BIRMABRIGHT — the corrosion resisting, strong light alloy — is an ideal architectural material which is bound to be greatly admired in post-war offices, stores and public buildings.

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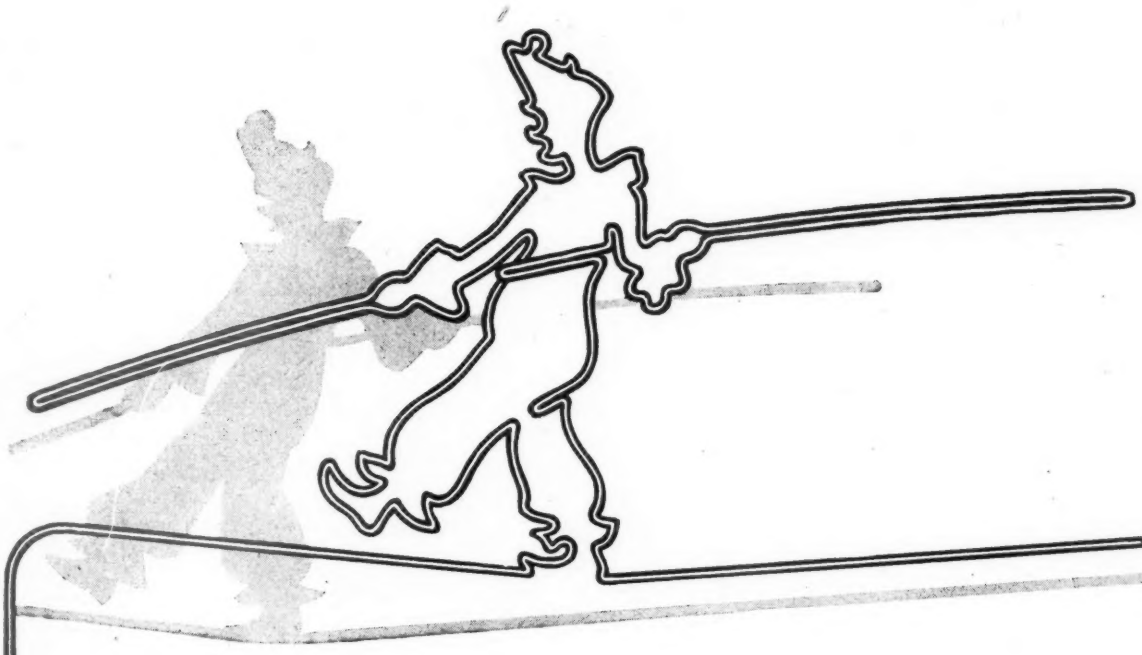
De La Warr Pavilion, Bexhill-on-Sea.
Architects: Mendelsohn & Chermayeff.
Metalwork: J. Starkie Gardner Ltd.

Entrance hall with balustrade hand railing of polished "Birmabright" Aluminium Alloy.

RP-428A



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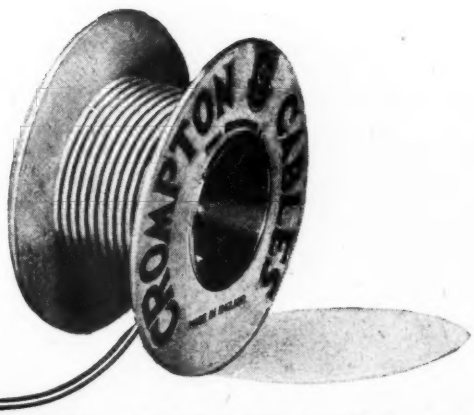

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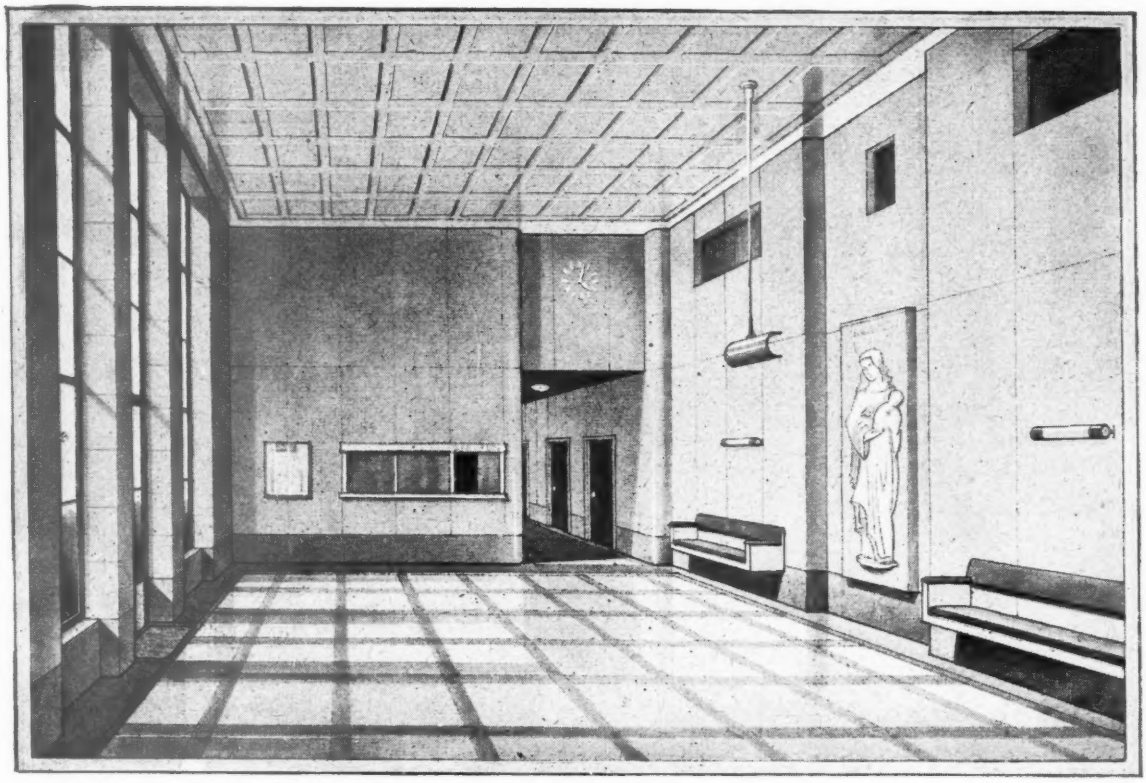
MESSRS. STANLEY HALL & EASTON AND ROBERTSON, ARCHITECTS



W4

In the design shown above Messrs. Stanley Hall & Easton and Robertson have further evidenced the fact that architects and interior decorators are offered in Warerite Laminated Plastics both a new material and a new medium of expression.

Here the architects have been at pains to demonstrate the possibilities of Warerite wall linings and panelling in so circumscribed a sphere as Hospital decoration. They have succeeded, too, in showing the conformability of the new medium to the austere in architecture.

Both as mural and ceiling decoration, and in its more utilitarian applications as surfacing for splash-backs, flush doors, table tops, bar and shop counters, here is unquestionably a material with a future. Highly resistant to wear and to the action of water, heat, acids and alcohol, its potentialities cover a considerable field. After the war Warerite wall panels and veneers will be available in a wide range of colours. Meanwhile it is a name to remember.

'What, no larder!'

SHE may consider the idea of a kitchen without a larder somewhat revolutionary. But actually, with a refrigerator of ample size, a larder is quite unnecessary. With this in view, Prestcold engineers have designed a model of 4½ cubic feet capacity for mass-production at a popular price. It would hold sufficient perishable goods for a family of four. Non-perishable foods would be kept in kitchen cupboards. The "no-larder" kitchen has been proved satisfactory in actual practice, and architects and builders will be quick to realise the constructional saving to be effected. For the future health of the nation a refrigerator is a desirable addition to every home. For the "quick-frozen" foods which will be available after the war, refrigerators will become an absolute *necessity* to all. The following advantages of the Prestcold design are well worth noting.

Storage capacity of approximately 4½ cubic feet, which will hold all the perishable foodstuffs for a family of four.

Larder space rendered unnecessary. Dry goods and non-perishable foodstuffs would be kept in kitchen cupboards.

Waist-high refrigerator door, allowing access to interior without stooping.

Height adaptable by varying position of supporting frames.

Refrigerator can be built into kitchen fitments with cupboard space above and below it.

Design provides for adequate ventilation of mechanism without the necessity for special air-bricks or ducting.

Ice making and "cold cooking" facilities.

PRESTCOLD

Refrigeration

A PRODUCT OF THE PRESSED STEEL COMPANY LIMITED

A Knob's Job

First of all, it must function perfectly ; it must turn the lock mechanism sweetly and silently, and it must allow the door to be pushed and pulled with ease on its hinges.

★

It must stand up to a lot of knocks and strains which have very little to do with its proper function. ***(Educational Note : Children favour door knobs for swinging purposes).***

★

Its shape must be " right," suiting the hand that uses it and remaining a quiet delight to the eye of the beholder. It should be available in colours to suit any decorative scheme.

★

It must be easily fixed, and once fixed, be firm and free from rattle ***(Lacrinoid door furniture dispenses with grub screws, the patent retention devices ensuring good fit).***

★

Well, that is the kind of door furniture Lacrinoid makes— perfect in function, pleasant to both hand and eye and produced at a price which allows its most widespread use.

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POST-WAR HOUSING

No. 1. Heat Losses through Roofs

RECOMMENDED STANDARDS

Post-War Building Studies No. 15, "Walls, Floors and Roofs,"* paragraph 244, reads as follows :

> "*TRANSMISSION THROUGH STRUCTURE*
> *The loss of heat by transmission through the structure of a roof and its coverings should generally be reduced to a minimum. The following values of thermal coefficient 'U' are now recommended by the B.R.S.*
>
> | *STANDARD A* | *STANDARD B* |
> |---|---|
> | *Roof and top floor ceiling 0·30* | *Roof and top floor ceiling 0·20*" |

Notes :

STANDARD A is for houses with uncontrolled heating appliance being of the normal open fire type.

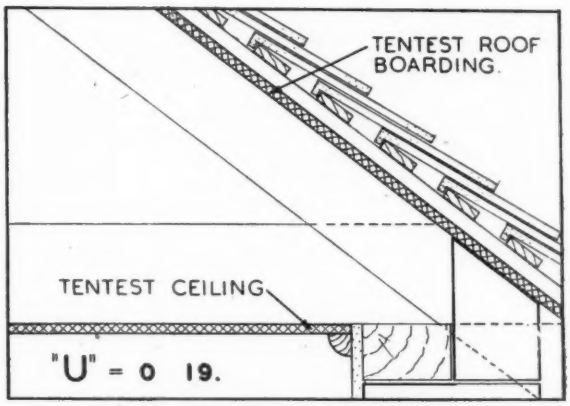
STANDARD B is for houses with controlled heating appliances, e.g., slow combustion, gas or oil stoves, electric heating or central heating.

THE THERMAL COEFFICIENT "U" represents the number of British Thermal Units lost per hour through one square foot of the structure for one degree F. difference between the indoor and outdoor air temperatures.

HOW TO ACHIEVE STANDARDS

The simplest and most economical way of improving insulation is, where possible, to use structural materials with high insulation value, *instead* of using those with low insulation value and then adding insulation separately. This method is particularly easy to apply to roof structures and the figures below (based on information given in recent official publications) show how the officially recommended thermal standards can be attained by inexpensive modifications of normal constructions.

*Pub. H.M.S.O. for M.O.W., price 9d.



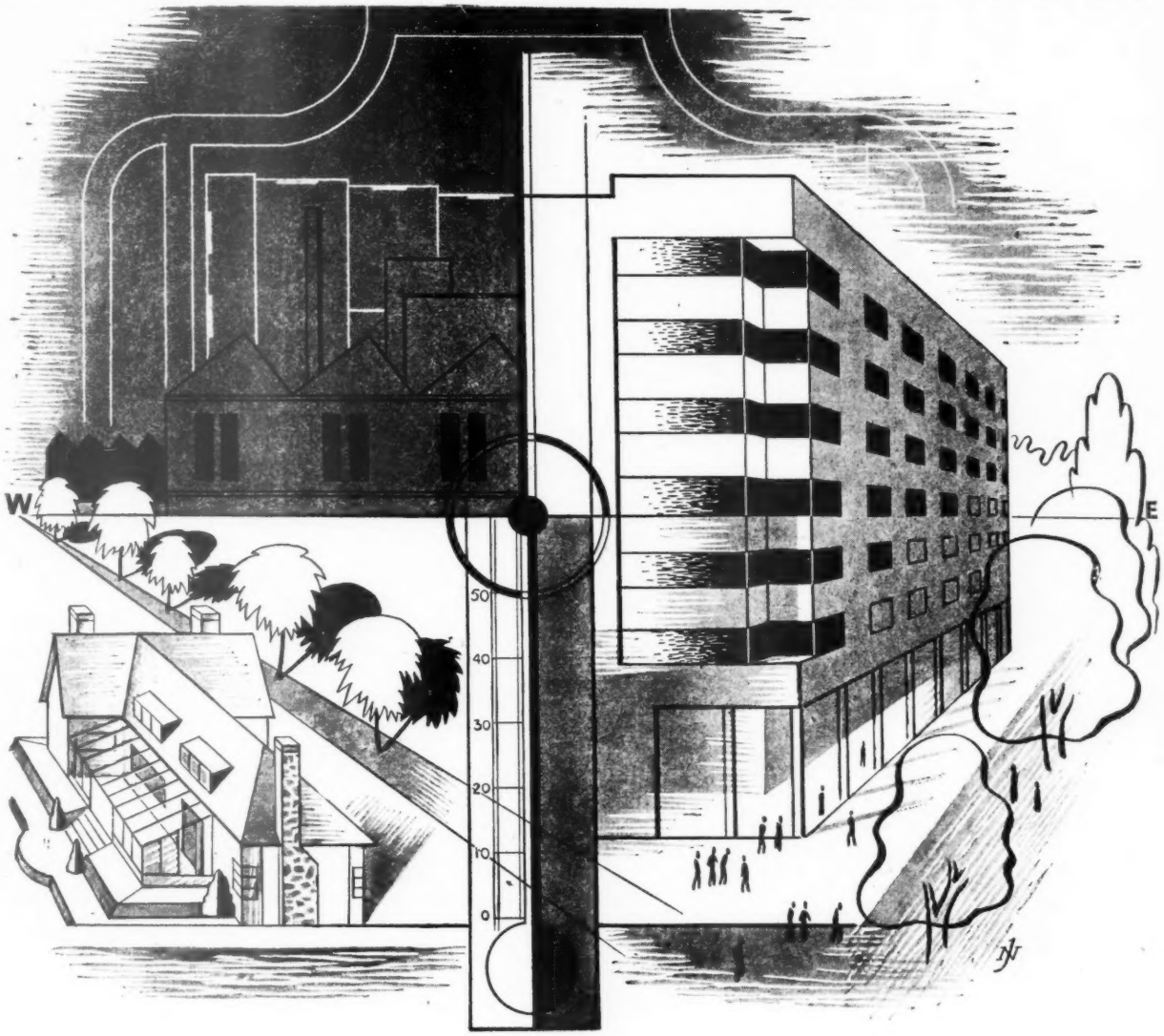
Standard B is easily attainable using ½in. TenTesT as roof boarding and as ceiling.

TABLE OF THERMAL TRANSMITTANCES

ROOF AND CEILING STRUCTURE.	"U"
PITCHED ROOFS	
Tiles on battens, plaster ceiling	0·56
Tiles on battens, ½-in. TenTesT ceiling*... ...	0·33
Tiles on boards and felt, plaster ceiling	0·30
Tiles on boards and felt, ½-in. TenTesT ceiling...	0·22
Tiles on battens on ½-in. TenTesT, plaster clg....	0·25
Tiles on battens on ½-in. TenTesT, ½-in. TenTesT ceiling	0·19
FLAT ROOFS	
Asphalt on 1-in. boarding, plaster ceiling ...	0·31
Asphalt on 1-in. boarding, ½-in. TenTesT ceiling	0·23
Asphalt on ½-in. TenTesT on 1-in. boarding, ½-in. TenTesT ceiling	0·17
Asphalt on 4-in. concrete, plastered soffit ...	0 62
Asphalt on 4-in. concrete, ½-in. TenTesT ceiling fixed to battens	0·26
Asphalt on ½-in. TenTesT on 4-in. concrete, ½-in. TenTesT ceiling fixed to battens ...	0·19

* *TenTesT is an ideal base for plaster finish.*

BIGWOOD UNICALOR COAL STOKER



HEATING

Whatever the outside conditions, the Bigwood "Unicalor" Coal Stoker exactly proportions the fuel feed to the heating requirements, regardless of prevailing weather conditions. For the heating of institutions, flats, industrial and commercial premises, hotels, stores and of the larger private houses, "Unicalor" firing is ideal. It is clean, automatic, needs none but occasional supervisory labour, and the design and method of feed ensure the most efficient utilisation of fuel.

In preparing schemes for heating, the advantages of "Unicalor" should be fully borne in mind.

JOSHUA BIGWOOD & SON LIMITED · WOLVERHAMPTON

S.K.12.

WHY USE THREE TONS

...WHEN TWO ARE BETTER?

It's hardly necessary to point out that steel is likely to remain a high priority material for some years to come, particularly during the period of reconstruction. So it's just as well that the 'Isteg' process provides a form of reinforcement which, because of the higher stresses permitted when it is used, makes it possible to save one third of the weight of steel normally required. This has obvious advantages quite apart from the fact that 'Isteg' is keyed to the concrete throughout its entire length, needs no hooks nor overlengths and minimises the cracking problem. But with all these advantages we wouldn't have got very far with 'Isteg' if it wasn't backed up with a first-class service which is well known and appreciated by Consulting Engineers who specify 'Isteg.'

