THE ARCHITECTS' JOURNAL

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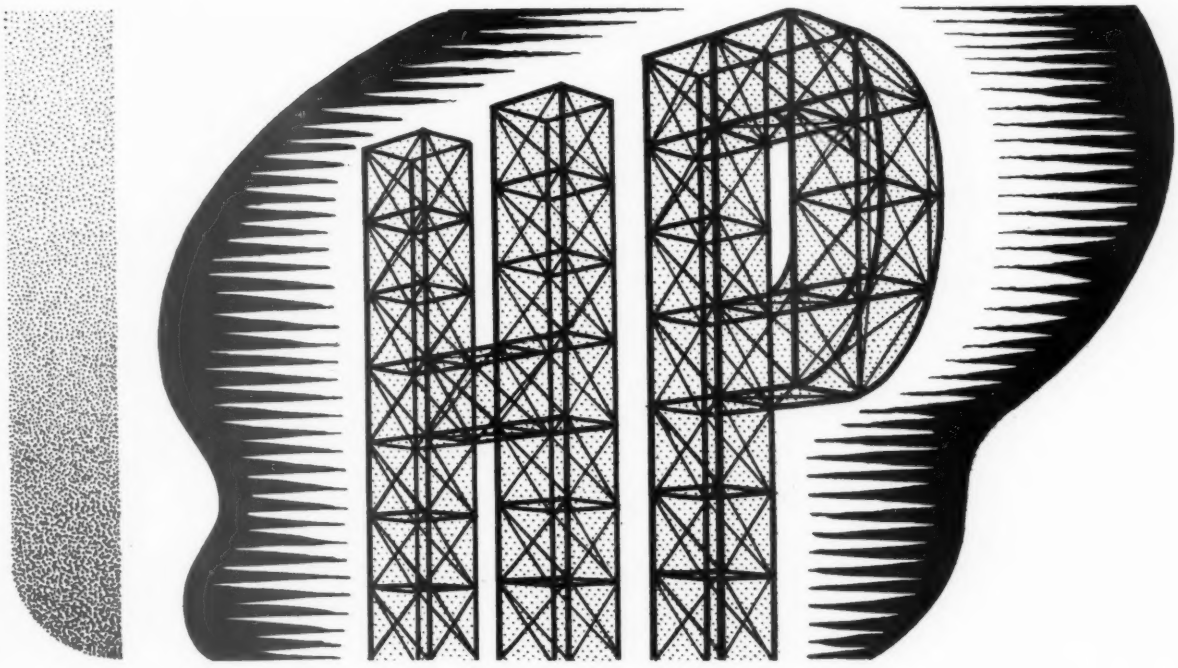

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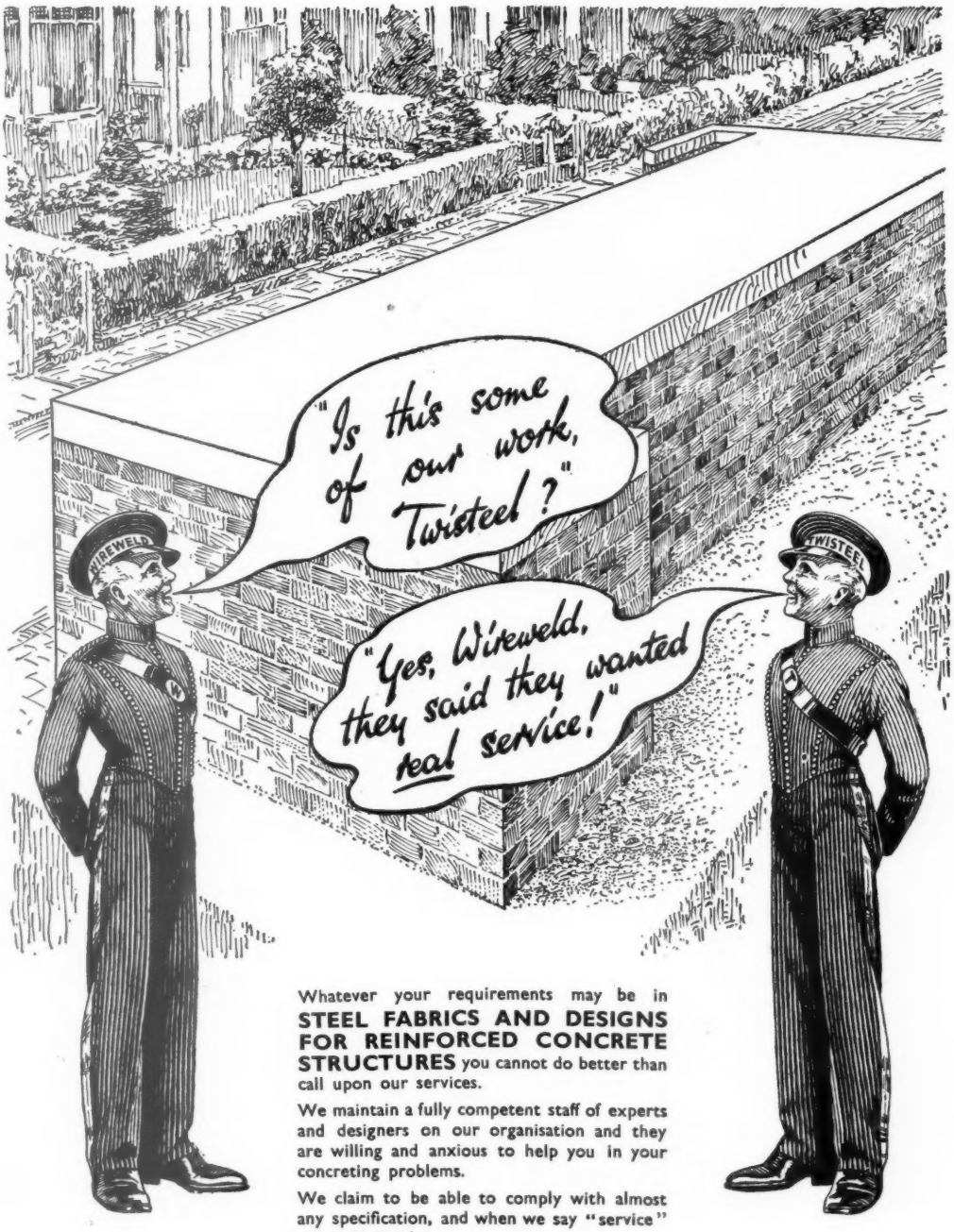

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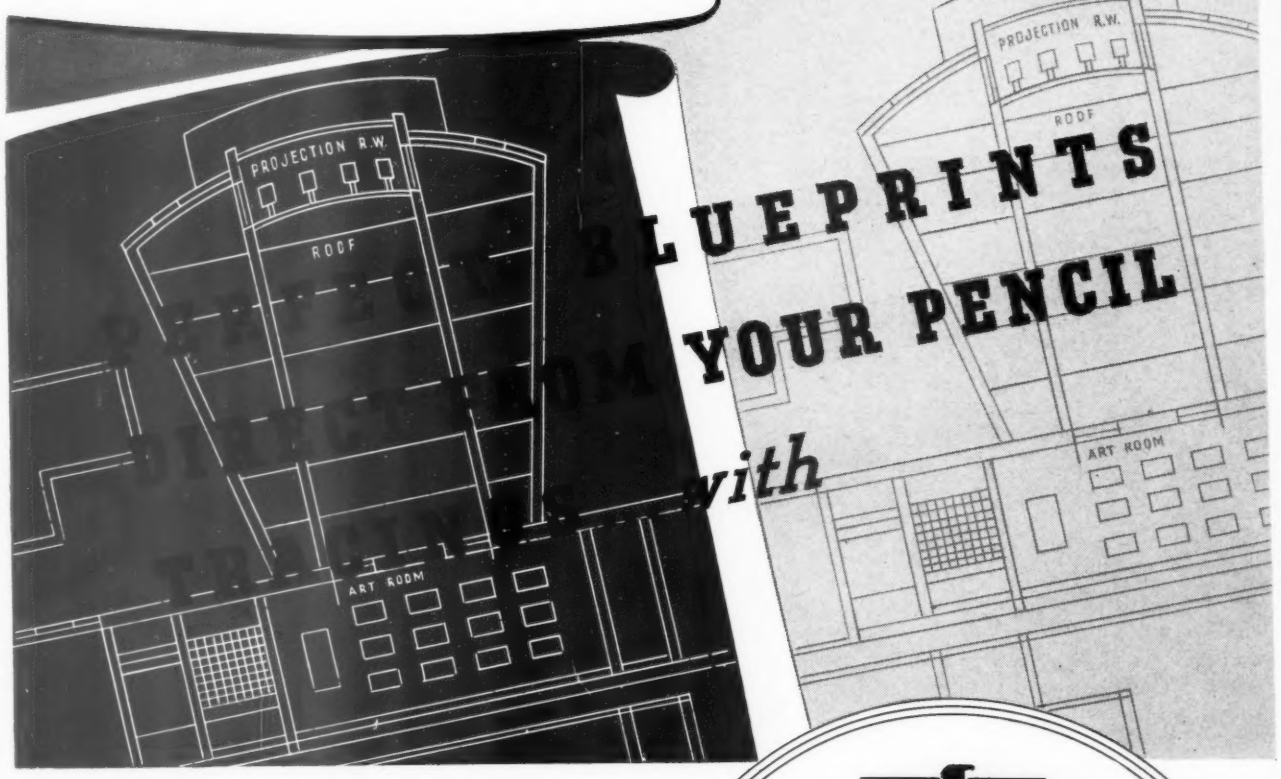

