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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THE ARCHITECTURAL PRESS

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Registered as a Newspaper.

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

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: W. Marlborough Whitehead, "Dyneley," Castle Hill Avenue, 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.	Langham 8738
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. 26, Store Street, Tottenham Court Road, W.C.1.	Museum 5400
BCC	British Colour Council. 13, Portman Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 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.	Fremantle 8494
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
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
BRDB	British Rubber Development Board. Market Buildings, Mark Lane, E.C.3.	Mansion House 9383
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., Civic Centre, Newport, Mon.	Newport 5491
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.	Abbey 7080
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DGW	Directorate General of Works, Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
DPT	Department of Overseas Trade. Horseguards Avenue, Whitehall, S.W.1	Trafalgar 8855
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 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
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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The Principal's Room, Hatfield Technical College

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The Council Chamber and Offices, Merionethshire, County Architect, Norman Jones, Esq., F.R.I.B.A.
The new Science building, Borough Polytechnic—Messrs. Norman & Dawbarn, Architects.

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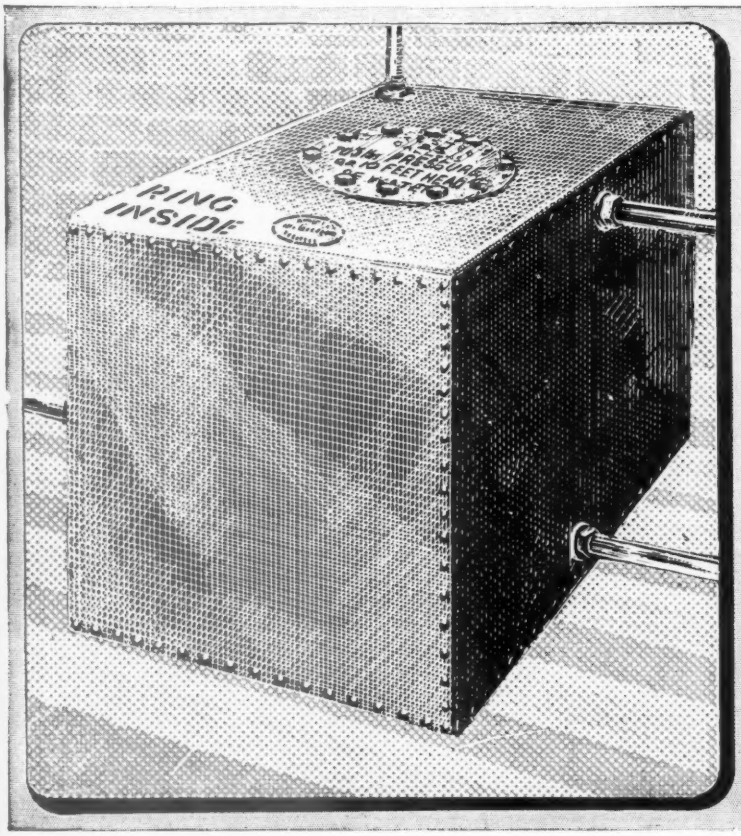
Architects for the Building, Messrs. Easton & Robertson, F./F.R.I.B.A.

The Refectory, Hatfield Technical College



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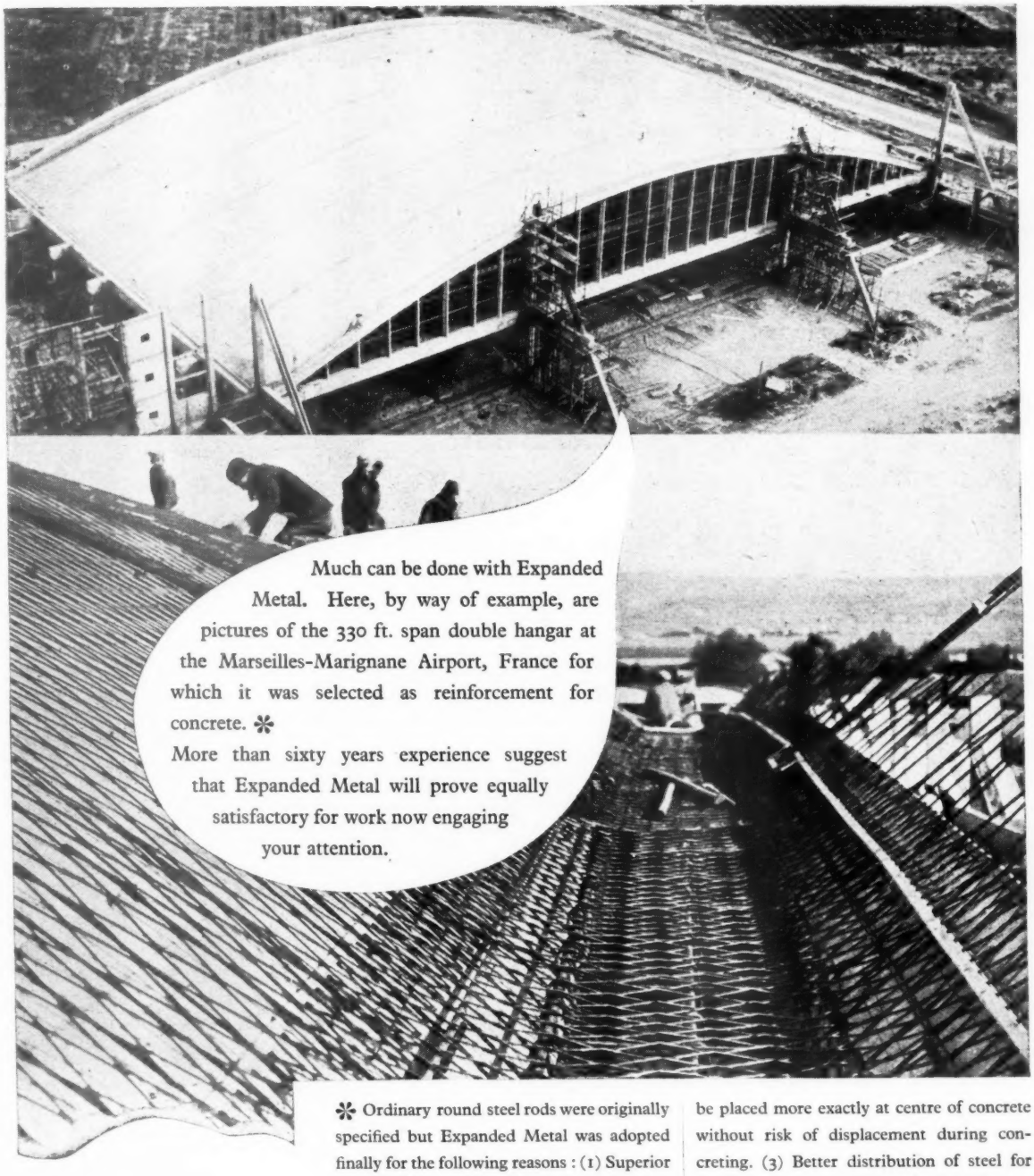

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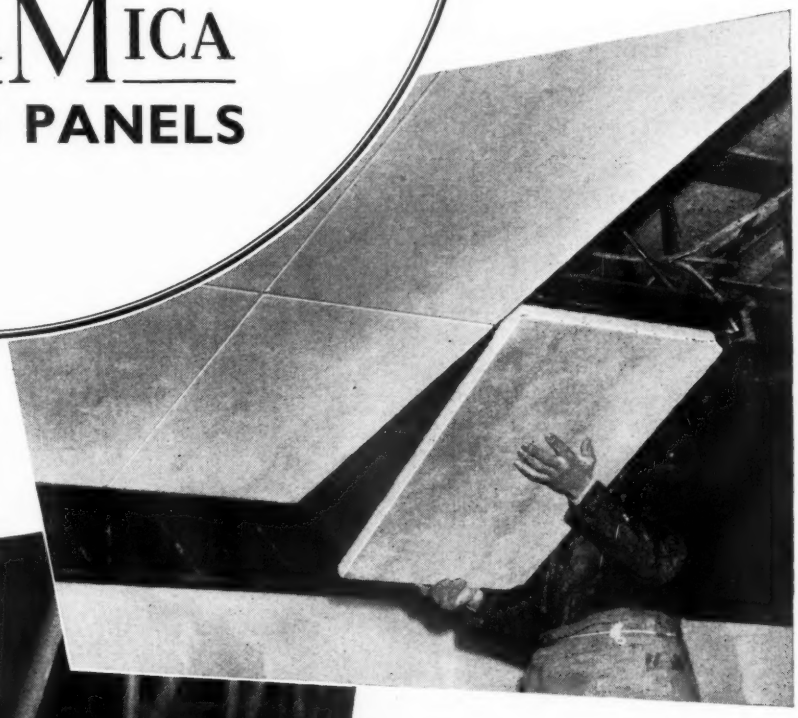
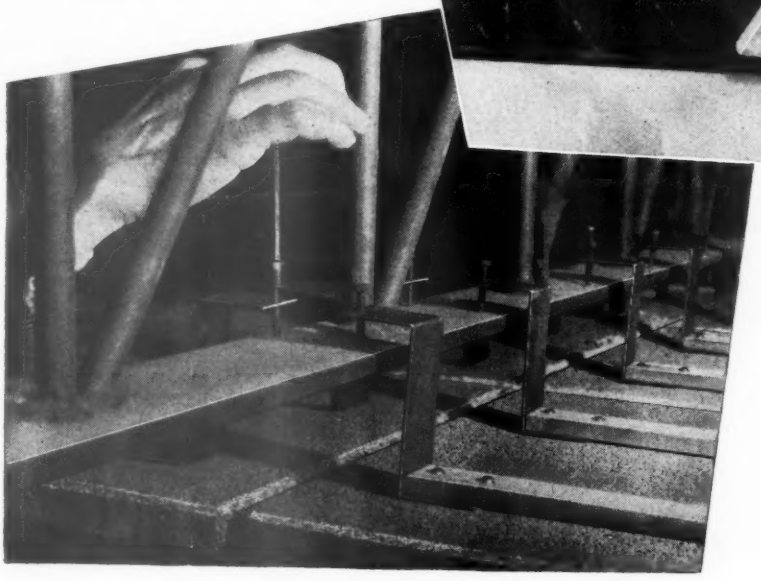


Right: A ceiling panel being lifted into position. Note that only one man is required for this operation.

Below: The method of adjusting the self-tapping screws which ensure a completely level ceiling.



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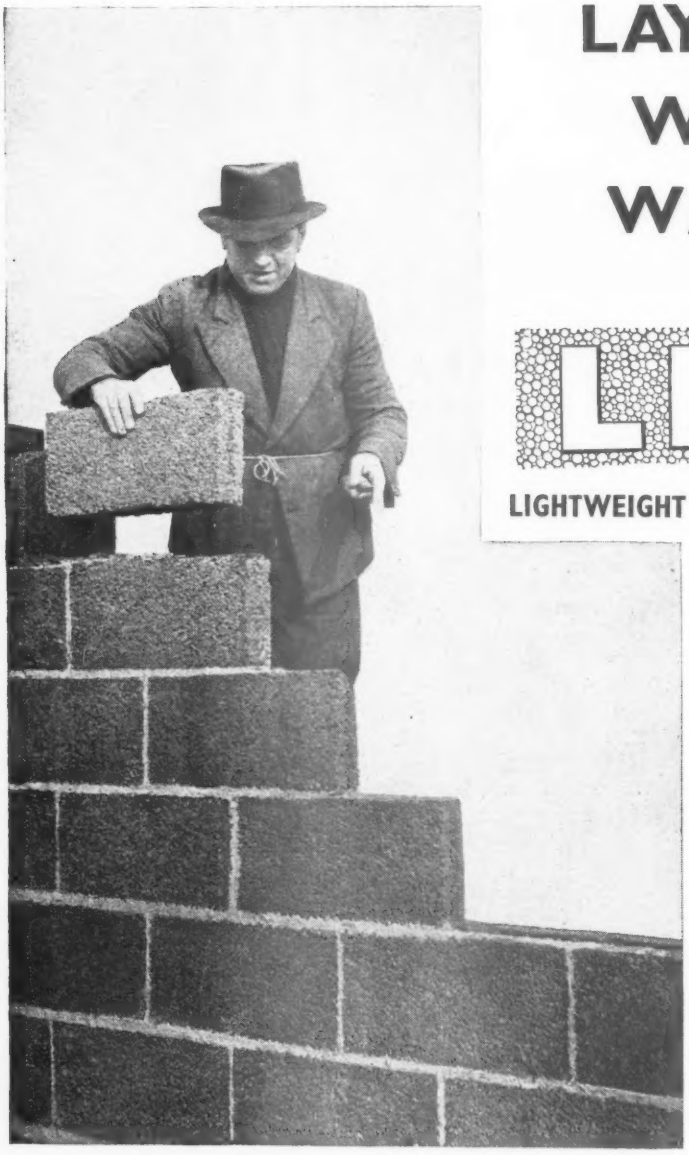

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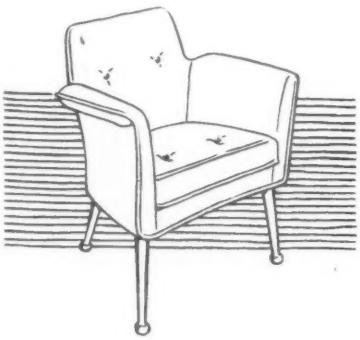

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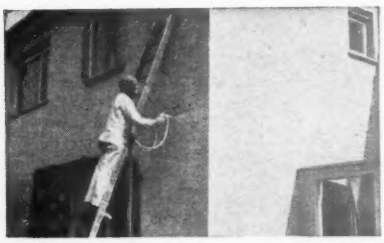

Sealantex Liquid Stone Compound being applied by spray to external walls of housing at Newton Aycliffe New Town.
Architects: Architects Dept., G. A. Goldstraw, B.A., A.R.I.B.A., Chief Architect, Newton Aycliffe Development Corporation.
Painting Contrs.: A. Hector Grabham Ltd., Sunderland.

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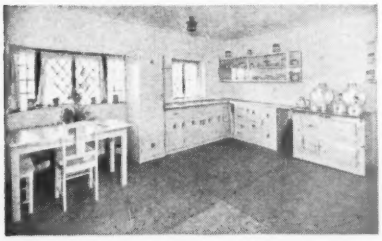
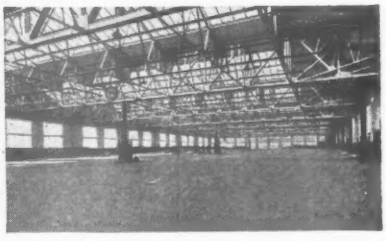


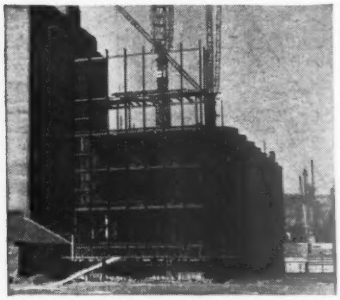
Floor laid incorporating Sealocrete Coloured Cork Flooring Compound, for Chubb & Maxwell (Pty) Ltd., Cape Town (Stockists), in Pavilion "Much Binding in the Marsh" at the Van Riebeeck Festival Fair, 1952, Cape Town, South Africa.

New Esso Refinery, Fawley. For Esso Petroleum Co. Ltd., Sealocrete Metallic Hardener used in concrete floors of the Central Maintenance Building.
Contrs.: Messrs. Foster Wheeler Ltd.

Sealocrete Double Strength Premix Solution and Sealocrete Corrugated Bitumised Waterbar (Prov. Patent) used in the construction of the basement for a block of offices for Messrs. Thomas Hedley & Co. Ltd., Newcastle-on-Tyne.
Architect: S. Burn, Esq.
Contrs: Stephen Easten, Ltd., Newcastle-on-Tyne.



New Bus Garage for City of Birmingham Transport Department at Quinton, Birmingham.
Architects: Messrs. Gately & Parsons, F.R.I.B.A.
Main Contrs.: Messrs. C. Bryant & Son, Ltd. Floors incorporating Sealocrete Metallic Hardener, laid throughout by the Empire Stone Co. Ltd.



National Grain Silo, Victoria Quay, Cork,
Architects: Chillingworth & Levie, South Mall, Cork.
Consultg. Engrs.: O'Connell & Harley, 9 South Mall, Cork.
Contrs.: John Sisk Ltd., Cork. Sealocrete Double Strength Premix Solution incorporated in the mass concrete walls and Sealocrete Corrugated Bitumised Waterbar (Prov. Patent) at each lift of concrete.

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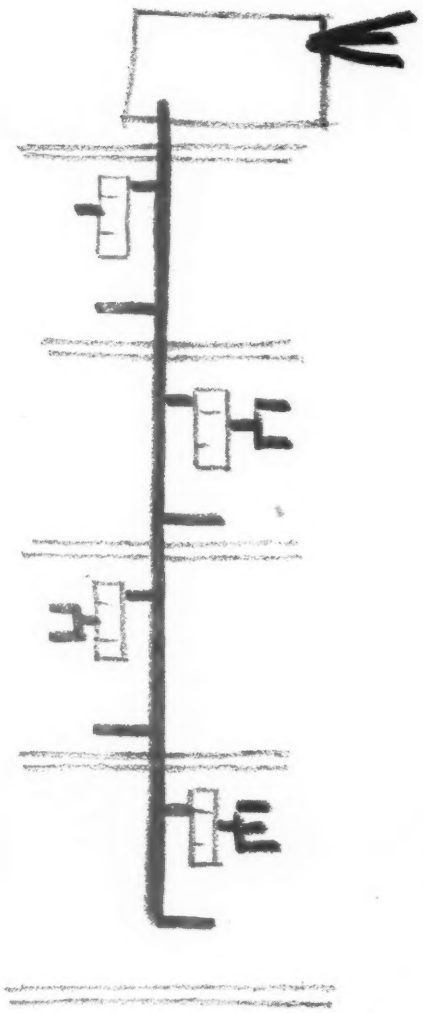

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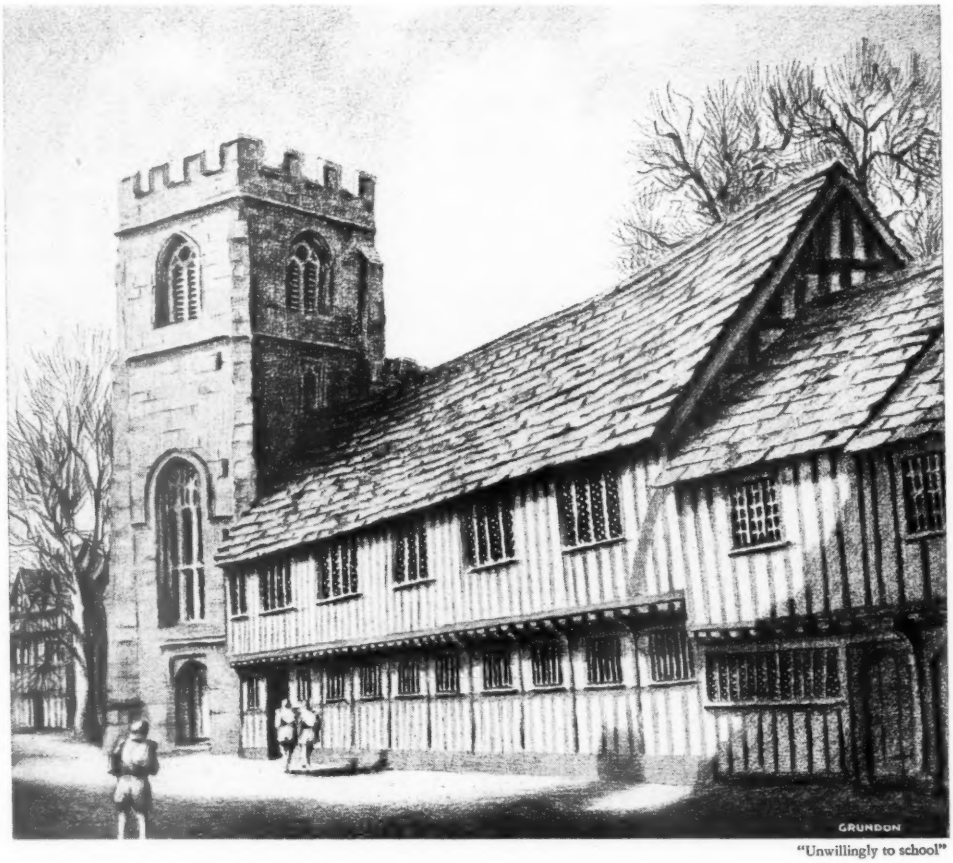

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The Golden Age of Elizabeth I

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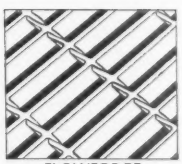
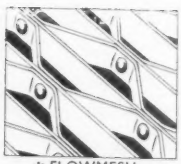
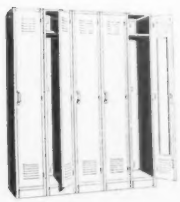
FLOORING SYSTEMS

Put the factory on a sound footing


FLOWFORGE


* FLOWMESH



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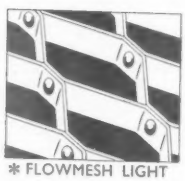
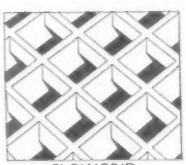
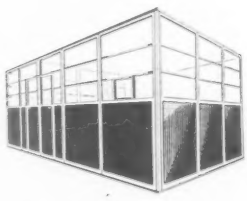

* FLOWMESH LIGHT


FLOWGRID



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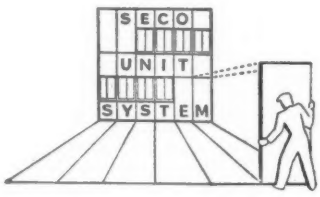
Liverpool Office: 604, Tower Building, Water Street, Liverpool 2. Tel.: CENtral 1170.

Cardiff Office: 10 Dumfries Place. Tel.: Cardiff 29045.

Glasgow Office: 1, Clifton Street, Glasgow C.2. Tel.: Douglas 4297. Also at Belfast and Dublin.

Erith County Grammar School, Belvedere, Kent. *Architect: P. J. B. Harland, F.R.I.B.A.*

BUILDINGS WITHOUT STEEL



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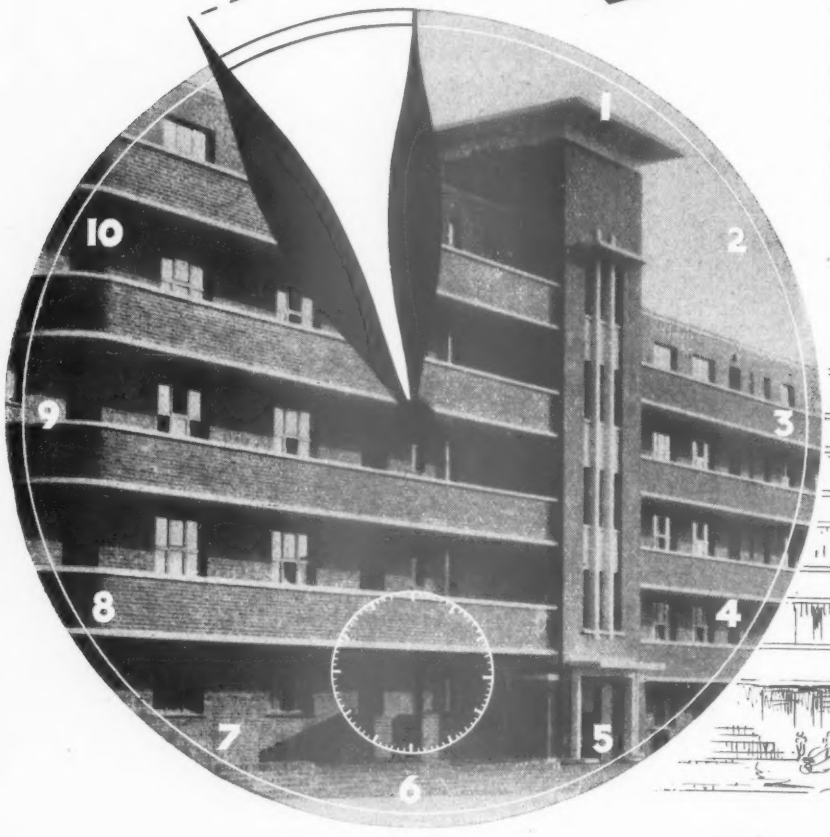

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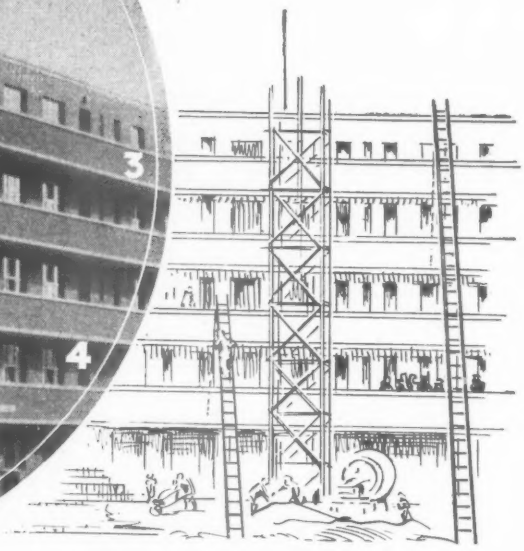

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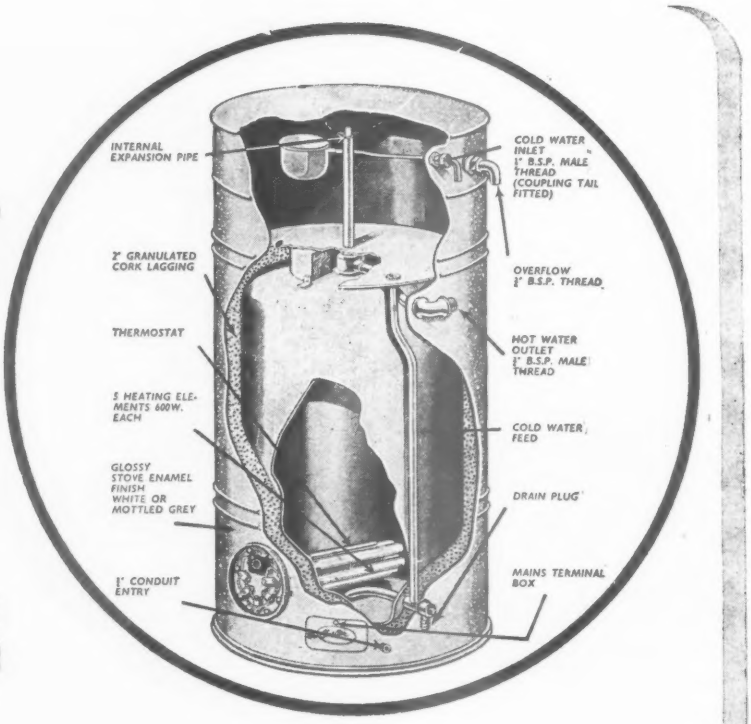