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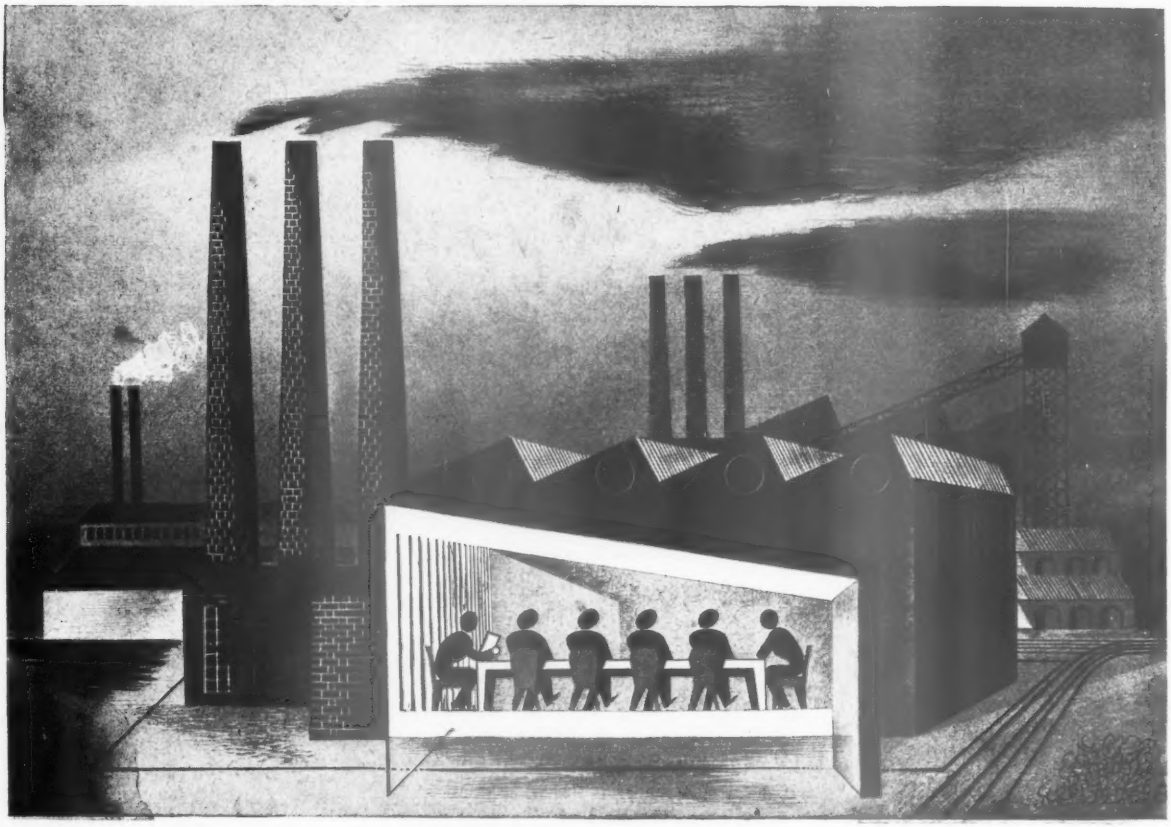

The switch-over in factories for peace-time output

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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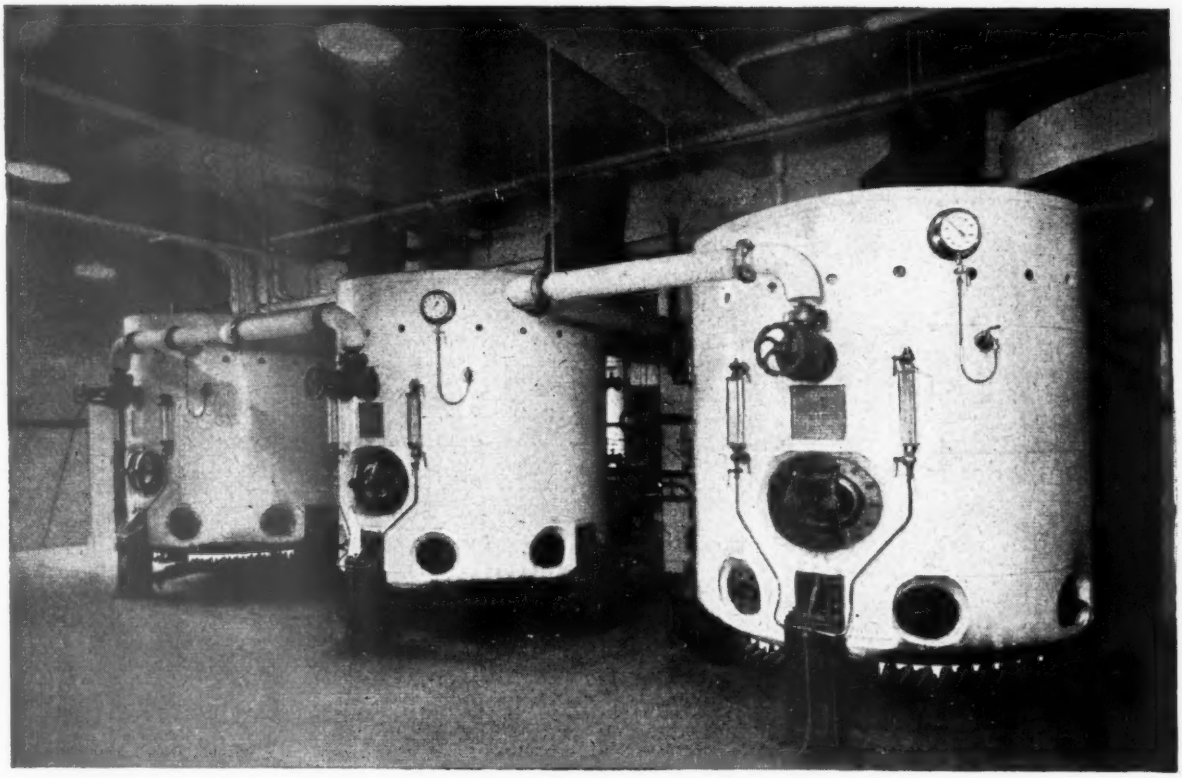

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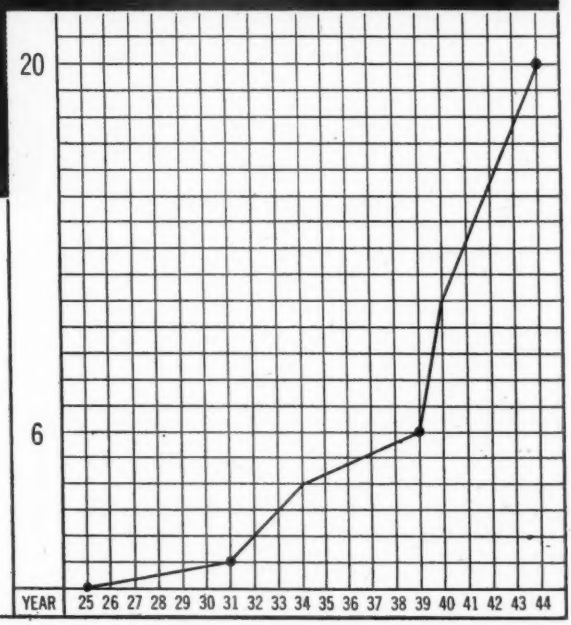
For every million square feet of metal processed in 1929, six times this area was treated in 1939, and over twenty times as much is being processed to-day.



These figures give some idea of the progress of the Parkerizing and Bonderizing Rust-proofing Processes; and this success is based upon results. Striking evidence of the value of Bonderizing is to be found in the lack of corrosion on the mudguards of many cars, despite long years of exposure in war time. After the war, cars will have "Bonderized" bodies, and many new products will gain in appearance and endurance by being "Bonderized." Our twenty years' experience is at the disposal of all engaged in production where Metal Finishing is necessary.

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IT CANNOT BE PARKERIZED (Regd.) OR BONDERIZED (Regd.) WITHOUT Pyrene CHEMICALS

IF building is to go forward at the speed which the nation demands, new ways of planning and of construction will be needed. Whatever may be the scope and shape of the building programme, structural steel will have an important contribution to make.

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ARENS are the Window Control specialists. Their job is the planning and perfecting of neat, silent, unobtrusive mechanical devices that make window opening and closing the smooth, easy thing it should be, and *is* in many a modern factory and municipal building.
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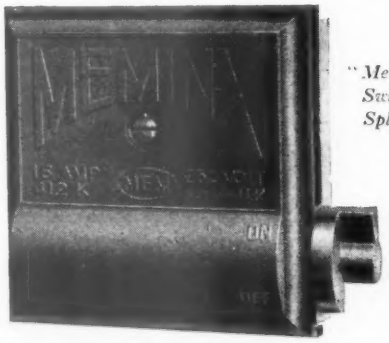
How many homes for how much?

The post-war demand will be for good houses in large numbers at reasonably low prices. How is the building industry to meet it? One thing is clear. As many components as possible will have to be factory-made on the most efficient and highly mechanised lines.

One kind of equipment for every building — electrical switch and fusegear — has been manufactured by M.E.M. in this way for many years. They have shown how cost can be progressively reduced and quality improved by steadily perfecting large-scale production on the basis of experience. The war has added to this experience and the benefits will be at the service of Installation Engineers when peace comes.



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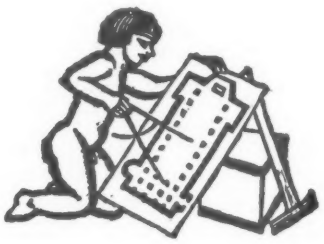

DIARY FOR APRIL MAY AND JUNE

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. *The English Town: Its Continuity and Development.* At the George Dixon Grammar School, Edgbaston, Birmingham. (Sponsor, TCPA.) MAY 17-31

BUXTON. *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA.) MAY 1-14

CHESTERFIELD. *When We Build Again.* Exhibition and Film. (Sponsor, TCPA, in collaboration with Messrs. Cadbury Bros.) AP. 25-MAY 19

LIVERPOOL. Film Show. *Valley of the Tennessee; The City; Housing in Scotland; New Builders.* At the Allied Centre, 1, Basnett Street, Church Street, Liverpool. (Sponsor, Association of Building Technicians, Liverpool Area Branch). Admission Free, refreshments, collection. 3 p.m. AP. 21

LONDON. Hope Bagenal. *The Noise Problem in Relation to Town and Country Planning.* At 28, King Street, Covent Garden, W.C.2. (Sponsor, TCPA.) 1.15 p.m. AP. 19

Professor L. B. Budden. *Post-War Architectural Education.* At 66, Portland Place, W.1. (Sponsor, RIBA). 6 p.m. JUNE 19

Electrical Association for Women. Twentieth Annual Conference. At the EAW Clubroom, 20, Regent Street, London, S.W.1:—10 a.m., Council Meeting, for Council members only; 12 noon, Buffet Lunch, for Council members. At the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2:—1.15 p.m., Registration of delegates; 2 p.m., Annual General Meeting; 3.30 p.m., Address by the Rt. Hon. Lord Brabazon of Tara (in the chair, the Dowager Lady Swaythling); 4.30 p.m., Tea. AP. 19

Dr. Harry Rosenthall. *Architecture in the Jewish National Home.* At Palestine House, 18, Manchester Square, W.1. (Sponsor, Palestine House.) 5 p.m. AP. 23

Royal Sanitary Institute Sessional Meeting. H. D. Manning. *Design and Construction of Sewage Disposal Works for Wartime Establishments.* Chairman: Dr. James Ferguson, Chairman of Council. (Sponsor, RSI.) 3.30 p.m. AP. 25

R. C. Bevan, of the Building Research Station. *Fire Grading in Building.* Architectural Science Board Lecture. At the RIBA, 66, Portland Place, W.1. (Sponsor, RIBA.) 5.30 p.m. AP. 25

Professor J. D. Bernal. *The Social Relations of Science.* Trueman Wood Lecture. At the Royal Society of Arts, John Adam Street, Adelphi, W.C.2. (Sponsor, RSA.) 1.45 p.m. MAY 16

T. Alwyn Lloyd. *Preservation of Coastal Amenities in Wales.* At Caxton Hall, Caxton Street, Westminster, S.W.1. (Sponsor, TPI.) 6 p.m. MAY 17

Charles Wheeler, R.A., President of the Royal Society of British Sculptors. *English Sculpture: Styles and Materials.* At the Royal Society of Arts, John Adam Street, W.C.2. (Sponsor, RSA.) 1.45 p.m. AP. 25

H. Conolly. *Planning for Individuals.* At 28, King Street, Covent Garden, W.C.2. (Sponsor, TCPA.) 1.15 p.m. MAY 3

Donald Barber. *Shopping Centres and Town Planning.* At 28, King Street, Covent Garden, W.C.2. (Sponsor, TCPA.) 1.15 p.m. MAY 31

Christian Barman. *Design in Modern Transport.* At the Royal Society of Arts, John Adam Street, Adelphi, W.C.2. The lecture will be illustrated by lantern slides. Chairman, T. E. Thomas, General Manager, London Passenger Transport Board. (Sponsor, RSA.) 1.45 p.m. JUNE 6

Dr. J. M. Mackintosh. *Social Medicine and Town Planning.* At the Town and Country Planning Association, 28, King Street, Covent Garden, W.C.2. Chairman, Dr. Norman Macfadyen. (Sponsor, TCPA.) 1.15 p.m. JUNE 14

MACHYNLLETH. *Country Life and Country Needs.* Exhibition. At the Town Hall. (Sponsor, BIAE.) AP. 19-30

NORTHAMPTON. *Country Life and Country Needs.* Exhibition. (Sponsor, BIAE.) AP. 19-MAY 7

WALLASEY. *The English Town: Its Continuity and Development.* Exhibition. At the Education Department, Wallasey, Cheshire. (Sponsor, TCPA.) AP. 19-28

NEWS

THURSDAY, APRIL 19, 1945
No. 2621. 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.*

★

Two committees, one amenity, the other Fisheries, say: DON'T DAM the Rivers Tummel and Garry at Pitlochry.

Two committees appointed under the Hydro-Electric Development Act to examine the effect on local amenities and fisheries of the proposed damming of the Rivers Tummel and Garry at Pitlochry for the Highlands hydro-electric scheme urge in reports that the proposal should be abandoned. The Hydro Electric Board announces that it does not intend to accept the recommendation. A public inquiry is, therefore, to be held in Edinburgh. According to *The Times*, the Amenity Committee states that the Tummel-Garry project will involve flooding the valley of the Tummel to within 2 ft. 6 in. of the top of the Falls of Tummel, and of the valley of the Garry for a distance above the Bridge of Garry. Several popular riverside walks and the sports ground in Pitlochry will be submerged. Regretting the projected disappearance of the Falls of Bruar and the loss of such exceptionally beautiful Highland scenery as the lower reaches of the Tummel and the Garry, the committee points out that this scenery is easily accessible to the public, and should be preserved unspoiled as a national asset. It, therefore, recommends by a majority decision that the board should not take powers to proceed with construction of works at Pitlochry. The Fisheries Committee states that the salmon spawning grounds on the upper Garry will be made useless, and recommends that the part of the scheme relating to the impounding of the waters of the upper Garry and the Bruar and other tributaries above the Falls of Struan should be abandoned.

From AN ARCHITECT'S *Commonplace Book*

A YANKEE ON ENGLAND: BUSHEY PARK. [*From* A Passionate Pilgrim, *by Henry James*] The little village of Hampton Court stands clustered about the entrance of Bushey Park, and after we had dined we lounged along into the celebrated avenue of horse-chestnuts. There is a rare emotion, familiar to every intelligent traveller, in which the mind seems to swallow the sum total of its impressions at a gulp. You take in the whole place, whatever it be. You feel England, you feel Italy, and the sensation involves for the moment a kind of thrill. I had known it from time to time in Italy and had opened my soul to it as to the spirit of the Lord. Since my landing in England I had been waiting for it to arrive. A bottle of tolerable Burgundy, at dinner, had perhaps unlocked to it the gates of sense; it arrived now with irresistible force. Just the scene around me was the England of one's early reveries. Over against us, amid the ripeness of its gardens, the dark red residence, with its formal facings and its vacant windows, seemed to make the past definite and massive; the little village, nestling between park and palace, around a patch of turfy common, with its taverns of figurative names, its ivy-towered church, its mossy roofs, looked like the property of a feudal lord. It was in this dark composite light that I had read the British classics; it was this mild moist air that I had blown from the pages of the poets; while I seemed to feel the buried generations in the dense and elastic sod.

★

High on the list among major post-war road development schemes is the plan for a TYNE TUNNEL FROM JARROW TO WALLSEND.

At a Press conference at Newcastle, the President of the Board of Trade, Mr. Dalton, said that the Minister of War Transport, Lord Leathers, had authorized him to say that the plan for a Tyne tunnel from Jarrow to Wallsend will, on its merits, come high among major schemes of road development. Mr. Dalton, who made a week-end tour of the area, said: more than 30 industrial firms giving direct employment to over 20,000 workers are coming to the district. Local firms have decided on important post-war extensions. Firms contemplating new works or extending old ones include: Engineering, electrical engineering, radio equipment manufacture, gas equipment, asbestos spinning, clothing and printing, food preparations and medical preparations. Four standard factories have been allocated. One tailoring firm is contemplating premises at South Shields, Sunderland and West Hartlepool.

For the next six years, in place of the Direct Fellowship Examination the CHARTERED SURVEYORS' INSTITUTION will hold a Direct Membership Examination.

Until now, one of the methods of entry into the Chartered Surveyors' Institution has been by passing a single examination known as the Direct Fellowship Examination. This examination, which was an alternative to the First Professional, Intermediate and Final examinations, was open only to candidates over 35 years of age, who had had at least five years as principals in an established business or had held positions of equivalent professional responsibility for the same period. The Council of the Institution, on a report from its Education Committee, has decided to discontinue the Direct Fellowship Examination from now onwards. In place of the Direct Fellowship Examination, there will be a Direct Membership Examination, which will be held for the first time in March, 1946. Candidates for the Direct Membership Examination must be surveyors, aged 35 or over, who have had at least 15 years' technical experience, the last four of which must have been spent in a professional office approved by the Council. The syllabus and marking of the Direct Membership Examination will be the same as those for the Direct Fellowship Examination hitherto. The passing of the Direct Membership Examination will not imply eligibility for election as a Fellow of the Institution. The consequences of success will be the same as in the case of the other professional examinations. The Council intends that the Direct Membership Examination shall be held for six years only, from and including the year 1946. During that period, the Direct Membership Examination will be held in March each year. Applications which should be made on forms obtainable from the Secretary of the Institution, 12, Great George Street, London, S.W.1, must be received at the Institution during the preceding August.

General Sir Frederick Pile, the new Director-General of the Ministry of Works. His department will execute all the Ministry's building responsibilities, including factory production, transport and the erection of temporary houses. "This is the part of our work" said Mr. Duncan Sandys, the Minister of Works, in the House of Commons, "which will require to be carried out with the drive and thoroughness of a military evolution." Before his appointment, General Pile was Commander-in-Chief Anti-Aircraft Command. He has already been associated with Mr. Sandys in the Flying Bomb Campaign.

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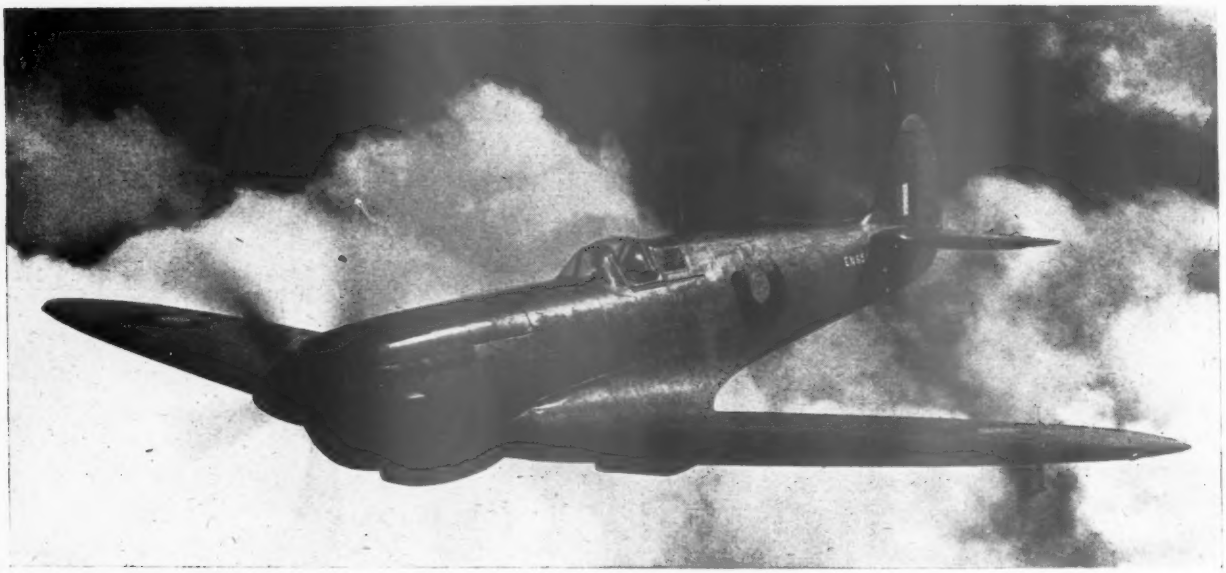

Strange Paradox

The Aircraft Industries Research Organization on Housing (AIROH) has developed a system of prefabricated house construction based on the use of aluminium alloy both for structural framework and external cladding. A prototype temporary house has been produced in this system, and has now passed its technical tests. After modifications in design and construction, and as soon as the Ministry of Aircraft Production can allot factory capacity, the temporary house will go into production. The system used is the most highly prefabricated that has yet been developed anywhere in the world. Whole house sections or slices are built in the factory in the manner of the TVA trailer house and are transported complete to the site, where they are clamped together. The temporary prototype itself is in four sections, and can be erected in twenty man-hours with an absolute minimum of site work. No skilled labour is needed. Technically this scheme, inaugurated privately four years ago, is an extremely interesting development, but not much can be said for the design of the prototype from the æsthetic point of view. It is strange indeed that the aircraft industry, which has been responsible for creating such beautiful forms as those of the Spitfire (shown above) should have permitted its house to take so mean and insensitive a shape as it has, whether it was conditioned by a Government department or not. No one expects a house to look like an aeroplane, but perhaps if its design were less the result of preconceptions and were evolved naturally and with imagination from needs, materials and construction, this home of the future might gain something of the spirit and superb grace of such technical masterpieces as the Spitfire. To paraphrase Frank Lloyd Wright, we have splendid tools in the box; we have yet to make humane, cultural use of them. The house will be fully described in the A.J. soon.

A distinguished surveyor, Mr. JOHN EDMUND DROWER, C.B.E., HAS DIED at the age of 91.

