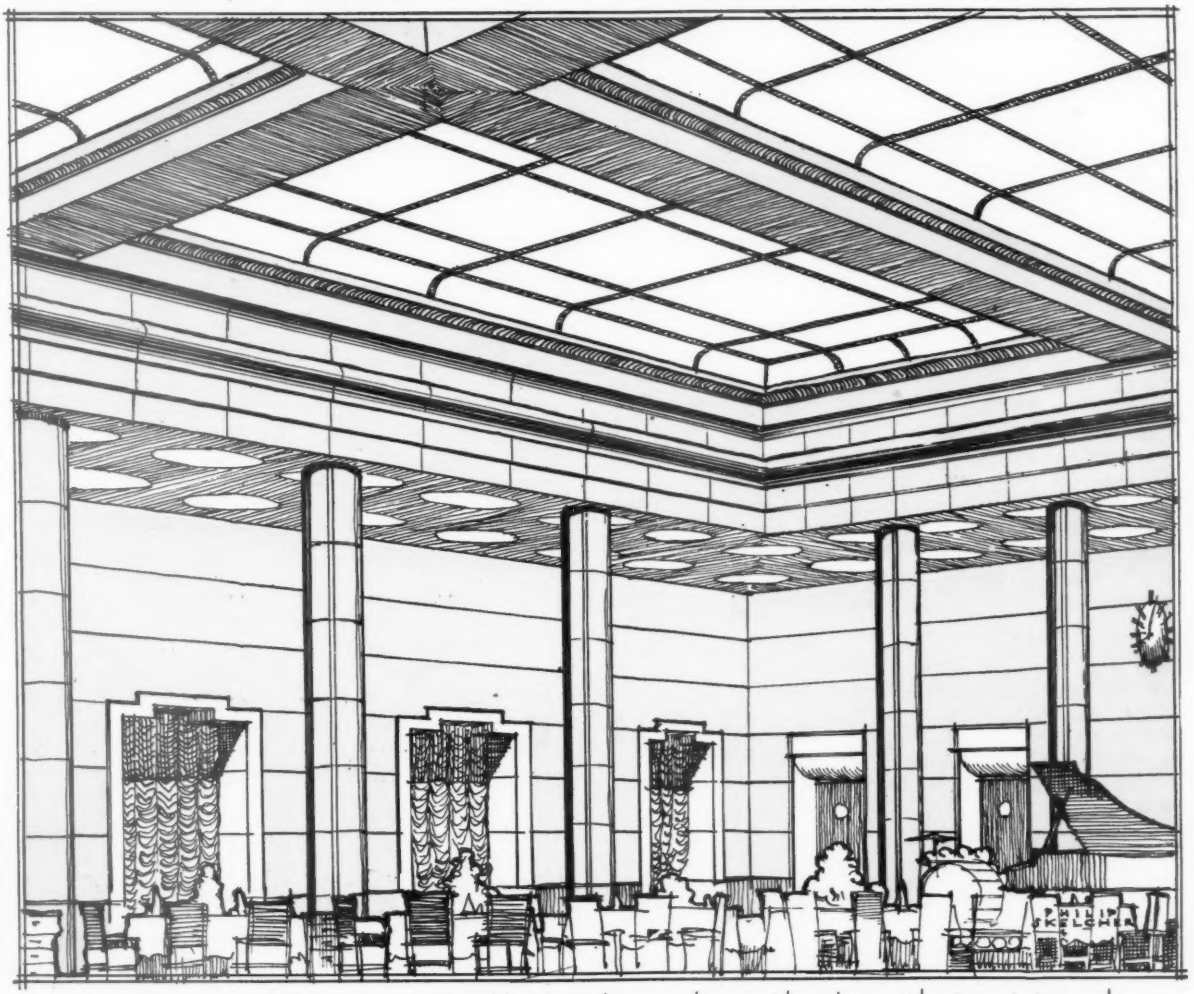
TRAFFOLYTE



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THE ARCHITECTS' JOURNAL
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The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

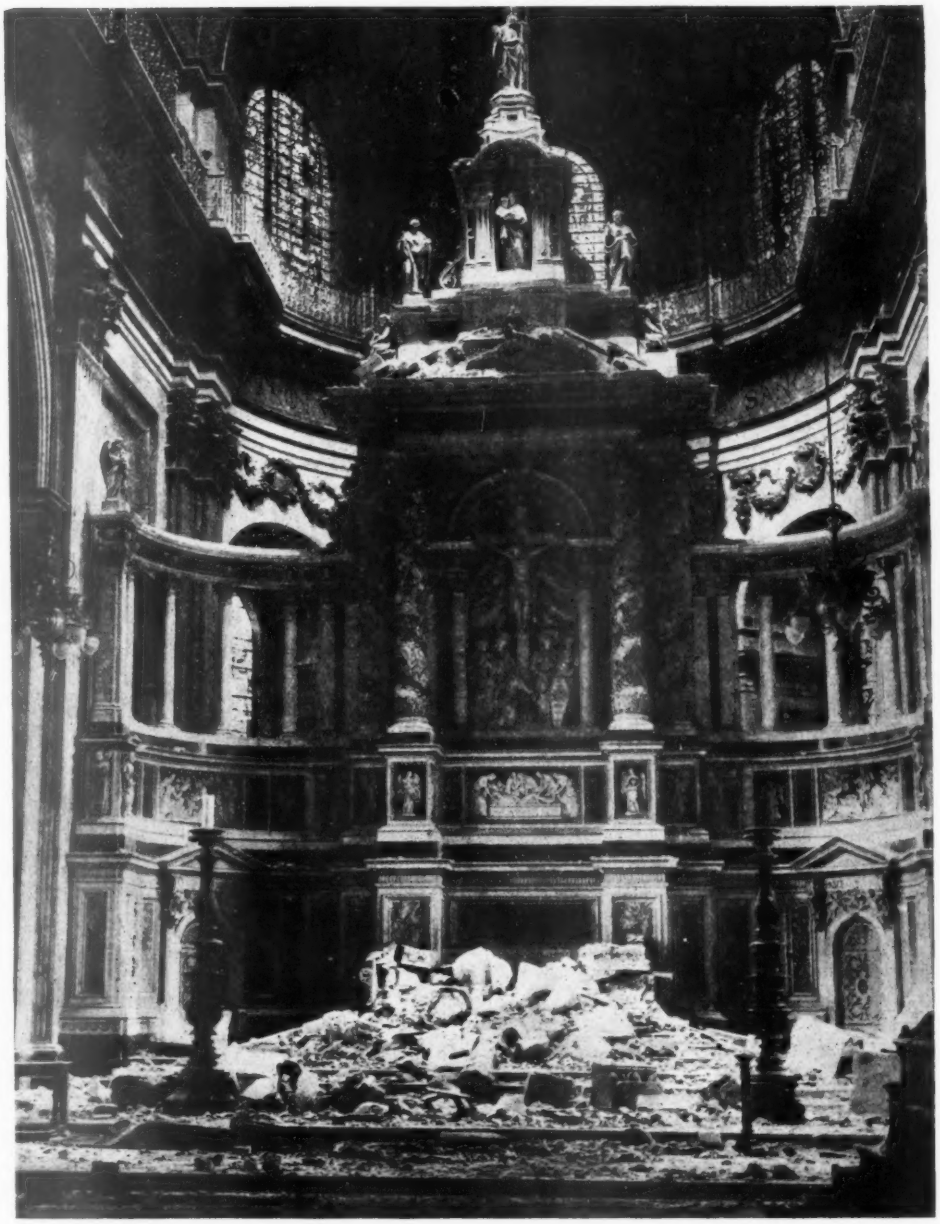
THURSDAY, OCTOBER 17, 1940. NUMBER 2387 : VOLUME 92

PRINCIPAL CONTENTS

Owing to the paper shortage the JOURNAL, *in common with all other papers, is now only supplied to newsagents on a "firm order" basis. This means that newsagents are now unable to supply the* JOURNAL *except to a client's definite order.*

To obtain your copy of the JOURNAL *you must therefore either place a definite order with your newsagent or send a subscription order to the Publishers.*

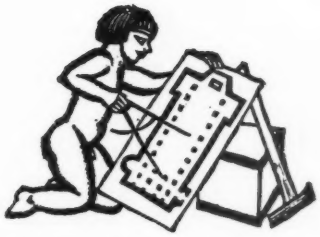
ST. PAUL'S CATHEDRAL



During an air attack on London last week a bomb struck the chancel roof of St. Paul's Cathedral and falling debris demolished the High Altar. The above photograph was taken on the morning after the raid.

ZÜRICH

Sculptural group in the entrance courtyard of Zürich University.



THE NEW MINISTRY

BY the time this article appears in print the fuller statement about the organization and aims of the Ministry of Works and Building may have been published. At the time of writing, it is probable only that a new system of controlling and allocating building resources is to be set up for the duration of the war.

This pause between the heralding of the event and the event itself can be well used by all members of the building and associated industries and professions. It enables them to collect their thoughts about what a wartime Ministry of Building ought to do and the way it should set out to do it, and about the events since war broke out which bear on these aims and methods. It enables them, in short, to make up their minds on what essential qualities and powers must be looked for in the new Ministry's organization.

The JOURNAL believes, as it stated last week, that in any such review of building and the war two factors will stand out as all-important. First, that in wartime a single *ad hoc* authority must be charged with the superintendence, allocation and production of all building resources. Second, that all the difficulties which have arisen over labour and materials since war began could have been avoided if such a single authority had been set up at the outset.

This second contention must surely be admitted by anyone who glances at the sequence of events since September 3, 1939. At that time there were enormous building resources set free, or about to be set free, by the cessation of private building—far more than Service Departments could use. Naturally, not all of these resources were of the kind which were most wanted for immediate war purposes. For instance, light, quickly built materials were only present in *peacetime* proportions. But the solution to this problem seemed—to builders—simple. It was to expand production of light materials, and to insist that all consuming departments should for the moment divide their requirements into *Urgent* and *Less Urgent*, so that "normal" peacetime techniques, standardized and speeded up as much as possible, could be used for supplying the latter.

This was not done. A large fraction of peacetime constructional and manufacturing resources were left to dwindle in idleness. The only control set up was the negative control of rationing the materials which were in immediate demand by a joint committee of consuming departments. The function of the Building Priorities Committee has been almost wholly to allocate *existing* resources to supply *immediate* needs. No authority was charged with *expanding* resources to meet estimated or possible *future* needs.

It took thirteen months for this negative control to reach its nadir. As supplies grew tight, it rationed stringently; as supplies grew tighter, it rationed more stringently. Finally, last month, in a frenzy of negative energy, it caused a rationing system to be set up for something virtually non-existent—and the extraordinary Private Building Control Order came into force.

The announcement of the new Ministry and the appointment of Sir John Reith suggests a change of policy—the acceptance of the building industry's contention that an authority must be set up to look ahead at future demands and to expand resources to meet those demands as well as to allocate those which have already been produced. But the test which the industry must apply to the coming statement of the Ministry's functions is whether it does state, in the plainest terms, that negative methods are ended and positive ones are to take their place.

At present the Government's advisers and principal servants are working under great strain, and architects, builders and manufacturers will make every allowance for the difficulties of a change-over in the control of a branch of the war effort which has to maintain production uninterruptedly. They will not worry over small faults in organization, for in wartime a host of these are inevitable. But they must make sure, at any cost, that the new Ministry is put in charge of all building resources at all stages and does intend to replace negation with action.

The methods and the men by which this new policy is carried out are the responsibility of the Government. In peacetime the building industry is unorganized centrally but is highly organized, and is usually regarded as very efficient, in its parts. Each section of it possesses a powerful representative body, and these bodies are represented on B.I.N.C. And within its ranks it possesses a fair share of men of the greatest organizing ability. It would seem reasonable that in the preparation of a comprehensive wartime control for such an industry, its representative organizations should be consulted and a few men of great reputation in the industry should be appointed to responsible positions in the control. So far as the JOURNAL is aware neither of these steps has yet been taken by Sir John Reith, and, of course, objections can be made to them. Consulting representative bodies wastes time, and the appointment to powerful position of a leader in one section of an industry may always raise qualms in other sections—though the building industry can triumph over many such qualms where getting a job done well is concerned.

