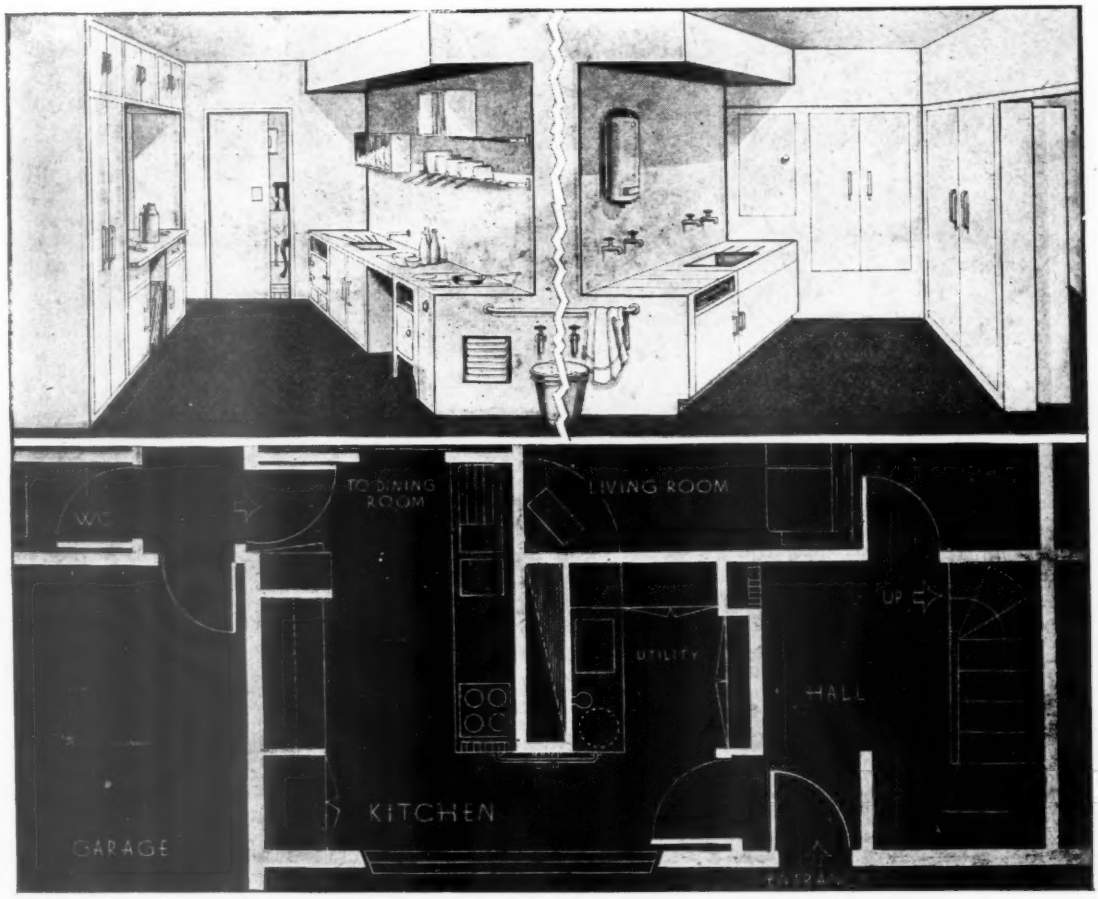


**EMPHASIS ON LAY-OUT.** The habitable and well-equipped Kitchen is proving to be the touchstone of post-war planning. Already it is the subject of nation-wide debate and practical research.

The Kitchen lay-out shewn above provides for the separation of the two main activities of food preparation and laundry work; and the installation of labour, saving gas appliances for automatic cooking, water-heating, clothes boiling-drying cupboards and a gas refrigerator; whilst warmth is furnished by an efficient gas radiator.

This kitchen may be inspected by appointment only, at Radiation House, Aston, Birmingham.

VISIT
**THE KITCHEN PLANNING EXHIBITION**
DORLAND HALL, LONDON, S.W.1
Feb. 6—Mar. 3

# Radiation Ltd

*COMPRISING*

Arden Hill & Co. Ltd. Davis Gas Stove Co. Ltd. Eagle Range & Grate Co. Ltd.
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RADIATION HOUSE, ASTON, BIRMINGHAM 6, AND 7 STRATFORD PLACE, LONDON, W.1

# Hotel Reception Hall

A DESIGN BY HUGH CASSON, M.A., A.R.I.B.A.


W5

ONE can almost imagine the blasé globe-trotter coming in through the swing doors of this hotel and pausing for a moment with the sudden thought—'Can this be Britain?' For Mr. Casson has thrown the classic gilt and alabaster tradition to the winds in designing this reception hall. His medium is Warerite Laminated Plastics—in itself a source of inspiration with its clean colourful surfaces and wide adaptability.

MAIN WALLS: *Dark green Warerite wall panels.*

SCREEN: *Pale blue Warerite veneer on laminated wood.*

WINDOW REVEALS: *Pale blue Warerite veneers on plywood.*

COUNTER TOP: *Black Warerite blister-proof quality veneer on blockboard.*

COUNTER FRONT: *Pale blue Warerite veneer on plywood.*

DOORS TO BAR: *Flush surface veneered with Warerite pillar-box red veneer.*

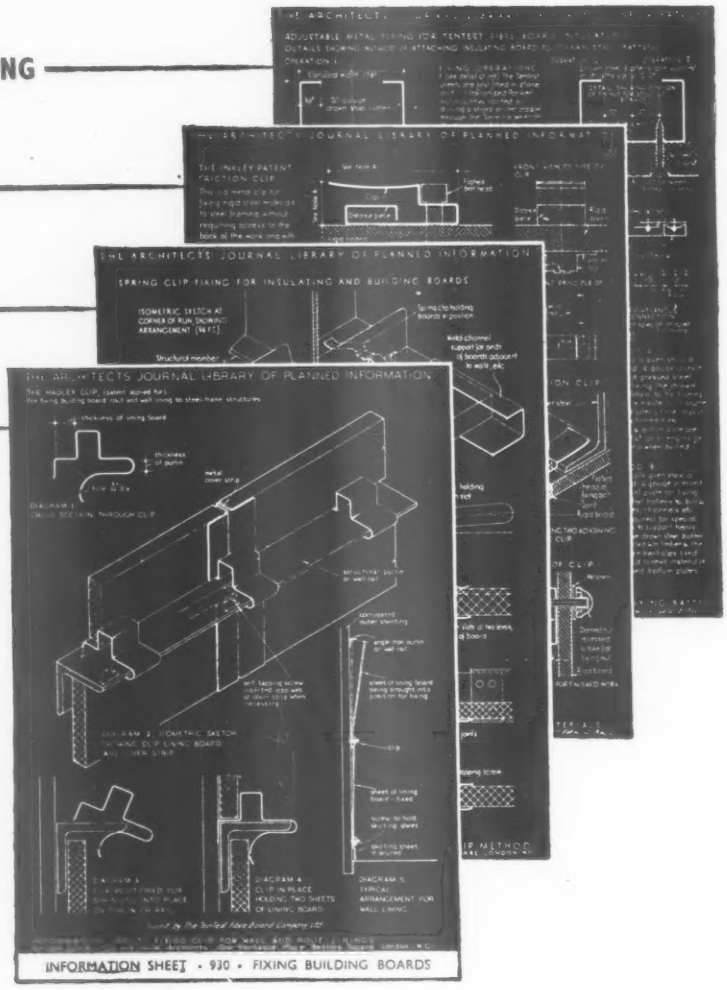
TABLE TOPS: *Surfaced with Warerite blisterproof veneers—biscuit colour.*

# 1936 and all that . . .

With the increase in the use of steel-framed buildings in the thirties, TENTEST pioneered metal-to-metal fixing for building boards . . . and we still lead in variety and technique.

To make a comprehensive contribution to the development of building technique we supply and fix complete and our SPECIALISED CONSTRUCTION department now have unparalleled experience in finding practical solutions to fixing problems on many types of construction.

- **1936 ADJUSTABLE METAL FIXING**
- **1938 FRICTION CLIP**
- **1940 SPRING CLIP FIXING**
- **1944 HADLEY CLIP**




Many post-war schemes embody new structural ideas and new fixing problems. We shall be glad to co-operate.

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*We shall be glad to send you information sheets and also our booklet "STRUCTURAL INSULATION" showing when, where and how to use insulation and how to calculate the results in terms of fuel, heating plant and £ s. d. Please say which you want—both if you like.*

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It's no part of our business to draw up a blue print of post-war building plans, but it's already obvious that, as a building medium, Brick will be as popular as ever. As manufacturers of Brick-making and Briquetting plant for over 50 years, we're glad to place our experience at the disposal of people who make bricks or are interested in doing so. The experts in our advisory department can help you select the best machinery for your particular purpose, and to supply full information regarding brick making procedure.

*Our "Emperor" Presses are made in various sizes capable of producing 1,200 to 2,400 bricks per hour and of exerting pressure from 100 to 200 tons. They produce high quality bricks of various types, including:*

*REFRACTORY BRICKS, SAND LIME BRICKS, AND BRICKS FROM WASTE MATERIAL SUCH AS SHALE, CLINKER, ASHES, ETC.*

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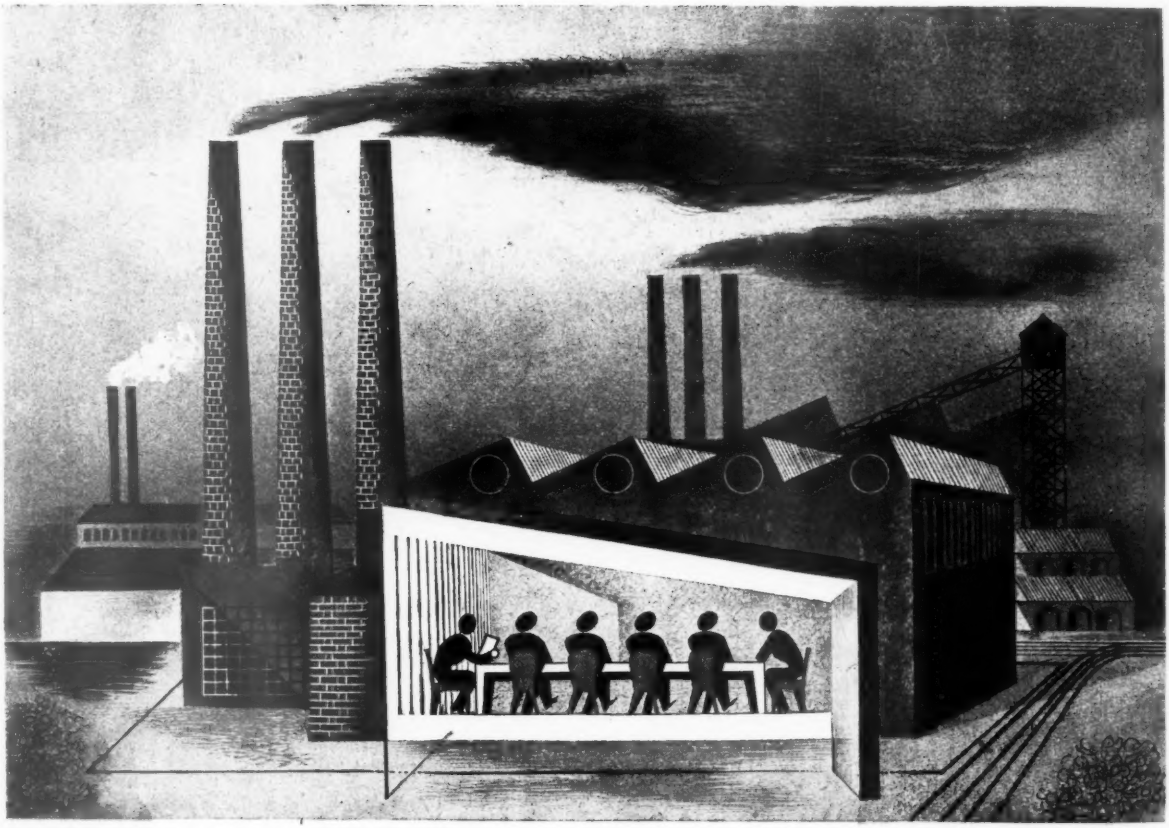

## The switch-over in factories for peace-time output

## A suggestion your industrialist clients will welcome

Owners and managers of factories will be discussing with their architects the replanning of their premises for peace-time needs. In most cases conversions will be needed; in not a few, extensions. Now is the opportunity to consider, for instance, making the factory less costly in fuel consumption, and not quite so dependent on ample fuel supplies (for restrictions will certainly continue). Celotex insulating board is the obvious choice, for it will provide the thermal insulation necessary to maintain equable temperatures. A valuable point also where offices are concerned, is the effective sound insulation value of Celotex. Specify Celotex for your industrialist clients for ceiling and wall linings and internal partitions in all factory developments.

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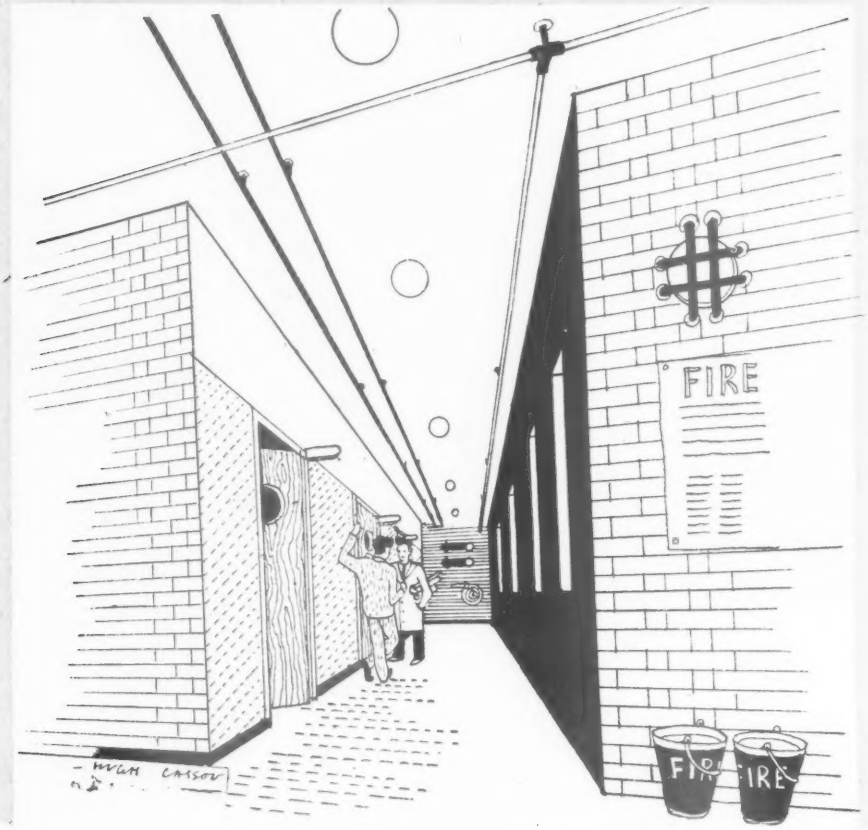
## *Colour scheme for a* **factory corridor?**



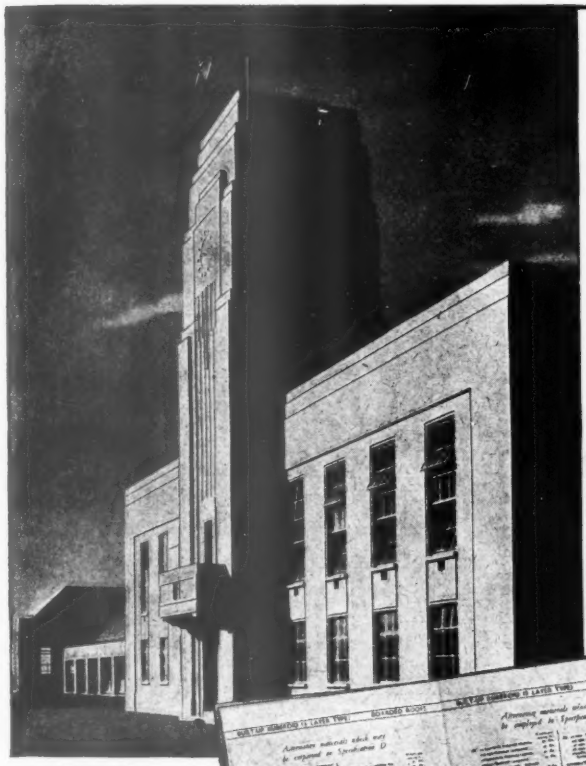

People are continually rubbing shoulders with corridor walls in a busy factory, so pastel colours below dado level are not advisable.

A tunnel effect can be avoided by making the left wall grey and 'dissolving' the right wall by painting it dark red or blue, with the end wall bright yellow to approach the eye.

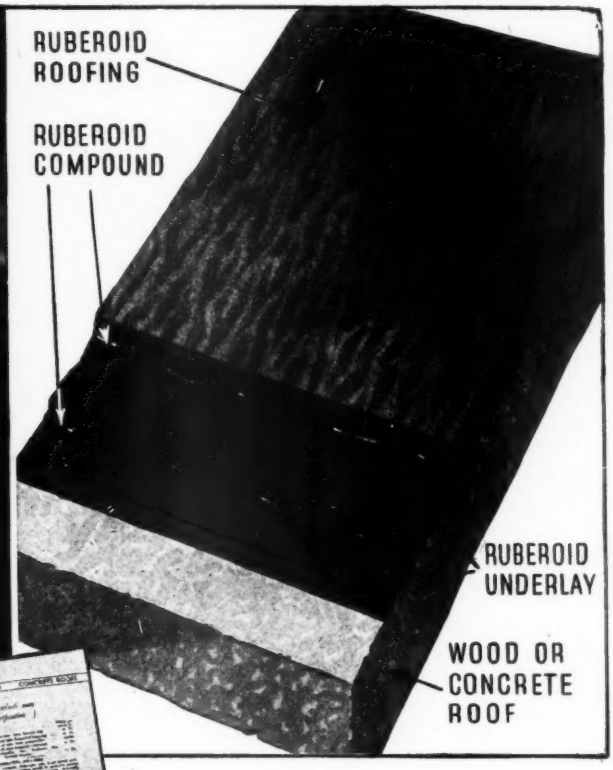
Architects and decorators will probably pay increasing attention to such points. They will use colour to create a sense of space; to make living and working conditions more pleasant. And of course they will choose paints that are washable and economical to maintain, that resist dirt and do not scale or flake.

*Here is a suggested specification:* (1) right hand wall: rich dark red or royal blue; (2) left hand wall: medium grey up to doorhead, pale grey above; (3) ceiling: pale grey; (4) end wall: Chinese yellow; (5) flanking walls: natural red brick; (6) floor: dull pink; (7) pipes, fire-appliances, name-plates: basic red, blue, yellow etc. as B.S.617.

★ Reproduction of this series, with actual colour references, will be supplied on request, price 1d. each. Previous subjects include Suburban Terrace, School and Portal Estate. Others follow. Please write to The Silicate Paint Co., J. B. Orr and Co. Ltd., Charlton, London, S.E.7.



County School,
Weston-Super-Mare.
Architect : A. J. Toomer, Esq.,
F.R.I.B.A. Taunton.




Architects and Engineers are invited to write for a copy of this Ruberoid publication No. 326 entitled "Standard Specifications for Ruberoid Roofs."

