

KEEPING AT IT!



FOR EVERY NATIONAL ELECTRICAL PURPOSE

ALL OVER THE WORLD

CALLENDER'S CABLE & CONSTRUCTION CO. LTD. HAMILTON HOUSE, VICTORIA EMBANKMENT, E.C.4

Branches throughout the World

THE ARCHITECTS'



JOURNAL

THE ARCHITECTS' JOURNAL WITH WHICH IS INCORPORATED THE BUILDERS' JOURNAL AND THE ARCHITECTURAL ENGINEER IS PUBLISHED EVERY THURSDAY BY THE ARCHITECTURAL PRESS (PUBLISHERS OF THE ARCHITECTS' JOURNAL, THE ARCHITECTURAL REVIEW, SPECIFICATION, AND WHO'S WHO IN ARCHITECTURE) FROM 45 THE AVENUE, CHEAM, SURREY

THURSDAY, JANUARY 9, 1941.

NUMBER 2398: VOLUME 93

PRINCIPAL CONTENTS

	PAGE
The City Fire	1
The JOURNAL's Printers	2
This Week's Leading Article	3
Notes and Topics	4
<i>Astragal's notes on current events</i>	
News	6
Zachary Merton Convalescent Home. Designed by W. H. Ansell	7
Housing at San Francisco. Designed by Arthur J. Brown, Jr.	12
Information Sheet facing page	12
<i>Structural Steelwork (813)</i>	
Information Centre	15
Buildings Illustrated	xxii

THE ANNUAL SUBSCRIPTION RATES ARE AS FOLLOWS:

BY POST IN THE UNITED KINGDOM.. £1 3 10
BY POST TO CANADA £1 3 10
BY POST ELSEWHERE ABROAD £1 8 6
SPECIAL COMBINED RATE FOR SUBSCRIBERS TAKING BOTH THE ARCHITECTURAL REVIEW AND THE ARCHITECTS' JOURNAL: INLAND £2 6s.; ABROAD £2 10s.

SUBSCRIPTIONS MAY BE BOOKED AT ALL NEWS-AGENTS

SINGLE COPIES, SIXPENCE; POST FREE, EIGHTPENCE; SPECIAL NUMBERS ARE INCLUDED IN SUBSCRIPTION; SINGLE COPIES, ONE SHILLING; POST FREE, 1s. 3d. BACK NUMBERS MORE THAN TWELVE MONTHS OLD (WHEN AVAILABLE), DOUBLE PRICE.

SUBSCRIBERS CAN HAVE THEIR VOLUMES BOUND COMPLETE WITH INDEX, IN CLOTH CASES, AT A COST OF 10s. EACH. CARRIAGE 1s. EXTRA

45 The Avenue, Cheam, Surrey

TELEPHONE: VIGILANT 0087-9 (3 LINES)

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.

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.

THE FIRE IN THE CITY



The moral of this picture, taken from St. Paul's looking north and east towards the Old Bailey, is that the British learn too slowly. The destruction shown in it is grave, and nearly all was the result of the raid on the City of London on the night following October 29. This destruction stands out unique from all that has gone before in that not a particle of it was caused by high explosive. None of it—according to the official reports—was even caused by oil bombs. All of it was caused by small incendiaries which a child can put out in the first few minutes after they have struck.

The danger of such incendiaries has been known for years. It has been known that no Fire Brigade, however efficient, can defeat the dangers they threaten. But these dangers can be immeasurably reduced, if not wholly banished, by each small group of buildings being guarded night and day by a small party of fire watchers, each of whom knows

intimately every part of the buildings in their charge. In spite of this knowledge the City of London was caught napping on the Sunday night ten days ago. Many buildings were entirely unguarded and from this cause came most of the destruction. In other buildings it had been forgotten that every part of the structure must be within reach—by trapdoors, ladders, or rakes—and that fire watchers must be fully practised in reaching every part. From this cause came part of the destruction. It was the realization, eighteen months ago, of the necessity for swift access to all parts of the Cathedral which enabled the watchers of St. Paul's to save the cathedral on the same night.

What has been done in St. Paul's by the enthusiasm and constant practice of architects and others can be done throughout the City and, with proper modification, in all urban areas. We have now been warned.

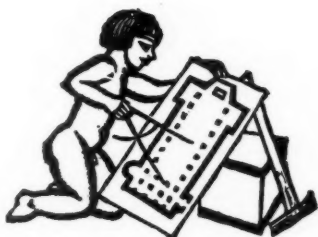


THE JOURNAL'S PRINTERS

On the night of Sunday, December 29th, the major part of the printing house of Messrs. Eyre & Spottiswoode, printers of THE ARCHITECTS' JOURNAL, was burnt out.

The photographs on this page, which were taken as soon as the neighbourhood was cool enough, show the buildings in which the most inconvenient immolation of everything connected with the printing of the JOURNAL twenty-four hours before going to press, led to the non-appearance of the issue for January 2.

Above are the old composing rooms of Messrs. Eyre & Spottiswoode, with Gunpowder Alley on the right. The smaller photograph shows in the foreground the old buildings in East Harding Street which housed editorial rooms and administrative offices.



ARCHITECTS IN 1941

THE first issue of a newspaper in a new year* is by custom dedicated to a summing up and a forecast, and the beginning of another year of a war in which the destruction and construction of buildings plays a large part increases the need for surveying, at a single moment, all architectural problems in as correct a perspective as can be obtained. But this week such a general review is postponed in favour of a close examination of one aspect of the present situation in building—the position of the architect.

At a time when it is generally believed that a grand attack will soon be made on Britain, there is only one standpoint from which the position of architects can be looked at: the standpoint of whether their skill is being as well used as any reasonably simple measures could secure.

If the true answer to this question is to be found, one must force oneself to realize, sharply and distinctly, that this is a war of technical skill and that the front is in every town as well as overseas. Vaguely people do realize this, but despite bombs in their own street, or perhaps because of bombs in their own street, primitive impulse is apt to sway their opinions on the employment of man power more heavily than reason. After the lessons of the last war, we no longer believe that if a man is not in uniform it does not much matter what he is in, but something of this attitude of mind still lives on in the reluctance of professions to suggest that any of their members should be offered any alternative to military service. This reluctance cannot do any good—for the Ministry of National Service can be relied on to bear in mind the nation's interest—and may do harm. And there seems good ground for holding that a review of the position of architects should now be clearly and plainly asked for by the profession.

Architects possess a special skill in the design and construction of new buildings and the repair of damaged buildings. They also possess, in common with other professions, abilities which render them desirable recruits for mapping, field survey, camouflage and other military activities. It would therefore seem

sensible to allocate all architects to those two fields of national service according to their age, physique and other individual qualities. This allocation has not been carried out, even to the extent of 70 or 80 per cent. which could reasonably be expected.

