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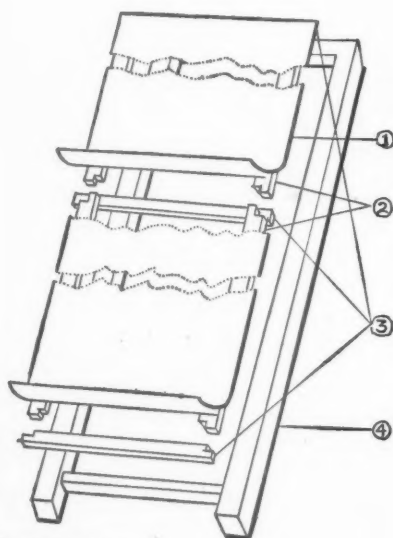
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#### THE DUFAY-GLAZING UNIT



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- ② STIFFENING STRIPS
- ③ METAL CROSS PIECES
- ④ EXISTING GLAZING BARS

Dufay-Glazing Units are in three standard sizes—4 ft. 6 ins., 4 ft. and 3 ft. Thus a 7 ft. 6 ins. rooflight will be glazed by one unit of 4 ft. 6 ins. and one of 3 ft.; an 8 ft. light by two 4 ft. units, etc. Odd sizes (in adequate quantities) can be supplied to order.

In addition to the glazing units the special bottom crossbar shown above and a supply of Boscofix cement are necessary.

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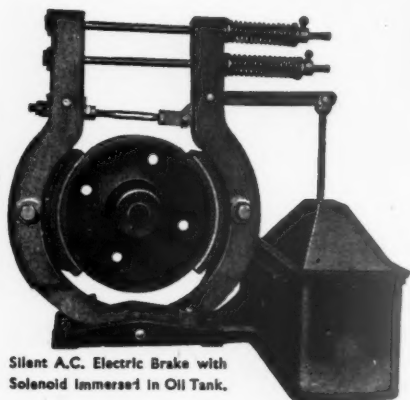
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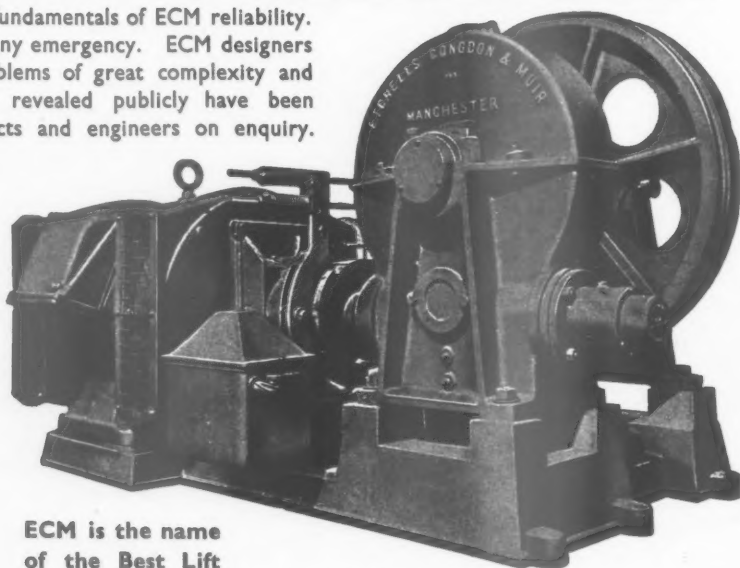
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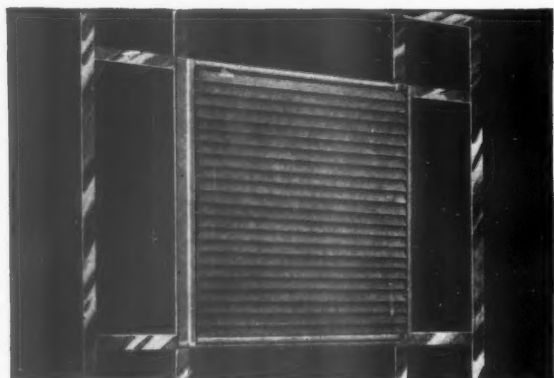
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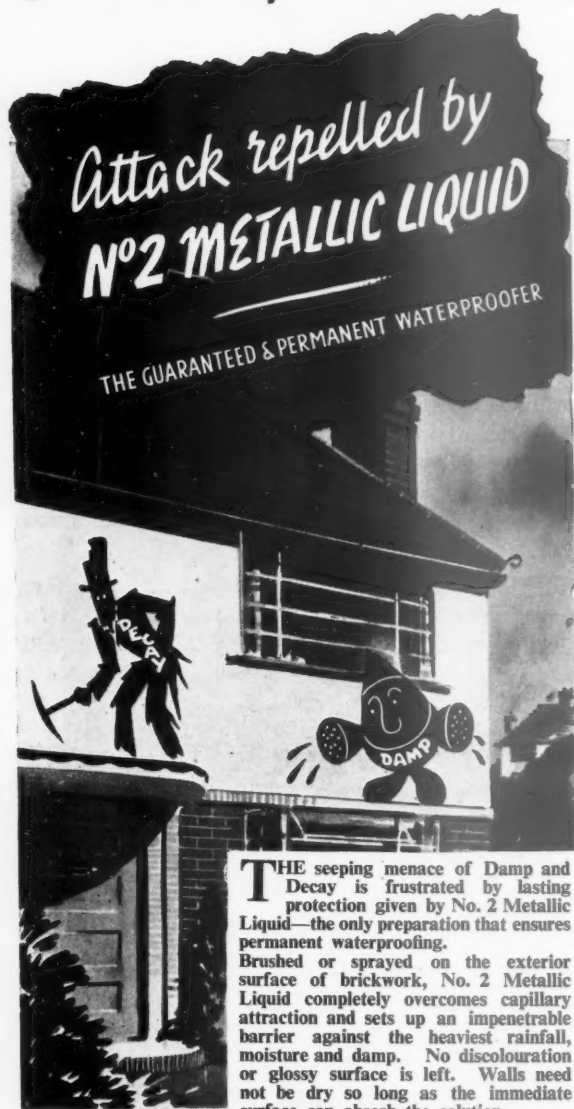
As with all other woods, and most other basic building materials, control of release is exercised, but for work that has received official sanction, and where Teak has been particularly specified, it is available and will be released.

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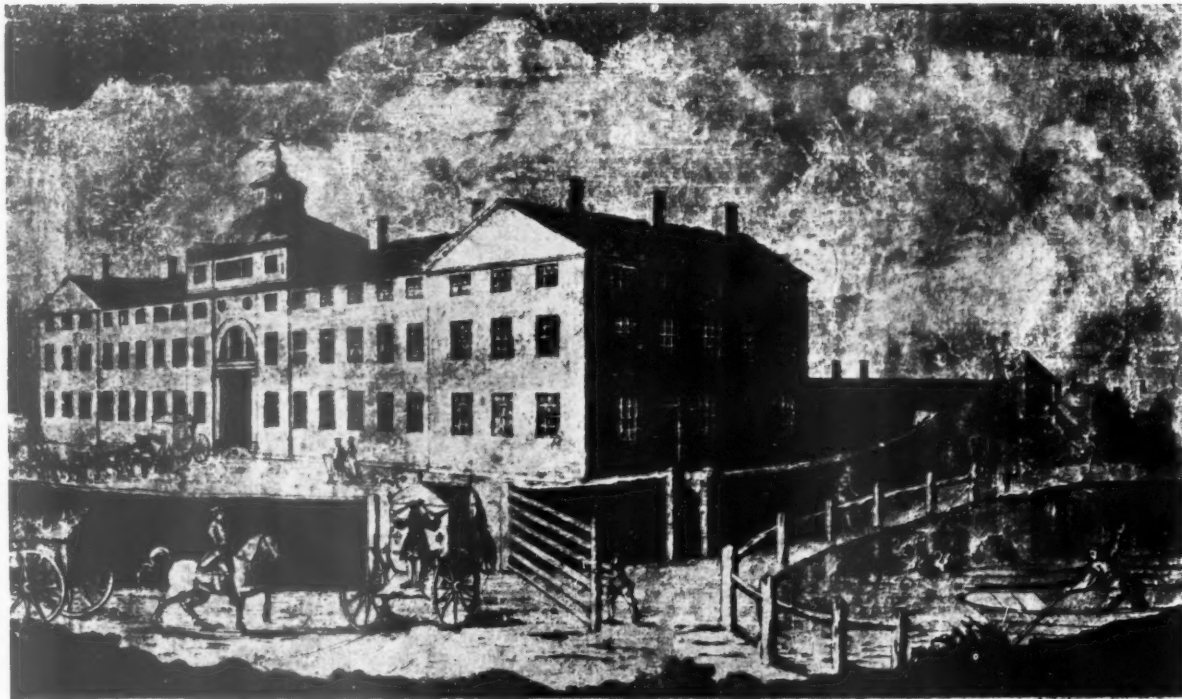
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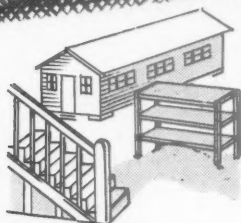
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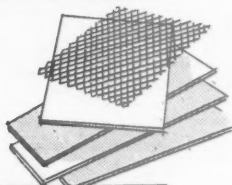
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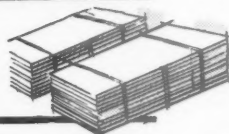
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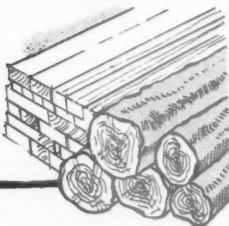