One of his achievements was the computation of the weight of the dome of St. Paul's, which he carried out in 1913 with nothing more elaborate than a foot rule in the way of apparatus. In 1915 he was invited to enter the War Office and became assistant director of army contracts. He was made a C.B.E. in 1919.

★

Superintending architect of metropolitan buildings and architect to the LCC from 1919 *to* 1935, *Mr. George TOPHAM FORREST, DIED SUDDENLY at Port Appin, Argyllshire, at the age of* 72.

The son of the late George S. Forrest, a schoolmaster, he was educated at the grammar school and university of Aberdeen. He served four years' pupilage with an Aberdeen firm and had four years' experience in London before taking up appointments under the Leeds Corporation and the West Riding County Council. In 1905, he became county education architect for Northumberland, and in 1914 county architect for Essex. He took up his appointment with the LCC in 1919, when the housing problems resulting from the last war were facing local authorities. During his term of office, the LCC carried out large cottage estates and extensive reconstruction schemes, and erected many hospital and educational buildings. He was also responsible for the architectural treatment of the new Chelsea Bridge, and, in collaboration with the late Sir Reginald Blomfield, for that of Lambeth Bridge. In 1924, he visited the United States on behalf of the LCC.

★★

Post war plans of the Tower Hill Improvement Trust provide a NEW SETTING FOR THE TOWER OF LONDON.

Extensions of Tower Hill as a setting for the Tower of London, with open spaces covering seven acres, are proposed in a report submitted by the Technical Committee of the Tower Hill Improvement Trust. The new open spaces will be laid out as a public garden, with a children's playground and other recreational facilities, as well as lawns, paths and flower-beds. The extended gardens will include, but not interfere with, the Merchant Marine war memorial, the site of the scaffold and the remains of old London Wall. It is also proposed that there should be a new east-west road in continuation of Victoria Embankment, via Lower Thames Street, Tower Hill and Royal Mint Street and Cable Street or East Smithfield and The Highway, thence to Commercial Road. Lower Thames Street and Great Tower Street should be widened and linked together by a thoroughfare adjoining the Tower. The proposals involve removing the existing Mark Lane station booking hall, but the committee says it is advised there is sufficient depth between the railway tracks and the surface to permit the construction of a new sub-surface ticket hall. It is also suggested that the LPTB's electrical substation in Trinity Place should be removed and an alternative site proposed. The committee is composed of Sir Charles Bressey; and Messrs. J. H. Markham, FRIBA, late director, Ministry of Works and Buildings; W. P. Shepherd-Barrow, chief engineer, Port of London Authority; B. H. Harbour, commercial manager, LPTB; and B. W. Stuttle, engineer and surveyor, Borough of Stepney.

RIBA ON HOUSE PRODUCTION

"TO examine the question of housing production in detail." Such were the terms of reference of the Housing Production Committee of the RIBA.* Its report begins by summing up the availability of materials, but not in a very helpful manner. For instance: "There are no existing stocks of linoleum," when what we would like to know is the productive capacity of the linoleum industry in twelve months. Aluminium is dismissed as: "Little definite is known about the prospects, however, and the use of aluminium might prove expensive." On steel windows: "If no timber is available and *steel is not required for other housing purposes* sufficient steel windows for 100,000 houses can be produced in the first 12 months" (our italics). Since when has the production of steel windows been dependent upon steel not being used for other housing purposes? The remarks on timber have already called forth wordy warfare.

Figures of labour and available sites are taken from the recently published Government White Paper and contain nothing new, except that the Committee thinks that a less degree of skill is required for house building and the necessary labour could be quickly trained. This refers, of course, to the traditional brick house and the obvious inference in all this is that traditional building could fulfil the nation's requirements without overmuch recourse to new fangled methods of prefabrication. True, the Institute has relaxed its original ostrich-like attitude on this subject (you will remember the pronouncement) to the extent of welcoming the development of prefabricated parts and suggesting that there may be a future to prefabrication as a long-term measure. But it seems hardly worth while to write a report merely to record an advance from a position in the deep rear, well off the map, to one in the immediate rear where you will clutter up the communications. One seeks in vain for the reason for this report, which places architects in a very poor position anent the new developments in building, developments in which, in point of fact, many younger members of the profession are playing leading and creditable roles. The net result is that the Committee believes that 200,000 houses can be built "of well tried materials" in the first two years after the war. The Government, be it noted, is under fire from all sides for offering a beggarly 500,000. It is not good enough to put forward unsupported views such as those on steel and aluminium in the name of the profession without at least quoting the evidence on which they are based. An immense amount of research and experiment being put into these materials has apparently been ignored. Whether we like it or not, steel and aluminium houses are being produced, and will be produced in vast quantities, and it is no wonder that the majority lack architectural advice, considering the official attitude of architects. Indeed, these successive pronouncements of the Institute are

* See *A.J.* April 5, *pp.* 268-270, for full report.

bound to cause considerable anger among large sections of the rank and file, whose views they manifestly do not represent. The narrow bias of the report is underlined with consummate ineptitude in the concluding sentence: "From evidence submitted it would appear that where private enterprise works with architectural advice it will produce a higher standard of design than local authorities working without such advice." So now we know.

We seem to remember a quotation—was it Hotspur?—about grasping the nettle. There is a nettle to grasp here for those with courage and vision, and what a prospect it opens up.

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

NOTES & TOPICS

L.G. ON PLANNING

Lloyd George was a friend of architects and a fierce and inspired fighter and pioneer in the cause of housing. His oratory was spell binding and emotional, yet common sense was borne onward by it, like a stout ship on the waves of the sea. He could charm a bird off a tree and mock a monster into submission. Listen again to that inimitable tongue battling in the cause of planning:

*

"The worst of the present rating system is that the moment a man neglects his property, he escapes rates; the moment a man begins to improve his property he is fined as a ratepayer. A shopkeeper extends his premises, a great workshop is erected, the rate assessor comes down and says: 'I am informed,' or let us put it in technical language, 'information has been laid against you, sir, that you have extended your works, that you are providing more employment for hundreds of workpeople; are you guilty or not guilty?' He says, 'I cannot deny it.' Then says the assessor, 'I fine you £50 or £100 a year as long as you live, and don't do it again.' And he goes on to a moorland near Leeds—not a building in sight, not a plough on the land, no sign of one. Then he says, 'This is all right. No improvements here.' He meets the proprietor and says, 'What are you doing with this land?' The proprietor says, 'I am holding it up until Leeds wants water, then I am going to charge them eight hundred years' purchase for disturbing my pheasants.' The rate collector takes him by the hand and says, 'It is such men as you who make the greatness of our country; we will only put you down 12s. an acre. We have to put something down.'"

*

"He goes home, feeling that he has done his duty. But somebody meets him in the street and says, 'Have you heard that Mr. Brown has added a bathroom to his house? He says, 'I don't believe it; I will go there at once.' He goes, and says, 'Is this true what I hear about you, that you have put a new bathroom to your house?' Mr. Brown says, 'I am sorry,' and the official replies, '£2 added to your assessment, sir.' And he walks home past a slum district, and he says, 'No baths here, anyway.' He meets the proprietor, and he just asks him the question. The proprietor reassures him on the spot. He says, 'No improvements about my property: it is not worth as much now as it was years ago.' He takes him by the hand and he says, 'Well done, thou good and faithful servant. Go and write quickly the assessment down by 15 per cent.'"

*

Those words were spoken by Lloyd George at Middlesbrough 32 years ago. Max Lock's Plan for Middlesbrough will soon be to hand. Thirty-two years is apparently a short time in the cause of planning, but let not the name of the great Welshman be forgotten by those who carry on the fight.

PUBLICATIONS RECEIVED

Since writing a note some weeks ago on the work of CEAPE, I have received two of its publications.* The first is *Architecture as a Communal Art*, in which Sir Charles Reilly traces briefly the development of communal architecture through history, and expresses his belief that it can only return on two conditions—first, the discovery and development of new building materials which will lead to new methods of construction, and thence to new forms of architectural expression, and second the establishment of some new social needs of a similarly universal character. The booklet contains a few unimaginatively chosen photographs, and a guarded introduction from Sir Gilbert Scott.

*

The other publication is *Art and Everyman*, by Hervey Adams. This is a brief analysis of the part played by Art—whether in town planning or saucepan design—in our daily lives, and was the basis of a series of talks given by the author at that pottingshed of architectural blossoms—Tonbridge School. It is enthusiastically introduced by Clough Williams-Ellis—himself no inconsiderable expert in the art of explaining architecture to the man (or child) in the street, and it is concluded by a short bibliography. It has, alas, no illustrations except for a rather congested piece of drawing

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Batsford, 6*d*. and 1*s*. 0*d*. respectively.

on the cover, and it suffers sadly from this omission.

*

Both the authors are experienced teachers. They write briskly and simply, and successfully avoid the dangers of pomposity and condescension. The pamphlets have no new message for architects, but they are short, clear, lively and cheap to buy, and they deserve the widest distribution in schools.

*

I have but two complaints about them. First their physical appearance is as lifeless and discouraging as those worthy but unreadable little missionary publications which can be encountered in any church, flapping forlornly in their pitchpine racks. Secondly, as they share the same aims, the same sponsor and the same publisher, why are they not, too, the same in format, cover and price? Unrelated publications, however uniform their aims and subjects, carry much less weight than an alluringly planned series. They are less easily recognized and less eagerly bought.

AND STILL MORE

Milling, mouth comfortably ajar, through the other publications received, I find that they include the following: a newsletter from the Manchester Society of Architects, the third issue of an admirable series designed to keep members of the Forces informed upon the architectural activities of their home town; a War Office hand-out containing the reassuring news that the mosaics in Ravenna are practically untouched, and damage to the principal monuments is "very light," and finally a new copy from Moscow of *Architecture in the USSR*, with news of the reconstruction plans for Rostov and Smolensk, studies of ancient monuments in Samarkand, Uzbekistan, and Georgia, and accounts of exhibitions in Moscow.

*

From this you will see that in a lot of places everything seems to be going fine.

ARE DOCUMENTS GOODS?

"When is a document not a document" sounds like a particularly tedious example of a rather out-moded form of conundrum, but it is, in fact, the point at issue in the case of *Hill v. The King*, reported in *The Times* of the 2nd of March. The case has some interest for architects.

*

Mr. Hill was an insurance broker, and he claimed that his books of account were included in the cover given by the Business Scheme section of the War Damage Acts. The Board of Trade claimed that they were not, on the rather strong grounds that Section 104 of the Act of 1943 specifically excludes "documents" from the definition of goods covered by the scheme. The claimant argued before the Court, in vain, that books of account were not documents but articles of commercial value, like office equipment, and therefore covered against damage by enemy action.

*

Mr. Justice Humphreys would not accept this. His view was that they were merely records of work that had been done and of no value to anyone else, and were therefore exactly what the legislature had meant by "documents."

*

The decision is a reminder to all professional men that documents are not goods, and are not therefore automatically covered by the War Damage schemes, but it still leaves open the question of whether plans and drawings are documents of the kind excluded by the definition section of the Act. In one sense, they are records of work done and of particular value to the architect who made them. In another, they are things of intrinsic value, like a sketch or a drawing or a map, and, if they have a commercial value, then it is arguable that they are covered by the general cover given to goods.

*

The argument is not one in which it is easy to express any opinion, but one can say that any architect who has not insured these things outside the Board of Trade scheme simply on the strength of such an argument has been definitely optimistic.

ASTRAGAL

LETTERS

D. D.

Norman C. Levie

Colin F. Walker

Salaries

SIR,—Every so often a little isolated correspondence appears drawing attention to the low salaries offered to architects. The subject is almost completely ignored by the rank and file of the profession, who seem to regard it with deadly fatalism. I am prompted to ask the following questions:

(*a*) Can it be that the leading lights (who presumably if not making a fortune are doing quite well out of the profession) are at the worst rather satisfied to obtain cheap assistance, or at the best indifferent to the state of affairs?

(*b*) Having succeeded in making the status of the architect difficult of attainment, should the RIBA take little or no interest in the matter?

(*c*) Could a small portion of the energy which is being devoted to post-war planning be diverted to a Post-War Plan for the Architectural Profession? Or

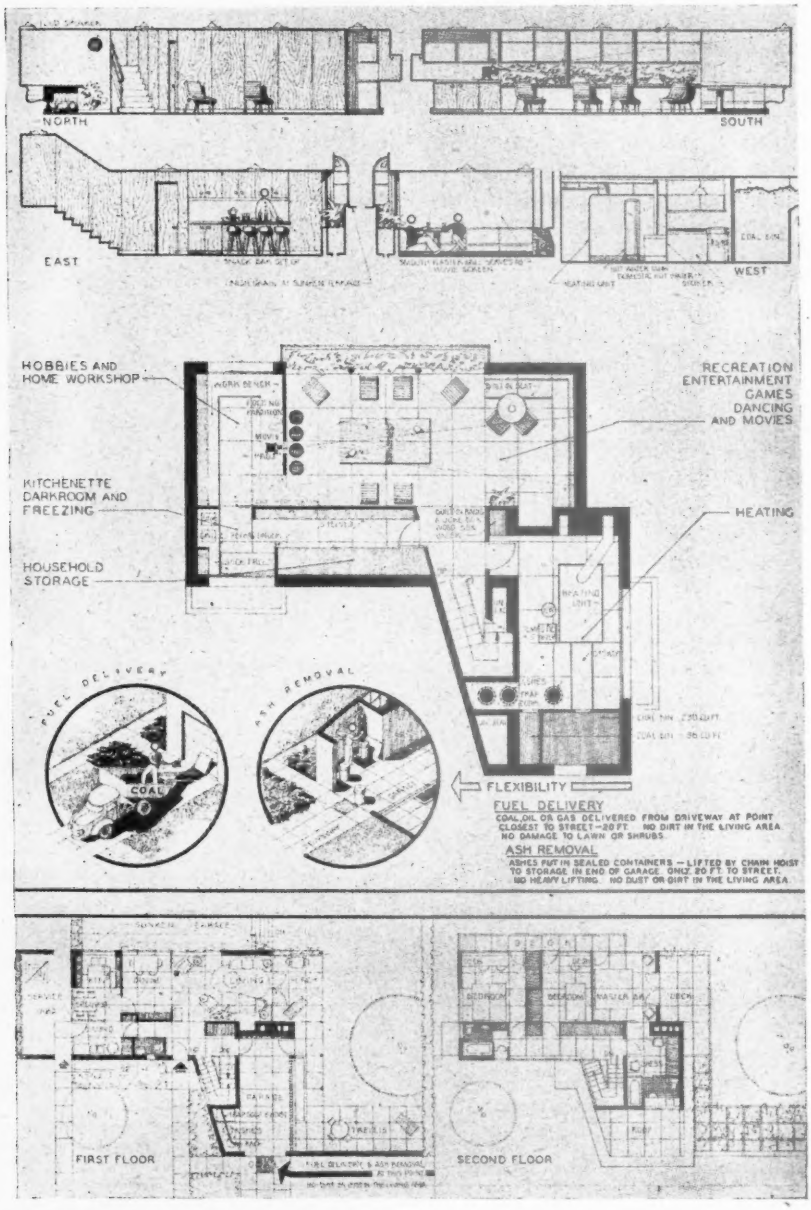
(*d*) Would this be too undignified?

D.D.

Building Your Own House

SIR,—With reference to Astragal's comments on building your own house. You may be interested to know, that for a number of years now, house building has been carried out in the Western Isles of Scotland (Lewis, Harris, Skye, etc.) by individual crofters with the help of their families and neighbours to standard plans designed by the Department of Agriculture for Scotland. These houses of single and double storey design are of stone construction with roof coverings of slates,

WINNING DESIGN IN THE USA FLEXIBLE HEATING COMPETITION



A Flexible Heating competition was recently sponsored by the Bituminous Coal Institute in the USA. The programme was to design a small house incorporating a basement for central heating. Economy of heating was one of the problems as well as the designing of a convenient and well-arranged basement with a workable heating plant. The planning of the house itself was considered important, for it was assumed " that a good basement plan must be properly related to a good first-floor plan." The heating facilities were judged on adequacy and convenience for normal operation, for the delivery and storage of fuel, and for the handling of ashes. The report of the jury states, " Some of the competitors incorporated much too elaborate mechanisms for ash disposal. It should be remembered that the average ash of domestic bituminous coal is in the neighbourhood of five per cent . . . Each fuel-burning unit should have its separate flue, for many draft troubles develop if two units interconnect in one smoke pipe." The winner, whose scheme is shown above (reproduced from Architectural Record *for January), was Elliot L. Whitaker, A.I.A. Coal is delivered remote from living quarters in front of closed garage doors. The ashes are removed in baskets by means of a simple hoist in the garage. A recreation room, work shop, storage space, and small kitchen are included in the basement as well as the heating plant. The design, like most of the others submitted, concentrates on provisions for coal as fuel, on the assumption that the use of any other type of fuel, such as oil or gas, would be possible within the area occupied by the coal facilities.*

asbestos tiles or corrugated iron or asbestos. All inside walls are strapped and lined with T. & G. lining and ceilings are similar.

The Dept. concerned has set up stores in the Islands, from which the crofters purchase the necessary materials for their houses and loans can be arranged for the same purpose. All building materials with the exception of local stone have to be shipped into the areas and close standards have had to be arranged to prevent wastage and to allow for easy erection by the individuals concerned.

It is, therefore, not necessary to go to Russia, or even Sweden for examples of this practice and perhaps Mr. Silkin had this example in mind when he made this proposal.

I have had a wide experience of housing in this area and have personally designed several of the types of houses which were built by the crofters. Just prior to the war, the external walls were being built of concrete (in place of stone) and roughcasted. The internal services in these isolated areas were of course, negligible, except in certain cases, and these, which were carried out by local tradesmen with the help of the individuals concerned, were expertly executed. Materials were bought in bulk and distributed to the various stores and made for cheapness in purchase for the individuals.

These houses were usually built as a spare-time occupation, but it was remarkable how quickly they were erected. In a climate as wet as any in Britain, the finished article was very cosy and adequately suitable to withstand the gales of their usually isolated sites.

Edinburgh NORMAN C. LEVIE

Open Letter to Woolworths

SIR,—It has come to my notice (through the medium of the ARCHITECTS' JOURNAL) that your company proposes to erect a new store with a *Gothic elevation*, on the site of the Clarendon Hotel, Oxford.

Gothic would be, to say the least of it, regrettable.

As an architectural student now serving with the Royal Navy, I feel it my duty to attempt to persuade you from taking this retrograde step into the nineteenth century; without due consideration of the possibility that a modern building may be made to harmonize with an older one; and the fact that many buildings of present-day elevation add considerable dignity to the streets in which they are situated.

This, of course, is extremely elementary, and is a fact known to any first-year student; but it would seem a fact of which many laymen are lamentably ignorant.

Why should twentieth century Gothic harmonize with the dignity of Oxford? Impossible. Gothic is a style which has been logically developed to its conclusion; all it has to say has been said—it is impossible to bring it back; nay, undesirable—let Gothic rest in peaceful beauty.

It is impossible, therefore, to produce Gothic to order without inevitably presenting a false effect—the Gothic elevation arose out of the Gothic plan and the spirit of its time; the modern elevation must of necessity do the same. One does not just stick Gothic or Classic on to an elevation like paint—if one does, it must be expected that the result will have a " stuck-on " effect—it will possess no dignity; it will not harmonize; it will, in fact, defeat its own object. This, again, is elementary—but, again, what should be obvious is realized only by a few.

Please, please consult a competent architect (*not* an engineer or a trust), and ask him for his idea of a suitable scheme, before taking a step which will surely have a retarding effect, certainly a depressing one, on the idea of a new Britain; a Britain for which I, for one, earnestly hope.

COLIN F. WALKER

PHYSICAL PLANNING SUPPLEMENT

In planning land use one of the most important decisions to be made by the planner lies in his estimate of the acreage that should be set aside for the different uses. The following article describes certain methods that can be followed in determining the acreage that should be set aside for shops in the reconstruction of existing towns or in the building of new ones.

SHOPS: *their number and distribution*

RACHEL CARO, A.R.I.B.A.