Such a failure would not have mattered if the demand for architects for building work had remained restricted to new buildings. But, since September, architects have become needed in large numbers for the work for which they were all formerly reserved—for repairs and other work connected with buildings damaged by bombs. And as the demand for architects has increased so has the call up of those younger architects—aged 28–35—who form the most valuable part of the staffs of both private and public offices.

If the predicted great attack on this country takes place in the next two or three months it will certainly be accompanied by intensified bombing. If local authorities and public utility companies are to deal promptly with the consequences of this bombing they must be allowed to keep their present architectural staffs and be able, if the need arises, to increase those staffs quickly. At present they have difficulty in doing the first and would find it impossible to do the second.

This situation may not call for the reservation of all architects. But it does seem to require the reservation of those who are already engaged on Government and Civil Defence work and a careful survey of where all other architects over 30 are now and what they are doing.

It would, of course, have greatly simplified discussion of the whole question if the index cards of the Architects' Central Register had rendered unnecessary this new survey of what architects are now doing. But the statement contained in the current issue of the *R.I.B.A. Journal* shows how far this is from being the case. That statement discloses that, of 81 architects written to—all of whom had stated they were in immediate need of work—32 never replied, 18 said they had already got work, and only 7 eventually accepted a job.

Such a result stultifies the Register and the Royal Institute, and enhances the public idea of architects as being thoroughly unbusinesslike people. No one can help architects if they will not make the smallest effort to help themselves.

* For reasons which are sufficiently explained on other pages, this is the first issue of the JOURNAL in the New Year, though it ought to be the second.



The Architects' Journal

45 The Avenue, Cheam, Surrey

Telephone: Vigilant 0087-9.

NOTES & TOPICS

LAST WEEK'S JOURNAL

ON Monday, December 30th, I got up very early. In the rural bus a thin little man with a cold talked unendingly in thin tones of a red glare towards London the night before: I eyed him with distaste. My railway journey was interrupted and as I made my way along Holborn towards the printers of *THE ARCHITECTS' JOURNAL*, the manuscript of my contribution for January 2 weighed heavily in my pocket. I was well aware that, for wartime, that MSS. was far too late.

After turning into Fetter Lane I did not think of this again. Two or three groups of office workers in a roadway, two or three lines of hose, are disregarded these days: but a rope barrier barring the way, a street disappearing into smoke, compels some notice of external events.

The printing houses of Messrs. Eyre & Spottiswoode, His Majesty's Printers, are in the centre of one of the most tightly packed labyrinths of narrow streets and alleys, tall and low, new and old buildings which can be found in the City of London. And that is saying much. Once out of Fetter Lane there are no vistas longer than thirty yards and no streets much wider than fifteen feet. Down each street ran hose, at each corner a fire-pump whirled and fifty clerks, typists or machine operators stood about looking at nothing except thin smoke drifting over buildings. It must have taken me a quarter of an hour to come to one flank of Eyre & Spottiswoode's.

Of the Georgian building which I knew best, only a thin

slab of front wall remained leaning forward perilously over the blackened remnant of a Royal Arms. Firemen were still at work on the debris behind, and in the Old Buildings on the opposite side of the street. Only the New Building, of steel and concrete, stood up structurally firm, with a plume of smoke drifting from its top floor. And while I stood watching, I found myself more concerned with the vagueness of my recollection of the form and detail of what had gone than with any regret for the destruction.

After a minute or two I was joined by a member of Messrs. Eyre & Spottiswoode's. He gave me some fuller details of events and as he did so I noticed a plump and brisk figure in a checked coat who eyed each group of bystanders in turn, and then skipped over the hose towards another. Eventually he came near us, fixed us for a moment with a firm protuberant eye and then came closer. "Excuse me," he said. My companion paused. "Excuse me," the stranger went on, neatly dodging a leaking hose, "but can I interest you in buying some first-class printing machinery?" And he presented his card.

WHAT HAPPENED

I spent some time on that Monday morning hearing what had happened; and the Editor has asked me to reconstruct the events which, by the destruction of everything connected with the printing of an issue of the *JOURNAL* while it was going to press, deprived readers of their *JOURNAL* for January 2.

The buildings of Eyre & Spottiswoode consist of three main blocks, a new and an old on one side of a narrow street and an old block on the other: these blocks are hemmed in on every side, as I have already mentioned, by other buildings. Flanking passages, courts, alleys and archways, a miscellany of 18th-century town houses and a few almost rural cottages have been wedged tight and overshadowed by Georgian warehouses, Victorian workshops—packed with heavy timbers and cast iron pillars—and a sprinkling of new framed buildings. All save the last have been cut about to be almost unrecognizable for what they were, all are black with soot and from all come the humming, flashing and clicking of printing and allied trades.

As might be expected of a house with so famous a name, Messrs. Eyre & Spottiswoode's had a first-class A.R.P. and fire-watching organization. Stirrup pumps and sand was on every landing and the spotter's post on the tower of the New Building was linked by telephone and bells to key points below. At about 7 p.m. on Sunday December 29th, five fire watchers were on duty, the Luftwaffe arrived and a batch of about twenty incendiaries struck the buildings.

To say that these were put out is to do little justice to the fire watchers. In rambling old buildings with pitched and flat roofs, lean-to's, areas, wells and external stairs

THE JOURNAL FOR JANUARY 2

Incendiary bombs set fire to and gutted the buildings of Messrs. Eyre & Spottiswoode, His Majesty's Printers and printers also of THE ARCHITECTS' JOURNAL, as the JOURNAL was about to go to press last week.

As the fire destroyed, in various buildings, the type, blocks, copy, photographs, drawings and paper of that particular issue of the JOURNAL, as well as the presses and machines, it may be said to have made a good job.

From the reader's point of view the consequence was the non-appearance of the JOURNAL for January 2—an issue which contained, among other things, the JOURNAL's good wishes to all architects for the New Year.

These good wishes we here renew, and the conflagration—in the common if not the Fire Brigade meaning of that word—which caused their postponement is described by Astragal on these pages.

in endless profusion, tracking down incendiaries is an exhausting and hazardous activity. But it was done.

*

There was then a pause for an hour or two in which the spotters on the roof of the New Building underwent their full share of the maddening experience which led to an outburst of justifiable indignation in the press on the following Tuesday and to Mr. Herbert Morrison's broadcast on the same day. They saw incendiary bombs fall on adjoining buildings which were unguarded, barred and locked. Fire watchers who felt justified in leaving their own building—and some took this risk—lacked the crowbars, ladders and intimate knowledge of the buildings layout, which were necessary to reach the bombs quickly. Many had to be left.

