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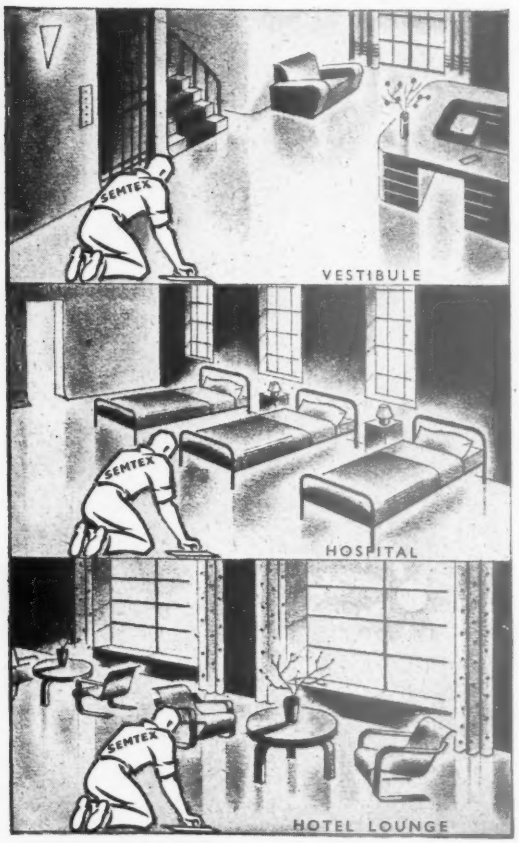

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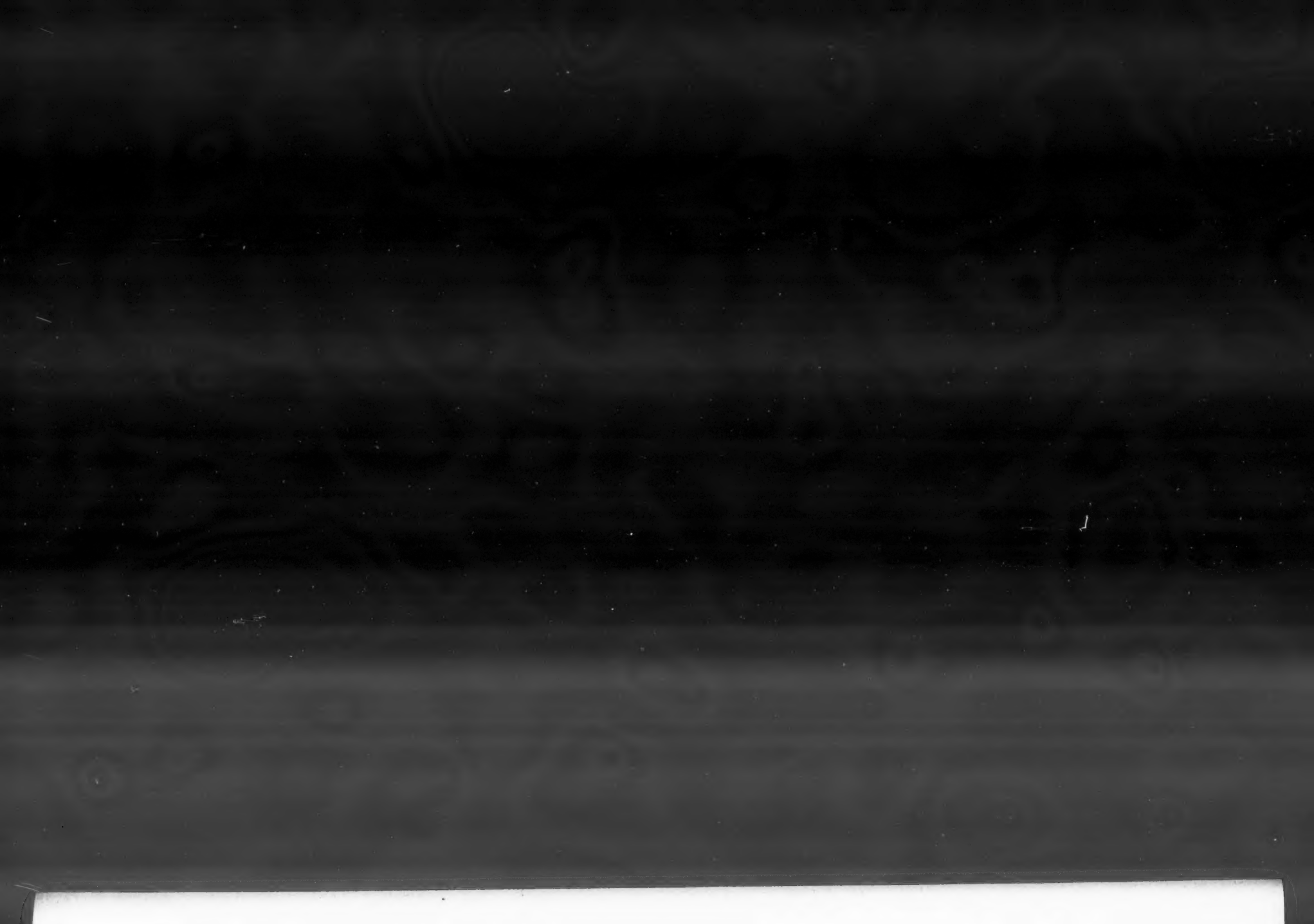

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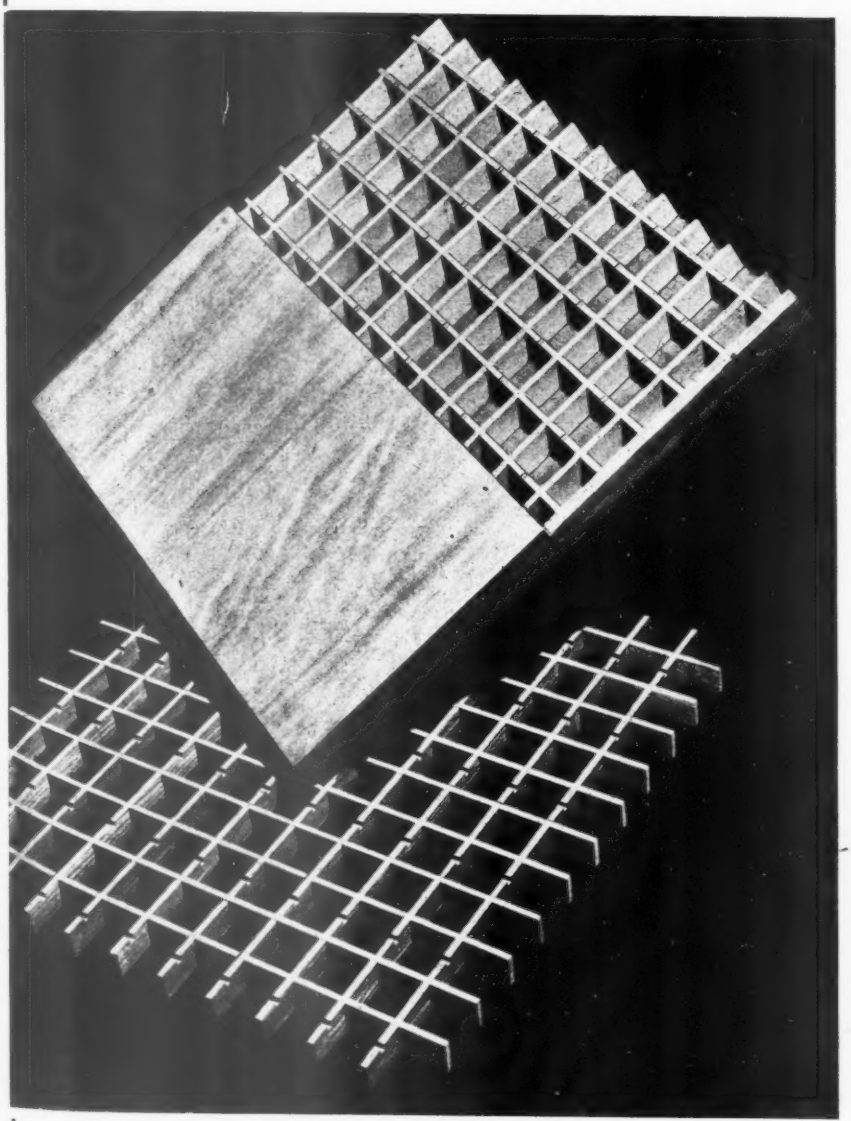

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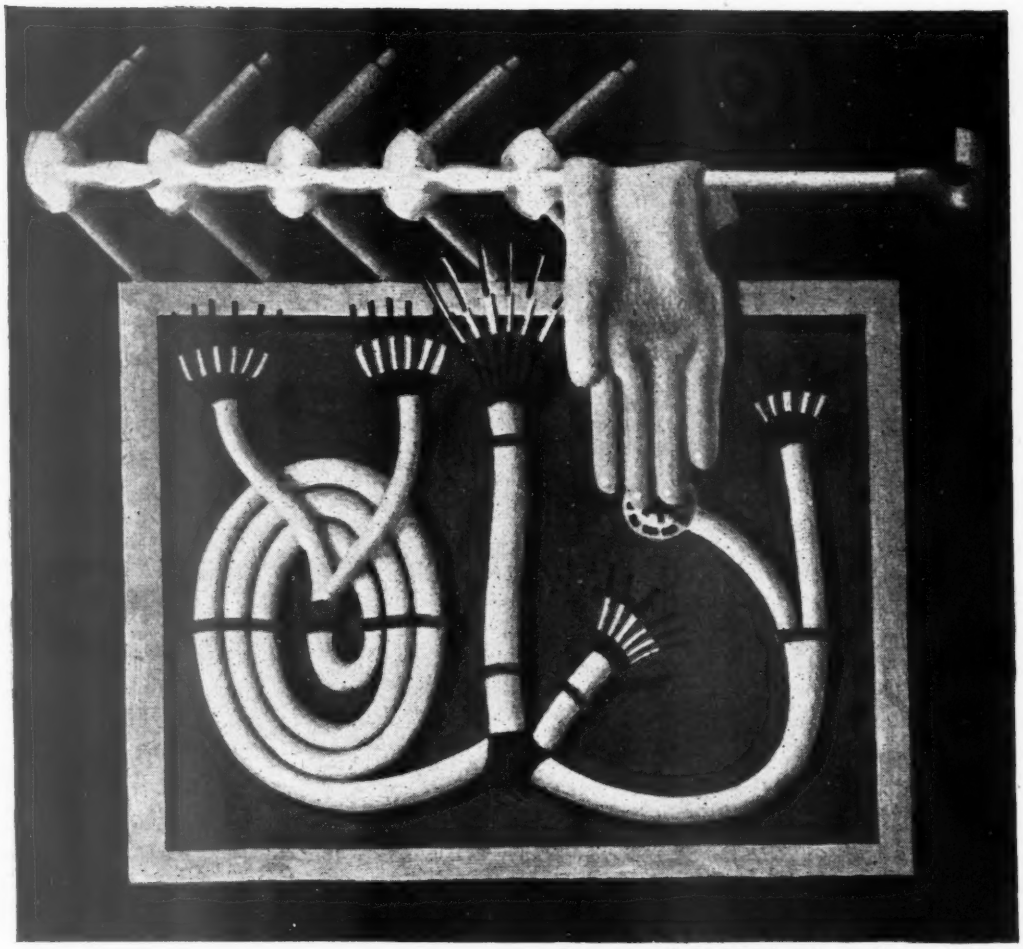

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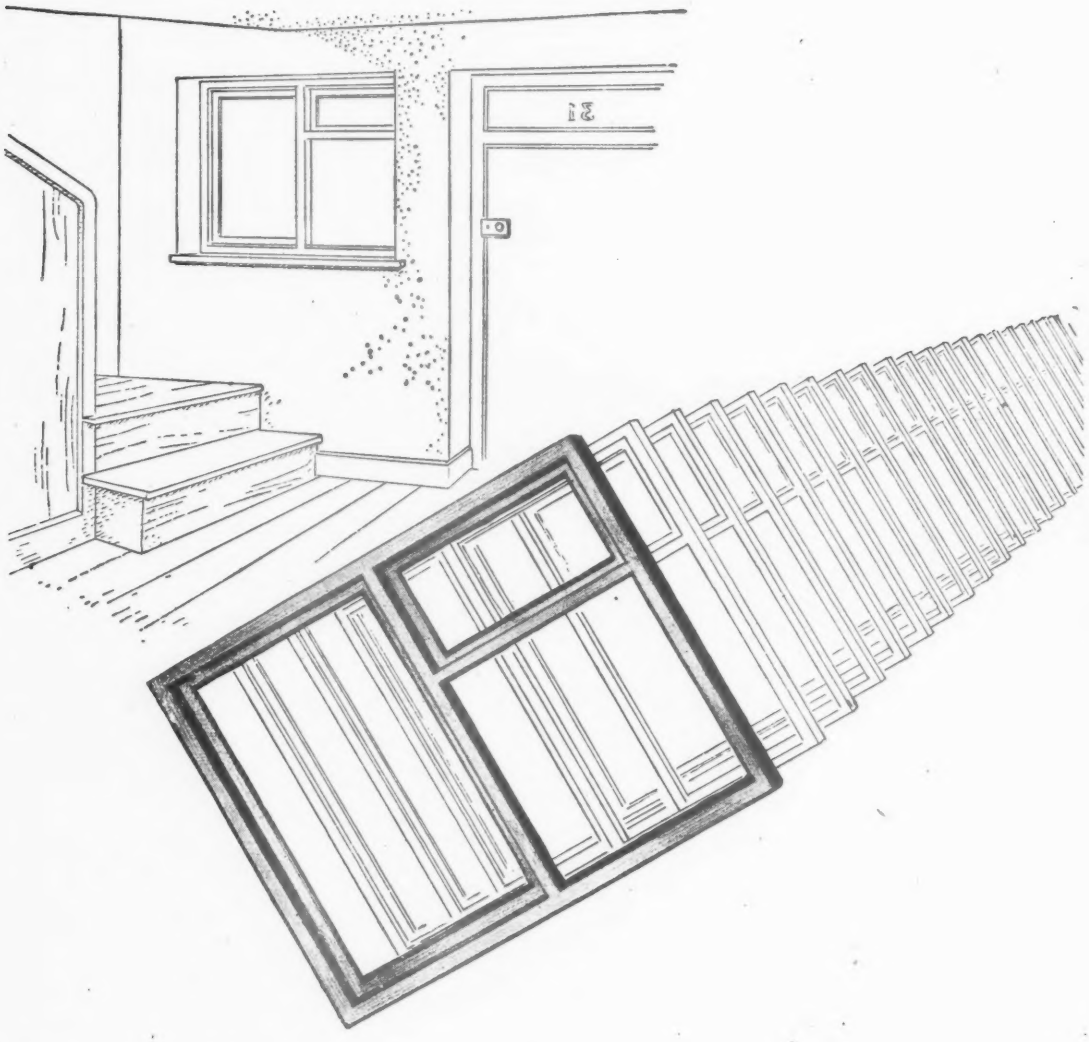

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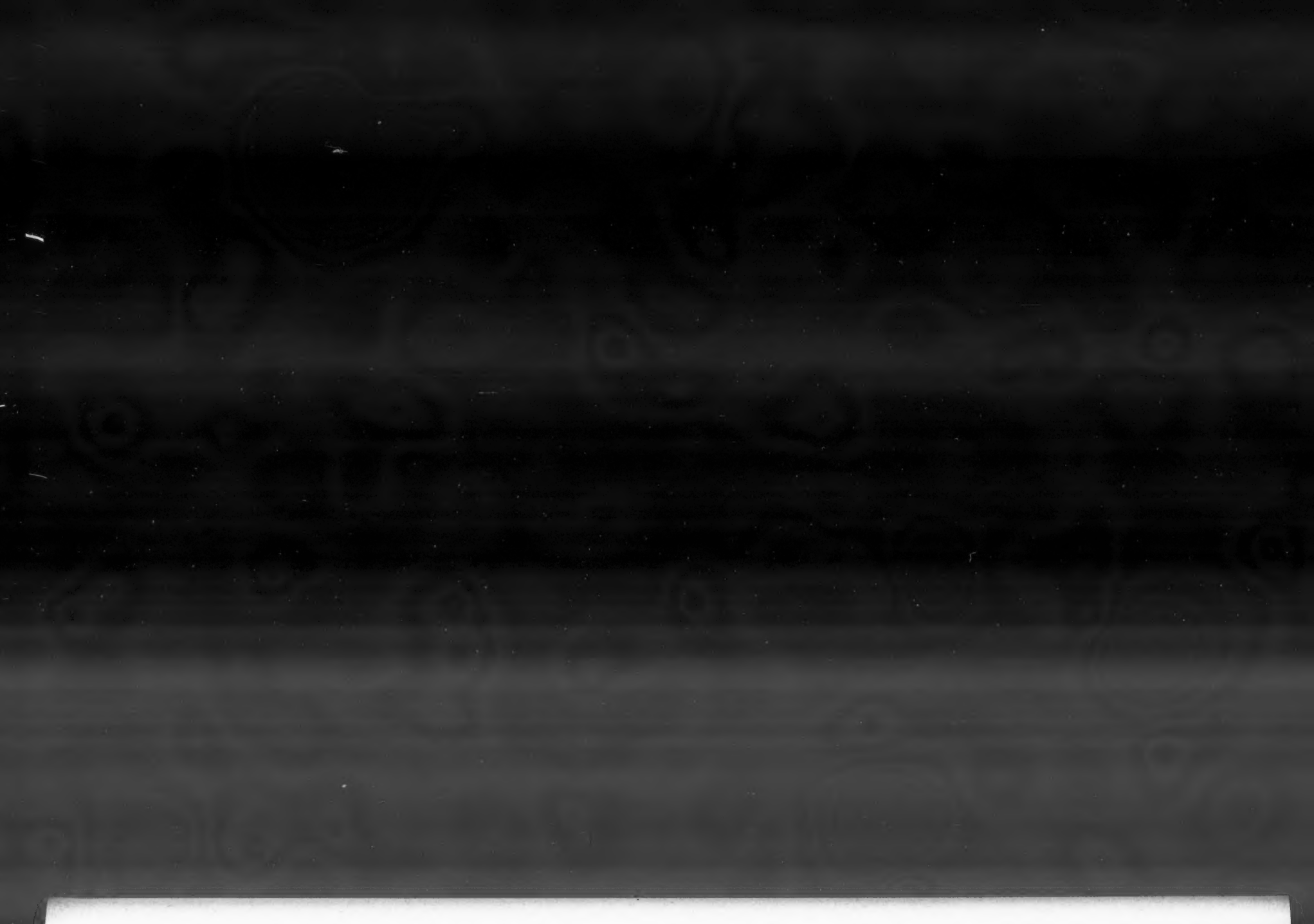