But, as we have stated, the methods and the men are the Government's concern. What matters to the industry are the results. And these results can best be forecast if the industry applies to the coming explanation of the new Ministry's functions the two simple tests—

1. Does it provide for the single control of all building and building materials' production in all stages?

2. Does it provide for estimating all demands on building resources a year ahead and for expanding production and labour power to fulfil them?

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

NOTES & TOPICS

ARCHITECTS AND THE NEW MINISTRY

THE announcement that Sir John Reith was to be Minister of Works and Buildings, and that a statement on the new Ministry's functions would be published later, was first made public on October 3. On October 7 *The Times* published a letter about the new Ministry from the President of the R.I.B.A.* I must admit that I found this letter disappointing—for three reasons.

*

First, it seemed to me to indicate that the R.I.B.A.—the premier authority on all matters of concern to architects—neither had been, nor had expected to be, consulted concerning the formation of the new Ministry or the duties which it was to carry out.

*

Second, it seemed to encourage rather than destroy the too general opinion of architects as persons who are only interested in the artistic side of building.

*

Third, it seemed to imply that architects are not paying much attention to the colossal *wartime* job of the building industry—and all the organization that will entail—but are merely looking forward to a Golden Age of rebuilding afterwards and want to secure a good share of it well in advance.

*

I may have exaggerated these faults: readers can judge for themselves. But I do not think any architect will deny the enormous importance of the questions involved.

*

Let us try to get to the root of these questions. The practice of contemporary architecture in peacetime requires three kinds of ability—in what is called Art, in building construction and in organization. In the eyes of most of the public the last two kinds of ability are at least *as important* as the first—if not much more important. It is not worth while regretting this. It is a fact.

What happens in wartime? In the eyes of all his fellow countrymen the architect's wartime importance lies solely in his constructional and organizing ability.

*

The architect's position is therefore surely plain. It is his duty to devote all his constructional and organizing ability to the hard, perhaps dull, but enormously important and complex job of helping the building industry tackle wartime demands. It may be that, in the course of this work, the architect will be able to design buildings which are good architecture despite wartime conditions of speed, minimum cost and strange materials. We believe that he *will* do so, often. But he must never approach a job from the point of view of "Art," he must never even acknowledge in wartime his desire to design a "good" building, or he will be thought an impractical madman by the overstrained laymen around him.

*

If these contentions are true it was the plain duty of the R.I.B.A. when war broke out to examine how the building industry could best be organized for its wartime job, and make representations to the Government. In conjunction with B.I.N.C. this was done. A Ministry of Building was asked for with powers to list all existing resources, to allocate them and to prepare and allocate future resources. The Government did not accept the recommendations.

*

But now, nine months later, we are to have a Ministry of Building. It is obvious that such a Ministry contains the seeds of three great possibilities:

(1) The centralized control and organization of all building resources during wartime. (Building and Organization *only*.)

(2) The continuance of this Ministry's control—as a Ministry of Reconstruction—during the period of great demands on the building industry after the war is over. (Art and Building and Organization.)

(3) The post-war amalgamation of this Ministry with the town-planning section of the Ministry of Health to provide a central directive body for that positive Territorial Planning which we know must come soon if the chaos of peace is not to be worse than the destruction of wartime. (Great Art, Great Building and Great Organization.)

*

It would probably have been unwise for the last two possibilities to have been stressed in the President's letter of last week—though they might have been touched on. But one would have expected—since the R.I.B.A. had apparently not been consulted about the new Ministry—a restatement of what exactly the R.I.B.A., B.I.N.C. and the building industry expected the new Ministry to do—and why. One would not have expected the general agreement on these points throughout the industry to be ignored, nor the arty detachment of architects at this grave moment to be so unhappily stressed.

COMPENSATION FOR AIR RAID DAMAGE

The Prime Minister stated last week that a scheme of compulsory insurance against air raid damage to buildings would soon be brought into operation to provide a fund for payment of compensation. Thus a remedy which has

* This letter is reprinted on page 312 of this issue.—Ed. A.J.

long seemed practicable and sensible to everyone except insurance experts is to be put into operation.

*

There is, however, some disconcerting powder mixed with this jam. The greatest advantage—one might say the only advantage—of the compulsory insurance scheme to the ordinary public is that it would enable compensation to be paid directly each claim has been properly investigated. But Mr. Churchill did not promise this. He said : " Compensation . . . will be made at the end of the war, if not sooner, and where the necessity arises . . . the means of carrying on will not be withheld."

*

This is disappointing. The new scheme will end a state of affairs which shows signs of becoming impossible only if payment of a compensation is made within three or six months. Many architects and surveyors are now engaged on surveys of damaged or destroyed buildings and the preparation of compensation claims, and all of them, I fancy, must have been dismayed by the measureless obscurity of the legal-financial background of any " after the war " compensation scheme.

*

One only has to consider the case of ten small speculative houses which have been completely destroyed to understand why metaphysics and Aristotelian logic have been recommended for the preliminary training of lawyers. On behalf of ten squalid patches of brick rubble and all-too-thin site concrete, ten hard-hit tenant purchasers are at present, in theory, bound to continue mortgage payments to their building societies until after the war, while simultaneously paying rent for another house and coping with all the unavoidable expenses which follow the destruction of household chattels. Compensation after the war " in the light of the financial situation then obtaining " might be a tolerable method of repayment for a big company with adequate reserves. But it is intolerable for a clerk with £300 a year, a nervous wife and a strong desire " to know where he stands."

*

A compulsory insurance scheme with immediate settlement of claims may present many difficulties in application. But in the layman's view it cannot possibly give rise to the labyrinthine post-war complications for which the present scheme is heading directly. What is more, it is, of course, far more just. Why should the property owner in North Wales, the Lakes or Scotland (who sleeps soundly in bed at night) escape bearing a portion of the burden of his unlucky fellow-countryman in Stepney ?

. . . AND FEES

Architects will also hope that the R.I.B.A. and Surveyors' Institution will see that, when the new scheme comes into operation, two points of professional importance are cleared up.

*

The first is whether professional fees for preparing a claim for compensation can be added to the total sum claimed. In the Final Report on Principles of Assessment of Damage* (which the Government accepted), paragraph 10 reads as follows :

*

In paragraph 5 of our First Report we recommended that damage to immovable property should be assessed in some cases on the cost of reasonable reinstatement. We think it well to state that in our view costs of reinstatement include professional fees, properly incurred, for the preparation of plans and quantities and for superintendence of the work.

*

Now most architects and owners who have read this have assumed, perhaps a little hastily, that, since preliminary surveys and estimates of damage are an essential preliminary to " reasonable reinstatement," fees for such surveys and estimates could also be added to the sum claimed.

*

It seems that in the view of district valuers it is not so. Fees for actual rebuilding after the war can be added ; fees for immediate surveys and preparing claims can not, and must be paid by the owner without recompense. This seems unjust—particularly for the £300 a year man whose small business premises have gone.

*

The second point concerns the amount of fees which should be charged for such preliminary surveys and preparation of claims. This is a very difficult matter since the amount of work may vary enormously and without reference to the market value of the building which has been damaged. Yet it seems likely that by now sufficient experience has been obtained of the work involved in widely different cases to enable some " working basis " to be put forward by the professional societies.

*

The ten shillings an hour of time spent by principals and assistants, which was agreed by the R.I.B.A. and the Ministry of Health, is on the best lines, but its defect—in the eyes of the building owners—is obvious. I have, however, tried to think of a better method—based on cubic contents, amount of claim, market value in 1939, or a combination of any of these, and must confess myself defeated.

THOUGHTS BETWEEN CRATERS

Lead glazing looks unreliable when a bomb has burst twenty feet away. It waves out bombwards like curtains in a " still " from *Rising Storm*. Tile-hanging, when not stripped, can suffer spectacular disarrangement. Someone likened it to a child's careful water-colour, showing every tile, which has been lightly but regularly smudged over. A sash window had moved out of a damaged wall without breaking a pane.

*

The effect of small incendiaries seems very slight. A couple of dozen had fallen on a paper mill and cardboard box factory : total damage, one case of cartons burnt out. One which fell on an asphalt roof burnt out where it struck ; another beside it bounced and came to rest on another roof a hundred feet away.

*

But to hark back to lead glazing (surely this phrase should occur somewhere in *Specification :* " Hark back and revive, retain vestiges, cut out rudiments, derive and mix, apply liberally in small areas ; operator's eyes to be well bound with a clean handkerchief, twice folded and strongly tied ") —to hark back to lead glazing, some people have no sense of proportion. The owner of the domestic ruin eyed the twisted nets of lead morosely. " They told me," he said cuttingly, " that lead glazing resisted blast well."

ASTRAGAL

* H.M. Stationery Office. Price 2d.

NEWS

COMPETITION RESULT

Mr. Alexander Scott, a second year student of the Dundee School of Architecture, Dundee College of Art, has been awarded the first prize in the architectural section of the National Eisteddfod of Wales. The subject was a bridge of modern design and construction to replace an old one in a specified Welsh village.

A.R.P.

Memorandum No. 16, entitled "Emergency Protection in Factories" has just been issued by The Ministry of Home Security. It is obtainable from H.M. Stationery Office, price 1d.

HOME GROWN MINING TIMBER

Some misapprehension appears to have arisen as to the procedure for applying for the transport subsidy on home grown mining timber, which formed the subject of two previous Notices, No. T.47 of August 30 and No. T.49 of September 12.

When home grown mining timber is to be consigned from one of the Producing Areas shown in paragraph 7 of the Notice of August 30 to the Receiving Area allocated to it in that paragraph, it is not normally necessary for any enquiry to be sent in advance to the Timber Control at Bristol on the question whether the traffic will qualify for a subsidy. It is intended that the subsidy should be paid in such cases provided that the applicant satisfies the Control that the requirements have been met. It is only in cases where the timber is to be consigned to a Receiving Area other than the Area allocated to the Producing Area in the Notice that an advance application should be made to the Timber Control, if it is considered that there are special circumstances justifying the payment of the subsidy.

Claims for the payment of the subsidy will only be considered on timber consigned on or after August 31, 1940. In the case of timber shipped from Northern Ireland and Eire, or sent by sea from Scotland, the Bill of Lading submitted with the claim must have been signed on or after August 31.

With reference to paragraph 6 of the Notice of August 30, the amount of the subsidy on rail charges will be based on special railway rates where these are in force. The claimants for the subsidy should, therefore, ascertain from the local agent of the railway company whether such special rates are in force and should see that, if so, the special rates are charged.

Applications for the subsidy should only be made monthly. Payments will be made by the Control at the end of the following month.

ILLUMINATED ENGINEERING SOCIETY

Following meetings have been arranged by the above society:

Tuesday, October 22. A paper on "Industrial Lighting and the Black-out," by Mr. H. C. Weston. To be held at the E.L.M.A. Lighting Service Bureau, 2 Savoy Hill, London, W.C.2.

Tuesday, December 10. Demonstrations illustrating Effects of Contrast in Illuminating Engineering. To be held at the E.L.M.A. Lighting Service Bureau, 2 Savoy Hill, London, W.C.2.

1941. Tuesday, January 14. A paper on "Fundamental Principles of Vision in Very Weak Light," by Dr. W. D. Wright.

Tuesday, February 11. A paper on "The Recognition of Coloured Light Sources," by Mr. J. G. Holmes.

Tuesday, March 11, and Tuesday, April 6. Subjects to be announced.

Tuesday, May 13. Annual general meeting.

Attention is particularly drawn to the alteration in the time of meetings (2.30 p.m.) necessitated by the present conditions.

ANNOUNCEMENTS

Messrs. Murrell and Pigott, FF.R.I.B.A., of 44 Bedford Row, have moved their office to 14 Cromwell Place, South Kensington, S.W.7 (telephone Ken. 8234). The firm will now be known as R. Mountford Pigott, M.C., F.R.I.B.A., J.P., chartered architect.