*

It may well have been because of these neighbouring beacons that at 10 p.m., Eyre & Spottiswoode's and immediately adjoining buildings were struck by a shower of incendiary bombs numbering between 50 and 250. With every part of the buildings lit by the greenish white flares, the fire watchers and helpers from those sheltering in the New Building went into action again. A great number were put out and muffled in sand; but after twenty minutes the flames from two adjoining buildings and one part of their own, made it clear that the game was up. Slowly, swotting a few last bombs as they went, the watchers got themselves and those sheltering with them out of the way, handed Eyre & Spottiswoode's over to the Fire Service and added their skill and equipment to the fire squads of more fortunate neighbours.

THE LESSONS

The results of this fire go far beyond the loss to readers of one issue of the JOURNAL, and no doubt a great deal of consideration is being given to the complete defeat of future fire-raising exploits by the Luftwaffe.

Mr. Morrison's demand for a fire watcher in every building is an obviously desirable first step—but it can be only a first step. The menace of a fire bomb depends in part on the time it is left unattended, in part on the neighbourhood, and in part on the type and contents of the building in which it falls. In a highly dangerous neighbourhood, one fire watcher in each building with his duties solely confined to each building would be ludicrously insufficient: on a suburban housing estate it would be excessive.

*

The right solution would seem to be to zone all areas according to degree of fire risk and to insist on the setting up of the degree of organization appropriate to each. Organisation is plainly more important than numbers. In a Class 1 fire neighbourhood, incendiaries can only be beaten at once if the fire watchers in each two hundred yards square area act together. They must all be known to each other and to the Chief Fire Watcher in the area and all must know their locality intimately and how to get into each building in it.

*

If this organization is set up a bunch of twenty-five incendiaries landing on and about three buildings should present no difficulty. The Chief Fire Watcher, in the highest building, can take a look from the roof and then send to the buildings concerned one or more men from each large building which is unaffected. Or, if things seem quiet elsewhere, he can ask a neighbouring Chief Fire Watcher for a dozen more men.

*

In areas of less danger this procedure can be progressively modified. But it is crystal clear that nothing less will do behind Fleet Street.

ASTRAGAL

NEWS

ROYAL GOLD MEDAL

MR. FRANK LLOYD WRIGHT

On the recommendation of the Royal Institute of British Architects His Majesty the King has signified his approval of the Award of the Royal Gold Medal for Architecture to Mr. Frank Lloyd Wright, the eminent American Architect.

Mr. Frank Lloyd Wright, who is 70 years of age, was trained as an engineer at Wisconsin University and entered the office of Adler & Louis Sullivan in 1887. During the following decades Frank Lloyd Wright was one of the first to use the open plan, which has since become one of the fundamental constituents of modern architecture. But with this freedom of plan he perpetually strove to "unite" his buildings and their sites by the use of local materials and strong horizontal lines. The Robie and Coonley houses, built in 1908, are two of the most famous houses in which he carried out his theories.

During 1914-1918 Mr. Wright built the Imperial Hotel in Tokio, which by a system of balanced and floating construction successfully survived the earthquake of 1921 and added greatly to its designer's reputation. The influence of Japanese "free planning" on Wright's later work is very noticeable.

After 1930 Frank Lloyd Wright began the greatest period of his career and his buildings include "Falling Waters" and the extremely original S. C. Johnston Factory.

In recent years he has developed his town planning ideas and has planned "Broadacres City," a new form of city community consisting almost entirely of smallholding estates, symptomatic of the "back to the land" ideas which are threaded through all Wright's recent work.

In the spring of 1939 Lloyd Wright came to England as the guest of the Sulgrave Manor Board to deliver a series of lectures at the Royal Institute of British Architects. Wright's visit and the stir it caused, particularly among the younger English architects, was in many ways an outstanding event in English architectural life in the year preceding the war.

MR. T. S. TAIT

Lord Reith, Minister for Works and Buildings, has appointed Mr. T. S. Tait, of Sir John Burnet, Tait and Lorne, to be Director of Standardization. Lord Reith has also appointed Colonel C. L. Howard Humphreys, of Messrs. Howard Humphreys and Sons, consulting engineers, to be Director of Works, a post which has been in abeyance since 1927. Colonel Humphreys has been released from military duties to take up the position.

GUNNAR ASPLUND

The JOURNAL regrets to announce the death in Stockholm of Gunnar Asplund, Sweden's most noted modern architect. Mr. Asplund is best known to British architects for his buildings at the Stockholm Exhibition of 1930—the first big

exhibition to be designed coherently and wholly in the modern manner. In this, as in most of his work, his effects were obtained by the use of carefully coloured or carefully chosen plain surfaces in conjunction with plants and flowers.

One of Gunnar Asplund's last works was his extension to the Gothenburg City Hall, which, by its contrast with the old classic building, caused considerable criticism.

R.I.B.A. MEMBERS AND EMPLOYMENT

The following leading article appears in the R.I.B.A. Journal:

The R.I.B.A. Register contains the names of a very large number of members who have stated in writing that they are in immediate need of employment. The cards of these members have a special mark to ensure that they will receive early and special consideration if opportunities arise.

They have all received repeated requests:

- (1) To keep the R.I.B.A. informed of any change of address.
- (2) To report at once if their situation has changed and they are no longer seeking employment.

Regular notices have appeared in the Journal on this subject, together with some startling evidence of the way in which many members disregard these obvious precautions. The efforts of the R.I.B.A. to find work for unemployed members are being constantly defeated or made more ineffective by the proceedings of these members.

Recently an opportunity arose for obtaining positions for a large number of members. Great care was taken to select from the list members who appeared to have the qualifications required and who had all stated that they were in urgent need of employment.

Eighty-one names were sent in with the recommendation of the R.I.B.A.

The prospective employer wrote to all of them.

The results have just been reported to the R.I.B.A.

- 32 did not answer the letter sent to them.
- 18 replied that they were not in need of employment.
- 4 had left the addresses given the R.I.B.A. and the letter failed to reach them.
- 2 made appointments to interview the employer but did not keep the appointment or send any explanation.
- 11 refused the appointments offered on the ground that the salary was inadequate, one of them saying that he would not consider less than £1,000 to £1,200 a year.
- 7 accepted the appointments offered to them.

These figures speak for themselves. We can only appeal once more to members in this position to help us to help them.

CHANGES OF ADDRESS

Owing to enemy action, Messrs. Southern, Ltd., have moved their London office to 18 Northwick Circle, Kenton, Harrow, Middlesex; Phone: Wordsworth 1501 & 2525.

Owing to enemy action the R.I.W. Protective Products Co., Ltd., have moved their offices and works to No. 2 Orsman Road (late Canal Road), London, N.1.

