THE ARCHITECTS' JOURNAL

standard contents

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

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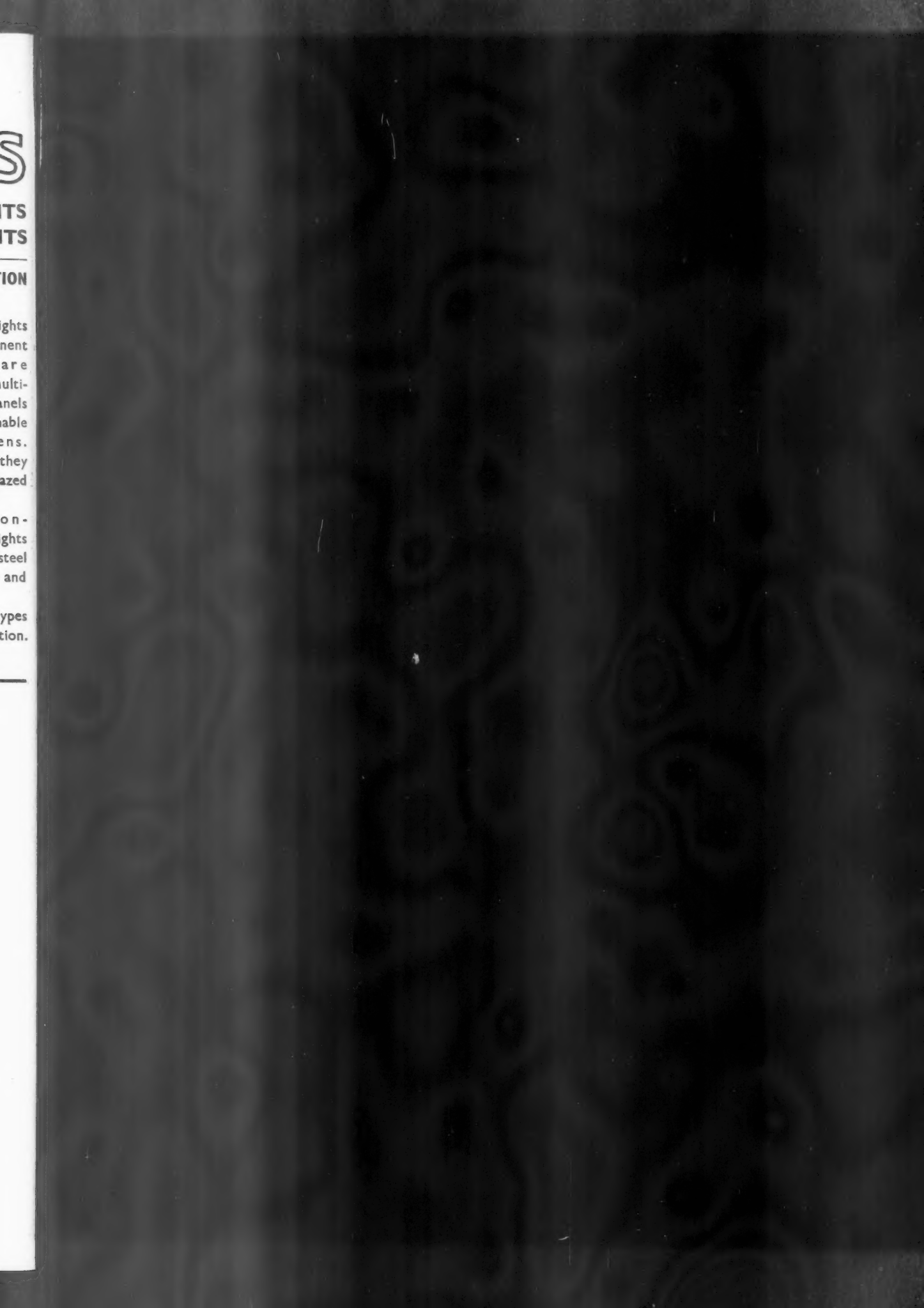
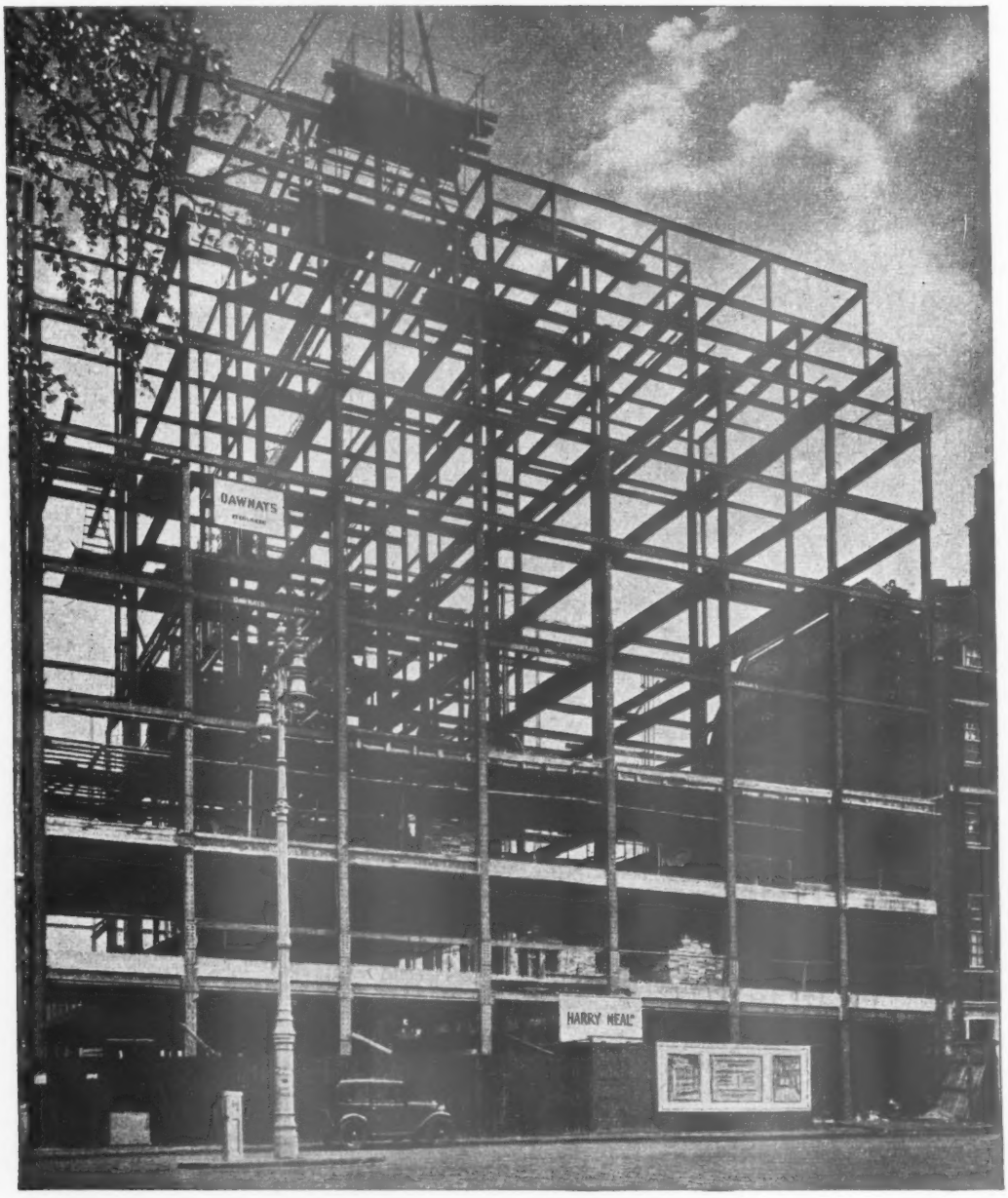
★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ie one week, Ig to Z the next. In all cases where the town is not mentioned the work LONDON is implicit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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, Berkhampstead, Herts.	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5721
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James' Square, S.W.1.	Whitehall 9737
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
APRR	Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1.	Euston 2158-9
ArchSA	Architectural Students' Association. 34/36, Bedford Square, W.C.1.	
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Welbeck 9738
ASB	Architectural Science Board of the Royal Institute of British Architects. 66, Portland Place, W.1.	Langham 5721
AScW	Association of Scientific Workers. 15, Half Moon Street, Piccadilly, W.1.	Grosvenor 4761
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BATC	Building Apprenticeship and Training Council. Lambeth Bridge House, S.E.1.	Reliance 7611, Ext. 1706
BC	Building Centre. 9, Conduit Street, W.1.	Mayfair 8641/6
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 17, Amherst Road, Ealing, W.13.	Perivale 6869
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Flaxman 7766
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Millbank, S.W.1.	Whitehall 5140
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. 28, Victoria Street, S.W.1.	Abbey 3333
BTE	Building Trades Exhibition. 4, Vernon Place, W.C.1.	Holborn 8146/7
CABAS	City and Borough Architects Society. C/o Johnson Blackett, F.R.I.B.A., Borough Architect, Town Hall, Newport, Mon.	Newport 3111
CAS	County Architects Society. C/o F. R. Steele, F.R.I.B.A., County Hall, Chichester.	Chichester 3001
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CCP	Council for Codes of Practice. Lambeth Bridge House, S.E.1.	Reliance 7611
CDA	Copper Development Association. Kendals Hall, Radlett, Herts.	Radlett 5616
CIAM	Congrès Internationaux d'Architecture Moderne. Doldertal, 7, Zurich, Switzerland.	
COID	Council of Industrial Design. Tilbury House, Petty France, S.W.1.	Whitehall 6322
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUJC	Coal Utilization Joint Council. 3, Upper Belgrave Street, London, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DOT	Department of Overseas Trade. 35, Old Queen Street, S.W.1.	Victoria 9040
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 8, Buckingham Palace Gdns., S.W.1.	Sloane 2837
FASSC	Federation of Association of Specialists and Sub-Contractors, 5, Arundel Street, Strand.	Temple Bar 6633
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 26, Great Ormond Street, Holborn, W.C.1.	Chancery 7583
FOB 1951	Festival of Britain 1951. 2, Savoy Court, Strand, W.C.2.	Waterloo 1951
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4041
FS (Eng.)	Faculty of Surveyors of England. Buckingham Palace Gdns., S.W.1.	Sloane 2837
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 27, Grosvenor Place, S.W.1.	Sloane 2844
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 5615
ICA	Institute of Contemporary Arts. 17-18 Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215





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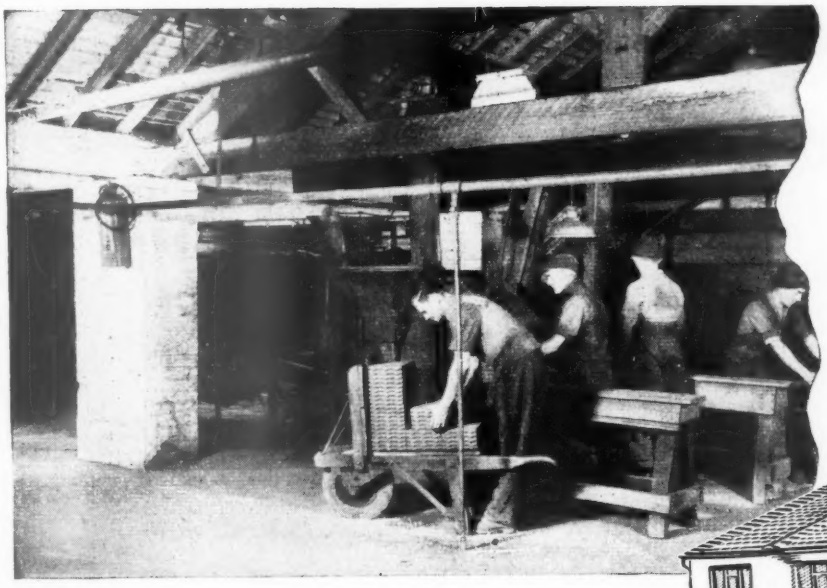

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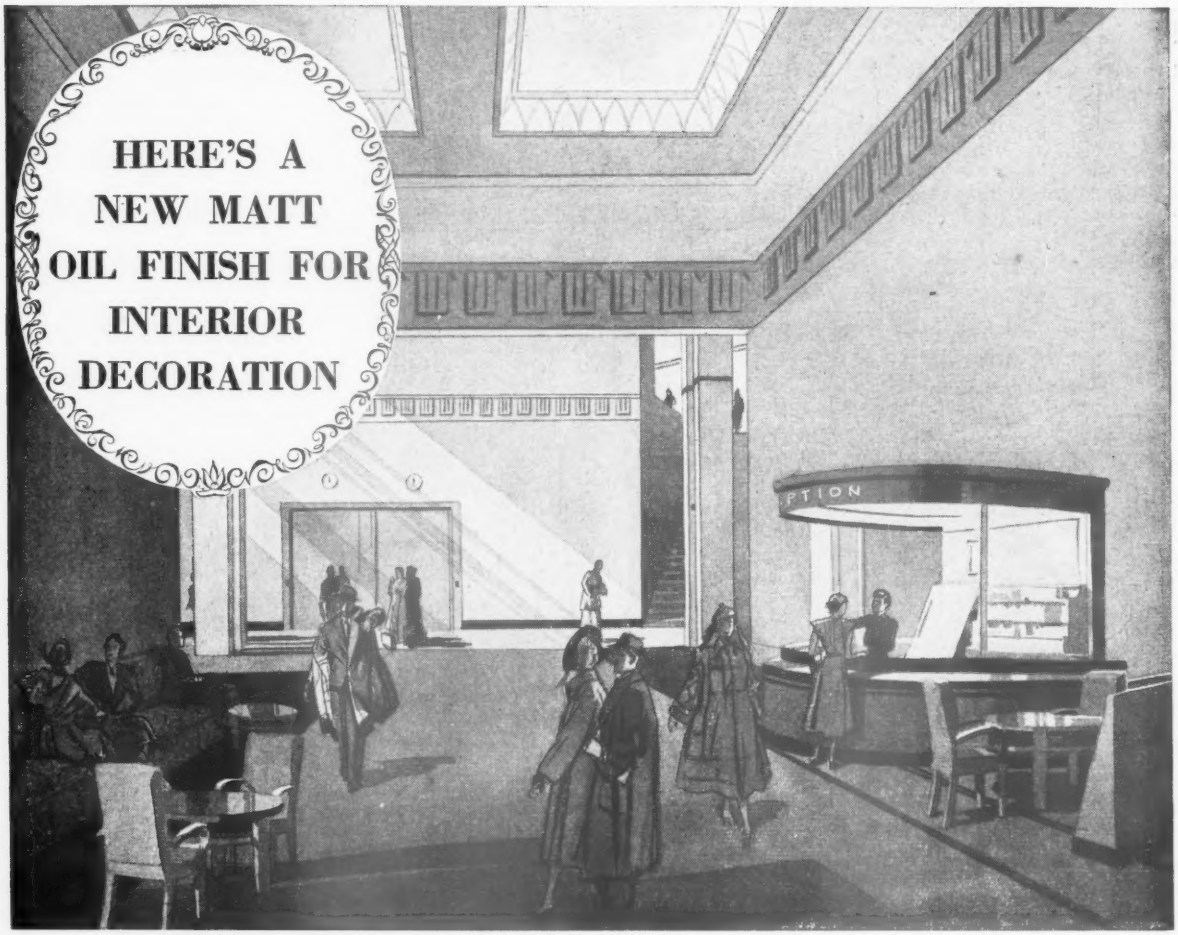

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The Saloon Bar (illustrated above) has a counter front with square reeded panels, broken by shaped pilasters. The counter top is in solid oak with a moulded front edge. The backfitting is mirrored, with eight shelf divisions above. The beer engine is a 4-pull Standard Dalex. G. & C. are also responsible for the attractive Lounge and Public Bars, all the beer-raising equipment and the fixed seating.

Architect: A. Glyn Sherwin, Esq., M.Inst. R.A., F.F.A.S., B.E. M.Inst.

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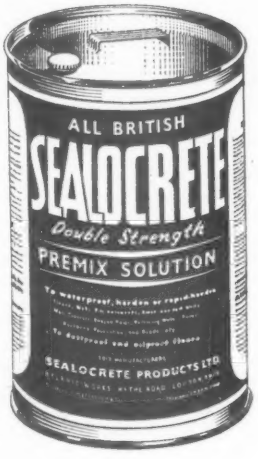

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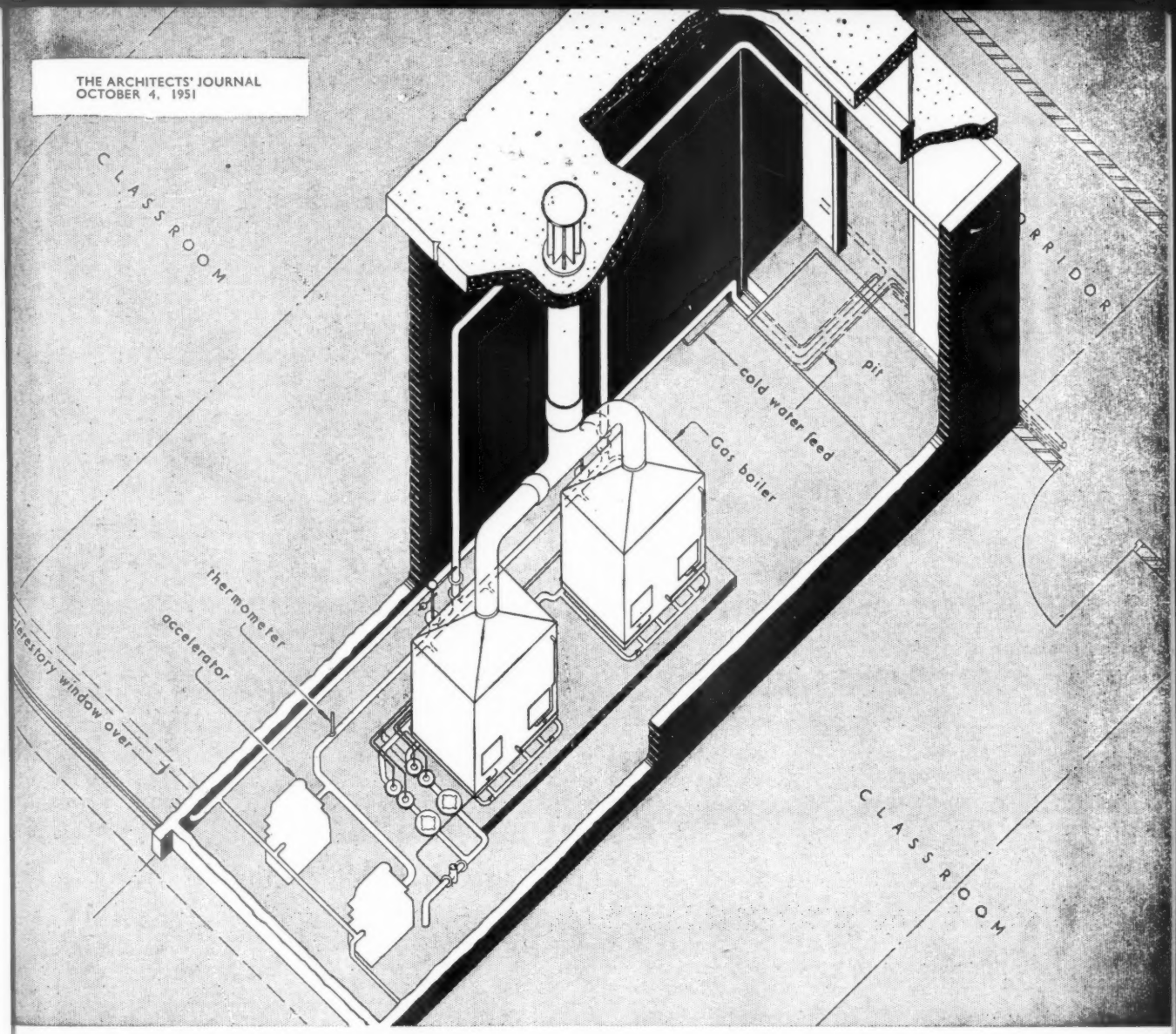

Boiler house for New Classroom Block, Twickenham Technical College. County Architect : C. G. Stillman, F.R.I.B.A.

GAS solved this school heating problem

Gas-fired low pressure central heating is installed in this most recent extension to Twickenham Technical College, opened in 1948.

Factors which influenced the choice of boiler plant were : the distant situation of the new buildings in relation to the main boiler house ; the difficulty of providing fuel storage and access to it ; and the difficulty of providing a suitable chimney that would be unaffected by the proximity of adjacent high buildings.

The new single-storey block contains eight classrooms with cloakroom accommodation. The total catalogue rating of the two automatically controlled boilers is 720,000 B.T.U's per hour.

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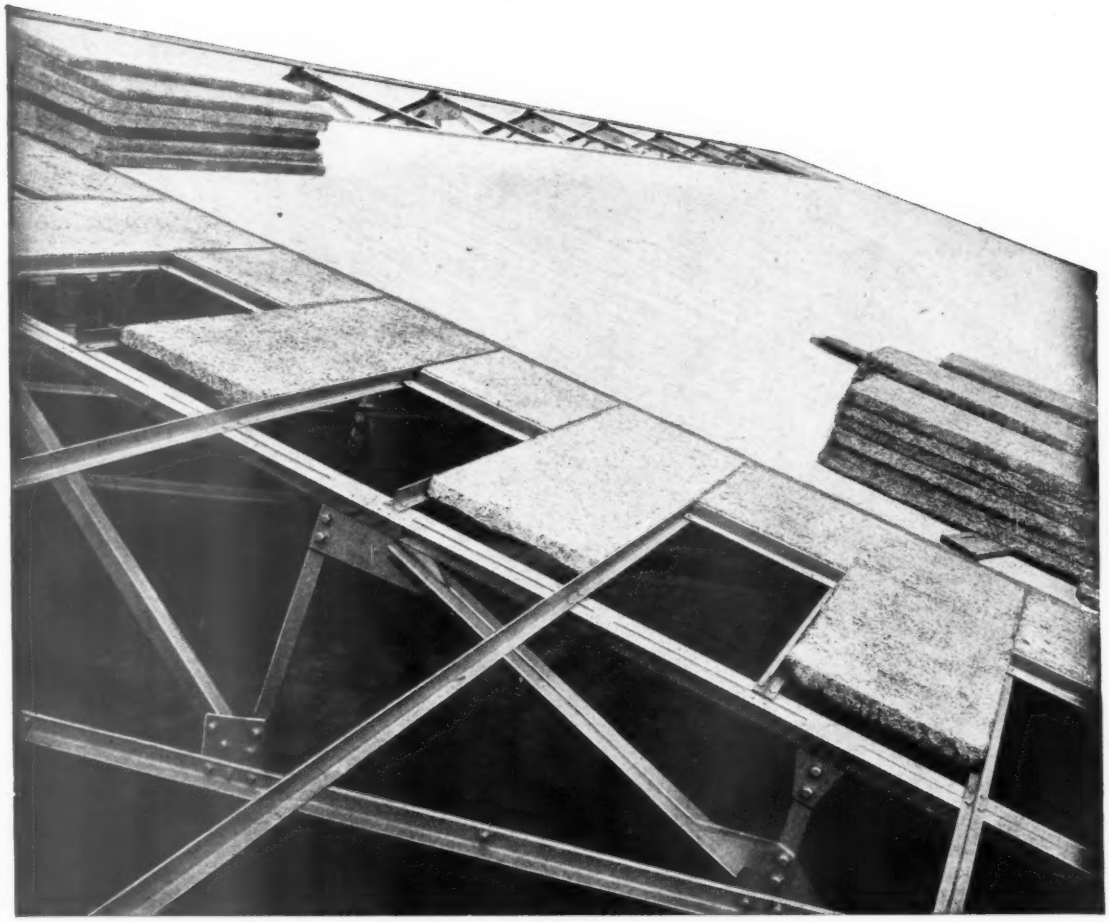

This form of GYPKLITH *construction is* PARTICULARLY SUITABLE FOR FACTORY ROOFS

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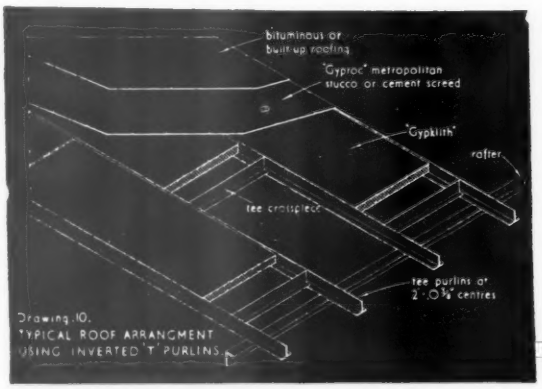

Typical roof arrangement using inverted "T" purlins

In the building illustrated, GYPKLITH is supported between purlins of inverted "T" section, spaced at centres equal to 2 ft. plus the web thickness and bolted direct through the flange to the trusses.

The top surface of the GYPKLITH is screeded with GYPROC Metropolitan Stucco ready for finishing with bituminous roofing.

The underside of the GYPKLITH is left untreated in order not to impair its sound absorbent properties. A relatively smooth finish can, however, be obtained by brushing GYPKLITH Surface Filler over the underside of the slabs before fixing in place.

The thermal transmittance "U" value of this roof construction, using 3" thick GYPKLITH, is 0.15 B.Th.U's per sq. ft. per hour per 1°F difference in temperature.

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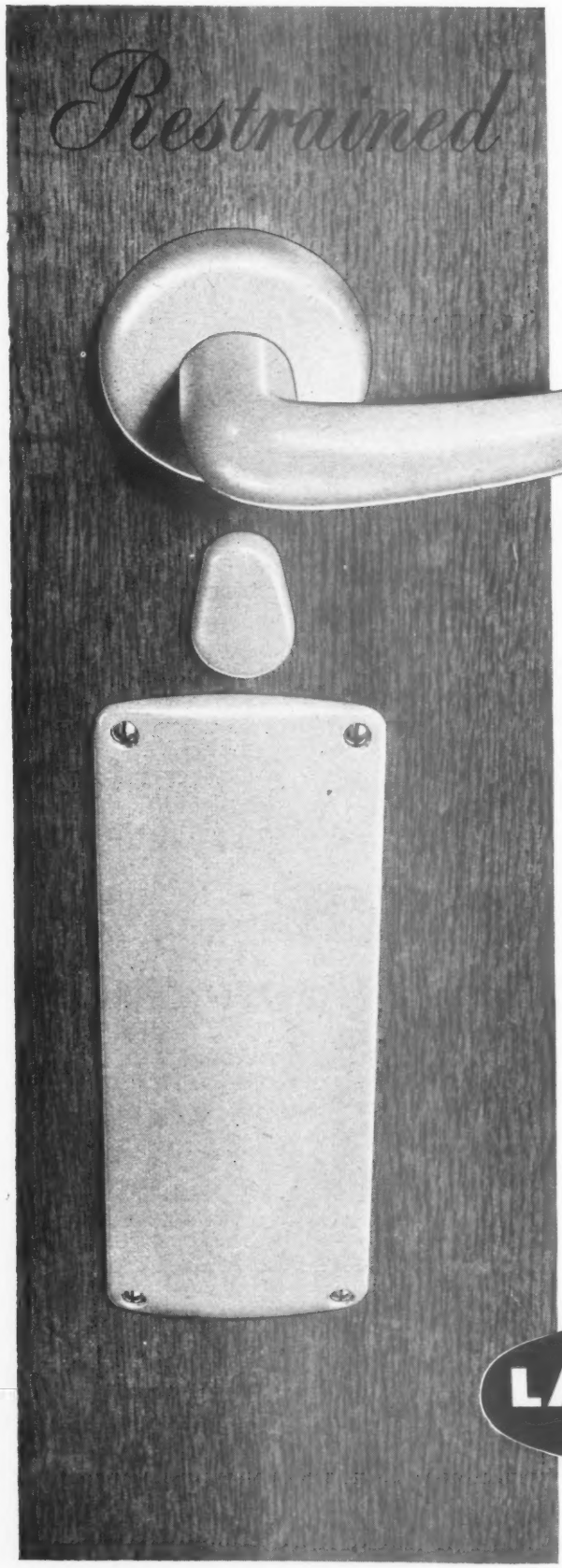

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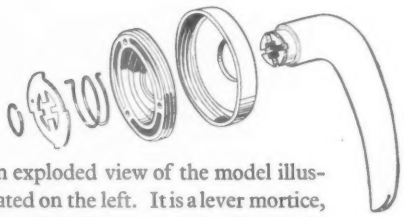
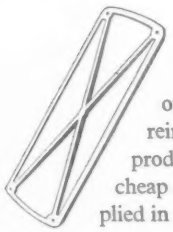


An exploded view of the model illustrated on the left. It is a lever mortice, concealed fitting and the Lacrinoid "floating spindle" principle is used, thus dispensing with grub screws. No. 280.