Mr. Albert E. Batzer, F.R.I.B.A., F.S.I., 36 Ebury Street, S.W.1, has transferred his office temporarily to "Estcots," East Grinstead, Sussex. Telephone East Grinstead 360.

MINISTRY OF BUILDING

Below is the letter by Mr. W. H. Ansell, President, R.I.B.A., referred to in this week's Leading Article:—

SIR,—On December 29 last you published a letter from the then president of the R.I.B.A. suggesting that one remedy for many of the ills of the Government's wartime building programme would be the creation of a Ministry of Building. The successive reports of the Select Committee on National Expenditure have emphasized the need for some controlling and co-ordinating authority, and yesterday's announcement as to the formation of such a Ministry completes the first stage of an interesting journey.

Sir John Reith will have the good will and can be assured of the cordial co-operation of the architectural profession with him in his new task. Although the position as to the fuller use of the training and experience of the profession in the Government building programme is far better than it was nine months ago there is still a great deal of unfinished work to be done for various Departments. The new Ministry of Building will bring a welcome detachment from some old and bad methods and a power of organization that together will have beneficial effects.

It is, however, in the possibilities of the Ministry in the future that the imagination is most stimulated, and in this connection I plead for the early and complete recognition of the function of the trained designer and planner in the reconstruction that will follow our final victory in the war. The opportunity must be taken of clearing many areas of inferior houses which have been badly shattered and of providing layouts and new dwellings which shall give the fullest possibilities of healthy lives for our people. Unless there is vision and trained skill in planning from the outset there will be the same dreary failures as in the past. The nation should, even for its smallest houses, have the highest available architectural skill.

Everyone has felt the responsive uplift of spirit, that link of the beholder with the perhaps far-distant designer, that comes of a finely resolved solution of a human problem in building. This is seen in the L.C.C. housing estate at Downham just as truly as in the Orangery in Kensington Gardens or the group on the Acropolis itself, in different degree. It is not present in the stuccoed dullness of much of Belgravia nor the mean streets of the outskirts of many of our towns.

It is for the national good, therefore, that this appeal is made, not in the narrow interests of one profession, however deserving. The tragedy of past years has too often been that the nation has trained its architects and then declined to use them.

I am, Sir, your obedient servant,
W. H. ANSELL,
President, Royal Institute of British Architects.
66 Portland Place, W.1.
October 4.

DIARY

Friday, October 25. Architects' Registration Council, 66 Portland Place, W.1. Quarterly meeting.

Saturday, October 26. Institution of Structural Engineers, Institution of Civil Engineers and Institution of Municipal and County Engineers (Yorkshire Branches), at the Hotel Metropole, Leeds. "The Channel Tunnel." By T. J. Guerritte. 2.30 p.m.

CONTROL OF BRICK PRICES

The Board of Trade has made an Order (S.R. & O., 1940, 1806) applying the Prices of Goods Act to all kinds of building bricks. The effect of this Order is that the prices of bricks may not be raised above the prices charged on August 21, 1939, by more than is reasonably justified in view of the increase in the costs of making and distributing them. The Order applies to all sales of bricks whether by manufacturers, merchants, builders, or other persons. Any person who has reason to suppose that he has been overcharged for bricks after today, should report the matter to the Local Price Regulation Committee for his district. Copies of the Order may be obtained from H.M. Stationery Office.

AIR RAID DAMAGE

Following notice has been issued by the Secretary of the R.I.B.A.:—

It is understood that some members of the R.I.B.A. are kindly giving free advice to poor houseowners whose property has been damaged as the result of air raids, and it has been suggested that it would be of great benefit to the poorer members of the community if other architects would follow their example. A house-owner whose life savings are represented in his little cottage is often bewildered and helpless when he sees everything he possessed destroyed or seriously damaged by an enemy bomb. He is quite unable to pay professional fees, but it is felt that a professional man would often be prepared to help by advising him on the filling up of the claim form, etc.

It is suggested that any architects who would be prepared to give their services in this way should notify the local authority in whose area they practise or reside, and the latter could then give their names to the unfortunate owners who require guidance.

PRESIDENTIAL ADDRESS

Following are extracts from the address of the President of Sheffield, South Yorkshire and District Society of Architects and Surveyors.

"The results of air attacks upon this country have brought to the front many problems for architects, some old and others new; the effects of blast and suction on certain materials and types of structures; the vulnerability of plate glass and the comparative immunity of lightweight glass in small panes. Shall we revert to the ultra small pane of some material admitting light but obscuring vision like the old cat's eye with one or two panes allowing clear vision? Is the solution the swinging window left open at right angles to the frame? Or the French window with shutters, either louvred or roll?

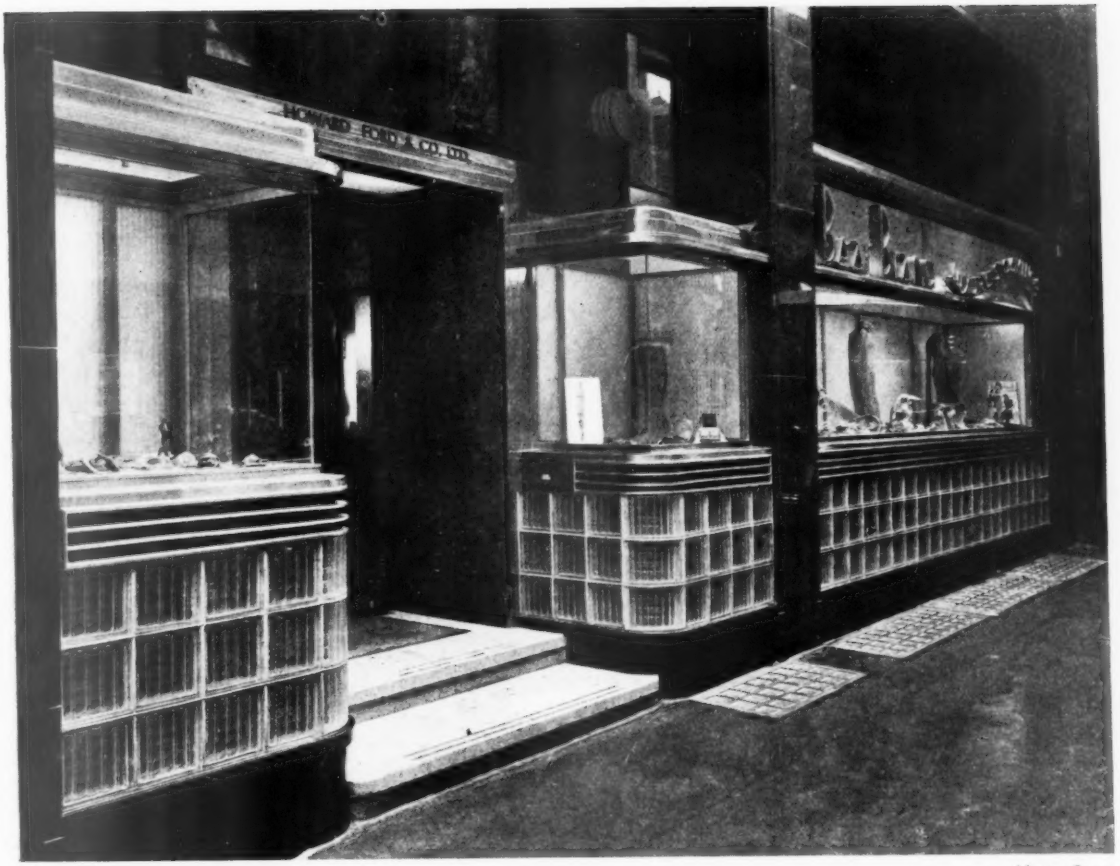
"Again, the urge to remove hospitals away from centres of population is redoubled, as is the imperative necessity of emergency first-aid stations and operating theatres in the midst of the people's dwellings.

"And as regards the dwellings themselves, are the future dwellings to be built on communal lines? Has communal feeding come to stay? However that may be, the black-out has certainly underlined the necessity advocated by Town Planning experts of communities having their own centres with places of religion, amusement, shops and the rest.

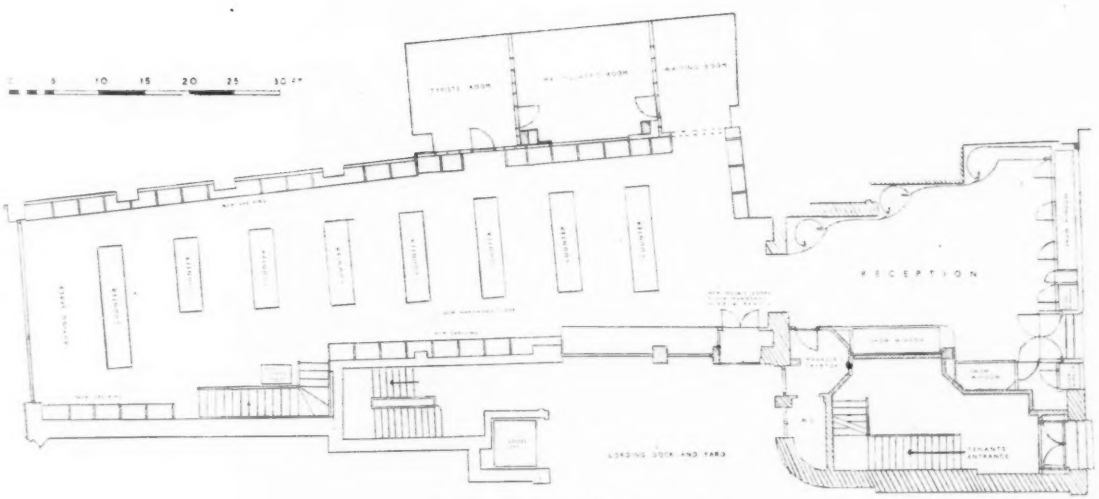
"Again, is it in the best interests of the country that industrial premises should all be herded together in one area providing large targets for hostile aircraft?

"There is also the psychological factor to consider; is it better to have works near to the operatives' homes so that dangers are shared with their families, thus abolishing the anguish caused by anxiety and doubt and also the difficulties of transport?"

"All these and similar problems are capable of solution, but only by keen observation, clear thinking and experiment.



Main front



GROUND FLOOR PLAN

SHOP, WOOD STREET, E.C.

DESIGNED BY JOSEPH EMBERTON

GENERAL—28 Wood Street, E.C.2, was built during the early years of the present century. It is now held on lease from the Prudential Assurance Co. by a firm of hosiery wholesalers. The premises have been acquired for use as the London warehouse and showroom. At present the firm's requirements are met by the occupation of the three lower floors, and the upper floors are let on short leases until such time as they may be required. The basement is used for the receipt and despatch of goods. The showroom occupies the front part of the ground floor, the rear section being used for stock and the directors' office. The first floor provides further accommodation for stock and general offices.

EXTERNAL FINISHES—Shopfront : anodized aluminium. Main entrance door, ⅜-in. armourplate frameless glass with anodized heads and shoes ; handles, glass (coloured). Steps : terrazzo. Plinth : granite. Glass bricks under the display window.