THE OTHER CAMP

SINCE the Nazis came into power in Germany, the German man in the street has been promised many good things in the future. Besides the People's Car he has been promised the People's House and the People's Flat. And, like his Car, his House and his Flat, have not yet appeared. The Fascist regime has never gone so far as to promise its supporters motor cars, but it has repeatedly forecasted that small holdings in far more fertile spots than Libya will soon be forthcoming on a large scale.

Latterly, for reasons which can perhaps be guessed, the broadcasts of both countries—and particularly German broadcasts—have dealt most frequently with the good things that are coming in the way of new buildings, and the JOURNAL prints below a summary of what is now being promised to those who do what they are told in the other camp.

The Coming Flats (Broadcast by Dr. Ley)

The Fuehrer has also signed a decree ordering the erection of flats. We already have plans showing how these flats will look. They will be available at a reasonable rent. The Fuehrer desires that the flats should contain a large habitable kitchen, three rooms, bath or shower, balcony and a few small chambers; pantry, refrigerating facilities, etc., and should have at least an area of 74 square metres. The schemes are ready, and the Fuehrer, despite the tremendous tasks he has on hand, gives advice, and is active in the direction of these schemes.

He is seriously concerned with the question of how such flats should be built. He says, "Take a shower instead of a bath. Why? Because I am worried that a mother might bath her children one after the other in the same water. I do not want that."

The Fuehrer is really concerned about the necessity for a pantry in each of these flats, and a room containing facilities for refrigeration. He thinks a great deal about the size of these flats. He is the greatest strategist, statesman, orator; but the greatest of all is Adolph Hitler as a man.

Hitler's Building Project. "American Journalist" interviewed. (Broadcast.)

MRS. RAY BEVERIDGE, the well-known American writer and journalist, interviewed on housing conditions in Germany, says Hitler's great housing project would have been in operation long since if the war had not intervened. His many peace offers were made because he did not want any hindrance to his plans for making Germany the ideal social state. A healthy, beautiful soul is only possible if the body is well cared for, and these "family homes" were only to be let to people with many children. Of the 300,000 which are to be started as soon as the war is over, 80 per cent. will have a large kitchen-living room, a parents' bedroom and two children's bedrooms.

All will have a pantry, a shower-bath and a large balcony. The rent will be about 40 marks monthly, or 27s. 6d. per week. Despite the war, building materials are being collected and prepared so that work can be started as soon as the war is over.

Broadcast to Norway. Oslo (Norway): 1154 m.: In Norwegian for Norway.

Copenhagen: One thousand Danish architects, civil engineers and artisans will in the near future go to Hamburg to take part in the large scale building works.



ZACHARY MERTON CONVALESCENT HOME, SURREY

D E S I G N E D B Y W . H . A N S E L L

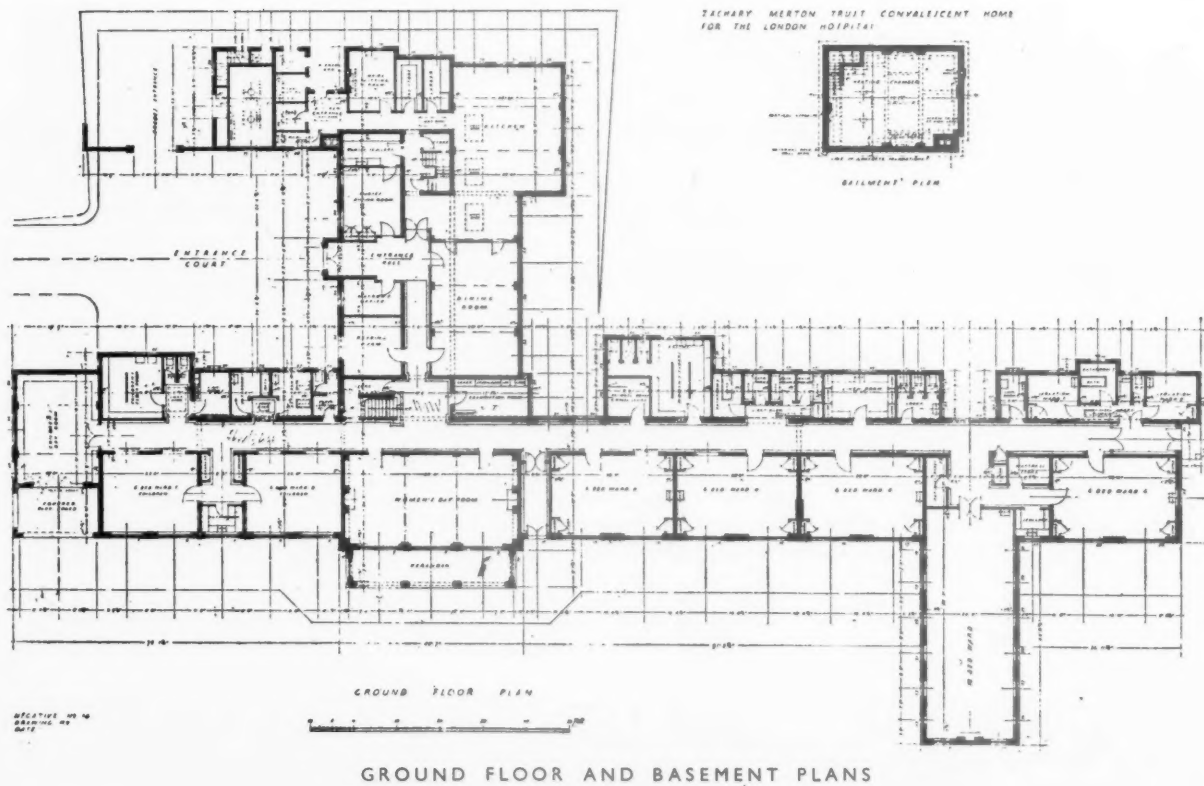
GENERAL—The Zachary Merton Home, Surrey, is one of a number which have been erected as the result of a bequest of over £300,000 by the late Mr. Zachary Merton, to be devoted entirely to the building and equipment, but not the maintenance, of convalescent homes.

Under this bequest the Zachary Merton Trust, of which Mr. R. Holland-Martin is chairman, has built thirteen or fourteen homes in various parts of the country. Mr. W. H. Ansell, M.C., P.R.I.B.A., has been their advisory architect for all the homes, but has himself designed and carried out this home for the London Hospital.

SITE AND PLAN—The home is planned for twelve children and thirty-eight women convalescents. It stands on a beautiful but difficult site, owing to its considerable fall. The committee insisted on a level floor to the ground floor throughout the building, and this has been obtained.

CONSTRUCTION—Brick walls, fire-resisting floors, metal windows.

The general contractors were Messrs. C. Miskin and Sons, Ltd. For list of sub-contractors see page xxii.