The back view of the finger plate illustrated on the left showing the reinforcement. Being mass produced these plates are cheap as well as sound. Supplied in two sizes. No. 1064/3.

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Standard laying rates for Thermalite building blocks are as follows:
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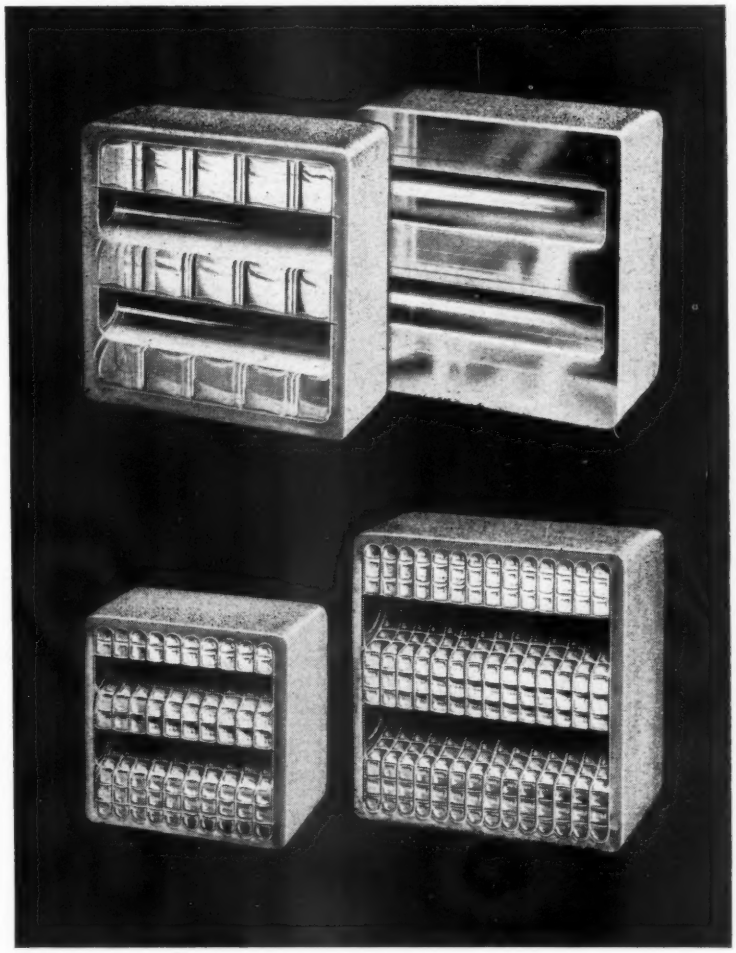

(*Top*) Type 3 (Fluted on one face). Size $7\frac{3}{4}$" x $7\frac{3}{4}$" x $3\frac{7}{8}$"
(*Bottom, left*) Type 2. Size $5\frac{3}{4}$" x $5\frac{3}{4}$" x $3\frac{7}{8}$" (*Bottom, right*) Type 32. Size $7\frac{3}{4}$" x $7\frac{3}{4}$" x $3\frac{7}{8}$"

Patent Nos. 552195 583552. *Further patents pending. Designed by Lethieullier Gilbert, A.I.A.A., L.R.I.B.A. and L. James Hobson, A.R.I.B.A.*

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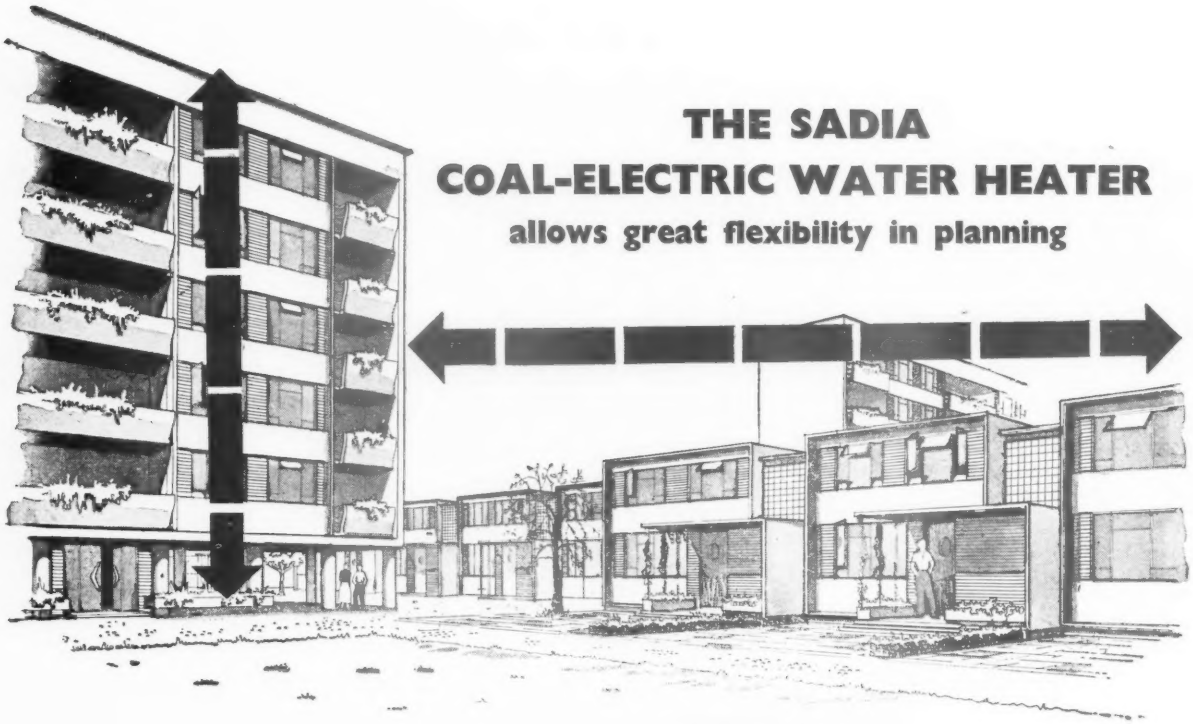
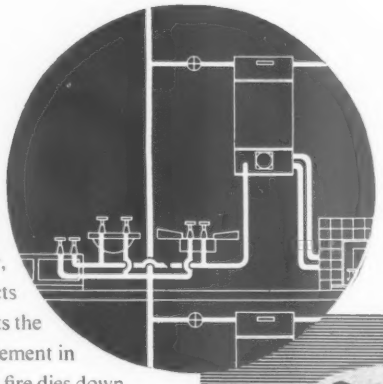


THE SADIA COAL-ELECTRIC WATER HEATER

allows great flexibility in planning



The Sadia coal-electric water heater is suitable for both houses and flats, and can be used either with a back-boiler or an independent boiler. It is a water heater planned to make the best use of available fuels. During winter, when fires are lighted, the Sadia coal-electric water heater acts as a storage tank, the back-boiler or the solid-fuel boiler heats the water, and the thermostatically controlled electric heating element in the Sadia coal-electric water heater takes over only when the fire dies down. In summer, no fires need be lighted, electricity takes over completely, and the house keeps cool.

The Sadia coal-electric water heater is the only factory-built unit of its type; made by water heating specialists it is the result of the accumulated experience of many years in this particular field. Efficiently insulated, it increases the effectiveness of the solid fuel boiler to which it is connected.

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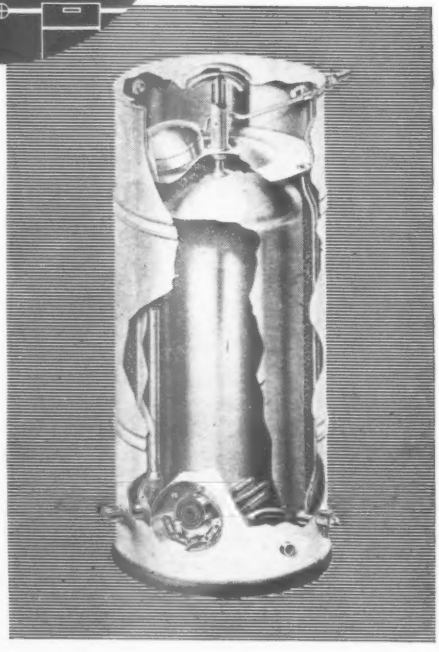

Aidas Electric Ltd., Sadia Works, Rowdell Road, Northolt, Middlesex.
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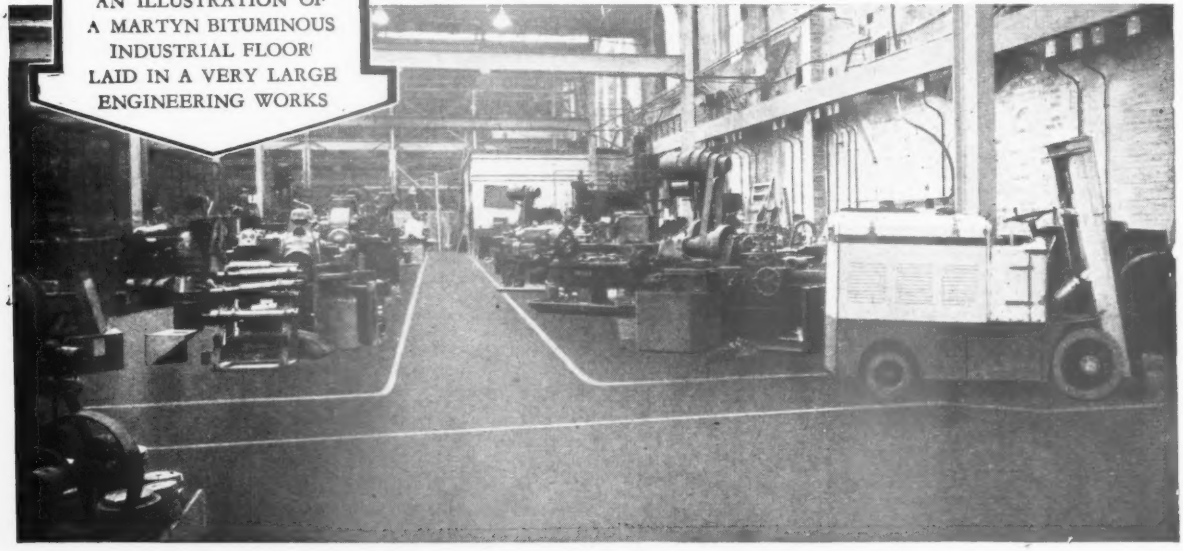

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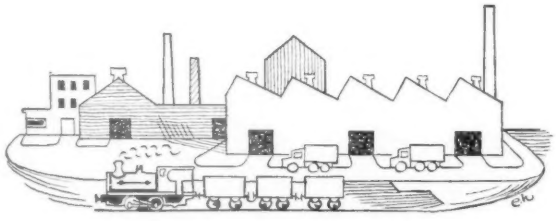

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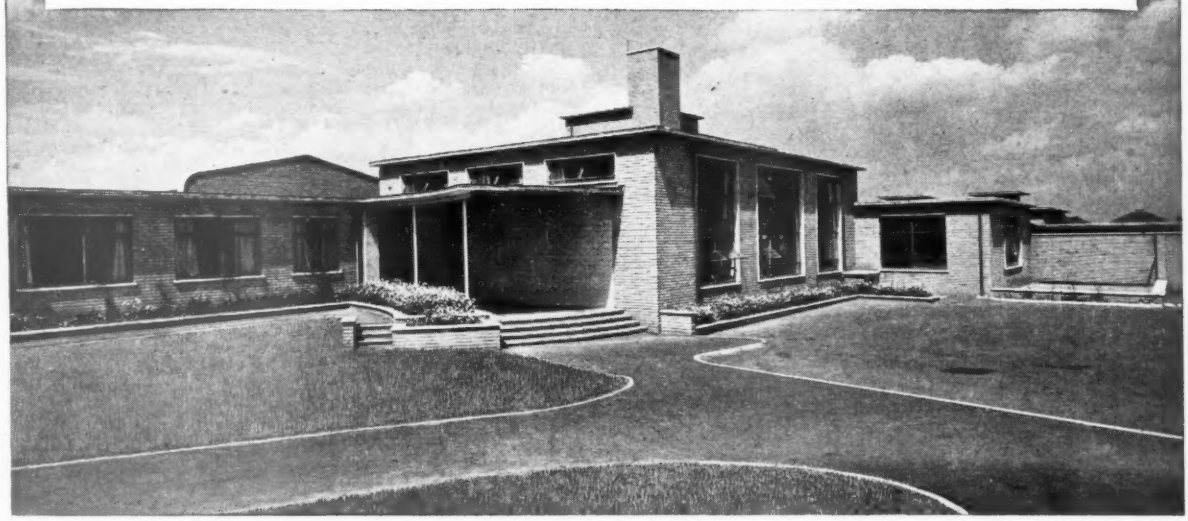
AN INTERESTING NEW PRIMARY SCHOOL



Wentworth Drive County Primary School, now completed, has some novel and interesting features:

This new school in Dartford, Kent, was built in little over a year. The architect—Mr. S. H. Loweth, F.S.A., F.R.I.B.A., M.I.Struct.E.—went to some trouble to see that only building materials in full supply were specified. It is interesting to note that he used the same flooring material, in a variety of forms and colours, for well over half the ground-area of the building. He chose Accotile, the new asphalt-tile flooring made by the Armstrong Cork Company.

"A primary school to accommodate 320 pupils. A school that is practical, pleasing to see, and *one that the ratepayer can afford.* A school, above all, to be built quickly." These were the broad terms of the brief given to Mr. S. H. Loweth, F.S.A., F.R.I.B.A., M.I.Struct.E., Kent County Architect. Only 16 months later, pupils began taking their first lessons in Wentworth Drive School.

Speed of erection was a prime consideration. Wentworth Drive thus became one of the first schools in Britain to incorporate aluminium construction. Although the front of the building, as seen from the road (i.e. the Admin. Wing, Assembly Hall and School Meals Unit), is constructed of yellow stock brick in traditional style, the two long classroom-wings—which stretch out behind—were brought on site in the form of prefabricated aluminium units four feet wide, ready cladded both outside and inside, and supplied by the Bristol Aeroplane Company. The result is a good-looking combination of old and new.

Classrooms and corridors were both constructed on direct-to-earth concrete, thereby saving time and expense. The flooring material used was Accotile (thermoplastic tile made by Armstrong Cork Company).

So satisfactory has the architect's design proved, that a second and adjoining school is shortly to be built next-door to the existing building, on similar lines. Wentworth Drive's heating-chamber and meals-unit are, therefore, double-sized. They will, eventually, serve both schools.

There are many modern features in the new school. It is, for instance, wired throughout for radio and gramophone reproduction. Perhaps, however, its most interesting facet is the quality of its interior decoration. A great deal of thought was devoted to this, in order to give pupils a pleasant place to work in, with no lack of variety. The colour-schemes, particularly, have been carefully devised, and have won praise from high authority.

Every classroom has a different colour-scheme—set off by the tile floors. Here, the architect was helped by the wide range of colours in which Accotile is available.

All in all, a not-unimportant part in the project was played by Armstrong's Accotile. The decorative qualities of the tiles have given the floors an appearance of near-luxury. It is quiet to walk upon, and even in the corridors, where the hardest wear is expected, it will last well. It is very easily cleaned and—most vital—its extremely low price has helped to make Wentworth Drive School not only a first-class building but "one that the taxpayer can afford."

. . .

For full information about Armstrong's Accotile, architects and builders are invited to telephone or write to Armstrong Cork Company Limited, Flooring Department, Bush House, Aldwych, London, W.C.2. Tel: Chancery 6281. Scottish Branch: 5 Oswald Street, Glasgow, C.1. Tel: Central 5703.

The following were responsible for Wentworth Drive County Primary School: S. H. Loweth, Esq., F.S.A., F.R.I.B.A., M.I.Struct.E., County Architect; R. T. Green, Esq., F.R.I.B.A., County Architect (in charge of Schools); R. C. Passmore, Esq., A.R.I.B.A., Principal Assistant; C. B. H. Cremer, Esq., A.R.I.B.A., Architect in Charge; Messrs. Gilbert Ash Ltd., 2 Stanhope Gate, London, W.1, General Contractors.

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AJ

THE ARCHITECTS' JOURNAL

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HE QUITE FORGOT

Opening a new industrial estate, particularly a well designed one, should, I would have thought, have been a rather inspiring business. Last week's opening at Harlow was not, but it's hard to say why. Half way along a new concrete road, flanked on one side by the new buildings, complete or nearly so, standing in the tumbled muddy soil of the building site, and on the other, the brown mouldering shapes of one of Harlow's earlier industries, a farm, stood a circle of unimpressed journalists and labourers eyeing a little black box on a shabby deal table. By turning a switch on the box, Mr. Lindgren, Parliamentary Secretary to the MOLGP (who was standing in for Hugh Dalton), turned on the supply of electricity to the factories. Not a very inspiring movement anyway, hardly as dramatic as cutting a tape, but everyone made the most of it, fussing around with cameras and adjusting the position of the table while Mr. Lindgren posed and posed.

*

He made a speech, of course, telling us that this was the only way to settle London's congestion, a policy he had been advocating (as I am sure you all remember) for the past twenty-five years. He wished well the industrialists and workmen who were going to the estate, and he expressed appreciation of the efforts of Richard Costain, Chairman of the Development Corporation. But once again, as so often happens, no reference was made to the designers of the buildings, or the planners or the consultants (though of course he remembered the building operatives). Now I am quite sure that nobody, from the top architect to the most junior draughtsman, cares tuppence whether he remembers them or not, but the public would, I'm sure, respect more highly those public servants who can remember these details, and give credit and thanks where it is due.

*

As I left the site, I passed a little group of men filling in the hole around the tree which Mr. Lindgren had planted to commemorate his visit. It seemed rather close to one wall of a factory, which fact no doubt prompted a journalist to call out to the gardeners: "You'll be cutting that down in a few year's time": to which remark the gardeners, not one whit perturbed and not pausing to look up from their task, replied: "We know, we know."

THE PREDICTABLE ENGLISH

We are a wonderful people. I have been told a story about a meeting which recently took place in the Festival offices to decide how many extra precautions would be needed on the South Bank to prevent large-scale pilfering (more politely "souvenir-hunting") during the last days of the exhibition. It was attended of course by the South Bank security staff, and also by a hard-bitten officer from Scotland Yard with a lifetime of experience of the British public behind him.

*

His advice was asked about the need for extra police on the last day. He thought for a moment, and then came out with this very useful generalization: "No need to worry too much," he said. "The British public doesn't pilfer on a Sunday. Wednesday or Saturday, yes. But Sunday, no."

*

No doubt he is right, but (writing before the event) I don't suppose the Festival authorities took many chances, so I hope for your own sake that before you slipped that prize pullet under your coat or that useful-looking household gadget into your pocket, you made quite sure that the gentleman in the mackintosh who looked as though he was merely trying to get there first wasn't in fact a plain-clothes detective.

CIVIL ART

Just before it closed, I visited an exhibition of paintings and sculpture by the Association of Civil Servants Art Group. This was held in what is called the "Pillared Hall" in the new Whitehall office buildings designed by Vincent Harris. The Hall lives up to its name, having octagonal black columns in pairs down each side of it, in a manner not unreminiscent of one of the rooms in Stockholm Town Hall. Much more

dominating, though, is the strongly coloured floor of squares of maroon and cream linoleum. However, enough of the room: I went to see the paintings.

*

The standard is remarkably high, but, of course, as one would expect, very traditional in expression. Every conceivable technique was used, and every conceivable artistic subject was faithfully portrayed, even a view of Highland cattle (albeit very small) standing beneath large and misty hills. There were illuminated manuscripts decorated with halfpenny-sized medallions depicting sunsets, and a large, pink and yellow suffuse painting of roses on an old brick wall, every chip and crack of which was meticulously recorded.

*

As I left, however, I noticed to my surprise a small disruptive element. Some abstract paintings with a strength of colouring which I could not help feeling, I hope quite groundlessly, may well hamper the artist's career if his departure from convention becomes known to his superiors in The Service.

THOSE 300,000 . . .

A General Election on October 25 holds out the possibility that we may soon have a Conservative government, and in that event ASTRAGAL (though strictly non-party) thinks that we shall be hearing more of the 300,000 houses a year which a Party Conference rather rashly chose as their target figure.

*

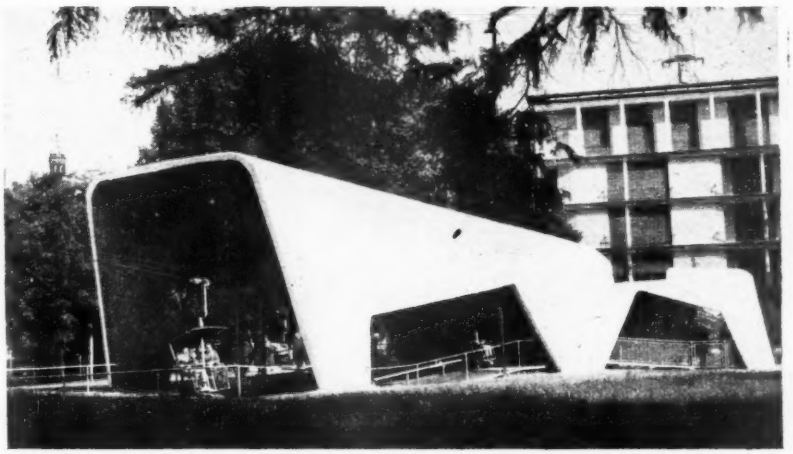
Though nothing in home affairs could be more worth while, it is doubtful whether anyone in the industry thinks we can reach this output, even if re-armament and export needs grow no greater. But it is perhaps possible to agree on the methods which offer a chance of improving on 197,000; and on those which don't. Firstly, we must build new dwellings in large contracts; "large" being relative to the locality, and thus varying from 50 up to 500 and more. This puts paid straight away to daydreams (now mainly indulged in by evening papers) of tens of thousands of 3-houses-at-a-time speculations by small builders. Secondly, we could gain a good deal by concentrating for 5 years on 2-bedroom and even 1-bedroom dwellings of 600-700 feet super. Thirdly, we must admit that prefabrication of structure has little to offer us while light materials are so scarce. We must, in fact, cut on carcassing to save what we have for finishings and equipment. This seems to point to a wide use of materials such as "no fines" which does the mass of the structure with nothing but small stones and a little cement. It might also be helpful to sack the man who allows us to export complete prefabricated timber houses at a time when we are beginning to walk round the walls of new first-floor bedrooms rather than across the middle of the floors.

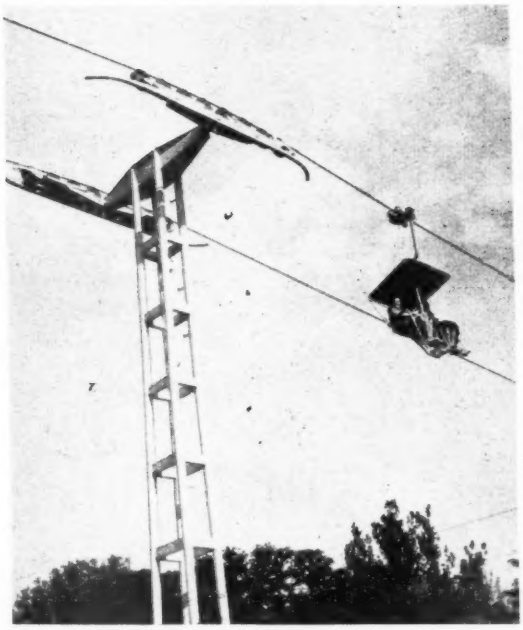
GOING BY WIRE

I don't suppose many AJ readers have any more desire than I have to emulate the feat of Charles Elleano, who recently made a high wire crossing of the Thames to the South Bank with so much French grace and aplomb. Yet surely the pleasures and possibilities of the more sedentary kind of wire travel are unduly neglected in this land of ours.

*

I am prompted to this reflection by the photographs that I show you on this page of the "*seggiovia*" erected in the Parco at Milan for the Triennale. The purpose of this amiable and elegant device was to waft foot passengers across that part of the park which contained the exhibition, affording them a (let us say) woodpecker's-eye view of the pavilions on the way. How delightful to cross the Thames, or swing among the trees of Kensington Gardens or Battersea, in this manner!





The Festival authorities may feel a little ashamed if they get to hear that at this year's Milan Triennale people wishing to travel to the exhibition by wire did not have to walk—as did Charles Elleano at the South Bank (see note below). Instead they travelled in this "seggiovia" from the station shown above.

Farewell to an Exhibition : Welcome to a Regained South Bank

In this last view of the South Bank Exhibition we have numbered those buildings which could and should be retained until actual building for the permanent redevelopment starts, so as to ensure that this hard-won site maintains its role as a cultural centre and an integral part of central London. The periodic crowds drawn to the Festival Hall (1), the only permanent building would be supplemented by using the Lion and Unicorn Pavilion (2), as an art gallery, by the Telekinema (11) and by the use of the administration block (9) as offices, and the Homes and Gardens Pavilion (10) might be used as a BEA terminal with Underground access at Waterloo Station Gate (3). Another attraction would be the riverside walk (5), with fountains, ponds, plants and look-out platforms retained, running from the '51 Bar (4) (with the vast building site of the cleared upstream section to be watched from its terrace) past the pier (6) and the Shot Tower (7), to the Thameside Restaurant (8).

ASTRA ET ASTRAGAL

If you have been in London this summer you may have been fortunate enough to see that pleasing French film in which one of the characters, a *very* young man, having waved his farewells to a departing lady, turns, disconcertingly, to the agape audience and crows delightedly: "I am the lover of a married woman!" as he takes a running leap back to his *appartement* (short lease only). Throughout life one steadily accomplishes those acts, moral or otherwise, which mark one's social climb. ASTRAGAL, almost as brashly as the young man, can now announce one such step: he has been *invited* to a film première. A little late in the day, no doubt, but do not scoff at one who has reached out and touched the stars. To be precise, the hem of Anne Todd's veil (was it, I wonder, her sixth or seventh?).

*

The occasion was the showing of *The Magic Box*, the film of the life of Friese-Green, the inventor of the cinematograph. This is a sad film, the story of a dull and unsuccessful character, despite a very good performance in the principal part by Robert Donat. Whatever chance the story had was successfully ruined by the policy of including virtually every eminent actor amongst the cast. The result was similar to a charity matinée. The audience, snug in the gilded belly of the Odeon, gaped and lunged as they strove to spot their favourites. "Why, look!" they cried: "Laurence Olivier." And, sure enough, there he was.

*

The sets of Edwardian interiors by John Bryan were first-class, and, oddly enough, like many a contemporary architect's sitting room. Dark green striped wallpapers, cluttered shelves of lustre china, beaded footstools—you know whom I have in mind.

*

Afterwards, of course, there was a celebrity inspection. Down the stairs filed the nobs, flashing smiles to greet the flash-bulbs; from film stars to Gerald Barry and even the benign face of painter Carel Weight in shaggy tweeds. Overheard in the foyer: "My evening's made for me, my dear, I've seen John Rothenstein!"

ASTRAGAL

The Editors

ILL-INFORMED CRITICISM

A STATEMENT by an Alderman at the annual conference of the Institute of Housing condemning "the rake-off of those professional men, the architects" did not receive much publicity in the daily Press. Nevertheless, there were newspapers which saw fit to publish it, and it is, therefore, encouraging to be able to report that the President of the RIBA has written to those newspapers to refute such criticism.

We publish this week in our correspondence columns two letters, which readers have sent to us, drawing our attention to Alderman W. E. Power's comments. In one of them is quoted in full the report of the Alderman's speech which appeared in several Liverpool newspapers.

What the Alderman says is all the more dangerous for the element of truth which it contains. It can well be argued that housing would be cheaper if architects were not employed and designs standardized. Thanks to our Victorian forefathers, many of the public and, indeed, even engineers, have not yet entirely got rid of the idea that the architect is only the man who applies the art to a building. It's an old story, but it is hard to live down. It is made even harder to live down by the fact that there are still architects practising who, by their inefficiency, or whimsicality, do unreasonably increase the cost of building.