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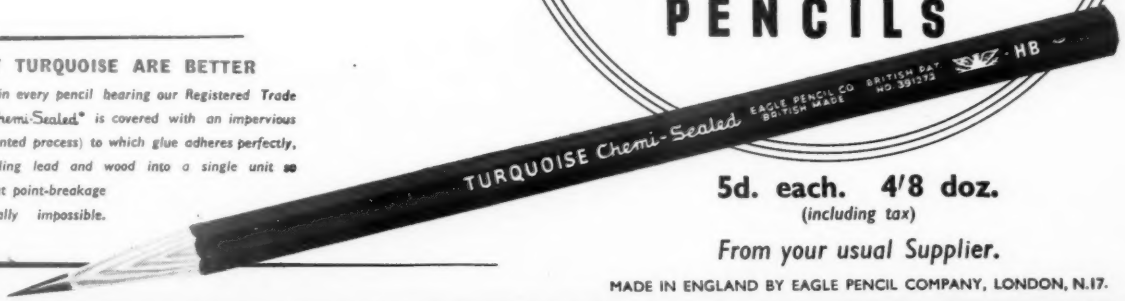

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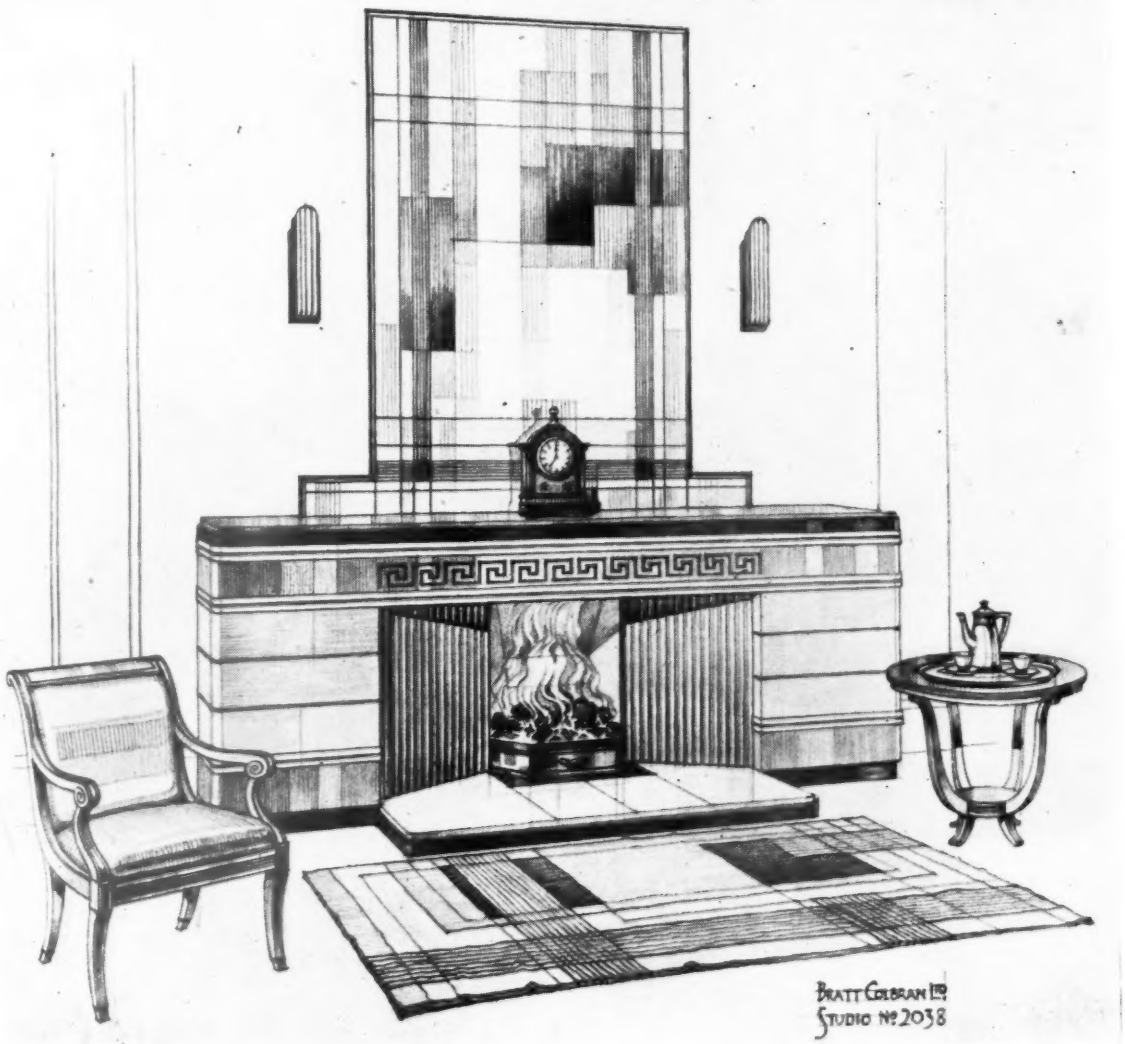

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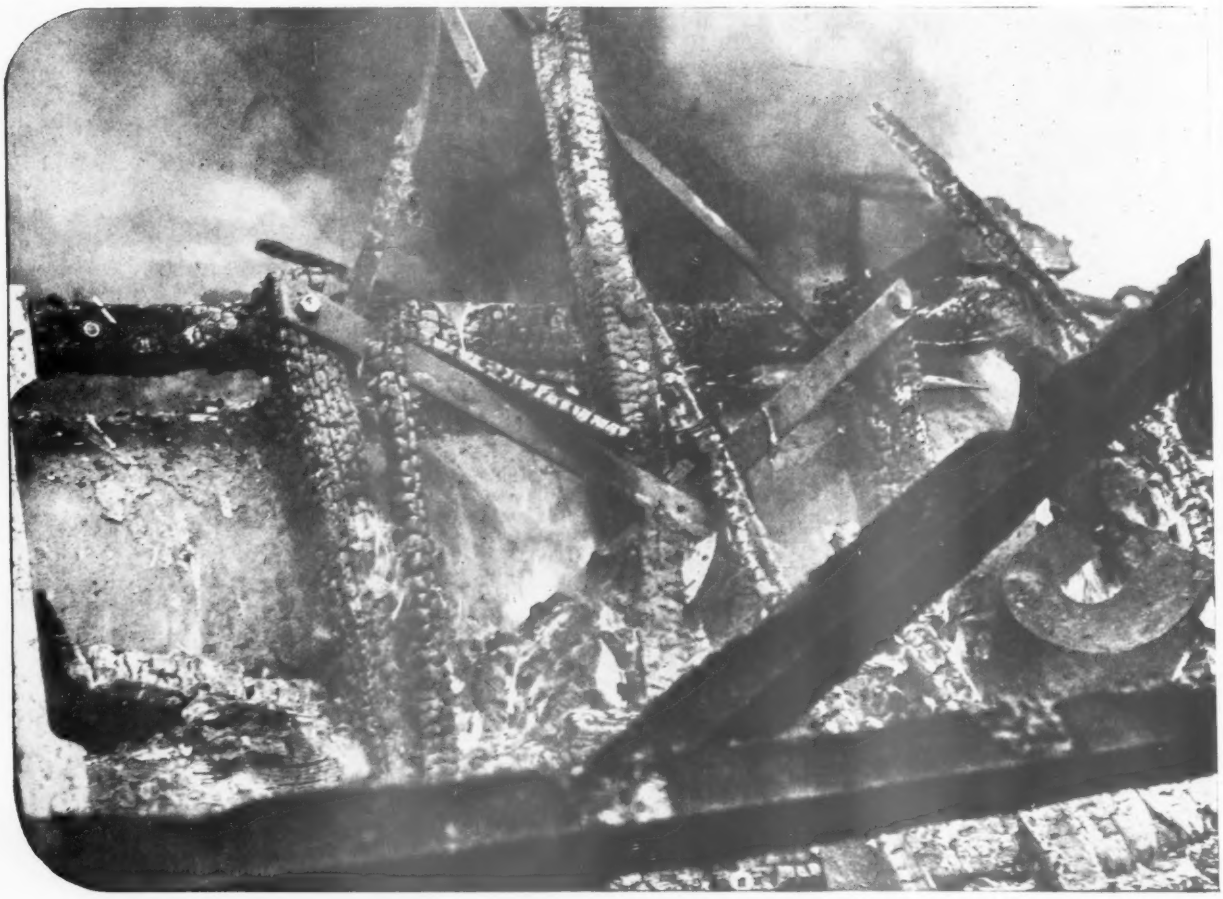