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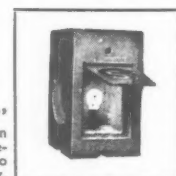
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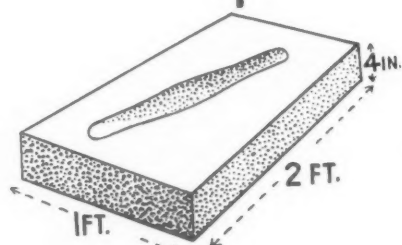
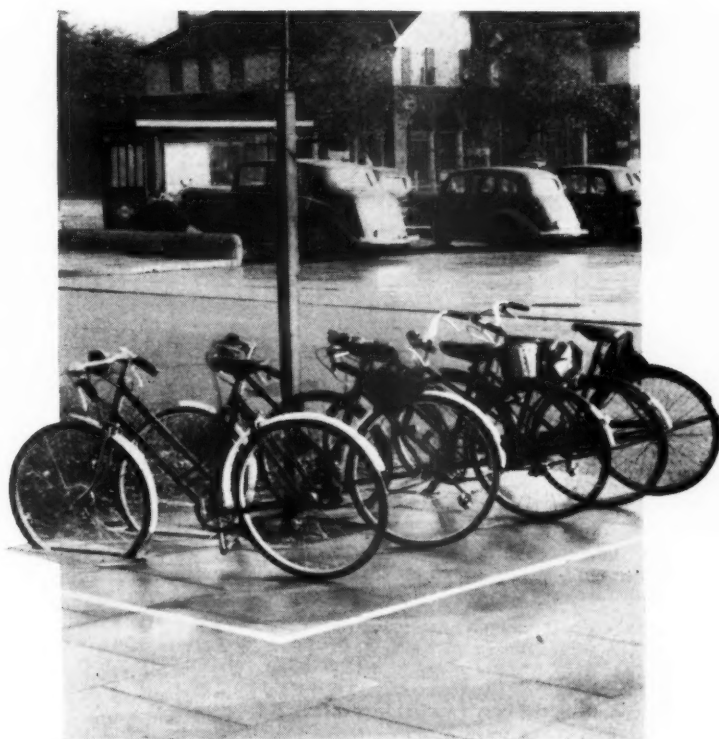
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THURSDAY, JUNE 26, 1941.

NUMBER 2422 : VOLUME 93

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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.



To those responsible for Aerodrome planning, building and maintenance

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# BISON

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## "A PACK OF PEOPLE"



A ROW OF HOUSES WITH AN OPEN SPACE  
BETWEEN THEM.

The workers were crowded into any kind of dwelling near the factories. There was no control of the planning of their homes.

And this is a city  
In name but in deed  
It is a pack of people  
That seek after meed  
For officers and all  
Do seek their own gain  
But for the wealth of the  
Commons  
Not one taketh pain  
And hell without order  
I may it well call  
Where every man is for  
himself  
And no man for all.

Robert Crowley.

'meed' = gain



## OUR INHERITANCE

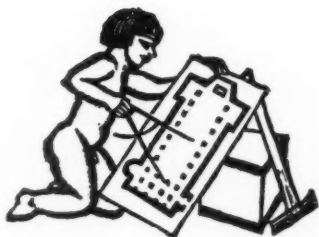
*Our Inheritance* is the title of an exhibition for use in schools, which has been organized by the Housing Centre, and was opened there on Monday, June 16th. It is reviewed on page 416 of this issue. One sheet from the exhibition is reproduced above; it is part of an historical survey which traces the chief social and economic changes that have taken place in this country during the last 1,000 years, in so far as they have affected architecture and the appearance of the country side. There are 36 sheets in all. They are small in size and were designed to be easily fixed to a wall, or to be handed round a class.



## DESTRUCTION IN DUBLIN

*Photographs showing some of the effects of the first serious bombing that Eire has experienced. At least 300 people are said to have been rendered homeless. Three minor incidents occurred last January.*





## THOUGHTS INSPIRED *by the* FIRST SITTING of the RIBA RECONSTRUCTION COMMITTEE. 2.

THE architect carrying out post-war reconstruction will be called upon to design much larger schemes than were common before the war. Some of these will be on virgin soil, but mostly they will be on land which, though devastated by bombing, will have roads and services intact and usable. Early in his planning therefore he will find himself considering whether to re-use these existing communications or whether to lay out new; and the answer will be dictated by the relative economy of new engineering technique and existing services, but all in terms of the relative running cost.

Mechanical engineering will be an early and important consideration in planning, growing in importance as the scale of the scheme increases. In larger schemes services may dictate the very form of replanning. In America and on the Continent, and especially in the housing of the best German period, the layout of drainage and services was given prime consideration, and that by architects to whom aesthetics were no secondary matter.

The Garchey refuse disposal system by which refuse may be sluiced away and re-used for heating purposes is already well known. It has been installed in the Leeds housing scheme at Quarry Hill for some years, where it is proving itself as economical as it is desirable. Pre-war housing failed to solve this distressing problem, and it is to be hoped that in post-war reconstruction some such form of refuse disposal as the Garchey system will be more commonly adopted, even if it adds yet another lot of pipes to be tucked away somewhere.

District Heating is another service, new to this country, which has proved its value during the war. It uses either steam or hot water, circulating through high-pressure pipes, to provide heating, hot water and motive power to building within areas which may be measured in square miles. These new services may not be everywhere applicable but obviously they have a part to play in reconstruction.

Of necessity the architect must know much more about mechanical engineering than he has done in the past, and regard it as an integral part of his work. In pre-war days services were often almost an afterthought, as witness the ganglion of sewers, pipes and conduits which German bombs in city streets have brought to the light of day.

It is something more than an ideal, it is an actual possibility, that in really big schemes services should

be grouped within a proper inspection way where they are accessible throughout their lengths. This is a necessity where district heating is concerned, and was one of the features of the Drancy scheme which most surprised the visiting architect. What is true of the relation of the architect and the mechanical engineer holds good with structural engineering.

Before the war there was no lack of experimentation with prefabricated construction, the idea behind it being dry building—in which site labour is reduced to a minimum; but these experiments were isolated, whether in America, Germany or France, and only slowly were being incorporated into the body of building practice. Now they *must* be incorporated. Demands are so severe, labour will be so scarce, that we must take every means of supplementing the lack of labour on the site, by prefabricating under factory conditions as many of the parts of building as economy dictates.

All this presupposes a much more scientific outlook towards building, and we must not only face but welcome the fact that the architects and engineers are in the thing from the beginning. For long we have felt this divorce between the two, and it has helped neither of us to work in isolation. The fusion happens now under pressure of external events, and we have only to have a proper care for good building for it to continue and prosper.

Early therefore in the R.I.B.A. deliberations on reconstruction we should like to see a request for collaboration, and we hope to see both structural and mechanical engineers sitting on the various sub-committees. More than this, it should be felt in every part of architecture—in education perhaps more than elsewhere; it is the next generation of architects who will feel the full impact of the scientific approach.

Although we pretend otherwise, architectural education has not advanced to meet the present situation. How else can we explain the strong student associations which exist purely to fill the wide gaps in the official curricula?

All this we speak of is part of a wider movement to accept science as one of the chief means of securing a better life, and this acceptance is going to differentiate this century from the last. It is a world-wide movement in which we, as architects, have taken too little part. Yet in the reconstruction period to come we may be able to prove that science and humanitarian ends are not incompatible.



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

# NOTES & TOPICS

## IN DUE COURSE

**L**AST week the building and associated engineering industries came under an Essential Works Order; and thus, in the 22nd month of war, the highest official countenance has been given to that dictum which has worn so threadbare among builders: *the building industry will be (or is) in the front line.*

An Essential Works Order restricts the right of builders to discharge men and the right of men to leave their job. So far, so good. But it raises a very nasty problem of its own. To offset the obvious encouragement to slacking which is presented by the trio—no sacking—no movement—guaranteed wage—it encourages a system of bonuses for good work, and so hits the most cherished principle of building trade unions right on the point of the chin.

Trade unions will have nothing to do with piecework in any disguise; and a watching brief held for the Profession at a dispute on this matter, has thrown some light for me on an attitude which seems opposed to the most reasonable individualism.

As I see it, a union is out to increase the number of its members and raise their standard of living. It is therefore more concerned with men of average, or slightly below average, skill than with the first-rate workman. If it allows payment by results under any disguise whatsoever\*, it cannot prevent two things happening: (1) The pace of the last becoming the pace for all; and (2) A steady decline in the standard wage, and an increase in the piecework rate.

An outsider cannot pretend to judge this matter—he can have no knowledge of how quickly a temporary wartime concession by a union can become a permanent

\* Throughout the whole of my meeting an employer's representative referred to bonuses as "encouragement of good effort," without once showing the slightest recognition of the words used by the other side.

peacetime rule. But any outsider can see that with a building industry reduced from a pre-war 1,350,000 to a present-day 750,000, the efficient use of building to its utmost capacity is . . . desirable.

## OUTPUT

But is the building industry being efficiently used? The *News Chronicle* recently dwelt on the subject of output in the building trades, and stated that there was a "disturbing drop in output per man hour." No explanation for fallen output could be given by the writer or his informants. Apparently it is general—and town and country alike are infected. "Canteens, hot baths and radio sets" do not provide the necessary stimulants. Why should they? Over-eating and hot baths are not exhilarating and "Music while you work" tires many.