It is obviously the task of the daily papers to publish the articles describing the architects' job and the disastrous lowering of already low standards which would come about if architects did not control the design and layout of housing. It is not for the JOURNAL to tell the architectural profession how essential they are, but rather is it the JOURNAL's task to remind the profession that criticism is most effectively answered by results. Inefficiency and slowness in the design and erection of housing *may* do calculable harm to an architect's reputation. The harm done to the citizen and his family patiently waiting to be housed is not so easily assessed. Architects, by virtue of their name, claim the chief responsibility in the building world. They must, therefore, be prepared to be the chief target for criticism.

THE NEED FOR REPLANNING PLANNING LAWS

There is an increasingly widespread belief that amendments must be made to the present system of planning and licensing if building controls continue. On page 405 of this issue Ernest Watkins reports on some of the criticisms of the 1947 Planning Act made at the recent TCPA Summer School at Oxford. These, and other criticisms, have a much less academic sound—thanks to the political atmosphere of 1951—than comments on the Act made twelve months ago. It seems opportune to suggest that the architectural profession

(and, therefore, its professional associations?) might consider the collection of material concerning the practical working of the Act. Such material would provide valuable evidence for anyone who was made responsible for reviewing the Act. And it certainly will need reviewing if shortages of men, money and materials continue in the building industry for even another ten years, for it is no more adequate than the existing defence regulations governing building licences. The inevitability of a continuation of building controls is emphasized by the fact that the Home Secretary recently made an Order, under the Civil Defence Act, 1948, declaring that it was the duty of every local authority in England and Wales to make plans for the provision of civil defence shelters.

The Architect's Rake-Off

SIR,—The following is a copy of a paper cutting published in the *Liverpool Evening Express on Thursday*, September 20, and is forwarded to you without comment:—

"Council houses would be cheaper but for the rake-off of these professional gentlemen, the architects," Alderman W. E. Power of Birkenhead, told the Institute of Housing Conference at Scarborough today. "The necessity of employing architects to get a proper building is raising the cost of houses," he said. "Before the war the houses used to be built on plans and specification. Now there seems to be something very suspicious knocking about, and the Ministry must know about it. Isn't it a remarkable thing that the builders will not accept a contract unless there are quantities drawn? Those quantities cost money. You have to pay a percentage to the quantity surveyor, and so add appreciably to the cost of the houses."

Sometimes plans were not ready, for the builders were afraid to say anything in case they offended the architect. Alderman Power continued: "The Ministry must tackle the people who are too big to be spoken to—these professional gentlemen who are having a rake-off from housing. They are not necessary at all, for there are standard designs of houses and there is the commonsense of the local engineer."

Alderman Power also had a word to say about "the steel racket."

"I think," he said, "the Ministry have fallen down altogether because there are many authorities—particularly one or two I know of myself, who placed their orders at the beginning of the year and have no steel at all.

"Who has got the steel? They cannot get it and consequently the houses have been held up."

"TEN ARCHITECTS"

Chester

[Alderman Power's remarks are the subject of this week's first leading article.—ED.]

SIR,— I have just read the remarks by Alderman W. E. Power which were addressed to the Institute of Housing Conference at Scarborough. Such a libellous and ill-informed statement made by an alderman should be dealt with at a high level. As editor of the leading architectural Journal, and spokesman for our profession, it would be in the interests of all architects if you were to press for an inquiry by the RIBA into this civic leader's statement.

Already it is regrettable that so many local authorities still carry out housing schemes and all their building under an engineer, without inferring that architects can be dispensed with. One has only to scan the pages of the architectural journals to see how deplorably low is the general standard of architecture in this country. Imagine what the state of affairs would be if this alderman's suggestions were adopted by any of the one hundred local authorities to whom this statement was made.

VERNON H. LEE

Southport

The Architect's Object

SIR,—John Summerson's criticism (AJ September 13) contains much superficiality of statement. Architecture interprets the culture in which it is built. Architects reacted to the eclectic Renaissance and in their search for a true expression explored different problems. This exploration continues. The difference between problems explored and solved gives personal style; the style of the architect. The intuition of the problems involved—the expression of man's relation to the universe—gives the style of the culture.

All art must be in the cultural style to be meaningful to those who live in the environment. Eclectic art may be superficially pleasing but is empty in content. To be eclectic, architecture need not merely revert to past cultural styles. It can arise from a personal romantic concept in which intuitive symbolism is replaced by sentimental association. The winning design for Coventry Cathedral is in this category.

To suggest that contemporary architecture merely arises from a negative analytical approach is to accept the mediocre as a basis for discussion. In architecture in all cultures, planning and construction are never initially conceived as being the ends. They are always used as a means in the expression of an intuitive concept of a building.

For there are two concepts involved in architecture—a general and a particular. Each culture develops a concept as stated before. Obviously, if a cathedral is to be meaningful to us today and we accept that the Royal Festival Hall is contemporary, then both cathedral and concert hall will be in the same cultural style.

Within this general concept each building arises from the emotional demands of the architect, his concept of the building. That is, in a creation of a building, the architect imagines himself within and outside the building and designs to satisfy his own emotional demands, both conscious and unconscious. The concept of the building will be different as the emotional demands are different. This is Le Corbusier's poetry, when building is uplifted to architecture by the emotional demands of the architect. This, we are told, has not "the slightest relevance to a place of orthodox worship."

ANTHONY JACKSON

Brixton

Design for Juveniles

SIR,—We were interested to see the House illustrated on page 348 of the JOURNAL for September 20, and we imagine in a few years' time the following dialogue being heard in North End, Hampstead, N.W.3:—

"DAD! Where are you?"

"Building a coal store in the yard."

"Have you seen Nurse?"

"Yes, she's in the kid's bedroom" . . .

"Oh, Nurse, where's Maggie?"

"She left here about half-an-hour ago, and if she hasn't lost her way, she should have reached the bathroom by now.—Why?"

"I thought she was looking after young Albert on the balcony—he's dropped his hammer through the floor, broken the dining room window, and now he's fallen through the railing! I'd better tell Dad to stop messing about with that coal store and fix some rabbit wire to the balcony . . . DAD!!"

Is our imagination too vivid, or do the people in Hampstead Heath lead a more settled life and control their children to better advantage than do we Northerners?

"THE ARCHITECTS' CRITICAL PARTNERSHIP"

Sheffield

Laugh with a Sob

SIR,—The Town Hill Rest Precinct well deserved ASTRAGAL'S criticism (AJ September 20): what could one do but laugh—albeit with a sob at the end—at such a prospect. It is the only shred of enjoyment it will ever give.

Other similar "gardens" come easily to mind which merit harsh words: must we for ever withhold our indignation at that which is so obviously comfortless and barren in summer and winter alike?

TONY MOORE

London

Cafes or Craggy Cliffs?

SIR,—In the past few months pressure of public opinion has caused the Ministry of Works to reconsider at least two of its major building projects: first the new Colonial Office then the "reconstruction" of Carlton House Terrace. General dissatisfaction has also been expressed with the appearance of most of the Government office buildings erected under the Lessor Scheme.

It is alarming that a body responsible to the public for the design of such a large volume of post-war building should show such an appalling lack of imagination and architectural appreciation in fostering these schemes, which will survive as our legacy to many future generations. The fact that the Colonial Office and Carlton House Terrace projects had reached such an advanced stage before they became public is regrettable in itself. It seems that the Ministry, fearing the consequences of publicity, proceeds with its plans in secret as long as possible and then, when the facts do leak out, disarms criticism by saying that it is too late for any major alteration to be made.

This unsatisfactory process seems to be starting again in the case of a site in Horseferry Road, Westminster, where building work has already begun on what promises to be another huge scheme. Surely it would be very much in the public interest for drawings of the intended building to be made available very soon so that any justifiable criticism can be made and acted upon.

In the meantime, we hear that part of the South Bank site is earmarked for Government offices. It would be very pleasant to think that the many delightful buildings which are there at present will be replaced by something equally worthy of this fine site; but one has only to look immediately across the river at the monstrous mountain of stone which is being raised in Whitehall Gardens to see an awful warning of what Government offices can, and usually do, look like. This year's Exhibition has shown us the wonderful possibilities of South Bank, with its restaurants, bars, fountains and terraces along the river. Are these newly won amenities to be retained in a permanent form, or are they to be swept away with indecent haste and replaced by great craggy cliffs of offices as lively and inviting, especially by night, as Whitehall, County Hall or the Colorado Desert? In view of the tremendous interest which has been aroused in the South Bank site, it would seem that the Ministry of Works, and any other authorities involved, would be well advised to take the public into their confidence and to let us see what their proposals are before the excavators and pile-drivers move in.

T. A. BALDWIN

London

[ASTRAGAL made a similar suggestion on September 6.—ED.]

Homes for Murals

SIR,—In your last issue ASTRAGAL threw a somewhat nostalgic light on some aspects of the liquidation of the South Bank Exhibition.

The photograph above shows the new central laboratory at Cambridge for Spillers Ltd. It was designed by Lanchester and Lodge and was recently completed.

Having painted one of the murals, I remember the birth of this great exhibition as one of the happy periods in my life, not only because I was at last doing work connected with something real and necessary in relation to architecture—which had always been my ambition—but also because of the atmosphere of expectation and optimism connected with the whole venture. It seemed to me and to many others that a new and fruitful era in mural painting was about to dawn in this country. Unfortunately our hopes have been dashed, and—perhaps prematurely—a feeling of frustration is setting in.

Not only has nothing happened so far, not only have the art critics ignored the issues involved and failed to seize this opportunity to consider what was good and what was bad from the point of view of a possible recreation of the lost tradition in the integration of painting and sculpture with architecture, but we now hear that some of the murals which "do not find homes" following the close of the Exhibition may be auctioned as so much used timber or otherwise disposed of as scrap.

This is the country where even Sir Gerald Barry, as reported in the *News Chronicle*, dare not mention the word "culture" for fear of setting "certain newspapers feeling for the safety-catches of their revolvers." But—for better or worse—these murals represent a serious effort and illustrate the state of mural painting in this country, and, by inference, of our artistic culture. They could be preserved by placing them, free of charge, in government buildings, schools, the factories of the nationalized industries, canteens, trade union conference rooms and so on.

But there comes a "Grey Eminence" whose narrow mind decides everything: The Taxpayer. It appears that the Festival authorities have now but one thought—to reduce the deficit to a minimum. Every shilling helps.

This, it seems to me, makes the whole problem interesting to architects. Almost all the murals are on wooden panels and easily transportable. Many of them could be cheaply acquired. It would be interesting to see if architects are serious when they talk about the desirability of introducing painting to architecture. Here is their chance: ready-made murals to try out.

MAREK ZULAWSKI

London

DIARY

Exhibition of British Popular and Traditional Art. Sub-title: Black Eyes and Lemonade. At the Whitechapel Art Gallery. Daily except Mondays, 11 a.m. to 6 p.m. Sundays, 2 p.m. to 6 p.m.
UNTIL OCT. 6

London: An Adventure in Town Planning. Exhibition of work by Assist. Professor Smigielski, staff and students of the School of Architecture, Polish University College. At ICA, 17-18 Dover Street, Piccadilly, W.1. Weekdays 10 a.m. to 6 p.m. UNTIL OCT. 6

New Timbers and Their Uses, by R. P. Woods, Chief Scientific Officer, TDA. At Hereford College of Further Education, Newtown Road, Hereford, at 7.15 p.m.
OCTOBER 9

Prestressed Concrete, by O. J. Masterman, BRS. At the Sunderland Technical College, The Green, Sunderland, at 7.0 p.m.
OCTOBER 10

The RIBA Form of Contract, by C. Stanbury Madeley at the Building Department, North Staffordshire Technical College, Cauldon Place, Stroke-on-Trent, at 6.30 p.m.
OCTOBER 11

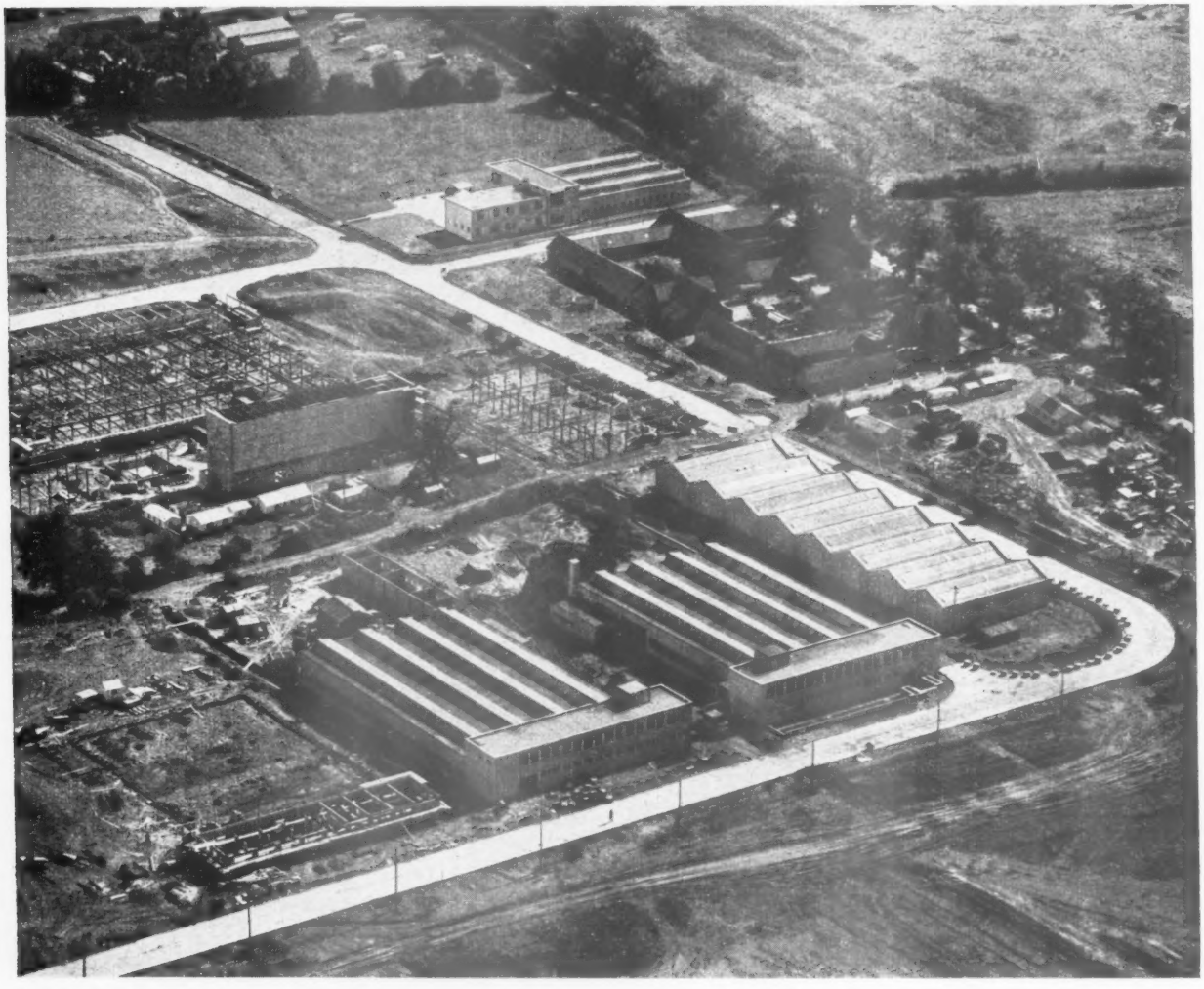
Social and Economic Developments in China. A talk by Joseph Needham. Organized by the Students' Planning Group of the TCPA. At 28, King Street, Covent Garden, W.C.2, at 6.15 p.m. OCTOBER 11

Scottish Housing Since the War. A paper to be read by R. J. Gardner-Medwin, Chief Architect and Planning Officer to Department of Health for Scotland. At the Annual General Meeting of The Housing Centre Trust, 13, Suffolk Street, S.W.1, at 6 p.m.
OCTOBER 16

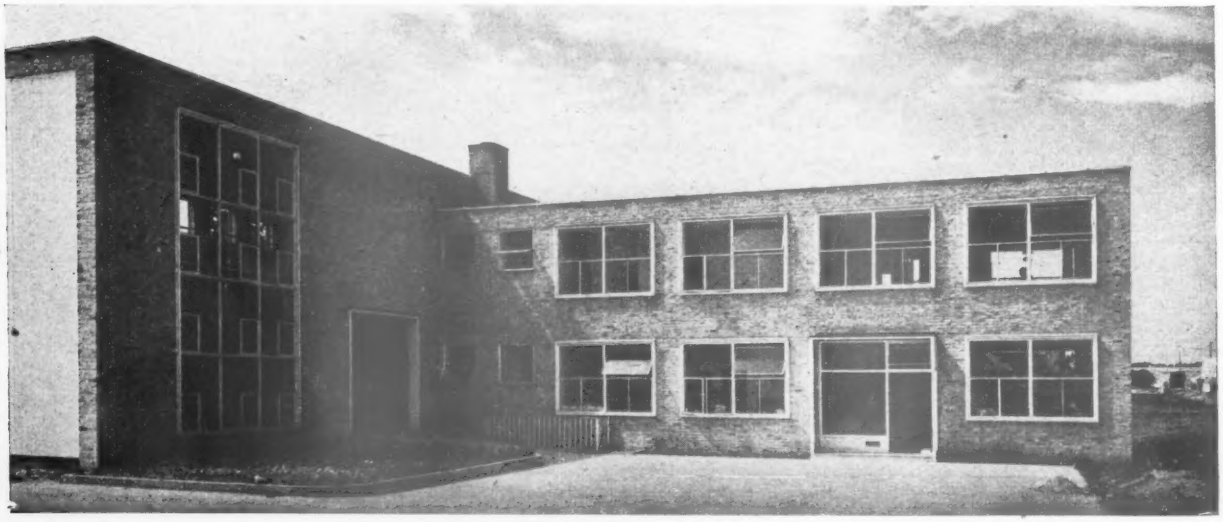
The Quantity Surveyor and the Building Contract. A lecture by Arthur J. Willis. (Sponsor, The Institute of Quantity Surveyors.) At the Institute, 98, Gloucester Place, W.1. 6.45 p.m. OCTOBER 24

Exhibition of Architecture. Sponsored by the Institute of Registered Architects. The above exhibition will be on view at the following places:—East Finchley Library (until Oct. 6); Thomas Parsons Showrooms, 70, Grosvenor Street, W.1. (Oct. 8-19); Council Office, Surbiton (Oct. 22-27); Building exhibition, Olympia (Nov. 14-28).

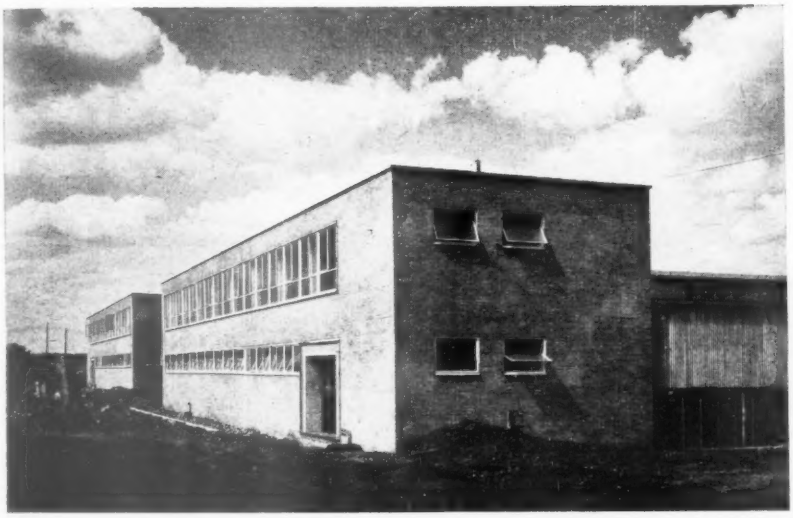
HARLOW NEW TOWN, ESSEX : OPENING OF



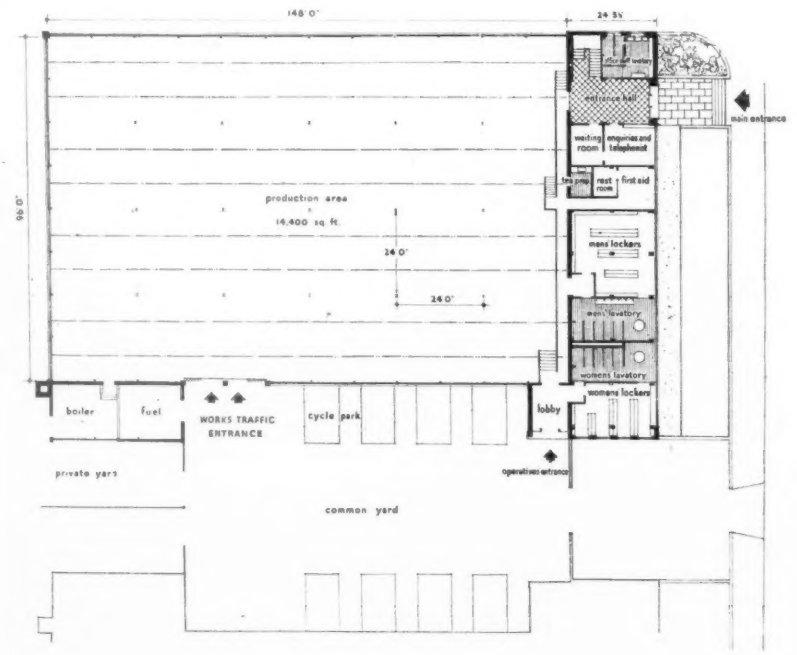
The industrial estate forming part of the new town at Harlow was opened on September 24 by G. S. Lindgren, Parliamentary Secretary to the MOLGP. The buildings have been designed in the Harlow Development Corporation's Architects' Department under Frederick Gibberd, architect-planner, and V. Hamnett, executive architect. Above, centre, are two standard factories. 8 sectional factory units are seen to the right of these. Left, a factory under construction; Centre, top, and in the photograph below, are the laboratories for the British Hydromechanics Research Association. (*See* JOURNAL *for June 7.*)



THE INDUSTRIAL ESTATE



Above is a view of the two standard factory units when nearing completion; below, a ground floor plan of one of them. Its production area (of 13,824 sq. ft.) has a steel frame. The walls below cill level are of cavity construction (brick outer and breeze block inner skins); above cill level, vertical patent glazing, and from eaves to top of patent glazing the walling is of asbestos sheeting, lined with insulation boarding. The roof is flat, with monitor roof lights giving 7·5 per cent. average daylight factor over the whole floor. It is covered with bituminous built-up roofing on 2-in. wood wool slabs. The two-storey office block also has a steel frame, with cavity walls (brick outer and 3-in. hollow brick inner skins). In this, and the sectional factories, are contained light engineering, medical appliance and scientific instrument works. Four standard factories and five units of sectional factories are at present under construction. A six-acre site is being levelled for a glass-bottle manufacturer who will build his own factory, and work will begin shortly on two standard factories, four units of sectional factories and two other factories to be built by their owners.



RIBA

President Defends Profession

A. Graham Henderson, the RIBA President has written to *The Liverpool Echo* which printed the comments on the architectural profession made recently by Alderman W. E. Power, of Birkenhead, and discussed in our correspondence columns on the opposite page and in our first leading article:—

"My attention has been drawn to your issue of September 20 in which remarks made by Alderman W. E. Power of Birkenhead at the Annual Conference of the Institute of Housing are quoted. He is alleged to have said in effect that but for the employment of architects to design the houses and surveyors to prepare bills of quantities on which the builders base their competitive tenders for the work, Council housing would be cheaper.

"There are certain statements made at public meetings and quoted in the public press from time to time which are so manifestly absurd that it seems unnecessary to refute them, but when a subject of such vital importance as housing is referred to in an irresponsible manner I feel that the remarks made cannot be ignored.

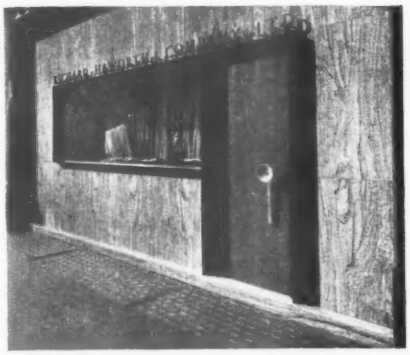
"I am certain that a responsible body such as the Institute of Housing would realize the absurdity of attempting to carry out housing without proper professional assistance, apart from the fact that the Ministry of Health have directed the local authorities in their various housing manuals and instructions to seek the best possible professional skill, I think it is fair to state that not only those responsible for the carrying out of housing schemes but also the general public are now aware that the quality of the houses built is almost as important as the quantity if we are to avoid the creation of further slum areas, the existence of which in the past have caused, to a large extent, the problem of re-housing.

"The enormous improvement which has been effected in the standard of housing for the last few years has been due to the efforts of architects who have achieved not only improved design in houses but, by their professional skill, have effected economies in planning and convenience of arrangement. This statement is borne out by the circular sent out from the Ministry of Local Government and Planning to housing authorities in April last dealing with what steps can be taken to secure a reduction in the cost of house building without prejudice to essential standards. The Minister expresses the view that many able architects have shown that it is possible by skilled planning to maintain the existing standards within smaller

NEW LONDON SHOWROOM AND OFFICES, FOR

The London showroom and offices for Richard Haworth & Co., Ltd., illustrated here, were designed by F. M. Gross. The available space was narrow and elongated and is lighted at only three points. The entrance lobby, typing space, salesroom and showroom are combined in one room, the showroom being separated by a curtain which runs in a recessed ceiling track. A false ceiling was suspended to obtain the required depth for artificial light and the air conditioning system. All irregularities in the existing walls have been straightened out by panelling and screen walls. The top photograph shows the four salesmen's desks, which are attached to a built-in filing cabinet with roller shutters. The heating system is behind the counter, with cold air inlet above and warm circulation grills below. When more space is needed in the room these tables can be detached. Above, left, a view down the length of the room, with the showroom at the far end. Above, right, the manager's office with a built-in fitment on the far wall in mahogany and abura. The curtains are green, the upholstery lime green, and the carpet fawn.

MANCHESTER TEXTILE FIRM



The street entrance is shown in the photograph on the left. The facade is faced wth Italian cippolino marble, the outer framing and the door are of teak and the door frame and lettering in coinage bronze. Below this photo is the receptionist's desk and enquiry counter in macoree with routed lines. The top and shelf are of sycamore. A ribbed glass screen behind separates the area from a private interviewing office. Below, a corner of the showroom which is on a higher level. The light railing is of wood and brass. Above the heating grills there is a small display case. The general contractors were Messrs. J. Gerrard & Sons, Ltd. For sub-contractors see page 424.

total superficial areas than those previously prescribed. The circular goes on to state that if plans are prepared by a qualified architect, provided they comply with the conditions in the circular, they need not be submitted for approval to the Ministry.

"Regarding the necessity of employing quantity surveyors, it will be obvious to anyone who knows anything about tendering for housing that without a properly prepared bill of quantities it would be quite impossible to check tenders received and that if each builder had himself, individually, to prepare such a bill the cost of doing so would be reflected in his estimate."

This feature covers aspects of legislation, parliamentary news or statutory rules and regulations which are of special significance to the architectural profession.

ERNEST WATKINS

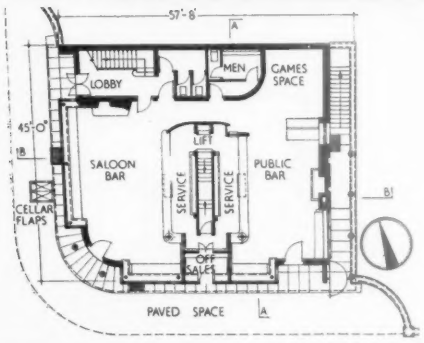
The Architect and Current Affairs

Among the papers read at the recent Town and Country Planning Summer School at Oxford was one by H. W. Wells entitled *A Critical Analysis of the Working of the 1947 Act*. Mr. Wells is far from being a harsh critic of the Act, or of intentions behind it. On the contrary, in some respects he appeared as an apologist, and in doing so displayed two of the common failings of apologists, their tendency to equate intention with performance and their tendency to regard planning under the 1947 Act with blinkered eyes.