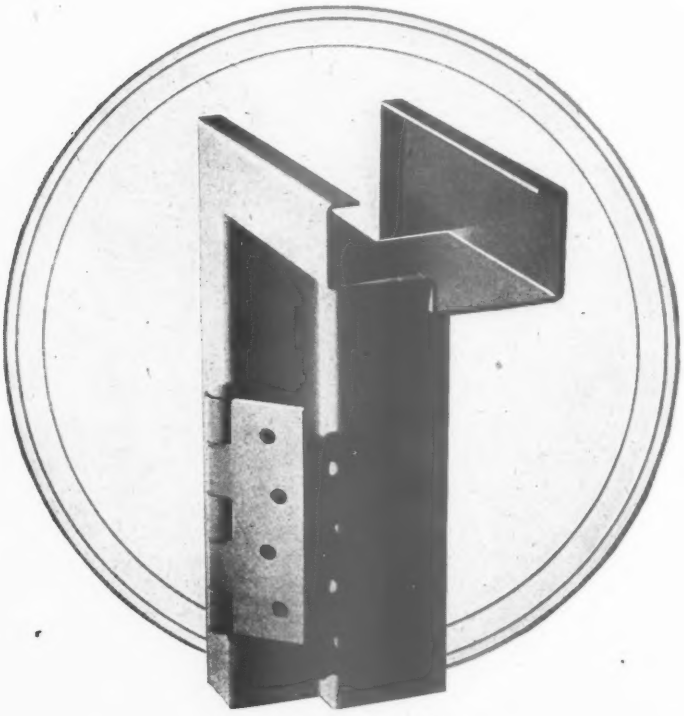

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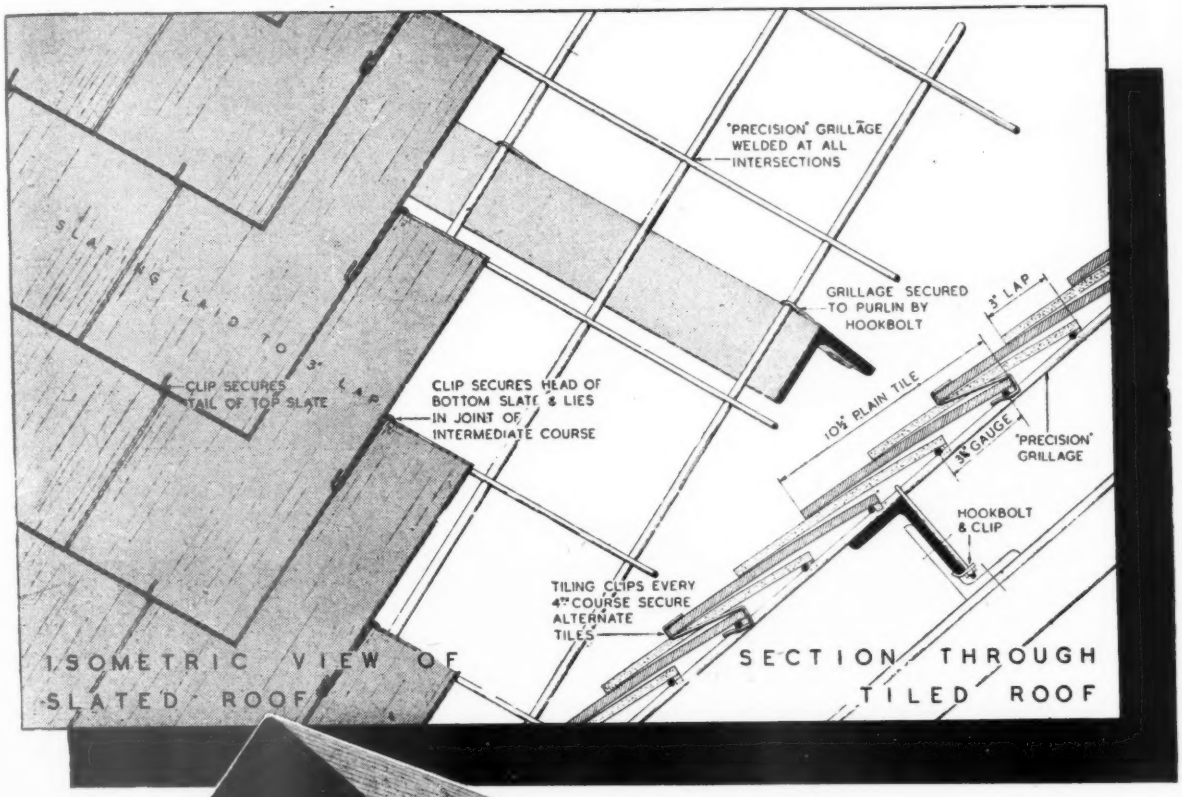

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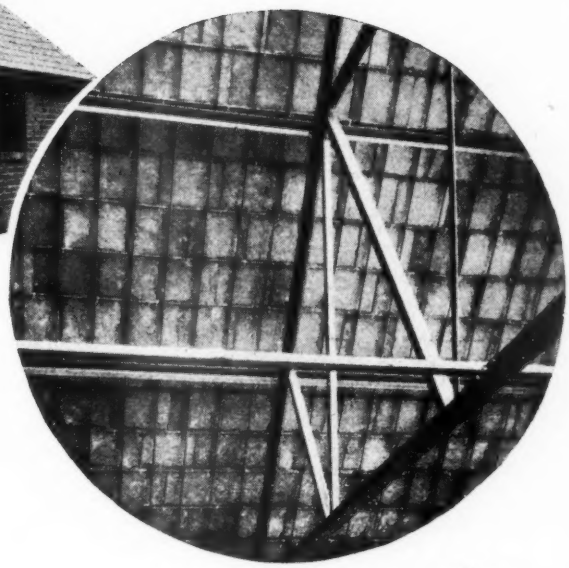

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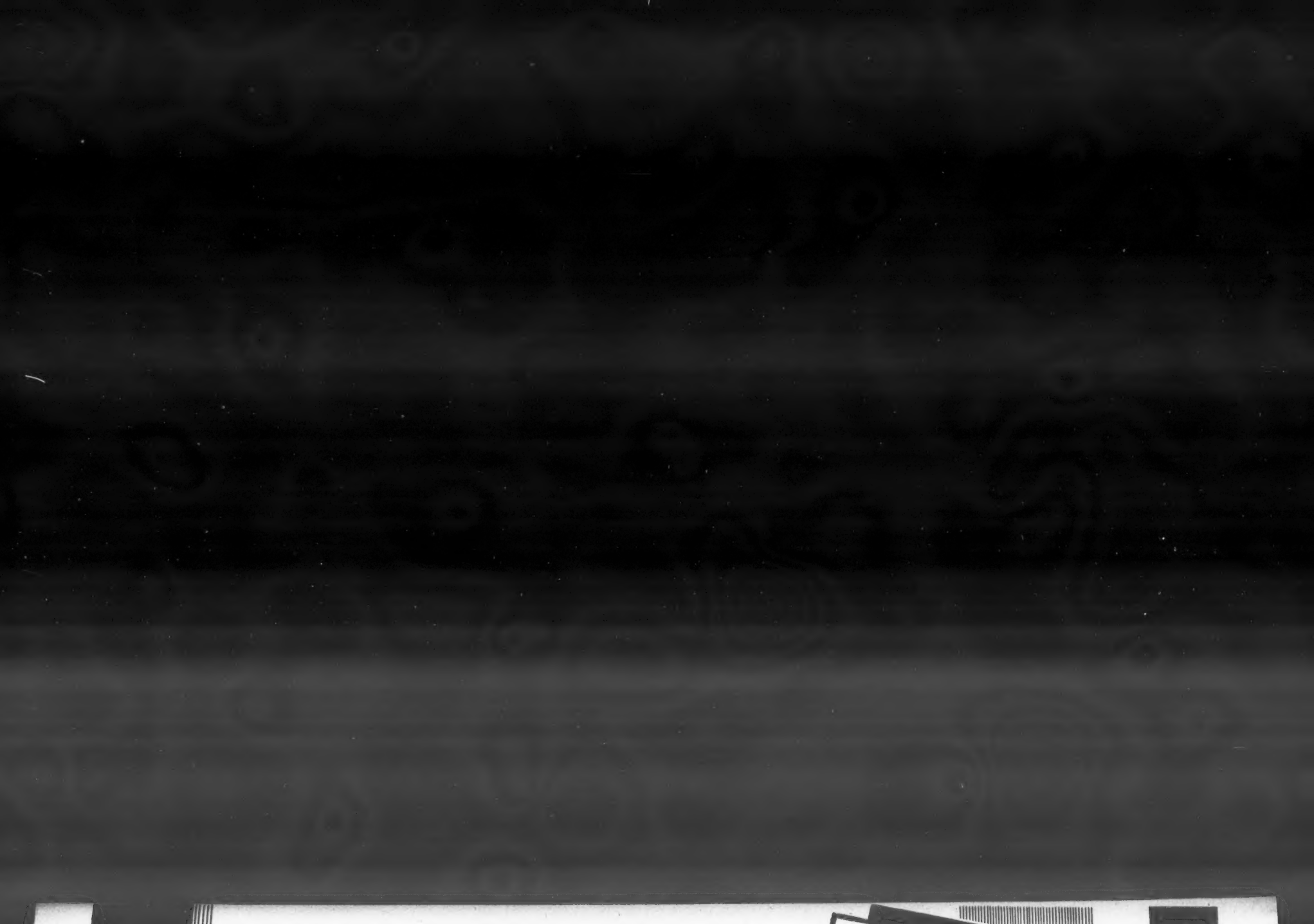
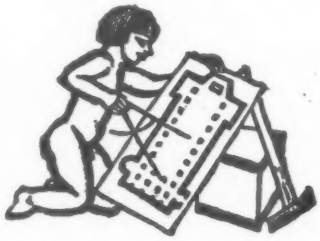


In common with every other periodical this JOURNAL *is rationed to a small part of its peacetime needs of paper. Thus a balance has to be struck between circulation and number of pages. We regret that unless a reader is a subscriber we cannot guarantee that he will get a copy of the* JOURNAL. *Newsagents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



DIARY FOR APRIL MAY AND JUNE

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

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

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

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

HASLINGDEN. *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA.) MAR. 29-AP. 7

LONDON. R. M. Wynne-Edwards. *Building Plant.* Architectural Science Board Lecture. At the RIBA, 66, Portland Place, W.1. (Sponsor, RIBA.) 5.30 p.m. AP. 18

Thomas Sharp. *Planning a Cathedral City.* At 28, King Street, Covent Garden. W.C.2. Chairman, H. G. Strauss, M.P. (Sponsor, TCPA.) 1.15 p.m. AP. 5

F. J. Osborn. *The Garden City Idea in 1945.* At Caxton Hall, Caxton Street, Westminster, S.W.1. (Sponsor, TPI.) 6 p.m. AP. 5

C. Roland-Woods. *The Work of the Codes of Practice Committees.* At 66, Portland Place, W.1. (Sponsor, RIBA). 6 p.m. AP. 10

A. Trystan Edwards. *Sunlight and Sanitation in Relation to the Planning of Building.* At the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.1. Chairman, A. C. Bossom, M.P. (Sponsor, Chadwick Trust.) 2.30 p.m. AP. 10

F. A. Mercer, Editor of "Art and Industry." *The Industrial Design Consultant.* At the Royal Society of Arts, John Adam Street, W.C.2. (Sponsor, RSA.) 1.45 p.m. AP. 11

R. O. Ackerley. *Factors Influencing the Design of Electric Lighting Installations for Building Interiors.* At the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2. (Sponsor, IEE.) 5.30 p.m. AP. 12

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

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

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

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

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

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

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

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

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

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

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

LOUGHBOROUGH. *Royal Sanitary Institute Sessional Meeting.* W. Granger, Borough Surveyor and Water Engineer, Loughborough. *Rural Water Supplies: Ideals and Practical Possibilities.* Visits to Loughborough College or the laboratories of the Genatosan Company. Chairman: Dr. A. Massey, C.B.E. (Member of Council). (Sponsor, RSI.) 10.30 a.m. AP. 14

WALLASEY. *The English Town: Its Continuity and Development.* Exhibition. At the Education Department. Wallasey, Cheshire. (Sponsor, TCPA.) AP. 14-28

NEWS

THURSDAY, MARCH 29, 1945
No. 2618. VOL. 101

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

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

★★ *means important news, for reasons which may or may not be obvious.*
Any feature marked with more than two stars is very big building news indeed.

The Ministry of War Transport should publish at once the data needed to FORMULATE A PLAN FOR INLAND TRANSPORT, particularly motorways.

So urges Mr. G. N. Wilson, chairman of the British Road Federation, in a statement. He says: The Civil Servants and the Treasury should be the servants of the general public and of the road-users, and not, as they are at the moment, the secret pundits operating a restrictive and abortive policy. If the Government has no policy, then the whole question should be brought out into the open. Once the information is published, there will be no difficulty in formulating an overall plan of road construction and improvement.

★

Members of the Gravesend Council complain that the Health Ministry is MAKING THEM BUILD MODERN SLUMS.

The complaints were made during a discussion of the layout of prefabricated houses for the town. To fall in with the Ministry's wishes the Council will have to waive its building bye-laws about the width of streets and provision of footpaths. Councillor Dr. J. I. Hagard described the layout of the proposed estate as awful. He said: Some of the roads will be only 10 ft. wide, with no footpaths, and many houses will have only 14 ft. of ground at the back. The Mayor (Councillor H. Davidson) said the Council is strongly opposed to the Ministry's scheme, but has to accept it to get temporary houses.

From AN ARCHITECT'S *Commonplace Book*

SUBTERRANEAN FOLLY : CATACOMBS OF WYCOMBE. [*From* The Clubs of the Georgian Rakes, *by Louis C. Jones (Columbia University Press)*.] A decade before he rebuilt the church, Sir Francis (Dashwood) had rebuilt the road from West Wycombe to High Wycombe. . . . One of the reasons for this project was to relieve the unemployment which was afflicting the town at the time. The chalk for making the roadbed came from a mine under the church hill. The workers dug long tunnels into the hill and then mined out the chalk, making, either by accident or design, three large rooms at various points in the tunnel. No chalk has been mined since 1751, and the cave is very much as it was then. The passageways are high and wide, but often twisting and deceiving, for there are innumerable blind alleys to disconcert the newcomer. The cave, as the mine is called, runs back into the hill about two hundred and eighty yards. In one place the interweaving alleyways remind one of the catacombs at Rome, and at another point, farther into the hill, there is a stream deep enough for Sir Francis to have had a little boat, for crossing what he called the River Styx. Halfway from the entrance to the Styx is a great vaulted room, a good thirty-five feet high. In each of the corners is a large niche or alcove, obviously made with some deeper purpose than the mining of chalk. . . . It was here that the Medmenham Monks met from time to time. Perhaps to give his tenants further employment, perhaps to have a fitting entrance to a meeting place of the Medmenhamites, perhaps merely for the fun of it, Sir Francis had made at the mouth of the cave a large Gothic façade with pointed towers and pillared arches.

★★

The first two years after the war in Europe will be treated as a period of National emergency when EXCEPTIONAL MEASURES WILL BE TAKEN TO MEET THE HOUSING SHORTAGE.

This declaration is given in a White Paper published by Lord Woolton, Minister of Reconstruction, to state the objectives of the Government's housing policy and the organization for carrying it into effect, and to provide a summary statement of action so far taken. The Government, it is stated, intends to press forward during the current year with the manufacture of temporary houses to the fullest possible extent. How long production will be continued thereafter will depend on the speed attained in the production of permanent houses. The Government's primary objective will be to provide the maximum number of dwellings, permanent or temporary, in the emergency period. In any event, production of temporary houses will continue long enough to meet the allocations, numbering 145,000, which have been made to local authorities. So far as possible materials and fitments for the housing programme are being standardized. As the war situation permits, manufacturers will be enabled to put these standard articles into production without waiting for specific orders. They will be assured, if necessary, by the Government of a market for their products. A warning is that, although housing will have the highest priority among civil work, the total building force will have many other claims on it. It is proposed to provide subsidies for house building both by local authorities and by private enterprise.

The LCC Town Planning Committee recommends that DEPTFORD CREEK BRIDGE be reconstructed as an opening bridge and widened, at an estimated cost of £280,000.

Under the reconstruction scheme the bridge will be widened from 45 ft. to 70 ft., providing for four lanes of traffic with dual carriageway 20 ft. wide. Deptford Creek Bridge, on a road forming part of the main traffic route from London Bridge along the south bank of the Thames to Greenwich and Woolwich, was damaged in September, 1940, and became unusable as an opening bridge. Repairs were carried out to enable it to be used as a fixed bridge.

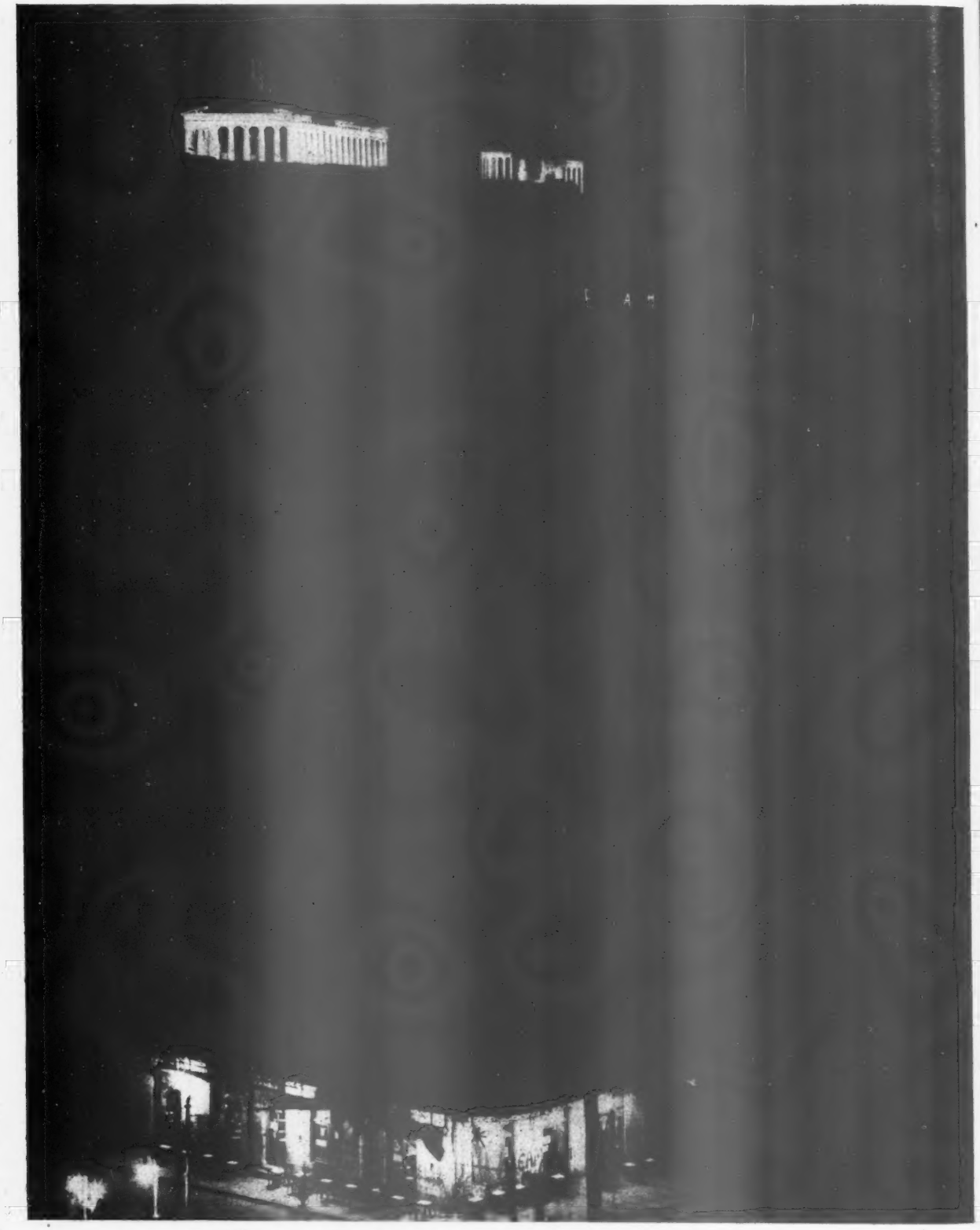
During the housing emergency, says Mr. George Hicks, Joint Parliamentary Secretary to the Ministry of Works, A SUB-STANDARD OF ACCOMMODATION WILL HAVE TO BE ACCEPTED.

