deciding what, in fact, was a useful addition to the List and what was not, led the Editors to realize that, to some extent, they had unwittingly misled their readers by including in the published list many items which should not have been there. These have been deleted from the revised list published this week. Inevitably readers would have been guided in submitting items by the very items shown in our list and the fact that a few of these have subsequently been deleted must be misleading. We apologise for this. The fact is that the task of selecting from reader's suggestions those items which should be added to the list led us to clarify our criteria of choice. What is a suitable item for the check list? The Editors decided that an item must satisfy the following. Firstly, it must be common to most, if not all building types. Thus *datum for levels* would go in, *petrol interceptors* would not. Secondly, it must be common to most methods of construction. *Expansion joints*, therefore, would qualify, *roof truss locations* would not. Thirdly, items of equipment must be given their general description, i.e., *heat supply sources* (boiler, back boiler, etc.). Fourthly, it should be an isolated

item as distinct from something implicit in the construction. *Windows* would not be listed, whereas *window numbers* would. Fifthly, it should be an item which is best shown on a working drawing and not on a detail drawing or schedule. Whilst the term "Working Drawing" is generally accepted as the  $\frac{1}{8}$  in. or  $\frac{1}{4}$  in. scale drawing which contains plans, sections and elevations, this may not have been clear to some readers and the Editors would like to take this opportunity of reminding them.

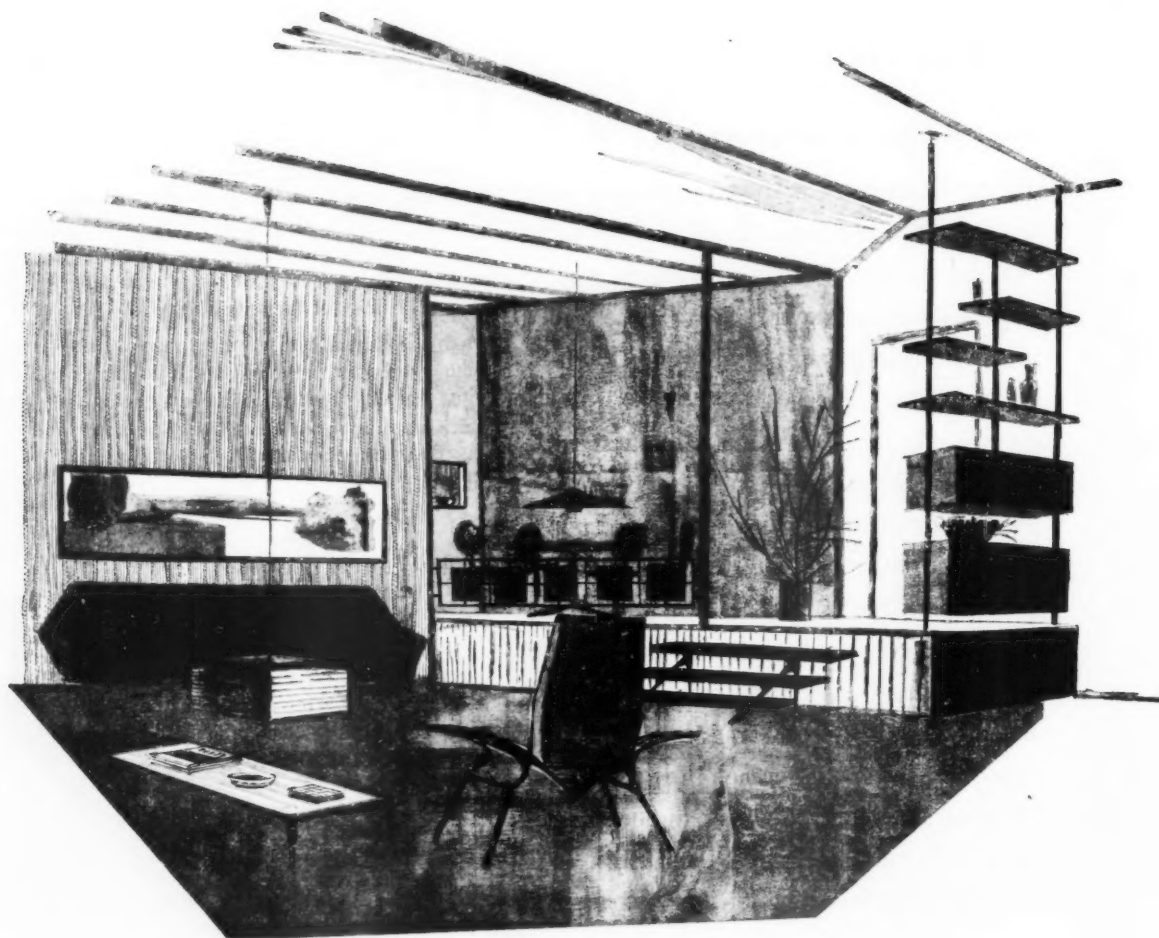
When the Editors applied these more detailed criteria to their own list they found that a number of items failed the test. The following is a list of these items which have now been removed. Some will find their way into subsequent building types lists.

- Room areas
- Floor joists
- Mat well
- Window and/or door schedule
- Boiler (independent)
- Back boiler
- Immersion heater
- Instantaneous water heater
- Concrete site slab
- Hardcore
- Plinth
- Herringbone strutting
- Insulation
- Flue gathering
- Chimney capping and dimensions
- Obscure glass-bathroom and w.c.
- Glass types and weights
- Door types
- Facing material
- Brick coursing-and bond
- Type of brick

Only one reader suggested that a specific item on our list was not really applicable and we were tempted to award him £5 5s. for suggesting a useful omission!

Having established the principles of selection we proceeded to make our choice. For those who recognize their own suggestions on the revised list and find no cheque coming with the postman, please remember that, inevitably, items were duplicated and a first-past-the-post system had to be adopted.

If all the items submitted by each reader—and this varied from one to 40 odd—were added together the total would run into several hundreds. Had each one been an original, usable idea, the present list would be more than doubled. Inevitably, there were a tremendous number of duplications and once we had waded through the first half-dozen or so letters it was rare to come upon an item which had not already been mentioned. Whilst this duplication made the task of sorting, classifying and selecting much more tedious



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### technical section

it undoubtedly was of value in serving as a guide for selection. When several people submit *telephones*, for example, or *lightning conductor* or *fresh air inlet* it is evidence for including the item. Popular choice, however, was not a criterion in selecting items, but only a guide. One point, we feel, must be stressed. A check list cannot hope to—and, in fact, should not—include every note which an architect would expect to put on his working drawings. This is not the purpose of a check list, which, after all is said and done, is not an itemized text-book on building construction. Whilst we have described the purpose of a check list as being, as well as a check or reminder, a guide, particularly for those who are less experienced or are breaking new ground, its function as a guide is necessarily limited. One must assume that whoever prepares or at least supervises the preparation of working drawings will have at least an elementary knowledge of building construction and techniques and will be capable of preparing the drawings, even if he is not capable of remembering to include everything on them relevant to the building type. If he is not capable of preparing the drawings, he needs, not a check list, but a construction manual. For this reason the suggestion for adding, say, *roof construction* to item 3 sections was disallowed. It must be assumed that if you are drawing a section through a building you will note on that section the relevant items which are shown, such as roof covering, sarking, roof battens, rafters, trusses, floor construction and so on.

As you will see we have now omitted from the basic list *window and/or door schedule*. There are a number of items which cannot adequately be shown on a working drawing in sufficient detail. Such items, we feel—and many readers suggested this—should be the subject of schedules. Schedules could well be issued for ironmongery, sanitary fittings, wall, floor and ceiling finishes and so on. Can any reader suggest other items suitable for scheduling?

There are certain points of detail arising from readers' submissions. One point brought out was the variety of interpretation of certain items. As an example *telephones*, which we have included, was suggested in many forms—GPO cables, entry point, instrument and bell positions, telephone installation, telephone services (mains boxes, etc.). This suggested that the extent and nature of the service depended very much on the particular job and that, therefore, only a general note of reminder was warranted. Again, one or two readers submitted *fan lights* (or transom lights). This item was not admitted as it was considered it could best be included in window and door schedule and, subsequently on the detail drawings.

It is hoped that published check lists will continually be improved by additions and omissions from time to time. Meanwhile the Editors extend their thanks to those readers who were good enough to submit material, and are especially grateful to those who very kindly forwarded their suggestions typewritten and in simple list form.

### List of award winners

#### 30 guineas to:

Malcolm Stuart	Drawn by, traced by, checked by	(General)
	Lightning conductor	(Plans)
	Interceptor	(Plans)
	Fresh air inlet	(Plans)
	Overflow pipes	(Plans)
	Drain cocks	(Plans)

#### 15 guineas to:

H. D. Blowes	Telephone	(Plans)
	Expansion joints	(Plans)
	Meters	(Plans)

#### 10 guineas to:

G. K. V. Tomlinson	Falls to gutters	(Plans)
	Alarm systems	(Plans)

#### 5 guineas to:

K. G. Bridger	Rainwater heads	(Elevations)
W. E. W. Brook	Datum for levels	(General)
Alan D. Griffiths	Fire-fighting equipment	(Plans)
R. Desmond Henly	Bell installation	(Plans)
G. B. Horscroft	Letter box	(Elevations)
Howard V. Lobb & Partners	Expansion joint	(Elevations)
R. H. R. Spencer	Window numbers	(Elevations)
Taylor and Crowther	Soot door	(Sections)

### Filing

We suggest that readers tear out from the JOURNAL the reprinted Basic Check List for working drawings on page 714 and keep it for office reference.



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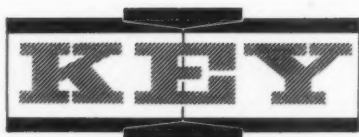
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technical section

## Basic checklist for working drawings

### 1. General

*(Information which will appear on all Sheets)*

Title block (name of job, location, architect's name and address, tel. no.).  
 Drawing no.  
 Job no.  
 Scale.  
 Date.  
 Revisions.  
 Cross reference to other drawings and details.  
 General instructions to contractors.  
 North point.  
 Drawn by, traced by, checked by.  
 Datum for levels.

### 2. Plans

*Site and layout.*

Setting out dimensions.  
 Existing and new levels.  
 Landscaping (e.g. trees to be retained or removed, fences and hedges to be removed, ditches filled in, paving, etc.)  
 Building line.  
 Sewer main and invert levels.  
 Gas main.  
 Electricity.  
 Telephone.  
 Water supply.  
 Fences and gates.  
 Public footpaths and rights of way.  
 Adjacent buildings.  
 Road names.  
 Paths.  
 Rubbish disposal.  
 Drainage (if not shown separately).

*Foundation.*

Dimensions, levels.  
 Reinforcement to concrete.  
 Position of walls.  
 Damp-proof courses.  
 Expansion joints.

*Floor.*

Dimensions (including wall thicknesses).  
 Floor areas.  
 Floor levels.  
 Section lines.  
 Room names and/or numbers.  
 Floor finishes.  
 Beams over (dotted).  
 Rooflights over (dotted).

Ducts (services, etc.).

Flues.

Damp-proof courses (vertical).

Built-in furniture.

Door thresholds.

Door numbers, swings, sizes.

Window numbers.

Stairs (number treads, show directions up and/or down, headroom, etc.).

Foundation access.

Roof space access.

Expansion joints.

*Roof*

Dimensions.

Fall.

Gutters.

Rainwater outlets.

Roof finish.

Parapet copings (flat roofs).

Maximum and minimum screed thickness.

Flues.

Vents.

Rooflights.

Falls to gutters.

Lightning conductor.

Expansion joints.

*Drainage.*

Sewer main (type, i.e. foul, combined, etc.).

Position of sanitary fittings.

Soil and waste pipe layout.

Manhole positions, sizes, invert levels.

Vent pipes (wire balloon at top).

Anti-syphonage pipes.

Gulleys.

Grease trap.

Rodding eye.

Cesspool.

Soakaway.

Septic tank.

Biological filter.

Rainwater pipes.

Rainwater pipe layout.

Interceptor.

Fresh air inlets.

*Electrical layout.*

Light points.

Power points.

Switches.

Rising main (position).

Meter cupboard.

Bell installation.

Alarm systems.

*Gas and water services.*

Rising main.

Point of entry / first stop cock.

Cold water storage tank.

Hot water cylinder.

H.W. expansion tank.

Stop cocks.

Taps.

Sanitary fittings.

Gas points.

Meters.

Fire fighting equipment.

Overflow pipes.

Drain cocks.

Heating equipment.

### 3. Sections

Datum (e.g. structural floor level).  
 Floor to ceiling (or floor to floor) heights.

Vertical dimensions.

Foundation dimensions.

Ground level (existing and finished).

Damp-proof course and membrane.

Flashing.

Roof pitch.

Tanking.

Air bricks.

Soot door.

### 4. Elevations

Floor lines (related to datum).

Foundations (dotted).

Windows to open and types.

Sill heights.

Air bricks.

Soil and vent pipes.

Rainwater pipes and gutters.

Rainwater heads.

Expansion joints (e.g., brickwork, etc.).

Window numbers.

Letter box.

**WHEN DESIGNING THAT  
NEW INDUSTRIAL BUILDING  
YOU MUST CONSIDER  
THE REQUIREMENTS OF THE  
THERMAL INSULATION ACT\***

They call for a high performance factor in thermal insulating materials. If at the same time you wish to ensure effective flame resistance, excellent light reflection and no decoration problems, then . . .

**CELOTEX**  
REGD TRADE MARK  
**FRIB**  
(FLAME RESISTANT INSULATION BOARD)

which has a "k" factor of 0.35, a Class I (B.S.476) rating on both surfaces (no spread of flame whatsoever), is light in weight, economic in use, easily handled and readily installed with Celotex versatile metal fixing systems . . .



\* The Thermal Insulation (Industrial Buildings) Act 1957

**IS THE  
COMPLETE  
ANSWER**

**TO CELOTEX  
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DEPT. F. NORTH CIRCULAR RD.,  
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N.W.10. TELGAR 5717

Please send me technical  
details and a sample of your  
Celotex Flame Resistant  
Insulating Board. I am also  
interested in bevelled panels.

NAME .....

ADDRESS .....

TOWN .....

CI15

technical section

**More lists**

We publish this week the first of the series of check lists on particular building types. The subject is Traditional Housing. It is intended to be read in conjunction with the Basic List, so it is necessarily a short one, as it contains nothing which is already on the other. If your practice is almost entirely domestic it may suit you to combine the two. This is a matter for individual choice, as one should expect to vary or add to a *standard* list to suit a particular purpose. If readers consider the list too short, however, they can take advantage of the Editors offer, once again, to pay for bright suggestions.

Under the heading "Electrical and Heating Layout" only those items are included which can be shown satisfactorily on the working drawing and which have a bearing on construction and layout. A more comprehensive list, it is felt, is not warranted. More detailed information, when required, would appear on the drawings of a consultant or specialist sub-contractor.

**Still more lists**

The Editors are anxious to receive architect's check lists for other specialist building types which can serve as a basis for AJ lists or alternatively suggestions for check lists for other purposes.

*Rough draft***Check list for  $\frac{1}{8}$ " or  $\frac{1}{4}$ " scale working drawings****Traditional housing**

(to be read in conjunction with Basic Check List)

**1. General**

Refer to Basic Check List

**2. Plans***Foundation*

Floor joists over (direction, sizes)

Bearers

Sleeper walls (and access)

*Floor*

Floor and/or ceiling joists over (direction, sizes)

Herringbone strutting

Roof trusses over (dotted)

Towel rails

Mat well

*Roof*

C. W. cistern (access)

Flashings

Chimney

Pipes through roof

Roof access

*Electrical and heating layout*

Light points

Power sockets

Switches

Point of entry

Meter and cupboard

Radio and T.V. equipment

Cooker point

Extract fan

Clock point

Electric fires.

Boiler (independent)

Back boiler

Immersion heater

Instantaneous water heater

Radiators, convectors, skirting panels

Heater cabinets

Room thermostats

**3. Sections**

Concrete site slab

Hardcore

Herringbone strutting

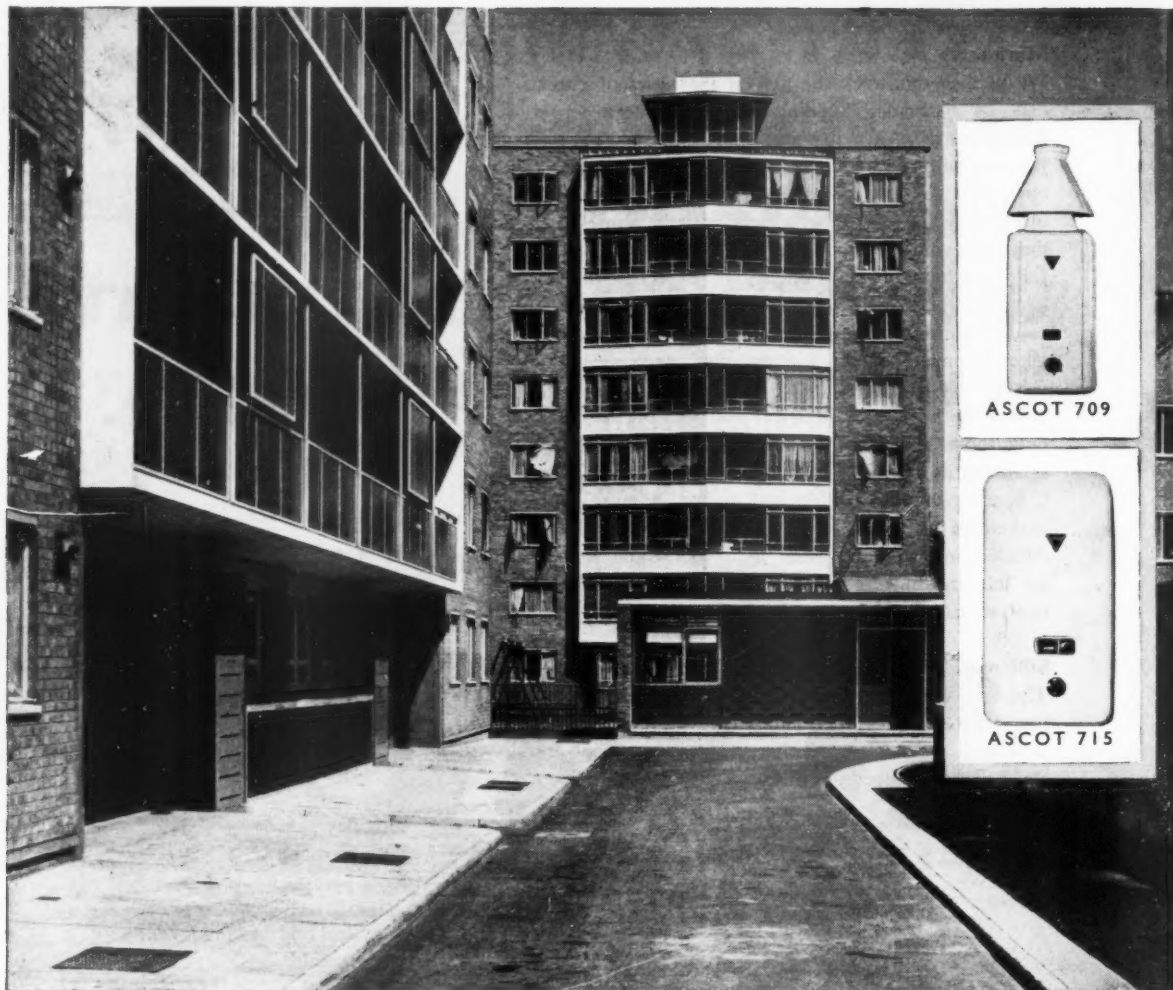
Insulation

Flue gathering

Chimney capping and dimensions

**4. Elevations**

Refer to basic list



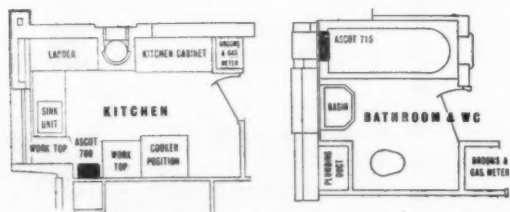
Caroline Estate extension, Hammersmith

## ASCOT IN NEW HOUSING (9)

Ascot instantaneous Gas Water heaters have been extensively used for providing hot water in dwellings comprising the London County Council's new Caroline Estate extension at Hammersmith, photographed above. In the eight-storey block, Joanna House, Ascot multipoints have been installed in the 30 three-room and two two-room flats. In the ten-storey block, Henrietta House, Ascot 715 'balanced flue'

multipoints are provided in 20 three-room and 18 two-room flats. For technical reasons, an alternative water heating system was necessary in two two-room flats on the ground floor of this block.

In all other maisonettes and flats on the Estate, back boilers have been provided for hot water, except in six maisonettes. Here, Ascot 715 multipoints are installed to obviate difficulties which would have otherwise resulted from having flues for solid fuel fires situated near the ten-storey block.



Two typical installations of Ascot Multipoints in a kitchen and a bathroom in flats on the Estate.

### RESPONSIBLE AUTHORITY

London County Council  
Architects: Edward Armstrong &  
Frederick MacManus, F.R.I.B.A.,  
Chartered Architects,  
28, Gloucester Place, London, W.1

REGD. TRADE MARK



ASCOT GAS WATER HEATERS LTD • 255 NORTH CIRCULAR ROAD • LONDON • N.W.10  
WHG/A379



## SECONDARY SCHOOL

ARNOLD HIGH SCHOOL,  
NOTTINGHAM

for the  
designed by  
NOTTINGHAMSHIRE C.C.  
THE DEVELOPMENT GROUP OF  
THE ARCHITECTS AND  
BUILDING BRANCH, M.O.E.

Chief architect  
development architects  
ANTHONY POTT  
J. L. H. KITCHIN,  
P. R. TINDALE

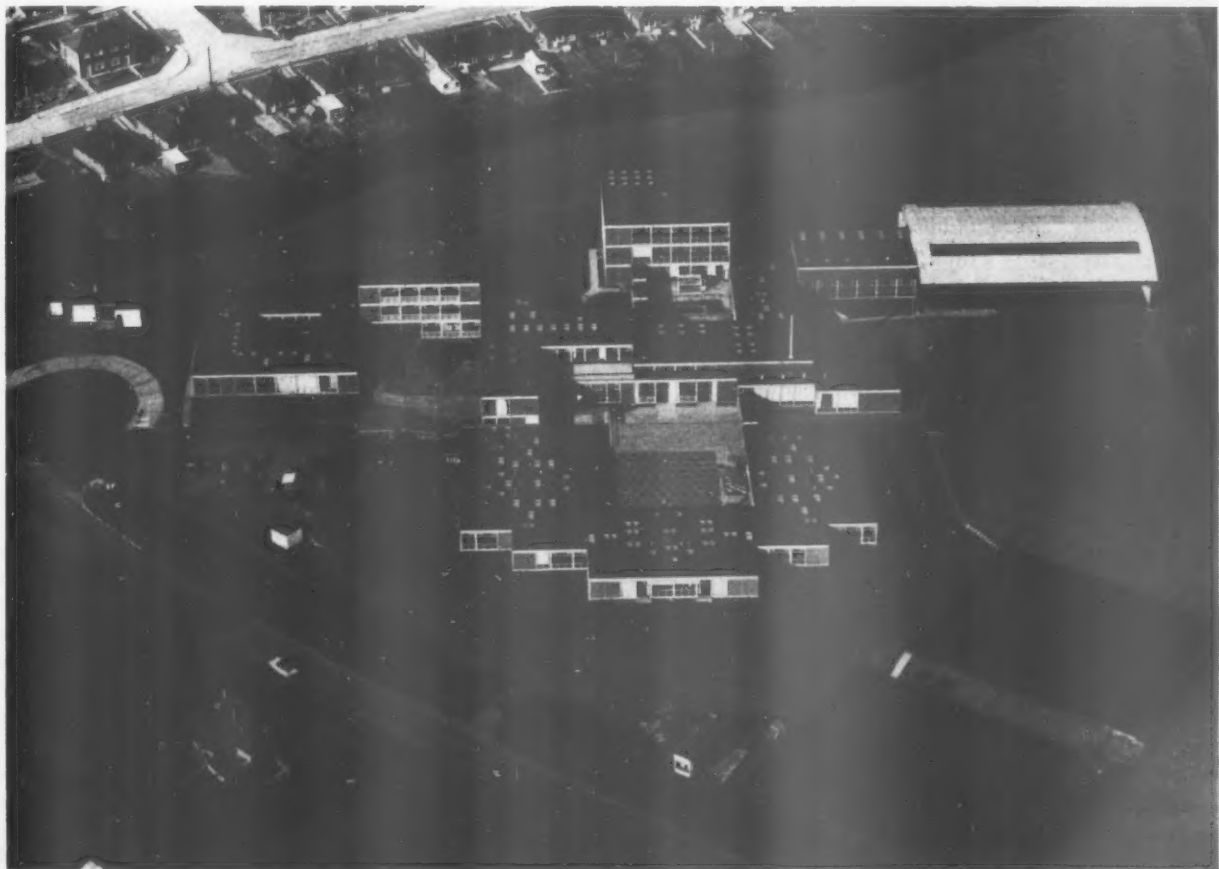
in collaboration with  
consulting structural engineers  
quantity surveyors  
D. E. E. GIBSON  
(then County Architect, Notts)  
A. J. and J. D. HARRIS  
M.O.E. QUANTITY SURVEYORS  
DEPT.