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A Ruberoid Built-up Roof consists of two or more layers of Ruberoid underlay, bedded together and surfaced with either Ruberoid Standard Roofing or Ruberoid Astos Asbestos Roofing. It can be laid on either boarded or concrete roofs, whether flat, pitched or curved. It is a permanent roof which will withstand all weather conditions

An attractive alternative is provided by a finishing layer of Ruberoid Slate Surfaced Roofing in red, green or blue. These colours are particularly soft and pleasant, being formed of natural crushed slate applied to the surface during manufacture

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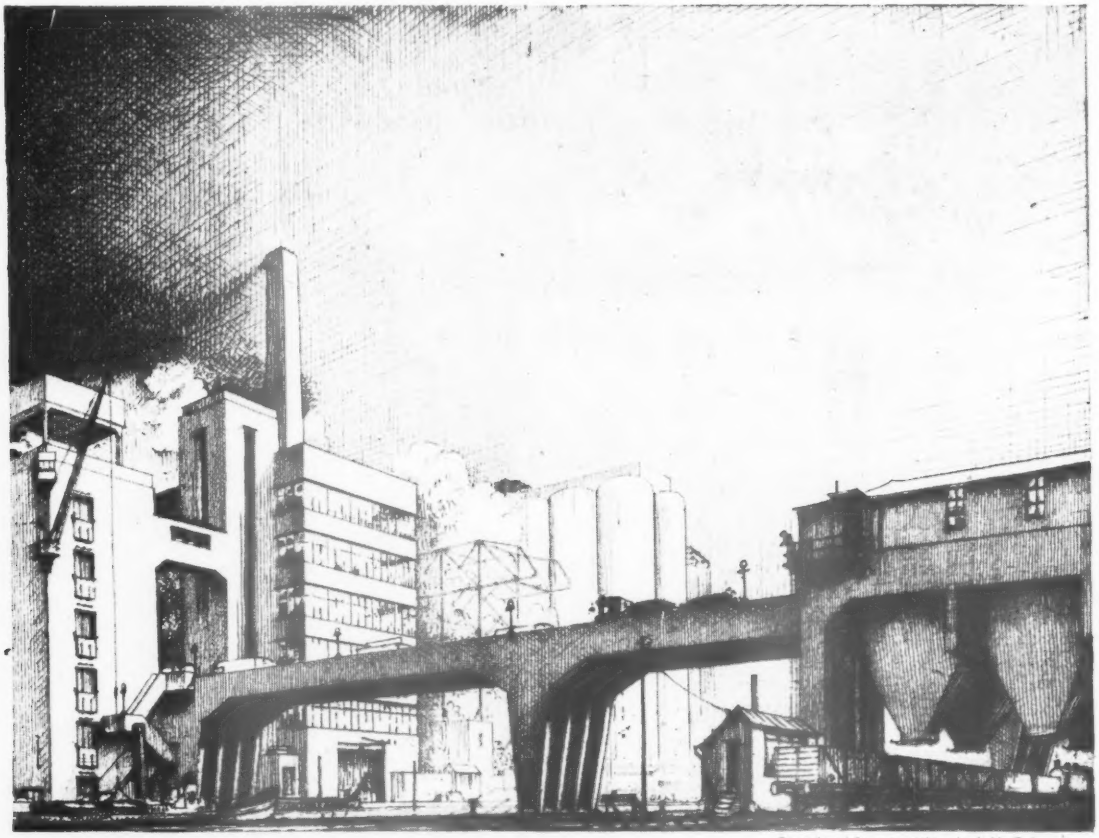

Reproduced from an etching by J. M. G. Forsyth.

The massed grandeur of industrial structures, the very shape of which symbolise their purpose in industry, has been dramatised by many artists in the various mediums at their command. The appeal is stimulated by the sense of vigour expressed in the line and character of such buildings, which features are determined by balanced design consistent with the magnitude and flow of stresses developed in a structure by the function it performs.

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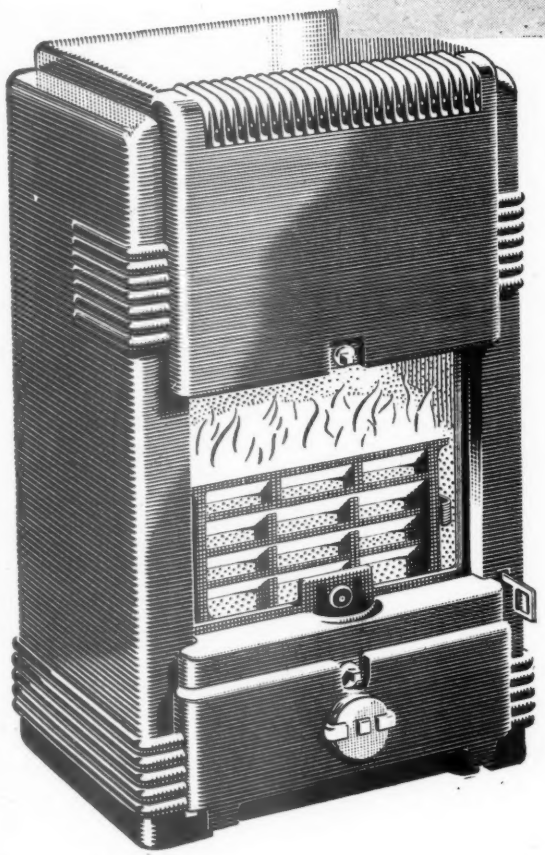
# NEW-FASHIONED VISIBLE HEAT

EXAMPLE

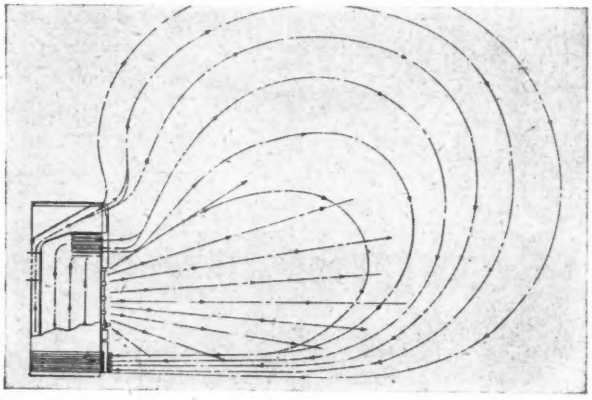
## THE OTTO HEATING STOVE



SPECIFICATION: (TWO SIZES)

| | | |
|---|---|---|
| **FOR OTTO No. 1** | Height | 26″ |
| | Width | 17¼″ |
| | Depth | 13¼″ |
| Height to top of flue outlet | | 18½″ |
| Diameter of flue suitable for 4½″ or 5″ flue pipe | | 4¾″ |
| **FOR OTTO No. 2** | Height | 30″ |
| | Width | 17¼″ |
| | Depth | 13¼″ |
| Height to top of flue outlet | | 21¾″ |
| Diameter of flue suitable for 4½″ or 5″ flue pipe | | 4¾″ |

FINISHES: Ebony black or coloured vitreous enamel, or "Alisheen" de Luxe enamel.



ADVANTAGES: Burns any kind of fuel, coal, coke, anthracite, peat or small logs. It can be a closed or open fire. It is a day-and-night stove, for the combustion is under control. It heats the air of a room. The diagram shows the air duct which runs below, behind and over the fire cavity. Cool air is drawn in underneath. This moves upward behind the fire where heat is most intense. The heated air (still clean and pure) is then thrown forward and outward. The atmosphere is thus kept in constant circulation and the room is made really warm and comfortable even in the farthest corner. With the Otto Stove, heat which ordinarily would be absorbed by the wall at the back, comes out into the room giving 20% more warmth from every ounce of fuel used.

**ONE OF THE MANY CONTRIBUTIONS TO THE POST-WAR HOME THAT WILL BE MADE BY**

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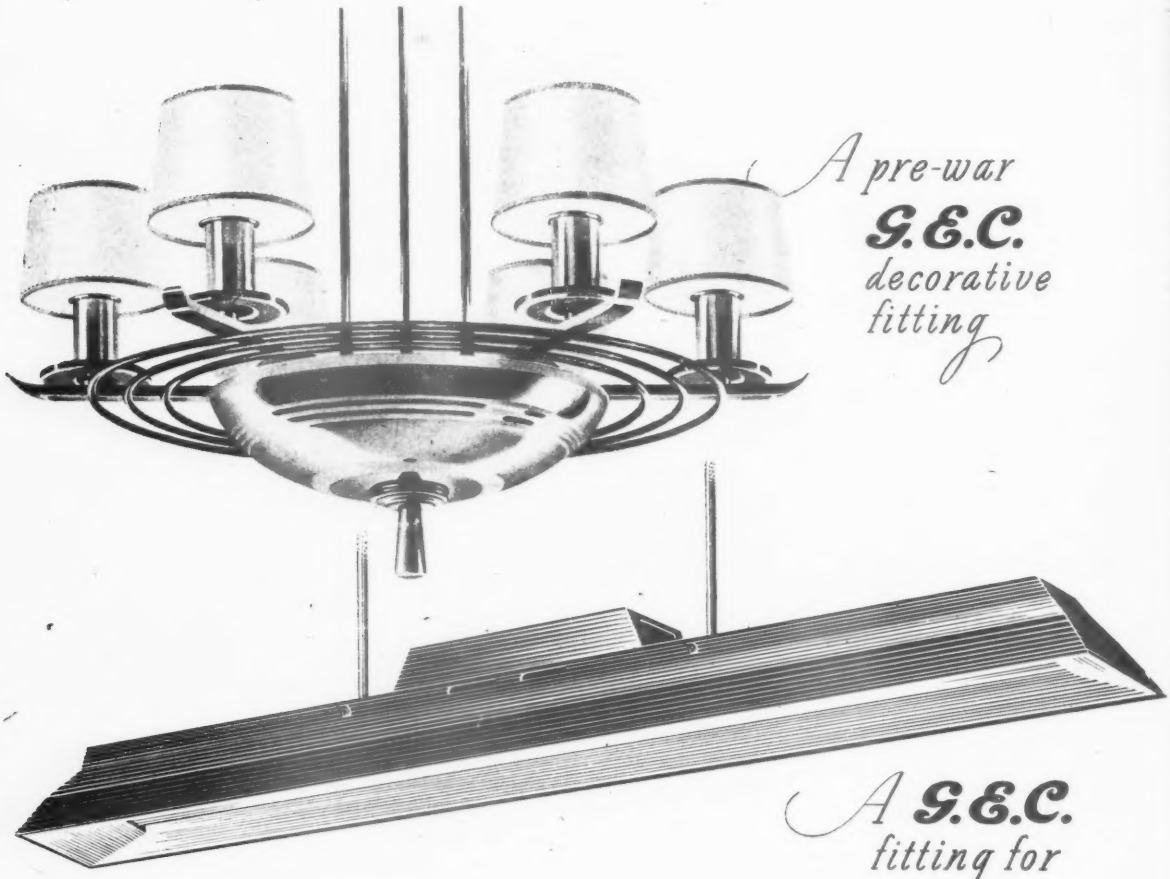


*A pre-war* **G.E.C.** *decorative fitting*

*A* **G.E.C.** *fitting for the war industries*

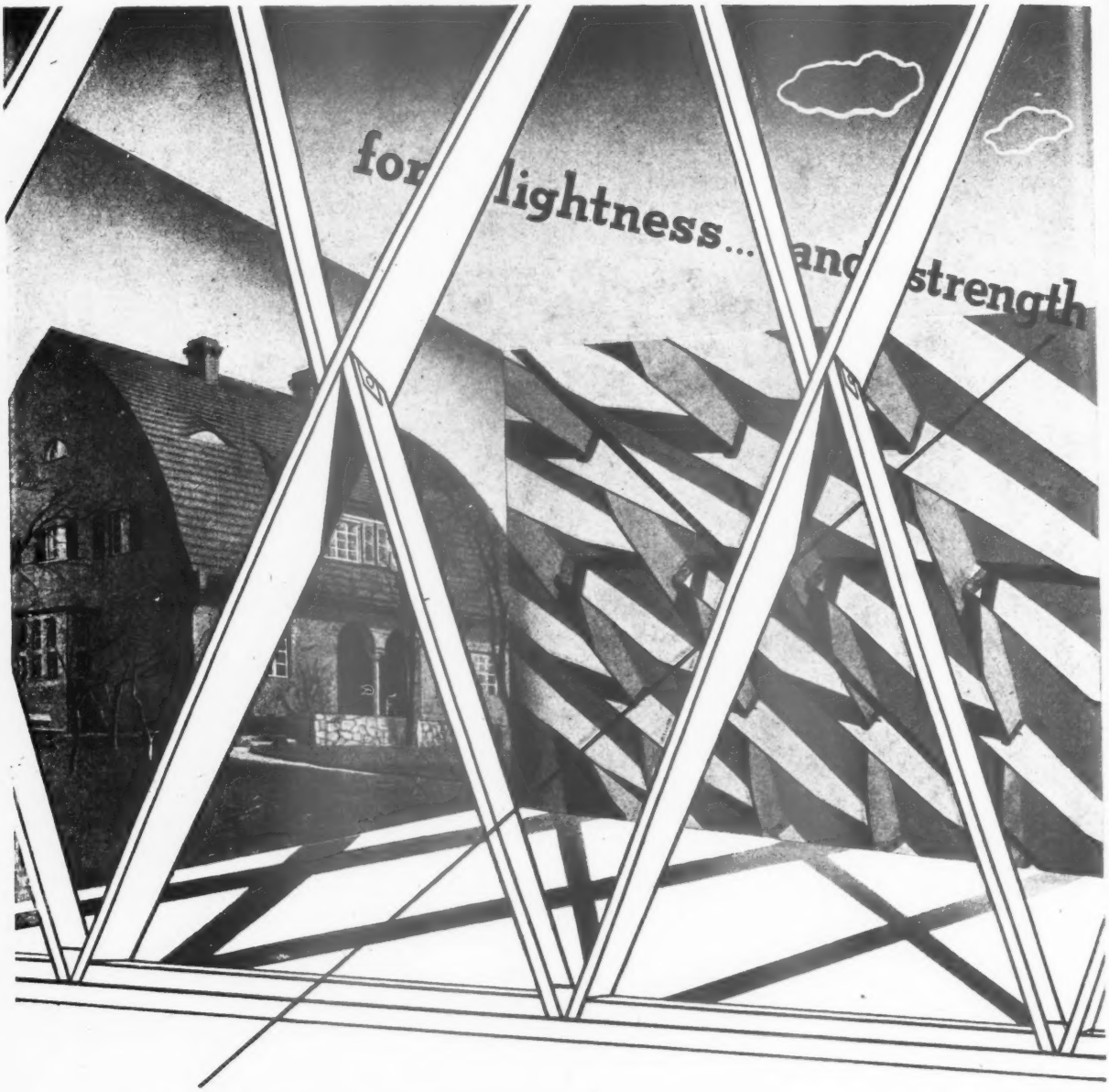
# when Peace returns . . .

. . . the memories of those delightful G.E.C. fittings of character and refinement known so well before the war will be happily revived. The cloak of the Company's great war effort will be shed, and its fittings designers and manufacturing craftsmen will be free to turn their skill and artistry once again to producing ranges of fittings that will satisfy the states and needs of all.

**G.E.C.**

DESIGNERS AND MANUFACTURERS OF

**ELECTRIC LIGHT FITTINGS**




# LAMELLA roof construction

Almost every variety of building can be roofed with Lamella, from a shed or cottage to wide spans for halls and warehouses. The success of Lamella lies in the economical use of units of small dimensions ; a Lamella roof gives uninterrupted roof space and floor area, and gives a wide freedom in design, with pleasing architectural aspects.

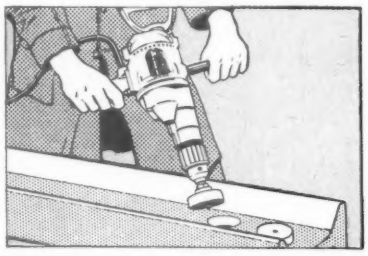
LAMELLA F HILLS & SONS LIMITED · MANCHESTER 17

LM2.

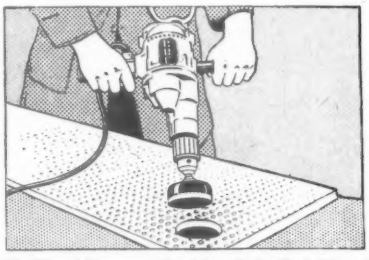
# HOW WOULD YOU CUT THIS HOLE?



*Holesaws range from 3/4" to 4".*



*Cutting a clean round hole in a steel girder.*



*Drilling 'Durasteel' with a B & D drill and holesaw.*

Do you use an acetylene cutter to make a ragged hole? Or would you take a 'short cut' with a B & D Drill and Holesaw to give you a clean round hole of the exact size?

With Holesaws the capacities of Portable Electric Drills can be increased up to 4" in any material that a hacksaw will cut. Holesaws are made with coarse or fine teeth and for tougher materials in high speed steel.

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# The New Horizon .. 8

Original Painting by Doris Zinkeisen

*"Healthy Citizens are the greatest asset any country can have."*
WINSTON CHURCHILL.

It is the essence of our liberty that the people have employed their work-free hours according to individual desires. Easy access to the countryside makes possible the dedication of some portion of those precious leisure hours to healthy relaxation in the pure air and sunshine, to walking, to swimming and to many another outdoor pursuit.

Within our cities the war on dirt, ignorance and disease is being waged unceasingly by the medical profession and by progressive industry. Much has been done within this organisation to ensure the health and physical fitness of all its members during working hours. More will be done as a result of the constant study now given to this all-important subject.

But still the greatest scope lies in the field of preventive measures because the responsibility rests largely with each individual. All must join in the battle for health with new vigour and purpose. With the whole nation steadfast in these aims, this country can advance with confidence, strength and wisdom, "to keep its high place in the leadership of the world."

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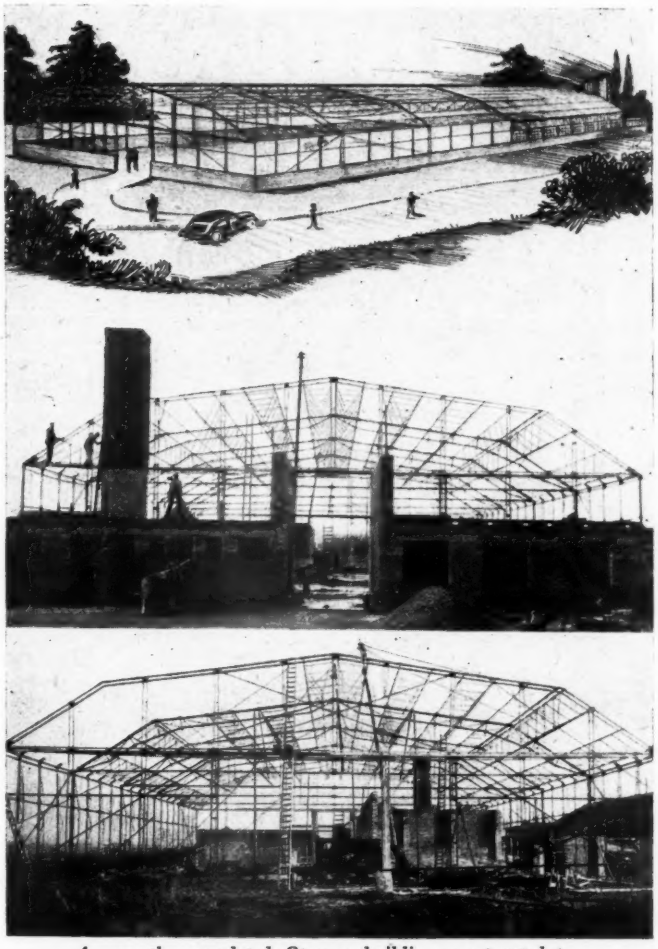
# PATENT WELDED TUBULAR CONSTRUCTION

Data Sheet No. 12



*A recently completed Storage building constructed to the designs of B. W. Turnbull, A.R.I.B.A. (Architect) and F. J. Samuely, B.Sc., M.I.Struct.E. (Consulting Engineer).*
*An office annexe in brick is provided at one gable end, asbestos cement sheeting being used as cladding for the remainder of the structure.*

In this Data Sheet we give a general description of a store building (80 ft. by 150 ft. by 15 ft. to tie beam level), the whole framework of which was of light tubular steel construction—a form of construction recently developed by this Company, having many advantages over the usual types of steel frame construction. Further Data Sheets, published fortnightly in this JOURNAL, will detail the technicalities and advantages of the constructional method adopted.