This article is designed to act as a guide for the planner in determining the optimum number of retail outlets a neighbourhood of, say, ten thousand persons should have to support it. At the outset it must be realized that there can be no hard-and-fast rules stating the quantity of these shops; rather it is a matter of balancing the many varied conditions to be taken into account, *e.g.*, proximity to other shopping centres, the local customs, the density at which the people are housed, the economic state of the population, the turnover of the shops, etc. The best way to approach the subject seems to be to base all calculations on various types of surveys, which, if compared and linked together, form some sort of broad picture to make a basis for local adjustments.

grouping of shops

The neighbourhood, though semi-self-contained, acts with others as an integral part of a town. To minimize the distance the housewife has to travel each day, some form of shopping facilities must be zoned within a reasonably short distance of her home. This is why at least one shopping centre must be found within each neighbourhood, where day-to-day demands can be satisfied. These shops would be subsidiary to the main civic shopping centre. The density at which the neighbourhood is housed would determine the quantity of these centres. A single centre is possibly preferable with a larger range of choice for the purchaser, since competition between the shop owners increases the value and quantity of the goods supplied. But the distance a person is prepared to walk is an important factor; the quarter of a mile house-to-shop radius should seldom be exceeded. Although low density housing will call for more scattered layout of shops, these should be arranged in little knots; for each trade attracts another, and together they form a nodal point at which the inhabitants can meet.

survey of shops

Conditions in most of our towns, from the shopping aspect, are at present far from good; nevertheless a survey of existing conditions, or preferably those of a normal year, say 1938, can act as a valuable guide for the future. The disposition of existing shops must be taken into account when deciding the location of a new centre in a re-development plan. Likewise local customs and preferences must be considered if the town is to retain its character. A street market may form an integral part of the lives of the people, and it must be given a suitable site in a plan and taken into account when calculating for the number of shops. The local rating and valuation department can often give useful information of figures of various types of shops in any locality. These existing figures must, however, be read with care. It is not sufficient to replace the same quantity of premises in an improved location. Most towns are very much over-shopped and a high proportion of the owners make insufficient incomes.

The type of survey described is only useful when redevelopment schemes are being designed. Some figures are needed for the neighbourhoods of our new towns. Figures 1 and 2 on next page give an interesting picture of the varying numbers of persons supporting shops selling different types of commodities. The table is derived from the 1931 Census of Industry figures (Table V) and is arrived at by taking the total population of a town or village and dividing it by the summation of the columns denoting persons working on their own account and those scheduled as branch managers, and subtracting the column marked as transport managers, etc. Unfortunately, a certain margin of error will exist; one cannot tell how many people come from the outlying districts to make their purchases in the town shops; also the National Records Office admits a chance of error in the returns of those filling in the census. Many hundreds of towns are to be found in these tables, as well as all the county remainders; but it seems that the best way to make use of them is to take the towns with approximate equivalent population to that in question and with similar occupation, *e.g.*, mining, holiday resort, water place, etc., and determine the inter-quartile range of the number of persons supporting each type of shop. The example of 39 towns of 20,000 to 50,000 inhabitants is taken to give a general picture when calculating for a small satellite town. All types of towns have been selected, but each is situated at least five miles from any other town of comparable size, so that the possibility of each drawing on the other's trade is at a minimum. The simple frequency diagram in Figure 2 shows at a glance that trades such as general stores, grocery, public houses, have, in most towns, a fairly fixed quantity of persons supporting them, whilst other trades, such as chemist or hardware, show a much more varied apportionment; this is perhaps accentuated owing to the variety in nature of the towns under consideration.

survey of budgets

The survey of budgets is no doubt the more accurate approach to determine the number of persons who should, economically speaking, support a particular shop. If the sum spent per head of the family is ascertained and a desirable turnover of the shop arrived at, then a simple calculation will give the optimum number of persons per shop. A budget survey is more difficult to determine in a mixed income group, unless the percentages of the various groups is well established. But except in the case of non-food commodities, in which it becomes too unwieldy, a very accurate figure can be achieved.

The percentage of the family income spent on foodstuffs is not a constant. As the income mounts, the food expenditure mounts also, but at a slower rate, decreasing from 45 per cent. to 30 per cent. or even less in the higher income groups. The consumption of energy-giving foods—sugar, bread, potatoes, fats, etc.—remains fairly constant throughout the income scale, except in the case of the very poor, while protective foods—milk, eggs, meat, fruit, green vegetables, etc.—which give energy in a more costly and less concentrated form, are more heavily consumed as the income rises. In the poorer classes, consumption of various foodstuffs is dependent on prices; the diet must be satisfied at the smallest cost. Should new foods—canned meat, for example—be on sale at a lower price than, say, fresh vegetables, provided it forms an equally or more satisfying diet, a change takes place. Thus the grocer now takes some of the trade from the dairy, and so on; propaganda and food prices playing a large part in determining the diet of the very poor. All this reflects back on the condition of the trade of the shops at which the meagre food money is spent. In a poor neighbourhood, the proportionate number of foodshops dealing in various commodities calculated to make an economic turnover at time

County	Town	Total Population	Public House	Grocer	General Stores	Tailor or Dressmaker	Draper	Butcher	Cobbler	Hairdresser	Greengrocer	Restaurant	Garage	Baker	Stationer	Confectioner	Dairy	Coal Merchant	Fish-Monger	Footwear	Tobacconist	Chemist	Hardware	Total No. of Shops	Population per Shop	Town.
Bedfordshire	Bedford.	40554	400	400	500	300	300	900	600	900	800	1000	600	800	1100	800	800	1500	2400	2400	2100	2500	2700	1197	36.93	Bedford
Berkshire	Slough	35550	500	600	600	600	600	1000	1200	1000	800	1400	1000	1900	1700	2000	2100	2000	1500	3700	3100	1900	2800	665	50.42	Slough
Cheshire	Chester	41440	300	500	600	400	500	800	800	900	2800	600	900	1300	1000	700	2200	1500	2800	2200	2100	2100	2800	1024	40.48	Chester
Cheshire	Crewe	46069	600	400	500	600	500	800	2600	800	900	700	2000	2000	2500	1000	2100	1800	2600	3100	3500	4600	3800	935	49.27	Crewe
Cheshire	Macclesfield	34905	200	200	700	300	700	500	600	600	900	700	1500	500	1200	800	1500	1700	1800	2700	1900	2500	3500	1010	34.57	Macclesfield
Cumberland	Workington	24751	500	500	500	500	400	600	1100	1300	1000	800	1800	700	1700	1000	1200	1800	3500	2200	2500	2800	5000	570	43.39	Workington
Derby	Heanor	22381	700	500	400	800	700	700	1400	1500	1200	1200	7500	2500	2000	3200	2000	1900	11200	1400	11200	4500	11200	366	65.07	Heanor
Devon	Torquay	46165	200	600	500	300	400	1100	700	800	1200	800	400	1100	1000	1400	900	2000	800	2600	1000	1500	1900	1596	28.97	Torquay
Durham	Jarrow	32018	900	1200	400	1300	1300	800	4200	1600	2900	200	5200	2100	1500	1300	3500	1300	3600	6400	6400	800	1600	526	60.89	Jarrow
Essex	Chelmsford	26537	600	800	500	600	400	1300	1200	900	600	1600	800	1200	1300	1000	1800	3800	1900	1700	2900	3300	1700	563	45.06	Chelmsford
Essex	Colchester	48701	400	900	500	400	500	900	600	1000	700	1100	1000	1400	1600	1100	700	2700	1400	3000	2700	2700	2700	1103	44.15	Colchester
Gloucestershire	Cheltenham	49418	200	800	600	300	500	800	700	800	500	1000	400	1300	1700	1200	1600	1300	1600	2100	1300	2400	2400	1446	34.25	Cheltenham
Herefordshire	Hereford	24165	300	400	500	400	300	600	800	700	1000	1100	500	1200	1000	1000	900	1000	5400	1200	2200	2700	1200	731	33.93	Hereford
Kent	Canterbury	24446	200	400	500	300	400	700	600	800	500	700	1100	600	800	700	1200	1900	2400	1900	1300	2700	1500	764	32.00	Canterbury
Kent	Maidstone	42280	1000	600	900	500	600	1000	1200	1000	1000	1900	1200	1700	1600	2100	1800	2600	2400	2400	2600	3100	2800	781	54.15	Maidstone
Lancashire	Accrington	42991	500	400	300	500	300	600	1100	900	900	400	2500	300	1100	700	3900	1200	3600	2900	3900	3100	2400	1274	33.68	Accrington
Lancashire	Fleetwood	23001	1000	400	600	1400	500	1300	1300	900	1700	500	2300	800	1400	1300	1100	1000	1000	2900	2900	3300	4600	547	33.40	Fleetwood
Leicestershire	Loughborough	26945	400	300	500	500	300	600	1100	1000	1000	1100	1500	1000	2200	1700	900	1000	3800	3400	1800	3000	2400	682	39.51	Loughborough
Lincolnshire	Cleethorpes	28621	1100	300	400	500	400	700	800	600	1100	500	1000	700	1200	1500	1200	1100	1400	2000	1900	1400	2600	772	47.76	Cleethorpes
Norfolkshire	King's Lynn	20583	600	500	500	400	400	700	700	700	900	1100	1000	600	1100	1600	600	900	600	1500	1600	2100	2900	617	23.5	King's Lynn
Northamptonshire	Kettering	31220	500	700	400	400	500	800	200	800	1100	2000	1400	1200	1200	1200	900	1900	1800	2100	3100	3900	5200	800	39.02	Kettering
Northamptonshire	Wellingborough	21223	400	700	200	500	400	300	200	1000	1100	1400	900	700	1100	1000	1200	1900	3000	2700	2900	1900	2100	631	35.22	Wellingborough
Northumberland	Blyth	31680	500	900	300	2800	900	1100	7000	1400	2800	1100	3500	1900	1400	2900	5200	1700	5200	2900	7900	5200	6300	492	81.07	Blyth
Northumberland	Ashington	29418	7400	800	500	2500	1100	1800	2000	1700	4200	1500	4200	2700	5900	2300	1800	7400	3700	5900	9800	14700	4900	294	100.0	Ashington
Nottinghamshire	Mansfield	46077	400	500	200	200	300	500	500	800	600	600	1400	1300	1100	900	900	3800	3800	1100	2100	2100	3800	1011	45.58	Mansfield
Nottinghamshire	Worksop	26285	500	500	500	800	500	700	1400	1100	1200	2200	2200	1500	2000	2200	1500	4400	1500	2400	3300	6600	3300	517	50.66	Worksop
Northants	Peterborough	43551	400	600	300	500	400	600	1000	900	1100	1300	900	1100	1400	2000	2000	1700	1300	2600	3400	2600	2600	991	43.63	Peterborough
Salop	Shrewsbury	32372	300	300	700	400	400	800	1100	800	1600	800	700	2000	1300	1400	1300	1200	1200	2000	2000	2200	4000	905	35.77	Shrewsbury
Somersetshire	Taunton	25178	300	500	300	300	300	1000	700	800	1000	1100	600	900	900	1700	600	6300	1000	1000	1600	2500	1200	795	31.66	Taunton
Hants	Winchester	22970	200	500	600	300	900	1000	600	900	900	800	800	1000	1000	2100	2100	2300	2600	2100	1500	2600	3800	597	38.67	Winchester
Hants	Aldershot	34250	500	600	600	800	600	1300	900	1100	1200	1400	1400	2000	1600	1400	6900	1900	3100	1800	2400	6600	6900	538	63.72	Aldershot
Staffordshire	Burton-on-Trent	49486	400	700	400	700	500	800	1600	1000	1000	2000	1200	2700	1700	1500	1300	1700	200	2200	4100	4900	5100	1065	36.91	Burton-on-Trent
Staffordshire	Cannock	34585	700	500	400	1000	600	900	1600	1600	1400	1900	1600	1600	4300	1700	1700	1900	5800	3100	5800	6900	5800	567	61.00	Cannock
Suffolk	Lowestoft	41769	400	500	400	400	500	800	500	800	700	700	1200	900	1600	1500	1300	1200	1400	2300	1800	1500	2600	1098	38.03	Lowestoft
Surrey	Epsom	27089	600	1200	2300	600	800	1600	1600	1500	1500	1200	900	6800	3900	1600	3400	3900	3900	4500	3000	3900	4500	362	74.84	Epsom
Surrey	Guildford	30754	500	600	900	400	500	1000	900	1100	2200	800	1000	1500	1000	1700	1500	2100	2400	3100	1600	2800	2600	680	45.22	Guildford
Sussex	Bexhill	21229	500	400	700	400	700	700	800	1000	500	700	500	1100	900	1100	1300	2400	2100	1300	1800	1900	2100	562	37.28	Bexhill
Warwickshire	Rugby	23826	400	600	500	600	300	700	1000	1000	700	1500	1000	2200	1100	1700	1100	1800	2000	2200	2200	2400	1300	557	42.78	Rugby
Yorkshire	Scarborough	41788	400	300	600	300	300	500	700	700	700	900	700	600	700	1300	500	900	700	1300	1100	1100	2300	1451	28.81	Scarborough
	The Median		500	500	500	500	500	900	900	900	1000	1100	1200	1300	1400	1500	1500	1900	2400	2400	2500	2700	2800		43.21	
	The Average		700	600	500	600	500	800	1000	1000	1200	1000	1400	1500	1600	1500	1700	1900	2400	2500	3100	3600	3400			
Inter Quartile Range.	The Lower Quartile		400	400	400	400	300	700	700	800	800	700	900	900	1100	1000	900	1500	1500	1900	1800	2200	2400			
	The Upper Quartile		600	700	600	600	600	1000	1200	1100	1200	1400	1600	1900	1700	1700	2000	2500	3500	2900	3300	3300	4000			

NUMBER OF PERSONS PER SHOP IN 39 TOWNS
IN ENGLAND, OF POPULATION 20,000 TO 50,000.
FROM 1931 CENSUS OF INDUSTRY TABLES ; TABLE 5.

of planning, may prove totally incorrect in years to come, when new and cheap substitutes containing equal food values have been discovered. Doubtless the best approach to planning is to base assumptions of figures on a staple pre-war year—say 1938—making suggestions which are elastic and adjustable to fit the unpredictable future.

estimate of turnover

To determine the number of persons of a certain income group who should economically support any shop, a turnover figure must be established which will give a reasonable living for the shop owner and will as well keep within the spending power of the customer. This is a very difficult fact to ascertain. Turnover is dependent upon many factors; upon the selling price of the stock held, upon the amount of stock returns, the initial capital layout, etc. The profit from this turnover must be sufficient to pay for the shop rent, rates, assistants, upkeep, and all the overhead expenses as well as supporting the owner and his family. In these times, with the rise in cost of living, the margin of profit must be greater than yesterday.

With rent at, say, £150 to £200 yearly, a branch store consisting of manager, assistant and errand boy has to make a turnover of at least £4,000 yearly to run on an economic footing. The large co-operative stores demand a weekly turnover of £135 per assistant, even in very poor quarters. A representative of the Retail Distributors' Association suggests as a reasonable guide that a shop should make a turnover of £1,000 per assistant. The co-operative society figure is more ambitious; they give an example of a small branch shop having a manager, one senior and two junior assistants, and supplying 1,000 persons, which has a yearly turnover of £5,200 to £6,200. Shops only paying about £50 yearly rent can make a good profit out of £2,000 turnover, and if the shop is owner-run, it can be an economic concern at a much lower figure.

A civic survey of existing conditions in small towns in England recently, showed an average turnover of £1,500 yearly per shop. This seems a very low figure, as it is generally recorded that two-thirds of the turnover is spent on stock replacements, leaving only £500 for rents, rates, operating expenses, as well as supporting the owner and his family. This no doubt is the reason why so many shop owners before the war were having to close down. The retail trades committee (non-food) states that there was a 19 per cent. reduction between September, 1939, and March, 1942, in small non-food retailers with less than £1,000 yearly turnover, and 11 per cent. in those of £1,000 to £5,000 turnover; whilst those with more than £5,000 turnover rose by 3 per cent. The national trend is obviously towards a higher turnover

Calculations from the Census of Industry tables in Figure 1 above, show the population supporting each shop in various towns. Taking towns of approximately the same size, a remarkably constant figure is obtained for those selling certain commodities. The frequency diagram, Figure 2 below, shows the table in Figure 1 above, in diagrammatic form.

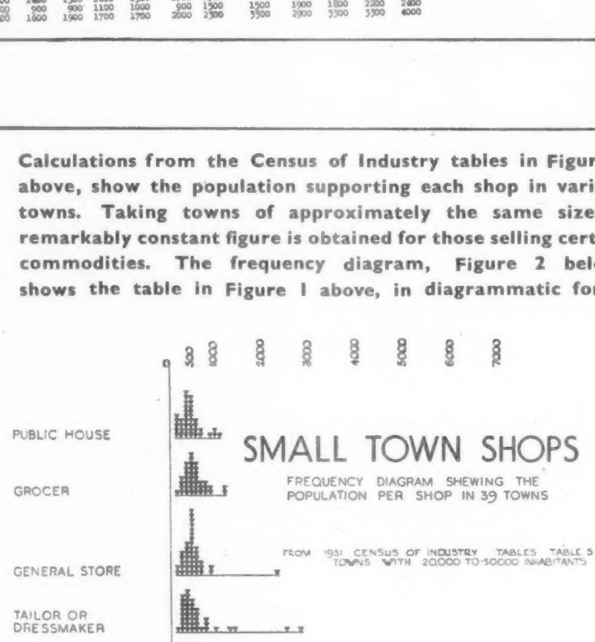


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figure. Again the same committee in their report of June, 1942, state that 8 per cent. of the total number of shops were making over £10,000 and taking 54 per cent. of the trade, and that 35 per cent. were making between £2,500 and £10,000 and taking 33 per cent., whilst 57 per cent. were making less than £2,500 and taking only 13 per cent. of the trade.

A figure for turnover, therefore, well above the average of £1,500, say £4,000, yearly seems to be a fairly correct one for which to plan after the war. It will, of course, only be used theoretically; in practice, many shops will make a much larger sum, while others may still make a reasonable profit with a much lower figure.

The number of shops which a balanced neighbourhood can support is dependent on expenditure per head at the particular shop as well as its turnover. It is apparent that with a very low income level group it is necessary to increase the number of persons to bring a shop turnover to a fixed level; thus if a fixed estimate is used, based on calculation of the needs of a wealthier district, the turnover will inevitably be too low. However, in a poorer neighbourhood where rents, rates, cost of living, labour costs, etc., are considerably cheaper, the margin of profit made by the shop owner can be lower while still allowing him to live decently; likewise his turnover can be less. So, if calculations are made on the budget survey principle, in a mixed income level community, between, say, £2 and £17 weekly; it can be seen from Figure 3 on the right that the average food expenditure is 9s. 4d. per head, a sum well above the 7s. 8d. minimum given by the British Medical Association in May-June, 1939.

persons per shop

It would be valuable if one could calculate a rough figure of persons per shop; but it can be seen from the 1931 Census that it varies enormously from town to town; dependent on so many factors, location, occupation of the town, its age, its proximity to another of any size, etc. Sometimes it needs an infinite amount of local knowledge to discover, for instance, why Middlesbrough has 85.5 persons to a shop, whilst Bolton has only 37.5. Perhaps it is that the latter suffered, in 1931, from the economic depression; many people were forced to leave to find employment elsewhere. Perhaps it is that Bolton, unlike Middlesbrough, draws her customers from a more intensely populated surrounding region. It is impossible to generalize; each problem must be judged on its own merits.

In Figure 4 on the right there is a comparison of the figures of persons per shop obtained from four sources; it is quite remarkable how well they tally, and they form a good basis for planning if they are read with the National Trend, and if, in addition, local conditions are taken into consideration. It is, however, quite erroneous to apply these figures direct in the case of small communities, whereas for much larger towns, say of 30,000 persons, they give a fairly reasonable estimate.

Having determined by this rough guide how many shops a town of predetermined population can support, the question of their grouping must be decided in the light of local customs, preferences and problems, and careful local surveys.

types of shops

Each neighbourhood should have a retail outlet for all perishable goods—goods which have to be purchased often and in small quantities, as well as those that demand small expenditure and have short durability. All these should be purchased within walking distance of the home. In a poor district there will be a demand for the sale of still more goods very near at hand so that the cost of the article is not increased by the money spent on travelling. Thus some drapery, hardware, clothing and footwear shops should be found within the neighbourhood. This is not the case where the housewife can afford a car, or the cost of bus fares; she will then like to go where there is a greater choice, though she should be encouraged to purchase foodstuffs near her home.