SIB File No. (97)

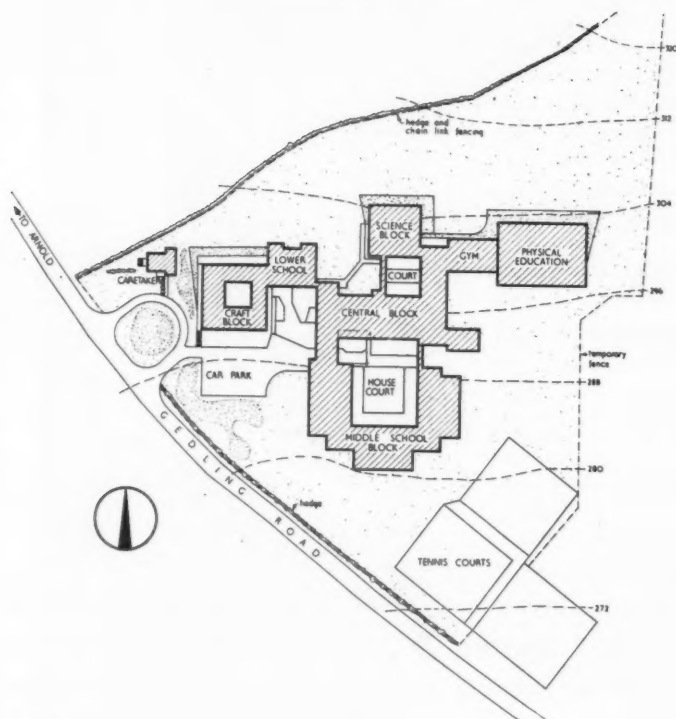
UDC No. 727.2

The latest job from the MOE is Arnold School, designed as a testing ground for new plan forms reflecting present and predicted future trends for grammar school education. At the same time the project has been used as a prototype for a new structural system in precast, pre-stressed concrete which will be marketed by the general contractor.

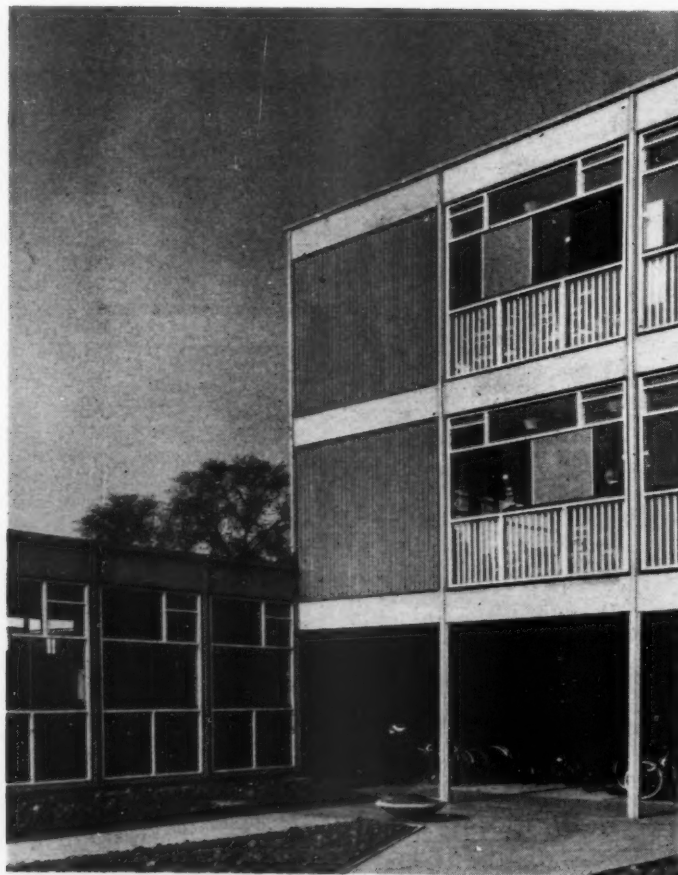
*Aerial view of Arnold, looking north*



## building illustrated



Site plan



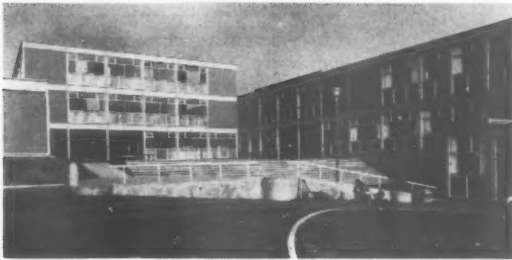
"... blocks, often of different storey height, collide rather than come together harmoniously..."

**APPRAISAL:** *The educational idea:* The really significant plan developments at Arnold result from a synthesis of social organization and educational requirements: the school is designed so that children pass through three successive phases, each geared to give the maximum environmental help as the pupil grows up. So that the younger children arriving from junior schools shall not be worried and confused by the size and scale of the buildings, they spend a transitional period in their own building, which is called the Lower School. This partly independent building has eight classrooms of normal size, its own entrance, sanitary accommodation and outside play space. From these familiar surroundings the complex ramifications of the whole school can slowly be absorbed.

As the child grows and is ready to assume greater independent social responsibility and to begin educational specialization, he moves into Middle School where the 30-strong class base normal to present school planning, is replaced by a social organization in the form of six houses. Sixty children are based in each six houserooms of 700 sq. ft. Attached to every houseroom is a 370 sq. ft. group room, sanitary and cloaks accommodation, and a housemaster and housemistress's rooms. For teaching, the middle school will break down into 18 groups of 20 children each with the choice of many different courses. More diverse specialization here has led towards a greater number of smaller classrooms. Paper exercises at planning stage, based on many alternative uses and varying curricula, have proved the flexibility of the plan. In their final stages at school the children, while still remaining members of their house, are based upon an 850 sq. ft. sixth form common room. Much of the work will now be done on their own, and the four small sixth form teaching spaces are planned as annexes to the library. In these later stages the school is planned so that teaching methods may become more like those associated with college than with school. Sixth formers are regarded as students rather than children, and self-discipline is the means towards greater responsibilities.

The educational ideas at Arnold are by no means revolutionary: they have been bandied about for some years, many school authorities pay lip-service to them, and they are indeed based upon ancient educational patterns. But the important and exciting point for schools architects is that at Arnold the MOE architects, starting with an open mind, have substantiated theories and carried them right through to form the working basis of the school. For instance, this is the first time that any school has deliberately been designed to facilitate the organization of classes into groups of less than 30.

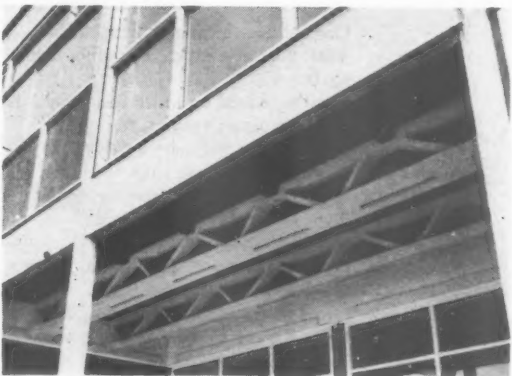
*The structural idea:* The design team decided to produce a system that would cost 20 per cent less than any similar on the market. Making the fullest use of post-tensioning and pre-stressing techniques, parts have been refined and rationalized so that the number of components is reduced to a minimum. Structural module is 3 ft. 4 in. with 10-in. vertical increments. Columns are prestressed 6-in. x 6-in. cruciform shape, located and mounted on pre-cast sills. There are various column headpieces, depending upon the junction condition. Boundary beams form the fascia and main lattice beams of constant depth are built up of small components and with either one, two or three high-tensile steel



*"So that the younger children arriving from junior schools shall not be worried and confused by the size and scale of the buildings, they spend a transitional period in their own building . . . This partly independent building has eight classrooms of normal size, its own entrance, sanitary accommodation and playspace."*



*"... the biology courtyard is dwarfed and has the feeling of a half-forgotten backyard . . ."*



*"... boundary beams form the fascia and the main lattice beams of constant depth are built up of small components . . ."*



*"... the vision of a crisp white concrete frame . . . dimmed by the dull quality of the concrete . . ."*

wires will span from 6 ft. 8 in. to 46 ft. 8 in. Beams are rebated to take r.c. floor plates and compressed straw roof decking.

*The visual impact:* Once upon a time, but not so long ago, utility and beauty were considered synonymous in a building. The logic of plan and section, simply defined by structure, was to shine forth in three dimensions. It doesn't happen: the few surviving exponents of this philosophy know it doesn't happen (see the various forms of knitting now used as cladding), but very understandably they refuse to say so. This is unfortunate: a great deal of misunderstanding could be cleared away if they would acknowledge architecture as well as technique.

Arnold has an exciting background and contains progressive solutions to difficult problems. It is also the first off in a new system and therefore demands sympathetic criticism. Many difficult decisions had to be made purely in terms of firmness and immediate expediency. It is apparent that with more attention to detailing and further appreciation of structural finishes we have a potentially useful and crisp system. However, it must be stated that, as a physical statement, the school does not do justice to the ideas behind it: it is not a complete building in the sense that completeness is the harmonious combination of *all* the elements. This is a pity because this sort of completeness is an essential of beauty, and falling short here reduces the propaganda value of the building.

The plan does not shine through because there is little clarity of the parts in three dimensions. There is no perceptible logic in relationships. Blocks, often of different storey height, collide rather than come together harmoniously. This is perhaps the result of the logic of the Ministry's particular brand of designing, based on the collection of all the known and knowable data. For beauty does not come into the category of collectable data. This is not to decry a scientific approach. Neither is it a plea for a "full-conceptual" architecture, although it must be said that this approach can work supremely well as long as its conceptions are constantly checked against fact and performance standards. And such a method might also be called "scientific" in the sense that it is the basis of a great deal of pure scientific experiment—the justification of a hunch.

The steeply sloping site adds to the difficulties at Arnold, and courtyards—excellent in conception—have an horizon of unsympathetic roof lines. In particular, the biology courtyard is dwarfed, and has the feeling of a half-forgotten backyard.

The detail and proportion of the structure has almost succeeded. The vision of a crisp white concrete frame with soft infill panels is however dimmed by the dull quality of the concrete, by chipped arrises and stained surfaces. Instead of the warmth of natural timber (surely the original idea and shown in the contractor's handout), the infill panels are of softwood finished in a dull grey-green preservative. Some structural junctions are visually unresolved and the proportion of spandrel panels in glazed wall units is often unhappy.

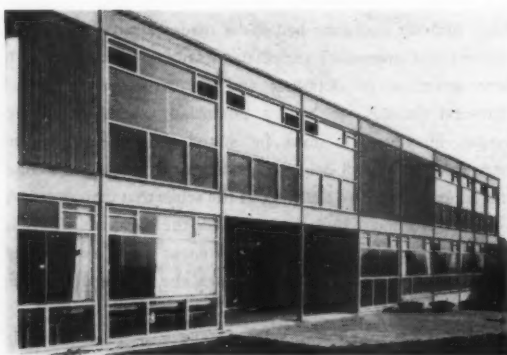
Internally it is again obvious how important loomed structural considerations. The structure is never compromised: finishes are, as it were, wrapped around it, and sometimes

## building illustrated

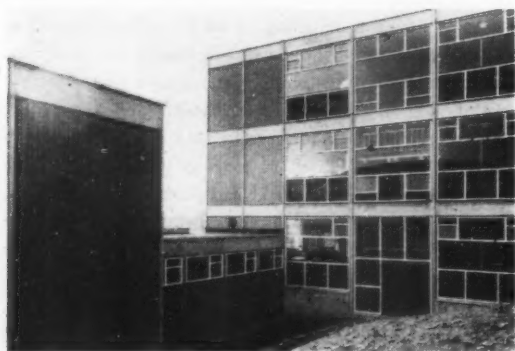
they don't quite fit. This process is not helped by a low standard of workmanship. All those aspects of the building requiring to be organized scientifically are, as one would expect, successful. Natural lighting is everywhere excellent; sound absorption and problems of transmittance, satisfactory; colour is often vivid but refreshing and always used in the right place.

Two interesting detailed points are worth noting: a fully equipped laundry is provided (the first in any secondary school) and has been placed behind a glass screen so that the children can watch the processes; all handbasins are equipped with spray nozzle taps with a subsequent saving in fuel running costs.

And playing fields and planting are admirably planned. The provision of playing fields demanded an immense amount



"... the proportion of spandrel panels of glazed wall units is sometimes unhappy."



"... some structural junctions are visually unresolved ..."

of earth moving and the opportunity has been taken thoroughly to examine the subsequent landscaping problems. A careful and detailed scheme has been evolved. Playing fields are screened by belts of forest trees, with wild flowers sown in the banks. In the courtyards and around the buildings each plant has been carefully positioned with reference to maintenance, colour, density of foliage, texture and scent.

## analysis

## CLIENT'S REQUIREMENTS

A four-form entry school for boys and girls with a sixth form of 120. The building was required to be suitable for selected pupils wishing to study for various qualifications, and who would normally go to a grammar school. The project to bring together the various progressive trends apparent in existing grammar schools which are attempting to adapt themselves, despite unsuitable or inadequate accommodation, to providing an increasing technological and scientific bias.

## SITE

On the south side of the town of Arnold, about four miles from Nottingham, the total area of the site is 34.5 acres. Playing fields are shared with two other schools. The site is surrounded by well-grown hedgerows containing mature oak and ash trees, and falls from north to south with an average slope of 1 : 15. There are pleasant views to the south. The soil is marly clay over hard red marl at depths of 3 to 5 ft., bearing strength, 8 to 9 tons.

## PLANNING AIMS

The hub of the plan is twofold and consists of the library, as the intellectual centre, and the assembly hall, as the communal centre. Around these are grouped the other units of social accommodation of the lower, middle and upper schools, each with its own entrance and outside space. Because of the relatively severe climate and the openness of the site it was decided to plan for a number of sheltered courtyards while organizing the various blocks in as simple a form as possible, to keep down external wall area.

## SUMMARY

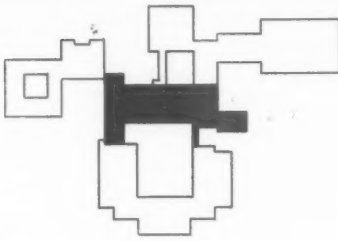
Ground floor area: 29,531 sq. ft.  
Total floor area (as calculated for school buildings): 60,272 sq. ft.  
Total floor area, on which cost analysis is based: 56,829 sq. ft.  
Area per place: 73.9 sq. ft.  
Tender date: February 27, 1958.  
Work began: April, 1958.  
Work completed: September, 1959.  
Type of contract: Negotiated.  
Net cost: £209,150 19s. 9d.  
Net cost per place: £256 6s. 3d.  
Net cost per sq. ft.: 69s. 5d.  
Gross cost: building contract, £227,379 16s. 4d.; playing fields, £9,466 2s. 7d.; private sewer, £662 1s. 2d.  
Total: £237,508 0s. 1d.  
Some explanation of the following cost analysis is necessary. The net cost of the school is £209,150 19s. 9d. The area is 60,272 sq. ft. and the cost per sq. ft. is 69s. 5d. But for pre-contract cost planning the school was divided into three sections. These sections appear in the cost analysis as follows:

School (excluding covered ways and Physical Education shed)	56,829 sq. ft. at 71s. 1½d.
Covered ways	669 sq. ft. at 56s. 8d.
PE shed	8,430 sq. ft. at 12s. 3d.

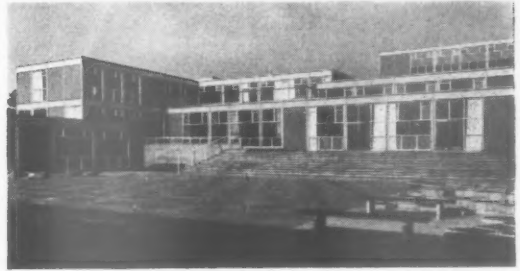
There is obviously a difference between 60,272 sq. ft. and the actual areas given above. The reason is as follows: of the Ministry's regulation minimum teaching area for the school 4,000 sq. ft. was set aside for gymnasium. It was later decided to build a gymnasium of about 2,400 sq. ft. and to "convert" the remaining 1,600 sq. ft. into a much larger covered area (8,430 sq. ft.) without increasing the net cost. Therefore, in assessing the total school area the PE shed was counted as 1,600 sq. ft. and the remainder of the difference is allowances made for covered ways, covered areas and porches.



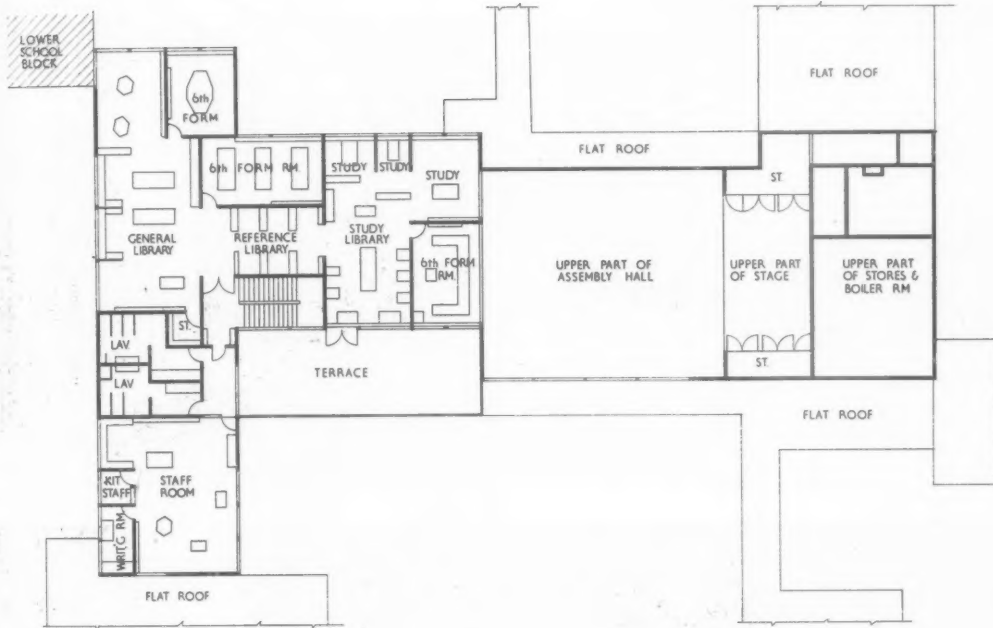
building illustrated



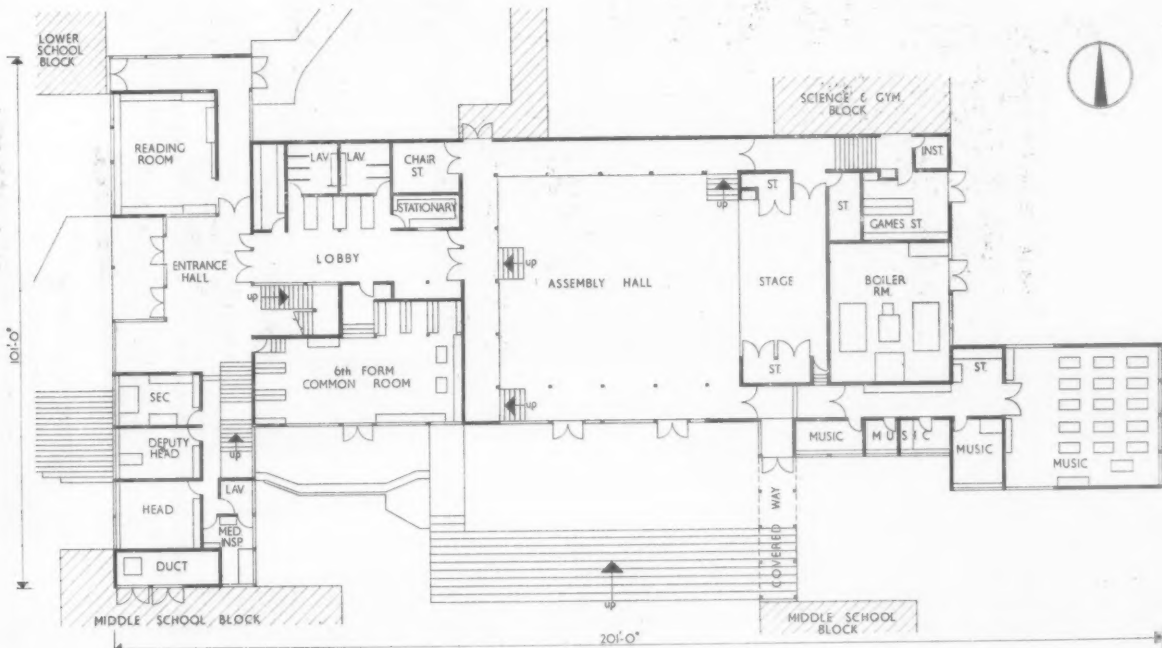
Key plan



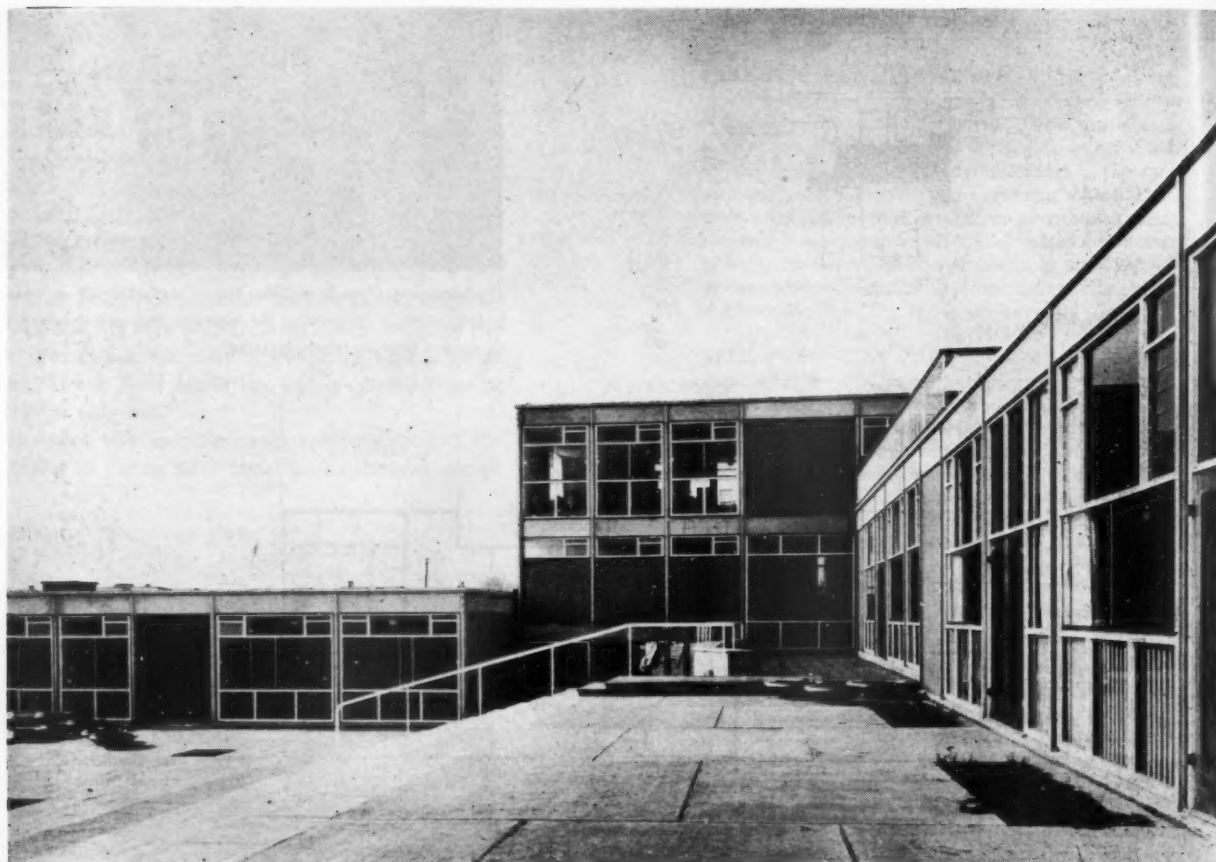
The house room block forms three sides of a courtyard from which, looking north, is this view of the assembly hall and library with the science block in the background.