*General Notes :* The building was prefabricated to a greater extent than is possible with normal structural methods. The prefabricated sections, being composed mainly of tubular sections, were light in weight though dimensionally large.

The sections comprised :

| | |
|---|---|
| 8 ½ Truss sections. | 4 Tie beams. |
| 8 Main tubular columns. | 60 Purlin frames. |
| 4 ½ Wind frames. | 44 Vertical wall stiffeners. |
| 4 Tubular corner columns. | 14 Vertical wall stiffeners (for the gable ends). |
| 4 ½ Gable end rafters. | 2 Double door components. |
| 52 Sectional wall rails. | |

A total gross tonnage of only 24, representing an approximate saving of 45 per cent. over the usual forms of steel frame construction.

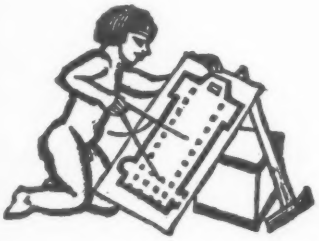
The structural design may be described as an amplification of panel construction and consists of space frames each containing their own sectional and principal bracing members and capable of transmitting all the forces through the main structure. Wind bracing is arranged in the upper chord level, transmitting all wind forces to the four walls which consist of columns of intermediate horizontal and vertical ribs and diagonals.

This form of light steel construction, whilst providing a perfectly satisfactory permanent structure, is simply dismantled and gives nearly 100 per cent. salvage value; the type of stanchion used and the method of fixing to the foundations is such that when the steelwork is dismantled, by chipping away the weak cement covering over the foot of each column, the clamps can be released and the whole of the structure salvaged with the exception of the "J" fasteners sunk in the foundations.

Welded tubular construction gives the lightest possible framework to comply with the B.S.S. for structural steel, hence it is the lightest to handle, the most convenient to transport, can be erected easily and rapidly and affords the greatest economy in the use of steel.

*NOTE.—These Data Sheets are appearing fortnightly in* THE ARCHITECTS' JOURNAL*—the complete series is available in Folder Form and application for copies should be addressed to Scaffolding (Great Britain) Limited, Saunderton, Princes Risborough, Bucks.*

*In common with every other periodical this* JOURNAL *is rationed to a small part of its peacetime needs of paper. Thus a balance has to be struck between circulation and number of pages. We regret that unless a reader is a subscriber we cannot guarantee that he will get a copy of the* JOURNAL. *Newsagents now cannot supply the* JOURNAL *except to a "firm order." Subscription rates: by post in the U.K. or abroad, £1 15s. 0d. per annum. Single copies, 9d.; post free, 11d. Special numbers are included in subscription; single copies, 1s. 6d.; post free, 1s. 9d. Back numbers more than 12 months old (when available), double price. Volumes can be bound complete with index, in cloth cases, for 15s. each; carriage 1s. extra. Goods advertised in the* JOURNAL *and made of raw materials now in short supply, are not necessarily available for export.*



# DIARY FOR FEBRUARY MARCH AND APRIL

Titles of exhibitions, lectures and papers are printed in italics. In the case of papers and lectures the authors' names come first. Sponsors are represented by their initials as given in the glossary of abbreviations on the front cover.

BIRMINGHAM. J. B. W. Brownsdon and J. English, both of Messrs. Chance Bros. *Glass: Wartime Developments and Their Applications to Design.* At the Royal Birmingham Society of Artists, New Street, Birmingham, 2. (Sponsor DIA. Birmingham Branch.) 5.30 p.m. FEB. 26

CHESHUNT. *When We Build Again.* Exhibition. (Sponsor, TCPA). FEB. 28-MAR. 10

HASLINGDEN. *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA). Town and Country Planning Association Conference, Mar. 24. Speakers, R. L. Reiss and W. Dobson Chapman, Vice-President TCPA. MAR. 22-APR. 7

LICHFIELD. *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA). The Town and Country Planning Association is holding a Conference on the last day of the Exhibition. Speaker, F. J. Osborn. FEB. 15-17

LONDON. *Devastation and Reconstruction.* Exhibition of French prefabricated houses. At the RIBA, 66, Portland Place, W.1. The exhibition is being brought over from France under the auspices of the French Ministry of Information and is the first exhibition to be produced since the liberation of Paris. It was prepared in France during the German occupation under enormous difficulties and in spite of political direction on the policy of reconstruction which tended to ignore all but effete and obsolete methods of construction. Open daily (Sundays excepted) from 10 a.m.-6 p.m. FEB. 15-MAR. 15

John Coolidge. *Vignola.* At the Courtauld Institute of Art, 20, Portman Square, W.1. 1.15 p.m. FEB. 22

*Conference on Atmospheric Pollution.* Joint conference of the Institute of Fuel and the National Smoke Abatement Society. At the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2. Chairman, morning session, Sir Lawrence Chubb, Hon. Treasurer, National Smoke Abatement Society. Opening of Conference by Major Gwilym Lloyd George, M.P., Minister of Fuel and Power. Chairman, afternoon session, Dr. E. W. Smith, President of the Institute of Fuel. FEB. 23

F. N. Sparkes and A. F. Smith. *The Concrete Road; a Review of Present-day Knowledge and Practice.* At the Institution of Civil Engineers, Great George Street, Westminster, S.W.1. (Sponsor, Institution of Civil Engineers). 5.30 p.m. FEB. 27

Federation of Master Builders. *Luncheon Meeting preceding Fourth Annual General Meeting.* At the Connaught Rooms, Great Queen Street, W.C.2. Guest of honour, Sir Malcolm Trustram Eve, K.C. 1.15 p.m. FEB. 27

Professor E. P. Stebbing. *Erosion and Water Supplies.* At the Royal Society of Arts, John Adam Street, Adelphi, W.C.2. (Sponsor, RSA). 1.45 p.m. FEB. 28

F. Longstreth Thompson. *An Outline Plan for a Region.* At Caxton Hall, Caxton Street, S.W.1. (Sponsor, TPI). 6 p.m. MAR. 1

*National Housing and Town Planning Conference.* At the Central Hall, Westminster, London, S.W.1. The Conference will consider some of the more important problems confronting local authorities in post-war reconstruction in England and Wales, and will be similar in character to the conference held in Westminster in October, 1943. Ladies are specially invited. The Minister of Health (Mr. H. U. Willink) will address the Conference on March 2, and it is hoped that the Minister of Town and Country Planning (Mr. W. S. Morrison) will find it possible to address the conference on March 1. Following is the preliminary programme:—March 1: Chairman, Alderman P. J. M. Turner, J.P. (Sheffield), Chairman of the National Housing and Town Planning Council. General Subject: *Planning for Post-War Reconstruction.* March 2: Chairman, M. Lindsay Taylor, Town Clerk of Southall, Middlesex, and Vice-Chairman of the National Housing and Town Planning Council. General Subject: *Housing the Nation.* MAR. 1-2

Lord Westwood. *Industrial Relations.* (Amulree Memorial Lecture). At the Royal Society of Arts, John Adam Street, Adelphi, W.C.2. (Sponsor, RSA). 1.45 p.m. MAR. 14

MALVERN. *When We Build Again.* Exhibition and Film. (Sponsor, TCPA, in collaboration with Messrs. Cadbury Bros.). *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA). Town and Country Planning Association Conference, Mar. 17. MAR. 10-19

MIRFIELD, YORKS. *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA). FEB. 25-MAR. 9

# NEWS

THURSDAY, FEBRUARY 15, 1945
No. 2612. VOL. 101



*Though no feature in the* JOURNAL *is without value for someone, there are often good reasons why certain news calls for special emphasis. The* JOURNAL'S *starring system is designed to give this emphasis, but without prejudice to the unstarred items which are often no less important.*

★ *means spare a second for this, it will probably be worth it.*

★★ *means important news, for reasons which may or may not be obvious.*

*Any feature marked with more than two stars is very big building news indeed.*

### *Following are the results of the July examination for the RIBA DIPLOMA IN TOWN PLANNING.*

At the Examination held in July, 1944, the following were successful, and have been awarded the RIBA Diploma in Town Planning: Douglas Winston Aldred, James Edwin Lees Caldwell, Antony R. Lamb, R. Fraser Reekie. The following candidate having previously passed the examination conducted by the Town Planning Joint Examination Board, has gained approval for the requisite probationary work and has also been awarded the RIBA Diploma in Town Planning: James A. Roy McKee.

### *Mr. C. W. Peat says the conversion of WASTE PAPER is creating a new industry with tremendous possibilities.*

Sawdust, he continued, formerly a headache for scientists, is now being used as an ingredient in plastics and fuel and is being developed as a source of industrial alcohol and building material. Mr. C. W. Peat, Parliamentary Secretary, Ministry of Supply, was speaking at the opening of the Ministry's *Wealth from Waste* Exhibition in London. Nearly four million tons of waste paper, he said, have been salvaged since the war began and now provide about two-thirds of our requirements.

## *From* AN ARCHITECT'S *Commonplace Book*

FROM THE JOURNAL FIFTY YEARS AGO : A CHAT WITH MR. PENROSE, M.A., F.R.S., P.R.I.B.A. [*From* The Builders' Journal *for February* 12, 1895.] Next to Archdeacon Sinclair's charming old house in St. Paul's Churchyard is an insignificant one-storey building, upon whose front door the name of Penrose is all but obliterated from the well-worn plate. It is the official address of the Cathedral Surveyor. . . . Mr. Penrose stands with clasped hands waiting for your questions with the resignation of a saint awaiting his doom. . . . " You have never discovered any alarming deterioration in the stability of any part of the Cathedral ? " " None whatever. The New City Underground Railway Company wanted to construct a station at the corner of the Churchyard, but we strenuously opposed it, and the House of Lords Committee very wisely upheld our opposition. Although the ' tube ' will run very close to the foundations there is not the slightest fear of any damage being caused by that." Smilingly, you ask Mr. Penrose if he ever had the intention of washing the outside of the Cathedral ? " The question is too ridiculous to answer," is his reply. " The sooty coating only forms on those parts not exposed to the weather, so that were there any virtue in the washing suggestion, a few months would bring back the old condition of things.". . . " You love the Cathedral, Mr. Penrose ? " " Yes. It is, in my opinion, the greatest classic exterior in the world. St. Peter's has no doubt a nobler interior, but there is nothing known to Europeans which quite comes up to the external grandeur of St. Paul's. Its front is beautiful beyond any conception." " You are this year's President of the Royal Institute, Mr. Penrose ? " " Yes ! The Council asked me if I would fill the chair, and I accepted." And at this sublime height of modesty it would have been painful to have proceeded further. . . .

*Local authorities have set up a* ***COMMITTEE TO REPLAN NORTH MIDDLESEX*** *and South East Herts., and settle boundary problems.*

The authorities likely to be included in the committee are Middlesex and Hertfordshire County Councils, the municipal boroughs of Edmonton, Finchley, Hendon, Hornsey, Southgate, Tottenham, Wembley, Willesden and Wood Green, the urban districts of Barnet, East Barnet, Cheshunt, Enfield, Friern Barnet, Harrow and Potters Bar, and the rural district of Elstree.

★

*Mr. A. Trystan Edwards has been selected by the Chadwick Trustees as the recipient of the £250 award* ***TO UNDERTAKE RESEARCH*** *into the density per acre for houses in large towns.*

*In the House of Commons, Mr. Ivor Thomas questioned the Parliamentary Secretary to the Ministry of War Transport about a proposal to drive through the middle of the ancient city of* ***HEREFORD*** *a road, described as an internal by-pass road, which by its close proximity to the existing bridge would impair the view of the river and cathedral, necessitate the filling in of the ancient ditch, and would threaten the ancient city wall.*

Mr. Noel Baker stated in reply: The existing trunk road through the city of Hereford is narrow and congested, and it cannot be widened. There is comparatively little through traffic, and a by-pass road outside the city would not, therefore, meet the need. For this reason, the County Highways Committee and the Town Council are considering an alternative route immediately outside the city wall, with a new bridge over the River Wye. I am assured that this plan would not spoil the views of the river or of the cathedral, and that it would open up a better view of the city wall structure. The committee and the council also hope to preserve a portion of the ancient ditch. The scheme is still in a preliminary stage, and the advice of the Royal Fine Arts Commission will be obtained before it is adopted.

*Mr. Robert W. Foot, O.B.E., M.C., Chairman of the Mining Association of Great Britain, has been appointed* ***PRESIDENT OF THE COAL UTILIZATION JOINT COUNCIL*** *for* 1945.

The retiring President, Sir Evan Williams, Bart., has held office since the inception of the Council. The Vice-Presidents of the Council for 1945 are Mr. John Charrington, Lt.-Col. Sir John Greenly, K.C.M.G., C.B.E., and Sir W. R. Dudley Pryke, Bart.

*At Bath, an exhibition of the master plan, providing for an evolutionary programme of orderly, progressive development of the city for the next fifty years, has been opened by Mr. W. S. Morrison, the Minister of Town and Country Planning. The plan has been prepared by Sir Patrick Abercrombie (Consultant), Mr. John Owens (City Engineer) and Mr. H. Anthony Mealand (Town Planning Officer). In the photograph, taken outside the Victoria Art Gallery, where the exhibition is being held, are : left to right front, Sir Alfred Hobhouse, Mr. W. S. Morrison, the Mayor of Bath (Councillor Edgar Clements), and the City Engineer (Mr. J. Owens). right to left back: Sir Patrick Abercrombie, and the Town Clerk.* *See also p. 132*

# THE ARCHITECTS' JOURNAL

*standard contents*

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

★ The war has both multiplied the number of Official Departments and encouraged Societies and Committees of all kinds to become more vocal. The result is a growing output of official and group propaganda. A glossary of abbreviations is now provided below, together with the full address and telephone number of the organizations concerned. 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 |
| ABT | Association of Building Technicians. 5, Ashley Place, S.W.1. | Victoria 0447-8 |
| APRR | Association for Planning and Regional Reconstruction. 34, Gordon Square, W.C.1. | Euston 2158-9 |
| ARCUK | Architects' Registration Council. 68, Portland Place, W.1. | Welbeck 9738 |
| ASB | Architectural Science Board of the Royal Institute of British Architects. 66, Portland Place, W.1. | Welbeck 5721 |
| BC | Building Centre. 23, Maddox Street, W.1. | Mayfair 2128 |
| BCIRA | British Cast Iron Research Association. Alvechurch, Birmingham. | Redditch 716 |
| BDA | British Door Association. Shobnall Road, Burton-on-Trent. | Burton-on-Trent 3350 |
| BIA | British Ironfounder's Association. 145, Vincent Street, Glasgow, C.2. | Glasgow Central 2891 |
| BIAE | British Institute of Adult Education. 29, Tavistock Square, W.C.1. | Euston 5385 |
| BINC | Building Industries National Council. 11, Weymouth Street, W.1. | Langham 2785 |
| BOT | Board of Trade. Millbank, S.W.1. | Whitehall 5140 |

## *Both Fifty Years Old*

This issue marks the fiftieth anniversary of the Journal, for on February 12, 1895, the first number of *The Builders' Journal*, as it was first called, was published. It was thus born within a few months of the Tower Bridge, when the Prince of Wales on behalf of the Queen performed the "picturesque and stately ceremony" of opening the world-famous landmark. A reporter of the time recorded that "at the touch of a silver disc small enough to be formed into a lid of a loving-cup, the leaves of the bridge rose smoothly and noislessly under the hand of the Prince of Wales." But no silver disc was needed to open the first leaves of *The Builders' Journal*. Those "bright and happy pages," as the first editor described them, could be acquired (almost unillustrated) for a copper disc. Since 1895 money values have changed as much as editorial values. So have æsthetic values. This week's leading article tells how the Journal has played its part in the architectural revolution which has taken place since the Tower Bridge was built, while Astragal supplies those anecdotes which make any history comprehensible.

*Mr. Stanley C. Hawes has been elected* PRESIDENT OF THE NATIONAL ASSOCIATION OF SHOPFITTERS.

At the annual luncheon and general meeting of the National Association of Shopfitters, held in London, Mr. Stanley C. Hawes (Fredk. Sage & Co., Ltd.) was elected President for the ensuing year, and Mr. A. Edmonds (A. Edmonds & Co., Ltd., Birmingham) Vice-President. The many problems facing the industry in its turnover from wartime to peacetime production were discussed, and progress reports were made resulting from the recent meeting between the Ministry of Works and the Association on the rehabilitation of the Shopfitting Industry. A report was also made on the negotiations taking place between the Association and the War Damage Commission as to a basis of payment for repairs to war damaged premises.

★★

*The King has awarded the GEORGE MEDAL to Lt. Hugh Baldwynne Lyle Horner, Royal Marines Engineers, for gallantry in rescuing the injured occupants of a jeep which had been driven into a mine-field.*

Although he had no previous experience in dealing with mines, Lt. Horner, stabbing for mines with a bayonet and using bandages for tapes, systematically searched and marked the mine field and rescued the injured men. With no moon, with an air-raid warning followed by a heavy anti-aircraft barrage, the search lasting for more than two hours, was carried out with a minimum of torch light in waist high corn. Before volunteering for the Royal Marines Lt. Horner, A.R.I.B.A., practised with Leslie Norton, A.I.A.A., at 45, Albemarle Street, W.1. The practice is now being continued by Mr. Norton alone at 16, Clifford Street.

★

*Master Painters of England, Scotland and Wales have formed a* CONFEDERATION OF MASTER PAINTERS.

Representatives of the National Federation of Master Painters of England and Wales, the National Federation of Master Painters in Scotland, and the Federation of Painting Contractors, met in Edinburgh on January 30, when the Confederation of Master Painters was instituted with the following objects:—(1) To preserve the autonomy and independence of the painting industry as an essential national service, and to act as the representative organization on behalf of Master Painters generally, in England, Scotland and Wales. (2) To promote the interests and improve the status of Master Painters, and all connected with the industry. (3) To promote good relationship and mutual understanding with the operatives, and to improve and develop apprenticeship and training.

*North Ilford people have launched a scheme to* PROVIDE THEIR OWN COMMUNAL CENTRE

The first aim will be a communal home, with facilities for recreational and cultural activities, sections for amateur dramatics and orchestral and choral music, a good sized hall, and smaller rooms for discussion groups.

# FIFTY, NOT OBVIOUSLY, OUT

ON February 12 the JOURNAL was fifty years old. This is a good, if not a great age, for history has crowded several centuries worth of change into that brief period. Thus the JOURNAL feels that it need not blush to devote a leading article to itself. Less might seem casual; more would hardly be modest.