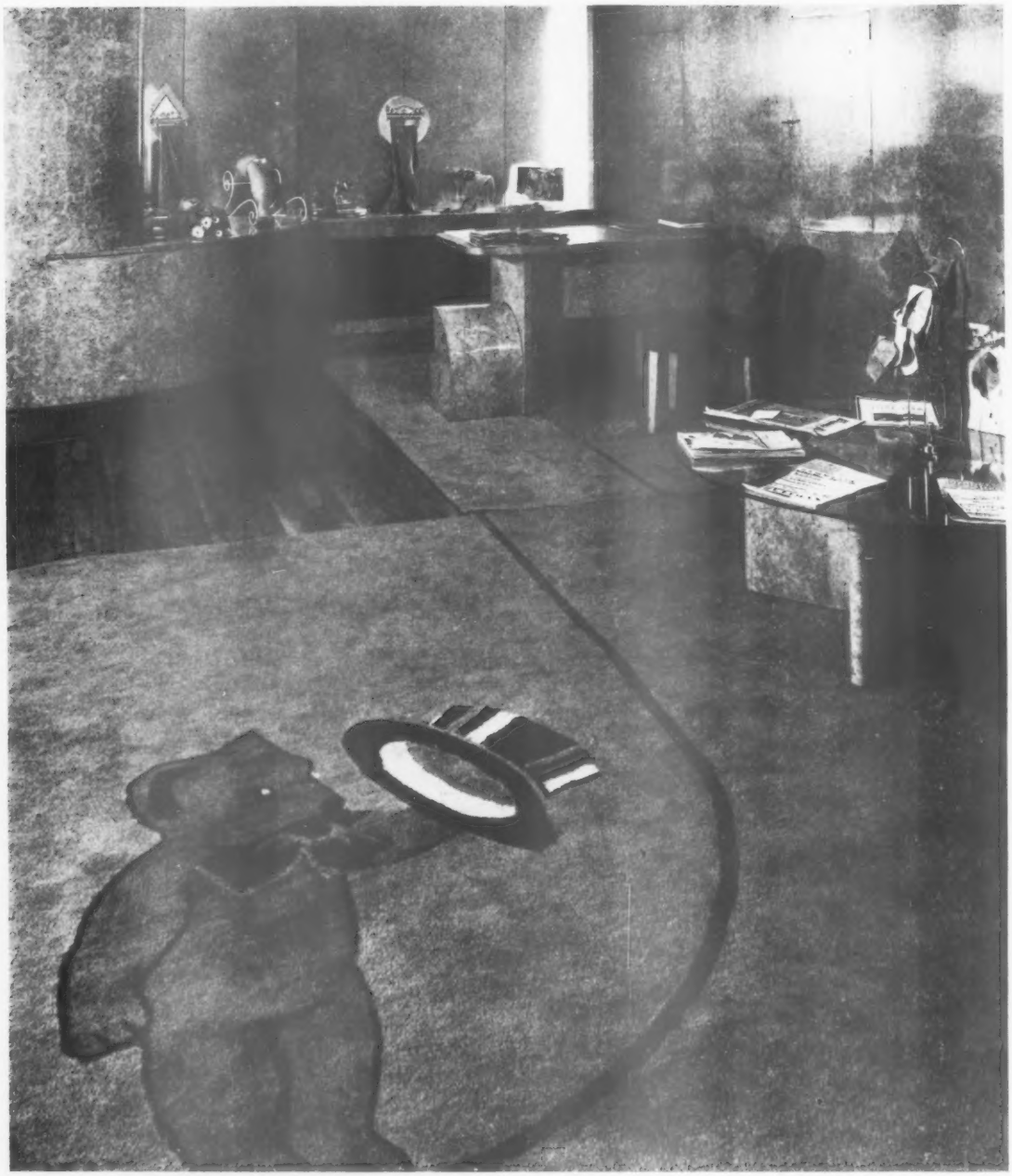
PLAN AND INTERNAL FINISHES—The display window to Wood Street had its form determined by the fact that it would be wholly concerned with the display of hosiery, and the necessity for allowing as much daylight to penetrate into the showroom as is possible under the very restricted conditions imposed by one of the narrowest streets in the City of London. An inclined mirror has been incorporated in the roof of the portion of the window allotted to display to reflect the light from the sky into the showroom. For the display of such articles as ladies' silk stockings a bright simple background was considered necessary and frosted mirrored glass has been used. The showroom has been arranged to provide accommodation for three small tables especially designed to carry a full range of samples at which a salesman makes sales to a prospective customer with a reasonable degree of privacy. Two showcases have been provided, in order to enable specimen shop window displays to be set up for demonstrations to customers, who consist chiefly of retail shopkeepers, and also for the display of showcards, etc., which are provided by the clients for display with their products. Besides the showcases, three niches have been formed for the display of goods under well-lighted conditions, but at the same time making them easy for close examination and handling. The walls have been lined with a veneer of burr elm.

Main entrance

SHOP, WOOD STREET, E.C. • DESIGNED BY JOSEPH

Above, display window in the reception room—main entrance doors are on the left; right, two views of the manager's room.

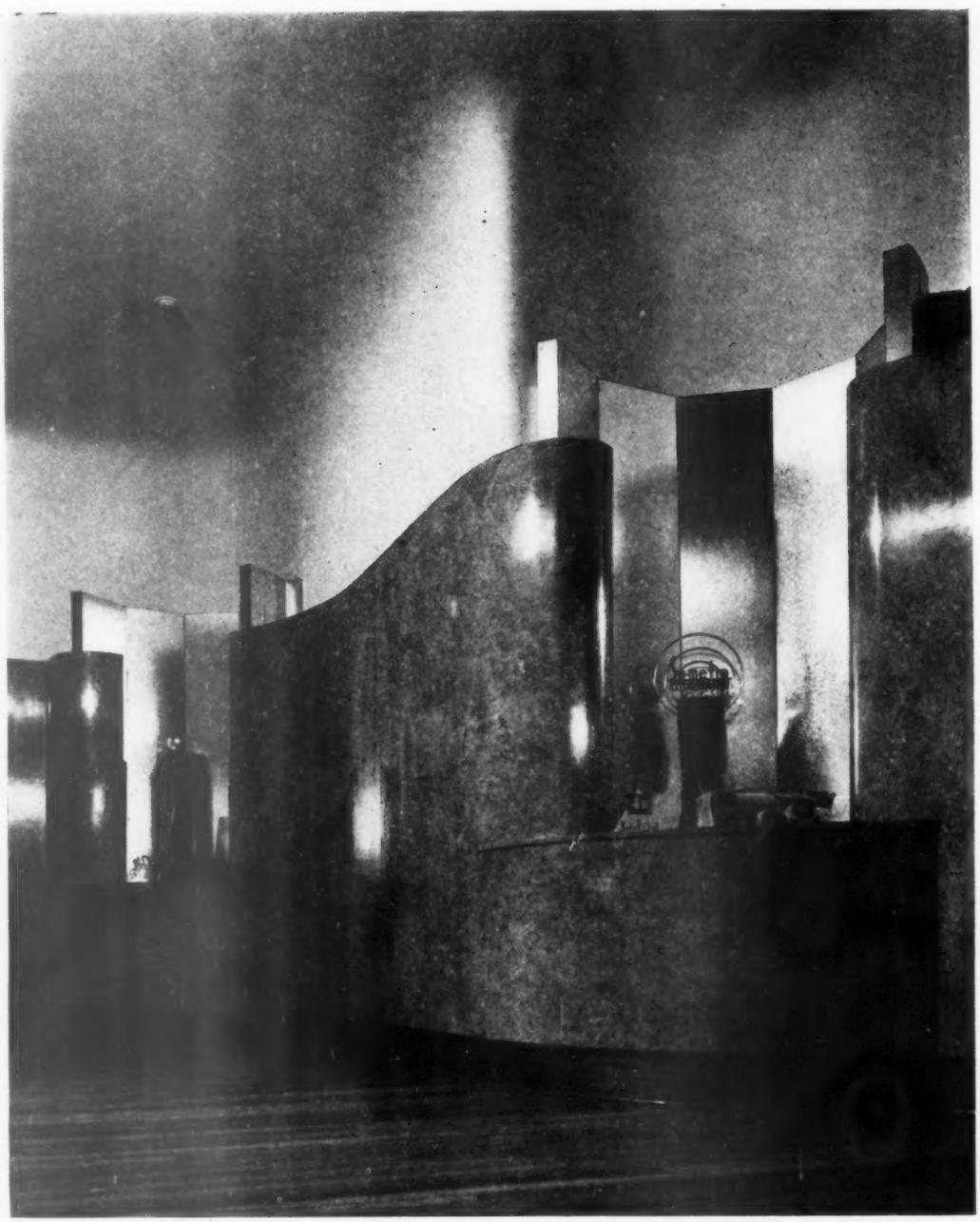
EMBERTON



Above, the reception room; left, packing room.

INTERNAL FINISHES (*continued*).—The stockroom carries stock around the walls and under counters on which stock is sorted and orders filled. Customers are often not satisfied with the inspection of samples only but wish to examine stocks, and this has been taken into consideration in the arrangements. The glass bricks are

SHOP, WOOD STREET, E.C.



Detail in the reception room

provided under the display window in order to admit daylight to the basement.

SERVICES—As the use of radiators would be injurious to such delicate stock, the heating has been carried out by the installation of unit heaters attached to the ceiling, and warm air is distributed by means of electric fans.

General contractors were W. S. Barton & Co., Ltd.; for list of sub-contractors, see page xvi.

BY JOSEPH EMBERTON

SAVILE ROW POLICE

Main (Savile Row) front

GENERAL—This new police station comprises six floors above pavement level with basement and sub-basement. Sub-structure is tanked with asphalt and the foundations and retaining walls carried out in "Super-Cement" concrete. This double precaution was taken in view of the water level revealed by the trial holes.

CONSTRUCTION—Superstructure is of steel-frame construction with reinforced concrete floor slabs throughout, those over the basement and sub-basement being specially designed to withstand the collapse of the upper floors in the event of air raids.

EXTERNAL FINISHES—External walls are faced with "Shellybed" Portland stone with reconstructed granite base and travertine marble window mullions. The horizontal concrete ribs of the old Burlington Street front are projected

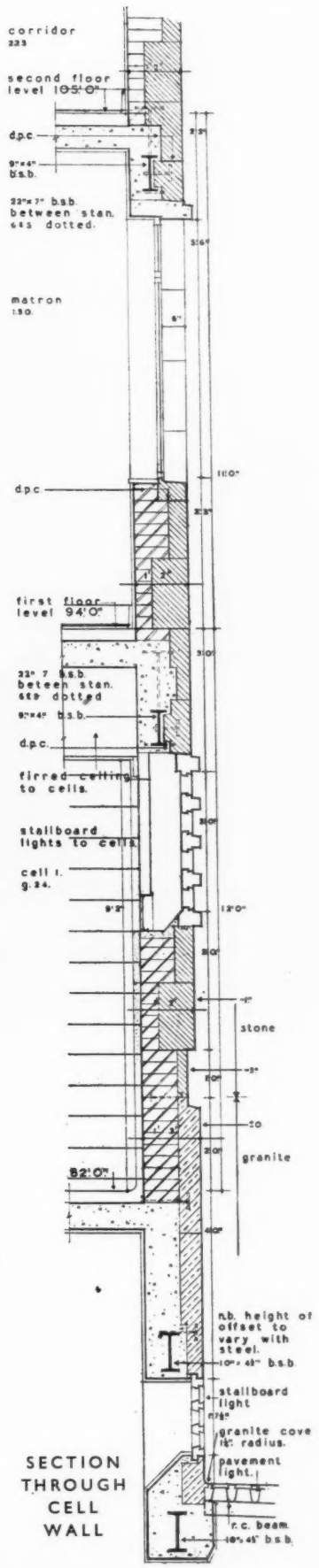
STATION, W.1

Another view of the main front

DESIGNED BY SIR JOHN BURNET, TAIT AND LORNE

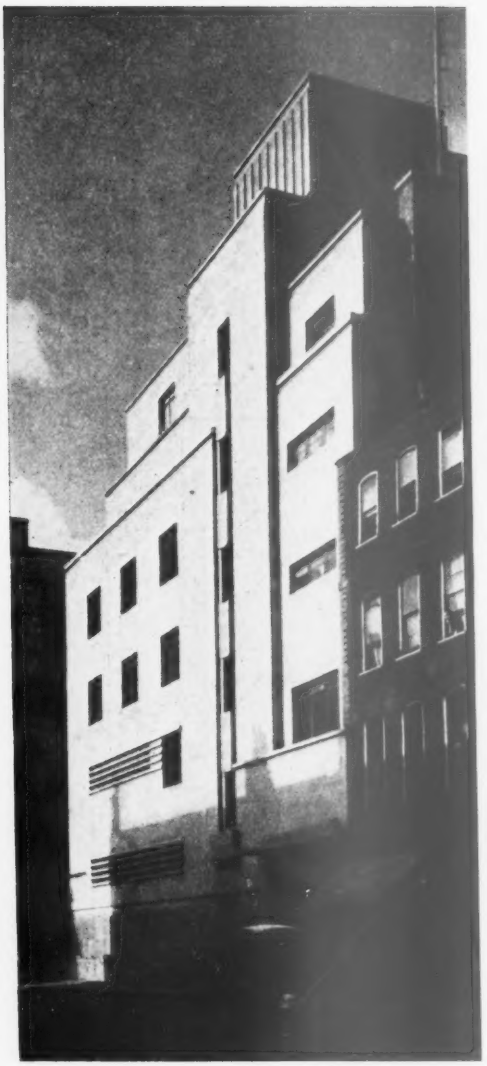
from the main wall face and the spaces between are filled with glass-concrete. In addition to this treatment on the outer face of the wall, there is a second skin of glass brick on the inner face, as shown in the section through the cell wall, reproduced on this page. This inner panel stops short of the cill to allow a space through which both inner faces can be cleaned.