Mr. Hicks, who was speaking at Sutton, Surrey, stated that there is a total need of 4,000,000 new houses. The Government's plans for labour, materials, and building methods will in a few years' time produce a good machine for turning out perhaps 400,000 houses a year.

Sir Stafford Cripps : To have real success in the electrification of the country WE MUST BRING DOWN THE PRICE OF GENERATING POWER.

Proposing the toast of The Association at a luncheon in London of the British Electrical Development Association, Sir Stafford Cripps, Minister of Aircraft Production, said it was most fortunate from a defence point of view that the grid system had been established before the war, and was capable of comparatively easy expansion where necessary. There has been a great and almost embarrassing advance in the use of electricity in this country, and after the war the field will be open to a most extensive development of electrical appliances of all kinds. To have real success in the electrification of the country we must bring down the price of generating power, and must regard the market for appliances not as a luxury or semi-luxury market, as we did before the war, but as

The Gas Light and Coke Company invited over one hundred architects, master builders and heating engineers to visit the Kitchen Planning Exhibition at Dorland Hall and afterwards entertained them to lunch. In the photograph, taken during lunch, are, from left to right, Mr. Grey Wornum, Mr. A. E. Sylvester, Chairman, Dr. Oscar Faber, President of the Institution of Heating and Ventilating Engineers, and Mr. F. M. Birks, chief engineer of the Gas Light and Coke Company.



The Light of Liberation

The light of liberation once more shines on the monuments of ancient Greece, the birthplace of modern science and of the democratic ideal. This remarkable photograph was taken by Dmitri Kessel, photographer for *Life*, from a hotel window in Athens after the entrance of the Allies. The flood-lit Parthenon and Erechtheum float serenely and magically above the dark streets of the modern town. A discordant note is struck by the leftist letters EAM burning on the side of the Acropolis hill, discordant at least to EDES and to others, but acceptable perhaps to Athena Parthenos, a goddess who, though pre-eminent as a civic deity, was also wise in the arts of war.

one of the necessities of modern civilization. That meant the introduction of mass production on the very latest and most efficient lines, with massive tooling up and ample capitalization. If we really developed properly our domestic market on mass-production lines, then we could have a very good chance of competing in the export market. Lord Brabazon, president of the association, responding, said that the recent shortage of electricity was partly due to poor and unsuitable coal. In the period between the two wars the amount of coal required to generate one unit of electricity had been reduced from 3 lb. to less than 1 lb.

★

Prefabricated housing difficulties have made THE GOVERNMENT TURN TO MORE PERMANENT CONSTRUCTION, says Mr. George Hicks.

Speaking at the Housing Centre, London, Mr. George Hicks, Parliamentary Secretary to the Ministry of Works, said: The public has been led to think, wishfully, that full prefabrication has already been achieved, and that it will automatically, like a fairy godmother, wave a wand and solve the housing problem. The public must not be misled. Even after a way has been found to build houses by factory methods, the factory and the tools have to be prepared and site conditions studied. The application of prefabricated methods to temporary housing proves difficult in all three of these processes, and while the programme for temporary construction was proceeding the difficulties incurred had made the Government consider it worth while to turn its energies to more permanent forms of construction.

Two-storey houses are wanted by Poplar Borough Council PREFABRICATED IN BLOCKS OF FOUR.

London boroughs are calling on the Minister of Health to arrange for the provision of two-storey terraced temporary houses with three bedrooms instead of small two-bedroom bungalows. According to the *Evening News* the Standing Joint Committee of the Metropolitan Boroughs urges that the highest possible number of permanent dwellings should be provided and that the programme for temporary dwellings should be subsidiary to that main objective. Facts are given relating to Poplar showing that the small bungalows take up too much space. Nearly 10,000 houses in Poplar have been lost, and the erection of some 1,500 to 2,000 two-bedroom bungalows will not be adequate to meet the immediate post-war situation. Furthermore, to put up that number of temporary bungalows it would be necessary to take every vacant site in the borough, apart from one specially defined area. As the temporary bungalows must remain for 10 years, the programme for permanent houses would be largely stultified and proper re-development rendered impossible. The Poplar Council therefore wants two-storey houses which can be prefabricated in blocks of four. Each house has a living room, dining-room, kitchen, and three bedrooms. These details are given of the accommodation which could be provided on two specific sites in the Borough under the existing and proposed temporary arrangements as compared with accommodation pre-war. Pre-war houses 51 (158 bedrooms); temporary bungalows 21 (42 bedrooms); two-storey temporary houses 32 (96 bedrooms).

HOUSING: A POLICY—I

"ALCOHOL for immediate action. Caffein for common council. Theine for thought," declares a wise character in a contemporary novel. If last week's debate in the Commons and the new White Paper* are indications, it is clear that a good deal more tea must be drunk by those concerned with housing and planning if alcohol and coffee are to produce the right results in the future.

In the urgent period now upon us the Government hopes to provide half a million houses in two years. In attempting this it is faced with very real difficulties and it cannot be blamed for the shortage of labour, materials (especially timber and steel) and of factory space. There have, however, been justified complaints about its prevarication.

The excuse for a change in policy on temporary houses was the shortage of means of production, but this merely led to the question as to why this difficulty had not been foreseen in the first place. There are obviously other difficulties which have decided the Government to whittle down its scheme of temporary housing, such as the siting problem and the lack of enthusiasm of local authorities for the scheme. This change of policy is not without its bright side. The official temporary bungalow is very badly planned, and its wide frontage is unsuitable for the congested areas where it will be most needed. The houses are wasteful and, as Astragal pointed out last week, are temporary by name but not by nature. The proposed ten year life is precisely the most unsuitable length of life. Real emergency stop-gap types are needed, those Uni-Seco and Nissen huts now being erected somewhat furtively in some of the most devastated areas of London being far more suitable, for all their inadequacy, than the official Portal types. The houses soon to be shipped from the USA are also nearer the real requirements, and such systems as the emergency concrete arch dwellings illustrated in the Journal for January 4 this year have not received the official attention they merit. In planning, if we must have rigid types, then that with the narrow frontage prepared by Liverpool (see A.J. of last week) is a great advance on the official temporary house.

In permanent housing we believe that the authorities are beginning to see the right way through, and are wisely considering all methods of construction which do not draw on the limited traditional building labour. Prefabricated systems for permanent houses are being studied by MOW, such as the Braithwaite, the Arcon, the Howard, and others. The Swedish timber house is not being ignored, and the promising possibilities of light steel framework and lightweight concrete are rightly receiving attention. The excellent Duplex idea, too, is well in mind. More attention yet needs to be given to the conversion of existing buildings and to prefabrication applied to flats; also to such proposals as the Birmingham

* *Housing*, presented by the Minister of Reconstruction to Parliament (HMSO, 2d.)

house, the two stage house, and Mr. Arup's box construction. There is an important general attitude towards housing as a whole which we would put forward in conclusion. The Journal has consistently advocated temporary housing, and now that official policy appears to be moving away from the idea, we reiterate our faith in it *if rightly applied.* Indeed we believe that the idea should be extended to include all housing to this extent: that (*a*) an immediate development of the truly temporary house is needed within the physical limitations—of the *emergency* house which is not intended to be anything more than a stop-gap to last 2 to 3 years and then to be salvaged for what it is worth or entirely scrapped. At the same time (*b*) the length of life of the so-called permanent house should in the main now be regarded as finished in 25 to 30 years. The obvious reasons for this are that we live in a truly transitional period. All conditions—technical, social and economic—are in a state of rapid flux and considerable uncertainty. We should not attempt to condition the environment of the next generation when our only certain knowledge about it is that it will demand greater changes than have ever occurred before in a short space of time.

Housing cannot be separated from the wider problems of siting and planning, and uncertain policy and leadership here are now blocking the road to the housing solution. In the coming weeks we will attempt to express a clear opinion on these all-important subjects in relation to housing.

The Architects' Journal
War Address: 45, The Avenue, Cheam, Surrey
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NOTES & TOPICS

THE NEW SECRETARY

Mr. Spragg's appointment as Secretary of the RIBA comes rather suddenly, as it was generally believed that no appointment would be made until after the war. It is evident that the Council has been well pleased with Mr. Spragg's work since he became Acting Secretary on Sir Ian MacAlister's retirement a year ago.

*

The new Secretary must know all the ins and outs of the job, for he joined the RIBA staff in 1913 and was Sir Ian's right-hand man for nearly twenty years. He will be all the more valuable to the RIBA in the coming hectic times, not only because of his wide personal contacts in all the highways and byways of the building country, but because of his friendly and always helpful personality. This is no time for architects and their representatives to retire to rarified realms of exclusiveness and inaccessibility.

WINDOWS OF THE SOULLESS

A copy of a circular letter sent out with BS Handbook No. 3 by the Ministry of Health to all Local Authorities has just come into my hands. It is of such cardinal importance that I now reproduce the significant extract from this letter: "The information given in the Handbook should be a guidance to Local Authorities in the preparation of their post-war housing plans, and it will be a condition of the Ministry's approval of such plans that they conform to the standards of materials and incorporate the standard equipment described in the Handbook." This is now confirmed in the new White Paper on Housing.

*

At first sight this object strikes one as admirable, for do we not all want to maintain suitable and minimum standards of building? In so far as standards of quality and performance, and those excellent standards which promote interchangeability are concerned, we wholeheartedly approve, and in practice architects are among the staunchest upholders of all such BSSs. We shall be forgiven, therefore, if we take exception to the peremptory style of this letter: "and it will be a *condition* of the Ministry's approval."

*

Consider what this means. Among the products listed as standard in BS Handbook No. 3 are doors, wooden gates, wood mouldings, stairs and windows, metal windows, glazed tile fireplaces, chimney pots, basins and baths. All these are design standards as well as standards of quality or dimension. Not all are important, but some are vital.

*

Whatever the design, type, or style of house the architect is to be limited in the long post-war years to two ranges of windows: the standard wood or steel casements. He will have the choice in steel of the small pane or the horizontal pane of unfortunate memory. The colourless, insipid proportions of these casements will multiply like spawn throughout the land. Progress of thought, design, and improvement in living and visual environment will be blasted for years to come by the necessity to take and use these weedy bits of metal. In wood we are somewhat better served in the matter of proportion, but after using twenty million BSS 644, Pt. 1—1944, even these will begin to pall.

*

This, unfortunately, is just a beginning. It should be noticed that the letter concludes, hopefully, that addi-

tional standards are being prepared. Excellent. Why not absolutely standard kitchens? We are coming to that. After all, if the architect has no choice, why should the housewife have any? Why should she want a change of kitchen? Why, for that matter, not a standard house? Why should anyone want a change of house? Let's design one house and build five million. It simplifies things. Apparently we are nearer to this than levity suggests.

*

One cannot but take the charitable view that a slip-up has been made on this matter. After all, its purpose would be served if it indicated that the various standards were available, that they represented the minimum quality of building that could be allowed, and that they might promote some economy if used in sufficient numbers. To attempt to make them mandatory is a cardinal error in standardization. Standards serve the community only so long as they are used willingly. If imposed from above they are liable to lose their usefulness and become a bar on progress.

*

It is unlikely that the Ministry has heard the last of this.

INCOHERENT TRIO

It was six years ago, in these pages, that I first used the expression Total Architecture. Since then I have continued to note the lack of liaison between the different branches of our architectural and planning world. The right hand of the Reconstructionist knoweth not what his left hand doeth. On the rough analogy of the double bass player in the Queen's Hall orchestra who first heard the violins when he took a night off and went to the Proms, the town planners and the country planners, the housing experts and the prefabricators, the manufacturers and farmers, the public health doctors and employers, the artists and technicians, may some day meet by chance in a forgotten committee room and be amazed to find that they are all working on the same job.

*

But we can prevent that happening, entertaining and instructive as it would be. For even if the Government has said No to a National Plan, is that any reason why we, the people, should abandon national planning?—why we, the orchestra, should not take it upon ourselves to conduct the conductor? It would not be the first time. If the national plan cannot come from above, then it must come from below. Each planner, each architect, each technician, each citizen, must be a dual-purpose jigsaw piece in the single pattern of the new Britain which is shaping itself before our eyes. He must retain his self, but he must also be part of the picture, working towards its coherence as a whole.

*

To place their facts and hopes and arguments within this total frame is the clear duty of all those who speak or write or talk about architecture and planning at the present chaotic time, and especially of those whose task it is to educate the public about the great building issues of the day. Yet what do we find? A mess of private heavens which may become a public hell.

*

Take, as example, the trio of publications which has come into my hands this week. *Homes for All*, a record of BBC discussions on housing; the Georgian Group's 1944 Report; and *The Architecture of the Fire Service*, an RIBA Distinction Thesis by Mr. Hedley Miller, a Plymouth student. The BBC opens the preface to its discussions on housing with a blunt and fantastic apology for not saying much about architecture. The Georgians, on the other hand, are naturally full of architecture, but the BBC discussions on planning ignore the Georgians utterly, as though most of the country and the best of the towns had not been designed by these men of the Age of Reason, with their legacy of vital factors affecting present proposals.

*

Mr. Miller is interesting and enthusiastic about the NFS down the ages, but says nothing about the various kinds of housing which were presumably the victims of these byegone conflagrations; nor does he link his historical pageant with the present and impending condition of fire fighting and prevention among the *Homes for All*.

*

Yet indiyidually these three productions are excellent, informative, informal, readable, and thoroughly useful.

ASTRAGAL

LETTERS

Joseph Babbs, F.F.S.(Eng.), A.I.A.S.

C. D. Carus-Wilson, M.C., F.R.I.B.A.

F. G. Lees

J. W. E. Norman, Managing Director, Norcon, Ltd.

Charles Aliaga-Kelly, B.ARCH., M.R.I.A.I., A.R.I.B.A.

Increase that £10 Limit, or—

SIR,—As a practising surveyor, I would protest against the refusal of the Minister of Works, Mr. Duncan Sandys to rescind the £10 limit on building expenditure to private property. This £10 limit continues to cause much hardship on private owners: since, if the dilapidation is not a result of war damage, no adequate repair can be effected.

There is no doubt that owing to the limit much deterioration is causing serious damage to good property in London and the Home Counties, whereas in other parts of the country (where the limit does not apply) one finds property well tended.

There is also a further aspect: the complexity of the procedure in applying for a Licence of Essentiality and the long delay in obtaining a decision, which is almost invariably a refusal. The architect or surveyor must prepare a specification, estimate of cost, complete forms and enter into various correspondence, and to what end?

It is surely ironical that in England's worst damaged area where, moreover, the housing shortage will be most acute, the £10 limit of expenditure should prevent the salvage of such property as exists.

Let us at least have the £100 limit that applies to other parts of the country.

London JOSEPH BABBS

Temporary Housing

SIR,—The British Cast Concrete Federation is to be congratulated on the construction of its Bungalow, and Cyril Farey on

ARCHITECT'S WAR SKETCHES

In the Journal for March 15, were reproduced three sketches, made on active service by Oliver Cox, a lieutenant RE and a Student RIBA. Above are three more from the same characterful sketch-book, quick impressions drawn at night on the A Deck of a troopship.

his idealizing of its outward appearance. Before the design is finally adopted for fabrication, would it be possible for the planner to make its plan fit Mr. Fairey's elevation?

Hardwicke — C. D. CARUS-WILSON

SIR,—In the JOURNAL for March 8 you published the thanks of one of the greater minds of the profession, for the care with which you have treated the subject of prefabrication. As a lesser mind and member of the Forces, I should like to add my thanks.

In common with many of similar mental capacity, I find it difficult to regard a large section of the future of building as an amusing change from the morning crossword puzzle. Further, may I suggest that professional experts might well transfer their energies from scrutinizing the sketches of "eminent perspective artists" to considering the flexibility of the system to which they intend to "present the cake."

Ilkley, Yorkshire — F. G. LEES

SIR,—The delightful letter of Mr. Gilbert Fraser has given many members of our Association a considerable amount of amusement. I am sorry, therefore, that it calls for a reply which, while not interfering with its entertainment value, does rather upset one or two of the more important points which, I take it, were successful in securing for us the award of the prize or cake.

The perspective was prepared in May, 1944, with the sole object of providing a general idea of the building when erected. Some eight or more plans were subsequently prepared, and the one illustrated in THE ARCHITECTS' JOURNAL was in accordance with the latest requirements of the Ministry of Works. In fairness to Mr. Fraser, I do feel that this should perhaps have been pointed out when the details were submitted to THE ARCHITECTS' JOURNAL.

I cannot refrain from taking the matter a little further and mentioning the fact that, if Mr Fraser had examined the eminent artist's drawing a little closer, he would have found that the corner column did not correspond with the corner column on the plan, and I almost apologize for adding that, if he had read the script, he would have found an error concerning the thermal insulation of the wall lining U- 0.207 and not 0.027—a printer's error.

J. W. E. NORMAN
Managing Director,
Norcon, Ltd.
(Member of the British Cast Concrete Federation)
London

The Module

SIR,—I heartily endorse Capt. Price's letter about using the metre as the module for building. The metric system has been adopted by physicists, mechanical, electrical, and many civil engineers without their finding it too much for their brains, and I fail to see why architects and builders should be so conservative and under-estimate their own brain capacity.

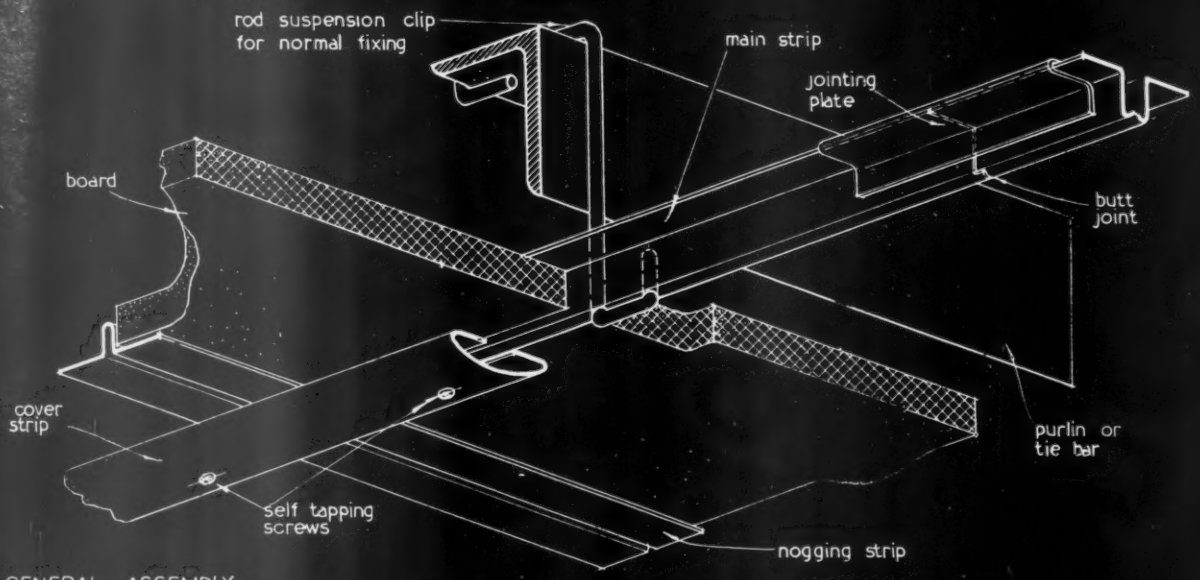
It is apparently the older members of the professions who are most conservative on this point. When attending a lecture on surveying while at the University, I asked, in all innocence, why staffs could not be printed upside down so that an inverting eyepiece on a level would not give trouble to young and inexperienced surveyors. The only answer I could get was that after I got used to reading a staff upside down, I would find the change difficult!