That half century falls into two very distinct parts—before and after the last war. The JOURNAL was first published in February 1895 as THE BUILDERS' JOURNAL, and cost one penny. It was one of a number of periodicals which were started to provide technical information for the first "universally educated" public (*Answers* and the *Daily Mail* supplied their wider reading.) The building industry was then just beginning to develop the multitude of specialized subdivisions and skills which now exist and the architectural profession possessed a small somewhat archæological and uninfluential centre and no very clear boundaries. From the beginning the JOURNAL was interested in new techniques—it published a considerable series of articles on ferro- or reinforced concrete in 1904-1908—and in the 23 years to 1918 it helped to build, and was itself built up by, what might be called the first generation of School architects. Out of this productive collaboration arose a certain progressive attitude towards architectural technics and politics, and this bore fruit after the last war, in the revolution—it can hardly be called less—which produced the modern movement. By the early twenties the JOURNAL was publishing articles on Corbusier's work (the change of heart for the *avantgarde* of English Architects generally, and the JOURNAL specifically, came on May 19, 1921, a date which is down, it is to be hoped, in Dr. Nikolaus Pevsner's records, when Roger Fry gave his historic address, *Some Architectural Heresies of a Painter*, at the RIBA). And from that time the JOURNAL began to work for *the cause*. Today when every architect is a modern architect, and every building a modern building, and every building paper flaunts its GILL SANS, it is convenient to think of the revolution as having merely just happened, but it did not just happen, and there are times, and this is one of them, when it is proper to remember that the cause of modern architecture (with all that phrase implies) had to be fought for, against enormous odds, by people who stood to gain nothing, stood indeed to lose much—friends, money, reputation, and the acclaim of the official and the successful—by the fight. With the single exception of THE ARCHITECTURAL REVIEW, a monthly, the JOURNAL was for years the only building paper to fight the modern battle, just as some years later it was the only paper to fight seriously the battle for planning, a fight that is still going on. In both cases the JOURNAL stood journalistically alone, and for neither has it ever received the plaudits of the multitude. What it has received, and what it prizes far beyond any possible kind of public recognition, is something

much more rewarding—the support, inarticulate perhaps but solid, of many thousands of practising architects, the great body of the greatest of all professions, who though cursing from time to time the vocal (and occasionally over-energetic) championship of unpopular causes, have remained amazingly constant in their attachment and even, we dare to hope, their affection, for the paper. There are still subscribers on the JOURNAL's books who have taken every issue since the first; and there is today a long waiting list of "would-be" readers whom a cruel law forbids us to introduce to felicity.

Self congratulation is always an unbecoming thing and we do not intend to indulge it here, particularly as this is a time when all the attention anybody has to spare from the war should be focussed on the future—potentially the greatest future that ever opened before a generation of architects. The best way to think of the last half-century is as a prelude to the next, which opens for the JOURNAL in 1945. A great year, we must all hope.

*The Architects' Journal*
*War Address: 45, The Avenue, Cheam, Surrey*
*Telephone: Vigilant 0087-9*

# NOTES & TOPICS

FROM BJ TO AJ

The past, we are often told, lies hidden behind an ivied wall of legend and of prejudice. The A.J., however, has always believed in the maxim that the quickest way over an ivied wall is to send a fast man round the end. Astragal therefore returns, a little breathless, to bring you his findings from behind that wall.

*

It all began fifty years ago. On Tuesday, February 12, 1895, a Mr. Abrams, from Yorkshire, produced the first number of *The Builders' Journal* at the offices in Arundel Street, Strand, of the Talbot Newspaper Co.

*

"It is our aim, our ambition, our aspiration, even," proclaims the title page of that first number, "to build our Journal worthily and well, not for the hour only, but for future years; for the few men in the forefront of an enduring and a laborious art; for the disciplined ranks of a distinguished Profession; for the young men—Architects to be—and for all who love a clustered column or a flying buttress, a traceried window or a Greek frieze, for the man, too, who honestly plumbs a jamb. . . ." Magnificent sentiments these—even to those contemporary architects who have little affection for a clustered column and who have never done anything to a jamb except lean against it.

*

The text, closely printed upon the following 16 pages, does its best to live up to them. Leafing them through today, one is struck by the surprising outspokenness of late Victorian journalism. For instance, members of the AA are referred to as "hairdressers' assistants." Sir William Ingram, president of a photographic firm, is rebuffed for "glorifying every slut of the stage by tricky photography"; a story about Professor Roger Smith is coupled with the phrase "now getting into the sere and yellow leaf"; the rival *Builder* is referred to as that "smug little commercial enterprise in Catherine Street"; and a footnote to an article by Mr. Leonard Stokes says: "Although the gist of his paper could have been contained in a column of good literature, Mr. Stokes has been compelled to fatten it and thereby sacrifice half its power." No wonder the editor addressed his paper to the "disciplined ranks." They had to be disciplined to take this kind of talk.

*

But *The Builders' Journal* contains much else besides plain speaking, and despite the poverty of illustration and poor standard of reproduction—unless, of course, it is true that the pea-soupers of those days were perpetual—it was certainly worth the penny which was asked for it. For his money the reader of this number got, for instance, an interview with Mr. Penrose, President of the RIBA and Surveyor of St. Paul's Cathedral, who makes two astounding statements—first, that the stability of St. Paul's is "in not the slightest danger," and second, that "the West Front is beautiful beyond any conception." An interview follows with Sir Arthur Blomfield, who speaks warmly of "the beautiful drawing and artistic attainments of my nephew Reginald."

*

There are articles on terra cotta, the City Tube, and the new Admiralty Building won in competition by the Leeming Brothers of Halifax. There are Trade Notes, Competition Announcements, and a news column called *Bricks and Mortar*, which, in the words of Astragal's predecessor, contains "the cream of comment upon all contemporary matters."

*

There is plenty of news, too. We learn, for example, that only 50 per cent. of the architects of the day read professional technical papers; that Messrs. Trollope & Sons have Union trouble; that London has "gone mad over photographic albums"; that a new Turkish Bath "in the Moresque style" has been opened in the City; that a plot of land has been acquired in Westbourne Grove for a colossal store; that there is a competition at Durham for a Sewage Disposal plant (What? No cooling towers?); that a Mr. Hoskins, F.R.I.B.A., was injured in a disastrous explosion in a gunsmith's shop; and that Mr. Dupont, a well-known Colchester contractor, unsuccessfully attempted suicide by cutting his throat.

*

Such are some of the stirring events recorded in the first number of *The Builders' Journal*—sufficiently exciting, one would have thought, to make the other 50 per cent. of the profession become subscribers at once. But it was

not to be, and the Talbot Newspaper Co. became insolvent in 1902. The firm was then taken over by the present proprietors, who proceeded to develop it first under the name of Technical Journals (1902), Ltd., and later as the Architectural Press.

*

The Journal has remained in the same hands since 1902 and is still a family, and therefore a human, affair. But it has had a number of distinguished editors. Hugh B. Philpot was the first editor, and left at the turn of the century for *The Illustrated Carpenter and Builder*, being followed by one who name is well known to all members of the Architecture Club, that of J. H. Elder-Duncan. Then there was R. Randal Phillips, who later went to *Country Life* and is now at the Ministry of Works. He was joint editor with H. Kempton Dyson. There was J. F. McRae and G. Jeffery Howling (Editor of *The Builder* since 1925 and still going strong). There was H. H. Statham, Sir Charles Reilly, Professor Richardson and Christian Barman, now at MOW.

*

Among these names, the late H. Kempton Dyson's is particularly significant, for it was he who, between 1904 and 1908, helped to put ferro-concrete on the map through the pages of the Journal. Thus he initiated the progressive technical policy of the paper. He became, incidentally, one of the founder members of the Concrete Institute, now the Institute of Structural Engineers.

*

Another significant step towards the strong support of the modern movement which has characterized the A.J. more consistently and for longer than any other technical journal (at one time with considerable risk) was an article published in 1920 by Gordon Holt, then a teacher at the AA. He was, amongst other things, art critic to the Journal, which was even then backing such "advanced" institutions as the London Group. Calling at the office one day, he proposed to the editor that, since he was visiting Paris, he should write an article for the Journal on the author of a remarkable book that had just appeared in France. The article was subsequently written and published, and so the first introduction of architects in this country was made through the pages of the Journal to le Corbusier and *Vers une Architecture*.

CMD 6579

Like a tough and middle-aged oak tree, the Ministry of Health holds its ground, and bows its head to light breezes and savage storms alike: now shedding a branch, now rattling its dry leaves, but changing very little in essentials. This simile is prompted by further perusal of the Ministry's most recent White Paper, *Local Government in England and Wales during the Period of Reconstruction*, which so skilfully avoids any proposed action that would be unpopular with Local Authorities—or at least the more powerful ones.

*

And yet, when Parliament tosses more and more powers into their laps, does it ever stop to think whether they are in a position to make good use of them? In fact, the whole face of reconstruction in this country will wear the look that the local officials give it—the architect by his housing layouts, the borough surveyor by his street works and his services, the planning officer by the skill with which he interprets the intricacies of the 1944 Act.

*

The White Paper makes one sensible proposal: that the system of revising the boundaries and status of local authorities should be reviewed and consolidated in the hands of a Boundary Commission, with powers to mould and merge their arbitrary confines. Apart from this, and a promise to assist further at some future time the poorest and the most war-damaged areas, the White Paper reverts to the comfortable—if somewhat confusing—present pattern of local government. The word Regional is brought up, only to be immediately knocked down. Amid the chorus of disapproval that accompanies it, one cannot help reflecting how admirable—and how convenient—an Aunt Sally it is.

ASTRAGAL.

# LETTERS

*Charles H. Fowler, A.R.I.B.A., and Jessie H. Fowler, Reg. Arch.*

*B. A. P. Winton-Lewis, A.R.I.B.A.*

*F. J. Osborn*

*G. B. J. Athoe*
(*Secretary, The Incorporated Association of Architects and Surveyors*)

## Crystal Palace Competition

SIR,—Whilst learning with pleasure that this project is to become the subject of a national competition, we would like to suggest that this is not the best time to promote such a venture. Considering the fact that many of the younger members of the profession now on active service will be precluded from competing on anything like an equal footing with those more fortunately placed in this respect, and having regard to the opportunity which the winning of such a competition would afford, we most earnestly suggest that the announcement be delayed, at least until demobilization of architects takes place.

We feel that no great inconvenience would be occasioned by further delay, since three years elapsed after the fire before the outbreak of war, without any action being taken.

CHARLES H. FOWLER
Bournemouth JESSIE H. FOWLER

## Control of Design and Erection of Buildings

SIR,—The trend of building legislation has always been to safeguard and enhance the public interest. When Parliament saw fit to pass the Architects' Registration Act, its intention was, presumably, to protect the public by ensuring that architects as members of a not unimportant profession concerned with building, should be properly qualified.

The design and supervision of buildings is the very *raison d'etre* of the architect, and despite the growing need for other consultants, all of whom are necessary in their several spheres, he is still the best qualified to carry out this work. However, during

# A PLAN FOR BATH


*The exhibition of* A Plan for Bath *was opened by Mr. W. S. Morrison on February* 1. *The plan was prepared by Sir Patrick Abercrombie, Mr. John Owens (City Engineer), and Mr. H. Anthony Mealand (Town Planning Officer). The eighty thousand word report on the plan is soon to be described in greater detail in the* Journal. *Above top, is a view of the model of the central area of Bath, looking north. Below is a plan of the central area ; the buildings marked black are existing churches, light tone are other existing buildings, dark tone are proposed new buildings. Suggestions for this central area include : the removal of the shops on Pulteney Bridge to provide a covered footpath and allow for the widening of the street, and the restoration of the Bridge to Adam's original design ; a new café and lido below the bridge, facing the weir ; the improvement of roads to make a central ring, thus turning the town-centre virtually into a precinct ; a new cultural centre in the present Guildhall buildings which are to be extended for the purpose (at present the civic and administrative offices are housed there : it is suggested that these should be moved to the Royal Crescent); a shopping precinct ; a technical college ; hotels ; a concert hall ; and, what is perhaps the most ambitious of the proposals, a large health centre facing south on to the river. This would, by itself, form one of the ten precincts into which the central area is divided ; it would make Bath one of the most important centres for rheumatic diseases. The buildings suggested are : a Centre of Medical Research ; a Medical Health Centre ; Hostels for patients ; an Ear, Nose and Throat Hospital and Eye Infirmary, and a covered swimming bath. The planners expect that "the building for this great work will prove that modern architects and landscapists can hold their own with the mighty Georgian Masters of the past."*

the inter-war period, despite the great amount of building, and an abundance of legislation governing building, the general standard of design and amenity was not very high. The percentage of buildings erected from the plans of an architect, not to mention under his supervision, was very low.

It is crystal clear that in the post-war years there will be a building programme of unprecedented size. Moreover the public demand, that not only shall buildings be provided, but that they will have all the amenities that they quite rightly expect, and that attention will be paid to proper planning and design as well as to health, and to stability of structure. Therefore would it not be desirable for Parliament to enact that, saving in special circumstances all new buildings costing more than, say, £200, should be erected from the plans of a registered architect.

The writer understands that legislation of this character is in force in the Union of South Africa, as well as several European countries.

Brighton B. A. P. WINTON-LEWIS

## London's Housing Needs

SIR,—Dr. Block's letter makes plain the difference between us. He wants to prescribe (as demographic doctor) for what he diagnoses as the public's *needs*; I want to cater (as servant of the public) for their *demand*. A world of social philosophy separates these two policies. I am far from ridiculing demography, but I conceive it as something less primitive than scientific head-hunting. And demography must not replace democracy.

Welwyn Garden City F. J. OSBORN

*Dr. Block replies as follows: Mr. Osborn's definition of the difference between us is not correct. We are all, or endeavour to be, servants of the people. But, in a good servant, obedience is not enough; nor does he who most invokes the master's name, always serve him best. I do not "prescribe" anything. That is the task of planners. But I urge planners to study the facts before making the "prescriptions." There is not the slightest danger of collision between demography and democracy, but there is the danger of servility, in the guise of democracy taking the place of true service.*—ALEXANDER BLOCK.

## Accelerated Training

SIR,—In view of the magnitude of the post-war building programme and the obvious and urgent need for sufficient numbers of trained men of the supervisory and professional grades, it appears to be not only essential that this class should have high priority in the matter of release, but also serious attention should be devoted to the question of accelerated study and training courses.

In many cases the men have been able to continue studies to a certain extent, including some experience with the use of the film or film strip in their training. We, as an Association, are interested on behalf of our members and others in the Forces, in this latter aid to speedier study, and have gained a certain amount of information in regard thereto, thanks to the Film Centre, the MOI (Films Division) and Ministry of Education (Optical Aids Branch). I should be very grateful if any of your readers could give me further information, more especially as to the use of the film or film strip for training in engineering, electrical, and other industries.

G. B. J. ATHOE,
Secretary

The Incorporated Association of Architects and Surveyors.

**PHYSICAL PLANNING SUPPLEMENT**

**On January 25, 1943, the Germans were driven out of Voronezh. In six months they had destroyed most of the town. In the article below, Academecian of Architecture L. Rudnev and I. Tkachenko, architect, describe the proposals for the replanning of Greater Voronezh which have now been completed. Right is a sketch of a monument which it is proposed to erect as a memorial to the Patriotic War.**

# VORONEZH replanned

*L. Rudnev and I. Tkachenko*

Having liberated all their territory, the Soviet people are immediately proceeding to reconstruct their cities, villages and homes. Soviet architects are taking an important part in this work, inventing new methods of design to speed up the reconstruction of cities, most of which figure prominently in the history of our country.

Russian cities arose at the crossways of trade routes or on sites of strategic importance. For this purpose a place was selected where two rivers met, which provided a natural barrier for the city's defence, or simply on a high bank or hill, which provided a view of the approaches to the city.

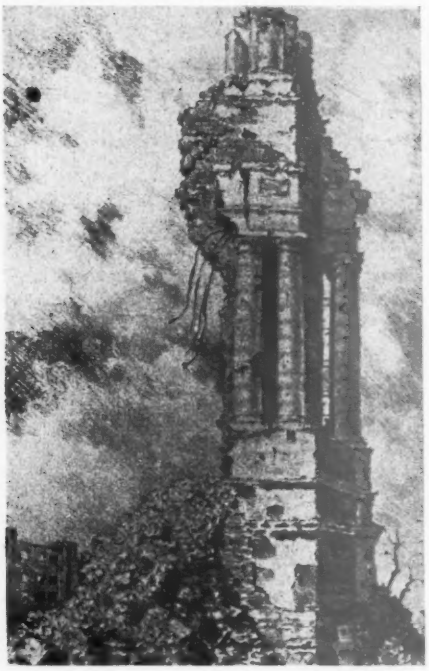
This consideration determined the choice of site for Voronezh in 1586, when it was founded on the border of the Moscow state to defend it from attacks by nomad tribes.

On the picturesque slopes of the river banks at an altitude of 50-60 metres a city of stone churches and brick buildings was founded. Only the Church of the Assumption and the belfry of the Okatovaya Monastery have remained intact to our days.

In 1695 Peter the First established the Voronezh wharf for building the Azov fleet. The city was growing, new streets were being laid out, and on them brick buildings were rising. The arsenal, with its low portico decorated with military armour, the old Peter wharf on the island formerly used by the Yacht Club (destroyed in 1942), and a number of villas were preserved up to our times.

During the reign of Catherine II, the city was planned on the principle of dividing it into a central part and suburbs. The new plan of Voronezh drawn up in 1774 after the fire of 1772 is typical of this type of planning. The authors of this plan strove to give the city, or rather its centre, a more "European" appearance, streets and avenues were laid out in an architectural pattern, the main streets being 21 metres and the side streets 13 metres in width. Monasteries, churches, government buildings, the "trade rows" of the merchants, and the villas were used as compositional accents. They were erected on the most dominating sites in the city—on the hills, terraces, at the top of cliffs, and on the slopes to the river. The Mitrophanyi Monastery, with its high belfry, which was subsequently completed by the well-known 18th century architect Quarengi, was erected on the highest terrace of the plateau of the edge of a cliff overlooking the river.

The plan drawn up in Catherine's reign retained the main architectural axis of the city—the Moscow highway—which started at the Mitrophanyi Monastery at right angles to the river. The highway passed through a number of squares, each square having a definite functional purpose—one was



**Above are the ruins of the Mitrophanyi Monastery, Voronezh, completed by Quarengi in the 18th century and destroyed by the Germans in 1942. Below left is a sketch of the proposed descent from one end of Karl Marx Street. Below right is a sketch of the new plan for the city made under the direction of Academecian Rudnev. It is " based on a population of from 450,000 to 500,000 and complies with the most modern requirements for the zoning of industrial and residential areas."**

devoted to trade rows, another to government buildings, and a third to the Cathedral and a market place. Another main road, running parallel to the river at the edge of the cliff, was built up of villas. The central section of the city was encircled by an avenue beyond which on the river banks were the dwellings of the poor. Throughout the further growth of the city this layout, with its compositional elements, was consistently adhered to and developed. At the end of the 18th century the city was enriched with a famous architectural monument—the Potemkin Palace—and a number of fine villas which still remain.

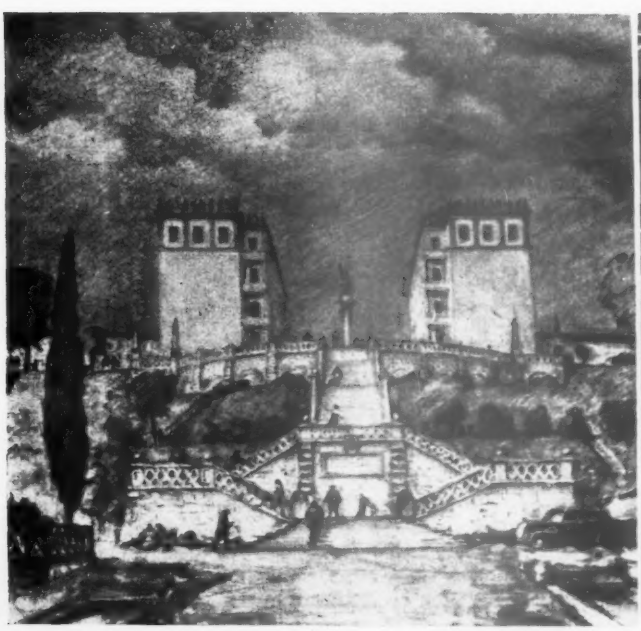
Voronezh was one of the most beautiful Russian cities, and it took a number of centuries to build. In six months the German vandals ruthlessly destroyed most of it. Of the 1,300,000 square metres of dwelling space, only 120,000 were intact at the time of the expulsion of the Hitlerites on January 25, 1943. Industrial buildings and the municipal services of the city also suffered heavily.