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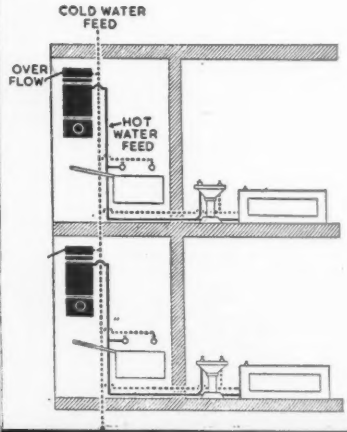

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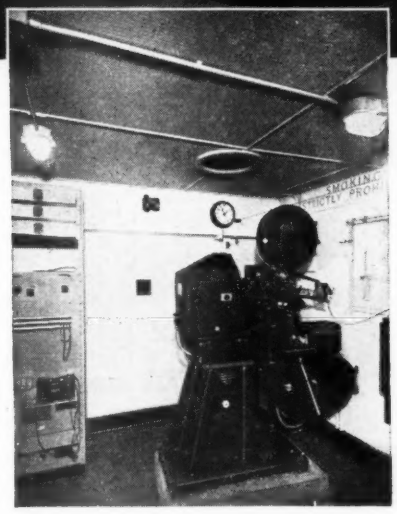

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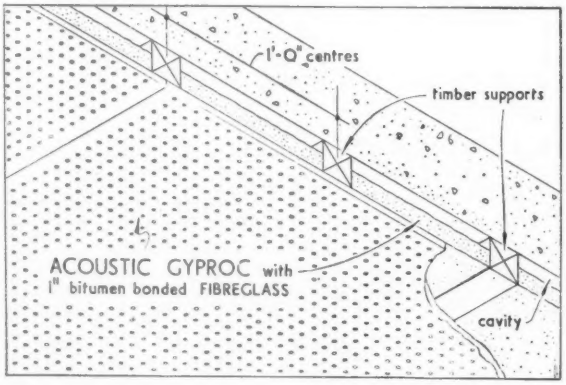

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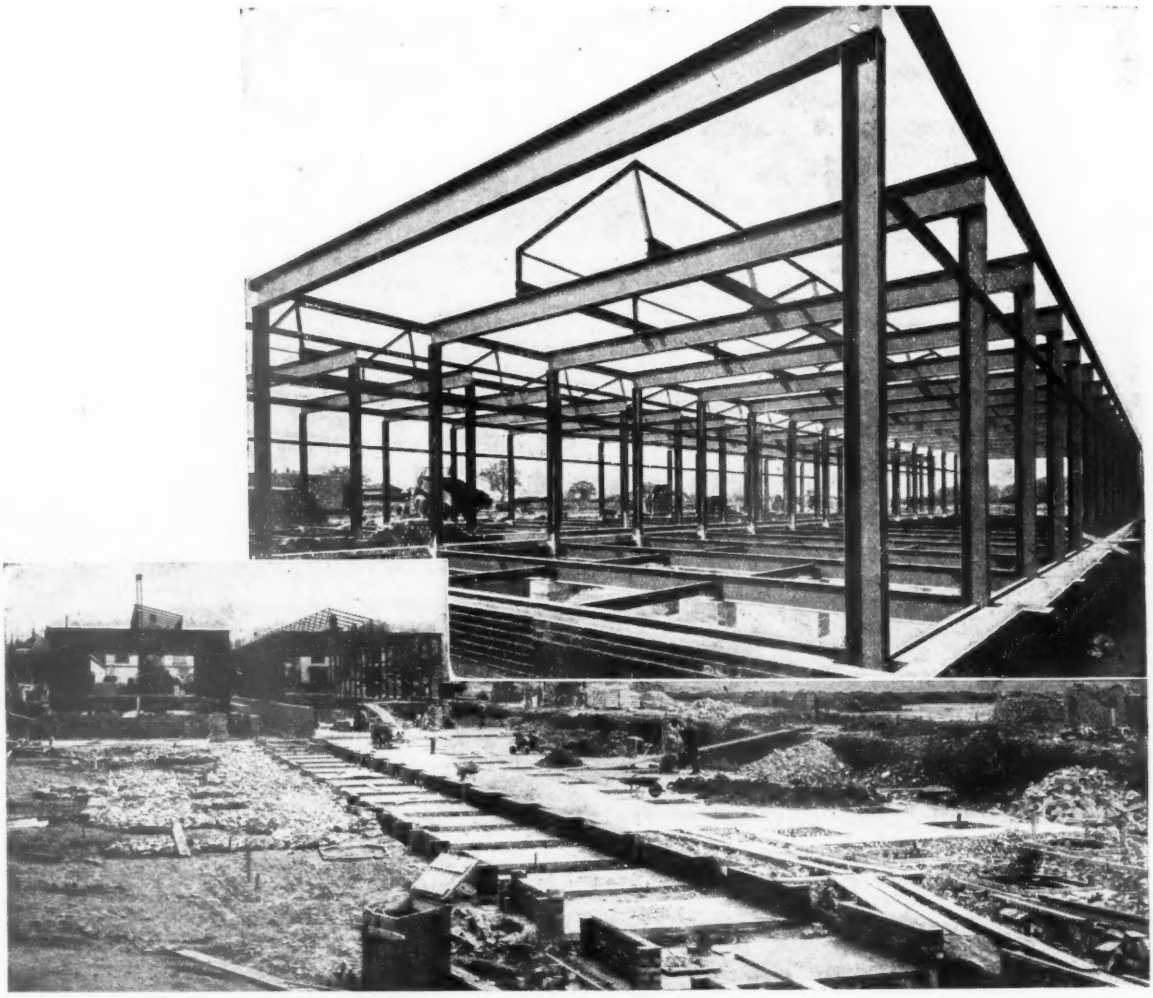
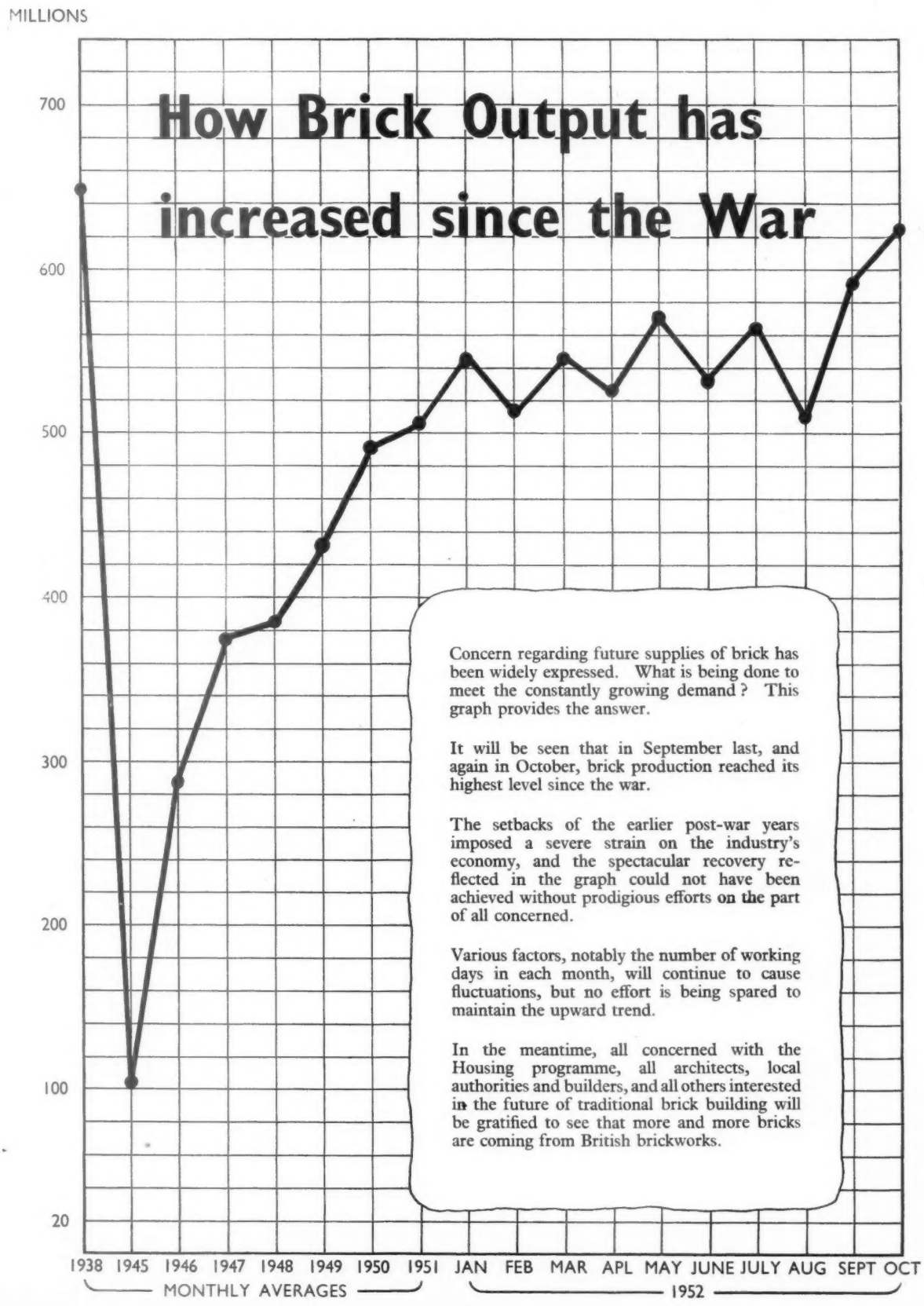


Workshop Block—College of Further Education—work being carried out for the Education Committee of the Grimsby County Borough Council under the supervision of J. V. Oldfield Esq., M.Inst.C.E., Registered Architect, Borough Engineer & Surveyor



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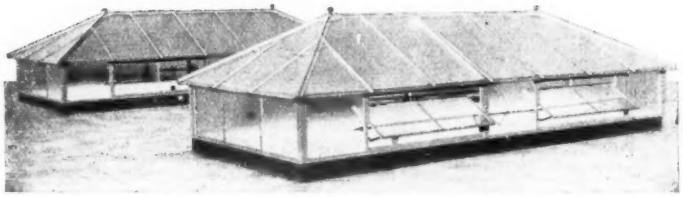

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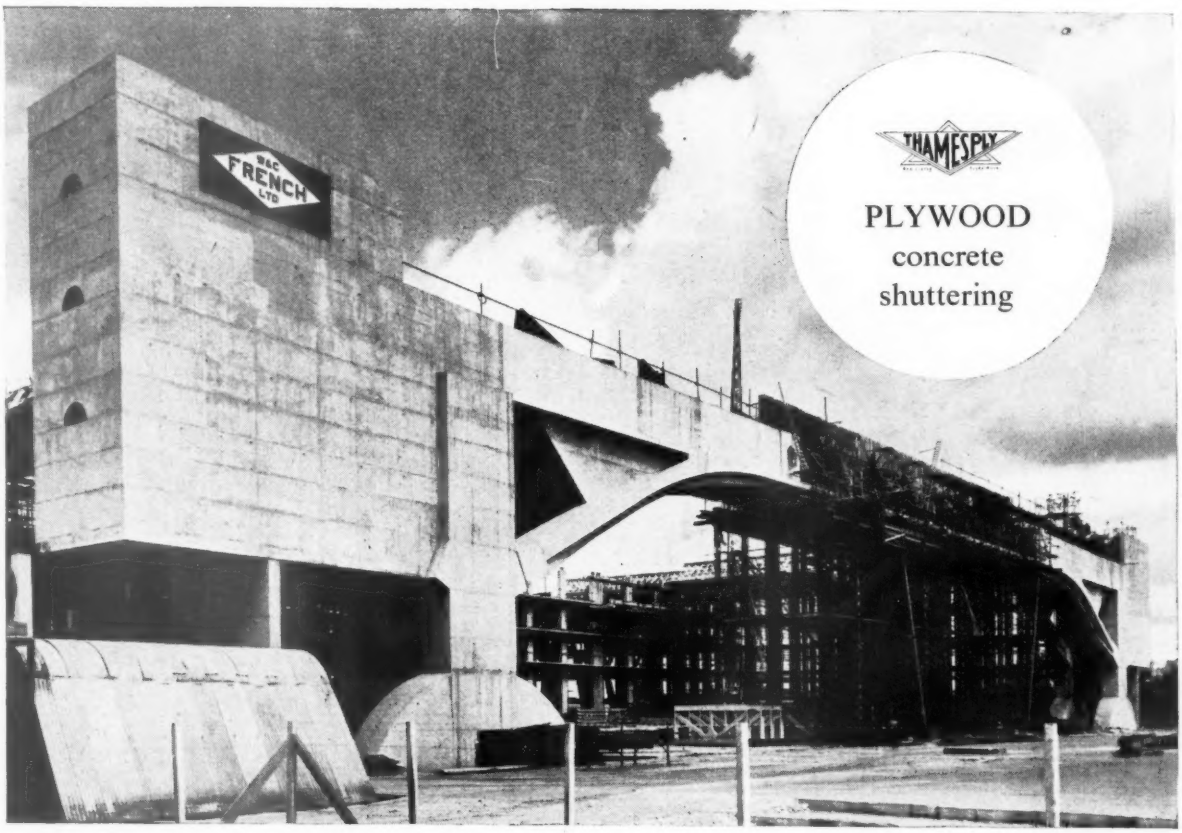

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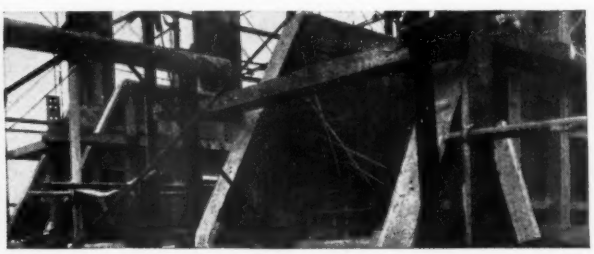

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THE ARCHITECTS' JOURNAL

9, 11 & 13, Queen Anne's Gate, Westminster, London, S.W.1 Whitehall 0611

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TIME-LIFE

Some of you no doubt read Robert Jordan's penetrating whisk-over of the Time-Life building in last week's *Observer*—and several hundred visitors a day—invited or not—have since been trailing round to see for themselves whether Lady Docker has, in fact, been "surpassed," and where exactly the pudding cooked up has "gone soggy" as Jordan suggested. ASTRAGAL has not yet had time to make up his own mind on these points—his first visit was too fleeting—but there were certainly many things about the building's interior that he'd like to see done differently, and a few that he thought hadn't been done often enough. Architects who worked on the project, however, say that Jordan was incorrect in assuming "carte blanche" for all concerned, and in attributing failure partially, at least, to too many gold dollars. Budgets were, in fact, strictly controlled.

*

ASTRAGAL much looks forward to the ICA discussion on the building next March—a meeting which, it is rumoured, will be held in the heart of Dockerland itself. It will no doubt strike as many sparks as those that glitter unrepentantly on the handrail which disturbed the *Observer's* critic.

ONE MORE RIVER TO CROSS

That article, however, raises an issue concerning criticism—or critical tactics—on which I find it equally hard to make up my mind. Does this kind of criticism, in the *public* press, of buildings in which a real effort has been made to do the proper thing, produce more harm than good?

*

As my readers know, I have always been second to none in pleading for more frank and free criticism of current architecture. Its growth is a thing to be welcomed, and we are grateful to Jordan for being one of the few people who offer it to us and to David Astor for giving him a platform in the *Observer*. The problem, as I would summarize it, is this. One: we all want new buildings criticized. Two: editors (and critics) prefer to discuss the more lively and enterprising buildings because more can be said about them that will interest ordinary readers. Three: these tend to be the best buildings.

*

The result is that these are picked on for critical discussion, while the glaring defects of far worse buildings pass without comment. Does this discourage that spirit of enterprise in its clients that architecture so badly needs? I am not saying that other companies will be less inclined in the future to employ the best contemporary designers because of what Jordan said about the Time-Life building. But it might work out like that. What do readers think?

C. H. JAMES

It was distressing to read last week of the death of C. H. James. He will probably be remembered by most people as the designer (with Rowland Pierce) of some of our better municipal buildings—Hertford is, without much doubt, his masterpiece—and will therefore be considered a major exponent of the Anglo-Swedish idiom. But in point of quantity he should surely be remembered as a house-designer who contributed many intelligent, workable and sensitive exercises in Neo-Georgian to Welwyn and to Hampstead Garden Suburb.

*

In addition, as a planner he laid out a number of housing projects in various parts of the country, and also produced (with Pierce again) a rebuilding plan for Norwich which, although it must have looked over-cautious to some of the fire-eaters of the planning trade, made intelligent use of bombed areas to open up vistas and to clear up long-standing problems of circulation. This plan seems to have gone the way of all plans—a few bits have been carried out, the rest quietly shelved—and it looks as if James's monument in a city to which he gave a great deal will be the great brick cliff of the City Hall, Norwich—a building which

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ASTRAGAL is glad to have defended many times in his youth against citizens who attacked it for the wrong reasons.

CIAM COMES ROUND AGAIN

Another CIAM congress is due this year; it is to be held late in July at Aix-en-Provence, a site chosen by the French group (whose turn it is to act as hosts) partly because only twenty miles away lies the magnet that draws all architects: Le Corbusier's *Unité d'Habitation*. At least one day of the congress is to be spent visiting the building, with meetings on the roof.

*

The subject is to be Dwellings and Their Immediate Surroundings. There has been a certain amount of scepticism lately, especially among the younger architects, about the continuing value of CIAM and whether it is not too much concerned with flogging horses that have been dead since the 'thirties —scepticism that ASTRAGAL shares to a certain extent. But it seems that Sert, the president, is very much aware of this too, and is proposing a reorganization of the whole set-up which will make it both more realistic in its methods of working and more in tune with modern needs.

*

Let us hope that Sert gets his way and that CIAM 9, at Aix-en-Provence, will become the first of a series of rejuvenated congresses, instead of the last of a series that has largely survived since the war on the strength of its earlier reputation and the loyalty of its members to those who led the way when it was the spearhead of a revolution.

ARCHROME

Archrome is a word coined by the MOE to describe its range of colours in the forthcoming school building bulletin on colour in schools. David Medd, MOE architect and one of the pioneers in the use of colour in the Herts schools, discussed the design of colour schemes in a talk to the IES last week, which served as an *aperitif* to this bulletin.

*

David Medd is, as might be expected, ahead of most architects—and even of one or two members of the architect-engineer (we're all converted) audience at the IES. For instance—students, boys at the LCC, Herts., and the Top Ten in private practice, etc., skip a bit here—what does 5Y 6/10 mean? You know all about chroma, of course, but how accurate are you in spotting correctly colour values from 1 to 9? When you design a room you study your light sources, and arrangement of wall planes, no doubt, but do you bear in mind at the same time the colours you will be using and the area of each? Do you consider relating reflectivity to quantity of lighting, the correction of colour for morning, mid-day or evening sun, and contrasts of shade and light, and strong and weak colour?

*

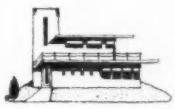
You don't quite follow? Dear, dear, and you're a qualified architect, no doubt. Never mind, you will find all the answers in the MOE Bulletin, Mr. Medd promises. Or will you? ASTRAGAL felt a first tingling sense of apprehension when the inevitable saturnine chap in the back row asked: "Who is Munsell? How do you measure chroma?" No offence to Medd and the boys, of course, but do we really know?

CORB AND CANVEY

As I listened to flood reports, I wondered whether Corbusier, without knowing it, had an answer or two up his sleeve. As a student ASTRAGAL was enthralled by Corb's arguments for "pilotis." Gardens could extend beneath them and they provided people with shade and outdoor space. In some way or other —my memory is a bit hazy here— they reduced the effects of bombs (pre-atomic). But did Corbusier ever think of floods? How many lives might have been saved, how many tragedies of ruined homes avoided if houses on Canvey Island and at other places below high tide level had been raised on pilotis. The experts tell us that it would be uneconomic to build sea defences capable of combating the rare combination of wind and tide which caused the recent devastation. Is it out of the question that new houses built below the danger level should be raised in some way? I believe that along Chiswick Mall and other spots where there is frequent danger of flooding, certain elementary precautions are made in this manner. What do the planners and the economists have to say?

NO PRIZES

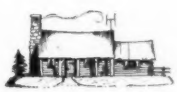
These little sketches of houses come from an article in our contemporary *Homes and Gardens* and represent the possible varieties of English domestic

architecture, *viz.*, Renaissance, Contemporary, Tudor, Regency, Mediæval, Georgian, Victorian Gothic, Continental, Whimsy, Modernistic, Log

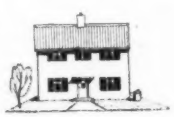
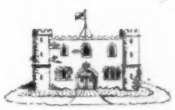

Cabin and Post-war. You might like to while away an idle couple of minutes pairing off the labels with the buildings, and thus proving, among


other things, that you can tell the difference between Contemporary and Modernistic—or even Contemporary and Post-war.

As for the article itself, entitled *The Function of an Architect*, ASTRAGAL does not feel qualified to comment, and will content himself with a quote:


"Some people (the author says) try to do without an architect because they are afraid he will dictate to them and force them to accept a house of a type

they do not like. There *are* architects like this, but they usually discover early in their careers that domestic planning is not their *métier*, and decide to specialize in factories and public buildings."

Chinese Eclecticism

These two photographs exemplify the diversity of architectural style employed by architects of the new China—from the "ninety-per-cent. traditional" of the cultural centre, left, to the "could-have-been-built-anywhere" of the hotel, above. The absence of any single dominating style was one of the features of the architectural scene noted by F. Skinner (of Skinner, Bailey & Lubetkin) during the four-week visit to China from which he has recently returned. Mr. Skinner will be speaking on "An Architect in China" at a meeting at the Conway Small Hall tomorrow (7 p.m.). An illustrated report of this meeting will be published in a forthcoming issue of the JOURNAL.

Few statements, one feels, can have thrown quite such a revealing light on the current state of English architecture, and from now on we shall all look at factories and town halls with a new sympathy and understanding.

THE HIGHER THE FEWER

In his radio talk on Kadleigh & Horsbrugh's High Paddington scheme last week, Professor Holford certainly pulled no punches. With devastating charm and unruffled good humour, he defined the scheme's proportions as monstrous rather than heroic, a substitution of potential top-to-bottom for back-to-back slums.

*

But as his argument developed one sensed that he was really doing a brilliant piece of piloting between the Scylla of the high city boys and the Charybdis of the garden city boys and their suburban jungle. (Crystal clear thinking and masterly exposition are Holford's hallmarks.) He condemned High Paddington, not on sentimental grounds, but because it was unadaptable to changing social needs. He said that "High Rise" apartments (an American term) might well suit the special needs of the few, such as the cliff dwellers of Mies's Lakeshore towers and pointed out that the elite did not reject tenements and the row house (luxury flats and the London Square and terrace are, in fact, just these); they were rejected by the masses. The popular 19th century ideal was the isolated family house; its 20th century realisation is the semi-detached villa. And because these now form a vast and costly suburban slum, Professor Holford sees no reason why they should be replaced by a potentially more inflexible and indestructible one.

*

Does he then reject all high dwelling units? Not exactly, ASTRAGAL sensed, but then the professor did not commit himself. He seemed to suggest that Le Corbusier's *Unité d'Habitation* may give some answers. Above all he argued for moderation and caution. Beyond a certain size, height and density there is a point of no return, a danger of total failure. We do not yet know what this point is. Professor Holford therefore pleads wisely for no extremes.

ASTRAGAL

POINTS FROM THIS ISSUE

Executive Editor: D. A. C. A. Boyne

WHEN DO ARCHITECTS RETIRE?

OLD architects, it is commonly said, never retire, they go on working until they die. Certainly one of the great attributes of the practice of architecture is that while sight and a steady hand endures, a man can pursue the art and perfect his technique during every day he lives. Such is the fascination of the subject that few good, or aspiring, architects would be content to do otherwise.

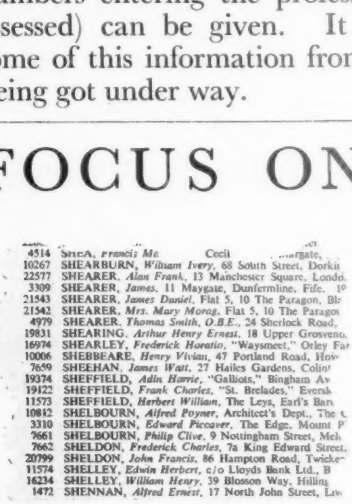
It is perhaps significant, too, that while the competition system gives opportunity to precocity, a considerable number of eminent architects have not begun to make their mark until over, or about, the age of forty—Le Corbusier and Frank Lloyd Wright being two obvious examples. So it might be fair to say that in the recent past, at any rate, architects tend to be late starters, and most reluctant finishers, of their careers.

Inevitably, of course, the physical disabilities of old age reduce the architect's productive capacity—he takes, as senior partner, perhaps a less active role, but love of the art, or maybe economics, keeps him on the strength of the architectural muster, and therefore on the Architects' Register. This may be the reason why the most important *single* cause of the removal of names from the Architects' Register is death and not retirement. Slightly under half the total number of names removed each year from the register is caused by death alone. This is a significant point which arises from the article overleaf by the JOURNAL's Guest Editor for 1953. Professor Ian Bowen is continuing in this issue the study which he commenced last week of the size of the profession. During the year Professor Bowen has undertaken to supervise a detailed survey of the structure of the profession and to try to forecast its future prospects. He is commencing this study by analysing existing facts and figures, and last week he showed the net growth of the profession. This week he goes on to show the rate of withdrawal and next week he will describe the rate of "first registration," i.e., the number of architects registering for the first time each year.

A further task will be to discover the age-structure of the profession. This is essential if the future rate of retirement and death in the profession is to be found. From the bare facts gleaned from a study of past numbers of the Architects' Register, Professor Bowen shows the number of deaths and the *total* number of removals from the register due to the following causes: unprofessional conduct, failure to pay the

annual fee, *voluntary resignation*, and the normal retirement from active life. But, as Professor Bowen points out below, from existing information neither the actual retirement rate, nor the *true* death-rate (both vital figures if the effect of future numbers entering the profession or its actual size are to be assessed) can be given. It is, however, hoped to discover some of this information from a survey of the profession now being got under way.

FOCUS ON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7661 SHELBOURN, *Philip Clive*, 9 Nottingham Street, Mel
7662 SHELDON, *Frederick Charles*, 7a King Edward Street,
20799 SHELDON, *John Francis*, 86 Hampton Road, Twicke
11574 SHELLEY, *Edwin Herbert*, c/o Lloyds Bank Ltd., B
16234 SHELLEY, *William Henry*, 39 Blosson Way, Hillin
1472 SHENNAN, *Alfred Ernest*, 17 North John Street, Liv

YOU

The annual rate of loss from the profession is the second subject which Professor Ian Bowen, the JOURNAL'S *Guest Editor for* 1953, *describes in his first series of articles on the size of the profession. All the statistical work and consultation of sources of information, on which these articles are based, have been done by Martyn Webb, who is now continuing his enquiries for other basic facts relating to the profession. The title piece, above, is reproduced from a page chosen at random from the Architects' Register, and the names have no direct connection with the article.*

Guest Editor:
Professor IAN BOWEN

The Rate of Withdrawals from the Profession

THE total number of architects in the profession was discussed in my first article, and I tried to show that the usual analyses of the changes that have occurred since pre-war were apt to be misleading. The true net increase in the number of architects since pre-war is only of the order of 10 per cent.