Part of main front

ZACHARY MERTON CONVALESCENT HOME,

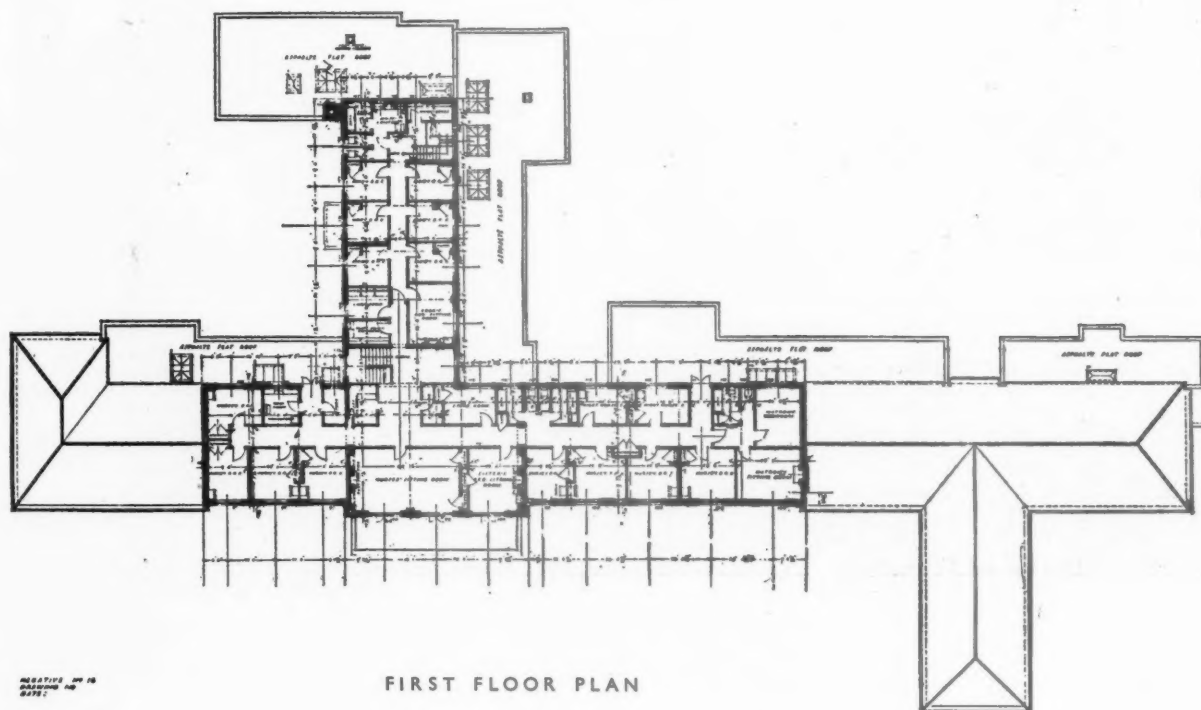


The veranda on the main front

SURREY • DESIGNED BY W. H. ANSELL



The entrance court



ZACHARY MERTON CONVALESCENT HOME,



Top, dining room, showing service doors from kitchen; centre, the twelve-bed ward; bottom, the kitchen.



THE ARCHITECTS' JOURNAL for January 9, 1941

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 813 •

STRUCTURAL
STEELWORK**Subject :** Steelwork for Roof Construction,
9 : Comparative Use of Lat-
tice and Plate Girders**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 bearing upon the design of the steelwork.

Both principles and details are considered in relation to the surrounding masonry or concrete 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 forty-first of the series, and illustrates the comparative use of lattice and plate girders.

Stress Limits :

When a load is to be carried by a beam, this will best be designed as an R.S.J. section, as long as the bending moments are not too great. If these are excessive, plated sections can be used, which are usually economical up to a section modulus of 600 in.³ provided the shear stresses in the web do not exceed the prescribed limit. Where a greater section modulus is required, or where the shear stresses are excessive, either plate girders or lattice girders can be used. This is explained in Figure 1.

The curve marked A shows the limit up to which ordinary joists can be used, and the rounded corner on the right-hand side refers to beams where a large shear and large bending moment occur at the same section, e.g. with cantilevers. Curve B marks the limit, depending on shear and bending moments, up to which plated joists are economical as a rule, while for values above and to the right of this curve lattice girders or plate girders would be practical. These can be constructed for almost any combination of shear forces and bending moments, although with a large shear the economy tends more towards the use of plate girders.

The dotted line C in Figure 1 gives an indication of the relative economy of latticed and plate girders, although so many other factors influence the choice that practical calculations may give quite different results.

Economical Use :

A lattice girder is generally deeper than a plate girder, and where its depth is not limited, a lattice girder is usually the more economical. See Figures 2 and 3.

The economy of shallow lattice girders is limited by the fact that, owing to increased forces in the members and shallow angles between diagonals and chords, gusset plates may become so large that they almost replace the web plate of a plate girder.

In domestic and office buildings, where construction depth is not normally available, plate girders are usually given preference. It is often possible, however, to adapt a lattice girder by extending it through two or more floors, using one floor as the upper and the next floor as the lower chord. Figure 4 is an example of such a truss carrying a wall.

Strutting and Hanging :

Where openings must be left for passages or for windows, an important construction is the hanging or strutting of plate girders (Figures 5 and 6 respectively) which might be considered as a combination of lattice and plate girders.

If symmetrical loads are set up, the actual plate girder can be considered to be supported at points A and B, in Figures 5 and 6, so that its bending moment is greatly reduced. With unsymmetrical loading the effect of the struts and hangers is reduced, but is still enough to justify this type of construction.

In Figure 5, a full line shows the bending moment diagram for an unstrutted plate girder, the dotted line for a strutted girder with a distributed load and the chain dotted line for a strutted girder with one-sided load, the live load being assumed to be twice the dead load.

The constructions shown in Figures 5 and 6 can be used also to stiffen buildings against horizontal forces.

Industrial Girders :

For industrial buildings, and also for exhibition halls, theatres, etc., the construction depth is not usually limited, and for heavy loading, consequently the use of lattice girders is much more common. If possible the depth of these lattice girders should not be less than one-fifth of their span, and it is possible, of course, to combine a lattice girder with hangers or struts, as already described for plate girders, and as shown in Figure 7.