It is interesting to compare the figures arrived at by the

			MONEY SPENT PER CAPUT PER WEEK.						
SOURCE OF INFORMATION.	TOTAL WEEKLY INCOME	AVERAGE SIZE OF FAMILY	ALL FOODS	*GROCERY	BUTCHER	GREEN GROCER	*BAKER	*DAIRY	FISH
British Medical Association minimum diet for 1 male adult for 1 week. May, June 1939 prices.			7/8	2/10	1/8	1/2½	1/5½	-/6	-/1½
Food, Health & Income by John Boyd Orr 1937. Taken from Budget Survey of 70-250 persons.			4/-	1/1	1/1	-/6	-/9	-/5	
"			6/-	1/7	1/8	-/10	-/11	-/8	
"			8/-	2/-	2/4	1/4	1/-	1/10	**
"			10/-	2/3	2/9	1/8	1/2	-/11	
"			12/-	2/9	3/6	1/11	1/3	1/2	
"			14/-	3/9	3/8	2/10	1/5	1/6	
Ministry of Labour Gazette 1941 Survey 1937-38. 1,036 Agricultural Workers.	£2.18.0. (Average)	3.72	7/3	3/3	1/7	-/7	1/2	-/8	-/2
Working Class Wives, by Marjory Spring Rice, (1941).	£1.19.0.	3.0	6/-	3/-	-/8	-/5	1/-	-/8	-/3
"	£2. 1.0.	3.5	5/-	2/1	-/6	-/6	-/11	-/10	-/2
"	£2.10.0.	2.5	12/8	7/5	2/5	-/6	1/2	-/7	-/7
Poverty and Progress, by Rowntree, (pub: 1941).	£2. 1.8.	4.0	5/5½	2/3½	1/4½	-/9	-/4½	-/7½	
"	£1.17.0.	4.0	4/1	1/4	-/8½	-/9½	-/6½	-/5½	-/3
"	£3.12.0.	3.5	9/-	3/10	1/1	1/4	1/3	1/4	-/3
"	£5.15.0.	3.0	11/3	4/2	1/10	1/10	-/11	1/-	1/6
Ministry of Labour Gazette 1940 Survey 1937-38. Industrial Households.	£4.5.10. (Average)	3.76	10/2	4/-	1/10	1/3	1/6	1/2	-/3
1,360 Middle Class Wives. 1938-39 Survey. (1598 budgets).	£5.15.0. (Average)	2.92	10/3	3/2	2/1	1/9	1/3	1/6	-/6
(507 budgets).	£7.17.0. (Average)	3.39	11/1	3/6	2/-	2/-	1/3	1/10	-/6
(186 budgets).	£11. 0.0. (Average)	3.56	12/5	4/1	2/3	2/3	1/8	1/7	-/7
(69 budgets).	£17. 7.0. (Average)	3.97	12/2	3/9	2/5	2/3	1/5	1/9	-/7
THE AVERAGE.	£ 5.2.10	3.43	9.18 9/4	3.10 3/2	1.88 1/11	1.6 1/8	1.16 1/2	1.0 1/-	.44 -/5
To make £4,000 average yearly turnover at above personal weekly expenditure.	NO. OF PERSONS TO SUPPORT EACH SHOP, (APPROX).			500	826	989	1288	1539	3500
Provided all food shopping is done within the community.	NO. OF SHOPS TO SUPPORT COMMUNITY OF 10,000.			20	13	10	7	6	3

* Groceries include all rationed goods - but not meat or milk or any cleaning or hardware goods. Flour, biscuits, cakes and bread come under the category of baker - whilst only milk is included in the dairy calculations.

** Fish is not given but this may account for difference in the calculations.

By determining, as in Figure 3 above, the amount spent per head on each item (for foodstuffs only), a more reliable estimate of persons per shop is obtained. The sum spent per caput at each type of shop calculated against the turnover figure will give the population necessary to support it. A comparison of the figures of persons per shop obtained from various sources, in Figure 4 below, shows a remarkable similarity and is thus a fairly accurate basis upon which to work.

	Source of Information				
Type of Shop	Per cent. Increase or decrease in shops per 1000 population 1901-1931 in towns. Article by P. Ford, Economic Journal Sep. 1935.	Retail Distribution by H. Smith. Survey from Kelly's Trade Directories. Actual persons per shop.	1931, Census of Industry tables. Survey of 39 towns population 20,000-50,000. Actual figures per shop.	1931, Census of Industry tables. Survey of 40 small towns and villages. Actual persons per shop.	Budget expenditure survey. From actual expenditure per head on family incomes £2 - £17 (estimated number)
Grocer & Provisions	- 14.8	430	500	500	500
General Stores	- 10.5	510	500	500	--
Butcher	- 11.3	1,000	900	900	800
Greengrocer	--	1,270	1,000	1,500	1,000
Dairy produce	--	2,800	1,500	1,400	1,500
Baker	- 17.3	--	1,300	900	1,300
Fishmonger	--	2,300	2,400	--	3,500
Confectioner	+ 71.7	1,270	1,500	--	--
Tobacconist	+ 15.0	2,800	2,500	--	--
Chemist	+ 15.1	4,000	2,700	3,700	--
Hardware or Ironmongery	--	3,300	2,800	3,000	--
Coal Merchant	--	--	1,900	1,300	
Footwear	--	3,080	2,400	--	--
Cobbler	--	--	900	800	
Draper	- 11.3	--	500	700	
Tailor or Dressmaker			500	500	
Hairdresser			900	1,600	
Public House			500	500	
Restaurant			1,100	--	
Garage			1,200	1,000	

Number of Persons		*Type of Shop*
3,000	6	General Stores.
	6	Grocers.
	3	Greengrocers.
	3	Dairy Produce.
	2	Bakers.
	1	Fishmonger.
	2	Confectioners.
	2	Stationers.
	1	Tobacconist.
	1	Footwear.
	1	Chemist.
	1	Coal Merchant.
	2	Garages.
	3	Drapers.
	3	Cobblers.
	4	Tailors or Dressmakers.
	6	Public Houses.
	3	Hairdressers.
	2	Restaurants.
	52	Total

Number of Persons		*Type of Shop*
10,000	20	Grocer and Provisions.
	20	General Stores.
	11	Butchers.
	8	Greengrocers.
	7	Dairy Produce.
	8	Bakers.
	4	Fishmongers.
	7	Confectioners.
	4	Stationers.
	4	Tobacconists.
	4	Footwear.
	3	Ironmongery or Hardware.
	3	Chemists.
	5	Coal Merchants.
	10	Garages.
	11	Drapers.
	11	Cobblers.
	20	Tailors or Dressmakers.
	20	Public Houses.
	11	Hairdressers.
	9	Restaurants.
	200	Total

Number of Persons		*Type of Shop*
30,000	60	Grocer and Provisions.
	60	General Stores.
	33	Butchers.
	30	Greengrocers.
	20	Dairy Produce.
	23	Bakers.
	12	Fishmongers.
	20	Confectioners.
	12	Tobacconists.
	10	Chemists.
	10	Ironmongery and Hardware.
	15	Coal Merchants.
	12	Footwear.
	33	Cobblers.
	33	Drapers.
	33	Hairdressers.
	60	Tailors or Dressmakers.
	60	Public Houses.
	27	Restaurants.
	27	Garages.
	21	Stationers.
	611	Total

The direct application of the survey, in Figure 5 above, gives an untrue picture in the case of smaller population figures, although it is more accurate for larger towns. These figures must therefore always be applied with reference to local conditions.

direct application of the survey which can be used to give the number of shops for various size communities (Figure 5) with those of equivalent population under widely differing circumstances. In both examples the figures are all based on the survey and, though hypothetical, they show what dissimilar results are obtained owing to the differing location and conditions of the towns.

"A" demonstrates a town of 10,000 inhabitants, situated on the coast; in fact, a small seaside resort in an isolated position. It is five miles from the nearest town of any appreciable size, so it will have to be a small community complete in itself, with sufficient shops to supply the inhabitants, as well as supporting the tourist population during the holiday period. Such a town of mixed income level groups would have sufficient trade to support:—

Foodstuffs		
Grocer		20
Butcher		18
Greengrocer ..		10
Baker		7
Dairy		6
Fishmonger ..		3
Confectioner ..	6	10
Tobacconist ..	4	
Restaurant or Cafe		10
Public House ..		20
		104

Miscellaneous	
Garage and Cycle Repairs ..	8
Wireless Repairs	2
Hairdressers ..	4
Post Office (1 main and 3 sub.) ..	4
Furniture ..	1
Toy Shop ..	1
Pawnshop ..	1
Jeweller	2
	23

Household Goods	
Hardware ..	3
Stationers and Newsagent ..	6
Chemist	3
Laundry and Cleaner Depot	2
	14

Clothing	
Tailor or Dressmaker	10
Draper	3
Cobbler	6
Footwear ..	2
	21

TOTAL

Foodstuffs	104
Household Goods	14
Miscellaneous	23
Clothing	21
	162

"B" is a neighbourhood unit of 10,000 which, together with five others like it, makes up a town of 50,000 inhabitants. It will thus form a unit in which the less durable articles can be purchased, while the inhabitants are in easy reach of a large centre to give better choice of durable and expensive goods where also some foodstuffs may be purchased. Such a community would need the following shops:—

Foodstuffs		
Grocer		16
Butcher		14
Greengrocer ..		10
Baker		4
Dairy		4
Fishmonger ..		2
Confectioner ..	3	5
Tobacconist ..	2	
Restaurant or Cafe		2
Public House ..		16
		73

Miscellaneous	
Garage and Cycle Repairs ..	5
Wireless repairs ..	1
Hairdresser ..	1
Post Office ..	2
Pawnshop ..	1
	10

Household Goods	
Hardware ..	2
Stationers and Newsagents ..	4
Chemist	2
Laundry and Dyeing and Cleaning Depot ..	2
	10

Clothing	
Tailor or Dressmaker	4
Draper	2
Cobbler	3
Footwear ..	1*
	10

* If the district is poor.

TOTAL

Foodstuffs	73
Household goods	10
Miscellaneous	10
Clothing	10
	103

Above are two different units comprising 162 premises for an isolated community, and 103 for a community acting as satellite and forming part of a large town. In Case "A" the food category is complete, and all other shops very well exemplified, while in Case "B" the food shops form by far the largest number, but there are some non-food shops as well. By comparing either of these results with Figure 5, the example for 10,000 persons, the mistake of the direct application of this survey is vividly illustrated; for no community of 10,000 persons would be entirely self-contained even in the most isolated position in the British Isles. Although none of the methods described, therefore, are entirely precise in estimating the acreage that should be set aside for shops in any particular area, they form a reliable guide so long as local conditions are also taken into account.

PRICES

TWENTIETH WARTIME LIST

Rates of Wages have not risen since February 1, 1945, and are now as follows :—

LONDON DISTRICT	*Craftsmen.*	*Labourers.*
Within 12 miles radius	2s. 2½d.	1s. 9¼d.
From 12-15 „ „	2s. 2d.	1s. 9d.

GRADE CLASSIFICATIONS

	A	A¹	A²	A³	B
Craftsmen..	2s. 1d.	2s. 0½d.	2s. 0d.	1s. 11½d.	1s. 11d.
Labourers..	1s. 8d.	1s. 7¾d.	1s. 7¼d.	1s. 7d.	1s. 6½d.

W. A. Davis.
F.S.I., F.I.Arb.

CURRENT MARKET PRICES OF MATERIALS

BY DAVIS, BELFIELD AND EVEREST,

Chartered Quantity Surveyors.

Prices vary according to quality and the quantity ordered.

Those given below are average market prices and include delivery in the London area, except where otherwise stated, but do not include overhead charges and profit for the General Contractor.

CONCRETOR

Cements

† All delivered in paper bags (20 to the ton) free.
* Paper bags charged at 7/– extra per ton; jute sacks charged at 35/6 per ton and credited on return at 1/6 each, when received in good condition within two weeks.

	6 Tons and over	In 80-ton freights F.A.S. Safe Wharf In River Thames, London Area.
*Portland .. .. per ton	57/–	54/6
*"417" Ultra rapid hardening .. .. per ton	77/–	—
*Rapid hardening .. per ton	63/–	60/6
*Water repellent .. per ton	87/–	—
Atlas White (1 barrel 376 lb.)		per barrel — 6 ton upwards
*Colorcrete rapid hardening, buff and red	per ton	97/–
*Colorcrete rapid hardening khaki ..	per ton	97/–
†Colorcrete rapid hardening dark ..	per ton	—
†Colorcrete non-rapid hardening ..	per ton from	175/– to 399/–
†Snowcrete	per ton	225/–
	1–9 cwts.	10–19 cwts. 1 ton and upwards
*Ciment Fondu, delivered Central London area .. .. per cwt.	15/3	14/9 per ton 254/–

Aggregate and Sands (Full Loads)

2" Unscreened ballast	per yard cube	12/–
¾" (Down) Washed, crushed and graded shingle	per yard cube	12/9
¾" (Down) Ditto	per yard cube	13/9
2" Broken brick	per yard cube	14/6
¾" Ditto	per yard cube	16/–
Washed pan breeze	per yard cube	9/6
Coke breeze 1" to dust	per yard cube	—
3/16" Sharp washed sand	per yard cube	14/6
White Silver Sand for white cement (one ton lots)	per yard	40/–

(For Sands for Bricklaying and Plastering *see* respective trades)

Pavings

Brick hardcore	per yard cube	7/6
Concrete ditto	per yard cube	—
Clean furnace clinker and boiler ashes.. ..	per yard cube	3/6
Coarse gravel for paths	per yard cube	—
Fine ditto	per yard cube	—
Clean granite chippings	per ton	39/2

CONCRETOR—(*continued*)

Pavings—continued

Red quarry tiles, 6" × 6" × 7/8"	per yard super	8/11
Ditto 6" × 6" × 5/8"	per yard super	7/5
Buff ditto 6" × 6" × 7/8"	per yard super	9/9
Ditto 6" × 6" × 5/8"	per yard super	8/2
Hard red paving bricks, 2"	per 1,000	237/9
Ditto 1¼"	per 1,000	215/9

Reinforcement

Home trade maximum basis price for mild steel rods, ⅝" diameter and upwards, ex mills delivered to station or siding .. .. per ton £16 19 6

Extras for :—		
Under ⅜" to 7/16" diameter	per ton	10/–
Ditto 7/16" and over ⅜" diameter	per ton	15/–
⅜" and over 11/32" diameter	per ton	20/–
11/32" and over 5/16" diameter	per ton	25/–
5/16" and over 9/32" diameter	per ton	30/–
9/32 and over ¼"	per ton	35/–
¼" diameter	per ton	40/–
Under ¼" to 3/16"	per ton	60/–
Lengths over 40 ft. to 45 ft.	per ton	10/–
„ „ 45 ft. to 50 ft.	per ton	15/–
„ „ 50 ft. (as 50 ft. plus per ft.) ..	per ton	1/6

Sundries

Retarding liquid, in 5-gallon drums (for exposing aggregate)	per gallon 23/–	Ex Warehouse, Southwark Bridge. Drums chargeable and credited, if returned.
Ditto (for obtaining a bond)	per gallon 14/4½	

BRICKLAYER

Common Bricks

†Rough stocks	per 1,000	—
†Third stocks	per 1,000	—
†Mild stocks	per 1,000	—
Sand limes	per 1,000	—
‡Phorpres pressed Flettons	per 1,000	62/3
‡Phorpres keyed Flettons	per 1,000	64/3
Blue Staffordshire wirecuts	per 1,000	295/9
†Lingfield engineering wirecuts (ex works)	per 1,000	98/–
Firebricks, best Stourbridge 2½"	per 1,000	425/–
Firebricks, best Stourbridge 3"	per 1,000	542/6

Facing and Engineering Bricks

Sand Limes, No. 1	per 1,000	—
Sand Limes, No. 2	per 1,000	—
‡Phorpres rustic Flettons	per 1,000	82/3

‡ At King's Cross (Maiden Lane) Stn. For delivery in W.C. district add 10/– per 1,000.

BRICKLAYER—(*continued*)

Facing and Engineering Bricks—continued.

Midhurst Whites	per 1,000	—
†Hard stocks, firsts	per 1,000	—
†Hard stocks, seconds	per 1,000	—
Sand-faced, hand-made reds	per 1,000 from	195/6
Sand-faced, machine-made reds	per 1,000 from	—
Red rubbers (9¾-in.)	per 1,000	—
Uxbridge Flints (white)	per 1,000 from	96/–
Uxbridge Flints (creams, light greys, etc.) per 1,000	from	130/–
†Dunbriks (concrete), greys or Commons	per 1,000	67/–
†Dunbriks (concrete), various colours	per 1,000	—
†Southwater engineering No. 1 (first quality red pressed)	per 1,000	158/–
†Southwater engineering No. 2 (second quality red pressed)	per 1,000	138/–
Blue pressed	per 1,000	323/3

† Price ex works, delivery extra.

Limes and Sand

		1-ton lots	6-ton lots
Lime, greystone	per ton	61/–	—
Lime, chalk	per ton	61/–	—
Lime, blue Lias (including paper bags)	per ton	—	—
Lime, hydrated (including paper bags)	per ton	70/6	—
Washed pit sand	per yard cube	13/6	

(For cements, *see* "Concretor.")

Hire of jute sacks charged at 1/6 and credited at 1/6. If left charged at 1/9.

Sundries

Wall ties, self coloured	per cwt.	—
Wall ties, galvanized	per cwt.	—
D.P.C. slates, size 18″ × 9″	per 100	51/–
D.P.C. slates, size 14″ × 9″	per 100	43/9
D.P.C. slates, size 14″ × 4½″	per 100	12/–
‡Ledkore D.P.C. Grade A	per foot super	8½d.
‡Ledkore D.P.C. Grade B	per foot super	10½d.
‡Ledkore D.P.C. Grade C	per foot super	1/–

‡ Trade discount 5 per cent. and cash discount 5 per cent. Prices include delivery on minimum of £5 orders.

Airbricks:	9″ × 3″	9″ × 6″	9″ × 9″	12″ × 9″	14″ × 9″
Red and buff terra cotta	each 1/–	2/1	4/7	—	12/7
Black cast iron, School	9″×3″	9″×6″	9″×9″	12″×6″	12″×9″
Board pattern airbricks per doz.	—	—	—	—	—
Galvanized ditto per doz.	—	—	—	—	—
Black hit and miss cast iron ventilators per doz.	—	—	—	—	—
Galvanized ditto per doz.	—	—	—	—	—

Buff terra cotta chimney pots	1′ 0″	1′ 6″	2′ 0″	2′ 6″	3′ 6″	5′ 0″
	each 3/8	4/4	6/4	8/4	19/–	32/5

Fireclay per ton 71/–

Wall reinforcement supplied in standard rolls containing 25 yards lin.

*2″ wide black japanned	per roll 2/5	Greater widths pro rata 2½″ price carriage paid on orders of £5. Discounts for quantities.
*2″ wide galvanized	per roll —	
*2½″ wide black japanned	per roll 3/–	
*2½″ wide galvanized	per roll —	

Partitions, etc.

		2″	2½″	3″	4″
Clinker	per yard super	2/11	3/4	3/10	4/10
Pumice	per yard super	5/–	6/–	—	—
Hollow Block	per yard super	2/9	3/–	3/7	4/1
Plaster	per yard super	5/2	5/10	7/1	8/4

†1″ Wood-wool Slabs per yard super from 4/2 to 4/10
†2″ Wood-wool Slabs per yard super from 6/7 to 7/6½
†3″ Wood-wool Slabs per yard super from 8/6 to 9/8½

† Prices according to quantity ordered. 2½% Cash Discount.

Gas Flue Blocks

		Single Flues.	Double Flues
Straight blocks	each	1/4	2/5
Backing block	per set of 3	3/3	5/8
Cover blocks	each	1/8	3/6
Raking blocks 45°	each	3/2	4/11
Raking blocks 60°	each	2/2	3/5
Offset blocks	each	3/10	5/4
Closer blocks	each	1/4	2/5
Closer flashing blocks	each	1/1	1/10
Straight flashing blocks	each	1/1	1/10
Terminal and cap	per set	7/3	12/3
Middle terminal and cap	per set	6/9	11/6
End terminal and cap	per set	7/–	12/–
Corbel block	each	5/4	10/9
Gathering block	each	—	3/7

DRAINLAYER

Agricultural Pipes

		2″	3″	4″	6″
Pipes in 12″ lengths	per 1,000	77/6	110/–	147/6	285/–

(Delivered in full loads Central London Area.)