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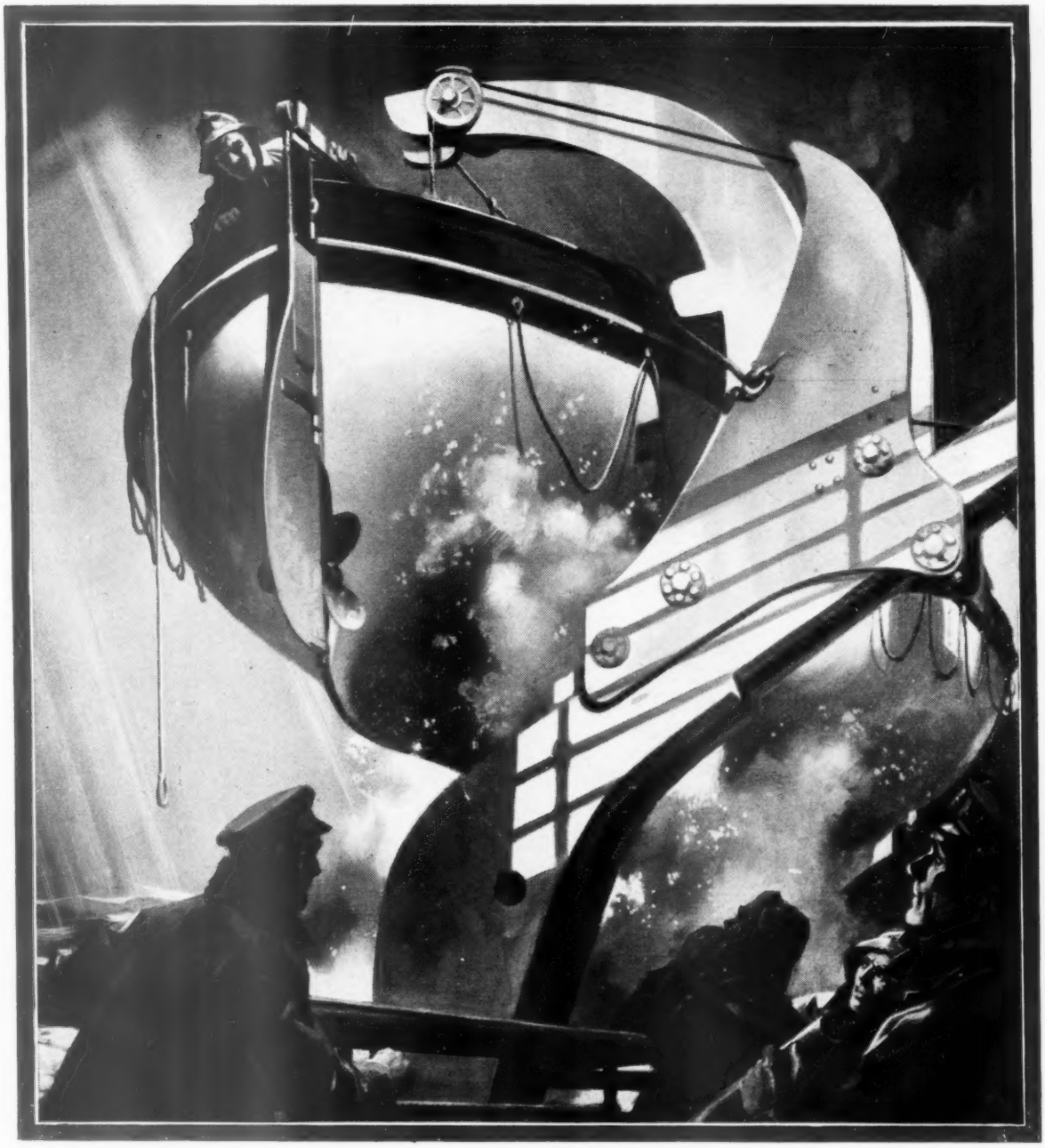
The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, JULY 2, 1942. NUMBER 2475: VOLUME 96

PRINCIPAL CONTENTS

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this JOURNAL *should not be taken as an indication that they are necessarily available for export.*

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.*



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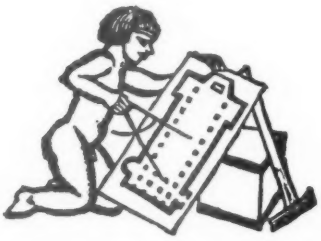
In common with every other periodical and newspaper in the country, this JOURNAL *is rationed to a small proportion of its peace-time requirements of paper. This means that it is no longer a free agent printing as many pages as it thinks fit and selling to as many readers as wish to buy it. Instead a balance has to be struck between circulation and number of pages. A batch of new readers may mean that a page has to be struck off, and conversely a page added may mean that a number of readers have to go short of their copy. Thus in everyone's interest, including the reader's, it is important that the utmost economy of paper should be practised, and unless a reader is a subscriber he cannot be sure of getting a copy of the* JOURNAL. *We are sorry for this but it is a necessity imposed by the war on all newspapers. The subscription is £1 3s. 10d. per annum.*



from AN ARCHITECT'S *Commonplace Book*

" For the better Execution of the Work I forthwith procured Labourers, that had been employed on the Chelsea Water-Works, and sent them down to Bath to dig the Canal I had undertaken ; 'till which time (1726) the real Use of the Spade was unknown in, or about the City, and the Removal of Earth was then reduced to a third Part of what it formerly cost.

I likewise provided Masons in Yorkshire, Carpenters, Joiners and Plasterers in London and other Places, and from time to time sent such as were necessary down to Bath to carry on the Buildings I had undertaken. And it was then, and not till then, that the Lever, the Pulley, and the Windlass, were introduced among the Artificers in the upper Part of Somersetshire ; before which time the Masons made use of no other Method to hoist up their heavy Stones, than that of dragging them up, with small Ropes, against the Sides of a Ladder."

An Essay towards a description of Bath. By John Wood (Senior). Vol. II. 1749.

NEWS

BUILDING TRADES WORKERS

The age of reservation for men in building and civil engineering occupations has been raised to 41, in accordance with proposals discussed some time ago with the building and civil engineering contracting industries. But, on account of the urgent demands for constructional work, it is not proposed in general to call up immediately for the Forces men whose age of reservation is thus raised if they are engaged in approved employment on such work or are transferred to such employment.

Under arrangements already made a limited number of men below the existing reservation age of 30 will be called up within the next few weeks, but for the others and for those over 30 deferment of calling up will be given if they are employed on or are transferred to vital construction work of immediate urgency.

The occupations for which the age of reservation has been raised are those which are covered by the special scheme for building and civil engineering as indicated in the Schedule of Reserved Occupations-(Revision, December, 1941).

WASTE PAPER

An exhibition, " Waste Paper goes to War," was opened in the Great Hall at Lewis's, Ltd., Manchester, last week. It will be open every weekday from 10 a.m. to 5.30 p.m., on Wednesdays from 10 a.m. to 1 p.m., and will continue until July 11.

Organized by the Waste Paper Recovery Association on behalf of the Waste Paper Merchants Association, the exhibition tells the whole story of waste paper from the time it is put out for salvage until it becomes a munition of war.

A.A.S.T.A.

A debate organized by the A.A.S.T.A. entitled " Reconstruction : Has the time come for preparing schemes ? " (" Yes ! "—Jane Drew, F.R.I.B.A. " No ! "—Kenneth Campbell, A.R.I.B.A.), will take place at the London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, W.C.1, on Saturday, July 11, at 2.30 p.m. Members of organizations working on reconstruction, professional men working on wartime building, and building operatives will attend and speak.

SIR EDWIN COOPER

It is with deep regret we record the death of Sir Edwin Cooper, R.A., at the age of 69. He died suddenly at his office in Gray's Inn last week. Sir Edwin designed the Port of London Authority Building, Trinity Square, Tower Hill—he was officially architect to the Authority, for which he carried out a great deal of work, at Tilbury and elsewhere—Marylebone Town Hall, the New Lloyd's and Royal Mail Building, Leadenhall Street, and the Star and Garter British Red Cross Memorial, Richmond. He became a Fellow of the R.I.B.A. in 1903, A.R.A. in 1930, and R.A. in 1937. In 1923 he was knighted, and in 1931 he received the Royal Gold Medal of the R.I.B.A. In 1937 he succeeded Sir Edwin Lutyens, P.R.A., as president of the I.A.A.S.

COMMITTEE ON THE BRICK INDUSTRY

The second report of the Committee of the Brick Industry (chairman, Mr. Oliver Simmonds, M.P. for the Dudderston Division of Birmingham) has now been published (H.M. Stationery Office, price 6d.). The report is now being considered by the Minister of Works and Planning, who will announce the Government's policy in due course.

The First Report.—The first report of the Committee, which was presented to the late Minister at the end of last year, recommended, among other measures, the compulsory closure of brick works with the object of adjusting the output to current falling demand, and suggested a scheme for contribution towards the care and maintenance of such closed works, so as to ensure that they would be kept in a condition to resume production immediately after the war, to meet the anticipated urgent demands for reconstruction.

These recommendations have been implemented by two Orders made by the Minister of Works and Planning and the Treasury :

The Bricks (Control) Order, 1942, dated May 4, 1942, under which all producers of building bricks must be licensed by the Minister of Works and Planning.

The Bricks (Charges) Order, 1942, made on May 13, 1942, imposing a levy of 3s. per thousand bricks, to provide the Care and Maintenance Fund for closed works.

During the first four months of this year 163 works closed voluntarily within the care and

the new topography of bath

There are three types of war correspondent: the first is the journalist, who batters his typewriter to provide you with hot news for the daily press; the second is the photographer, a close colleague of the journalist; the third is the painter. How the first two go about their task is common knowledge. What of the war artist? This is a typical instance of the way the Ministry of Information's team of artists get to work. Bath was raided —badly. Shortly after the first bombs had dropped the M.O.I. contacted John Piper—one of the team—and gave orders for him to proceed to Bath immediately. He began work whilst the smoke was still rising from the fired buildings. His impressions (one of them, Lansdown Crescent, is reproduced above) were on show at the continuous exhibition of war paintings at the National Gallery a few days later. When Coventry was attacked, Piper and Randolph Schwabe were told to proceed at once to the town, and when they arrived the town was still burning. The result was first-class news paintings. As the War Artists Advisory Committee states: "Each true artist has his own vision, whether highly imaginative or closely realistic. Therefore, in our choice of artists to whom appointments and commissions have been given, and in the choice of pictures purchased on our recommendation, we have not favoured any one school or style rather than another." These men and the Committee are doing a good job of work.

maintenance scheme.

The Second Report.—The second report, which is to some extent complementary to the first, as many of the recommendations arise from problems of selecting works for closure, opens with a review of the period from the submission of the first report until the presentation of the second on May 4, 1942.

The following are the chief points and recommendations made by the committee in this second report:

A Picture of the Industry.—It is fundamental to regard the undertakings which comprise the industry as falling into either the Fletton group or the non-Fletton group.

The non-Fletton part of the industry, manufacturing about two-thirds of the national output, consists of a large number of units diversified in every way except in their common conception of the brick market as a local affair. The Fletton group, on the other hand, although localized in the Bedford and Peterborough area, has by a combination of a number of favourable factors been able to develop its production and distribution on a national basis.

