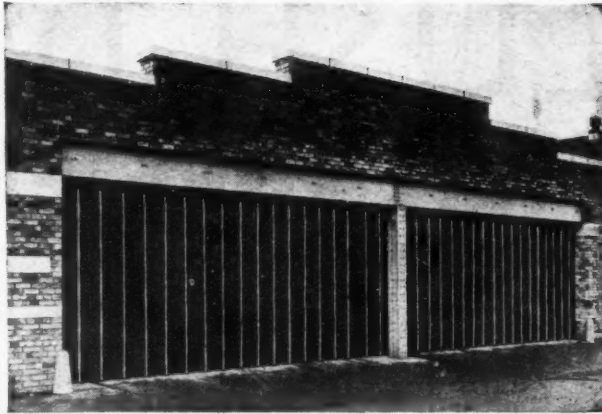


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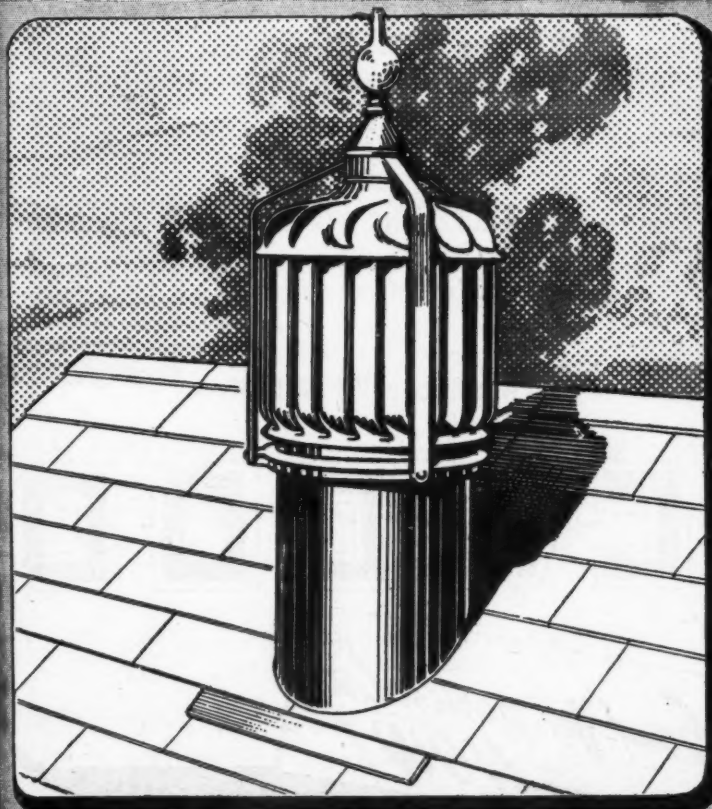
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Who produced the first Building Board?



This settles a long-standing misconception

Reprinted from the "Builders' Merchants' Journal and Builders' Ironmonger," May, 1946.

BRITISH WALLBOARD PIONEER

Some people appear to be under the impression that the wallboard industry originated in the U.S.A. about 1915. We are reminded, however, by our friends the P.I.M. Board Co., Ltd., of Sunbury-on-Thames, that the industry had its origin in Great Britain, the inventor being the late Mr. D. M. Sutherland, the talented and popular managing director of the Company, who died only three years ago, and who gained his first experience in paper and pulp manufacture as far back as 1875, when in the employ of a firm of Edinburgh paper-mill engineers.

His association with the production of millboards dated back to 1882, in connection with the manufacture and use of Lincrusta-Walton for the decoration of railroad carriages—millboard being used as a backing for the Lincrusta.

The name "millboard" was subsequently dropped for the more appropriate one of "Panelboards," and by 1898 the demand for these had grown to such dimensions that a separate company was formed—namely, The Patent Impermeable Millboard Co., Ltd. (now, of course, the equally well-known P.I.M. Board Co., Ltd.), of Sunbury-on-Thames, Mr. Sutherland being its first managing director—a position he continued to hold for the rest of his life.

During the Company's manufacturing career, other types of boards have been produced, to take the place of wood—notably "Sundeala," which is made in two qualities, both water-resisting to a very high degree, and eminently suitable for use in ships, railway carriages, and the interiors and exteriors of houses.

To meet the demand for an acoustic and insulating board, the Company

brought out the highly-successful "Insulwood." Fire-resisting boards are also produced, and the Company's ant-proofed boards are in great demand for tropical countries, as they resist most satisfactorily even the attacks of termites.

It is interesting to recall that prior to the production of these special boards Mr. Sutherland had adopted the plan of pasting thick sheets of paper together to form a thick board, the sheets being sometimes cemented together with a suitable asphalt adhesive, but with the introduction of homogeneous boards such as "Sundeala," "Agasote," etc., the manufacture of laminated boards was discontinued.

Homogeneous boards are so often regarded as American in origin that it is particularly interesting to discover that prior to 1908 the Sundeala Company shipped large quantities of its boards to the U.S.A., and subsequently, in order to avoid delay in the execution of orders and the high tariff of 55 per cent. imposed on the boards, it was arranged to start up manufacture in the U.S.A., a mill for the purpose being organised near Trenton, New Jersey, under the direction of Mr. Manson Sutherland, the late Mr. Sutherland's eldest son, who controlled the manufacture for the American market for about twelve years. As far as can be ascertained, these homogeneous waterproofed boards shipped from the English mill were the first to be used in the United States, but since that time many other companies have set up mills in both the U.S.A. and Canada to meet the ever-increasing demand.

We have much pleasure in placing upon record this story of British pioneer enterprise. Honour where honour is due.



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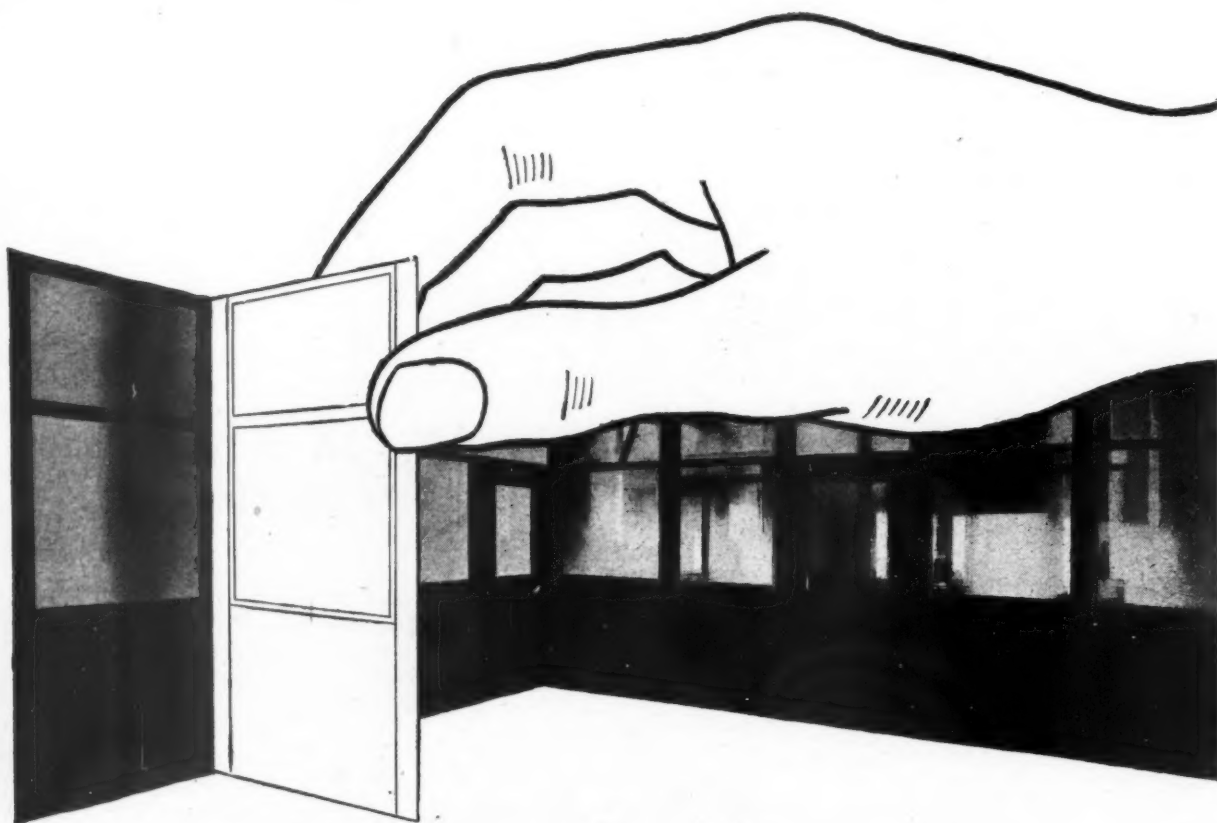
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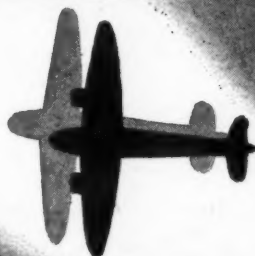
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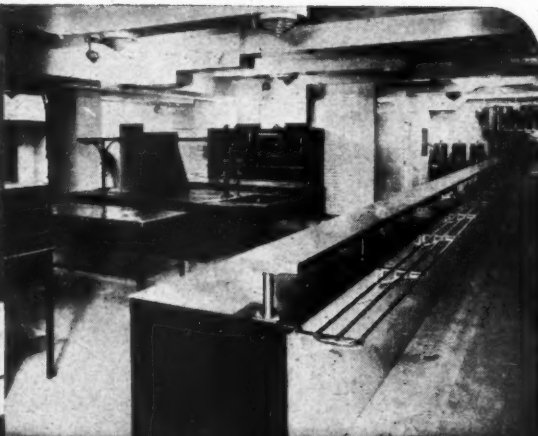
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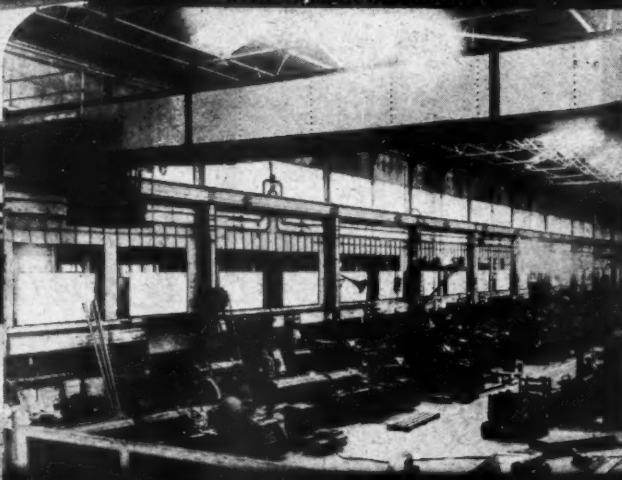
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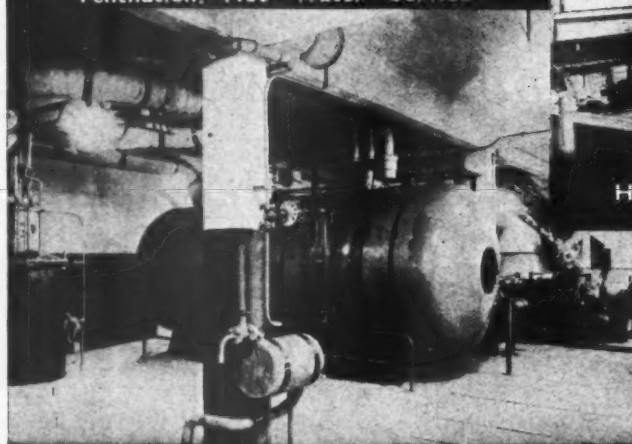
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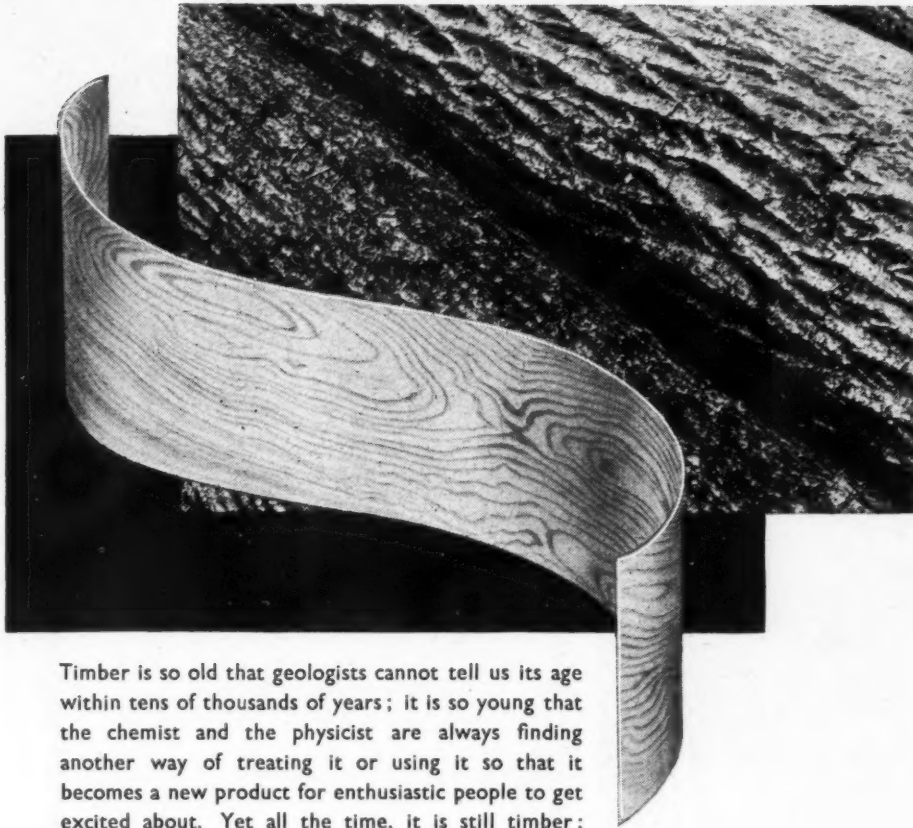
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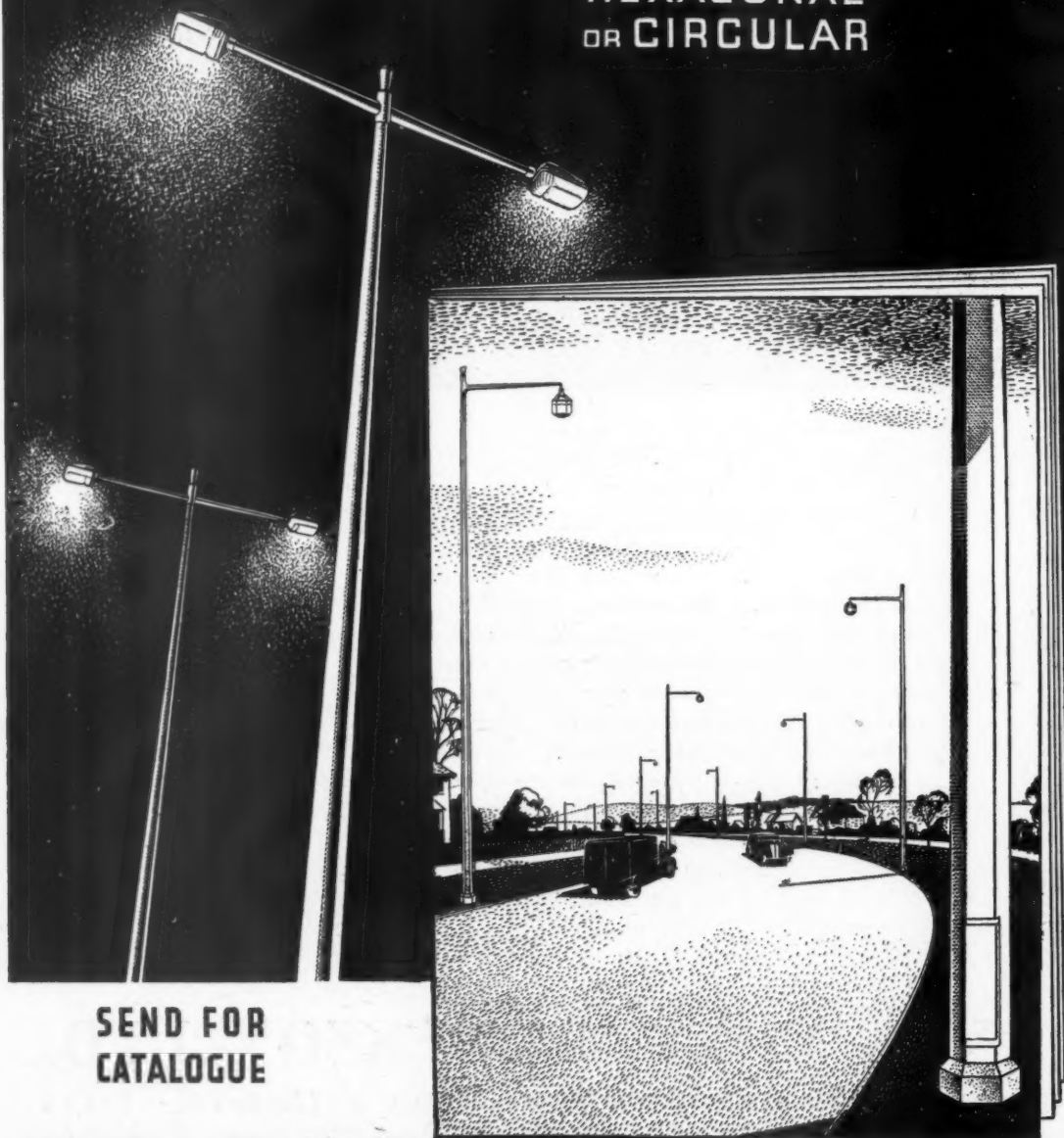
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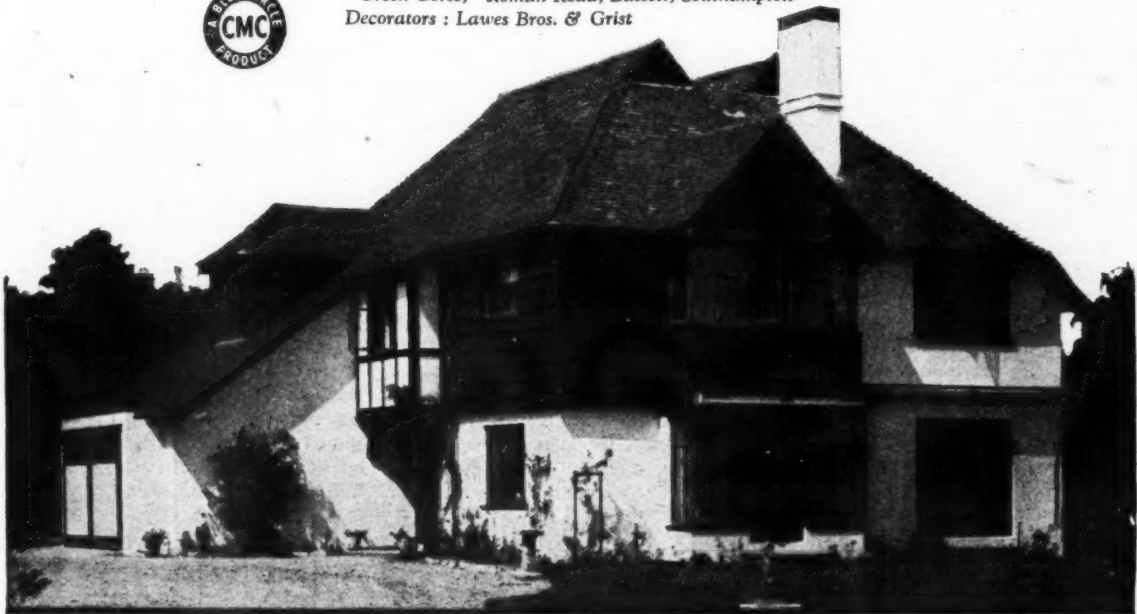
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POTTERY THROUGH THE AGES · NO. 3



EGYPT HAD THE POTTER'S WHEEL

Ancient Egypt was another cradle of western civilisation. The periodical inundations of the Nile left behind deposits of clay and silt of which, at a very early date, advantage was taken for pottery-making. Long before Europe had evolved beyond the neolithic stage of culture, Egypt was an active centre of ceramic art, the influence of which later radiated to Greece and other countries.

The refinement of shape and finish of some of the smoothly burnished red and black pottery made by hand 6,000 years ago shows that even then the craft had a long history behind it. By 3,500 B.C.—or earlier according to some authorities—the Egyptians had learned the use of glazes. After firing,

this was unquestionably the most important development in the early history of ceramics. By glazing, pottery could be made water-tight and easily cleaned, greatly increasing its usefulness for storing liquids and foodstuffs.

Some of the turquoise blue and green glazed Egyptian ware, found in tombs, is of surpassing beauty. A wealth of different objects were produced—statuettes of gods and goddesses, sacred emblems of animals and scarabs, charms, gaming pieces and even children's toys. Fragments of glazed ware were used with great effectiveness for inlaying the decorations on mummy cases. Brilliantly coloured tiles adorned the walls of

palaces, such as those of Rameses II and Rameses III at Tell-el-Yahudiyeh.

That the Egyptians used the potter's wheel for making circular shapes is apparent not only from the pottery itself but is confirmed by the wall-paintings at Beni-Hasan, on which our illustration is based. These early wheels were propelled by hand. When foot-propelled wheels were first introduced is not known, but it was not until last century that the first power-driven wheel was perfected by Henry Doulton. Today, this traditional method of shaping ware is still practised, especially for making individual pieces of decorative pottery and special shapes in electrical porcelain and chemical ware.



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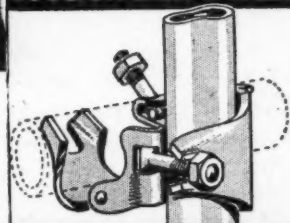
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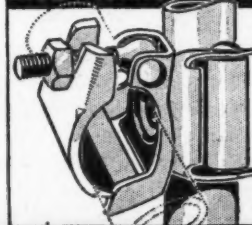
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Actually this is a factory at Coatbridge in Lanarkshire built by Wimpeys during the last winter of the war.

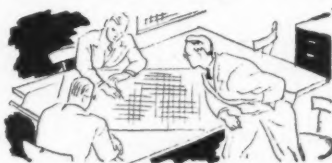
Yet the problems of organization and execution were not one whit different from the huge problems confronting the building industry today. Only the fullest resources of scientific planning and scientific use of manpower can solve them. And this is where Wimpeys come in.