INTERNAL FINISHES—"Shellybed" stone is used, polished, for lining the walls of the main entrance hall. The staircases and landings have green terrazzo treads and risers, with cream terrazzo borders and dados. Oak block floors and cork tiling have been used in corridors and special rooms, and linoleum floors and dados in the various offices.



SECTION THROUGH CELL WALL

Below, front to Old Burlington Street. Right, sergeants' mess ; right, bottom, service bar in canteen. Facing page : top, general inquiry office ; bottom, main entrance hall.



SERVICES—The mechanical plant comprises automatic coke-fired boilers ; plenum and extract ventilation to cells, kitchens, internal lavatories, etc., gas filtration A.R.P. plant, and emergency diesel lighting and power. The consulting engineers were R. T. James and Partners. Consulting engineers for mechanical services and lifts were Stinton

SAVILE ROW POLICE STATION • BY SIR

Jones and Partners, and the quantity surveyor was Oswald E. Parratt. General contractors for the sub-structure were Higgs and Hill, Ltd., and the general contractors for the superstructure were Wm. Moss and Sons, Ltd.; for list of sub-contractors and suppliers, see page xvi.

JOHN BURNET, TAIT AND LORNE

HOUSE AT PURLEY, SURREY

SITE—A sloping plot in Riddlesdown Avenue, Purley, with a drop from the road of 1 in 6, overlooking a golf course at the rear.

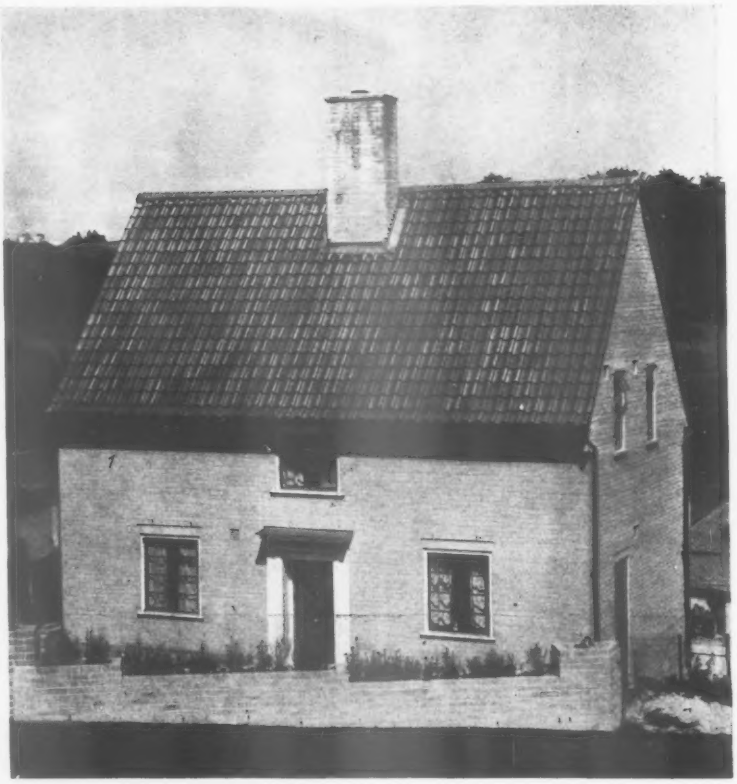
CONSTRUCTION AND EXTERNAL FINISH—11-in. cavity walls with light grey concrete facing bricks upon dark brick plinth. 4½-in. brick internal walls and 3-in. block partitions. Timber floors and roof, roof finish, battens upon untearable felt covered with Staffordshire Blue clay pantiles at 50 degrees pitch. Standard domestic metal windows in wood surrounds, painted cream, as also is the pine doorcase. Doors and ironwork painted emerald green.

INTERNAL FINISHES AND EQUIPMENT—Walls and ceilings rendered and set with hard plaster and distempered. Bathroom tiled all walls full height 6 in. by 6 in. cream glazed tiles. Floors narrow strip pine, lightly stained and waxed. Staircase in pine with metal balustrade. Doors flush pine throughout, grey stained and waxed.

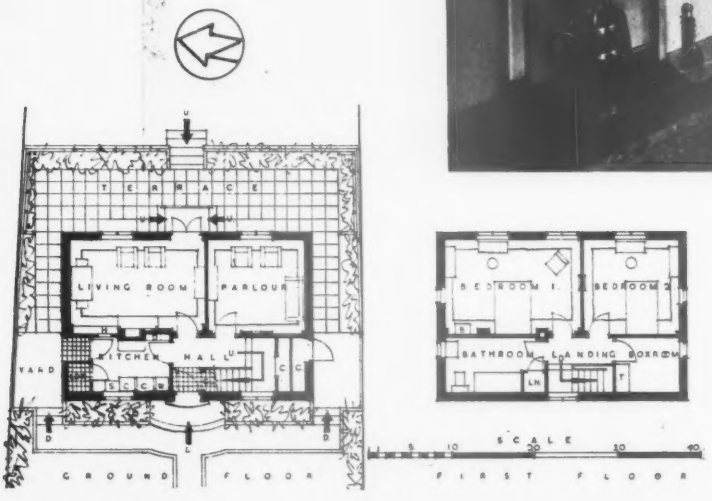
SERVICES—Heating by open coal fire in living-room, elsewhere by wall panel electric fires. Water heating by gas heater in kitchen.

COST—£840 in 1939 or 1s. 2d. per foot cube, including retaining wall and terrace at rear, and front walling.

General contractors were N. and F. Chapman, Ltd. ; for list of sub-contractors, see page xvi.



Top, main (west) front and the living-room



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THE DETERMINATION OF STRESSES IN ROOF TRUSSES :

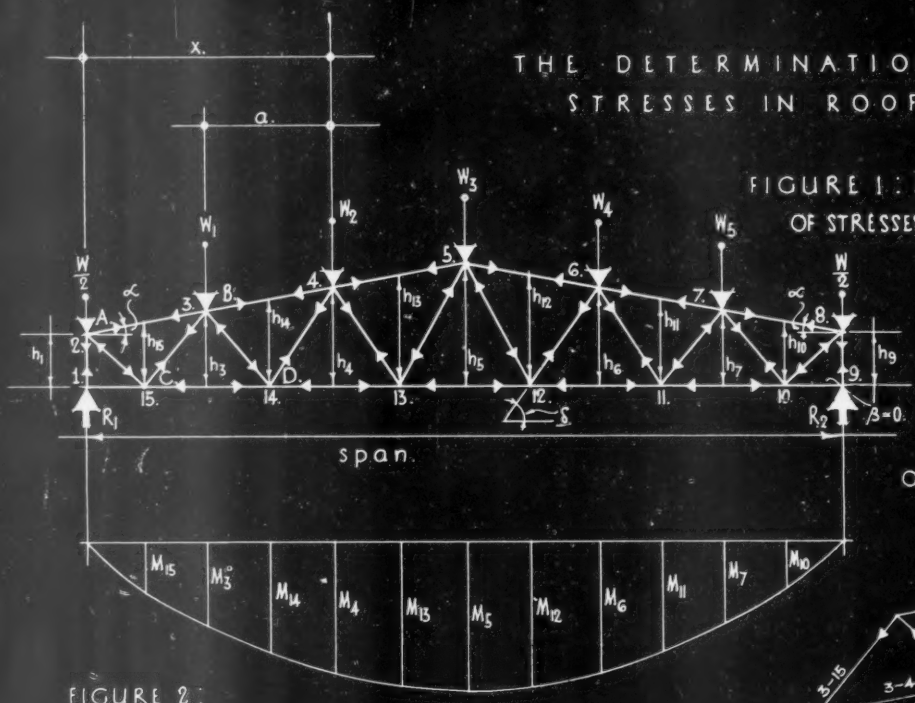

FIGURE 1 : DETERMINATION OF STRESSES BY CALCULATION.

FIGURE 2 : BENDING MOMENT DIAGRAM

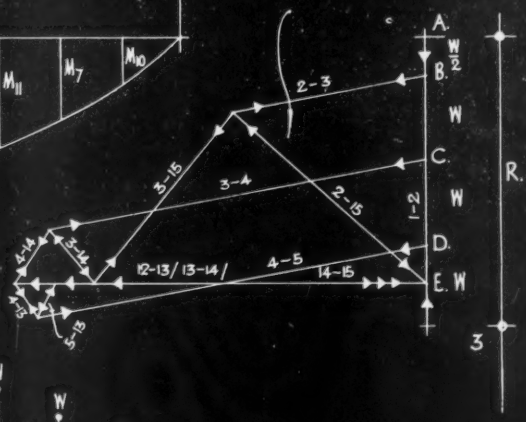

FIGURE 3 : FORCE DIAGRAM OF GRAPHICAL METHOD.

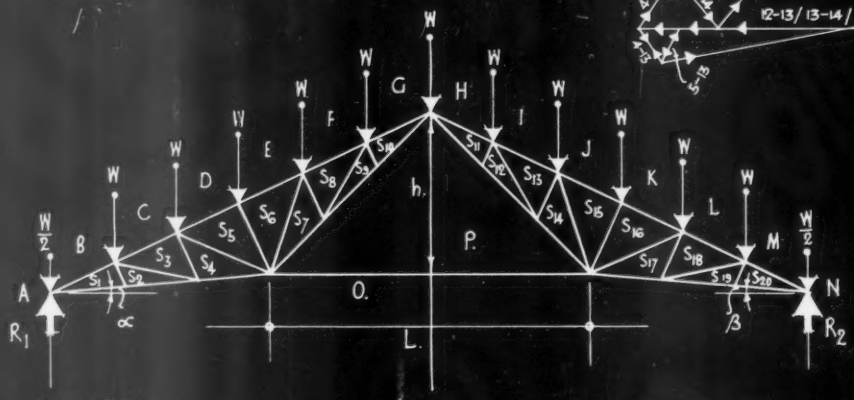

FIGURE 4 : DETERMINATION OF STRESSES BY COMBINED GRAPHICAL & ANALYTICAL METHODS.

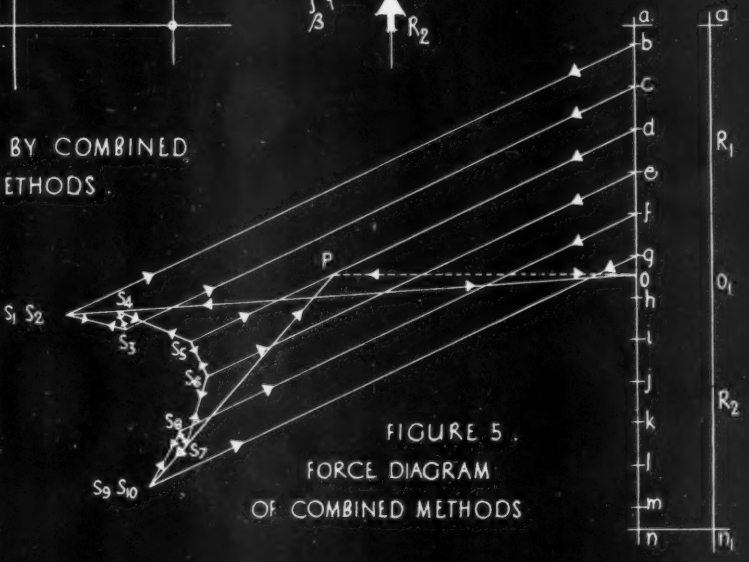

FIGURE 5 . FORCE DIAGRAM OF COMBINED METHODS

NOTE :
Members in compression are shown thus ⟶⟵
Members in tension are shown thus ⟵⟶

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INFORMATION SHEET : STEEL FRAME CONSTRUCTION : No. 35.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 807 •

STRUCTURAL STEELWORK

Subject : Steelwork for Roof Construction, 3 : Determination of Stresses in Trusses

General :

This series of Sheets on steel construction is not intended to cover the whole field of engineering design in steel, but to deal with those general principles governing economical design which affect or are affected by the general planning of a building. It also deals with a number of details of steel construction which have an important effect upon the design of the steelwork.