This fundamental difference of outlook between the two sections of the industry, combined with the diversity of characteristics within the non-Fletton group, renders the problem of selecting further works for closure a matter of extreme difficulty. The broad guiding principle is that bricks should be drawn from the works which enable production and delivery to site to be effected with minimum demand upon national resources, which could be used more advantageously in other directions. The Committee has consulted with the Government Departments concerned with each of these resources—man-power, transport and fuel—which are consumed by different types of works in appreciably different proportions. Apart, however, from an indication that transport through railway bottlenecks must be avoided, and an impression that reduction in length of haulage takes certain precedence over other considerations, the Committee has not been able to derive from these consultations any clear guidance as to the relative importance which should be attached to the three factors, each separately of vital importance, as also is the necessity for continued production of building bricks on a scale adequate to meet wartime needs.

A Quota Plan.—The Committee accordingly concludes that reduction of demand should be met, whether by closure of works or otherwise, upon the basis of sharing the contraction of output as equitably as national interest and exigencies of war may permit, at the expense of all sections of the industry.

To achieve this sharing the Committee recommends a "quota plan" which envisages ten different areas in the country, including the Fletton group, each producing a proportion of the national demand, varying in each case within plus or minus 25 per cent. of a predetermined percentage. This percentage is based on the 1941 production with adjustments to reflect in some degree the differences in hardship suffered since the outbreak

of war, the variation of plus or minus 25 per cent. being introduced to allow adjustment to meet war conditions.

Further Closure of Works.—The Committee recommends that further necessary closure of works should be the responsibility of the Director of Bricks of the Ministry of Works and Planning. For the adjudication of appeals from undertakings whose works are included in closure lists, the Committee recommends the establishment of a tribunal comprising an independent chairman, representatives of the Ministry of Labour, the Ministry of War Transport and the Mines Department, and two members neither of whom should be directly or indirectly interested in the case under consideration, drawn from a panel of representatives of the industry.

Compensation for Loss of Sales.—The Committee recommends a scheme of compensation for loss of sales based for each works on a percentage of national sales in 1938, thus bringing within the scheme works closed either before or after the introduction of the scheme for care and maintenance recommended in the first report. This compensation scheme is to operate on the principle of payment of a levy for over sales and a receipt of compensation for under sales, at the rate of 3s. per thousand bricks.

The Price of Bricks.—Price stability in the industry is essential to operate the quota plan successfully and, unless the correct level of prices exists, it will be difficult for the industry to bear even part of the levy for the care and maintenance of closed works, or to initiate the proposed compensation scheme for loss of sales.

The Committee recommends the fixation by statute of minimum prices for bricks delivered to site. These prices would vary in different parts of the country, and in the initial scheme the Committee recommends 10-mile squares as the units of area, though where possible these squares should be grouped into larger areas. By a majority, the Committee recommends that one minimum price only should be fixed in each area, but three members recommend that within the framework of the minimum price scheme there should be provision for differentiation between bricks of different types or qualities.

On the question of maximum prices the Committee recommends that the controlling authority for the minimum price scheme should watch any upward trends in prices, and where necessary investigate particular cases and report to the Minister for his appropriate action.

Control of the Industry.—In the first report, a controlling authority for the Care and Maintenance scheme was proposed, and it is now recommended that a comprehensive authority should be set up within the statutory powers of the Minister, to control that scheme in addition to the further scheme now put forward, and to perform certain other functions.

This body is provisionally called the National Building Brick Council, and the recommended constitution shows it to consist mainly of representatives of the employers in the industry, although it is also to include officers of trade unions and research organizations.

It is recommended that the National Building Brick Council should have area councils representative of the manufacturers making sales in various parts of the country. For the control of the quota plan, the Committee recommends that "the Minister should appoint the Director of Bricks as a representative to the National Council Organization, to direct the operation of the quota plan in particular and to consult the Council on matters relating to or affecting the brick industry."

★*The title-piece and tail-piece to the leading article are two of John Piper's drawings after the Bath raid.*

IMMORAL BATH

THIS issue illustrates some of the main damage to Baedeker's Bath. The Assembly Rooms have been destroyed. Walls are still standing but the building has been gutted by fire. Lansdown Crescent has been shaken by blast and in Lansdown Place East, a few houses are quite uninhabitable, the stone facing having been stripped off the façade. All Saints Chapel, 1790 Gothic, has been completely wrecked, the middle section of Somerset Place has been burnt out; in the Royal Crescent some interiors have been destroyed, though the façade as a whole is undamaged. The Circus has escaped without serious damage, though windows are out and ceilings down in one section, owing to a direct hit on the back of one of the houses. A number of individual buildings have been destroyed, but the real Bath survives German bombs as it survives British commercialism.

The real Bath was the result of an accident, or rather of a coincidence. It happened that fate threw together an architect of vision, a tradesman of greatness, and a compère of genius. By playing into each other's hands they succeeded for a time in defeating the traditional British opposition represented by a town council of small tradesmen and lawyers. The result has never ceased to puzzle our race. Yet the mystery isn't as baffling as all that. The particular civic article they succeeded in concocting being one that appealed strongly to the age's freer spirits, adventurers or people of leisure, it came about that for rather more than half a century a British town got out of the hands of the middle classes and so to speak ran amok.

By all the rules known to shopkeepers it should have paid for this ungodly conduct with chaos and insolvency—not to mention fire and brimstone—but in point of fact until it was reconquered for the bourgeoisie in the time of Jane Austen,

Bath waxed great in wealth and form. It became—and remains—the English model for seemly urbanism. Where the law-abiding draper, the moral industrialist, the sound engineer, and the safe borough surveyor, have produced a series of civic disasters which strung together on a thread of superior drains and excellent tram services have made of urban England one greater disaster, the infamous and drunken nobility, the debauched and profligate *beau monde*, in the single case in which they were permitted to give civic expression to their mode of life, evoked an urban masterpiece, described by Landor (rather optimistically) as second only to Florence amongst the cities of Europe. A masterpiece whereon even to-day, after commercialism has resumed its sway and done its all-but-damndest, one can look with a certain satisfaction. The reason? The naughtiness of Bath was a sociable naughtiness. To be really naughty you had to be really sociable. Because it lived an intensely social life Bath society was forced to cultivate the social arts. In the pursuit of insouciant and sociable naughtiness Bath Scciety accepted voluntarily at the hands of the Beau—a tyrant whose despotism involved not even a police force—a severe discipline which stamped out duelling, took away from the gentleman his greatest visible distinction, the wearing of a sword, embraced an expansive philanthropy, and provided a disciplined frame in the form of ordered building development. According of course to the authorized version, Bath's high civic standard existed quite independently of its low moral one, but this version is typical of our own lack of moral fibre. Bath was urbane *because* it was naughty—sociably naughty, for cities must be rooted deep in sociableness, and naughty sociableness is a far far better thing than no sociableness. Ennui is the real enemy of urbanism. Blitzed or unblitzed, Bath has that moral for the modern town-planner, befogged and bespectacled behind his mountains of density statistics.

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NOTES & TOPICS

BATH

Most educated people know the names of half a dozen architects, but how many know their buildings? Lutyens is probably better known to the public than any architect but Wren, yet apart from the Cenotaph how many laymen could mention a couple of his jobs? The Woods, father and son, are an exception. There is a strong conviction that they built Bath. The average literate person would feel he'd been sold a pup if you took him round Bath and showed him how much they didn't do.

*

The Parades, Queen Square and Gay Street pretty well polish off the elder Wood (he died as The Circus was started). Compare with these the output of another architect, Thomas Baldwin—Pulteney Street, Laura Place, the Guildhall, the Market, the Pump Room, the Cross Bath, the Piazza and Bath Street. All front-rank stuff, yet except amongst initiates, Baldwin's name is never connected with Bath at all.

*

Then there was Camden-Crescent-Reveley. He didn't do a lot but he was a brilliant performer. A pupil of Chambers he was responsible for what, though only a fragment, is amongst the most perfect pieces of architecture in the

The North Front of John Palmer's Pump Room (1793) *from Abbey Yard, looking through the colonnade into Stall Street, and*

The West Front of the Pump Room, from Stall Street. According to Astragal the two fronts are obviously fragments of two different designs.

land. I refer to the west front of the Pump Room in Stall Street, which is illustrated here. John Palmer started the other front, the one to Abbey Yard, in 1793, though Baldwin is popularly supposed to have done the building, but even were there no other evidence (and the evidence is in fact pretty mystifying), it should be clear to any architect that the Abbey Yard front and the Stall Street front are portions of two different designs, if not the product of two different hands. Reveley died and we lost a potential master, but his fragment remains unblitzed.

★

There are, of course, other and more famous names which could be linked with Bath, indeed a forest of names, but they don't get popular recognition. As far as the public goes, it's a case of not being able to see the trees for the Woods.

★

By "the public" of course is meant the intelligent book-bred public brought up to accept as an article of faith that Bath is the Unspoilt City. Speaking as a notoriously jaundiced character I admit to being able to see quite a bit more. Bye-law housing, for instance, sprawling between allotments, and factories along the edge of a very dirty river. If the wind is right an envelope of smoke which fills Victoria Park and the adjacent houses with an unnatural odour and a thick yellow light. Shop signs and façades that make nonsense of the unity of a street. Bright new buildings whose proportions make a joke of the Bath Clause.

★

Climbing the hill towards the Crescents I admit to being able to see as I look across the valley a sky-line worthy of Potters Bar.

★

Let's be frank about the Baedeker raids—it's not vandalism we British resent so much as infringement of our personality. We have our own subtle way of destroying the three-star article and we prefer to stick to it.

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MOWP's latest efforts hit the front page of every daily. A force of 600 mobile builders has been formed to tackle emergency building work anywhere in Great Britain.