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the Wimpey Regional Office nearest the site. Head Office departments—Building, Engineering, Estimating, Plant, Transport, Accountancy and the rest—assess needs, plot progress-sheets and dove-tail schedules. Wimpey's Central



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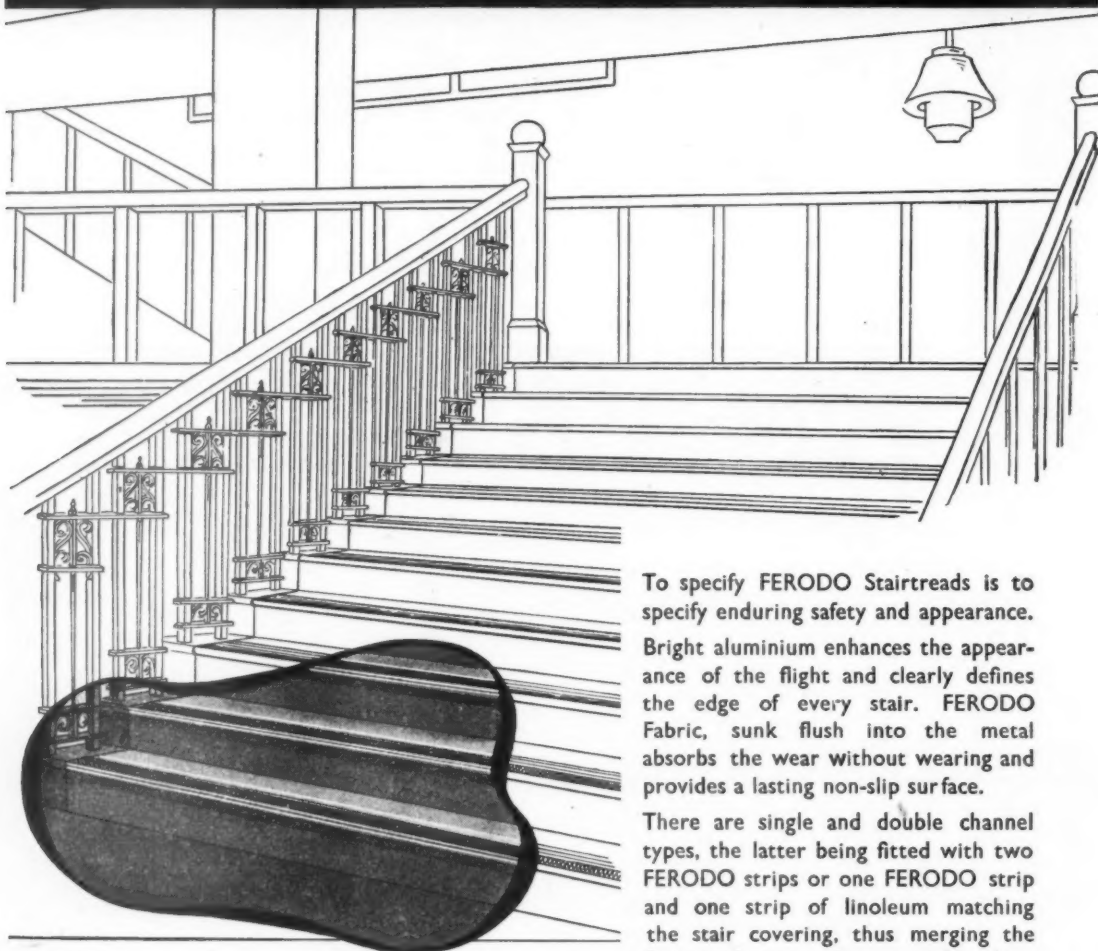
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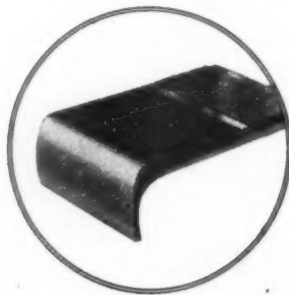
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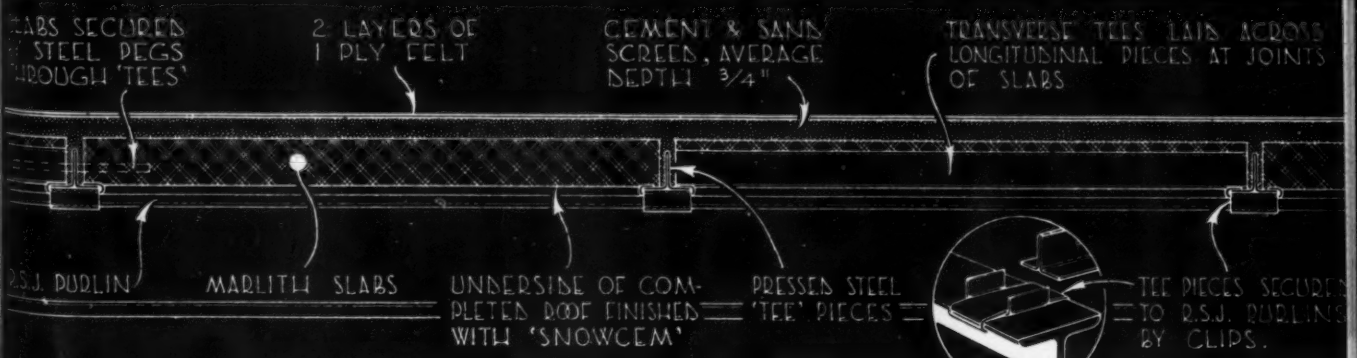
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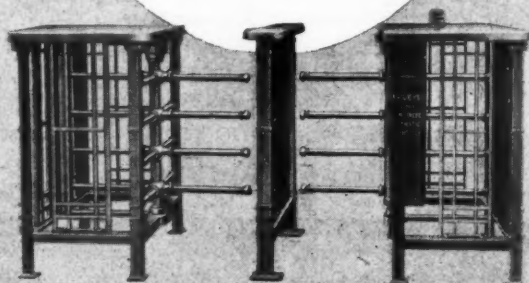
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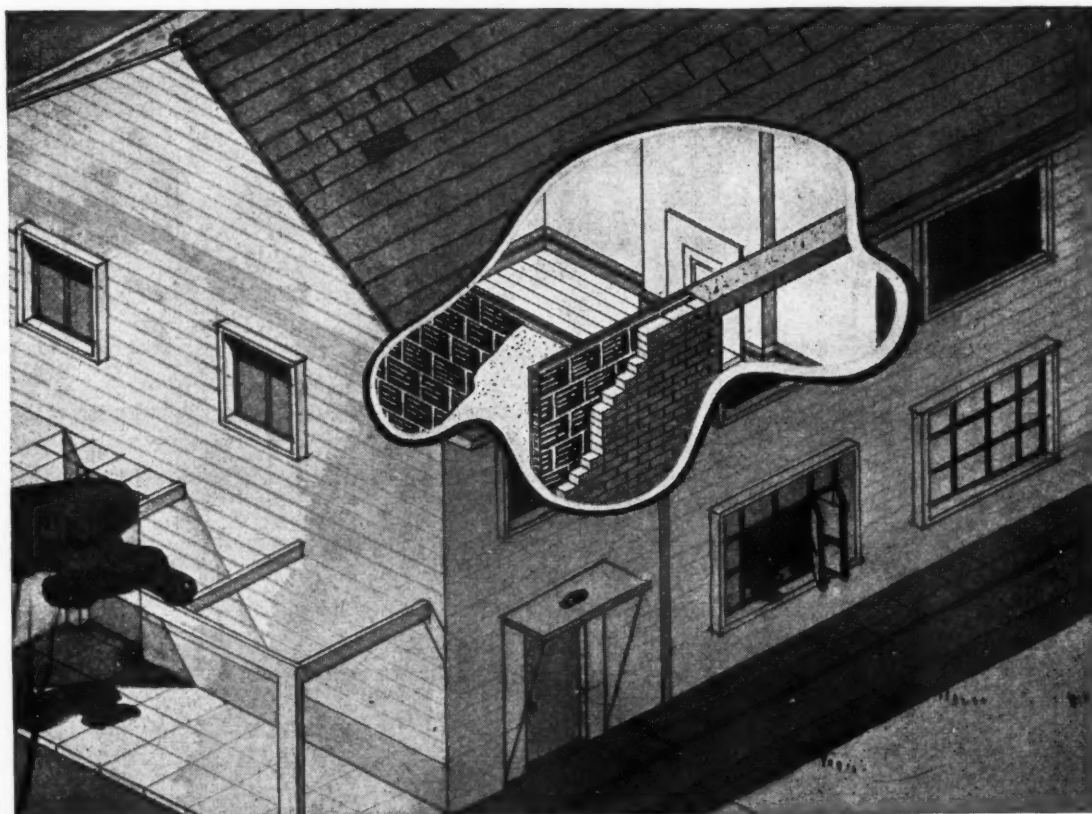
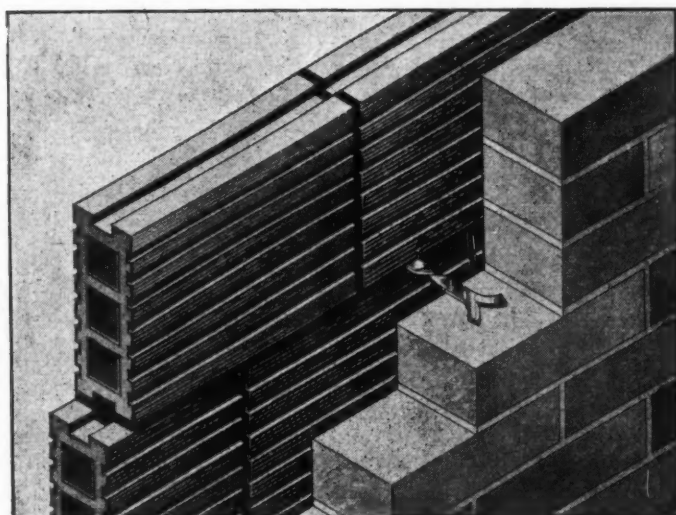
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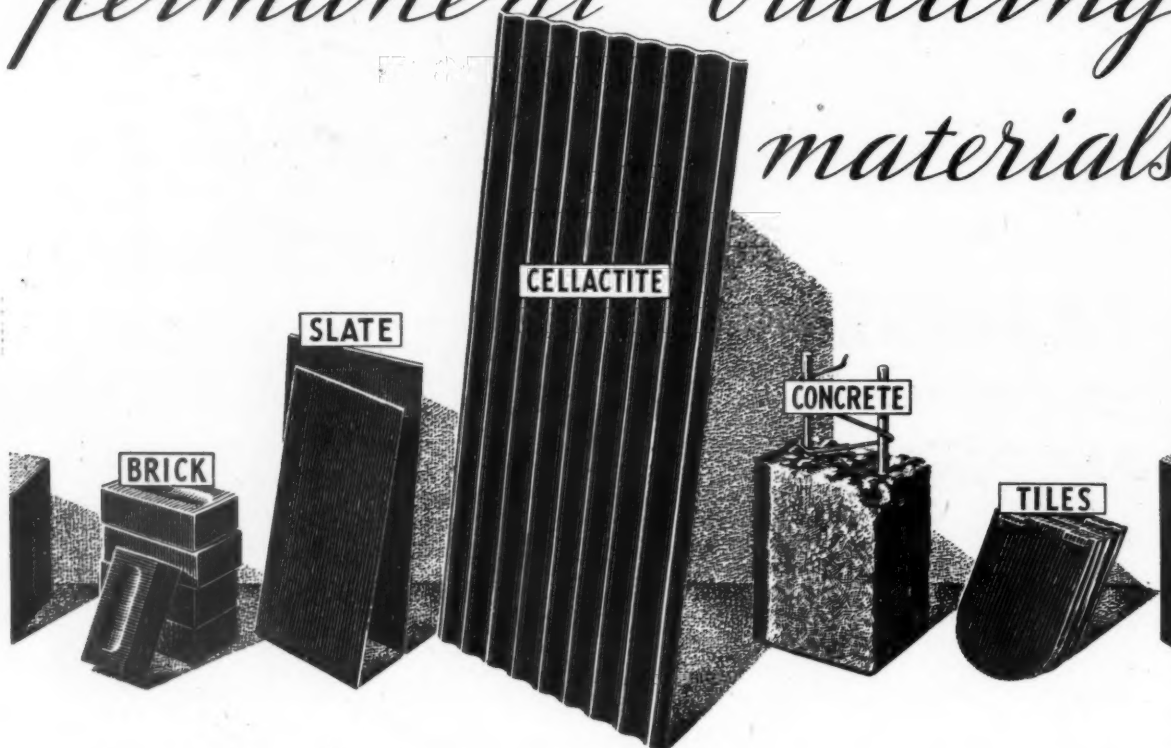
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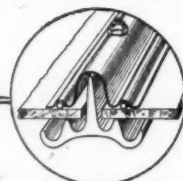
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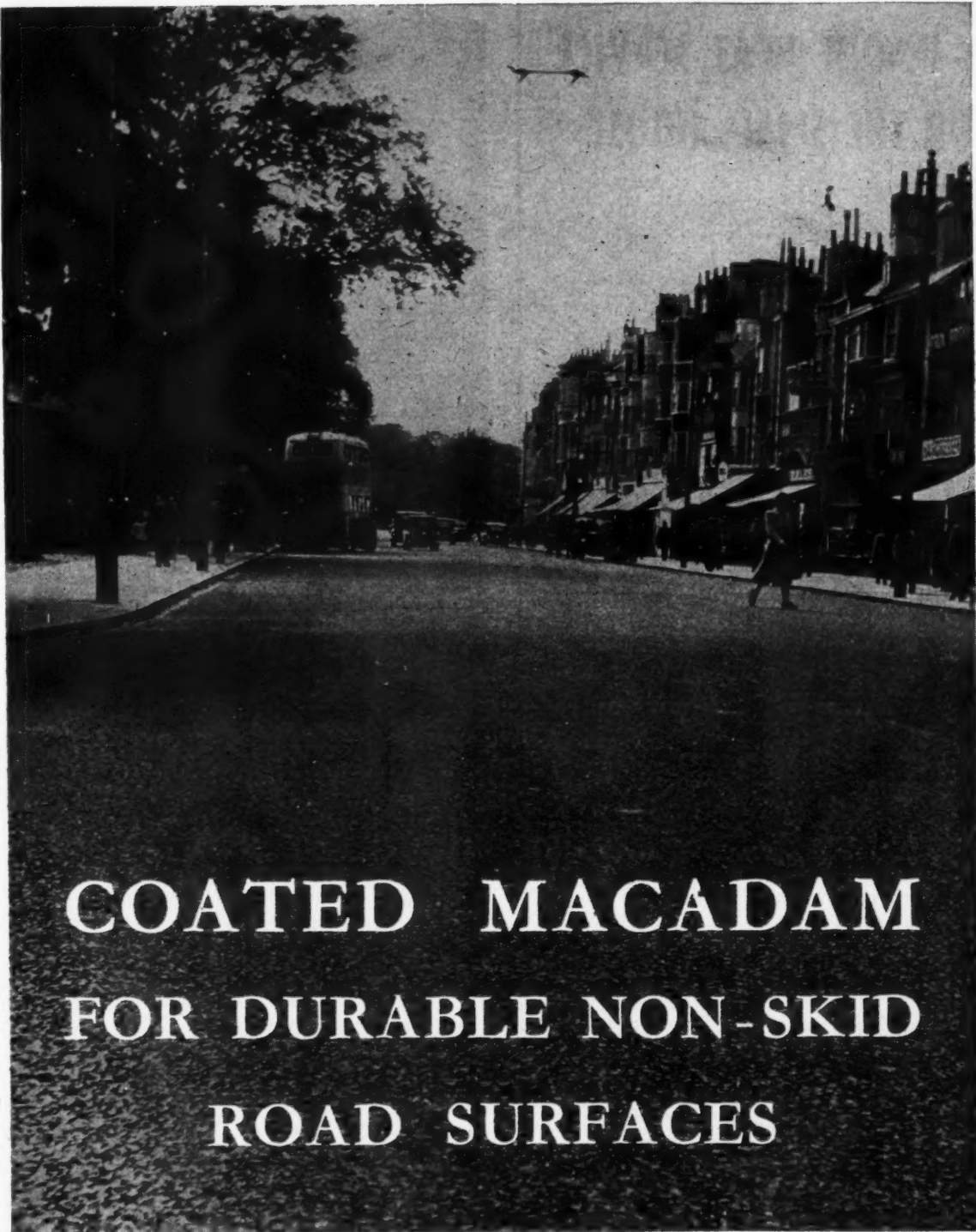
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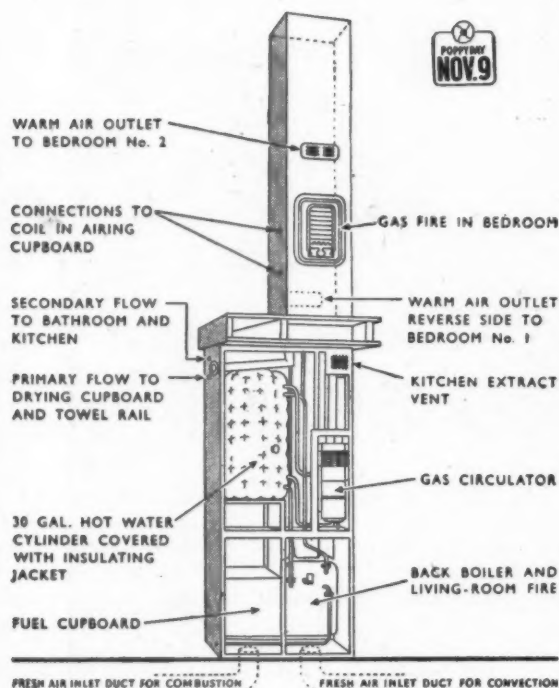
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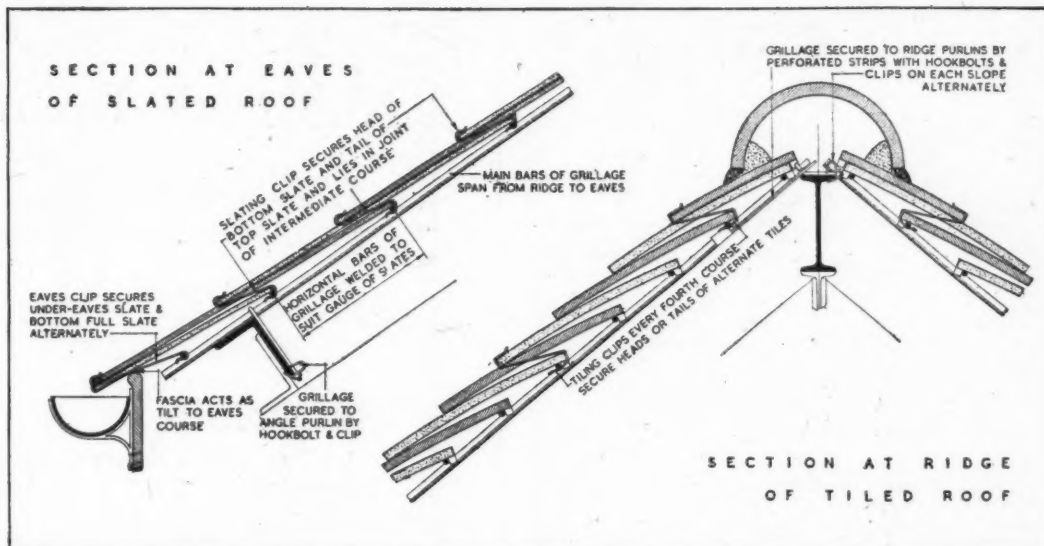
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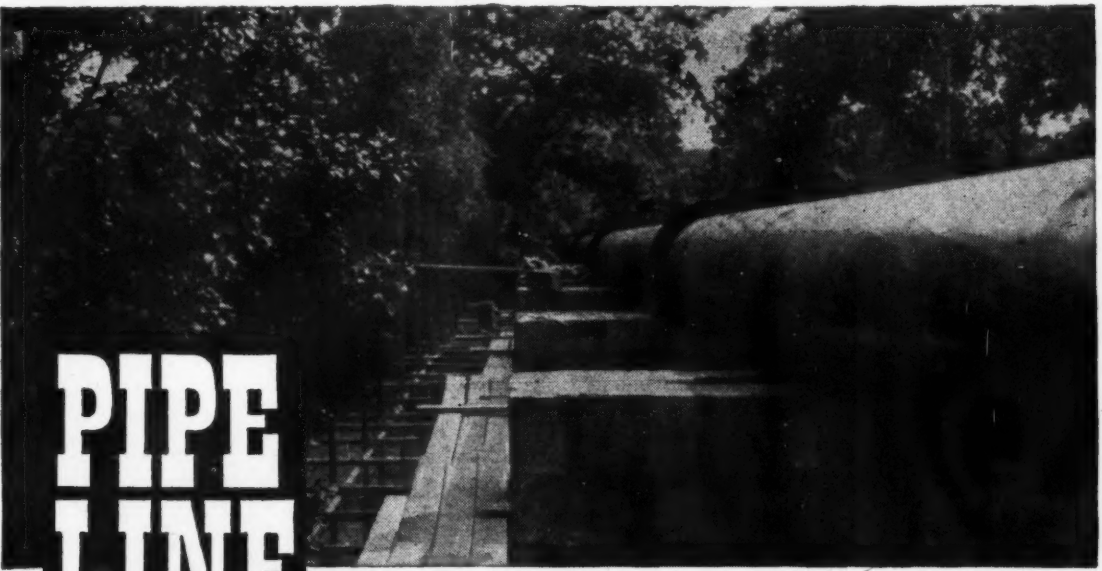
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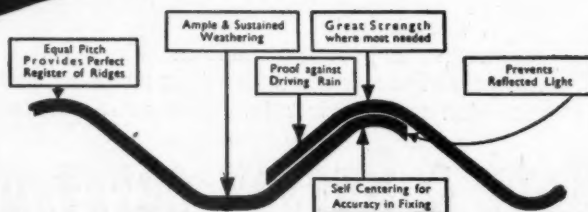
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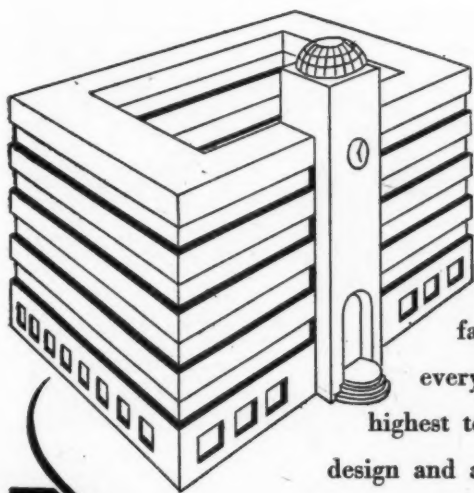
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In common with every other periodical this JOURNAL is rationed to a small part of its pre-war needs of paper. Thus a balance has to be struck between circulation and number of pages. We regret that unless a reader is a subscriber we cannot guarantee that he will get a copy of the JOURNAL. Newsagents now cannot supply the JOURNAL except to a "firm order."

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DIARY FOR OCTOBER NOVEMBER AND DECEMBER

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 the initials as given in the glossary of abbreviations on the front cover.

BLACKBURN. *Regional Building in the United States.* Exhibition at the Public Library, Museum and Art Gallery. (Sponsor, Arts Council.) Until Oct. 26

BLACKPOOL. *Plans for an Arts Centre.* Exhibition at the Borough Surveyor's Department, Municipal Building. (Sponsor, Arts Council.) Until Oct. 26

EDINBURGH. *Exhibition of Standard Products for Housing.* At the Royal Scottish Museum, Chambers Street, Edinburgh. The aim of the exhibition is to make known the types of goods in production now or in the future, from whom they are available and at what price. It is also hoped that it will encourage the use of products conforming to British Standard Specifications to ensure certain basic qualities. The exhibition will be mainly for the information of local authorities, technicians and builders but will also be open to the general public. (Sponsor: Ministry of Works and the Department of Health for Scotland in consultation with the other Government Departments concerned.) Mondays to Saturdays 10 a.m. to 5 p.m., Sundays 2 p.m. to 5 p.m. Admission free. Until Oct. 31

HODDESDON. *Council of Industrial Design. Refresher Course for Young Designers.* Industrial designers and authorities on design, including Warnett Kennedy, R. Y. Goodden, Norbert Dutton and B. G. Bowden, will take part in talks and discussions with young designers and draughtsmen during a residential refresher course organised by CID at High Leigh, Hoddesdon, Herts. Limited number of places available. Tickets, two guineas inclusive of meals and accommodation. Students will visit the Britain Can Make It Exhibition and talk to its designers. (Sponsor CID.) Nov. 4-8

LONDON. *Sudbury and District Survey and Plan.* Exhibition at 13, Suffolk Street, S.W.1. To be opened by L. Dudley Stamp. Chairman, Lt.-Col. R. Hamilton, M.P. for Sudbury Division of Suffolk. 3 p.m. (Sponsors, Sudbury and District Planning Association and the Housing Centre.) Oct. 24-Nov. 8

Northern Polytechnic Fiftieth Anniversary. Celebration at the Northern Polytechnic, Holloway, N.7. Exhibitions and demonstrations by the Department of Architecture, Surveying and Building. Open to visitors from 6.30 p.m. to 9 p.m. All former members of the staff and students specially invited. (Sponsor, Northern Polytechnic.) Oct. 24-25

Royal Photographic Society of Great Britain Exhibition. At the Science Museum, Exhibition Road, S.W.7. Ninety-first annual exhibition of photographs, which contains some 900 photographs from 21 countries of various kinds such as pictorial, technical, colour, miniature camera, cinematography. (Sponsor, Royal Photographic Society.) Until Oct. 26

P. J. Marshall, late General Secretary of SATO. *SATO and a Burma Plan.* At the RIBA, 66, Portland Place, W.1. (Sponsor, MARS group, supported by the Association for Planning and Regional Reconstruction, Association of Building Technicians, and Architects Students' Association.) 6.15 p.m. Oct. 25

Swiss Planning and Building Exhibition. At the RIBA, 66, Portland Place, W.1. Organized with the co-operation of the foremost architects and associations in Switzerland. Building for work, building for recreation, housing, town and country planning, schools and hospitals are among the subjects covered. Other features are the preservation of old and historic buildings and the countryside, and the re-planning of winter sports resorts, for which an extensive programme has already been started. How Switzerland makes the most of her landscape is shown in a series of photographs. Until Oct. 26

Danish Domestic Design. Exhibition at the Geffrey Museum, Kingsland Road, E.2. First showing of the exhibition in England. Consisting of furniture, domestic utensils, including kitchen ware, textiles and wall-paper. Tuesday to Friday, 10 a.m. to 9 p.m.; Saturdays, 10 a.m. to 6 p.m.; Sundays, 2 p.m. to 6 p.m. Mondays closed. (Sponsor, Arts Council.) Until Oct. 27

MERTHYR TYDFIL. *Royal Sanitary Institute Sessional Meeting.* At the Castle School, Cyfarthfa Park. Discussion on *Housing and its Amenities*, to be opened by G. Eric Mitchell, Borough Architect and Engineer, Merthyr Tydfil. 10.30 a.m. (Sponsor, RSI.) Oct. 26

PORTSMOUTH. *Plans for an Arts Centre.* Exhibition at the Central Public Library. (Sponsor, Arts Council.) Until Oct. 26

SALFORD. *History of the British Playhouse.* Exhibition at the Museum and Art Gallery, Peel Street. (Sponsor, Arts Council.) Until Oct. 30

SOUTHAMPTON. *What is Modern Painting?* Exhibition at Woolston Community Centre. (Sponsor, Arts Council.) Oct. 24-Nov. 8

NEWS

THURSDAY,
No. 2700

October 24, 1946
VOL. 104

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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.