First floor plan



Ground floor plan, central block [Scale: 1/2" = 1' 0"]



Oppo  
down  
concr  
finis  
var  
alum  
Glaz  
Open  
low  
exter  
Oppo  
schoo  
assem  
sever  
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Furn  
blue

Four  
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of sof

## building illustrated

## analysis

Opposite page, top: the terrace in front of the assembly hall leads down into the house room courtyard. The structure is fairfaced concrete, natural colour. Solid infill panels are softwood-faced, finished with two coats of a grey-green parfinic distillate preservative. Behind the timber facing are two layers of corrugated aluminium foil with an inner face of asbestos-based wallboard. Glazed window panels are in painted European redwood. Opening lights are aluminium-framed sliding sections with louvered hopper lights above. Low-level infill panels are faced externally with coloured compressed asbestos cement sheets.

Opposite page, bottom: the hall is placed in the centre of the school and is planned for diverse uses. It can take a standing assembly of the school, be divided by curtains to give space to several small groups, or be equipped for producing a play. Movable platforms have been provided to extend the stage or to be used in various arrangements on the stage or in the hall. Furnishings and finishes are rich and warm; the ceiling is dark blue and the floor cork tiled.



Four music practice rooms have been provided in addition to the small hall which has a predominant musical bias. To get over the problem of reflected sound in these small rooms, the ceilings have been angled in the form of inverted pyramids and are made of softwood boarding on a softwood frame.

	cost per sq. ft.	s	d
Preliminaries and insurances		4	7
Contingencies		2	5

## Work below ground floor level

Surface stripped 8-in. deep and excavated to reduce levels.

Levels made up with earth.

5-in. reinforced concrete floor slab. Concrete edge beam reinforced with rods. 6-in. concrete retaining walls. Concrete steps and column bases.

2 coats damp proof membrane. Bituminous paint on plinth.

## Suspended ground floors

Side aisles to assembly hall consisting of 5-in. reinforced concrete suspended floor on dwarf bearer walls. Area, 666 sq. ft.

## Frame

3-ft. 4-in. modular pre-cast concrete frame with 6-in.  $\times$  6-in. pre-stressed columns at 6 ft. 8 in. and 10 ft. centres on the perimeter, post-stressed, self-faced slab boundary beams 1 ft. 7 in. deep  $\times$  6 ft. 8 in. and 10 ft. long; post-stressed lattice primary beams 1 ft. 5 in. deep and spanning up to 46 ft. 8 in.; and post-stressed lattice trimmer beams 1 ft. 8 in. deep and spanning 6 ft. 8 in. and 10 ft.

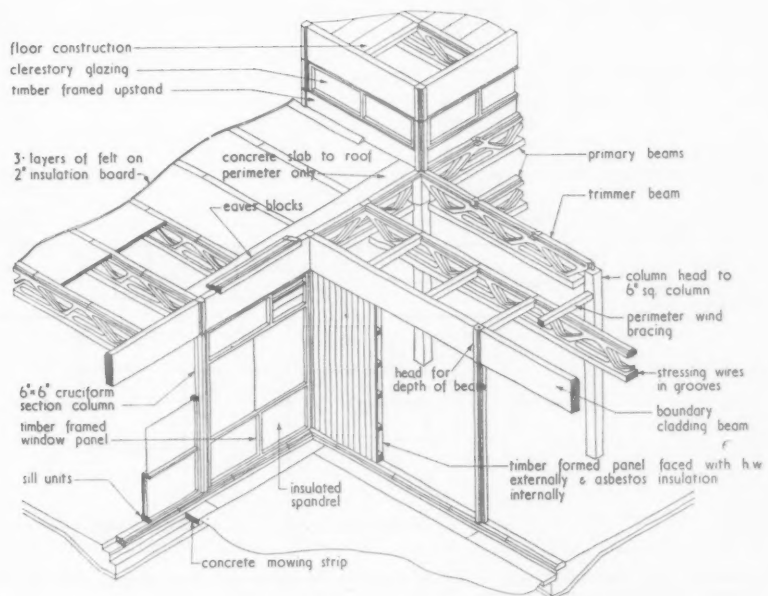
The spacing of the primary beams is at 3 ft. 4 in. centres.

## External walls

4-in. thick overall timber prefabricated cladding units ranging in size from 6 ft. 2 in.  $\times$  1 ft. 8 in. to 9 ft. 6 in.  $\times$  9 ft. 2 in., consisting of softwood framing faced externally with 1-in. Brunei teak boarding and internally with  $\frac{1}{2}$ -in. asbestos insulation board over an insulating lining of building paper and aluminium foil.

The units are fixed between columns and have 2 $\frac{1}{2}$ -in. girth p.v.c. metallic silver flashing at top and bottom edge of cladding units. Included in this element are roof upstand units of softwood framing covered externally with  $\frac{1}{2}$ -in. plywood and 4 $\frac{1}{2}$ -in. hollow concrete block walling.

$$\text{Ratio: } \frac{\text{solid wall}}{\text{floor area}} = \frac{0.215}{1}$$

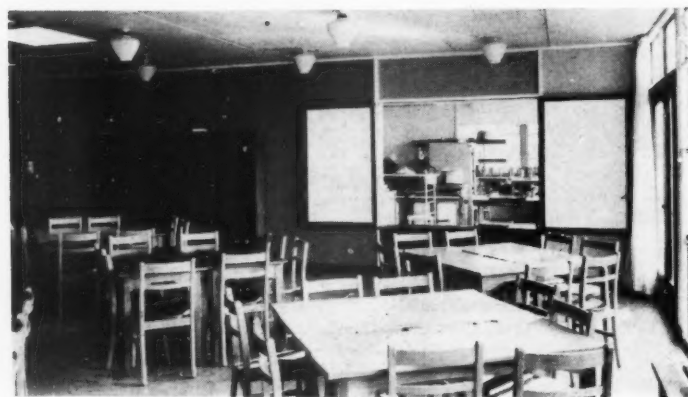


Isometric sketch showing system of construction.

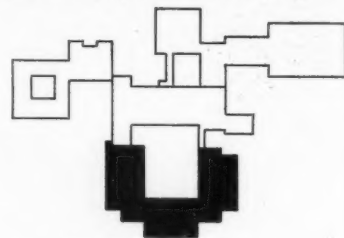
## building illustrated



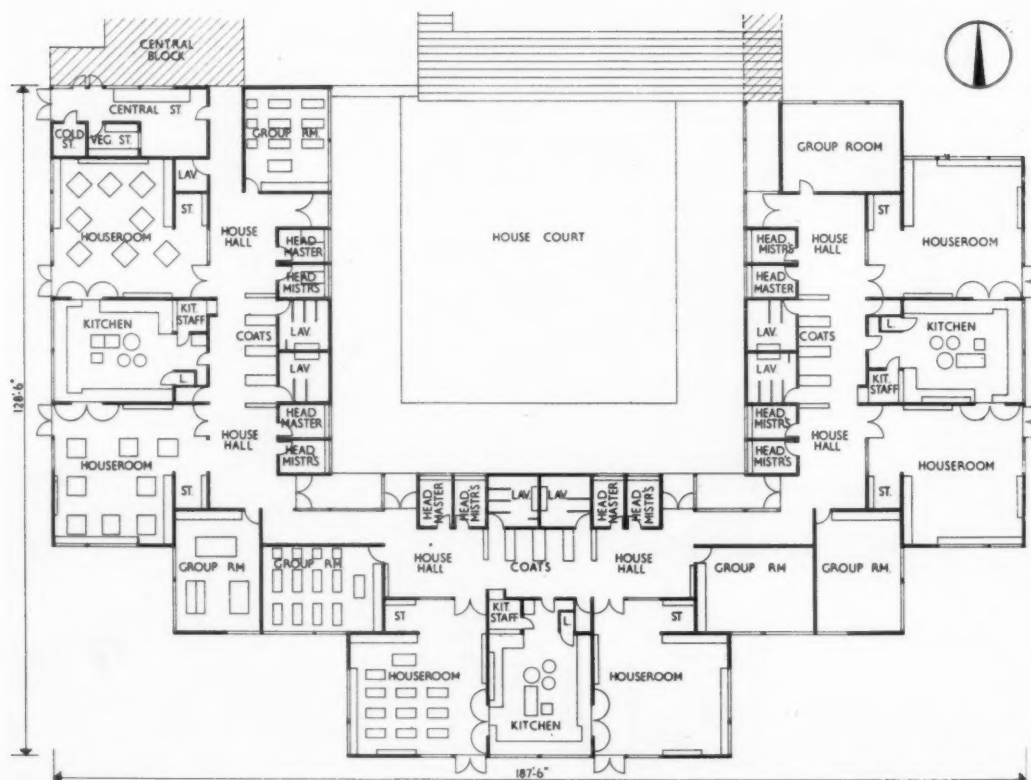
House rooms in the middle school each have their own entrances and entrance halls, with sanitary accommodation and cloaks shared between two rooms. Book lockers are in hardwood and have slatted roller doors. Beneath the clock are two flap-down tables which can be used individually for private study.



House rooms are used for dining for the whole school. Each pair of rooms is served by a kitchen where food is cooked, having been ordered and prepared in a central store near the main entrance. House rooms are counted as half teaching spaces and it is hoped that in time they will build up a tradition as social centres. There is evidence that this process has already begun.



Key plan



Ground floor plan, middle school block, showing the house and group rooms, used for dining, and the twelve house master and house mistress rooms. [Scale:  $\frac{1}{8}'' = 1' 0''$ ]



## analysis

## Windows and external doors

Softwood prefabricated window and door frame units. Sliding windows and patent vents.  
3 single and 1 pair double flush doors.  
8 single and 38 pair double framed doors with galvanised steel thresholds. P.v.c. metallic silver flashings. Spandril panels faced externally with  $\frac{3}{8}$ -in. asbestos cement, internally with  $\frac{3}{8}$ -in. asbestos insulation board over a lining of aluminium foil. Cost includes glazing and all ironmongery (generally Swedish with satin nickel silver finish).

$$\text{Ratio: } \frac{\text{windows and doors}}{\text{floor area}} = \frac{0.385}{1}$$

## Roof construction

2-in. compressed straw in 3-ft.  $\times$  12-ft. slabs spanning between beams at 3 ft. 4 in. centres with steel tees at edges of slabs finished 3-ply felt with granite chippings.

Area, 3,213 sq. yd.

$\frac{1}{2}$ -in. pre-cast concrete slabs as windbracing on perimeter.

Area, 944 sq. yd.

3-in. concrete in-situ to boiler house. 16 sq. yd.

3-in.  $\times$  10 in. precast concrete eaves capping. 2,800 ft. run.

Expansion joints and trimming round vents.

Balustrading to balcony. 54 ft. run.

Total roof area, 39,942 sq. ft.

## Rooflights

215 lights, of which 30 have opening gear.

2 ft.  $7\frac{1}{2}$  in.  $\times$  2 ft.  $7\frac{1}{2}$  in.  $\times$  2 ft.  $0\frac{1}{2}$  in. metal lights.

Cost includes glazing, softwood linings and curbs.

## Upper floor construction

3-ft.  $\times$  1-ft. 1-in.  $\times$  1 $\frac{1}{2}$ -in. precast concrete slabs.

Expansion joints.

Area: 15,511 sq. ft.

## Staircases

Precast concrete stairs and landings. Wrought iron balustrades and hardwood handrails.

4 staircases, all 4 ft. wide, with total rise of 10 ft.,

20 ft., 21 ft. 8 in., and 24 ft. 2 in.

Total of structural elements: 24s 4d

## PARTITIONS AND FITTINGS

## Internal partitions

4 $\frac{1}{2}$ -in. hollow concrete blocks 2,973 sq. yd.

6-in. ditto 289 sq. yd.

3-in. ditto, at sides to heater cabinets 25 sq. yd.

Gypsum plastering 5,341 sq. yd.

Timber stud partition, faced asbestos insulation board 43 sq. yd.

Softwood framed bulkheads faced ditto 66 sq. yd.

Sound-reducing bulkheads in ceiling space.

Expansion joints.

s d  
6 5 $\frac{1}{2}$

## Internal doors

Flush doors to BS 459 part 2a, faced both sides with utile veneered plywood.

Framed doors to BS 459 part 1, in utile.

Softwood frames and fanlights.

Glazing, in door panels, 874 sq. ft.; in fanlights, 1,078 sq. ft.

Ironmongery, Swedish with satin nickel silver finish.

No. of single doors: 124 flush, 8 framed.

Pairs of double doors: 6 flush, 23 framed.

## W.c.s and cleaners' cubicles

Softwood frame partitions with  $\frac{3}{8}$ -in. plywood infilling.

3 3

Flush doors and ironmongery.

18 cubicles.

## Fittings

Storage shelving, 354 sq. ft.

Storage racks, 1,218 sq. ft.

Wood and metal storage racks; games storage racks and pegs; hall stores and cupboards; balustrade to steps; stage suspension gear; display sills; window seats; draining boards; kitchen hatches, stacking units, servery units, larders and stores, screens and worktops; central store shelving, vegetable preparation units. Cold room. Laundry hatch, kit dispenser, changing room benches, laundry equipment. Sundry hatches and small fittings, curtain tracks, proscenium curtain fittings, hand lift, window guard bars, hinged writing tables. (Only fixing of kitchen equipment is included in cost.)

1 9 $\frac{1}{2}$

## Built-in furniture

7 $\frac{1}{2}$

661 lockers and stands.

982 ft. run of wall benching.

Working tops, pin-up boards, chalkboards and mobile chalkboards; shelving, book and magazine racks; fume cupboards, damp cupboard.

7 $\frac{1}{2}$

Fire-fighting equipment, incinerators, mirrors and gym equipment—cost of fixing only.

Total of partitions and fittings: 10s 0 $\frac{1}{2}$ d

## FINISHES

Floor finishes	Area in sq. yds.	Price per sq. yd.	4 0
Synthetic resin-bonded flooring	562	17s 4d	
Holmsund tiles	275	37s 0 $\frac{1}{2}$ d	
Rubber tiles	34	45s 2d	
Studded rubber tiles	591	39s 1 $\frac{1}{2}$ d	
Linoleum	1,362	27s 7d	
Vinyl asbestos tiles	22	24s 3 $\frac{1}{2}$ d	
P.v.c.	1,459	28s 1d	
Cork tiles	1,005	33s 9d	
Quarry tiles	291	32s 7d	

s d  
1 4 $\frac{1}{2}$

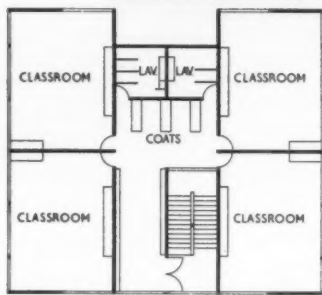
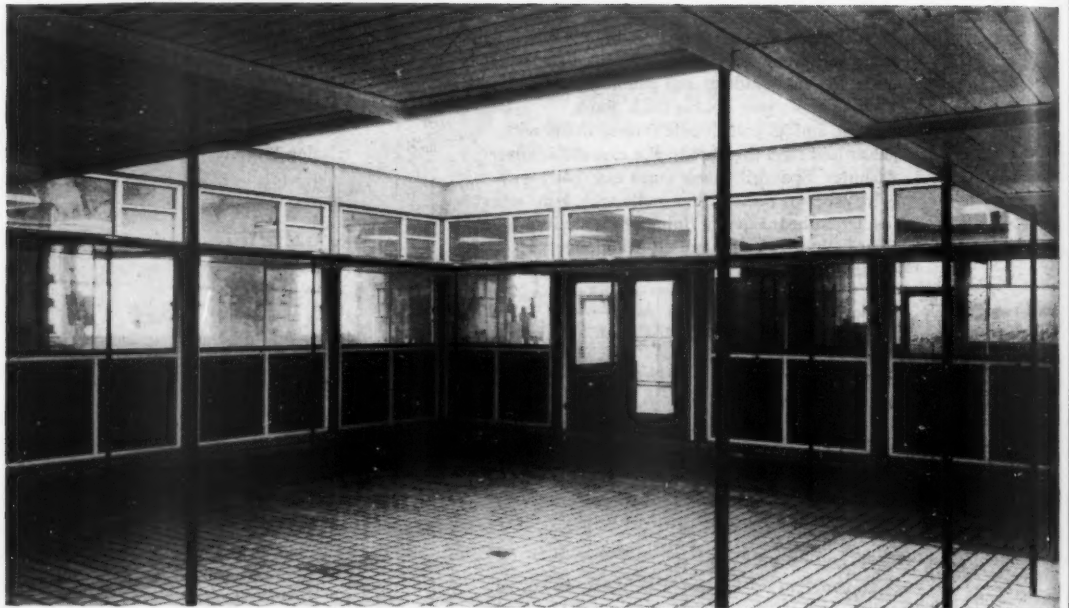
2 $\frac{1}{2}$

2 0

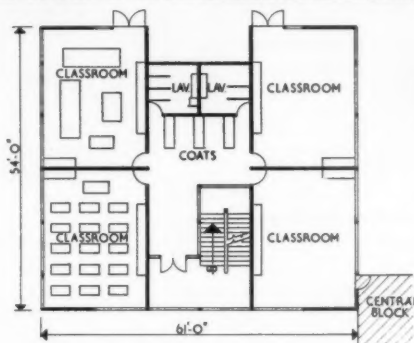
3 1 $\frac{1}{2}$

3 4

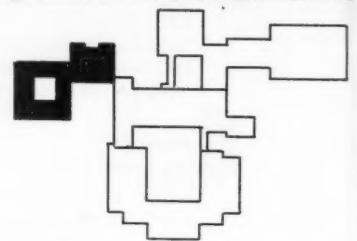
building illustrated



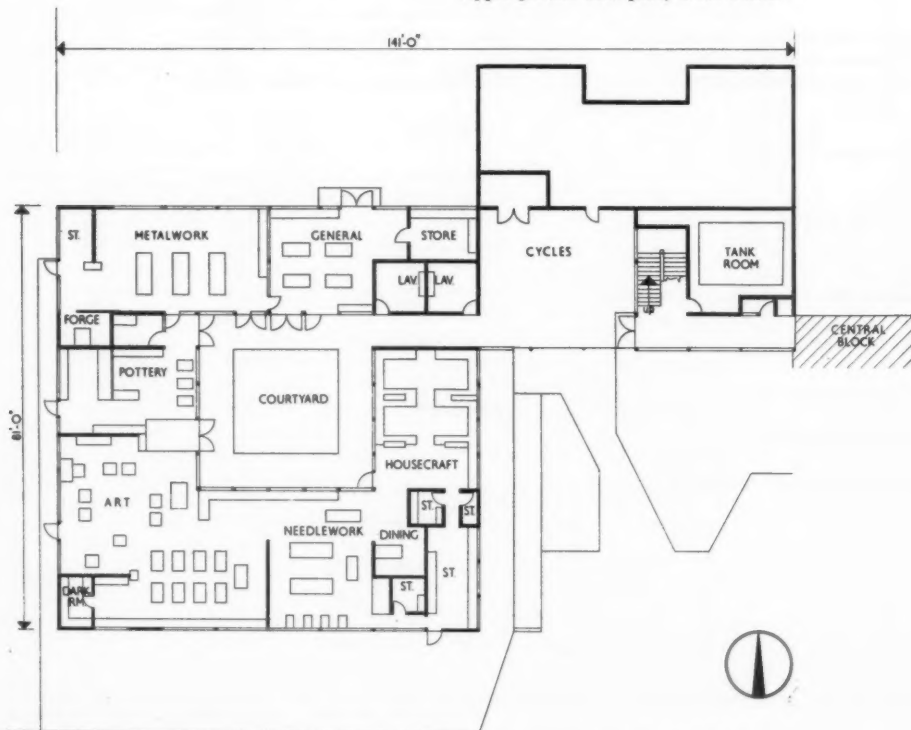
First floor plan, lower school



Upper ground floor plan, lower school



Key plan



Ground floor plan, craft block, and lower ground floor plan, lower school. (Scale:  $\frac{1}{4}$ " = 1' 0")

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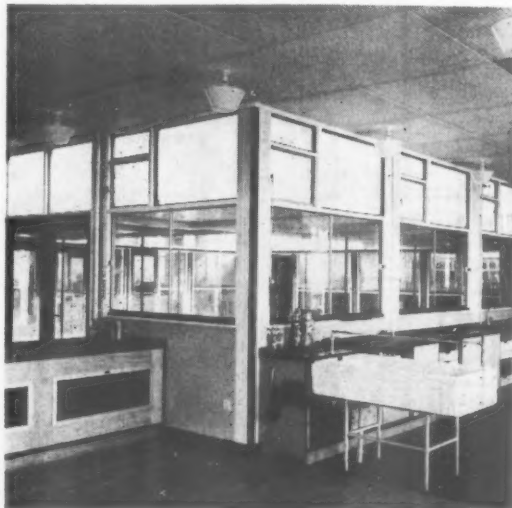
## analysis

Opposite: the craft block has this delightful little internal work yard, paved in blue bricks, with a covered way all round. All rooms open on to this, and when in use there is a splendid, busy quality without objectionable noise transmission.



Staircases have pre-cast pre-stressed raking beams which are carried by post-tensioned beams at half landings and by trimmer beams at landings. Treads and risers are integral pre-cast concrete units and the finish is p.v.c. sheet and nosing. Main supports for the balusters are bolted right through the tread unit.

The art room in the craft block. The large sink is a highly successful innovation. The pipe is drilled to give four jets on each side and speeds up considerably the process of washing brushes and palettes.



## Wall finishes

s d  
2½

Type of finish	Area in sq. ft.
Asbestos cement	589
Splashbacks	284
Tile splashbacks	459
Gaboon-faced plywood panelling	160
Maarud mahogany panels	291

## Ceiling finishes

2 11½

Fibrous plaster panels, mainly 3 ft. 4 in. × 3 ft. 4 in., 36 plain, 64 sound-absorbing, 5,688 sq. yds.  
Match-boarded panels, 130 sq. yds.  
Softwood cornices, 10,313 ft. run.

## Decorations

1 8½

Walls, 3 coats emulsion, or primer and 2 coats oil paint.  
Ceilings, 2 coats emulsion.  
Softwood rooflights, windows, doors, screens, cubicles and fittings, knotted, primed and stopped and 2 coats oil paint.  
Hardwood fittings and wall finishes, 2 coats synthetic resin varnish.  
Externally, softwood windows and doors, k.p.s. and 2 coats oil paint.

Total of finishes: 8s 10d

## SERVICES

## Plumbing

2 7½

External: 3 in. aluminium alloy rainwater goods. Reinforced bitumen soakers.  
Internal: Storage capacity for 9,076 gallons of water.  
Light gauge copper piping for cold drinking main and hot and cold down services.  
Preformed wastes in copper and alcathane.  
Galvanised steel soil and waste stacks.