Talking about the suggestion that there was a marked falling-off in the amount of work done per man per hour with an operative, he admitted that he thought there was some truth in the allegation. When asked how he accounted for the fall, he said: "With few exceptions the men in the industry are either engaged as fire-watchers, air-raid wardens, Home Guards, Demolition workers, etc., some part of the week. This leads to loss of sleep and fatigue—and possibly to some waste of time in discussion or description with his mates when next they meet on the job. Further, a good number of men who are loosely attached to the building trade—cabinet makers, organ builders and the like—are now classified as joiners, and are trying to fill the part of fully trained men. Statistics which measure the output of these 'joiners' doubtless show a decline in output."

He also said that a lot of time was lost through the breakdown of transport, and that that day he and another had taken six hours to fix four wood shutters—which they could have fixed in two hours *had they been on the job to fix.*

## WHO IS TO BLAME

Who is to blame? I asked another operative. "Certainly not the man on the scaffold," he said. "He is working, when he can be found, ten and a half hours a day for seven days a week. He can't do any more. On the other hand there are men in the shop who only work forty-four hours a week who want to work longer. Yet, because their work is contract the employer will not pay a man the extra rates. The man can't change his employer or his task. So how can it be up to him?"

"Presumably the employer deems overtime uneconomic. If it is there must be some defect or error in the original contract—and price, not time, has been the selective factor."

"Or perhaps the labour is not available," I said to my friend. "No," he said, "that excuse won't wash since firms with priority contracts have most of the available labour allocated to them by the Exchanges. That sounds reasonable, but on shop work it is not, and in blitzed areas it is a hindrance, for when the Regional Commissioner alters the order of priority, the last people to learn the news seem to be the labour exchanges, which continue to dispatch men to works whose urgency has been reduced. It's no use talking. You have to go where you are sent."

## WHERE AM I?

Another meeting which I attended, again as watcher, was about the application of the Uniformity Agreement, introduced to stop migration of labour. This agreement is, of course, not uniform: it leaves certain smaller works out. The craftsmen on the scheme under consideration did not like the Uniformity Agreement and were thinking of going to smaller jobs just outside the local union's jurisdiction.

★

The union delegates did not want the men to go: neither did the employers. But there harmony ended. The delegates asked for an all-round rise which the employers, under the Uniformity Agreement, could not give. The employers offered a bonus which would have made up far more than the difference for nearly all the men. The delegates would not have it (though the men, unofficially, would).

★

The meeting ended with the delegates hinting even more broadly that with a push the scheme might be put under an Essential Works Order—thus compelling the men to stay on the job at the wage offered—while it was the employers who were offering to pay far more than was asked to two-thirds of the men, and were refusing to ask for compulsion if it could possibly be avoided.

## “HOUSING AND THE RAIDS”

Efficient or not the building trade is definitely *not* helped by the kind of article which appeared in a recent *Manchester Guardian* and which seemed to me less well-informed than one expects of that great newspaper.

★

The writer began with the statement that the problem of rehousing the homeless in much raided areas is entering a new phase, and that in certain districts new housing accommodation, built to last for the duration plus three or four years, may soon be needed in quite large quantities. So far so good.

★

But after referring to the partially standardized housing units now being prepared for certain categories of war workers, he writes:

Among architects it is generally agreed that there is no practical obstacle to the large-scale provision of similar hostels for air raid victims, and indeed that there is no other solution to what must soon become a pressing and evergrowing problem.

I believe that all architects who know anything of this subject would agree that there exists a practical obstacle of a particularly impenetrable kind; we haven't got the materials and we haven't got the labour.

## MOBILE LABOUR

Hot on the heels of the new Essential Works Order has followed the announcement that a mobile labour force of 100,000 men is being established for the repair of damaged buildings, works and airfields. So far it has not been explained how this force is to be organized.

★

Questions immediately arise. The first is how are these men to be employed in intervals between “blitzes”? To be effective for their primary purpose they must be held in immediate readiness. Are they to be idle in the intervals?

The second question, almost more important than the first, is how are they to be transported? The transport of 100,000 men raises problems equal in scale to the transport of three divisions of the army. What arrangements are to be made for this?

★

So far the Government has shown a regrettable inability to grapple with the problem of organizing the building industry, which is typified by their blank refusal to employ architects in positions where their ability could be of use. Is this latest move a serious attempt to make good past omissions, or is it just another gigantic bluff? In the absence of more precise information, one is tempted to conclude that propaganda is the main object.

## OLYMPIA'S SUBSTITUTE

The country lane rose and fell sharply. Clumps of rhododendron and lilac slipped past in full bloom, and cows flicked their tails under trees. A ruined house drew the eyes by having been plainly ruined a century before last September. The car slowed down rapidly and turned into an even narrower lane, turned again through a big gap in a hedge and crunched over cinders into a special kind of world.

★

Behind the hedge, on 60 feet of cinders, there stretched a double line of cars which seemed infinitely long—a Petroleum Officer's nightmare winking in the sun. On the further side of the cinders and across the lane were long lines of huts, astonishingly inconspicuous, broad, replete.

★

The car wriggled and backed and we got out. From that moment there was no escape. One after another figures approached and features took shape: features often bronzed, nearly always unusually trimmed with new moustaches, polo jerseys or old flannels, where old flannels had never been before. But always familiar. The building industry had moved to rural England.

★

And it had taken care, one noticed, to make itself comfortable. The low, broad huts disclosed acres of new distemper, legions of switches and several hundred plain but highly efficient baths and w.c's. The clubrooms would not have disgraced the *Queen Mary* (2nd class); the dining hall was immense and colourful and the drawing offices were swell. Through them all, and eddying along concrete paths between new-sown plots of grass, flowed the Architectural and Allied Professions. Never since the last Exhibition lunch at Olympia can so many of them have been together on the same five acres.

★

We got down to business in the end, and it was only when we queued up at lunch to file in our hundreds past the hotplate, that it occurred to me something was missing.

“Are there . . .” I hissed in the ear of the next ahead, “any *builders* here?”

★

My companion looked around and then pointed to a man who was in the act of being served. “That,” he said, “is the Manager for—.” And mentioned a name which hangs until completion on many of London's biggest blocks. It seemed to me that the manager had a hunted look.

ASTRAGAL



## NEWS

### NEW ARCHITECT TO THE L.C.C.

Mr. F. R. Hiorns, F.R.I.B.A., the Architect to the London County Council and Superintending Architect of Metropolitan Buildings, will retire under the age limit on 13th July, 1941.

To fill the vacancy, the Civil Defence and General Purposes Committee of the Council have decided to recommend the Council on 1st July, 1941, to promote Mr. J. H. Forshaw, M.C., M.A., B.Arch., F.R.I.B.A., who is at present Deputy Architect. Mr. Forshaw will continue as at present to be in charge of the Rescue Service and the War Debris Disposal Service.

The salary attaching to the position of Architect to the Council and Superintending Architect of Metropolitan Buildings is £2,500 a year, rising by £250 at the end of the first and third years to £3,000 a year.

### CONTROL OF CIVIL BUILDING

Regulation 56A of the Defence (General) Regulations, 1939, which came into operation on October 7, 1940, provided that no work of building or civil engineering construction, the cost of which exceeded £500, should be undertaken without the consent of the appropriate authority. The Regulation has been amended with effect from April 14, 1941, so that the limit of £500, below which no consent was required, is now reduced to £100. Certain other changes have also been made. The changes have been incorporated in the revised edition of the "Notes for the Guidance of Applicants" issued by the Ministry of Works and Buildings, and the earlier editions of September 18, 1940, should now be regarded as cancelled. Applicants are strongly advised in all cases to consult the Regulation itself. This is contained in S.R. & O., 1940, No. 1678, and the amendments in S.R. & O., 1941, No. 437, each of which may be obtained, price 2d., from His Majesty's Stationery Office or through any bookseller.

### PROPAGANDA FOR RECONSTRUCTION

An exhibition for use in schools was opened at the Housing Centre on Monday, June 16, by Mr. Kenneth Lindsay, M.P. The title is "Your Inheritance," and the exhibition consists of 36 sheets 12 in. by 15 in., which can be displayed either by pinning them on a wall or by handing them round the class. The exhibition cost £50 to prepare, and is the result of the generosity of an anonymous donor.

The exhibition is in three parts. The first seven sheets deal with the nature of the opportunity that has been created by the war; the next fifteen sheets, which are particularly good, trace clearly and simply the changes that have taken place in town and country from the time of the open field system up to the present day. The closeness of the connection between architecture and the social and economic life of the community is made plain. Part three is a statement of the needs that planning ought to satisfy, both in the country and

in the town. The impression left by this section is rather a blur. In general, however, the aim of the exhibition is not to advance a solution but to attract attention to the existence of a real problem, and to make clear the importance of a right solution.

In his opening speech Mr. Lindsay stressed the fact that many changes had been brought about in school curricula by evacuation. Children had been freed from their desks and were taking part in many real activities from which they had previously been debarred. For instance, they were working on the land. There was a widespread demand among teaching staff for material of the kind contained in this exhibition; they needed it to counteract the impression left in the children's minds by scenes of widespread destruction.

Mr. Lindsay stated as his opinion that what we need most just now are men with practical social vision. That is to say, technicians able to overstep the narrow boundaries of their own technique and think in terms of other sciences. For an architect to be just a designer working to order was no longer enough; he should understand education or public health or some other branch of social life and be prepared to recommend in connection with these reforms that only an architect could know to be possible. A sheet from the exhibition is reproduced on page 411.

### INSTITUTION OF STRUCTURAL ENGINEERS

#### NEW MEMBERS

*Studentship:* Liddell, H. S., of Paisley, Renfrewshire. *Graduateship:* Cooper, N. G., B.Sc., of Gosport, Hants.; Thorn, R. B., B.Sc., of Colchester. *Associateship:* Poy, Mak Chun, of Canton, Kwantung, China. *Membership:* Bray, T. J., of Aberdeen; Graff, A., B.Sc., A.M.Inst.C.E., of Johannesburg; Vanstone, F. W. E., of Preston, Paignton, S. Devon.