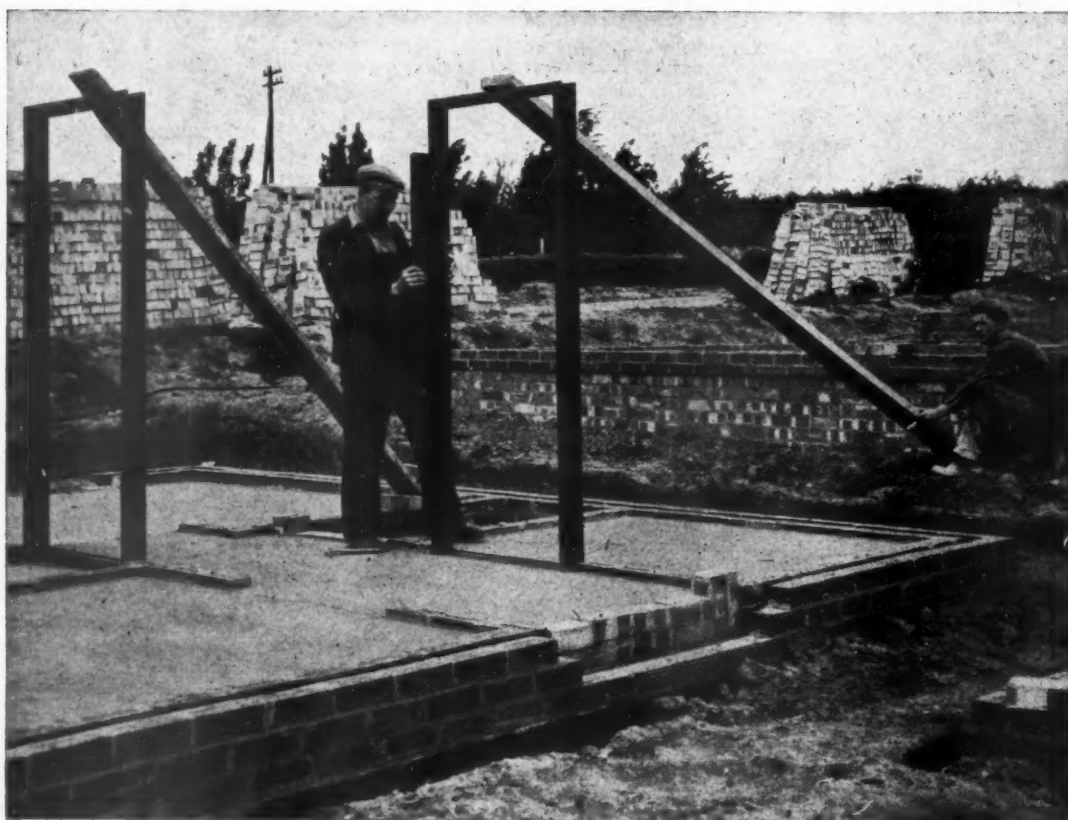
★★ means important news, for reasons which may or may not be obvious.

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

The Scottish Special Housing Association announces SEVERAL NEW APPOINTMENTS TO THE COUNCIL OF MANAGEMENT.

They are: A. G. McBain; James McBoyle, County Clerk of Midlothian; Miss M. W. McLaughlin; Rev. W. C. V. Smith; W. Grierson Macmillan. The other members of the Council of Management are W. C. Davidson, O.B.E., F.S.I. (deputy chairman); G. R. McIntosh (Housing Convener, Aberdeen); Mr. Thomas Paterson, J.P. (Housing Convener, Ayr Burgh); Mr. P. J. G. Rose, C.B. (King's and Lord Treasurer's Remembrancer) and Mr. J. Stirling, B.Com., B.L., F.S.A.A. (Chief Accountant, Department of Health for Scotland). Under the Housing (Scotland) Act, 1944, the functions of the Scottish Special Housing Association were considerably extended and the Secretary of State asked the Association to aim at a programme of 100,000 houses over the next ten or twelve years. To achieve this the Association are extending their direct labour organisation, as well as continuing to build through private contractors. The new appointments follow the recent appointment by the Secretary of State of Major J. Dalziel, M.Inst.H.E., M.Inst.B.E., to be whole-time chairman of the Association in order to expand the direct labour side of the Association's activities.

★
The Government is to build A NEW COLONIAL OFFICE on the site of the old Westminster Hospital, opposite the Abbey.



NORTHAMPTON RURAL DISTRICT COUNCIL

R. J. Miller, A.I.A.S., *Architect and Surveyor*

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THOUGHTS OF A 19TH-CENTURY SHARAWAG: VALUE OF IRREGULAR STREETS. [From *The Art of Building Cities* by Camillo Sitte; translated by Charles T. Stewart (Reinhold Publishing Corporation).] Rugged terrain, water courses and existing roads should not be ruthlessly obliterated for the sake of a stupid rectangularity. On the contrary, they should present welcome occasions for deviating street lines and other informalities. Irregularities of this kind, so often removed at tremendous expense in these days, are absolute necessities. Without them a certain rigidity and cold affectation descends upon even the finest works. Moreover, it is precisely these irregularities that provide easy orientation in the street network. They have value, too, from the standpoint of public health. Circuitous and crooked streets in old cities break the wind so that even at high velocity it sweeps only over rooftops. In contrast to this, high winds blow through the regularized streets of modern cities to the point of discomfort and unhealthiness. . . . Vitruvius pointed out that the orientation of streets should be determined as much by the direction of prevailing winds as by the points of the compass. Our highly scientific modern city building has forgotten all about that, and has developed a facility for making every possible mistake.

In view of the widespread public interest in the proposal to restore THE RUINS OF FOUNTAINS ABBEY, the Society for the Protection of Ancient Buildings regards it as its duty to make known to the public its considered opinion on the matter.

The Society has come to the conclusion that owing to the nature and conditions of the ruins, rehabilitation in this particular case would inevitably involve so much drastic restoration of an imitative nature that the architectural and historic value of the building would be gravely impaired. The Society must therefore oppose the project as being contrary to the fundamental principles for which it was founded, and on which its policy has been based for nearly seventy years.

£100,000 is to be spent by the Southern Railway on PREFABRICATED RAILWAY TRACKS.

Instead of fitting rails, sleepers, and chairs together on the site, they will be assembled at a special depot before being moved to the site in completed 60-ft. lengths. The method necessitates the use of large cranes, which pick up the old track and place it on trucks and then drop the prefabricated track into position. Not only is the new system cheaper—it is expected to save 13½ per cent. in cost compared with the old method—but it puts the lines out of action for only half the time required with the older method.

★

Mr. S. R. Raffety, consulting engineer to Whitehaven Corporation: If there is any damage to the amenities by RAISING THE LEVEL OF ENNERDALE LAKE it will be hardly noticeable.

Modifications of the Whitehaven Corporation's plan for raising the level of Ennerdale Lake were accepted with reserve by Friends of the Lake District at the Ministry of Health inquiry. The Friends were the chief objectors to the scheme. These modifications were to reduce the area of land to be submerged, reduce the height of the western causeway by two feet, and shorten it by 310 ft. to 470 ft. Mr. S. R. Raffety, consulting engineer to the corpora-

tion, undertook to do the work to harmonize with the natural beauty of the surroundings. If there is any damage to amenities, he said, it will be hardly noticeable. Public right of access to the foreshore, woods, and fells surrounding the lake will not be impaired. Asked if he accepted the modifications, Mr. T. M. Backhouse, for the Friends of the Lake District, replied: Yes, I think so. If the Ennerdale scheme has to be accepted we are satisfied Mr. Raffety will do the work with the minimum of damage to amenities.

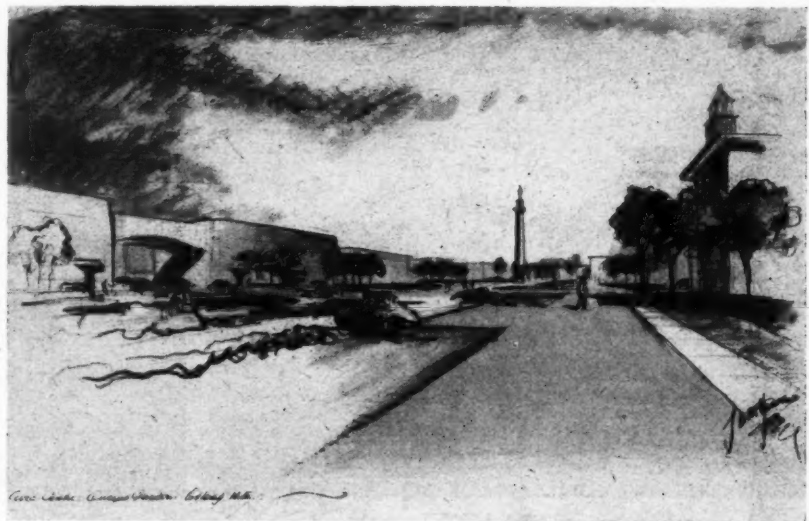
The RIBA has AWARDED THE ARCHIBALD DAWNAY SCHOLARSHIP of £65 for 1946-47 to D. W. Fletcher, of the Welsh School of Architecture, Cardiff.

The scholarship is presented in accordance with the will of the late Sir Archibald Dawnay and is intended to foster the advanced study of construction and the im-

provement generally of constructional methods and materials and their influence on design.

In the ninety-eighth report the Ecclesiastical Commissioners outline PLANS FOR THE REDEVELOPMENT OF ALL THEIR WORKING-CLASS ESTATES on modern lines.

The redevelopment will involve an expenditure of £1,000,000 over ten years. Sir Patrick Abercrombie has advised the Commissioners on the replanning of three estates at Shoreditch, Brixton and Newington. His detailed recommendations were approved before the end of 1945, but as they involved the planning of larger areas than those owned by the Commissioners, negotiations have had to be carried on with the London County Council and other authorities concerned, and decisions are pending.



A perspective of the remodelled Queen's Gardens, which will form part of Hull's new Civic Centre. The illustration is from Plan for Kingston-upon-Hull, prepared for the City Council by the late Sir Edwin Lutyens and Sir Patrick Abercrombie, just published [A. Brown and Sons, 15s. od.]. The plan has been accepted in principle by the Corporation. Sir Patrick Abercrombie assumes the prosperous continuance of Hull's dual role of port and industrial centre. The Corporation has adopted his scheme for industrial zoning and has made an order for compulsory requisition for large residential development. His order of initial priorities is first housing, then industry, and thirdly shopping.



Queen Elizabeth

The Cunard liner Queen Elizabeth has just completed her maiden voyage as a passenger ship from Southampton to New York, after having steamed nearly 500,000 miles as a trooper. The reconditioning began on March 6 last, when her furniture and fittings which had been stored in various

parts of the world were reassembled. Many well-known artists, architects and designers have been co-opted in the ship's decoration. Top, the ballroom by G. Grey Wornum. Below, left, a special suite room. Below, right, the first class smoking-room, also by Grey Wornum.

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Cornwall County Council and St. Ives Corporation have formed a joint committee to press for a £750,000 HARBOUR OF REFUGE OFF THE LAND'S END PENINSULA.

It is considered that the ideal scheme would be one designed to serve a larger lifeboat than can at present be used at St. Ives and, in addition, to provide a moderate-sized breakwater. Such a project has been estimated to cost about £750,000, but the figure might be reduced to £480,000 if the War Department would be willing to sell at a reasonable price to the promoters six or seven of the concrete caissons built as part of the Mulberry prefabricated harbours for the invasion of France. A breakwater 1,500 ft. in length, the end of it in water 40 ft. deep, would provide a sheltered area of many acres, giving protection to merchant vessels as well as to a launching site for the lifeboat.

★

This year the Commonwealth Fund Fellowships, established to enable selected graduates of British Universities TO STUDY AND TRAVEL IN THE USA, have been resumed after having been suspended throughout the war.

Only twenty Fellowships, each of the approximate value of \$3,500, have been awarded this time. Of these one has gone to an architect, Mr. A. B. Drought, a graduate of the University of Liverpool. Mr. Drought qualified in the Liverpool School of Architecture in July, 1941, when the degree of Bachelor of Architecture with First Class Honours was conferred upon him. On completing his University course he joined the Army, serving overseas with the Royal Engineers. In America he will be pursuing a course of post-graduate study in the School of Architecture and Planning of the Massachusetts Institute of Technology and will also be working under the direction of Professor Gropius, Director of the Graduate School of Architecture of Harvard University.



Mr. A. B. Drought, B.Arch., Liverpool School of Architecture, awarded a Commonwealth Fellowship. See News Item.

THE PROPER STUDY

IN the Information Centre of this issue is reviewed the recently published Government Report on the effects of the atomic bombs on Hiroshima and Nagasaki. From the technical point of view, the chief interest of this document is the evidence presented on the remarkable stability of framed buildings in comparison with those of load bearing walls. The report points out that reinforced concrete buildings of very heavy construction in Hiroshima, even when within 200 yards of the centre of damage, remained structurally undamaged, whereas at Nagasaki the monumental Roman Catholic Cathedral, with walls of heavy load bearing brick construction, was destroyed by blast, 600 yards from the centre of damage.

Indirectly, from the sociological point of view, however, the document is of far greater significance—a fact which should have been brought home to many last week by the broadcasting on the Third Programme of John Hersey's poignant *New Yorker* report.

To the humanist the Government report must be a symptom of that over-specialization of the individual in our too intellectual, too impersonal, too masculine culture, which itself, before all else, requires a new and stable structural framework. The engineer is particularly prone to this fault of over-specialization—to such activities as Objective Investigation—and there is a danger now that the architect, who above all experts should develop a broad, humane outlook, may become a blind novice of the new religion called Science.

Architecture is an art and all available knowledge and resource should be applied merely to broaden its scope as an art and so add to life's pleasure. The art of an epoch, especially its building, is the expression in outward form of the inward spirit of that epoch. The architect, therefore, must see life whole—not even avoiding such so-called specialized subjects as political-economy, and all that that implies—if he wishes his art to flourish and his creative powers to be unfrustrated. These are truisms, perhaps, but it is precisely the simple and the obvious that so often escape the specialist, however brilliant he may be in his own particular sphere. A world in which all structural skeletons have withstood atomic blast, but in which no life moves cannot delight even the structural engineer, for he himself will be a skeleton. There is no reason to suppose in any case that any structure on earth will be able to withstand the fully developed atomic explosion, compared with which the type of bomb dropped on the Japanese may soon seem little more destructive than a hand grenade.

If the expert now fails to understand what is the first proper study of mankind, we can but quote resignedly from the 1870 *Journal* of the Brothers Goncourt: "They were saying that Berthelot had predicted that a 100 years from now, thanks to physical and chemical science, men would know of what the atom is constituted. . . . To all this we raised

no objection, but we have the feeling that when this time comes in science, God, with his white beard, will come down to earth, swinging a bunch of keys, and will say to humanity, the way they say at five o'clock at the Salon, 'Closing time, gentlemen.'"



The Architects' Journal

29, Queen Anne's Gate Westminster, S.W.1

Phone: Whitehall 0611

N O T E S & T O P I C S

DESIGNERS' CONFERENCE

Our South Kensington spy [little black wool dress, pearls, and Harrods hair-do] who attended the recent Designers' Conference at the V. & A., reports that, like the Paris Conference, it was well-attended and well-intentioned, tempering its successes with cynicism and its failures with farce.

No new ground has apparently been broken, but the delegates had the opportunity of visiting *Britain Can Make It* in reasonable comfort, of seeing Mr. Gloag in person, and of discussing to their heart's content the place of the designer in the post-war world—and believe me, said our spy, they want it to be a key one. "Bad as architects," she added moodily.

Asked to recall for us the highlights of the week-end, she mentioned Mrs.

Lovat Fraser's hat and Mr. Chadwick's moustache, Mr. Warnett Kennedy's horrid word imagenerity, Commander Campbell's travelogues, of Mr. Wells Coates in the Brains Trust, the lament of a Yorkshire manufacturer of fire-extinguishers, and the friendly hospitality of Mr. Norbert Dutton at the opening party in the candle-lit Goldsmiths' Hall. "What was it like," she was asked, "among the burning candles, when Norbert Dutton had fled?" . . . But she had gone.

DESIGN IN AIR TRANSPORT

The old Italian Tourist Bureau in Regent Street was recently taken over by BOAC, who are now staging there a small exhibition of Design in Air Transport. This consists of furniture (dull), crockery, glass and silver (excellent), fabrics (unexciting), aircraft interiors (ho-hum), women's uniforms (excellent) and publicity material (excellent).

The team of designers is headed by Lonsdale Hands, who, judging from some hastily altered labels in the exhibition, seems to have had some argument with somebody as to who designed what. The general standard is commendably high. It is most encouraging to see three-dimensional proof that design is a commodity valued by those in charge of our official air transport companies. In these days, reliability, speed and comfort are taken for granted as the routine virtues of well-organized air travel. Good design—of hangars or menu cards and of aircraft interiors or coffee cups—is less frequently encountered.

An airliner is a travelling showcase of design. It is only commonsense to see that this is of the very highest standard in every detail. This BOAC exhibition, and the encouraging appointment of Mr. Christopher Nicholson as Design Consultant to

British European Airways, are signs that this point is being watched, and that with any luck British airlines may soon, like London Transport, be the best looking as well as the best run in the world.

USA HOUSING

Hugh Casson's little book on American wartime housing* is a brilliant digest of a diffuse and perplexing subject. One had vague impressions of trailer houses, prefabrication in all degrees, mushroom towns of startling magnitude, intriguing inventions like the balloon house. Now we have all this neatly sorted out with the lessons for our own problems clearly underlined. It is useful to know just which variations and degrees of prefabricating technique were in fact employed to the greatest extent under the imperative urgency of Defence Housing—for example, that the completely-finished large slice of house, or the concentrated service unit, were found to be too fragile under the circumstances. Of course, we knew already that the whole programme was made vastly easier for the Americans by the universal availability (and acceptance) of timber for houses. We, alas, have to solve our problem in a shortage of the world's best building material.

But, although American housing cannot teach us to use timber which we haven't got, it has one major lesson for us. You can have standards of accommodation, standardization of dimensions and fitments, control of costs, an overall general level of income group and degree of comfort, but there is no need to suffer from standardization of ideas. There is a brilliant variety in the various American schemes within the limits of the general programme—most noticeable perhaps in layout, but running right through the planning and construction of the dwellings, whether of novel or ordinary construction.

One particular point. American house-planning seems to have altogether accepted the living-room-as-a-passage arrangement. This is no new thing, being already well established in

* *Homes by the Million.* Hugh Casson. (Penguin Books, 2s. 0d.)

the CIAM work of the late 'twenties. Its adoption immediately frees the plan for agreeable spatial development even if on a restricted scale. The boredom and rigidity of our own house-planning may be largely due to an obstinate adherence to the wasteful and restrictive front corridor—absurdly mis-named hall.

CPRE CALL TO ARMS

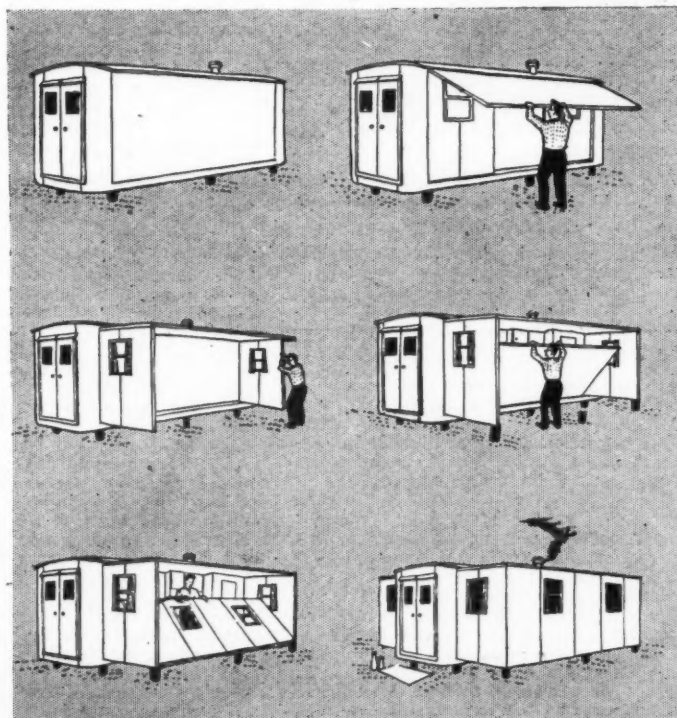
Every time one reads such reports as that for the current year of the Council for the Preservation of Rural England, one is struck afresh by the extraordinary volume of work done for the public generally by voluntary and disinterested societies. Britain seems to be covered by them as a modern building is threaded with a sprinkler fire-fighting device. Let the temperature at one point rise too high and a flood descends on the offender, sometimes—but not always, the CPRE regrets—one strong enough to sweep away both offender and his sin. We should be more grateful to them all than we are.

In the vast list of subjects in which the Council is interested, and on which it is prepared to go into battle at a moment's notice, one subject in par-

ticular stands out, possibly because it is one in which the Council can report small success and is therefore in need of greater public interest and support. It is the question of advertisement control. It is always irritating to be told that other countries do things better than we do, but a friend just back from a visit to Holland reports how very restful it is to drive along the roads there and to see nothing but genuine Dutch countryside. It is not that the Dutch are so uncommercially minded that they eschew advertisements altogether; it is just that they keep them in their proper place—towns.

The Council is not afraid to say that legislation is essential. Voluntary agreements with the trade will not work; there is always someone outside the agreement who will jump in and wreck a view with an advertisement for his hotel or garage or new swimming pool. On this issue, ASTRAGAL, however much he may hate control for its own sake, will march even with a squad of secret police if their task is the removal, once and for all, of those hoardings that disfigure every main road that we have.

ASTRAGAL



From the Penguin Homes by the Million reviewed by Astragal this week—a USA patent for the expanding trailer house.



LETTERS

M. G. Ionides, A.M.I.C.E.,
(Secretary, National Council of Building
Material Producers)

Housing Statistics

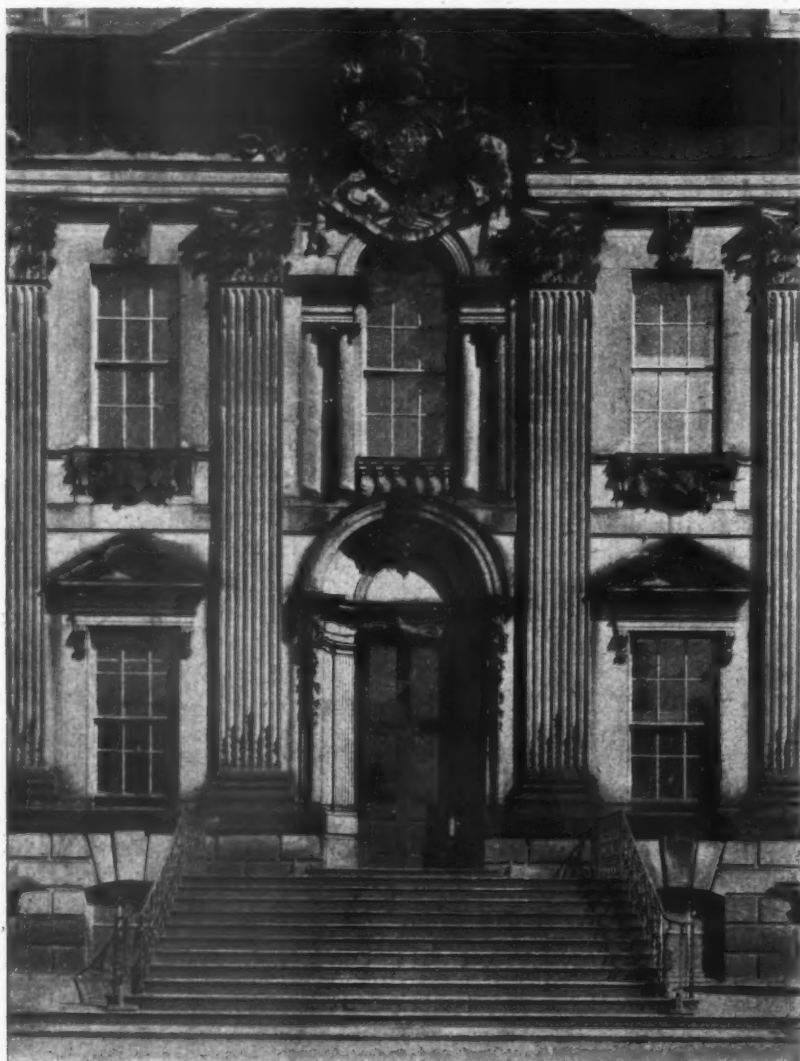
SIR,—In the second article on Mr. Bowen's Price Index for Building Materials in your issue of September 5, Mr Bowen sets out some statistics and interprets their significance. He passes on to certain corollaries, arrives at conclusions and finally offers suggestions as to possible courses of action. At first sight the form of his argument may seem correct, but he has in reality omitted one of the most vital links in the chain. He has not discussed the statistical significance of the data from which the whole sequence of his argument flows. As every statistician knows, a given set of data may be capable of more than one reasonable interpretation, and the choice between them may rest on a fine balance. Mr. Bowen has not considered any alternatives, though at least one is obvious.