The metric system should be adopted completely.

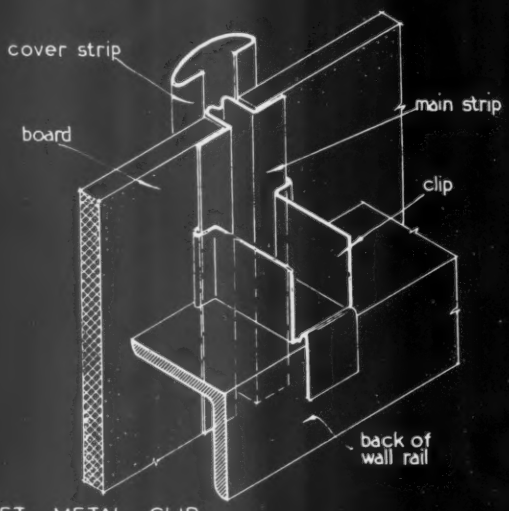
Portrush — CHARLES ALIAGA-KELLY

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

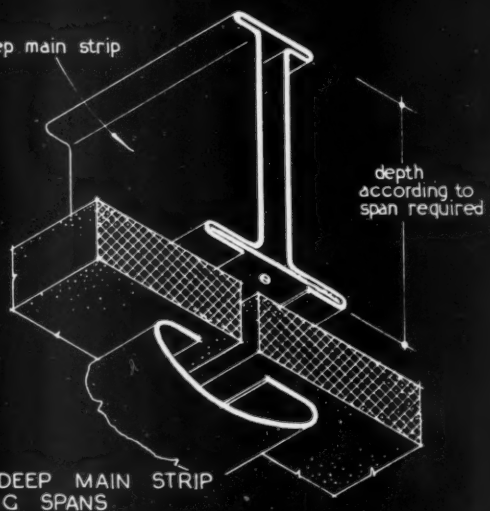
THE ·DUOSTRIP· (removable panel) FIXING SYSTEM —for fixing building board ceilings and linings.



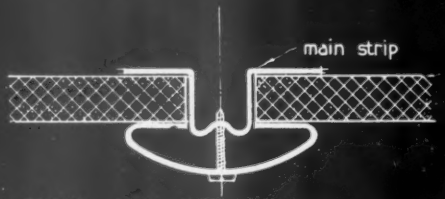
GENERAL ASSEMBLY FOR CEILINGS AND ROOF LININGS.



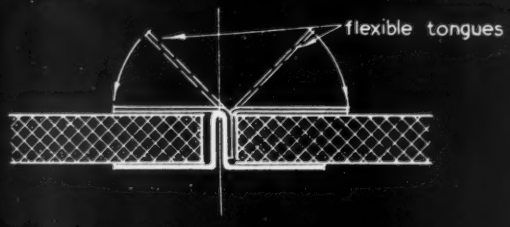
SHEET METAL CLIP FOR VERTICAL LININGS



SPECIAL DEEP MAIN STRIP FOR LONG SPANS



MAIN STRIP AND COVER STRIP — cross section.



NOGGING STRIP — cross section.

Issued by Specialised Construction, The Tentest Fibre Board Co., Ltd.

INFORMATION SHEET: FIXING SYSTEM FOR WALL AND ROOF LININGS.
Sir John Burnet Tait and Lorne Architects One Montague Place Bedford Square London WC1.

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 954 •

FIXING BUILDING BOARDS

Subject :

The Duostrip (Removable Panel) Fixing System. (Patent applied for.)

General :

The Duostrip system provides a means of fixing building boards as roof or wall linings, or as ceilings.

The following are the main characteristics of the system :

(1) It accommodates any type of building board in any thickness from $\frac{1}{8}$ in. to $\frac{5}{8}$ in.

(2) The long edges of each panel are firmly gripped throughout their length between flanges of main and cover strips, thus preventing the penetration of dust or air.

(3) Any panel may be removed and replaced without damage, and without disturbing other panels.

Principle of System :

(*See diagrams on face of this Sheet*).

Panels of building board are secured between the flanges of a main strip and a cover strip. The main strips (spaced normally at 2 ft. $0\frac{1}{2}$ in. centres), are attached to purlins, tie-bars, or other suitable framing, by means of clips made from metal rods or sheet metal, or other appropriate means. Sleeved joint plates connect the ends of the main strips as and where required. The cover strips are fixed to the main strip by self-tapping screws. The ends of panels are seated on and clipped to Tee-section nogging strips supported at their ends by the cover strips.

Spacing of Supports :

The span which can be accommodated between supports is dependent on the depth of the main strip and the weight of board to be supported. Standard main strips at 2 ft. $0\frac{1}{2}$ in. centres, carrying $\frac{1}{2}$ in. insulating board, will span up to 6 ft. between supports, and the special main strip, 2 in. deep, will span up to 14 ft. with $\frac{1}{2}$ in. insulating board, or up to 12 ft. with $\frac{3}{8}$ in. plasterboard.

Manufacturers : Specialised Construction, TenTesT Fibre Board Co., Ltd.

Temporary Address : 75, Crescent West, Hadley Wood, Barnet, Herts.

Telephone : BARnet 5501 (5 lines)

PHYSICAL PLANNING SUPPLEMENT

The very nature of the opportunities the blitz brought to Britain's cities, and the impossibility of realizing immediately the great plans which they inspired, has made us a nation of goal-planners. So, when rebuilding does begin, the TVA has one particularly important lesson to teach us. It was expressed by Mr. Lilienthal, whose book on the TVA is reviewed below, at a meeting of the American Society of Planning Officials; he said, "An awakening in the whole people of a sense of common purpose is the very life principle of democratic planning. Not one goal, but a direction. Not one plan, once and for all, but the conscious selection by the people of successive plans." Above, is action-planning in operation, night-work at Fontana Dam in the Great Smoky Mountains. This dam is 460 feet high, the height of a 46-storey building.

PLANNING FOR ACTION

BY GORDON STEPHENSON, F.R.I.B.A.

David E. Lilienthal, chairman of the board of directors of the Tennessee Valley Authority, has written a most exciting book, recently published in this country at the remarkable price of ninepence.*

In the preface Mr. Lilienthal says: "I am an administrator and not a professional writer. This book bears the literary marks of that deficiency. I have had to do the writing, moreover, while carrying on my work, often in the midst of those recurrent 'crises' that make up the life of any administrator. And I recognize that in writing about the Tennessee Valley Authority I cannot be wholly objective. No one can be so absorbed in this work as for a decade I have been and remain passionless about a task so altogether heartening. The reader, then, is warned at the outset that he will find no tone of Olympian neutrality in this book. For this I make no apology, for I believe the world badly needs conviction; it has had too much of a kind of impartiality which is inevitably irresponsible. In this book there are convictions stated and conclusions pressed." These are courageous words.

Appreciation of the courage, ability and actions of Mr. Lilienthal has recently been recorded by Charles E. Beard, historian, the Trevelyan of America, when he said that Mr. Lilienthal "in virtue of his public services in the TVA has won a place for himself amongst the first citizens of the Republic." If the original concept of the TVA had not been sound, and if the bold experiment had failed or been a partial failure, it is very unlikely that Mr. Beard would pay such a high personal compliment. He sees Mr. Lilienthal in his place as chairman of a board which is running a highly successful going concern and a public corporation at that. But the corporation had its growing pains, and if we are to learn fully the lessons of this great experiment, it is well that they should be examined. In this article it is possible only to touch on one or two matters of the many which did not find their place in the book.

* *TVA: Democracy on the March*, by David E. Lilienthal. Penguin Books, Harmondsworth, Middlesex. New York, USA. Price 9d.

the creation of TVA

In his message to Congress on 1933, proposing the creation of TVA, President Roosevelt said it was to be "a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise . . . charged with the broadest duty of planning for the proper use, conservation, and development of the natural resources of the Tennessee River drainage basin and its adjoining territory for the general social and economic welfare of the Nation."

The choice of directorate of such a corporation was of fundamental importance. Section 2 (a) of the Tennessee Valley Authority Act, 1933 and 1935, states that: "The board of directors of the Corporation shall be composed of three members to be appointed by the President, by and with the advice and consent of the Senate. In appointing the members of the board, the President shall designate the chairman. All other officials, agents and employees shall be designated and selected by the board."

Work on various projects was under way almost as soon as the board was established. Indeed, the US Army Engineers had already surveyed the navigation, flood control and power possibilities of the Tennessee River, and the Bureau of Reclamation of the Department of the Interior had completed the engineering designs of Wheeler, the first of the projected main river dams. By the end of 1933 the

H I W A S S E E

Above, Hiwassee Dam, in North Carolina. In just over a decade TVA built sixteen dams. It finished the Cherokee Dam in sixteen months, a world record. Then it did Cherokee's near-twin, Douglas, in twelve months.

TVA design team and the construction force had the Wheeler and Norris dams rising from bed rock.

The responsibilities of the board were great and numerous. It was a policy-making and executive body, a regional planning agency, and the head of the largest development undertaking in the United States. It was to engage in the rehabilitation through education of an area larger than England, and to act as a public utilities corporation. Action was the main requirement, and policy making was left, to a large extent, to the individual members of the board.

Very shortly after their appointment, the three directors arranged to divide their many responsibilities. The Chairman, A. E. Morgan, as the engineering expert was to build TVA's most spectacular exhibits, its dams. Dr. Harcourt Morgan, agricultural expert, was to deal with rural rehabilitation and fertilizer development. David Lilienthal, public utilities expert, was to specialize in legal problems and the marketing of electricity. Experienced planners always advocate the separation of policy-making and executive functions. If this advocation is correct, then the board made a very bad start. In the evolution of the TVA, broad principles of policy had to be hammered out. In attempting to do this the three specialists failed to co-operate. Their work was being wrought on three anvils instead of one.

Four years after the inception of the Authority it became obvious that the board was failing to develop a harmonious policy, and John B. Blandford, Jr., later to become Administrator of the National Housing Agency, was appointed General Manager, or chief executive officer.* By bringing about a general consolidation of functions into departments under Mr. Blandford the directors recognized an initial mistake. But it was too late to heal the breach which had occurred between chairman Morgan and Mr. Lilienthal. The chairman strongly disagreed with Mr. Lilienthal over the question of distribution of power and relations with private utility companies—Mr. Lilienthal's special field. Dr. Harcourt Morgan was in full agreement with Mr. Lilienthal's policy, which has since been completely vindicated by results. President Roosevelt caused a great political storm when, in 1938, he removed chairman Morgan from his office, thereby endorsing Mr. Lilienthal's policy.

At the height of the dispute on the board Mr. Lilienthal was leading the fight in the courts where the TVA's right to sell electricity was being questioned by private power undertakings. Mr. Wendell Willkie, chief spokesman of the power companies, rose to headline prominence at this time. In the lower courts, and in the Supreme Court, TVA won its case. In Chapter 5, *The People's Dividend,* Mr. Lilienthal explains what that means. He proves conclusively that all the work undertaken by the TVA is a sound investment when judged by the most orthodox and conservative financial standards.

TVA finance and returns

The total TVA capital expenditure for every purpose whatever on June 30, 1944, was in the neighbourhood of $750,000,000. Only a small portion of the investment, $65,000,000, is represented by bonds issued by TVA With this exception, Congress preferred the policy of appropriating funds directly; before the war at the rate of about $50,000,000 per annum. The total investment for power, navigation and flood control is in the region of $700,000,000. Of this approximately 65 per cent. is allocated to power, 15 per cent. to navigation, and 20 per cent. to flood control. Power has been called the paying partner—this is very true in terms of cash, and the author says that "even if the total investment for power, navigation, and flood control—the entire $700,000,000—were *all* charged against power, revenues from electricity would repay the entire amount, in less than sixty years. This would be grossly unfair to electric consumers in this valley, for Congress has never applied such a policy in the development of other rivers; nor is it a policy that should be followed. I cite the fact merely to show that, regardless of how the capital cost may be allocated, this is a good investment." A very important point noted is that if any of the three main functions of the river works—production of power, improvement of navigation, and flood control—had been dealt with separately, they would have cost much more. *By combining these three functions in single structures* that serve all three purposes, so that costs common to all three may be shared, great economies were produced.

The huge task of harnessing the water to such a tune that it actually pays dividends is only one side of the story. The other side is the one that receives most stress in the book. It is told in two ways. First, the increase in material well-being is set down. The gradual increase of agricultural production is illustrated by examples from different counties and states. Here is one from Georgia, where the State Agricultural Extension Director reported progress on 103 farms:

"*Cotton yields have increased from* 275 *to almost* 400 *lbs. per acre. Corn yields have been boosted from* 20 *to* 30 *bushels per acre. Acreage of soil building crops per farm has jumped from* 10 *to* 35.* *Animal units per farm have doubled.*"

Then, statistically, another measurement of increased material well-being is shown. The income level of the people in the region is rising. "By 1940, and before the effect of war expansion the *per capita* income had increased in the seven valley states 73 per cent. over the level of 1933; while for the same period the increase in the country as a whole was only 56 per cent. . . . Bank deposits increased 76 per cent. between 1933 and 1939, compared to 49 per cent. in the country." This is in a region of low income, about half the United States average. If present trends continue it will

*A chart showing the organization of the TVA and a further account of its activities appears in the book by Julian Huxley, *TVA : Adventure in Planning.* Architectural Press, 1944. 8s. 6d.

* The average farm unit in the valley is 75 acres.

yet bring itself to the national average and possibly beyond. The depth of the depression occurred in 1933, so the valley had lifted itself more rapidly from disaster than the rest of the country; all the more extraordinary as it was already a "special" area before the depression.

Private capital has gone into the region in ever increasing quantities. Heavy and light industries have been built up. Several large basic industries have entered or rapidly expanded; aluminium, ferro-silicon, heavy chemicals are listed. They included two of the largest phosphatic chemical works in the country. Not only have the valley inhabitants benefited but also the rest of the country, and even this country, as many shiploads of TVA superphosphates have come to aid our wartime farming. "The war has added mightily to the list," says the author, but he is unable to reveal details, although we know some of the later dams have been built at breakneck speed to power the aluminium industry, basic to the war machine. Many of the new pre-war light industries are named. Their rise is "at least as important as these heavy industries." But miracles are not claimed. "We have a long way to go in the Valley."

The Valley is on its way, and the people of the Valley know it. These are the two significant factors. Everybody recognizes its wealth and potential wealth. The effect on the people through TVA's now firmly established policy of full democratic participation all along the line is not so generally known. Yet it has been dramatic. A people unable to see any reasonable future now stands firmly on its feet. "They are no longer afraid. *They have caught the vision of their own powers.* They can stand now and talk out in meeting and say that if industry doesn't come into the Valley from other sections, then we'll build our own industry. This they are doing today."

local participation

Gradually, as the TVA itself found its feet, it acted more and more as a powerful catalyst. At first it was somewhat detached from the life of the Valley, a benevolent agent imposed from above. State and local governments had no planning agencies; had only the vaguest notions of the eventual effects of the TVA programme. This was to be expected. In recent years "the very essence of TVA's method in the undertaking . . . was at every hand to minimize what it was to do directly and to encourage and stimulate the broadest possible *coalition* of all forces. Private funds and private efforts, on farms and in factories; state funds and state activities; local communities, clubs, schools, associations, co-operatives—all have major rôles. Moreover, scores of federal agencies co-operated . . . "

Some parts of physical development, for example the large scale building of houses, are often thought of as planning rather than an end product which should be preceded by well laid plans. These plans would embrace other important and relevant factors such as the location of the houses in relation to work places, shopping and social facilities, and the integration of housing with other necessities, such as the school and health systems, recreational open spaces and buildings. This spells a unity of development which is not yet worked out in democratic techniques. It means unity in action by different agencies. In this way planning would be part of action. With the TVA, planning is an essential arm, but an arm only, in the process which produces action and results which are tangible.

planning for action

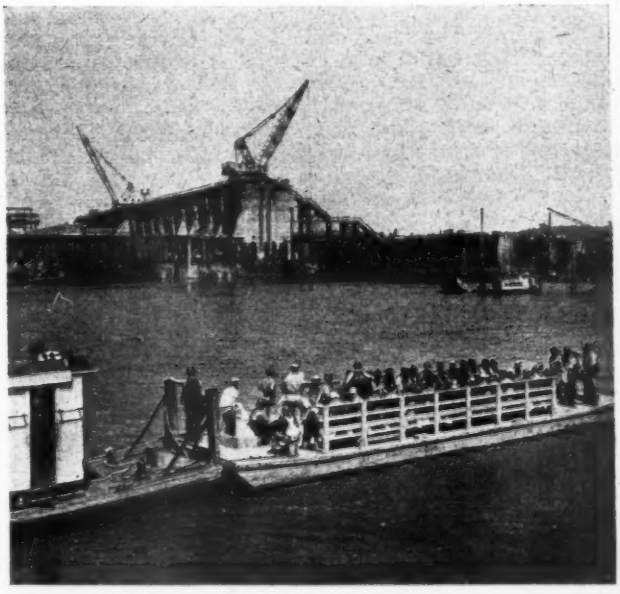
In a paper read to the members of the American Society of Planning Officials in May, 1944, Mr. Lilienthal explained the fully developed TVA attitude to planning. Some of them have disagreed with the TVA techniques, particularly in the earlier and stormier days of the authority. Many of them were brought up on zoning and "advisory" planning. It is fairly certain that now only a minority would disagree with the main line of his thesis. It is also certain that his thesis is of universal importance. There were many striking passages in his paper. One in particular deserves a good deal of thought: "An awakening in the whole people of a sense of common purpose is the very life principle of democratic planning. Not one goal, but a direction. Not one plan, once and for all, but the conscious selection by the people of successive plans."

In his paper Mr. Lilienthal stressed that "TVA's purpose was not the making of plans, but that a valley be developed. Plans had to be made, of course, many of them. But plans and action are part of one responsibility. TVA is responsible not alone for plans but for results. Those results depend chiefly upon the people's participation. Getting that participation was to be almost wholly on a voluntary basis. To get a job done in this way was a unique assignment, one that required the invention of new devices and new methods. If TVA had been a "planning agency" in the sense that its responsibility had been limited to the making of plans—the usual meaning of the term—those plans would probably have met the fate of so many other plans: brochures decorating bookshelves, adornments of the bibliography of a sterile learning."

"In the TVA the merging of planning and responsibility for the carrying out of those plans forces our technicians to make themselves a part of the main stream of living in the region or community; this it is that breathes into plans the breath of

PEACETIME COMMANDOS

Right, are the cofferdam commandos, in hard hats and Mae Wests, at Kentucky Dam. A cofferdam is a temporary dam thrown around a construction area to clear it of water. This work is dangerous and demands, in peacetime, those qualities which have for too long, been associated only with war. (This illustration and those on the two previous pages are taken from "The Valley and its People: A Portrait of TVA," by R. L. Duffus and Charles Krutch. Alfred A. Knopf. New York. 1944. $2.75).



life. For in the Tennessee Valley the expert cannot escape from the consequences of his planning, as he can and often does where it is divorced from execution. This has a profound and salutory effect on the experts themselves." Mr. Lilienthal went on to explain that the TVA way is a hard way, that mistakes are made, that the perfect technical solutions are not always possible if the people go along with the plans.

technical teamwork

How did this great team work together? They found it difficult at first. The board had its troubles and so did the many technical experts. They were not used to unity in action. Yet they had to work together. The unified development project based on a comprehensive plan is not the work of one man or one profession. It is the work of a team—experts and many people. Until we get experience of common action on a large scale the technical experts in every country will push their own claims beyond reason.