Previous Sheets :

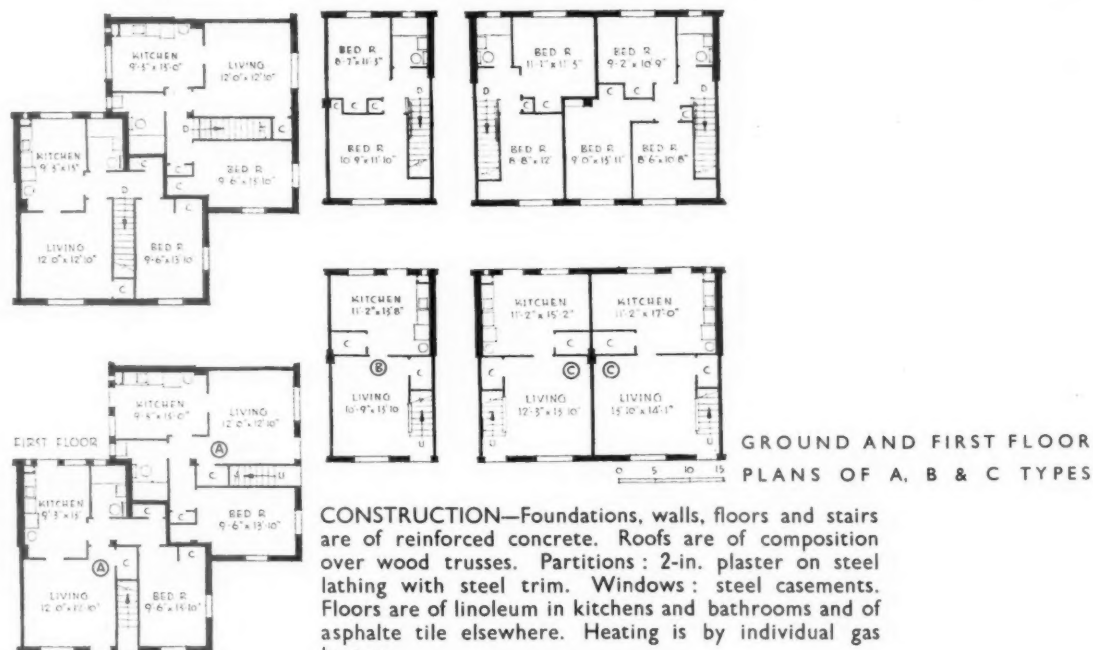
Previous Sheets of this series on structural steelwork are Nos. 729, 733, 736, 737, 741, 745, 751, 755, 759, 763, 765, 769, 770, 772, 773, 774, 775, 776, 777, 780, 783, 785, 789, 790, 793, 796, 798, 799, 800, 801, 802, 804, 805, 806, 807, 808, 809, 810 and 811.

Issued by : Braithwaite & Co., Engineers,
Limited

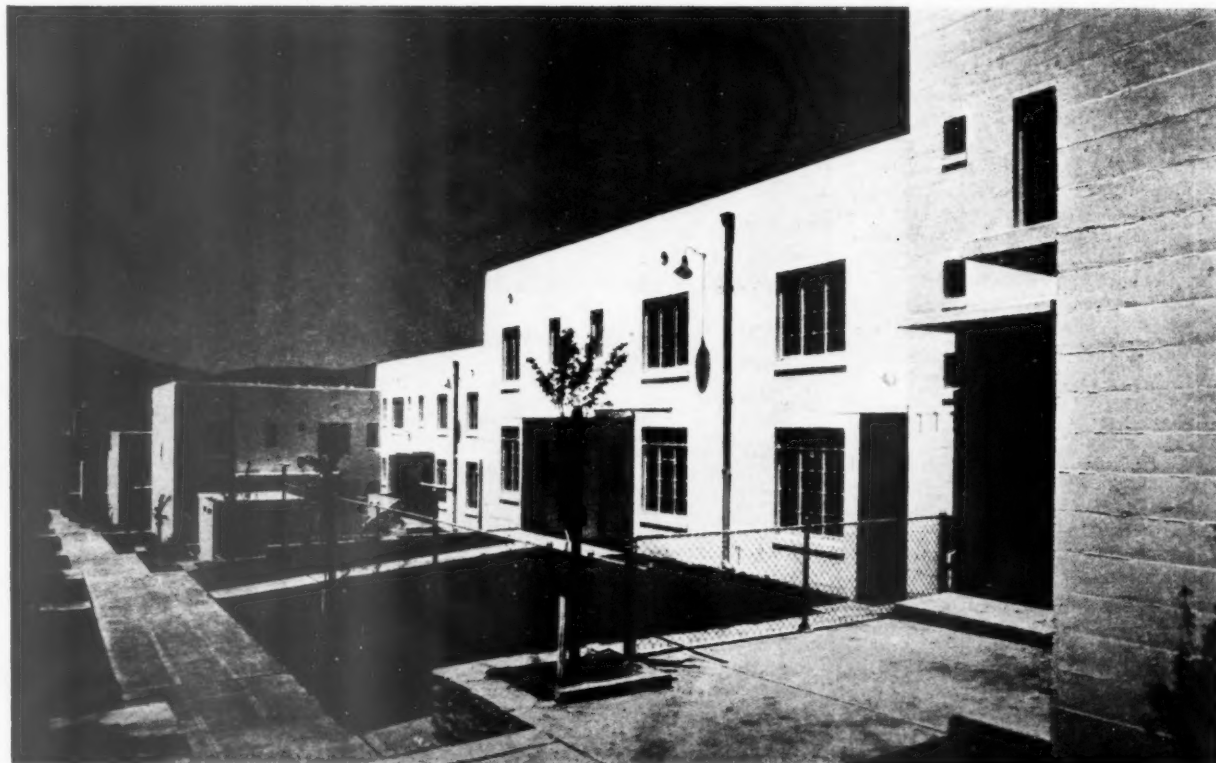
London Office—Temporary address :
King's House, Haymarket, London, S.W.1

Telephone : Whitehall 3993

HOUSING AT SAN FRANCISCO



Below, the central pathway of the estate.



DESIGNED BY ARTHUR J. BROWN, JR.

HOUSING AT SAN FRANCISCO

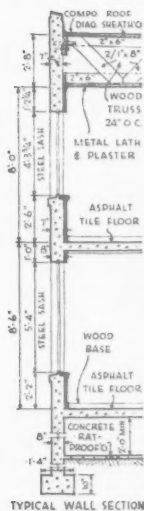
DESIGNED BY ARTHUR J. BROWN, JR.

Right, a detail of an alternative type of entrance. Below, centre, the screened play space for children. Bottom, one of the refuse collection houses on the estate.

The illustrations of this housing project are reproduced from
"The Architectural Record."



SECTION THROUGH
EXTERNAL WINDOW WALL.