The data essential to his argument reduce to the following:—

	BOT Index of Industrial Materials and manu- facture prices. (1930 = 100)	BOT Index of Building Material prices. (1930 = 100)	Bowen's Index of Building Material prices. (Aug. 1939 = 100)
July, 1945	175.8	158.6	3rd qtr. 1945 : 160.5
July, 1946	184.7	177.7	3rd qtr. 1946 : 175.8
	8.9	19.1	15.3

In direct contrast to Mr. Bowen it is quite possible to argue as follows: "It is true that the building materials index has risen out of proportion to that of industry at large. But many weighty sections of the industry were highly concentrated during the war and had unique difficulties to surmount which show a reflection in price movements during the year. Even so, however, the effect has been only to bring building materials more into line with industry at large since even at the end of the year the index was substantially below the general industrial average. Two conclusions may be drawn. First, that there is a reasonable expectation that the disproportionate rise will not continue. Second, that although rising prices in industry generally are clearly a cause for concern, building material prices in particular can be ascribed a low place as regards

AT THE GEORGIAN EXHIBITION



One of the photographs at the current exhibition, *Four Phases of Georgian Architecture*, at the Guildhall, London, presented by the Georgian Group. It is the centre of the west front of Wentworth Woodhouse, Yorks (c. 1726) by some unknown follower of Vanbrugh.

the necessity for specific action by Government."

I do not attempt to assess the weights which ought to be ascribed respectively to Mr. Bowen's interpretation and the directly opposite one given above. Mr. Bowen's conclusion may or may not be valid; my point is that the argument through which he reaches it is not valid.

In fact it is more than questionable whether a simple overall index is or can be a legitimate guide to this kind of conclusion at all. It may indeed have its uses to lend plausibility in the more political field. But what the industry and the public should be given by statisticians are facts together with rigid deductions pushed no further than is permitted by the facts themselves and the well-known limitations of valid statistical method.

M. G. IONIDES,
Secretary,

National Council of Building
Material Producers.
London

Mr. Ian Bowen replies: I entirely agree with Mr. Ionides that "a given set of data may be capable of more than one reasonable interpretation." Let us therefore examine the data, and consider with which hypothesis they are most consistent. For,

to elaborate Mr. Ionides' point, statistical data in an economic context, rarely suffice to "prove" anything; they are, at the most, consistent or otherwise with a given hypothesis, though they may provide incontrovertible evidence to refute unfounded arguments.

The fact is that the prices of building materials rose much more steeply from mid-1945 to mid-1946 than did the prices of industrial materials and manufactures generally; this is not in dispute. The rise was about 15 points, or twice as many points as the general rise in wholesale prices.

What conclusions of mine is Mr. Ionides disputing? He leaves this point completely vague, but puts forward two "conclusions" of his own. Let us first examine his conclusions and then re-capitulate my own, to see which is the more reasonable.

His first conclusion is that there is "a reasonable expectation that the disproportionate rise" in building materials prices will not continue. But this conclusion is hardly consistent with the fact that the rise in the index in the third quarter of 1946 was due to 20 materials out of 44; since the remaining 24 materials are known to be subject to very similar economic forces on both the demand and supply side, and there is, thus, no indication that the rising trend

in the index had worked itself out by August, 1946. If, however, Mr. Ionides, writing on behalf of the National Council of Building Material Producers, intends to assure us that there will be no further demands for a rise in prices from his members until August, 1947, the news is as welcome as it is unexpected.

His second "conclusion" is that "building material prices in particular can be ascribed a low place as regards the necessity for specific action by Government." But this conclusion, for which Mr. Ionides adduces no arguments or evidence, is hardly consistent with the acknowledged fact that the current building programme is going to absorb a large (some say too large) proportion of the total national resources, a fact which could easily be substantiated by statistics, but to quote them at length would be superfluous.

My own conclusions were as follow. First, that "the present rate of increase in the price of building materials generally will be continued, at least for another quarter, and possibly for six months." Since August, this remark has already been substantiated, since there have been rises in the prices of linseed oil, paint, cisterns, drain-pipes and other items. Secondly, I pointed out that, politically, a general deflation of prices was unlikely, so that a check to building materials' prices would have to be found by piecemeal action. Does Mr. Ionides want a general deflation? Thirdly, I suggested that the Government, to secure an improvement in prices, might have to provide "technical help, labour and plant as a priority measure to the favoured industries." Does Mr. Ionides believe that the members of his Council can flourish without help from the Government on labour or plant priorities? And, again, fourthly, I suggested that "the relatively low-cost and low-price (materials) industries" should receive "large and continuous orders" where possible. Does Mr. Ionides wish them to receive small and discontinuous orders?

Certainly there is room for dispute as to the different ways and means of obtaining the high output and low prices which all public-spirited producers of materials must be assumed to desire. There is no *a priori* reason for supposing that building materials producers are not as patriotic or progressive as other people, and that many of them are not as anxious as the rest of us to see lower costs and low prices established. But, what is the last paragraph of Mr. Ionides' letter supposed to mean? The public is not just "given facts" by statisticians; the public is "given facts" by the building materials producers themselves—hundreds and hundreds of facts—in the form of price quotations. The humble task of the statistician is to analyse these facts, and the purpose of a single index number or series of index numbers, is to average out these otherwise confusing details and to give the public a chance of seeing the wood as well as the trees. The purpose of an index number is to give some indication of the general drift of events. In this way, it is of practical value to the architect and to the builder.

Adam Smith remarked that price-fixing by merchants or manufacturers was usually a form of conspiracy against the public; nor are fixed prices necessarily much less monopolistic when endorsed or acquiesced in by a Government department. What is needed from the producers is much fuller information on their production, costs, prices and output per head, etc. In the long run, the producers themselves, especially the more efficient, would benefit from a franker disclosure of the facts of their respective industries. When, instead, a spokesman of theirs challenges the right of an economist to discuss possible means of arresting the rise in prices—a matter of considerable public concern—there is a danger that the (perhaps wrong) impression will be created that the producers want to cover their policies with a veil of the deepest obscurity.

PRICES

Rates of Wages rose on January 1, 1946, and are now as follows:—

LONDON DISTRICT

Within 12 miles radius
From 12-15 „ „

Craftsmen.

2s. 7½d.
2s. 7d.

Labourers.

2s. 1½d.
2s. 1d.

GRADE CLASSIFICATIONS

	A	A ¹	A ²	A ³	B	B ¹	B ²
Craftsmen..	2s. 6d.	2s. 5½d.	2s. 5d.	2s. 4½d.	2s. 4d.	2s. 3½d.	2s. 3d.
Labourers..	2s. 0d.	1s. 11½d.	1s. 11¼d.	1s. 11d.	1s. 10¾d.	1s. 10d.	1s. 9¾d.

T. 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 or non-returnable jute sacks charged at 7/- extra per ton.

	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" Quick setting extra rapid hardening	per ton 78/6	—
*Rapid hardening	per ton 63/-	60/6
*Water repellent	per ton 88/6	—
Atlas White (1 barrel 376 lb.)	per barrel —	6 ton upwards 98/6
*Colorcrete rapid hardening, buff and red	per ton 98/6	98/6
*Colorcrete rapid hardening khaki	per ton 176/- to 400/6	226/6
†Colorcrete	per ton 1-9	10-19 1 ton and upwards
†Snowcrete	per ton 16/8	16/2 per ton 254/-
*Ciment Fondu, delivered Central London area	per cwt. 16/8	16/2 per ton 254/-

Aggregate and Sands (Full Loads)

2" Unscreened ballast	per yard cube 12/8
1" (Down) Washed, crushed and graded shingle	per yard cube 13/7
1" (Down) Ditto	per yard cube 14/8
2" Broken brick	per yard cube 14/6
1" Ditto	per yard cube 16/-
Washed pan breeze	per yard cube 9/6
Coke breeze 1" to dust	per yard cube —
1" 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 hardore	per yard cube 6/6
Concrete ditto	per yard cube —
Clean furnace clinker and boiler ashes	per yard cube 3/-
Coarse gravel for paths	per yard cube —
Fine ditto	per yard cube —
Clean granite chippings (in 5 ton loads)	per ton 37/7
Ditto (in 5 ton loads) (Immediate delivery)	per ton 38/7

CONCRETOR—(continued)

Pavings—continued

Red quarry tiles, 6" x 6" x 1½"	per yard super 9/9
Ditto 6" x 6" x 1½"	per yard super 8/8
Buff ditto 6" x 6" x 1½"	per yard super 10/11
Ditto 6" x 6" x 1½"	per yard super 9/9
Hard red paving bricks, 2"	per 1,000 260/9
Ditto 1½"	per 1,000 246/6

Reinforcement

Home trade maximum basis price for mild steel rods, ½" diameter and upwards, ex mills delivered to station or siding		per ton £16 19 6
Extras for:—		
Under ½" to ¾" diameter	per ton 10/-	
Ditto ¾" and over ¾" diameter	per ton 15/-	
1" and over 1" diameter	per ton 20/-	
1½" and over 1½" diameter	per ton 25/-	
2" and over 2" diameter	per ton 30/-	
2½" and over 2½" diameter	per ton 35/-	
3" diameter	per ton 40/-	
Under 1" to 1½"	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 1/8	

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 70/-
† Phorpres keyed Flettons	per 1,000 72/-
Blue Staffordshire wirecuts	per 1,000 —
† Lingfield engineering wirecuts (ex works)	per 1,000 108/-
Firebricks, best Stourbridge 2½"	per 1,000 445/-
Firebricks, best Stourbridge 3"	per 1,000 532/6

Facing and Engineering Bricks

Sand Limes, No. 1	per 1,000 —
Sand Limes, No. 2	per 1,000 —
† Phorpres rustic Flettons	per 1,000 90/-
† 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.

2½" engineering bricks	per 1,000	120/-
†Hard stocks, firsts	per 1,000	—
†Hard stocks, seconds	per 1,000	—
Sand-faced, hand-made reds	per 1,000 from	245/6
Sand-faced, machine-made reds	per 1,000 from	100/-
Red rubbers (9½-in.)	per 1,000	—
White facings	per 1,000 from	100/-
Coloured facings (creams, buffa, browns & terra cotta)	per 1,000 from	117/6
†Dunbriks (concrete), greys or Commons	per 1,000	125/-
†Dunbriks (concrete), various colours	per 1,000	145/-
†Southwater engineering No. 1 (first quality red pressed)	per 1,000	181/-
†Southwater engineering No. 2 (second quality red pressed)	per 1,000	156/-
Blue pressed	per 1,000	—
†Southwater pressed sandfaced reds	per 1,000	161/-
†Dorking pressed sandfaced multi-coloured facings	per 1,000	140/9

† Plus 1/6 per 1,000 levy—Prices ex works—Haulage extra.

Limes and Sand

	1-ton lots	6-ton lots
Lime, greystone	per ton	74/9
Lime, chalk	per ton	74/9
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 14" x 9"	per 100	45/9
D.P.C. slates, size 14" x 4½"	per 100	14/-
†Ledkore D.P.C. Grade A	per foot super	10d.
†Ledkore D.P.C. Grade B	per foot super	1/1½d.
†Ledkore D.P.C. Grade C	per foot super	1/4

† Trade discount 7½ per cent. and cash discount 7½ per cent. Prices include delivery on minimum of £5 orders.

Airbricks:	9" x 3"	9" x 6"	9" x 9"	12" x 9"	14" x 9"
Red and buff terra cotta	each 1/-	1/10	4/10	—	12/11

Black cast iron, School	9" x 3"	9" x 6"	9" x 9"	12" x 6"	12" x 9"
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Board pattern airbricks

Galvanized ditto per doz.

Black hit and miss cast iron ventilators

per doz.

Galvanized ditto per doz.

Buff terra cotta chimney 1' 0"

pots

Fireclay

Wall reinforcement supplied in standard rolls containing 25 yards lin.

*2" wide black japanned .. per roll 2/9

*2" wide galvanized .. per roll —

*2½" wide black japanned .. per roll 3/5

*2½" wide galvanized .. per roll —

Partitions, etc.

	2"	2½"	3"	4"
Clinker	per yard super	3/2	3/8	4/2
Pumice	per yard super	7/-	—	—
Hollow Block	per yard super	3/1	3/4	4/-
Plaster	per yard super	5/-	—	8/9
†1" Wood-wool Slabs	per yard super from	4/2	to 4/10	—
†2" Wood-wool Slabs	per yard super from	6/7	to 7/8½	—
†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 1/8	2/9
Backing block	per set of 3	4/-
Cover blocks	each 2/5	4/7
Raking blocks 45°	each 3/9	6/-
Raking blocks 60°	each 2/8	4/-
Offset blocks	each 4/6	6/4
Closer blocks	each 1/8	2/9
Closer flashing blocks	each 1/3	2/2
Straight flashing blocks	each 1/3	2/2
Terminal and cap	per set 8/7	14/4
Middle terminal and cap	per set 8/4	13/8
End terminal and cap	per set 8/7	14/3
Corbel block	each 6/3	13/-
Gathering block	each —	6/9

DRAINLAYER

Land Drain Pipes

	2"	3"	4"	6"
Pipes in 12" lengths	per 1,000	99/6	138/6	179/-

(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 Gully, without grating	each 6/3	6/10½	11/3
Ordinary round or square Grating, painted	each —/7½	1/3	2/8
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 37½%	Plus 62½%
Orders under 2 tons, 100 pieces upwards	Plus 55%	Plus 80%
Orders under 2 tons, less than 100 pieces	Plus 65%	Plus 90%

	Best	Seconds
Orders for 2 tons and over	Plus 30%	Subject to 15% off the price of best quality for all sizes.
Orders under 2 tons, 100 pieces upwards	Plus 47½%	—
Orders under 2 tons, less than 100 pieces	Plus 57½%	—

Cast Iron Drain Pipes and Fittings

Socket and Spigot Pipes:—	Weight (per 9 ft.)	Size	9 ft.	6 ft.	4 ft.	3 ft.
1. 1. 8	4"	per yard ..	9/9	10/10	17/5	13/2
1. 1. 17	4"	per yard ..	10/2	11/2	17/10	13/8
2. 0. 1	6"	per yard ..	15/-	17/11	28/10	23/-
3. 3. 21	9"	per yard ..	27/3	35/9	62/-	47/4
			2 ft.	18 ins.	12 ins.	9 ins.
1. 1. 8	4"	each ..	10/10	—	—	—
1. 1. 17	4"	each ..	11/1	—	—	—
2. 0. 1	6"	each ..	17/4	—	—	—
3. 3. 21	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 9/8	20/-	61/7
Single junctions	Fig. No. 18 each	16/11	33/8
Intercepting traps	each 46/3	77/-	180/5
Gulleys ordinary trapped "P"	each 22/4	—	—
Extra for inlet 4"	each 11/7	—	—
Grease Gully trap	each 177/11	—	—
H.M.O.W. large socket gully trap with 9" gully top and heavy grating and one back inlet	each 40/5	72/-	—

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 —	—	4/2½
Ditto, short lengths	each 1/3	1/10½	—
Half round ordinary channel bends	each 1/10½	2/9½	5/0½
Ditto, short	each 1/10½	2/9½	—
Ditto, long	each 3/9	5/7½	10/1½
Three-quarter round branch bends	each 5/-	7/6	—
	6" x 4"	9" x 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" x 18" single seal for foot traffic. (Weight 3 cwt. in lots of 24)	each 19/3
†24" x 18" single seal for light car traffic. (Weight 2 cwt. in lots of 24)	each 49/7
†24" x 18" Wood Block pattern. For road traffic. (Weight 3 cwt.)	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	7/7	31/-

These prices are subject to 7½% advance.

MASON*Yorkstone*

Building quality Robin Hood and Woodkirk Blue Stone.

Blocks scrapped, random sizes .. per foot cube	7/5
Add for blocks to dimension sizes .. per foot cube	10d. (each dimension)
Templates with sawn beds, edges rough (up to 4 ft. super and not over 2' 6" long) .. per foot cube	8/3
Templates with sawn beds, sawn one edge, per foot cube	9/10½
Templates with sawn beds, sawn two edges, per foot cube	11/6½
Price f.o.r. Yorkshire, railway rate to London Station per ton. (Minimum 4-ton loads.)	37/7

Artificial Stone

6" x 3" Copings and sills .. per foot run	2/6
6" x 6" Copings and sills .. per foot run	3/10
9" x 3" Copings and sills .. per foot run	3/-
9" x 6" Copings and sills .. per foot run	5/6
12" x 3" Copings and sills .. per foot run	3/10
12" x 6" Copings and sills .. per foot run	6/7
Cornices according to detail, per foot cube (from)	11/10

SLATER, TILER AND ROOFER*Best Bangor Slates*

24" x 12" .. per 1,000 actual	£ s. d.
20" x 10" .. per 1,000 actual	—

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

Tiles

Basic for Hand-made sandfaced 10½" x 6½" red roofing tiles .. per 1,000	171/-
Machine-made sandfaced 10½" x 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):—	
* 15½" x 7½" grey .. per 1,000	£7 6 0
* 15½" x 15½" diagonal, grey .. per 1,000	£14 12 0
* 15½" x 15½" 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.

1" Insulation Board .. Up to 5,000 sq. ft. 5,000 to 20,000 sq. ft.	per yard super 2/3½	per yard super 2/1½
1" Ditto .. Up to 5,000 sq. ft. 5,000 to 15,000 sq. ft.	per yard super 2/9½	per yard super 2/7½
1" Hardboard .. per foot super 4½d.	per foot super 4½d.	per foot super 4½d.
1" Ditto .. per foot super 6½d.	per foot super 6½d.	per foot super 6½d.
1" Ditto (medium or semi-hard) .. per foot super 5½d.	per foot super 5d.	

Laminated Wallboard

1" Thickness (standard):	
1 bundle up to 2,500 sq. ft. .. per foot super	-2½d.
2,500 sq. ft. to 5,000 sq. ft. .. per foot super	-2½d.
5,000 sq. ft. and over .. per foot super	-2d.

Asbestos-cement and Asbestos Products

1½ Semi-compressed flat building sheets, grey .. per yard super	1/7
1½ Ditto .. per yard super	2/3½
1½ Ditto .. per yard super	2/3½
1½ Asbestos wallboard (in sheets 8' 0" x 4' 0"), per foot super	1/5
1½ Ditto .. per foot super	-4
1½ Asbestos wood (in sheets 8' 0" x 4' 0"), per yard super	2/6½

Prices are for orders of 2 tons and over

WALLBOARDS, Etc.—(continued)*Asbestos-Cement and Asbestos Products—(continued)*

1" Asbestos Insulating Board .. per foot super	—
25-75 150-300 Over	600
1" Fireproof plaster board .. per yard super	2/7
1" Ditto .. per yard super	2/5
2" Paper Faced Linen Tape .. per 100 yard roll	—
Joint filler .. per lb.	—

Sundries

Slates or sarking felt .. per yard run	-10
Roofing felt (1-ply bitumen) .. per yard sup.	1/1½
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) (Supplies limited) .. per yard run	-5½
"Cabots" Quilts:—(Ex Works) Twenty roll lots delivered carr. free	
Double ply .. per roll	—
All rolls 28 yards long by 36" wide. Special terms for quantities.	
"Fibreglass" sound deadening quilt .. per yard super	—
Up to 500 yds. Over 500 yds.	
Light grade .. 1/11	1/10½
Medium grade .. 2/4½	2/3½
In rolls 27 yards long by 36" wide.	
"Fibreglass" bitumen bonded mats .. per yard super	1/4
In rolls 10, 12½, 15 yards long by 33", 36", 42", 45" 48" wide.	
Cut steel clasp nails .. 1" per cwt.	41/9
" floor brads .. 2" "	34/6
Bright oval wire nails .. 1" "	47/9
Galvanized wire staples with alicut points .. 1" x 12 gauge per cwt.	56/-
Scotch glue .. per cwt.	—

STEEL AND IRONWORKER*Steelwork*

Basis price for rolled steel joists sections	£ s. d.
5" x 3" to 16" x 6", in 10 ft. to 50 ft. lengths	ex mills 18 15 0
	per ton

PLASTERER*Plaster and Cement*

Sirapite (coarse) .. per ton	1-ton loads 91/6
" (fine) .. per ton	99/6
Victorite No. 1 (White) .. per ton	—
" No. 2 (Buff) .. per ton	—
Thistle (browning) .. per ton	91/6
Pink plaster .. per ton	85/6
White plaster .. per ton	94/6
Keene's pink .. per ton	142/6
Keene's white .. per ton	148/6
Gypstone .. per ton	70/6
Glastone .. per ton	73/-
Paristone (haired) .. per ton	73/-
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.	84/6
Goat's hair .. per cwt.	102/6
Expanded metal lathing, 9' 0" x 2' 0" ½ mesh	
x 26 gauge .. per sheet	4/-
Wire Slate nails (galvanized) 1½" x 15 gauge .. per cwt.	68/11
" " (bright wire) .. per cwt.	—
1½ Plaster board (plaster base) 3 yards	150-300 Over
per yard super	2/2
1½ Galvanized nails .. per cwt.	63/4
Hessian Scrim cloth in 100-yard rolls	
3½" wide .. per roll	7/6

Wall Tiles

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

Commercial quality.	
Ivory, white, etc., glazed 6" x 6" x ½" .. per yard super	10/1
Angle beads (1½" wide) .. per yard run	1/2½
" " (1") .. per yard run	-10
Rounded edge tiles .. per yard run	2/6½
Coloured enamelled bright glazed,	
6" x 6" x ½" .. per yard super	14/3
Angle beads (1½" wide) .. per yard run	1/4½
" " (1") .. per yard run	-11½
Rounded edge tiles .. per yard run	2/7
Eggshell gloss enamelled, 6" x 6" x ½" .. per yard super	15/-
Angle beads (1½" wide) .. per yard run	1/7½
" " (1") .. per yard run	1/0½
Rounded edge tiles .. per yard run	2/8½
Special rates for quantities	

PLUMBER*Lead*

3½ lb. and upwards milled sheet lead in quantities of 5 cwt. to 1 ton in sheets	per cwt.	68/6
Lead ternary alloy, No. 2 quality extra over sheet lead or lead pipe	per cwt.	11/-
Allowance for old lead delivered to merchant or manufacturer	per cwt.	49/3

Cast Iron Goods

Percentage Adjustment.
on List No. 3100 A.B.
1/2/40

Rainwater Goods (painted or unpainted) ..	Plus 45%
Soil goods (coated or uncoated)	Plus 45%

Mild Steel Rainwater Goods

The following prices for Pipes and Fittings are subject to 42½ per cent. addition, and Gutters are subject to 35 per cent. addition.