In his book Mr. Lilienthal illuminates a most difficult problem. "It is an ironic fact that the very technical skills which are ostensibly employed to further the progress of men, by the intensity of their specialization, create disunity rather than order and imperil the success of their common objective. Resources cannot be developed in unity until each technologist has learned to subordinate his expertness to the common purpose, has come to see the region and its problems 'in its entirety.'"

The solution of a single problem with an enormous number of inter-related parts was the essence of the TVA mandate. Despite the author's honest acknowledgment that the perfect solution to many of the parts was far from achieved, who would deny that, in general, the solutions were pretty handsome? From the smallest detail to the largest there is an apparent and underlying logic and sense. The problem of the demountable temporary dwelling for construction camps was eventually solved as sweetly as the very difficult and numerous problems of human relations and attitudes to various phases of the work. The farm community needs were handled as expertly as the complex technical demands imposed by any one of the massive dam projects. The results can be seen in a more vigorous, active, and happier people, and in the magnificent examples of engineering-architecture.

The dams are the spectacular show pieces, and Mr. Lilienthal has said "we wanted those dams to have the honest beauty of a fine tool, for TVA was a tool to do a job for men in a democracy." In the minds of the many millions of ordinary folk who have seen them, the dams are dramatic and beautiful, as well as useful. They understand their beauty almost as fully as the many architects and engineers who have sung their praises. The dams and dam builders have helped in an extraordinary way to develop a contemporary engineering and architecture which has impressed the minds of countless numbers. They have become conscious for the first time of building æsthetics. No "great" names are inscribed on these contemporary monuments. They are designed by a team whose pride is fully satisfied by the inscription on every power house: "Built for the People of the United States."

the lessons of TVA

The people of the United States are beginning to understand the lessons of TVA, both æsthetic and practical. The overall lesson is well summarized by Mr. Lilienthal.

"A new and modern task requires new and modern tools; a spirit of enterprise and a creative modern outlook are quite as necessary in devising the mechanics of getting things done as in establishing policies and goals. What the TVA set out to do was such a new and modern task. For such an undertaking Congress and the President invented an entirely new kind of government implement: the regional development corporation."

"This corporate public agency, the Tennessee Valley Authority, was thus set up to be as different in its organization and the way it was to do its work as the scope and the nature of the task it was directed to do was different from previous American efforts in resource development. It is not, however, the fact that the TVA was cast in the mould of a corporation that is distinctive. The corporate device for public undertakings was, of course, neither new nor unique."

"The TVA is a significant departure as an instrument of twentieth-century democracy in this: that, in creating the TVA, Congress adopted and carefully wrote into law the basic principles and practices of modern management. A federal agency with the broadest of responsibilities was given a full set of the tools that American business has found essential to good management."

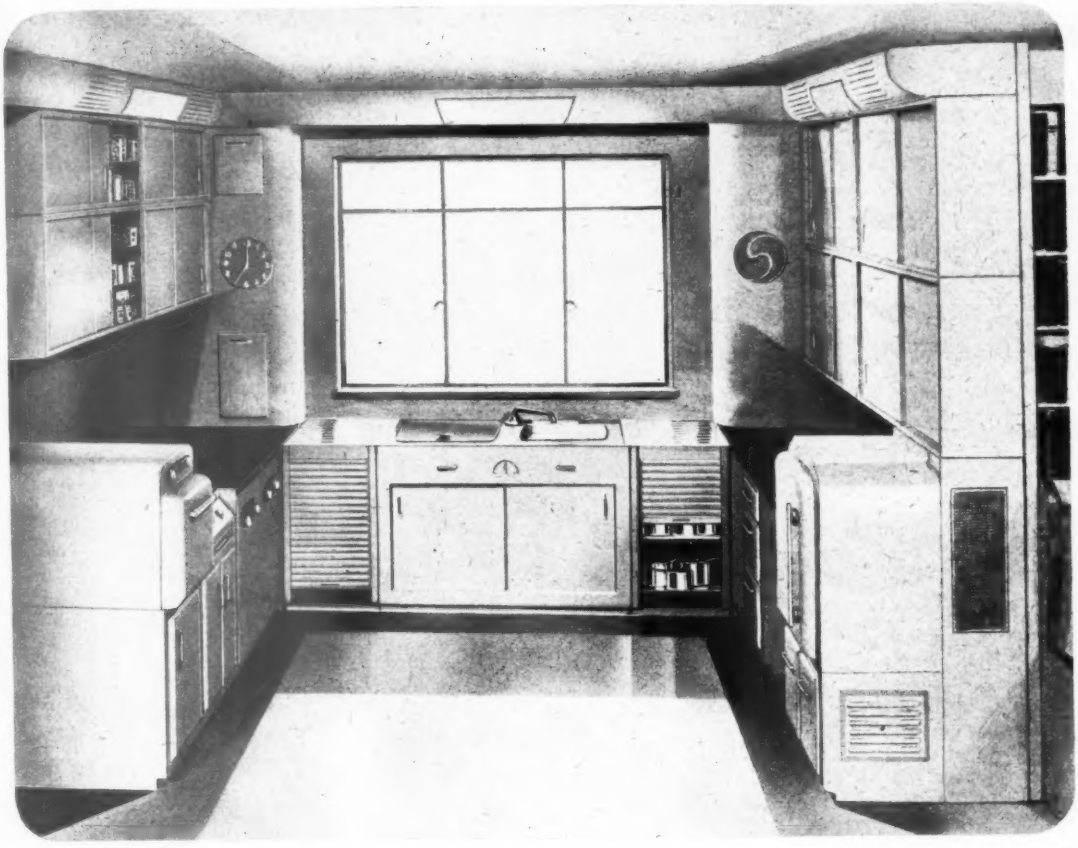
The people have reacted, slowly at first, but ever more strongly to opportunity which TVA has brought. They recognize that its responsibilities are their delegated responsibilities; that they are responsible for it through their government; that it co-operates with them at every turn when working out the details of its programme. The author speaks of the "confident, sure, chesty feeling" which has arisen in the Valley. In a most interesting chapter he speaks of TVA and world reconstruction; of the many visitors from all parts of the world who have come to learn something. He issues words of warning about too literal assumptions that the TVA idea can be carried away and simply applied elsewhere. He stresses the underlying point in the thesis of the book that "the public corporation, in itself (while it might be very useful), would have only an incidental relation to the TVA idea unless it were the instrument of the basic idea of unified development within a natural region."

new TVAs

Every year in the Congress of the United States the concept of TVA is debated. In September, 1944, President Roosevelt urged, in a message, "careful and early" consideration which would spread Federal establishments patterned after the TVA throughout most of the country west of the Mississippi River.

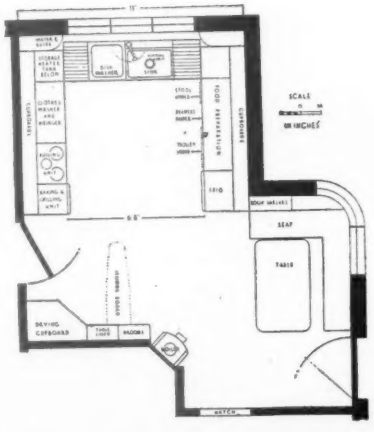
The greatest emphasis in the message was given to the Missouri River Basin, where the Governors of eight of the nine States in that region recently petitioned for legislative and administrative action to develop the basin "for the greatest good of its citizens both present and future, and for the greatest benefit of the United States." Eleven years ago such a request would have been the remotest of possibilities; now the facts speak for themselves. Mr. Roosevelt described the proposed authorities as post-war undertakings which would aid in the creation of employment and in the stimulation of industry, business and agriculture in the areas involved. Congress, the President emphasized, has at all times retained the final authority over TVA, "for the Authority comes before the Congress each year to obtain appropriations to continue its work and carry out its plans." The same he said would be true of the other authorities he proposed.

"May I also ask," he concluded, "that renewed consideration be given to a study of the Arkansas and Columbia River basins." Just before America's entry into the war the final touches had almost been applied to the setting up of an Arkansas Valley Authority; the Columbia River is already harnessed in two places by the Bonneville and Grand Coulee Dams. The survey of the Columbia River suggested ten giant dams. The Grand Coulee structure, now completed, is staggering in conception and size. The ultimate power installation will be 2,000,000 kilowatts. Three times the size of Boulder dam, it is so colossal the human eye cannot measure the scale. Someday soon an amazing book will be written on Grand Coulee. When it is one of a series of ten dams, part of the unified development of the Columbia River basin, the pioneer work of the Tennessee Valley Authority will be an acknowledged turning point in the history of America. Democracy will truly be on the march, resolute and unafraid.



A PLANNED ELECTRIC KITCHEN

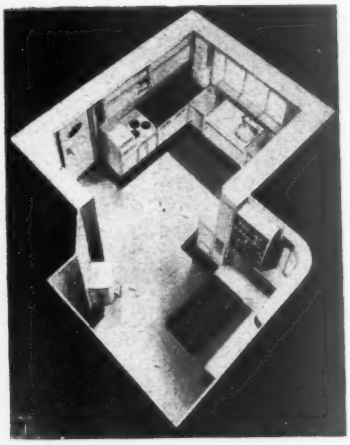
DESIGNED BY E. R. GILBERT

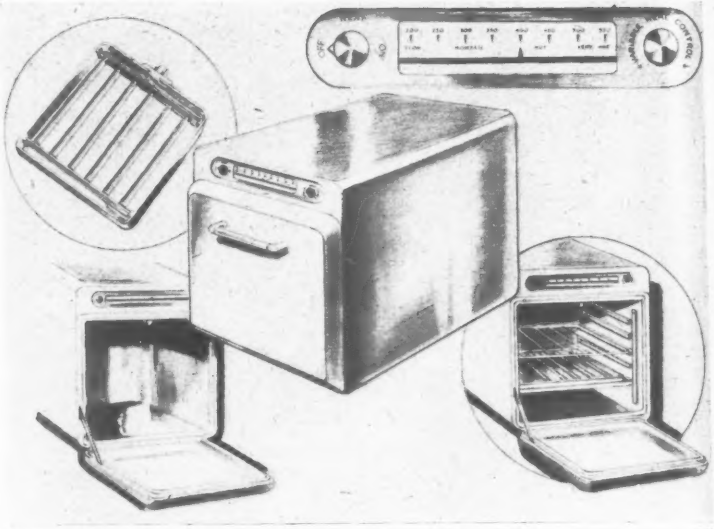


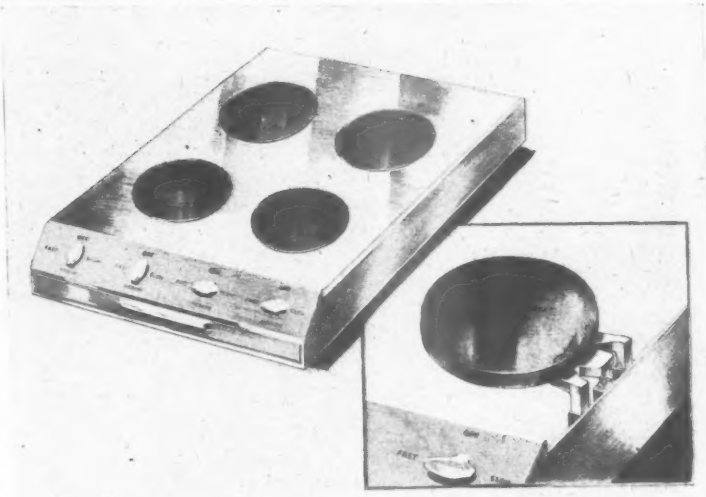
Top, a general view. Above, plan to a scale of $\frac{1}{8}$ in. to 1 ft. 0 in.

This all-electric kitchen in aluminium has been designed for the Wrought Light Alloys Development Association and is intended to reduce the labour of the housewife in the higher income categories to a minimum in view of the probable shortage of servants after the war. It has a number of interesting features, especially in the detailed design of the equipment. Equipment includes (from left to right) a two-unit cooker, clothes-washing machine, sink unit incorporating electrically-operated dish-washer and waste-disposal unit, flanked by draining boards. The main work-bench has a large refrigerator alongside. On the left of the window, in a built-in recess, is the mains intake with main and house fuse system, the meters and a synchronous clock. Below is the heated water storage tank for use in the summer when the solid fuel boiler is not in use. A small door on the outside wall enables meter readings to be taken without entering the house. On the right of the window is a loud speaker. On the far side of the room is the solid fuel domestic boiler. Next to it is a large vertical cupboard in two sections, one for brooms, etc., the other for table linen, etc. Behind one door is mounted the ironing board. Alongside is the drying cupboard with an electric heating unit.

Between the ceiling and the top of the cupboards is a continuous ventilating duct. An extractor fan is contained at the top of the meter cupboard on the left of the window. One end of this duct is extended into the top of the drying cupboard to remove the hot, moist air. Within the duct runs







Top left, a perspective view from above. Above top, the oven unit of the cooker with a removable inner lining and door hinged at the foot ; it has a temperature control scale with a travelling pointer rotated by a knob. Below, the boiler unit of the cooker with four hot plates in a polished aluminium surround ; switches are grouped together on a sloping panel at the front of the unit ; red neon lights indicate when the switches are on.

the electric wiring which provides three additional lighting points above the sink, the main work-bench and the cooker.

All cupboards are of aluminium and have removable and adjustable shelves.

Ample socket points for small portable electric equipment, such as toaster, mixer, mincer, vegetable shredder, etc., are available at working level. This equipment is permanently wired in circuit, each item being separately switched, and rigidly fixed on separate hinged flaps, so that when not in use it can be placed out of sight in the wall cupboard system at the back of the work-bench.

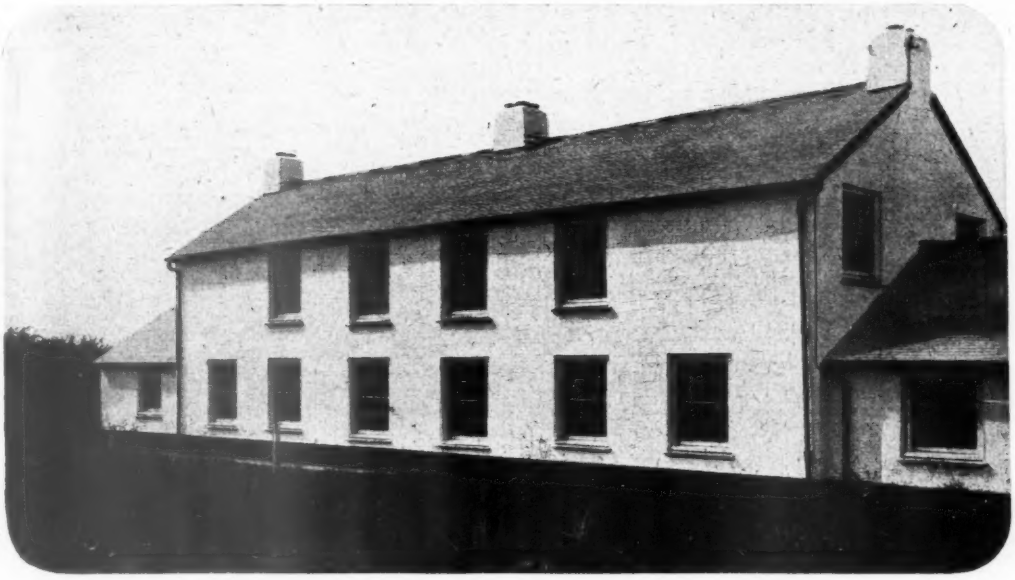
The Waste Disposal Unit below the sink consists of a simple rotary cutter combined with a shredder. The sink can be used for all normal household purposes, but when the current is switched on, potato parings, scraps from the plates, small bones, etc., are quickly reduced to a thin pulp which is then flushed down the drain.

The mixer union tap over the sink has a swinging arm which is also telescopic and can be raised 10 in. to allow buckets to be filled at the sink.

The washing machine has twin tanks for washing and rinsing, respectively. An independently motorised wringer is fitted between the tanks and is raised into position when required.

The electric cooker is in two separate units, one for boiling and the other for baking. Both are mounted on cupboard units to give correct working heights and avoid unnecessary stooping. The boiler unit has four separate hot plates arranged within a polished aluminium surround. Switches are grouped together and mounted on a panel in a row set at an angle of 45 deg. Red neon lamps indicate when switches are on. The oven has a door hinged at the foot which can be used as a shelf for basting when open. The inner lining of the oven is in one piece and can be removed for cleaning. All its corners are rounded. The heating elements are spiral-wound on ceramic cores and spring mounted on insulated metal frames for easy replacement. The element frame is fitted with a pair of insulated prongs for insertion into the projecting socket mounted at the rear of the oven. Clipped to either side of the oven, and instantly detachable, are the pressed side frames which carry the adjustable wire racks. These side frames also incorporate the grooves supporting the heating element assembly unit. By setting the horizontal element in the oven three-quarters of the way down, both grilling and baking can be carried out with the same element. The thermostat mechanism is mounted behind with its tube projecting into the oven through the inner lining. The temperature control scale extends almost the full width of the oven and its travelling pointer is moved by a rotating knob. The scale is illuminated when the oven is on.

PLANNED ELECTRIC KITCHEN



Left, view from south. Below, plan to $\frac{1}{16}$" scale.

PAIR OF FARM-WORKERS COTTAGES

DESIGNED BY GEOFFREY BAZELEY

GENERAL—These cottages were designed by Geoffrey Bazeley and Partners for the West Penwith RDC and built at Wall-Gwinear, Cornwall. They were begun in November, 1943 and took a little over nine months to complete.

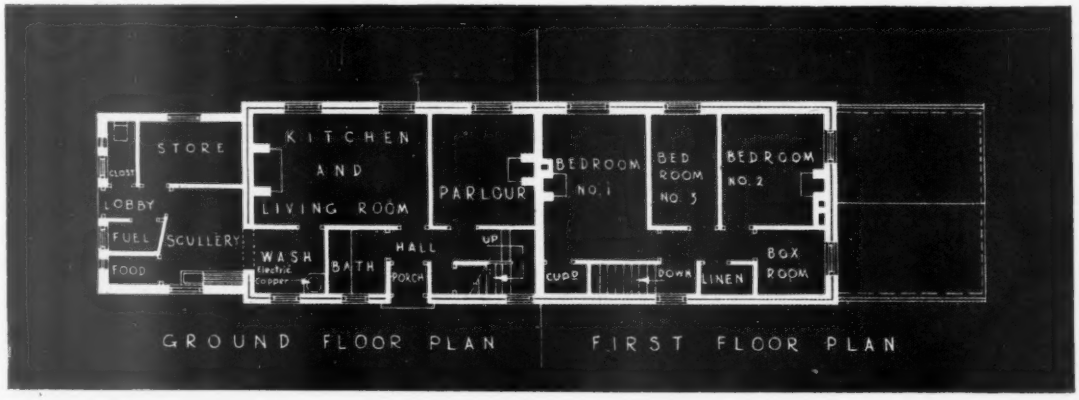
CONSTRUCTION—Walls consist of an inner and an outer skin, each of 4-in. concrete blocks with a 2 in. cavity. Internally they are plastered and externally rendered and finished in white Cullamix with a black tarred plinth. Internal partitions on the ground floor are of concrete blocks, with patent hollow blocks on the first floor.