TYPICAL WALL SECTION



SOME QUESTIONS ANSWERED THIS WEEK :

★ *IS it still possible to obtain a copy of the 1939 Prices published by THE ARCHITECTS' JOURNAL?* - - - - - Q623

★ *ONE of my clients has had a building partially destroyed by a bomb and a good deal of it will have to be pulled down. I should like some information on the question of salvage* - - - Q626

★ *I WISH to get some plastic letters suitable for name plates, office doors and the like* - - - Q628

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

R E G E N T 6 8 8 8

Q 623

ARCHITECTS, LONDON.—*Could you tell us whether it is still possible to obtain a COPY OF 1939 PRICES published by THE ARCHITECTS' JOURNAL, and whether they are still likely to be the basis of valuing claims for compensation for War Damage under the new War Damage Bill.*

We appreciate that as the War Damage Bill has not yet been passed it may not be possible for you to answer the question, but we are sure that many other Architects are interested in this problem and are wondering whether it is worth while spending a lot of time studying 1939 Prices.

We regret to inform you that the Prices for March, 1939, published in the JOURNAL are now out of print and cannot be obtained from normal sources. The JOURNAL had considered republishing the prices, but it appears that they may not be of great interest when the War Damage Bill becomes law. The War Damage Bill (H.M. Stationery Office—Price 1s.) Clause 4 refers to two kinds of compensation namely "payment of cost of works" and "value payment," which are rather similar to the old "value of reinstatement" and "diminution in value." In the case of "payment of cost of works," however, the amount

of payment is to equal the proper cost involved in reinstating the property in the form in which it existed immediately before the occurrence of the damage. Further, "Proper Cost" is defined as "such cost as is reasonable, having regard to the prices of materials and rates of remuneration for services current when the works are executed and to all other relevant circumstances." It is too early to make a definite statement, but it seems obvious from the above that 1939 Prices are not likely to be used in the future for valuing "Reinstatement," though claims based on diminution in value will still be ascertained by reference to March, 1939, Prices.

Q624

ARCHITECT, LONDON.—*I am an ARCHITECT EMPLOYED by a local authority and am liable to be called up for Military Service. I have been engaged ON WAR DAMAGE WORK and should like to clear up the jobs for which I have been responsible. The Borough Engineer is willing to write on my behalf asking for my calling-up papers to be delayed; can you tell me to whom he should apply and whether the application should be on any special form.*

It is only necessary for the Borough Engineer to write to the Ministry of Health stating the facts of the case. This can take the form of an ordinary letter.

If the Ministry of Health considers that an extension of time is warranted they will hand over the particulars to the Ministry of Labour who will send the necessary form to the Borough Engineer.

Q625

ARCHITECTS, NEWCASTLE-ON-TYNE.—*Re PROTECTION AGAINST FLYING GLASS IN FACTORIES. Could you give me full particulars of the Ministry's requirements in connection with roof lights, windows, etc.?*

As it is hardly possible for us to give you full particulars we would strongly advise you to get from H.M. Stationery Office (Kingsway, London), or from any bookseller:—

The Factories (Glass Protection) Order, 1940—(price 1d.)
Circular issued by the Ministry of Labour and National Service for the guidance of occupiers of Factories to which the *Factories (Glass Protection) Order, 1940*, relates—(price 1d.). Briefly, the first of these states that the Order applies to factories in which

more than 250 persons are employed, that occupiers are to provide reasonable protection against injury caused by broken glass and that occupiers shall have regard to any circulars issued by the Minister for the guidance of occupiers. Exemption may be granted if the persons employed are not employed in the performance of essential services.

The circular gives recommendations but points out that there is no need to alter existing arrangements provided they afford effective protection. Some of the recommendations are briefly as follows:—

For roof glass which cannot be obscured or replaced by non-splintering materials. Stick textile fabric to the outside of the glass with bituminous adhesive, and after the latter has dried apply a second bituminous coat. Plain glass will soon fall if broken by blast and 2 in. mesh wire netting can be used as a protection against this. Wired glass so treated will hold together better after breakage and the additional protection can be (1) 2½ in. mesh three-ply netting of sisal, hemp or jute fixed close under the glass, or (2) cross bars at not more than 2 ft. centres.

For roof glass which must be kept clear. Fit wire netting of 1 in. mesh under plain glass or of 2 in. mesh under wired glass. The netting to fit closely under the glass.

For vertical external glass.

If it can be obscured, treat with fabric bitumen as above or with stout paper pasted over the whole area of the glass inside. If it cannot be wholly obscured, use a textile netting, muslin or cheese cloth, secured to the glass by damp-resisting adhesive. If it must be left plain, screen the glass internally with ½ in. or ¾ in. mesh wire netting. Occupiers desiring further help may apply to the local Factory Inspector or to the other Authorities mentioned in the circular.

Q626

ARCHITECT, LONDON.—*One of my clients has had a BUILDING PARTIALLY DESTROYED by a bomb AND a good deal of it will no doubt have to be pulled down. I should like some information on the question of SALVAGE. Is it better to let the Local Authority demolish the premises or to pay a builder who can be instructed to pull down the building carefully and to salvage materials when possible? The building is brick built, so the chief thing I am concerned with is the bricks.*

It is impossible to give any definite answer, as each job must be considered on its own merits. If the Local Authorities are called in the cost will

remain a charge on the premises and will not become payable until after the war; this may be an important consideration for your client, as a builder will, of course, require immediate payment.

Lead, tiles, windows, doors, fireplaces, stoves, joinery and sanitary fittings, etc., are well worth salvaging provided they are in good condition and can be stored conveniently. Floor boards, if not sufficiently good to be used for their original purpose, can often be used for roofing, and as timber is likely to be scarce for some time after the war, old timber is valuable, providing it is in sufficiently long lengths.

A certain amount of lead, timber, etc., will probably be recoverable, whoever pulls the building down, and a great deal depends on the value of the windows, doors, fittings, etc. It is worth remembering that although such things have a comparatively low value if sold in the open market (as the buyer may have to store them a considerable time before he finds a job on which they can be re-used), they may save your client a considerable amount of money if they can definitely be re-used when rebuilding.

If, as you suggest, the chief item of salvage is bricks, it is doubtful whether it is worth incurring any expense in pulling down beyond the minimum. Bricks are certainly not worth salvaging as bricks (as opposed to hard-core, etc.) unless they are generally sound and built in lime mortar, or are required, for æsthetic reasons, to match up with existing work. Even in such cases it is not necessarily sound practice to re-use them, and we would suggest your reading "The Re-use of Salvaged Brick," by L. W. Burridge (Technical Bulletin No. 5, issued by the Clay Products Technical Bureau of Great Britain).