In the next article I shall be concerned with the numbers entering the profession each year, that is with the *gross* entry, whereas last week only *net* growth was discussed. The difference is due, of course, to the losses to the profession that occur each year either by death or retirement, or because of the removal of a name from the Architects' Register for some other reason. Perhaps the simplest plan will be to look at these losses in some detail first.

THE REASONS FOR LOSSES AND WITHDRAWALS

Architects' names disappear from the register each year for a number of different reasons, the most important being death and voluntary resignation. The total of these "removals" has varied considerably from year to year, as is strikingly shown in the accompanying graph. In the peak years of 1940 and 1948 removals amounted to 568 and 666 names.

Apart from death and voluntary resignation, a certain number of names are removed each year either for unprofessional conduct or for failure to pay the annual fee. Yet another important category (partly included among some of those already listed) must be the number retiring from active life. But the number of these, however, is not known. The only figures available in regard to death and retirement relate to the death of persons still on the register. Thus neither the retirement rate, nor the *true* death-rate among architects and retired architects as a class can be given.

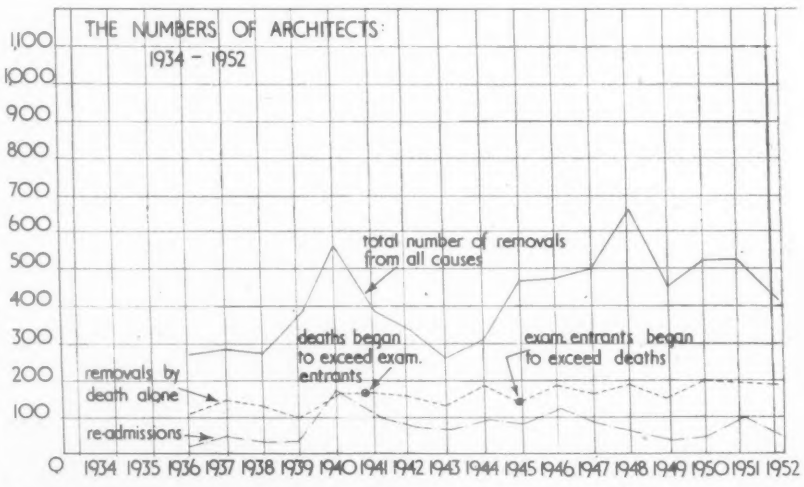
TWO PEAK REMOVALS

The peak in "removals" of 1940 was presumably due to architects leaving the profession to join the forces, or to take up alternative employment. The second peak of 1948 is not so easy to explain. One view is that it was due to a heavy batch of retirements, but a part of the explanation may be that the slowing-down of the building programme in that year drove a rather unusually large number of younger architects out of the profession. There is no direct explanation available.

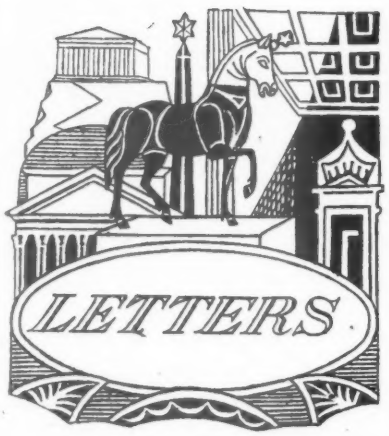
INCREASE IN RE-ADMISSIONS TO THE PROFESSION

One important point about those removals which represent voluntary withdrawal is that this practice creates, to some extent, a pool of persons who can seek re-registration. On average, as is shown on the graph, re-admissions to the register do not much exceed 50 a year, but in some years (for example 1940, 1946 and 1951) re-admissions have been markedly higher.

Next week I will show the rate of entry into the profession, for comparison with the rate of withdrawals.



A graph showing the numbers of architects removed, and the number of architects re-admitted to the Architects' Register in each year from 1936 to 1952. This graph will be reproduced again next week for comparison with a graph (accompanying the third article in the series on the size of the profession) which will show the number of architects registering for the first time in each year.



Peter Hampton, A.R.I.B.A.

Peter Trench

W. W. J. Trollope, A.I.A.A.

Derek A. de-G.-Abbott, Student RIBA

Edward Craven, A.R.I.B.A.

G. V. Yates, A.I.A.S.

State-Controlled Architects

SIR,—We note with interest that we are to have a long overdue investigation into the conditions and prospects of the architectural profession, to be carried out by one who is a leader in his field.

Professor Bowen's task is a difficult one—to assemble pertinent data calls for unlimited patience, but to draw from it accurate conclusions calls for the wisdom and integrity of a judge—and let us admit that such virtues can only be found outside the profession, for what architect looks at his brethren with unbiased interest?

One cannot maintain with justice that those thousand odd architects employed by the state who have exchanged independence for security are still of the same professional standing as those in consulting practices, for with the state as sole client there is no possibility of enterprize: the state organizations by their very structure inhibit other than uninspired compromises. The reason for this is probably that architects are utilized in an advisory capacity, answerable to civil servants with non-technical administrative capabilities only, who either misuse all technical advice or ignore it out of sheer ignorance.

As for those who once came under the description of local authority servants, they are perhaps the most unfortunate of any. The assistance (or interference) so freely given by the state to the local administrations was once a trickle but is now a deluge. And whereas a professional man used to hold a position of undisputed trust and responsibility, he now has to answer to a hoard of administrative ministerial parasites, who swarm around with their inexhaustible supply of meaningless forms, supporting, controlling, referring, deferring, disapproving, inspecting, allocating, and doing all the other things that hamper getting the job done. How then can a local authority servant, unable to act on his own initiative conform to the criterion of professionalism in the face of this rabble directing his very thoughts?

What, then, of the future of those architects ensnared for ever by the ever growing state octopus? They would do well to look to the doctors, and see how they fare now. The respected and loved family GP no longer exists; and the form-filling machine which has taken his place looks on his patients as bread and butter with an NHS number stamped on it. With one single act a noble profession has been wiped out, and instead there exists a body of paid physiological mechanics.

Fortunately for them, however, they had a monopolistic and fast acting society, the BMA which, realizing the changed order of things, turned itself overnight into a closed shop trade union to a watertight industry, and started bargaining for pay and conditions.

The RIBA is neither monopolistic, nor—by its constitution—is it capable of inverting its policy in the same way that the BMA did, and therefore it will be unable to withstand the impact of state absorption of the profession: and if this happens, what then of professional ethics?

It pays the state to introduce dilutees into the learned professions; mediocrity for the many is preferable to specialization for the few, so far as the state is concerned. It is so much easier to deal with a mass of "standard" human beings, and the cost in salaries and administration is less.

This is all too easy to bring about in the profession, where possibly three-quarters of its members are engaged already on state or semi-state projects, and where remuneration by cut scales of fees or by low salary scales has become so much poorer.

It remains to be seen whether the creative calling of architecture is strong enough to survive continued frustration, mean living and debasement of the profession to the level of clerical draughtsmanship.

Let Professor Bowen show us the way out of this depressing morass of indirect control by laymen, and we shall be eternally grateful.

PETER HAMPTON

London.

Building Lessons from the USA

SIR,—ASTRAGAL accuses me (AJ February 5) of being out of step with my fellow employers as a result of my recent reference at the AA to the low status of the building industry in this country by comparison with the USA. He links my reference to the high wage rates of that country to my suggestion that one answer to demands for increased efficiency here is "to get to the position which the Americans have reached." Now ASTRAGAL must know that to place two statements in juxtaposition without elaboration will often result in misinterpretation. He must know too that a book, not a letter, is required to deal with the subject under review. I would, however, like to make the following comments.

The status of an industry is to be judged *inter alia* by the importance of its national role, by the calibre of the people in it, by the public awareness of its efficiency and, of course, by the quality of its product. It is not necessarily judged by its wage rates for, reverting to the USA, if it were, the building industry there would not rank above mining and transportation, which it undoubtedly does.

I am not a wild enthusiast for all things American but I do believe that in our industry there is much we can learn from them. Why is it that the American building industry "attracts the cream of entrants into industry"? (para. 19, section 8 of the Productivity Team's Report on Building). Why is it that the number of applicants waiting to enter it is "so large that considerable discrimination can be exercised in the selection of entrants"? (para. 4, section 8 of the Productivity Team's Report on Building). And this despite the fact that welfare standards fall well below ours and the accident rate is considerably higher. Why is it that in other countries of the world the man in the street is proud of his buildings, knows who designed them and often knows who built them?

It is true that higher earnings increase the attractiveness of an industry. It is true also that in 1949 the building industry of the USA was in danger of pricing itself out of the market. Economic stability has, however, again been reached and that despite the fact that its average earnings exceed the average of manufacturing industries. Is it not possible that its status results from the fact that, apart from being thoroughly efficient from top to bottom, its leaders are of the highest calibre found in the country, its management ranks are filled by college trained technicians assisted by frequent transfers between architects' and contractors' offices, its operatives are recruited from youths who have reached a minimum educational and physical standard and many of whom have continued their general education to the age of seventeen. Is it not possible that the American public realizes the economic importance of the construction industry and are prepared to recognize the place it has made for itself in their national life?

A study of the address given by David Woodbine Parish, from which this correspondence arose, will show how in the line of education the trend of thought is veering in the direction I have indicated. Education apart, however, there are principles involved quite outside the control of one industry, *e.g.*, the National Wage Structure, and the individual attitude towards work. On this latter subject I close this letter with some approximate figures which might give food for thought. Real wages are some 300 per cent. higher in the USA building industry than here. Output per man hour on similar site operations is some 50 per cent. higher and building costs (according to the type of building) from 50 per cent. to 75 per cent. higher. Deductions Mr. ASTRAGAL?

PETER TRENCH

London.

Qualifications Should be Revised

SIR,—We inserted in your JOURNAL an advertisement for an assistant. Of the thirty or so applications resulting, 75 per cent. were from men who had recently qualified as associates after five years in a school. These were rejected at once as unsuitable for as they lack office experience it is not an economic possibility to employ them.

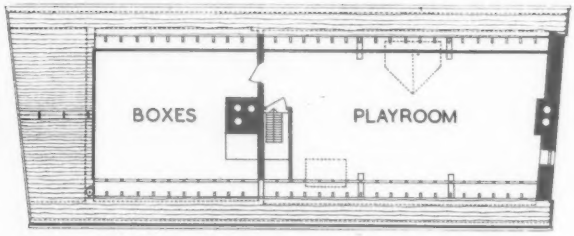
This prompts us to return to a matter which received some attention from your correspondents in November last—namely, the great importance of practical experience and the precise significance, or lack of precise significance, of the designation ARIBA. These young men are entitled to be registered as architects; so far as the public are concerned they are architects, but it will take ten years of practical experience before they are really fitted to act alone. Indeed, although we know that under certain conditions they are capable of passing examinations, we cannot even be certain they will ever become architects in the true sense.

Yet there are many practising architects of an ability not surpassed by many of the fellows who are also styled associates. If designations are to be granted which the public may assume are indications of professional capacity, they are entitled to expect something more than this omnibus classification.

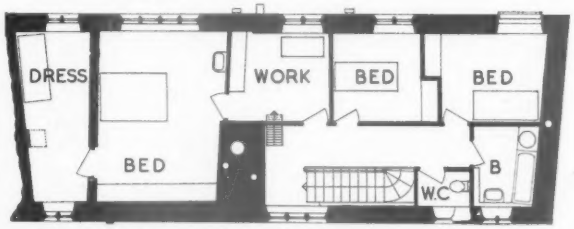
The multiplication of designations is as undesirable as it is unnecessary for a suitable qualification with a little adaptation and

FLOOR-HEATED HOUSE IN GLOUCESTERSHIRE

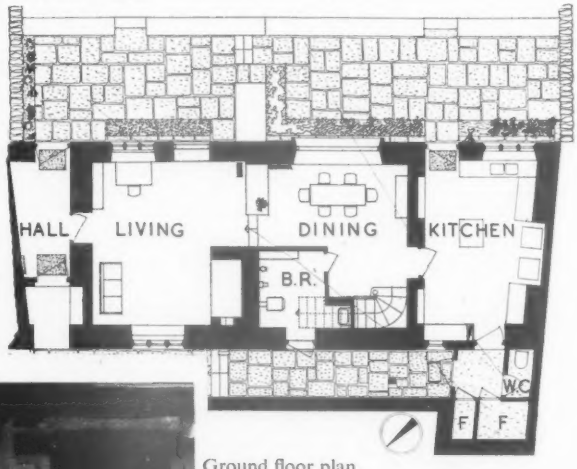
Box Cottage, Blockley, is the first of the houses illustrated in this issue which are heated by floor panels. Its heating system is described in an article on pages 255 to 259. The photograph above shows the garden facade from the south-east, and below is the living room looking towards the dining room. This house was converted from three tumbledown stone cottages; the architects were Notley and Notley. Floor heating is used on the ground floor, which is finished with stone flagging since the behaviour of the wood available at the time of building could not be guaranteed under the action of heat.



Second floor plan



First floor plan [Scale : $\frac{1}{8}$" = 1' 0"]



Ground floor plan

re-orientation lies ready to hand—the licentiateship. All that is needed is to open entry to this class to associates, and to make it understood that in moving into it the associate of tried practical ability is establishing his worth and lifting himself out of confusion with the neophytes.

Qualification for licentiateship should remain precisely as it is at present. Inter alia it should remain open to non-associates, for the thing that matters is that we should have good architects and we cannot afford to restrict their discovery to one source.

The result would be that the licentiateship would be the indication of reliability and the associateship would recede to an importance more commensurate with the standard of attainment of those newly admitted to the classification.

W. W. J. TROLLOPE

London.

Students or Speculators?

SIR,—Today the architectural student is persistently told that the profession is overcrowded, yet the majority of buildings in this country under construction are still not designed by qualified architects.

This position makes the architects registration act a farce. Either the RIBA should press immediately for legislation to bring *all* building under the control of qualified architects, or allow their members to act as building contractors on the lines proposed by Professor Walter Gropius.

Only by adopting one of these two courses can architects effectively bring about the reformation of our environment. The JOURNAL has pointed out the immediate danger of "the return of the worst type of pre-war 'spec.' building."

Enough has been written on the uncontrolled development of the inter-war years. This time we must be certain it does not happen again. Surely one way is to utilize to the full the potential effective strength of the profession?

DEREK A. DE-G.-ABBOTT

London.

Building High

SIR,—May I be allowed to comment on the growing opinion that we must build upwards, if we are to meet the ultimate housing need without undue wastage of agricultural land.

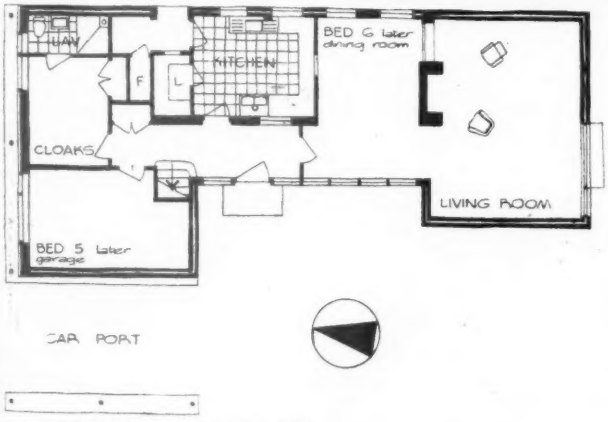
No one will question the excellent technical solutions expressed in Sergei Kadleigh's "High Paddington" scheme, or in Corbusier's flats at Marseilles. But is this all that is necessary? If we are to create living conditions, in which the human body, mind and spirit can grow to full stature, then I suggest we must develop a deeper philosophy and a wider concept of town and country planning.

Few will disagree with the need to conserve agricultural land whenever possible; a viewpoint so well advocated by Professor Dudley Stamp. To place this problem in perspective a re-examination of probable land requirements in the next twenty years is necessary. Professor Stamp made three estimates in a paper he gave to the TPI (see *TPI Journal*—March-April, 1950). I do feel however that his estimates need more critical examination.

In the first place his figure of 53 acres per 1,000 population could I think be amended to 46 acres or even less, without undue lowering of standards. This could be achieved by adopting an average density of 45 persons per net acre, reducing playing fields to an average of 5 acres per 1,000, and by minor savings in other items; while school standards already reduced only equal 4 acres per 1,000. New town standards, so apparently generous, include town centres, a high percentage of land for communications, services and industry; and often some agricultural land within the designated area. By

HOUSE AT RUISLIP, MIDDLESEX

The house at Ruislip illustrated on this page was designed by Harrison and Seel for a client with a large family. Six bedrooms were required, although the house may be easily converted to an orthodox four bedrooms at a later date, by the two ground floor bedrooms being changed to a dining room and garage respectively. A special Ministry dispensation allowed for a floor area



Ground floor plan [Scale: $\frac{1}{8}$" = 1' 0"]

First floor plan

of 1,670 sq. ft. The shape of the plan was mainly dictated by the necessity to get all the accommodation into a rather narrow site and yet retain good aspect to all the rooms. The site faces north-west and the living room was placed at the rear to face south and overlook the garden. The entrance, seen in the photograph left, is approached from a small courtyard on the west side. This centre portion of the house is ultimately intended to be a roof garden with pergola, linking the two roofs together at first floor level. The photograph above is a view from the north-west. The walls are of 11-in. cavity construction, the outer skin of yellow Uxbridge flint bricks and inner skin of clinker blocks. The general contractors were H. F. Siebert (Builders) Ltd.

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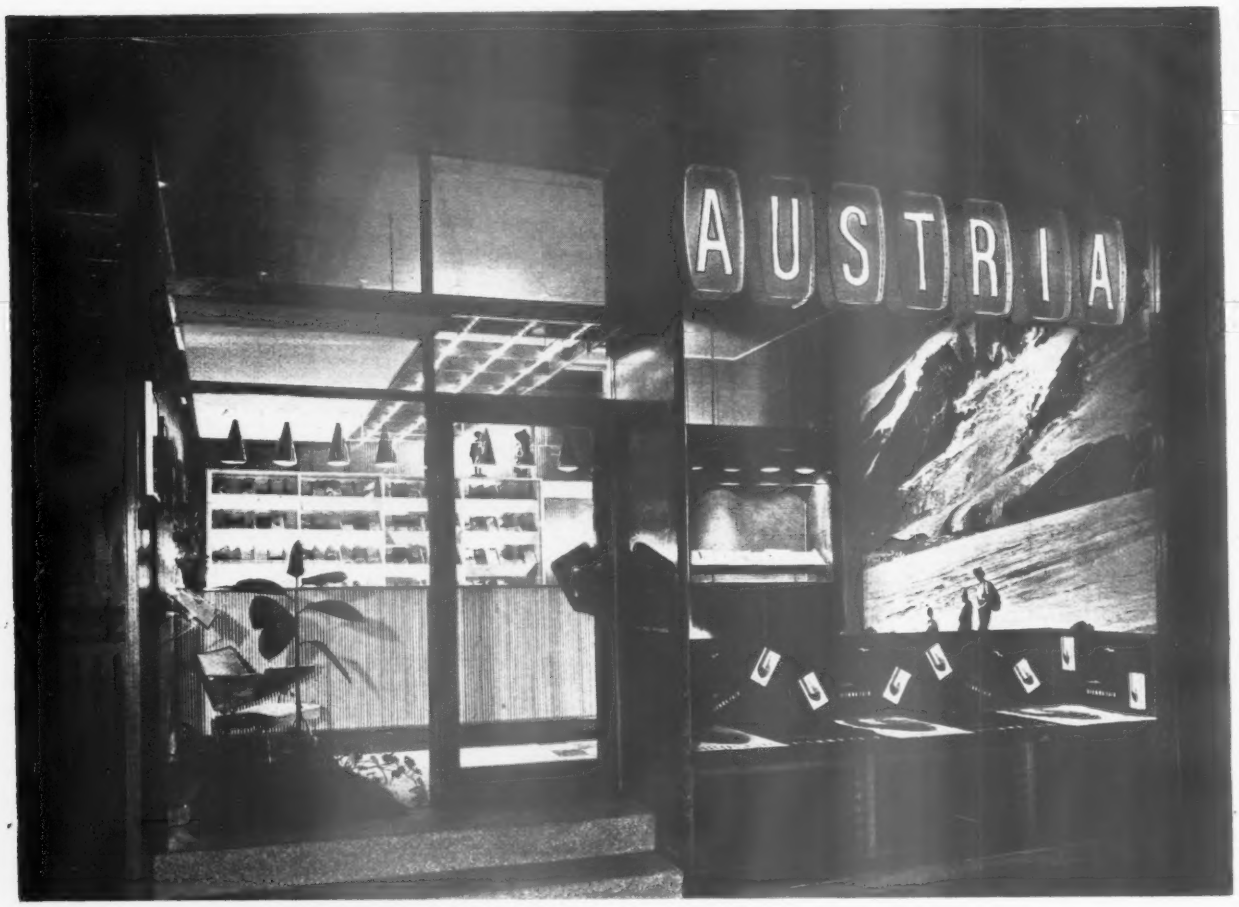
far the greater proportion of development in this country will be as extensions to existing settlements, already provided with these items; and so the low gross densities of the new towns will be unnecessary.

In the second place, even if we accept the *Economist's* estimate (January 7, 1950) that 33 per cent. of houses are obsolete and need replacing, surely one-quarter of these can be rebuilt on cleared sites, leaving only 25 per cent. to be re-accommodated on new sites. This equates with Professor Stamp's third estimate of the amount of housing required. However, instead of using his figure of 53 acres per 1,000 population, the amended figure of 46 acres referred to above would result in a total of 506,000 acres. Add to this Professor Stamp's figures for arterial roads, minerals and reservoirs and we get a round total of 635,000 acres. If a further 100,000 acres for service requirements be added, the final total amounts to 735,000 acres. This appears an alarming figure but it only amounts to 3 per cent. of the total acreage for improved farmland, compared with Professor Stamp's first estimate of over 9 per cent.

Before the agricultural fraternity complain regarding the use of land for development—which in effect is to deny reasonable living conditions to town dwellers—I suggest it should consider if production cannot be increased by other means within its power.

(*a*) For instance, have the claims of the late Sir Albert Howard ever been fully investigated? He and his followers have produced enough scientific evidence of increased production, by using compost and natural manures, to merit a full scale investigation by the Ministry of Agriculture. Howard claimed that we could grow most of our own food in these islands.

AUSTRIAN TRAVEL BUREAU, DOVER STREET, LONDON, W.1



Brian Peake designed this travel bureau (with assistant architects M. E. Woodford and P. A. Sanderson) for the Austrian State Tourist Department. Two contracts were placed: the first (£1,000) for a new ground floor, new walls and piers in the basement and a new staircase, as the original premises were in a poor condition; the second (just under £3,000) for all furniture and fittings on the ground floor. Left: enquiry counter. General contractors: A. E. Franks (contract 1) and Frank W. Clifford Ltd. (contract 2).

(*b*) How many grade (B) or even grade (C) farms are tolerated by local agricultural committees?

(*c*) Walk around any town and note the high proportion of accommodation land not used to capacity. Would not this land be better incorporated in some farm holding, even if not within a ring fence?

Surely there is a strong case for the Minister of Housing and Local Government to carry out the duties with which he is charged under the Minister of Town and Country Planning Act 1943, to "secure consistency and continuity in the framing and execution of a national policy" and to give a strong lead on desirable development standards without delay.

There is no evidence from any housing survey that people prefer flats, no matter how great the amenities provided, if houses are available—even though they be in terraces. Rather do we find everywhere that strong desire for a house and a garden, however small. Huxley's "Brave New World" and Orwell's "1984" may be caricatures of the future but, nevertheless, they do indicate tendencies in modern society which could easily grow. Let us not create physical conditions in which those tendencies could develop more easily. To condemn the individual and his family to High Paddington and similar schemes, will be to take one more step on the road to mass regimentation, and to loss of the individualism so essential to the growth of a free society.

I believe that, as planners, we must think and think hard, before we advocate building upwards, exciting though the architectural possibilities may be. Planning is more than the exercise of the third dimension or the finding of a technical solution.

Finally, may I emphasize what we all know—that planning came into being for the service of man, and not man for the convenience of the planners.

EDWARD CRAVEN

Lincoln.

Wanted: Architect Panels

SIR,—Architects are not sufficiently known by people desiring to have a house built; this fault could partially be remedied by architects forming panels in various districts and submitting the list of names to local authorities who would acquaint the public of this ready facility; fees for this type of work must be drastically reduced.

There will probably be violent reaction to the latter suggestion, but I quote a recent case:—An architect charged £25 for ¼ in. scale drawings of a small detached house; there was no specification so that they are not sufficient as working drawings or for the purpose of obtaining competitive estimates; he asked a further £5 5s. for submission of drawings to local authority and Central Land Board!

I would be very pleased to elaborate my scheme to your correspondents.

G. V. YATES

Bucks.

NEWS

RIBA

News In Brief

The RIBA council has conferred on E. Maxwell Fry the RIBA distinction in Town Planning.

The following have accepted nomination for election as honorary associates:—Sir Leigh Ashton, Sir Ernest Gowers, Eric Gregory and Gordon Russell. And Professor Joseph Plecnik (Jugoslavia) has accepted nomination as an honorary corresponding member.

The following appointments have been made:—*RIBA Representatives on the Architects' Registration Council for* 1953-54. H. Anderson, D. H. Beaty-Pownall, J. T. Castle, L. A. Chackett, Anthony Chitty, Dr. F. F. Curtis, A. G. Sheppard Fidler, R. O. Foster, P. G. Freeman, P. K. Hanton, J. K. Hicks, Cecil Kennard, Howard V. Lobb, E. D. Lyons, E. D. Jefferiss Mathews, S. W. Milburn, T. E. North, Denis Poulton, A. L. Roberts, W. A. Rutter, Ernest Seel, H. G. C. Spencely, R. H. Uren, C. S. White. *RIBA Representatives on Admission Committee, ARCUK for* 1953-54. L. A. Chackett, C. J. Epril, Martin Lidbetter, Denis Poulton. *Ministry of Housing and Local Government Housing Medals* 1953: *Chairmen of Regional Awards Committee.* Region No. 5. London: Sir Charles Mole. Region No. 6. Southern: Colonel R. F. Gutteridge. *Public Works and Municipal Services Congress: RIBA Representative on Executive Committee.* P. F. Burridge (in place of J. Lewis Womersley). *Georgian Group Conference, Cheltenham, March* 23-26, 1953. *RIBA Delegate.* Eric Cole. *RIBA Representative on Codes of Practice Sub-Committees convened by the Institution of Structural Engineers on Prestressed Concrete and Factory-made Precast Reinforced Concrete Components.* L. W. Elliott. *RIBA Representatives on BSI Committees.* (i) *British Standards for Artists' Materials, Conference to consider Formulation of Standards.* Peter Shepheard, Lawrence Wright. (ii) *LBC/18: Laboratory Furniture and Fittings.* C. C. Handisyde, C. W. Sully.

The International Union of Architects is to be invited to hold the fourth assembly and congress in London in the summer or autumn of 1955. If the invitation is accepted the congress will take the place of the British architects' conference in that year.