FINISHES—Floors: both hall and scullery in 6 in. × 6 in. buff quarry tiles; parlour in T. and G. boarding; kitchen, store, fuel and closet in cement; first floor in T. and G. boarding on joists throughout. Stairs are of timber. Walls: cream distemper. Ceilings: whitened. Joinery: natural stain to show grain of timber. Fireplaces: tiles. Roof: scantle slates.

SERVICES—As there is no water on the site at present, underground rainwater storage tanks with filters have been constructed, from which water is taken to tanks in the roof. It was thus inadvisable to instal a domestic hot water system. Hot water to the bath is supplied by an electric copper fitted with a draw-off discharging directly over the bath.

Wastes from bath and sink are taken into a septic tank into which will also run the soil pipe from the WC, when, at a future date water being laid on the site, a water closet replaces the chemical closet now installed. The box room on the first floor is so designed that it can be converted into a bathroom when water is laid on and a hot water system installed.

Electric light is installed with adequate power sockets.



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

1849 **Housing Enquiry**

WHAT KIND OF HOMES? (*Hackney and Stoke Newington Social Workers' Group*, 1944, 9*d*.) Results of limited housing inquiry to ascertain views of young parents. No comments on kind of homes suitable for grown-up families, adult workers or old people.

The enquiry was confined to parents of children in Infant School and 332 interviews were carried out. These omitted mothers at work—one quarter of the total number.

The great majority had lived all their lives in the borough though over half had lived under 5 years in their present homes.

Just over half wanted to move to "an outer suburb of London," provided work was available at a reasonable distance; under 10% wanted to move out to a medium sized town and a country village; the rest wanted to stay in central London.

"An outer suburb" can be taken to mean "a little house in somewhere more open."

When asked if they would prefer "a house with a small private garden" or "a flat with a laid-out garden for sitting in and an allotment if desired," 92% chose the house. (N.B.—All were mothers of young families.)

Among the criticisms were no complaints about terrace housing as such (absence of back or side entrance, etc.).

Visitors estimated that half the families visited needed re-housing.

1850 **Hospitals**

1844-1944 AND ONWARDS. (*Prepared and published by the St. Albans and Mid Herts Hospital in collaboration with the Architects' Co-operative Partnership*, 1944, 1*s*.) Booklet on past, present and future of St. Albans and Mid Herts Hospital. Contains chapters useful to architects: *The First Stages in Planning a Hospital*, and *The Patient and His Surroundings*. Mainly on new principles of ward planning.

This pamphlet, illustrated with diagrams, drawings and photos, is admirably produced and its ultimate object is propaganda for the raising of funds for rebuilding the hospital. No final plan for the new hospital is laid down and only general planning principles are discussed.

The old, conventional type of ward with its 20 to 30 beds—drab, dreary and inconvenient, is compared with the present tendency. In the old type of ward patients' heads are between windows so that they must always stare into the light, both the light on the other side of the ward by day and the lights in the centre by night; no patient can see what is happening outside the window, the night nurse cannot attend to one or two sick patients without disturbing some twenty others; the whole ward must be roused together, as the morning's work begins; each individual can only talk to his immediate neighbours.

The present tendency is to sub-divide large wards into smaller groups by partitions. Greater flexibility for the intake of patients is thus allowed; it makes easy the segregation of cases requiring similar treatment or in an equal state of recovery; the risk of infection is reduced; beds can lie parallel to the windows, an arrangement giving the advantages of no down-draught on to the bed, no light glare in the patients' eyes, a less restricted outlook (especially if window sills are kept low); a friendlier and more homely feeling can be achieved; moreover ceilings can be kept lower and so reduce building costs. Diagrams of various bed groupings are shown.

The hospital bed, the Ward Unit and the Operating Theatre are also dealt with.

MATERIALS

1851 **Housing Manual**

REFERENCE BACK TO NO. 1791, HOUSING MANUAL, 1944: TECHNICAL APPENDICES. (*A.J.*, 15:2:45.) Two errors in manual have been pointed out by MOW relating to thickness of window glass and hemi-hydrate plaster.

The specification on page 40 recommends 18 oz. clear sheet glass. As this weight would be insufficient for large panes, it has been decided only to recommend that glass should conform to B.S.S. No. 952.

In the table on page 42 it is wrongly stated that retarded hemi-hydrate plaster is not suitable for use on metal lathing. A specially prepared form suitable for use on metal lathing is on the market. Alternatively the addition of 5 per cent. by weight of hydrated lime enables ordinary retarded hemi-hydrate plaster to be used on metal.

1852 **Plasters**

GYPSUM AND ANHYDRITE BUILDING PLASTERS. *BS* 1191—1944. (*British Standards Institution*, 2*s*.) Plasters used in general building operations and in manufacture of pre-formed building products. Definitions, classification, purity, composition, marking, quality of different classes, testing.

Plasters having a calcium sulphate base may vary widely in properties. The properties required for undercoat work differ in some degree from those required for finishing coats. The classification adopted in this specification is mainly on the basis of mineral types with a further sub-division to cover plasters suitable for undercoats, finishing coats, or for the dual purpose. There exists at present considerable confusion in the nomenclature of these various groups, so that the name applied to one type of plaster may be different in one part of the country from that in another part. Some standard form of nomenclature, as established in this specification, is very necessary.

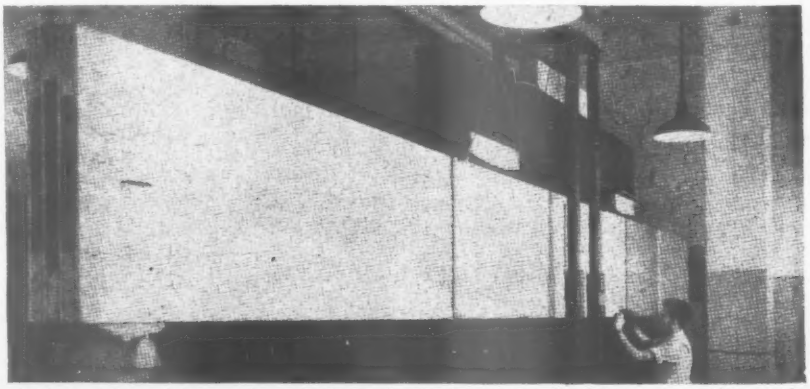
1853 **Plywood**

COMPARATIVE TEST DATA ON NAIL- AND PRESSURE-GLUED PLYWOOD BEAMS. *D. Countryman* (*Engineering News-Record, November* 16, 1944, *pp.* 622-626). Nail-glued beams, using both casein and low-pressure phenolic glue, averaged 87½ per cent. as efficient as shop-fabricated beams that had been assembled with pressure glueing.

There has been a controversy regarding effectiveness of nailed glueing compared with pressure glueing. By nailed glueing is meant a process in which the only pressure for maintaining contact between adjacent wood surfaces is that exerted by nails. In pressure glueing an external form of pressure is used (such as hand clamps, screw or hydraulic presses), so that the joint is formed under a fairly uniform pressure. In general nailed glueing is associated with site fabrication, whereas pressure glueing is more likely to be employed in a factory.

The Douglas Fir Plywood Association research staff have made tests to determine the relative strength factors of nail-glued and pressure-glued plywood beams. The specimens were beams of 25 ft. length and 24 in. depth, having three vertical plywood webs and flanges laminated from 1 × 6 in. clear Douglas fir lumber. Thirteen full-sized beams have been tested, details of four are included in the article.

Nail-glued beams, using both casein and low-temperature phenolic glue, averaged



A plywood beam being made ready for testing in the 200,000 lb. Olson test machine at the University of Washington. The load is applied at the third points of the 24 ft. span by means of a timber distribution beam. See No. 1853.

about 87½ per cent. as efficient in strength as all similar shop-fabricated beams. This slight relative reduction in strength apparently was not attributable to a weaker glue bond in the nailed beams, but was probably related to a large number of butt joints and perhaps to a weakening effect of the closely spaced nails. This conclusion applies only to plywood beams and not to laminated lumber in general.

Analyses indicate that even if there had been no glue used, the nail-glued beams could still have supported their design loads with nails alone. The allowable nail bearing values would have been exceeded by only 25 per cent. This fact is of importance to those who wish to insure against the possibility of glue failure due to exposure.

1854 *Flooring Tiles*

CONCRETE FLOORING TILES AND FITTINGS, DIMENSIONS AND WORKMANSHIP. *BS* 1197—1944. (*British Standards Institution*, 2*s*.) Dimensions and workmanship of flooring tiles and fittings made with cement and inert aggregate, plain or coloured, mat or polished.

1855 *Roofing Slates*

ROOFING SLATES. *BS* 680—1944. (*British Standards Institution*, 2*s*.) Roofing slates of true slate rock. Characteristics, designations, thickness, marketing description, tests.

This specification supersedes the first edition, which was restricted to slates from particular geological formations of Wales.

1856 *Nails*

WIRE NAILS AND CUT NAILS FOR BUILDING PURPOSES. *BS* 1202—1944. (*British Standards Institution*, 2s.) Classification; dimensions, surface finish, weights of bright steel wire nails and cut steel nails.

The specification includes a comprehensive list of types and sizes of nails, and is well illustrated.

1857 *Contracts*

MEMORANDUM ON CONTRACTS BASED UPON APPROXIMATE BILLS OF QUANTITIES. *O. A. Davis*, F.S.I., F.I.ARB. (*Issued privately and published here in full.*) Type of contract which has received least criticism under special, urgent war conditions. Advocated by CSI for cases where exact requirements cannot be determined before commencement of job. Advantages and disadvantages. Probably of great post-war value.

Special conditions and primarily extreme urgency led Government Departments to adopt various types of Building Contracts, during the war, including Prime Cost, Target Cost, Schedule Contracts and Contracts based on Approximate Bills of Quantities, subject to remeasurement.

Most of these are now regarded as unsuitable for general use but the Contract based upon an Approximate Bill of Quantities has received the least criticism and has recently been advocated by the Chartered Surveyors' Institution in cases where exact requirements cannot be determined before commencement. (See *The Journal of the Chartered Surveyors' Institution*, Vol. xxiv, Part iv, October, 1944: Report of the Quantity Surveyors' Committee on the Use of Bills of Quantities in Post-war Operations.)

It seems likely that extreme urgency will still be an important factor in post-war building. The relaxation of building restrictions will no doubt release a sudden flood of work for Architects and Surveyors, and prospective Building Owners will be more impatient than lever to make an early start. Further, the gradual removal of restrictions upon building materials will make it difficult to determine exact requirements in advance.

The orthodox Bill of Quantities is ideal, but it can only be justified if it represents the work to be executed so accurately that subsequent remeasurement, on site, is largely obviated. In this connection it should be remembered that accuracy in measurement is limited by the accuracy of the data upon which it is based.

Even before the war it was becoming almost standard practice for Architects to expect their Surveyors to work concurrently, so that Contract Drawings, Specification and Bill of Quantities were all produced and completed at about the same time. Surveyors could seldom afford to object, but the practice frequently led to playing for safety or the measurement of provisional quantities which had to be remeasured for the Final Account.

If this practice is allowed to develop still further, as seems probable, the problem should be faced, as an attempt at accurate measurement from drawings, followed by accurate remeasurement on site (involving the sorting out of the work which has to be omitted from the original Bill) is a wasteful and expensive process.

The type of Contract advocated, where these eventualities are likely to arise, is one based upon full Drawings, Specification and Bill of Quantities measured in accordance with the Standard Method of Measurement—the sole departure from normal practice being that the quantities would *reasonably* represent instead of *precisely* represent, the work to be done, and all work would be remeasured on site instead of merely the variations and "provisional quantities."

The advantages are numerous and may be summarized as follows:—

1. There is an immense difference which may not be obvious to anyone but a Quantity Surveyor, between measuring quantities which reasonably represent the work to be done and measuring accurate quantities from supposedly fixed data with the object of obviating remeasurement.

2. Owing to the shorter time required for preparation, it is not unreasonable to expect Contract Drawings, Specification and an Approximate Bill of Quantities to be completed at roughly the same time.

3. Contractors have a very fair idea of the job when tendering, which eliminates the gambling inherent in a Contract based upon a Schedule of Prices.

4. The Tender and Final Account are based upon a system of measurement the implications of which are well known to both Surveyors and Contractors and which has stood the test of time.

5. The necessity of remeasurement on site, before the work is covered up, ensures that the Surveyor is conversant with the job and better able to warn his client of probable extras. Further, he should be able to prepare valuations for certificates at little cost to himself.

6. The cost, up to the time of the Signing of the Contract, is comparatively small. This has an obvious advantage where a scheme may have to be abandoned and might be a great help to a prospective Building Owner who wishes to commence work as soon as Building Restrictions are relaxed but who does not wish to incur the full fee for a Bill of Quantities in the meantime.

The chief disadvantages are as follow:—

1. The Building Owner does not know his exact commitments in advance.

2. Bills of Quantities, being approximate, might tend to deteriorate in quality and thus give rise to the claims which have been experienced with Schedule Contracts.

The answer to both of these appears to be in the employment of a reputable firm of Quantity Surveyors and recognition of the fact that the preparation of an Approximate Bill still requires adequate time and an adequate fee. Building Owners have only too seldom known their *exact* commitments in advance and experienced Quantity Surveyors should have no difficulty in seeing that the difference between estimated and final cost is kept within reasonable bounds, provided the requirements do not vary. Further, claims will not arise if Preliminaries and Descriptions generally are given in full and the approximation is restricted to measurements.

So far, the Chartered Surveyors' Institution has published no Scale of Charges for this work, but presumably the charge for the preparation of the Final Account would be similar to that for a Bill of Quantities. This means that if the new type of Contract is to be no more costly than the old, the charges for the Approximate Bill of Quantities must compare favourably with fees for Variations. In practice, it is probable that the comparison would be favourable to the Building Owner and very favourable in all cases where substantial variations might be expected.

Nothing in the foregoing should be taken as a condemnation of the normal Contract based upon a full Bill of Quantities. This type of Contract is still the best providing the conditions which led to its adoption still prevail.

QUESTIONS and Answers

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

1858 *Farmhouse*

Q *I am doing some work in connection with alterations to a farm to bring the farm buildings up to the standard required for the production and sale of Accredited Milk. The farm at present has no water laid on and there is no bathroom to the house. Is there any authority who will give a grant towards the following, and, if so, what is the value of this grant?*

(a) *The cost of adding a bathroom to the farmhouse.*

(b) *The cost of laying a water main from the supply in the road outside the farm to the farm buildings.*

(c) *Any other grant for which the owner is eligible.*

A Your best plan would be to get in touch with your local War Agricultural Committee, who, after a visit by their Technical Staff, would be able to give you all details as to the work required to be done and the grants, if any, available for that work.

A grant of up to 50 per cent. may be obtained for the laying on of water to dairy farm buildings in connection with milk production.

War Agricultural Chief Executive Officer, St. Mary's Gate, Derby.

SOCIETIES AND INSTITUTIONS

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

IHVE

Oscar Faber

February 14, at the Institution of Heating and Ventilating Engineers. Presidential address by Dr. Oscar Faber on LESSONS DERIVED FROM TWENTY YEARS OF HEATING AND VENTILATING EXPERIENCE.

O. Faber: The Author has been fortunate in the last twenty years or so in having the benefit of experience of some large heating and ventilating installations, and it was inevitable that many interesting observations would result therefrom. In some cases curious phenomena have come under our attention and we have learnt lessons from which we think others might derive benefit. It is therefore proposed to give a short description of some of these works.

BANK OF ENGLAND

The Bank has probably the most complete equipment of any building of this kind. This equipment includes the following: Panel heating, complete ventilation and air-conditioning of the whole building, its own water supply from nine artesian wells, electric generating station and boiler plant, a very complete system of telephones, internal and external, as well as bells and signals, some 30 electric lifts, all of which have self-levelling device and mechanical operation of doors, some of which are very high speed.

Panel Heating.—It was eventually decided to use copper (rather than lead or steel) pipes embedded in the concrete floors in continuous coils devoid of joints except at the connection of the risers. At this point they were screwed to a valve which was accessible and connected to the risers by a short welded pipe.

Special care was taken to provide a first-class key between the concrete ceiling and the plaster by laying on the shuttering lengths of rubber sheeting with raised ribs ¼ in. × ¼ in. at ½-in. centres which, when the shuttering had been struck, could be peeled off and left a ribbed ceiling giving excellent adhesion for the plastering. This has proved entirely satisfactory, and there has been no case of any trouble in connection with the panel-heating system.

Down draughts at the windows were most carefully guarded against by the provision of heated cills.

Ventilation.—The fact that over half the cubic contents of the Bank lies below ground level in the three floors named respectively, basement, vault and sub-vault, obviously made the mechanical ventilation of these lower portions a necessity, and the author's recommendation that mechanical ventilation should also be applied to the whole of the superstructure was accepted by all concerned and carried out.

The author prefers to use a panel-heating system where mechanical ventilation is employed, since in his view air movement is necessary for comfort, and temperature alone is by no means the whole consideration.

Generally speaking, two air changes per hour were given as a minimum, but there were, of course, a great many places where a much greater air change was necessary, depending on the occupancy and the amount of heat likely to be given off by electric lighting and machines of all descriptions used in a mechanised banking system.

To distribute the air from the plant, two double inlet cased fans, each driven by 100-H.P. motor, were used, and these delivered to an underground tunnel 8 ft. square, which ran as a ring main right round the Bank well below the sub-vault floor at a depth of some 60 ft. below the ground. This tunnel is connected to some nine vertical rising shafts generally 6 ft. × 3 ft. in sectional area, to which horizontal ducts are connected in the various floors, and sometimes provided with booster fans so that the ventilation in a particular department can be increased during periods of specially dense occupancy. It was found that this gave an extremely elastic arrangement, enabling the quantity of air in various parts of the Bank to be varied at will.

The aforesaid tunnel and rising shafts also serve to accommodate the mains for heating, hot-water supply and electric services. All the rising shafts were provided with ladders and platforms so as to be readily accessible from the Engineering Department without requiring access into the more secret or private portions of the Bank.

With the object of saving fuel in winter time and power in summer time, provision was made for about 60% of recirculation.

A separate system of vertical shafts was provided to collect the exhaust air which connected with a separate tunnel adjacent to the fresh air tunnel and at the same level.

The extract from the three basements was taken to an exhaust tunnel constructed in the centre of the outside retaining wall, this tunnel being 8 ft. high × 3 ft. wide, with rounded corners, and a smooth finish inside. By the use of excellent shuttering and without any additional application, a fine face was produced by good concreting. The air from this tunnel was used for ventilating the generating station and boiler house, giving a continuous current from one end to the other.

The air used for ventilation is generally introduced at a temperature of some 5 deg. or 10 deg. below that at which the Bank is maintained so as to produce a feeling of freshness, and it is found that with this provision the panel-heating system is not called upon to supply as much heat as it had been calculated for, with the result that the anticipated flow temperature of 130 deg. has in practice never been reached, though it would unquestionably have been required had the ventilation system not been in operation.

One point which became clear from the experience of the Bank was that the heat losses from concrete roof surfaces appear to be considerably greater than what one would expect by the use of the figure for conductivity of concrete given in the IHVE Code of Practice, where the conductivity of concrete is given as something lower than the conductivity of brickwork. Our experience is that it is considerably higher.