Both principles and details are considered in relation to the surrounding concrete or masonry construction, and are intended to serve in the preliminary design of a building so that a maximum economy may be obtained in the design of the steel framing.

This Sheet is the thirty-fifth of the series, and illustrates the methods of determining stresses in the members of roof trusses.

Methods :

There are two ways of determining stresses in trusses :

(1) By calculation.
(2) By graphical methods.

Calculation :

For purposes of calculation, a truss (for example see Figure 1) is considered as a beam. A bending moment diagram, see Figure 2, can be constructed indicating the bending moments at points which correspond to each node.

If the reactions are R_1 and R_2, and the loads W_1, W_2, etc., and the horizontal distance of these loads from any node, a_1, a_2, etc., and if the node is at a distance x from the left support, then the bending moment is $M = R_1x - W_1a_1 - W_2a_2$, etc., taking all the loads on the left of the node in question.

If this node is in an upper chord, the force in the corresponding member of the lower chord is

$$L = \frac{-M}{h \cos \beta}$$

where h is the vertical distance of the lower chord from the node, and β is the slope of the lower chord.

If the node is in the lower chord, the force in the corresponding upper chord becomes

$$U = \frac{M}{h \cos \alpha}$$

where α is the slope of the upper chord.

The horizontal components of all forces in a section of a truss must together equal O and the filling members can always be calculated from that fact. If the force in an upper chord is U, in a lower chord L (negative) and in a diagonal D, then $U \cos \alpha + L \cos \beta + D \cos \delta = O$.

$$D = \frac{-U \cos \alpha + L \cos \beta}{\cos \delta}$$

Graphical Method :

The graphical method consists of the force diagram, which is shown in Figure 3 for the same truss. Such a force diagram is constructed by resolving forces into their two components, proceeding from the support to all nodes.

For instance, at the support there is a force acting which is known, namely, the reaction, and this can be resolved into the two components in the direction of AB and AC. At B, there is the force in AB and the load W_1, which together are resolved into the components in the direction of BC and BD. This process can be repeated until all forces are determined, and in a simply triangulated truss, i.e. a truss which is composed of triangles, this can be arranged so that there are always only two unknown forces at one point, so that there is no difficulty in resolving them.

The graphical method is, of course, less accurate, but it helps in avoiding major mistakes.

Combined Methods :

Occasionally a combination of both graphical and analytical methods is useful, for instance in the case of a Fink truss, see Figure 4. The quickest way is to determine the force in centre member of the lower chord by means of calculation, and to proceed determining the remainder of the forces by the force diagram, Figure 5. The force in the centre member is :—

$$L = \frac{-M}{h}$$

where M is the bending moment in the centre and h is the distance from the lower chord to the node in the centre of the upper chord.

Previous Sheets :

Previous Sheets of this series dealing with structural steelwork are Nos. 729, 733, 736, 737, 741, 745, 751, 755, 759, 763, 765, 769, 770, 772, 773, 774, 775, 776, 777, 780, 783, 785, 789, 790, 793, 796, 798, 799, 800, 801, 802, 804, 805 and 806.

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Address : Horseferry House, Horseferry Road, Westminster, London, S.W.1

Telephone : Victoria 8571

SOME QUESTIONS ANSWERED THIS WEEK:

★ *CAN you advise me on materials to camouflage a large concrete car park adjoining a town centre?* Q549

★ *I SHOULD be obliged if you could advise me as to the kind of anti-splinter varnish to protect old leaded stained glass windows in a church* - Q560

★ *ARE there any firms producing light-tight air bricks for use in shelters which do not need any added provision for blacking-out?* - - Q562

★ *COULD you give us the names and telephone numbers of firms producing wire reinforced glass substitute materials?* - - - - Q564

THE ARCHITECTS' JOURNAL

INFORMATION CENTRE

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 services are available to any member of the industry.

Questions may be sent in writing to THE ARCHITECTS' JOURNAL, 45 The Avenue, Cheam, Surrey, or telephoned direct to the Information Centre: Regent 6888.

Enquirers do not have to wait for an answer until their question is published in the JOURNAL. Answers are sent direct to enquirers by post or telephone 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. Samples and descriptive literature sent to the Information Centre by manufacturers for the use of a particular enquirer are forwarded whenever the Director of the Centre considers them likely to be of use.

Finally, if an answer does not provide all the information needed, the Centre is always glad to amplify any point on which the enquirer wants fuller explanation.

Any questions about building or architecture may be sent to:

THE ARCHITECTS' JOURNAL
45 THE AVENUE, CHEAM, SURREY
Telephone: *VIGILANT 0087*

or ring the Architects' Journal Information Centre at

REGENT 6888

Q547 ARCHITECTS, LONDON.—*Owners of a large FACTORY producing goods for export have approached us regarding camouflaging the BUILDINGS. We have made photographs from models of the building and from these we have endeavoured to map out a SCHEME OF CAMOUFLAGE, but even to us this does not seem a very satisfactory procedure. Is there any official body whose aid we can enlist in preparing a scheme of camouflage?*

Factories engaged on war production are requested to camouflage the premises, and camouflage departments attached to the official departments co-operate in devising a suitable scheme of camouflage. Since this factory is producing goods for export the continuance of production must be of interest to the Department of Overseas Trade, 35 Old Queen Street, S.W.1, and it is suggested that they should be approached to see whether any facilities can be afforded by them for the taking of aerial photographs which would be of great assistance in devising a scheme of camouflage and also possible technical assistance in indicating lines of treatment such as colourings, structural camouflage, road camouflage. Failing assistance from this Department, aid might be available from the Civil Defence

Camouflage Establishment of the Ministry of Home Security, who can be communicated with c/o Horseferry House, Thorney Street, London, S.W.1.

Q548 SURVEYORS, LONDON.—*We have been called in to assess the damage to a building completely demolished in a recent air attack. The building was erected in 1929, and if we could find the percentage difference in BUILDING COSTS between 1929 and March 1939 this would help materially in assessing the claim for compensation. Can you help us?*

A graphical representation of the course of building costs, costs of living and building wages for the period 1914 onwards, compiled by H. J. Venning, F.S.I., was given in the Special Supplement in the double number of the *Architect and Building News* on January 19, 1940, and copies, price 1s. net, would be obtainable from the publishers, Messrs. Gilbert Wood & Co., Ltd., 2 Breams Buildings, London, E.C.4.

Q549 ARCHITECT, LONDON.—*Can you advise me on materials TO CAMOUFLAGE a large concrete CAR PARK adjoining a Town Centre?*

Road camouflage materials are available from the firms mentioned below.* These firms will be able to tell you of all the more usual materials and methods of camouflaging concrete, but it should be borne in mind that the park will present different problems when full and empty and a certain amount of suspended camouflage—e.g. netting—may be found advisable.

Q550 BUILDERS, STAFFORDSHIRE.—*For the replacement of DAMAGED ROOF GLAZING we are anxious to know of forms of BOARD MATERIAL which will give weathertightness and provide blackout.*

Two new boards recently produced are particularly suited for this work. There is the Limpet board, a material of 2 mm. thickness formed of hard compressed asbestos and both waterproof and flexible. It is available in widths of 40 in., 48 in. and 60 in., and in lengths up to 20 ft. The other is the Steelbestos board, which is flexible and will take a paint surface and so give weathertightness. This board is of 2 mm. thickness and in 2 ft. widths and in standard lengths of 6 and 8 ft. The thinnest type of Durasteel 3.DF2 fire protection sheeting ($\frac{1}{8}$-in. thick) could also be used for the purpose. Supplies of the above materials are available despite priority demands. Or again the infilling of the glazing bars could be done by using a thin fibre board of the utility type of about $\frac{3}{16}$-in. thickness, or a plaster board could be used. With fibre or plaster board, however, it would be necessary to use externally a thin bitumen underslating felt or a reinforced bitumen paper to provide an external waterproof layer. Suppliers are given below.*

Q551 ARCHITECT, NORTHAMPTON.—*Recently I have been asked to construct a small surface shelter for a shop, and I am considering an UNREINFORCED ARCHED STRUCTURE IN a LIME CONCRETE. What type of lime should be used if slaking of the lime on the site is to be avoided? Also, how long should the shuttering be left in position, and using lime, what thickness of concrete would be equivalent in strength to 1:2:4 cement concrete 6 in. thick?*

If work of this kind is to be attempted, strong corrugated iron sheets should be used, and left in as a permanent shuttering. Moreover, the sheets will have to be bolted and braced with angle irons rather in the manner of an Anderson shelter. We doubt very much whether lime concrete in arched construction has ever been attempted during this century. Only ground stone lime (eminently hydraulic lime of the Blue Lias type) should be used. Very clean aggregates should be used, and these should be free from dust. A probable method of preparing the concrete would be as follows:

The ground stone lime and damp sand in equal volumes should be mixed together and left in a pile and covered with damp sacks for at least 48 hours. This lime and sand mix should then be machine mixed with the coarse aggregate and in equal volumes giving a finished mix of 1:1:2 lime-sand-aggregate. Placing is as for cement concrete, but it is highly important that the concrete in position is maintained in a damp condition for at least the first seven days. The question of removal of shuttering will not arise; the shuttering must be regarded as permanent. The question of its removal with safety could arise only after several months. As to the thickness of lime concrete equivalent in strength to 6 in. of normal 1:2:4 concrete we regret that we have no information to offer. For shelters of mass concrete construction the thickness of concrete should be 15 in. to provide standard blast and splinter resisting conditions (1:9 cement-aggregate mix).

Q552 ESTATE AGENT, LONDON.—*In shop property managed by us numerous glass WINDOWS have been DAMAGED BY BLAST, and we are anxious to know whose is the responsibility for their replacement. The shops are let on quarterly agreements and the tenant pays the glass insurance premium while we ourselves are responsible for all repairs.*

The legal position under air raid conditions regarding all agreements about property is obscure, and the Information Centre cannot attempt to put forward a valid opinion. But from the particulars given, it is at least arguable that the tenant's responsibility for the glass ends with insuring it as far as it is insurable. Glass is, however, only insurable against blast on special terms, and in default of a previous agreement that the tenant should enter into such special insurance it would seem that the landlord must bear the cost of replacement until it is recovered at the end of the war under the Government scheme. One may add that it would be foolish to renew expensive plate-glass windows just now, and the cost of a smaller area of cheaper glass surrounded by blockboard would not be large.

Q553 ARCHITECT, CORK.—*I have searched, so far in vain, for OIL LAMPS (of any type) OF a GOOD MODERN DESIGN. I should be very grateful if you could inform me whether such are available, and if so, give me names of manufacturers. Two well-known firms, for instance, according to catalogues available here, have not one model of even reasonably simple design. I should think the catalogues are up to date, as they have the very latest of the "modernistic." Also, are figures available for the calculation of intensity of light required, in terms of oil lighting, for rooms of various sizes and uses?*

In the attempt to find an oil lamp of good modern design the catalogues of Messrs. Falk, Stadelmann & Co., Ltd., 91 Farringdon Road, London, E.C.1, and Messrs. Condrup, Ltd., 78 Fore Street, London, E.C.2,

* *Silexine, Ltd., Richford Street, Goldhawk Road, Shepherd's Bush, London, W.6; Sal Ferricite and Trading Co., Ltd., 748 Fulham Road, London, S.W.6; Cement Marketing Co., Saxon Works, Coldhams Lane, Cambridge.*

* *Limpet Board: J. W. Roberts, Ltd., Armley, Leeds, 12; Steelbestos: Southerns, Ltd., Store Street Saw Mills, Manchester; Durasteel: Durasteel Roofs, Ltd., Oldfield Lane, Greenford, Middlesex.*

should be looked at in addition to those already in your possession.
It does not seem that special tables are available giving light intensities required in various rooms in terms of oil lighting. But for each room, taking into consideration the size, use to be made of the room and disposition of the lighting fittings, it should be possible to prepare a lighting scheme on orthodox lines. The candle-powers of the various oil lamps are given in the manufacturers' catalogues, and lamps of 80 candle-power and 120 candle-power are roughly equivalent to electric lamps of 100 and 150 watts respectively.