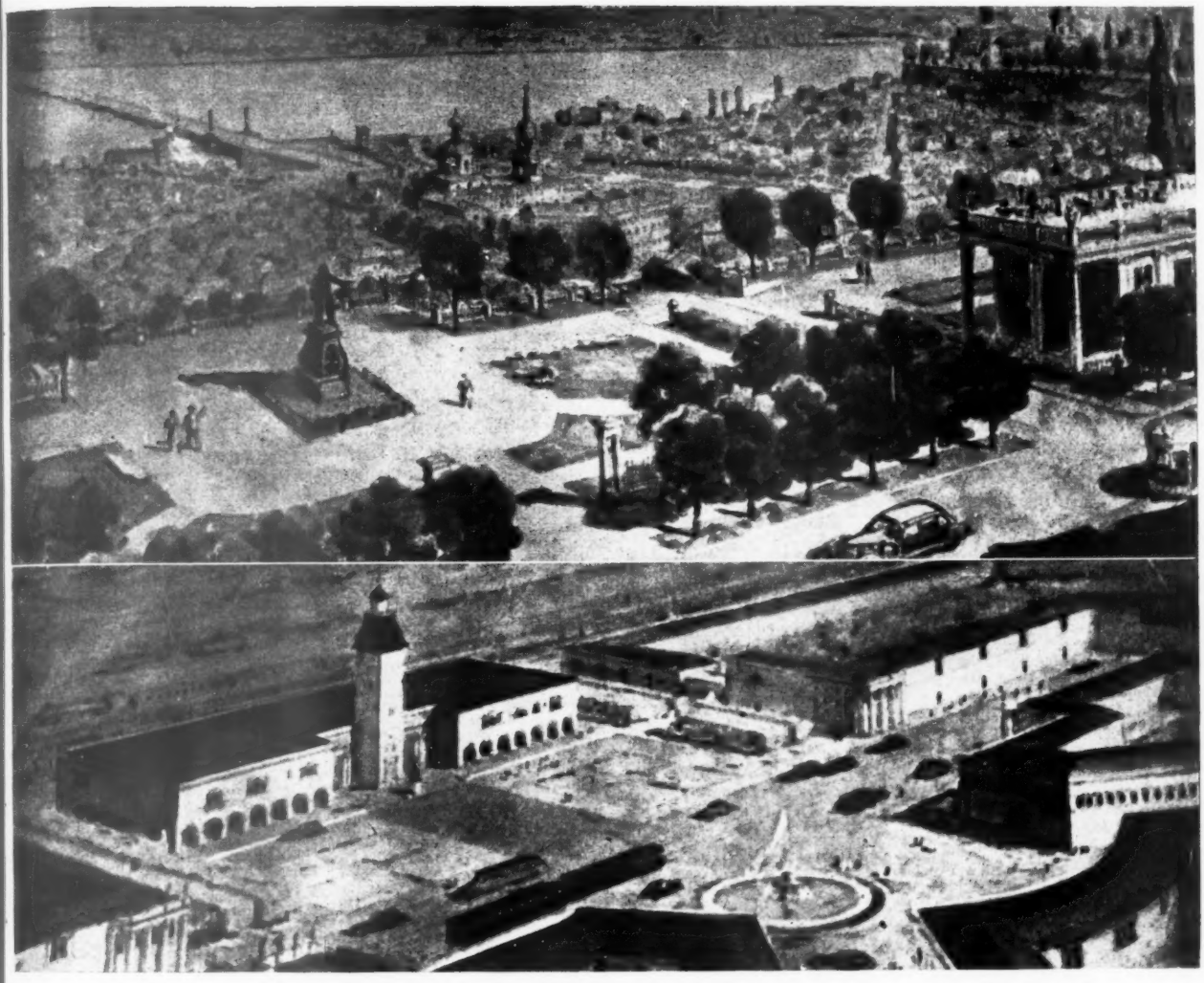
The Soviet government is showing great concern in the rehabilitation and correct replanning of the cities destroyed by the German invaders and in the renaissance of our national architecture. It has shown this concern in establishing a Committee on Architecture, under the Council of People's Commissars of the USSR.

The Hitlerites blew up most of the large buildings in Voronezh. Whole sections of the city and entire streets are devastated. Not a single large brick building escaped the holocaust; a few of the lesser damaged ones are now being temporarily repaired and used for living quarters. Almost all the wooden structures were burned, leaving only chimneys and fire-places sticking out in a wasteland.

Our project for rebuilding Voronezh is based on a population of from 450,000 to 500,000, and complies with the most modern requirements for the zoning of industrial and residential areas. To meet these conditions, main roads, streets and squares will be widened and redesigned to fit into a unified architectural conception. The old radial plan will thereby attain its ultimate crystallization.

The contemplated expansion of the city is included in the plan of " Greater Voronezh." The axis of this territory is to be one of the fine radial thoroughfares (Avenue 9th of January), which starting from the Central city square, will





**Top is a sketch of the restored monument to Peter the Great standing in the square before the Potemkin Palace. Above is a sketch of the new station square, with the new central station, hotels and other large buildings shown.**

lead to a lovely park on the banks of the Don.

The industrial section will be developed along the railway, and is to be separated from the residential districts by a protective zone of parks and woods. The railway yard and lines will be redesigned to conform to the new general plan. Sports grounds, beaches and boating stations will be set up on the river Don.

The basic problem involved in the reconstruction of the centre of the city is to turn the façade of the city towards the river. Along the edge of the river cliffs a new boulevard is to be laid out. The buildings will face the river side, and here a new monument—to the Patriotic War—will be erected. The new boulevard will be more than four kilometres in length. The Monument to Peter the Great will be reconstructed and moved to the centre of the Potemkin Palace.

City parks and wooded areas will be greatly extended, and the monument to the Patriotic War will include a large new park which will gradually be enlarged as small buildings now on the site are pulled down.

The existing Park of Culture and Rest will be improved and enlarged to reach the banks of the river, where a beach will be laid out and boat houses built. As the territory of even the enlarged park will be too small to meet all the requirements of the population, it is planned to set aside a large wooded area up the river Voronezh and on the left bank of the Don.

It is designed to create an interesting silhouette of the city. We know that large architectural ensembles as Rossi street, the Stock Exchange, and the Admiralty in Leningrad, which, while solving the problems involved in their immediate vicinity, also play an important rôle in determining the general silhouette of the city. In Voronezh we shall also create huge architectural ensembles designed to enhance its sky-line.

Besides this we must find correct locations with suitable backgrounds for monuments. The architectural aspect of the Central city square will undergo a considerable change. The building of the City Soviet will be erected here. The railway station square will be radically changed. It will be enlarged, and on it a new Central Station, hotel and other buildings will go up. A number of other squares will also be redesigned.

Industrial establishments will gradually be moved from the centre of the city to the outskirts with sufficient area in reserve for expansion. Workers' communities of one- and two-storied houses with all modern conveniences will be built up within easy reach of these industrial sections.

Local building materials—red and silica brick, whitesand brick, gypsum and roof tile will be exclusively used. With these materials we can create many fine types of cottages. Against a background of greenery, white and red cottages, interspersed with wooden houses, will lend a decorative note to the place.

Great attention will be directed to interior decoration and planning of living quarters. The designing of apartments acquires exceptional importance in densely populated areas.

The Voronezh railway junction remains almost unchanged on the plan, which is guided by the maximum preservation of its essential elements. The station on the right bank, which was destroyed by the Germans, is being rebuilt, and the area before it will be considerably enlarged, while the left bank station is being moved nearer to the Otrozhka station, and is included in the general plan of the left bank.

The Voronezh River divides the city into two parts at some places, separating it by a kilometre, and adds to its beauty.

In order to achieve a correct approach to the new architecture it is essential to study the historical monuments that have been preserved. This will help us to develop the architectural tone of Voronezh, and it is for this purpose that local architects are being invited to assist in the work of reconstructing the city.

The new Voronezh is being prepared in the studio of the Academy of Architecture of the USSR by the architects V. Lebedev, I. Tkachenko, G. Time, P. Sheller, in collaboration with the Voronezh architect K. Mironov. This group will work under the general supervision of the co-author of this article, L. Rudnev.

## PLANNER'S SCRAPBOOK

### WOLVERHAMPTON PLANS

An exhibition of 'Wolverhampton of the future' was opened at Wolverhampton by Lord Woolton on January 26. In the report of the Reconstruction Committee it is stated that the present proposals are put forward as a basis for discussion, and that in due course they will be considered by the Council. A comprehensive social and industrial survey is still to be undertaken; it will be carried out in co-operation with Birmingham University. However, the Committee believes that sufficient research has already been undertaken to enable proposals to be put forward in broad principle for improving traffic facilities, for the redevelopment of the central area of the town and for the provision and location of houses for the immediate post-war years.

**growth**

In 1750 Wolverhampton had an estimated population of 7,454. By 1800 the population had increased to 12,500 persons, but in the subsequent 50 years, 7,000 houses were built in the town and by 1850 the number of inhabitants had reached 50,000. In 1901 the figure was 94,187 and the 1931 census gave the population as 133,190—which by 1939 was estimated to have increased to 144,000. The total number of houses in the borough is approximately 40,545, whilst the number of shops totals 2,645 (less than 15 houses to every shop). The borough at present covers an area of 9,113 acres.

**housing**

Immediate post-war housing needs are estimated at a minimum of 6,700 houses. The target aimed at is 1,000 houses per year. Layouts have been prepared for two large housing estates, on which roads and sewers will be constructed in the near future; these layouts provide for approximately 2,100 houses, and include community buildings, schools and playing fields.

**transport**

A central ring road is recommended, containing within its circumference the principal Civic Centre, the central shopping and business areas and the majority of places of amusement. It is proposed that the town's main radial roads should be widened to 80ft. to provide for dual carriageways and adequate footpaths. Several small car parks are suggested, but it is stressed that an effort should be made to obtain additional parking spaces along with new buildings which are likely to need them.

**civic centre**

A scale model has been made of the proposed civic centre, which will include administrative buildings, police buildings, a central library, an art gallery and an educational precinct. This scheme is part of a long-term policy and it is pointed out that it is dependent to a certain extent on the form of future legislation for the acquisition of the property.

**recreation**

There is a considerable deficiency in open space in the town. The total area of public parks, playing fields and playgrounds amount to only 295 acres and school playing fields to only 177 acres. Assuming the ultimate population within the existing borough boundary to be 150,000 persons, the total area of parks, playing fields and children's playgrounds should be 750 acres and of school playing fields 450 acres. The Committee make recommendations for new open spaces and extensions of existing ones.

**conclusion**

Proposals for industry and the delimitation of neighbourhoods are still to be worked out in greater detail.

So far as cost is concerned, the Committee point out that, although the cost will be formidable, a plan based on research, worked out with forethought and adopted after careful scrutiny, will prove less costly than unplanned development.


## PLANNER'S QUIZ

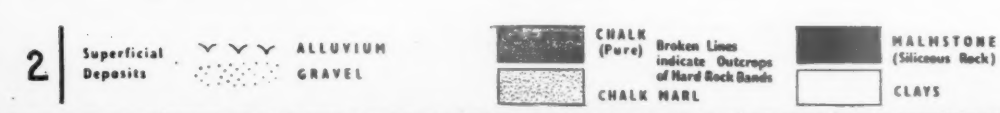
**3. On the left is part of a map from a guide to a rapid method of District Survey. All the information shown can be deduced from published sources, but these sources will not be given until the next Quiz, when the key to the symbols used on the map will also be given.**

**There are, therefore, two questions; what do the symbols denote in the map on the left? and from what published sources was the information taken?**

**Answer in the next Planner's Scrapbook.**

## THE ANSWER TO THE LAST PROBLEM

**2. The symbols in this map of ROCK TYPES are shown below. The information was taken from Geological Survey One Inch to One Mile Maps with the help of Geological Survey sheet memoirs.**



*Lightweight concrete is a relatively new material to us but one which may soon become as widely used here as on the Continent. This article describes a particular application of the material in the form of hollow blocks. The author outlines the history of the lightweight hollow block, suggests a suitable standard size for this country and a suitable aggregate in the form of foamed slag. He discusses the characteristics of the foamed slag block, and explains how, and with what advantages in speed, performance and economy, houses could be built with it. An experimental house recently built in this material is described and illustrated on pages 140 and 141.*

# The Foamed Slag HOLLOW BLOCK

BY M. GALLAI-HATCHARD, M.I.Struct.E., Dipl.Mech.Eng.

## HISTORY OF THE LIGHTWEIGHT BLOCK

The demand for increased speed in building construction, together with rising wages, led the Continent and the USA to develop various types of building blocks, the dimensions of which are larger than their respective national clay bricks. The earlier types of these blocks were made of concrete or burnt clay. The resulting high weight was reduced to more reasonable limits by forming cavities in the blocks. These hollow concrete blocks were far from popular with the bricklayers and masons; neither did they eliminate condensation.

The advent of various types of lightweight concrete aggregates, however, caused large scale development in the use of hollow blocks. In this respect Germany was greatly assisted by its extensive natural pumice deposits, and the availability of this cheap raw material led to the development there of a great lightweight block and hollow block industry. This was not achieved without strong opposition by the brick interests, but the great advantages in weight, cost, and speed of construction were soon realised, and no opposition could stay its development. A further impulse was given to this development by the advent of foamed slag which, in its own economic territory around the iron and steel industry, ousted pumice.

The development of the hollow block in the United States also showed astounding progress. The first lightweight concrete aggregate produced on a large scale in the States was expanded clay. This was followed by foamed slag which developed around the iron producing centres. Cinder, a very reliable clinker, derived from anthracite and pumice deposits in California, was added to the raw materials for the lightweight blocks.

Whereas in Germany a variety of sizes of hollow block was developed, in the United States the manufacturing and consuming industries agreed upon a standard size, which brought all the attendant advantages of standardization. The United States' Masonry Unit (Fig. 1) has overall dimensions of 15¾ in. × 7¾ in. × 8 in., and has either three oval cavities or two square cavities. The development in the production of this Masonry Unit is shown in a chart (Fig. 2) published in *The Concrete Manufacturer* (Pit and Quarry Publications, Chicago). The yearly output of 500 million blocks reached in 1941 is roughly equivalent to 6,000 million bricks. Of the 500 million, about 150 million masonry units were produced with various lightweight aggregates, the balance in ordinary concrete. The apparent disproportion between concrete units and lightweight units is explained by the immense distances existing in the USA which makes the transport of lightweight aggregates beyond certain limits uneconomic.

## BRITISH BLOCK NEEDED

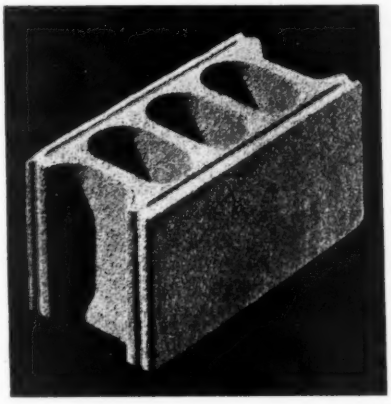
In view of the gigantic post-war building programme in which speedy construction will be of paramount importance, there is a definite need for a British National Building Block. In this country the hollow building block in housing has been little used. Heavy concrete blocks were not well received by the bricklayers; neither did the houses built with such blocks show particularly attractive qualities. The absence of a reliable home-produced lightweight concrete aggregate at a competitive price was the stumbling block to development, for imported pumice was too expensive.

At last the advantages of foamed slag are being realized here, and it may soon be adopted as the national lightweight concrete aggregate. This is a natural development owing to the favourable geographical distribution of blast furnaces all over the country. Certain developments are afoot, and foamed slag is indeed likely to be available soon at a competitive price in most parts of the country and to take its due place in the coming great building boom. Now is the time, therefore, to lay down standards for the design and use of a British National Building Block.

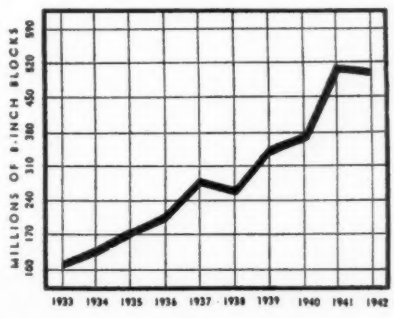
## WHAT SIZE OF BLOCK?

To evolve an entirely new design for a British National Hollow Block acceptable to the various interests concerned would take valuable time. Even when the design was agreed upon time would also be needed for equipping the pre-cast concrete and building industries all over the country with new plant for mass production. Such delays would rule out the hollow lightweight block for general use in the early post-war years, when every method which will speed up construction will be badly needed.

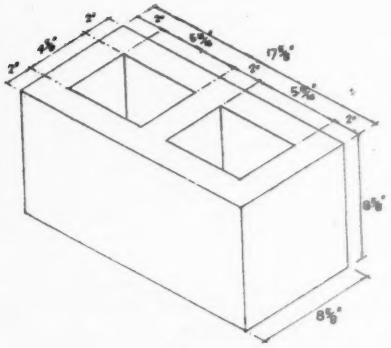
There is, however, a way to short circuit these difficulties. The building industry has been encouraged by the authorities during the war to acquire machinery and outfit for the production of what has become known as the ARP Block. This hollow block, 18 in. × 9 in. × 9 in. (nominal), has been produced in ordinary concrete and used all



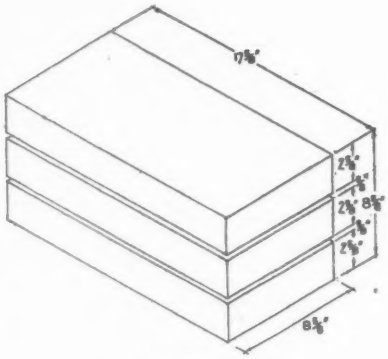
**1.** *The USA Standard Masonry Unit 15¾ in. × 7¾ in. × 8 in.*



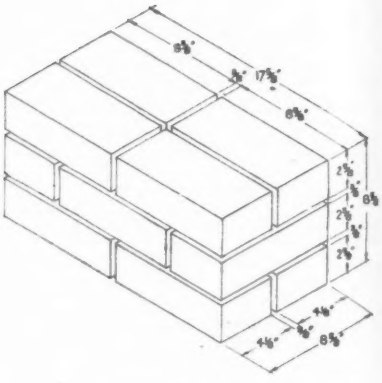

**2.** *Graph showing the development in the production in the USA of the standard block shown in Fig. 1.*



**3.** *The ARP Block.*



**4.** *The Four Brick Slabs.*



**5.** *Briquettes of standard brick size.*

over the country for defence purposes. This unit weighing between 65 and 70 lbs. is obviously too heavy to be popular in house building, but produced in foamed slag concrete its weight could be reduced to 35 to 40 lbs., and at the same time it would possess all the additional advantages of lightweight concrete, such as high insulation, freedom from condensation, nailability, high fire-resistance and excellent sound absorption.

The ARP Block (the dimensions of which comply with BSS No. 834/1939) may not be ideal, but it has the advantages that machinery for producing it is now available throughout the country and that the pre-cast concrete industry could go into production as soon as supplies of foamed slag are available. It would, however, require some adaptation if it is to be a practical proposition in house construction.

The ARP Block in its present design cannot be cut into useful sub-units without great waste. The undivided large block could serve only for straightforward large wall surfaces, and would not satisfy detail requirements such as those of window and door reveals, bays and corners.