The RIBA council has approved the agreement made by the Hospitals Committee (in association with the Nuffield Trust) with the MOH for better co-ordination of the study of hospital design and planning. It has been suggested that the Ministry should sift, collate and disseminate the results of research with the help of an advisory group made up of experts in the field of hospital planning.

The Minister of Housing and Local Government, Harold Macmillan, has expressed his appreciation of a suggestion made by the RIBA president, Howard Robertson, that the architectural profession should help "in any action which might be taken regionally or locally in regard to the survey and restoration of obsolescent housing property."

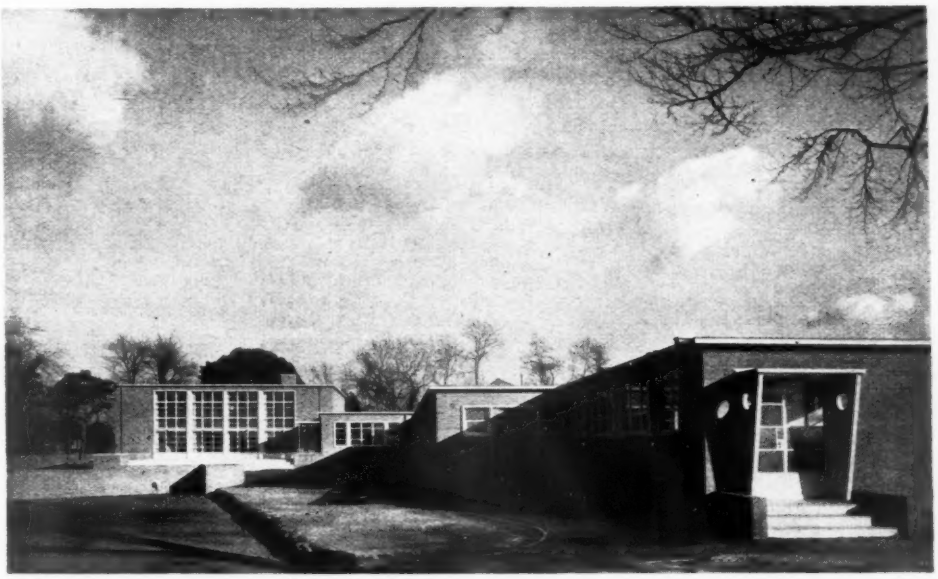
OBITUARY

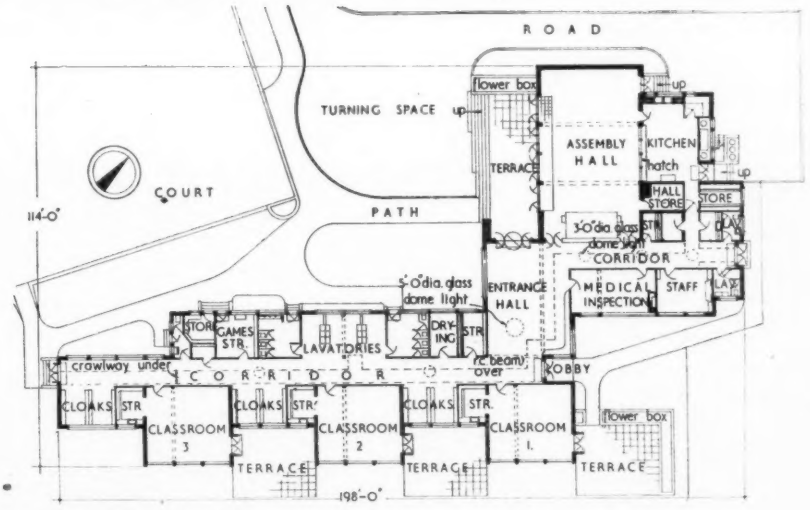
Herbert A. Welch

We regret to report the death, on February 13, of Herbert Arthur Welch, partner in the firm of Welch and Lander and a former member of the RIBA Council.

PRIMARY SCHOOL AT WILLESBOROUGH, KENT

The County Primary school in Church Road, Willesborough, near Ashford, was designed by Jackson and Jackson (assistant architect, E. W. Chandler), in association with S. H. Loweth, County Architect. The photograph right shows the classroom wing and assembly hall on the left, seen from the south-west; below is the entrance hall. The columns are painted red and the floor is asphalt on concrete. Walls are of load-bearing brickwork and roofs are of precast concrete beams and slabs. There are floor heating panels under the assembly hall windows. The general contractors were R. Corben & Son Ltd. For consultants and sub-contractors see page 264.





Plan [Scale: $\frac{1}{32}$" = 1'0"]

An exhibition prepared by the R.I.B.A., entitled "Home and Surroundings," is now open at the Institute's headquarters in Portland Place. It is the first of a series "The Architect and You," which will tour the country on loan to "responsible bodies." The exhibition, which will remain at the R.I.B.A. headquarters until February 28, "illustrates the architects contribution to the particular problems of siting, layout and landscaping at different densities." The screen above—one of thirty—shows a New Town neighbourhood.

COMPETITIONS

The "News Chronicle" House

Architects are invited by the *News Chronicle* to submit designs in competition for one- and two-storey houses (800 to 1,000 sq. ft.).

The assessors will be Louis de Soissons, F.R.I.B.A., Herbert Tayler, F.R.I.B.A., and J. Lewis Womersley, A.R.I.B.A. They will select five designs from the entries and the competitors who submitted them will each receive 150 guineas. A house may be built to one of these designs—or it may be built to a design selected in the layman's section of the *News Chronicle* competition.

Copies of conditions may be had on application to "Open Architectural Competition," *News Chronicle*, Bouverie Street, E.C.4. No deposit is required.

University Buildings for Sheffield

The council of the University of Sheffield invite architects in Great Britain to submit in competition designs for the new University buildings to be erected on sites in Western Bank and adjacent areas which will form part of the University central precincts. The competition will be for a proposed new library and for proposed new buildings for departments of the Faculty of Arts and for Administration.

In addition competitors will be asked to prepare a layout for other departments, so that the library and departments above mentioned will take their proper place in the final design.

The promoters have appointed Sir Percy Thomas, P.P.R.I.B.A., F. R. S. Yorke, F.R.I.B.A., and Gerard Young, J.P., Pro-Chancellor of the University of Sheffield, to act as the assessors.

The premiums will be (1) £5,000; (2) £3,000; (3) £2,000.

Any questions which the competitors wish to ask must be addressed to The Secretary, Architectural Competition, The University, Sheffield 10, on or before March 14, 1953. The deposit of £2 paid by the applicant for these conditions will be returned to him on receipt of a *bona fide* design, or in the event of the applicant declining to compete, on the return of the competition documents at least four weeks before the date for submitting designs.

SCHOOLS

S. A. W. Johnson-Marshall claims schools cheaper than pre-war

"Architects seldom got an opportunity of talking to so many of their important clients at once," said S. A. W. Johnson-Marshall, chief architect to the MOE, addressing teachers, specialists and educators at last month's North of England Education Conference at Newcastle. "At this period of architectural history you are the most important clients we have. You are professionals and you are organized. No other major building user combines these qualities to the same extent and now, when we are doing more building than at any time in our history, you have the opportunity to leave a tremendous legacy of fine building to succeeding generations. The progress you have made since the war is encouraging. In quantity, nearly 1,000 schools have been built. In cost, in real terms, schools are 45 per cent. cheaper than they were in 1949 and are cheaper than they were in 1939. In quality, the general standard has improved considerably. In terms of productivity, output per man month is nearly 5 per cent. higher than the average for the rest of the building industry.

"Perhaps 1949 was the key year. Before it both you and we architects were adjusting ourselves to greatly changed post-war conditions . . . conditions of scarcity in popular building materials, lack of staff, lack of manpower on the site and the new conditions produced by the Education Act. After 1949 this adjustment began to pay dividends, and provided we do not receive any major setbacks, the process should continue.

"Perhaps the two most important factors for success are: a much closer collaboration between the people designing schools and those using them; and proper programming.

"Architecturally collaboration does not stop at the Education Officer being on good terms with his oposite architect number. It means bringing vital and first-hand experience of what you teachers, specialists and educators are trying to do in schools—bringing that experience to bear on the men, perhaps No. 3, 8, or even No. 20, in the large office, who are actually designing the schools. It isn't much use letting those chaps loose to go and find out for themselves, because they will come back with such a conflicting welter of requirements that they will get nowhere. They must be steered by someone high enough up to act as the arbiter when the P.T. specialist clashes head on with the Domestic Subjects adviser in their rival claims for the proper share of those elusive square feet allowed by this Ministry! It is doubtful whether the arbiter can be any less than the Education Officer or his deputy.

"I'll try to sum up some of the characteristics of our good schools:

"(*a*) Grace and spaciousness—achieved by grouping the small as well as large spaces, such as the entrance hall and assembly hall, instead of separating them.

"(*b*) Large windows to look out on pleasant views.

"(*c*) The building does not have the same character everywhere but provides different and exciting environments for different activities.

"(*d*) The design of the building is as simple as the design of the windows, fittings and furniture.

"(*e*) Keep Infants' schools, and if possible Junior schools, small and domestic in scale.

DIARY

Annual Exhibition of Photographs by AA Members. At 36, Bedford Square, W.C.1. Mon. to Fri. 10 a.m.-6 p.m., Sat. 10 a.m.-1 p.m. UNTIL FEBRUARY 20

Home and Surroundings. The first in a series of travelling exhibitions under the general title of *The Architect and You.* At RIBA, 66, Portland Place, W.1. Weekdays: 10 a.m.-7 p.m.; Saturdays: 10 a.m.-5 p.m.

UNTIL FEBRUARY 28

An Architect in China. F. Skinner (see p. 238). Conway Small Hall, Red Lion Square, Southampton Row, W.C.1. 7 p.m. FEBRUARY 20

The Royal Palace at Amsterdam. Miss K. Fremantle. At the Courtauld Institute of Art, 20, Portman Square, W.1. Admission 2s. 5.30 p.m.

FEBRUARY 24

Vertical Versus Horizontal Living. Speakers include Ove Arup and Max Lock. At the AA, 34-36, Bedford Square, W.C.1. 8 p.m.

FEBRUARY 25

Building in the Netherlands. Exhibition at RIBA, 66, Portland Place, W.1. Weekdays: 10 a.m.-7 p.m.; Saturdays: 10 a.m.-5 p.m.

FEBRUARY 25 - MARCH 28

Review of Housing and Neighbourhood Development since the War. Percy Johnson-Marshall. At the Student Planning Group, 28, King Street, W.C.2. 6.30 p.m.

FEBRUARY 26

HOUSE

at 4, ASHLEY CLOSE, WELWYN GARDEN CITY, HERTS.

designed by W. A. ALLEN

Part of living room before extension

Although 4, Ashley Close was built in 1948, and is the first fully floor heated house in Britain, it has recently been extended and forms an interesting example to illustrate the subject of floor heating for private houses, which is discussed fully in an article on pages 255-261 of this issue. The general purpose of the scheme was to see whether floor heating could really free planning completely, so far as draughts were concerned, and also to avoid other troubles which could offset the advantages of open planning.

Living room looking towards the dining space.

Left, the garden facade from the east. In the foreground is the new extension.

HOUSE

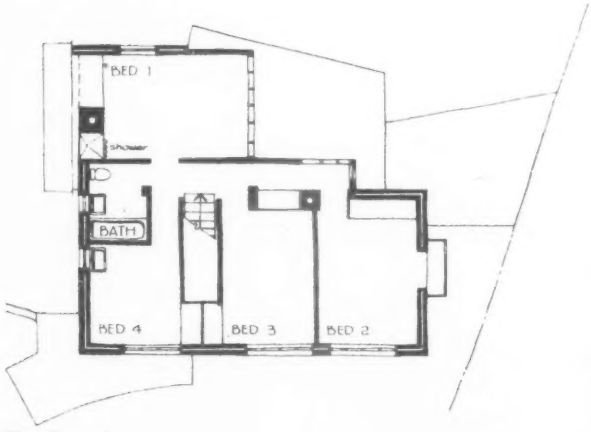
at WELWYN GARDEN CITY, HERTS.

designed by W. A. ALLEN

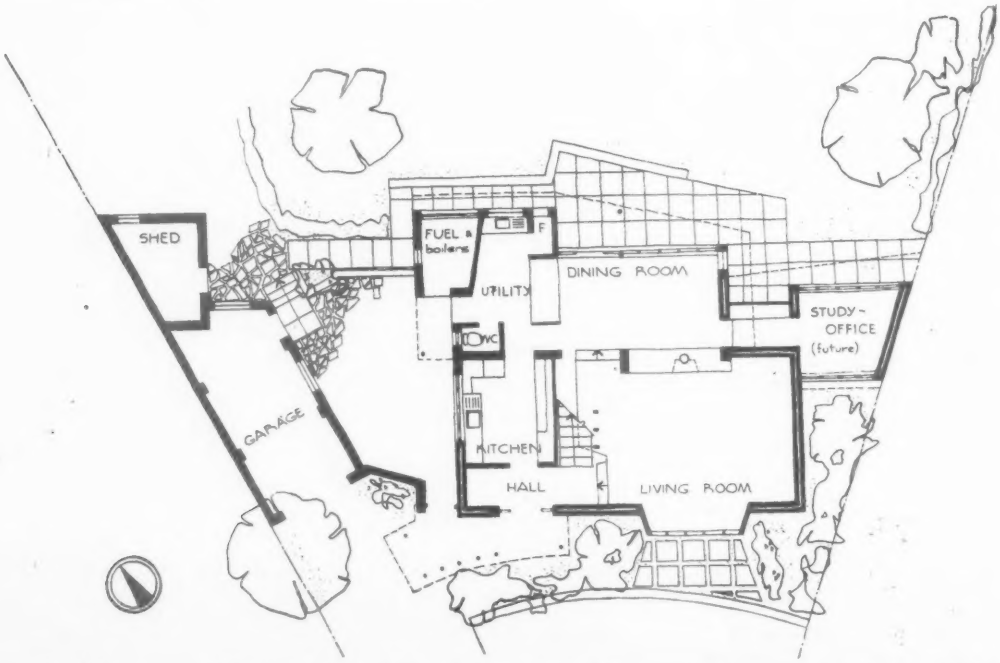
SITE.—The site, which faces south-west towards the house illustrated on pages 250-254, is at the end of the turning circle which completes Ashley Close. The ground slopes southwards, and a change of level of 3 ft. from corner to corner of the house is partly taken up by differences in ground floor level.

PLAN.—The important points to test in open planning combined with floor heating are: first, can stairs be placed in the living area and draughts still kept under control; second, can the front door be sited near the living room, without a draught lobby and third, is there too much noise transmission up and down stairs. In practice it has been found that open planning can be draught free, but that sound absorbents to reduce noise transmission are important and must be carefully placed. The fireplace was built so that in stage 1 of the development, which was only 1,000 sq. ft. in area, there was a view into the garden over the mantelpiece, as seen in the small photograph on page 247, and in stage 2 it serves as a counter dividing living and dining areas.

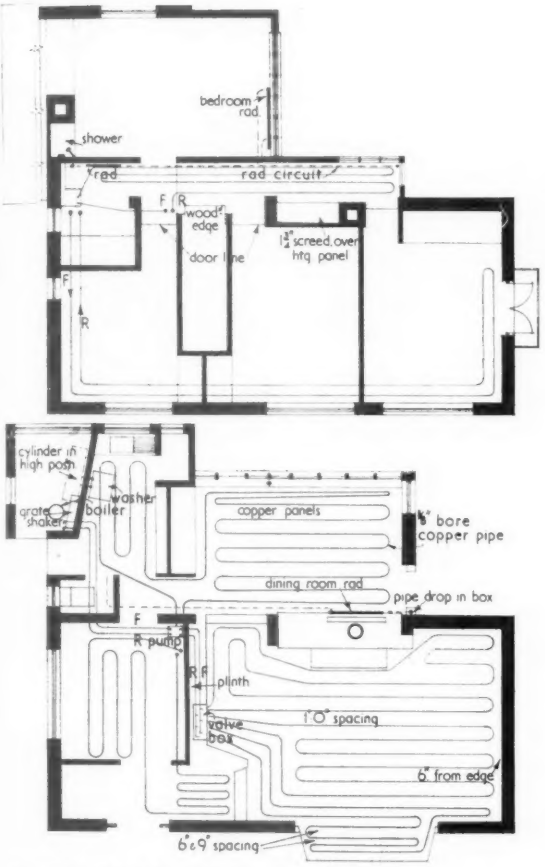
CONSTRUCTION.—Foundations are 10-in. diameter short-bore piles to a depth of 6 to 7 ft. (chosen



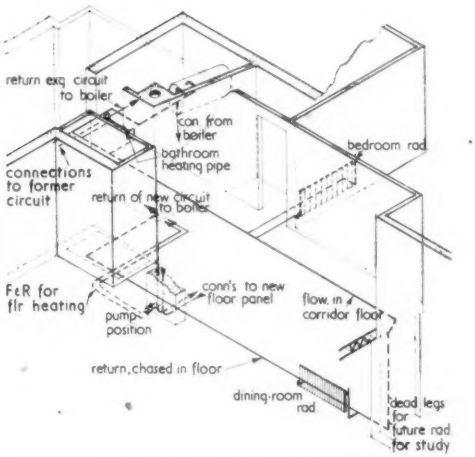
First floor plan



Ground floor plan, the extension consists of dining room, utility, boiler room and bedroom 1. [Scale : $\frac{1}{16}$" = 1' 0"]



Ground and first floor plans showing floor heating layout [Scale : $\frac{1}{16}$" = 1' 0"]



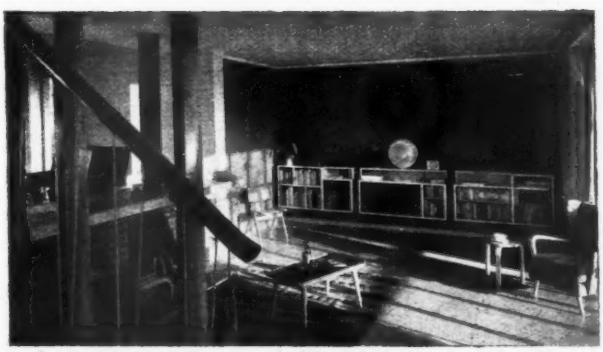
Geometric sketch of radiator pipe layout [Scale : $\frac{1}{16}$" = 1' 0"]

because of the clay soil and for economy) with 9-in. *in situ* beams between, formed by thickening the site concrete and inserting single rod reinforcement. Walls are of cavity construction, the outer skin being brick and the inner skin clinker blocks. The first floor is of lattice steel joists with concrete beams formed in their depth to span between supports, without showing beams. The scissor truss roof helps to avoid the "boxy" appearance of small rectangular bedrooms and reduce overall height. When this house was built there were requests from planning authorities and others for the use of a pitch roof, plain tiles and red brick external walls.

FINISHES.—The floor finishes downstairs, which have proved most successful with floor heating, are quarry tiles and plastic-bonded chipboard. The latter replaced soft plywood, which proved difficult to obtain. The large mantelpiece, 9 ft. by 3 ft., is finished with quarry tiles on a concrete slab. The architect has equipped the kitchen with a lino-covered concrete counter in place of a draining board, as he prefers this to the type of stainless steel draining board available in this country.

SERVICES.—Heating is by pump-circulated floor panels using ¾-in. bore soft copper pipe, supplemented by one radiator downstairs. On the first floor the heating pipes are run in the open web joists and are again supplemented by one radiator. The solid fuel boiler serves heating and domestic hot water. The radio is built-in between living room and kitchen to get good baffle and the magnetic back of the speaker is used to hold kitchen utensils. The general contractors for the extensions were Yeoman & Partners, Ltd. The architects desire to acknowledge the exceptionally interested co-operation of the general contractors on 4 and 8, Ashley Close. For sub-contractors see page 264.

Below, the dining area in the extension. Bottom, the main living area from the hall.



HOUSE

at 8, ASHLEY CLOSE, WELWYN GARDEN CITY, HERTS.

designed by JOHN BICKERDIKE

in association with W. A. ALLEN

This house for a family, consisting of husband and wife and three children, has a very open plan, with large living room areas on the ground floor. The downstairs area is 885 sq. ft. out of a total of 1,500 sq. ft., which is nearly 50% more than the upstairs area. The first floor corridor consists of an open gallery overlooking the main living area. This open planning is ideal for floor heating, which is the subject of an article on pages 255-261 of this week's JOURNAL.

The living room with kitchen on the extreme right.

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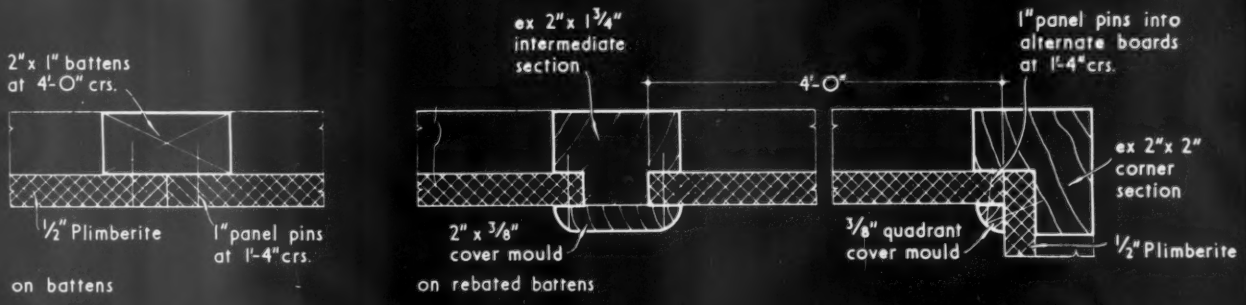
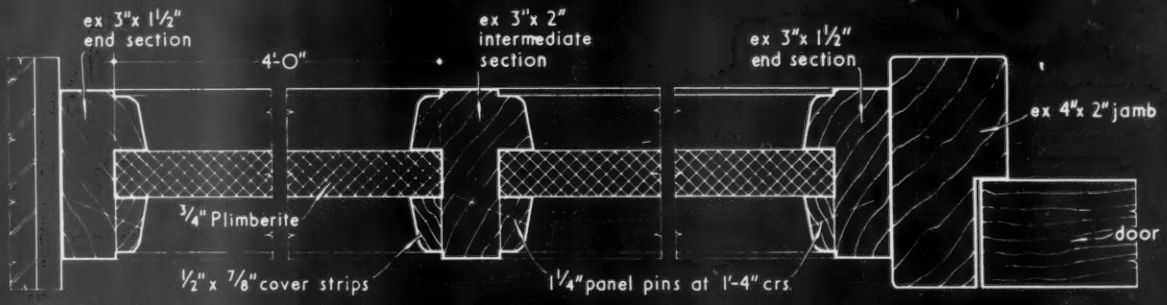
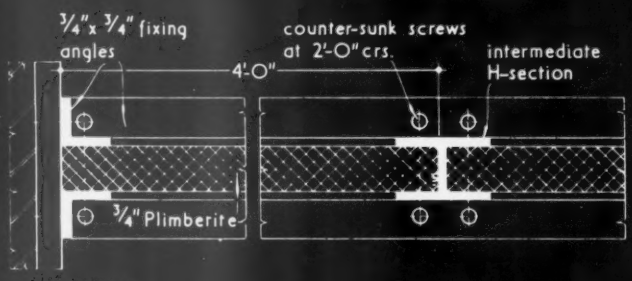
BUILDING BOARD APPLICATIONS

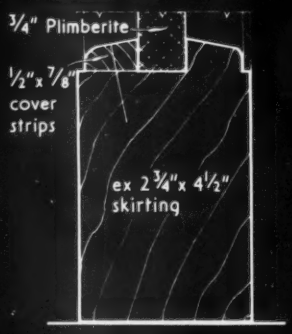
The Architects' Journal Library of Information Sheets 403. Editor: Cotterell Butler, A.R.I.B.A.



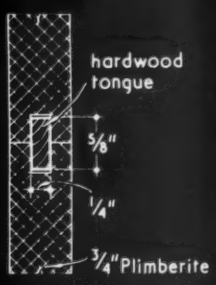
WALL LININGS.



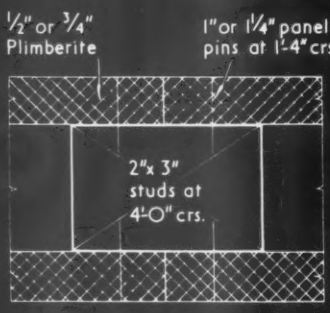


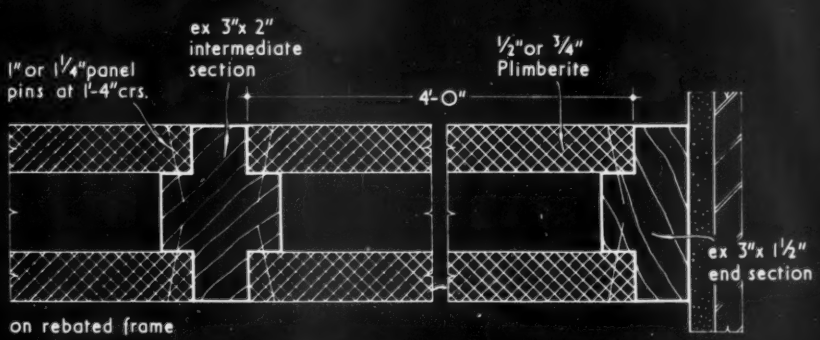


SINGLE-SKIN PARTITIONS.



LOOSE-TONGUE JOINTING.





DOUBLE-SKIN PARTITIONS.

15.C11 · PLIMBERITE · BUILDING BOARD : WALL LINING AND PARTITIONING

This Sheet describes the use of Plimberite building board for wall linings and single- and double-skin partitions and shows typical methods of construction.

General

Plimberite building boards are 8 ft. by 4 ft., and are made in two thicknesses, ½ in. and ¾ in. As a rule, ½-in. Plimberite is used for wall lining and ¾-in. for partitioning. In either case the only timber or metal supporting structure necessary is that for framing the boards all round and holding them in position, as Plimberite boards are rigid and strong ; they are less flexible and more resistant to impact than hardboards or insulation boards. They do not require battening or bracing and labour and materials are therefore considerably reduced. As the boards are not easily damaged, Plimberite linings and partitions can be taken down and re-erected elsewhere if so desired.
Plimberite boards are not subject to movement under normal conditions of humidity (copies of a report on this subject by the Forest Products Research Laboratory are available from the manufacturer). Therefore if the boards are properly sealed and ventilation provided for air spaces (which might otherwise hold damp and so cause the boards or timber to move) there will be no danger of the boards swelling and buckling the framework or shrinking and showing a paint line.

Wall Lining

For lining a wall 2 in. by 1 in. battens, or tee or angle sections machined from 2 in. by 2 in. timber, are mounted on the wall and ½-in. Plimberite boards secured in place with 1 in. panel pins at 1 ft. 4 in. centres.
The reverse side of the boards should be given a coat of priming paint or waterproofing compound or, where there is a danger of mould or dry rot, treated instead with a spirit-bound rotproofing compound in the same way as the woodwork behind the lining.