## Sanitary fittings

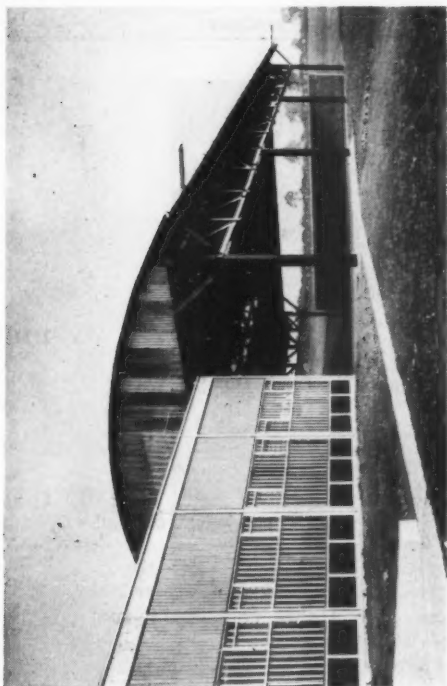
1 1½

155 white glazed fireclay with chromium-plated fittings, 24 chemical stoneware dilution pots and metal sink stands.

## Gas installation

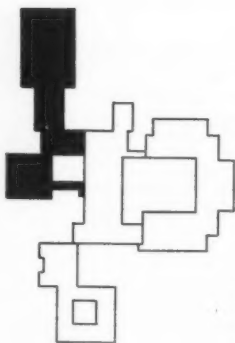
3½

Mild steel tubing, 64 points to kitchens and laboratories.

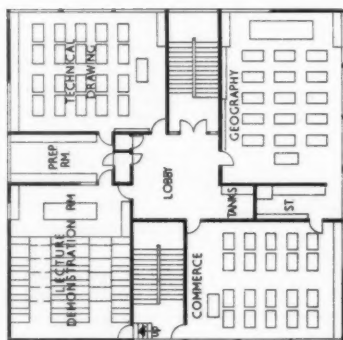


*Arnold provides a huge covered games space in addition to the gym, which is on the left of the picture. This P.E. shed covers an area of 8,430 sq. ft. and is a magnificent traditional timber barn (12 in. x 12 in. softwood columns) clad with asbestos cement. The vertical railings in painted softwood are designed to protect the children from danger from low level glass.*

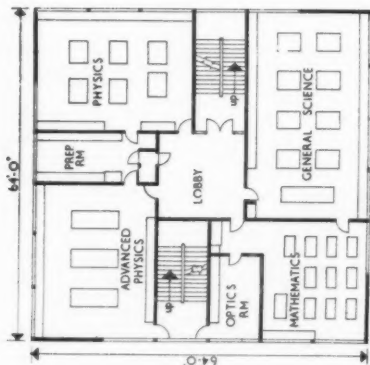
building illustrated



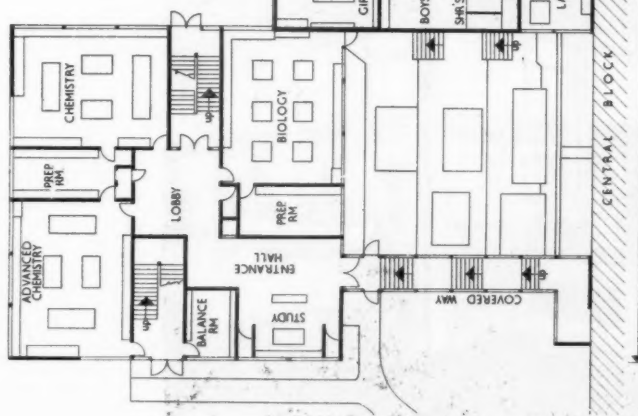
Key plan



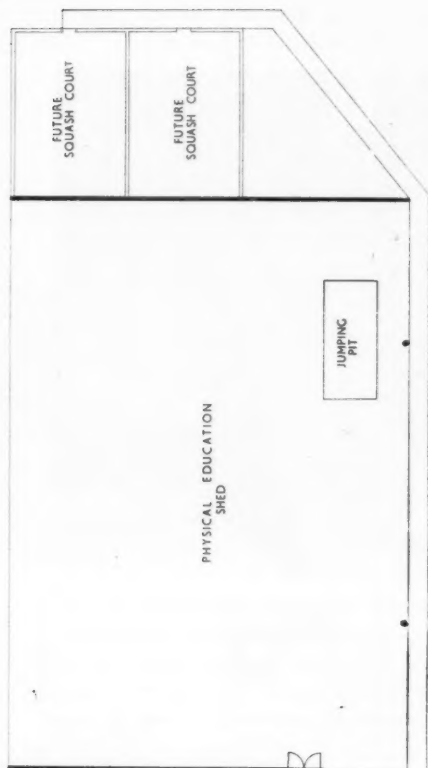
Second floor plan, science block



First floor plan, science block



Ground floor plans, science block and physical education block [Scale: 1/8" = 1' 0"]



PHYSICAL EDUCATION SHED

JUMPING PIT

FUTURE SQUASH COURT

FUTURE SQUASH COURT

GYMNASIUM

158'-0"

CENTRAL BLOCK





The gym, in a school of Arnold's size there would normally be two gymnasia. Because of the provision of the outside P.E. shed, only one, of 2,400 sq. ft., is provided. Equipment has not yet been installed there. The floor of the gym is a departure from the usual wood strip. It is a dark green pimpled p.v.a. tile which has good non-slip characteristics, and agility mats will be used when resilience is required.



The advanced chemistry laboratory. A trend was noticed in schools studied before planning of Arnold began towards the separation of theoretical and practical work. Owing to the smaller groups of pupils, practical work was diverse in character and tended to be less supervised than was expected. A formal tiered lecture theatre has therefore been provided and six small laboratories of 673 sq. ft., plus one of 900 sq. ft. for lower school use. Benching has been designed by the architects and where services are not required it is movable. Cupboards beneath benches can be moved and distributed where required.



Every opportunity has been taken to provide small areas for individual study. This one is off the entrance hall in the science building and is equipped with a display case and bookshelves. Ceilings are standard size throughout in fibrous plaster with random perforations or plain as required. They are undecorated.

#### Electric installation

P.v.c. wiring. Electric water heaters, clocks, fire alarm system, heater cabinets, stage lighting, radio and TV wiring.

Type of fitting	Number of each type
Light points	1,154
Clocks	18
Power points: 13-amp. single sockets	128
13-amp. twin sockets	10
30-amp. single sockets	4
Water heaters	74
Extract fans	12
Mixing machines	3
Fire alarm bells	14
Fire alarm pushes	17

#### Heating installation

Thermostatically controlled warm air system.  
Hot water circulated by pumps from oil-fired boilers to heater exchange units.  
Hot water to showers and kitchens by calorifiers.  
Gas boiler for hot water to laundry and changing rooms in summer.  
Steel flue.  
Temperature: 62 deg. F. when outside temperature is 32 deg. F.  
Air changes: 3 per hour.  
"U" value of walls: 0.17.  
"U" value of roofs: 0.16.

#### Ventilation

15 asbestos roof vents. 3 mechanical vents to kitchens.  
17 wall vents to rooms.

#### Total of services: 13s 1½d

#### Drainage

Main runs, 4-in. and 6-in. pitch fibre. Branch runs, 4-in. stoneware seconds.  
Land drains mainly 3-in. agricultural.  
Fittings, salt glazed stoneware.

#### External works

Tennis courts, oil storage tank supports, enclosure and fuel mains.  
Thresholds.  
Excavations and filling around, necessary to site the building.

#### Physical education shed

Area, 8,430 sq. ft. Cost, £5,160, or 12 3d. per sq. ft.

#### Shillings per sq. ft. of floor area:

£202,095 15s. 10d. (including external works)	
56,829 sq. ft. (measured inside external walls)	= 71 1½

s d  
3 2

5 10½

1

1 5½

2 7½

## analysis

## COST COMMENTS

This is the first school to be completed using the Laingspan system and therefore the cost of the structure is of primary interest. The Ministry's Development Group, in this case augmented by consultants and a nominated contractor, set out to develop a new structural system 20 per cent. cheaper than similar systems on the market at that time, and further to build a school using the new system at a cost below the limit of £264 per place. The group state that after a study of the cost of structural systems for other schools it was decided to allow in the cost plan 15s. 8d. per sq. ft. for the elements frame, roof construction, rooflights, upper floor construction and staircases.

This meant a saving of 3s. 11d. per sq. ft. of floor area on the structural cost of similar schools. The measure of their success is evident from the total of these elements in the cost analysis—15s. 3½d.

Some of this saving has been allocated elsewhere in the cost plan. Preliminaries must carry the contractor's development costs, and Contingencies include a design risk element. It has been found possible to spend more than the usual amount on fittings.

The wall finishes at 2½d. per sq. ft. of floor area do not represent the full value of that element. The internal wall finish to the external walls is an integral part of the pre-fabricated cladding units and is included in that element. To match this effect on the analysis, the internal wall plastering is included with "Internal Partitions."

The group claims this as an example of a correctly balanced cost analysis stemming from a correctly balanced cost plan: cost has been considered together with function, quality and amenity, with a net cost per place of £256 6s. 3d., which is well below the cost limit and comparing with £258 9s. the national average at time of tender.

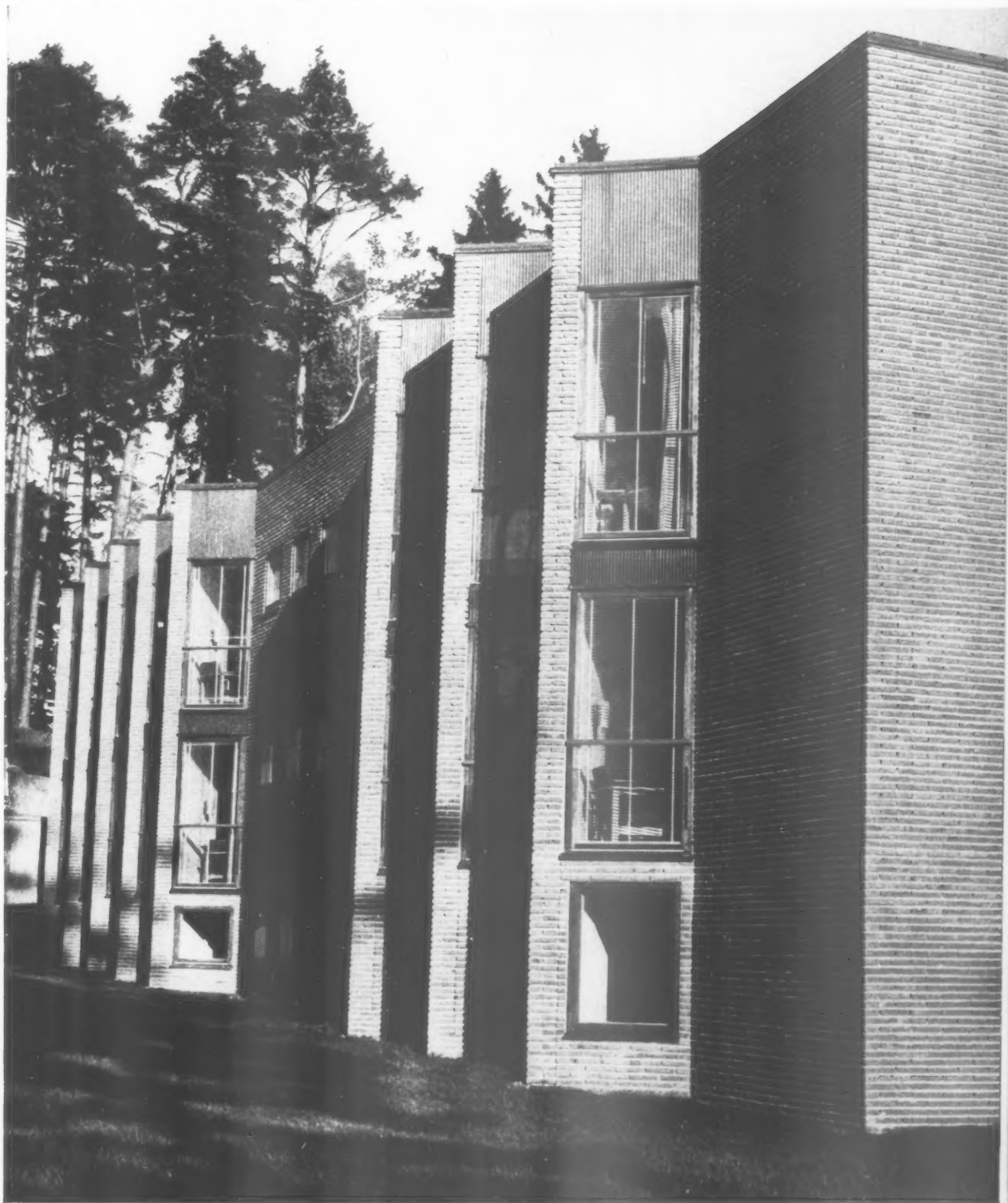
However, it could be argued that a low building cost had, at least partly, been achieved at the expense of low maintenance costs: e.g., we have softwood instead of hardwood or aluminium windows, p.v.c. for woodblock floors, one undercoat on woodwork externally for two undercoats, felt roof finish for asphalt, etc. There is no inherent value of course in building below cost limits as an exercise in itself, and cost planning implies that money saved on target costs will be available to give a better finished product.

## CONTRACTORS

*General contractor:* John Laing & Son Ltd. *Sub-contractors:* *Sewage pumping equipment:* Adamsez Ltd. *Felt roofing:* Wm. Briggs & Sons Ltd. *Landscaping and tennis courts:* The En Tout Cas Co. Ltd. *Proscenium curtain track and lightning protection:* W. H. Furze & Co. Ltd. *Hand operated lift:* Gibbs Bros. & Lucas Ltd. *Floor covering:* Haskel Robertson Ltd. *Electrical installation:* N. R. Kirk (Contractors) Ltd. *Metal balustrades:* Metalcraft (Nottingham) Ltd. *Plumbing and gas installations:* Newman & Watson Ltd. *Paints:* Joseph Mason. *Cold room:* Pressed Steel Co. Ltd. *Studded rubber floors:* Rubberware Ltd. *Water main and meter:* City of Nottingham Water Department. *Fibrous plaster ceilings:* Thomas & Wilson Ltd. *Warm air heating installation:* Weatherfoil Heating Systems Ltd. *Fencing:* Boulton & Paul Ltd. *Dutch barn:* Wm. Kay (Bolton) Ltd. *Dutch barn asphalt flooring:* The General Asphalte Co. Ltd. *Painting:* F. Labbett & Sons Ltd. *Glazing:* Faulkner Greene & Co. Ltd. *Plastering:* W. A. Telling Ltd. *Allday windows:* P. O. Auday & Co. Ltd. *Louvre windows:* N. V. Appleton (Pty.) Ltd. *Asphalt tanking:* Limmer & Trinidad Asphalte Co. Ltd. *Road surfacing:* General Asphalte Co. Ltd. *Wall benching and lockers:* Educational Supply Association Ltd. *Rooflights:* Greenwood's & Airvac Ventilating Co. Ltd. *Doors:* Jayanbee Joinery Ltd., Manor Joinery Works Ltd. *Laundry equipment:* D. & J. Tullis Ltd., Thomas Broadbent & Sons Ltd.

WINDOW: TRAINING CENTRE IN STOCKHOLM

*Anders Tengbom, architect (material supplied by Alice Mylo)*

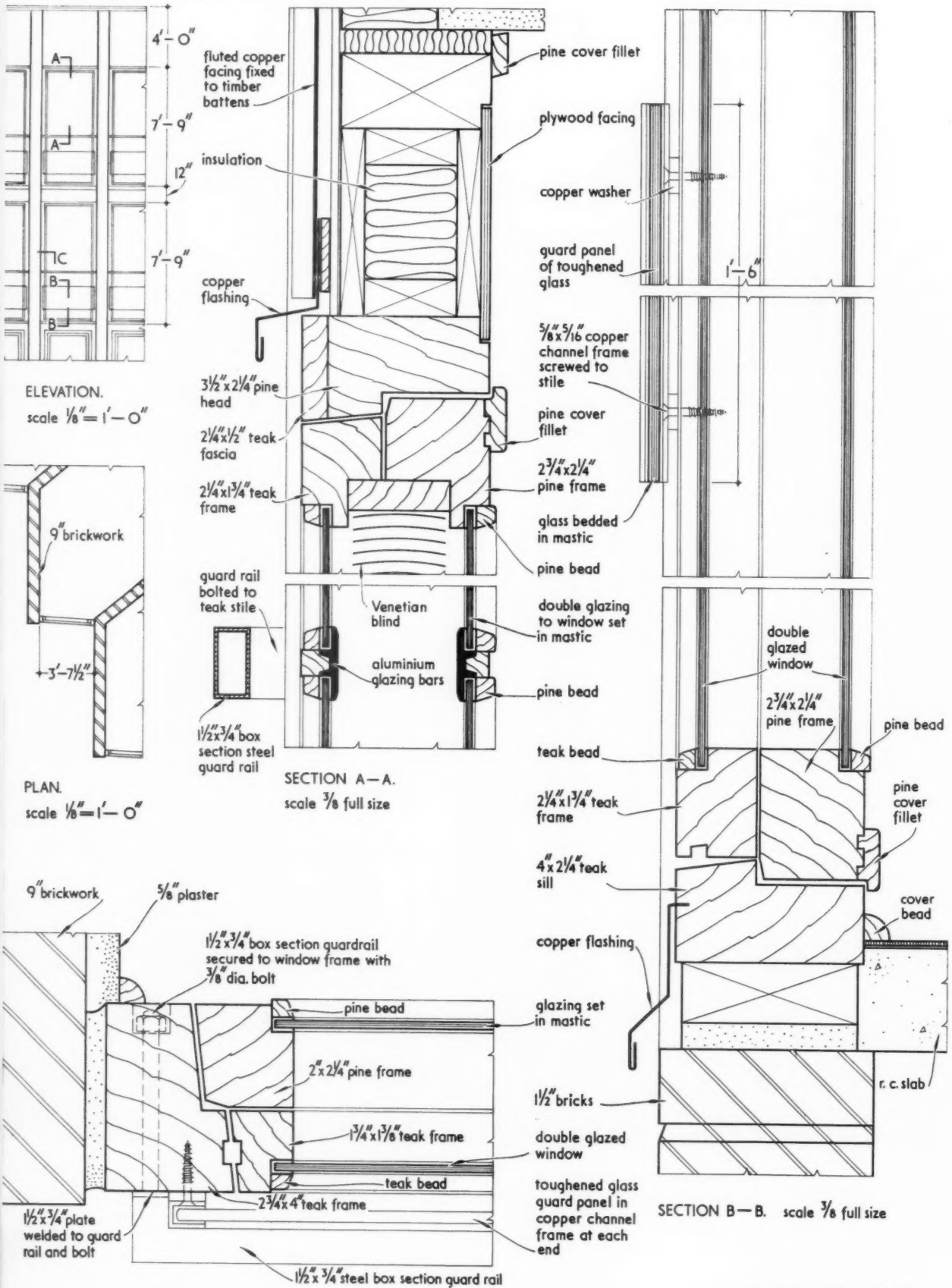


*This detail shows how comfort conditions can be achieved with a large window: double glazing and a scrupulous avoidance of the "heat bridge" effect. Here, both panes are inward opening. Note the neat guard rail and the use of an aluminium glazing bar with teak beads. The inside view of this window can be seen in the detail published on December 3, 1959.*

working detail

WINDOW: TRAINING CENTRE IN STOCKHOLM

Anders Tengbom, architect (material supplied by Alice Mylo)



ELEVATION.  
scale 1/8" = 1'-0"

PLAN.  
scale 1/8" = 1'-0"

SECTION A-A.  
scale 3/8 full size

SECTION B-B. scale 3/8 full size

PLAN AT C. scale 3/8 full size

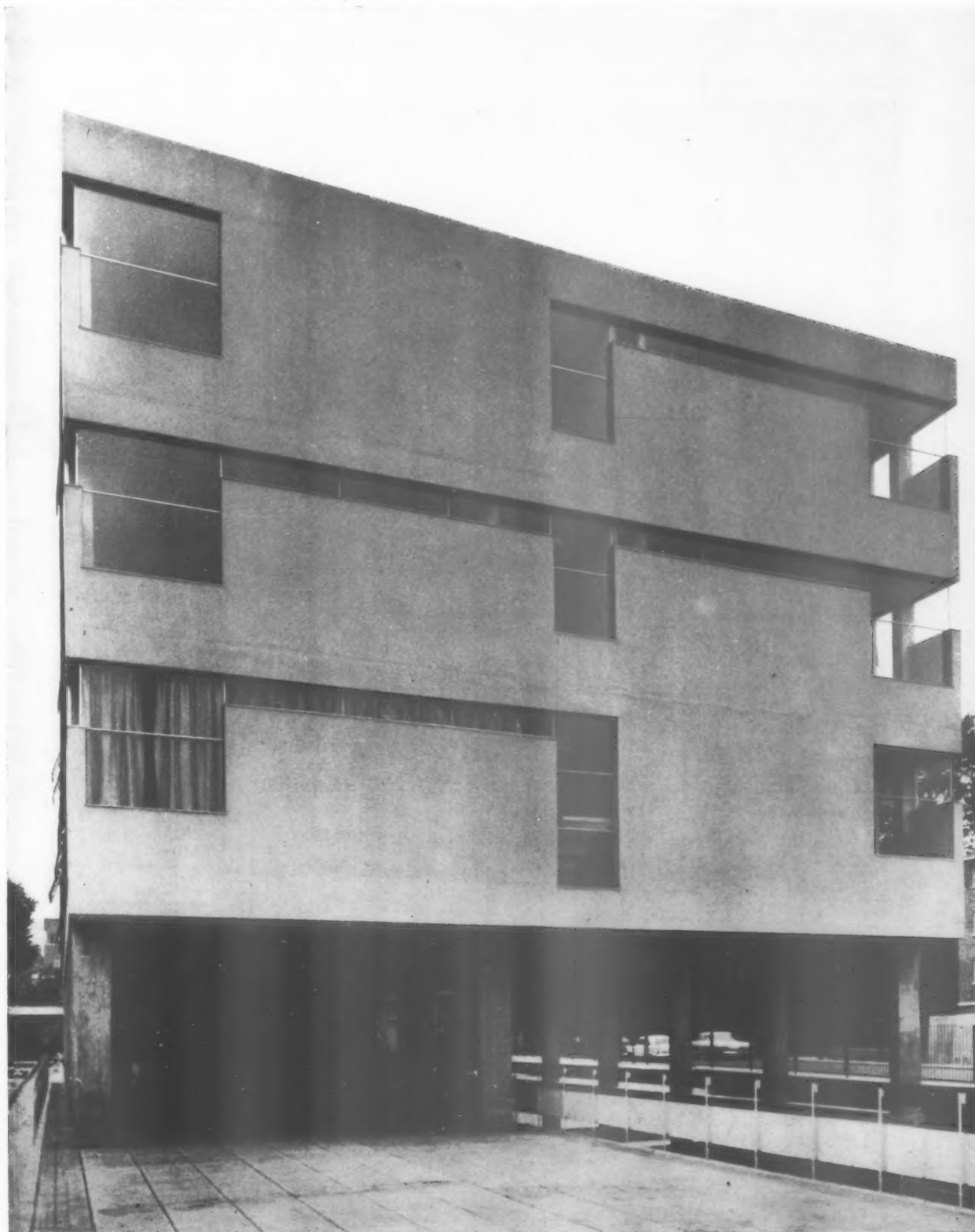
note: figured dimensions in feet and inches are approximate



working detail

WINDOWS: SCHOOL IN LONDON, W.C.1

*Hubert Bennett, Architect to the London County Council*

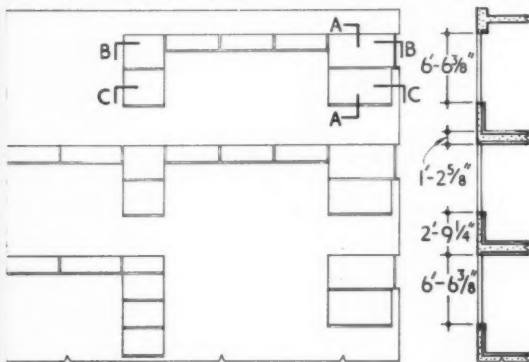
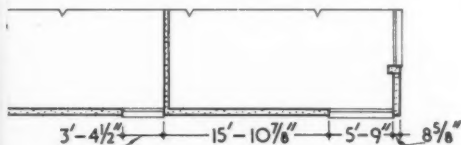