If, however, the actual dimensions of the hollow block were 17⅛ in. × 8⅛ in. × 8⅛ in. (Fig. 3), it would be equivalent in volume to twelve standard bricks, 8⅛ in. × 4⅛ in. × 2⅛ in., including ⅜ in. mortar joints (Fig. 5). The volume of the ARP Block could also be sub-divided into three slabs of 17⅛ in. × 8⅛ in. × 2⅛ in., including the ⅜ in. mortar joints (Fig. 4). Each of these slabs represents the volume of four bricks with a ⅜ in. mortar joint, and therefore the Four Brick Slab is a good name for this unit. With the three types of units, *i.e.*, the ARP Block, the Four Brick Slab and the Briquette equal to a standard brick, all produced in foamed slag concrete, every walling problem could be solved.*

The Trianco type of machine, which is mostly used for this work, is fitted with moulds for a 17⅝ in. × 8⅛ in. × 9 in. block. The thickness of 9 in. instead of 8⅛ in., used in conjunction with a briquette of 8⅛ in. length could easily be adjusted in the rendering. The other machines on the market have moulds for 18 in. × 9 in. × 9 in. (actual), and would therefore require very slight alteration. Auxiliary units, *i.e.*, the Briquette and the Four Brick Slab, could easily be made with the machinery available in the pre-cast concrete industry.

## A CODE OF PRACTICE

Having arrived at a suitable size of block, a code of practice is now needed which takes into account the particular characteristics of foamed slag concrete and which also specifies the best methods of application. An unofficial draft code of practice has in fact already been prepared by a group of technical experts.* This is now being finally revised and should be in print shortly. The following facts and recommendations are based on this code.

## FOAMED SLAG CONCRETE

Foamed slag is a cellular lightweight concrete aggregate produced by inflating molten blast-furnace slag with steam by a special process. The crude product is then crushed and graded into the usual two gradings, *i.e.*, ½ in. to ¼ in. and ¼ in. to dust. The average weight of the coarse aggregate (½ in. to ¼ in.) is 30 to 32 lb. per cu. ft., but should not exceed 37 lb. per cu. ft. in order to comply with BSS No. 877/39. The average weight of the fine aggregate (¼ in. to dust) is 40 to 42 lb. per cu. ft. The thermal conductivity co-efficient of loose foamed slag is 0.87 BTUs per 1-in. thickness.

Whereas the weight of ordinary concrete of whatever strength and quality is about 145 to 150 lb. per cu. ft.; the weight of foamed slag concrete may vary between 45 to 125 lb. per cu. ft., according to strength. The crushing strength may be varied between, say, 150 lb. per sq. in. to 6,000 lb. per sq. in. The most useful commercial type of lightweight foamed slag concrete with nail-holding qualities and a crushing strength of 300 to 400 lb. per sq. in. will weigh about 70 to 75 lb. per cu. ft. The thermal conductivity co-efficient of this type of concrete will be about 1.7 BTUs per 1-in. thickness. For hollow blocks, as described in this article, concrete with a crushing strength of about 400 lb. per sq. in. is desirable.

## EXTERNAL RENDERING

An essential characteristic of foamed slag concrete is its honeycombed nature and its maze of inter-communicating cavities. If foamed slag concrete is exposed in a vertical position, driving rain will penetrate through the labyrinth of cavities, according to the strength of the driving force, to a depth of 2 in. or so. It will then be partly absorbed and, having lost its impetus, will flow down by gravity through the cavities of the outer layers. At the same time, foamed slag concrete dries out very quickly. These features have been realized in other countries for years and have led to the omission in certain types of utility building of external rendering. In fact, it has been found positively dangerous with all such porous materials to apply so-called waterproof types of rendering. These renderings are, as a rule, very rich in cement and thus apt to craze or crack. Moisture which penetrates will spread and be forced to dry within the structure. Any rendering applied to foamed slag concrete or any other porous concrete should not be water-proof, but must be a breathing type with an open texture which allows water to penetrate and evaporate.

A comparatively cheap method of external rendering which has proved both effective and attractive is the following. The first coat, ⅛ in. to ½ in. thick, should consist of:—

1 volume Portland cement.
3 volumes finely ground hydrated lime (white).
9 volumes foamed slag fines (¼ in. to dust).

(Only two volumes of lime are actually required. The additional volume of lime is a concession to labour, which is mainly interested in the workability of the mix requiring less effort in application.)

The finishing coat is a slung rough cast of a new and attractive type applied while the first coat is still wet. The specification of this slung mix is:—

1 volume Portland cement.
3 volumes finely ground hydrated lime (white).
9 volumes foamed slag aggregate, consisting of a mixture of 2 volumes coarse foamed slag (¾ in. to ¼ in. or ½ in. to ¼ in.), with 1 volume foamed slag fines (¼ in. to dust).

Of course other types of rendering may also be applied providing the first coat is just lightly applied and the finishing coat is of a breathing type.

The use of foamed slag fines in lieu of washed sand gives additional insulation owing to the cellular aggregate which, at the same time, adds breathing properties to the rendering.

For internal rendering the same mixture as suggested for the first coat of the external rendering can be applied in one or two coats, according to the quality of the building.

The same mix should be as for the mortar bonding the blocks.

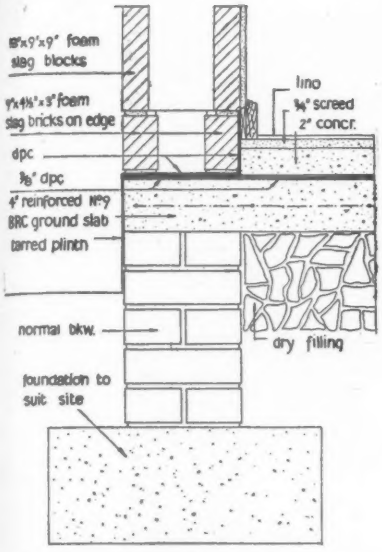
## WATER-PROOFING

The details in Figs. 6-8 show that, generally speaking, the usual commonsense precautions should be taken in the provision of horizontal and vertical damp-courses for foamed slag work as for the ordinary 11 in. cavity or 9 in. solid brick wall.

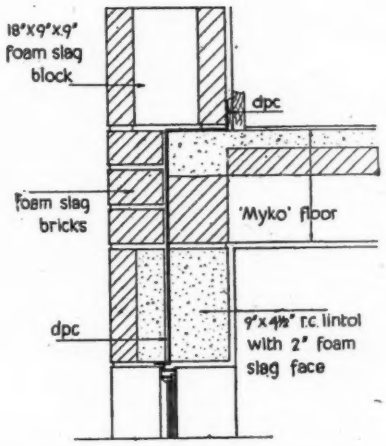
As foamed slag concrete, if used near ground level, tends to become splashed, saturated, and stained, a brick or concrete plinth with a tarred finish should be built from the foundations to at least 9 in. above ground level up to the damp-course. Above the damp-course, the lowest course should be of foamed slag briquettes, not blocks, so that the cavity at this level is continuous

* We understand that a Patent has been applied for this method of building. The Patentees, however, do not desire to exploit the Patent financially. Licences will be granted to all reliable firms for a nominal royalty who undertake to follow strictly the recommendations for its successful use.—Ed., AJ.

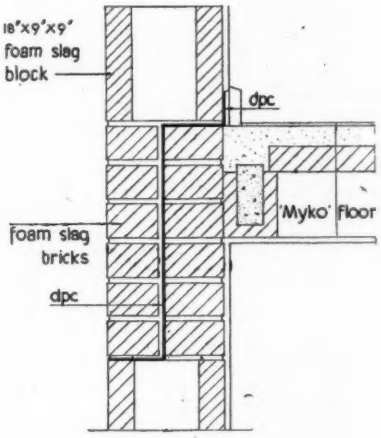
* R. T. James, M.Inst.C.E., Derek Bridgwater, B.Arch F.R.I.B.A. and Dr. K. Hajnal-Konyi, M.I.Struct.E.




**6.** *Section through foundation wall.*




**7.** *Section at floor and lintel level.*

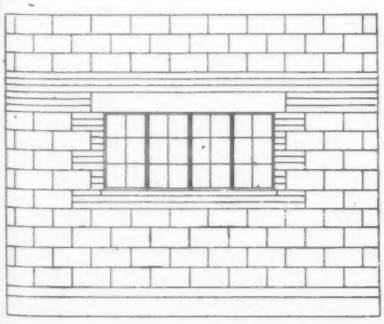



**8.** *Section at floor level with solid wall.*

along the whole length of the wall, and thus avoids the trapping of any moisture which may collect in the cavities of the blocks. As the course is laid, some of the bricks should be left out temporarily in order that the cavity can be finally cleared of mortar droppings. At reasonable distances small permanent slits should be left as weep holes.

It is suggested that in all cases lintels should be in two halves, the inner one being a normal RC lintel capable of taking the weight of any floor load coming directly over the lintel. The front or outer lintel should have a strong RC backing with a 2 in. deep foamed slag face of the same density as the normal foamed slag block in order that the whole of the outer surface of the building may have approximately the same qualities of absorption, heat conductivity, and bonding surface for rendering. The damp-course at lintel level should run between these inner and outer lintels and be finally turned up above floor level (Fig. 7).

Fig. 8 shows the bonding of flooring and walling and waterproofing of the Myko concrete floor, a system which itself embodies foamed slag concrete. With this floor a bearing is taken at a number of points onto the outer wall, and therefore the outer wall at this level should be treated all the way round the building in two halves, with a vertical damp-course between. This is done simply by using foamed slag concrete briquettes. The treatment of timber floor joists is similar.



**9.** *Treatment round window reveals.*

## WINDOW REVEALS

As standard metal windows are not of such sizes that they can fit into the opening governed by the sizes of the blocks, it is necessary for the reveals to window (and door) openings to be built in foamed slag concrete briquettes, and windows can easily be arranged and placed in the outer wall so that these foamed slag briquette reveals are symmetrical about the openings (Fig. 9).

Building these reveals in foamed slag briquettes has the advantage that the reveal can be built in two thicknesses with a damp-course between, thus providing against the penetration of moisture from beating rain which frequently takes place in a wall at this point (Fig. 10).

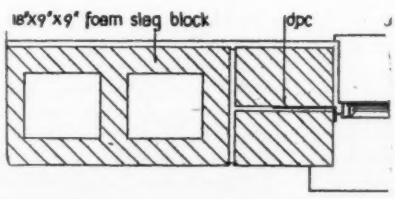
The raking top courses of gable ends can be finished in foamed slag briquettes cut to the required size and slope (Fig. 11).

## THERMAL INSULATION

Tests are now being undertaken by the authorities to discover the exact value of thermal insulation for walls of the standard foamed slag hollow block described here. It is certain that the value is better than the 0.3 U. of the 11-in. cavity brick wall and is likely to be found to be below 0.2 U.

## CONCLUSION

The foamed slag hollow block and its auxiliary units should be useful, incidentally, not only in housing. To ease the housing situation, many existing buildings, such as flats and hotels, could be extended by adding extra storeys. By using light weight materials, such as that described in this article, two floors could be added for every one in brick.

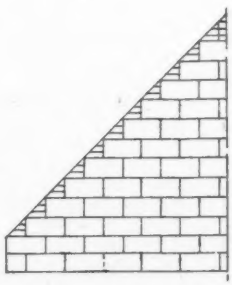



**10.** *Plan of window reveal.*

The practical success of the foamed slag concrete block depends largely on the attitude of the bricklayers towards the system. It has been proved in this country that a bricklayer can lay without undue effort 100 foamed slag blocks a day, which is equal to 1,200 bricks. According to USA standards, many more blocks than this can be laid at piecework rates.

The reason why alternative methods to brick building are being considered by the authorities is based less on a possible brick shortage than on the anticipated shortage of bricklayers. It has been accepted that the present daily output per bricklayer could not provide the required number of houses per year. That is why speedier alternative methods, based on unskilled or semi-skilled labour, are contemplated. It is to be hoped that the bricklayers will appreciate the great speed-up which they themselves could give to building progress by adopting light-weight block building, and that the State will not ignore this technique of building in its scheme for training demobilized soldiers in the building trades.

Finally, an important advantage of the foamed slag concrete block should be mentioned, an advantage applying, of course, to any lightweight blocks—its saving in transport weight. Assuming the average weight of the foamed slag block to be 38 lb., the weight of 12 clay bricks, which the block would replace, would be at, say, 6 lb. per brick, 72 lb. Thus the hollow block would save some 44 per cent. on transport and handling weight.

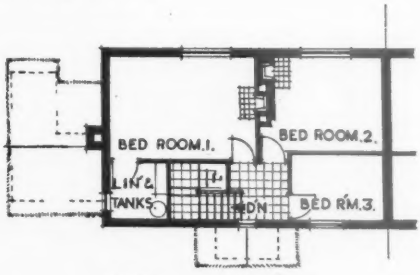


**11.** *Treatment of raking courses at gable ends.*

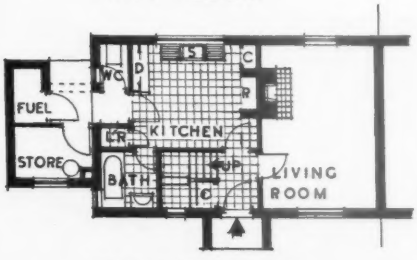
# COTTAGES IN SOMERSET

## *DESIGNED BY C. J. WOODBRIDGE AND R. RICHES*

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




FIRST FLOOR.




GROUND FLOOR

GENERAL—This pair of agricultural workers' cottages, built during the war at Mr. Eric Towler's Beazley Farm, near Timberscombe is the first application in this country of the foamed slag hollow concrete block, a method of construction described in an article on pages 137 to 139.

As an experiment, it was agreed that a design should be made which was not conditioned by any special method of construction. It was found in practice that no departure from the original plan and elevation had to be made to suit the very flexible conditions imposed by the block units used, and no difficulties were encountered during construction; the local bricklayers, it is said, took to the blocks like ducks to water.

CONSTRUCTION — The general principle was to use as large a unit as possible without cutting wherever possible. Three units in all were used, all of foamed slag concrete: the large hollow block, 18 in. × 9 in. × 9 in. (nominal) for main walls, party walls, chimneys; the four-brick slab, 18in. × 9 in. × 3 in. for partitions; the 9 in. × 3 in. × 4½ in. briquettes for plinth,

eaves infilling, window and door reveals.

Timber and steel were reduced to a minimum to conform with war-time standards.

The first floor is of a patent type of reinforced concrete floor which incorporates foamed slag. The roof is of thatch on timber scantlings.

RENDERING—The external rendering is of (1) a thin coat of foamed slag mortar [1 cement : 3 finely-ground hydrated lime : 9 foamed slag fine ($\frac{1}{8}$ in. to dust)] on which was thrown, while still wet (2) a coarse mix [9 mixed foamed slag aggregate (2 coarse and 1 fine) ; 2-3 finely-ground white hydrated lime : 1 Portland cement]. This gave a pleasant rough texture.

COST—It is not yet possible to give a comparative final cost for this type of construction as in this first experiment the foamed slag had to be transported from Scunthorpe to Portland. Here the blocks, etc., were made, and thence transported to Timberscombe. This extra cost would in general practice be eliminated once a network of production centres were established. In view of the saving in labour it has been estimated that this type of construction, provided foamed-slag is reasonably near at hand, would be competitive with brickwork.

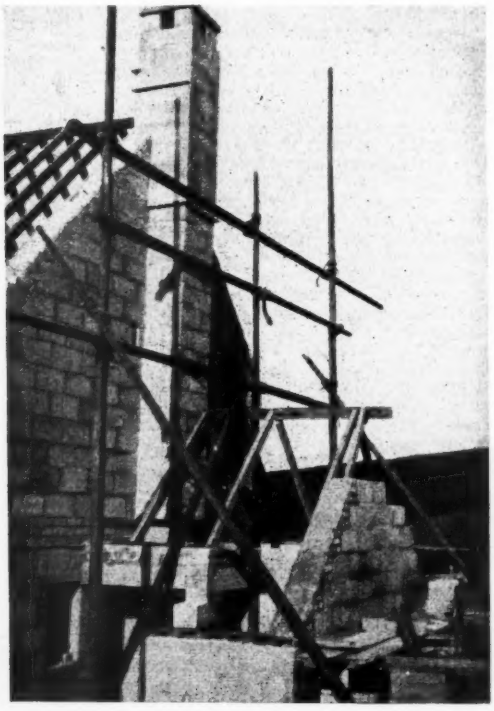
TIME—The daily output per bricklayer was about 100 large blocks, which is equal to 1,200 bricks. Complete walling above damp-proof course in blocks, slabs and briquettes took :

| | | |
|---|---|---|
| Craftsmen's hours | ... | 911 |
| Labourers' hours | ... | 272 |
| Total hours | ... | 1,183 |

The time needed to erect the same walling in 11-in. hollow outer walls and 4½-in. partitions, allowing an output per bricklayer of 300 bricks per day, would be :

| | | |
|---|---|---|
| Craftsmen | ... ... | 1,532 |
| Labourers | ... ... | 766 |
| Total hours | ... | 2,298 |

*Above left, buttering a block with cement, lime and foamed slag mortar. Above centre, a chimney stack during construction showing parged flue. Above right, the plinth below the DPC of ordinary brickwork ; above the DPC is a course of foamed slag briquettes forming a continuous hollow which collects any moisture within the walls ; this escapes through open joints ; during construction a few briquettes are left out, so that the hollow can be cleared of droppings. Below left, a view of the finished job. Below right, a gable end during construction.*



# INFORMATION CENTRE

*The function of this feature is to supply an index and a digest of all current developments in planning and building technique throughout the world as recorded in technical publications, and statements of every kind whether official, private or commercial. Items are written by specialists of the highest authority who are not on the permanent staff of the Journal and views expressed are disinterested and objective. The Editors welcome information on all developments from any source, including manufacturers and contractors.*

## *STRUCTURE*

**1790** *Northolt Houses*

DEMONSTRATION HOUSES. *Ministry of Works.* (*HMSO*, 1*s*.) Short account of the demonstration houses and flats erected at Northolt by MOW. Structural details and methods alternative to traditional ones described. Steel frame and lightweight concrete. Costs. (See A.J. October 12, 1944.)

By reading this booklet one obtains a much better idea of the purpose of the demonstration houses at Northolt than by visiting the site. On the site it is hardly possible to visualize and appreciate the difference between houses built by various methods but similar in layout and appearance. The attention of a visitor is unintentionally focussed on elevations, arrangements of rooms, equipment, etc., whereas the chief aim of the experiment, to try out unorthodox methods of house construction, remains hidden. The booklet gives a clear report on structural details and methods of construction other than the traditional brick house which may be employed as alternatives in post-war housing.

The whole experiment is based on the assumption that "houses built of brick with timber floors, and having a pitched or sloping roof covered with tiles or slates, are still regarded as the norm, and that the great bulk of the houses to be built under the 10-12 year post-war programme may be expected to be of this type." It is realized, however, that the traditional house requires craftsmen of a large number of different trades, depending on each other. Shortage of any one of these particular trades may impede the operations of other trades and cause delay in the completion of houses. It is therefore necessary to consider the use of alternative materials and methods.

Out of the 13 blocks erected, seven are built by special methods and in special materials, the other six are in traditional materials embodying recommendations as to internal planning and arrangements, including a demonstration of a type of emergency houses. One of the blocks in this second group has been built to the same plan as that used for some houses in the first group, so as to provide a basis of comparison.

The seven "unorthodox" buildings may be divided into two groups: (1) Steel framed; (2) Lightweight concrete cast *in situ*.