★

These men are to charge about the country in flying squads, complete with mobile feeding and sleeping accommodation, materials and plant. Each squad is equipped with specially designed vehicles—three fitted with sixteen bunks each, a fourth with twelve bunks and a kitchen, to provide the squad with three meals a day for seven days. A 5-ton lorry acts as tender to the convoy, carrying plant and sufficient materials to enable the squad to be independent for seven days. Thus, in a town blitzed overnight, they can arrive within a few hours and get to work without calling on local resources for billeting, food, tools or even materials. Similarly, they can start an urgent

job for one of the services in any lonely spot without the need for huts, bedding or canteens.

AIR FIELDS FOR LONDON

Statements have recently appeared in the press associating the names of Professor Abercrombie and Mr. Dougill with an ambitious scheme for what can only be called the *aerification* of London.

★

According to these statements a scheme is about to be submitted to the L.C.C. which provides for the construction of no less than twenty civil airports on the outskirts of Greater London after the war, sufficiently far removed from the centre to avoid the inconvenience of fog, but connected with it by an air-taxi service depositing travellers somewhere in the vicinity of Regents Park within ten minutes of their arrival in port.

★

Newspaper correspondents, inspired by its possibilities have dilated on the advantages of an arrangement which would make it possible for girls' schools, by chartering a demobilized bomber, to offer their pupils the civilizing experience of French conversation lessons in Paris ; and for business men to live without inconvenience in Inverary, Donegall or Tralee.

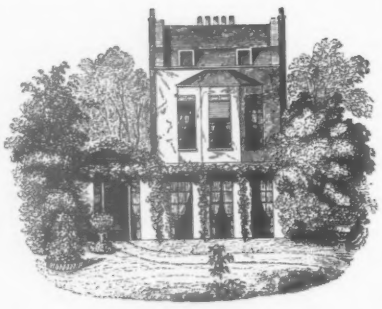
★

Unfortunately, the story has no foundation in fact. There is no such scheme. Professor Abercrombie and Mr. Dougill were two very surprised men the day they opened their papers and found out what a lot of airports they'd designed.

ROYAL ASSENT

On Wednesday, February 11, Lord Reith rose in the House of Lords to announce that he was to be the first Minister of Planning. A fortnight later Lord Portal took over from Lord Reith and piloted the new Bill through the House of Lords. Mr. Henry G. Strauss, his Joint Parliamentary Secretary (Mr. Hicks is the other), nursed it through the House of Commons. The Bill received the Royal Assent on Wednesday of last week and Lord Portal, and not Lord Reith, is the first Minister of Planning.

ASTRAGAL



LETTERS

ELIZABETH DENBY
MARGARET TOMLINSON
JOHN BENNETT
CYRIL SJOSTROM, A.R.I.B.A.
E. W. ARMSTRONG, F.R.I.B.A.

Elizabeth Denby

Sir,—I cannot, alas, claim "experience in flat management" as part of my early training. My experience in low cost housing began in 1926 as first Organising Secretary of the Kensington Housing Trust, which bought slum property for reconditioning, or demolition and rebuilding, and of the Kensington Housing Association, which did general propaganda for better housing.

During the subsequent seven years' extremely arduous work, at a time before "housing" had become fashionable, I learnt to know Housing Acts and Byelaws inside out, to realize to some extent the needs and wishes of working people, to be increasingly bored by slums, and increasingly fascinated by the quality of the new environments which could be created in slum areas and industrial cities.

It is this exciting quality in housing which keeps one's interest perpetually stimulated and alive.

London. ELIZABETH DENBY.

[*In the caption to the frontispiece in our issue for June 11, we said : "Her experience in flat management, and her researches abroad, have enabled her to make important contributions to a number of housing schemes."* —ED. A.J.]

War Damage at Exeter

Sir,—For the benefit of those interested in Georgian Exeter, I feel that Astragal's information about raid damage in your issue for June 18 should be corrected.

Barnfield (*not* Burnwell) Crescent is fortunately undamaged, but another cul-de-sac off Southernhay, Dix's Field, has been almost completely destroyed. About half of Southernhay West has gone, and the whole of Bedford Circus, including Bedford Church. Other Georgian losses are : Higher Summerlands, a terrace of large detached houses, and the Workhouse, or City Hospital, not to be confused with the Devon and Exeter Hospital, which is also a Georgian building.

Of earlier buildings, the following have been destroyed or badly damaged: the churches of St. Laurence, St. Stephen, St. Sidwell and St. Mary Arches ; the Norman House, The Hall of the Vicars' Choral, St. Catherine's Chapel and Almshouses, Bampfylde House, the Abbots' Lodge, and the Cavalier Inn. MARGARET TOMLINSON.

Seaton.

Sir,—The professional press and architects are always complaining that the daily press treat architectural matters with lack of knowledge and inaccuracy, consequently one is very disappointed with your Notes and Topics paragraph on War Damage at Exeter.

For instance, "Southern Haye" is known as "Southernhay." Then you refer to Burnwell Crescent, the town-planned Georgian quarter behind the Cathedral. What exactly do you mean by "behind the Cathedral" ? Further, there is no such name in Exeter as Burnwell Crescent. JOHN BENNETT.

Exeter.

Light Obscuration

Sir,—I would like to take this opportunity of dispelling a misconception regarding the light obscuration of different kinds of windows. It is not my intention to advocate wood or metal windows, but in all fairness to the manufacturers of wood windows, I should like to point out that the statement frequently made to the effect that light obscuration by wood windows is greater than that of steel is entirely misleading.

Theoretically, this is true only if the overall size of the opening in the wall is restricted owing to the plan shape or because of æsthetic considerations. This is seldom the case, and if we assume that we need a specific quantity of light to a room we insert a window in the wall giving the requisite glass area.

In the case of wood frames and sashes, we therefore have a larger window opening, incidentally saving walling material, which, from an economic point of view, is to the advantage of the wood window.

London. CYRIL SJOSTROM.

Demobilization Committee

Sir,—I am sorry you should choose to infer that only three members of the present R.I.B.A. Demobilization Committee had the honour of serving in the last war.

I refer to the second paragraph of your Leader in your issue for June 18, which makes this careless deduction.

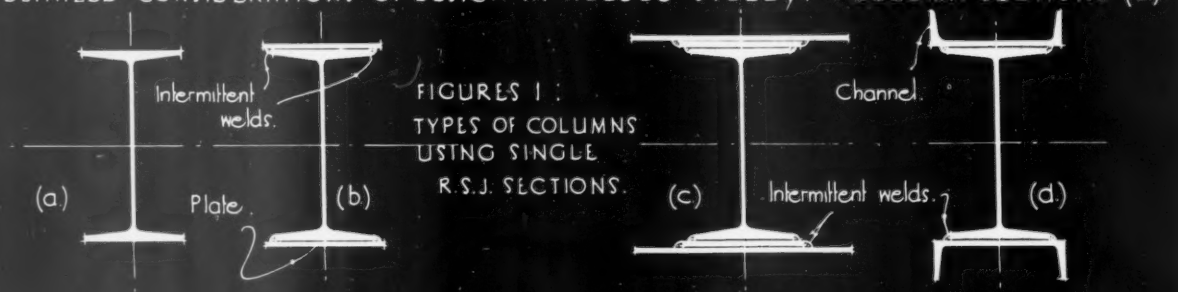
Home Forces. E. W. ARMSTRONG

[*We regret the error, and offer our apologies to Ft/L. Armstrong. We are informed that all members of the R.I.B.A. Demobilization Committee served in the last war.*—ED. A.J.]

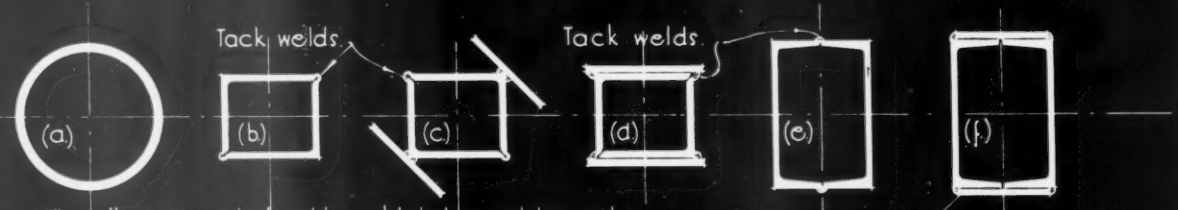
TH

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

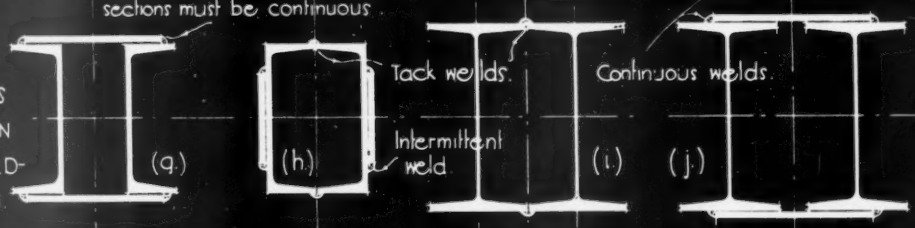
DETAILED CONSIDERATIONS OF DESIGN IN WELDED STEEL, 7 : COLUMN SECTIONS (a)



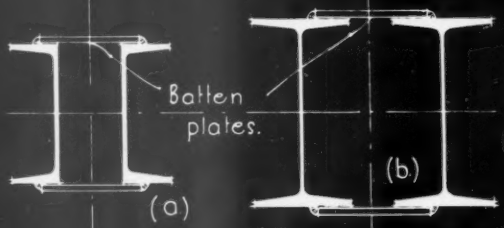
FIGURES 1 : TYPES OF COLUMNS USING SINGLE R.S.J. SECTIONS.