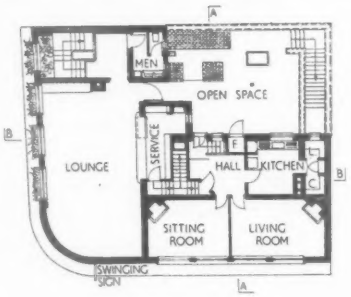
In his discussion of the sections of the Act which deal with the preservation of buildings of historical or architectural interest, Mr. Wells mentioned the common complaint that it may well be idle to list a particular building for preservation if there are no funds available to preserve it. He continued: "We must not, however, under-estimate the extent to which 'listing' has created a consciousness of what is worth preserving. People are becoming increasingly proud of owning a 'listed' building. If planning consists of no more than writing the name of a building on a certain list in a public office and then hoping that someone. owner or third party, will find money to preserve it, then, to me, it is pretty well indistinguishable from plain anarchy. (Granted anarchy may preserve

FESTIVAL INN, DORSET ROAD, LAMBETH,

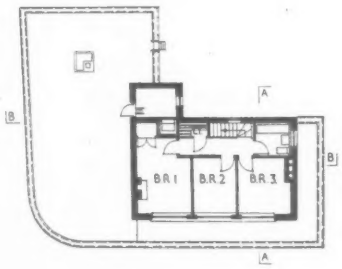
Old licensed premises belonging to Ind Coope & Allsopp, Ltd., in Dorset Road were required for demolition by the LCC before the war in order to continue a housing scheme. A new site on the opposite side of the road was made available, but the war held up the work, and the new premises, designed by W. J. Witham, Regional Architect to the brewers, have only recently been completed. The restricted area of the site necessitated the planning of the public rooms on two floors, and storage of all kinds had to be at basement



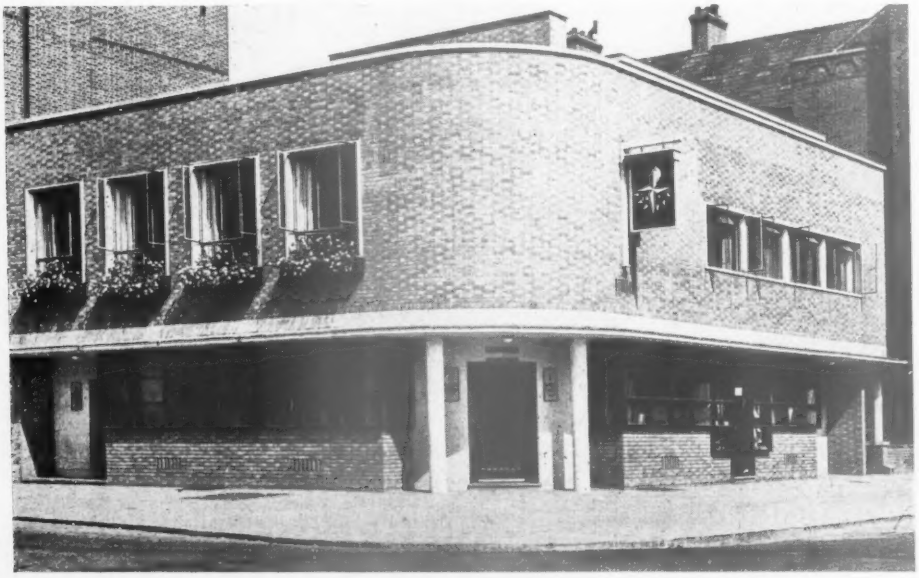
Ground floor plan [Scale : $\frac{1}{32}$" = 1' 0"]



First floor plan

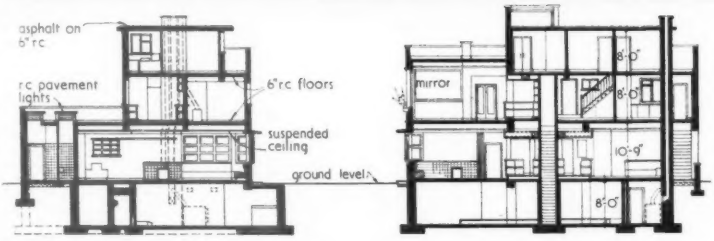


Second floor plan



level. The separate outside staircase, which provides a private entrance for the tenant's flat, also acts as an emergency fire escape for the first floor lounge, which is seen above, left. The mural is by Stanley Mills. External walls are mainly of 13½-in. brickwork and 11-in. cavity walls for parapets. The facing bricks are 2⅝-in. light russet brown, handmade. The fireplace

LONDON, S.W.8.



Sections A-A and B-B [Scale : $\frac{1}{8}$" = 1' 0"]

wall in the public bar, seen below, is faced with 2-in. bricks, and murals here, and in the saloon bar (right), are by William Morris. Below, on the opposite page, is a photograph from Dorset Road looking north-east and above is a view looking south-east. The general contractors were Gee, Walker & Slater, Ltd. Sub-contractors on page 424.

many buildings, but we did not need a 1947 Act for its creation)."

Mr. Wells then passed to *Tree Preservation, Agriculture and Location of Industry* (the arrangement of subjects is his, not mine) and said this, and this only, about location of industry: "Industry is moving into areas of possible unemployment. There is plenty of evidence of the effectiveness of the national policy in these directions." The only comment I can find breath enough to make is that not even a parliamentary secretary to a ministry could have produced a statement more bland, or more evasive.

But Mr. Wells became more alive and thought-provoking when he passed to those parts of the Act (VI and VII) dealing with development charges. His account of the criticisms of these parts of the Act included most of those often made at present. Development charge, he said, was—in practice—a tax of development and redevelopment, and a deterrent to useful redevelopment in particular, and the problems of valuation that it raised were insoluble. (Insoluble, that is, to a surveyor attempting to use the recognized methods of his profession.) In Mr. Wells' view, the conditions under which such selections had to be made allowed only of theoretical valuations, since the valuation must be based on "market values" in circumstances which could never arise in an actual market.

The speaker went on to discuss what amendments to these parts of the Act were first, desirable, and second, possible. His first point was that the 1947 Act was framed, after the investigation made by the Uthwatt Committee, to provide a solution to the compensation-betterment problems of the thirties, but that these problems were quite different from those existing today, for these reasons: (*a*) The dominant factors in development today were first, shortages and, second, cost of material and labour (not cost of land). (*b*) Shortages, gave value to a licence to build, not to permission to develop. (*c*) Cost ruled out a great deal of private development of the kind that gave rise to the problems the Uthwatt Committee attempted to solve. (Will anyone ever build houses, on an extensive scale, for letting?) (*d*) Today the value of agricultural land had risen, and so had diminished the change in value attributable to anticipated change in use.

The conclusion Mr. Wells reached was that the policy on which the development charge is based had become increasingly divorced from reality, in that the administrative act which adds value to land is the grant of the building licence for it, yet, by definition, that licence is not a thing which should have value, since it is only granted when some need is established. In short, Mr. Wells infers, but does not say, that the government should impose a fee on the grant of a building licence (parallel, perhaps, to the sum collected by the revenue for "monopoly" value on the grant of a new wines and spirits licence?). Over the development charge he is more explicit. He suggests that the simplest solution might be to drop both the payment of compensation for restrictions imposed and the collection of betterment for freedoms granted, and he quotes a sentence from MOLGP's Survey to hint that the authorities might be glad to settle for that, too.

Has the 1947 Act been in operation long enough to have become, so to speak, a vested interest, too established to make any radical change likely? I cannot feel that is so. Reform of this Act does not lend itself to any popular slogan, so I imagine that both parties will steer clear of it in any election campaign. Nevertheless, it is impossible to escape the feeling that substantial amendments to that Act may become solid possibilities in the not too distant future, which adds considerably to the value of the kind of practical analysis of the experience gained since 1948 contributed by Mr. Wells.

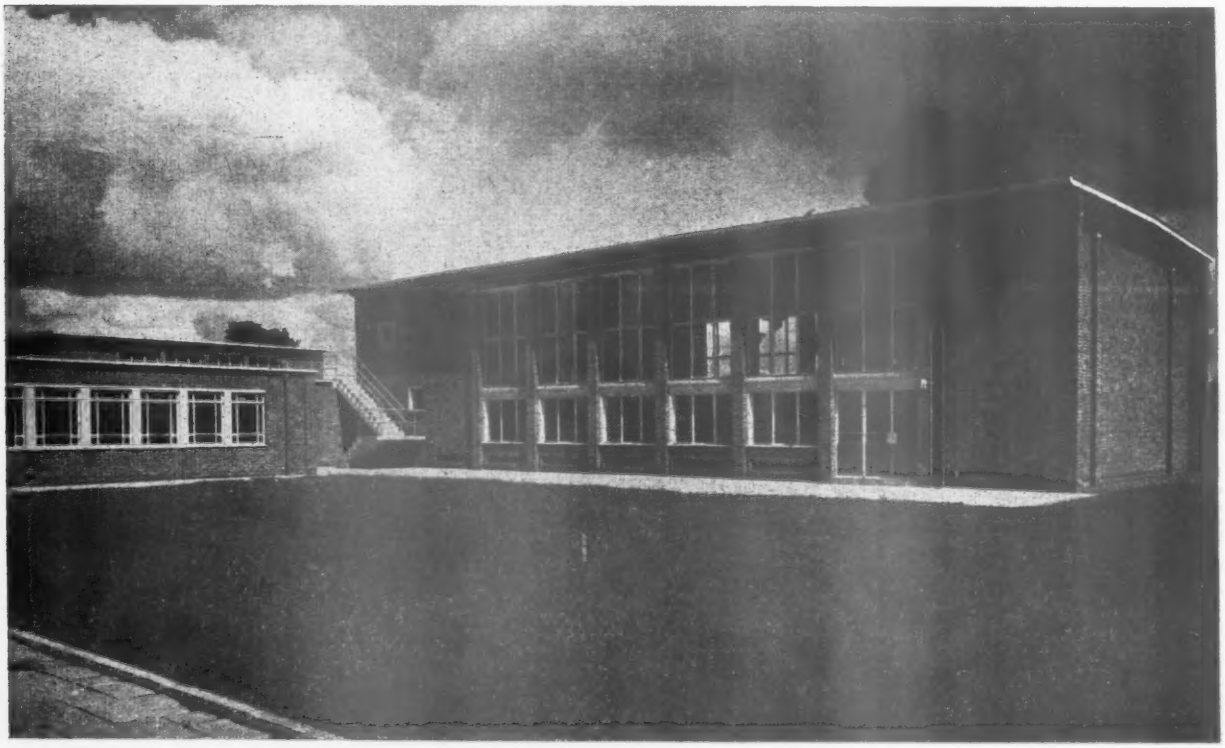
PRIMARY SCHOOLS

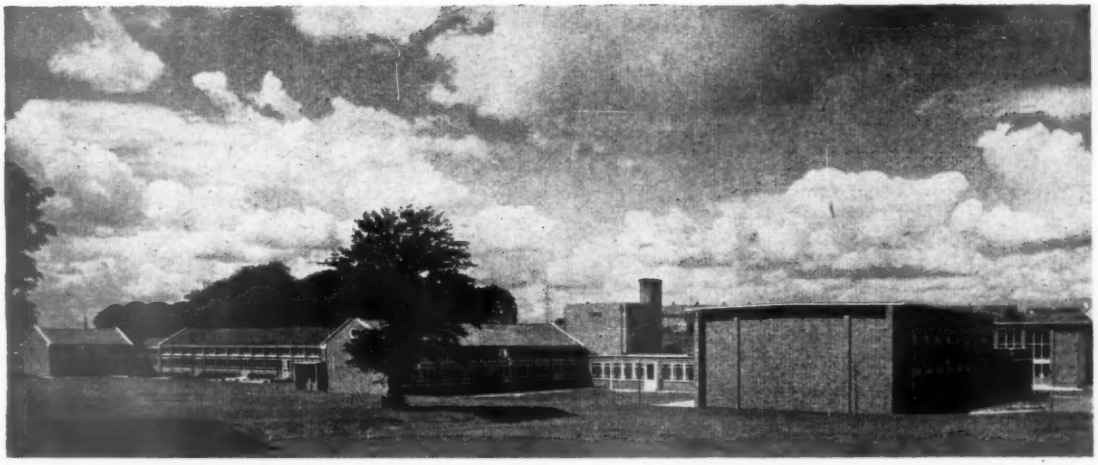
at LEAGRAVE, LUTON, BEDFORDSHIRE

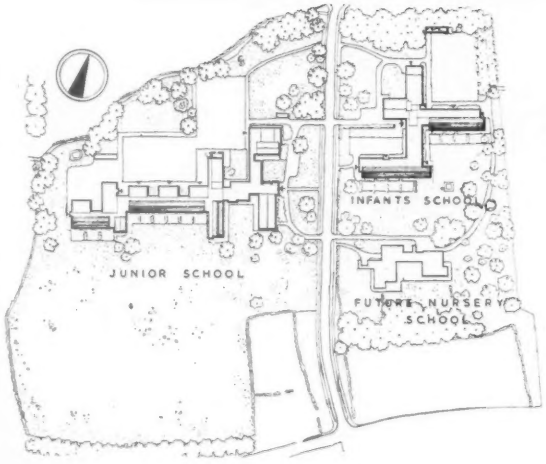
designed by HOWARD V. LOBB and PARTNERS

The junior and infants' schools, which are situated in the valley of the River Lea between Leagrave High Street and a new housing estate, were opened last week by the Chairman of the Bedfordshire County Council. The 16-acre site, on which a nursery school will be built later, has been planted in accordance with a scheme of landscaping designed by H. F. Clark and will contain a group of tall beeches along the line of the river. The site is bisected by Strangers Way, a road which has been extended to connect the High Street with the new housing estate.

Junior assembly hall from the south-west.



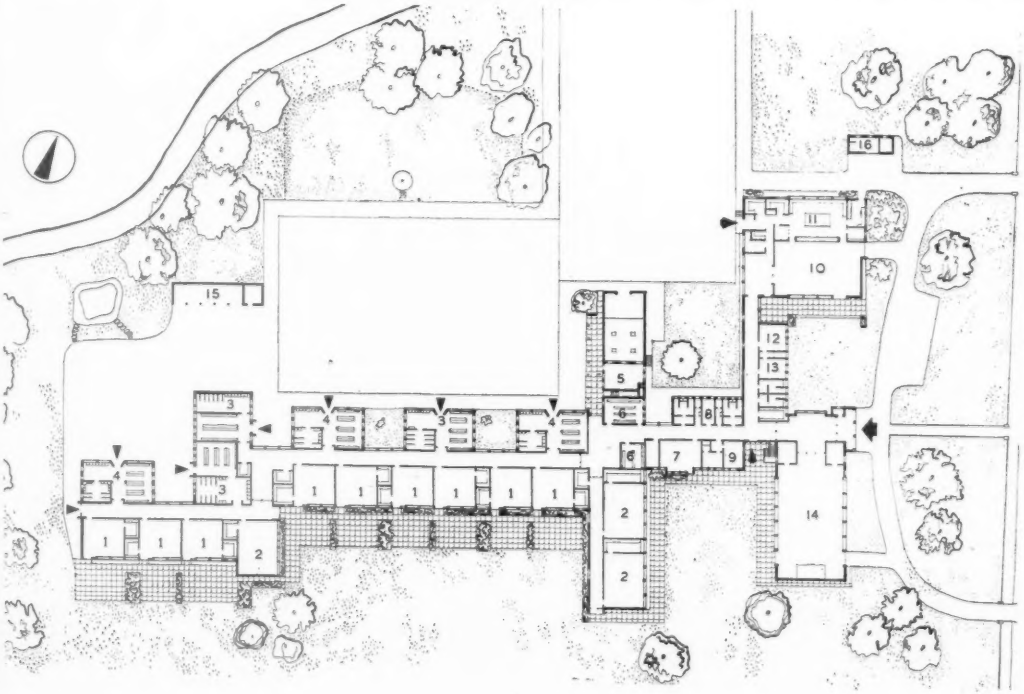




Site plan

Above, general view of junior school, from the south-east. Right, looking through the entrance doors into the assembly hall.

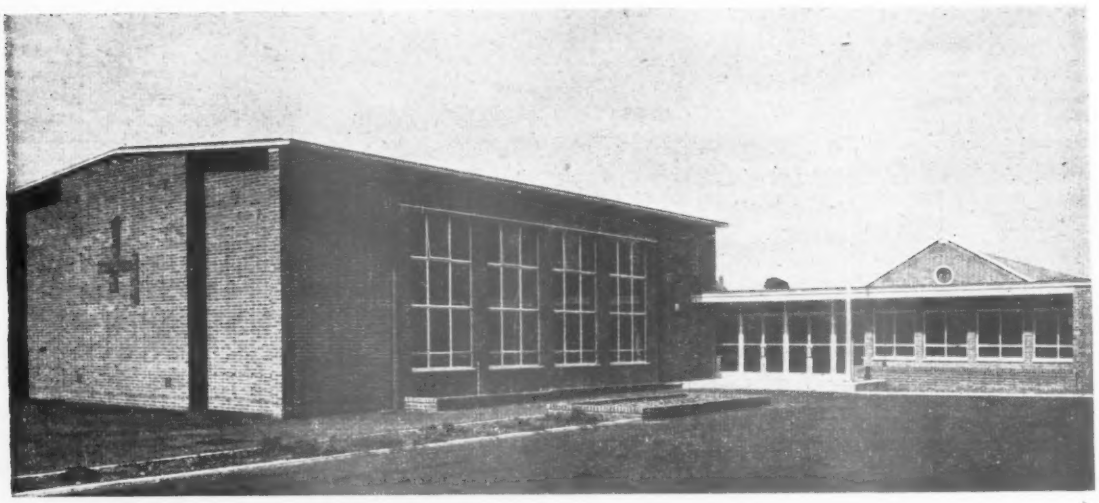
Plan of junior school
[Scale : $\frac{1}{16}$" = 1' 0"]

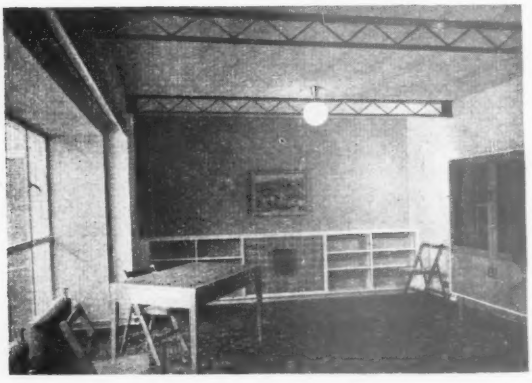


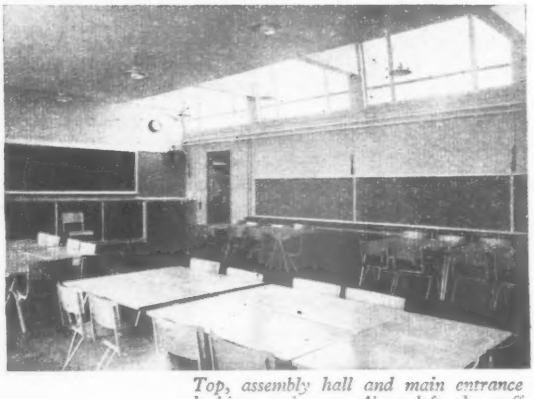
KEY

1. Classrooms.
2. General purposes rooms.
3. Girls' lavatories
4. Boys' lavatories
5. Upper part of boiler room.
6. Drying room.
7. Staff room.
8. Staff cloakrooms and lavatories.
9. Head teacher.
10. Dining hall.
11. Kitchen.
12. Medical inspection room.
13. Waiting room.
14. Assembly hall.
15. Play shed.
16. Mater room and garden store.

PLAN.—The junior school accommodates 480 boys and girls in twelve teaching rooms, which are arranged in three groups. The buildings are planned in a series of compact blocks for economy and because it is thought that very long blocks of classrooms are rather intimidating to a child. Each classroom has a French window leading to a paved outside teaching space. The assembly hall, which opens off the main entrance hall, is intended for use by the local community out of school hours. There is a film projection room, but the MOE would not







Top, assembly hall and main entrance looking north-east. Above left, the staff room. Above right, typical infants' classroom.

INFANTS' SCHOOL

at LEAGRAVE, LUTON, BEDFORDSHIRE

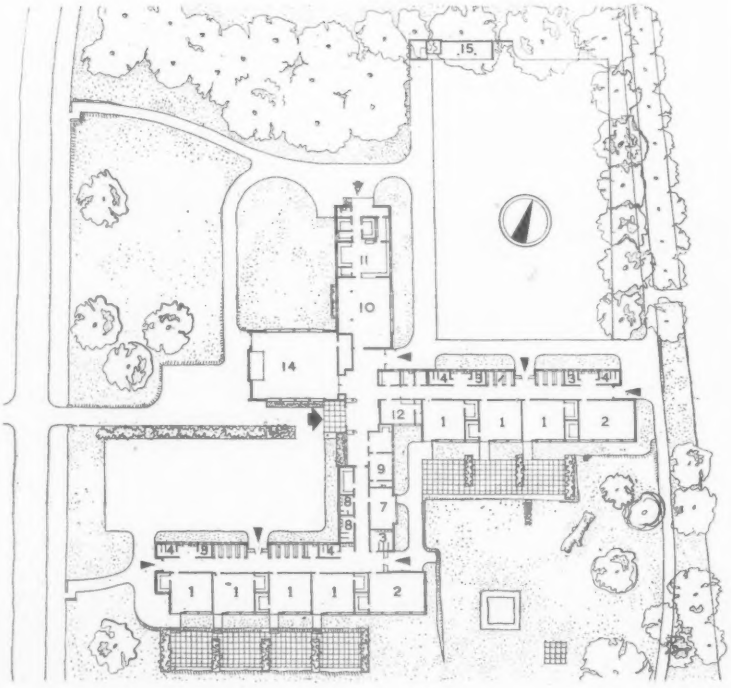
designed by HOWARD V. LOBB AND PARTNERS

sanction a stage for amateur theatricals and at present there is only a small platform. The infants' school, which accommodates 360 children in nine teaching rooms, was the second to be built and was partly affected by recent cost restrictions.

FINISHES.—The greater part of the building has pitched roofs and brick walls of a variegated plum-red colour to be in harmony with the nearby houses and the general character of the countryside. The sloping roofs are covered with cedar shingles. The interiors mostly have walls of plain brickwork, the dadoes, above which the brickwork is painted, being the same as the outside facing bricks. The floors of the classrooms and dining hall are of beech blocks and in the assembly hall beech boards. The ceilings are of insulating board sprayed with a mix containing vermiculite, which has good insulating properties.

The general contractors were T. & E. Neville, Ltd. For sub-contractors, see next week's issue.

Plan of Infants' School [Scale : $\frac{1}{100}$" = 1' 0"]
For key to figures see previous page



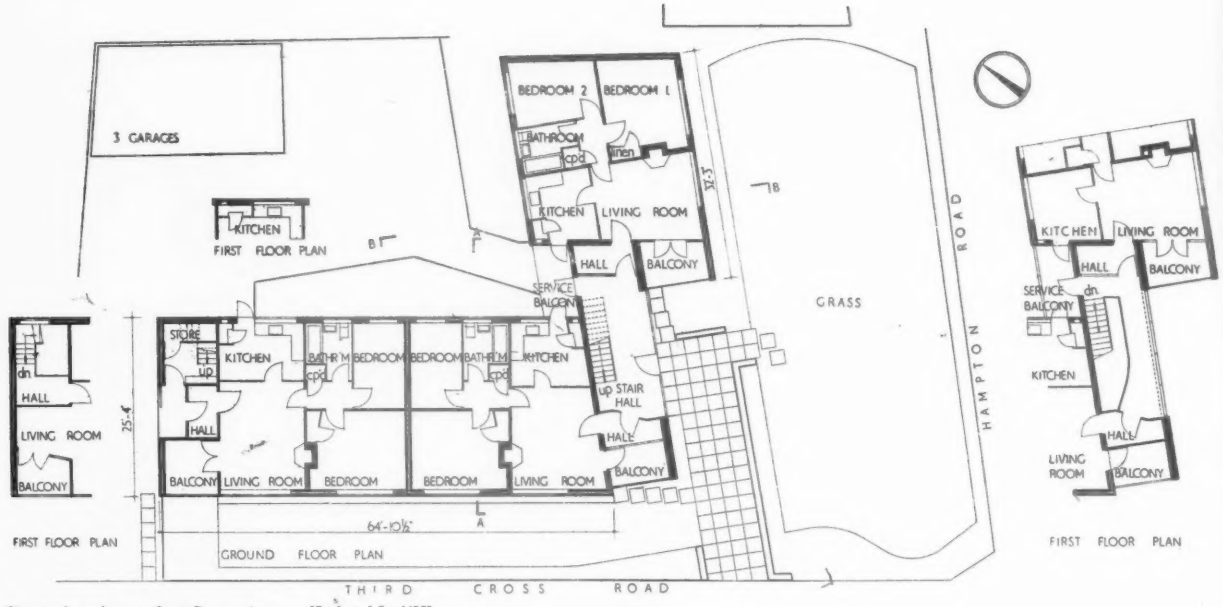
FLATS

in HAMPTON ROAD, TWICKENHAM, MIDDLESEX

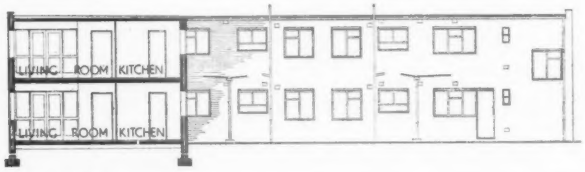
designed by ERIC LYONS and G. PAULSON TOWNSEND

Owing to a future road widening scheme, this block of six flats, known as Box Corner, is set well back from the Hampton Road. Access was restricted to Third Cross Road and so the main entrance to all except the two flats at the north end of the building is by a paved terrace leading to the glazed screen in the stair hall, which faces south. All the flats have living rooms with a south or west aspect. Box Corner has been built for a private client, but the tenants are from the Borough housing list.

View looking north with the main entrance on the left.



Ground and part first floor plans [Scale: $\frac{1}{32}$" = 1'0"]



Section B-B

Section A-A

FLATS

in HAMPTON ROAD, TWICKENHAM, MIDDLESEX

designed by ERIC LYONS and G. PAULSON TOWNSEND

SITE.—At the rear of the building are placed garages, a cycle store and drying yard, with access in the north-west corner of the site. The terrace on the south is separated from the main garden by a low brick wall of dark red facing bricks. On the west side of Third Cross Road a further site is to be similarly developed, but with flats 3 storeys high.

The south-west facade facing Third Cross Road. The drive on the left leads to lock-up garages.

Looking west at the main entrance and stair hall.

PLAN.—Each flat has a total floor area of 730 sq. ft. including the balcony or garden room, which is the minimum area for which a licence can be obtained. It is considered that this large recessed balcony amply compensates for the slight reduction in room sizes. The kitchen, which is entered from the living room, is planned with room for a breakfast table.

CONSTRUCTION.—There are weight-bearing walls throughout, supporting the reinforced-concrete hollow-tile floor and roof. The external cavity

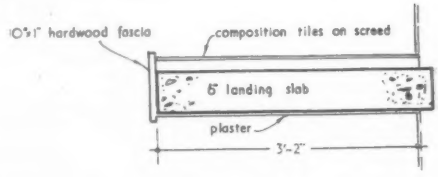
Main hall and first floor landing.

The main staircase from the entrance hall.