Single-Skin Partitions

For partitions of this type ¾-in. Plimberite boards are recommended, framed all round in timber or metal H, tee or angle sections. Skirtings, ceiling finishes and glazing present no difficulty, standard sections being used which carry the boards also. The drawings on the face of this Sheet show typical details of construction.

Timber frame : A rebated timber frame takes the boards, which are held in position by cover strips secured with 1½-in. panel pins at 1 ft. 4 in. centres. Sections similar to those shown are used for the finish at the ceiling.

Metal frame : Metal angles, fixed with countersunk screws at 2 ft. centres, are used to secure the boards against the floor, walls and ceiling and H sections provide the intermediate vertical supports. Countersunk screws are also used to hold the boards in the framing.

Double-Skin Partitions

For a partition of great rigidity and high insulation value for heat and sound, two skins of ½-in. or ¾-in. Plimberite can be used. The first detail on the face of the Sheet shows the boards butt-jointed over a 2 in. by 3-in. stud frame and secured with panel pins at 1 ft. 4 in. centres (1 in. long for ½-in. boards and 1¼ in. for ¾-in. boards). The second detail shows a wrot and rebated framing to which the boards are fixed in a similar manner.

Horizontal Joints

For a lining or partition higher than 8 ft., timber or metal sections similar to those for the vertical framing can be used horizontally and panels cut for filling in to the ceiling. For flush horizontal joints in partitioning with ¾-in. Plimberite the edges of the boards may be grooved and a hardwood tongue glued in as shown in the detail. This makes a rigid joint and the machining of the Plimberite (which if desired will be done by the manufacturer) presents no difficulty.

Thermal Insulation

Wall linings : Plimberite has a thermal conductivity (k) of 0·9. Where ½-in. boards are used for lining a 9-in. brick wall, with an air gap of 1 in. between the boards and the brickwork, the overall thermal transmittance (U) of the structure is approximately 0·27, i.e., within the standard required by modern building practice ; it will be even lower if the outside wall is of cavity brickwork.
Partitions : The thermal transmittance of a double-skin partition of ½-in. Plimberite boards with a 2-in. air gap is approximately 0·28. Where ¾-in. boards are used and glass-silk quilt hung in the space between, it becomes 0·12 to 0·16.

Sound Insulation

A single-skin ¾-in. Plimberite partition provides adequate sound insulation for most office and domestic purposes. The mean sound absorption coefficient is 0·20 and the reduction factor 26 decibels. Double-skin partitions give better insulation against air-borne sound and a further improvement can be made by hanging glass-silk quilt in the space between the boards.

Finish

Both sides of the boards can be decorated and notes on decoration and " Specifications for Painting Plimberite " may be obtained from the manufacturer on request.

Further Information

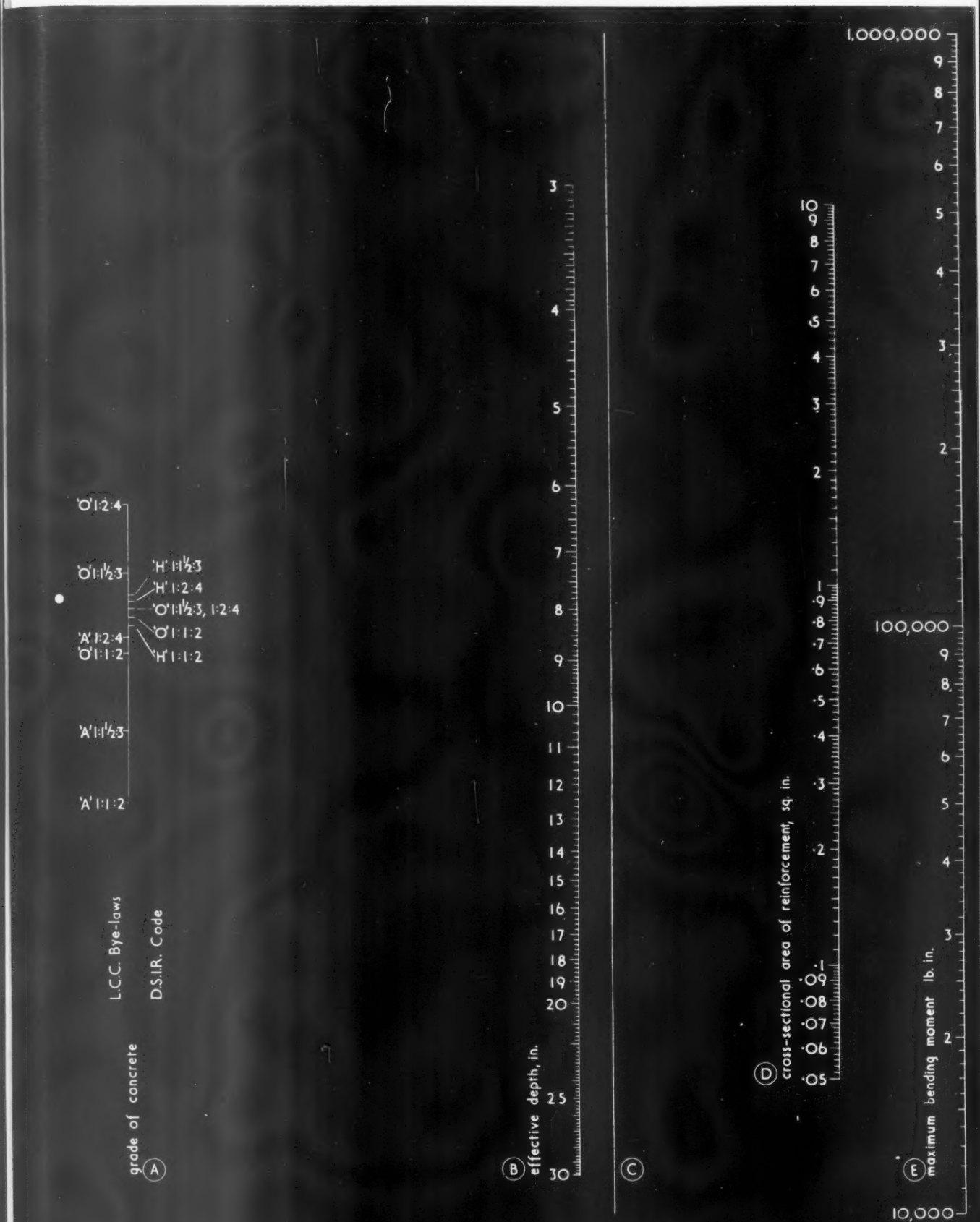
The manufacturer provides a technical advisory service which is available to deal with questions of detail concerning the use of Plimberite.

Compiled from information supplied by :

British Plimber Limited.
Address : 20, Albert Embankment, London, S.E.11.
Telephone : Reliance 4242.

CONCRETE REINFORCED BEAM AND SLAB DESIGN

The Architects' Journal Library of Information Sheets 404. Editor: Cotterell Butler, A.R.I.B.A.



NOMOGRAM FOR REINFORCED CONCRETE BEAM AND SLAB DESIGN 2: AREA OF REINFORCEMENT.

Compiled by Peter Burberry, A.R.I.B.A.

6.A11 NOMOGRAM FOR REINFORCED CONCRETE BEAM AND SLAB DESIGN 2: AREA OF REINFORCEMENT

This Sheet is the second of two giving nomograms which replace some of the mathematical processes required in the calculation of reinforced-concrete beams and slabs. The nomogram on this sheet is used, as described below, to obtain the cross-sectional area of reinforcement required for members of given dimensions. Sheet 6.A10 shows how to obtain suitable sizes for beams and slabs of rectangular section in relation to bending.

Method of Use

Setting 1. Join the appropriate readings on the grade of concrete scale A (see Sheet 6.A10 for descriptive notes) and the effective depth scale B by a line or straight edge. Project to cut the transfer line C.

Setting 2. Join the point found on the transfer line C and the maximum bending moment value on scale E. The reading where the line cuts scale D gives the cross-sectional area of reinforcement required.

Areas of Round Steel Rods

The following table gives cross-sectional areas of mild steel rods to B.S.785 (safe stress in tension 18,000 lb./sq. in.)

Dia. (in.)	Area for various numbers of bars (sq. in.)							
	1	2	3	4	5	6	7	8
¼	0·049	0·098	0·147	0·196	0·246	0·295	0·344	0·393
⅜	0·110	0·221	0·331	0·442	0·552	0·662	0·773	0·883
½	0·196	0·393	0·589	0·785	0·982	1·178	1·374	1·570
⅝	0·307	0·614	0·920	1·227	1·534	1·841	2·148	2·454
¾	0·442	0·884	1·325	1·767	2·209	2·651	3·093	3·534
⅞	0·601	1·203	1·804	2·405	3·007	3·608	4·209	4·810
1	0·785	1·571	2·356	3·142	3·927	4·712	5·498	6·283
1¼	0·994	1·988	2·982	3·976	4·970	5·964	6·958	7·952
1½	1·227	2·454	3·682	4·909	6·136	7·363	8·590	9·818
1¾	1·485	2·970	4·455	5·940	7·425	8·909	10·394	11·879
1½	1·767	3·534	5·301	7·068	8·836	10·603	12·370	14·137

Cover and Spacing of Rods

The following notes relating to the cover and spacing of reinforcing rods are based on extracts from the British Standard Code of Practice C.P.114 : 1948 and Amendment P.D.885, February, 1949.

Cover: The reinforcing rods should be covered by the following thickness of concrete, exclusive of plaster or other decorative finishes :—

(1) At the ends of a rod—not less than 1 in. or less than twice the diameter of the rod.

(2) For longitudinal rods in a beam—not less than 1 in. or less than twice the diameter of the rods.

(3) For tensile, compressive, shear or other rods in a slab—not less than ½ in. or less than the diameter of the rods.

(4) For any other reinforcement—not less than ½ in. or less than the diameter of the rods.

Reinforced concrete work used externally, or in contact with the soil, and internal work exposed to corrosive conditions should have the cover to reinforcing rods increased by ½ in. above the figures given. Where the reinforcement is not round, or twin bars are used, the diameter taken should be that of a circle having an area equivalent to that of the rods used.

Spacing of rods: The distance between parallel reinforcing rods should not be less than the greatest of the three following distances and where possible even greater :—

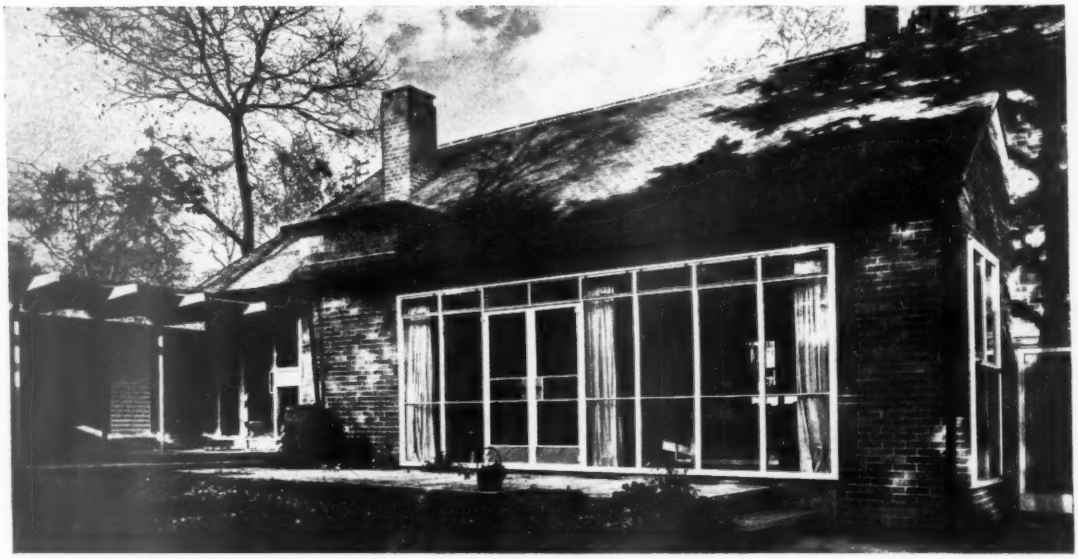
(1) The diameter of the bars if their diameters are equal.

(2) The diameter of the larger bar if their diameters are unequal.

(3) ¼ in. more than the nominal maximum size of coarse aggregate used.

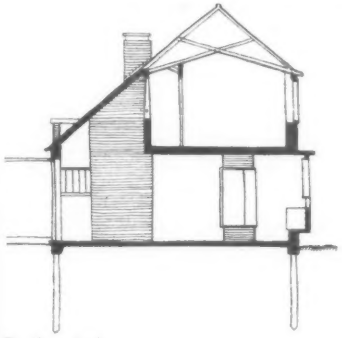
The vertical distance between main horizontal reinforcing rods (or the perpendicular distance between them if they are inclined) should not be less than ½ in., except at a splice or lap or where the rods run transversely to each other. In solid slabs, the pitch of the main bars should not be more than three times and the pitch of distributing bars not more than four times the effective depth of the slab.

In cases where twin rods, or bars which are not round are used, the diameter taken should be that of a circle having an area equivalent to that of the rods used.

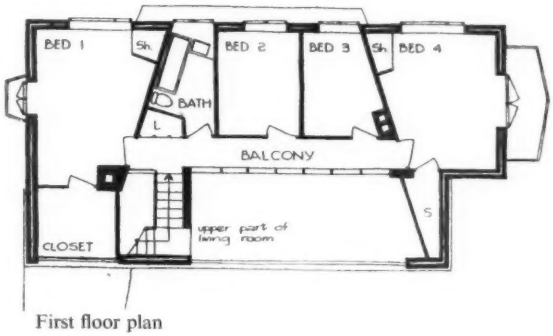


Above, a view from the south, showing the large living room window and the covered way between house and garage on the left.

SITE.—Existing houses in the road are rather poorly related. But the architect for this house has not allowed it to stand in isolation. Its garage will be linked with the future house on the adjacent site to the south-west, and the house is already linked with the existing property to the north.



Section A-A

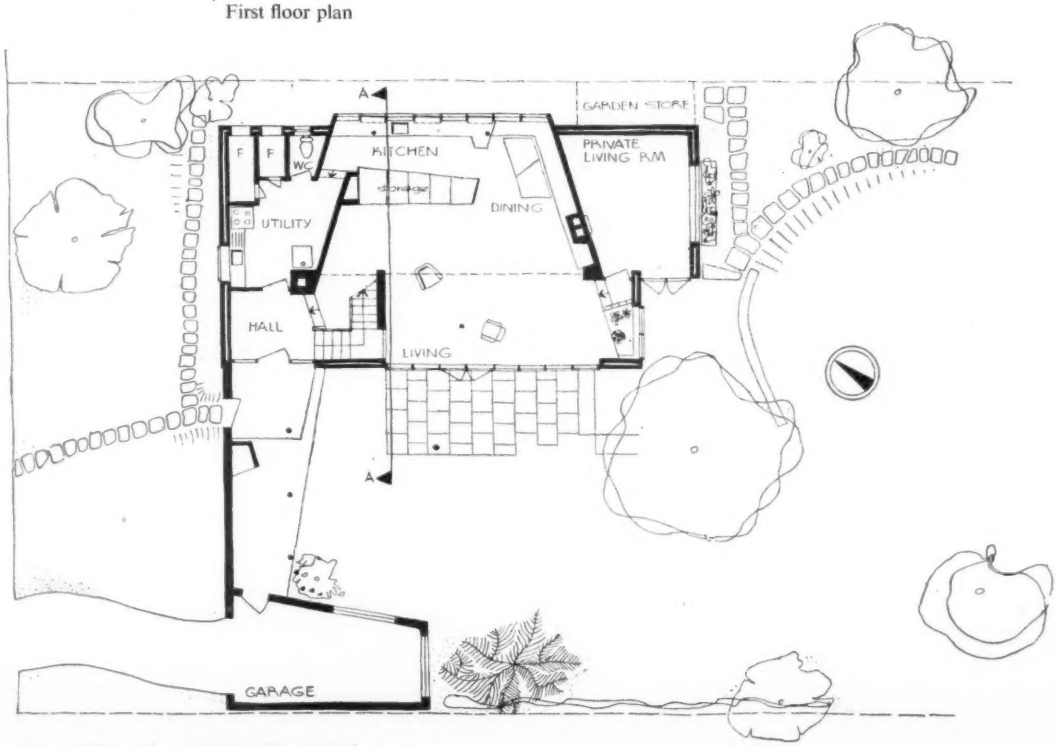


First floor plan

HOUSE

at WELWYN GARDEN CITY, HERTS

designed by JOHN BICKERDIKE



Ground floor plan [Scale : $\frac{1}{16}$" = 1' 0"]

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Above, the indoor garden at the south corner of the main living area. Below, the rear facade from the north. On the left is a store which is linked with the garage of the adjoining house. In the centre is the large kitchen window, three frames of which contain built-in cupboards.

HOUSE

in WELWYN GARDEN CITY, HERTS

designed by JOHN BICKERDIKE

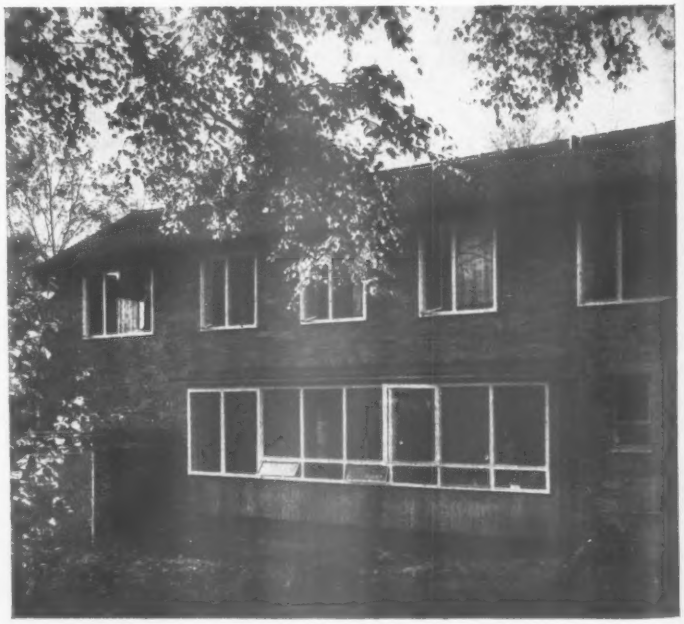
There is a steep fall of ground from north to south and the ground floor of the house is on three levels.

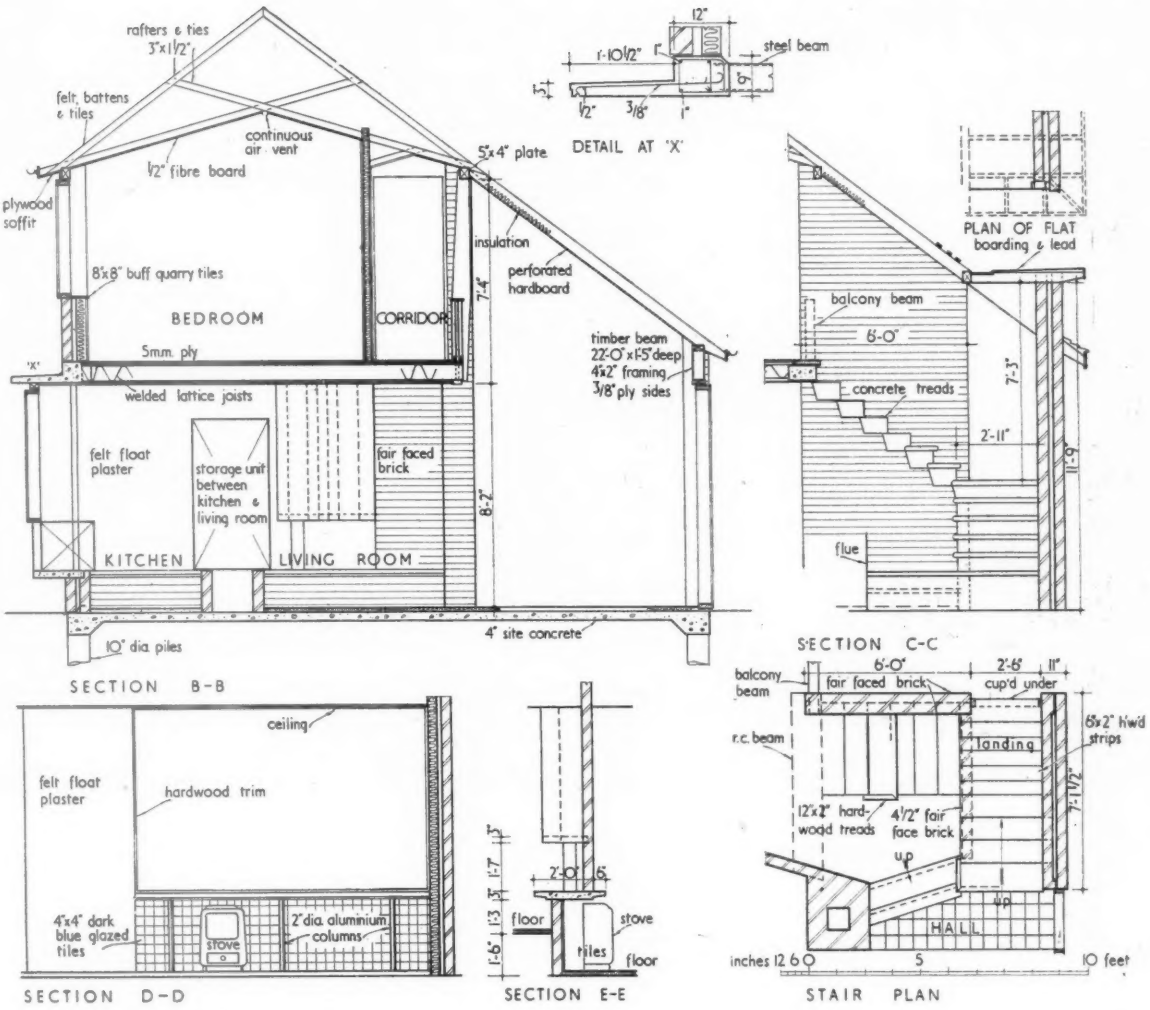
PLAN.—The chief planning problem was to provide a main family room for games, weaving, pottery, parties, etc., and a dining space linked to the kitchen area so that children could have a table for work or play near their mother. The private living room is placed so that no one is tempted to use it as a corridor to the garden and it is intended as a quiet room. There is no back door, but the utility room is used as a way in for children. The covered way between house and garage is also intended to be a garden shelter and faces south.

CONSTRUCTION.—Foundations are of short-bore piles, hand augured. The walls are load bearing, with an outer skin of 4½-in. brickwork, 2-in. cavity and inner skin mainly of 4-in. clinker blocks. The first floor gallery is carried on a lattice steel beam, similar to those commonly used in schools, 3 ft. deep by 20 ft. long. Stair treads are concrete, cantilevered above half-landing level. Roof, over bedrooms, consists of scissor trusses, continuing over the single-storey part of the living room as a lean-to. The ground floor is solid concrete and the first floor lattice steel joists.

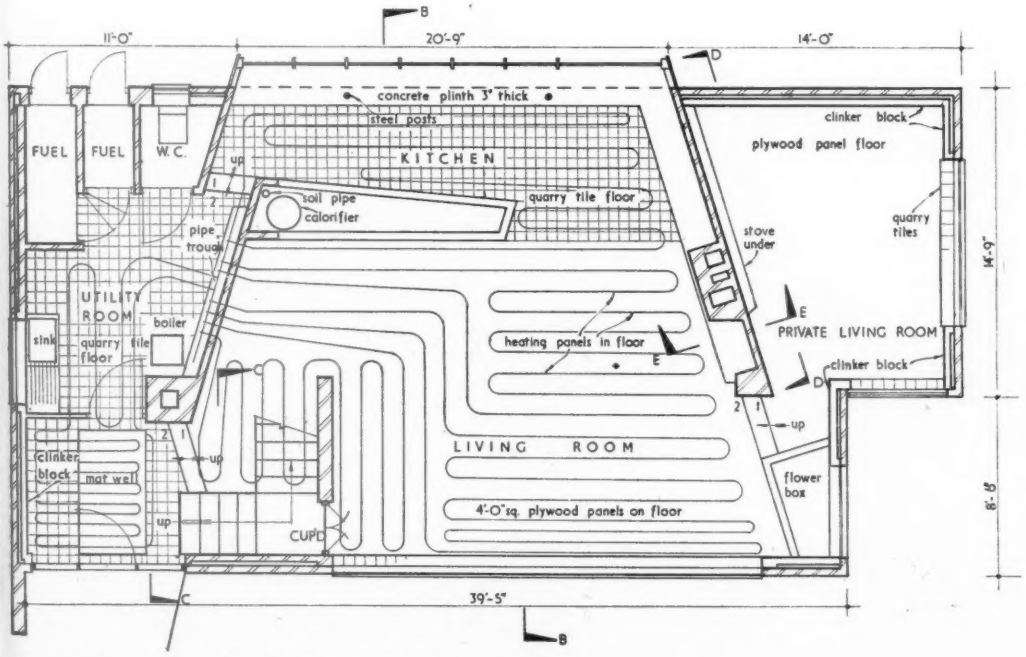
FINISHES.—Walls are of red bricks externally and fair-faced London stocks or plastered internally. Partitions are of 3-in. clinker blocks. Floors are finished with beech plywood squares, 4 ft. by 4 ft. and $\frac{5}{16}$ in. thick, stuck and pinned on to battens and screed. Upstairs these squares are laid on rough boarding. Quarry tiles are used in the kitchen, hall and utility room. Ceilings are plastered insulation board downstairs and exposed insulation board upstairs. Over the main living room the ceiling is of perforated hardboard backed with glass quilt for thermal insulation and sound absorption. The main kitchen unit on the north-east wall contains a sink and electric cooker and rests on a brick plinth 1 ft. 3 in. high. Stair treads finished with hardwood. Windows have purpose-made timber frames with finely tapered sections.

SERVICES.—Ground floor is heated by floor panels of ½-in. mild steel pipes buried in 2-in. thick screed. The water is circulated by pump from a boiler which burns small anthracite. Bedrooms have radiators served by pipes which run in the open-web joists. An immersion heater in the hot water cylin-





Sections and plan of staircase



Ground floor plan showing floor heating layout [Scale : ¼" = 1'0"]

HOUSE

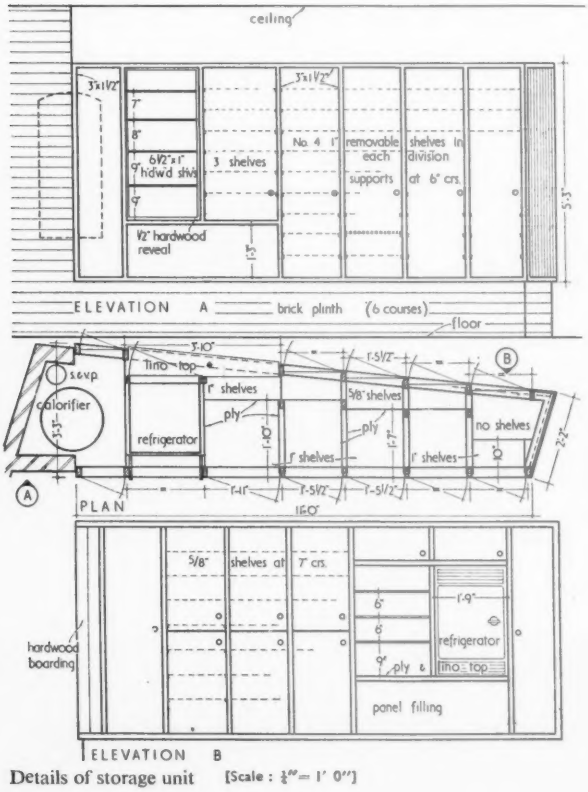
in WELWYN GARDEN CITY, HERTS

designed by JOHN BICKERDIKE

der is for summer use. The open hooded fire in the living room stands on a concrete plinth continued round from the kitchen. The slow combustion stove in the private sitting room stands under this plinth, since this room is 15 in. lower than the main living space. The price, including the garage, was £4,100 approximately. The price per ft. cu. was 3s. 11d. and per ft. sq. 50s.