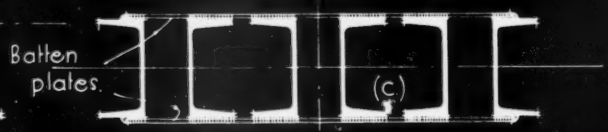
Where there are no tack welds, welds between plates and sections must be continuous.

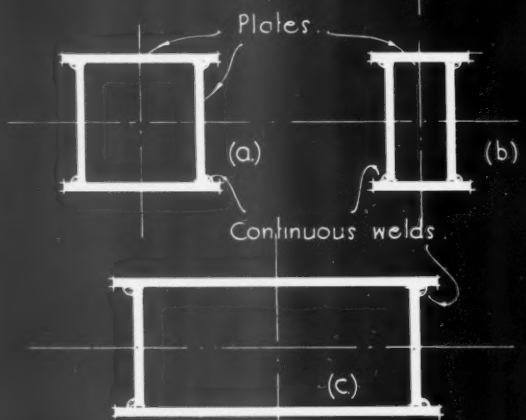


FIGURES 2 : TYPICAL EXAMPLES OF HOLLOW COLUMN SECTIONS FOR WELDED CONSTRUCTION.

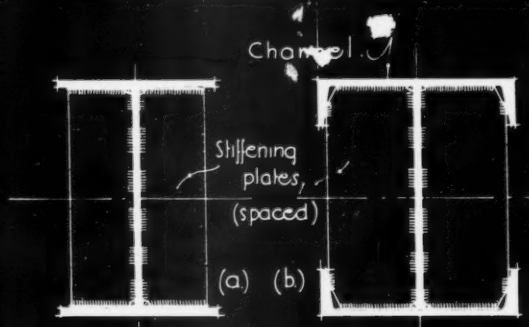


FIGURES 3 : WELDED BATTEN PLATES TO TALL, SPACED COLUMN SECTIONS.





FIGURES 4 : HEAVY BOX COLUMNS BUILT UP OF PLATES.



FIGURES 5 : TYPICAL EXAMPLES OF PLATE-GIRDER TYPE COLUMN SECTIONS FOR HEAVY LOADING.

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INFORMATION SHEET : STEEL FRAME CONSTRUCTION, 78 : WELDING 34.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 869 •

STRUCTURAL STEELWORK

Subject :—Welding 34 : Detailed Considerations of Design in Welded Steel 7 : Column Sections (*a*).

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 maximum economy in the design of the steel framing.

This Sheet is the seventh of the section on detailed considerations of design in welded steel, and illustrates and describes typical examples of column sections.

Sections :

In welded construction the range of column sections is much larger than in riveted construction, and while single R.S.J.s can with advantage be used (see Figure 1) they are not very efficient and can be replaced by other sections (see Sheet 35 of this series).

Buckling :

When designing a column it is advisable to arrange the material as far away from the centre of gravity of the section as possible. Such an arrangement results in the maximum degree of resistance to buckling and the use of the highest permissible stress. Hollow sections, therefore, are particularly suitable.

The designer who is accustomed to riveted construction may be disinclined to use hollow sections, as it is difficult to insert rivets or bolts in such sections. Such reluctance is not justified, however, in the case of welded construction, and hollow sections are recommended (see Figure 2).

Radius of Gyration :

For tall columns, especially in industrial buildings, a single R.S.J. is replaced by two sections at a certain distance from each other, thus obtaining an increased Radius of Gyration. This arrangement can also be adopted in welded construction (see Figure 3). Columns of this type occupy more space than those shown in Figure 2, and the batten plates used to connect the single parts of the section necessitate extra labour and material.

Boxed Columns :

Welded columns may consist entirely of plates, and examples of this type of section are given in Figure 4. They present an unlimited range of possibilities, and can be varied in shape to suit local conditions, i.e. they can be square or oblong. They are used mainly for heavy columns, where angles and channels of appropriate sizes are not available.

Unsymmetrical Sections :

In many instances unsymmetrical sections, for instance, an R.S.J. with only one plate, are more economical than symmetrical ones. These unsymmetrical sections can easily be derived from those shown on the front of this Sheet. For further references see Sheet 36.

Heavy Loads :

When very heavy loads have to be carried the reduction in permissible stress due to high slenderness ratio makes the use of single sections, even R.S.J.s, unsuitable. In such cases columns made up of plated joists become more economical. They are also preferable where bending moments have to be taken. Thus the plated joist in Figure 1c, with a wide plate, is most suitable in such cases. Other sections of this type can be built up from plates, as shown in Figure 5.

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, 821, 822, 823, 824, 826, 827, 829, 830, 832, 836, 837, 838, 839, 840, 842, 843, 845, 847, 848, 849, 850, 851, 852, 853, 855, 856, 857, 859, 860, 862, 863, 865 and 867.

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★SPRING 1836

On the nights of April 25 and 26, 1942, Bath was blitzed in the first of the Baedeker Raids. Since nearly every building in the town is a period piece a good deal of good 18th century work was lost, but this can't yet be shown in detail. The following pages illustrate the extent of the damage to the show pieces.

An earlier disaster in an earlier Spring at Bath, the fire at Prior Park on May 30, 1836. Below, some of the scenes in the city the day after the raids. Buildings are smoking, the streets are full of debris. Bottom right, people whose homes were wiped out are waiting to go to the rest centres, and sit on their luggage outside the house which exactly two centuries ago was the home of Beau Nash.

★SPRING 1942

QUEEN SQUARE

Started in 1728 *Queen Square was completed in six years, but only on the north side was Wood senior able to carry out his original scheme, his idea being to have four palaces facing one another. The Engraving (which is looking west) shows the only one of the four to be built, which, as the small photograph shows, is still undamaged, but the south side (shown below and entirely occupied by the Francis Hotel), got a direct hit. On the extreme left of the engraving can be seen the obelisk put up by Beau Nash to celebrate the visit of Frederick Prince of Wales. The Beau's unerring architectural sense, a side of his genius which has had no attention drawn to it, is exhibited in this excellent monument which still "makes" Queen Square. The reader not familiar with Bath should imagine that the brief tour made in the following pages starts from Queen Square and goes north up the road (Gay Street) which runs out on the right-hand side of the engraving behind the lady with the black boy. This leads to The Circus, adjacent to which lie the Assembly Rooms and the Royal Crescent. Then we go north again to Lansdown Crescent and Somerset Place. St. James's Church at the end of the issue is out of place, but the rest follow this order. Notice how the facade above gains by the absence of area railings. The view is by Malton,* 1784.

THE CIRCUS

Begun in 1754 by Wood senior the year of his death, The Circus was finished by his son who then went on (1767) to build the Royal Crescent. Smollett, who confused the work of father and son, wrote : " The same artist who planned the Circus has likewise projected a Crescent ; when that is finished we shall probably have a star ; and those who are living thirty years hence, may perhaps see all the signs of the Zodiac exhibited in the architecture of Bath." The outstanding feature of the Circus, which excited Landor's enthusiasm to such an extent that he declared " there is nothing in Rome or the world to equal it," is its division into three segments, all of the same size, but each with a different number of houses, a group of buildings thus facing the spectator at each of the three entrances. In the engraving the men with the chair are taking its occupant from Brock Street on the left (which leads to the Royal Crescent) in the direction of Gay Street and Queen Square. The artist is looking north-east across the Circus to Bennett Street which flanks the New Assembly Rooms, also by John Wood junior. Below, Bennett Street can be seen on a morning a hundred and fifty-eight years later. On the right is a corner of the Assembly Rooms (gutted). The destroyed building is the Regina Hotel. The Circus itself has lost a few panes of glass, but its exterior is otherwise undamaged.

THE NEW ASSEMBLY ROOMS

These buildings—"new" to distinguish them from the old or Lower Rooms near the abbey (the original scene of the junketings of Beau Nash, who died in 1762), were built by John Wood the younger, in 1771, after Robert Adam's designs (still to be seen in the Soane Museum) had been turned down on the ground of expense. Sheridan wrote a poem on the occasion of their opening and Mr. Pickwick played cards in the card room with Miss Bolo, Lady Snuphanuph and Mrs. Colonel Wugsby, about fifty-two years later. The card room with everything else in the building is now no more. This is the most serious loss Bath has sustained since the Rooms were only re-opened in 1938, after Mr. Mowbray Green, F.R.I.B.A., had done a great work of reconditioning. Although the buildings were completely gutted by fire during the raids, the Chandeliers, their greatest glory, had already been removed to safety. Their day of danger was in the last war, when the Rooms were used as a hospital and the patients, wounded Tommies, passed their time throwing oranges at them. The walls of the building still stand.