### CHARTERED SURVEYORS' INSTITUTION PRIZE-WINNERS

Penfold Gold Medal: Driver Prize, Saint, A., Greystones, Nonnington, Kent; Wainwright Prize: Institution Prize, Schofield, D., c/o The County Architect's Office, The Castle, Chester; Galsworthy Prize: Quantities Prize, Hanks, W. F., 12, Glengall Road, Bexley Heath, Kent; Crawter Prize: Kennedy, J. T. C., Old Manse, Irish Street, Downpatrick, Co. Down; Constructive and Working Drawings Prize: Lankester, J., Strang, Braddan, Isle of Man; John Gilchrist Prize: Cunningham, I. R., 11, Blinkbonny Road, Edinburgh, 4; Special Prize: Lejeune, A. C., 29, Hensley Road, Bath; R. Irwin Barr Prize: Samuel, H. J. G., Fairview, Ratho, Midlothian; Hyman Marks Prize: Ferguson, S. L., "Netherton," Queen Edith's Way, Cambridge; Julian Rogers Prize: Barrows, T. G., 15, Earn Street, Glasgow, E.I.

### CHANGE OF ADDRESSES

Messrs. Lionel H. Frewster and Partners have opened new offices at 31, Dorset House, Gloucester Place, London, N.W.1. Temporary telephone, Welbeck 5522, Extension 13.

Messrs. Bethell & Swannell, Chartered Architects, have moved to Victoria House, Vernon Place, Southampton Row, W.C.1. Telephone—Holborn 1503.

## LETTERS

### Alf's Button

SIR,—In view of the JOURNAL's well-known opposition to technical publications being used for political ends may I express my disapproval of Astragal's anti-Soviet propaganda in Notes and Topics, re "Alf's Button."

Surely, in this struggle in which we are engaged we need all the friendship and support we can possibly attract and such "quotas," to say the least, do not contribute towards a better understanding between the architects of neutral countries and ourselves.

W. MORRIS.

Rustington.

### Students in the National Effort

SIR,—The enclosed is a copy of a letter I have sent to the editors of the *Times* and the *Manchester Guardian* concerning the non-absorption of students into the national effort at a time when architects are vitally needed.

At Hull we are faced with the complete cessation of fourth and fifth year training. Only one out of twenty-four of our students who have joined the Forces has been given any sort of draughtsmanship or surveying work to do.

If approached in a unanimous and a concerted way by the profession as a whole, there is a likelihood that the Ministry of Labour would rectify the omission of architectural students from the provisions of the Joint Recruiting Boards\* so that they could be absorbed in a planned sort of way into national work as trained men.

The delegation of the A.A.S.T.A. to the Ministry was more hopeful in this field than any other aspect of reservation, and the matter is of specially vital importance if senior architectural training is to continue in September.

MAX LOCK, A.R.I.B.A.

Head of the Hull School of Architecture, The College of Art, Hull.

The letter enclosed by Mr. Lock reads as follows:—

117, PARK AVENUE,  
HULL.  
June 14, 1941.

SIR,—The Country is in desperate need of architects to assist in the supervision and erection of war factories and housing and to survey and repair air raid damage. The Minister of Health has just announced a vast and urgent building programme for the accommodation of evacuees. Yet there is no planned absorption of trained architectural students into the National effort.

Men training at Schools of Architecture have shown themselves extremely useful in assisting to survey bomb damage and directing first aid repairs in their "blitzed" areas. But when they become nineteen, and before they can take either their Final or—in many cases—their Intermediate Examinations, they are automatically conscripted into the Forces where their special knowledge is hardly ever recognised or required.

Technical subjects covered in architectural training include building construction, building science, surveying, heating and hot water installation, lighting, electrical servicing and equipment, theory and design of structures in wood, steel and reinforced concrete, drainage and sanitation, plumbing, specifications, acoustics; and in addition legal subjects such as the law of Contract, the Building Acts and Town Planning. This apart from the intensive training in planning, layout and design.

Why, therefore, are not these students earmarked for



National Service like other technical trainees and included in the provisions of the Joint Recruiting Boards? These have been set up in order "to ensure that men possessing scientific or technical qualifications are allocated to forms of National Service in which they will be most useful."

Yet Architectural Students (other than Naval Architects) are excluded.

Unless this omission is rectified before July, there can be little or no fourth or fifth year training in the Schools for the final R.I.B.A. examinations next year, the stream of qualified men will be stopped and senior teaching suspended—a tragedy when the country needs more architects and planners than ever before in its history.

The student of architecture to-day is as important to the national well being as the medical and dental student who is reserved for special national service in the Forces or elsewhere. About 300 architects become qualified every year. If these men had had themselves employed as engineers' draughtsmen, they would become automatically reserved. If they register as qualified architects or architects assistants, or students there is no reservation or national use for their long and valuable training.

Surely, in the light of the present circumstances, this prodigal wastefulness cannot be allowed. Planned absorption of newly trained architects into the National Effort is a necessity, as is the continuation of architectural education. But only prompt action can effect this before much vital knowledge and enthusiasm is lost and the higher training machinery in the Schools is brought to a complete standstill, or worse still, disbanded.

Yours faithfully,

MAX LOCK, A.R.I.B.A.,

Head of the School of Architecture of the Hull College of Art.

#### \* JOINT RECRUITING BOARDS AND TECHNICAL COMMITTEES.

Joint Recruiting Boards have been set up at Universities and University Colleges to assess the suitability for training as officers of undergraduates and resident University graduates who volunteer or are called up for service in His Majesty's Forces. Each Joint Recruiting Board consists of a representative of the University or University College, as Chairman, together with representatives of the Service Departments.

The Joint Recruiting Boards are also considering applications from men under the age of 25 belonging to any of the following classes, whether University men or not:—

(a) Men with University Honours degrees in one or more of the following subjects:—Engineering, Naval Architecture, Metallurgy, Chemistry, Physics, Biological Sciences, Agriculture (including Forestry), Geology, Mathematics, Statistics; or with University General or Pass degrees in two or more of the aforesaid subjects; or with University Pass degrees in Agriculture, Engineering, Metallurgy or Naval Architecture.

(b) Men with the Higher National Diploma or Higher National Certificate in Mechanical or Electrical Engineering; or with the Associateship of the Institute of Chemistry; or with a University or National Diploma in Agriculture; or with an award of equivalent standing in any of the subjects specified in this paragraph or in (a) above.

(c) Men who have started or are about to start a full-time course at a University, College or recognised Technical or Agricultural College or Institution for one of the qualifications specified in (a) above.

(d) Men who have started a course at a recognised Technical or Agricultural College or Institution for one of the qualifications specified in (b) above.

NOTE.—Full-time Students in Mining Engineering can be interviewed at any age.

Most of the Joint Recruiting Boards have appointed Technical Committees, composed of University experts in the subjects mentioned, to assist them in this part of their work. The purpose of these arrangements is to ensure that men possessing scientific or technical qualifications are allocated to the forms of National Service in which they will be most useful. The Boards may recommend that such men should engage in technical service in the Forces or in scientific or technical work of a high order in civilian life, or that they should complete a course of study so as to be better fitted for such service.

### Margarine Coupons and Jute Fabric

SIR,—As an architect I am much interested in the Circular Concrete Hut article in your issue for June 12.

Will you please say how many margarine coupons would be required for the jute fabric for one complete hut.

J. C. WHETTAM.

Bath.

## BOOK REVIEW

### SAFE SHELTERS—NOW

Shelter policy has come up for discussion again—"Safe shelters—now!" is a reprint of the fourth report of the A.R.P. Committee of the A.A.S.T.A., first published in *Architectural Design and Construction*, May, 1941. The report is divided into three parts: A history of Government policy; a survey of the alternative types of shelter that might be provided under existing conditions; and suggestions about further policy.

Originally the safe shelter policy of the A.A.S.T.A. was turned down by the Government on the grounds that too much safety was bad for morale. No doubt there were other reasons as well. There are no real grounds, however, for claiming that the excellence of

civilian morale results directly from the wisdom of the shelter policy that has been pursued. Experience has shown that the chief enemy of morale, as things have turned out, is not safety but discomfort, if it has to be endured for any length of time. Seventy-one per cent. of the civilian population continue to sleep, as usual, in bed. Their ability to carry on is probably due to this more than to official policy.

Government policy is attacked by the A.A.S.T.A. under two heads: (1) the shelters provided are not sufficiently safe; (2) they are not sufficiently comfortable and do in fact mostly remain empty. The title of the pamphlet is "Safe Shelters—now!" This is a hangover from early days. Almost greater stress is laid on the importance of comfortable shelters—a point of view which should have a widespread appeal. It has a point of view which, one feels, the Government has not yet learned to appreciate. A rough night under the dining-room table, together with three other members of the family, is not really a good preparation for the next day's work.

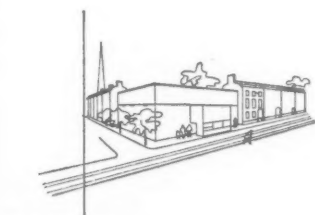
The type of new shelter recommended by the A.A.S.T.A. is a surface shelter which can be built in one or two stages; the first stage gives a degree of safety that is roughly equivalent to the best type of existing brick shelter. The second stage gives an increased stage of protection and is proof against a direct hit from a 500 lb. bomb. Construction, for the first stage, is chiefly reinforced concrete; for the second stage, mass concrete. Steel used is about equal to the amount needed for a Morrison table shelter, per person accommodated. They recommend also that the size of shelters should be increased in order to make possible the provision of communal washing and feeding facilities, proper sanitation and air conditioning. They calculate that if shelters were designed to accommodate a minimum of 200 people, the extra cost of services would be largely offset by structural economies.