Salt Glazed Stoneware Pipes and Fittings

		4″	6″	9″
Pipe (2′ lengths)	each	1/8	2/6	4/6
Bends, ordinary	each	2/6	3/9	6/9
Single Junction, 2′ long	each	3/4	5/–	9/–
Yard Gulley, without grating	each	6/3	6/10½	11/3
Ordinary round or square Grating, painted	each	–/7½	1/3	2/6
Ordinary round or square Grating, galvanized	each	1/0½	2/1	4/4½
Extra for Inlets, horizontal	each	1/6	1/6	1/6
Extra for Inlets, vertical	each	2/3	2/3	2/3
Intercepting Trap with Stanford Stopper	each	17/6	22/6	37/6
Grease and mud interceptor with bucket for removing silt and grease for 6″, 9″ and 12″ drains, with iron grating, painted	each		20/–	
Ditto, with iron grating galvanized	each		21/10½	

The above prices to be varied by the following percentages for the different qualities given. All subject to 2½ per cent. cash discount.

	British Standard	British Standard Tested
Orders for 2 tons and over	Plus 15%	Plus 40%
Orders under 2 tons, 100 pieces upwards	Plus 32½%	Plus 57½%
Orders under 2 tons, less than 100 pieces	Plus 42½%	Plus 67½%

	Best	Seconds
Orders for 2 tons and over	Plus 7½%	Subject to 15% off the price of best quality for all sizes.
Orders under 2 tons, 100 pieces upwards	Plus 25%	
Orders under 2 tons, less than 100 pieces	Plus 35%	

Cast Iron Drain Pipes and Fittings

Socket and Spigot Pipes:—

Weight (per 9 ft.)	Size	9 fts.	6 fts.	4 fts. each	3 fts. each
1 . 1 . 8	4″ per yard	8/7	9/7	15/4	11/7
1 . 1 . 20	4″ per yard	8/11	9/11	15/8	12/–
2 . 0 . 6	6″ per yard	13/3	15/9	25/5	20/3
4 . 0 . 2	9″ per yard	24/–	31/6	54/7	41/7

		2 fts.	18 ins.	12 ins.	9 ins.
1 . 1 . 8	4″ each	9/7	8/1½	7/6	6/9
1 . 1 . 20	4″ each	9/10	—	—	—
2 . 0 . 6	6″ each	15/3	—	—	—
4 . 0 . 2	9″ each	—	—	—	—

Tonnage Allowances:—
Orders up to 2 tons nett.
Orders 2 to 4 tons less 2½%.
Orders 4 tons or over less 5%.

		4″	6″	9″
Bends (short radius)	each	8/5	17/6½	53/11
Single junctions	each	14/10	30/4	93/–
Intercepting traps	each	40/5	67/5	165/9
Gulleys ordinary trapped	each	19/6½	—	—
Extra for inlet 4″	each	10/1	—	—
Grease Gulley trap	each	155/8	—	—
H.M.O.W. large socket gulley trap with 9″ gulley top and heavy grating and one back inlet	each	35/4	63/–	—

Channels in Brown Glazed Ware

		4″	6″	9″
Half round straight channels 24″ long	each	1/3	1/10½	3/4½
Half round straight channels 30″ long	each	—	—	4/2¾
Ditto, short lengths	each	1/3	1/10½	—
Half round ordinary channel bends	each	1/10½	2/9¾	5/0¾
Ditto, short	each	1/10½	2/9¾	—
Ditto, long	each	3/9	5/7½	10/1½
Three-quarter round branch bends	each	5/–	7/6	—

		6″×4″	9″×6″
Half round taper channels 24″ long	each	3/9	6/9
Half round taper channel bends	each	4/8½	8/5½

The above prices are subject to the same discounts as those given for "Best" quality salt glazed stoneware pipes.

Manhole Covers, etc.

	Black	Galvanized
‡24″ × 18″ single seal for foot traffic. (Weight 0.0.3 in lots of 24) each	19/3	30/–
‡24″ × 18″ single seal for light car traffic. (Weight 2 cwts. in lots of 24) each	49/7	88/2
‡24″ × 18″ Wood Block pattern. For road traffic. (Weight 3 cwts.) each	Coated	79/3

DRAINLAYER—(*continued*)

Manhole Covers, etc.—(*continued*)

		Fine Cast	Galv.
‡Cast iron steps, 13½″ long, 6″ wide, 9″ in wall, approximate weight 5½ lb. each	per dozen	17/4	28/11
‡Galvanized fresh air inlets with cast brass fronts (L.C.C. pattern)	each	4″ 7/7	6″ 31/–

‡ These prices are subject to 7½% advance.

MASON

Yorkstone

Building quality Robin Hood and Woodkirk Blue Stone.

Blocks scrappled, random sizes	per foot cube	6/3½
Add for blocks to dimension sizes ..	per foot cube	8½d. (each dimension)
Templates with sawn beds, edges rough (up to 4 ft. super and not over 2′ 6″ long)	per foot cube	7/–
Templates with sawn beds, sawn one edge,	per foot cube	8/4¾
Templates with sawn beds, sawn two edges,	per foot cube	9/9½
Prices f.o.r. Yorkshire, railway rate to London Station per ton. (Minimum 4-ton loads.)		29/1

Artificial Stone

6″ × 3″ Copings and sills..	per foot run	2/3
6″ × 6″ Copings and sills..	per foot run	3/6
9″ × 3″ Copings and sills..	per foot run	2/9
9″ × 6″ Copings and sills..	per foot run	5/–
12″ × 3″ Copings and sills..	per foot run	3/6
12″ × 6″ Copings and sills..	per foot run	6/–
Cornices according to detail, per foot cube (from)		10/9

SLATER, TILER AND ROOFER

Best Bangor Slates

	£ s. d.
24″ × 12″ .. .. per 1,000 actual	—
20″ × 10″ .. .. per 1,000 actual	—

Prices include for delivery to site in lots of 1,000 and upwards.

Tiles £ s. d.

Hand-made sandfaced 10½″ × 6½″ red roofing tiles per 1,000	—
Machine-made sandfaced 10½″ × 6½″ red roofing tiles per 1,000	—
Berkshire rustic pantiles .. .. .. per 1,000	—

Asbestos-cement

6″ corrugated sheets, grey	per yard super	3/5
Standard 3″ corrugated sheets, grey ..	per yard super	3/1½
Slates (*Manufacture temporarily suspended*) :—		
* 15¾″ × 7⅝″ grey	per 1,000	£7 6 0
* 15¾″ × 15¾″ diagonal, grey ..	per 1,000	£14 12 0
* 15¾″ × 15¾″ diagonal, russet or brindled	per 1,000	£23 12 6
Pantiles (*Manufacture temporarily suspended*).		
* Large russet brown	per 1,000	—

* Prices are for minimum two-ton loads, and are subject to 5% trade discount.

WALLBOARDS, Etc.

½″ Insulating board..	per yard super	2/4⅞
¾″ Building board	per yard super	2/0½
⅛″ Standard hard board	per foot super	-/4⅝
1/16″ Do.	per foot super	-/5⅛
⅛″ Tempered hard board	per foot super	-/5 15/16

Laminated Wallboard

3/16″ Thickness (standard) :		
1 bundle up to 2,500 sq. ft.	per foot super	-/2¼
2,500 sq. ft. to 5,000 sq. ft.	per foot super	-/2⅛
5,000 sq. ft. and over	per foot super	-/2

Asbestos-cement and Asbestos Products

†5/32″ Semi-compressed flat building sheets, grey	per yard super	1/6½
†3/16″ Ditto	per yard super	1/7
†¼″ Ditto	per yard super	2/3½

†Prices are for orders of two tons and over and are subject to 5% trade discount.

¼″ Asbestos wallboard (in sheets 8′ 0″ × 4′ 0″),	per foot super	-/5
3/16″ Ditto	per foot super	-/4
* 3/16″ Asbestos wood (in sheets 8′ 0″ × 4′ 0″)	per yard super	2/6¼

* Prices are for orders of 2 tons and over.

The following asbestos prices are for minimum 1-ton lots and are subject to 10 per cent. trade discount :—

Asbestos-cement stipple glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″) ..	per yard super	8/8
Marble glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″) (*Manufacture temporarily suspended*)	per yard super	—

WALLBOARDS, Etc.—(*continued*)

Asbestos-Cement and Asbestos Products—(*continued*)

		25–75 yards	150–300 yards	Over 600 yards
½″ Asbestos Insulating Board	per foot super	—		
¾″ Fireproof plaster board	per yard super	2/7	2/3	1/11
¼″ Ditto	per yard super	2/5	2/1	1/9
Joint tape ..	per 100 yard roll	—	—	7/6
Joint filler	per lb.	—	—	-/4

Sundries

Slaters or sarking felt..	per yard run	-/9
Roofing felt (1-ply bitumen)	per yard sup.	1/–
Bituminous hair felt	per roll	58/–

All rolls 25 yards long by 32″ wide.

Building paper, 50″ wide (B.I. 20)	per yard run	1/1
„ (K. 40)	per yard run	-/5¼
" Cabots " Quilts :—(Ex Works) Twenty roll lots delivered carr. free		
Double ply .. per roll —	per half roll	—

All rolls 28 yards long by 36″ wide. Special terms for quantities.

Cut steel clasp nails	1″ per cwt.	39/3
„ „ floor brads	2″ „	31/3
Bright oval wire nails..	1″ „	43/4
Galvanized wire staples with slice cut points	1″ × 12 gauge per cwt.	52/–
Scotch glue	per cwt.	—

STEEL AND IRONWORKER

Steelwork £ s. d.

Basis price for rolled steel joists sections 5″ × 3″ to 16″ × 6″, in 10 ft. to 50 ft. lengths	ex mills per ton	15 10 6

PLASTERER

Plaster and Cement

		1-ton loads
Sirapite (coarse)	per ton	91/6
„ (fine)	per ton	99/6
Victorite No. 1 (White) ..	per ton	—
„ No. 2 (Buff) ..	per ton	—
Thistle (browning)	per ton	91/6
Thistle (haired)	per ton	—
Pink plaster	per ton	91/6
White plaster	per ton	94/6
Keene's pink	per ton	138/–
Gypstone	per ton	70/6
Glastone	per ton	73/– ex Works,
Paristone (haired)	per ton	70/6 Kent
Cullamix (Tyrolean Finish) 1 ton lots and upwards	per ton from 149/– to 182/6	

Sundries

Sharp washed sand				per yard cube 14/6
Cow hair				per cwt. 70/–
Goat's hair				per cwt. 100/–
Expanded metal lathing, 9′ 0″ × 2′ 0″ ⅜″ mesh × 26 gauge				per sheet 3/–
Wire Slate nails (galvanized) 1¼″ × 15 gauge				per cwt. 62/5
„ „ „ (bright wire) „ „				per cwt. —
		25–75	150–300	Over
⅜″ Plaster board (plaster base)		yards	yards	600 yards
	per yard super	2/2	1/10	1/8
1¼″ Galvanized nails ..	per cwt.	58/3		
Scrim cloth in 100-yard rolls	per roll	3/10		

Wall Tiles

The following prices are subject to 75 per cent. addition :

Commercial quality.		
Ivory, white, etc., glazed 6″ × 6″ × ⅜″ ..	per yard super	10/1
Angle beads (1½″ wide)	per yard run	1/2¾
„ „ (1″ „)	per yard run	-/10
Rounded edge tiles	per yard run	2/6½
Coloured enamelled bright glazed, 6″ × 6″ × ⅜″	per yard super	14/3
Angle beads (1½″ wide)	per yard run	1/4¾
„ „ (1″ „)	per yard run	-/11½
Rounded edge tiles	per yard run	2/7
Eggshell gloss enamelled, 6″ × 6″ × ⅜″ ..	per yard super	15/–
Angle beads (1½″ wide)	per yard run	1/7½
„ „ (1″ „)	per yard run	1/0¾
Rounded edge tiles	per yard run	2/8¼
Special rates for quantities		

PLUMBER

Lead

3½ lb. and upwards milled sheet lead in quantities of 2 tons and upwards	per cwt.	37/–
Lead ternary alloy, No. 2 quality extra over sheet lead	per cwt.	14/–
Allowance for old lead delivered to merchant	per cwt.	18/–

Cast Iron Goods

	Percentage Adjustment on List No. 3100 A.B. 1/2/40
Rainwater Goods (painted or unpainted)	*Plus* 29%
Soil goods (coated or uncoated)	*Plus* 29%

Mild Steel Rainwater Goods

The following prices are subject to 2½ per cent. trade discount and 40 per cent. advance.

24 gauge rainwater slip jointed pipes.		2″	2½″	3	3½″	4″
Galvanized round pipes with ears	per 6′ 0″	2/7½	3/1½	3/9	4/3	4/9
Painted round pipes with ears	per 6′ 0″	2/4½	2/9	3/1½	3/7½	4/–
Painted or galvanized short lengths with ears, extra	each	–/6	–/6	–/6	–/6	–/6
18 Gauge gutters.		3″	3½″	4″	4½″	5″	6″
Galvanized half round gutters	per 6′ 0″	2/–	2/3	2/4½	2/9	3/–	3/7½
Painted half round gutters	per 6′ 0″	1/6	1/9	2/–	2/3	2/6	3/–
Painted or galvanized short lengths extra	each	–/3	–/3	–/3	–/3	–/3	–/3

Asbestos-Cement Rainwater Goods

The following prices are subject to 12½ per cent. trade discount. Orders over £30 are subject to 17½ per cent. trade discount.

Rainwater Pipes.

Prices are for 6′ 0″ lengths, 10′ 0″ lengths available in 2½″, 3″, 3½″ and 4″ diameters. Short lengths up to 2′ 0″ are charged as 1 yard. From 2′ 0″ to 4′ 0″ charged as 1½ yards. From 4′ 0″ to 6′ 0″ charged as 2 yards. Over 6′ 0″ charged as 10′ 0″.

Round pipes

2″	per yard run	2/3½
2½″	per yard run	2/6¾
3″	per yard run	3/1
3½″	per yard run	3/7¾
4″	per yard run	4/2½
4½″	per yard run	6/–½
5″	per yard run	7/1¾
6″	per yard run	8/10¼

Gutters.

Short lengths of gutter up to 2′ 0″ charged as 1 yard; from 2′ 0″ to 4′ 0″ as 1½ yards, and over 4′ 0″ as 2 yards.

Half round gutters	3″	4″	4½″	5″	6″	8″
per yard run	1/7½	1/11¼	2/–½	2/4½	3/3¾	4/1
Ogee gutters per yard run	—	2/4½	2/6¾	3/1	3/9	4/10½

INTERNAL PLUMBER

Lead pipe in coils, 5 cwts. and upwards	per cwt.	40/9
Lead soil pipe	per cwt.	44/3
Add if ribbon marked	per cwt.	–/6
Lead ternary alloy, No. 2 quality extra over lead pipe	per cwt.	14/–
Plumber's solder	per cwt.	155/–
Tinman's solder	per cwt.	210/–

Drawn lead traps with brass screw eye, 6 lb.

		1″	1¼″	1½″	2″
S. trap	each	2/9	3/2	3/11	5/8
P. trap	each	2/5	2/7	3/3	4/7
Extra for 3″ deep seal	each	–/8	–/8	–/8	–/8

Screwed and Socketed Steel Tubes and Fittings for Gas, Water and Steam, etc.

Tubes.							
Tubes 2 ft. long and over		½″	¾″	1″	1¼″	1½″	2″
	per ft.	–/5½	–/6¾	–/9½	1/1	1/4½	1/10
Pieces 12″ to 23½″ long	each	1/1	1/5	1/11	2/8	3/4	4/9
Bends	each	–/11	1/2	1/7½	2/7½	3/2	5/2
Fittings.							
Elbows, square	each	1/1	1/3	1/6	2/2	2/7	4/3
Elbows, round	each	1/2	1/5	1/8	2/4	2/10	4/8
Tees	each	1/3	1/7	1/10	2/6	3/1	5/1
Crosses	each	2/9	3/3	4/1	5/6	6/7	10/6
Sockets, plain	each	–/4	–/5	–/6	–/8	–/10½	1/3
Sockets, diminished	each	–/6	–/7	–/9	1/–	1/4	2/–

INTERNAL PLUMBER—(*continued*)

Screwed and Socketed Steel Tubes and Fittings for Gas, Water and Steam, etc.—(continued)

Flanges	each	1/–	1/2	1/4	1/9	2/–	2/9
Caps	each	–/5	–/6	–/8	1/–	1/3	2/–
Plugs	each	–/4	–/5	–/6	–/8	–/10	1/3

Fittings and flanges and tubes ordered in long random lengths are subject to the following trade discounts :—

	Tubes	Fittings	Flanges
"Light Weight"	50¼%	40¼%	25%
"Heavy Weight"	42¾%	32¾%	9¾%

COPPERSMITH AND ZINC WORKER

Copper

Hot rolled copper sheeting in 1 cwt. lots, all gauges to 24 wire gauge	per lb.	1/1¼
Light gauge copper tube, solid drawn	per lb.	1/3¼
Copper tube, solid drawn screwing sizes	per lb.	1/2½
Copper wire, 10 and 12 gauge	per lb.	1/2
Copper nails, 1″ and up	per lb.	—

GLAZIER

Sheet Glass cut to size (ordinary glazing quality)

18 oz. clear sheet	per foot super 3⅝d.
24 oz. ditto or "R" quality	" " " 5d.
26 oz. ditto	" " " 6½d.
32 oz. ditto	" " " 8½d.
⅛″ figured rolled and cathedral glass (white)	" " " 6½d.
⅛″ ditto, approved tints	" " " 9½d.

British Polished Plate Glass cut to size

In Plates not exceeding		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
2 ft. super	per foot super	2/2	2/4	2/10
3 "	per foot super	2/6	2/10	3/6
5 "	per foot super	2/9	3/3	4/–
*45 "	per foot super	3/3	3/8	5/–
*100 "	per foot super	4/1	5/1	6/6

*Plates exceeding 100 ft. super or 160 in. long or 100 in. wide at higher prices.

Special quotations should be obtained for other qualities and thicker substances.

Wired Glass Cut to Sizes

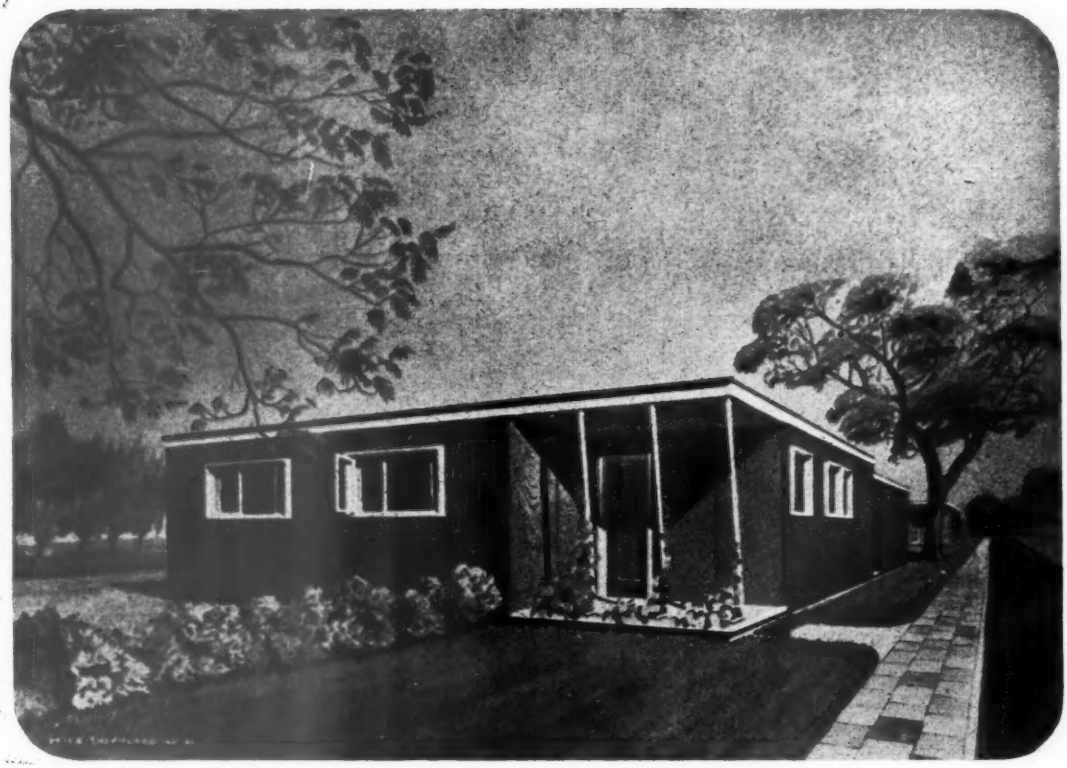
¼″ Wired cast	per ft. super	9½d.
‡¼″ Georgian wired cast	per ft. super	10d.
‡¼″ Polished Georgian wired glass	per ft. super	3/2

‡ For cutting to allow for wires in adjacent pieces to be "lined up," add 4d. per foot super.