*The fenestration on this building shows the triumphant technical realisation of one of the earliest ideas of the modern movement. Note the bedding of the glass in aluminium comes and in a timber frame flush with the concrete.*

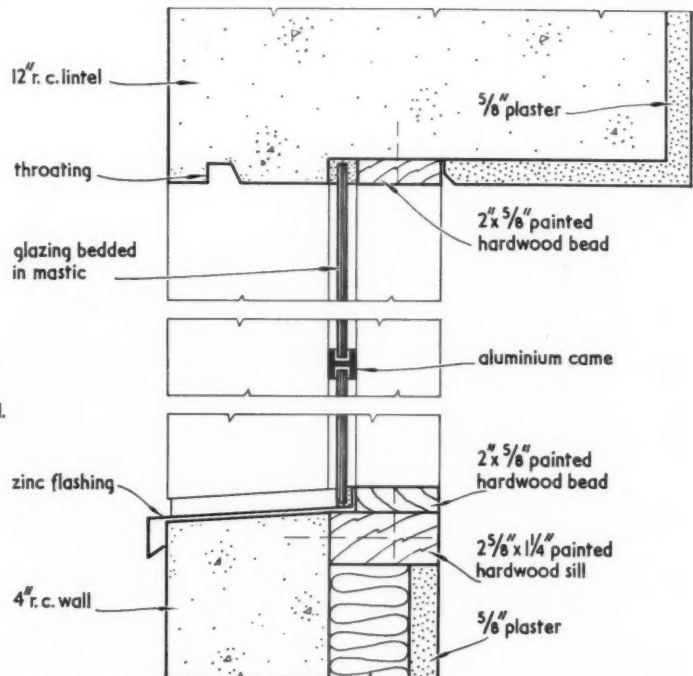
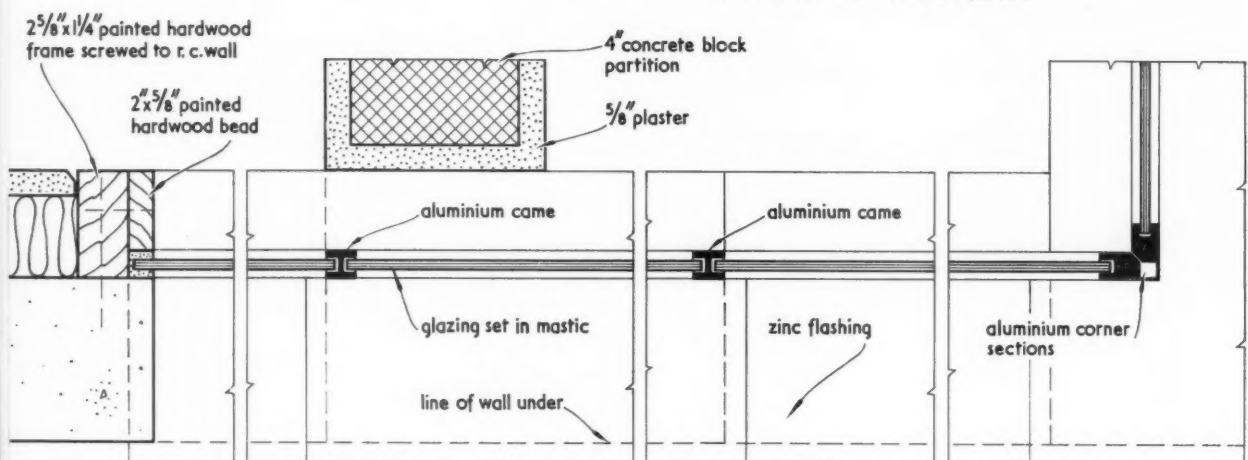
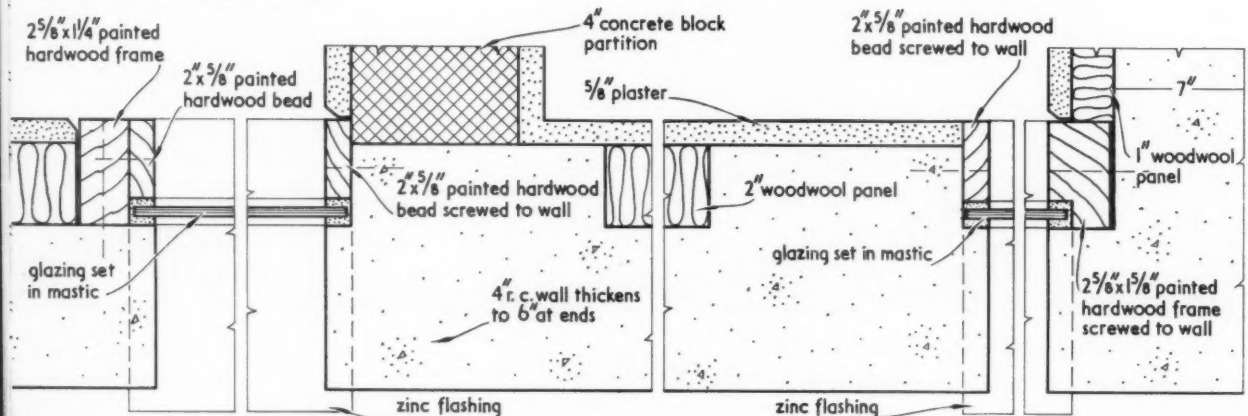
## working detail

WINDOWS: SCHOOL IN LONDON, W.C.1

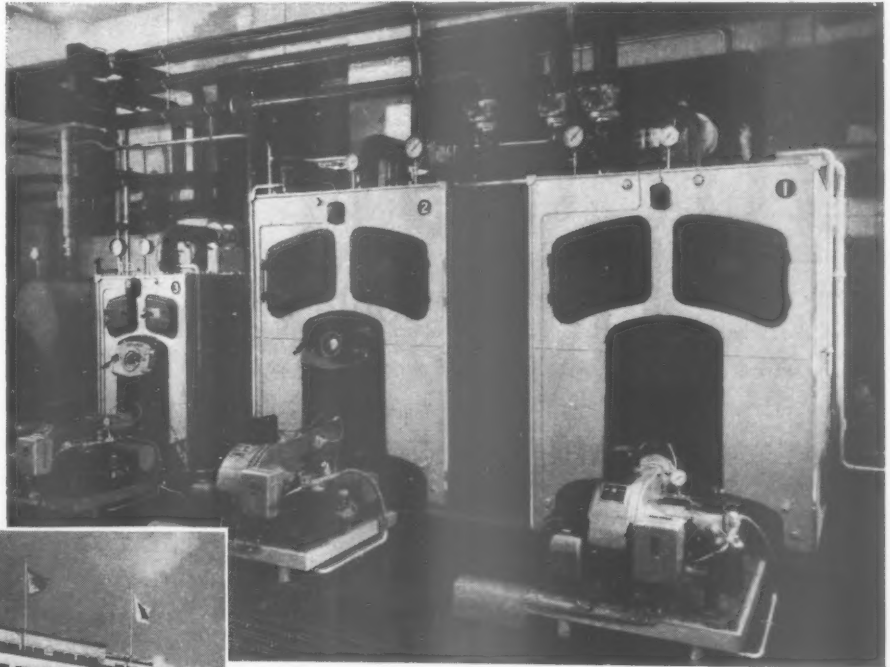
Hubert Bennett, Architect to the London County Council

ELEVATION. scale  $\frac{1}{16}'' = 1' - 0''$ PLAN. scale  $\frac{1}{16}'' = 1' - 0''$ 

SECTION.

SECTION A - A. scale  $\frac{1}{4}$  full sizePLAN AT B - B. scale  $\frac{1}{4}$  full sizePLAN AT C - C. scale  $\frac{1}{4}$  full size

## Shell-Mex & B.P. Limited chose IDEAL BRITANNIA BOILERS for their oil-fired installation in Shell-B.P. House, Bristol



Two Ideal Britannia oil-fired boilers for central heating and one for indirect hot water supply have been installed in the new Shell-B.P. House in Wine Street, Bristol.

Ideal Britannia Boilers are made in 49 sizes with capacities ranging from 40,000 to 2,492,000 B.T.U./hour. A distinct advantage of the Britannia is that the firebox gives adequate space for burning the quantity of oil necessary to provide the catalogue ratings with the highest efficiency. Tests show up to and over 80% efficiency calculated on the gross calorific value of the oil.

# IDEAL BRITANNIA BOILERS



IDEAL BOILERS & RADIATORS LIMITED · IDEAL WORKS · HULL

# NEW COLOUR RANGE IN 1960

accotile and accoflex

The colour range of both these well-known flooring materials have been extensively changed for 1960 reflecting modern trends in interior decoration.

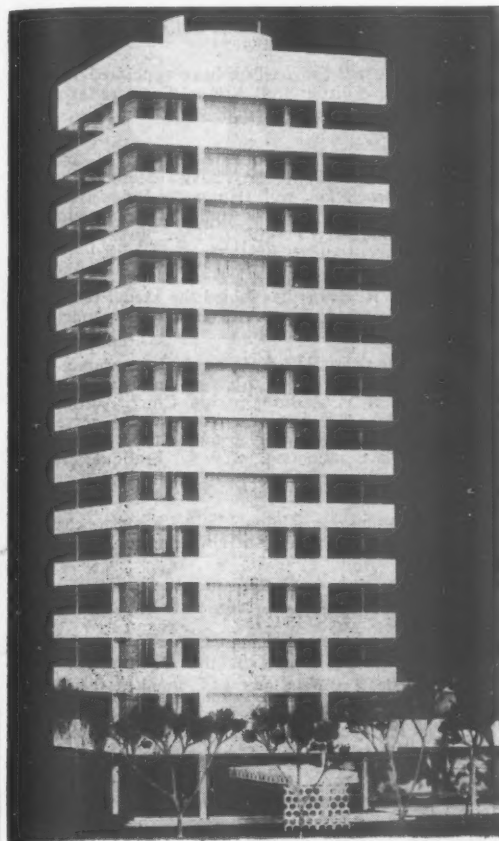
The new colour range leaflets, Publication 383 on Accotile and Publication 384 on Accoflex, are now available. Samples of the new tiles will be ready on January 1st, and will be sent on request.

 **Armstrong Flooring**

Armstrong Cork Company Ltd  
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Bush House, Aldwych, London W.C.2  
Tel: COVent Garden 1101



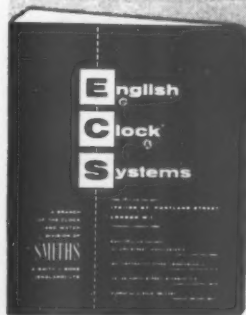
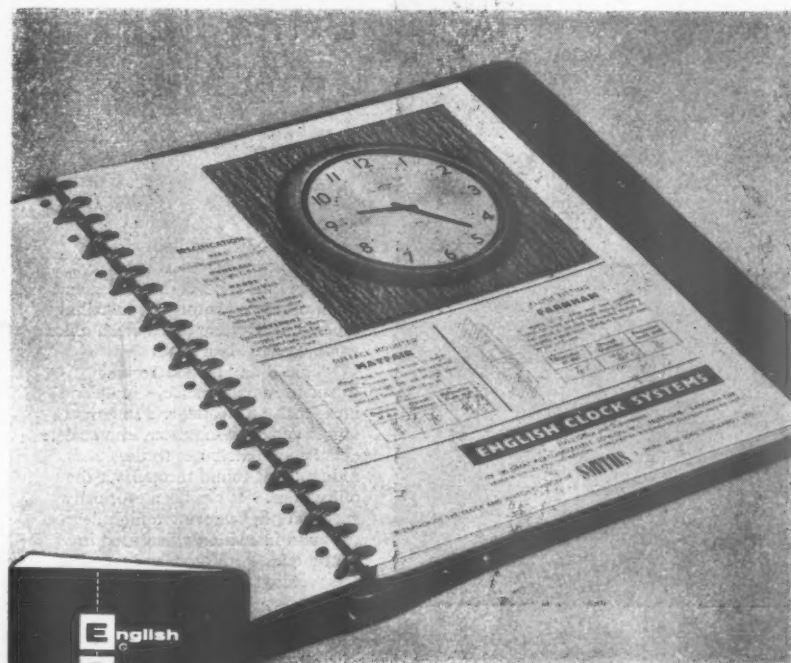
## PROPOSED OFFICES AT NEASDEN, LONDON, N.W.10



Dennis E. Pugh has designed this new office building for Radiation Ltd. The firm is following the trend of businesses to move out of central London and has decided to build an office block on the North Circular Road at Neasden. The tall block, on which work started recently, and which should be finished by 1961, will be a foil to the ribbon development along the North Circular and punctuate the monotony of the two and four storey building which has taken place along the entire length of this roadway between and after the wars. Accommodation is to be provided for the directors of the parent company as well as for the secretarial, commercial and publicity departments for the gas, electrical, solid fuel and warm air divisions and for a number of associate companies. Each department will have its own floor which can be reached by one of the two lifts to be installed. The floors, which might be described as "departmental trays," are given sculptural expression by the setting back of the windows from the external face of the wall, staining of which is to be reduced by means of cill gutters. The windows are in anodised aluminium and the external cladding to the reinforced concrete structure is  $1\frac{1}{2}$  in. travertine slab. The whole building stands on large diameter pile foundations, which are necessary to carry the 160 ft. high tower. The floors are of coffered reinforced concrete. The consulting engineers for these 30,000 sq. ft. of offices are Ove Arup and Partners, the quantity surveyors are Davis, Belfield and Everest and Sir Robert McAlpine and Sons Ltd. are the main contractors. The building will be fully described in the JOURNAL.

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reference

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Birmingham, Manchester,  
Glasgow and Belfast.

## Announcements

### PROFESSIONAL

Gilbert Yeates, A.R.I.B.A., has taken over the practice of the late Benjamin Waterhouse, F.R.I.B.A., at 134, Deansgate, Manchester 3, which will be continued at the same address under the style of Benjamin Waterhouse & Company.

Hermion Crook & Williams, Chartered Architects, Surveyors and Valuers, have opened a branch office at 5, Bridgeman Terrace, Wigan, Lancs., and will be pleased to receive trade literature, price lists and samples.

Roger A. Burgess, B.Arch., A.R.I.B.A., is engaged in research into non-load bearing partitions and would be pleased to receive details from manufacturers, at the Department of Building, The Manchester College of Science and Technology, Manchester 1.

### TRADE

Rotaflex (Great Britain) Ltd. have made the following new appointments within the firm: John Naylor—Sales Manager, Godfrey Jacobs—Export Sales Manager, and Richard Klein—Manager of the Architectural and Display Lighting Division.

J. F. Purvis, A.M.I.Struct.E., is now Reinforced Products Manager of Thermalite Ytong Ltd.

Stramit Boards Ltd. have appointed James Marsh, F.C.I.S., as Secretary of the Company.

Jenson & Nicholson Ltd. have appointed H. G. Ablett as a Director of the Company.

H. L. Buchanan is now manager of the Glasgow branch of Simplex Electric Co. Ltd.

A. R. M. Tanner has joined the board of Easiclone Porcelain-Enamel (1938) Ltd., as Sales Director.

Cyril Bayton, chief mechanical engineer of Taylor Woodrow Construction Ltd. has been appointed to the board of Taylor Woodrow Plant Co. Ltd. Jack Rogers has been appointed to the board of Taylor Woodrow Services Ltd.

Austins of East Ham Ltd. announce that Frederick Why, A.M.B.I.M., one of the Company's Assistant Directors, has now assumed responsibility for the Grangewood Partition Division of the Austin Hall Group of Companies.

Hymatic Engineering Co. Ltd. announce the following changes in their Hydrovane Compressor Division: G. Seaton—Senior Representative in Northern England, D. R. Morgan—Sales Representative in Northern England, W. H. Wheeler takes over a new Midland territory concentrated on Birmingham, G. P. Webb—Sales Representative in South Eastern England and L. G. Calvert—Sales Representative in London and Middlesex.

The UAM Group has extended its technical advisory services by appointing P. C. Lawrence and T. LeQuesne to Union Fibre Pipes (Great Britain) Ltd.

George Ellison Ltd. have appointed Thomas G. Ellison and Arthur E. Skan as Joint Managing Directors.

The American Biltrite Rubber Co. and the Dodge Cork Co. have entered into an association with Humasco Ltd., who now have the sole UK and European rights for solid vinyl flooring and the vinyl cork flooring produced by these companies.

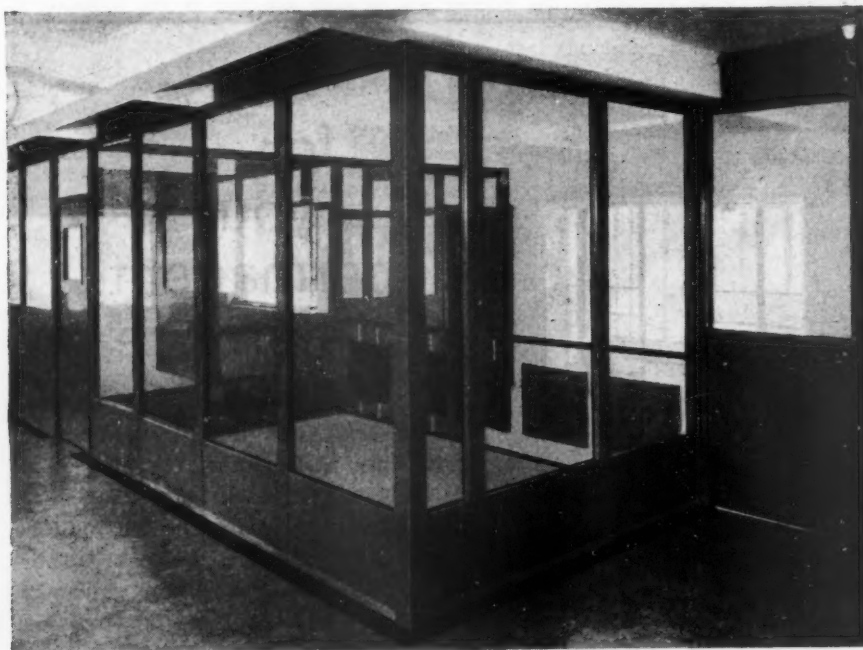
J. R. Evans has joined the executive staff of Teleng Ltd. as Assistant to the Director.

Siemens Edison Swan Ltd. announce that J. H. W. Morgan has retired from his position as Radio Division Chief Accountant. He will, however, continue to serve the organization for a time at 33, Grosvenor Place, London, S.W.1, headquarters of Associated Electrical Industries Ltd.

Aluminium Union Limited has now changed its name to Alcan (UK) Limited.

### Correction

The designers of the John Thompson (Beacon) Windows Ltd. stand at the Building 'Exhibition were Morrison, Rose and Partners, and not, as stated in the JOURNAL for December 3, Maurice, Rose.



## Bring light and calm to your office

Give your office the light airiness and calm efficiency that cuts out noise and unnecessary bustling (and also impresses visitors) by installing Norwood 'Double Skin' flush office partitioning. Norwood 'Double-Skin' is modern and dignified in appearance, simple and inexpensive to install and imparts to offices and showrooms an immaculate effect and contributes to the reduction of sound throughout the office floor. It has been especially successful in achieving a high degree of sound insulation when used in conjunction with modern acoustical tiled ceilings and double glazing.

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c  
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"Palmers" are proud to have supplied the trolley system for external wall maintenance at the Kitt Green Project for the H. J. Heinz Co. Ltd."



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Architects: Lewis Solomon, Kaye & Partners F/A, R.I.B.A.  
Contractors: Rowley Bros. Ltd.

A pair of AYGEE "Armourplate" Doors with  
standard handles, patch fittings and transome light,  
set as a fine foil to the impressive marble entrance  
of this new office block.

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Architects: White, Cooper & Turner F/F, R.I.B.A.  
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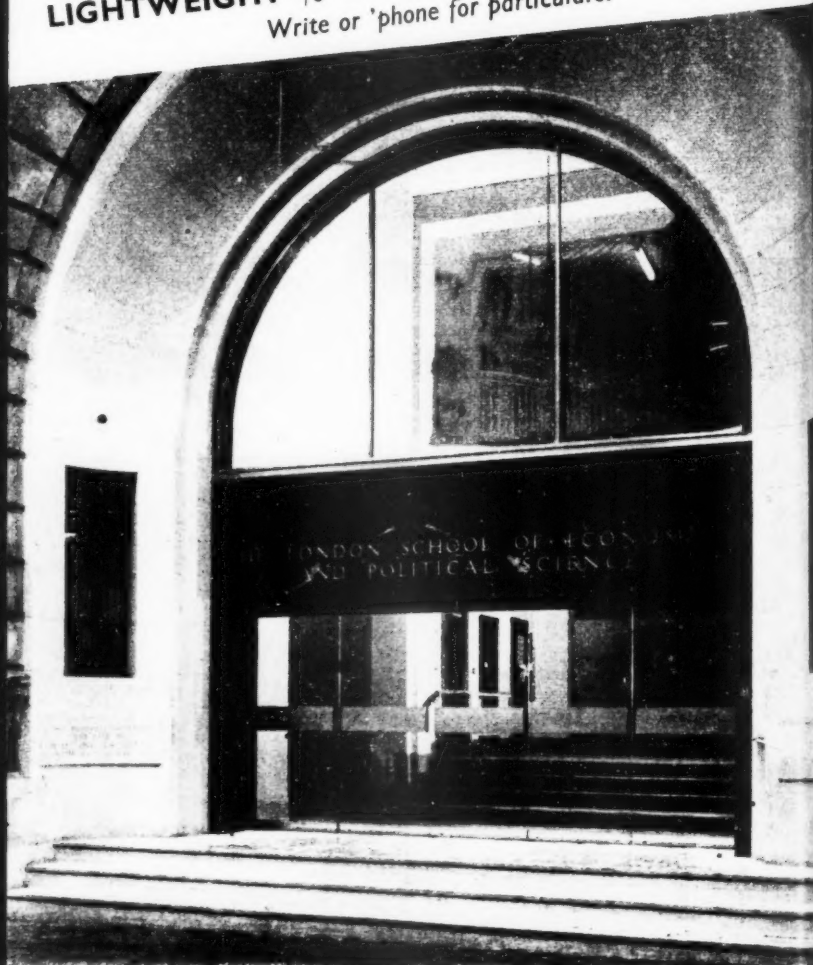
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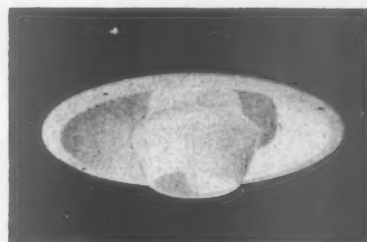
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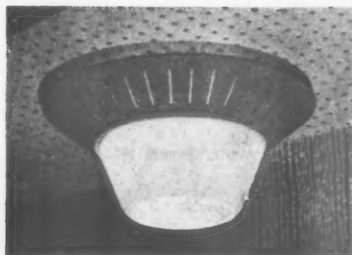
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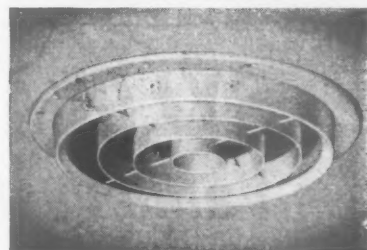