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
16 Gauge gutters. 3"	3½"	4"	4½"	5"	6"
Galvanized half round gutters .. per 6' 0"	2/-	2/3	2/4½	2/9	3/-
Painted half round gutters .. per 6' 0"	1/6	1/9	2/-	2/3	2/6
Painted or galvanized short lengths extra .. each	-/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, but 10' 0" lengths are available in 2", 2½", 3" and 4" diameters at same prices. 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	2/6½
3"	per yard run	3/1
4"	per yard run	4/2½
5"	per yard run	7/1½
6"	per yard run	8/10½

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	1/11½	2/-	2/4½	3/3½
Ogee gutters per yard run	—	2/4½	2/6½	3/1	3/9

INTERNAL PLUMBER

Lead pipe in coils, 5 cwt. and upwards ..	per cwt.	69/6
Lead soil pipe	per cwt.	72/6
Add if ribbon marked	per cwt.	-/3
Lead ternary alloy, No. 2 quality extra over lead pipe	per cwt.	11/-

Plumber's solder	per cwt.	155/-
Tinman's solder	per cwt.	187/6

Drawn lead traps with brass screw eye, 6 lb. 1"	1½"	1½"	2"
S. trap	each	3/-	3/5
P. trap	each	2/7	2/10
Extra for 3" deep seal "S" trap each	-/6	-/7	-/8
Extra for 3" deep seal "P" trap each	-/4	-/5	-/5

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

Tubes.					
Tubes 2 ft. long and over .. per ft.	½"	¾"	1"	1½"	2"
Pieces 12" to 23½" long .. each	1/1	1/5	1/11	2/8	3/4
Bonds	each	-/11	1/3	1/7½	2/7½
Fittings.					
Elbows, square	each	1/1	1/3	1/6	2/2
Elbows, round	each	1/2	1/5	1/8	2/4
Tees	each	1/3	1/7	1/10	2/6
Crosses	each	2/9	3/3	4/1	5/6
Socket, plain	each	-/4	-/5	-/6	-/8
Socket, diminished	each	-/6	-/7	-/9	1/-

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"	46½%	31%	19½%
"Heavy Weight"	39%	23½%	31%

COPPERSMITH AND ZINC WORKER*Copper*

Hot rolled copper sheeting in 5-cwt. lots	16 wire gauge	per lb.	1/2½
Ditto	24 wire gauge	per lb.	1/4½
Copper wire, 10, 12 and 14 gauge		per lb.	1/2½
Copper nails		per lb.	1/3

GLAZIER*Sheet Glass, cut to size (ordinary glazing quality)*

For quantities exceeding 500 ft. super.

18 oz.	per foot super	3½d.
24 oz.	per foot super	5½d.
26 oz.	per foot super	6½d.
32 oz.	per foot super	8½d.

Polished Plate glass, ordinary substance, approximately ¼" —

In plates not exceeding:	Glazing quality	Selected glazing	Silvering quality
2 ft. super	per foot super	2/5	3/1
3 ft. super	per foot super	2/9	3/10
5 ft. super	per foot super	3/-	4/5
*45 ft. super	per foot super	3/8	5/6
*100 ft. super	per foot super	4/5	7/2

* Extra sizes, i.e., plates exceeding 100 ft. super or 160 inches long, or 100 inches wide, at higher prices.

½" figured rolled and cathedral—untinted 7½d.

½" rolled plate	10½d.	per foot super
¾" or 1" rolled plate	6½d.	per foot super
¾" or 1" rough cast	7½d.	per foot super
Prismatic	1/2½d.	per foot super
1" wired cast	9½d.	per foot super
¾" Georgian wired cast	10½d.	per foot super
¾" polished wired	3/6d.	per foot super
1" wired arctic	1/8d.	per foot super

Hollow glass blocks:—

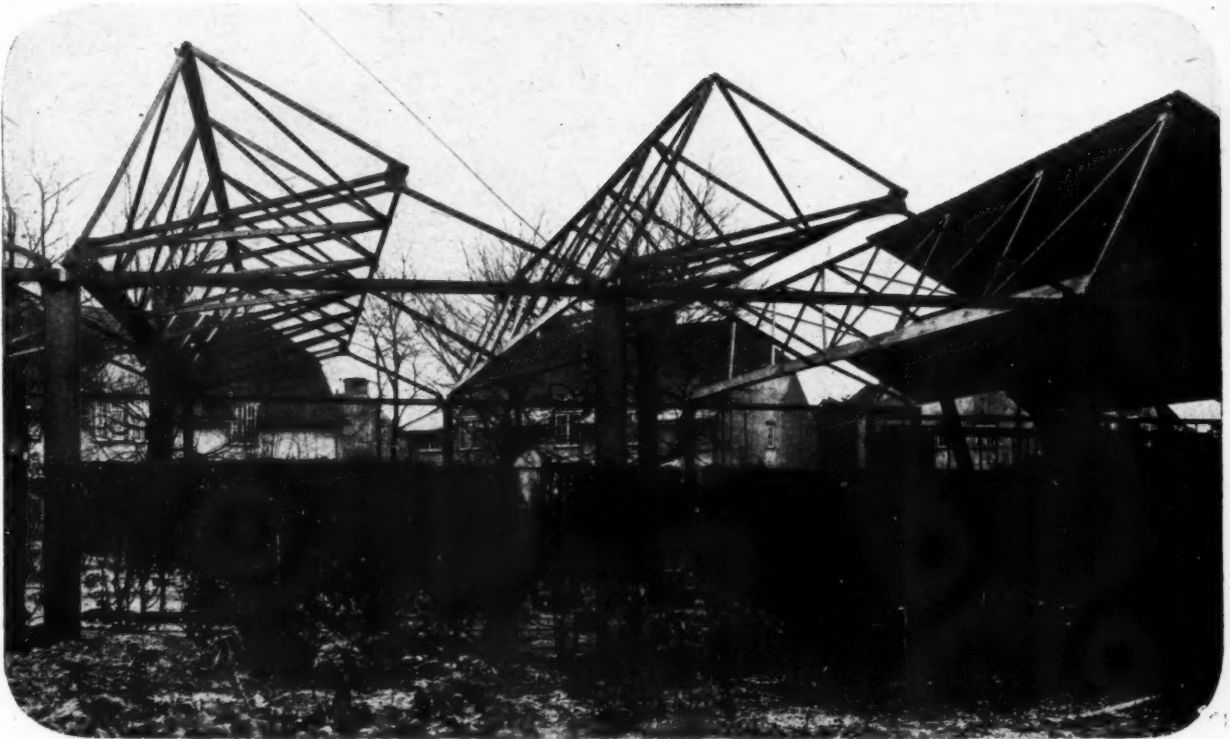
P.B.2. 5½" × 5½" × 3½"	2/6 each
P.B.3. 7½" × 7½" × 3½"	3/6 each
P.B.32. 7½" × 7½" × 3½"	3/6 each

Radiussed corner bricks to match up with:—

P.B.2	4/6 each
P.B.3 or 32	6/- each

PAINTER

Snowcem paint (in free air-tight metal containers)	per cwt.	56/-
White ceiling distemper	per cwt.	—
Washable distemper	per cwt.	66/- to 80/-
Ready mixed white lead paint (best), semi-gloss, per 28 lb.		33/9
Aluminium paint (best quality)	per gallon	6/-
White enamel	per gallon	50/6
White enamel paint	per gallon	38/-
Stiff white lead (genuine English stack process, 1 ton lots, 1 cwt. kegs)	per cwt.	107/9
Liquid driers	per gallon	26/6
Linseed oil raw (5-gallon drums)	per gallon	16/3
" " boiled (5-gallon drums)	per gallon	16/5
French polish	per gallon	21/-
Knottling	per gallon	24/-
Oil stain (scumble)	per lb.	3/3
" " red oxide	per cwt.	80/-
" " middle Brunswick green	per cwt.	120/-
" " dark umber	per cwt.	130/-
" " golden ochre	per cwt.	112/-
Varnish (outside quality) oak	per gallon	38/-
" " copal	per gallon	38/-
" " flattening	per gallon	0/-
Turpentine, genuine American 5-gallon lots	per gallon	4/2½
" substitute	per gallon	2/-
Croosote, 1-gallon lots	per cwt.	37/6
Linseed Oil Putty	per cwt.	37/6
Utility Glazing Putty	per lb.	1/9
Size in ½ S	per lb.	1/7
Best quality English gold leaf, 23 carat	per book	3/8
Extra thick, ditto	per book	4/8



View during construction of the Byfleet factory.

SPACE FRAME

SYSTEM OF NORTH LIGHT ROOF CONSTRUCTION

DESIGNED BY O. S. A. F. I. R.

This form of construction for long span north light roofs has been developed to save cost and to make erection of the steelwork on the site quick and easy. An example by its designer of a factory for the Tudor Engineering Company at Byfleet, Surrey, is illustrated here. Steelwork was supplied and erected by Dorman, Long & Co., and the architectural layout was by H. J. Spiwak. The usual structures for long span north light roofs consist of a main lattice girder in each roof bay—either vertical under the apex of the roof or inclined behind the glazing—supporting secondary trusses spaced 12 ft. to 15 ft. apart and purlins and bracings, requiring a great number of connections which have to be bolted up during erection at high level. Furthermore, as the structure as a whole is stable only when all members are fixed, temporary bracings or guy ropes are required during erection.

These disadvantages can be avoided by reducing the number of purlins to a minimum and by bracing them together in such a way as to form a lattice framework, which is rigid in space against forces in any direction, called a Space Frame.

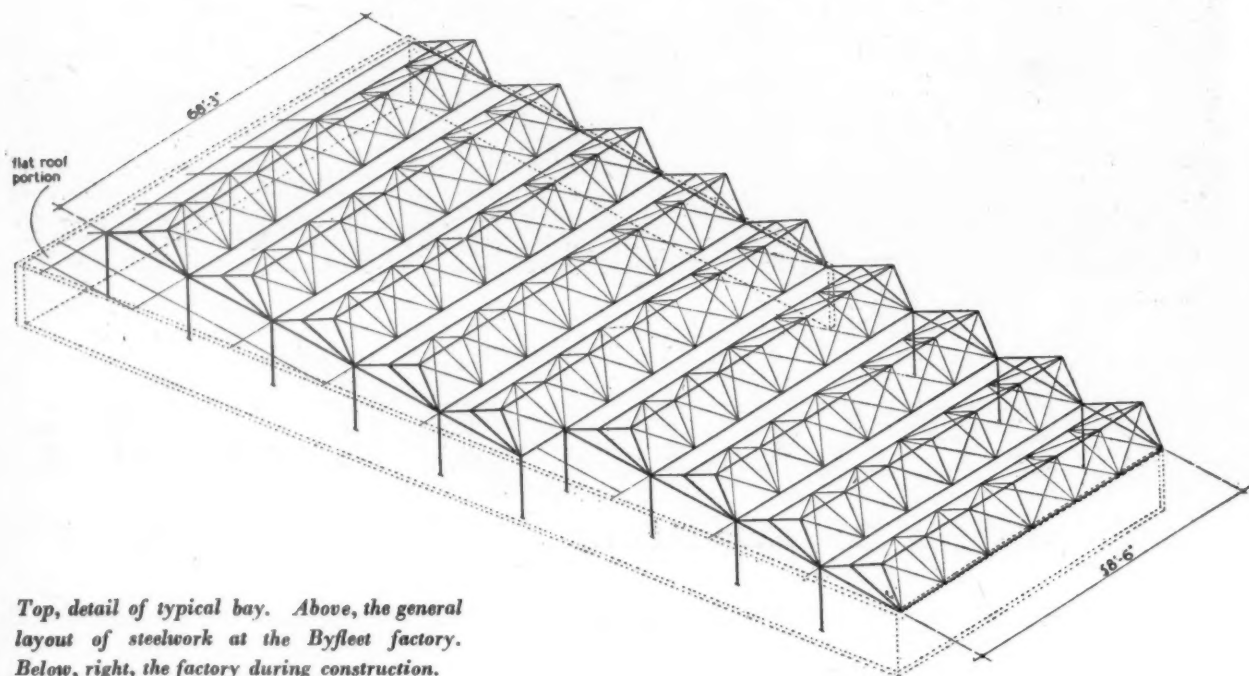
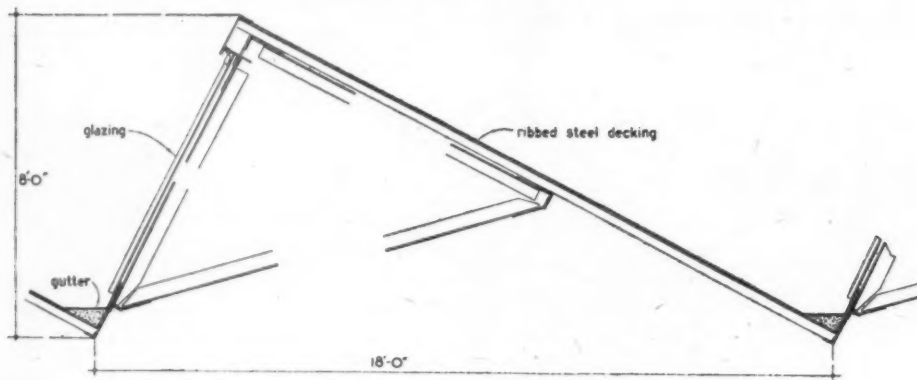
Ruberoïd steel roofing is used for covering the south slopes of the roof, spanning 8 ft. between the purlins (the maximum span of this material is 9 ft.). The bays are arranged in such a way that, besides the valley and ridge purlins, only one intermediate purlin is required in the south slope. This gives a bay width of 18 ft.

The three purlins of one bay—the ridge, the valley and the intermediate roof purlin—are framed and braced together to form a Space Frame girder of triangular cross-section which, because of its great depth and rigidity against forces in any direction, can span a great length from gable to gable.

The triangle is the simplest rigid shape and girders of triangular cross section require therefore no inside bracing. The three sides enclosing the Space Frame are braced like plane lattice girders; supports are required only at the gables spaced apart a distance corresponding to the bay width, i.e., 18 ft. To hold the space frame in position, a light spandrel truss provides the support for the end of the intermediate purlin.

The valley purlin serves as support for the lower end of the roof sheeting of the adjacent bay; the glazing bars are fixed on to this purlin direct and it is constructed in such a way that no further roof sheeting is required below the foot of the north light. At the ridge, the glazing bars are fixed to the purlin which also supports the roof sheeting.

As can be seen from the isometric, it was necessary to use frames of two different spans, 68 ft. 3 in. and



Top, detail of typical bay. Above, the general layout of steelwork at the Byfleet factory. Below, right, the factory during construction.

58 ft. 6 in., in order to take up the irregularities of the site. The lengths differ by one bay of 9 ft. 9 in., otherwise the two kinds of frames are identical. To make full use of the available site, the triangular strips between the boundary and the gables of the space frames were covered with a flat roof.

The photographs show the steelwork during erection partly covered with steel decking. They show the steel stanchions between the space frames and the flat roof on the east side. On the west the roof is supported on the brick wall and piers with the exception of the last four bays where steel stanchions are provided to cater for a future extension. A strut was provided in the centre of the span



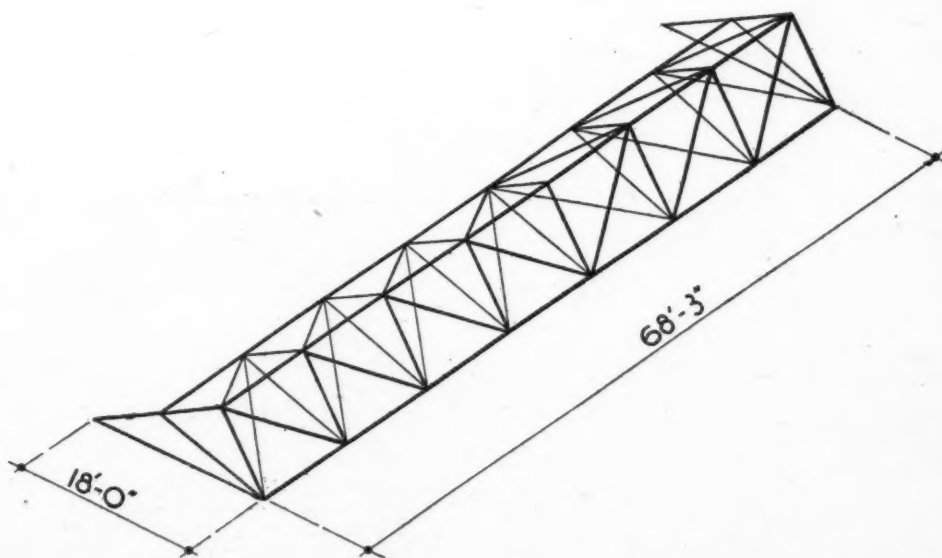


Above, another view of the factory during construction, showing close-up of the end of a bay. Below, diagram of a space frame unit as hoisted.

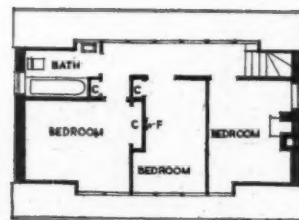
connecting adjacent space frames in order to secure their exact distance, but the side rigidity proved so great that these struts could have been omitted.

Each space frame was supplied to the site in sections to suit transport, the girder behind the north light and the girder along the roof slope being in two halves and the bracings to the girder at the underside being separate members. The whole space frame was assembled on the ground together with the spandrel trusses at the ends in the most convenient position and hoisted as one complete unit and fixed on the stanchions. Light lifting tackle could be used as the weight of one bay is small, approximately 2 tons. This method of erection avoids all assembling of members and bolting together at high level above the ground and also makes unnecessary the use of temporary guy ropes for holding in position partly erected sections. The hoisting of one space frame completes the structure of one bay. The total weight of the steelwork in the Byfleet job is approximately 25 tons, giving on a total area covered of 12,000 ft. sup. an average weight of steelwork of only 4.7 lb./ft. sup.

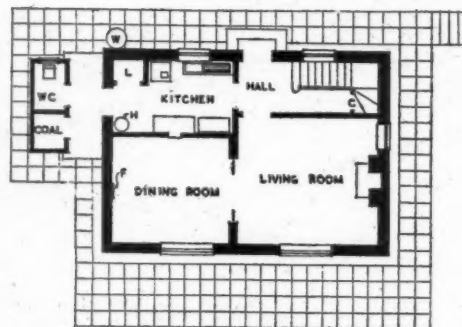
On the same system, the designer has prepared schemes for roofs of a free span of up to 120 ft. with a bay width of 21 ft. The system can be adapted to the construction of east-west aspect roofs, where the space frame is accommodated within the skylight running in the direction of the span of the roof.



SPACE FRAME SYSTEM OF ROOF CONSTRUCTION



FIRST FLOOR



GROUND FLOOR

COTTAGE

AT EAST GRINSTEAD

BY A. R. CASTIGLIONE

GENERAL.—The cottage is set back 200 ft. from the roadway and all the rooms with the exception of the bathroom and kitchen face south. Coal fires are fitted in the living room and one bedroom and other rooms have electric fires. Electricity is also used for cooking and heating water for kitchen and bath.

CONSTRUCTION.—Outside walls brick, built with an 11-in. cavity, in Midhurst whites and white-washed, two courses of slates forming the D.P.C. Roof and

outside sills hand made sandfaced Swallow tiles. Coal shed and W.C. timber and weatherboarding, roofed with felt and tarred.

INTERNAL FINISH.—Main partition walls are brick, elsewhere lath and plaster. Wood floors laid throughout. The living room and dining room, which are planned together, are separated by double curtains. Fireplace in living room 2-in. brickwork. Mantelpiece and hearth, and inside sills Heather quarry tiles. The bedrooms open off a passageway which is really a

long dormer window entirely glazed along one side. They have casement windows and built in cupboards. The bathroom floor is covered with black linoleum carried up the side of the bath. A small linen cupboard has been included.

FITTINGS.—To reduce the cost standard mouldings were used for the windows, architraves, skirtings, etc. These were all made locally. Doors are standard four panel. The whole house is liberally supplied with electric lighting and heating points. Concealed lighting is fitted above the windows in the living room and in one bedroom. Elsewhere lamps are ceiling fitted.

COST.—The pre-war cost of the cottage was £675. This price included the septic tank and all electrical fittings except the water heater and stove which are hired.

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.

PHYSICAL PLANNING

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CPRE Report

QUARTERLY REPORT, JUNE, 1946, INCORPORATING REPORTS, DECEMBER, 1945, AND MARCH, 1946. Council for the Preservation of Rural England. (CPRE, Quarterly Report, June, 1946, Vol. XIV, No. 6.) Admirably clear and informative survey of recent events in planning covering Bills, Acts, statutory orders, parliamentary debates, committees, official and unofficial publications.

The Quarterly Report provides concise digests and summaries. The following is an indication of the various aspects covered.

Proceedings in Parliament. Local Government Boundary Commission Act, 1945. Statutory Orders (Special Procedure) Act. Hill Farming Bill.

Planning and Housing Legislation. Requisitioned Land and War Works Act, 1945. Supplies and Services (Transitional Powers) Act, 1945. Emergency Powers (Transitional Provisions) Act, 1946. Acquisition of Land (Authorisation Procedure) Act, 1946. Housing (Financial and Miscellaneous Provisions) Act, 1946. Building Restrictions (War-time Contraventions) Act, 1946. Building Materials and Housing Act, 1945. New Towns Bill.

Planning: General. New Towns Committee. CPRE Memorandum to the New Towns Committee. Second Interim Report, New Towns Committee. Greater London Advisory Planning Committee. New Forest Report issued by the New Forest Regional Planning Committee. Villages: statement by the Minister of Town and Country Planning. TCPA conference on Planning Problems of Holiday Areas. Minister of Town and Country Planning: various orders and circulars.

Planning and Industry. Distribution of Industry: Government policy. Surface mineral working.

Planning and the Service Departments. Service Departments and the use of land. Government policy. Future use of land held by the Service Departments.

Housing. Government policy. CPRE and rural housing. Interim Report, 1946, of the Rural Housing Sub-Committee of the Central Housing Advisory Committee. Building materials in stone districts. Housing associations: statement by Minister of Health. House construction costs: statement by Minister of Works. Ministry of Health Housing Progress Reports. Ministry of Health: various housing circulars.

Planning and Housing: Cases of Interest to CPRE. This section deals with a number of recent cases of violation of amenities.

Preservation of Buildings. Preservation of historic buildings: appointment of Committee of Advisers. Future of Georgian houses at Bath. Demolition of houses of historic or architectural interest: Parliamentary debate.

National Parks. Government policy. CPRE and National Parks Committee. Administration of National Parks. Coastal preservation. Provision of holiday camps.

Open-Cast Coal Mining. Workings at Wentworth Woodhouse.

Roads and Bridges. Government policy. Trunk Roads Act, 1946.

Electricity Distribution and Works. Durham: proposed generating plant. Northmet Power Bill. Kingston-on-Thames new power station. Hydro-Electric (Scotland) Act: Tummel Garry Scheme.

Afforestation. Government policy and reports. Planting grants. Timber felling. New Forest: Forestry Commission Committee. Tree planting in streets.

Water Policy and Undertakings. Manyfold Valley scheme. Ennerdale Water, Lake District. River Boards: proposed legislation. Rural water supplies and sewerage. Sewerage schemes, incl. Goring-on-Thames and Frensham Pond.

Advertisement Control. Government policy.

2779

Tree Planting

TREE PLANTING IN ROADS AND STREETS IN URBAN AND SUBURBAN AREAS.

Ministry of Town and Country Planning Circular No. 24: 14th May, 1946.

(HMSO, 1946, 1d.) Suggestions to local planning authorities and joint town and country planning committees (England and Wales) on improvement of urban areas by incorporating trees in design and layout of roads. Two appendices.

It is felt that the question of planting trees in urban areas should be given fresh attention at the present time, when numerous and extensive reconstruction schemes are being put in hand. Technical experts should be consulted from the outset. The following points should be borne in mind:

(a) Trees should be well clear of the carriageway so as to avoid contact with passing vehicles, and should be of such types and so placed that when they attain maturity they will not obstruct the vision of drivers or pedestrians.

(b) Care should be taken that the trees neither cause damage to public utility mains, sewers, etc., nor are themselves damaged or stunted through contact with them.

(c) As the tree grows, its roots are liable to cause dangerous irregularities in the paving slabs around, and it is desirable that where possible trees should be planted in either grass or possibly tarmac verges.

(d) Tree planting results in a considerable restriction of the effective width of the footway and it is desirable that on classified roads carrying a fairly large volume of traffic and in towns where the footways are normally crowded, no planting should take place on footways of a width of less than 10 feet.

(e) Free advice is available to highway authorities on this matter from the Roads Beautifying Association.

Other aspects discussed include the selection of trees for comparatively restricted space; the need for regular attention by a skilled staff; choosing trees for planting in areas with impure atmospheres; planting on footways and verges of roads and streets; coastal planting, and grants towards the cost of tree planting.

Appendix A contains a select list of trees suitable for planting on the open verges, pavements, etc., of streets and roads of urban and suburban areas in England and Wales, with notes on soils and climate.

Appendix B gives an approximate estimate of tree planting costs which owing to recent variations in prices should serve as a rough guide only.