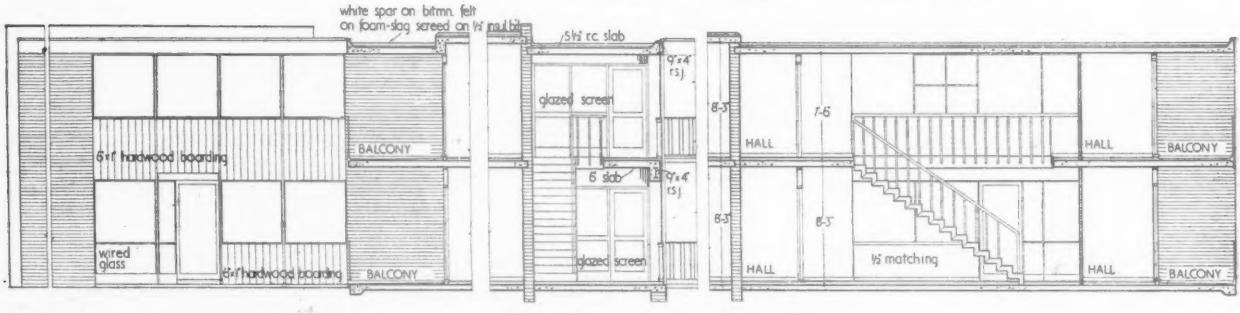
FLATS

in HAMPTON ROAD, TWICKENHAM, MIDDLESEX

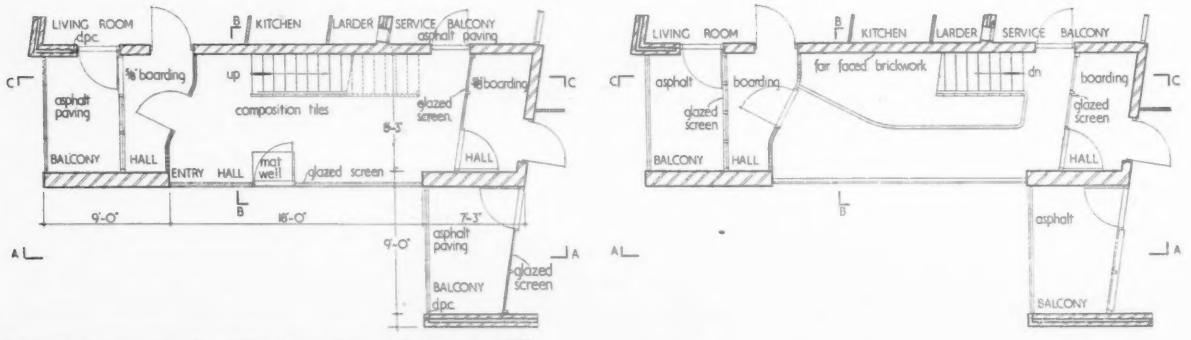
designed by ERIC LYONS and G. PAULSON TOWNSEND



Section through landing [Scale : $\frac{3}{4}$" = 1'0"]



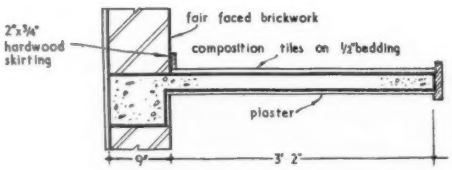
Section A-A Section B-B Section C-C



Main staircase, ground and first floor plans [Scale : $\frac{1}{16}$" = 1' 0"]

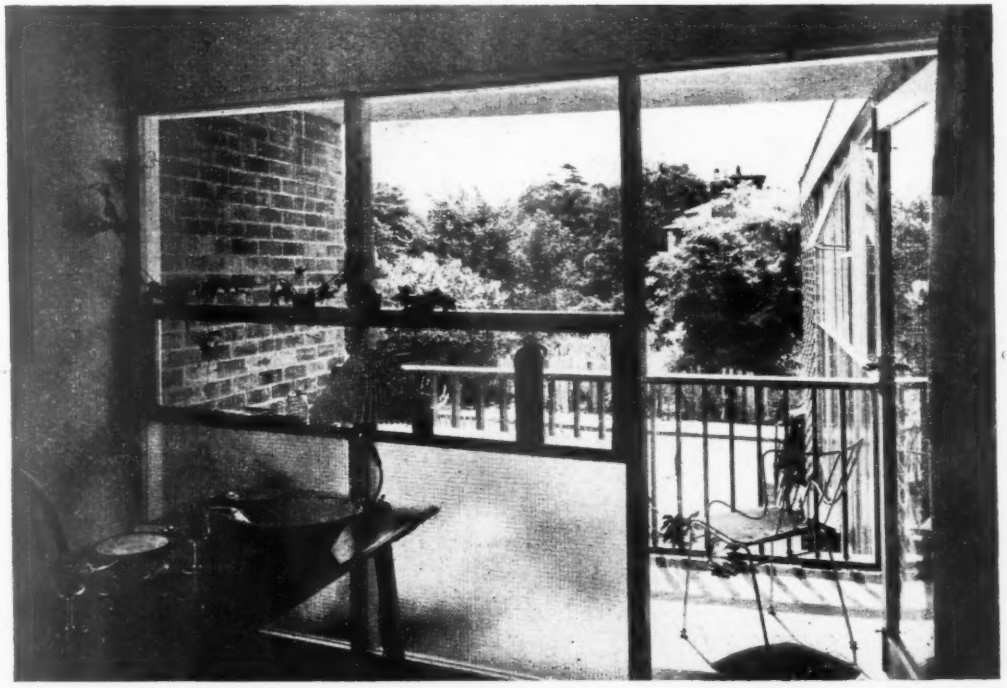
walls are 10½ in., comprising 4½-in. external brickwork and 4-in. internal hollow-clay blocks. The main staircase is formed of precast concrete units cantilevered from the back wall of the hall.

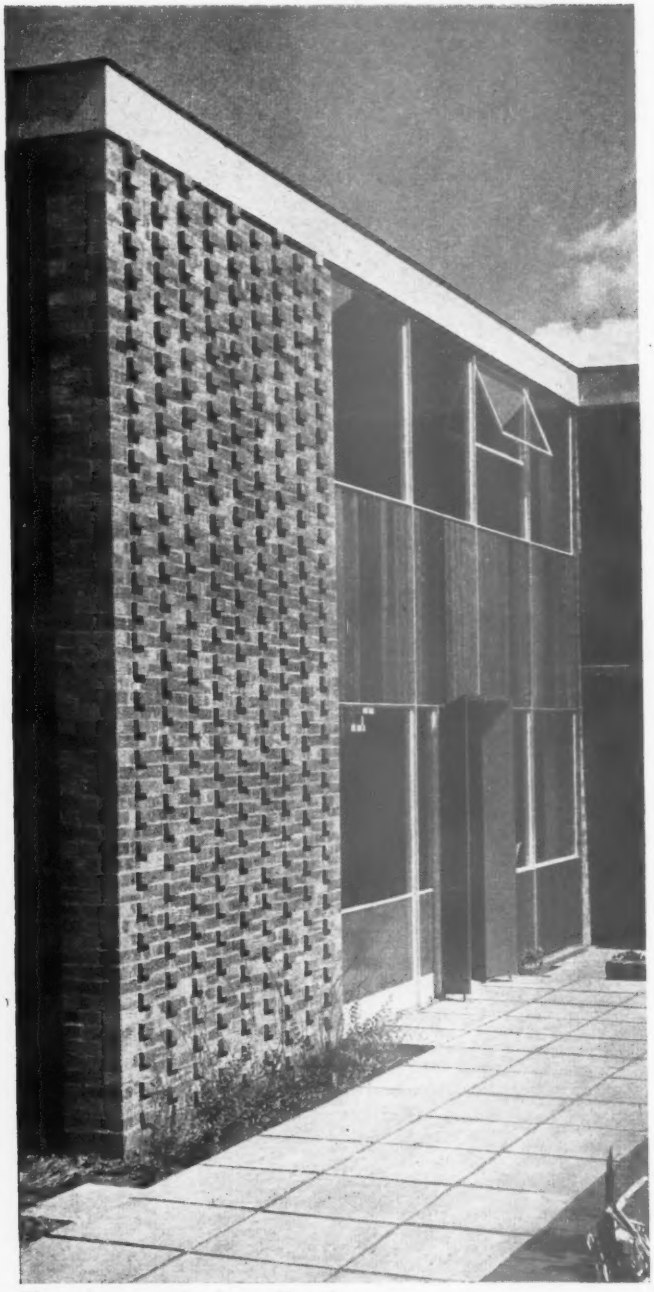
FINISHES.—The ground floor slab is waterproofed with bitumen membrane and finished with linoleum. The first floor slab is finished with ¾-in. boarding on 2-in. battens, laid on a glass-wool blanket. Treads and risers of the main staircase and the floor of the hall are covered with compressed rubber tiles. The roof is insulated with a foamed-slag screed and finished with asphalt. Windows are painted white and cills dark blue. The boarding to the stair hall screen and the balcony balustrades are of red cedar, oiled to retain the colour. Internally, all flats are distempered or painted white except for a wallpaper panel on the fireplace wall of the living room.



Section through precast concrete stair [Scale : ½" = 1' 0"]

Above left, typical first floor living room with open fireplace. Below, the glazed screen dividing the living room and garden room in a first floor flat.

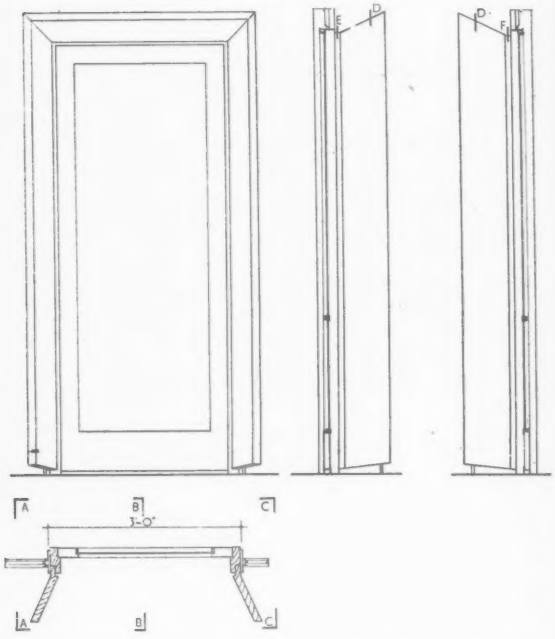




The main entrance door has a wide projecting frame and is set in a glazed screen with panels of vertical boarding.

SERVICES.—Hot water is provided by the back boiler in the living room fireplace, supplying the cylinder which has an immersion heater for summer use in the adjacent cupboard.

The general contractors were the Eden Residential Construction Co., Ltd. For sub-contractors, see page 424.

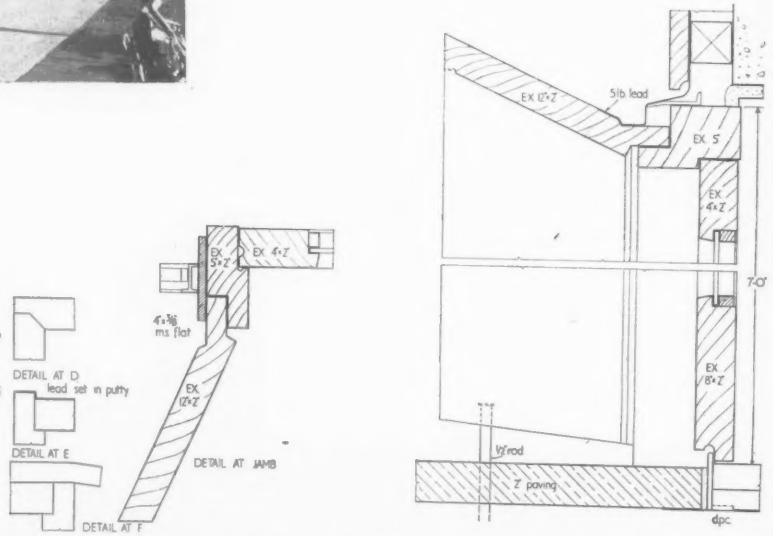


Elevation, plan and sections A-A and C-C of main entrance door [Scale : ½" = 1' 0"]

FLATS

in HAMPTON ROAD, TWICKENHAM, MIDDLESEX

designed by ERIC LYONS and G. PAULSON TOWNSEND



Section B-B and detail of jamb [Scale : 1½" = 1' 0"]

back
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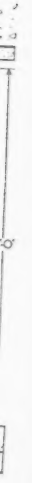
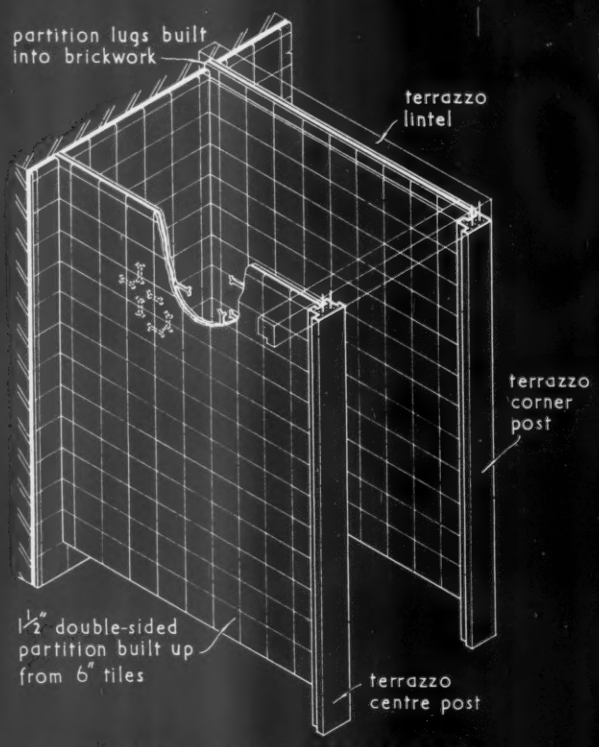
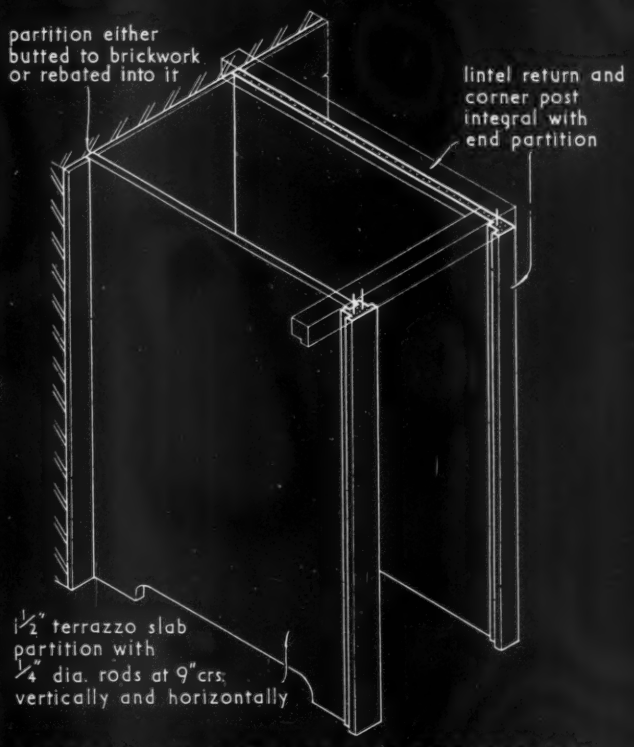


SPECIALISED FITTINGS | LAVATORY CUBICLES 43.Z3

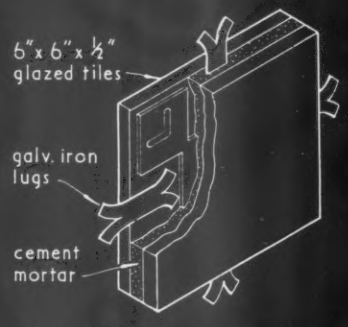
The Architects' Journal Library of Information Sheets 331. Editor: Cotterell Butler, A.R.I.B.A.



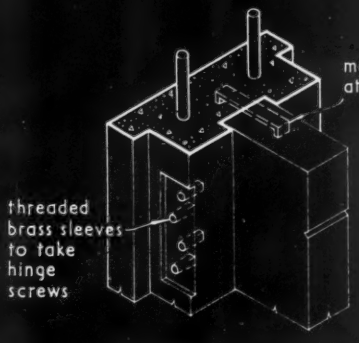
TILE PARTITIONS WITH TERRAZZO POSTS.



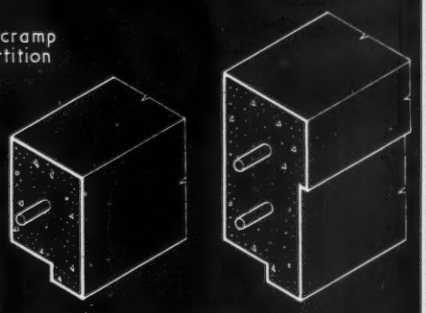
TERRAZZO SLAB PARTITIONS WITH TERRAZZO POSTS.



UNIT FOR TILE PARTITIONS.

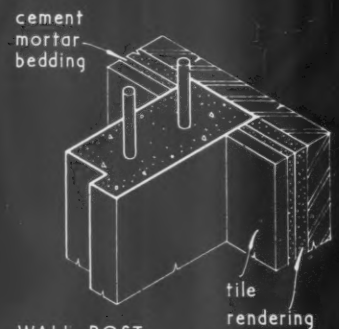


CENTRE POST FOR TILE OR TERRAZZO SLAB PARTITIONS.

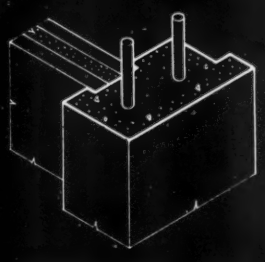


ALTERNATIVE LINTELS.

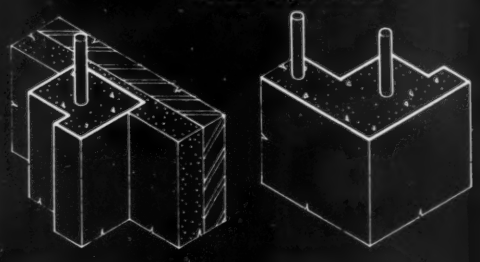
note: cross-sectional sizes of posts and lintels may be varied to suit requirements



WALL POST. TILE CUBICLES.



CORNER POST.



WALL POST. CORNER POST. TERRAZZO SLAB CUBICLES

TILE OR TERRAZZO SLAB LAVATORY CUBICLES.

Manufacturers: Carter and Co. London Ltd. and Art Pavements and Decorations Ltd.

43.Z3 TILE OR TERRAZZO SLAB LAVATORY CUBICLES

This Sheet describes two types of lavatory cubicle : one composed of double-sided glazed tile partitions and precast terrazzo posts and lintels, and the other of precast terrazzo slab partitions, posts and lintels.

Tile Cubicles

Partitions : These are prefabricated from specially keyed 6 in. by 6 in. tiles and galvanized iron connecting lugs.
The introduction of tiles other than 6 in. by 6 in. for decorative purposes is likely to weaken the construction and is not recommended. An overall size of 6 ft. by 5 ft. should be regarded as the maximum.
A semi-recessed paper holder may be incorporated in the partition if required.

Posts : These are of reinforced terrazzo and are grooved to take the partitions. When the partition is to be supported clear of the floor, the stopping of the groove at the required height from the floor level forms a bearing surface for it. At the top a cramp is fixed from the top edge of the partition to the top of the post. The reinforcing rods project above the post to engage in holes left in the underside of the lintel.

Lintels : These are of reinforced terrazzo and are connected to the posts as described above. The lintel returns are grooved on the underside to accommodate the tops of the partitions.

Fixing at wall : The tile connecting lugs at the edge of the partition are grouted into the brickwork.

Terrazzo Slab Cubicles

Partitions : The terrazzo slab partitions are 1½ in. thick and are reinforced with ¼ in. diameter rods at 9 in. centres vertically and horizontally.
An overall size of 7 ft. by 6 ft. 6 in. should be regarded as the maximum.

Posts : These are as described above for tile cubicles. Corner posts are cast in one piece with the end partitions.

Lintels : These are of reinforced terrazzo and, with the exception of the returns, are holed to receive the projecting rods of the posts. The returns are cast in one piece with the end posts and partitions.

Fixing at wall : Where the wall linings are of terrazzo or tiles the partitions are tightly butted to the brickwork. Where the wall is fairfaced brickwork or plaster finished the partitions are housed in a groove cut into the brickwork. Alternatively, lugs may be cast in the edge of the partitions for grouting into the wall face.

Fittings

Threaded brass sleeves are cast in the posts to take the hinge screws and are tapered to prevent their being dislodged.

Finish

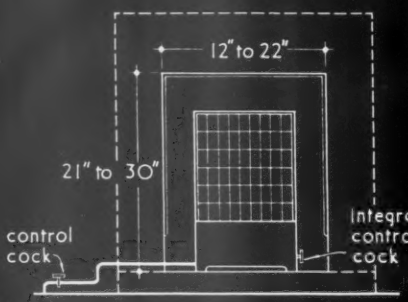
Both types of cubicle are available in a wide range of colours. A combination of colours may be used, e.g. one colour for partitions and another for posts and lintels.

Compiled from information supplied by :

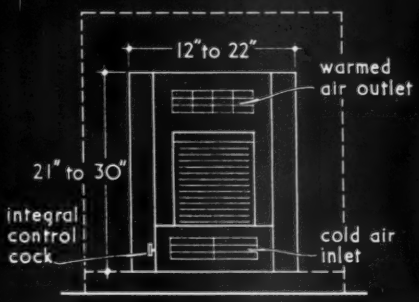
Carter & Co., London, Ltd.
Head Office : 29, Albert Embankment, London, S.E.11.
Telephone : Reliance 1471.
Works : Poole, Dorset.
Telephone : Poole 125.
Art Pavements & Decorations Ltd.
Address : St. Paul's Crescent, Camden Town, London, N.W.1.
Telephone : Gulliver 2226.
Telegrams : Granulemos, Norwest, London.
(Both companies are members of The Carter Group.)

SPACE HEATING | UNITS | GAS

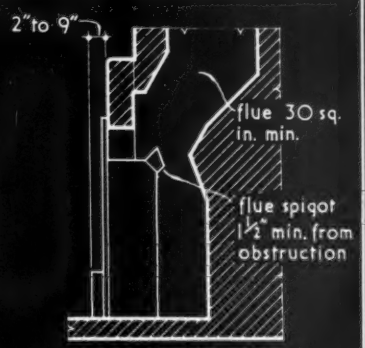
The Architects' Journal Library of Information Sheets 332. Editor: Cotterell Butler, A.R.I.B.A.



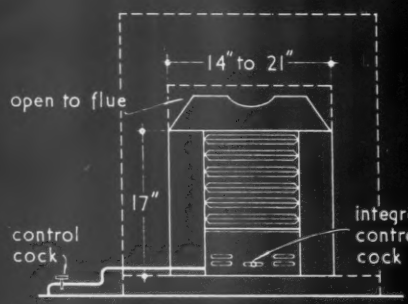
hearth type



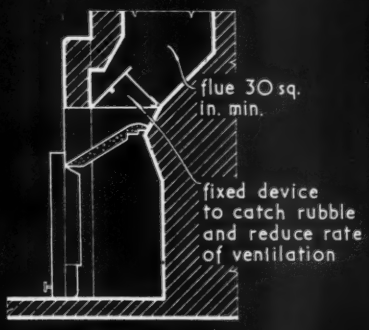
hearth type (with convection component)

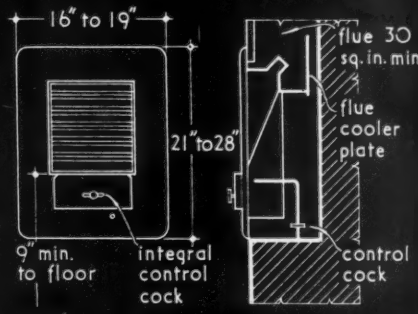


section thro' hearth type



inset type

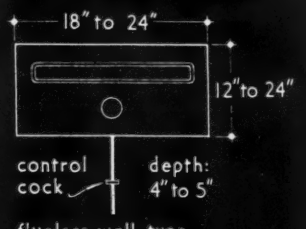




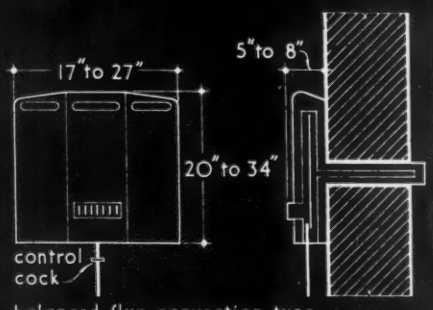
panel type

PRINCIPAL HEATING APPLIANCES.

flueless floor type

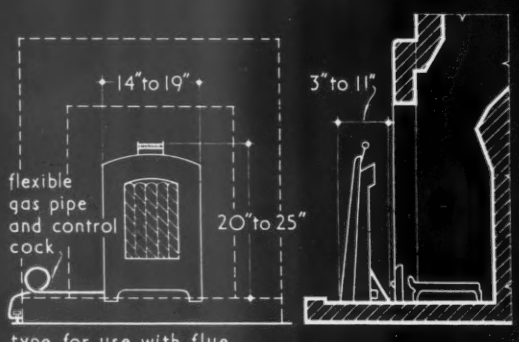


flueless wall type

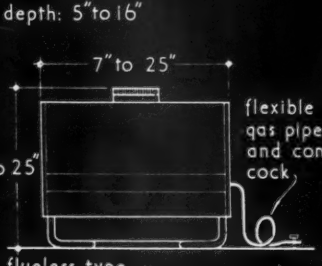


balanced flue convection type

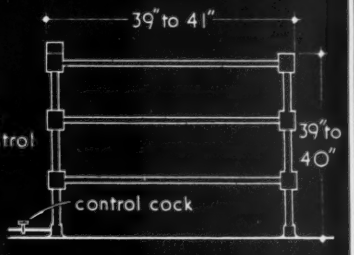
SUPPLEMENTARY HEATING APPLIANCES: FIXED TYPES.



type for use with flue



flueless type



SUPPLEMENTARY HEATING APPLIANCES: PORTABLE TYPES.

FIXED TOWEL RAIL.

TYPICAL DOMESTIC GAS SPACE HEATING APPLIANCES. (Compiled from information supplied by The Gas Council.

29.C3 DOMESTIC GAS SPACE HEATING BY INDEPENDENT APPLIANCES

This Sheet summarises the common types of domestic gas space heating appliance.

General

Comfortable warmth can be achieved by a judicious combination of radiant and convected heat and air movement. A gas fire fitted to a flue provides a high temperature source of radiant heat and sufficient air movement for comfort and a gas convector heater has the function of an air warmer. The sizes of these heaters to perform a particular task will depend largely on the size and construction of the room to be heated and the use to which it is put. The gas undertaking will give advice on the sizes and types of heater required.

Principal Heating Appliances

These are all radiant heaters and some are provided with a convection component.

Hearth types: These are designed for fixing in front of a fireplace with a flue. Input ratings range from 10,000 to 20,000 B.Th.U./hr.

Inset types: These are for fitting into a fireplace in the same position as a solid fuel grate with an air space above opening directly to the flue. Input ratings range from 10,000 to 24,000 B.Th.U./hr.

Panel types: These are designed for fitting into a prepared wall recess connected to a flue and arranged so that the burner level of the fire is at least 9 in. above the floor. Input ratings range from 10,000 to 20,000 B.Th.U./hr.

Supplementary Heating Appliances: Fixed Types

These are all convector heaters, although some are designed to provide additional radiant heat.

Flueless floor types: These are for permanent installation without connection to a flue. Input ratings range from 2,000 to 12,000 B.Th.U./hr.

Flueless wall types: As above, but wall mounted. Input ratings range from 2,000 to 4,000 B.Th.U./hr.

Balanced flue convection types: These are designed to fit on an outside wall. The flue is carried through the wall and air for combustion is drawn from the same position as the flue terminal. The burner chamber is therefore sealed from the room. Input ratings range from 5,000 to 10,000 B.Th.U./hr.

Towel rails: These are generally water or oil filled rails heated by a small gas burner. Input ratings range from 500 to 1,000 B.Th.U./hr.

Supplementary Heating Appliances: Portable Types

Types for use with flue: These are designed for temporary connection (by flexible tube) to any gas point which conveniently enables the fire to stand in a fireplace and utilize the flue. Input ratings range from 5,000 to 12,000 B.Th.U./hr.

Flueless types: These may be connected to any convenient gas point by flexible tube. Input ratings range from 2,000 to 5,000 B.Th.U./hr.

Installation

For details of laying and fixing of installation pipes, see Sheet 37.D2. Control cocks may be concealed under floor boards, in the skirting or behind the appliance, but should be readily accessible. Cocks with removable keys are available for nurseries, etc. Where a fire is to be fitted on a floor made of combustible material, it should be supplied with an incombustible hearth extending at least 12 in. in front and 6 in. on both sides.

Hearth types: The jambs and lintel of the fire opening should be in one plane and the fire should entirely cover the fire opening. The lower part of the fire forming the rear wall of the burner housing should form an effective seal on the hearth to prevent chimney draught from interfering with the proper operation of the burner.

Inset types: It is desirable that a baffle be inserted in the chimney above the fire to collect falling material and to prevent an excessive ventilation rate. When dog or basket grates are fitted in a recess, the height of which is more than 3 ft., a screen of non-combustible material, *e.g.*, glass, metal, etc., should be fitted across the front at the top of the recess.

Panel types: These should be fitted in accordance with the manufacturer's instructions. Metal fixing bolts of approved design, and not wood or fibre plugs, should be used. Provided that the fire is fitted so that the burner is 9 in. minimum above the floor level, a hearth is not required. Fires of input rating higher than 15,000 B.Th.U./hr. should not be fitted to precast concrete flues having internal dimensions of 12 in. by 2½ in. or less.