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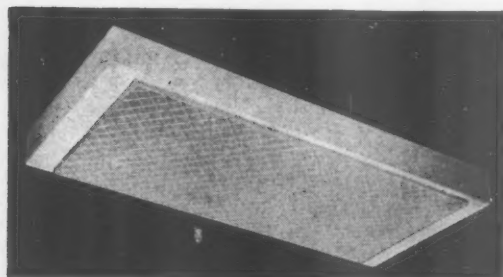
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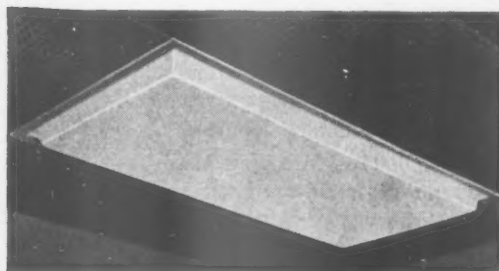


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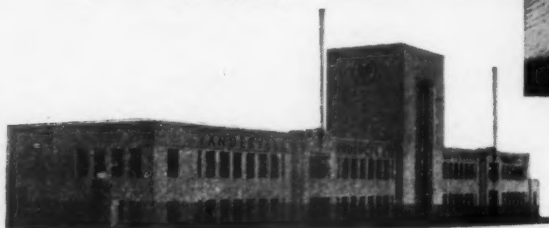
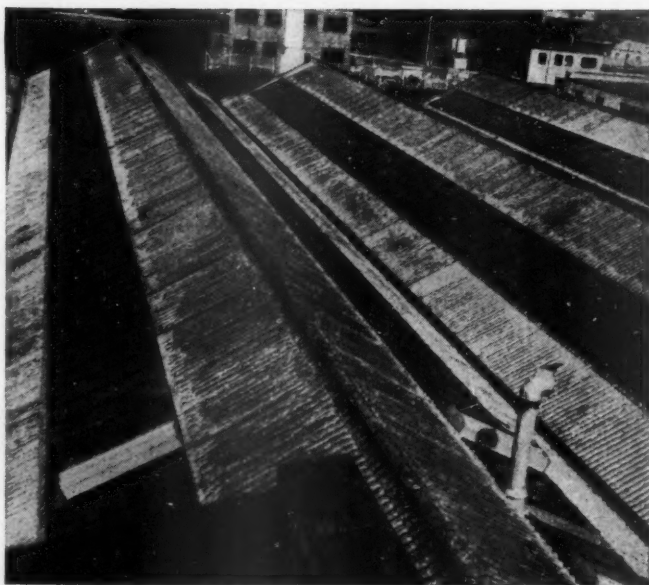
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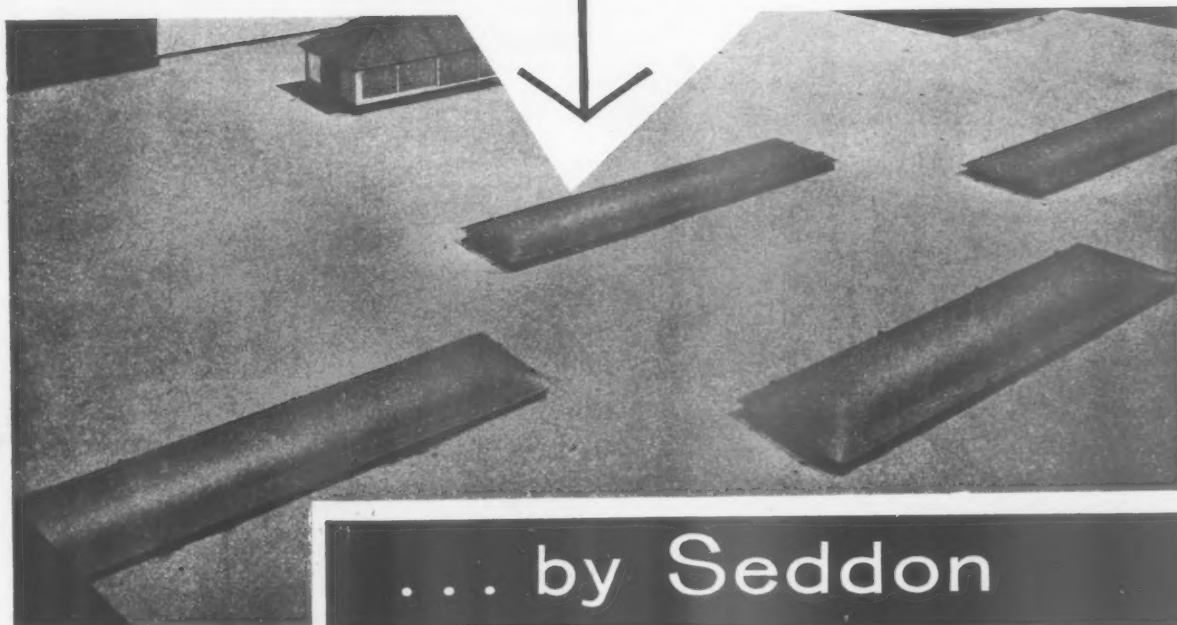
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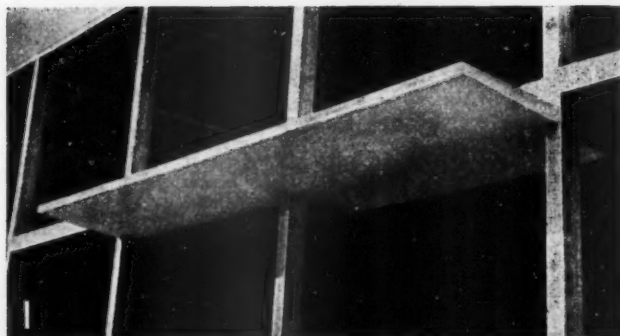
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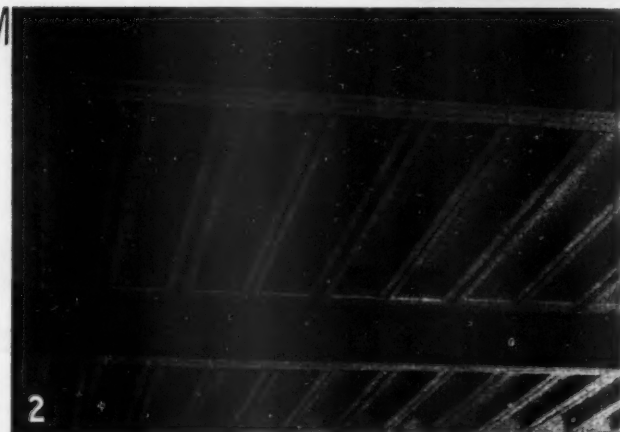
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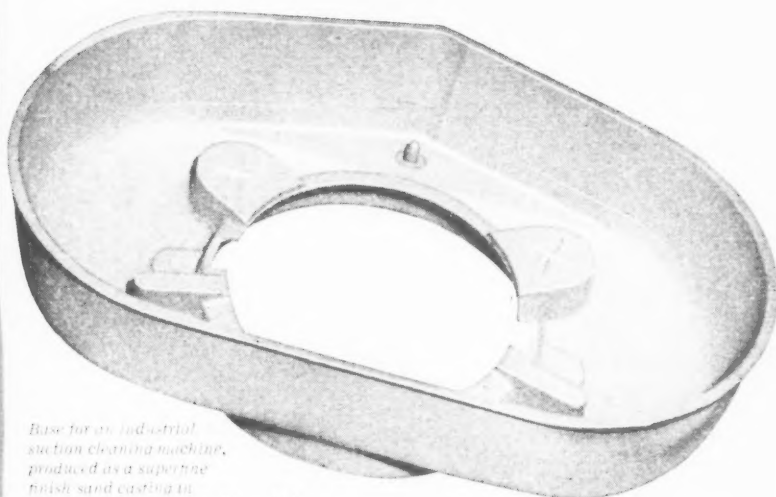






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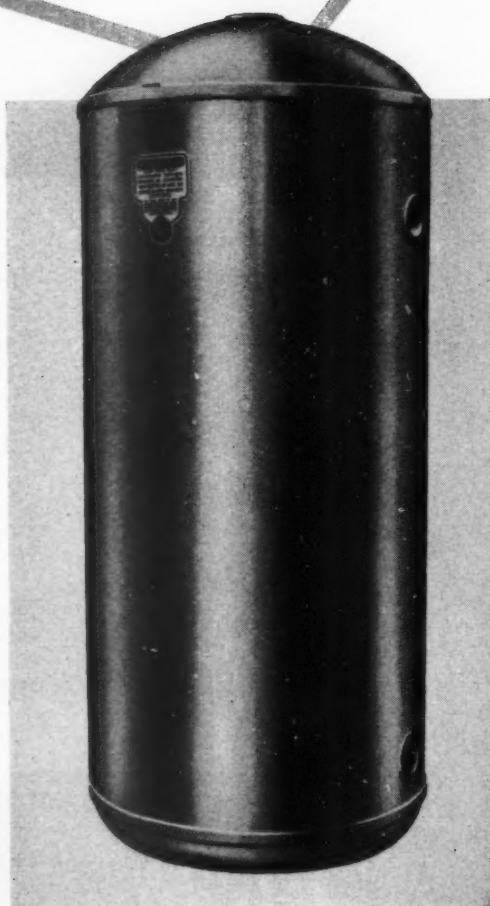
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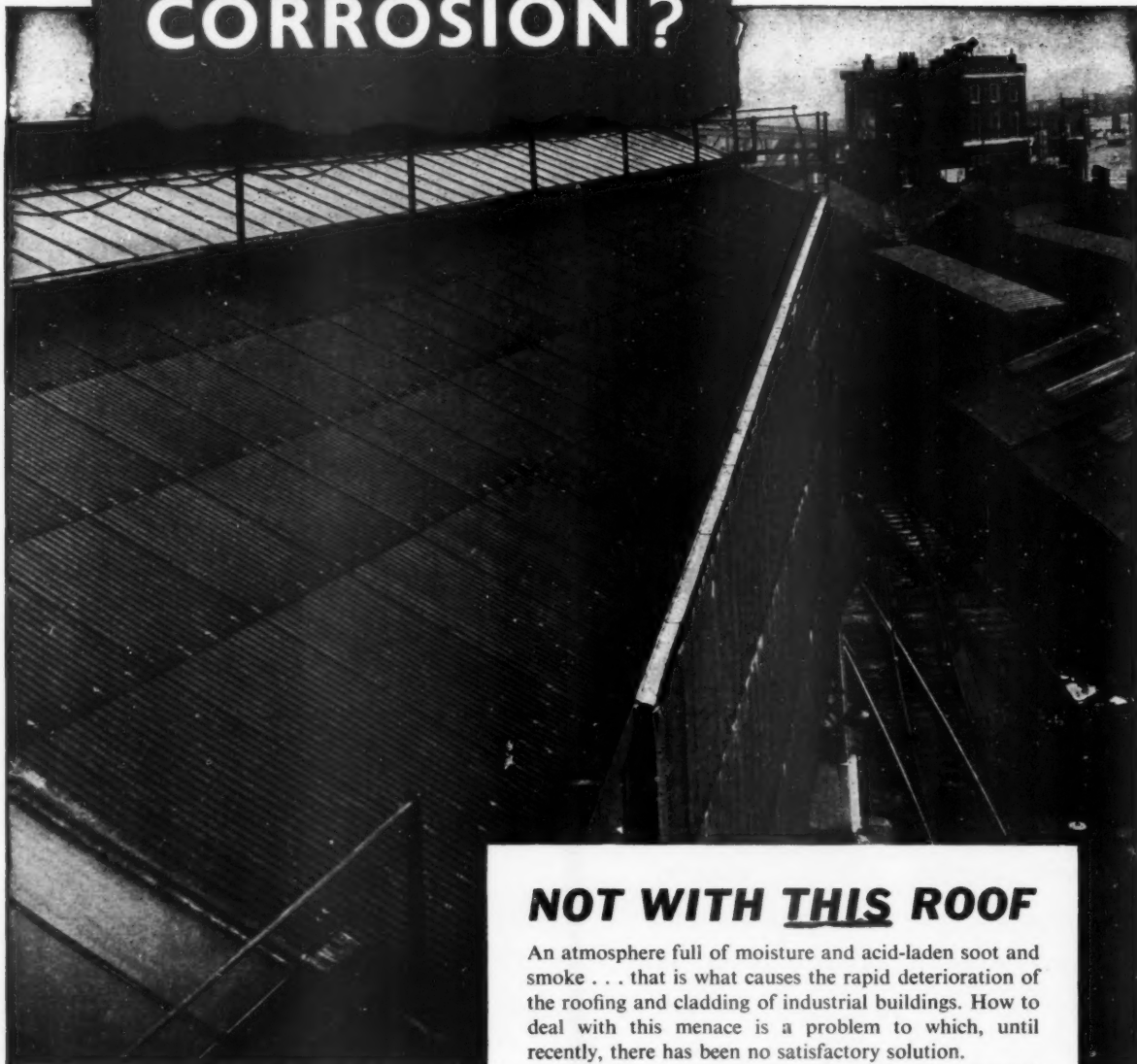
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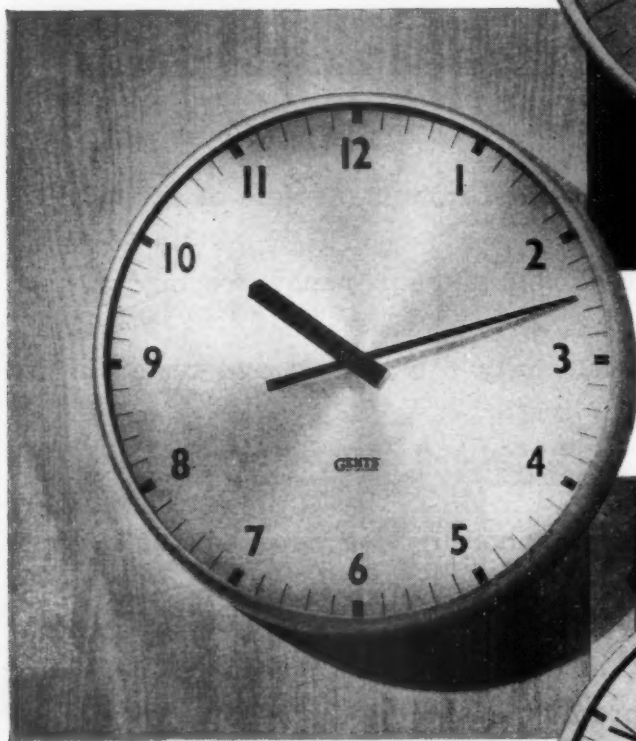


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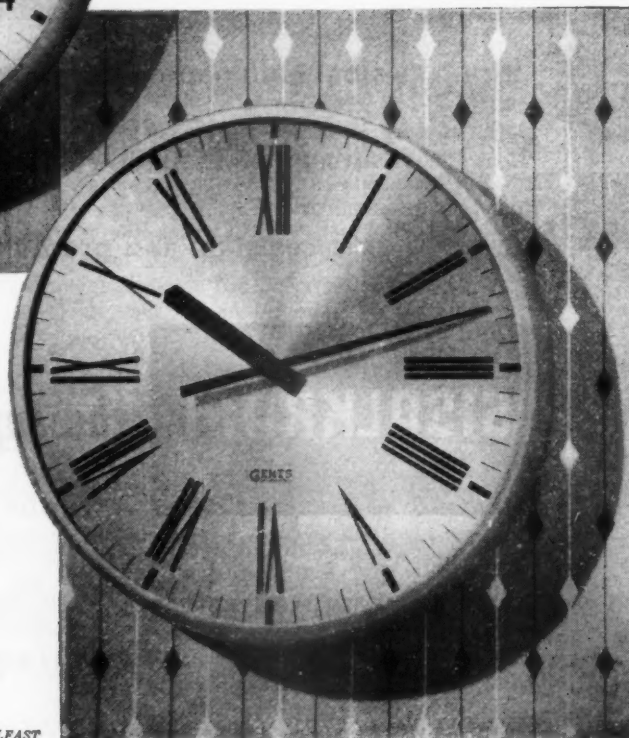
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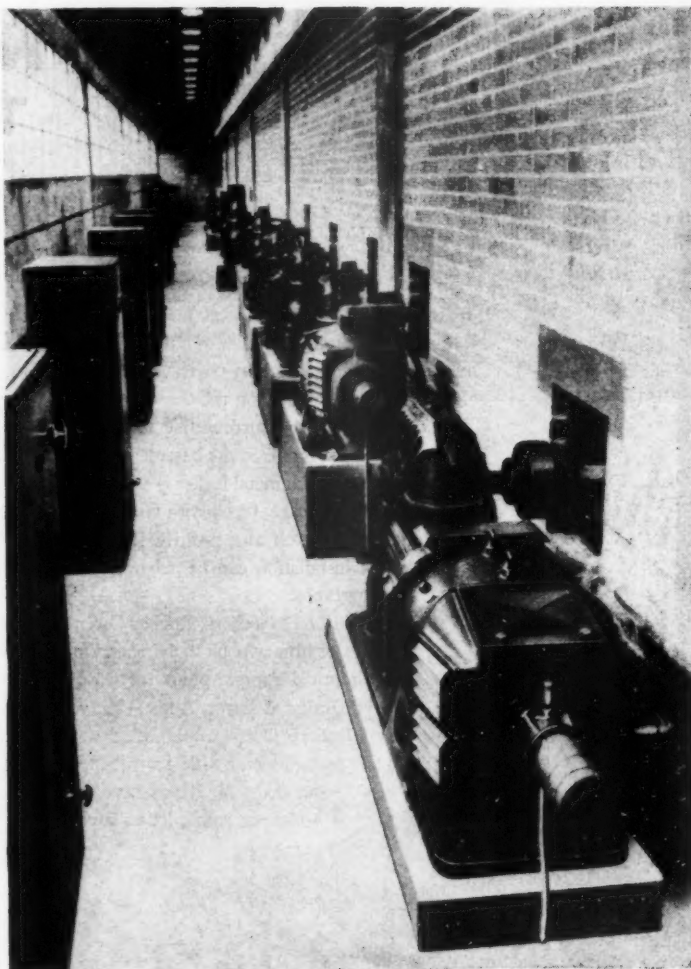
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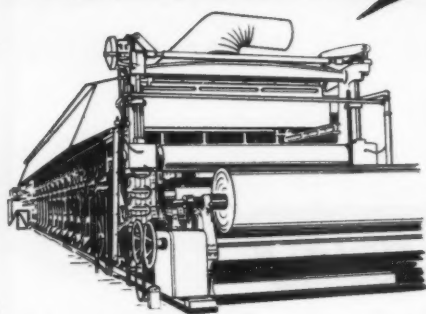
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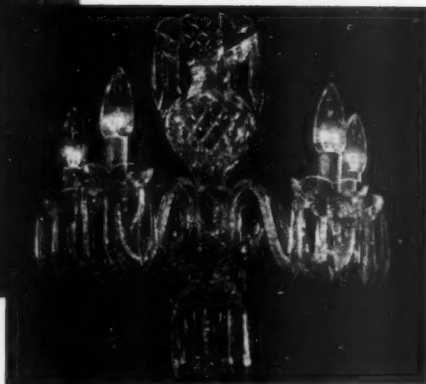
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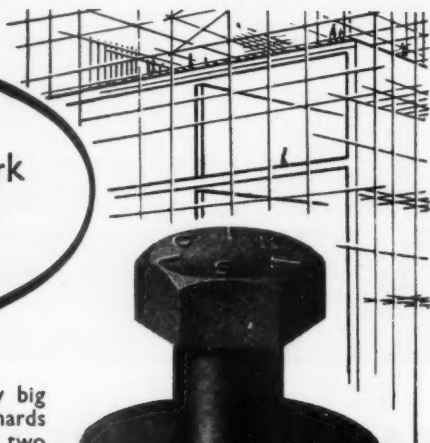
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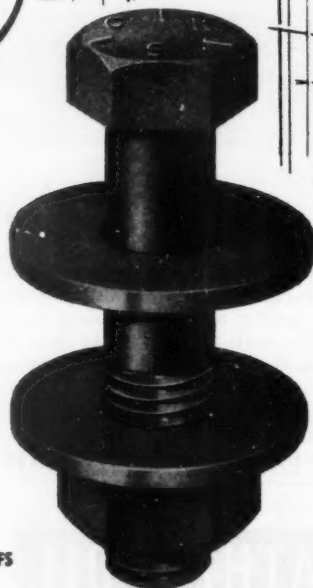
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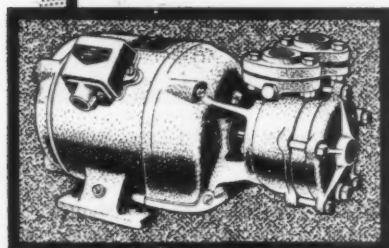
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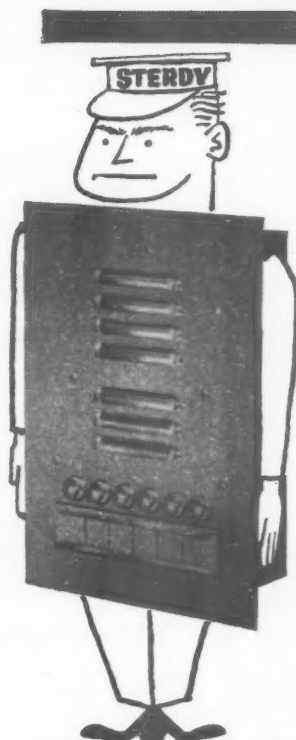


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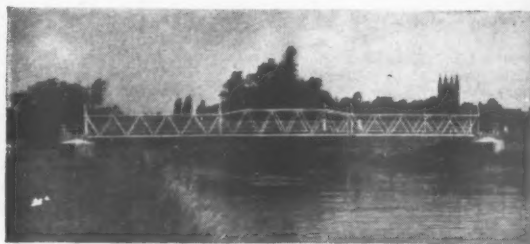