STRUCTURE

2780

Atom Bomb Report

THE EFFECTS OF THE ATOMIC BOMBS AT HIROSHIMA AND NAGASAKI. Report of the British Mission to Japan. (HMSO, 1946, 1s. 0d.) The two cities before and after the attack. The action of the atomic bomb. Blast, heat, radioactive effects. Casualties. Conclusions. 24 photos.

The report describes what was observed and what could be learned three months after the bombing of Hiroshima and Nagasaki. (See Nos. 2197:22.11.45, 2475: 4.4.46). Its intention is to form general conclusions on the effects to be expected from similar bombs.

Both in Hiroshima and Nagasaki, the scale of disaster brought city life and industry virtually to a standstill. Even the most destructive conventional H.E. attacks had no comparable effect in paralysing communal organisation. It is usual for a bomb to damage only part of a large building which may then collapse further under the action of gravity. The blast wave from the atomic bomb, however, was so severe that it engulfed whole buildings, pushing them askew. After blast pressure has fallen from its peak to zero, there always follows a period of suction. Although this suction is weaker than the original pressure, it lasts several times as long, and therefore normally does much damage to objects which had no time to fail under the usually brief initial pressure. Pressures from the atomic bomb, however, lasted long enough to give windows, doors, walls, and even chimneys and telegraph poles time to fail. As a result, effects which could be described as blast suction were usually scarce. Because the explosion was high in the air, much of the damage was due to downward pressure. Poles remained upright immediately below the explosion, but were overturned or tilted at greater distances from the centre of damage.

Photographs show great areas of destruction in which, rising here and there like islands, there remain reinforced concrete buildings showing few signs of external damage. The observations make it plain that reinforced concrete framed buildings can resist a bomb of the same power detonated at these heights, without employing unusual thicknesses of concrete. The main requirements are a frame designed to withstand heavy side forces from any direction.

The bulk of the damage to single storey steel-framed factory sheds was by blast. The most striking feature was the mass distortion, in the direction away from the explosion. It appeared to be less severe in sheds covered with a material which had itself shattered under the blast, such as asbestos cement, than in sheds covered with a pliable material such as corrugated iron which had transmitted pressure.

Illustrations from the British report on The Effects of the Atomic Bombs at Hiroshima and Nagasaki (HMSO, 1s.), on which the leading article comments this week. Below, a general view of Hiroshima looking across the centre of damage (marked by arrow); some of the framed buildings near the centre remain standing; in the foreground are the remains of Japanese dwellings. Right, a reinforced concrete building about 300 yds. from the centre of damage; designed for earthquake resistance, this building was a composite reinforced concrete and steel frame and received no serious structural damage. See No. 2780.



Timber framed single-storey buildings behaved badly, being excessively vulnerable both to fire and to blast. They collapsed at distances of 2 miles and more from the centre of damage.

With regard to unframed brick buildings with load-bearing walls, the Mission estimated the effect of a bomb of the same power exploding at the approximate height of those at Hiroshima and Nagasaki, at distances up to 2½ miles from the centre of damage.

Standard British shelters would have behaved well against a bomb of the same power exploded at the same height.

Gas and water pipes were in general undamaged. Sewers were damaged in Hiroshima; they did not exist in Nagasaki. Overhead cables and their supports were severely damaged to distances of ½ mile to 1 mile. Damage to public transport was not considerable.

Out of 49 bridges within 2 miles of the centre of Hiroshima only one wooden bridge and one steel bridge in bad repair were destroyed by the blast. Nine wooden bridges were usable, although some of them suffered small displacement in the direction away from the explosion. The 35 bridges within 2 miles of the centre of damage at Nagasaki were all small and relatively light. All bridges within ½ mile of the centre of damage suffered some damage or displacement, most severe in the least massive bridges but in only four cases did the damage require repair before the bridge could be used.

The report discusses in detail the effect of heat and radio-activity on human beings. It appears that in a multi-storey reinforced concrete building four solid floors overhead

give complete protection against the effect of gamma rays. As far as buildings are concerned, both direct and indirect fires must be regarded as active dangers from atomic bombs.

In conclusion, an impressive diagram shows the probable effects of atomic bombs on people and their homes in a typical British urban area. The overall picture is sombre.

2781

German Building Report

THE GERMAN BUILDING INDUSTRY. *BIOS Final Report No. 575. Item No. 12 (HMSO, 12s. 6d.).* General report on developments in Germany before and during the war. Recommendations for further investigations.

This report is the result of a survey of the German building industry by a British team of assessors, appointed by MOW with the particular purpose of selecting "those subjects that were likely to repay further study." Thus the report is confined to an assessment of the German building industry from the point of view of future technical investigations.

The subjects of interest are graded in three groups, according to their importance, the order within the groups not being according to merit.

Group 1.

Autobahn bridges,
Autobahn planning,
Canals, river improvements, hydraulics,
Dimensional standardisation,
Lightweight concrete,
Payment by results,
Prestressed concrete,

Shell concrete,
Steelwork,
Timber.

Group 2.

Architecture,
Lattice retaining wall,
Rubble utilization,
Power tools.

Group 3.

Miscellaneous "A."

Under this heading are collected some subjects in which recent German work presents some features of particular interest, but not a broad field of progress.

Miscellaneous "B."

A further list of subjects examined and discarded as exhibiting no particular progress.

Out of these subjects, for autobahn bridges, prestressed concrete, shell concrete and steelwork, see No. 2783; for dimensional standardisation see *A.J.* leading article for August 8, pp. 93-4.

The planning of the Autobahn had already been studied by a British delegation in 1937, but a renewed study of this subject is recommended, since the questions to be asked to-day will be different from those put by the 1937 delegation. In view of the intention to build a system of motor roads in the United Kingdom, information about experience with the Autobahn during a period of over 10 years would be of great value and would furnish valuable data on the broad considerations in national planning and on a number of details.

The existence of many large rivers in Germany has facilitated the development of inland waterways and hydro-electric stations. Since 1933 right up to and during the war the government encouraged and sponsored the further development of the waterway system by the improvement of existing and the construction of new canals, the canalisation and regulation of the main rivers and the provision of inland port facilities. Important works of this nature were completed just before and during the war, with others still under construction or planned at the end of hostilities. It is claimed that many of these works embody modern and unique features both in design and construction. This was made possible with the aid of extensive and exhaustive model experiments. Many other kinds of hydraulics research were also pursued, including such things as groundwater flow, which in this country is classed with soil mechanics. There are a number of important hydraulics laboratories in Germany, one of the best known being at Karlsruhe, which was visited by the team and where much useful information was obtained.

Light-weight concrete is a subject of great interest in connection with the housing programme in this country. It has already been studied by one of the specialist teams, which visited Germany before the Assessors' tour and a special report is being prepared. The present report deals mainly with gas-concrete and is less concerned with concrete made of light-weight aggregate. The chemical agents most frequently used in Germany are aluminium powder and hydrogen peroxide. Steam-cured gas concretes are regarded by German experts as likely to prove very valuable building materials in areas where light-weight aggregates are not readily available. Steam curing is essential if adequate strength and freedom from shrinkage are to be obtained. At present the main production of gas-concrete is for building blocks for walls.

A system of payment by results was introduced in the German building and civil engineering industries in 1942 and became compulsory for all jobs at the beginning of 1943. The system is claimed to have worked well. Its aims were to increase output and wages and encourage co-operative work. The system is described in detail and several forms showing the method of working out a man's payment are reproduced.

The wartime steel shortage produced an in-

polished plate glass

Development from grinding and polishing by hand to the continuous automatic system

For very many years Plate Glass was produced in only small sizes, and the grinding and polishing was a laborious manual process. It was a slow business, and in the 19th century Pilkingtons devised machinery which was able to undertake most of the manual work. Technical improvements continued to be made, until the final process described here was evolved.

The grinding and polishing were done on a circular rotated steel table, 30 ft. or 40 ft. in diameter. The surface of the table was flooded with plaster of Paris. Workmen then covered the table with pieces of the glass, which they trod firmly into the plaster—this was known as "swimming the plate." The table was then moved under the grinders—two circular iron-shod discs—which were lowered on to the glass. Both the table and the two discs were rotated by motors. Water containing abrasive, usually sand, was fed between the grinders and the glass. Coarse sand was applied at first so that a level surface was ob-

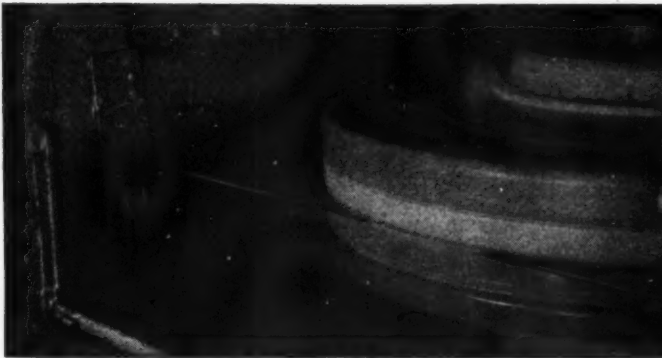
tained as quickly as possible. The surface was then smoothed by supplying finer grades of sand and, in some cases, emery, and in this way a flat surface with a smooth silky texture was obtained.

When the smoothing process was finished, the table was withdrawn from the grinders, washed down and placed under the polishers. In the polishers, felt pads took the place of the two iron runners, and rouge and water were supplied in place of sand and emery. When the polishing was complete the glass was taken off the table and relaid the other side up. In this case the glass was laid on cloth so that the polished surface would not be spoilt, and the grinding and polishing operations were repeated on the opposite side of the glass.



"Swimming the Plate" in the Disc Grinding Process

the OLD



Close-up of Twin Grinding Head



A view of the Grinding and Polishing Section of the Twin Plate machine

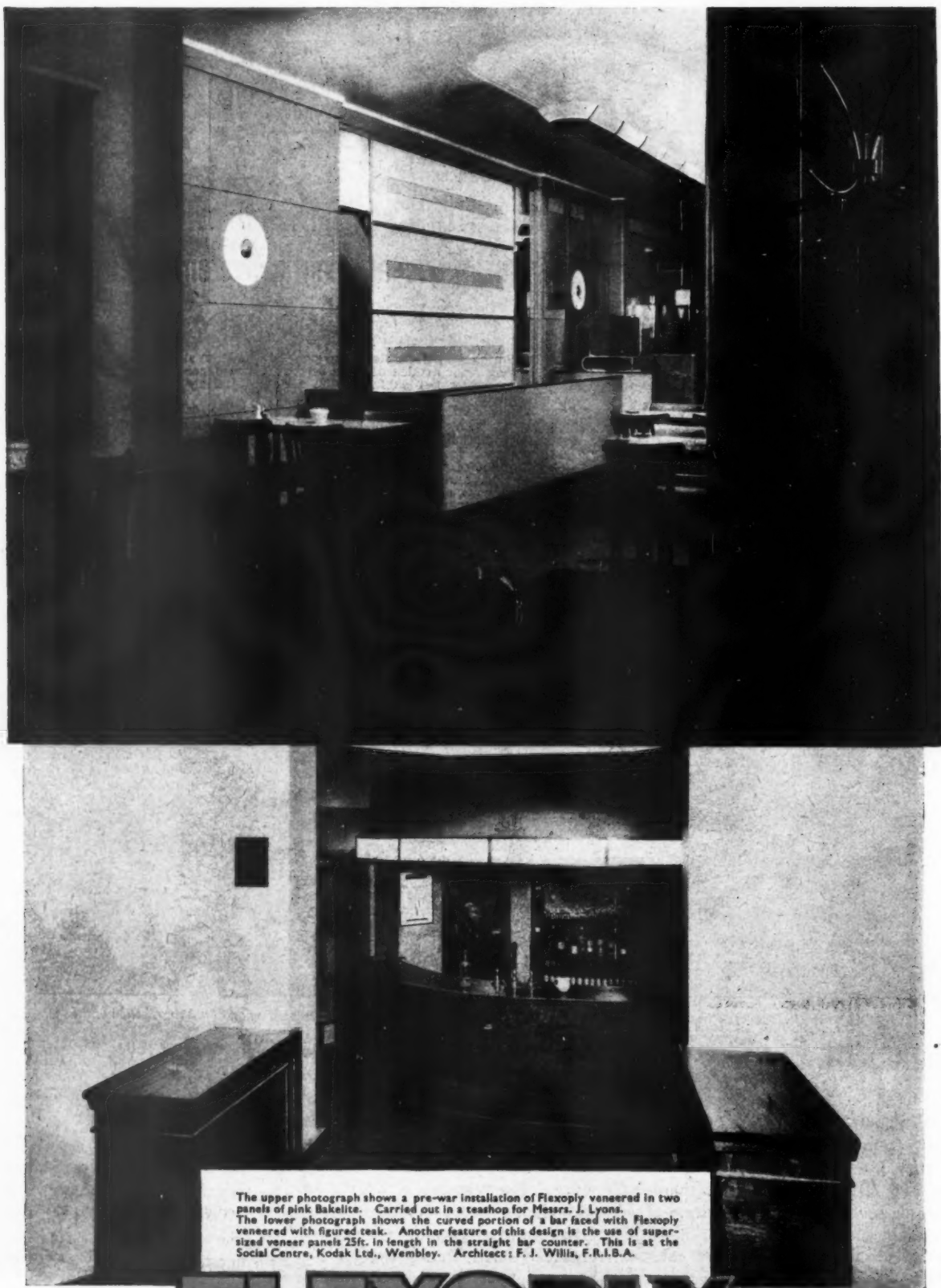
and the NEW The process described above produced Polished Plate Glass of fine quality: but greater speed of operation was necessary. Time and labour were occupied in laying and resetting the tables. Pilkingtons commenced therefore to devise a continuous system of grinding and polishing. After much research and experiment they completed, and now have in operation, a machine which continuously grinds and polishes both sides of the glass simultaneously. The uncut ribbon of glass, after it has emerged from the 'lehr' or annealing chamber, passes through this machine in a continuous length, and is not cut up until it has left

the far end of the machine fully polished. Each grinding head above and below the ribbon of glass has a vertical motor-driven spindle carrying a cast iron disc in which there are grooves to ensure even distribution of the sand and water. The first pair of discs is fed with coarse sand, and the succeeding discs receive sand which becomes progressively finer. During the grinding process about $\frac{1}{2}$ m.m. of glass is removed from each surface. The polishing section of the machine has a large number of heads similar to the grinder, but instead of iron discs each head carries a number of felt-covered discs which are arranged to rub the glass in all directions. A

mixture of rouge and water is fed on to these discs and converts the dull "frosted" texture left by the grinders into a high polish. Plate glass made by this process is known as Twin Plate, and it is especially remarkable for the supreme degree in which the surfaces are flat and parallel. The quality of this Plate Glass is the finest obtainable.

This is published by PILKINGTON BROTHERS LIMITED, of St. Helens, Lancashire, whose Technical Department is always available for consultation regarding the properties and uses of glass in architecture.

LONDON OFFICE AND SHOWROOMS AT 63 Piccadilly, W.1. Telephone: Regent 4281, where architectural students may get advice and information on all questions relating to the properties of glass and its use in building.



The upper photograph shows a pre-war installation of Flexoply veneer in two panels of pink Bakelite. Carried out in a teashop for Messrs. J. Lyons. The lower photograph shows the curved portion of a bar faced with Flexoply veneer with figured teak. Another feature of this design is the use of super-sized veneer panels 25ft. in length in the straight bar counter. This is at the Social Centre, Kodak Ltd., Wembley. Architect: F. J. Willis, F.R.I.B.A.

FLEXOPLY

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creased use of timber as a structural material both for bridges and building work. The need for economy could only be met by more scientific methods of design, and these in turn had to be based on research. A considerable programme of research was carried out during the war (see No. 1118:15.4.43). Important work appears to have been done on the following subjects:

- (a) Stress grading and allowable stresses.
- (b) Moisture content and drying.
- (c) Jointing methods (nailing, bolting, glueing, connectors).
- (d) Testing and development of structural forms (nailed heavy plate girders, glued I- and box-beams, struts of various types).

The assessors have found that buildings designed under Nazi influence have no great architectural value. Nearly all buildings were designed with a pronounced flavour of propaganda. German structural engineering shows better progress. Projects nearer to the province of the engineer are better architecturally than those subject to conscious architectural treatment. The Autobahn bridges and shell concrete roofs are a case in point.

It was suggested at the RIBA that a report upon the condition at present of some of the severely simplified buildings of the pre-Nazi period might be of interest for the further development of modern architecture in Britain. With this in view, visits were paid to the Weissenhof Siedlung at Stuttgart and to the Römerstadt and other suburbs at Frankfurt am Main. The weathering of the buildings at Weissenhof was considerably masked by bomb damage, but those at Frankfurt were largely undamaged, the Römerstadt being in excellent condition. The general impression was that the simplification of external design and the experimental materials used had resulted in no exceptional deterioration after 15 to 20 years' exposure.

An interesting innovation in the construction of retaining walls is a new type called Gitterwand, best translated perhaps by Lattice Retaining Wall. The basic principle is the support of a face by a series of horizontal slabs one above the other, whose inner ends are embedded in the face while edges rest upon the retaining wall proper. The soil is trimmed back to a stable angle above each slab from a toe at the outer edge, so that the wall itself may be replaced by a series of pin-jointed stanchions. Beside a number of theoretical and practical



An example of German shell concrete construction, the Slaughter House at Kiel. The photographs were taken by the BIOS team which visited Germany. See No. 2781.

advantages, this type of structure offers a cheap solution for high retaining walls. Such walls have been built up to 30 ft. high and with up to five stages.

A year or so before the end of the war, the Germans began to study the possibility of treating rubble and debris for re-use as building material. Several practical schemes have been developed as a result of a considerable amount of research, and are described in the report. (See also A.J. 26.9.46, p. 220.)

The concluding sections deal with the organisation of the German building industry and building research. The connection between them is much closer than in this country. The type of tendering usual in Germany encourages contractors to submit alternative schemes based on the application of new methods of design. The professors of the technical high schools (which have university status) collaborate with the industry and are frequently consulted by the contractor on problems of design and development of new materials. Many of the technical high schools possess laboratories with equipment on a lavish scale, sometimes better than comparable establishments in Britain; research on a particular subject is sometimes carried on at several simultaneously.

It is emphasized throughout the report that further investigation into most of the subjects is necessary, and suggestions are made regarding the programme and organisation of the teams to be sent to Germany.

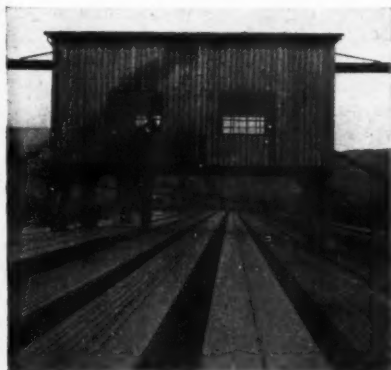
There can be no doubt that the utilization of many of the types of structure and methods of construction referred to in the report would be of great benefit to this



country. It is therefore important that the most thorough information should be obtained from Germany and that this information should be widely distributed. In this connection it may be mentioned that, had this been realized before or even during the war, many of the subjects to which attention is drawn now could have been exploited in this country long ago. German technical periodicals and textbooks available in technical libraries here contain ample data on most of the items discussed in the report. By systematic search in the Patent Office, the Science Library, etc., much valuable material could be collected. Before the specialist teams go over to Germany to investigate further, they should study the German literature here related to these subjects, which goes far beyond the documents listed in the report. A comprehensive knowledge of this literature would greatly increase the efficiency of the teams.

2782 German Precast Concrete Report

GERMAN CONSTRUCTION METHODS. FABRICATION AND ERECTION OF PRECAST CONCRETE. Report by Joint Intelligence Objective Agency, Washington, D.C., September, 1945 (HMSO, 8s. 6d.). New types of precast construction. New methods of manu-



A German plant for prestressing concrete—one of the items investigated by the BIOS team which visited Germany recently. Their report is reviewed in No. 2781. The plant produces lengths of prestressed reinforced concrete which are sawn into building blocks. (The photographs on this page are Crown Copyright, published by permission of H.M. Stationery Office.)

facture. Prestressing. Use of lightweight concrete. Barracks in standardized units. Rigid frames composed of precast members. Architectural treatment of industrial buildings.

This report briefly describes the use of precast reinforced concrete members in the construction of barracks, housing, multi-storey factory buildings, etc., in Germany during World War II. It includes a discussion of special technique, such as the use of heated forms, prestressed wires, lightweight concrete and the pouring of concrete under 4 to 10 atmospheres of air pressure.

The necessity of rapid construction and the shortage of materials during the war forced the German engineers to improve the methods of manufacturing pre-cast concrete. Complex pre-cast concrete units made in the usual way have to remain in the forms several days after casting. To avoid this delay the *pre-cast heated form* method was developed. Through heating, the time of setting is so accelerated that one member a day can be made in each form.

An article by Dr. H. Rüschi, reproduced both in German and in English, describes the application of this method to the large standardized units which were used in factories. For floors and flat roofs, a ribbed slab of 16 ft. 6 in. span has been developed, together with standard pre-cast beams suitable for spans up to 33 ft. For larger spans, up to 100 ft., lattice girders, composed of pre-cast prestressed members, were adopted.

Pre-cast cylindrical shells, each covering an area of 16 ft. 6 in. by 33 ft., were also mass produced. A big steel plant at Kattowitz, Upper Silesia, was built with a combination of such units and some *in situ* concrete. The photographs of this plant show a very intelligent architectural treatment.

Precast concrete was extensively used in barracks and also by the Prussian mining industry in a variety of standardized buildings. An article by R. v. Halasz describes the advantages obtainable by concrete of very high strength (8,500 lb./sq. in.).

Structural details of a standardized barracks are also reproduced in the report. The design, based on a module of 125 cm. (4 ft. 1 in.), does not show any special features as compared with similar work in this country. On the other hand, in pre-stressing and heated pre-cast work, much could be learned from the German industry.

The reproduction of the illustrations of the report is very poor; the translation has apparently been prepared without sufficient knowledge of the subject matter, with some rather curious results which render parts of the English version unintelligible. E.g., in the translation of the article by Dr. Rüschi, the term "flat slab" is used instead of "T-beam" (p. 3). Even worse is the first paragraph on p. 7, according to which the concrete "is sealed with a Rüttlern (English word not known)." "Rüttlern" is the German technical term for vibrator, and the correct meaning of the German text is, of course, that the concrete is condensed by means of vibrators.

2783 German Engineering

A REPORT ON STRUCTURAL ENGINEERING IN GERMANY. John Mason. (*The Structural Engineer*, June, 1944, pp. 297-334). Reichsautobahn bridges. Prestressed concrete. Shell concrete. Precast concrete construction. Steelwork. 34 illustrations.

The Author has spent two months in Germany on an assessing committee sent out by the MOW. The paper is a summary of the findings of the committee.

The most important engineering development in Germany immediately prior to the war was the Reichsautobahn or National Motor-ways. This new system of trunk roads was designed to provide up and down

one-way express roads for the exclusive use of motor vehicles, avoiding all minor towns and villages en route. All other traffic except motor traffic was absolutely prohibited from using them. Eliminating level crossings has necessitated an enormous number of small bridges. The contractors tendering for bridges were at liberty to submit alternative designs. This competition resulted in a great variety of types of bridges. Aesthetic considerations often overruled economic factors.

The Author describes a large masonry viaduct carrying the Reichsautobahn over a deep valley and several bridges across the Reichsautobahn. The common characteristic of the latter is the elimination of solid parapets and the careful treatment of the concrete surface left exposed.

Reinforced concrete predominates in road over road crossings, whilst steel appears to be exclusively used for road-railway crossings.

An interesting form of construction is the Stabbogen, a combination of arch and girder, creating an impression of extreme elegance. The author believes that this is a new development. It is certainly new in this country. In Switzerland and in Germany however, Stabbogen bridges have been built for over 20 years.

Prestressed concrete had a great development in Germany. Beside the application of Freyssinet's patents, other systems were exploited. Of particular interest is a factory at Leimen near Heidelberg, manufacturing prestressed precast hollow slabs in lightweight concrete.

Shell concrete was considered to be the most impressive modern building form seen in Germany. (See *Inf. Centre No. 1717: 21.12.44*.) Several photographs showing barrel vault roofs damaged by air raids are published and indicate their high resistance to blast. The most impressive example of shell construction included in the article is the Market Hall at Cologne. It consists of arched ribs of 150 ft. span carrying concrete cladding and glass.

The chief recent German contribution to structural steelwork lies in the field of welding. Much research was made and published. Among the jobs visited, besides Stabbogen bridges, stressed skin steel hangars and demountable tubular hangars were found particularly interesting.

In conclusion, the Author is of the opinion that no significant or revolutionary advances in technique have been made, but that the Germans have achieved a degree of progress which engineers in this country have failed to equal.