The four steel-framed blocks (two of which were built by the British Iron and Steel Federation) show a great variety of possibilities in the cladding. One is faced with pre-cast reinforced concrete slabs of 3 ft. 4 in. by 1 ft. 4 in., one with brick, one with brick on the ground floor and with vertical ribbed steel sheet on the first floor, finished with a special rough texture "stone" paint, one has a coloured cement mortar rendering in the ground floor, partly on steel dovetailed sheeting and partly on paper-backed welded wire fabric, whereas the cladding of the first floor is of horizontal ribbed sheet steel. A similar variety of materials has been used in the inner walls. All four blocks demonstrate the very great advantages of framing, of which little use was made in housing in the past, even in larger blocks of more than two storeys.

The three cast *in situ* houses were built in three different materials: (*a*) No-fines concrete; (*b*) Foamed-slag concrete; (*c*) Expanded clay concrete.

No-fines concrete has successfully been used in many houses (most of them in Scotland). The production of foamed slag started in this country about 12 years ago. According to *Housing Manual, 1944*, issued by MOH and MOW, foamed slag is "the variety of concrete which appears from every point of view to compare most favourably with brickwork as a walling material." It is the more surprising, therefore, that this material has, so far, had only a few applications in housing in the British Isles. It has been used for this purpose extensively both in USA and in Germany. It should have a future also in this country if its production is properly organized. The third material is not a practical proposition for the time being, since it is not available on the British market.

Cast *in situ* concrete is applicable in large housing schemes where a standardized shuttering (which does not exclude a variation in the design of the individual houses) can be re-used many times. It mainly requires unskilled labour, except for the erection of the form-work. At Northolt two types of shuttering were used: (*a*) Flast steel sheeting placed between wooden posts; (*b*) Open timber frames strongly braced and faced on one side with small mesh expanded metal. This second type seems to be particularly suitable; when removed it leaves markings on the surface of the wall which form a key for the subsequent rendering.

Some of the technical data are not quite accurate, *e.g.*, the mix of the foamed-slag concrete is given as follows (p. 23):—

> 112 lb. Portland cement to B.S.12;
> 1 cu. ft. sand to B.S.882;
> 8 cu. ft. of foamed-slag aggregate to B.S.877, of which 50 per cent. was from ¼ in. to ⅛ in. and 50 per cent. from ½ in. to dust.

This implies that 4 cu. ft. of coarse and 4 cu. ft. of fine foamed slag were used. The actual mix was as follows:—

> 112 lb. rapid hardening cement;
> 1 cu. ft. ordinary washed sand;
> 4 cu. ft. foamed slag, ⅛ in. to dust;
> 9 cu. ft. foamed slag, ½ in. to ⅛ in.

A mix containing 50 per cent. coarse and 50 per cent. fine foamed slag, as suggested in the report, is not economical, and the concrete thus obtained has not the properties desirable in housing.

Another misleading statement is that the reinforcement of the foamed-slag concrete house is "similar to the no-fines concrete house." In fact, it is quite different, as was pointed out by Astragal in A.J. of November 9, 1944, p. 341.

All the unorthodox building methods are well illustrated by isometric details and photographs of the various stages of progress. The booklet also contains cost figures, based on actual labour and material costs of individual blocks of dwellings as built, adjusted for contracts of 500 houses. The figures are exclusive of profit and overheads.

The value of these figures is rather doubtful, since only the total costs are given without any details, not even separately for labour and materials. Builders having their special organization for carrying out large housing schemes may arrive at different figures which may show a different relation between the various types.

The plans reproduced are of a high standard of draughtsmanship; they show what architects should aim at in their drawings.

**1791** *Housing Manual Appendices*

HOUSING MANUAL, 1944: TECHNICAL APPENDICES C TO L. MINISTRIES OF HEALTH AND WORKS. (*HMSO*, 1*s*. 6*d*.) Technical data for design of dwelling houses. Foundations, lightweight concrete in walls, sheet lining materials, thermal and sound insulation, scientific use of timber, cooking and heating appliances. Typical dimensional standards. Index.

The Appendices to the *Housing Manual* (see Inf. Centre No. 1,748, A.J. for December 28, 1944, p. 491) contain a fuller discussion of the technical requirements in dwelling houses. Starting with the foundations, a table of minimum dimensions is given for various conditions. Further tables contain mixes suggested for lightweight concrete in walls and the physical properties of sheet lining materials. Construction details are given for cavity party walls (suggested for improved sound insulation), ground floors, flat roofs, for the protection of pipes from frost, private sewers, copings, lintels and cills. The questions of thermal and sound insulation are dealt with in detail. The use of 3 in. lightweight concrete inner walls instead of the traditional 4½ in. brick is encouraged, since it provides better thermal insulation. Of particular interest are the data on the scientific use of timber. Suggestions are made for the selection and installation of the various types of appliances for cooking, room heating and water heating which govern the requirements for chimney stacks and flues. The Notes for Specification are a concise summary of building materials and equipment, with many numerical data and frequent references to existing BSs or to BSs in preparation. A list of all the relevant BSs is also included. Some typical dimensional standards now under discussion (metal and wooden windows, wooden doors, metal finishings) are illustrated.

On p. 38 under *Aggregates*, for Nailable Concrete only clinker is mentioned, for Lightweight Concrete foamed slag and clinker. This should be compared with the following quotation from the recently published revised edition of Building Research Bulletin No. 15. (Lightweight Concrete Aggregates, see No. 1793), p. 8:—

> "Nearly all the lightweight concretes in common use are easily cut with bricklayers' tools, and no difficulty is experienced in forming chases for pipes and conduits. They are all usually considered to be suitable for nailing, though clinker concretes, and particularly those made from well fused clinkers, are sometimes less satisfactory in this respect. The hard lumps of clinker resist penetration by a nail, causing it to bend or deflect."

The elaborate index refers also to the Manual itself.

The publication will be of great help to architects and local authorities concerned with housing.

# BUILDING FOR DAYLIGHT

## No. 3 FACTS ABOUT GLASS FOR ARCHITECTURAL STUDENTS

### Domestic planning in the 18th and early 19th Centuries

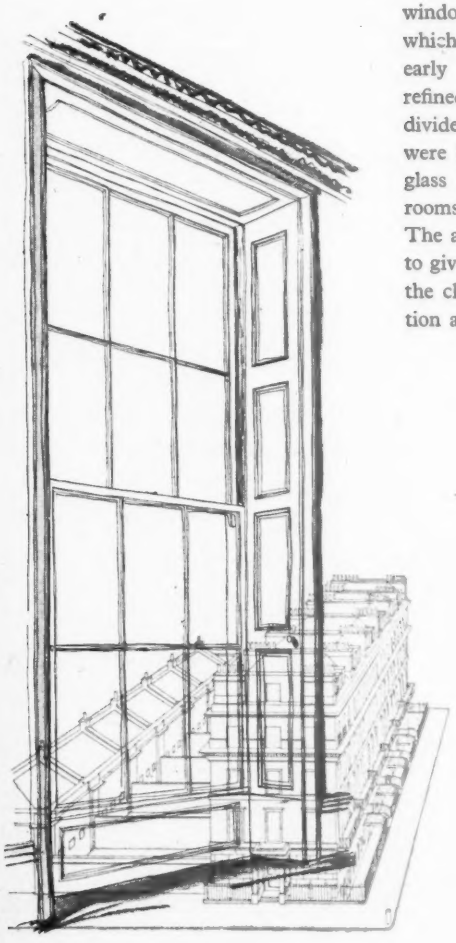
In 18th century England architects evolved an orderly solution to the problem of domestic planning. Houses were built in terraces and arranged in street squares and crescents, facing gardens. Complete areas in London, Bath, Cheltenham and other cities and towns were thus laid out, and in all these schemes care was taken to get good daylighting to the principal rooms of houses, though the kitchen and servants' quarters were relegated to basements and attics which were often ill lit. The requirements of the formal layout determined the orientation of houses.

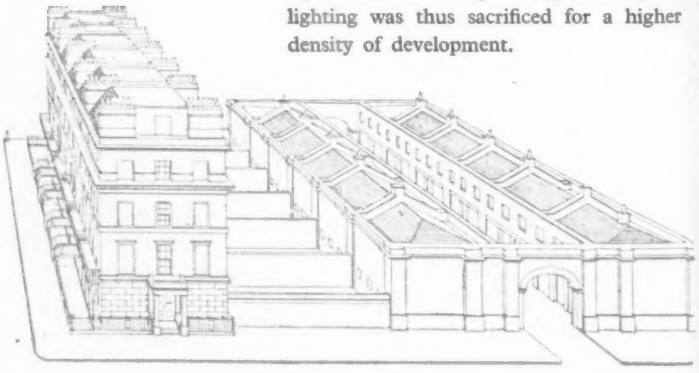
### The Terrace

This arrangement of terraces, which faced on to wide access roads with small gardens behind, and beyond them the mews with its own service road, formed the social unit. The provision of an adequate angle of light was considered in the spacing of the blocks, and the alternation of the high terraces with the lower mews buildings gave added interest. This type of layout was developed further during the latter half of the 18th century and continued during the Regency period and the early Victorian era. Later there was a tendency to increase the height of the buildings without opening up the layout and in many examples adequate lighting was thus sacrificed for a higher density of development.

### The Sash Window

The construction and form of the sash window were perfected, and glazing bars which had been of thick, flat section in the early 18th century, were progressively refined, until a thin and elegant section divided the panes. The sizes of panes were increased to the limits attainable by glass makers. Windows in the principal rooms were carried from floor to ceiling. The area of glazing was carefully adjusted to give the quality of lighting which suited the character of Georgian interior decoration and furnishing in all its phases.





*This is published by Pilkington Brothers Limited, of St. Helens, Lancashire, whose Technical Department is always available for consultation regarding the properties and uses of glass in architecture.*

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1792 MOW *Building Study*

WALLS, FLOORS AND ROOFS: MINISTRY OF WORKS POST-WAR BUILDING STUDIES No. 15. *By a Committee convened by the RIBA*, 1944 (*HMSO*, 9*d*.). General properties (strength and stability, weather-resistance, thermal and sound insulation, fire resistance), special requirements, recommendations, including suggestions for standards and research. Appendix on war-time experience in new forms of construction.

The terms of reference of the Committee were:—

"To review existing practice in this country and abroad on the structure of walls, roofs and partitions to houses, flats, schools, office buildings and agricultural buildings, and to make recommendations."

As indicated in the title, the report is divided in three parts. Each part is sub-divided in three sections. Section I deals with such general properties as strength and stability, weather-resistance, thermal insulation, sound insulation, fire resistance. Section II considers the special requirements in domestic buildings, schools, commercial buildings and agricultural buildings as they relate to Section I. Section III makes recommendations and suggests subjects for standards and research.

Section I, in each part, is an excellent critical survey of existing materials and methods. Particular stress is laid on the requirements of thermal insulation and sound insulation, neither of which has received sufficient attention in the past. The Committee is of the opinion that the 11 in. cavity wall with brick external face is likely to hold its place. It is reliable in its resistance to weather, its maintenance cost is low, but its heat insulation achieves only the lowest standard required in domestic buildings (.30 B.Th.U.). This can be improved either by the use of internal linings or by constructing the inner leaf of materials with better thermal insulation, such as lightweight concrete or hollow clay blocks.

The data regarding the thicknesses of various materials giving a thermal insulation of .20 B.Th.U. are not correct, *e.g.*, the thickness for pumice concrete is stated as 5 in., for foamed slag concrete as 9 in., for clinker concrete as 10 in., and for no fines concrete as 12 in. It is not likely that a mix of pumice concrete which is so efficient in thermal insulation can be used in a load bearing wall of 5 in. thickness. These figures should be compared with the thermal insulation of the walls of the cast *in situ* houses at Northolt, given in the report of the MOW (Demonstration Houses, see Inf. Centre No. 1790) as follows:—

| | |
|---|---|
| 12 in. no-fines concrete wall in clinker aggregate ... ... | .23 |
| 8 in. foamed slag concrete ... | .16 |
| 8 in. expanded clay concrete... | .16-.20 |

It seems probable that the figures published by the Committee are based on mixes which differ from each other greatly in density, and are not equally suitable for use in load-bearing walls.

It is far more difficult to achieve the required standard of sound insulation. Whereas the tendency in the use of modern structural materials, such as steel and reinforced concrete, is towards continuity, the basic principle of sound insulation is discontinuity.

It is expensive to obtain good sound insulation by structural means, and the report emphasizes "that the first line of defence is to plan buildings so that the need for structural insulation is reduced to a minimum." It is pointed out that all parts of a building have to be considered collectively, and that "there is little or no benefit to be derived from special precautions which do not include all parts of a structure."

In some cases the Committee has found that its recommendations conflict with existing by-laws and building regulations, and suggests that these should be revised (*e.g.*, to permit the cavity construction of party walls).

When considering the subject of dwellings arranged in blocks of flats, the Committee noted, from information placed before it, that where the flats were not more than five storeys high, solid load-bearing walls in accordance with existing by-law requirements were usually cheaper than framed construction with non-load-bearing walls. It would have been desirable to include some figures in the report to show to what extent the cost is affected by the number of storeys and the type of cladding. At Northolt the relevant figures compare as follows:—

| Type of Dwelling | Total Area sq. ft. | Net Cost | | Gross Cost |
|---|---|---|---|---|
| | | Total £ | per sq. ft. s. d. | £ |
| Concrete-Clad Steel Frame .. .. .. | 900 | 730 | 16 3 | 755 |
| Brick-Built Control House .. .. .. | 862 | 759 | 17 7 | 815 |
| Brick-Clad Steel Frame Houses.. .. .. | 862 | 780 | 18 1 | 835 |

These houses are only two-storeys high, and the concrete-clad steel frame shows a saving of 7.6 per cent. in the cost per sq. ft., against the brick-built control house, whereas the brick-clad steel-frame house is only 2.85 per cent. more expensive. In view of the great advantages of framing, as pointed out in the MOW report at Northolt, this question would have deserved a more detailed discussion.

In an Appendix, *Experience Resulting from Wartime Buildings*, certain developments in the use of materials and of new forms of construction are described. Some of these were liable to defects resulting from humidity and temperature changes, some were found to have a considerable measure of structural permanence, although defective in weather resistance in exposed positions or as regards thermal insulation.

Experience has proved the necessity of expansion joints in light construction if the length of the building exceeds 60 to 100 ft. Roofs of hollow precast reinforced concrete units supported on brick cavity walls have given trouble when constructed without topping over the units. "The absence of thermal insulation has caused movements of the roof as a whole, and secondary movements of the units themselves, resulting in open joints showing on the under side, in the rupturing of the felt covering in cracking at the wall bearings, and in the communication of damaging lateral and longitudinal forces to the walls." A topping of lightweight concrete of 2 to 3 in. thick has eliminated or considerably lessened the above defects.

The deficiencies here mentioned do in no way affect the great value of the report. It is impossible to refer here to all essential items. It contains throughout many useful hints and practical suggestions, and should be studied by all architects.

# *MATERIALS*

1793 *Lightweight Concrete*

LIGHTWEIGHT CONCRETE AGGREGATES. *F. M. Lea.* (*Building Research Bulletin, No.* 15. *Revised Edition*, 1944, *HMSO*, 3*d*.) Uses of lightweight concrete aggregates. Materials available. Properties of lightweight concretes. Precautions in use. Misleading generalizations.

There is a considerable demand for lightweight concrete aggregates in building for a great variety of uses both for precast and *in situ* work. The materials available can be divided into three groups: (1) Aggregates used in the state in which they occur naturally (pumice). (2) By-products arising from other processes (furnace clinker, coke breeze, sawdust). (3) Artificial and processed aggregates specially manufactured (expanded clays, shales, slates, slags, etc.).

Natural lightweight aggregates are not available in this country. Aggregates of the second group may contain dangerous constituents and have to be used with caution. Most important for practical purposes is the third group. Among processed aggregates only foamed slag could be made available for general use in building at present.

The Bulletin contains data about the density, the movements caused by changes in moisture content, strength, thermal conductivity and fire resistance of lightweight concretes made of various aggregates in different mixes. It makes recommendations for certain applications, and points out "that external walling in lightweight concrete has been extensively used on the Continent. . . . The growing number of examples in this country shows that the method can be applied with success and can in some respects show advantages over the better known walling systems."

In view of the importance of the subject, as expressed in this quotation, it is the more regrettable that the second edition of a publication, issued by such high authority as the BRS, does not contain information on essential points, and is, in many respects, misleading.

One of the most useful applications of cast *in situ* lightweight concrete, the thermal insulation of flat roofs, is not mentioned at all among the "principal uses." In the same way, the application of precast units in floors and roofs is omitted. The following quotation is characteristic of the spirit of the whole booklet:—

"The use of lightweight aggregates in reinforced concrete work merits attention; hitherto they have rarely been used in this way in this country, because in many cases doubts still exist as to their efficacy in protecting reinforcement embedded in them against corrosion."

It is well known that breeze and furnace clinker aggregates cause rusting on the steel reinforcement. This question has been dealt with in the BRS Special Report No. 15 (published in 1930). It is equally well known, however, that both pumice and processed aggregates, like foamed slag, expanded clay, etc., are eminently suitable for use as aggregates in reinforced concrete. Both in the USA and Germany there are big plants manufacturing pre-cast units for floors and roofs in reinforced lightweight concrete. Of course, a certain density is required to protect the steel, but a density of about 2/3 of that of ordinary concrete is sufficient, so that one-third of the weight can be saved, which is of great advantage in many types of structure. In the sentence quoted no distinction is made between various types of lightweight aggregates, and by this generalization doubt is cast on a subject about which there is no doubt.

The mix of lightweight concrete is given several times as 1:12, 1:5, etc. (by volume). This is not the way to describe a mix since 1:12 may mean 1:3:9 or 1:4:8 or 1:6:6, etc., and the corresponding concretes have quite different physical properties.

Table I (Comparative Properties of Lightweight Concrete) is based entirely on this inadequate description of the mixes.

In the reference to BS 834 (relating to precast concrete blocks) it is not mentioned that the figures both for density and strength are based on the inclusion of the core space, which alters the meaning of these figures.

It is stated that "movements caused by

changes in moisture content, in particular drying shrinkages, have in the past been a frequent source of trouble with lightweight concretes." Further, referring to Table I: "The moisture movements vary over a considerable range. The average, though not the lowest, values for these lightweight concretes are in excess of the corresponding values for normal ballast and crushed stone concretes."

The actual figures in Table I for drying shrinkage are:

| | | |
|---|---|---|
| Pumice concrete ... | ... .04-.08 | per cent. |
| Coke breeze and clinker concrete ... | ... .03-.20 | ,, |
| Foamed slag concrete ... | .04-.05 | ,, |
| Expanded slate ... | ... .01-.04 | ,, |

The limiting figure in BS 834 is .06. We can, therefore, see that the remarks quoted apply to coke breeze and clinker concrete, and to a certain extent to pumice concrete, but not to foamed slag and expanded slate concrete. This is the same type of misleading generalization as is given in the case of corrosion.

The present total capacity of the plants in this country is given as of the order of 150,000 tons/annum. This figure seems to err on the high side.

Lack of space prohibits the reference to further inaccuracies and deficiencies of the booklet, which, instead of giving a guide to the building industry, lags far behind.

**1794** — **ASB** *Lecture*

ASB LECTURE: RECENT DEVELOPMENTS IN LIGHTWEIGHT CONCRETE. *T. W. Parker* (*at the RIBA on November* 22, 1944, *RIBA Journal, December*, 1944, *pp.* 43-47). Properties and uses of lightweight concrete. Examples of external wall construction.

The lecturer gave a survey of lightweight concretes made of lightweight aggregates, mainly on the lines of Building Research Bulletin No. 15 (see Inf. Centre No. 1793). He also discussed the question of rain penetration and the surface treatment of walls.