The incoming air is brought down to the plant chamber situated some 40 ft. below ground at the Lothbury end in a vertical shaft about 40 ft. × 12 ft., where it is divided into two streams serving two completely separate plants, each of which is discharged in the underground tunnel by the large double inlet fans previously referred to.

Each of these plants contains a self-cleaning oil filter about 10 ft. wide and 16 ft. high, pre-heating coils, a washing plant with atomising sprays, and an after-heater set of coils. The air is then taken through cotton-wool fabric filters which were added as the result of experience in the first section. Had the electrostatic filter been commercially available at the time it is likely that it would have been used, but the Bank scheme was a little too early for this.

The plant includes a complete equipment of refrigerating machinery for dehumidifying and cooling the air in hot weather.

In Section 3 of the Bank, *i.e.*, the western-most half, a very satisfactory system of air

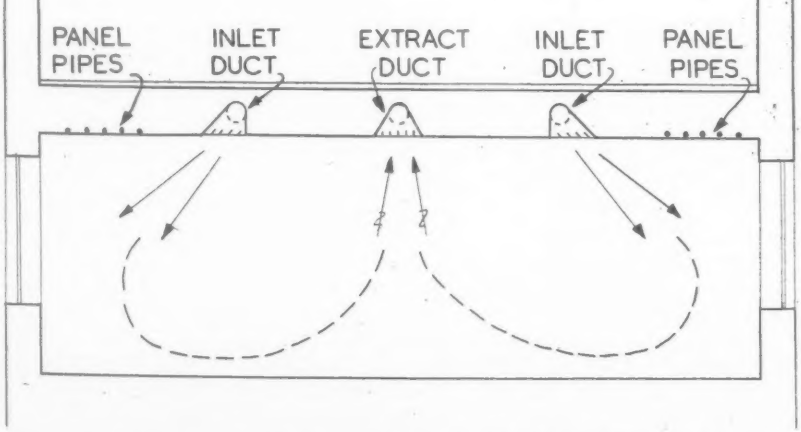


Diagram of the system of ventilation in the western-most half of the Bank of England.

S. W. Newbery, Photo

THE LATTICE INN, KING'S LYNN

"Where the red lattice doth shine.
Good ale is a traffic within."
—17th Century Doggerel.

THE lattice—otherwise called the chequers—on a tincture red, was the ensign armorial of Fitzwarren who, in the 14th century, was the authority for the licensing of vintners and publicans. These arms were displayed as a sign that the house was duly licensed, and that the liquor was of honest brew. Modern trade marks, or brands, likewise guarantee to the purchaser that the materials sold under them are of the same manufacture as those which have previously given him satisfaction, and although the good manufacturer highly prizes the reputation of his brand, the primary purpose for which the law grants, and upholds his rights in it, is to safeguard the purchaser against worthless substitution.

distribution was devised which enabled a large expanse of clean, flat ceiling to be maintained in large departments. This consisted of incorporating in the floor horizontal ducts of circular cross-section varying in diameter from 7 in. to 9 in., which discharged through square grilles in the ceiling. To prevent excessive loss of heat or of cold these were insulated along their length with ½-in. glass silk.

There are two rows of outlet grilles with louvred deflectors directing the air towards the windows at the two sides where it drops and comes back to the centre of the room along the floor. Near the centre it rises and is exhausted by similar exhaust ducts in the floor collecting from a central row of gratings.

This arrangement enables a floor to be cut up by partitions in any desired manner without cutting off the ventilation from any portion, each length of about 10 ft. being, as it were, self-contained from a ventilation point of view.

The air in the Bank is maintained at a temperature of about 68 deg. F. and a humidity varying between 50% and 60%.

Generating Station and Boiler Plant.—Owing to the high cost of electricity delivered in the City of London it was found necessary to consider the alternative of providing the Bank with its own generating station, and this was also considered desirable for reasons of security and reliability.

Owing to the adoption of panel heating, with its low temperature of circulating water (about 110 deg. F.) it was found possible to utilize this water for the cooling of the diesel engines which were adopted, which would not have been possible had the water served radiators at a temperature of 180 deg. F.

The economy of the generating station is much improved by the fact that the engines are arranged so that most of the heat normally wasted is in the Bank usefully employed.

When the plant was first designed all the engines and boilers were arranged to run on oil, as there was very little difference in cost between this and other fuels, and its cleanliness and flexibility were great assets. When the war broke out it was considered nationally undesirable to use a fuel which had to be brought by sea, and the boiler plant was converted to burn creosote pitch, while the diesel engines were converted into the gas-cum-oil system. Under this system about 10% of the full load fuel oil is burnt, and the remainder can be town gas or oil, and can be altered at will without stopping engines. This conversion was effected without the need for enlarging the cylinders and pistons, which would certainly have been necessary to get the requisite output if they had been converted into pure gas engines.

Comparatively recently the Ministry of Fuel have intimated that they would prefer the Bank to revert to oil in preference to gas owing to the coal situation, and this has been done. Incidentally, this has also reduced the cost of running somewhat as at present the cost of a therm is less with oil than with gas.

QUEEN'S HOTEL, LEEDS

This is probably the most modern hotel in England; Architects: W. Curtis Green, R.A., & Partners, and W. H. Hamlyn, F.R.I.B.A. It was described in *Engineering*, November 26, 1937, and elsewhere.

All the bedrooms had mechanical ventilation so that double windows could be used and kept shut without asphyxiation. This is very necessary in Leeds if it is desired to exclude the noise due to iron tyres and horse-drawn traffic on cobbled streets, and trams. It is also necessary for excluding the dust and dirt from an unusually dirty atmosphere, with the railway station on one side and power station on the other.

Inlet air comes from vertical ducts near the central corridor, blows across into the bedroom, and is exhausted in ducts extracting from the bathrooms, there being, of course, one bathroom to each bedroom.

The bathrooms are internal so as to reserve all the outside for bedrooms and windows.

Down draughts from the windows are checked by radiators consisting of flat panels integral with the metal window frames. These give the guests an opportunity of varying the temperature at will.

It was necessary to provide six separate ventilation plants for the building owing to the various requirements as regards temperature and humidity at various times and different occupancy. Thus two serve the bedrooms, three the public rooms, and one the kitchen.

Ten boilers each of 2 million B.T.U. capacity of Gravico type, burning coke, were installed, this large boiler plant serving not only the hotel but also the L.M.S. offices adjacent thereto.

A special series of conveyors about 200 ft. in length had to be designed to fetch coke from a dump under the old railway arches over which the station was built.

The air filtration in a place like Leeds is a matter of the greatest importance and the air stream in every plant went first through an oil filter, then through a fabric filter and finally through a washer. All the washers were provided with glass eliminator plates which avoid the corrosion usually associated therewith.

An interesting occurrence is perhaps worthy of mention. Though the fresh air inlet to the boiler house was brought by means of a shaft from a low roof at third-floor level, it was found during the summer to be so highly charged with mosquitoes as to block completely the oil filters. The mosquitoes' wings lay flat against the oily surfaces and piled up solid. But for these filters the discharge of mosquitoes into public rooms and bedrooms alike would have resulted.

DOLPHIN SQUARE

Dolphin Square (Architect: Gordon Jeeves, F.R.I.B.A.) is interesting as being probably the largest block of flats in London, containing as it does some 1,200 separate flats and having a frontage on the Thames Embankment of about 500 ft. and a depth of some 800 ft. It is provided with a large underground garage and a sports centre containing swimming bath, squash courts, and a most efficient restaurant with kitchen under.

The swimming bath was sterilised with ozone in lieu of the usual chlorine treatment, as the smell of chlorine would have been most undesirable in a confined space adjacent to the restaurant. This eventually proved entirely satisfactory, though there was at first some trouble due to corrosion of the metal used in the elements.

The humidity arising from the large free water surface maintained at about 75 deg. F. caused some trouble from condensation on the Lenscrete roof over, cooled as it would be by contact on the upper surface with the open air. The drops of condensation apparently extracted something from the paint and dropping into the pool caused some discoloration. We were, however, fortunate in being able to cure this by directing warm air from unit heaters on to the ceiling, though at one time it seemed to present a difficult problem.

In connection with the restaurant ventilation, a good deal of research and some modification to the original arrangement became necessary. The occupation and other conditions of the restaurant necessitate nearly twenty air changes per hour for satisfactory conditions to be observed, that is to say, the difference between the inlet and outlet not to become excessive.

The temperature was thermostatically controlled at first by an on and off type of valve operating the heater warming the inlet air. The inlets were situated near the ceiling and blowing horizontally across it.

It was found that with this type of valve, when the heater was shut off by the thermostat the thermal capacity of the air heater was so low that cold air followed almost immediately. Instead of blowing across as intended, it tended to drop on to the occupants below and cool their food more than their tempers. When the thermostat subsequently opened up the heater valve a minute or two later warm air would be introduced and blow straight across as desired. This difficulty was entirely cured by the substitution of a modulating valve in lieu of one of the on and off type.

It is interesting to note that this building with its 1,200 flats has been satisfactorily served with water from four Artesian wells and that in this case submersible pumps were used. These are, of course, considerably lower in cost than the deep-well pumps usually employed hitherto, where wells of the great depth now necessary in London (600 ft.) are used, and the author had some hesitation in adopting them as they were at that time perhaps somewhat experimental. Nevertheless, they have now given some seven years of successful service, and in the author's view entirely justified their adoption.

The hot-water supply has to be carried in copper pipes when London well water is used, but the use of such piping with compression joints adds very little to the cost as compared with the screwed galvanised-iron pipes which would otherwise no doubt have been adopted.

In this building, as at the Queen's Hotel, Leeds, internal lavatories are adopted throughout, and provided with continuous ventilation by extract fans which are provided in duplicate.

An experience which gave some trouble and which was new to us was that in the early days the radiators near the top were constantly requiring to be vented. At first it seemed impossible to account for this, as it continued long after one would have supposed that all the air contained in the water prior to heating up had now been allowed to escape.

A careful investigation of the problem revealed that the gas escaping from the air vents, instead of being air, was hydrogen, and could be ignited at the air cock so as to burn with a blue flame. This hydrogen was no doubt due to the rusting of the iron in the pipes and radiators, which abstracted oxygen from the water, leaving the hydrogen free, and it was at any rate a new and unexpected phenomenon in the experience of the author. It became sufficiently important and serious to necessitate fitting automatic air vents and carrying these up into boxes on the roof.

TOWN HALLS

The following notes relating to the Guildhall, Cambridge (C. Cowles-Voysey, F.R.I.B.A.), are perhaps of interest, and are to some extent at any rate typical of the work done in the other town halls.

Panel heating in thin copper pipes ⅜ in. diameter and 6-in. centres was used with most satisfactory results. The architect was anxious to provide clean, flat ceilings in which partitions could be erected anywhere without being tied by projecting beams. For this reason the floors consisted of a double-slab construction carried out in reinforced concrete with panel pipes embedded in the lower or ceiling slab, with insulation above to prevent transmission through to the floor above.

The embedment of the pipes in a thin ceiling slab instead of the much thicker slab required where floor and ceiling are combined in a single slab, makes the panel heating much more responsive to changes of temperature required by changes of external conditions.

With the same object of enabling partitions to be constructed anywhere without being tied by internal piers, the walls were also made hollow so as to present a clean flat face both inside and out, the inside skin being carried across the face of the stanchion casings so as to avoid the pattern staining when plaster is applied partly on a thin partition and partly on a solid concrete casing due to the different conductivity of the backing.

In the author's experience it has been proved over and over again that dirt is deposited on a cold surface much more than on a warm one, and that even a very slight difference of temperature is enough to cause a very noticeable difference in discoloration.

In the Guildhall, Cambridge, as in many Town Halls, mechanical ventilation was limited to Council Chamber, Committee Rooms, Police Court, Sessions Court, and the Public Hall. In other words, to places where dense occupation would occur.

HOSPITALS AND SCHOOLS

Perhaps the Barrow Mental Hospital at Bristol, for which Sir George Oatley was the architect, represents a typical layout of a hospital in country surroundings where it is divided up into a large number of separate two-storey villas, separated by pleasant country and well wooded. In the case of Barrow there are 55 separate buildings in the final layout, of which approximately 33 have been constructed in the first scheme.

It was necessary to supply each building with steam for sterilizing and cooking, hot water for domestic supply, hot water for heating, and cold water supply.

The mains for the above services were carried in underground tunnels varying in size, but averaging about 6 ft. high and 4 ft. 6 in. wide. All the pipes were lagged except the cold-water supply pipes.

Radiation from the hot-water mains is reduced by the air in the tunnels standing at a temperature considerably above normal outside temperatures, but if this temperature is allowed to become excessive it produces condensation on the cold-water pipes. For this reason air vents in the shape of low vertical shafts were provided at intervals and a natural air circulation was induced, air entering the tunnels through gratings at the lower portions of the tunnels and being drawn up into the shafts at the higher portions of the tunnels.

The Barrow services were perhaps of special interest by reason of the adoption of panel heating in the ceilings and the effect thereon on timber floors over the ground with a well-ventilated air space under.

Especially in places such as the sick hospital, where in reasonable weather both sides are completely open, allowing a gentle through current of air, panel heating is of great advantage as giving a degree of comfort through radiation independent of the air temperature, but calculations showed that the presence of the cold timber floor with the well-ventilated air space under it extracted much more heat than one would normally expect, inasmuch as the radiation from the ceiling on to the timber floor is to some extent lost as far as raising the temperature of the air is concerned. To meet this point the floors were carefully insulated with cork under the boards.

In other works of this kind where heat has to be carried to many buildings the alternative system of embedding mains in the ground in cellular concrete, which is an excellent insulator, is sometimes adopted abroad and has its advantages and disadvantages. The disadvantage, of course, is that pipes cannot be inspected without excavation and the cutting away of the concrete, and that they are not so free to expand and contract as required. On the other hand it is claimed that it is often cheaper and seems to work well in practice.

In this hospital steam was generated in super Economic-type boilers which serve a steam-driven generating station as well as the steam mains.

The exhaust steam from the engines was taken to calorifiers and used for the heating and hot-water supply. When this is done the overall thermal efficiency of the steam engines is extremely high and electricity can be produced at a very low figure, as the waste of heat inevitably associated with a large generating station with no outlet for its low-grade heat necessarily prevents such stations from having a thermal efficiency of more than 20% to 25% over the year, and in some cases something less, as against 60% to 70% with a combined power and heating plant, as in the case of Barrow.

DISTRICT HEATING

The job previously referred to is an example of district heating serving some 35 or more separate buildings, but the installation is, of course, small compared with some of the district heating schemes which have been used with such great success in Russia and on the Continent and in America, where whole cities are heated from mains in the streets.

An interesting application of district heating was, however, carried out in this country under the author's supervision in several large ordnance factories. In one of these approximately 1,400 separate buildings were supplied with steam for heating, hot-water supply and process. The installation was large enough to require three separate boiler houses about a mile apart one from the other, feeding a 14-in. ring main, each boiler house containing ten 30-ft. × 9-ft. Lancashire boilers complete with mechanical stokers, coal-handling plant, large coal storage, grit arresters and mechanical ash-handling plant.

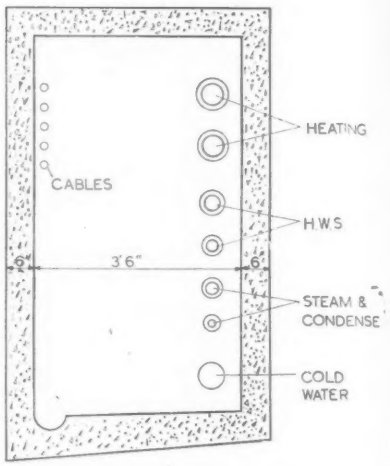
In these jobs the mains were slung from concrete poles and arranged to provide for complete freedom for expansion and contraction, though fixed at intervals to massive concrete anchor blocks so that the movements could be controlled. The pipes were, of course, adequately lagged, and this system of distribution, where permissible, is, of course, more economical than putting the mains underground, and is also a lot quicker to erect and easier to supervise.

The future of district heating as applied to civic areas in this country is still in the melting pot, and it is, perhaps, too early to say to what extent it affords the economical solution of the supply of heat to domestic and commercial properties, though a great many schemes have been prepared and reported on.

CHURCHES AND CATHEDRALS

The heating of churches and cathedrals has problems of its own and has frequently been most inadequately considered and carried out. The usual method of construction adopted in Victorian times was to construct open ducts in the centre of the gangways between rows of pews, cover these with cast-iron gratings and run several lengths of cast-iron mains in the ducts connected to cast-iron or wrought-iron boilers. This system had the great advantage of being a low-pressure one, but this is almost the only thing that can be said in its favour.

Persons coming in from the outside had no option but to walk on the cast-iron gratings, which were sometimes noisy, and in any case the receptacles for any dirt which they carried in on their boots. This dirt, falling on to the cast-iron pipes, got carried up with the uprising hot air and vitiated the atmosphere. Where the spaces between the cast-iron pipes were small the dirt frequently bridged right across them and greatly impeded their emission. Being



Section through the reinforced concrete pipe tunnel at the Barrow Mental Hospital.

out of sight, they were generally out of mind, and it was seldom anyone's business to clean them. Much heat was also radiated to the sides of the duct and lost into the earth. The boilers were generally very inefficient.

Another serious disadvantage was that by inducing uprising currents of hot air in the centre of the church and making no provision for dealing with down draught from the windows, a circulation was set up which tended to increase the latter. Owing to the great height of the windows in the larger churches and cathedrals these down draughts are a very serious problem, and any system which does not treat them seriously will not give any degree of satisfaction.

Another common system was with hot air. Under this system a furnace was built into an underground cellar and heated the air, which was either allowed to escape through large cast-iron gratings above it or conveyed to large ducts where it was allowed to escape to gratings in other places in the church. This generally had the same disadvantages as have already been referred to.

In the case of St. Albans Abbey, which has the longest nave of any cathedral in England, the heating consisted of coke stoves standing on the floor, with thin iron flue pipes carried right up the walls. Not only were these quite inadequate to warm the air in any weather below about 45 deg. F., but the smoke condensing in these uprising flues allowed tarry compounds to escape through the joints and disfigure the walls. The escape of sulphurous gases deteriorated the mediæval plaster and stonework and the fabric generally, so that their function seemed to be to destroy rather than to warm the cathedral.