2784 German Timber Structure Report

WOOD STRUCTURAL RESEARCH AND DEVELOPMENT. Report prepared by Field Information Agency, Technical United States Group Control Council for Germany. Final Report No. 225. October, 1945. (HMSO, 8s. 6d.) Methods of manufacturing nailed girders, laminated wood, plywood and their application in structural engineering, building and aircraft construction. Comprehensive bibliography. Abstracts from reports on the use of timber. Instructions for the surface treatment of glued timber. (See also No. 1118: 15.4.43.)

The material compiled in this report was collected in several research laboratories in Germany.

No change in design methods involving the use of timber connectors (see No. 1146: 20.5.43) has been made in the past ten years, except perhaps the use of heavier gauge metals in connectors of the bulldog type. German investigators are satisfied that all connectors, whether of steel, cast steel or aluminium are suitable for long-

term use without loss of strength if made of sufficiently heavy metal. Dowels made of oak or creosoted beech are also often used. Nails have been used as fasteners in some constructions, but the consensus is that such structures are temporary. No attempts have been made to develop nails of improved design. Nailed wood I-beams were adopted in small bridges, hangars, in umbrella sheds over railway platforms, etc. In laminated arches rectangular sections are preferred to I-sections because of greater ease of fabrication.

Methods of manufacturing compressed and uncompressed laminated wood and their physical properties are discussed in the report and two types of prefabricated timber house are described in detail. Neither differs to any great extent from present practice in USA and in this country, although the use of compressed wood panels in various parts of one of the types is new. Without illustrations the details are difficult to follow.

The most valuable part of the report is the lists of publications by the Building Research Laboratory at Stuttgart and the Timber Research Laboratory, Hohen-schwangau. The first list comprises 132 references to publications between 1921 and 1944, the second contains 88 items. In addition, three lists of publications by the Building Research Laboratory at Stuttgart, in 1942, 1943 and 1944, with 47, 31 and 37 items respectively, are included. Only a few of these items relate to timber, most of them are concerned with developments in welding, concrete, reinforced concrete and pre-stressed concrete. It is rather surprising to find them in a report devoted to timber and to miss many of them in other reports of this series dealing with developments of the German building industry in general (See No. 2781), and in concrete and reinforced concrete in particular (See No. 2782). The lists are full of misprints, and the sub-committee's inability to translate *torf* (peat) seems surprising.

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', 13, Queen Anne's Gate, Westminster, S.W.1.

2785

Q Can you give me the name and address of any Society who could supply me with illustrations of modern inn and hotel signboards? I would also like to know whether brewers and hotel owners are being encouraged to take an interest in signboard design.

A There was at the Building Centre in Bond Street in the middle of the 1930's an exhibition of about 250 Inn Signs which came from all over the country. These were chosen by a Committee which was set up at the request of the Council for the Preservation of Rural England to foster interest in good design. After this exhibition a register was compiled of artists designing inn signs. This register is now kept by the Central Institute of Art and Design, Batt's Hotel, Dover Street, London, W.1.

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Announcements

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Mr. J. Blackburn, newly appointed Burgh Architect of Inverness, would be glad to receive trade catalogues, etc., at the Burgh Architect's Office, Inverness.

Messrs. Richard Sheppard & J. Shufflebotham, Registered Architects, have moved to 21, Coram Street, W.C.1. Telephone: TERminus 8580.

Sir Percy Thomas, O.B.E., HON. LL.D., J.P., F.R.I.B.A., has been appointed Deputy Lieutenant for Glamorgan.

Sir William Griffiths, D.S.C., F.R.I.C., F.I.P., Chairman and Managing Director, Mond Nickel Co. Ltd., Mr. H. J. Allcock, M.S.C., M.I.MECH.E., M.I.E.E., British Insulated Callender's Cables Ltd., and Mr. Christopher F. S. Taylor, M.C., Rhokana Corporation Ltd., have been appointed to the Management Committee of the Copper Development Association.

Messrs. Sundeala Board Co., Ltd., Aldwych House, London, W.C.2 (Phone: Chancery 8159) announce that their Pimco metal fixings for building boards embodying the Pimco patent metal "V" clip will be known in future as Sundeala metal fixings in order to bring these under the one trade name of Sundeala which covers their complete range of hardboards, medium hardboards, and insulation boards.

Mr. Norman Keep, F.R.I.B.A., Head of Department of Architecture and Building, Southend-on-Sea Municipal College, will be pleased to receive from manufacturers samples, catalogues and data relevant to modern building construction, for the use of full-time students taking the recognized course in architecture.

The Minister of Supply has appointed Sir Wilfrid Ayre to be the seventh member of the Iron and Steel Board. This is the further appointment foreshadowed in the press announcement on September 5. The Iron and Steel Board has now taken over the functions previously carried out by the Iron and Steel Control, including the administration of the current Iron and Steel Control Orders. Mr. J. C. Carr has relinquished the post of Iron and Steel Controller. The address of the Board is Bush House, South West Wing, Strand, London, W.C.2. (Telephone: Temple Bar 2401.) Sir Wilfrid Ayre, who is fifty-six, has had long experience in the shipbuilding industry and is chairman and managing director of the Burntisland Shipbuilding Co., Ltd. He is Chairman of the British Shipbuilding Research Association, a past president of the Shipbuilding Conference and of the Institute of Engineers and Shipbuilders in Scotland, and a director of the National Bank of Scotland.

The address of the Worcester office of British Insulated Callender's Cables, Limited, has been changed and is now 37, Broad Street, Worcester. The telephone number remains unchanged as Worcester 2070.

Mr. L. De Syllas, A.R.I.B.A., took up the appointment of Architect and Planning Officer to the Government of Barbados as from March this year. He would be pleased to receive manufacturers' trade catalogues on all equipment and building products available for the colonial export market, particularly with reference to electrical fittings, plastic and ironmongery hardware, general panel finishing products for internal use and any materials suitable for tropical buildings. His address is Mr. L. De Syllas, A.R.I.B.A., Government Architect and Planning Office, 35, Broad Street, Bridgetown, Barbados, BWI.

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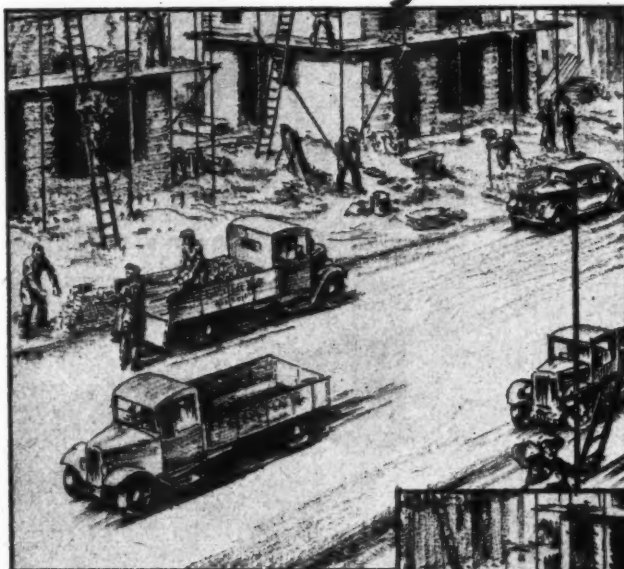
Kindly write for details of publications, issued free of charge, dealing with the applications of rubber in various industries. Please state the industry in which you are interested.

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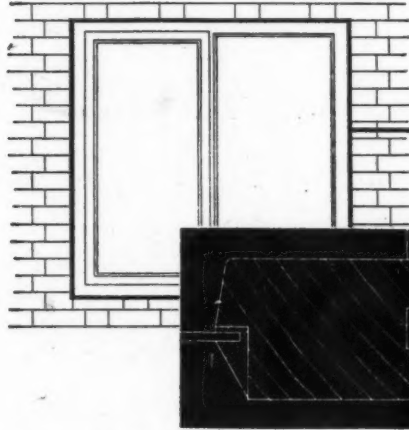
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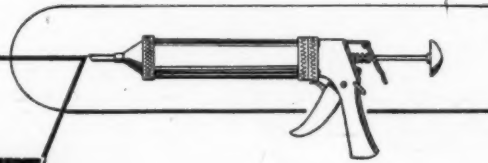
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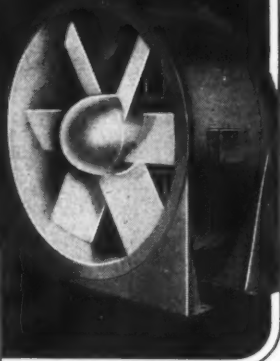
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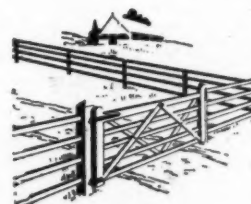
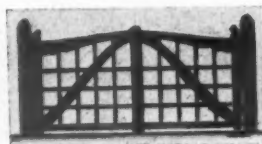
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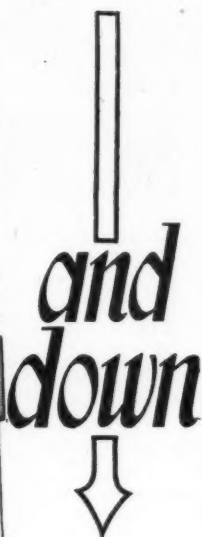
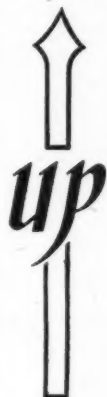
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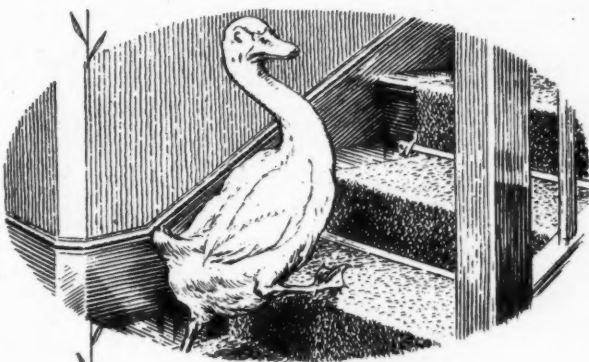
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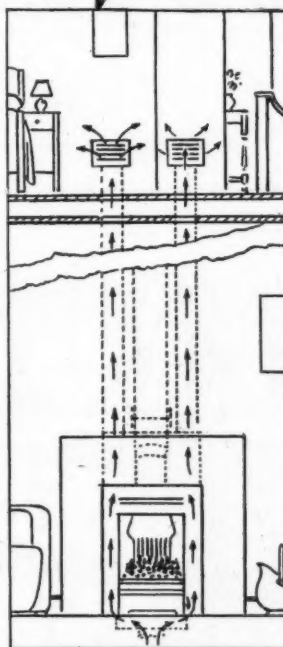


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... **Upstairs
Downstairs,**

and in My Lady's Chamber . . .



My Lady has thought rather ill of her Chamber during the winter. It may be, she feels, a garlanded bower when the warm sun shines, but during the long frost last January . . . Brrr!

In the circumstances, we are telling my Lady—by means of our advertisements in the current issues of "Country Life", "The Listener", "The Economist", etc.—of the advantages of installing an Eagle Convactor Grate. This will provide a cheerful blaze for her living room and—at the same time, for the same quantity of fuel—send a continuous flow of warm air up to those formerly arctic regions, the bedroom, bathroom and landings.

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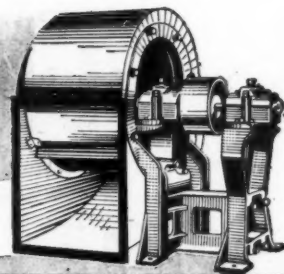
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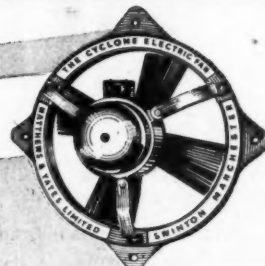
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Replies to Box Numbers should be addressed care of "The Architects' Journal," War Address: 45 The Avenue, Cheam, Surrey.

Public and Official Announcements

Six lines or under, 10s.; each additional line, 1s. 6d.

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, Euron Place, London, S.W.1. TEL.: SLOANE 5615. 991

LONDON COUNTY COUNCIL.

Applications are invited for the following positions:—

(1) QUANTITY SURVEYORS AND ASSISTANTS (SENIOR AND JUNIOR). Required for:—

(a) "Taking-off" quantities, measuring, and adjusting variations under building contracts and preparing estimates.

(b) Preparing estimates and measuring repairs and minor works under schedule of prices (experience of London County Council War Department or Office of Works Schedules).

(c) Working up, etc., in connection with domestic buildings and general working up (junior).

(d) Measurement of roads and sewers and housing work on cottage estates, preparation of interim and final bills on Schedules.

(2) ARCHITECTS, BUILDING SURVEYORS, TECHNICAL ASSISTANTS (ARCHITECTURAL) AND JUNIOR DRAWING OFFICE ASSISTANTS. Required for:—

(a) Work in connection with the design and development of housing schemes for cottage estates and black dwellings (experience in domestic architecture preferred).

(b) Similar work in connection with schools and hospitals.

(c) The preparation of estimates and specifications for works of cleaning and painting, repairs and minor alterations at schools and hospitals.

(d) Assistants to district surveyors. A knowledge of the London Building Acts and by-laws is necessary for these positions.

(e) Junior drawing office assistants for general drawing office work. Should be able to finish plans from rough drawings, take dimensions and make sketches. Pay, according to age and experience, up to 55s. a week, plus cost-of-living addition.

(3) HEATING ENGINEERS AND HEATING AND VENTILATING ASSISTANTS. Good technical education required. Applicants must be experienced in the design of, and preparation of drawings, specifications and estimates for, modern hot water heating, ventilating and hot water supply schemes.

Except as otherwise shown, salaries for the above positions will be determined by qualifications and experience up to a maximum of £400 a year, together with cost-of-living additions up to £90 a year, according to basic salary. Salary up to £500 for certain positions of heating engineer and building surveyor. Successful candidates will be engaged on a temporary basis, but will be eligible for appointment, according to merits, for permanent appointment on the occurrence of vacancies. Temporary staff are required to contribute to the Council's Superannuation and Provident Fund.

Ex-Service candidates with experience prior to their war service will be specially considered.

Application forms may be obtained from the Clerk of the Council, County Hall, Westminster Bridge, London, S.E.1, enclosing stamped addressed foolscap envelope.

Canvassing disqualifies. 947

COUNTY BOROUGH OF DARLINGTON.

BOROUGH SURVEYOR'S DEPARTMENT—QUANTITY SURVEYOR.

Applications are invited for the appointment of Quantity Surveyor, on Grade IV of the National Scale of Salaries, £420×£15—£465, plus cost-of-living bonus of £59 19s. 3d. per annum.

Preference will be given to candidates who have passed the Professional Associate Examination of the Royal Institution of Chartered Surveyors.

Applications, endorsed "Quantity Surveyor," giving names and addresses of three referees, should be delivered to the Town Clerk, Darlington, on or before the 31st October, 1946.

Canvassing, directly or indirectly, will disqualify. 657

CITY OF MANCHESTER.

HOUSING DEPARTMENT.

(1) The Manchester Corporation invite applications for the following appointments:—

(a) DEPUTY DIRECTOR OF HOUSING, at a basic salary of £1,050, rising by biennial increments of £100 to £1,250 per annum.

(b) DEPUTY (DIRECT WORKS) MANAGER, at a basic salary of £575, rising by annual increments of £25 to £650 per annum (Grade VII—National Scales).

(c) DEPUTY (MAINTENANCE) MANAGER, at a basic salary of £460, rising by annual increments of £15 and £20 to £510 per annum (Grade V—National Scales).

(d) FIRST PURCHASING ASSISTANT, at a basic salary of £330, rising by annual increments of £15 to £375 per annum (Grade I—National Scales).

(e) SECOND PURCHASING ASSISTANT, at a basic salary of £335, rising by annual increments of £15 to £360 per annum (Clerical Division—National Scales).

(2) In each case the appropriate cost-of-living bonus recommended by the National Joint Council is payable in addition to the basic salary shown, and as regards (c) the salary may be reviewed in certain circumstances.

With regard to (a) the duties of this officer will be to deputise for and generally assist the Director of Housing, who is responsible for the control, organization and administration of the Corporation's Housing Department. Applicants must be capable organizers and administrators, possessing good business ability and experience of the design and construction of houses and the development of housing estates.

So far as (b) and (c) are concerned, applicants should have practical experience of all branches of the building trades, the requisitioning of plant and materials, the direction of different classes of labour, the erection of dwellings and estate development. Applicants for the post of Works Manager recently advertised who have already asked that their previous application should be treated as an application for the post of Deputy (Direct Works) Manager need not submit a further application.

With regards to (d) and (e), applicants should have experience of the buying of materials required for the construction, repair and renewal of houses, and also of the inspection and testing of materials submitted by contractors.

Applications (with copies of three recent testimonials) must be made upon the prescribed form, obtainable from me, and returned in a sealed envelope, indicating the appointment applied for, so as to reach me at the Town Hall, Manchester, 2, not later than Saturday, the 2nd November, 1946.

Canvassing in any form, oral or written, direct or indirect, is prohibited, and applications or copies thereof must not be sent to members of the Housing Committee or the Council.

PHILIP B. DINGLE,

Town Clerk.

Town Hall, Manchester, 2,
9th October, 1946. 633

COUNTY BOROUGH OF SWANSEA.

ASSISTANT QUANTITY SURVEYORS.

Applications are invited for the following appointments on the established staff in the Borough Architect's Department:—

(a) Senior Assistant Quantity Surveyor. Salary (Grade V), £460, rising by two annual increments of £15 and one of £20 to £510 per annum.

(b) Assistant Quantity Surveyor. Salary (Grade III), £390, rising by annual increments of £15 to £435 per annum.

The salary scales are those of the A.P. and T. Division of the National Scheme of Conditions of Service, and are exclusive of the "cost-of-living" bonus payable in addition at the will of the Council (current rate 23s. per week).

Applicants for both appointments must be Professional Associates of the Royal Institution of Chartered Surveyors, having qualified in the Quantities Sub-Division, and should have had considerable experience in "taking off" in a quantity surveyor's office.

Applicants must be under 45 years of age.

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

The appointments may be terminated by one month's notice on either side.

Forms of application may be obtained from the Borough Architect, Guildhall, Swansea.

Applications, accompanied by copies of three recent testimonials, and enclosed in an envelope endorsed "Senior Assistant Quantity Surveyor" or "Assistant Quantity Surveyor (III)," as the case may be, must be delivered to the undersigned not later than Monday, 11th November, 1946.

Canvassing, directly or indirectly, will disqualify.

T. B. BOWEN,

Town Clerk.

Guildhall, Swansea.
8th October, 1946. 616

NORTHERN IRELAND HOUSING TRUST.

APPOINTMENT OF QUANTITY SURVEYOR.

Applications are invited for the above post. Candidates must be members of the Chartered Surveyors' Institute, who have had good experience in the preparation of estimates, bills of quantities, measuring-up and the adjustment of final accounts in connection with Housing Schemes.

The salary scale attaching to the post will be £540×£20—£890, with entry point above the minimum in the case of a candidate with exceptional qualifications and experience.

The Northern Ireland Housing Trust is a Statutory Body set up by Parliament, and has an immediate building programme of several thousand houses.

The Chief Technical Officer of the Trust is E. A. Ferriby, Esq., B.Arch., A.R.I.B.A., A.M.T.P.I. The appointment will be full time, and other things being equal, and ex-Service preference will be given.

Candidates should apply by letter to the address given below, stating date and place of birth, qualifications and experience, the date when able to commence duties, and the names of two referees.

Applications will be received up to 9th November, 1946.

General Manager,

Northern Ireland Housing Trust, 5, Donegall Square South, Belfast. 630

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SCHOOL OF ARCHITECTURE AND DEPARTMENT OF BUILDING.

Head: E. F. DAVIES, B.Arch.(Lvp.), F.R.I.B.A., F.R.I.A.S.

Applications are invited for the following posts:—

(a) FULL-TIME LECTURER AND STUDIO INSTRUCTOR IN ARCHITECTURAL DESIGN AND CONSTRUCTIONAL SUBJECTS. Salary: £400 by £15 to £625. Honours Graduate, or with additional qualification, £450 by £15 to £685.

(b) FULL-TIME JUNIOR LECTURER AND STUDIO INSTRUCTOR IN CONSTRUCTIONAL SUBJECTS. Salary: £360 by £15 to £595.

Commencing salary in each case according to qualifications and experience.

The School is recognized for purposes of exemption from the R.I.B.A. Intermediate and Final Examinations.

Applicants must be members of the Royal Institute of British Architects, and should possess the Degree or Diploma of a recognized School of Architecture.

Members of the staff of the school are normally afforded reasonable opportunities for practice and research.

The successful applicants will be expected to take up duties as soon as possible, but consideration will be given to applications received from men who may still be on National Service.

Applications, accompanied by three recent testimonials and names of three referees, should reach the undersigned (from whom further particulars may be obtained) by Thursday, November 7, 1946.

A. C. WEST,

Director. 636

COUNTY BOROUGH OF BURNLEY.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following positions:—

(1) SENIOR ARCHITECTURAL ASSISTANT (Grade V). £460 to £510, plus bonus, at present £59 16s. per annum.

Applicants should have had experience in the design of educational buildings, and preference will be given to Associates of the Royal Institution of British Architects.

(2) ARCHITECTURAL ASSISTANT (Grade IV). £420 to £465, plus bonus, at present £59 16s. per annum.

Applicants should preferably have had experience in either housing or educational work, and previous service with a Local Authority would be regarded as an advantage.

Conditions of service are those formulated by the National Joint Council. Both appointments are on the established staff, and are subject to the provisions of the Local Government Superannuation Act, 1937. The successful candidates will be required to pass a medical examination.

Forms of application may be obtained from the Borough Engineer and Surveyor, Town Hall, Burnley, to whom applications should be returned in the envelope provided not later than noon on Monday, the 11th November, 1946.

Applicants should make it clear in their application as to the position for which they are applying.

C. V. THORNEY,

Town Clerk. 610

TRUST.
REVEYOR.

BOROUGH OF MANSFIELD.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

Applications are invited for the following appointments, both of which are subject to the Local Government Superannuation Act, 1937, a medical examination, and one month's notice on either side. The salary scales are those of the A.P. & T. Division of the National Scales, and are exclusive of the cost-of-living bonus, at present £59 16s. per annum.

(a) CHIEF ARCHITECTURAL ASSISTANT (Grade VI). £535-£220-£225-£2600 (commencing salary in accordance with qualifications and experience).

(b) QUANTITY SURVEYING ASSISTANT (Grade III). £390-£15-£15-£15-£435 (commencing salary £390).

Candidates for appointment (a) must be Registered Architects and Associates of the Royal Institute of British Architects, with considerable experience in the design of houses, municipal architectural work, and building quantities. Candidates for appointment (b) must be Professional Associates of the Royal Chartered Institute of Surveyors, having qualified in the Quantities Sub. Division, and should be experienced in the preparation of Specifications, Bills of Quantities, and Final Accounts for Housing Public Buildings, etc.

Application forms may be obtained from Mr. E. T. Crowe, B.Sc., A.M.I.C.E., Borough Engineer and Surveyor, Carr Bank, Mansfield, to whom applications, appropriately endorsed, must be delivered not later than Friday, 1st November, 1946.

Canvassing, either directly or indirectly, will disqualify.

A. C. SHEPHERD.

Town Clerk.

Carr Bank, Mansfield.
7th October, 1946.

628

CITY OF OXFORD.

Applications are invited for the following appointments, in the Department of the City Estates Surveyor and Architect to the Education Committee.

Appointments (a) and (c) will be subject to the National Scheme of Conditions of Service, and to the provisions of the Local Government (Superannuation) Act, 1937.

Arrangements can be made, if desired, for renting housing accommodation.

(a) SENIOR ASSISTANT. At a salary in accordance with Grade III of the National Scale of Salaries, viz., £390 to £435 per annum, exclusive of cost-of-living bonus (at present £59 16s. per annum).

Applicants must be Professional Associates of the Royal Institution of Chartered Surveyors, with experience in valuation and property management, and accustomed to the preparation of plans and specifications for minor building works.

(b) ARCHITECTURAL ASSISTANT (TEMPORARY). At a salary from £460 to £510 per annum, according to experience, exclusive of cost-of-living bonus (at present £59 16s. per annum).

Applicants should be Associate Members of the R.I.B.A., and have had experience of School Work.

(c) TECHNICAL ASSISTANT-HOUSING. At a salary in accordance with Grade I (Miscellaneous Division) of the National Scale of Salaries, viz., £255, rising by annual increments of £15 to £300 per annum, plus cost-of-living bonus (at present £59 16s. per annum).