The general contractors were Yeomans & Partners, Ltd. For sub-contractors see page 264.

Above, storage unit dividing kitchen, on the right, and living area. Below, slow combustion stove in the private living room.



Details of storage unit [Scale : ¼" = 1' 0"]

TECHNICAL SECTION

Open planning is not just an *idée fixe* that certain architects try to impose on the occupants of all the houses they design; it is the environmental framework for a changed mode of living, which, if it ever becomes widespread, may have far-reaching effects on the history of our time.

But the success of open planning (in the home) depends largely on the efficiency of the heating system adopted. Under-floor heating is probably the most suitable form of central heating for use in open-planned houses, and it is, therefore, a most important subject to those architects who believe that open plans have other virtues than that of being photogenic. Following the technical article on domestic floor heating, which commences below, is a short article in which the relationship between floor heating and open planning is discussed and some of the supposed disadvantages of the latter are analysed.

This week's special feature

23 HEATING AND VENTILATION
domestic floor heating

The number preceding the week's special article or survey indicates the appropriate subject heading of the Information Centre to which the article or survey belongs. The complete list of these headings is printed from time-to-time. To each survey is appended a list of recently-published and relevant Information Centre items. Further and earlier information can be found by referring to the index published free each year

The two floor-heated houses illustrated on pages 247-249 *and* 250-254 *have similar heating systems, which are, in turn, similar to the technique used in the house at The Glade, Welwyn Garden City (designed by the Architects Co-operative Partnership) described in the* JOURNAL *for January* 31, 1952. *For this reason, no detailed description is given here. Instead, a very brief outline of the points common to all three is given, and the differences discussed. This is followed by an account of the heating systems of four other floor-heated houses, details of which we received as a result of the request made in the article on domestic floor heating published in the Technical Section for January* 31, 1952.

THE THREE HOUSES AT WELWYN GARDEN CITY

Water for the floor heating is taken direct from the boiler to a shower-bath type valve which reduces its temperature to somewhere in the range 100-120° F. The water is then led to a small pump which forces it through the panel circuit and back to the boiler. The return main is cross-connected to the shower-bath valve to give the latter the cool water necessary to reduce the temperature of the water from the boiler.

The panel circuit starts from a manifold, which is simply a short length of pipe from which the panel feeds are taken, and similarly the return-ends of the panel arrive at another manifold. These manifolds are simply convenient clusterings of the panel ends, and one end of each panel is valved at the

manifold for control. The remote ends of the manifolds can be uncapped to blow any panel clear of an obstruction.

The panels consist of small-bore pipe, $\frac{3}{8}$ in. copper in No. 4 Ashley Close; $\frac{1}{2}$-in steel in No. 8. The steel is cheaper, but not quite so convenient to install.

The panel lengths are similar, so that they all offer equal resistance to, and therefore get equally fed with, the warm water. The average length of the panels is 120 ft.; if they were much longer, they would tend to cool off too much at their farther ends.

DESIGN OF THE PANELS

The pipes are laid about 2 in. below the surface of the screed, and, in the main living areas, about 1 ft. apart. Closer spacings, down to 6-in., are used in corridors, near windows, and in other places where relatively high floor temperatures are acceptable. Wider spacings, up to 15- or 16-in., are used where only background heat is wanted. Thus the "norm" is the living area, and other surface temperatures are controlled simply by varying the pipe spacing.

The pipes are not insulated from the sub-concrete, except for about 2 ft. around the edge of the house, where edge losses can cause serious waste. (Here the pipes and screed lie on a layer of insulation material, and the edge of the screed is insulated.) This probably means that appreciable amounts of heat get stored in the ground, which may contribute to the fact that experience in No. 4 Ashley Close shows that the occupants' heating season substantially ends somewhere in February. A contributory factor is the very evident heat gain in the Spring through the south-facing windows.

The occupants of No. 4 control their pump by switching it on and off by hand—perhaps twice a day. In No. 8 Ashley Close the pump is controlled by a thermostat, as in the house at The Glade.

SUPPLEMENTARY HEATING

In No. 4 the first floor has background floor heating by means of a gravity flow $1\frac{1}{4}$-in. pipe running in the depth of the floor, with a single flow and return run. The joists are of the open-web steel type, so that the pipe can be threaded through them, and the whole floor is readily warmed. But the capacity of the boiler does not permit free enough use of this coil to give full room heating. In the recent extension, a second gravity circuit was introduced to add two radiators—one on the ground floor, one on the first floor. The radiator downstairs had been found desirable because, although the floor warming is highly comfortable, there was a slight tendency in very cold weather for the air indoors to remain a little too cool for absolute sedentary comfort. The placing of a radiator downstairs is a practice the architect now recommends.

In No. 8 the bedrooms are all heated by radiators, and this practice seems on the whole preferable, especially as the flow and return for the radiators provide some floor warming anyway. The distant private sitting room has partial floor heating and a slow-combustion openable stove; it was thought that this room was too distant, and too far below the boiler, to warm solely by floor heating.

As with the house at The Glade, the floor heating provides a high degree of comfort and complete freedom from stuffiness. An open fire is, as usual, found pleasant and, coupled with the otherwise very uniform warmth, the point source of heat adds a desirable degree of contrast. The outstanding feature of comfort is, naturally, the entire freedom from cold feet. Children, with their tendency to play on the floor, find its warmth very gratifying, and there is no danger of chills for them. Altogether, the warm floor gives the occupants a feeling of freedom to move about the house, which is by no means common.

FLOOR FINISHES

Floor finishes for floor heating are always of interest; these houses have several. There are quarry tiles, which are most acceptable when warm; large plywood squares, 4 ft. × 4 ft. and 4 ft. × 8 ft., pinned to battens in the screed and stuck down with synthetic adhesive; wood chip and plastic panels. All these floors are durable and have been found to give good resistance to soiling. The plywood squares seem very good and suffer only limited shrinkage, provided the wood is hard —*e.g.*, beech or birch. The wood chip and plastic panels have been highly successful, although again there has been some tendency to shrinkage.

OTHER FLOOR-HEATED HOUSES

The results of our request for information about other floor-heated houses were very interesting, not so much for the number of schemes submitted (only five were sent in), but because four of these came from Ireland and because the differences in design were much greater than we expected.

SINGLE-STOREY HOUSE IN GORTNAMONEY, N. IRELAND

E. W. Beaumont, of Houston & Beaumont, Belfast, submitted details of a single-storey house he designed for himself (plan, Fig. 1), in which the floor heating, though similar in principle, is carried very much beyond the stage reached in the scheme for the house at The Glade, particularly in respect of the degree to which it is automatic. The key diagram (Fig. 2) shows how sensitively it has been worked out. Briefly the exceptional features are:

(*a*) a pilot outside which can override the normal setting of the regulator thermostat for floor panels and allow it to operate at a lower temperature when the outside temperature rises;

(*b*) a continuous-running pump, with an automatic mixing valve controlled by a thermostat;

(*c*) separate control for living room and study, which, by orientation and double-glazing, gain more from solar heating than the other rooms;

(*d*) automatically-stoked boiler, with the stoker controlled by the demand for hot water.

The heating engineer was J. R. W. Murland, of Belfast.

Circuit and General Design

Hot water is taken from the boiler to an indirect cylinder for domestic hot water and through a mixing valve and a continuous-running pump to the floor panels for heating purposes. In this house, however, the mixing valve is controlled by a regulator thermostat in the heating return, which automatically opens and closes the mixing valve regulating the amounts of hot water, (i) from the boiler and (ii) re-circulating through the bye-pass, to balance the heating input with the heat loss from the house. The regulator thermostat is electrically connected through a calibrator box to an outside pilot, which is responsive to the external factors which determine the heat loss from a building—temperature, wind, rain, and sun. The pilot, through the calibrator box, over-rides the normal setting of the regulator thermostat and allows it to operate at a lower temperature as the heat demand falls below the maximum, following an increase in the outside temperature.

Boiler and Stoker

The boiler is fired by an automatic underfeed stoker, which is controlled by an immersion thermostat in the return pipe of the domestic hot water secondary circulation. Again, the water is circulated by an electric pump which is never switched off. The stoker feed screw and blower are automatically brought into action whenever the temperature of the water falls below that at which the thermostat is set, and for a predetermined period during every hour, by an over-riding electrical timing device. This prevents the fire from going out when the heat loss from the house is so small that the stoker would not be brought into action by the thermostat.

The Panels

The panels are of $\frac{3}{4}$-in. or 1-in. black iron pipe, welded together and connected to the main flow and return, which is $1\frac{1}{4}$-in., reduced to 1-in. part of the way along. Pipes are laid at varying centres, from 8-in., in the living room and main bedroom, to $10\frac{1}{2}$-in. in the study bedroom, and 13-in. in the kitchen. The panels vary considerably in length also, according to heat loss due to windows and the conductance of the floor finish and covering.

To prevent some panels running cold each circuit has a butterfly regulating valve, under a small access panel in the floor. Also under this panel is an air

vent to permit the release of air locks. In the dining room, there is also a coil of 2-in. pipe above the floor, under a built-in seat beneath the window.

The panels are placed in the centre of the 4-in. site concrete, under which is a 4-in. layer of vermiculite concrete, except in the kitchen where the difficulty is to get rid of heat rather than conserve it—here the pipes are laid directly on hardcore. The panels in the living room and study have a separate thermostatic control, which is electrically connected to a motorized valve on the branch feeding these two panels. The object of this is to regulate separately the flow of heat to these two rooms which face south and have insulated double-glazing and, therefore, become much warmer than the other rooms, whose smaller windows face east and west. The thermostat is set at 65° F. and several times during a warm day in March the motorized valve was closed off for some time, completely cutting off the flow of heat to the living room and study. There is a fireplace in the living room. The thermostatic control of the heating panels in the living room regulates the temperature when this fire is alight, without causing any reduction of heat to other rooms.

The flow temperature immediately above the mixing valve varies from 110 to 150° F., according to the weather conditions, and the air temperature is kept fairly steadily between 60 and 65° F., except in the bedrooms at night, where, with windows open, it drops somewhat, but quickly rises again to comfort conditions after the windows have been closed for a few minutes in the morning.

The Controls

In the coldest weather the stoker control is left on the day position all night, but, when the outside temperature gets above 36° F., the night control is used for economy and, in this case, the general temperature drops below the comfort level but soon recovers in the morning. Except in very cold weather, the stoker control is set to cut out at 125-130° F., which gives an ample supply of hot water in the return domestic pipe. In very cold weather this has to be increased to get water hot enough to allow the flow in the heating circuit to get up to 150° F. above the boiler.

(The control equipment is manufactured by the Rheostatic Co. Ltd.)

The above description gives some idea of the exceptional arrangements made to deal with every conceivable thermal eventuality. It must be a remarkable mechanism.

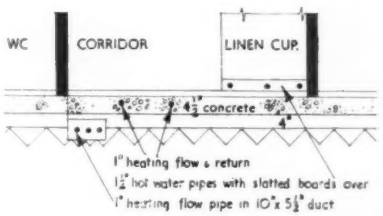
HOUSE AT DONAGHADEE, N. IRELAND

A second scheme from Northern Ireland—actually built before the other—was developed in the opposite direction—away from mechanization and towards simplicity, for it relies upon gravity instead of a pump for circulation. This is an extremely interesting development, particularly as it is used successfully in a single-storey house, where it cannot rely on a second storey to add to the gravity effect. Some help was obtained, however, by sinking the boiler house 3 ft. below the general floor level.

The salient features of the system are:

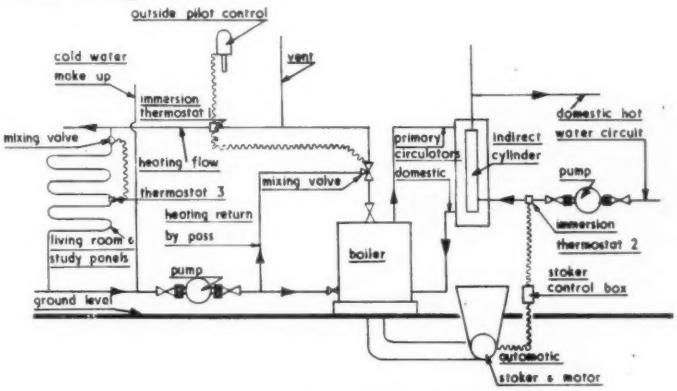
(*a*) flow mains rise to the roof space and then drop to floor level in each room;

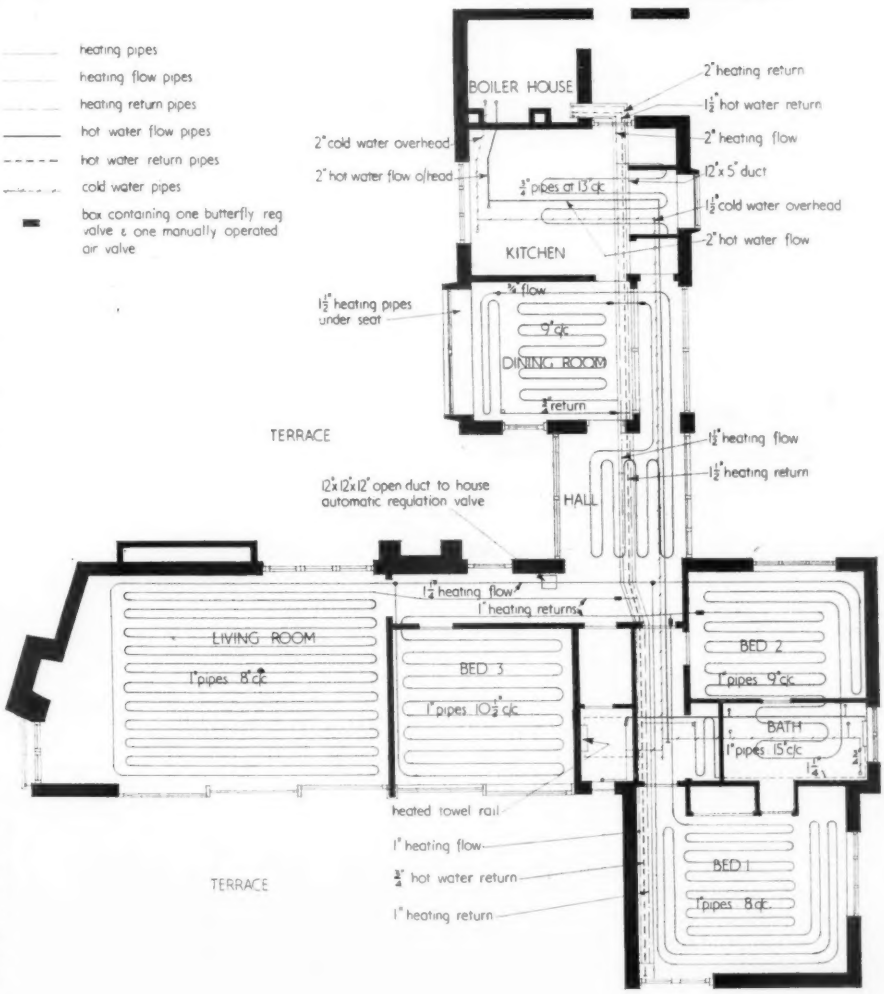
(*b*) flow through panels is balanced by valves on each panel;



House at Gortnamoney (Architects, Houston and Beaumont), Fig. 3, Section through heated floor.

Single-storey floor-heated house in Gortnamoney, N. Ireland. Below, Fig. 1, plan, [1½" = 1' 0"] Right, Fig. 2, diagram of controls.





(*c*) panels are ¾-in. bore steel tubes.

The owner and designer of this house, which is illustrated in Figs. 4, 5 and 6, is H. E. Kenmuir. The heating installation was designed and installed by G. N. Haden & Sons Ltd. Mr. Kenmuir provided the detailed notes which follow:—

The control valves for each panel are located on each drop from the flow mains in the roof, and there is also a check valve to regulate the flow through each panel relative to other panels. The living room is fed by two large drops, each dividing into three panels, controlled by the check valves. In this way, individual panels are kept to a reasonable size and some degree of flexibility has been obtained. The check valves are regulated to control the flow through each of the six panels according to their position in the room, a greater flow being allowed to pass through panels under windows and at doors than those in the centre of the room.

The Panels

Panels are made of ¾-in. bore heavy-gauge steel tubes, butt welded and bent on the site, and spaced at 6-in. centres. The boiler has an output rating of 61,000 B.Th.U., and is fitted with an automatic damper regulator, which, as well as serving the heating panels, provides the hot water supply, by means of an indirect cylinder (also fitted with an immersion heater). The boiler, cylinder and flow mains in the roof space are all insulated.

The construction of the house is fairly conventional except for the floor, which is 4-in. concrete on hardcore, covered with a D.P.C., a 1½-in. vermiculite concrete screed, and a topping of 2-in. cement screed, in which the pipes are embedded. This screed is divided into panels with "Ebonite" strips.

Cracks in the Screed

Mr. Kenmuir says that some small cracks have appeared in the finishing screed, along the lines of some of the panel pipes. They are not serious and are probably caused by the pipes being too close to the surface. He suggests that a layer of fine wire-mesh, laid on top of the pipes before the screed was laid, might have prevented these cracks. Another contributory factor may have been the fact that during the drying-out period the temperature was kept higher than is normal.

It is found that, by keeping the water temperature in the boiler between 110 and 120° F., very comfortable conditions are provided, with the air temperature in the living room being between 60 and 62° F. This temperature is almost constant from a height of about 1 ft. above floor level to about 7 ft. There is no sensation of too much warmth underfoot. The bedrooms are designed to be at a lower temperature than the living room, but a few minutes "topping-up" with an electric fire, when going to bed and rising in very cold weather, is all that is necessary.

The total cost of the heating and hot water services (1949) was about £250.

Mr. Kenmuir speaks briefly of his experience with the heating system. It will be seen that his house has an open plan, protected by a lobby at the front door, and that there are extensive areas of glass. Experience in the house at The Glade would not lead one to expect serious draughts, and Mr. Kenmuir confirms that there are no cold spots, not even near the large windows, though he notes as Mr. de Syllas did, an impression of slight coolness when sitting for a long time without any point source of heat, such as an open fire, when the weather is cold. It is proposed later to weather-strip doors and windows, and double-glaze the latter to reduce running costs.

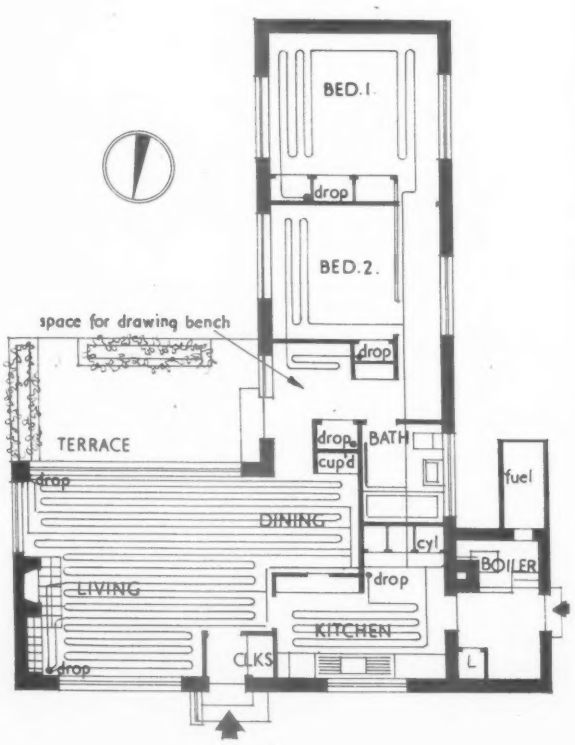
Mr. Kenmuir says he has noticed one point not mentioned in the discussion on the house at the Glade; he finds the house very sensitive to the effect of solar heat. He says, for instance, that during sunny days in winter, when air temperatures may drop to as low as 35° F., he has to turn off the panels. Mr. de Syllas has subsequently confirmed that he notices this too. Presumably this is due to a combination of circumstances; large windows, residual heat in the slab and ground, and the exceptional general dryness and consequent warmth of the structure.

Mr. Kenmuir would have no hesitation in using floor heating again, and, though he thinks forced circulation may be an improvement, he finds little inconvenience in the gravity system once one is familiar with running it.

TWO HOUSES BY BRENDAN O'CONNOR

The third Irish report came from Brendan O'Connor, of Dublin, who sent information about two houses. One of these, Carrickail, Carrickmines, was described in the JOURNAL for Jan. 11, 1951 (see Figs. 7 and 8). In it, copper-pipe panels are used in all rooms and passages; on the ground floor they are embedded in concrete about 3 in. thick over an asphalt D.P.C.; on the first floor they are in a screed of about the

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



Single-story floor-heated house at Donaghadee, N. Ireland. Above, Fig. 4, view from south-east. Below, Fig. 5, sketch of living room. Right, Fig. 6, plan. (Architect, H. E. Kenmuir.)

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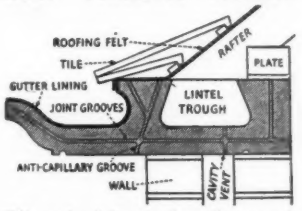

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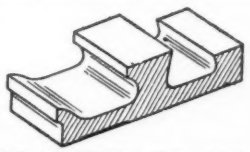
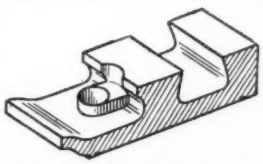
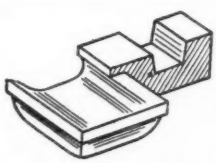


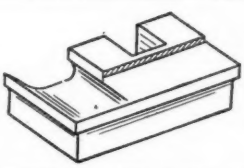
Finlock "N" Type Gutter block enabling lintels to be cast *in situ* if required.



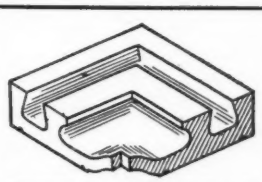
Finlock "G" Type Gutter block enabling lintels to be cast *in situ* if required, but illustrating soil vent.



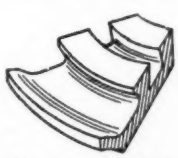
A typical standard stopped end for use on gable end walls, available for all type Gutters.



Illustrating a flush stopped end where this is also made with moulded return, available for all type Gutters.



Illustrates the typical internal angle for use with all Gutters. External angles also available.



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(A.J. Information Sheet No. 33010)

DH

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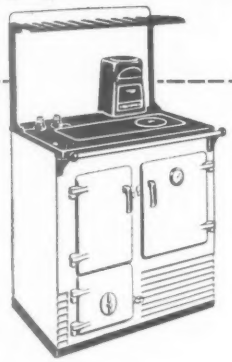

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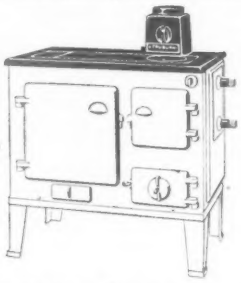
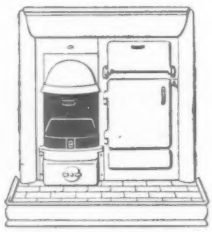


THE TRUBURN Free standing, continuous burning, lightly insulated, with boiler. Particularly suited to low-cost housing. The No. 2 Truburn serves households up to 8 persons.



THE ALICO A continuous burning side-oven combination grate with boiler; provides cooking and water-heating for households up to 8 persons, and full room heating up to 1,500 cu. ft. Average fuel consumption 1½-1¾ cwts. per week (overnight burning at ½-⅝ lb. per hour.)

same thickness over a hollow-tile floor. The system has been running satisfactorily since 1948, and is, therefore, about the same age as the installation at No. 4, Ashley Close—believed to be the first in this country.

Mr. O'Connor's second house is mainly a one-storey building, with an internal music gallery. Both the gallery and the main floor are heated, but in this house best-quality, mild steel pipes have been used instead of copper. The installation incorporates an automatic mixing valve, controlled by the external temperature.

CONVERTED COTTAGES AT BINGHAM, NOTTS.

Finally, from Notley & Notley, architects, of Bingham, Notts., came details of a conversion of three tumbledown stone cottages, with another floor heating installation by G. N. Haden & Sons, Ltd. The resultant house is called Box Cottage, and is in Blockley, Glos. (Figs. 9 and 10; photos on page 242.)

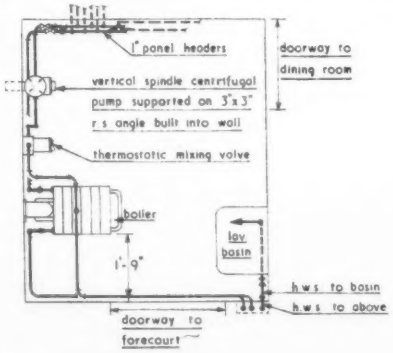
The installation is similar to that at the Glade. Water drawn off from the boiler through a 1-in. pipe passes through a mixing valve, and enters the pump, from which it is forced into the manifold, through 4 panels of $\frac{3}{8}$-in bore, soft-copper pipe, and back to the boiler. Generally, the coils of the panels are at 12-in. centres, buried in a 3-in. screed. The panels are valved at one end only, and the manifold has removable end caps, in case a panel gets clogged and needs to be blown clear. No floor heat is provided upstairs; gas or electric fires have been installed. No insulation was provided under the screed.