There is a strong prejudice in official quarters against any concentration of shelters. Actually larger units would be easier to administer, and experience has shown that people are willing to travel much farther to a popular shelter than was originally anticipated.

Only the Government is in a position to say what the scope of the A.R.P. programme should be. The A.A.S.T.A., however, make out a good case for further scrutiny of the use that is being made of resources ear-marked for the purpose.

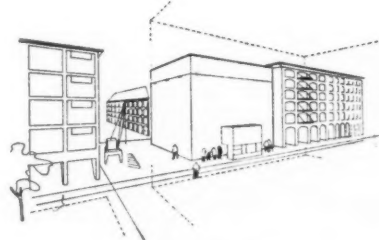
A.H.T.B.

The accompanying illustration is reproduced from "Safe Shelters—now!" reviewed above. It shows two types of one stage shelters. If these had been built in two stages there would be a corridor running round the outside of the building on all floors, to give additional protection. The construction of the first stage would have been reinforced concrete of sufficient strength to resist blast. The second stage consists in adding mass concrete of sufficient thickness to be proof against a direct hit from a 500 lb. bomb.

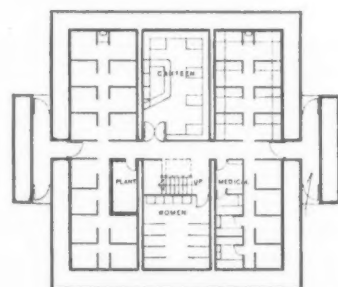


ELEVATION—

Two storey shelter.

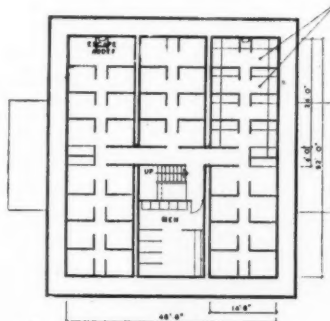


Six storey shelter.

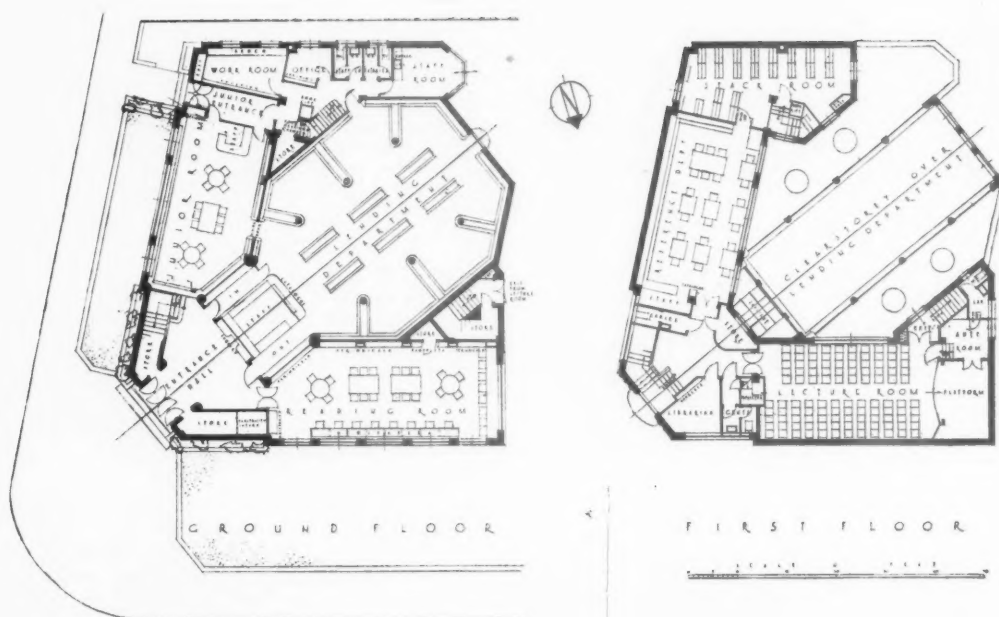


PLAN—

Ground floor.



Upper floor.



## LIBRARY AT NEW MALDEN



**GENERAL.**—The lending department provides accommodation for 12,500 books ; the junior room for 2,200, with seating for 14 readers and the reference department for 1,600 with seating for 20. In the reading room the newspaper slopes are adjustable for angle, and are fitted at a level to allow the reader to sit down. Racks accommodate about 70 magazines and periodicals and seating is for 28 readers. The lecture hall seats 110 persons and has a projection room. On the elevations are nine circular sculptured panels.

BY A. R. GOLDTHORP.

CONS  
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bricks  
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CONSTRUCTION—Steel framed, with brick walls, and reinforced concrete floors and roof; external walls, brown, hand-made sand-faced bricks; window cills, cornices and copings, reconstructed Portland stone.

stippled cement glaze, with panels of cork for notices. Other ceilings and walls, plastered and finished either in flat paint or washable distemper, except where portions of the ceilings are panelled with V-jointed insulation board.

INTERNAL FINISHES—Floors: generally  $\frac{3}{8}$  in. thick compressed cork tiling; main entrance hall, vitreous tiling with mosaic border. Walls, entrance hall, main landing and junior entrance,

*Above, the main entrance hall.*

For list of sub-contractors see page xx.

ASSISTANT: F. C. OTTON



Library at New Malden. Top, reading room ; above, junior room.





# CREMATORIUM

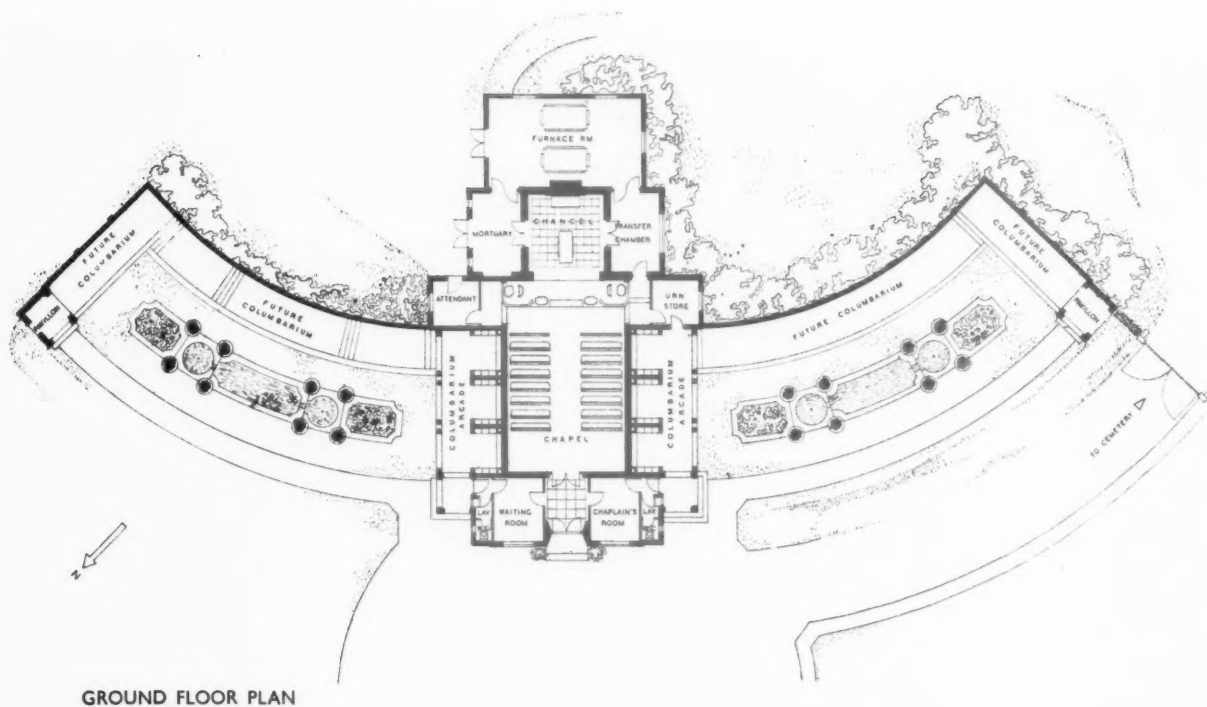
A T B R I G H T O N

SITE—The columbaria and cloisters are designed in conjunction with pools having electrically controlled fountain jets and flower gardens. The cloisters will eventually be extended around the garden courts. The grounds surrounding the chapel have been designed by the architect and have a spacious approach road and forecourt, and wide stepped lawns following the slopes of the site planted with borders and shrubberies. The wrought iron entrance gates have gilded panels bearing symbols.