ROYAL CRESCENT

The Royal Crescent built between 1767 and 1775 is only a row of houses but it is also the best piece of architecture in England. It has a scale and elegance hardly ever found outside the greatest French buildings, and an effect of rigour seldom achieved by them. It entitles John Wood junior to a place amongst the great European architects, and its loss would be a serious matter. As the illustrations show a bomb succeeded in getting one of the houses, but this very fact prompts the encouraging reflection

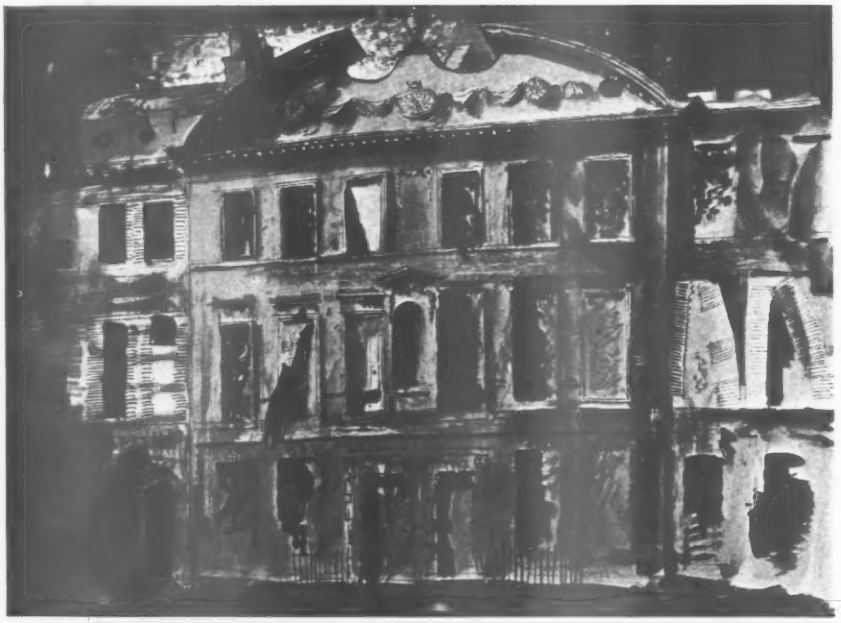
(which applies to most 18th Century building, and in particular to the best work in Bath), that so long as part of a given scheme survives, the extent of the damage to the rest is architecturally speaking not important, since the fact that the work is repetitive, depending on design rather than craftsmanship, means that it can be put back. The Luftwaffe would have to destroy the whole of the Royal Crescent for instance, leaving not a single unit of the design complete, to achieve its object of destroying a monument, and even then the whole thing could be rebuilt from existing drawings without the loss of anything worse than a bit of patina. In the case of a baroque palace, or a mediaeval hall, or even a Victorian tour de force, the virtue of the work lies in its being an authentic product of a given school of craftsmen—thus it would be waste of well-meant effort to try to rebuild a blitzed cathedral. But so long as records are kept the 18th century can always be put back, however literally the Other Side seeks to remove its foundations, a consoling thought for those who find Bath more satisfying than say Augsburg. Another thing the blitz can't, but the war may, do to Bath is to remove the iron railings which abound in the city. So far this useful work hardly seems to have been begun. Although much of the ironwork is good, the architectural effect would be improved by an offensive against the railings.

Lansdown Crescent before the raid.

Lansdcwn Crescent after the raid.

LANSDOWN CRESCENT AND ALL SAINTS' CHAPEL

Lansdown Crescent was designed by Palmer and, with Somerset Place, makes the undulating wall referred to by Giedion in Time, Space and Architecture *(p. 91). The position of All Saints, or Lansdown Chapel, as it is sometimes called, is shown in John Piper's drawing—the end house and archway seen in the photograph on the opposite page are revealed again through the gaping wall of the chapel. The chapel is a total loss. It was good late eighteenth century Gothic. One of the drawings reveals a date* 1794 *scratched on the wall with the initial J.R. The architect was John Palmer. Lansdown Crescent itself is unhurt, but the houses leading up to it from the east were badly knocked about. They are shown both in the photograph on this page and in John Piper's magnificent drawing, which gives their position in relation to the Crescent. Here, at No.* 20, *lived one of the great aesthetes of all time, William Beckford, who retired to Bath when he sold Fonthill, and died in Lansdown Crescent surrounded by the books he refused to sell. Unable to exist without a tower he built a new one on Lansdown, and from its South Chamber which commanded a tremendous prospect, he used to point his telescope each morning towards his old home, the tower of which, the famous one built by Wyatt and torchlight, was just visible in the extreme distance. One morning Beckford pointed his telescope but the tower was no longer there. From these upper crescents and terraces the modern prospect of Bath is wonderfully depressing. The city reveals itself as being, like Oxford, merely an inner core surrounded by a chaos of industrial development and bye-law housing.*



SOMERSET PLACE

Somerset Place was not so lucky as Lansdown Crescent. The central portion was completely gutted as the photograph and drawing show. Even so, the remarks made apropos the damage in the Royal Crescent apply just as clearly here. The façade is still there, and even if it had to be pulled down first, rebuilding would not be a difficult matter. All the drawings in this issue are by one artist, John Piper, who was sent down on the heels of the raid to record the results. His drawings, amazing in their accuracy as well as their atmosphere and quality, give a vivid impression of the blitzed city. They are now on view at the National Gallery.

PATENT WELDED TUBULAR CONSTRUCTION

Data Sheet No. 4

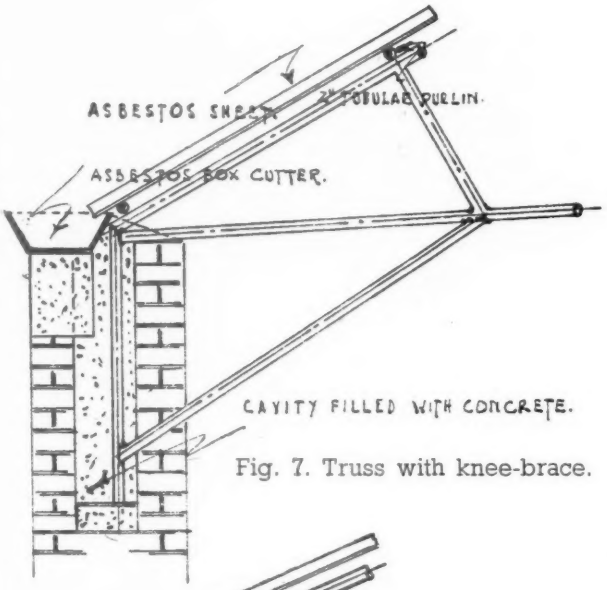


Fig. 7. Truss with knee-brace.

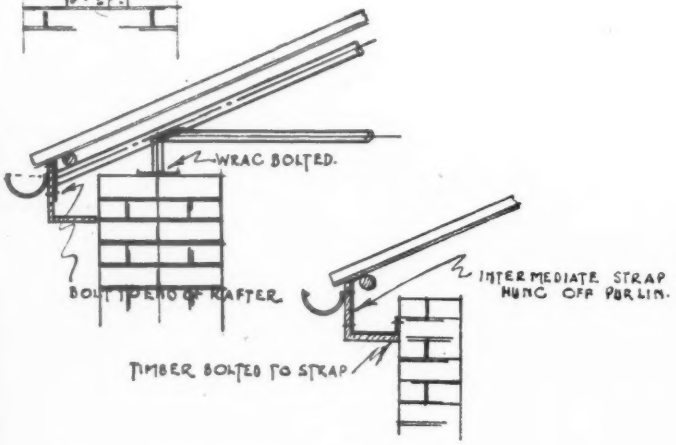


Fig. 9. Truss wrag bolted and with gutter strap suspended from purlin.

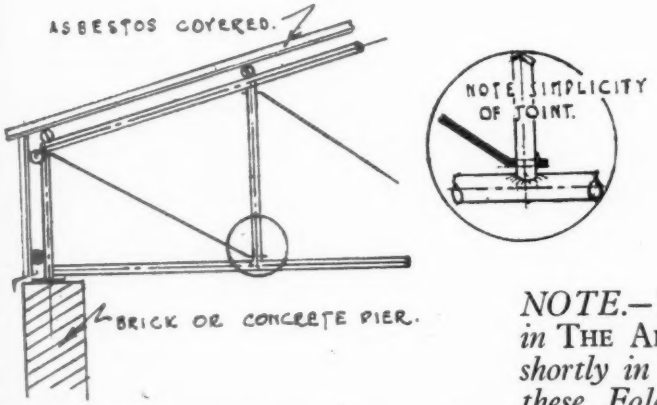


Fig. 10. Girder type roof principle as applied to brick or concrete construction.

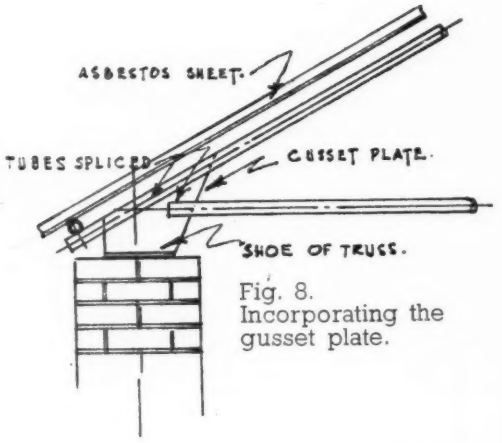


Fig. 8. Incorporating the gusset plate.