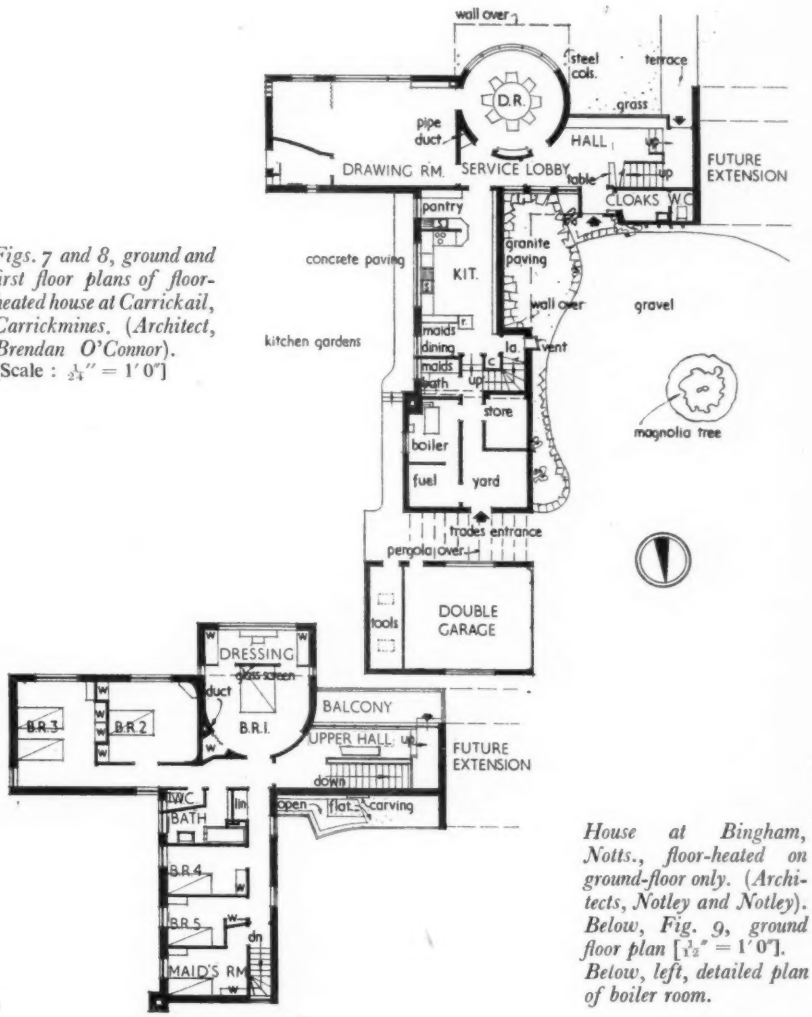
The architects describe the clients as being " delighted " with the system, but they note, as Mr. and Mrs. de Syllas and Mr. Kenmuir did, that if a person is sitting still for a long time, a little extra heat is needed. An open fire was provided and caters for this.

FLOOR FINISHES

All 3 of our correspondents gave details of the floor finishes they used. The house at the Glade has two satisfactory finishes—quarry tiles and a plastic-bonded wood-chip tile. To these, Major Beaumont has added softwood on battens with fitted carpets, hardwood strip and a granolithic concrete finish. Mr. O'Connor has contributed linoleum, while Messrs. Notley and Notley have used stone. Mr. Kenmuir and Mr. O'Connor also used close carpeting, and Mr. O'Connor also used hardwood strip.

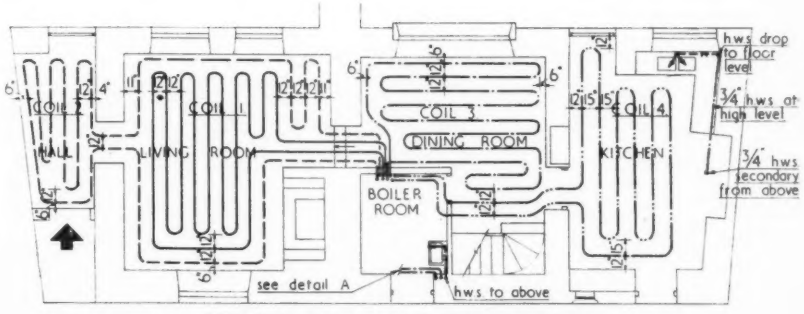
The houses described above have provided us with much new knowledge of floor heating. Both the more complicated and the simpler systems appear completely successful. The latter are, perhaps, the most important, as they may help to popularize the idea.





Figs. 7 and 8, ground and first floor plans of floor-heated house at Carrickail, Carrickmines. (Architect, Brendan O'Connor). [Scale : $\frac{1}{24}$" = 1' 0"]

House at Bingham, Notts., floor-heated on ground-floor only. (Architects, Notley and Notley). Below, Fig. 9, ground floor plan [$\frac{1}{12}$" = 1' 0"]. *Below, left, detailed plan of boiler room.*



COIL SCHEDULE

COIL No	SHEWN THUS	LENGTH	TUBE C. R. S.
1	———	145'	12"
2	— — —	145'	12"
3	— · — · —	124'	12"
4	— · · — · · —	124'	15"

The close relationship between central heating and open planning has long been appreciated; floor heating—in a sense, an "improved" form of central heating—makes open planning far more feasible than ever before. In the following article, the occupant of a floor-heated, open-planned house discusses the problems of open planning and explains how most of them have been solved in the houses at Welwyn Garden City illustrated on pages 247-254.

FLOOR HEATING AND OPEN PLANNING

For ten years or so Americans have put out an argument about floor heating and open planning that runs somewhat as follows: "Open planning is the key to spaciousness and architectural opportunity in the small house, but open planning is only feasible if a house is fully heated. Of all the types of heating available, floor warming is best for the purpose because it best offsets draughts and avoids the risk, attendant on air warming, that the upstairs will over-heat at the expense of the downstairs spaces."

Conditions immediately after the war did not favour trials of these ideas here, but in 1947 W. A. Allen was given an experimental licence for a house designed for such a test (No. 4 Ashley Close). It was a two-stage design, limited at first to 1,000 sq. ft. (see JOURNAL for July 8, 1948) to conform to the regulations then in force, and extended last year to about 1,500 sq. ft. The house as it stands now is shown on pages 247-249.

THE FUNCTIONAL QUESTIONS

The functional questions in open-planning are: Can the stairs be taken directly out of the living space without causing a large down-draught? How close to the living space can the front door be placed without causing bad draughts? How close can the kitchen be to the living space, without troubling the occupants with cooking and other smells? Does sound transmission from downstairs to upstairs become too easy? If all these questions can be answered satisfactorily, the use of open-planning will depend only on whether people like to live in open-planned houses.

Briefly, the answer to all the questions is "yes." Draughts are apparently no trouble at all, either with open stairs or with the front door almost in the living room, as in Mr. Allen's house, though the front door in his house is favourably placed to avoid an inflow of cold air, because it faces falling ground. Another floor-heated house nearby—the house in the Glade (see JOURNAL for January 31, 1952)—has its front door facing a court at the bottom of a slope, and has more trouble with cold air; even so, it is not serious.

KITCHEN SMELLS

As for trouble with smells from the kitchen, it is one of the things everybody fears but apparently seldom suffers from in practice. Perhaps it is because in an open plan you adapt yourself to smells and lose awareness of them; if this is so, open-planning may even have advantage over closed-planning, where the contrasts from room to room often make you sharply aware of smells in a small house. But most cooking smells are pleasant, or should be, and some of the unpleasant ones, such as burnt milk, are useful to have as a warning. In any case they disappear very quickly in No. 4 Ashley Close, and never worry the owner or his guests, although the kitchen in this house is not so much *planned* as part of the living space, as it becomes so in practice, because the doors are left open.

SOUND TRANSMISSION

Sound transmission is more of a problem. Some children sleep more soundly than others, and those in No. 4 Ashley Close are not worried by the radio or by a party, but it would be possible for annoyance to occur in this way. On the other hand, there is an advantage in being able to hear children who call out during the evening. Recently a sound absorbent has been put on one of the walls enclosing the staircase, and it has been found that this limits noise transmission so much that the original intention of lining the other wall as well has been abandoned. Americans have been using sound absorbents in open-planned houses for many years. It should be realized that a house with an open plan usually has a larger single living space than ordinary houses, with no more furniture than usual, and that this tends to create excessive reverberation.

THE LOSSES

The main question in open-planning in a small house is what losses have to be balanced against the gains? The losses would be those associated with the loss of the privacy that goes with separate small rooms and a separate stair hall. Meals are taken more publicly in a house with an open-plan; you go upstairs more publicly; there is no separate room to take visitors into for a private talk, or for children's homework or play.

The problem of meals can be dealt with by planning, *e.g.*, by using screened or half-screened arrangements; well-handled, these can be entirely successful for reasonable privacy and can keep the sense of spaciousness, but they can lose the usefulness of one big living space, and this wants watching. The stairs are no problem at all.

No. 8 Ashley Close, a view of the main living area from the staircase half landing: the first floor balcony can be seen top left.

The difficulty of not having a room for a private talk can be very real, especially as, when there is only one large living space, children are very likely to play in it. Again, an arrangement which screens part of the space for dining may work well enough for most of these other needs in the small house. In 1,500 sq. ft. it is not difficult to find space for a separate room.

In the end, the arguments for open-planning in the small house heavily outweigh those of conventional planning, because generosity of space (a living area of 350 sq. ft. or more is practicable in a 1,000 sq. ft. house) and the attendant architectural opportunities are overwhelming advantages.

INFORMAL LIVING HABITS

The technique leads, of course, to more informal living habits than in conventional houses, but this hardly seems out of place in the small house, and the better sense of human scale and dignity, and the "elbow room" that goes with spaciousness, is invaluable.

No. 4 Ashley Close, in its enlarged state, has a dining space partly separated from the main living space, but has no entirely private room downstairs, although it is intended to add later a study-office for the owner. In its present form the plan has one disadvantage: the living room is often full of young children and it becomes, in practice, everybody's playroom—children and grown-ups alike. This is grand for the children, who seem to love open plans; but the adults may suffer a little. A big kitchen, big enough to let children play near their mother, would have provided some relief, but this was not possible by the time the problem had been appreciated.

In a subsequent house which John Bickerdike and William Allen designed for Mr. and Mrs. D. J. A. Boyd—No. 8 Ashley Close—(illustrated on pages 250 to 254 of this issue) this particular problem has been solved. The plan (page 251)—truly an open-plan—has a main family room, with the dining area and kitchen on one side so that the dining space is more-or-less out of the "public way," but the kitchen zone close enough to the living space to enable the children to play near their mother—when they want to. It will be noticed that the dining zone cannot be seen from the entrance hall, the view being cut off by the brickwork of the staircase and the cupboard.

A SEMI-PRIVATE SITTING ROOM

In addition, there is a semi-private sitting room, big enough for evening use with three or four guests, but small enough to be suitable for the parents to use alone. It is carefully placed to avoid tempting the children to use it regularly—as they do the main family area—by keeping the door to it out of sight (and thus out of mind), and by a camouflage of planting, in the form of an indoor garden, cut through the foundations. It is also down two steps, which helps to isolate it.

A "WET-WEATHER CORRIDOR"

One risk of the open plan is that the use of the open areas as corridors in wet weather will make good floor finishes difficult to maintain. For this reason, the utility room, both in No. 4 and No. 8 Ashley Close, has been placed where it can serve as a "wet-weather corridor" to the kitchen and dining area. It is the convenient place to take off wet clothing and shoes, and it is well warmed to dry them. No. 8 has no back door and no serious need has been felt for it with this plan; there are, of course, plenty of doors to the garden.

THREE-DIMENSIONAL PLANNING

This house has *three-dimensional* open planning, for the corridor serving the bedrooms overlooks the main family area (see photograph on page 260). The ceiling of this area, where it slopes up to the balcony-corridor, is entirely of sound absorbent material. No particular difficulty arises with noise here, nor does it seem likely when the private sitting room is the normal room for evening use. On the other hand, one can imagine that a party might perhaps disturb the children. This, if true, is one of the losses to offset against the daily pleasures of an open arrangement.

The house at the Glade (see JOURNAL for Jan. 31, 1952), the houses in Welwyn Garden City described in the JOURNAL for Nov. 20, 1952, and Nos. 4 and 8 Ashley Close are all within a stone's-throw of one another and it has been possible, therefore, to make comparative observations about living in open-plans. Unquestionably, it tends to lead to a particular way of life. There is the informality of the closely-linked spaces; a sense of hospitality, perhaps from the easy connection between front door and living areas; and a touch of dignity, perhaps unexpected with the informality, but arising from the spaciousness and the conscious architectural qualities which are so seldom possible in the small house but are the main values of the open-plan. The small house cannot have everything, but the open-plan can give it a lot which is not otherwise obtainable; floor heating gives it, at the same time, high thermal comfort and efficient utilization of space.

Reeded glass is available in four patterns, Narrow, Broad, Cross and Major. The glass itself is exceptionally white and clear and its surface bright and lustrous. The light transmissions of all the patterns are about the same, but the narrower reeds give greater obscuration. They are excellent glasses for partitioning, for borrowed lights and for windows where some obscuration is required. The reeding is completely in key with the tendency of so much contemporary architecture to emphasize either vertical or horizontal motifs. Two new developments of Reeded glass, Narrow and Broad Reedlyte, offer greater obscuration and are more suitable where a high degree of privacy is necessary. Besides their normal architectural uses they are employed in lighting fittings, diffused lighting panels and decorative lighting schemes. Special lighting glasses such as Luminating (which has a very narrow reeded pattern) are also available.

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TECHNICAL DETAILS FOR REEDED GLASSES

Width of Reeds: Narrow-$\frac{1}{2}$ in., Broad-$\frac{7}{8}$ in., Cross $\frac{1}{2}$ in., and Major-$1\frac{3}{4}$ in.

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THE INDUSTRY

From the Industry this week, we report on communal laundry equipment, the use of paint "stainers" for making a large range of colours, and a new automatic level.

COMMUNAL LAUNDRIES

The communal laundry has recently met with some criticism, and some local authorities are proposing to give them up. One cause for complaint has arisen from the installation of the domestic type washing machine which is incapable of withstanding without expensive maintenance the heavy use it may undergo.

Electrolux, Ltd., a Swedish firm, and therefore more experienced in communal laundries than most English firms concerned with manufacturing laundry equipment, has been selling here since 1951 equipment of a type which it has sold on the Continent for over 15 years: scaled-down commercial laundry equipment, suited to the intensive use of communal laundries on housing estates. They have recently been demonstrating this equipment at the Building Centre. The minimum equipment, for 30 families, consists of a washing machine, a water extractor, a truck, two drying cabinets, a sink and a sink water-heater. The washing machine, electrically operated, with gas or electric water-heating up to 180° F. or boiling point, can be loaded with 22 lb. of (dry) clothes, which it washes in 30-45 minutes. A truck can be used to carry the clean clothes (which are rinsed in the washing machine) to the water extractor which, with a 14 lb. (dry) capacity, revolves at 1,440 r.p.m. From these figures it can be seen that the equipment can handle approximately three times the amount of a domestic machine. This equipment is largely built of chrome steel, with the minimum of joints to facilitate cleaning. Only a cold water supply is needed, and the stopping and starting devices are virtually foolproof. The washing machine costs £235 (gas) and £245 (electric); the water extractor £155 and the truck £40. (*Electrolux, Ltd.*, 153-5, *Regent Street, London, W.*1.)

999 COLOURS

Messrs. Jenson and Nicholson are marketing in March a range of 999 paint colours based on the Ostwald colour theory. Titled Robbialac "Colorizer" Paints, all the colours are pastel shades; 529 being on a white base and 470 on a grey base. The types of base are: undercoat, suede finish, eggshell and enamel, and the colours are obtained by adding not more than 2 tubes of stainer to the base. When large quantities are required, the paints are sent ready-mixed from the factory.

The cans of paint are in the normal sizes; to them is added a proportionate amount of stainer; e.g., a gallon can, costing 57s. 6d., has ½ pint of colour added to it in the form of two tubes of colour. These stainers have merely to be stirred into the base. For 25s. the architect can buy a case, measuring 10 in. × 2½ in. × 1½ in., containing samples of all the 999 colours. The decorator can economize in ordering paint because he need have no fear of running short of a colour as he can always match his colours exactly. This Robbialac "Colorizer" system is so far, only for pastel shades, although 10 deep tones, or saturated colours, can also be obtained. Saturated or strong colour cannot, of course, be produced on a white or grey base, but the firm hopes to produce an equally comprehensive range of saturated colours in the near future. (*Jenson and Nicholson*, 36, *St. James's Street, London, S.W.*1.)

A NEW AUTOMATIC LEVEL

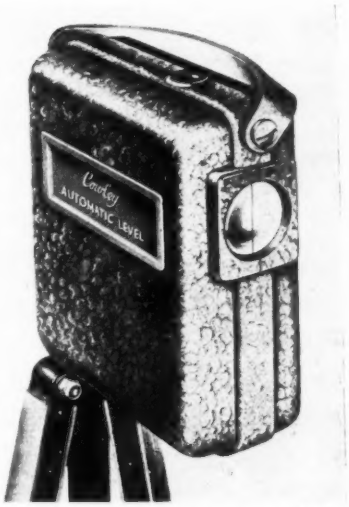
The photograph on the right shows the new "Cowley" automatic level—an instrument developed in Australia during the middle of the war, and now in production in this country. The instrument is about the size of a small ciné camera, and is exceptionally easy to use. With the ordinary dumpy level there is an elaborate levelling drill to be gone through each time the instrument is set up, but with the "Cowley" level, the whole thing is extremely simple.

The tripod is set up so that the spindle on the top is approximately vertical, and the level is slipped over this spindle, on which it is free to rotate. A horizontal sighting line is obtained from a prism inside the level; the prism being kept horizontal by a pendulum, which is free to swing while the level is on its spindle, but which is automatically locked as soon as the level is lifted off for carrying about.

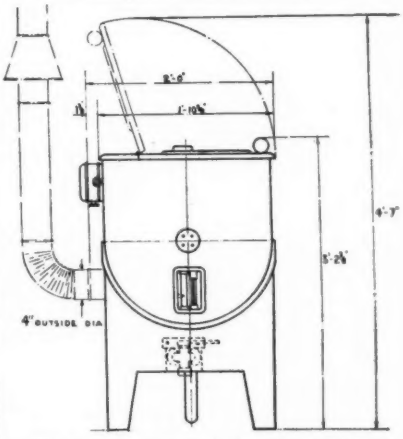
The level is robust, yet weighs only 4¾ lb., complete with tripod. Accuracy is greater than ¼ in. in 100 ft.—less than with the ordinary dumpy—but high enough for most purposes. It is very simple to use and almost anyone could be taught to use it in two or three minutes. Price is £16. (*Hilger and Watts Ltd.*, 48, *Addington Square, Camberwell, London, S.E.*5.)

STEELWORK TABLES

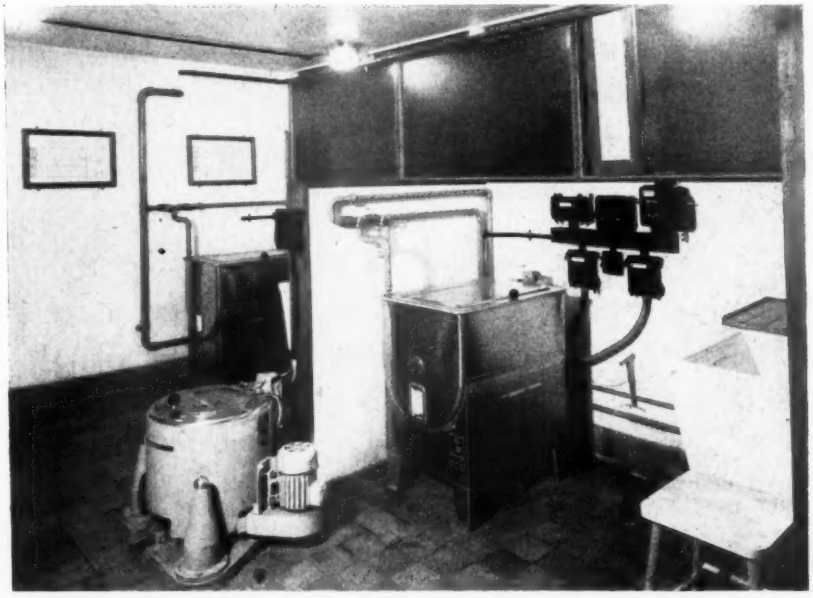
Little bigger than a fattish pocket diary, the latest edition of Fleming Bros.' section book has been completely revised to bring it into line with the newer methods of steelwork design set out in BS 449, and with the higher yield stresses allowed in steel manufactured to BS15. All the usual tables for beams, angles, stanchions and struts have been included, the welding section has been considerably enlarged, and there are plenty of useful formulæ for the loading of portal frames. A larger desk edition of the pocket book is to be produced during the next month or so—price 19s. 6d. (*Fleming Brothers* (*Structural Engineers*) *Ltd.*, 49, *Bath Street, Glasgow C.* 2.)



The "Cowley" automatic level, developed in Australia, now available here.



Electrolux communal laundry equipment. Above, diagram of gas-heated washing machine. Below, installation in the flats at Pimlico designed by Powell and Moya.



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Buildings Illustrated

House at Ruislip, Middlesex. (Page 242.) Architects: Harrison & Seel, A/A.R.I.B.A., A.M.T.P.I. General contractors: H. F. Siebert (Builders) Ltd.

County Primary School in Church Road, Willesborough, Nr. Ashford, Kent, for Kent County Council. (Page 245.) Architects: Jackson & Jackson, F./A./L.R.I.B.A.; in association with S. H. Loweth, F.S.A., F.R.I.B.A., County architect; Assistant architect: E. W. Chandler, A.R.I.B.A. Consulting engineer: J. Roger Preston & Partners. Reinforced concrete consultants: Hajnal & Myers. Electrical consultants: Barlow, Leslie & Partners. Quantity surveyor: Dearle & Henderson. General contractor: R. Corben & Son Ltd. Sub-contractors: asphalt, roofing felt, Permanite Ltd.; bricks, Hammill Brick Co. Ltd.; carcasing bricks, Eastwoods Sales Ltd.; artificial stone, Kent Concrete Products; moler flue linings, Cellactite & British Uralite Ltd.; special roofings, Wadcrete, Ltd.; patent glazing, casements, W.C. partitions, Henry Hope & Sons Ltd.; woodblock flooring, Horsley Smith & Co. (Hayes) Ltd.; asphalt flooring, Neuchatel Asphalte Co. Ltd.; waterproofing materials, Sika Ltd.; central heating, Bearfoot & Bryett Ltd.; electric wiring, G. E. Wallis & Sons Ltd.; sanitary fittings, Alfred Olby Ltd.; plaster, E. E. Cheeseman & Sons; metalwork, Bayliss, Jones & Bayliss Ltd.; concrete tiling, Langley (London) Ltd.; textiles, Lewis & Hyland; asphalt flooring, Neuchatel Asphalte Co. Ltd.; paints; Imperial Chemical Industries Ltd.; cloakroom fittings, The Educational Supply Association Ltd.; macadam pavings, Albert H. Hooker & Sons Ltd.

Extension to house at 4, Ashley Close, Welwyn Garden City, Herts. (Pages 247-249.) Architect: W. A. Allen, B.ARCH., A.R.I.B.A. General foreman: L. Tozer. General contractors: For part I (original house), Stevenson-Spence, Harpenden; For part II (extensions), Yeomans & Partners Ltd. Sub-contractors: tiles, Messrs. Speights of Leighton Buzzard; patent flooring, Jicwood Ltd.; boilers, Aero Pannier & Co.; electric wiring, Eastern Region Electricity Board; door furniture, Dryad Metal Works Ltd.; joinery, Fuller-Hills Ltd.; wallpapers, Arthur Sanderson & Sons Ltd., and John Line & Sons Ltd.

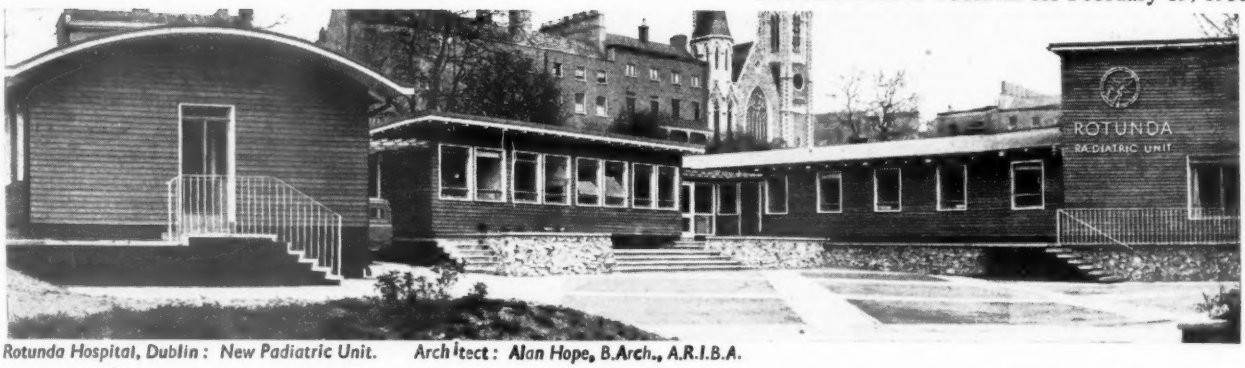
House at 8, Ashley Close, Welwyn Garden City, Herts. (Pages 250-254.) Architect: John Bickerdike, D.A.(MANC.), A.R.I.B.A., in association with William Allen, B.ARCH. (MAITOBA), A.R.I.B.A. General foreman: L. Tozer. General contractors: Yeomans & Partners Ltd. Sub-contractors: bricks, Townsend & Partners (bricks supplied by John Byford & Sons Ltd.); structural steel, Hills (West Bromwich) Ltd.; tiles, Summers & Co.; roofing felt, Ruberoid Ltd. (Contractor for tiles and felt, Wm. Sandfield Ltd.); glass, J. Preedy & Sons Ltd.; plywood flooring, Bambergers Ltd.; central heating, plumbing, Subtrades Ltd.; stoves, Radiation Ltd.; boilers, Earleymil Ltd.; electric wiring, Eastern Electricity Board; door furniture, Dryads Ltd., Comyn Ching & Co. (London) Ltd., and A. J. Binns Ltd.; casements, Crittall Manufacturing Co. Ltd.; plaster, Byron & Panter Ltd.; metalwork (balustrading), T. Holland & Sons; joinery, Fuller Hills Ltd., and H. F. G. Ross & Son.

Announcements

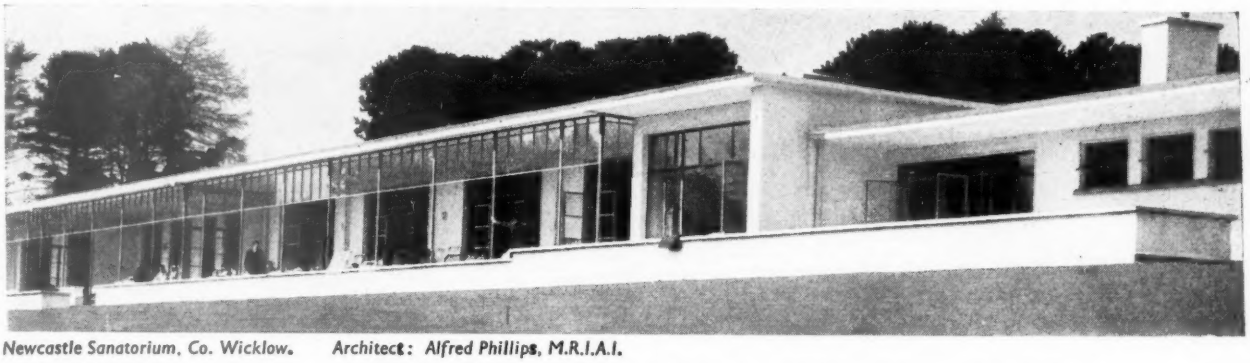
Beardshaw & Heumann, Architects & Design Consultants, have moved their offices to 36, Seymour Street, Marble Arch, W.1. (Tel: Ambassador 9685.)