*Above, a view from the south-west. Below : North west elevation.*



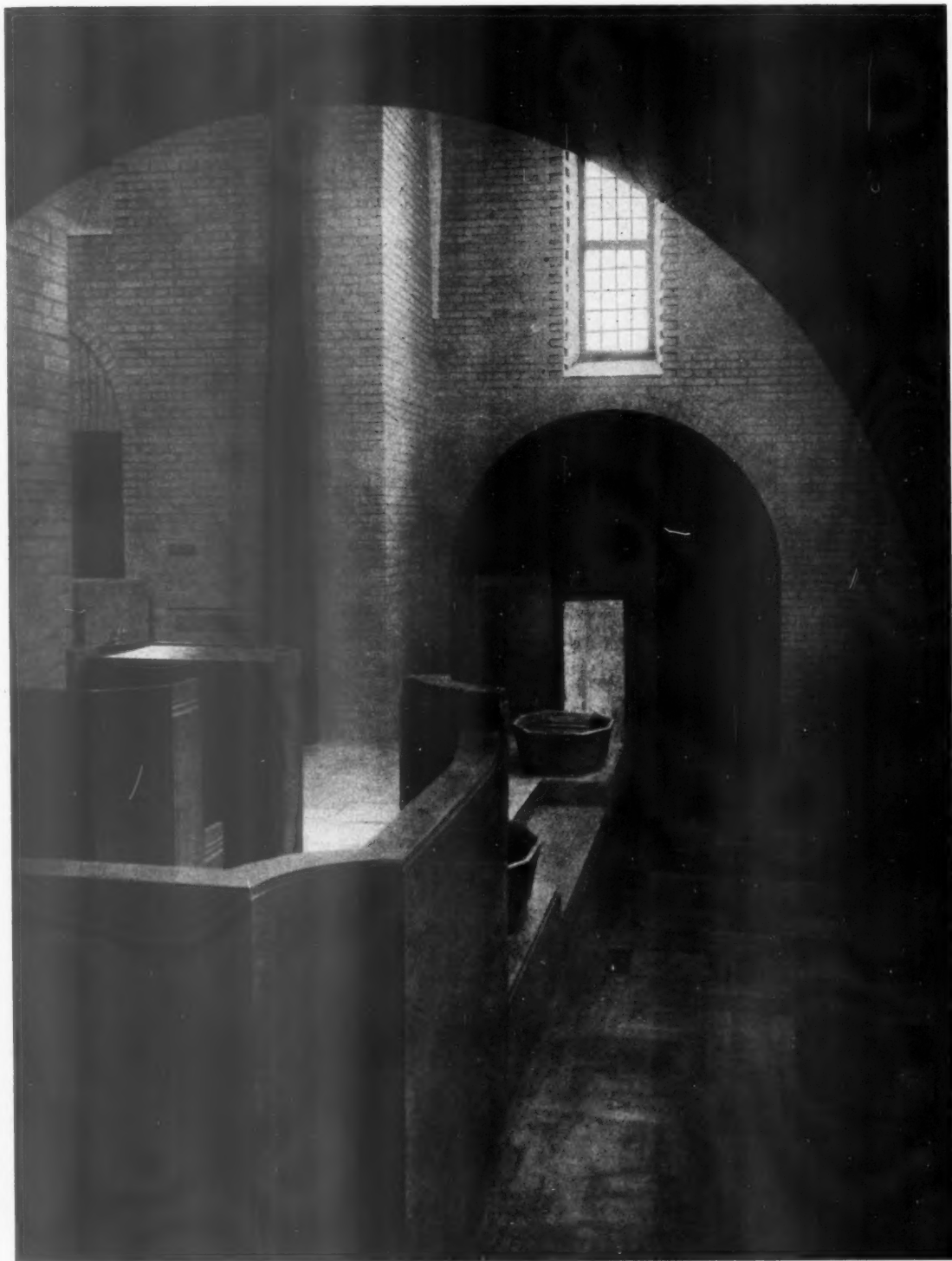
DESIGNED BY JOHN L. DENMAN



**GENERAL**—Crematorium, with chapel, cloisters, columbaria and garden courts, on sloping downland 300 ft. above sea level.

**SERVICES**—The gas heated furnace is placed in the furnace room at the rear of and level with the chancel floor, and has communication on each side of the chancel through the transfer chambers, one of which is also available for use as a mortuary. Arrangements have been made for the addition of a second furnace.

## C R E M A T O R I U M   A T   B R I G H T O N



The furnace flue is incorporated in the design of the tower. The building is warmed by a gas-heated hot water installation.

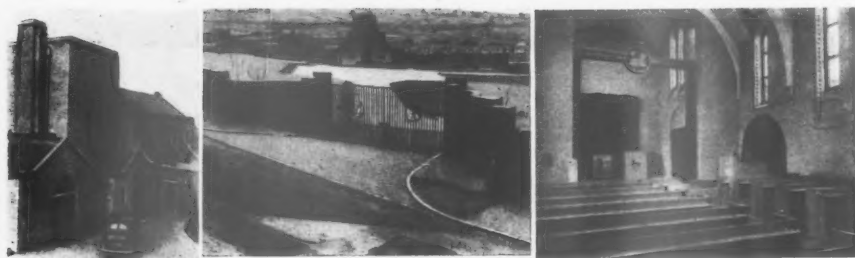
*Above, Looking across the chancel. Facing page, A perspective drawing by the architect from this year's Royal Academy Exhibition.*

DESIGNED BY JOHN L. DENMAN



**CONSTRUCTION**—External facings, thin hand-made multi-coloured bricks ; internal facings, cream bricks ; roof, sand-faced heavy section pantiles. The chancel is screened from the chapel with blue curtains suspended from the rood beam. Similar blue reredos hangings with a canopy are provided above the oak altar table, the front of which has orphrey carved panels. There is a stained glass circular window at the west end ; the remainder of the glazing is in antique tinted leaded lights with oak frames. Pews and clergy desks, oak ; chancel walling, steps and pavings, Ancaster stone ; flooring to the nave, wood block ; bier, oak.

*Above, the cloisters ; and below, from left to right, view from east ; the entrance gates ; and the chancel.*



## CREMATORIUM AT BRIGHTON







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## PRACTICAL CONSIDERATIONS INVOLVED IN CONSTRUCTIONAL WELDING, 2.

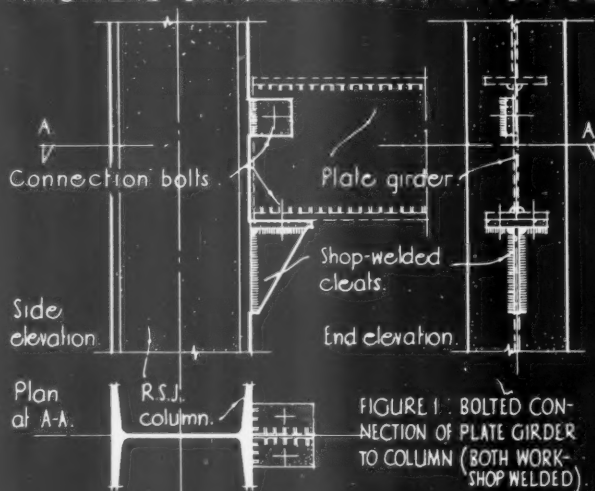


FIGURE 1: BOLTED CONNECTION OF PLATE GIRDER TO COLUMN (BOTH WORKSHOP WELDED)

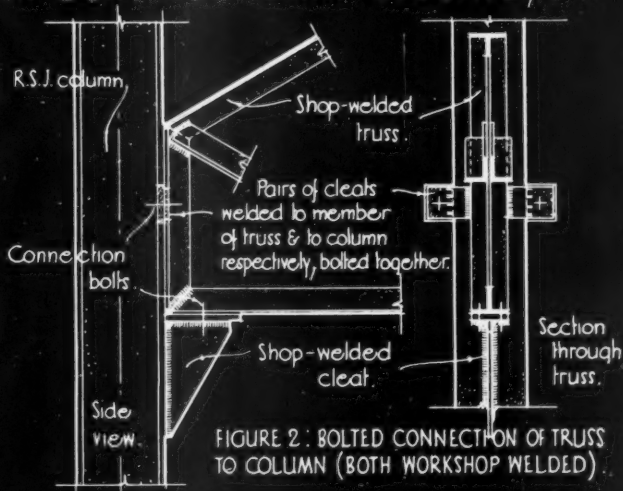


FIGURE 2: BOLTED CONNECTION OF TRUSS TO COLUMN (BOTH WORKSHOP WELDED)

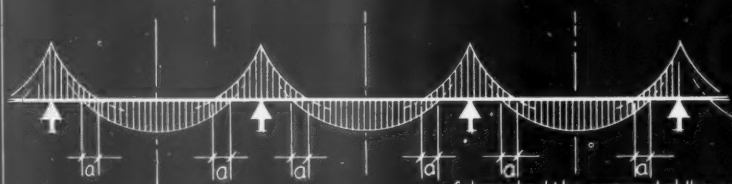


FIGURE 3: BENDING MOMENT DIAGRAM OF CONTINUOUS BEAM

Splices should be arranged at the points of contraflexure ranging along lines 'a', where bending moments are small.