Q554 PRINTERS, METROPOLITAN AREA.—*We are a firm of printers and have been advised by an architect friend to enquire of your bureau whether there is anything known to you which could assist us in a problem brought about by the present emergency conditions. In our works we have a number of LINOTYPE MACHINES AND the lead for the type is kept molten by a small gas burner incorporated in the machines. In our area conditions have arisen which have brought about a REDUCED GAS PRESSURE, so little, in fact, that we have been unable to operate our machines successfully. From enquiries we have made, we find that it would be possible to have the machines adapted so that the lead heating is done by electricity, but the cost of this conversion is about £75 per machine, a prohibitive cost for what we hope to be a mere temporary expedient. Can you suggest any way out of our difficulty?*

In rural areas "bottled" gas is used to operate domestic cookers and fires, and might well prove helpful in the present emergency. The gas is supplied under pressure in containers, and little adjustment to the gas leads would be necessary. Enquiry as to its possible use in the circumstances outlined above should be directed to the two operating companies: The Calor Gas (Distributing) Co., Ltd., Belgrove House, Belgrove Street, W.C.1; or Messrs. Spencers (London), Ltd., 6 London Street, London, W.2.

Q555 ENGINEER, MIDDLESEX.—*I should be much obliged if you could give me some advice on the question of dry-rot in wood block floors, or alternatively let me know if there is a publication which deals with the following point. In the case of a wood block floor set directly on to concrete on the ground floor (no basement), is it safe to lay LINOLEUM OVER the WOOD BLOCK floor, as I have been told that in such circumstances there is danger of dry-rot attacking the floor, owing to lack of ventilation? In the particular case I have in mind the linoleum has been down on a block floor for about six months, and if your advice is that it is unsafe to leave it there, is it necessary to apply any treatment to the wood blocks after removing the linoleum?*

In laying linoleum on this type of floor a lot will depend on the construction of the concrete floor under the blocks. Providing the concrete is perfectly dry and the blocks have been laid in bitumen mastic sufficiently thick to prevent any block coming into contact with concrete, there should be no danger of dry-rot affecting the floor, and linoleum could be laid over the floor without risk. As a general rule the use of impervious coverings on solid wood block floors is discouraged. In any case, the linoleum should be of good quality and should be waxed and not washed. Reference should be made to the Forest Products Research Record No. 14, "Dry Rot Investigation in an Experimental House," published by His Majesty's Stationery Office, York House, Kingsway, London, W.C.2, price 6d., and also to "Some Experiments in the Development, Treatment and Eradication of Dry Rot in Floors," obtainable free of charge from The Secretary, The Linoleum and Floorcloth Manufacturers' Association, Staines, Middlesex. Should, however, the linoleum be removed, there would be little or no advantage in an application of a wood preservative, because the moisture arises from underneath, and to be completely effective the blocks would have to be impregnated under pressure prior to laying.

Q556 ARCHITECT, LONDON.—*My own HOUSE has fallen a VICTIM OF the INCENDIARY BOMB. The outbreak of fire was tackled promptly by the fire-fighting services, and damage was confined to the roof covering and timbers. The house is one of a terrace row, and of some 28 ft. frontage. The old roof was of low pitch and slate covered with the timbering in the form of two sets of king post trusses resting on a centre bearing wall running from front to back. No part of the old roof is usable now, but I intend MAKING GOOD THE DAMAGE with all speed. From enquiries I have made, it would seem that I can procure a certain amount of structural timber, but I am not anxious to replace the boarding and slating; I would much rather have a roof structure and finish more resistant to incendiary bombs. Weight, of course, is an important factor, and a normal flat concrete roof would be prohibitive in this respect, even were it structurally possible. Have you any suggestions as to possible constructions and of materials likely to be immediately available?*

Since structural timber is to be available, we should recommend a timber construction again of the double king post type or, probably better still, of a single flat-topped queen post type. The question then resolves itself largely into the choice of suitable roof coverings. One possibility would be the use of ⅜-in. 3.DF2 Durasteel fire protection sheeting on top of the timbers, finished with the steel-cored asbestos-covered Durasteel roof covering. Or Cellactite or Robertsons' protected metal roofings could be used in place of the Durasteel roofing. With this form of construction the weight per square foot laid of both incendiary protection and roof covering would be about 8.5 lb. Alternatively, using mastic asphalt as the roof surfacing, a slab unit could be laid on top of the timbers. Wood wool-cement slabs of the Wellinlith, Thermacoust and Gypklith types, plaster slabs as supplied by Messrs. J. A. King & Co., Ltd., 181 Queen Victoria Street, London, E.C.4, or the Turnall Asbestos Cement Building Slab could be used in this way. Weights per square foot are approximately as follows: Wood wool-cement slabs 2-in. thick, 5 lb.; 2½-in. plaster slabs, 11 lb.; Turnall Building Slab, 8 lb. Mastic asphalt 1-in. thick weighs 11 lb. per square foot.
Suppliers' addresses are given below*.

Q557 ENQUIRER, SHEFFIELD. — *I shall be very pleased if you can inform me of a remedy to be adopted to prevent CONDENSATION ON THE INSIDE walls OF "ANDERSON" steel SHELTERS. The shelter I have in mind has a 3 in. by 2 in. joist and boarded floor and the door is always open for ventilation, there being a wall of sandbags at the front forming a light trap. I had in mind some type of insulating material which you might name, for use with an electric fire—will these be suitable? Please send me your views as to suitable material to use and*

* *DURASTEEL: Messrs. Durasteel Roofs, Ltd., Oldfield Lane, Greenford, Middlesex; CELLACTITE: Messrs. Cellactite and British Uralite, Ltd., 296 High Holborn, London, W.C.1; ROBERTSONS: The Wolverhampton Corrugated Iron Co., Ltd., Ellesmere Port, Wirral, Cheshire; WELLINLITH: The Marley Tile Holding Co., Ltd., Harrietsham, Kent; THERMACOUST: Messrs. Thermacoust Products, Ltd., 32 Victoria Street, S.W.1; GYPKLITH: Messrs. Honeywill and Stein, Ltd., 21 St. James's Square, S.W.1; TURNALL BUILDING SLAB: The Turners Asbestos Cement Co., Ltd., Erith, Kent.*

whether I can obtain this material from any builder's merchant?

The most convenient form of insulation would be a ½-in. wood fibre insulation board of the Celotex, Lloyd Board or Insulite types, and the small quantity required should be available through a local builder's merchant. These boards with careful working could be bent to the curve of the corrugated sheeting and could be fixed to wood fillets, the fillets being bolted or wired to the angle iron framing of the shelter. The heating and ventilation to be provided, together with the absorptive nature of the boards, should eliminate condensation nuisances. The boards, unless specially flameproofed, are of combustible material, and this factor should be taken into account in placing the heating apparatus.

Q558 ARCHITECT, MIDDLESEX.—*I have recently been commissioned to design a COUNTRY HOUSE to be erected IN GREECE after the war, I am now preparing the sketch plans, and as the metric system of measurement is used i Greece, I would welcome information respecting scales used by architects in countries where the metre measure is used.*

In countries where the metric system of measurement is used, the scales in general use for architectural work are 1/100 for drawings generally and 1/25 for details.

Q559 BUILDING CONTRACTORS, KENT. — *We are building an Acid Recovery shed and we have been instructed to use "curved sheeting in corrugated protected metal equal to Robinsons or other approved." We have not met the name ROBINSONS before with reference to this type of METAL and wondered whether you can give us any information which would enable us to get in touch with the firm.*

Robinson as a name for protected metal roofings cannot be found; "Robertsons" protected metal is a well-known type produced by the Wolverhampton Corrugated Iron Co., Ltd., Ellesmere Port, Wirral, Cheshire. The material is a bitumen composition coated metal. An alternative material of similar type is Cellactite by the Cellactite and British Uralite Co., Ltd., Higham, Kent. Both forms of sheeting can be supplied in curved sections. One other possibility might be the asbestos-cement metal cored form of protected metal roofing known as Durasteel, manufactured by Messrs. Durasteel Roofs, Ltd., Oldfield Lane, Greenford, Middlesex.

Q560 ENQUIRER, YORKSHIRE. — *I shall be much obliged if you would kindly advise me as to the kind of anti-splinter VARNISH you would recommend TO PROTECT old leaded STAINED GLASS windows in a church.*

For glass generally the liquid coatings given below* are among the most reliable. We would hesitate, however, to recommend such a treatment on the glass panes such as are incorporated in leaded lights. Blast on leaded lights causes the panels between the reinforcing bars to bulge and the glass remains in position. With more severe blast, the bulge is continued to the extent that fracture of the lead cames takes place and the glass panes fly out. Liquid coatings are designed to hold fractured glass together, but have little if any power to prevent fracturing.

Q561 ENQUIRER, ESSEX.—*I believe there is some SPECIAL PAINT TO PREVENT CONDENSATION on the walls of an underground steel air-raid shelter. Could you give me some information about this material?*

Generally speaking, paint applications on steelwork will not prevent condensation, although the use of certain classes of absorptive mediums will prevent condensation showing to the same extent. To prevent the condensation would mean the provision of an internal insulating medium and adequate heating and ventilation. The paints given below† can be used on steelwork to reduce apparent condensation.

Q562 ARCHITECTS, LONDON. — *Are there any firms producing LIGHT-TIGHT AIR BRICKS, for use in shelters, which do not need any added provision for blacking-out?*

No air brick seems to have been specially designed for this purpose. In ventilated surface shelters two ways of ventilation are in common use. First, two ordinary louvre ventilators placed back to back with the underside of the louvres painted matt black: this gives the general effect desired and seems to satisfy blackout conditions where low-powered lighting is in use. The other way is for a Y-shaped ingoing to be formed in the 13½ in. brickwork, leading to a single louvre ventilator on the outside of the wall.

Q563 BUILDERS' MERCHANTS, LONDON. — *We have an enquiry from a builder for a SUBSTITUTE FOR CEMENT in floors. We know of the ordinary jointless flooring mix, but apparently the builder has something different in mind, saying the material he has seen used is in the form of a white powder and merely requires mixing with water before use.*

Messrs. Casebourne & Co. (1926), Ltd., Imperial Chemical House, Millbank, London, S.W.1, have a flooring mix made from anhydrous gypsum which would appear to resemble that described. The cementitious agent and filler are bagged together and when mixed with water provides a floor surfacing suitable for domestic and light traffic floors.

Q564 BUILDERS, LONDON.—*Can you give us the names and telephone numbers of the firms producing WIRE REINFORCED GLASS SUBSTITUTE materials?*

The materials indicated are the Windolite and Sunralite materials, and these are produced by Messrs. Windolite, Ltd., Harlow, Essex (Telephone Harlow (Essex) 2143); and Messrs. Sunralite Glass Substitute, 84 Chestnut Road, London, N.17 (Telephone Tottenham 4920). In addition, there is the Ferrophane material, which is a clear plastic sheeting reinforced with expanded metal. This is made by Messrs. Ferrophane, Ltd., 52 West Ham Lane, London, E.15 (Telephone Maryland 3677).