Q627

ARCHITECT, LONDON.—*Some time ago I made use of the Information Centre and received a reply in due course. Later I noticed in the published questions and answers an enquiry which was unmistakably mine in phraseology, although not exactly in accordance with my letter, and the reply differed from the one I received. I am not suggesting that you are dishonest but it does seem to me misleading to publish replies differing from those sent to enquirers, and I should be rather interested to know if this is a usual practice of yours—if the question is not too embarrassing for you.*

We are not embarrassed by your question and we freely admit that both questions and answers are altered for

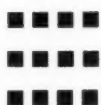


Square Grip Heavy Section Bars
in position

"SQUARE GRIP" DESIGNS IN REINFORCED CONCRETE

INCORPORATING

"Square Grip" High Tensile Bars and Fabric Reinforcements



Qualified Engineers

Economical Schemes

Prompt Service

Remember :—

**"SQUARE GRIP" DESIGNS
REINFORCE THE FUTURE**

**Ten million sq. yds. of "Square Grip"
Fabric are resisting Hitler's bombs in
British Roads and Buildings**

**THE "SQUARE GRIP" REINFORCEMENT Co. Ltd., SUNBURY (Middx.) 2772/3
GATESHEAD, LOWFELL 76081/2 & BRISTOL 77401/2**

Handmade Roof Tiles

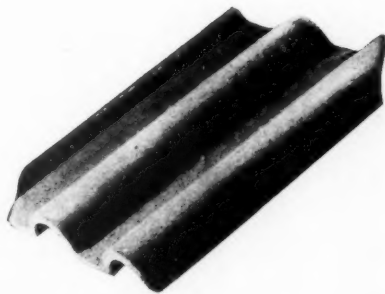
It is not too much to say that the "Reynardo" Handmade Tile is one of the most beautiful patterns produced in the past 100 years. It is such a distinctive shape and can be obtained in a wide variety of colours. Two especial favourites are Mottled and Apple Green glazed. Equally fine are the Russets, Reds, Greens, etc.

Fixed with our 'Secure' System Clips, "Reynardo" Tiles can be relied upon not to blow off, however fierce the gales.

This and other patterns are illustrated in our catalogue of Handmade Roof Tiles.

Write for a copy.

COLTHURST, SYMONS & Co., Ltd.,
PATENT TILE WORKS
BRIDGWATER, SOMERSET



publication. In the first place there is not sufficient space to publish anything like all the enquiries dealt with, and secondly, for the same reason, both questions and answers are often shortened for publication. Again, we get many enquiries, differing only in detail, and readers would soon become bored by repetition if all answers were published. In consequence, we may publish one "comprehensive" question and answer which embodies the salient features of several actual enquiries. We have two principal objects in view: (1) to satisfy enquirers by replying direct; (2) to satisfy readers of the JOURNAL by publishing examples of questions and answers which are of general interest. Our present practice provides the most satisfactory solution, and as the published matter does not give a false impression of the kind of service we render to individual enquirers, we do not consider that it is either misleading or dishonest.

Q628

ARCHITECT, KENT.—*I wish to get some PLASTIC LETTERS suitable for name plates, office doors and the like. Can you let me have the address of Eric Munday (if he is still in business) or of some other firm who supplies*

good letters. I only want a few so the name of one firm will be sufficient.

Eric Munday is still in a position to supply both metal and plastic letters. His address is Queens House, Leicester Square, London, W.C.2. (GERrard 5207.)

Q629

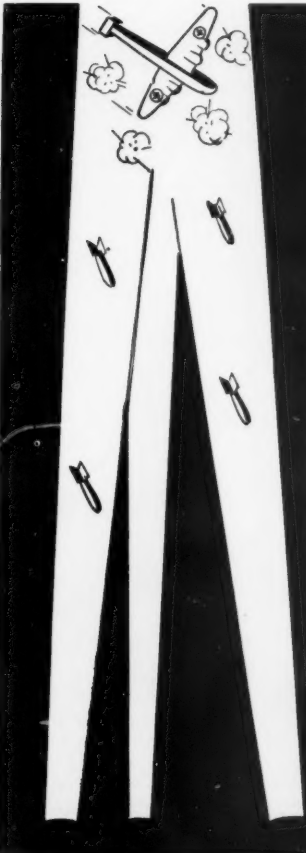
SURVEYOR TO MULTIPLE STORES.—*We have had several buildings destroyed as a result of enemy action and have found it extremely difficult to obtain LABOUR FOR THE REMOVAL OF DANGEROUS PORTIONS AND GENERAL DEBRIS. Can you please let us know what the position is with regard to obtaining the assistance of (a) The Local Authorities and (b) The Military Authorities?*

The answer to your enquiry is as follows:—You are entitled to apply to the Local Authorities to demolish property if it constitutes a danger to the public. Although Local Authorities are not bound to do more than this in connection with Shop Property, they use a certain amount of discretion in the exercise of their powers and you might just as well apply for their assistance, if you are unable to obtain the necessary labour, even though the

public is not actually endangered. In certain cases, for instance, Local Authorities will do a certain amount of "tidying up" to improve the appearance of a street and its psychological effect on the public. The Military Authorities may be called in by a Local Authority to assist them, but they may not be approached direct by a private firm or individual. In London the proper Authority to apply to is normally the District Surveyor who is in charge of the L.C.C. Rescue Service and Demolition Contractors, but in all other respects the same principle applies.

THE BUILDINGS ILLUSTRATED

ZACHARY MERTON CONVALESCENT HOME, SURREY (pages 7-11). Architect: W. H. Ansell, M.C., P.R.I.B.A. General contractors: C. Miskin and Sons, Ltd.; sub-contractors: Redpath Brown and Co., steelwork; Kleine Co., Ltd., fire-resisting floors; James Gibbons, Ltd., metal windows and ironmongery; Young, Austen and Young, Ltd., heating, hot water, etc.; Tyler and Freeman, electrical work; Leeds Fireclay Co., Ltd., sanitary fittings; Benham and Sons, Ltd., cooking fittings; Art Pavements and Decorations, Ltd., terrazzo, etc.; Hollis Bros. and Co., Ltd., wood-block floors; Bratt Colbran, Ltd., fireplaces; P. W. Rutherford and Co., lino floors and dados.



Don't dabble with the problem—
fit all windows with
'INDESTRUCTO'
LAMINATED SAFETY GLASS

Maximum protection against the danger of flying glass is provided by INDESTRUCTO Laminated Safety Glass. Crystal clear, non-discolourable, splinter-proof and shatter-resistant, it also gives security from the admission of blast and gas.

★ Where it is not practicable to use Safety Glass 'INDESTRUCTO SOLUTION' is an excellent 'second best.' When applied to ordinary glass windows it provides a high measure of splinter-proof protection.

BRITISH INDESTRUCTO GLASS LTD., Park Royal Rd., Willesden, N.W.10
Telephone: WILlesden 7761/5

★ Where it is not practicable to use Safety Glass 'INDESTRUCTO SOLUTION' is an excellent 'second best.' When applied to ordinary glass windows it provides a high measure of splinter-proof protection.
Telegrams: Silvarr, Harles, London