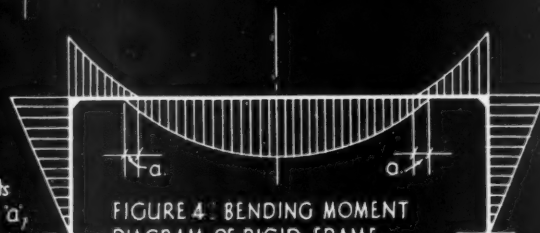


FIGURE 4: BENDING MOMENT DIAGRAM OF RIGID FRAME

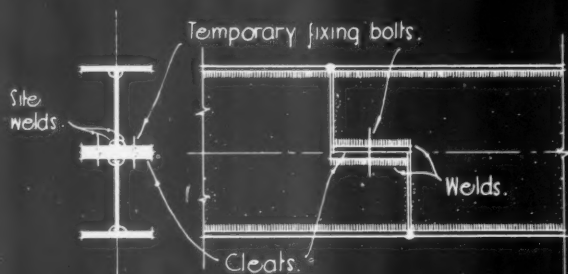


FIGURE 5: WELDING OF A SPLICED PLATE GIRDER

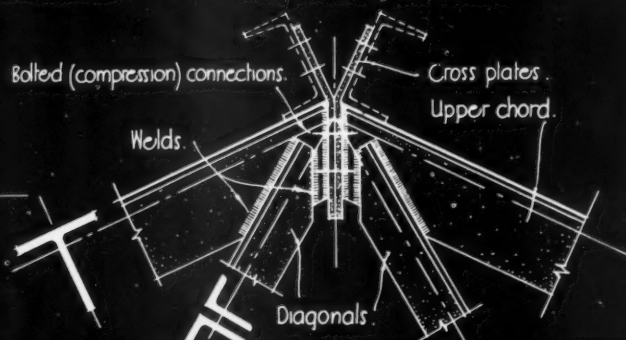


FIGURE 6: SPLICE IN THE APEX OF AN UPPER CHORD OF A TRUSS

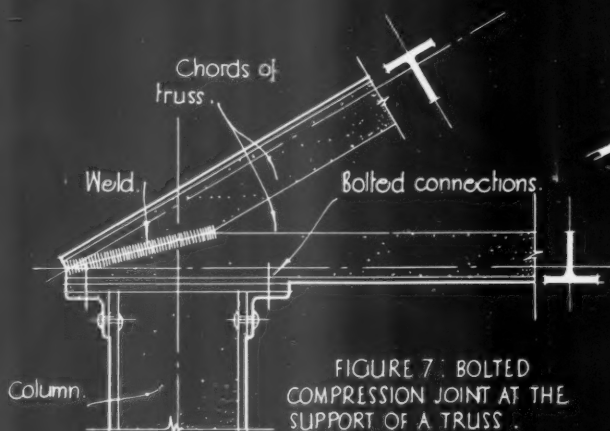


FIGURE 7: BOLTED COMPRESSION JOINT AT THE SUPPORT OF A TRUSS

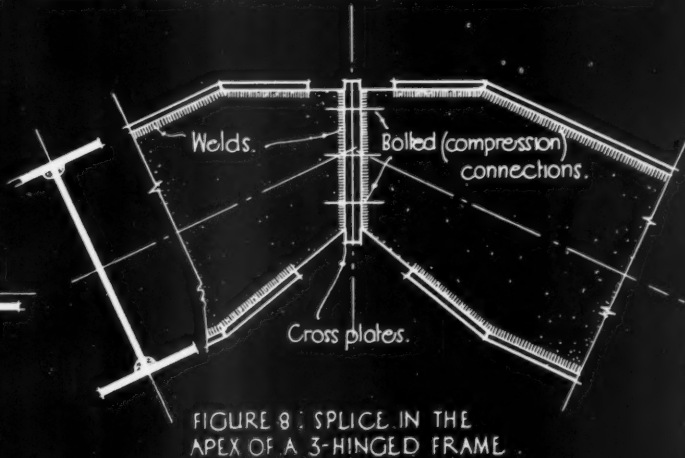


FIGURE 8: SPLICE IN THE APEX OF A 3-HINGED FRAME

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INFORMATION SHEET: STEEL FRAME CONSTRUCTION, 53: WELDING N° 9.  
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THE ARCHITECTS' JOURNAL  
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## INFORMATION SHEET

• 832 •

### STRUCTURAL STEELWORK

**Subject :** Welding 9 : Practical Considerations  
Involved in Construction Welding, 2 :  
Erection Problems.

**General :**

This series of Sheets on welded steel construction is a continuation of a preceding group dealing with riveted and bolted construction, and is intended to serve a similar purpose, namely, to indicate the way in which economical design as affected by general planning considerations may be obtained.

Both the principles of design and the general and detailed application of welded steelwork are analysed in relation to the normal structural requirements of buildings. The economies in cover and dead weight, resulting from the use of lighter and smaller steel members and connections are taken into consideration in the preliminary arrangement of the building components, in order to obtain a maximum economy in the design of the steel framing.

In Sheets Nos. 2, 3, and 4 of this group the advantages of the welding of structures are set out ; but it is only to be expected that welding will involve a number of practical considerations. These are illustrated and discussed in this and the previous Sheet. The difficulties encountered in the welding of structures are set out in Sheet No. 8 of the welding group, and the third on the list, which has been used as an argument against welding, will be discussed here. This is the claim that a welded design entails difficulties of erection.

**Special Considerations :**

The special problems of erection which occur in welded, and not in riveted construction, can be classified under three heads :—

1. Provisional fixing of different members.
2. Accessibility of points to be welded.
3. Greater difficulty for vertical and overhead welds.

All these difficulties can be circumvented by designing a type of construction which is welded in the workshop and bolted at the site (similar to buildings that are riveted in the workshop and bolted at the site).

**Site Bolts :**

Figure 1, for instance, shows the connection between a workshop-welded plate girder and a workshop-welded column made by means of bolts ; and Figure 2 shows the connection of a workshop-welded truss.

It is for the designer to see that in such cases, bolt holes for connection do not occur in tension members, where they would cancel some of the ordinary saving made by the use of welding.

**Site Welds :**

Where large trusses, continuous beams, frames etc., are concerned, welding at the site is unavoidable, but can still be reduced to a minimum by

careful design, and in particular, restricted to points that are easily accessible and to horizontal, downward welds.

**Large Construction :**

In the case of substantial steel skeletons, where rigid connections between different members are required, some of the many advantages offered by welding would be lost if site welding were altogether avoided. Such rigid connections between different members can usually only be produced by means of site welding, and in these cases it is for the designer to evolve a form of construction which does not require overhead welds, but one in which the welds are accessible and provisional fixing can be arranged without reducing the carrying capacity of any member by necessitating holes in parts stressed in tension or shear.

There is practically no case in which this cannot be done successfully, and Figures 1, 2, 5 and 7 give examples of bolts specially arranged for provisional fixing. Special plates with holes are often welded on to flanges or webs to avoid the drilling of holes in the main members. See the case shown in Figure 2.

**Splices :**

It is important that erection splices should be constructed so that the stress to be transmitted is a minimum, and the following rules should be observed :—

- (a) In continuous beams, as well as frames, there are always points where bending moments are small due to different types of loading, see Figure 3 and 4, and splices should be arranged at these points.
- (b) Vertical forces (shear) in combination with bending moments can always be taken by direct contact, thus making vertical shear welds unnecessary in erection splices. For instance, in the splices of a plate girder, Figure 5, the web has been stepped so that one end rests on the other and is able to carry the full shear forces. Both these parts can be held together temporarily by bolts through cleats, and only two site butt welds are required, both horizontal, and as the Figure shows they can be arranged so that they are carried out from above.
- (c) Where a splice is not necessary for the purpose of transferring bending moments, and where there is compression, all forces should be taken by direct compression so that any bolted connection serves merely to take shear forces during or after erection—see Figure 6—splice at the apex of an upper chord of a truss ; Figure 7, support of a truss ; and Figure 8, splice at the apex of a three-hinged arch.

**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, 811, 812, 813, 814, 816, 819, 822, 823, 824, 826, 827, 828 and 830.

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*Haddiscoe Church, Norfolk*

IT is tantalising, but inevitable, that so many of the interesting jobs in which 'PUDLO' Brand waterproofer is now being used must remain "unheralded and unsung" until after the war. In place of the illustrations that cannot be used, we are pleased to publish this series of drawings of East Anglian monuments; these drawings, in pen and wash, are the work of Leonard Squirrell, A.R.W.S., R.E., to whom that distinguished artist, Sir Frank Short, R.A., P.R.E., has paid the following tribute:—"In whatever medium he works, whether in colour, monochrome, or in the various forms of etching and engraving, there is a dignity of composition and a directness of expression, that would do no discredit to the best of the great School of East Anglian art. They give me the impression of subjects entirely visualised before a start is made, and then fearlessly set down; and founded entirely, as I think, on a love and reverence for what is beautiful in nature."

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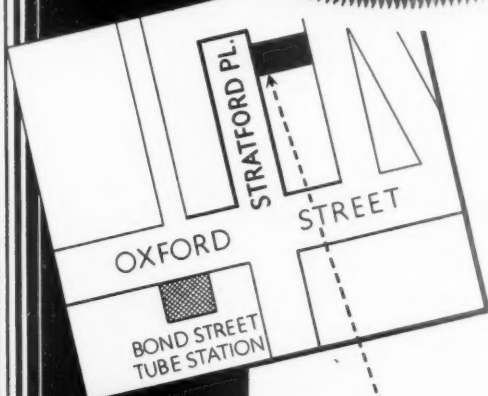
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★ *WHERE can I see Traffic Census Statistics?* Q 741

★ *ARE civilians employed in camouflage and where do they apply for employment?* - - Q 742

★ *WHAT is the simplest way of providing a "suitable degree" of fire-proofing?* - - Q 744

## 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 help is available to any member of the industry.

*Enquirers do not have to wait for an answer until their question is published in the JOURNAL. Answers are sent direct to enquirers as soon as they have been prepared. The service is confidential; and in no case is the identity of an enquirer disclosed to a third party. 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.*

Questions should be sent by post to—

THE ARCHITECTS' JOURNAL  
45 THE AVENUE, CHEAM, SURREY

—but in cases where an enquirer urgently requires an answer to a simple question, he may save time by telephoning the question to—

VIGILANT 0087

The reply will come by post.

Q 741

ARCHITECT, MIDDLESEX.—*I am preparing a road improvement scheme in connection with my studies for the final examination of the Town Planning Institute, and I wish to submit a "TRAFFIC DENSITY" DIAGRAM. I understand that the Metropolitan Police Traffic Census Statistics are published, but cannot trace by whom. The Stationery office inform me that they do not publish them. If you can inform me where they can be purchased I would be very grateful.*

Our information is that the Metropolitan Police Traffic Census Statistics are not made available to the public. We can only suggest that you write to the Metropolitan Police Headquarters, New Scotland Yard, London, S.W.1, stating your reasons for wishing to see them, and asking if you can either have a copy or obtain permission to inspect them.