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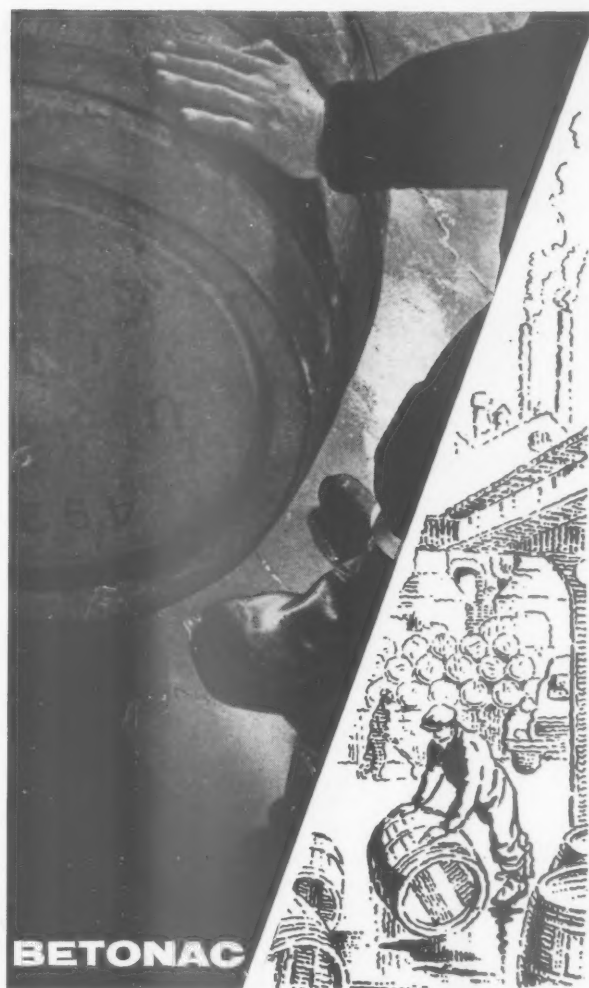
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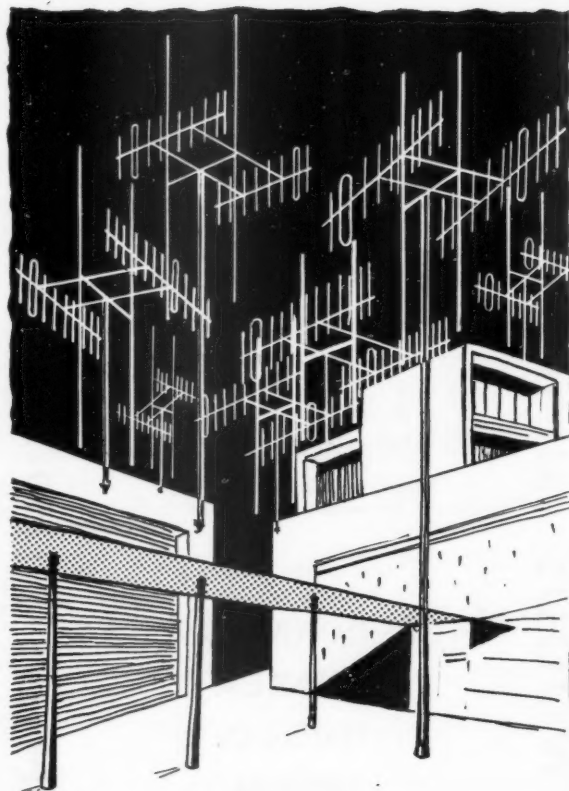
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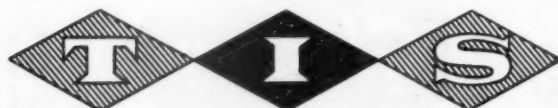
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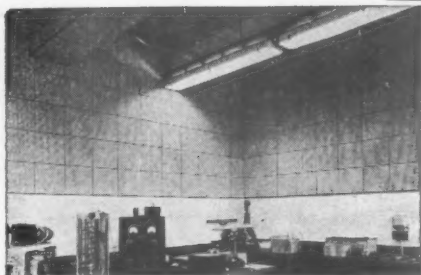
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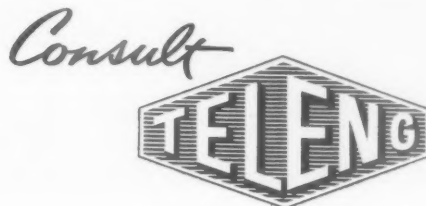
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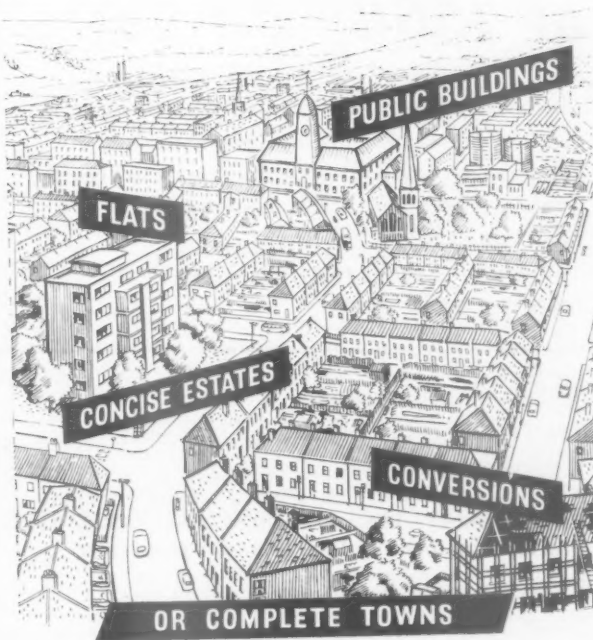
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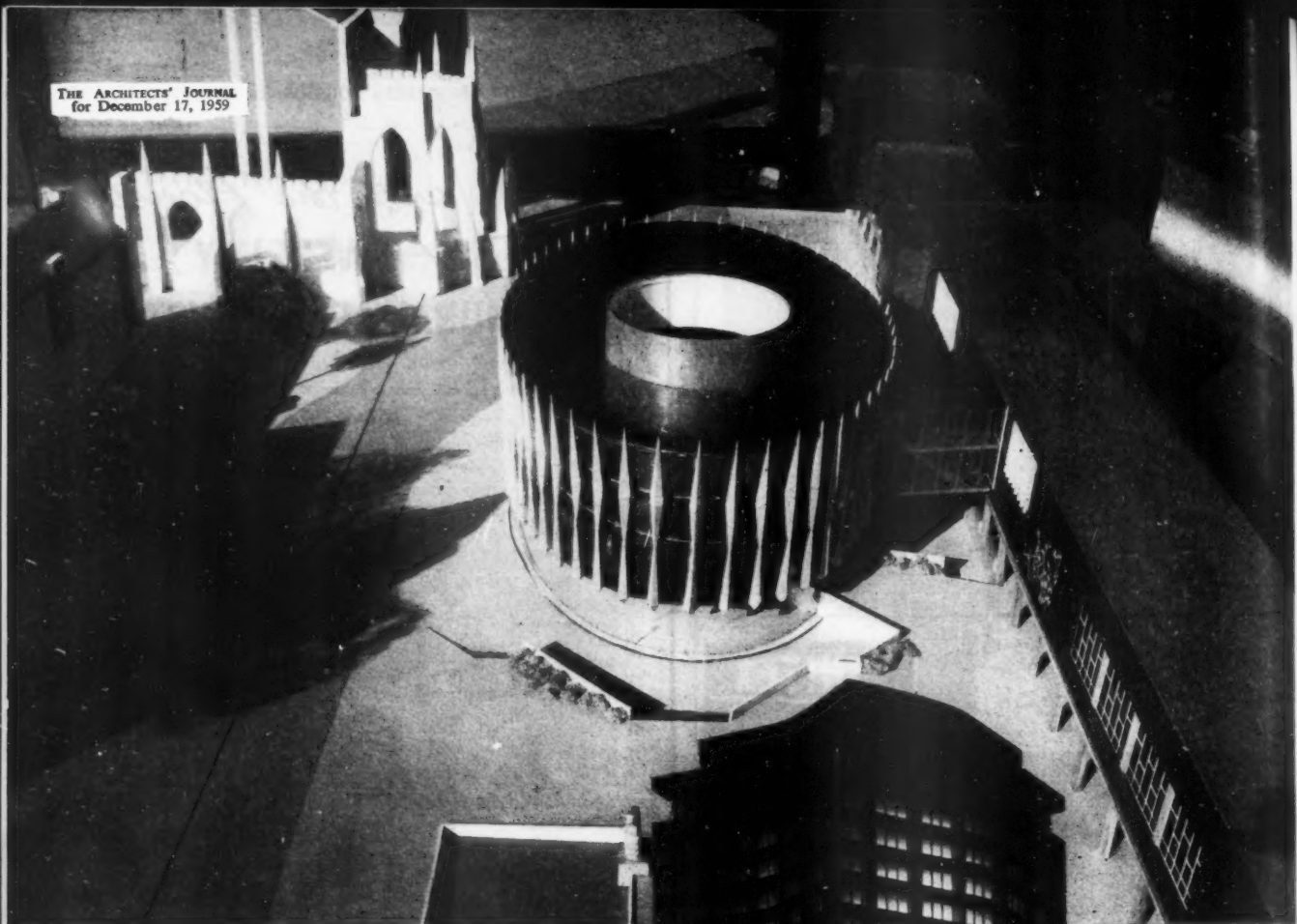
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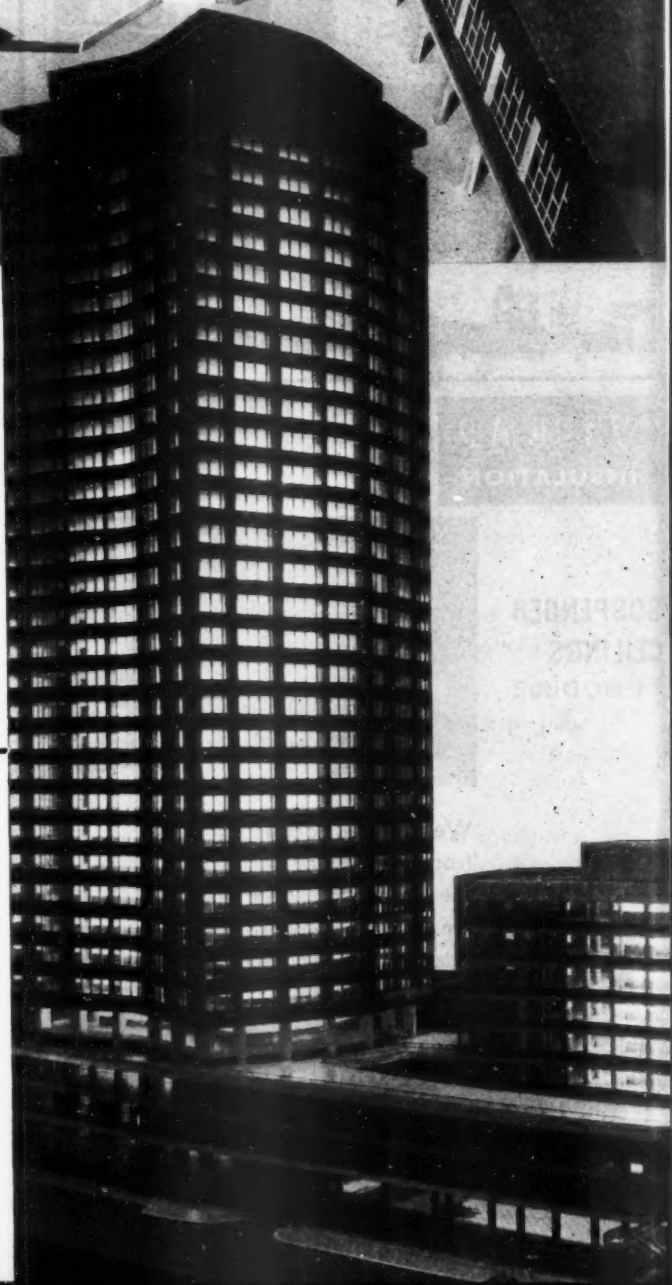
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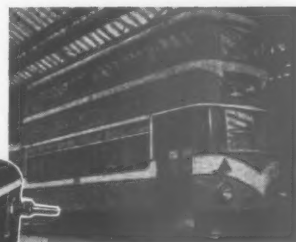
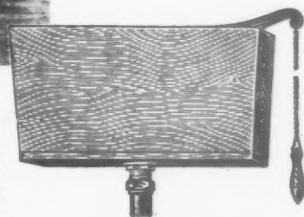


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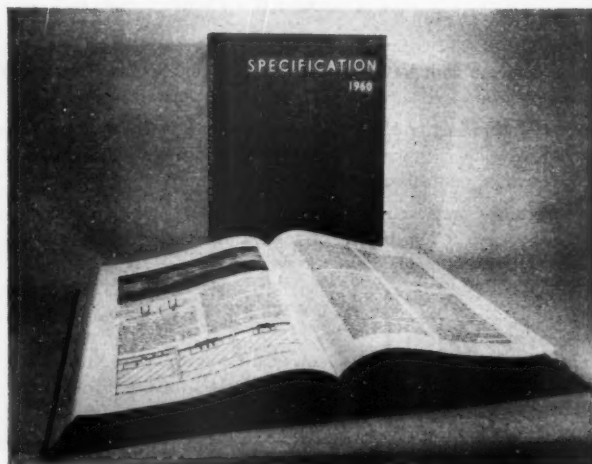
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## SPECIFICATION 1960

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

Assisted by PENELOPE WHITING, A.R.I.B.A.

THE 1960 EDITION of this unique complete guide to the writing of building specifications, long acclaimed as the standard work covering all sections of the building industry, has been scrupulously revised throughout and now runs to 1520 pages (1,458 in 1959, 1,404 in 1958). Model specification clauses are included in many of the sections, and the general arrangement is that laid down by the British Standards Specification for the sequence of trade headings in specifications.



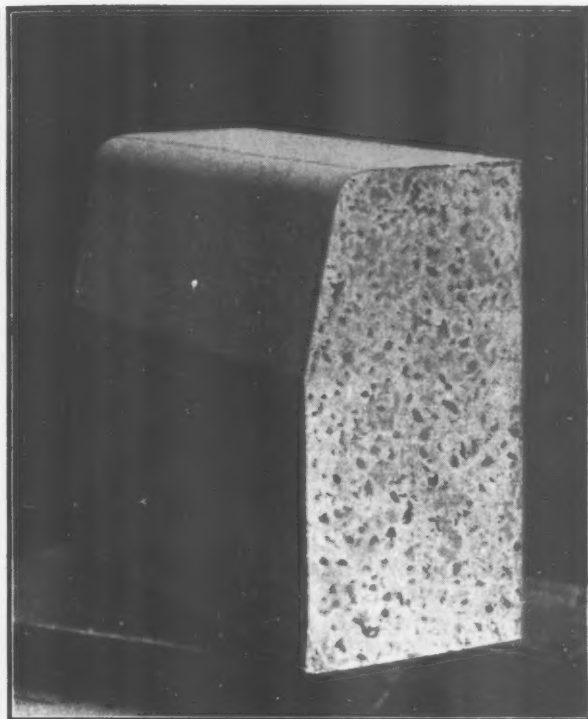
This year there is one entirely new section, *Landscape Work*, by J. St. Bodfan Gruffydd, F.I.L.A., which includes procedure and specification clauses for lawn-making, for shrub and hedge-planting and for tree preservation and pruning. Michael Keyte, A.R.I.B.A., has re-written *Lighting* (formerly called *Illumination*) under three main sub-headings: principles of good lighting; methods of calculation; practical techniques. J. B. Screeton, H. S. Froude, and A. O. Williams have re-written the *Painter* section. *Timber Engineering* has been separated from *Carpenter and Joiner* and forms a separate new section. M. J. Grafton, M.B.E., T.D., has written a sub-section on 'Supermarkets' in the *Shops* section, and Oliver Leach, A.M.I.C.E., contributes a note and comprehensive table on 'Site Investigation' in *Excavator*. W. E. J. Budgen, B.Sc., M.I.C.E., has brought *Structural Steelwork* up to date and E. D. Mills, F.R.I.B.A., has re-written the *Shell Concrete* text. Other sections substantially altered and enlarged include: *Mason*; *Roofer*; *Metal Windows*; *Plumber*; *Curtain Walling*; *Heating Engineer*; *Ironmonger*; *Electrical Engineer* and *Metal Worker*; and many new proprietary references are added throughout.

In each of its 41 sections will be found not only full details of the established methods of building construction but also the latest information about the constantly changing and ever-increasing number of proprietary systems and materials.

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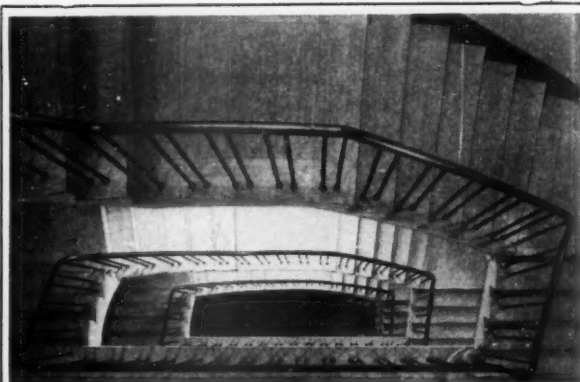
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Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 15, Queen Anne's Gate, Westminster, S.W.1. Normal printing arrangements have been altered to allow for the Christmas holiday. The latest dates for receiving advertisements for the December issues are as follows:-

December 24 issue—Wednesday, December 16.  
December 31 issue—Tuesday, December 22.

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 5s. 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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## BUILDING SURVEYORS

Architect's Department, L.C.C. has vacancies in Building Regulation Division and District Surveyors' Service for work in connection with applications under London Building Acts and bye-laws. District Surveyors' offices are located in Metropolitan Boroughs and work involves negotiations with developers and supervision of works in progress.

Up to £1,135, commencing according to qualifications and experience. Application form and particulars from Hubert Bennett, F.R.I.B.A., Architect to Council, EK/11/59, County Hall, S.E.1. (2628.) 7132

## MIDDLESEX COUNTY COUNCIL

## COUNTY ARCHITECT'S DEPARTMENT

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

ASSISTANT ARCHITECT, A.P.T. V (£1,250—£1,405 p.a.).

ASSISTANT ARCHITECT, A.P.T. IV (£1,095—£1,250 p.a.).

ASSISTANT ARCHITECT, Special Grade (£815—£1,100 p.a.).

JUNIOR ASSISTANT, A.P.T. I (£640—£795 p.a.).

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.

Applications are also invited for a post of ASSISTANT ARCHITECT, A.P.T. IV, to set up and take charge of a Technical Information Group and for a QUANTITY SURVEYOR, A.P.T. V, to undertake elemental analysis of estimates and preparation of costings for current building techniques.

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 from The County Architect, 1, Queen Anne's Gate Buildings, Dartmouth Street, S.W.1. must be returned within 10 days. (Quote B 470 S.O.) 7045

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GEORGE WRAY  
Secretary. 7277

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APPOINTMENT OF ADDITIONAL  
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Applications are invited for the appointment of ASSISTANT ARCHITECT within Special Grade, £785—£1,070.

Applicants must be professionally qualified and suitably experienced.

Applications, with the names and addresses of two referees, should be delivered to Mr. J. A. T. Richards, Borough Engineer and Surveyor, Town Hall, Chatham, not later than Saturday, 2nd January, 1960.

Housing accommodation will be available in an appropriate case.

The appointment will be:-  
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Application forms from the City Surveyor, the Guildhall, Cambridge, to be returned by the 21st December, 1959.

A. H. I. SWIFT,

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The successful applicant will be in charge of the Planning Office and responsible to the appropriate States Committee and will be expected to work under the general guidance of a Planning Consultant in the first instance.

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GEORGE HOOPER,

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Town Hall, Hayes, Middx. 7164

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(d) ASSISTANT QUANTITY SURVEYOR

Special Grade £785—£1,070 p.a.

Current projects of the General Section include new Municipal Baths and Civic Centre. The work of the Housing Architects includes redevelopment of central areas.

Applicants for posts (c) and (d) should be A.R.I.C.S. and have had considerable experience in the preparation of Bills of Quantities, Final Accounts and Valuations.

Previous local government experience not essential. House accommodation at an economic rent will be provided if necessary. National Conditions of Service apply.

Applications, together with the names of two referees, should reach the undersigned not later than Wednesday, 23rd December, 1959.

J. H. LLOYD OWEN,

City Architect.  
10 Loseby Lane, Leicester. 7215

## CITY AND COUNTY OF BRISTOL

## PLANNING ASSISTANT

Special N.J.C. Scale

Applications invited for post of a Planning Assistant, Special N.J.C. Scale (£785—£1,070 p.a.) in City Engineer and Planning Officer's Department. Applicants must have passed Final Examination of Town Planning or other appropriate Institute. Post superannuable; medical examination.

Housing needs of successful candidate and question of contribution towards removal expenses favourably considered.

Applications, stating age, qualifications, experience, present and previous appointments, with names of two referees, to City Engineer and Planning Officer, Cabot House, Deanery Road, Bristol 1, by 23rd December. 7188

## NOTTINGHAMSHIRE COUNTY COUNCIL

## APPOINTMENT OF ASSISTANT ARCHITECTS

A.P.T. Special Grade and A.P.T. IV

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. These programmes are handled by four groups of approximately eight Architects per group, under a Group Leader. All the Architects in the group carry out in turn the design, organisation and supervision of projects as Job Architects through all stages of the job from sketch plan to completion. As part of carrying out the County Council's building programme, the office has a policy of continuous development in planning and construction, on which all Architects take part from time to time.

The salary of the A.P.T. Special Scale ranges from £785—£1,070 and that of the A.P.T. IV from £1,065—£1,220. The commencing salary to be offered in each case will be in accordance with ability and experience. Starting dates 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. 7205



# BOROUGH OF ILKESTON

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT within the Special Classes Grade (£785-£1,070). Commencing salary to be according to qualifications and experience.

Housing accommodation available. Canvassing disqualifies. Application forms and conditions of appointment obtainable from A. O. Marshall, Borough Surveyor & Water Engineer, Town Hall, Ilkeston, to whom they are to be returned by Monday, 4th January, 1960.

J. YATES,  
Town Clerk,  
7210

# DUNDEE COLLEGE OF ART SCHOOL OF ARCHITECTURE

Principal: H. ADAM CRAWFORD, R.S.A., D.A. The Governors of the Dundee Institute of Art and Technology invite applications for the position of SENIOR LECTURER AND STUDIO INSTRUCTOR.

Applicants should be members of the R.I.B.A. and preferably be holders of a Degree or Diploma of a recognised School of Architecture. A Degree in Town Planning would also be an advantage. Salary Scales: Men-£1,300 x £50-£1,550. Women-£1,235-£1,550.

Plus 5 per cent. at each point on each scale. Both scales will be revised from 1st January, 1960.

Applications should be lodged by Monday, 25th January, 1960, or as soon as possible thereafter, and should be on the prescribed form which, with full particulars, may be obtained from the undersigned.

F. RAYMOND WILKINSON,  
Clerk and Treasurer.

Bell Street,  
Dundee.  
9th December, 1959. 7329

**TOWN PLANNING OFFICER** required in Tropical Building Section of Building Research Station, Garston Watford, Herts. Duties include (1) collation and dissemination of technical information on town planning matters for those working in field overseas; (2) liaison with overseas town and country planning organisations; (3) technical studies relating to development of planning standards, particularly in tropical areas. Short terms of duty abroad foreseen. Qualifications:—Registered Architect with experience of town planning. Membership of Town Planning Institute preferred. Salary range:—£1,245-£1,580. Forms from Ministry of Labour, Technical and Scientific Register (K) 26, King Street, London, S.W.1, quoting J 218/9A. Closing date 15th January, 1960. 7263

# 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 building, interior design, showroom 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 £902-£1,002 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. 7297

**LONDON TRANSPORT** urgently require ARCHITECTURAL ASSISTANTS for a varied programme of work. Candidates should be qualified to R.I.B.A. Intermediate standard and have had office experience.

Salary ranges:—  
Architectural Assistant, Class 1. £942 p.a.—£979 p.a.  
Architectural Assistant, Class 2. £814 p.a.—£906 p.a.

Medical examination; contributory superannuation scheme after probation; free travel. Please apply within 14 days to Staff and Welfare Officer (F/EV 766/1), London Transport, 55, Broadway, S.W.1. 7294

# CUMBERNAULD NEW TOWN CONSTRUCTION RESEARCH AND DEVELOPMENT

Applications are invited for the post of RESEARCH ASSISTANT in the Department of the Chief Architect and Planning Officer, to be concerned with constructional research and development.

The research will relate to the activities of project teams working on all aspects of the New Town, and will involve the assimilation and control of trade and technical information. For this the ability to assess materials, components and techniques of building will be required. Salary scale A.P.T. V-VI (£1,200-£1,390). Initial placing will be in accordance with age, qualifications and experience.

Five-day week. Local Government Superannuation. Housing will be made available in an appropriate case.

Write for application form to the General Manager, Cumbernauld House, Cumbernauld.

Closing date for receipt of completed forms: 8th January, 1960. 7324

# NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD

**SENIOR ASSISTANT ARCHITECTS**—Salary £1,100-£1,295. (New entrants commence at minimum.) Applicants must be registered Architects having passed the requisite examinations and must be good designers, capable of preparing working drawings and specifications for, and undertaking site supervision of all types of building projects. The Board is engaged in an expanding programme of hospital development and the appointments offer exceptional opportunities of gaining experience in designing and supervising the construction of hospital buildings.

Own car may be used for visiting hospitals, etc., for which adequate mileage allowance paid. Posts pensionable and excellent prospects of promotion. Previous hospital experience is not essential. Salary scales under review.

Application forms from Secretary, North East Metropolitan Regional Hospital Board, 40, Eastbourne Terrace, W.2. 7313

# STAFFORDSHIRE COUNTY COUNCIL COUNTY PLANNING AND DEVELOPMENT DEPARTMENT

Applications are invited for a new post in the Design and Amenity Section on either Special Grade (£785-£1,070 per annum) or A.P.T. Grade IV (£1,065-£1,220 per annum).

The successful applicant will be responsible for the design of a number of Town Centre Schemes and must have an imaginative approach to design and layout.

Applicants should indicate whether they hold a current driving licence.

Application forms can be obtained from D. W. Riley, County Planning and Development Officer, 41a, Eastgate Street, Stafford, and must be returned not later than the 30th December, 1959.

Relationship to any member or senior officer of the County Council must be disclosed. Canvassing will disqualify.