Supplementary heating appliances: Appliances of the fixed type should be rigidly secured to the floor or wall. Portable heaters should have a gas control cock on the inlet end of the tube. The cock and tube should be of a pattern approved by the gas undertaking.

Ventilation

Heaters fitted to flues: See Sheets 30.B1 and 2.

Flueless heaters: The gas consumed should never exceed 500 B.Th.U. per 100 cu. ft. of room space, and heaters should not be fitted in rooms which have neither air brick nor flue. Air bricks should ventilate directly to the open air or to a lobby or corridor ventilated directly to the open air. The total minimum unobstructed cross-sectional area of air bricks should be as follows :—

Cubic capacity of room	Unobstructed area of air bricks	
	Directly communicating to open air	Communicating to lobby or corridor
Up to 2,000 cu. ft. ..	20 sq. in.	40 sq. in.
2,001 to 3,000 cu. ft.	30 sq. in.	60 sq. in.
3,001 to 4,000 cu. ft.	40 sq. in.	80 sq. in.
For each additional 1,000 cu. ft. or part thereof ..	10 sq. in.	20 sq. in.

Compiled from information supplied by:

The Gas Council
Address: Gas Industry House, 1, Grosvenor Place, London, S.W.1.
Telephone: Sloane 4554.
Telegrams: Gascil, Knights, London.

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THE INDUSTRY · PRICES · TECHNICAL ARTICLES

TECHNICAL SECTION

The subject of prestressed concrete received considerable attention at the recent Building Research Congress (reported in the last three issues of the JOURNAL*), and last week a symposium, entitled "Prestressed Concrete Statically Indeterminate Structures," was held at the Institution of Civil Engineers. Donovan Lee, whose name, coupled with that of McCall, has been given to one of the most successful systems of applying prestress to concrete, wrote us the following article. Part II will appear next week, and the week after we hope to report on the symposium.*

PRESTRESSED CONCRETE

By Donovan H. Lee

(Part I)

Briefly, prestressed concrete is concrete in which the bending tension induced by the load is eliminated by applying a compression to it prior to loading. The usual example used to explain the principle of prestressing is a row of books, which cannot be lifted up from the ends in one piece unless they are pressed together. As the books are unable to resist tension between one and another, the compressive prestress (see Fig. 1*a*) which is applied right through the row of books from end to end must at least be equal to the intensity of the tensile bending stress which would be created by the books on the span represented by the length of the row. It is well known that in any length of a member spanning in the same way as these books, compression is caused at the middle of the span at the top and equal and opposite tensile stress on the underside. The previous application of the prestress then neutralizes the tension that would normally occur. The bending tension caused by the weight W on the span l is $f_t = \frac{Wl}{8Z}$ where Z is the modulus of the cross-section ($bd^2/6$ for a rectangular section). If the prestress force is to be the minimum necessary, the best level of application is that which will cause a compressive stress at the bottom surface equal to the bending tension and no stress at the top surface. To achieve this the prestress needs to be applied at one-third of the height up from the underside in the case of a member with a rectangular cross-section (Fig. 1*b*).

If the prestress is increased it is possible to support other weights (see Fig. 1*c*) on the row of books without a collapse occurring. There is a limit however to the load that can be supported because the stress at any point must not exceed the safe compressive stress at any stage of loading. The main points of the design will be shown to be readily covered by simple expressions but the application of them involves practical considerations which cannot be briefly dealt with here.

It is first desirable, however, to make clear why concrete is a material which is particularly suited to prestressing, and what are the advantages obtained by this as compared with normal concrete with mild steel reinforcement. Any material which is considerably weaker in tension than in compression, such as concrete or cast iron, can benefit by prestressing as this provides a means of controlling the stresses to suit the natural properties of the material. Thus, with prestressed concrete the whole of the section can be utilized, unlike normal reinforced concrete where that part of the concrete section which is subject to tension does not contribute directly to the bending strength. Also, the maximum steel stresses that can be permitted in reinforced concrete are controlled principally by the size of the hair cracks, which prevents the use of high grade steels. This is a distinct disadvantage as the ratio of cost to useful steel stress decreases with increase of the steel stress. Thus, for instance, if the strength of high tensile alloy bars with an ultimate strength of 70 tons per sq. in. as used in prestressed concrete could be utilized fully in reinforced concrete, the cost of steel as compared with ordinary mild steel reinforcement would be halved. With prestressed concrete this limitation of steel stress does not exist as the steel is tensioned whilst it is still unbonded to the concrete and thus does not transmit its strain to the adjacent concrete. In fact, in view of certain losses in prestress due to volumetric changes in the concrete (such as shrinkage), a high initial prestress in the steel is most desirable as this reduces the percentage losses. Prestressing also permits the use of high grade concrete which also has a more favourable cost-stress ratio than normal reinforced concrete. By applying a compressive stress to the concrete the resistance to shear is very greatly increased. This generally makes mild steel shear reinforcement unnecessary and allows the use of relatively narrow sections.

A unique property of prestressed concrete beams which is often taken advantage of is the tendency to camber upwards on prestressing, thus bringing the dead-load forces (such as the weight of the beam) into operation simultaneously with the prestressing forces. By increasing the eccentricity of the prestress above that required to give the triangular stress distribution (h/6 in Fig. 1*b*) these dead load moments can be counteracted so that the resultant stress due to prestress and dead-load is still triangular (diagram 1 plus diagram 2 = diagram 3, Fig. 1*c*). This means that practically all the dead-load can be "absorbed" without increase of section or prestress merely by lowering the prestressed bar or cable at the centre but not at the ends.

In view of these factors the use of prestressed concrete usually leads to much smaller sections than reinforced concrete and in building construction it frequently rivals cased steel joists for shallowness. In addition, the "crackless" concrete is not only itself more resistant to the weather, particularly to the effects of polluted atmospheres and sea-water, but the access of moisture and industrial fumes to the prestressing steel is prevented. The general absence of shear reinforcement also means there is usually no steel near to the concrete surface and liable to exposure by surface damage to the concrete.

METHODS OF PRESTRESSING

Basically there are two main methods of prestressing:

1. *Pre-stressing*, where wires of ⅛ in. dia. and up to about 0·2 in. dia. are stretched between abutments and held under high tensile stress whilst the concrete is placed in moulds around them. After the concrete has hardened sufficiently the wires are released and cut, and in trying to regain their original length they impart a compression to the concrete by virtue of the bond between it and the wires. As the stress transference between the concrete and the steel is caused by mutual surface action (*i.e.* bond) there is an upper limiting value for the ratio of area and circumference for a given steel stress, which for a steel with an original prestress of about 70 tons per sq. in. restricts the maximum wire size to about 0·2 in.

2. *Post-tensioning*, where the concrete is cast first with longitudinal ducts for high tensile bars or cables composed of a number of parallel wires. After the concrete has hardened the bars or cables are threaded through the ducts, tensioned by a hydraulic jack and then anchored at their ends against the concrete. Alternatively the cables or bars may be in sheaths which are placed before casting of the concrete, the sheaths preventing the concrete from reaching cables or bars and allowing free movement. The reaction of the anchor plates against the concrete imparts a prestress to the concrete which is prevented from buckling by the bars or cables being in contact with it and which resist any lateral displacement.

There are two important pre-tensioning methods in general use. However, lack of space only allows mention of the two principal ones. One of these, generally known as the "long line" method and sometimes as the Hoyer method, utilizes casting beds of great length, the wires being stretched from end to end and the members cast with small gaps between them to allow the wires to be cut after the concrete has hardened, so that a dozen or more members may be cast in each line. (Fig. 2*a*.) This system is largely used for making prestressed railway sleepers (Fig. 2*b*) and also for floor joists, piles and beams. In the other method individual moulds are used and these moulds are made strong enough to hold the wires in their stretched condition until the concrete is set and sufficiently hardened. (Fig. 3.) With this latter method curing is normally accelerated by steam or immersion in hot water so that the moulds are brought back into use again in 5 hours, or overnight. With the long line method steam curing is also sometimes used, either by using jacketed moulds connected to steam mains or by hoods applied over the moulds after concreting. The outlay on plant and equipment is considerably greater for the long-line than the individual mould method but the latter uses more expensive moulds which also necessitate a fairly large capital expenditure. For small productions, particularly where space is limited the individual mould method is normally the more economical. However, it suffers from certain technical difficulties connected with the temporary wire anchorages which make it less popular than the long line process.
for use where numbers of members of small or medium length are required of the same or similar section. As bond is depended upon to transfer the tension in the wires to create the compressive prestress in the concrete, there is no cost incurred in end anchorages. Because of this both pretensioned systems have a cost advantage

where the length of the members is short, in spite of the heavy capital costs which have to be written off. As the length of a member increases the relative cost of the anchorages decreases and a point is reached where post-tensioning becomes cheaper. The exact length at which this occurs depends on various factors.

Generally speaking pre-tensioning is usually cheaper up to 20 ft. and post-tensioning above 25 ft., but these figures can only be a rough guide as each case differs. Thus pre-tensioned piles up to 60-ft. long and post-tensioned railway bridge slabs of only 12-ft. span have been made apparently economically.

Apart from the reduced capital costs there are some other advantages when using post-tensioning. Whereas pre-tensioning is only really suitable for precast work, post-tensioning can and is also used for *in situ* construction. This extends its scope to the largest engineering works and in fact there appears to be no upper limit of size beyond which post-tensioning cannot be used. Another technical advantage arises from the ability to curve the bars or cables thus changing the distribution of prestress along a member to correspond with the varying moments. With pre-tensioning, as the wires are straight, this can only be achieved by varying the section, and this may clash with æsthetic or functional considerations. A third advantage is the reduced loss of prestress caused by shrinkage and creep of the concrete, which will be discussed later.

On the whole, post-tensioning is considerably more flexible than pre-tensioning which really can only be used for the simple type of structural elements such as simply-supported beams and not for continuous beams, portal frames and other constructions in which several members are formed into one assembly by stressing.

Typical of post-tensioning systems are, in chronological order, the Freyssinet, Magnel and Lee-McCall systems. The first two use cables of high tensile wires 0·2 in. dia. with an ultimate strength of 100-110 tons per sq. in. and an initial prestress of approximately 60 tons per sq. in.; lately, however, 0·27 in. dia. wires with an ultimate strength of 90-95 tons per sq. in. have also been introduced. The Lee-McCall system employs alloy steel bars up to 1⅛-in. dia. with an ultimate strength of 66-72 tons per sq. in. and an initial prestress of 42 tons per sq. in.

The Freyssinet cable may contain from 12 to 20 wires arranged concentrically about a central spiral. The wires are held pressed to the spiral at intervals by adhesive tape and may be surrounded by a 30g black iron sheath if required to be cast in the concrete instead of threading through pre-formed ducts. The cable is stressed by fixing the ends of the wires in pairs in a special jack, stressing and anchoring in a conical concrete wedge as shown in Fig. 4*b*. This wedge consists of two parts (Fig. 4*a*); the female section is usually cast into the concrete and the plug driven home by an auxiliary ram incorporated in the stressing jack after the

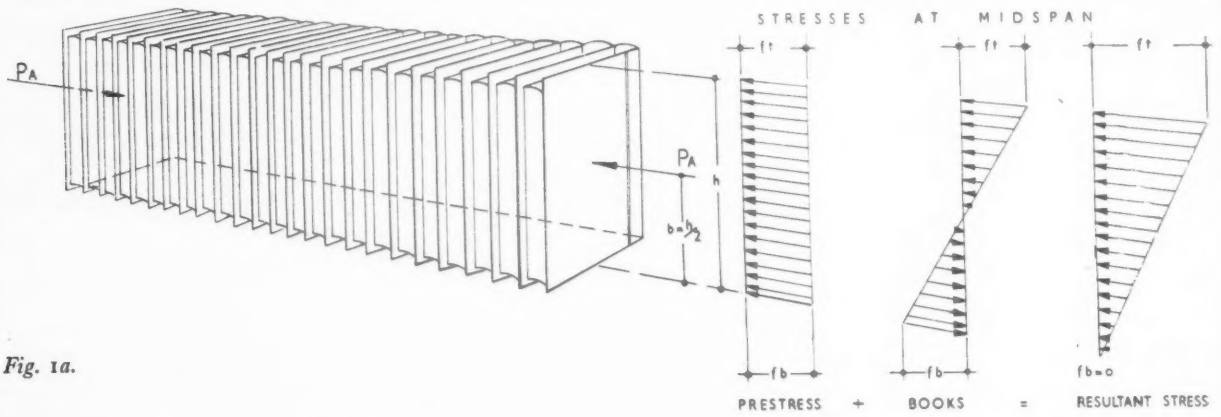

Fig. 1a.

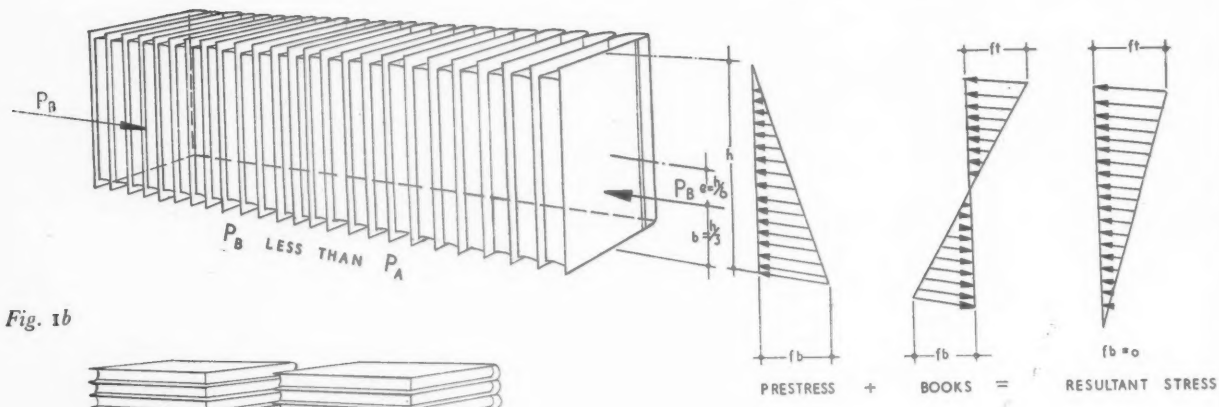

Fig. 1b

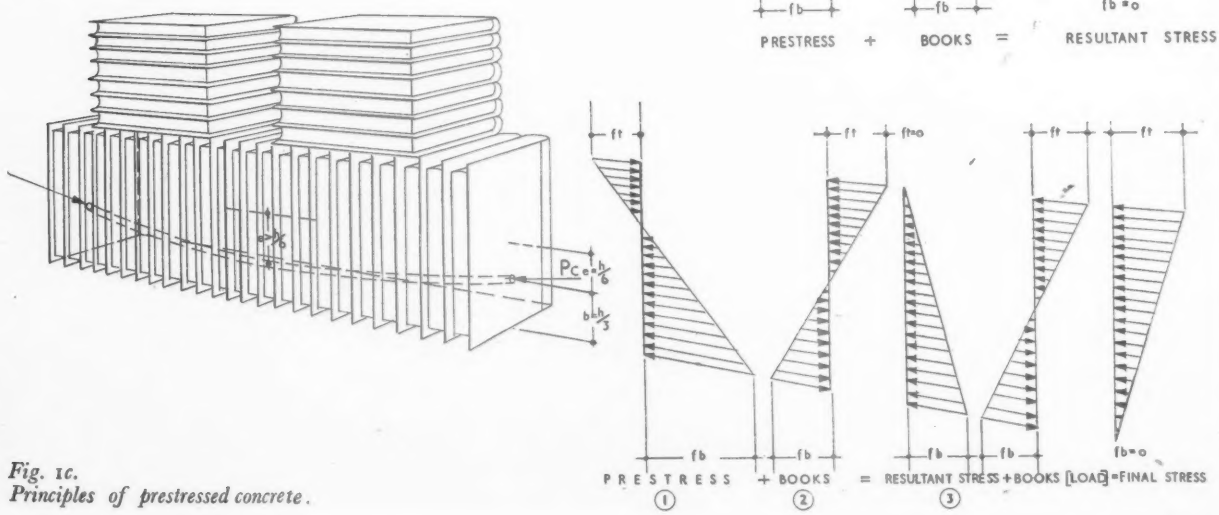

Fig. 1c.
Principles of prestressed concrete.

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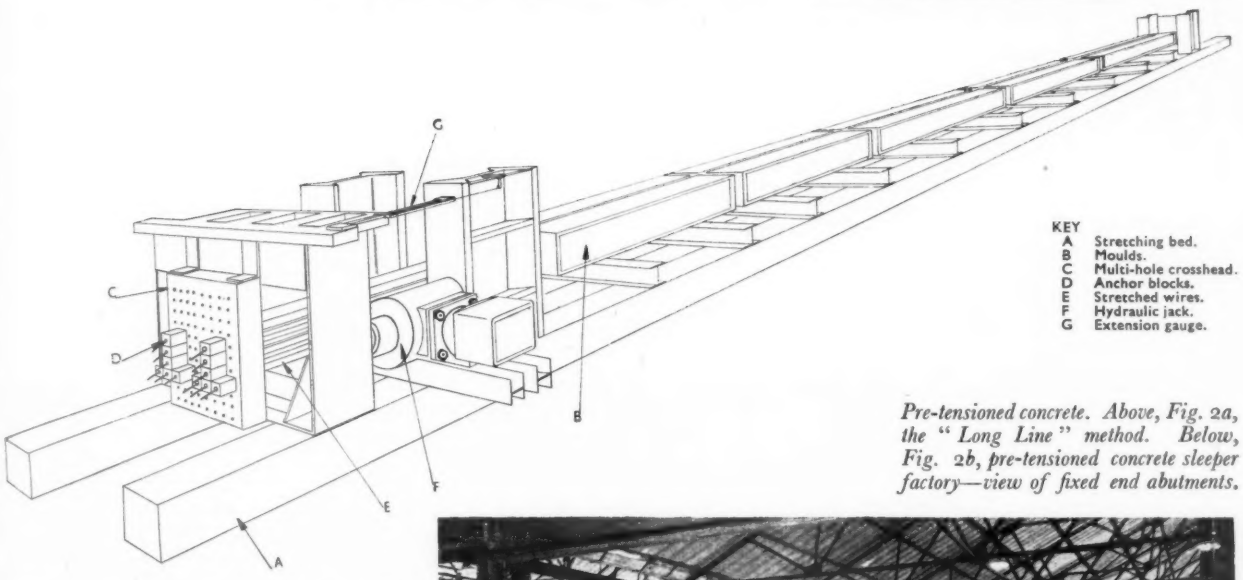


Pre-tensioned concrete. Above, Fig. 2a, the "Long Line" method. Below, Fig. 2b, pre-tensioned concrete sleeper factory—view of fixed end abutments.

required force and elongation has been reached. If the jack is only used at one end the plug at the other is driven home manually just before stressing.

THE MAGNEL SYSTEM

The Magnel system differs from the Freyssinet in the arrangement of the wires, the stressing and anchoring. The wires are in horizontal groups of four; thus each cable comprises a multiple of four wires which are arranged in a rectangular grid with vertical and horizontal spacers to keep the wires in their proper positions. The wires are stressed two at a time (Fig. 5*b*) and are anchored in sandwich plates by steel wedges which are driven home by a hammer (Fig. 5*a*). The sandwich plates bear against a distribution plate which transmits the prestressing force to the concrete. The advantage of this system is that it allows cables of up to 64 wires to be used. Also there is more certainty of equal stress in the individual wires as only two are stressed at a time. Disadvantages are the relatively high cost of the anchoring and the size of duct required to accommodate the rather bulky cables.

THE LEE-McCALL SYSTEM

In the Lee-McCall system, which uses high tensile bars, the anchorages consist of nuts screwed on to the bar at each end (Fig. 6*a*). The nut bears against a mild steel end plate which is usually cast into the concrete. Stressing is carried out by screwing an adapter on to the extended thread beyond the nut, sliding the jack over it and securing by means of a cotter (Fig. 6*b*). After the required force and extension has been reached the nut is screwed home to bear against the end plate. The jack is removed by simply withdrawing the cotter after which the adapter can be screwed off. The threading on the bar and nut is of a special type with tapering threads so that with the nut in the proper position the anchorage is as strong as the unthreaded part of the bar. The advantages of this system are the relatively low cost of the end anchorages and no risk of slipping (as with wedge fixings) due to the positive end anchorage. The stressing is simple and rapid as each bar is

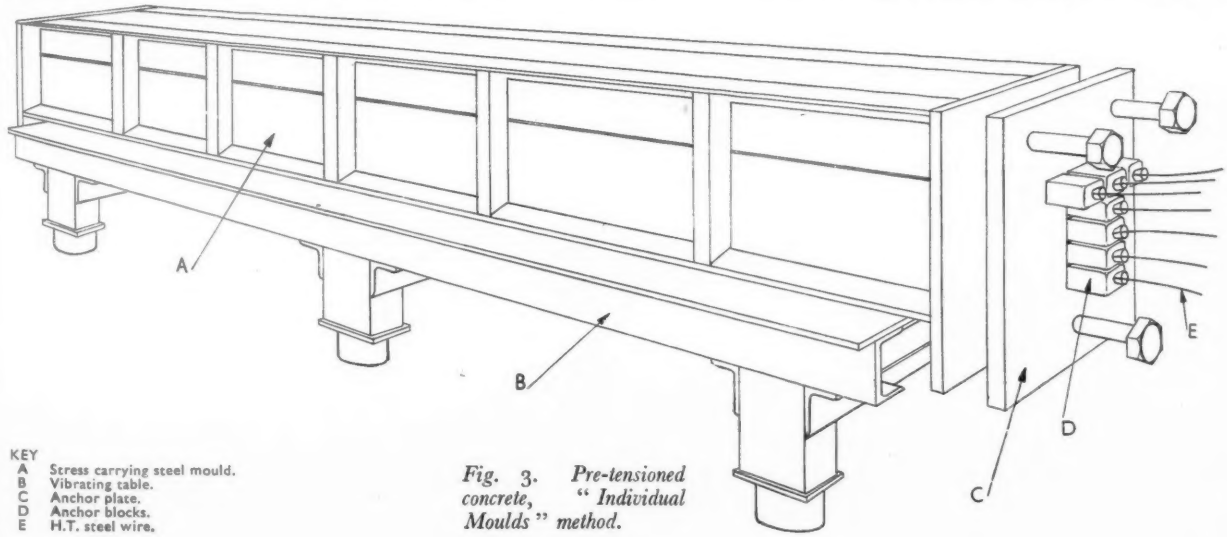
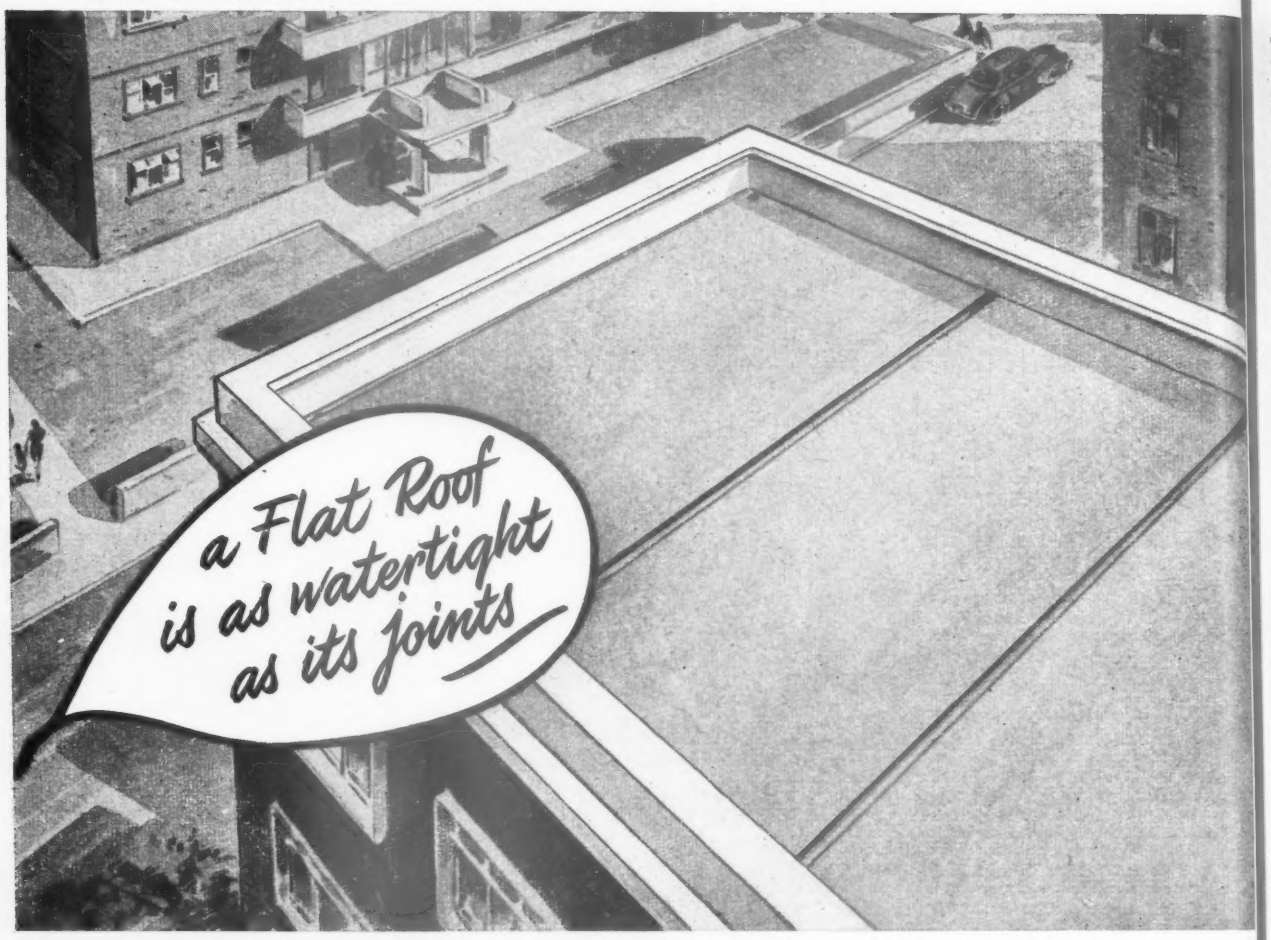


Fig. 3. Pre-tensioned concrete, "Individual Moulds" method.



A flat roof is as watertight as its joints.

The problem of making watertight expansion joints in flat concrete roofs can be solved by the use of Expandite rubber waterstops.

These waterstops were developed in the first place for sealing joints in hydraulic structures and are widely used by hydraulic engineers.

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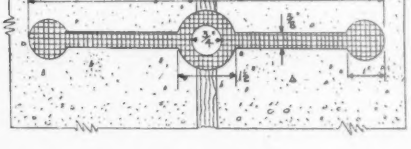
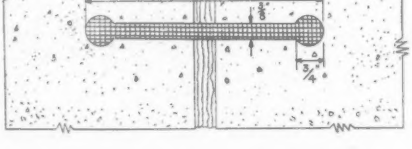
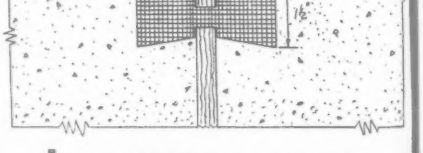
TYPE A TO ACCOMMODATE EXTREME MOVEMENT IN TENSION OR SHEAR



TYPE B FOR JOINTS WHERE RELATIVELY LESS MOVEMENT IS ANTICIPATED



TYPE C A MORE ROBUST SECTION FOR JOINTS WITH COMPARATIVELY SMALL MOVEMENT

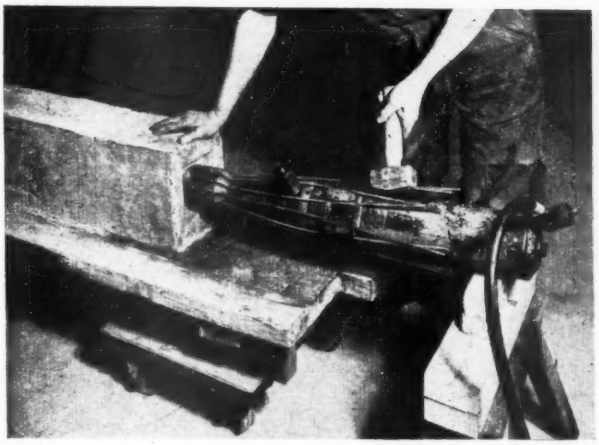


equivalent to a number of wires; thus a 1¼-in. dia. bar is equivalent to 18 × 0·2 in. dia. wires. However, with lengths beyond 60-ft., special high efficiency couplers are required which are not necessary with wire cables.