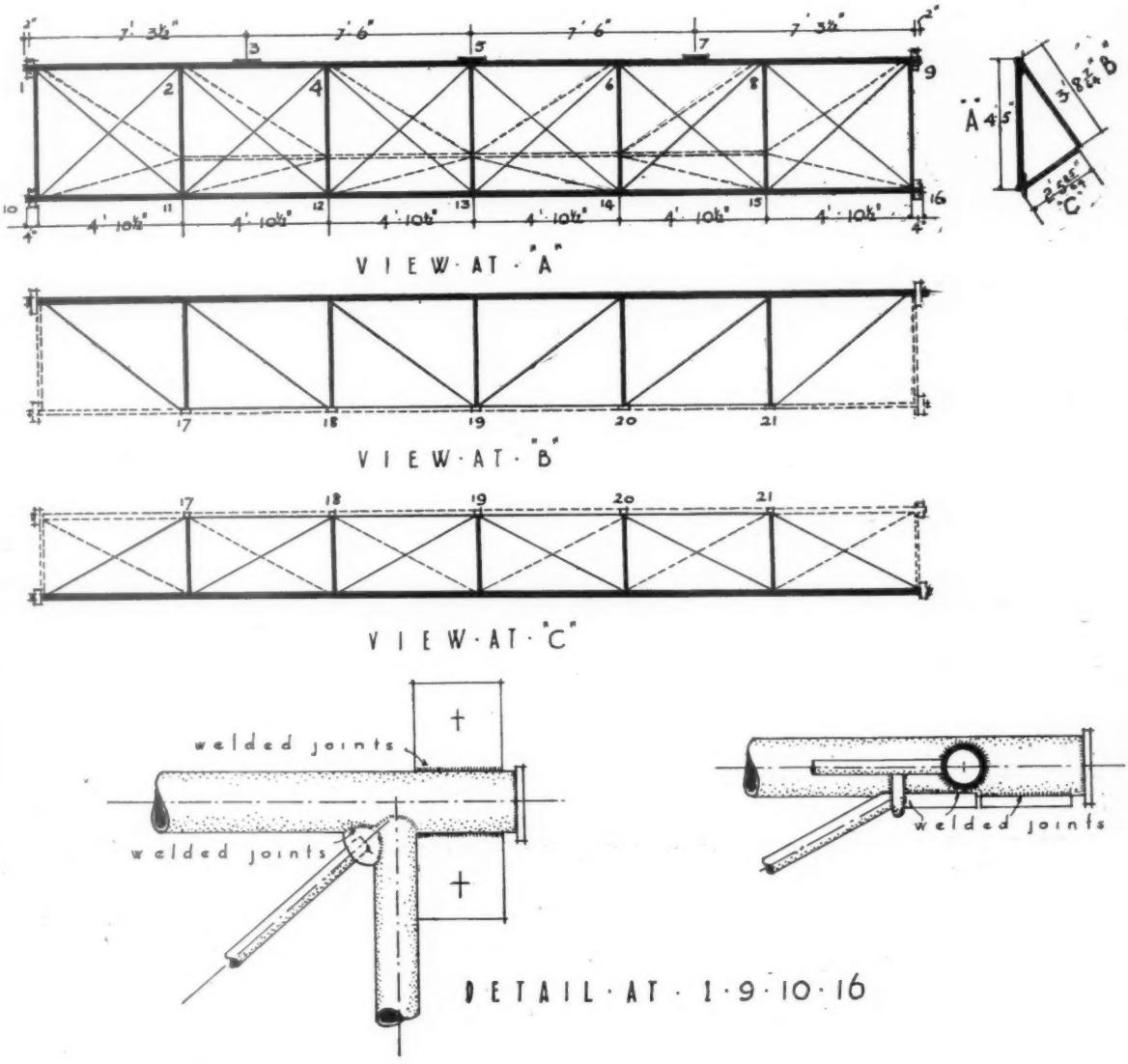
The author had the privilege of assisting in the replacement of this system with a modern one involving radiators and pipes, which are not only inconspicuous, but in which the down draughts from the windows, some of which are 40 ft. or 50 ft. in height, are adequately dealt with. The boilers are underground in the Dean's garden, and of the Gravico type, and under complete thermostatic control. The system consumes little more coke than the original stoves, but warms the cathedral uniformly and adequately to about 60 deg. F., whereas temperatures of 40 deg. to 50 deg. were common in the old system.

THE HEAT PUMP

Perhaps the subject of the heat pump, which has been mentioned in most textbooks and dismissed in a paragraph as an

PATENT WELDED TUBULAR CONSTRUCTION

Data Sheet No. 15



EAVES PURLIN

The eaves purlin frame serves a double function, acting as wind bracing for the side walls and also as an ordinary purlin; its shape has been dictated by the outline of the roof, side "A" lies in the roof and side "C" is horizontal.

The fabrication of the purlin is similar to that detailed in Data Sheet No. 14 but cross diagonals are introduced on side "A" where shear forces may act in either direction.

Further details of node points are given in Data Sheet No. 16.

They show how a large number of members can be joined at one point in a simple manner.

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

interesting development and then forgotten, is worthy of more consideration now that fuel economy has become recognized as an important matter to the inhabitants of this country. The time is now ripe for its development on a commercial scale, for it is of considerable national importance.

Calculations and tests show that by its use many times its heat can be usefully supplied by a given expenditure of electrical energy than when this electricity is utilized for the direct production of heat through immersion heaters or radiators, the magnification factor or advantage depending on the rise of temperature required, being very great for small rises and reducing progressively as these increase.

By way of illustration, a great deal of the town of Zürich, as is well known, is heated in this way, which is the more remarkable seeing that the river from which the heat is taken is generally frozen over at the time when heat is required most.

In England the problem should be simpler as our wells and rivers are seldom at a temperature of much below 40 deg. or 50 deg. The days when the Thames was frozen over and the mythical ox was roasted on bonfires on the ice are past, partly by reason of the demolition of old London Bridge, which tended to keep the tide from washing the upper reaches as it now does, and partly owing to the enormous quantities of heat put into the river by our generating stations.

When, instead of using electricity for driving the heat pump, this is driven from steam engines using coal, then it can be shown that an advantage of approximately two can still be obtained as compared with using coal for heating direct, and in the author's view there seem to be many applications for such systems in this country, especially for large buildings constructed in the neighbourhood of good rivers plentifully supplied with generating stations.

MARS

Annual Report

The following are extracts from the ANNUAL REPORT OF THE EXECUTIVE COMMITTEE of the Modern Architectural Research Group just issued.

MEMBERSHIP: The number of members increased during the Session 1944-45 from 80 to 95. In addition the Liverpool University Architectural Society affiliated to the Group.

COUNTY OF LONDON PLAN: A subcommittee was appointed following the meeting on May 15, 1944. Twelve meetings were held, and a Report was completed which has been approved by the Executive and will shortly be circulated to members and to the Press, a copy being sent to the LCC.

THE NEWS-CHRONICLE *PROJECT TO DESIGN A TOWN:* The Executive Committee regrets that, although negotiations have continued throughout the year, it has proved to be impossible to arrange for the Group's participation. It has therefore been resolved that individual members are freed from the obligation that they felt not to take private commissions in the project.

MARS NEWS: A news sheet for circulation to members was started with the first issue in July, 1944. Unfortunately the Paper Control would not grant a permit, so that the circulation of a news-sheet as such must be deferred. In the meantime it is intended to circulate reports of transactions to members in the same format to match *Mars News, No. 1.*

CIAM: A copy of *Civitas* was received from A. Roth (Switzerland) on October 18, 1944. A telegram of good wishes came from five members in New York to the public meeting on December 13, 1944. 'A long document on Reconstruction was received from a CIAM group in New York on December 20, 1944, and is under consideration.

FUTURE PLANS: It is proposed to continue the policy of holding Group meetings to discuss topics of current importance, and in particular to hear from members about work they are engaged upon that is of interest to the Group.

Public pronouncements will be made as occasions arise.

The Executive is alive to the need for a field for Group activity of a creative character; various suggestions are under consideration and proposals are invited from members, provided they are practicable under present conditions.

The Executive is pleased to announce that meetings during 1945 will be held at the RIBA.

ANNOUNCEMENTS

Mr. H. J. P. Skinner has resigned from the offices of Chairman, Managing Director and Director which he held in Messrs. Steel Scaffolding Co., Ltd., of 82, Victoria Street, London, S.W.1; Messrs. Charles Bunn, Ltd., of Herbert Street, West Bromwich, Staffs.; and Messrs. Warrington Tube Co., Ltd., of Latchford, Warrington, Lancs.

The Federation of Associations of Specialists and Sub-contractors has moved to Millbank House, 2, Great Peter Street, London, S.W.1. Telephone: Whitehall 9609.

Mr. George A. Boswell, F.R.I.B.A., chartered architect, has taken into partnership Mr. Peter Mitchell, A.R.I.A.S., and Mr. Ninian R. J. Johnston, A.R.I.B.A., Dip-Arch.(Glasgow). The title of the firm will now be "Geo. A. Boswell & Partners," with Chambers at 256, West George Street, Glasgow, as formerly.

CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal." War Address: 45 The Avenue, Cheam, Surrey, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

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

Public and Official Announcements

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

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

CANNOCK RURAL DISTRICT COUNCIL.

APPOINTMENT OF TEMPORARY ARCHITECTURAL ASSISTANT.

Applications are invited for the position of Temporary Architectural Assistant for the preparation of layouts, design of houses, and all other duties incidental to the preparation of this Council's Post-War Housing Programme.

Candidates should be A.R.I.B.A. or Registered Architects, and preference will be given to applicants with previous experience in the preparation of schemes for the provision of Working Class Dwellings.

Salary £450 per annum, plus a travelling allowance on the Council's scale; the person appointed will be required to provide his own suitable means of transport.

Applications, stating age, qualifications, experience, and position in relation to Military Service, together with copies of three recent testimonials, must be forwarded to the undersigned not later than the 7th April, 1945.

A. D. DALLOW,
Clerk to the Council.

Council Offices, Penkridge, Staffs.
9th March, 1945. 591

STOKE-ON-TRENT CORPORATION.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the above appointment in the City Architectural Department at a salary of £325 per annum, rising by annual increments of £15 to a maximum of £370 per annum, plus cost of living bonus, at present £59 16s.

Candidates must have had considerable experience in the preparation of drawings and specifications for school buildings.

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

Applications, stating age, qualifications, experience, and position with regard to military service, together with copies of two recent testimonials, should be received by me not later than Monday, the 9th April, 1945, and endorsed "Architectural Assistant."

HARRY TAYLOR,
Town Clerk.

Town Hall. 601

COUNTY BOROUGH OF BRIGHTON.

EDUCATION COMMITTEE.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, with special qualifications in the design of School Buildings, and experience in the maintenance and alterations to existing.

Salary £500-£700 per annum, according to qualifications and experience, plus war bonus.

Candidates should be Corporate Members of the Royal Institute of British Architects. The appointment will be subject to one calendar month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and experience, and giving the names of three persons from whom reference may be obtained, must be received by the undersigned in a sealed envelope, endorsed "Architectural Assistant," on or before 30th April, 1945.

D. J. HOWE (A.M.Inst.C.E., M.Inst.M. & Cy. E., Chartered Civil Engineer),
Borough Engineer and Surveyor.

Town Hall, Brighton, Sussex, 1.
14th March, 1945. 603

BRIERLEY HILL URBAN DISTRICT COUNCIL.

APPOINTMENT OF ARCHITECT.

Applications are invited for the post of Architect, at a salary of £700 per annum, plus cost of living bonus (at present £59 16s. per annum). The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination.

The person appointed will be required to carry out all architectural duties in connection with the Council's housing schemes, and all other duties that may be assigned to him from time to time by the Council.

Applications, endorsed "Architect," stating age, qualifications, experience and position in regard to liability for National Service, and accompanied by copies of not more than three recent testimonials, should be submitted to the undersigned not later than the 9th April, 1945.

HERBERT HEX,
Clerk of the Council.

Council Offices, Moor Street, Brierley Hill, Staffs.
20th March, 1945. 611

COUNTY OF SOUTHAMPTON.

APPOINTMENT OF COUNTY ARCHITECT.

The Hampshire County Council invite applications from Fellows or Associate Members of the Royal Institute of British Architects for the whole time appointment of County Architect.

The appointment will be pensionable, and will be subject to the staff regulations for the time being in force. It will be held during the pleasure of the Council, and will be terminable by three calendar months' notice on either side. The commencing salary will be £1,100 a year, and there will in addition be an allowance in respect of the increased cost of living, amounting at present to £59 16s. a year.

The person appointed will be required to undertake such architectural duties as may be assigned to him, including the design, construction and maintenance of buildings for any of the County services. He will be prohibited from engaging in private practice, and will be required to reside at Winchester or within three miles thereof. He will be provided with offices and staff, but will be required to keep a motor car for use in the County service, and will receive travelling allowances, according to the scale for the time being in force. He will be entitled to a vacation of four weeks in each calendar year. The appointment will be subject to passing a medical examination.

Applications must be on forms to be obtained from the undersigned, and returned to him on or before the 3rd May, 1945.

F. V. BARBER,
Clerk of the County Council.

The Castle, Winchester.
March, 1945. 612

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE.

Applications are invited for the appointment of TWO TEMPORARY ARCHITECTURAL ASSISTANTS in the Department of the West Riding Architect.

Applications, stating age, qualifications, experience and salary required, with copies of recent testimonials, should be delivered to the undersigned not later than the 21st April, 1945.

BERNARD KENYON,
Clerk of the County Council.

County Hall, Wakefield. 600

ARCHITECTURAL ASSISTANT, temporary, required by the Borough of Rowlet Regis, Staffs.

Candidates must be A.R.I.B.A. or hold equivalent qualification, and have had previous experience in municipal housing.

Salary £500 to £550 p.a., according to experience, with cost of living bonus, at present £49 8s. p.a., and overtime.

Applicants should write, quoting EA.1262XA. to the Ministry of Labour and National Service, Appointments Department, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for the necessary forms, which should be returned completed on or before 4th April, 1945. 609

TWO SENIOR TOWN PLANNING ASSISTANTS required by the Borough of Dover.

Candidates must be A.M.T.P.I. and either A.R.I.B.A., A.M.I.C.E. or A.M.I.M. & Cy. E., with previous planning experience.

Salary £500 p.a., plus war bonus £49 8s.

Applicants should write, quoting EA.1179XA. to the Ministry of Labour and National Service, Appointments Department, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for the necessary forms, which should be returned completed on or before 4th April, 1945. 604

OVERSEAS EMPLOYMENT. — DRAUGHTSMAN required by the Government of Uganda Public Works Department for three years, with prospect of permanency. Salary according to qualifications and experience in the scale £372, rising to £500 a year, plus war bonus, which on salary of £372 is between £40 and £102, according to dependants. Free passages and quarters. Candidates must be rapid and accurate architectural draughtsmen, with considerable experience of the design and construction of public buildings.

Written applications (no interviews), giving the following essential details: (1) Full name; (2) date of birth; (3) industrial training and experience; (4) name and address of present employers; (5) details of present work to the Secretary, Overseas Manpower Committee (Ref. 1790), Ministry of Labour and National Service, York House, Kingsway, London, W.C.2. 608

ARCHITECTURAL ASSISTANT, temporary, for a period not exceeding two years, required by the Borough of Prestwich, Lancs.

Candidates must be A.R.I.B.A. or equivalent, and have had previous experience in a municipal office. The work involves the preparation of layouts, plans for houses, roads, sewers, etc., specifications, quantities and general supervision of final accounts.

Salary £420 by £20 to £460 p.a., plus cost of living bonus £59 16s.

Applicants should write, quoting EA.1326XA, to the Ministry of Labour and National Service, Appointments Department, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for the necessary form, which should be returned completed on or before 4th April, 1945. 605

Architectural Appointments Vacant

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

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

CITY Architects and Surveyors require immediately Senior Architectural Assistant; permanent appointment; commercial, office buildings and housing; telephone for appointment City 5513.

CITY Architects and Surveyors require immediately Two Junior Draughtsmen for commercial and housing work. Telephone for appointment City 5513. 602

ARCHITECT and Quantity Surveyor's Assistant required at once. Reply, stating age and experience, to T. H. Thorpe, F.R.I.B.A., 23, St. James's Street, Derby. 613

STAFF ARCHITECT.—Applications invited for the position of Staff Architect at large modern Departmental Store in the North of England, site area 75,000 sq. ft., floor area 135,000 sq. ft., with complementary trading activities. Duties comprise the further development of the existing premises, general alterations, improved departmental layouts, designs for internal fixtures and fittings; also supervision and control of staff joiners, electricians, painters and plumbers. Also the preparation of plans, quantities, and specifications for building extensions, in co-operation with consulting Architects, and control of building operations. Permanent position. Salary according to experience and qualifications. Younger applicants preferred, with urge to make a good position. State age, qualifications, previous experience, salary required, and position in respect of National Service. Box 610.

REQUIRED, immediately, experienced Senior Architectural Assistant; must be first-class designer, with sound knowledge of construction. Apply, stating age, salary and experience, to James W. Mackintosh, 18, Orchard Street, Bristol, 1. 607

SENIOR ASSISTANT, capable of taking out quantities with knowledge of building costs, and proficient draughtsman, required for office in Midlands; must be exempt from military service; permanent post for suitable man. Reply, stating salary and qualifications, to Box 606.

Architectural Appointments Wanted

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

ARCHITECT'S ASSISTANT requires position in London on priority work. Box 473.

ARCHITECT, experienced in carrying through works in London and provinces. Box 465.

A.R.I.B.A. (39) offers part time services in London area; surveys, schemes and perspectives; wide experience. Box 474.

ARCHITECTURAL ASSISTANT, experienced domestic architecture and layout design, seeks spare time work. Box 472.

A.R.I.B.A. offers part-time services (London); housing or town planning preferred. Box 467.

PERSPECTIVES in Colour, Monochrome and Line, by R.A. Exhibitor. F. Van Baars, 13, John Street, Bedford Row, W.C.1. Holborn 4904. 525

ARCHITECTURAL STUDENT, studying for Inter. R.I.B.A., requires drawing experience; would do evening work for local architect in return for help with studies. Howells, 23, King Charles Road, Surbiton, Surrey. 479

ARCHITECT'S ASSISTANT, age 21, ex-R.A.F., seeks position with London Architect; 8 months in architect's office, and completing 2nd year course in architecture at the Polytechnic, Regent Street; free immediately. Box 476.

ARCHITECT (31) requires responsible position as Assistant, preferably with view to Partnership, in or near London; imaginative designer of schemes, layouts and detail; experience of up-to-date building methods. Box 471.

SENIOR DRAUGHTSMAN requires spare time work for Architects, Contractors, or Manufacturers; any class of work; factories, domestic, or schemes of prefabrication; Bristol or West Country areas. Write Box 459.

A.R.I.B.A. (37) offers spare time assistance to Architects in London area; industrial and commercial buildings, including detailed layouts and specifications for electrical and heating services, etc. Box 458.

ARCHITECTURAL Draughtsman and Surveyor, age 25, ex-Serviceman, 5½ years in architect's office, 2 years R.E. works services, desires part-time and week-end work, preferably surveying of working details. Box 464.

ARCHITECT and Surveyor, L.R.I.B.A., age 39, desires permanent progressive position; experienced licensed houses, hotels, hospitals, factories, housing, quantity surveying, specifications, working drawings and details; capable of taking charge of office staff. Box 466.

A.R.I.B.A., aged 26, ex-Serviceman, seeks suitable position in London area; please give full particulars. Box 469.

ARCHITECT ASSISTANT (26), ex-Service, with 9 years' experience, working drawings, surveys, etc., seeks progressive position in London or Southern Counties. Write Box 470.

ARCHITECTURAL and Surveying Assistant, ex-R.E., requires whole or part time work; experienced war damage work, dilapidations, measuring-up and settlement of builder's accounts, preparation of accurate surveys (theodolite, chain and levelling) for post-war development schemes. Box 463.

ASSISTANT, age 28, exempt N.S., neat, accurate, and essentially quick draughtsman, 3 years' school trained, 2 years' evening classes; excellent references; 6 years' professional experience, flats, housing, cinemas, breweries, conversions, surveys, details, perspectives, etc.; temporary engagement not objected; London area; salary £8 10s. per week. Edward Watkinson, 30, St. James Gardens, Holland Park, London, W.11. 477

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J. O. SHEPPARD, late of 21, Bedford Row, W.C.1 (and the Granwood Flooring Co., Ltd.), now at 1, East Road, Chadwell Heath, Essex, and on war work, thanks Architects for past cordiality, and looks forward to meeting them again when his new office opens. 800

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