Supplied in sizes up to 110 in. long and up to 36 in. wide.

PAINTER

Snowcem paint	per cwt.	56/–
White ceiling distemper	per cwt.	22/–
Washable distemper	per cwt. from	48/– to 66/–
Ready mixed white lead paint (best), semi-gloss, per 28 lb.		25/3
Aluminium paint (best quality)	per gallon	32/–
White enamel	per gallon	—
White enamel paint	per gallon	27/–
Stiff white lead (genuine English stack process, 1 ton lots, 1 cwt. kegs)	per cwt.	70/7½
Liquid driers	per gallon	22/–
Linseed oil raw (5-gallon drums)	per gallon	7/7
" " boiled (5-gallon drums)	per gallon	7/7
French polish	per gallon	15/6
Knotting	per gallon	24/–
Oil stain (scumble)	per lb.	3/–
" " red oxide	per cwt.	64/–
" " middle Brunswick green	per cwt.	90/–
" " dark umber	per cwt.	103/–
" " golden ochre	per cwt.	82/–
Varnish (outside quality) oak	per gallon	22/–
" " copal	per gallon	24/–
" " flatting	per gallon	26/–
Turpentine, genuine American 5-gallon lots	per gallon	—
" substitute	per gallon	4/–
Creosote, 1-gallon lots	per gallon	1/9
Linseed Oil Putty	per cwt.	28/3
Utility Glazing Putty	per cwt.	21/3
Size	per cwt.	130/–
Best quality English gold leaf, 23 carat	per book	3/6
Extra thick, ditto	per book	4/3



THE TOMO TEMPORARY BUNGALOW

DESIGNED BY F. R. S. YORKE, E. ROSENBERG AND C. SJOSTROM MARDALL

GENERAL.—The Tomo scheme for temporary houses was sponsored by the Tomo Trading Company and Linden Doors Limited, who also carried out full scale tests at their works near Uxbridge. Further tests and experiments are being made, and the system is in the process of being developed for two-storey permanent buildings.

WALLS.—The system used is that of the stressed skin type, using any available facing materials, such as fluted asbestos, plywood, aluminium, or steel sheeting externally, with an internal lining of plywood, wallboard, plasterboard, etc. The facing material is glued to a core consisting of a sawdust and wastepaper slab. Various types of glue were tried out, but casein glue was found to be generally satisfactory. A light timber frame 1½ in. by 2 in. with a spline connection forms a surround to the 3 ft. 0 in. by 8 ft. 0 in. or 6 ft. 0 in. by 8 ft. 0 in. wall units.

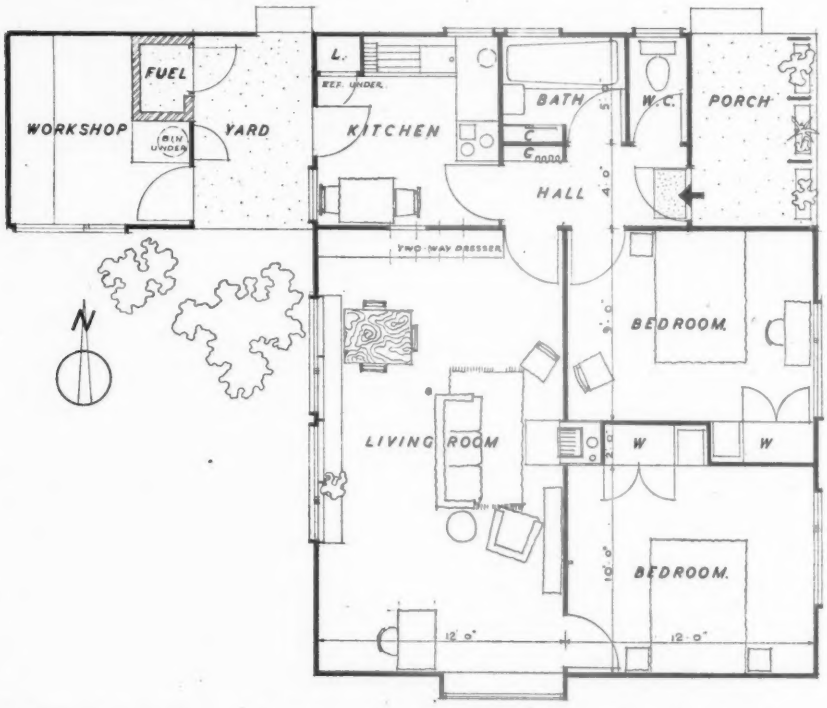
The weight of the sawdust slab is approximately 12 lb. per cubic foot, and a 3 ft. by 8 ft. solid wall section, faced with 22 gauge steel sheeting and wallboard would weigh about one hundredweight.

For purposes of testing the strength of wall units, a 2,800 lb. distributed load was placed on the top edge of a 3 ft. by 8 ft. solid wall section without causing a noticeable deflection.

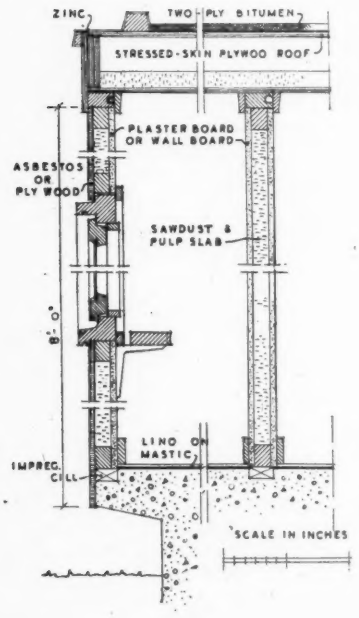
The thermal insulation, irrespective of facing materials, exceeds that of a 11 in. cavity wall.

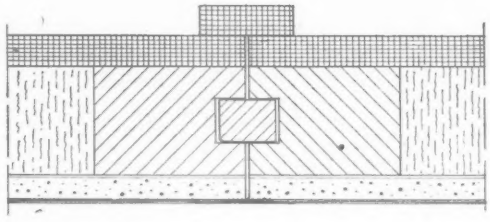
ROOF.—The scheme illustrated shows a stressed skin plywood roof in 12 ft. 2 in. by 3 ft. 0 in. panels, using the plywood off-cuts as framing members. Sawdust slabs are inserted for insulation purposes. The roof covering consists of two coats of bitumen on asphalted paper. Contrary to usual practice the roof is laid without fall, and the rain water is carried in a downpipe through the centre of the building.

THE TOMO TEMPORARY BUNGALOW



Above, plan to $\frac{1}{8}$ in. to 1 ft. 0 in. scale. Below left, detail wall section to 1 in. to 1 ft. 0 in. scale. Below right, half-full-size plan detail showing construction of wall joint; the system is the stressed skin type using any available facing materials, such as fluted asbestos, plywood, aluminium, or steel sheeting externally, with an internal wall lining of plywood, wallboard, plasterboard, etc.; the facing material is glued to a slab core of sawdust and wastepaper; a light timber frame $1\frac{1}{2}$ in. by 2 in. with a spline connection forms a surround to the wall units. The perspective on the preceding page is by Peter Shepheard.





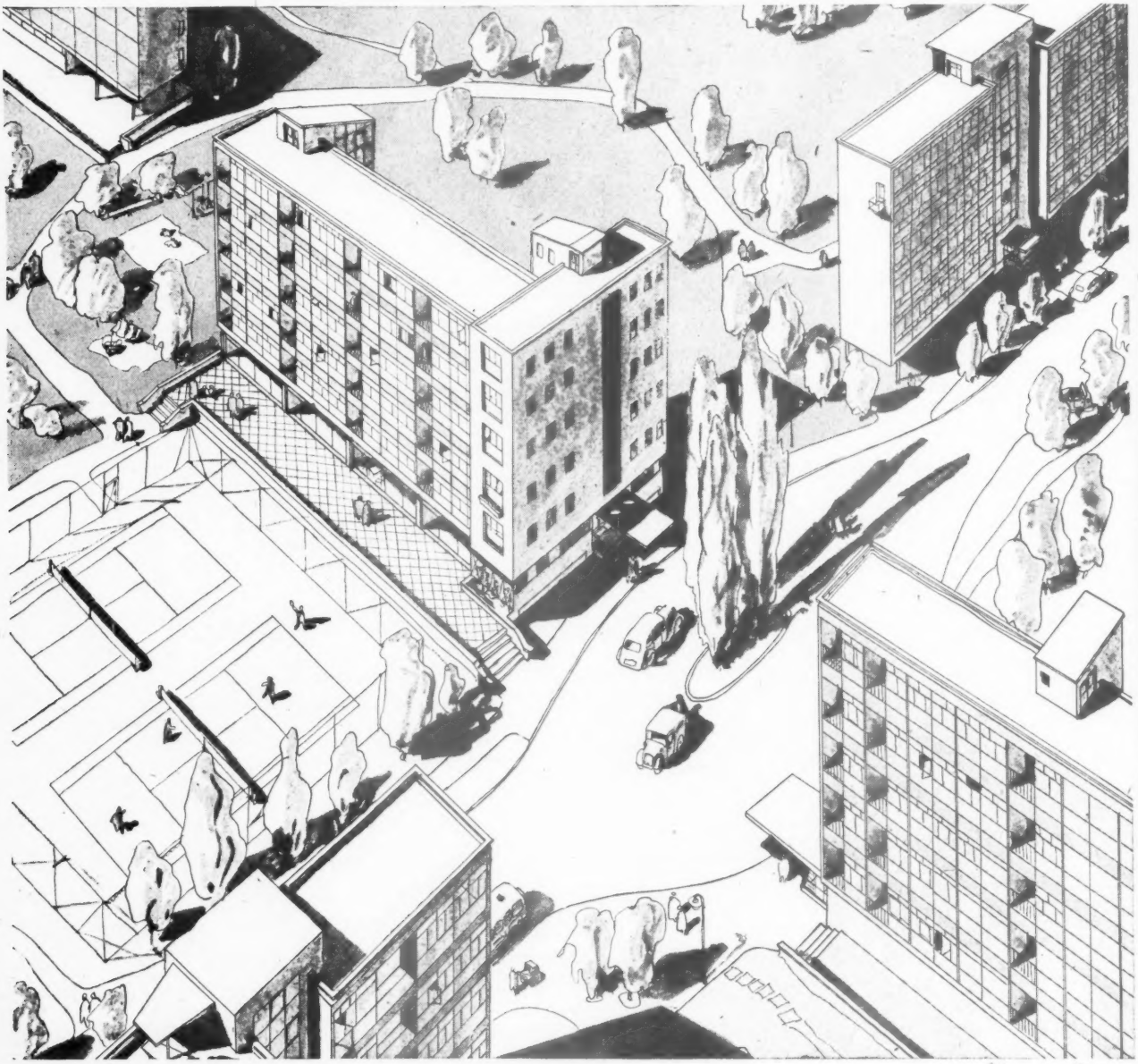
FLOOR.—The floor covering suggested is linoleum on mastic, laid direct on to a de-aerated concrete raft.

TIMBER QUANTITY.—For purposes of comparison with other systems of construction the Arcon plan was taken as a basis, and it was found that the total quantity of timber used was 0.47 Standards, excluding doors and built-in furniture, but including windows, door frames and all other joinery, and including factory waste.

COST.—The cost of the prefabricated structure, including roof, glazed windows and outbuilding is £250. The erection cost is not included in this sum.

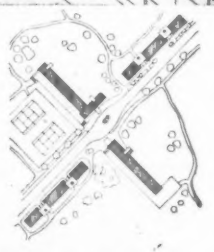
BUILDING FOR DAYLIGHT

No. 6 FACTS ABOUT GLASS FOR ARCHITECTURAL STUDENTS



In this example, windows have every opportunity of admitting daylight, because the maximum amount of daylight for each block has been secured by the general layout. The ample proportions of modern windows and the flawless clarity of modern glass are rendered ineffective, unless development is planned to make the most of daylight.

In mixed development, high blocks of buildings with special daylighting needs would create a wasteful use of land, and therefore an unmixed type of layout is used. The orientation of the blocks depends on the individual size, which in turn depends on horizontal or vertical arrangement. With large dwelling units, less space is needed on each floor, to allow for the economic use of lifts. Planning is thus determined by the character of vertical access—corridor access or lift hall—which again determines orientation. Corridor access is suitable for small flats, where all important rooms can face south. Lift hall access is suitable for larger flats, requiring east to west orientation.



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where architectural students may get advice and information on all questions relating to the properties of glass and its use in building

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

1878 **Housing**

DEVELOPMENTS IN POST-WAR HOUSING IN 1944. *Richard Sheppard.* (THE ARCHITECTS' JOURNAL, *January* 18, 1945, *pp.* 54-60.) Survey of prefabricated houses produced in 1944. Temporary houses: MOW Steel House, Arcon, Tarran, Uni-Seco, Jicwood. Permanent houses: Uni-Seco (Chobham), Unibuilt (Coventry), Tarran (Hull), Glasgow, Braithwaite (Hendon), Birmingham, BSIF (Northolt), MOW (Northolt).

1879 **Foamed Slag**

THE FOAMED SLAG HOLLOW BLOCK. *M. Gallai-Hatchard.* (THE ARCHITECTS' JOURNAL, *February* 15, 1945, *pp.* 137-139.) Application of pre-cast lightweight concrete hollow blocks in housing. Auxiliary units for window reveals, corners, etc.

Precast lightweight concrete hollow blocks of 16 in. × 8 in. × 8 in. are very popular in USA, and a variety of large size hollow blocks is being used in Germany. It is suggested that in this country the ARP block of 18 in. × 9 in. × 9 in. (nominal) size, equivalent in volume to twelve standard bricks, should be adopted, together with two smaller types, equivalent to four bricks and one brick respectively. With a combination of these three units all problems in walls can be solved.

A wall built in such units is much lighter and gives a much better thermal insulation than the traditional 11 in. brick cavity wall. Its water-proofing can be secured by a breathing rendering and by the provision of vertical and horizontal damp-courses. It requires substantially less labour on the site than a brick wall.

1880 **Foamed Slag Cottages**

COTTAGES IN SOMERSET. *Designed by C. J. Woodbridge and R. Riches.* (THE ARCHITECTS' JOURNAL, *February* 15, 1945, *pp.* 140-141.) Pair of agricultural workers' cottages, built in hollow blocks of foamed-slag concrete. First application of system described in article referred to in No. 1879.

1881 **Concrete Bungalow**

BCCF TEMPORARY BUNGALOW. (THE ARCHITECTS' JOURNAL, *February* 22, 1945, *pp.* 157-8, *and other journals.*) Reinforced concrete structure of post and panel type to provide bungalow similar to MOW emergency-factory-made dwelling.

The walls consist of precast concrete, spanning from column to column, with a weathered horizontal joint. Precast concrete eaves pieces are supported by the posts which carry the precast rafters at 3 ft. centres, covered with roofing felt, timber battens and concrete interlocking tiles. Ceiling and inner wall lining consist of sheets of plasterboard and fibreboard.

1882 **Concrete Floors**

RECONDITIONING CONCRETE FLOORS TO CARRY HEAVY WAREHOUSE TRAFFIC. (*Engineering News-Record, January* 25, 1945, *pp.* 116-119.) Methods of resurfacing concrete runways. Procedures for hardening concrete surfaces to prevent dusting under traffic.

The Repairs and Utilities Branch of Office of the Chief of Engineers of the USA Army has issued instructions to Engineers concerned with the maintenance of concrete floors subjected to the traffic of steel-tyred warehouse trucks under the title *Toppings and Treatment for the Correction of Concrete Floor Deficiencies.* The article is an abstract from these instructions.

1883 **Stainless Steel Aviary**

THE NEW AVIARY IN THE ZOOLOGICAL GARDENS IN ROME. *Eric Miles.* (*The Architect and Building News, February* 23, 1945, *p.* 132.) Stainless steel frame in the form of a polyhedron inscribed within a sphere of 96 ft. diameter.

Owing to its high initial cost the use of stainless steel has been more or less confined to special cases where a high resistance to corrosion is necessary. If the cost of upkeep is taken into account against the initial cost, stainless steel may provide a saving over a number of years. The new aviary of the Zoo in Rome was constructed in stainless steel in 1936, and on being inspected in 1940 it was in a perfect condition, without any sign of oxidization. During the four years since its erection no cost of upkeep was necessary.

The structure has the shape of a polyhedron inscribed within a sphere of 96 ft. diameter, composed of steel tubes of 2¼ in. diameter and ⅜ in. thickness. The whole framework is tied together by stainless tubes fixed radially round the main skeleton and welded thereto. It rests on a masonry bed, and the supports of the framework are so arranged that the whole skeleton is free to move owing to changes of temperature.

LIGHTING

1884 **Fluorescent Light**

STUDY OF ILLUMINATION. *E. B. Ley.* (*Illuminating Engineering, September,* 1944, *p.* 501.) Evidence concerning effect of fluorescent light on eye.

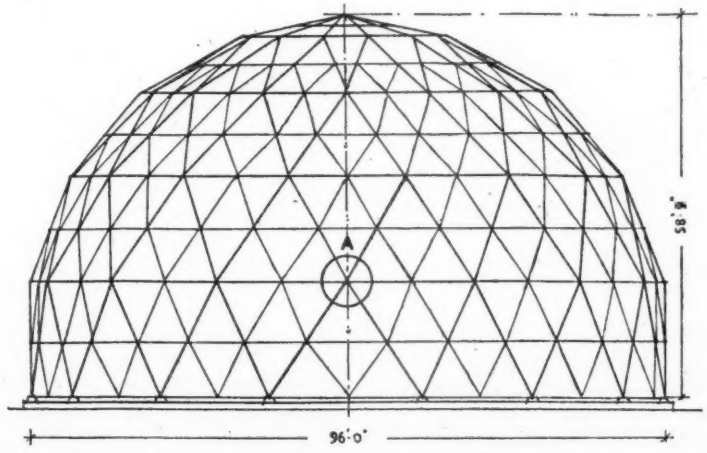
From time to time there have been suggestions that fluorescent light has an adverse effect upon the eye. Cases have been examined where complaints have been made, but very few have been proved to be due to the lighting. Claims have also been put forward that with fluorescent light, health of workers has been generally improved.

In the present case the evidence seems at first sight quite surprising. A group of individuals in the Medical Service of Headquarters, USA Eighth Service Command worked in a large room, 80 by 160 ft., lighted by fluorescent tubes in direct-type fittings. The working intensity was 33 foot-candles. It is recorded that 75 per cent. of personnel exposed to this light for two months registered complaints, 89 per cent. at 6 months, and 94 per cent. at 11 months. The complaints took the form of fatigue, mild photophobia, sandy sensation under the eye-lids, watering and burning of the eyes.

Attention is drawn to some recent work which indicates that if the eyes are exposed to light of certain spectral quality, riboflavin (vitamin B_2) which is secreted in the cornea of the eye, will be destroyed, and the belief is stated that these individuals are suffering from a deficiency of vitamin B_2. Certain evidence is adduced to support this argument.

In the room there had been considerable glare, due to the lighting tubes being too readily visible. It was thought this was aggravating the circumstances, and steps were taken to shield the lights. This reduced the incidence of complaints.

Architects may be somewhat alarmed at this news. It is desirable, therefore, to note that this case appears to be so entirely exceptional as to suggest that other circum-



Elevation of the stainless steel aviary in the Zoological Gardens in Rome. See No. 1883.