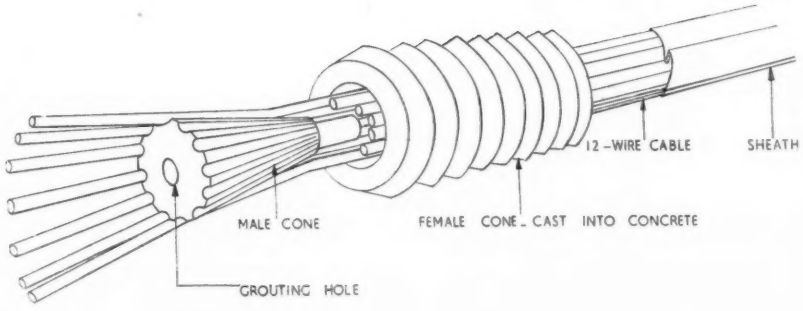
It is usual with all three systems to grout the cables or bars after stressing. Although not essential this is done in order to provide additional protection against corrosion and to improve the performance of a structure when subjected to excessive overloads. With the Freyssinet system the grout is injected through a hole in the male cone; both the Lee-McCall and Magnel systems require short ducts behind the anchorages connecting with the bar or cable ducts.

With any of these post-tensioned systems it is feasible to cast a beam in sections of convenient lengths. After placing them in line and jointing, the stressing will convert the sections into a homogeneous beam. It is also possible to tie a number of pre-cast units together transversely, thus making them act together rather than as a number of independent beams.

As is usual with a new building technique, such as prestressed concrete, many other post-tensioned systems are in use at present. Their development in their countries of origin can probably be attributed to excessive individualism since they do not appear to offer any particular advantages over the systems just described.



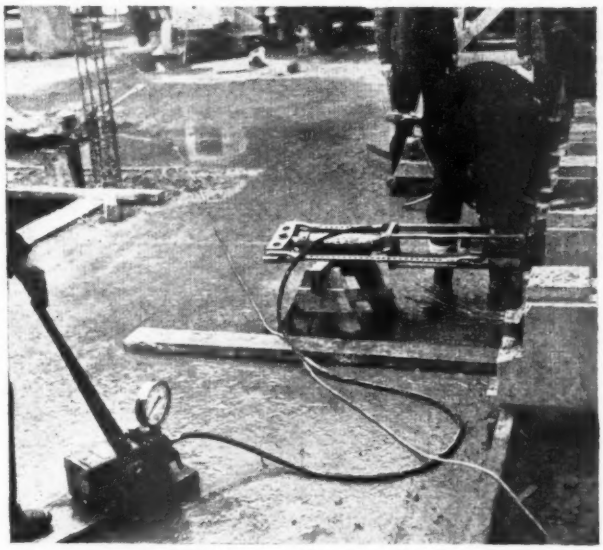
The Freyssinet system. Below, Fig. 4a, anchorage; right, Fig. 4b, jack.



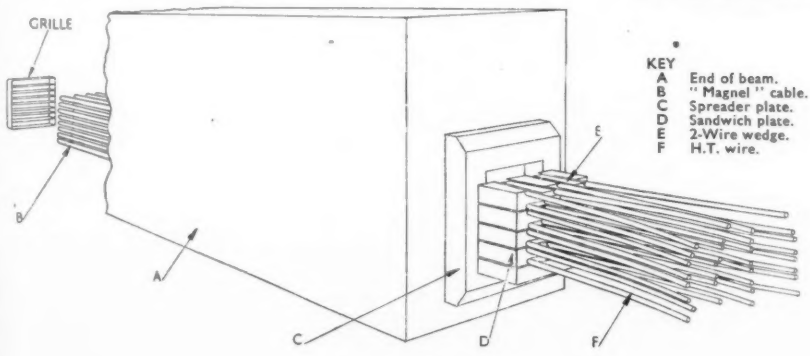
LOSS OF PRESTRESS

Concrete is subject to volumetric and linear changes throughout its life. These are due to shrinkage, which is part of the hardening process, creep, which is a function of the stress on the concrete, seasonal temperature changes and humidity variations. All of these cause a variation of prestress as the steel participates in the movement of the concrete. They also occur in ordinary reinforced concrete but are rarely allowed for. However, in prestressed concrete the stresses can be predicted within close limits and it is, therefore, usual to allow for the major of the secondary stresses, *i.e.*, shrinkage and creep. Both of these lead to a reduction of prestress, thus decreasing the available prestress and therefore the carrying capacity; hence the critical conditions for design usually exist when they are both fully realised.

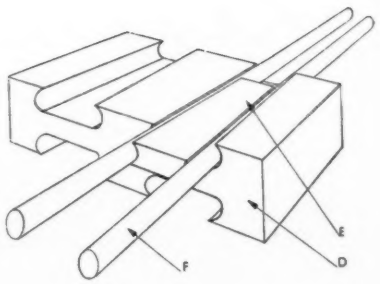
The total shrinkage of concrete of the quality usually employed in prestressed concrete is about 350×10^{-6} per unit length, *i.e.*, 0·42 in. in 100 ft. With post-tensioning, as only the shrinkage after stressing is of consequence, it is usual to reduce the previous figure to 200×10^{-6}. Thus the loss of stress in the steel (which is equal to [strain] × [modulus of elasticity] of the steel) is 4·5 tons per sq. in. for pre-tensioned concrete and 2·5 tons per sq. in. for post-tensioned concrete. The shortening due to creep amounts to about $0{\cdot}3 \times 10^{-6}$ per unit length per lb./sq. in. average stress, with a slightly higher figure for pre-tensioned work since the concrete is usually less mature

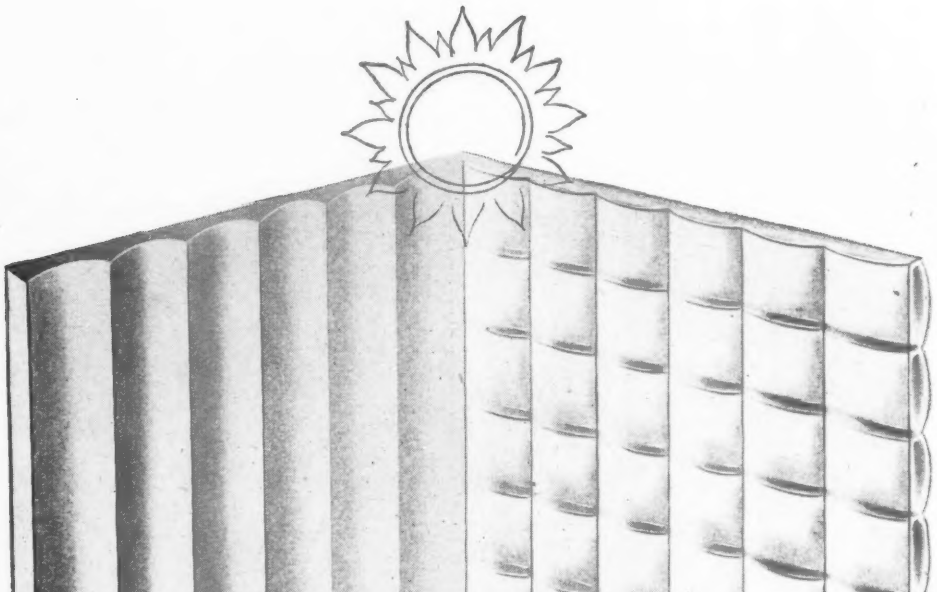


The Magnel system. Below, Fig. 5a, anchorage; right, Fig. 5b, jack.



KEY
A End of beam.
B "Magnel" cable.
C Spreader plate.
D Sandwich plate.
E 2-Wire wedge.
F H.T. wire.





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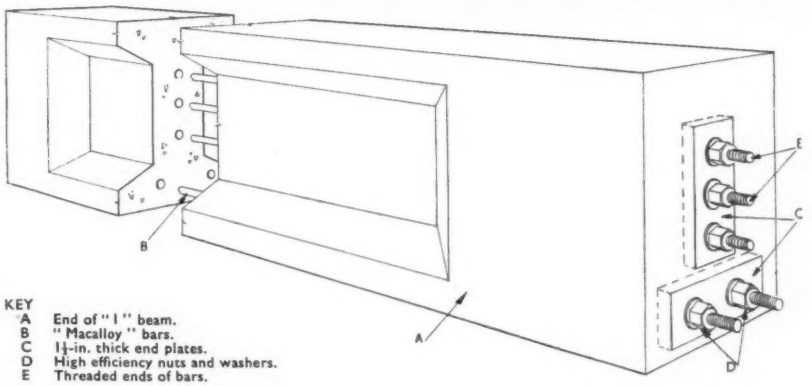
when the prestress is applied. This leads to a loss of 5 tons per sq. in. in the steel. In addition, with pre-tensioned work there is another loss due to compression of the concrete which causes a loss of approximately another 5 tons per sq. in. Due to the high stress used in wires some creep normally occurs in these as well, which is equivalent to a loss of prestress of 2 to 4 tons per sq. in.; there is no creep, however, of the Lee-McCall high tensile alloy steel bars. With these bars there is a slight overall reduction of losses due to their lower modulus of elasticity. On the average the loss of prestress or pre-tensioned concrete is 18 to 20 tons per sq. in. and 10 tons per sq. in. and 7·0 tons per sq. in. for wire and bar post-tensioned systems respectively. For design purposes it is convenient to express this loss as a percentage of the original prestress. The appropriate figures are:—

—	Ultimate Strength.	Initial Prestress.	Per cent. Loss.
	(Tons per sq. in.)		
Pre-tensioned systems			
0·08 in. dia. wires..	140/150	100	20
0·20 in. ,, ,, ..	100/110	70	25
Post-tensioned systems			
0·20 in. dia. wire cables	100/110	65	15
High tensile bars ..	66/72	42	16

The author would like to express his thanks to the following firms for the loan of photographs:
Dow-Mac (Products), Ltd. (Fig. 2*b*).
McCalls Macalloy, Ltd. (Fig. 6*b*).
Prestressed Concrete Co., Ltd. (Fig. 4*b*).
Stressed Concrete Design Ltd. (Fig. 5*b*).

The Lee-McCall system. Below, Fig. 6a, anchorage; right, Fig. 6b, prestressing jack and pump.



KEY
A End of "I" beam.
B "Macalloy" bars.
C 1½-in. thick end plates.
D High efficiency nuts and washers.
E Threaded ends of bars.

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

INFORMATION CENTRE

13.73 materials: timber
GLUE JOINTING

The Structural Application of Glue in Framing Farm Buildings. Bulletin No. 102. Aero Research Technical Notes. (Aero Research Ltd. June, 1951.)

Reprint of American paper first published in Agricultural Engineering. Specialized interest but useful for study of possible value of glue joints in structural timber where work is done by unskilled men, as is often the case when farm buildings are erected.

13.74 materials: timber
TIMBER PRESERVATIVES

Preservative Treatments for Timber in Buildings. Draft BS C of P. Sub-Code 112.100 (British Standards Institution. 1951. 2s.)

Wood preservatives for use against fungal and insect attack. Does not deal with fire-proofing.

Now that there is a tendency to use small, highly-stressed structural timber members, the use of timber preservatives has become of great importance. This draft Code contains a useful survey of the problem, including descriptions of types of fungal attack, types of beetle, different classes of preservatives and their limitations, and notes on methods of applying preservatives. What one wants to know most is: which of the proprietary preservatives are best? But, unfortunately, information of this type cannot be given in a Code. However, from this Code one can learn general principles, which are useful, and careful reading may enable one to question the purveyor of cures in an intelligent manner.

17.78 construction: general
BUILDING IN COLD WEATHER

How one builder beat winter weather. (Engineering News-Record [USA]. July 19, 1951. pp. 33-34.)

Faster work schedule easily offset extra cost of all-weather protection in construction of two-storey school building.

It is interesting to note the manner in which American builders approach the problem of winter construction. The treatment described is particularly suitable for one- or two-storey buildings with frames of welded steel or precast concrete and roofs of precast units.

The Clifton Fine School has one wing 246 ft. by 56 ft. and another 403 ft. by 82 ft. Foundations were started in September, 1950, but by the time the steel frame was erected winter had begun. The roof, of lightweight insulating tiles, was placed on the rafters, joints grouted and the whole covered by tar paper nailed to the tiles. 80-ft. run of light scaffolding was erected to roof level on each side of the frame and plywood panels on simple wood frames provided cladding. Windows were plastic-covered wire mesh on rough sash. Tarpaulins were used to seal up the end openings. Work continued on brick and concrete block exterior and glass-brick fenestration unhampered by rain or frost; fuel-oil stoves supplying the necessary heating. When a section of building was completed, the windbreak was hastily rebuilt in the next 80-ft. section. Having kept to schedule through the winter months, it is expected that the building will be completed by the original completion date—September, 1951.

The scaffolding and windbreak are fully recoverable and can be retained and re-used for the next job.

19.128 construction: details
STEEL CANTILEVERS

Long Cantilevers. (Engineering News-Record [USA]. March 22, 1951. p. 44.)

Structural steel frame supporting glass roof over swimming pool for Bogota Country Club, Bogota. Span, 76 ft. Anchor cantilever, 38 ft. long, carries 4-in. concrete roof slab. Whole beam supported on single column, approximately 20 ft. high. The frames, of built-up plate sections, are at 20-ft. centres.

21.38 construction: miscellaneous
HAND TOOLS

Powered Hand Tools, Nos. 1, 2 *and* 3. MOW Advisory Leaflets Nos. 18, 19 and 20. (HMSO. 1951 2d. each.)

Useful notes on powered tools for builders and craftsmen. First leaflet deals with electric tools for woodworking; second with powered tools for all trades; third with maintenance, and safety precautions.

This feature covers both the production and marketing of new materials and designs of equipment as well as the general trend of developments within the Building Industry.

THE INDUSTRY

By Brian Grant

DUCTS FOR ELECTRIC WIRING

Readers will probably remember the description in the JOURNAL some months ago of a special type of inflatable rubber tube which was then put forward mainly as a method for casting in concrete the long ducts necessary for post-tensioning wires. These tubes, known as Ductubes, have the advantage that they decrease in length on inflation and that, when the concrete is cured, the tubes, on deflation, not only increase in length again but at the same time twist longitudinally; the combined movements freeing the tubes from the concrete.

During the last few months, several further developments have taken place, and these tubes are now being used by the Post Office for the casting of telephone cable ducts direct in concrete, a method which should be considerably cheaper than the usual glazed stoneware pipe. The same method is also being adopted for drainage work on airfields. Both these methods involve comparatively large diameter tubes, up to about 3 in., and it is interesting to note that the smaller types are now being used for forming runs for electric wiring in concrete floors. This saves the cost of the conduit, and on the site it is quite easy to arrange the tubes so that they are clear of reinforcement bars or any other obstacles. At each ceiling point the tubes are fed through a wooden fixing block which is also cast in the floor, so that the final installation is simple and rapid.

The tubes are made in lengths of 60 ft., but, if necessary, two lengths can be joined together easily, to form longer runs. Diameters available are: ¾ in., 1 in., 1¼ in., 2 in., 3 in., 3½ in., and 4 in. It is claimed that the tubes can be used at least a hundred times, though many have already survived three times as many occasions as that. (*The Ductube Co. Ltd., Regent House,* 235-241, *Regent Stret, London, W.*1.)

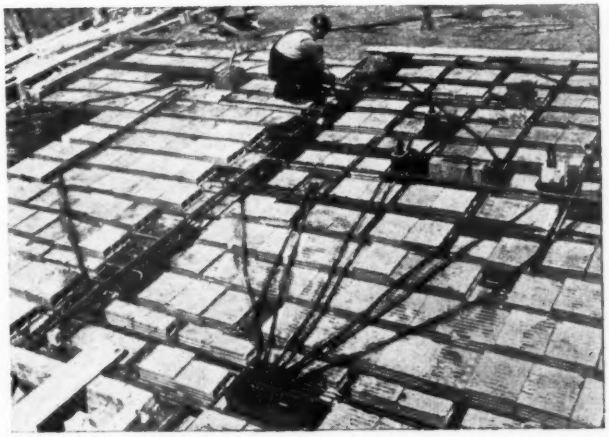
INTELLIGENCE IN LIFTS

Those of you who have been irritated by lifts which rush past the floor on which you are waiting should go to the new Government offices in Whitehall Place and see what can be done. The installation in this building consists of a bank of four, interconnected, passenger-operated lifts at each of the two main entrances. Each lift in the bank is operated in combination with the other three. The essential points of the installation are:—(i) calls are answered in rotation for the direction of travel, irrespective of the sequence in which they have been registered, (ii) the first car in the bank of lifts (travelling in the direction required) to reach the floor will answer the call, which cannot be cancelled until answered, (iii) an automatic weighing device enables the car, when full, to by-pass any landing calls, (iv) the departure of lift cars can be speeded up to suit the flow of passenger traffic, (v) car doors are each fitted with a safety edge, so that, when closing, the slightest pressure on either of these edges reverses the doors' direction of travel and causes them to open; after a short delay, the doors close again.

A visual indicator is fitted over each lift entrance in the lower terminal hall, showing the next lift to leave the floor for an up journey. Passengers entering the car press the appropriate button and the car and landing doors automatically close, completing the electrical interlocks. The car then starts its journey, automatically stopping at the floors, in rotation for the direction of travel, for which a call has been inserted. For example, if "up" calls have been made for, say, the 7th, 4th, 6th and 2nd floors in that sequence, for a lift travelling in the up direction, the car will first stop at the 2nd floor and, after discharging passengers, will proceed to the 4th floor and so on, ignoring any down calls until its return journey.

At landings there is only one button for "up" and one for "down." An intending passenger pushes the appropriate button and this registers the call in the control system; the first car in the bank of lifts (travelling in the required direction) to reach the floor will then answer the call. When the car approaches the floor, a gong rings and a light over the lift entrance goes on to tell the passenger which of the four lifts is stopping, giving him ample time to move to the lift.

The use of "Ductube" to form ¾-in. ducts in floor slabs, to obviate use of metal conduit. Above, method of looping "Ductube" through fixing block and passing through steel shuttering. Right, complete lighting and power layout.



The lifts can be attendant-operated if desired and a change-over switch is provided for this purpose. At the bottom terminal floor level there is a supervisor's panel for each bank of lifts. This contains a position indicator for each lift in the bank, together with the necessary operating switches, and gives the lift supervisor a visual indication of the position and direction of travel of each lift, together with the number of calls in the system for each lift. The lifts are despatched from the terminal floors automatically; the interval between lift departures being determined by the lift supervisor to suit the flow of passenger traffic.

In effect the whole system seems to behave much as lifts should, but too often don't. One push at each floor will produce one lift, instead of four pushes producing no lifts at all for different directions—enough to make one try for the Civil Service oneself. (*The Express Lift Co. Ltd., subsidiary of the G.E.C., Magnet House, Kingsway, London, W.C.*2.)

CUPBOARD LATCHES

I have just come across a cupboard latch which completely does away with any handle or knob on the outside of the door. Operation could not be simpler: to close the door—push until the catch clicks; to open—push the door again for ¼ in. or so. This push releases a catch and a spring pushes the door ajar. This new Tutch latch, which is now being made in this country, is made up of two units: the latch, and the strike hook, mounted on the door. The latch consists of a catch and a pusher, spring-loaded with a common spring and secured within a housing by two rivets. The basic operating principle centres on the pivoting action of the catch and pusher on the two rivets, assisted by the action of the spring, which operates for part of its length in tension and part in compression. When the strike hook enters the latch it compresses the pusher, causing the catch to fall and hold in the notch provided in the strike hook. The latch is now in the locked position. Immediately the catch holds, the pusher, released from compression, moves forward to its original position and pre-sets the catch for releasing the strike hook. Release is achieved upon the next compression of the pusher, which causes the catch to move upwards, freeing the strike hook. The description may sound a little complicated, but there are comparatively few parts, and as they are all made from precision pressings in large quantities it is possible to sell the catch at the low price of 3s. 9d. retail.

This is a useful device, which should help people who haven't enough hands to carry a tray and open a door at the same time. (*Linread, Ltd., Sterling Works, Cox Street, Birmingham,* 3.)

ENQUIRY FORM

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

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Please ask manufacturers to send further particulars to :—

NAME .....

PROFESSION or TRADE

.....

ADDRESS .....

.....

A.J. 4.10.51

Buildings Illustrated

New London showroom and offices for Messrs. Richard Haworth & Co. Ltd. (Pages 404-405.) Architect: F. M. Gross, M.S.I.A., F.R.S.A. General Contractor: J. Gerrard & Sons Ltd. Sub-contractors: Shop front, interior fittings, panelling and furniture, Osters & Fleming; chairs, Ernest Race & Co. Ltd.; ventilation system, Ventaxia Ltd., and Supervent Ltd.; central heating, Rosser & Russell Ltd.; collapsible window guards, Acme Metal Works Ltd.; lettering, The Lettering Centre; electrical works, Courtney Pope (Electrical) Ltd.; light fittings, Troughton & Young Ltd.; façade marble, Fenning & Co. Ltd.; sanitary equipment, Froy & Sons Ltd.; glass, Clark & Eaton; carpets, Perez; flowers and plants, Belsize Nurseries.

"The Festival Inn," 47, Dorset Road, Lambeth, S.W.8. (Pages 406-407.) Architect: W. J. Witham, A.R.I.B.A., Regional Architect, S.E. Region, (Messrs. Ind Coope & Allsopp, Ltd.). Assistant Architect: E. V. Leece, A.R.I.B.A. Consulting Engineer: (Structural Steelwork) J. C. Brownlie. Interior Decoration and furnishing: M. Grischotti. General Contractor: Gee, Walker & Slater, Ltd. Sub-Contractors: asphalt, Durable Asphalte Co. Ltd.; bricks, (exterior facings), Proctor & Lavender Ltd., (interior linings), Henry J. Greenham," Ltd.; structural steel, The Somerville Barnard Construction Co. Ltd.; fireproof construction (floors and roofs), The Kleine Co. Ltd.; glass, W. H. Underhill & Son, Ltd.; roof lights and cellar flaps, Haywards Ltd.; linoleum flooring and stairtread, Korkoid Decorative Floors; cork tiling floors, Cork Insulation & Asbestos Co. Ltd.; central heating, ventilation, G. N. Haden & Sons, Ltd.; grates, Bratt Colbran Ltd.; electric wiring, British Electric Co.; electric light fixtures, Troughton & Young (Lighting) Ltd.; sanitary fittings, B. Finch & Co. Ltd.; door & window furniture, Yannedis & Co. Ltd.; casements, Aygee Ltd.; screens and gate, F. W. Potter & Soar Ltd.; plaster, Suspended ceiling by Bracketing, Centreing & Lathing Ltd.; decorative plaster, Fibrous Plaster, H. E. Gaze, Ltd.; balustrade to stairs, Yannedis Ltd.; bar counters, joinery, Gaskell & Chambers Ltd.; tiling, wall & floor, B. Finch & Co. Ltd.; carpets & curtains, Peter Jones, Ltd.; paints, Hadfields (Merton) Ltd.; fixed seating, Gaskell & Chambers; easy chairs, David Joel Ltd.; other seating, Storey & Co. Ltd., Russell Furnishings Ltd.; tables and stools, C. & R. Wall Ltd.; cellar hoists, Aldous & Campbell Ltd.; clocks, Smiths, English Clocks Ltd.; signs, Buckleys (London) Ltd.

"Box Corner," 68, Hampton Road, Twickenham, Middx. (Pages 411-416.) Architects: Eric Lyons, F.R.I.B.A., A.S.I.A., and G. Paulson Townsend, L.R.I.B.A.. General Contractors: Eden Residential Construction Co. Ltd. Sub-contractors: Wall dampcourse, D. Anderson & Sons Ltd.; slab dampcourse, Field & Palmer Limited; reinforced concrete, Smiths Fireproof Floors Ltd.; facing bricks, Marston Valley Brick Co. Ltd.; common bricks, clay blocks, London Brick Co. Ltd., Flettons; concrete coping, Girlings Ferro Concrete Co. Ltd.; glass, Frank Mayle & Son Ltd.; rubber flooring, G. C. Constructional Flooring Co.; linoleum, Catesby's Limited; back boilers, Newton Chambers & Co. Ltd.; electric wiring, F. C. Clover; plumbing Faithful Bros.; electric light fitting, Hume Atkins & Co. Ltd.; sanitary fittings, J. W. Sergeant Ltd.; door furniture, Stedall & Co. Ltd., Comyn Ching Limited; wood windows, J. Alsford Limited; plasterer, Newman Bros.; stair balustrade, Light Steelwork Limited; metal glazed screen, J. Gardiner Sons & Co. Ltd.; joinery (general), West London Timber & Moulding Co. Ltd.; (kitchen fitments), Built-in Fixtures Ltd.; (mantel fitments), Joinery & Builders Supplies Ltd.; (doors), W. Hazelby Ltd.; (handrails), F. J. Lewis Limited; wallpaper, John Line & Son Ltd.; paint and distemper, Imperial Chemical Industries Ltd.; asphalt, Field & Palmer Ltd.; fireplace tiled surrounds, Broad & Co. Ltd.; signs, The Lettering Centre; furniture, Dunns of Bromley.

We regret that in our last issue we described Mr. S. A. W. Johnson-Marshall, the chief architect to the MOE, as assistant senior planning officer, reconstruction areas group, architects' department, LCC. We also regret that Mr. Anthony Cox was described as Andrew Cox and that Mrs. Patricia Goddard was described as H. G. Goddard.

In our issue of Sept. 20, 1951, we inadvertently referred to the "Creda Unit Type Ranges" as "Unity Ranges."

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

CAMBRIDGESHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPT.

Applications are invited for the appointment of a PLANNING OFFICER on Grade A.P.T., VIII, of the National Joint Council's Scales (salary £735 to £810 per annum).

Candidates should hold the qualifications A.R.I.B.A. and A.M.T.P.I., and be able to drive a car. A wide knowledge of modern planning technique will be required, and previous experience in a planning office will be an advantage.

The successful candidate will be in charge of the design aspect of the County Development Plan, including the preparation of schemes for village development and central area redevelopment. He will also be expected to advise on housing layouts and general landscape design.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, the Council's Conditions of Service, to the successful candidate satisfactorily passing a medical examination, and to three months' notice on either side of termination of appointment. Financial assistance, up to £2 weekly for a period not exceeding six months, may be given if the person appointed cannot obtain housing accommodation and has to maintain his own present residence in addition to the expense of lodgings in Cambridge.

Applications, stating age, past and present appointments (with dates), experience, qualifications, present salary and the names of two referees, should be received by the undersigned not later than the 15th October, 1951.

CHARLES PHYTHIAN,
Clerk of the County Council.
Shire Hall, Castle Hill, Cambridge. 4358

AUCKLAND HOSPITAL BOARD, N.Z.

Applications are invited from Registered and suitably experienced Architects, with qualifications such as B.Arch., A.R.I.B.A., A.A.I.A. or A.N.Z.I.A., for the position of ASSISTANT ARCHITECT.

Commencing salary NZ£850 per annum, by annual increments of NZ£30 to NZ£910 per annum plus the 15 per cent. General Wage Increase.

Accommodation is not provided.

Conditions of Appointment and Form of Application obtainable from the office of the High Commissioner for New Zealand, 415, Strand, London, W.C.2.

Applications, addressed to the Secretary, close at the office of the Board, Kitchener Street, Auckland, New Zealand, at noon on Monday, 29th October, 1951.

R. F. GALBRAITH,
Secretary.
4394

COUNTY BOROUGH OF BARNSLEY.
BOROUGH ENGINEER, SURVEYOR AND PLANNING OFFICER'S DEPARTMENT.
APPOINTMENT OF GENERAL PLANNING ASSISTANT.

Applications are invited for the permanent appointment of General Planning Assistant, at a salary in accordance with A.P.T., Grade II (£470×£15—£515 per annum).

Applicants should have passed or should be studying for the Intermediate Examination of the Town Planning Institute or its equivalent, and preference will be given to candidates who have had previous experience in a Planning Office, and who have been engaged in the preparation of Development Plans.

The appointment is subject to the National Scheme of Conditions of Service and to the provisions of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination.

The appointment will also be subject to one month's notice on either side.

Applications, stating age, present salary, present and previous appointments, experience and qualifications, etc., accompanied by copies of two recent testimonials, should be addressed to the Borough Engineer, Surveyor and Planning Officer, Town Hall, Barnsley, to reach him not later than Saturday, 20th October, 1951.