The duties will be in connection with the repairs and maintenance of the Corporation's Housing Estates, and candidates must possess a knowledge of building construction and management of property.

Applications, stating age, qualifications and experience, accompanied by copies of not more than three recent testimonials, should be sent to the City Estates Surveyor, Town Hall, Oxford, not later than Monday, the 11th November, 1946.

646

KENT COUNTY COUNCIL.

Vacancies exist for ASSISTANT ARCHITECTS, on the permanent and temporary staff of the Buildings Department, at basic salaries up to £420 a year, according to qualifications and experience, plus war addition-at present £59 16s.

The posts are superannuable, and the successful candidates will be required to pass a medical examination.

Candidates must be members of the Royal Institute of British Architects by examination or hold equivalent qualifications, and must be experienced in the preparation of preliminary plans, working drawings and specifications for school buildings, and the supervision of works in progress.

Applications, on forms obtainable from the County Architect, Springfield, Maidstone, should be delivered to him not later than the 9th November, 1946.

W. L. PLATTS.

Clerk of the County Council.

County Hall, Maidstone.
14th October, 1946.

679

CITY OF NOTTINGHAM.

CITY ENGINEER'S DEPARTMENT.

Applications are invited for two vacancies as SENIOR ARCHITECTURAL ASSISTANT.

Candidates should be members of the Royal Institute of British Architects, and to have experience in the works normally carried out in a local authority's office (other than Housing).

The salary is £460-£15-£15-£20-£510 per annum, in accordance with Grade A.P.T. (V) of the National Scale of Salaries.

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

Applications are to be submitted on the form to be obtained from the City Engineer, Mr. R. M. Finch, O.B.E., M.Inst.C.E., Guildhall, Nottingham, and are to be returned to him not later than Friday, 8th November, 1946.

J. E. RICHARDS.

Town Clerk.

The Guildhall, Nottingham.
9th October, 1946.

652

ISLE OF ELY COUNTY COUNCIL.

Applications are invited from suitably qualified persons for the following appointments, in the County Architect's Department:—

(i) QUANTITY SURVEYOR (Grade IV). Salary £420-£15-£465 per annum.

(ii) SECOND SENIOR ASSISTANT ARCHITECT (Grade III). Salary £390, and by £15 p.a. to £435 per annum.

(iii) An ARCHITECTURAL ASSISTANT (Grade II). Salary £360, and by £15 p.a. to £405 per annum.

The National Conditions of Service (including cost-of-living bonus) will apply, and the appointments will be subject to the Local Government Officers' Superannuation Act, 1937, the passing of a medical examination, and to one month's notice on either side.

Applications, accompanied by full particulars, and three recent testimonials, must reach the County Architect, County Hall, March, not later than the 9th November, 1946. Canvassing, directly or indirectly, will disqualify.

R. F. G. THURLOW.

Clerk of the County Council.

County Hall, March.
14th October, 1946.

671

CARMARTHENSHIRE COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments, on the staff of the County Architect's Department:—

(a) ASSISTANT ARCHITECTS (Grade V). £460-£15 and £20-£510 per annum.

(b) ASSISTANT ARCHITECTS (Grade IV). £420-£15-£465 per annum.

(c) ASSISTANT ARCHITECT (Grade I). £330-£15-£375 per annum.

The current cost-of-living bonus of £59 16s. will be paid in addition to the salaries stated.

Candidates for appointments (a) and (b) must be Registered Architects, preferably A.R.I.B.A., with good general experience in the design and construction of public buildings, including Schools.

The appointments will be subject to the Local Government Superannuation Act, 1937 and candidates, before appointment, will be required to pass a medical examination.

The appointments will be terminable by one month's notice on either side.

Applications, stating name, age, qualifications, experience, present and previous appointments (with dates), together with copies of three recent testimonials, should be delivered to W. T. Lloyd, A.R.I.B.A., County Architect, County Offices, Carmarthen, not later than Saturday, 9th November, 1946.

DANIEL JOHNS.

Clerk of the County Council.

County Offices Spilman Street, Carmarthen. 696

KENT COUNTY COUNCIL.

TWO BUILDING INSPECTORS are required, on the permanent staff of the Buildings Department, each at a basic salary of £420, rising by annual increments of £15 to £465 a year, plus war bonus-at present £59 16s.

The posts are superannuable, and the successful candidates will be required to pass a medical examination.

Candidates must have practical experience of the building trade, be thoroughly competent in the preparation of specifications, detailed estimates and builders' quantities in connection with the maintenance of buildings, and be able to prepare drawings for minor projects. Preference will be given to those possessing qualifications, such as the Buildings Inspector's Certificate. Previous local authority experience will be an advantage.

Applications, on forms obtainable from the County Architect, Springfield, Maidstone, should be delivered to him not later than the 9th November, 1946.

W. L. PLATTS.

Clerk of the County Council.

County Hall, Maidstone.
14th October, 1946.

678

CITY AND COUNTY OF KINGSTON-UPON-HULL.

APPOINTMENT OF TEMPORARY JUNIOR ARCHITECTURAL DRAUGHTSMEN.

Applications are invited for Four Temporary Junior Architectural Draughtsmen, at salaries of £200 to £250 per annum, plus cost-of-living bonus, according to age and experience. Applicants must have had Architectural Training, be good tracers and colourists, and preference will be given to those who have reached the standard of, or passed, the Intermediate Examination of the Royal Institute of British Architects. Application forms to be obtained from Andrew Rankine, A.R.I.B.A., City Architect, Guildhall, Kingston-upon-Hull, should be sent in completed, together with not more than three recent testimonials, on or before Monday, 4th November, 1946.

664

BOROUGH OF BUXTON.

BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the undermentioned appointments, on the staff of the Borough and Water Engineer:—

(1) CHIEF ENGINEERING ASSISTANT.

(2) ARCHITECTURAL ASSISTANT. The salaries for both these appointments will be in accordance with Grade II of the National Joint Council, namely, £360 p.a., rising by three annual increments of £15 to £405 p.a. Cost-of-living bonus, at present £59 16s., will be paid in respect of both these appointments.

The appointments are subject to the Local Government Superannuation Act, 1937, and are terminable by one month's notice in writing on either side. The successful applicants will be required to pass a medical examination.

Preference will be given to candidates possessing the recognized professional qualifications, and applications from Service men who are to be released in the near future will be considered. Applications, stating age, qualifications and experience, accompanied by copies of two recent testimonials, should reach the undersigned not later than 7th November, 1946.

A. C. W. RYLAND.

Borough Surveyor.

Town Hall, Buxton.
11th October, 1946.

665

THE ESHER URBAN DISTRICT COUNCIL.

APPOINTMENT OF QUANTITY SURVEYOR. (Re-advertisement).

Applications are invited for the above-mentioned appointment, in the Engineer and Surveyor's Department, at a salary in accordance with Grade IV of the A.P. & T. Division of the National Joint Council's Grading Scheme (£440-£15-£485 per annum), plus cost-of-living bonus, at present £59 16s. per annum.

Applicants should be technically qualified Quantity Surveyors by examination, and accustomed to preparing bills of quantities, specifications and estimates, and settling accounts for building contracts.

The appointment will be terminable by one month's notice in writing on either side, and is subject to the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination, and will be expected to devote the whole of his time to the service of the Council.

Intending applicants should send a stamped and addressed foolscap envelope for form of application to C. G. Alderton, A.M.I.C.E., M.I.M. & Cy.E., Engineer and Surveyor, Council Offices, Esher, Surrey.

Applications, endorsed "Appointment of Quantity Surveyor," and accompanied by copies of three recent testimonials, must be delivered to the above-mentioned officer not later than Monday, the 18th November, 1946.

Canvassing in any form will be a disqualification.

FREDERICK EDWARDS.

Clerk of the Council.

Council Offices, Esher, Surrey.

667

METROPOLITAN BOROUGH OF HAMMERSMITH.

ARCHITECTURAL ASSISTANTS.

The Council invite applications from persons with architectural experience in housing and other building work in connection with the appointment of (a) a Temporary Architectural Assistant in Grade H (£450-£20-£550 per annum, plus bonus, at present £59 16s. per annum, commencing at £450 per annum), and (b) two Temporary Architectural Assistants in Grade I (£250-£20-£450 per annum, plus bonus, at present £59 16s., commencing salary according to age, experience and qualification).

Forms of application may be obtained from the undersigned, and must be returned to the Borough Engineer and Surveyor not later than two weeks after the appearance of this advertisement.

W. H. WARHURST.

Town Clerk.

Town Hall, Hammersmith, W.6.
11th October, 1946.

668

METROPOLITAN BOROUGH OF BETHNAL GREEN.

APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the appointment of Three Architectural Assistants (Temporary Staff), in the Borough Engineer and Surveyor's Department, for work in connection with Post-war Housing.

Candidates must have had wide experience in the preparation of designs, working drawings, specifications, and estimates, and preference will be given to Associate Members of the R.I.B.A., fully conversant with the principal Building Acts and Regulations.

Salary, in accordance with A.P.T. Division (Grade V) of the National Scales of Salaries, £460, rising to £510 per annum (plus London "weighting," at present £20 per annum), plus cost-of-living bonus, at present 25s. per week.

Applications, stating age, qualifications and experience, with copies of three testimonials, endorsed "Architectural Assistant," must reach the Borough Engineer and Surveyor, Town Hall, Bethnal Green, E.2, before noon on Friday, the 8th November, 1946.

S. P. FERDINANDO,

Town Clerk.
692

MIDDLESBROUGH EDUCATION COMMITTEE.

APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

Applications are invited for the under-mentioned appointments, on the established staff in the Architect's Section of the Middlesbrough Education Department:—

(a) **ARCHITECTURAL ASSISTANT.** Salary in accordance with Grade IV of the National Joint Council Scales (£420-£465 per annum).

Applicants should be experienced in the preparation of working drawings and details for public buildings. Preference will be given to candidates who are members of the Royal Institute of British Architects, and have had previous experience in educational building work.

(b) **ARCHITECTURAL ASSISTANT.** Salary in accordance with Grade I of the National Joint Council Scales (£330-£375 per annum).

Applicants should have had good general experience in an architectural office, and be competent to make surveys and take levels.

A cost-of-living bonus, at present £60 per annum, will be payable in addition to the basic salary in each case.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937.

Applications, stating appointment applied for, giving full details of age, training, qualifications, present and previous appointments, type of experience, together with copies of not more than three recent testimonials, should be delivered to the Director of Education, Education Offices, Woodlands Road, Middlesbrough, by not later than Friday, 22nd November, 1946.

Canvassing, directly or indirectly, will be a disqualification.

E. C. PARR,

Town Clerk.

Town Clerk's Office, Middlesbrough.
October, 1946. 697

STAFFORDSHIRE COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment, at a commencing salary in accordance with Grade I of the Administrative, Professional and Technical Division of the National Scales, amounting to £330 per annum, rising by annual increments of £15 to £375 per annum. A cost-of-living bonus, at present amounting to 25s. 16s. per annum for males, is payable in addition.

Applicants should have had good architectural training and experience in the Architect's Office, and preferably should have passed the Intermediate examination of the R.I.B.A.

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

Applicants must disclose in their application whether they are related to any member of the authority or to a holder of any senior office under the authority. Canvassing of members, directly or indirectly, will disqualify.

Applications, giving age, nationality, details of education, training, experience, qualifications, previous and present appointments, and accompanied by three recent testimonials, should be delivered in a sealed envelope to the County Architect, County Buildings, Stafford, as soon as possible.

T. H. EVANS,

Clerk of the County Council.

684

DEPARTMENT OF HEALTH FOR SCOTLAND.

CHIEF ARCHITECT AND PLANNING OFFICER.

Applications are invited by the Department of Health for Scotland for the post of Chief Architect and Planning Officer in Edinburgh, at a salary of £1,800 inclusive.

The appointment is subject to the usual Civil Service conditions as to pension, holidays, etc. If the successful applicant is a pensionable official of a local authority, the Local Government and Civil Service (Superannuation) Rules, 1936, will apply.

Candidates must be between the ages of 35 and 50 on 1st September, 1946, must be members of the R.I.B.A. and the T.P.I., and must have extensive experience of housing (with particular reference to layout, design, and the new forms of construction) and of town and country planning.

Forms of application, with further particulars of the appointment, may be obtained from the Establishment Officer (Room 31), Department of Health for Scotland, St. Andrew's House, Edinburgh, 1, and must be returned to him not later than the 31st October, 1946.

Those candidates who appear best qualified will be required to attend a Selection Board in Edinburgh or London.

627

HARROGATE AND DISTRICT REGIONAL PLANNING COMMITTEE.

APPOINTMENT OF PLANNING OFFICER.

Applications are invited for the appointment of Planning Officer, at a salary of £800, rising subject to satisfactory service by annual increments of £50 to a maximum of £1,000 per annum, plus cost-of-living bonus (at present 25s. 16s. per annum). Applicants must be Corporate Members of the Town Planning Institute, and have had considerable experience in the preparation and administration of planning schemes. Preference will be given to persons who also possess a recognized qualification in architecture, civil engineering, or surveying.

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

Applications, stating age, qualifications, and experience, accompanied by copies of two recent testimonials, and one name for reference, should be delivered to the undersigned in envelopes endorsed "Planning Officer," not later than the 8th November, 1946.

Canvassing, directly or indirectly, will disqualify.

J. M. DODDS,

Honorary Clerk of the Harrogate and District Regional Planning Committee.
Town Clerk's Office, Municipal Offices,
Harrogate, Yorks. 670

CITY OF LINCOLN.

CITY ENGINEER'S DEPARTMENT.

APPOINTMENT OF SENIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the City Engineer's Office.

The salary will be £460, rising to £510 per annum, plus cost-of-living bonus, in accordance with Grade V A.P.T. of the National Scale of Salaries and Conditions of Service.

Candidates should be Associate Members of the Royal Institute of British Architects (or hold equivalent qualifications), and have had good experience in general architectural work, including school planning and design, and in the preparation of working drawings and specifications.

The appointment will be subject to the provisions of the Local Government Officers' Superannuation Act, 1937, and one month's notice on either side, and the successful candidate will be required to pass a medical examination.

Forms of application can be obtained from and should be returned to the City Engineer and Surveyor, Corporation Offices, Silver Street, Lincoln, not later than Monday, 4th November, 1946.

J. H. SMITH,

Town Clerk.

Corporation Offices, Lincoln.
10th October, 1946. 676

THE GLASGOW SCHOOL OF ART.

The Governors invite applications for the post of the SENIOR ARCHITECTURAL ASSISTANT. Previous teaching experience, though desirable, is not essential. Initial salary will be according to qualifications and experience, but the post will offer to a suitable candidate opportunities for development. The hours and terms of appointment permit of a limited amount of private practice being undertaken.

Applications, stating age, qualifications and experience, and the names of at least two referees, to be lodged with the undersigned immediately.

G. MUIR MURRAY,

Secretary and Treasurer.

167, Renfrew Street, Glasgow, C.3. 654

SURREY COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the following appointments:—

PRINCIPAL ASSISTANT ARCHITECTS:

Commencing salary £800, rising by annual increments of £25 to a maximum of £900, inclusive.

Applicants must hold either a degree in Architecture or be Members of the Royal Institute of British Architects, and should have had a good experience in the control of staff, organisation of work, and had a good training and an adequate experience in the design and construction of modern buildings. One of the appointments will require a specialised knowledge of the design of school buildings.

The following appointments will carry a cost-of-living bonus, at present 25s. 16s., and London allowance of £20 per annum.

ASSISTANT ARCHITECTS (Grade VIII):

Commencing salary £625, rising by annual increments of £25 to a maximum of £700 per annum.

Applicants must hold either a degree in Architecture, or be Members of the Royal Institute of British Architects, and have had a good training and an adequate experience in the design and construction of modern buildings.

ASSISTANT ARCHITECTS (Grade V):

Commencing salary £460, rising by annual increments of £15/£20 to a maximum of £510 per annum.

Applicants must hold either a degree in Architecture or be Associate Members of the Royal Institute of British Architects, and should have had a good training and an adequate experience in the design and construction of modern buildings.

ARCHITECTURAL ASSISTANT (Grade I):

Commencing salary £330, rising by annual increments of £15 to a maximum of £375 per annum.

Applicants should have had a good training in architecture.

ASSISTANT QUANTITY SURVEYORS (Grade VIII):

Commencing salary £625, rising by annual increments of £25 to a maximum of £700 per annum.

Applicants should possess approved qualifications and experience, and preference will be given to those who are Members of the Royal Institution of Chartered Surveyors (Quantities Sub-Division). They should be capable of undertaking all stages of the work for the preparation of Bills of Materials, including preliminary estimates; the preparation and settlement of final accounts; site measurements; and the preparation of interim certificates.

ASSISTANT QUANTITY SURVEYORS (Grade V):

Commencing salary £460, rising by annual increments of £15/£20 to a maximum of £510.

Applicants should possess approved qualifications and experience, and preference will be given to those who are Members of the Royal Institution of Chartered Surveyors (Quantities Sub-Division). They should be experienced workers-up, capable of abstracting and billing in all trades and drafting specifications from Bills of Materials.

ASSISTANT QUANTITY SURVEYORS (Grade III):

Commencing salary £390, rising by annual increments of £15 to a maximum of £435 per annum.

Applicants should have passed at least the Intermediate Examination of the Royal Institution of Chartered Surveyors (Quantities Sub-Division), and be capable of undertaking working-up, and the general technical duties of a Quantity Surveyor's Office.

ASSISTANT BUILDING SURVEYOR (Grade V):

Commencing salary £460, rising by annual increments of £15/£20 to a maximum of £510.

Applicants should possess approved qualifications and experience, and preference will be given to those who are Members of the Royal Institution of Chartered Surveyors (Building Sub-Division). They should be capable of drafting specifications in all trades, preparing schedules of disbursements, the preparation of detailed estimates for general maintenance works, and surveys of properties.

All the appointments will be subject to the provisions of the Local Government Act, 1937, and the successful applicants will be required to pass a medical examination.

Applications, stating age, qualifications and experience, and accompanied by copies of three recent testimonials, should be sent to the County Architect, Surrey County Council, County Hall, Kingston-on-Thames, not later than the 15th November, 1946.

Canvassing, either directly or indirectly, will disqualify a candidate from consideration.

DUDLEY AUKLAND,

Clerk of the Council.

County Hall, Kingston-on-Thames. 691

THE POLYTECHNIC 309, REGENT STREET, W.1.
SCHOOL OF ARCHITECTURE, SURVEYING AND BUILDING.

Applications are invited for the post of **SENIOR ASSISTANT IN SURVEYING AND BUILDING**. Candidates must possess professional qualifications in Surveying and/or Building, and should have had both teaching and practical experience. Salary scale commences at £600 per annum, rising by annual increments of £25 to a maximum of £750 per annum, plus London allowance and additional allowance for training, subject to the usual deduction of 5 per cent. for superannuation.

Further particulars and forms of application, which should be returned not later than 15th November, may be obtained by sending a stamped addressed foolscap envelope to the undersigned.

J. C. JONES,
Director of Education. 687

BOROUGH OF SOUTHALL.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the following permanent appointment, in the Department of the Borough Engineer:—

Architectural Assistant, at a commencing salary of £485 per annum, rising by annual increments of £15 to £515 per annum (both salaries being inclusive of London weighting and present cost-of-living bonus).

Applicants should be registered Architects, and have experience in housing design. The Council will do all in its power to assist the successful candidate to obtain housing accommodation in the Borough. The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, on forms to be obtained from the Borough Engineer, Town Hall, Southall, must be returned, accompanied by copies of two recent testimonials, on or before 5th November, 1946.

Canvassing any Member of the Council or any Committee thereof, directly or indirectly, will disqualify.

M. LINDSAY TAYLOR,
Town Clerk.

Town Clerk's Offices, South Road, Southall. 690
 October, 1946.

RURAL DISTRICT COUNCIL OF WINCANTON.

ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Architectural Assistant, in the Architect's and Housing Department of the Council.

The appointment will be temporary, but will subsist for at least three years.

Applicants must be competent to make surveys, prepare plans, deal with quantities, and to assist generally in the drawing office.

The salary will be in accordance with Grade III of the National Scale (390×£15=£435), with cost-of-living bonus (at present £59 16s. per annum).

Applications, stating age, qualifications and experience, and enclosing copies of not more than three recent testimonials, must be received by the undersigned not later than 30th October, 1946.

Canvassing, direct or indirect, will be a disqualification.

S. L. CHAVE,
Clerk of the Council.

Council Offices, Wincanton. 655
 10th October, 1946.

PLYMOUTH REGIONAL JOINT PLANNING COMMITTEE.

Applications are invited for the position of **SENIOR PLANNING ASSISTANT**. The salary will be in accordance with Grade V in the Administrative, Professional, and Technical Division, with a commencing salary of £460, rising to £510 per annum, plus bonus (at present £59 16s.), together with a travelling allowance in accordance with the Devon County Council scale.

Applicants should have had practical experience in the preparation of planning schemes with a Local Authority or Joint Committee, and be familiar with Interim Development control, and preference will be given to candidates who possess additional qualifications.

The person appointed will be required to devote the whole of his time to the services of the Joint Committee, and the appointment will be subject to one month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937. The successful candidate will be required to pass a medical examination.

Applications in writing, stating age, qualifications and experience, accompanied by copies of two recent testimonials, should be forwarded to reach the undersigned not later than the 11th November, 1946.

PERCY T. LOOSEMORE,
For Joint Clerks.

Council Offices, Plympton. 662
 11th October, 1946.

Architectural Appointments Vacant

Four lines or under, 5s.; each additional line, 1s. 6d.

Wherever possible prospective employers are urged to give in their advertisements 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.

LONDON PASSENGER TRANSPORT BOARD.—Applications are invited for appointments on the temporary staff of the Architect's Office as follows: **ASSISTANT ARCHITECTS, ARCHITECTURAL ASSISTANTS, STRUCTURAL ENGINEERING ASSISTANTS.** Salaries range from £250 to £465 per annum, according to ability, qualifications and experience, plus war advance, at present £72 16s. per annum. Applications, which should give a brief outline of training and experience, to be sent to Assistant Staff Officer (ER/E.261), 55, Broadway, Westminster, S.W.1, or by telephone ABBEY 1234, extension 194. 675

LEY, COLBECK & PARTNERS have a vacancy for a Senior Draughtsman, who has at least 5 years' experience of London practice. 'Phone London Wall 2917. 596

SENIOR AND JUNIOR ASSISTANTS required immediately for general practice. State age, experience, and salary required, to Howard Williams & Partner, 2, St. Andrews Place, Cardiff. 613

ARCHITECTURAL ASSISTANTS (Inter. R.I.B.A. Standard) and SURVEYORS (all types of surveying and quantities) required; salaries £300 p.a. and upwards, according to qualifications; offices situated in country area; five-day week of 40 hours; expenses will be paid for interviews. W. James Venables, L.R.I.B.A., 1, West Road, Congleton, Cheshire (Telephone 2003). 629

TWO ASSISTANTS required for progressive private office on East Coast. All details and salary to Box 648.

ARCHITECTURAL ASSISTANT required in busy Architect's Office, Huddersfield; commercial and housing work; salary £400 to £500, according to ability—Apply, stating age and experience, to Box 677.

CONSULTING ENGINEER would like to meet Architect requiring temporary furnished office; facilities for one drawing board, further accommodation likely to be available by December; period of sharing dependent on future requirements of each; W.C. area. Box 680.

BUILDERS' SURVEYOR and ESTIMATOR required for priced Schedules of Dilapidations; experienced man over 35, able to work without supervision; London area. Salary desired and particulars to Box 681.

THE ALUMINIUM DEVELOPMENT ASSOCIATION requires the services of an architectural trained Assistant Officer, to specialize on the application of aluminium and aluminium alloys in buildings; salary £450-£700 p.a. Experience and qualifications to A.D.A., 67, Brook Street, W.1. 682

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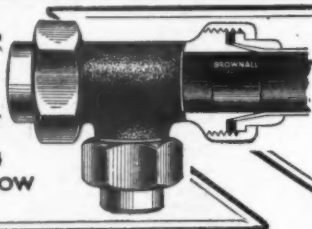
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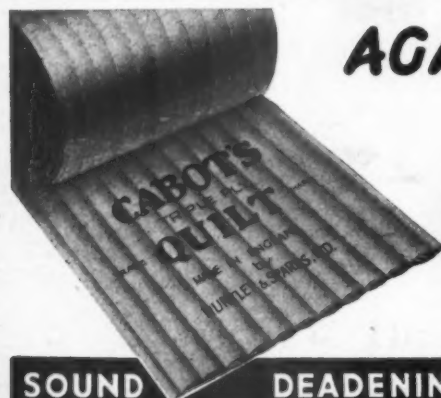


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