**1795** — **ASB** *Lecture*

ASB LECTURE: CONCRETE, ITS APPEARANCE AND DURABILITY. *N. Davey* (*at the RIBA on November* 29, 1944; *The Architects' Journal, January* 4, 1945, *pp.* 15-18, *XL, and the RIBA Journal, January*, 1945, *pp.* 75-82). Controlling factors in the production of concrete of uniform quality and of good appearance. Finishing and texturing. Basic requirements for concrete of good durability.

# *LIGHTING*

**1796** — **Town Planning**

LIGHT AND AIR IN TOWN PLANNING. *P. J. Waldram.* (*Builder, September* 22, *p.* 232, *and September* 29, 1944, *p.* 254.) General discussion of measures to control light in urban development. New method to assist daylight contouring in plans.

The article commences with some general views of the author concerning the present position relating to light and town planning. This is followed by a discussion of *What is Adequate Daylight*? in which reference is made to the attitude taken to this in a number of legal disputes. It is suggested that the use of daylight contours on plans, which has proved so useful in court cases, will be equally useful to the town planner.

The author has described in the RIBA Journal for March, 1944, a method which he considers is a promising help to town planners in doing daylight contouring. Of it he says here, "It is the simple expedient . . . of plotting once for all accurate calculated data of the sky factor values of rectangular quadulaterals of visible sky defined by angular co-ordinates of bearings and elevation." From these it is possible to plot graphs which are stated further to simplify the procedure. Three such graphs are published in this article, together with examples illustrating their use.

The article concludes with a short discussion of restrictions on overbuilding.

**1797** — ***Symposium of Experiments***

EXPERIMENTS ILLUSTRATING THE PRODUCTION AND NATURE OF LIGHT, PHOTOMETRY, THE FUNDAMENTAL PRINCIPLES OF ILLUMINATING ENGINEERING, AND THE ADVANTAGES OF GOOD LIGHTING. (*Transactions of the Illuminating Engineers' Society, September*, 1944, *p.* 133.) Symposium of experiments organized as demonstration for science teachers.

The note is composed of descriptions of experiments organized to show science teachers how to demonstrate lighting principles. The following are the main groups and their authors.

*The Production of Light*, by L. T. Minchin and J. B. S. Smyth.
*The Nature of Light*, by J. S. Preston.
*The Eye*, by W. D. Wright.
*Photometric Principles*, by J. T. M. Morris.
*The Benefits of Good Lighting*, by R. O. Ackerley.

The material should be of value to building science teachers.

**1798** — ***Draft Code***

INTERIM CODE OF FUNCTIONAL REQUIREMENTS FOR DWELLINGS AND SCHOOLS (CLASSIFICATION CODE). CHAPTER VII(*a*), ARTIFICIAL LIGHT. *Codes of Practice Committee of the Ministry of Works.* (*British Standards Institution*, 2*s.*) Draft for comment. Recommendations for intensity and minimum power of sources.

In two parts. The first part deals with Dwellings and begins by setting out the factors affecting illumination. A table gives, for each type of room, recommendations on illumination intensity with additional figures indicating the minimum provision which can be considered compatible with good lighting. For the minimum lighting the actual size of lamp or mantle required is listed, but it is important to note that combined with this specification for the power of the source of illumination is a proviso about the type and efficiency of the light fitting. A chart in an Appendix gives the sizes of lamps required in Living Rooms with the three main types of fitting, viz., Direct, Indirect and General. The differences in power of light source required for the different fittings are much greater than generally recognized.

The second part of the code deals with schools and follows the same general lines, but recommendations are given only in terms of foot candle requirements. The question of admixture of natural and artificial light is important in schools and factors such as control over glare due to bright or badly placed fittings are dealt with. The need for adequate maintenance is stressed. On the whole the standards of illumination suggested, although probably better than in many existing schools, do not seem unduly high, and not anything approaching the intensities now commonly used in America. On the other hand, what is most important, the comfort value of the lighting, is well recognized.

Both parts of this code should be of interest and value to architects.

**1799** — ***Industrial Plant***

INDIRECT LIGHTING IN A HUGE INDUSTRIAL PLANT. *J. L. Kilpatrick and L. N. Blugerman* (*Lighting and Lamps, September*, 1944, *p.* 22). Indirect lighting from continuous catwalks in large factory with vaulted roof.

The factory consists of eight vaulted bays, two of which are very large, being 60 ft. to the crown, with a span of 135 ft., and a length of 1,800 ft. For various reasons it was felt that high intensity indirect lighting would be most suitable. Maintenance of the high intensities was considered a major point, and accessibility of the fittings for servicing therefore was given prominence in the solution. The fittings are all attached to either side of a central cat-walk suspended some distance below the ceiling throughout the entire length of each bay. The shape of the vault is such as to cause the reflected light to be distributed uniformly over the working area.

Maintenance of lighting equipment is always urged by the electrical industry as a factor of major importance. This being so, the solution of fixing all fittings direct to cat-walks appears very sensible.

# *QUESTIONS and Answers*

*THE Information Centre answers any question about architecture, building, or the professions and trades within the building industry. It does so free of charge, and its help is available to any member of the industry. Answers are sent direct to enquirers as soon as they have been prepared. The service is confidential, and in no case is the identity of an enquirer disclosed to a third party. Questions should be sent to:* THE ARCHITECTS' JOURNAL, *45, The Avenue, Cheam, Surrey.*

**1800** — **Iron Railings**

Q *Some two years ago, one of my clients agreed to the demolition and the handing over of a considerable length of ornamental iron railings which had only been installed a few years previously. No claim was made for compensation and he now considers that as he will have to make some form of reinstatement a claim should be submitted. Is it now too late to make a claim and can you give me the name and address of the department to be approached? The particular district is Herefordshire.*

A Your client should apply to the Regional Compensation Surveyor of the Ministry of Works for the appropriate form, and should then make his claim. The claim should have been submitted within six months, but this may be waived.

Under the Act (and subject to certain provisions) the claimant is only entitled to the price which he might reasonably have obtained upon sale of the goods. As scrap this would probably be about 25s. per ton. Discretion is exercised in hardship cases, however, and if the railings were in good repair it might not be unreasonable to claim about 60 per cent. of their catalogue price.

Where railings are ornamental or, for some other reason, have a special value, the claimant is specifically entitled to more than scrap prices and he would be best advised to submit photographs or any particulars which may assist in substantiating his claim.

# CANTEENS

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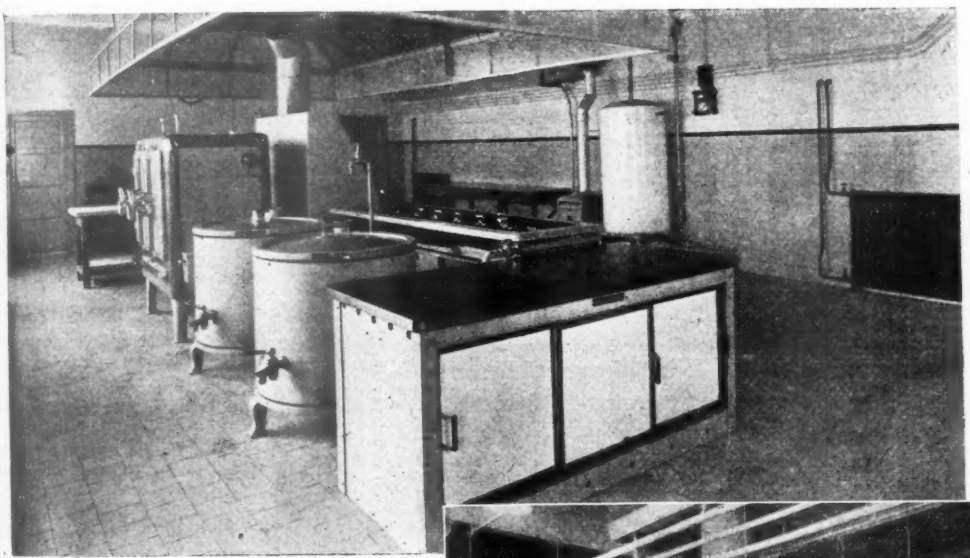

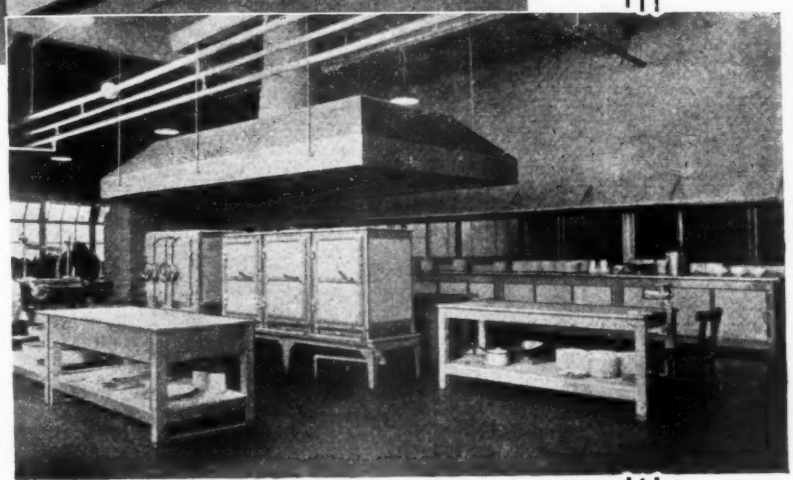

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# PRICES

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| BASIC MATERIALS | Increase over pre-war prices at end of | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. 1944 | Feb. 1944 | Mar. 1944 | Apr. 1944 | May 1944 | June 1944 | July 1944 | Aug 1944 | Sept 1944 | Oct. 1944 | Nov. 1944 | Dec. 1944 |
| | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. |
| Portland cement .. | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 | + 41.46 |
| 2-in. Unscreened ballast | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 | +108.70 |
| Fletton bricks (at station) | + 29.73 | + 29.73 | + 29.73 | + 29.73 | + 29.73 | + 32.43 | + 32.43 | + 32.43 | + 34.59 | + 34.59 | + 34.59 | + 34.59 |
| Stoneware drainpipes (British Standard) (2 tons and over).. .. | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 | + 43.75 |
| Roofing tiles .. .. | + 45 | + 45 | + 60 | +60 | + 60 | + 60 | + 60 | + 65 | + 65 | + 65 | + 65 | + 65 |
| Steel joists (basic sections ex mills) .. .. | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 | + 47.5 |
| Lime greystone .. .. | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 | + 43.53 |
| Sheet lead .. .. | + 65.22 | + 65.22 | + 65.22 | + 65.22 | + 65.22 | + 73.91 | + 73.91 | + 73.91 | + 73.91 | + 73.91 | + 73.91 | + 73.91 |
| Iron rainwater goods and soil pipes .. .. | + 32.5 | + 32.5 | + 32.5 | + 32.5 | + 32.5 | + 32.5 | + 32.5 | + 40.5 | + 40.5 | + 40.5 | + 40.5 | + 40.5 |
| White lead paint.. .. | + 46.21 | + 46.21 | + 46.21 | + 46.21 | + 46.21 | + 46.21 | + 46.21 | + 46.21 | + 46.21 | + 43.18 | + 43.18 | + 38.38 |
| RATES OF WAGES (Central London Area) | | | | | | | | | | | | |
| Labourers .. .. | + 26.98 | + 26.98 | + 26.98 | + 26.98 | + 26.98 | + 26.98 | + 26.98 | + 26.98 | + 26.98 | + 26.98 | + 31.75 | + 31.75 |
| Craftsmen .. .. | + 21.43 | + 21.43 | + 21.43 | + 21.43 | + 21.43 | + 21.43 | + 21.43 | + 21.43 | + 21.43 | + 21.43 | + 26.19 | + 26.19 |

LABOUR—Rates of Wages since November 1, 1944.

| LONDON DISTRICT | Craftsmen | Labourers |
|---|---|---|
| Within 12 miles radius .. | 2s. 2½d. | 1s. 8½d. |
| From 12-15 „ „ .. | 2s. 2d. | 1s. 8d. |

*N.B.*—Prices of materials include for delivery to site in the Central London Area unless otherwise stated.

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|---|---|---|---|---|---|---|---|---|---|
| Craftsmen .. .. | 2/1 | 2/0½ | 2/– | 1/11½ | 1/11 | 1/10½ | 1/10 | 1/9½ | 1/9 |
| Labourers .. .. | 1/7¾ | 1/7¼ | 1/7 | 1/6½ | 1/6¼ | 1/5¾ | 1/5½ | 1/5 | 1/4¾ |

*F.S.I., F.I.Arb.*

*Advertiser's Announcement.*

COMPANY MEETING.

# S. E. OPPERMAN LIMITED

## PRE-FABRICATED PERMANENT HOUSES

## ENORMOUS POTENTIAL DEMAND

The Eighth Ordinary General Meeting of S. E. Opperman Limited was held on February 8 at Stirling Corner, Boreham Wood.

Sir Ian Stewart-Richardson, Bt., the chairman, presided.

The following is the Chairman's statement circulated with the report and accounts :

Ladies and Gentlemen,—First I would like to apologize for the accounts not having been presented earlier, this delay being due to the finalizing of certain figures outside our control. In reviewing the accounts, you will see that these have been treated in the same manner as in the preceding year. I am glad to report that the sales and profit have increased, but owing to the incidence of taxation the amount of distributable profit has not increased proportionately. There has been no further writing down of the goodwill, as it is felt that this now stands at a very conservative figure. The directors recommend the maintenance of the 12½ per cent. dividend and that the sum of £500 be contributed to the staff benevolent fund, the balance being carried forward.

### NEW PRODUCTS.

Turning to the general policy of your company, shareholders are no doubt aware that for the last five years we have been engaged on work of national importance, but apart from this they should also know that due to the designing ability of the managing director your company has been able to contribute substantially to the war effort. Everything possible has been done to maintain our pre-war lines ; the plant and equipment in the factories is of the highest and most up-to-date standard. The gearcutting plant especially is probably the most varied in London, and is backed by the technical skill and resources which only years of experience can achieve. We are also glad to report that the agricultural machinery side of the business has continued to expand. Several more proprietary articles have been added to your company's range of equipment which has proved its efficiency over a considerably wide field.

The directors have closely examined various avenues of activity to replace specialized wartime production, and your company has undertaken the development of different types of permanent buildings adapted for pre-fabrication in factories such as these. A prototype dwelling house has now been erected. The Ministries concerned have been approached and the necessary labour facilities to carry out pilot production have been granted. It is not necessary for me to tell shareholders of the enormous potential demand for the production of a really good permanent factory-built house as distinct from the temporary houses about which there is so much controversy.

### INCREASED OUTPUT.

We anticipate that when this form of production is fully embarked on our output will exceed that already reached, and it will be accordingly necessary to make provision for a long-term policy. In such event further financial resources will be required, and, if so, the shareholders will be given the first opportunity to participate in any necessary increase of capital.

I regret to have to inform you that Mr. A. E. Bibby, who has been a colleague on the board since 1937, finds that the state of his health precludes him from continuing to serve as a director. He is due to retire by rotation this year, but has in the circumstances expressed his unwillingness to submit himself for re-election, and your directors have decided not for the time being to submit any other name to fill the vacancy. I and my co-directors join in recording our recognition of the many valuable services rendered in the past to the company by Mr. Bibby, and hope that he may be spared many years of retirement. In conclusion I should like to record the thanks of the board to the staff and works personnel for their co-operation during the year.

The report and accounts were adopted, and the auditors, Messrs. W. F. Smart, Son and Bloor, having been reappointed, the proceedings terminated with a vote of thanks to the chairman, directors, and staff.

## CLASSIFIED ADVERTISEMENTS

*Advertisements should be addressed to the Advt. Manager, "The Architects' Journal." War Address: 45 The Avenue, Cheam, Surrey, 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," War Address: 45 The Avenue, Cheam, Surrey.*

## Public and Official Announcements

***Six lines or under, 8s.; each additional line, 1s.***

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: 75 EATON PLACE, LONDON, S.W.1. TEL.: SLOANE 5615 991

BOROUGH OF MAIDENHEAD.

Applications are invited for the post of ARCHITECTURAL ASSISTANT, in the Borough Surveyor's Department, at a salary of £550 per annum, plus war bonus (on the Whitley Scale).

Candidates should have a recognised Architectural qualification and considerable experience in the design and execution of building works.

Applications, endorsed "Architect," are to be submitted on forms obtainable from the Borough Engineer and Surveyor, Guildhall, Maidenhead, not later than 23rd February, 1945.

Canvassing will be a disqualification. 510

CITY OF KINGSTON-UPON-HULL.

APPOINTMENT OF ASSISTANT ARCHITECTS.

Applications are invited for the appointment of Six temporary Assistant Architects, in the City Architect's Department.

The duties will include the Survey of existing Schools and the preparation of Plans, etc., of work necessary to make present buildings conform to the new Education Act.

The salary offered is £400 per annum, plus cost of living bonus.

Preference will be given to members of the R.I.B.A.

Applications, stating age, qualifications, and previous experience, together with copies of two recent testimonials, should be received by the undersigned not later than Wednesday, 28th February, 1945, and endorsed "Assistant Architect."

ANDREW RANKINE, A.R.I.B.A.,
*City Architect.*
Guildhall, Kingston-upon-Hull, Yorks. 512

CITY AND COUNTY OF BRISTOL.

CITY ARCHITECT'S DEPARTMENT.

APPOINTMENT OF ASSISTANT ARCHITECTS (TEMPORARY).

Applications are invited for the above appointments, and preference will be given to applicants with experience, in the carrying out of Educational buildings.

The salary offered will depend on the candidate's ability, experience, etc., but will be in the neighbourhood of £400 per annum, plus war bonus.

Applications, stating age, qualifications and experience, together with the names of three persons to whom reference can be made, are to be delivered to the undersigned not later than Saturday, 24th February, 1945.

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

J. NELSON MEREDITH, F.R.I.B.A.,
*City Architect.*
Eagle House, Colston Avenue, Bristol, 1. 509

## Architectural Appointments Wanted

*Advertisements from Architectural Assistants and Students seeking positions in Architects' offices will be printed in "The Architects' Journal" free of charge until further notice.*

STUDENT, R.I.B.A., desires position in Architect's Office; London area. Box 444.

LAD (16½), leaving high school with matriculation and distinction in art, seeks opportunity in Architect's Office. Box 440.

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JUNIOR (16), with drawing ability and two years' previous drawing office experience, seeks position in Architect's Office; keen and willing; at present attending architectural classes. Box 442.

ARCHITECTURAL ASSISTANT, 16 years' experience in factories, hospitals, houses, alterations to existing premises, working drawings, details, surveying, etc., desires spare time work. Reply Box 439.

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JUNIOR DRAUGHTSMAN, with 2 years' tuition in School of Architecture, Northern Polytechnic, London, and 9 months' office experience drawing, estimating and surveying, with a plasterboard and wood-wool concern, wishes to obtain further experience in other branches of prefabrication; any locality in Britain or abroad. Box 446.

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## Architectural Appointments Vacant

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WANTED.—Architectural Assistant, preferably with experience in Housing and Factory work; quantities an advantage; progressive post. Applications, in writing only, to Arthur Pickles, Architect, 3, Wards End, Halifax. 516

WANTED.—Architectural Assistant, with highest draughtsmanship and perspective qualifications; knowledge of housing and prefabrication an advantage. Applications, in writing only, to Arthur Pickles, Architect, 3, Wards End, Halifax. 517

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R.I.B.A. and T.P. INST. EXAMS. Private Courses of Tuition by correspondence arranged by Mr. L. Stuart Stanley, M.A., F.R.I.B.A., M.T.P.I. Tutor, 161, West Heath Road, N.W.3. Tel.: SPE. 5319. 415

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