A. J. Stevens has moved his office to 17, Onslow Street, Guildford, Surrey, where he will be pleased to receive trade catalogues.

Enquiries about the Town and Country Planning Summer School, to be held at Bristol from September 6 to 12 (Sponsor: TPI) may be obtained from 18, Ashley Place, Victoria, S.W.1.



Rotunda Hospital, Dublin: New Padiatric Unit. *Architect: Alan Hope, B.Arch., A.R.I.B.A.*



Newcastle Sanatorium, Co. Wicklow. *Architect: Alfred Phillips, M.R.I.A.I.*

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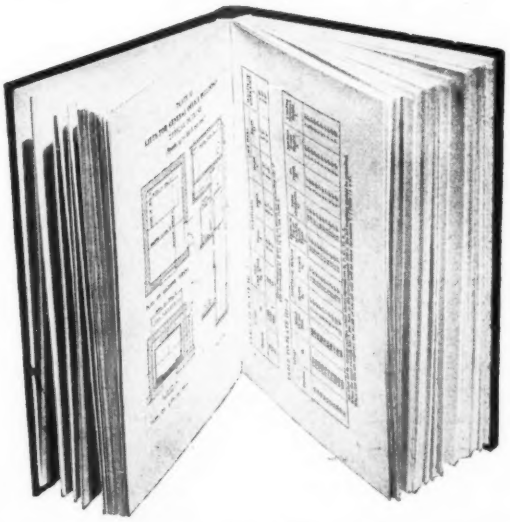

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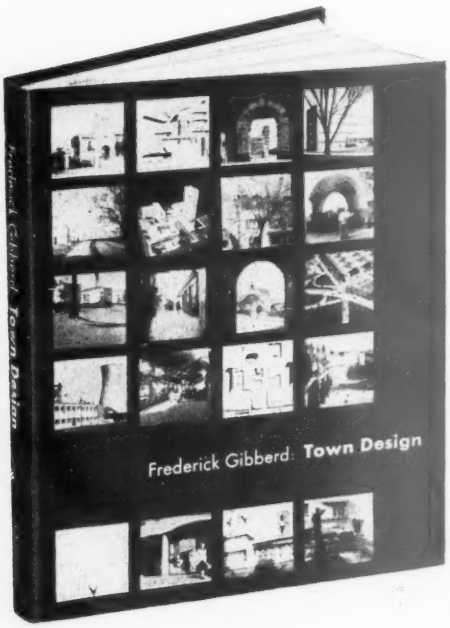
TOWN DESIGN

by Frederick Gibberd, F.R.I.B.A., M.T.P.I., F.S.I.A.; Member of the Royal Fine Art Commission, Member of the Central Housing Advisory Committee, Past Principal of the A.A. School of Architecture; Author of *The Architecture of England* and (with F. R. S. Yorke) *The Modern Flat.*

With this new book Mr. Gibberd fills a gap in existing town-planning literature by providing the first major work to deal, in a comprehensive and thoroughly practical way, with town design as an art. In addition to the original contribution it makes to the subject, this book will be found indispensable as a reference book by architects, engineers, surveyors, town planners, local authorities and all who have any interest in, or influence over, the appearance of the urban scene. It is arranged in four parts dealing with (1) DESIGN OF THE COMPLETE TOWN; (2) CENTRAL AREAS; (3) INDUSTRY; (4) HOUSING. Each part is illustrated by plans, diagrams and photographs, and is followed by a section in which are analysed in detail typical building groups from all over the world.



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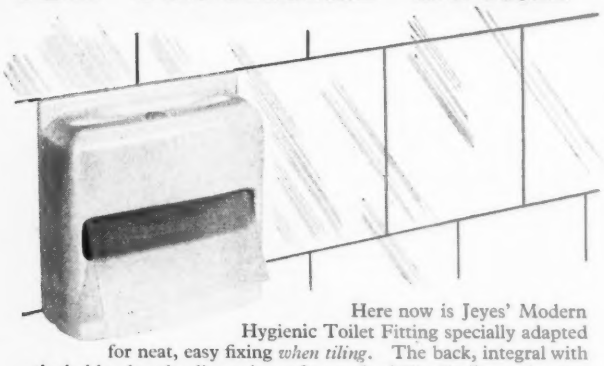

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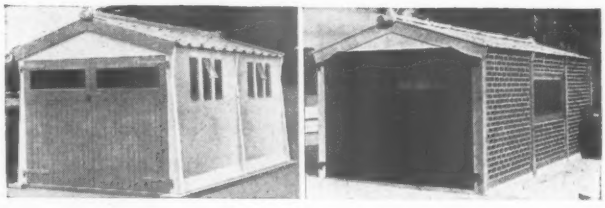

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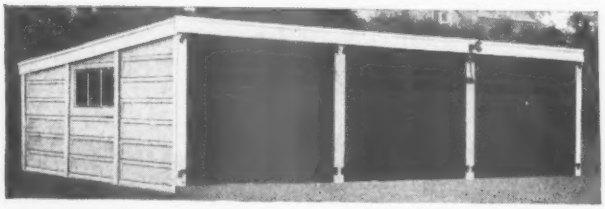

CLASSIFIED ADVERTISEMENTS

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

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

Public and Official Announcements

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

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

EAST ANGLIAN REGIONAL HOSPITAL BOARD.

Applications are invited for the appointment of ASSISTANT ARCHITECTS (TWO) in the Architect's Department of the Board's Headquarters. Salary: £600-£865 per annum. Additional increments based on experience and age may be granted to suitable applicants. Candidates must be Associate Members of the R.I.B.A. and Registered Architects. Good general experience in design, construction and specification writing essential. Knowledge of hospital work desirable.

The appointment will be subject to the National Health Service (Superannuation) Regulations.

Applications, stating age, qualifications and experience, with names of three referees, to reach the Secretary of the Board, 117, Chesterton Road, Cambridge, by 2nd March, 1953. 8182

CITY OF PETERBOROUGH.
CITY ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the appointment of a SENIOR ASSISTANT QUANTITY SURVEYOR on the permanent staff of the City Engineer and Surveyor, under the National Scheme of Conditions of Service and at a salary on A.P.T., Grade V.

Applicants should have a sound knowledge of the Standard Method of Measurement and also of the Code of Measurement for Small Dwellings, and be experienced in taking off and preparing Bills of Quantities, making interim valuations and settling Final Accounts.

Applications, stating age, qualifications and experience, accompanied by copies of at least two recent testimonials, endorsed "Quantity Surveyor," must be sent to the City Engineer at the Town Hall, Peterborough, so as to reach him not later than Friday, 27th February, 1953.

Applicants must disclose whether they are related to any senior officer or member of the Authority. Canvassing will disqualify.

C. PETER CLARKE,
Town Clerk.

Town Hall, Peterborough.
February, 1953. 8183

BUCKS COUNTY COUNCIL.

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

(*a*) PRINCIPAL ASSISTANT ARCHITECT (£950×£50 (4)—£1,150 p.a.).

Candidates should have a first-class qualification in architectural design. The person appointed will be responsible to the County Architect for the comprehensive architectural lay-out and arrangement of educational and other public building projects. Candidates must have had reasonable practical professional experience in such work.

(*b*) ASSISTANT ARCHITECT (£815×£40 (3)—£935 p.a.).

Candidates must have good academic qualifications and considerable creative ability in design, together with reasonable office experience in such work.

(*c*) ASSISTANT ARCHITECT (£815×£40 (3)—£935 p.a.).

Candidates are required to have a thorough knowledge and experience of the detailed constructional design of schools; be not less than 30 years of age, and have not less than 5 years' consecutive office experience in such work.

(*d*) ASSISTANT ARCHITECT (£710×£25 (3)—£785 p.a.).

(*e*) ASSISTANT ARCHITECT (£670×£20 (2)×£25—£735 p.a.).

Candidates should preferably have been trained at a recognised School of Architecture, and have had experience in School design and construction.

(*f*) ARCHITECTURAL ASSISTANT (£495×£15 (3)—£540 p.a.).

Candidates should preferably have attended a full-time course of Architecture and have passed the R.I.B.A. Intermediate Examination or its equivalent at one of the recognised Schools of Architecture.

These appointments are superannuable and subject to medical examination.

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

Further particulars and form of application may be obtained from the County Architect, County Offices, Aylesbury, to whom applications must be delivered by 28th February, 1953. 8184

URBAN DISTRICT OF EAST BARNET.
ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments:—

(1) ASSISTANT ARCHITECT (Established Staff). Grade A.P.T., IV (£555-£600 per annum, plus London weighting).

(2) ENGINEERING ASSISTANT (Established Staff). Grade A.P.T., III (£525-£570 per annum, plus London weighting).

(3) DRAUGHTSMAN (Established Staff). Grade A.P.T., I (£465-£510 per annum, plus London weighting).

Application forms may be obtained from the Engineer and Surveyor, Town Hall, Station Road, New Barnet, Hertfordshire, and must be returned to him by not later than Monday, 2nd March, 1953. 8176

RURAL DISTRICT COUNCIL OF CHELMSFORD.
HOUSING AND ESTATES DEPARTMENT.

Applications are invited for the undermentioned temporary appointments:—

(*a*) ARCHITECTURAL ASSISTANT.

(*b*) TECHNICAL ASSISTANT (Housing).

Applicants for appointment (*a*) must be experienced in building construction, had a good architectural training in housing and estate development, and be able, with the minimum of supervision, to prepare sketch plans, working drawings and details. Candidates should have had previous experience with a Local Authority, and preference will be given to applicants who have passed, or are about to take, the Intermediate Examination of the R.I.B.A.

Applicants for appointment (*b*) must have had considerable experience in field work and the supervision of housing contracts, estate road construction, laying of sewers, etc. Duties will also include negotiations with Service Companies for the laying of all main services, etc. Applicants must be at least 30 years of age. A travelling allowance in accordance with the National Joint Council Scale will be paid to the person appointed, who will be required to provide and maintain a motor car.

Salaries for both appointments will be in accordance with A.P.T., Grade II (£495-£540) of the National Scales of Salaries for Local Authorities.

Applications in candidate's own handwriting, stating age, present position, salary, qualifications and experience, and giving the names and addresses of two referees, to be made to the Estates Manager at this office not later than 28th February, 1953.

C. R. PLUMTREE.
Clerk of the Council.

Council Offices, New London Road,
Chelmsford.
5th February, 1953. 8174

NEWCASTLE REGIONAL HOSPITAL BOARD.
APPOINTMENT OF DEPUTY REGIONAL ARCHITECT.

Applications are invited for the appointment of Deputy Regional Architect, on the permanent establishment of the Board's Headquarters Staff, at a salary of £1,125, rising by annual increments of £50 to £1,325 per annum.

Applicants must be Registered Architects and Associate Members of the Royal Institute of British Architects. Good administrative and architectural experience is an essential qualification, as is also ability to supervise technical staff efficiently and possession of an intimate knowledge of the design and construction of all types of hospital buildings.

The successful applicant will be expected to deputise whenever necessary in respect of the whole range of the Regional Architect's duties and responsibilities.

The conditions of service will be as laid down by the Whitley Council, and the appointment will be subject to superannuation and be terminable by one month's notice from either side. The successful applicant will be required to pass a medical examination before the appointment is confirmed.

Applications should furnish full details as to age, training, qualifications, past and present appointments, present salary and professional experience, together with the names of three referees, and should reach the Secretary to the Board not later than Friday, the 27th February, 1953.

Dunira, Osborne Road,
Newcastle-on-Tyne, 2. 8191

HACKNEY BOROUGH COUNCIL invite applications for the permanent appointment of ARCHITECTURAL ASSISTANT, in the Borough Engineer and Surveyor's Department, in A.P.T., Grades III-IV (£525 p.a., rising to £600 p.a.), plus London weighting allowance. The commencing salary may be fixed at a point above the minimum, according to the qualifications and experience of the successful candidate.

Candidates must have had a good architectural training, and must have passed the R.I.B.A. Intermediate or equivalent examination.

Conditions of appointment and application form may be obtained from the undersigned on receipt of a stamped, addressed foolscap envelope.

Completed application forms, endorsed "Architectural Assistant," must be returned to the undersigned not later than first post on the 14th March, 1953.

DUDLEY SORRELL.
Town Clerk.

Town Hall, Hackney, E.8.
11th February, 1953. 8225

VACANCIES FOR TEMPORARY ASSISTANT ARCHITECTS.

The DEPARTMENT OF HEALTH FOR SCOTLAND invite applications from fully qualified architects for posts of temporary Assistant Architect. Headquarters Edinburgh. Age 25 and upwards. Inclusive salary scale £612—£949 (women £844) with placing according to age and experience. Prospects of establishment through open competition. Further particulars and application form obtainable from Establishment Officer, Department of Health for Scotland, Room 30, St. Andrew's House, Edinburgh, 1. Closing date for applications 28th February, 1953. 8197

WESTERN REGIONAL HOSPITAL BOARD.

Applications are invited for the appointment of a SENIOR ASSISTANT ARCHITECT. Applicants must be Associate Members of the R.I.B.A., and hospital experience is desirable. Salary scale £875 by £30 to £1,025. The appointment is superannuable and will be terminable on two months' notice on either side. The successful candidate may be required to pass a medical examination. Applications, stating age, qualifications and experience, together with the names of three referees, should be forwarded to the Chief Architect, 64, West Regent Street, Glasgow, C.2, not later than Friday, 27th February, 1953. 8207

ANGLESEY EDUCATION COMMITTEE.
NEW COUNTY SECONDARY SCHOOL AT LLANGEFNI.

Applications are invited from suitably qualified candidates for the appointment of a resident CLERK OF WORKS to supervise the construction of a new County Secondary School at Llangefni, Anglesey.

The inclusive salary will be £575 per annum. The appointment will be subject to one month's notice on either side and to the provisions of the Local Government Superannuation Act, 1937, and to the successful candidate passing a medical examination.

Candidates should have a practical knowledge of all branches of the building trade and be experienced in the supervision of the erection of large buildings, including setting-out, levelling, measuring-up and keeping records.

Membership of the Incorporated Clerks of Works Association of Great Britain will be an advantage.

Applications, stating age, qualifications and experience, and giving names of two persons to whom reference can be made, and accompanied by copy of one testimonial, should be sent to the undersigned not later than Monday, 2nd March, 1953.

E. O. HUMPHREYS,
Director of Education.

Education Offices,
Shire Hall, Llangefni, Anglesey.
10th February, 1953. 8205

CITY OF NOTTINGHAM.
CITY ENGINEER'S DEPARTMENT.

Applications are invited for the appointment of:—

ARCHITECTURAL ASSISTANT.
Grade A.P.T. III (£525—£570).

Applicants should have passed the Intermediate Examination of the Royal Institute of British Architects or had good drawing office experience.

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

Applications are to be made on forms to be obtained from R. M. Finch, Esq., O.B.E., M.I.C.E., City Engineer and Surveyor, Guildhall, Nottingham, to whom they should be returned not later than 4th March, 1953.

T. J. OWEN,
Town Clerk.

The Guildhall, Nottingham. 8189

ISLE OF MAN LOCAL GOVERNMENT BOARD.
SENIOR ASSISTANT ARCHITECT.

Whitley Council has agreed a new scale for this post. The salary will now be £625 by £15 to £725, subject to superannuation.

A house is available at an annual rent of £101 10s. 0d., plus rates.

New applications stating age, Technical Education, qualifications, present and past employment and experience, present salary and names of referees should be sent to Douglas Calder, A.R.I.B.A., A.M.T.P.I., Architect and Planning Officer to the Isle of Man, Murray House, Douglas, to arrive not later than 23rd February, 1953.

W. H. KARRAN,
Secretary.

6, Mount Havelock,
Douglas, Isle of Man. 8202

COUNTY BOROUGH OF TYNEMOUTH.
BOROUGH SURVEYOR'S DEPARTMENT.
APPOINTMENT OF ASSISTANT ARCHITECT—GRADE V.

Applications are invited for the above appointment, at a salary of £595-£645.

Applicants should be Associate Members of the R.I.B.A. Forms of application and conditions of appointment may be obtained from Mr. D. M. O'Herlihy, B.Sc.(Eng.), M.I.C.E., Borough Surveyor, 16, Northumberland Square, North Shields, to whom they should be returned by the 2nd March, 1953.

Dated this 10th day of February, 1953.

(Sgd.) FRED G. EGNER,
Town Clerk.

14, Northumberland Square, North Shields. 8223

CITY OF BRADFORD.
APPOINTMENT OF PLANNING AND ARCHITECTURAL STAFF.

Applications are invited for the following appointments in the City Engineer and Surveyor's Office, on the grades indicated.

(*a*) SENIOR TOWN PLANNING ASSISTANT, Post No. 13. Grade A.P.T. VI, £670—£735 per annum.

(*b*) SENIOR TOWN PLANNING ASSISTANT, Post No. 15. Grade A.P.T. VI, £670—£735 per annum.

Applicants for post (*a*) must be A.M.T.P.I., should preferably be A.M.I.C.E. or A.M.I.Mun.E., and have had considerable experience in the administration of the Town and Country Planning Act, 1947, and, in particular, dealing with applications for Planning Permission and Display of Advertisements.

Candidates for post (*b*) must be A.R.I.B.A. and A.M.T.P.I. Experience in the design of houses, flats and shops and the layout of housing estates is essential and general planning experience, particularly as regards redevelopment of Central Areas will be an advantage.

The appointments are superannuable. Applications on the prescribed form to be obtained from the City Engineer and Surveyor, Town Hall, Bradford, together with three testimonials, must be received by the undersigned not later than Monday, 2nd March, 1953. No housing accommodation will be provided by the Corporation.

W. H. LEATHEM,
Town Clerk.

Town, Hall, Bradford. 8208

URBAN DISTRICT COUNCIL OF COULSDON AND PURLEY.
ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited from suitably qualified persons for the position of SENIOR ARCHITECTURAL ASSISTANT, A.P.T., Grades V/Va (£595×£15/£20—£685).

London area weighting will be payable in addition to the salary stated above.

Applicants must be Chartered or Registered Architects, experienced in the preparation and execution of Municipal Housing Schemes by Contract, the maintenance of Public Buildings, etc. Preference will be given to candidates who have passed the Final Examination of the Royal Institute of British Architects.

The appointment will be subject to the Scheme of Conditions of Service; the Local Government Superannuation Acts; medical examination and to termination by one month's written notice on either side; and will be to the permanent staff.

Applications on forms to be obtained from the Engineer and Surveyor to the Council at the address stated below, giving age, details of experience, qualifications, etc., accompanied by copies of three recent testimonials, must be submitted to him by not later than first post on Monday, 2nd March, 1953.

Canvassing in any form will be a disqualification.

ERIC F. J. FELIX,
Clerk of the Council.

Council Offices, Purley, Surrey.
February, 1953. 8218

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD.
APPOINTMENT OF REGIONAL ARCHITECT.

Applications are invited for the appointment of Regional Architect, on the permanent establishment of the Board's Headquarters Staff, at a salary of £1,600, rising by annual increments of £75 to £1,975 per annum, plus £50 London allowance. Applicants must be Registered Architects and Associate Members of the Royal Institute of British Architects, and should have had considerable experience of architectural practice. They will be required to advise the Board upon all architectural matters relating to hospitals in the region in addition to carrying out such other professional, administrative and executive duties as the Board may assign. Experience of the design and construction of hospital buildings should be stated.

The conditions of service will be as laid down by the Whitley Council, and the appointment will be subject to superannuation and be terminable by three months' notice on either side. The successful applicant will be required to pass a medical examination before the appointment is confirmed.

Applications, which should include details of the candidate's age, qualifications, previous and present appointments and present salary, together with the names of three referees, should be endorsed "Regional Architect," and delivered to the undersigned not later than 7th March, 1953.

E. G. BRAITHWAITE,
Secretary.

11a, Portland Place, London, W.1. 8226

SALOP COUNTY COUNCIL.
COUNTY ARCHITECT'S DEPARTMENT.
APPOINTMENT OF SENIOR ASSISTANT ARCHITECT, A.P.T., GRADE VIII.

Applications are invited for the appointment of a Senior Assistant Architect, on A.P.T., Grade VIII (£760 to £835 per annum).

Applicants should be Registered Architects, preferably Members of the R.I.B.A., with a sound training and experience in the design and construction of modern buildings.

It may be possible to assist the successful candidate if there is any difficulty with regard to housing, and in any case a separation allowance of not exceeding 30s. a week will be paid to a married officer taking up the appointment, together with third-class return railway fare once a month to visit his family, such allowances to be limited to a period of six months or until such time as the officer is able to obtain accommodation for himself and his family in Shropshire, whichever is the earlier.

Application forms and conditions of the appointment may be obtained from the County Architect, C. H. Simmons, A.R.I.B.A., Dip.T.P., Column House, London Road, Shrewsbury, to whom they must be returned, accompanied by copies of three recent testimonials, not later than Tuesday, 10th March, 1953.

G. C. GODBER,
Clerk of the Council.

Shrewsbury.
February, 1953. 8224

BOROUGH OF SHREWSBURY.
APPOINTMENT OF TWO ARCHITECTURAL ASSISTANTS AND ONE JUNIOR BUILDING INSPECTOR.

Applications are invited for the following appointments on the permanent staff of the Borough Surveyor:—

(*a*) ARCHITECTURAL ASSISTANT. Salary A.P.T., Grade V (£595-£645).

Candidates should be experienced in general architectural work and in the layout, design and construction of houses, flats, shops and other domestic and public buildings.

Preference will be given to those who have passed the Final Examination of the R.I.B.A., and have subsequently worked in an architectural office for not less than two years.

(*b*) ARCHITECTURAL ASSISTANT. Salary A.P.T., Grades I-II (£465-£540).

Candidates must possess experience of Architectural work and be good draughtsmen. Preference will be given to those who have passed the Intermediate Examination of the R.I.B.A., or who are studying for an appropriate professional examination.

HOUSING ACCOMMODATION IN A FLAT CAN, IF REQUIRED, BE ARRANGED IN RESPECT OF BOTH THE ABOVE APPOINTMENTS.

(*c*) JUNIOR BUILDING INSPECTOR. Salary: General Division (£230 p.a. at age 20, rising to £450 at age 30).

Candidates must possess a good knowledge of practical building construction, and preference will be given to those studying or intending to study for a suitable Building Surveyor's or Inspector's examination.

Some knowledge of relevant Building Acts and Byelaws would be an advantage.

The appointments are subject to:

(1) National Scheme of Conditions of Service.
(2) Local Government Superannuation Act, 1937.
(3) Passing a medical examination.
(4) Termination by one month's notice on either side.

Forms of application can be obtained from the Borough Surveyor, Mr. F. R. Dinnis, A.M.I.C.E., Guildhall, Shrewsbury, and must be returned not later than Monday, 2nd March, 1953.

S. R. H. LOXTON,
Town Clerk.

Guildhall, Shrewsbury.
February, 1953. 8227

CITY OF ST. ALBANS.
ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant in the Department of the City Engineer and Surveyor at a salary in accordance with Grade A.P.T. II of the National Scales (£495 by £15 to £540).

Applicants should be suitably trained, good draughtsmen and have had experience in the design and layout of Housing Contracts.

Consideration will be given to the provision of housing accommodation.

The appointment, which is terminable by one month's notice, and is for a period of not less than two years, will be subject to the National Scheme of Conditions of Service, the Local Government Superannuation Act, 1937, and medical examination.

Applications, stating age, qualifications, present and past positions and experience, together with the names of two persons to whom reference can be made, should be sent to the undersigned to arrive not later than Monday, 2nd March, 1953.

W. B. MURGATROYD,
Town Clerk.

38, St. Peter's Street,
St. Albans. 8203

COUNTY BOROUGH OF DERBY.
BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointment on the permanent staff, in accordance with the National Scale of Salaries:—

ONE JUNIOR QUANTITY SURVEYOR, Grade I/II, £465—£540. Commencing salary £465 per annum.

Applicants should have passed the R.I.C.S. First Examination, be not less than 21 years of age and be experienced in working up bills of quantities and measuring up on site.

The appointment will be subject to one month's notice in writing on either side and to the terms of the National Joint Council's Scheme of Conditions of Service and the provisions of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination.

Form of application may be obtained from the Borough Architect, The Council House, Corporation Street, Derby, and should be returned when completed, together with a copy of one testimonial and the names of two persons to whom reference may be made, to arrive not later than Monday, 9th March, 1953.

Canvassing directly or indirectly will be a disqualification.

E. H. NICHOLS,
Town Clerk.

8204

LONDON COUNTY COUNCIL.
ARCHITECT'S DEPARTMENT.

Vacancies for ARCHITECTS (A.R.I.B.A.) (up to £696).

Application forms (for return by 2nd March) and particulars from Architect, AR/EK/H/2, County Hall, S.E.1. (137) 8217

WEST SUFFOLK COUNTY COUNCIL.

ASSISTANT QUANTITY SURVEYOR. N.J.C. service conditions, salary £525—£600 (A.P.T. III—IV). Post pensionable; medical examination. Applicants should be of Intermediate R.I.C.S. standard; duties will include working up and taking off, and measurement of variations both under the Standard Method and the Code of Measurement.

Application forms, obtainable from the Clerk of the County Council, Shire Hall, Bury St. Edmunds, to be returned by 7th March, 1953. 8206

POPLAR BOROUGH COUNCIL invites applications from Associates of the Royal Institute of British Architects for the established post of PRINCIPAL ASSISTANT ARCHITECT, A.P.T., VIII (£760/£835, plus weighting). Application forms from Borough Engineer and Surveyor, Poplar Town Hall, Bow Road, E.3. Closing date: 9th March. 8230

MINISTRY OF WORKS.

Vacancies exist in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS with recognised training and fair experience. Vacancies are mainly in London. Successful candidates will be employed on a variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges and Housing.

London Salary: Up to £628 per annum. Starting pay according to age, qualifications and experience. Rates outside London are slightly lower.

Although these are not established posts, many have long term possibilities and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality and full details of training and experience, to the Chief Architect, Ministry of Works, Abell House, John Islip Street, London, S.W.1, quoting reference W.G.10/C.A.1. 8047

Tenders for Contracts

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

TENDERS are invited for the purchase of the following PLAN PRINTING equipment: 1 Mason's double feed 40 in. Arclight Continuous Photo Copying Machine, 2 extra 10 amp. lamps complete—single phase a.c.; 1 Mason's double feed 40 in. Arclight Continuous Arclight Photo Machine, and certain sundries.

The apparatus may be inspected during normal office hours, and tender forms obtained on application to the County Supplies Officer, County Supplies Department, Sandling Road, Maidstone, Kent. 8198

Architectural Appointments Vacant

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

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

EXPERIENCED SENIOR ASSISTANT, with first-class constructional ability, required. Write, stating experience, salary required, to Louis de Soissons, A.R.A., & Partners, Midland Bank Chambers, Welwyn Garden City, Herts. 8164

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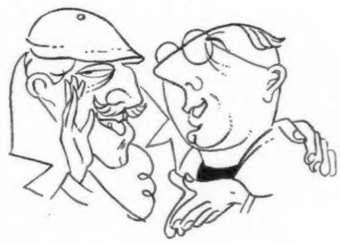

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