T. H. EVANS,  
Clerk of the County Council.  
7312

# BOROUGH OF EDMONTON

**QUANTITY SURVEYING ASSISTANT** (established) required for the Borough Architect's Department. Candidates should have passed the Final Examination of the Royal Institute of Chartered Surveyors. Salary—Special Grade, £785-£1,070, plus London weighting £10-£30 according to age. Applications on forms obtainable from the Town Clerk, Town Hall, Edmonton, must be delivered by the 1st January, 1960.

H. BACKHOUSE,  
Town Clerk.  
Town Hall,  
Edmonton, N.9. 7257



work in progress

HOWARD FARROW

Architects: Messrs. Ian Hamilton & Alan Chalmers, F./F.R.I.B.A.

Quantity Surveyors: Messrs Venning, Hope & Partners.

# CIVIL ENGINEERING & BUILDING CONTRACTORS

BANK BUILDINGS, RUSSELL PARADE, GOLDERS GREEN ROAD, LONDON, N.W.11

Telephone: MEAdway 3232

"The Dagmar Arms" was built for Messrs. Whitbread & Co. Ltd., and is one of three public houses recently completed by us.

Wherever the sign of Howard Farrow appears there is work in progress—whether it be that of sizeable factory sites such as the Firestone Tyre & Rubber Co. Ltd., and Chrysler Motors Ltd., or large blocks of flats like Chessington Lodge.

Work in progress not only includes the smaller types of construction as illustrated—but also, of course, the construction of private houses.

A folder giving a selection of Howard Farrow contracts covering a wide field of projects will gladly be sent on request.

A Company Member of the  
British Institute of Management

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# BOROUGH

ARCHITECT II, £765 to of application Town Hall, Thursday, 31st, qualifies.

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**BREDBURY AND ROMILEY URBAN DISTRICT COUNCIL**  
**ARCHITECTURAL ASSISTANT** required in the office of the Engineer and Surveyor. New appointment. Grade Special or A.P.T. III according to qualifications and experience.  
 Fuller details and application forms from Clerk of the Council, Council Offices, Bredbury, Cheshire. Closing date 4th January. 7180

**BOROUGH OF WIMBLEDON**  
**ARCHITECTURAL ASSISTANT**, Grade A.P.T. II, £765 to £880, plus London weighting. Form of application from Borough Engineer & Surveyor, Town Hall, Wimbledon, S.W.19. Returnable by Thursday, 31st December, 1959. Canvassing disqualifies. 7235

**ISLE OF WIGHT COUNTY COUNCIL**  
**PLANNING ASSISTANT** required. A.P.T. Special Grade (£785-£1,070). Permanent post. Candidates should be suitably qualified. General planning duties mainly in connection with the preparation of Town Maps. Applications, on forms obtainable from the Clerk of the County Council, County Hall, Newport, I.W. Closing date 6th January, 1960. 7295

**COUNTY BOROUGH OF ROCHDALE**  
 Applicants are invited for the post of **ARCHITECTURAL ASSISTANT** in the Housing Section on Special Grade (£785-£1,070 p.a.). The successful applicant if fully qualified will be offered, subject to conditions, housing accommodation.  
 Canvassing will disqualify. Relationship to any member or senior official of the Council must be disclosed. Appointment subject to medical examination.  
 Applications, stating age, qualifications, experience and names of two referees, to Borough Surveyor, Town Hall, Rochdale, by 23rd December. K. B. MOORE, Town Clerk. 7252

**CITY AND COUNTY BOROUGH OF GLOUCESTER**  
**DEPUTY CITY ARCHITECT AND ESTATES MANAGER**  
 Applications are invited for the above appointment. Salary scale D, £1,520 to £60, £50, £60 and £55-£1,755, and N.J.C. Conditions of Service. Applicants must be Associate Members of the R.I.B.A. The appointment will be subject to the successful applicant passing a medical examination, to the provisions of the L.G. Superannuation Act, and to termination by one month's notice on either side.  
 Applications, stating age and dependants, qualifications (with date of qualifying) and experience and the names of two persons to whom reference may be made, must be received by the undersigned, in an endorsed envelope, not later than the 4th January, 1960.  
 A. G. W. BOGGON, Town Clerk. 7310

**BOROUGH OF LEYTON**  
 (Municipal Borough in the County of Essex. Population approx. 100,000)  
**BOROUGH ENGINEER'S DEPT.**  
 Applications invited for appointment of **ASSISTANT ARCHITECT** at a salary within the scale of £785 per annum rising to £1,070 per annum (plus London weighting) in accordance with the provisions of the National Scheme of Conditions of Service for Local Authority Staffs (Special Classes).  
 Housing accommodation will be made available to successful applicant if required. Five-day week is operated.  
 Apply by letter to Borough Engineer, Town Hall, Leyton, E.10 (giving names of two referees), not later than Monday, 4th January, 1960.  
 D. J. OSBORNE, Town Clerk. 7311

**ARCHITECTS BUILDING SURVEYORS LANDSCAPE ARCHITECTS QUANTITY SURVEYORS and ASSISTANTS**  
 Required for construction and maintenance of parks and playing fields, sports buildings, restaurants, service buildings, etc. Salaries up to £1,135 for applicants with appropriate professional qualifications or £295 for Assistants (preferably intermediate standard). Starting point according to qualifications and experience. Also opportunities for Juniors.  
 Apply to Chief Officer, Parks Department, London County Council, County Hall, London, S.E.1. (Waterloo 5000, Ext. 8076.) (2727.) 7309

**D.S.I.R. Building Research Station** requires at Garston, Watford, Herts., MAN to assist in dealing with technical enquiries and in general liaison with building industry. Qualifications: I.O.B., H.N.D. or H.N.C. with at least 15 years' experience in building industry. Architects or Engineers with taste for interpretation of scientific information and its applications considered. Elementary scientific training (at least G.C.E. "O" level) an advantage. Salary range £1,315-£1,560. Forms from Ministry of Labour, Technical and Scientific Register (K), 25, King Street, London, S.W.1. quoting E.507/9A. Closing date 4th January, 1960. 7322

**WOKING U.D.C.**  
**ARCHITECTURAL ASSISTANT-A.P.T. II** (£765-£880)  
 Applicants for this appointment in Architectural Section of Engineer and Surveyor's Department, must be Students R.I.B.A., with good general experience.  
 Appointment offers competent assistant experienced in preparation working and detailed drawings, excellent opportunity engagement on variety of architectural projects.  
 Housing accommodation if required. Casual user car allowance.  
 Application forms from Engineer and Surveyor. Closing date 1st January, 1960. 7296

**LONDON COUNTY COUNCIL**  
**ARCHITECTS' DEPARTMENT**  
**VOLUNTARY SCHOOLS SECTION**  
**ARCHITECTS**, Grade III (£850-£1,135). Work includes assessment of sites and site extensions, examination of plans submitted by private architects for development of voluntary aided schools and preparation of contract particulars for works of Council liability (e.g., schoolkeepers' houses, meals kitchens, pavilions).  
 Starting salary according to experience and qualifications. Application form, returnable by 31st December, from Hubert Bennett, F.R.I.B.A., Architect to Council, EK/114/59, County Hall, S.E.1. (2745.) 7266

**BOROUGH OF HACKNEY**  
**ARCHITECTURAL ASSISTANT**  
 Applications are invited for the above appointment in salary grade A.P.T. II (£765-£880 p.a.), London weighting allowance £30 p.a. at age 26. Commencing salary according to training, qualifications and experience.  
 Candidates should have passed the Intermediate Examination of the R.I.B.A. or its equivalent.  
 Apply Town Clerk, Town Hall, Hackney, E.8, for application form, returnable by 9 a.m., 4th January, 1960. 7262

**THE DEPARTMENT OF HEALTH FOR SCOTLAND**  
**CHIEF ARCHITECT'S OFFICE**  
 Applications are invited from **ARCHITECTURAL DRAFTSMEN** with considerable office experience for a non-pensionable post. Duties include assisting architects on building projects in prisons, hostels, etc.  
 Salary range £580-£875 with placing according to age and experience. Form of application, obtainable from Chief Architect, T. A. Jeffries, Esq., A.R.I.B.A., A.M.T.P.I., Department of Health for Scotland (Room 30), St. Andrew's House, Edinburgh, 1, must be returned by 28th December, 1959. 7259

**BEESTON AND STAPLEFORD URBAN DISTRICT COUNCIL**  
**ARCHITECTURAL ASSISTANT**  
 Applications are invited for the above appointment, in Grade II (£765-£880) or Special Grade (£785-£1,070), the grade and commencing salary to be according to applicant's qualifications and experience.  
 Applications, accompanied by the names and addresses of two referees, should be forwarded to the Housing Architect, Town Hall, Beeston, Nottingham, not later than 31st December, 1959.  
 H. D. JEFFRIES, Clerk of the Council. 7260

**WARWICKSHIRE COUNTY COUNCIL**  
**ARCHITECTS' DEPARTMENT**  
 Applications are invited for the following appointments:-  
 1. **SENIOR ASSISTANT ARCHITECTS**-Grade A.P.T. III-IV (£880-£1,220). Applicants must be members of the Royal Institute of British Architects and be competent designers with a good knowledge of modern methods of construction.  
 2. **ASSISTANT ARCHITECTS**-Special Grade (£785-£1,070). Applicants must have passed Parts I and II of the R.I.B.A. Final or Special Examinations or their equivalent at one of the recognised schools of architecture. The successful applicants will work in teams on large projects but opportunity will be given to men with enthusiasm and ability to design and carry out smaller projects under a Group Architect.  
 3. **ASSISTANT HEATING ENGINEERS**-Grade A.P.T. III (£880-£1,065). Applicants should have had some years in the design of heating and hot and cold water supplies.  
 The commencing salary can be within the grade according to ability and experience.  
 Application forms and other conditions applicable to the appointments can be obtained from E. Davies, A.R.I.B.A., A.M.T.P.I., Deputy County Architect, Shire Hall, Warwick.  
 L. EDGAR STEPHENS, Clerk of the Council. 7261

**ARCHITECTS AND MAINTENANCE SURVEYORS**. Pensionable posts for men and women at least 25 and under 35 on 1.1.59 (extension for regular Forces service, Overseas Civil Service, established civil service and temporary Government service as Architect or Maintenance Surveyor). Candidates must be registered Architects or, alternatively, for Maintenance Surveyor posts, have achieved Corporate membership of R.I.C.S. (Building Section), or have passed examinations necessary for attaining Corporate membership. Starting salary (men, London) from £830 to £1,125 according to age. Scale maximum (London) £1,300. Promotion prospects. Write Civil Service Commission, 17, North Audley Street, London, W.1, for application form, quoting S60-61. 7307

**COUNTY BOROUGH OF DEWSBURY**  
**BOROUGH ARCHITECT AND BUILDINGS SURVEYOR'S DEPARTMENT**  
 Applications are invited for the following appointments:-  
 (a) **ASSISTANT QUANTITY SURVEYOR** (Quantity Surveyor's Section)-A.P.T. Grade IV.  
 (b) **ASSISTANT ARCHITECT** (Education Section)-Special Grade.  
 (c) **TOWN PLANNING ASSISTANT**-Special Grade.  
 (d) **ARCHITECTURAL ASSISTANT**-A.P.T. Grade I.  
 The commencing salaries will be fixed within the scope of the grades stated according to qualifications and experience, i.e., A.P.T. Grade IV £1,065-£1,220, Special Grade £785-£1,070, A.P.T. Grade I £610-£765. Applicants for (a) must have passed the Final Examination of the R.I.C.S., for (b) the Final Examination of the R.I.B.A. and for (c) the Final Examination of the T.P.I.  
 Housing accommodation may be made available if required.  
 The appointments will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Acts.  
 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 Thursday, 31st December, 1959, in envelopes endorsed "Appointment of".  
 A. NORMAN JAMES, Town Clerk. 7287

**EDINBURGH CORPORATION**  
**DEPARTMENT OF THE CITY ARCHITECT**  
**SENIOR ASSISTANT ARCHITECT** to act as group leader. Must be qualified by examination and have ability and experience to handle major contracts. Salary scale £1,075 x £40 to £1,275. Applications, giving full details of experience and the names of two referees as to character, should be sent to the City Architect, City Chambers, Edinburgh, 1, not later than 4th January, 1960, marked "Staff-Confidential." 7290

**PADDINGTON BOROUGH COUNCIL**  
**ASSISTANT ARCHITECT** (£815 to £1,100)  
 Starting salary according to qualifications and experience of the successful candidate, who should preferably be A.R.I.B.A., with experience in the design and supervision of building works of some magnitude and a knowledge of local authority requirements. Applications should state age, qualifications, present and past appointments with dates, names and addresses of three referees. Applications should reach me by 4th January, 1960 (quoting A.440).  
 W. H. BENTLEY, Town Clerk. 7286

**BRITISH RAILWAYS, LONDON MIDLAND REGION**  
**ASSISTANT ARCHITECTS REQUIRED**  
 APPLICATIONS ARE INVITED FOR VACANCIES IN THE OFFICE OF THE REGIONAL ARCHITECT AT EUSTON STATION, LONDON  
 The Electrification Programme offers great opportunities for imaginative designers and the work is of wide architectural scope and interest. In addition to vacancies for general architectural work the present Research Unit is to be strengthened and its activities will embrace standardisation of buildings, furniture, equipment and unit planning.  
 SALARIES are offered within the range £833 per annum to £1,200 per annum, with five-day week and concessionary rail travel.  
 Apply in writing, quoting reference No. 89, stating qualifications, age, experience and salary required, to:-  
 W. B. Headley, A.R.I.B.A., A.A. Dipl., Regional Architect, Chief Civil Engineer's Office, 5a, Euston Grove, London, N.W.1. 7284

**SOUTH AUSTRALIAN SCHOOL OF MINES AND INDUSTRIES**  
**NORTH TERRACE, ADELAIDE**  
**LECTURER IN THE DEPARTMENT OF ARCHITECTURE**  
 An applicant should hold a degree or diploma in Architecture and be a corporate member of an appropriate professional body. Previous experience as an architect is essential.  
 Salary: £A1,870 p.a. but may be increased by annual increments to £A2,050 p.a. if the applicant holds an appropriate Honours Degree or approved higher qualification.  
 The successful applicant may be required to lecture and conduct classes in subjects of the Architectural, Town Planning, Building or Quantity Surveying Courses for which he is qualified, and to devote the whole of his time to the duties of his office.  
 The position carries liberal sick leave and superannuation benefits. Assistance will be provided for travelling expenses of the successful applicant and for transport of personal effects.  
 Applications, with supporting documents, should reach the Agent General and Trade Commissioner for South Australia, 50, Strand, London, W.C.2, not later than 31st December, 1959.  
 R. W. PARSONS, Principal. 7301

# SURREY COUNTY COUNCIL

Applications invited for the following appointments:—

**GRADE IV** (£1,065-£1,220 p.a. plus £30 p.a. London allowance).

**ARCHITECTS.** Must be Assoc. Mem. R.I.B.A. and have had experience in preparation of drawings and specifications, and be capable of assuming responsibility for medium to large scale contracts.

**GRADE II** (£765-£880 p.a. plus up to £30 p.a. London allowance, according to age).

**ARCHITECTURAL ASSISTANTS.** Must be of good general training, preference given those who have passed Intermediate R.I.B.A.

**BUILDING SURVEYING ASSISTANTS.** Preference given those who have passed Intermediate R.I.C.S. (Bldg. Sub-Div.). Capable drafting specifications in all trades, preparation schedules of dilapidations, detailed estimates for general maintenance works and surveys of properties.

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. 7303

## UNIVERSITY, HOSPITAL AND GENERAL PRACTICE

### BELFAST NORTHERN IRELAND

Posts of **PRINCIPAL** also **SENIOR ASSISTANTS** are open, with possibility of Associate-ship, with the undersigned, who would be glad to receive applications from experienced Architects to join in this interesting range of contemporary work.

The services would be required primarily in Belfast, although preparation of work is possible in London Office, or Liverpool.

Terms and local conditions given to candidates interviewed—venue London and/or Belfast.

Applicants please write, giving particulars and note of present salary grade, age, and position in which interested.

John MacGeagh, A.R.I.B.A. (Bronze Medal), 7, Donegal Square West, Belfast 1. 7302

### CITY OF WESTMINSTER

**ARCHITECTURAL ASSISTANT (Male)**, permanent, required. A.P.T. I/II (£610-£880 plus up to £30 London weighting). Commencing salary according to qualifications and experience. Candidates should be good draughtsmen with some experience in the preparation of sketch schemes and perspectives, and must be studying for the R.I.B.A. examination.

Applications with particulars of age, previous appointments, present appointment and salary and names, etc., of two referees, to Town Clerk, Westminster City Hall, Charing Cross Road, W.C.2, by 9th January, 1960. 7331

### BOROUGH OF GUILDFORD

#### JUNIOR TOWN PLANNING ASSISTANT

Applications are invited for the above appointment in Grade A.P.T. I (£610-£765).

Personal and professional particulars, together with names of three referees, should be sent to the Borough Engineer and Surveyor, Municipal Offices, High Street, Guildford, Surrey, not later than 5th January, 1960. 7336

#### JUNIOR TAKERS OFF AND WORKERS UP

required in the new Works Directorate at the WAR OFFICE, Chessington. The Works Directorate is an expanding organisation being formed to take over design and supervision of all Army's new building work, in this country and overseas. Scope of the work will be varied and will include single and married quarters, hospitals, schools, offices, workshops and civil engineering works. The Quantity Surveying Division under the Chief Quantity Surveyor will be organised in small self-contained teams. Each team will be responsible for estimating, cost planning preparation of Bills of Quantities, certificates and preparation and settlement of final accounts for all projects assigned to it.

Preference given to candidates studying for professional examinations. Salaries will range from £200 (at age 16) to £900 (including London weighting) per annum depending on age and experience. Appointments in the first instance will be unestablished. Write, stating age, nationality, details of education and training and experience, to Manager, P.E.1067, Professional and Executive Register, Atlantic House, Farringdon Street, London, E.C.4. Only those applicants selected for interview will be advised. 7335

### BASILDON DEVELOPMENT CORPORATION

#### DEPARTMENT OF ARCHITECTURE & PLANNING

Applications are invited for architectural appointments in the following grades:—

A.P.T. IV: £1,065-£1,220.

A.P.T. III: £880-£1,065.

A.P.T. II: £765-£880.

Successful applicants will work on an extensive programme of Housing, Industrial or Town Centre projects.

Minimum qualifications required for A.P.T. III and IV posts, A.R.I.B.A., and for A.P.T. II posts, R.I.B.A. Intermediate Examination.

Appointments are supernumerary and subject to medical examination.

Housing is available for renting in approved cases.

Applications on the special form (obtainable from the Chief Architect/Planner) must be made to the General Manager, Basildon Development Corporation, Gifford House, Basildon, Essex, by Friday, 1st January, 1960. Covering envelopes to be endorsed with the post applied for. Please quote Ref. No. GM 6835. 7332

# BOROUGH OF CHESTERFIELD

## BOROUGH ENGINEERS' DEPARTMENT

Applications are invited for the following appointments:—

(a) One **SENIOR TOWN PLANNING ASSISTANT**, A.P.T. IV (£1,065-£1,220).

(b) Two **ARCHITECTURAL ASSISTANTS**, Special Grade (£765-£1,070).

The person appointed to (a) will be initially concerned with the detailed planning and implementation of the Central Area Development. Persons appointed to (b) must be Associates of the R.I.B.A. and have five years' experience.

A substantial programme of capital works is envisaged for completion during the next few years, including Indoor Swimming Bath, New Covered Market and a particularly extensive housing programme. The commencing salary in respect of posts will depend on qualifications and experience.

Housing accommodation and casual user's car allowance is normally granted in suitable cases.

Applications, stating age, qualifications, training and experience, naming two referees, to the Borough Engineer, Town Hall, Chesterfield, by 27th December, 1959. 7333

RICHARD CLEGG,

Town Clerk.

## Architectural Appointments Vacant

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

**LEWELLYN SMITH AND WATERS** require Senior and Junior ASSISTANTS for a widely varied programme of work. Salary according to experience. Please write stating qualifications, experience and age to 103, Old Brompton Road, N.W.7. 4622

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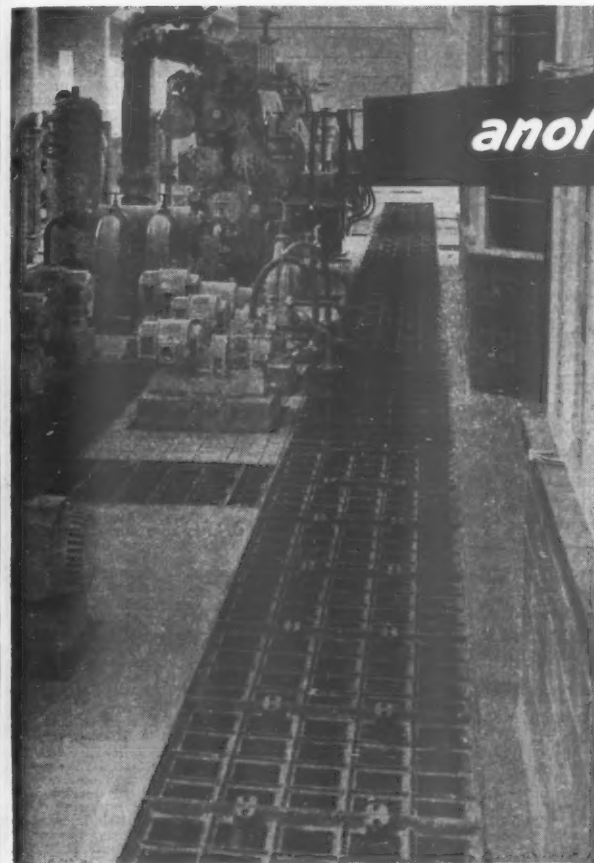
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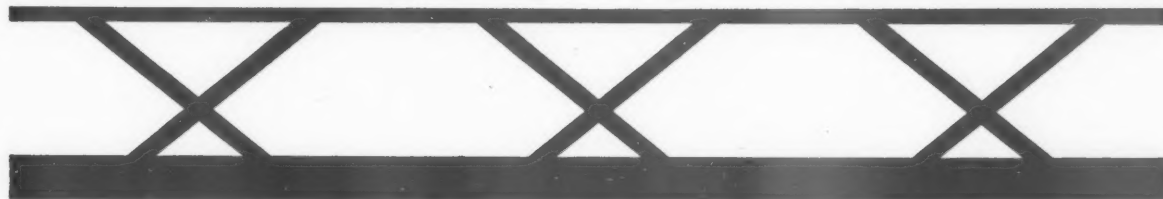
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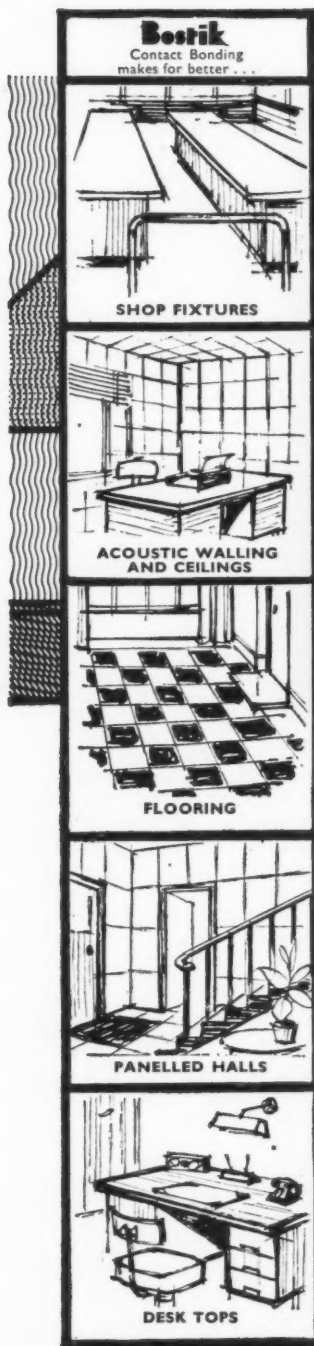
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