Canvassing will disqualify.

A. E. GILFILLAN,
Town Clerk.
Town Hall, Barnsley.
September, 1951. 4416

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for positions of ARCHITECT, Grade III (£550-£700) and TECHNICAL ASSISTANT (up to £580) for architectural work on new housing, schools and other public buildings. The positions are superannuable, and the above rates are subject to an addition of 10 per cent. on the first £600 and 7½ per cent. on any remainders. Application forms from the Architect, The County Hall, S.E.1, enclosing stamped addressed foolscap envelope and quoting AR/EK/A. Canvassing disqualifies. (514) 3914

BOROUGH OF BLYTH.
BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the appointment of a JUNIOR ARCHITECTURAL ASSISTANT. The salary for the appointment will be fixed within Grade II, £470, rising to £515, or Grade III, £500, rising to £545, of the A.P.T. Division, according to experience and qualifications.

Candidates should have passed the R.I.B.A. Intermediate Examination or its equivalent.

The appointment is subject to the Local Government Superannuation Act, 1937, one month's notice on either side, and the successful candidate passing a medical examination.

Applications, endorsed "Junior Architectural Assistant," stating age, qualifications and experience, must be delivered to the undersigned, with copies of three recent testimonials, not later than 1st October, 1951.

Canvassing will disqualify, and applicants should disclose relationship with any member or official of the Council.

THE COUNCIL WILL PROVIDE HOUSING ACCOMMODATION TO THE SUCCESSFUL APPLICANT, IF REQUIRED.

EDWIN W. CARTER,
Town Clerk.
"Dinsdale," 75, Marine Terrace, Blyth, Northumberland. 4397

GLOUCESTERSHIRE COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of ASSISTANT ARCHITECT, on A.P. and T., Grade VI (£645-£710 per annum). Candidates must be qualified members of the R.I.B.A., with not less than 4 years' experience with a local authority.

The appointment will be subject to the Local Government Superannuation Act, 1937, and will be terminable by one month's notice on either side. The successful applicant will be required to pass a medical examination before appointment.

Applicants should state whether or not they possess a motor car and/or hold a driving licence.

Applications, stating (1) name and address, (2) married or single, (3) age, (4) qualifications, (5) present position, salary and date of appointment, (6) previous positions with dates and salaries, (7) names and addresses of two persons to whom reference can be made, should be sent to S. E. Urwin, F.R.I.B.A., County Architect, Shire Hall, Gloucester, not later than Monday, the 15th October, 1951.

GUY H. DAVIS,
Clerk of the County Council.
Shire Hall, Gloucester. 4417

URBAN DISTRICT COUNCIL OF STANLEY.
ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant for housing work. Applicants must be registered Architects, and have sound experience, particularly in housing.

Salary will be in accordance with Grade V, A.P.T. Division, £570-£620. The successful applicant will be required to pass a medical examination.

Applications, endorsed "Architectural Assistant," stating age, present and past appointments and experience, with three references, to be received by the undersigned by Monday, 15th October, 1951.

R. BLAKEY,
Clerk of the Council.
Council Offices, Coach Road, Outwood, near Wakefield. 4440

THE ROAD HAULAGE EXECUTIVE are prepared to receive applications for the post of DRAUGHTSMAN in the South-Western Division (Bournemouth). Applicants, preferably qualified, with a good experience of industrial buildings, should be able to make surveys of land and buildings, and have reached at least the Intermediate stage of the R.I.B.A./R.I.C.S. Salary range £435-£595 per annum. Applications in writing, giving date of birth, qualifications, experience and present post and salary, should be forwarded to the Divisional Staff and Welfare Officer, 2, Richmond Gardens, Bournemouth, to reach him not later than 3 weeks from the date of this publication. 4441

BOROUGH OF ERITH.
APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment at a salary in accordance with the National Scale, A.P.T., II, commencing at £470 and rising by annual increments of £15 to a maximum of £515 per annum, plus London area weighting.

Applicants, who should be capable of preparing plans, specifications, estimates and Bills of Quantities for building works, should have had a good architectural training and be neat draughtsmen.

The appointment will be subject to the National Conditions of Service, to the Council's Regulations governing staff, to one month's notice in writing, and to the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination.

Applications must be on the form to be obtained, together with a list of duties, from the Borough Engineer and Surveyor, Town Hall, Erith, Kent, and be delivered to him not later than 16th October, 1951.

Canvassing, either directly or indirectly, will disqualify.

J. A. CROMPTON,
Town Clerk.
Town Hall, Erith, Kent. 4443

COUNTY BOROUGH OF BARNSLEY
BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.
APPOINTMENT OF
(*a*) CHIEF ASSISTANT ARCHITECT.
(*b*) SECOND ASSISTANT ENGINEER.
(*c*) THIRD ENGINEERING ASSISTANT.

Applications are invited for the above appointments on the authorised establishment. Appointments (*a*) and (*b*) in accordance with A.P.T., Grades VI-VII, £645-£760. Appointment (*c*) in accordance with A.P.T., Grade V, £570-£620.

Appointment (a):
Preference will be given to candidates who are Associate Members of the Royal Institute of British Architects and have had considerable experience in Local Government, preferably with a County Borough.

Appointment (b):
Candidates must be Associate Members of the Institution of Civil Engineers and/or should have the Testamur of the Institution of Municipal Engineers, as well as considerable experience in general Municipal engineering work.

Appointment (c):
Preference will be given to candidates who have either a University degree, or are Associate Members of the Institution of Civil Engineers or hold the Testamur of the Institution of Municipal Engineers, as well as having experience in a Municipal Engineer's office.

The appointments will be subject to the Scheme of Conditions for A.P.T.C. Services to the General Conditions of Service within the Corporation as varied from time to time, and to the provisions of the Local Government Superannuation Act, 1937.

The successful candidates will be required to pass a medical examination, and the appointments will also be subject to one month's notice on either side.

If necessary, housing accommodation may be offered to the successful candidates.

Applications, stating age, present and previous appointments, experience and qualifications, etc., together with the names of three referees, should be addressed to the Borough Engineer and Surveyor and Planning Officer, Town Hall, Barnsley, to reach him not later than Saturday, 13th October, 1951.

Canvassing will disqualify, and applicants should disclose in their applications whether or not to their knowledge they are related to any member or senior officer of the Council.

A. E. GILFILLAN,
Town Clerk.
Town Hall, Barnsley.
September, 1951. 4399

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Applications are invited for positions of CLERK OF WORKS (salaries up to £660, plus 10 per cent. on first £600 and 7½ per cent. on any remainder) in Housing Division of Architect's Department, to supervise erection of Multi-storey Blocks of Flats. Applicants should have considerable experience in modern reinforced concrete and steelwork construction, and have supervised large building contracts. Position superannuable.

Application forms, to be returned by 20th October, 1951, obtainable from Architect to the Council, County Hall, S.E.1, enclosing stamped addressed foolscap envelope and quoting AR/EK/HCW. (1151). 4449

CITY OF BATH.
CITY PLANNING AND ARCHITECTURAL DEPARTMENT.

Applications are invited for the appointment of CHIEF ARCHITECTURAL ASSISTANT, Grade A.P.T., VII (£685-£760) per annum. Applicants must be Registered Architects, and preference will be given to those who are Associates of the Royal Institute of British Architects. They should have good experience in design and construction of Municipal housing and other works.

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

Applications, stating age, qualifications and experience, together with the names and addresses of three referees, should be sent to the City Planning Officer and Architect, 2, Princes Buildings, Bath, not later than the 19th October, 1951.

The Corporation are prepared to render assistance to the successful candidate in securing housing accommodation if required.

JARED. E. DIXON.
Town Clerk.
Guildhall, Bath.
September, 1951. 4457

CITY OF BIRMINGHAM.
APPOINTMENT OF CITY ARCHITECT.

The Council of the City of Birmingham desire to appoint a City Architect to be responsible for the architectural work of the Corporation, and are prepared to consider applications for the position from gentlemen who by membership of the Royal Institute of British Architects and otherwise are suitably qualified.

The initial salary for the post will be £3,000 per annum.

A memorandum giving details about the scope of the appointment, and about salary increments and other conditions, may be obtained by application to me at the Council House, Birmingham, 1.

Applications for the post must be received by me not later than the 17th November, 1951.

J. F. GREGG,
Town Clerk.
The Council House, Birmingham, 1.
September, 1951. 4455

COUNTY BOROUGH OF WEST HARTLEPOOL.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the position of ASSISTANT QUANTITY SURVEYOR, Grade A.P.T. V (£570×£15×£15×£20—£620) in the Borough Architect's Department.

The appointment is subject to the Scheme of Conditions of Service of the National Joint Council for Local Authorities' Administrative, Professional, Technical and Clerical Services with the exception of Paragraph 39. The post will be superannuable and the successful candidate will be required to pass a medical examination.

The Council are prepared to consider the provision of housing accommodation for the successful applicant, if required.

Applications, stating age, experience and qualifications, together with copies of not more than three testimonials should be delivered at the office of the Borough Architect, Municipal Buildings, West Hartlepool, not later than Wednesday the 17th October, 1951.

ERIC J. WAGGOTT,
Town Clerk.

Town Clerk's Office,
Municipal Buildings,
West Hartlepool.
September, 1951. 4480

HEMEL HEMPSTEAD DEVELOPMENT CORPORATION.

Applications are invited for the appointment of SENIOR PLANNING ASSISTANT. Salary in the scale £610×£30—£810.

Applicants should hold a Town Planning qualification. The applicant appointed will be engaged on the design of residential areas, being chiefly concerned with the preparation of housing layouts, and should be a qualified architect or have a sound architectural background.

The appointment will be subject to the Development Corporation's staff rules and conditions of service (which are broadly similar to the Local Government Officers' "Charter").

Contributory superannuation with an opportunity of entering or continuing in Local Government Superannuation Fund will be provided.

Housing accommodation may be provided if necessary.

Applications, giving particulars of age, qualifications and experience, the names of two persons to whom reference may be made, and endorsed "Planning" should be addressed to the undersigned to reach him by 15th October, 1951.

W. O. HART,
General Manager.

Westbrook Hay,
Hemel Hempstead, Herts. 4478

CITY OF BIRMINGHAM EDUCATION COMMITTEE.
COLLEGE OF TECHNOLOGY, BIRMINGHAM.
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING.

Applications are invited for the post of SENIOR LECTURER in Quantity Surveying and associated subjects.

Candidates must be Fellows or Associates by examination of the Royal Institute of Chartered Surveyors or possess an equivalent qualification.

The successful applicant may be required to teach all necessary subjects up to the standard of the Final Examinations of the R.I.C.S. and other appropriate Institutions.

The person appointed will be expected to commence duties by not later than 1st January, 1952.

Salary for Senior Lecturers will be in accordance with the 1951 Burnham (Further Education) Scale (men: £1,000×£25—£1,150).

Further particulars and form of application may be obtained from the Registrar, College of Technology, Suffolk Street, Birmingham, 1, on receipt of a stamped addressed foolscap envelope. Completed forms should be returned to him not later than two weeks after the appearance of this advertisement.

C. McCAW,
Clerk to the Governing Body.
4458

CITY OF LIVERPOOL—EDUCATION COMMITTEE.
COLLEGE OF BUILDING.
CLARENCE STREET, LIVERPOOL, 3.
Principal: T. E. HALL, Dip. Arch., A.R.I.B.A.

Applications are invited for the appointment of ASSISTANT (full time), Grade B, to teach Architecture in the Department of Building and Professional Studies to the standard of the Final Examination of the Royal Institute of British Architects. (Duties to commence as soon as possible.)

Salary: £450×£25 to £725 (men); £405×£20 to £580 (women).

Candidates must possess the appropriate professional qualification and professional or industrial experience. Teaching experience is desirable but not essential.

The correct position at entry will be determined by the length of industrial teaching and war service of the candidate, and additions to the scale for training and graduate qualifications are payable up to a maximum of £114 per annum (men); £93 per annum (women).

Application forms and further particulars may be obtained from H. S. Magnay, Director of Education, 14, Sir Thomas Street, Liverpool, 1, to whom completed applications should be returned within two weeks of the appearance of this advertisement.

THOMAS ALKER.
Town Clerk and Clerk to the Local Education Authority. (JA 2721)
4454

BOROUGH OF BLYTH.
SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of a Senior Architectural Assistant, in the Borough Engineer's Department, at a salary in accordance with Grade V, A.P.T., namely £570 per annum, rising to £620 per annum by annual increments.

Applicants should be Registered Architects, with a good experience in Municipal Housing.

The appointment is subject to the National Scheme of Conditions of Service, the provisions of the Local Government Superannuation Act, 1937, the passing of a medical examination, and one month's notice on either side.

Applications suitably endorsed and accompanied by three recent testimonials must reach the undersigned not later than first post on 10th October, 1951.

Canvassing will disqualify, and applicants must state whether they are related to any member or senior official of the Council.

HOUSING ACCOMMODATION WILL BE PROVIDED IF NECESSARY.

EDWIN W. CARTER,
Town Clerk.

"Dinsdale," Marine Terrace, Blyth,
Northumberland. 4452

METROPOLITAN BOROUGH OF LEWISHAM.
APPOINTMENT OF ASSISTANT ARCHITECTS.

Applications are invited for the appointment in the Borough Architect's Department of: (*a*) A SENIOR ASSISTANT ARCHITECT, salary scale A.P.T. Division, Grade VIII (£735×£25—£910 per annum), and (*b*) an ASSISTANT ARCHITECT, salary scale A.P.T. Division, Grade IV-VI (£530, rising to £710 per annum). London "weighting," varying between £10 and £30 per annum, according to age, is applicable to each salary.

Applicants for both appointments must be suitably qualified, and in the case of (*a*) should be Associates of the Royal Institute of British Architects.

The appointments will be subject to the Rules and Regulations of the Council from time to time in force relating to Officers; to the National Scheme of Conditions of Service; to the provisions of the Local Government Superannuation Act, 1937; to termination by one month's notice on either side, and to the successful candidates passing satisfactorily a medical examination by the Council's Medical Officer of Health.

Forms of application may be obtained from the undersigned, to whom they should be returned, accompanied by copies of not more than three recent testimonials, in an envelope endorsed with the name of the post applied for, so as to be received not later than Saturday, the 20th October, 1951.

Canvassing, either directly or indirectly, will be a disqualification.

ALAN MILNER SMITH,
Town Clerk.

Lewisham Town Hall, Catford, S.E.6.
26th September, 1951. 4463

DOWN COUNTY COUNCIL
(NORTHERN IRELAND).

Applications are invited for the following:—

(*a*) DEPUTY COUNTY PLANNING OFFICER. Salary £875-£1,000×two £50 and one £25.

(*b*) ASSISTANT ARCHITECT. Salary £600-£710×four £20 and one £30.

Applicants for (*a*) must be Associate Members of the Town Planning Institute and Associates of the Royal Institute of British Architects, for (*b*) must be Associates of the Royal Institute of British Architects.

The appointments are subject to the Local Government Officers' (Superannuation) Act (N.I.), 1950, and are terminable by one month's notice on either side. The successful applicants for both posts will be required to live in or near Downpatrick, and for (*a*) will be required to provide a car for official journeys. Mileage allowance is payable at the County Council's rate for such journeys.

Preference will be given to suitable ex-Service candidates.

Applications, stating age, qualifications and experience, and accompanied by copies of two recent testimonials, to be delivered to the undersigned not later than 16th October, 1951.

J. H. HARVEY,
Secretary.

Courthouse, Downpatrick, Co. Down. 4462

PETERLEE DEVELOPMENT CORPORATION.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, in the Chief Architect's Department, at a salary of £500, rising by £50 increments to £600 per annum. Applicants must be to the standard of the Intermediate Examination of the R.I.B.A., or equivalent, be of good general training, and preferably have experience in a Municipal Architect's or Engineer's office.

Lodging allowance is payable at the discretion of the Corporation to a successful applicant who is married or has equivalent responsibilities, until suitable housing accommodation in the area is secured.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, to the Corporation's Staff Rules and Conditions of Service, and the passing of a medical examination.

Applications, setting out details of age, qualifications, experience, past and present appointments, should be submitted to me not later than 15th October, 1951.

A. V. WILLIAMS,
General Manager.

Shotton Hall, Castle Eden, Co. Durham. 4459

AMENDED.
METROPOLITAN BOROUGH OF FULHAM.
SENIOR ASSISTANT ARCHITECT.

Applications are invited for this appointment in the Architectural Section of the Housing and Public Buildings Department.

Salary: A.P.T., Grade VI (£645×£20 (2) × £25 (1)—£710 per annum, including London weighting.

Applicants should be Registered Architects, experienced in designing and dealing with large contracts through all stages. The successful applicant will be employed in a senior capacity in connection with the planning, design and execution of large schemes of flats and public buildings. Lack of previous experience in a Municipal office will not debar applicants from consideration.

Applications on forms obtainable from me; closing date 13th October, 1951.

CYRIL F. THATCHER,
Town Clerk.

Town Hall, Fulham, S.W.6.
September, 1951. 4468

BURGH OF ALLOA.
APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Senior Assistant Architect, on the staff of the Council's Architect, at a salary of £520-£565, placing on grade according to experience.

Applicants must be Registered Architects. Preference will be given to candidates who are Members of the R.I.B.A., and who have knowledge of Local Authority Housing Design. Experience in quantities is essential.

The post will be superannuable, and the successful applicant will be required to pass a medical examination.

A house will be made available if required.

Applications, giving age, qualifications and experience, accompanied with the names and addresses of two persons to whom reference may be made, should be sent to Mr. W. H. Gillespie, L.R.I.B.A., Burgh Architect, Municipal Buildings, Alloa, not later than 31st October.

WILLIAM MALTMAN,
Town Clerk.
4476

STAFFORDSHIRE COUNTY COUNCIL.
COUNTY PLANNING DEPARTMENT.

Applications are invited for senior appointments in the County Planning Department, in A.P.T., Grades VII-VIII. Salary from £635 to £760 p.a.

The persons appointed will be mainly engaged on the preparation and carrying into effect of housing and other estate development proposals.

Applicants should be qualified in Architecture or Engineering and Membership of the Town Planning Institute would also be an advantage.

Applications should give details of age, education and training, qualifications, present and previous appointments and experience, and should include copies of two recent testimonials and the names of two other persons to whom reference can be made. Applications should be sent to D. W. Riley, County Planning Officer, 41a, Eastgate Street, Stafford, not later than the 20th October, 1951.

T. H. EVANS,
Clerk of the County Council.
4469

Tenders for Contracts

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

COUNTY BOROUGH OF READING.
TO BUILDERS AND CONTRACTORS.

The Corporation of Reading invite tenders for the conversion for use as a Metal Workshop and Drawing Office of a Building in Crescent Road, Reading, adjacent to Alfred Sutton Central School.

The General Conditions may be inspected at the office of the Borough Architect, Town Hall, Reading, and copies of the Drawings, Specification, Form of Tender, and endorsed envelope obtained on application to him.

Tenders must be delivered to the undersigned not later than Friday, the 26th October, 1951.

No tender will be considered unless enclosed in the endorsed envelope provided and sealed, but not bearing any name or mark indicating the sender.

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

G. F. DARLOW,
Town Clerk.

Town Hall, Reading.
October, 1951. 4475

BOROUGH OF DAGENHAM.
WOODLANDS ESTATE, RAINHAM ROAD.
ERECTION OF FLATS.

Tenders are invited for the erection of 36 flats, in three blocks of twelve flats (three-storey).

Bills of Quantities and Form of Tender may be obtained from the Borough Engineer and Surveyor on payment of a deposit of two guineas, which will be refunded on receipt of a *bona-fide* tender.

Plans and General Conditions of Contract may be inspected during normal office hours.

Sealed tenders, in the envelopes provided which must bear no indication of the identity of the senders, to be delivered to the undersigned by noon on Saturday, 27th October, 1951.

KEITH LAUDER,
Town Clerk.

Civic Centre, Dagenham. 4479

Architectural Appointments Vacant

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

VACANCY for JUNIOR ASSISTANT, single. Salary £350-£450. Must be good draughtsman, with good practical knowledge of construction. Pension scheme. Interesting and varied work. Gotch, Saunders & Surridge, Chartered Architects, Kettering. 4409

ARCHITECTURAL ASSISTANT, Intermediate standard, required in Architects' office of multiple shop company, interesting work, possibility of permanency. Write Box 4383.

ARCHITECT'S ASSISTANT required by firm of Architects in South-West England; age 30 to 35. State experience and salary required to Box 4372.

PROGRESSIVE post for LADY ASSISTANT in small private practice, London, W.1. Neat Draughtsmanship, some typing ability required. Box 4401.

JUNIOR ARCHITECT'S ASSISTANT required in busy Westminster office, with good prospects of advancement and interesting work. Salary £260 p.a. Box 4419.

ARCHITECTURAL ASSISTANT, of R.I.B.A. Intermediate standard, with office experience, required immediately. Starting salary £400 to £500, according to experience. Apply, with full details, to Deacon & Laing, F./A.R.I.B.A., 9, St. Paul's Square, Bedford. 4470

A FAMOUS Mutual Life Assurance House needs a few men of drive and integrity to act as AGENTS. Architects and Surveyors have the right contacts, and can best serve their "Mutual" interests. Further details from Box 4466.

ARCHITECTURAL ASSISTANT, with at least 4 years' office experience, required in Architects' office in Ilford area. Must be neat and quick draughtsman, capable of preparing working drawings and full size details for school and hospital projects. Good prospects for man of initiative; 5-day week. Write, stating age, details of past work, education, and salary required. Box 4465.

OLD-ESTABLISHED Company, with headquarters in Lincoln, currently exporting houses to Australia, has a vacancy for an ARCHITECTURAL ASSISTANT of R.I.B.A. Intermediate standard, and with at least three to four years' office experience. Interesting work and excellent prospects, where ability and initiative are displayed. Full particulars to Box 4456.

PARTLY qualified ARCHITECTURAL STUDENT, prepared emigrate to New Zealand, offered generous salary, good conditions, interesting work, and share flat with University student. Air mail. B. E. Orchiston, B.Arch., P.O. Box 35, Wellington, New Zealand. 4464

ASSISTANTS required at Minehead and Taunton Offices. Intermediate Standard; for work on Housing, Hospitals and W.D. projects. Write, stating qualifications, experience, and salary required. Donati & Torrens, A./A.R.I.B.A., 13, The Parade, Minehead. 4446

ARCHITECT'S ASSISTANT required. Must have first-class knowledge of design and construction, and be prepared to use his own initiative. Apply, stating age, experience and salary required, to Gratrix & McLellan, Architects, 7, St. Helens Road, Swansea. 4438

ARCHITECT'S ASSISTANT required for Andover, Hants, Branch Office. Must be third or fourth year student. Write, with copies testimonials, and state salary expected to Box 4445.

ASSISTANT for busy and varied practice London, S.W., with sound knowledge of construction and reasonable London office experience essential. Excellent prospects for one willing to work hard and having ambition greater than required for public service. Box 4474.

Architectural Appointments Wanted

B. ARCH., Liverpool, needs part-time work near Liverpool. Experienced in design, working drawings, British and Swiss, translations of and into German. Very wide education. Box 4437.

SENIOR ASSISTANT (32), married, with family, requires post in small but progressive provincial office. Office trained, 12 years' experience, housing both L.A. and private, hospitals, schools, factory and industrial buildings. Experienced in site supervision, control of staff, handling contracts and working on own initiative. Preferably coastal town, but willing to go anywhere offering living accommodation. Minimum salary £575 p.a. All letters acknowledged. Box 260.

CHARTERED ARCHITECT (36) desires responsible position, home or abroad. L.R.I.B.A., 20 years' varied experience in private and public posts. Able to handle schemes from design to final accounts, including preparation of quantities. Sound business acumen. Car owner. Please write Box 261.

CHARTERED ARCHITECT requires responsible appointment. Wide experience, including contemporary London practice. Box 259.

A. R.I.B.A. seeks part-time situation in London area. Three days per week. Box 4491.

ARCHITECTURAL DRAUGHTSMAN and Model Maker-cum-Field Surveyor-cum-Clerk of Works-cum-Technical and Free-Lance Journalist and Photographer, seeks part-time job, embracing housing accommodation of some sort. Salary immaterial. Box 4450.

ASSOCIATE (31), varied general experience, office trained, requires responsible position in Lancashire area. Able to manage contracts from sketch plan stage to final account. Salary by arrangement, dependent on prospects. Box 257.

TEMPORARY position in North or Central London desired by student. R.I.B.A., with 5 years' office experience. Box 258.

ASSOCIATE (woman), 4 years' office experience, requires position. 4 days per week, in contemporary office of Architect or Designer in London. Box 4471.

ARCHITECTURAL ASSISTANT (A.R.I.B.A.) seeks spare-time work. Sketch plans, working drawings, details, etc., including estate site works, surveys. Box 4472.

ASSISTANT (24), 5 years' private office experience, passed R.I.B.A. Inter., capable surveyor, requires change. Please write Box 262.

EXPERIENCED ARCHITECTURAL MODEL MAKER seeks position. Accustomed to working with all types of material. Box 4473.

QUALIFIED ASSISTANT ARCHITECT (32), with wide experience, including industrial and housing, seeks responsible position, preferably in the West Midlands. Married, and would greatly appreciate unfurnished accommodation. Salary about £650. Box 256.

Other Appointments Vacant

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

LONDON COUNTY COUNCIL.
HAMMERSMITH SCHOOL OF BUILDING AND ARTS AND CRAFTS.

Applications are invited for the following appointments:—

(1) SENIOR LECTURER IN ARCHITECTURE. Applicants should be Fellows or Associates of the R.I.B.A., and preferably hold a degree or diploma of a recognised school of architecture.

They should have some teaching experience and also practical experience in design and construction.

(2) SENIOR LECTURER IN BUILDING. Applicants should be suitably qualified to control and teach in ordinary and higher national diploma and certificate courses, and should preferably have some teaching experience as well as industrial experience.

(3) LECTURER IN QUANTITY SURVEYING. Applicants, who will be required to supervise and teach in surveying course, should be Associates of the R.I.C.S., and preferably have some teaching experience.

(4) STUDIO MASTER IN ARCHITECTURE. Applicants, who will be required to give instruction in design and construction, should be Associates of the R.I.B.A., and preferably hold the degree or diploma of a recognised school.

(5) ASSISTANT TEACHER OF BUILDING SCIENCE AND MATHEMATICS. Applicants should be well qualified to teach these subjects in diploma and certificate courses.

Salaries for these posts will be in accordance with the Burnham Technical Report, 1951, and are as follows:—

Posts (1) and (2): £1,000×£25—£1,150.

Post (3): £900×£25—£1,000.

Posts (4) and (5): Assistants, Grade B, £450×£25—£725, plus graduate allowance £60 and training allowance where applicable.

For posts (4) and (5) the commencing point on the scale will be appropriate to previous teaching and/or industrial experience. All posts will carry a London allowance of £36 or £48, according to age.

Further particulars and application forms can be obtained on application to the Secretary at the School (S.A.E.), to whom completed applications should be returned on or before 31st October, 1951. (1181) 4467

R.I.B.A. Postal Tuition in Mechanics and Simple Structural Calculations and Theory of Structures. D. A. Fowler, Dip.Arch.(Abdn.), F.R.I.B.A., Derwent House, Wressle, Selby. 4444

FIRM, with established connection dealing with Architects and Local Authorities, require REPRESENTATIVE to handle patent unit used in housing. Architectural or building knowledge essential.—Replies to Box 4451.

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PLANT ENGINEER with experience of building trade, factory services and plant layout to supervise maintenance of buildings and services, erection of new buildings and to undertake plant layouts in a large industrial organisation in Edinburgh. Age around 40. Position permanent and pensionable. Salary up to £750 per annum according to experience. Write giving full particulars of education and experience to Box 821, Keith & Co., Advertising Agents, Edinburgh. 4481

LAND SURVEYOR, preferably with colonial experience, required for extensive land survey in Ethiopia; period 6 months approx., passage paid. Salary £1,000 per annum (free of tax) dependent on experience. Box 4477.

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ARCHITECTURAL ASSISTANTS require additional work. Surveying, Levelling, Working Drawings, Details, Tracings, etc. W. Graysmark, 41, Wadham Gardens, Greenford, Middx. 4333

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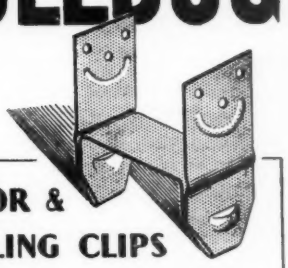

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