INFORMATION CENTRE

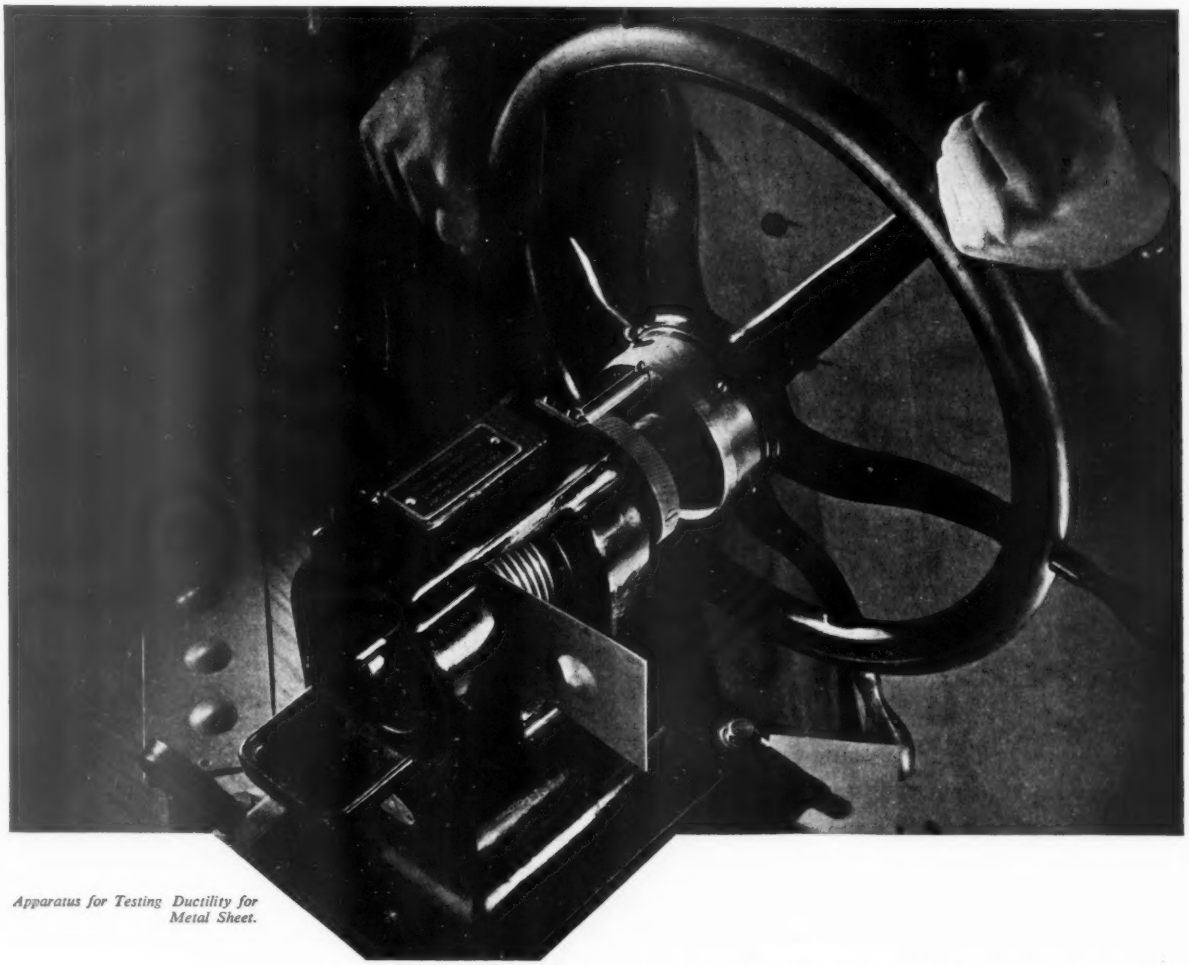
* *"ARPCO": Messrs. Manifold Developments, Ltd., 39 Victoria Street, S.W.1; "SLICK": Messrs. Slick Brands, Ltd., Stafford Road, Croydon, Surrey; "CERRUX": Messrs. Cellon, Ltd., Richmond Road, Kingston.*

† *"ELLICEM": The Adamite Co., Ltd., Manfield House, Strand, W.C.2; "CORKTEX": Messrs. Thos. Parsons and Sons, Ltd., 315–317 Oxford Street, W.1; ANTI-HUMIDITY COMPOUND: Messrs. Palorit, Ltd., 83 Scrubs Lane, N.W.10.*

TRADE NOTES

The Building Materials Division of Honeywill and Stein, Ltd., has merged with Gyproc Products, Ltd. This action has been taken in order to co-ordinate the sales and manufacturing sections. All activities are now being carried on in the name of Gyproc Products, Ltd. No change of staff has been made, and it is the firm's intention to extend still further the technical service and the distribution of their products. They hope, too, to introduce new materials for wartime needs. The address is Gyproc Products, Ltd. (incorporating the Building Materials Division of Honeywill and Stein, Ltd.), Great Burgh, Epsom, Surrey (Telephone Burgh

THE BUILDINGS of the Third Metal Age



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STEEL, concrete and glass have enabled architects to create a new architecture. These materials, like the invention of the arch, brought new structural possibilities. Now a new architectural period is arriving, and when wartime limitation of aluminium supplies passes, must give new forms for buildings. Architectural design in the Third Metal Age, the Age of Aluminium and its Alloys, will be influenced by the distinctive properties of these metals: their high strength to weight ratio, ductility, freedom from rusting, and ease and economy of casting and fabrication. In addition, Aluminium can be given an extremely wide range of finishes, and by means of anodizing and dyeing can be produced in all colours.

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●

First-Aid for Factory Floors

In these days of 24-hour shifts repairs to worn factory floors present a problem if one is to avoid interfering with production. Limmer and Trinidad's emergency service provides a solution. The existing worn floor is used as a base and a Lithocrete Asphalt Floor is laid over it. The accompanying illustrations show three recommended methods. The Lithocrete is delivered

For stone, brick or concrete floors, the joints can be cut or chipped, and filled in with Lithocrete asphalt.

Or the entire floor can be covered as it stands.

For worn-out wood-block flooring a hardwood fillet is provided where required as an abutment for the asphalt and to ease it down to the surrounding floor.

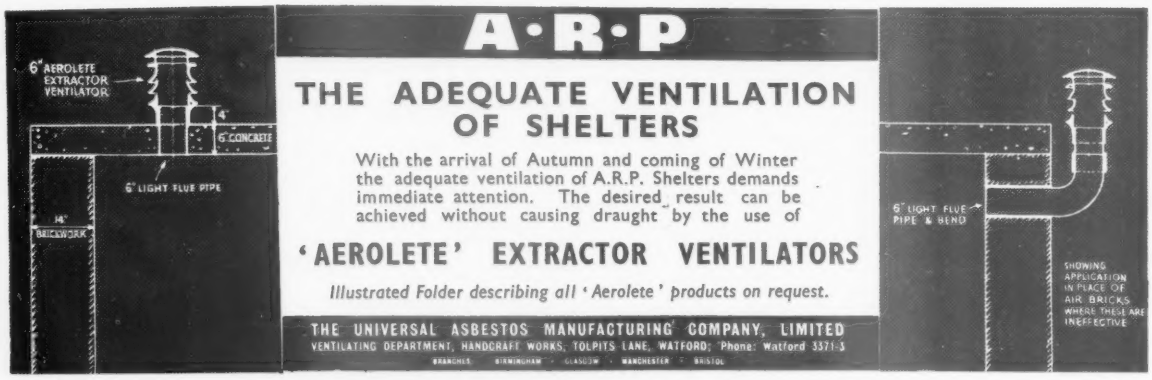
in mechanical mixers ready for application, and the floor can be used for traffic within two hours.—(*Limmer and Trinidad Lake Asphalt Co., Ltd., Berry Hill, Taplow, Bucks.*)

THE BUILDINGS ILLUSTRATED

WAREHOUSE AND SHOWROOM, WOOD STREET, E.C.2 (pages 313-317). Architect : Joseph Emberton. General contractors, W. S. Barton & Co., Ltd. Sub-contractors and suppliers included : James Clark and Eaton, Ltd., glass ; Horsley, Smith & Co. (London), Ltd., wood-block flooring ; Troughton and Young, Ltd., electric wiring ; Richard Whittington & Co., Ltd., central heating ; Barton, plumbing, plastering, and joinery ; Taylor, Pearse & Co., door furniture ; Fenning & Co., Ltd., marble ; Thonet Bros., Ltd., and Finmar, Ltd., furniture ; D. Burkle and Son, Ltd., joinery ; Pollard & Co., Ltd., shopfitting ; Bennie Lifts, Ltd., lifts ; Smith's English Clocks, Ltd., clocks ; Claude-General Neon Lights, Ltd., signs.

SAVILE ROW POLICE STATION (pages 318-321). Architects : Sir John Burnet, Tait and Lorne. General contractors for the substructure were Higgs and Hill, Ltd., the general contractors for the superstructure being Wm. Moss and Sons, Ltd., who also carried out the joinery, painting and coloured terrazzo work. Sub-contractors and suppliers included : Redpath Brown, Ltd., structural steelwork ; South-Western Stone Co., Ltd., Portland stone ; Jos. Brookes, Ltd., granite base ; Fenning & Co., Ltd., granite window spandrels ; J. Whitehead and Sons, Ltd., external marblework ; Anselm Odling and Sons, Ltd., internal marblework ; Diespeker & Co., Ltd., terrazzo ; Shaws Glazed Brick Co., Ltd., faience, cell linings ; Vigers Bros., Ltd., oak block flooring ; Mundet Cork Products, Ltd., cork tile flooring ; Noel Wood-Mosaic, Ltd., wood mosaic flooring ; Limmer and Trinidad Lake Asphalt Co., Ltd., coloured asphalt flooring ; Leaderflush, Ltd., flush doors ; Venesta, Ltd., cell doors ; Birmingham Guild, Ltd., external bronzework ; Bromsgrove Guild, Ltd., internal bronzework ; Henry Hope and Sons, Ltd., metal windows and patent glazing ; James Gibbons, Ltd., ironmongery and door furniture ; Smith's English Clocks, Ltd. (through Bective Electrical Co.), clocks ; Chubb and Son's Lock and Safe Co., Ltd., cell door locks ; Stitson, White & Co., Ltd., plumbing, drainage and sanitary fittings ; Young, Austen and Young, Ltd., mechanical services, heating, ventilation and kitchen equipment ; Bective Electrical Co., Ltd., electrical works and electrical work *re* gas filtration plant ; Waygood Otis, Ltd., lift installation; Carrier Engineering Co., Ltd., A.R.P. ventilation and filtration plant ; Engert and Rolfe, Ltd., asphalt ; Frank Burkitt, Ltd., rolling door to ramp ; J. A. King & Co., Ltd., pavement, roof and stallboard lights ; Faulkner, Green & Co., Ltd., glass and glazing ; Surrey Engineering Co., car turntable ; Bratt Colbran, Ltd., fireplace interiors, etc. ; Troughton and Young, Ltd. (through Bective Electrical Co.), lighting fittings ; Daymonds, Ltd., box sign ; Eric Munday, Ltd., lettering ; Cellulin Flooring, lino fixing ; General Plasterers, Ltd., plastering.

HOUSE, RIDDLESDOWN AVENUE, PURLEY (page 322). Architect : E. L. Banks. General contractors were N. and F. Chapman, Ltd. Sub-contractors and suppliers included : Roberts and Burling, Ltd., roof tiling and wall tiling ; Wheatly & Co., Ltd., roof tiles (blue Staffordshire pantiles) ; Dunbrik, Ltd., facing bricks (grey concrete bricks) ; Buxton and Longley, Ltd., electrical installation ; W. N. Froy and Sons, Ltd., electric fittings, fireplaces (special designs in marble), and sanitary fittings (cream coloured suites) ; Ascot Gas Water Heaters, Ltd., gas water heater ; Crittall Manufacturing Co., Ltd., metal windows ; Wenham and Fowler, metalwork ; Eric Munday, Ltd., metal letters ; Dryad Metal Works, door furniture ; Nobel Chemical Finishes, Ltd., paint and wall finishes.



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THE INFORMATION BOOK

of Sir John Burnet Tait & Lorne

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