Q 742

ARCHITECT, WORCESTERSHIRE. — *A young lady artist who has worked for me, and is good at design and execution, wishes to obtain a post in the Government CAMOUFLAGE department. Could you tell me*

whether civilians are employed, and to what department to apply?

The Departments concerned with camouflage are the Admiralty, the War Office, the Air Ministry, the Ministry of Home Security and the Ministry of Supply. As far as we are aware the only two Departments which employ civilians are the Air Ministry and the Ministry of Home Security.

Work at the Air Ministry is administered at the Air Ministry Headquarters by a special branch of a Directorate of Works under the control of the Chief Engineer. The work carried out at the Ministry of Home Security is done at the Civil Defence Camouflage Establishment, which forms a part of the Research and Experiments Branch of the Ministry. Communications should be addressed to the former at the Air Ministry, Kingsway, London, W.C.1, and to the latter at Horseferry House, Thorney Street, London, S.W.1. We doubt whether there are any vacancies in these Departments, and in any case they are almost certain to obtain assistance through the Central Register.

We suggest that your best course would be to apply direct to the Central Register, Queen Anne's Chambers, Westminster, London, S.W.1.

#### Q 743

ENGINEER, DEVONSHIRE.—*I have been much struck by the theories put forward in the book, "An Introduction to Modern Architecture," and am particularly interested in the principles suggested on page 25. I have evolved A METHOD of construction WHICH WOULD ENABLE SMALL prefabricated HOUSES TO BE MANUFACTURED ON A VAST SCALE and with a considerable diversity of design as well as great economy of material and time of erection.*

*My preliminary investigations into the commercial application of this invention have as might be expected suggested extreme difficulty both on account of the vastness of the project and the habit of thinking in terms of things-as-they-are.*

*On top of this, I am not a little nervous as to what might happen if some public body seeing the possibility of a rapid and easy solution of post-war housing problems, were to put the method in hand as it is and plaster England with architectural atrocities.*

*I should, therefore, be most grateful for any assistance you could give or suggest in the architectural evolution of design based upon my principles; I am also hopelessly at sea as to who to approach as possible contractors or better still how to get together a*

*small syndicate for the necessary experimental work in the hope that I could keep the method to some extent in my own hands.*

*I am a qualified mechanical engineer with a very wide experience, and have taken out a patent covering the idea.*

We understand from your enquiry that you would like to be put in touch with people who might interest themselves financially with your scheme, and also a contractor and an architect who would help you, at any rate during the experimental stage, and who would also have to take a financial interest as presumably you do not want to pay them for this experimental work. With regret, the Centre has concluded that it does not know of any individuals with whom we could put you in touch.

There is no doubt that if there is any chance of houses being built in large numbers, whether under a Government scheme or not, the R.I.B.A. would probably be consulted, and you might write to the Secretary of the Royal Institute of British Architects, 66, Portland Place, London, W.2, asking if he could put you in touch with anybody. You might also ask for the name and address of the local branch of the R.I.B.A. so that you could try to arrange to discuss your project with one of its members.

Alternatively you could write to Mr. Raglan Squire, c/o R.I.B.A., as he is Secretary of the Reconstruction Committee. He is most likely to be interested in new developments, and also is more likely to be in touch with individuals who would take a personal interest.

You might also get in touch with The Building Industries Services, of 115, Ebury Street, London, S.W.1. Their consultant, Mr. Cotterell Butler, who is well known for his articles on Wartime Building Practice in *The Builder*, is interested in such matters.

If these suggestions fail we can only advise you to advertise in the architectural papers such as *The Architects' Journal*, *The Architect* and *Building News*, *The Builder*, etc.

#### Q 744

ARCHITECT, CHESHIRE.—*As a reader of your JOURNAL for 30 years, I should appreciate your advice on the following:—*

*1. Regarding bye-law made under the PUBLIC HEALTH ACT, 1939, which reads as follows: "A building intended for separate occupation by two or more families, etc., etc."*

*I have made a slight alteration to a building for use by two families,*

*AND to avoid the extensive FIRE-PROOFING of floors and stairs, I am contending that there is no separate occupation, as the basement is common to both occupiers, and on the ground floor there is a communicating door between the ground floor tenant and the staircase leading to the upper floors occupied solely by the other tenants. Am I correct in my contention?*

*2. If I am called upon to provide a "suitable degree" of fire resistance on the underside of floors and stairs, etc., what would you suggest as the simplest method. The lowest cost need not be the main object, but the work must be carried out with the least possible dirt and disturbance to the occupier. All the decorations are new.*

*I would prefer either a fire-resisting paint which could be used on plaster surfaces, or possibly some type of mastic which could be applied to the same type of surface.*

It is impossible for us to give a definite answer without studying the particular bye-laws of your district, but we are of the opinion that the building would be considered as "intended for separate occupation by two or more families."

It is also difficult for us to advise you on fire-resisting materials without knowing more about the building and the requirements, but we doubt whether any simple remedies such as you suggest would be effective, as fire may attack floors either from above or below, and if the plaster became damaged any fire-resisting qualities which it possessed would become useless. Fire-resisting paints are made by several firms including The Dry Rot and Fire Prevention Co., Ltd., of 20, Harp Lane, London, E.C.3; Blundell, Spence & Co., Ltd., of 9, Upper Thames Street, London, E.C.4; and John Line & Sons, Ltd., 214, Tottenham Court Road, London, W.1.

You might consider that the taking up of the floor boards would cause less disturbance than the hacking of plaster, so we give below\* certain fire resisting materials which can be incorporated in floors. Normally, in the case of floors, they are laid on wire netting under the boards, but you can obtain full particulars from the manufacturers.

#### Q 745

ARCHITECT'S ASSISTANT, LONDON.—*I have been with one firm of Architects for nearly 18 years. During the past six*

\* *Slag Wool*: Fredk. Jones & Co., Ltd., Shobnall Road, Burton-on-Trent; *Slagbestos*: F. McNeill & Co., Ltd., Pixhamfirs, Pixham Lane, Dorking, Surrey; *Stillite Insulating Blanket*: Stillite Productions Ltd., Stillington Station, Co. Durham.



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years I have been taking off quantities and for three of those years I have been chief quantity surveyor. I am now employed by the Board of Inland Revenue Valuation Dept. assessing War Damage.

Would it be possible for me to get my F.S.I. on this record without taking an exam.?

I am 33 years of age and do not feel inclined (nor have I the time) to sweat up subjects. If you could help me in this matter I should be obliged.

In reply to your enquiry, it is not possible to obtain your F.S.I. without taking the necessary examinations. As we understand you do not want to sit for examinations we are not sending you particulars, but you can always obtain these from the Secretary of the Chartered Surveyors' Institution, 12, Great George Street, London, S.W.1.

### Q 746

ARCHITECTS, NOTTINGHAM. — We should be grateful if you would let us have any information about, or the names and addresses of any firms dealing with, the following: gas proofing doors; louvre type seal vents; pre-cast concrete seating units; portable sink complete with water container, etc.

We give below\* answers to your queries. The lists are not exhaustive, and we can give you further names on request.

\*1. Gas Proof Doors: Chatwood Safe Co., Ltd., Harlescott, Shrewsbury; The Crittall Manufacturing Co., Ltd., Upper Richmond Road, Barnes, London, S.W.; Durasteel Roofs, Ltd., Oldfield Lane, Greenford, Middlesex; Haywards Ltd., 187 193, Union Street, Borough, London, S.E.1; Joseph Sandell & Co., Ltd., 101, Waterloo Road, London, S.E.1; Universal Steel Doors Ltd., Albion Road, West Bromwich.

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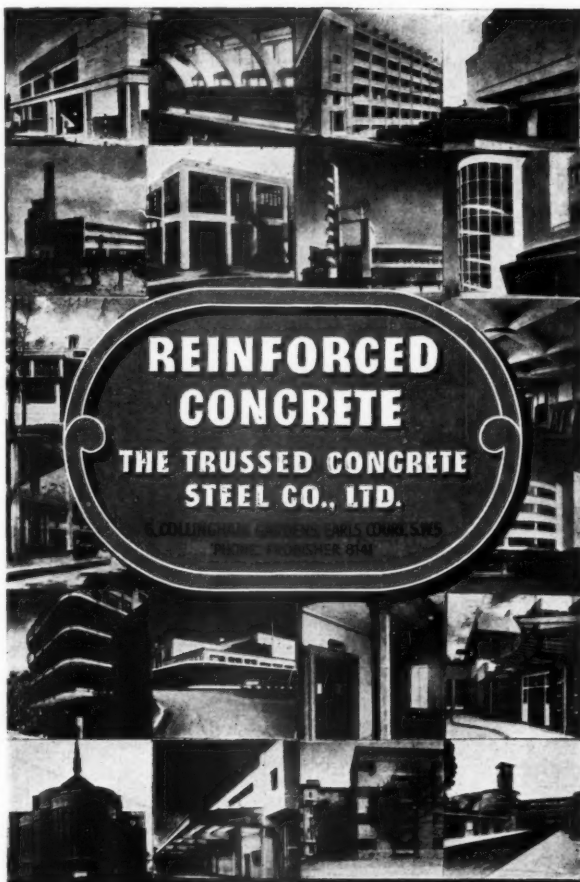
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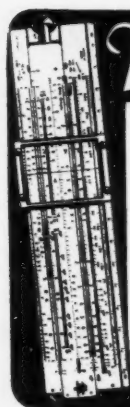
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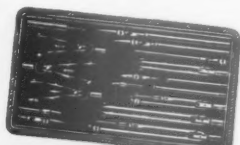


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