D

stances may also be operative. Also it may be useful to know that in tentative studies of the effect of light on riboflavin, ordinary bright daylight from an overcast sky was about three times as effective as fluorescent light. One might expect all these symptoms in ordinary daylight, therefore. No doubt this case will be thoroughly examined to determine its full significance.

1885 — ***Fluorescent Tubes***

FLUORESCENT LIGHTING. (*Textile Manufacturer, January,* 1945, *p.* 25.) Types and cost of fluorescent tubes. Notes for textile trade.

1886 — ***Fluorescent Street Lighting***

WHAT ABOUT FLUORESCENT STREET LIGHTING. *K. M. Reid.* (*Illuminating Engineering, May,* 1944, p. 311.) Interesting technical discussion. Difficulties in respect of outdoor temperature, starting and maintenance likely to prevent fluorescent street lighting at present.

1887 — ***Lighting and the Eye***

LIGHTING AND THE EYE. *D. B. Harmon.* (*Illuminating Engineering, September,* 1944, *p.* 481.) Function of illuminating engineer. Challenge to some of foundations of modern practice and use of physiological evidence.

This author's discussion relates mainly to the question, Does the lighting engineer interpret his physiological data correctly? In particular, is he right in assuming that daylight should be his criterion? There is a somewhat ambiguous philosophical discussion of man's past use of the eye which precedes the presentation of data relating to fluorescent lighting, together with complaints which have been recorded by individuals working under it. Some of the data is itself given more succinctly in *Study of Illumination* by E. B. Ley in the same issue of the Journal (see Inf. Centre, No. 1884), where it is shown that upwards of 90 per cent. of people working under fluorescent lighting in one large office ultimately suffered from eye complaints, said to be traceable to the destruction by this light of riboflavin (vitamin B_2) in the eye. Harmon explains the probability of this, noting also that it happens in daylight. This, in fact, is one of his reasons for doubting the value of daylight as a criterion for artificial light. He leaves his conclusion merely as a speculation. It is to be expected that his evidence will be adequately examined by the lighting profession.

1888 — ***Sight Testing***

VISUAL ACUITY AND VISUAL TASKS. *M. Luckiesh.* (*Illuminating Engineering,* July, 1944, *p.* 415.) Discussion of sight-testing techniques as index of fundamental requirements of vision.

1889 — ***Terminology***

BRIGHTNESS UNITS. *H. Reinhardt.* (*Illuminating Engineering, September,* 1944, *p.* 521.) Examination of brightness terminology.

1890 — ***Terminology***

BRIGHTNESS AND HELIOS. *P. Moon and D. E. Spencer.* (*Illuminating Engineering, September,* 1944, *p.* 507.) Lighting terminology.

The authors show how, as illumination practice has progressed, the emphasis on intensity which was common in the early days has shifted towards brightness. It is shown that this word has a confused meaning, and it is suggested that the introduction of the concept of Helios would clarify the position. A unit of Helios, termed the Blondel is suggested. Its use is described.

1891 — ***Ocular Photography***

OCULAR PHOTOGRAPHY AS A SCIENTIFIC APPROACH TO THE STUDY OF THE PSYCHOLOGICAL ASPECTS OF SEEING. *H. F. Brandt.* (*Illuminating Engineering, May,* 1944, *p.* 279.) Method of photographing the eyes as they move across a picture.

The author describes an instrument by which the excursions and fixations of one's eyes can be recorded in relation to the inspection of a picture. The author developed the technique apparently in relation to advertising, his purpose being to test posters and other material to see whether they attract the eyes in the way intended by the advertiser. There are some interesting pictures shown and analysed.

One cannot help wondering whether some architectural compositions could not, at least with amusement, and perhaps with edification, be examined this way.

1892 — ***Colour Terminology***

THE PSYCHOPHYSICS OF COLOUR. *The Committee of Colorimetry.* (*Journal of the Optical Society of America, May,* 1944, *p.* 245.) Full and satisfactory descriptions of wide terminology concerned with colour problems.

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.*

1893 — ***Ownership of Drawings***

Q *A client against whom I obtained a judgment for fees for the survey and preparation of plans for an estate is claiming that the original plans belong to him. The judgment was given in* 1941, *and since then he has paid hundreds of pounds, but refuses to make the last payment until he receives the plans and also threatens to take action if I do not deliver them.*

He has not claimed them before and the question was not raised in the Court, nor did the official Referee mention it in his judgment. What is the position?

A In the past the Courts have decided that when an architect's fees have been paid, not only the drawings, but also all drafts, details, contract documents and specifications which were produced for the execution of a contract should be handed over to the client, because they are his property, though the architect has a lien on them pending the payment of fees.

Should the architect's services be dispensed with for any reason, whether the project on which he was engaged was executed or not, then the architect's obligations to hand over the plans, etc., on payment of his fees remains unaltered. The handing over of plans, etc., to the client does not affect the architect's copyright.

Under the Statute of Limitations, if demand by the client for drawings, etc., be made and uncomplied with for six years, thereafter the client would not be able to bring any proceedings in respect of the architect's failure to deliver them.

1894 — ***Eaves Gutters***

Q *Could you refer me to a case or cases in which was settled the question of whether eaves gutters do or do not form part of the roof of premises for purposes of maintenance?*

A We have no knowledge of any case where eaves gutterings have been excluded from roofs for the purpose of maintenance. According to Woodfall's *Law of Landlord and Tenant* (24th Edition, 1939, page 637), a landlord who retains possession and control of a roof must see that it does not cause damage to tenants, and states that he is liable for the clearance of rainwater gutters within a reasonable time.

SOCIETIES AND INSTITUTIONS

Speeches and lectures delivered before societies, as well as reports of their activities, are dealt with under this title, which includes trade associations, Government departments, Parliament and professional societies. To economize space the bodies concerned are represented by their initials, but a glossary of abbreviations will be found on the front cover. Except where inverted commas are used, the reports are summaries, and not verbatim.

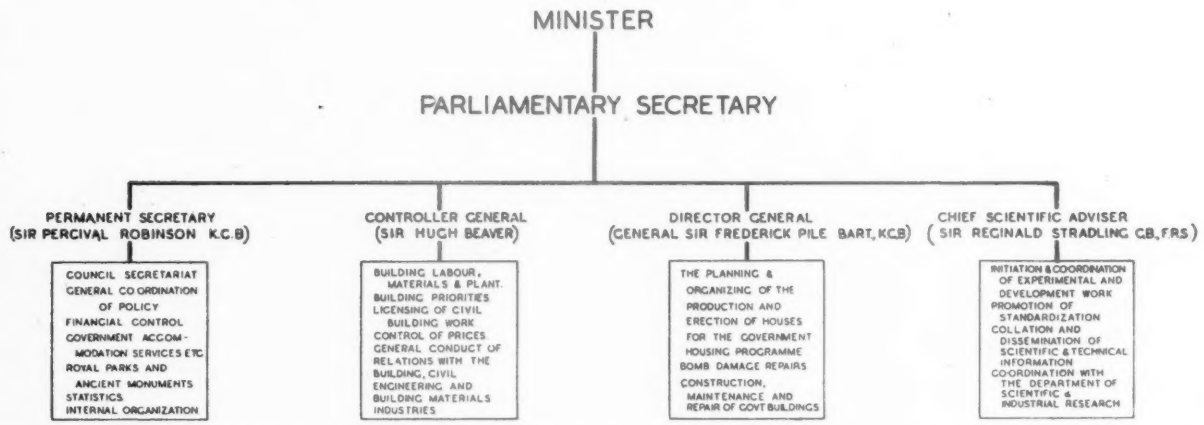
RIBA

New Members

As Fellows (4):—Devereux, Walter Alan, A.A.DIPL. (London); Geeson, Alfred Godwin (Wolverhampton); Hyslop, Charles Geddes Clarkson, A.A.DIPL. (Major R.E.) (London). *Overseas:* Butler, Austin Richard (Toorak, Melbourne, Australia).

As Associates (8):—Eglin, Henry James, DIPL.ARCH. (University of Liverpool) (Liverpool); Fogel, Joseph Gerald, DIPL.ARCH. (The Polytechnic, Regent Street, London) (London); Jaques, Clifford Sydney (The Polytechnic, Regent Street, London) (Shenfield, Essex); Smith, Harry Thomas Donald (Wolverhampton); Wills, Gerald (Midsomer Norton, near Bath, Somerset). *Overseas:* Chung, Kim-Chee, B.ARCH. (University College, Auckland, New Zealand)

MINISTRY OF WORKS COUNCIL



As can be seen, four departmental heads have been appointed: General Pile, as Director-General, is in charge of production, transport, and erection of temporary houses. Sir Reginald Stradling, Chief Scientific Adviser, is in charge of research and experimental building. Sir Percival Robinson, Permanent Secretary of the Ministry, is in charge of financial arrangements and co-ordination of policy. Sir Hugh Beaver, Controller General, is in charge of materials and licensing priorities. The four departmental heads, with Mr. George Hicks, Parliamentary Secretary, form a Ministry of Works Council under Mr. Sandys.

MOW

Reorganization

Above is a diagram issued by the Ministry of Works which illustrates the new organization in the Ministry as announced by Mr. Duncan Sandys in the recent debate on housing in the House of Commons.

(Auckland); Hanson, Albert Henry Alfred (Coogee, New South Wales); Moloobhoy, Sheriff A. (Bombay).

As Licentiates (15):—Carlin, William Francis (Londonderry); Dean, Edward George (Leamington Spa); Clark, John (S/Sgt. R.E.) (Canterbury, Kent); Dickinson, George Golborne (Liverpool); Gallannaugh, Reginald Horace (Burnham-on-Sea, Somerset); Gardiner, John Frederick (London); Gregory, Glyn Langton (Cheltenham Spa); Harman, Ernest George (Bristol); Jones, Sydney Howard (Birmingham); Kitchen, Francis Whitehurst (Leeds); Spurgeon, Ernest Atkinson (Keighley, Yorks); Tonner, John (Greenock); Walter, John Felix (Woodbridge, Suffolk); Winkless, Edward William (Harrow, Middlesex); Wright, William Frederick (Woldingham, Surrey).

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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

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Application forms obtainable on receipt of stamped addressed envelope from the Clerk to the Governors, South-East Essex Technical College, Longbridge Road, Dagenham, to whom they should be returned by the 22nd May, 1945.

B. E. LAWRENCE,
Chief Education Officer.

County Offices, Chelmsford. 672

ETON RURAL DISTRICT COUNCIL.

POST-WAR HOUSING.

APPOINTMENT OF ARCHITECT.

The above-mentioned Council, in connection with its post-war housing scheme, involving the erection of houses throughout the Rural Area, wish to engage the services of an Architect, experienced in laying out Estates and building small Country Cottages. The Council therefore invite qualified persons with such experience and who would be willing to act as Architect to the Council to submit their names to the Council and the terms upon which they would be prepared to accept such an appointment. In the first instance, the appointment may be in an advisory capacity only, as some of the lay-out work has already been carried out.

Further particulars will be supplied on request.

Communications, stating qualifications and experience, should be addressed to the undersigned to be received by the 23rd April, 1945.

G. L. BRIDGER,
Clerk to the Council.

Council Offices, Windsor Road, Slough Bucks.
6th April, 1945. 648

WEST SUSSEX COUNTY COUNCIL.

Applications are invited for the appointment of FOUR ARCHITECTURAL ASSISTANTS (men or women) in the County Architect's Department.

The salary (payable monthly) will be at a figure between £350 and £415 per annum, according to qualifications, age and experience. In addition, a war bonus—at present £60 per annum for men and £48 per annum for women—and an allowance for extended office hours (now (44 hours per week) of 12½ per cent. of basic salary (excluding bonus) will be paid.

Applicants must have had good Architectural experience and must be exempt from National Service, or able to obtain the approval of the Ministry of Labour to accept the appointment. Preference will be given to candidates with experience in educational buildings.

The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and terminable by one month's notice on either side.

Applications, stating age, qualifications, experience, and when available, together with the names and addresses of two persons to whom reference can be made, must be sent to C. G. Stillman, F.R.I.B.A., County Architect, County Hall, Chichester, not later than 26th April, 1945.

T. C. HAYWARD,
Clerk of the County Council.

County Hall, Chichester.
10th April, 1945. 661

TECHNICAL ASSISTANTS, temporary, required by the County Borough of South Shields.

Candidates must have been born before 1923 and have the necessary qualifications and experience.

ENGINEERING ASSISTANT; parts A. and B. of I.C.E. exam. or equivalent parts of Testamur of I.M. & Cy.E. Experience in road and sewer works an advantage.

Salary £270—£15—£300 per annum, plus bonus £49 8s. per annum.

Reference E.1492XA.

ARCHITECTURAL ASSISTANT. Must be A.R.I.B.A. or equivalent for work in connection with post-war housing.

Salary £315—£15—£350 per annum, plus bonus £49 8s. per annum.

Reference EA.1350XA.

The appointments are of indefinite duration, and successful applicants must pass a medical examination for superannuation purposes.

Applicants should write, quoting the appropriate reference, to the Ministry of Labour and National Service, Appointments Department, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for the necessary forms, which should be returned completed on or before 5th May, 1945. 666

ARCHITECTURAL ASSISTANT, temporary, required by the Borough Council of Bedford.

Candidates must be Registered Architects, with experience in Housing, including plans, specifications, estimates, etc. Other qualifications and experience will be an advantage.

Salary £345, rising to £370 per annum in six months, plus cost of living bonus, at present £59 16s. per annum.

Write, quoting EA.1333XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 5th May, 1945. 665

SENIOR ARCHITECTURAL ASSISTANTS required by the County Council of Lincoln—parts of Lindsey at Lincoln.

Candidates should preferably be A.R.I.B.A. or equivalent, and have experience in the design and construction of school buildings, hospitals, police stations, etc.

Salary £325 to £375 per annum, according to qualifications and experience, plus cost of living bonus, at present £59 16s. per annum.

The Appointment is subject to the conditions of the L.G.S. Act, 1937, the successful candidate being required to pass a medical examination.

The appointed person to provide his own car, for which an allowance will be paid in accordance with the Council's scale for 8 h.p. cars.

Write, quoting EA.1365XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 5th May, 1945. 667

ARCHITECTURAL ASSISTANT, temporary, required by the Borough Council of Poplar.

Candidates must have been born before 1923, and be A.R.I.B.A. or equivalent, and have had experience in the layout and design of modern council housing estates.

Salary £335—£25—£480 per annum, according to experience, plus bonus at present 23s. per week, plus payment for any additional hours worked.

The successful candidate will be required to contribute to the Superannuation Fund.

Write, quoting EA.1134XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 30th April, 1945. 658

ARCHITECTURAL ASSISTANT, temporary, required by the County Borough of Wallasey.

Candidates must have been born before 1923, and be Registered Architects, and preferably A.R.I.B.A., with knowledge and experience of Municipal work, including schools and hospitals.

Salary £290-£350 per annum, plus cost of living bonus at present £60. Commencing salary according to qualifications.

Write, quoting EA.1264XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 30th April, 1945. 657

Architectural Appointments Vacant

Four lines or under, 4s; each additional line, 1s.

Wherever possible prospective employers are urged to give in their advertisement full information about the duty and responsibilities involved, the location of the office, and the salary offered. The inclusion of the Advertiser's name in lieu of a box number is welcomed.

ARCHITECT'S ASSISTANT required in East Coast office; mainly for post-war housing work. Student R.I.B.A. or A.R.I.B.A. Please write, stating full particulars and salary required. Box 651.

LONDON OFFICE.—Architectural Assistant required for permanent position. State age, qualifications, experience, and salary. 662

ARCHITECTURAL ASSISTANTS, two seniors, with industrial experience for preparation of working and detail drawings on large contracts, also two juniors, required by Birmingham Architects. Full particulars to Box 660.

SENIOR Architect's Assistant required immediately; must be experienced in all types of design, competent to supervision and contract management. Apply in writing, giving full details and salary required, to J. Stanley Beard & Bennett, 101/3, Baker Street, W.1. 664

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.

ARCHITECT and SURVEYOR, L.R.I.B.A., (37), 14 years' varied experience, and 5 years' R.E. works services. Box 483.

ARCHITECTURAL ASSISTANT seeks post in London area; exempt H.M. Forces; age 22; experienced with factory layouts, surveys, conversions, etc.; inter. R.I.B.A. standard. Box 486.

ARCHITECT.—Perspectives, working drawings, all scales, requires work at home. Box 488.

EXPERIENCED ARCHITECT (39) offers services afternoons and evenings; full knowledge all London practice and office management. Box 491.

REGISTERED ARCHITECT, with pre-war practice in West End, wounded Ex-B.L.A. seeks responsible position, with designing scope, on post-war housing. Box 484.

A.R.I.B.A. desires Senior post, leading to partnership; 15 years' experience, T.P. qualifications, and used to full responsibility; in early thirties; Scotland preferred; becoming free from essential work now. Box 485.

ARCHITECT.—40 years' experience in practice and Government employ, desires temporary appointment in Birmingham area; recent experience in estate work, housing surveys, and public buildings, levelling, specifications, etc. Box 482.

ARCHITECTURAL ASSISTANT required at once; neat, accurate, and quick draftsman, with surveying experience, for work on Local Authority housing and site plans. Write, stating age, experience, salary required, with references, also position related to N.S. Acts. Box 669.

CHIEF ASSISTANT ARCHITECT (Chartered), with wide experience in the design, detailing and supervision of buildings in London and the Provinces, desires change to similar or executive position giving opportunities for greater scope and responsibility. Box 489.

GLASS or Tile Wall Linings.—Experienced man (32), available near future, seeks responsible position established company; able prepare designs, estimates, working drawings, interior and exterior schemes; competent to manage and progress contracts; good personality and address; highest references; replies treated in strictest confidence. Box 490.

ARCHITECTURAL ASSISTANT, student R.I.B.A., requires part-time work (two or three days each week, with prospects of full time post-war employment; in London or Surrey; training: 5 years at Regent Street Polytechnic School of Architecture; final R.I.B.A. testimonies approved; capable of designing and preparing working drawings; 2 years' experience in school design and construction; salary by arrangement. 481

CHARTERED QUANTITY SURVEYOR required for responsible position in office of London Chartered Surveyor. This is an opportunity carrying prospect of partnership for a gentleman who has had complete experience in a professional office and who is able to work up and take full charge of Q.S. side of practice. Experience in large civil engineering contracts desirable. A salary commensurate with qualifications will be paid. Please write in confidence, stating age, with details of past experience and present employment, and whether available now or post-war to Box 670.

Other Appointments Wanted

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

ENGINEER (Heating and Sanitation) seeks free lance work; experienced in all branches of profession; able at short notice to execute detail draughting, quantities, etc.; at present engaged on pre-fabrication. Box 633.

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Four lines or under, 4s.; each additional line, 1s.

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LAMBETH LOWER MARSH, S.E.1.—Freehold Site, in established trading position; frontage 33 ft., depth 100 ft.; for erection of Modern Shop or Showroom Premises; price £4,500. Box 671.

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VOLS. I, II, III, "Architectural Building Construction," by Jaggard and Dury; £2. Box 487.

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As originators of the Auto-Recorder System of Machine Milking, we have had extensive experience of planning layouts to accommodate the new technique. The Ministry of Agriculture's Clean Milk Bill, when passed, will mean a large increase in the number of new or modified farm buildings required. The position will be affected also by the findings of the English and Scottish Commissions on this important subject. The service of our Technical Department is available to any Architect who may be consulted in these matters. Write in confidence to: Gascoignes (Reading), Ltd., Berkeley Avenue, Reading.

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

CHARTERED ARCHITECT and British serving officer (32 years) desires contact old-established Architect or Firm connected with design or construction; object, post-war partnership; ideas, energy, and car available; or would go overseas. Box 663.

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SANITARY ENGINEER, M.R.San.I., undertakes Plumbing, Drainage and Domestic Hot Water schemes, specifications and quantities; experience in prefabrication. R. L. S., 2, Cecil Road, Cheam, Surrey. 668

WELL-KNOWN SPECIALIST on building materials re-opening consulting practice, closed during war, is now able to undertake a few non-competitive additional research and technical market investigations; well equipped chemical and physical laboratories. Inquiries to Box 410.

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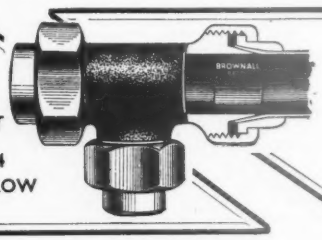

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