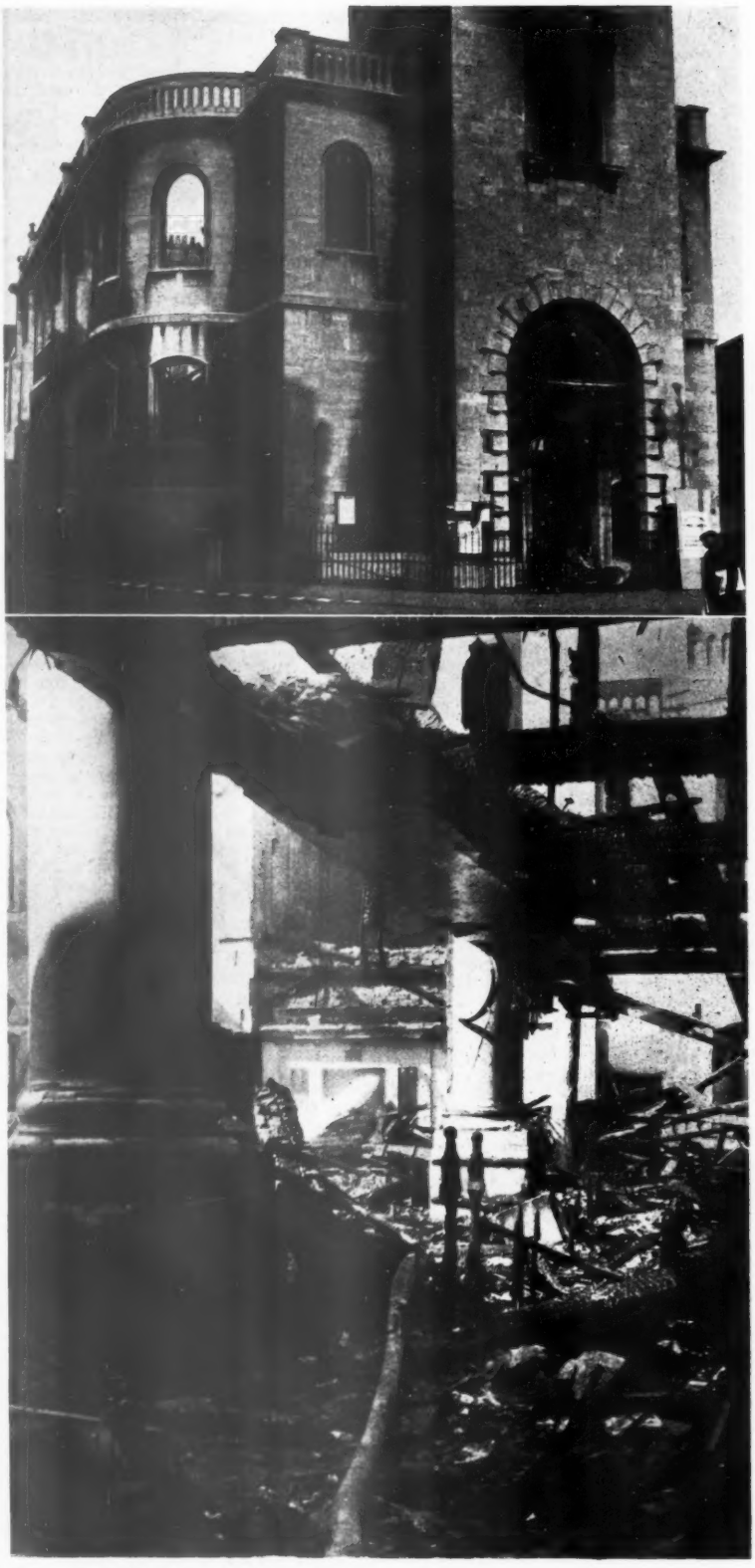
WITH BRICK OR REINFORCED CONCRETE CONSTRUCTION

The sections detailed in this Data Sheet shew the application of welded tubular trusses to brick or reinforced concrete construction (*see also* Data Sheet No. 11). The detail in Fig. 7, shewing truss with knee-brace, is not considered advantageous in brick or concrete construction since the incorporation of the knee-brace only effects a lowering of the support by one or two feet ; the constructional methods detailed in Figs. 8 and 9 are more generally to be recommended. In Fig. 9 it will be noted that the purlin has been fixed at the lower end of the rafter member and affords a convenient attachment for the gutter straps. In all-steel frame construction, when steel columns are utilised in place of brick or concrete piers, knee-braces can be incorporated with practical advantage. Where the gable ends of the building are to be in brick or concrete, the roof purlins supplied are attached to the brick or reinforced concrete piers ; alternatively, the gable ends can be carried out in welded tubular frame construction, and the tubular sections for assembly are supplied complete with the necessary wind braces, etc.

Fig. 10 shews girder type roof principle, as applied to brick or concrete construction.

A standard range of welded tubular roof trusses are available from spans of 15 ft., increasing by multiples of 5 ft., up to 120 ft.—they may be factory fabricated and delivered to the site in composite form ready for final assembly or, as is sometimes more advantageous, they can be delivered in smaller prefabricated sections to be welded on the site ; a special mobile welding plant and mobile units of skilled welders is available for this purpose. (Site welding is more fully dealt with in Data Sheet No. 7).

NOTE.—These data sheets are appearing weekly in THE ARCHITECTS' JOURNAL*—they will be available shortly in complete Folder form and application for these Folders should be addressed to Scaffolding [Great Britain] Limited, 77, Easton Street, High Wycombe, Buckinghamshire.*



ST. JAMES'S CHURCH

Actually St. James's Church was not a very exciting building which is just as well in view of the fact that the interior has been entirely demolished. It was built by Jelly & Palmer in 1768, but the west end is later and the tower mid-nineteenth century. From all these photographs it is clear that Bath, though knocked about, is still very much there in all essentials. Just how much, it has been the aim of this issue to show.

Below is a verbatim report of a speech made by Mr. HENRY STRAUSS, *M.P., Joint Parliamentary Secretary MOWP., at a recent meeting of the Town Planning Institute.*

PLANNING

I am most grateful to the Town Planning Institute for their invitation, but must apologise for two things; first, for the inadequate preparation of my speech, and, secondly, for not being a member of the Institute. I had always intended to follow the advice of my friend—Lord Justice Scott—and to become a legal member, but neglected to do so.

In choosing my topic to-day, I might have come as an amateur visiting experts, bestowing praise right and left and treating the meeting as a meeting of a mutual admiration society, but that would not be the most useful course. I shall assume that I am speaking to friends and fellow-workers, and that it is best to say exactly what I think, and even to be provocative. If I say something wrong, the matter can be put right in the discussion afterwards.

It should be a salutary thought for teachers that after seventy years of compulsory education we know, from the cult of astrology and the success of advertising, that there is nothing too idiotic for the compulsorily educated public to believe. In the same way, it should be good for town planners to remember that in the generation that followed the beginning of modern town planning in 1909, and especially in the interval between the two German wars, we suffered in England a greater destruction of the beauty of town and country at a quicker rate than had ever been experienced anywhere in time of peace; and that, with notable exceptions, the destruction was nowhere greater than in the areas that were town planned.

Just as the vogue of astrology need not make our teachers disbelieve in education, but might well make them modest, so this shameless destruction of England's beauty need not make us disbelieve in planning, but ought to make us critical and ruthlessly honest in seeking the causes of our failure.

Was the failure due to bad tools, i.e. inadequate Acts of Parliament giving inadequate powers, or to bad workmen, i.e. inadequate planning authorities failing to use the powers that were given them? If we are honest, we shall admit that the failure was due to both.

In numerous speeches, in Parliament and outside, I have criticized the existing legislation on the subject, and in recent years I derived the greatest help from the admirable Report of the National Survey and National Planning Committee, which was approved by your Council on May 20, 1938. I was delighted, therefore, to be able recently to inform the House of Commons that the objective of the Government's policy was to secure the right use of the land of the country for all purposes, and to add "for this existing planning powers are known to be inadequate, and it will be necessary to introduce legislation substantially amending, strengthening and extending the present law." I cannot give you any details of that legislation this afternoon. We are awaiting, as you know, the final report of Mr. Justice Uthwatt's Committee and the report of Lord Justice Scott's Committee, and it is right that Parliament should be the first to hear any particulars of forthcoming legislation.

The acceptance of the principle of National planning means at least this: never again will it be possible for a Minister in either House, when some scandalous destruction of town

or countryside or reckless squandering of our inheritance is brought to light, to disclaim all interest and responsibility, and to treat the matter as the exclusive affair of the local authority of the area in question. It is the affair of the local authority, but it is also the affair of the nation.

In no country in the world is wise planning more important than in England. Two facts are too often forgotten: first, England is easily the most crowded country in Europe, or, if Scotland and Wales are added, occupies second place—Belgium alone being more crowded; secondly, while it contains perhaps the most beautiful scenery in the world, that beauty is of all natural beauty the most vulnerable. Take the Downs, where you find perhaps the noblest, the most sublime and spiritual beauty in all nature. Contrast them with the Rocky Mountains of Canada. In the Rocky Mountains the work of nature is on so stupendous a scale that, if the work of man is trivial or unworthy, the beauty of nature is scarcely affected. The Downs, on the other hand, do not impress by their grandeur or their size. The loveliness of their lines is subtle and delicate, and it is quite as possible to destroy those delicate lines and to mar that incredible beauty by sham and unworthy building, as it would be to hack to pieces some masterpiece of painting.

What have been the main faults in our town and country planning hitherto? The most important fault is, perhaps, this: that such planning has too often been thought of merely in the form of maps showing the lines of roads and indicating zones and land uses. As long as it is so conceived, town planning will certainly fail. Its success will not be judged by the pattern of the ground plan as seen by someone in a captive balloon some miles up. It will be judged by what it looks like to the inhabitant of the completed town or village. We are concerned, not with maps in the flat, but with homes and cities, towns and villages, construction in three dimensions, civic design. Without architecture town planning is useless or even mischievous.

To-day it often happens that a man buys a home near the boundary of a town which is beautiful at the time he buys it, and could remain so. Gradually his environment is destroyed, and what might have been a twentieth century Bath becomes in fact a Jerrybethan suburb. At the end of the process he is informed, quite truly, that throughout the period the district has been town planned. He then says, "to Hell with town planning," and he is perfectly right.

Town planners must always remember this: while it is possible for a ground plan to be so bad as to render good building impossible, it cannot, however good it is, render good building certain. That will depend on the architect. It is essential that the ground plan, by providing building blocks of practicable size and shape and the right relation between streets, buildings and open spaces, should afford opportunity for good architecture. Architectural advice is, therefore, needed at an early stage of the plan. It is again, of course, essential when the buildings are designed.

Unfortunately, there is the most widespread and disastrous ignorance of what architecture means. Architects are thought of as a luxury, as fellows who add ornament to buildings otherwise complete, instead of as planners who should be consulted from the beginning, and who are to-day prepared to build cities and streets as worthy of the twentieth century as Bath was of the eighteenth. The Cinema Company may have known its public, when it boasted that in its theatre there was not a square foot not covered by decoration.

No mistake in æsthetics has produced more terrible results in our towns and villages than the false idea that uniformity produces monotony. In no great age of architecture have people been frightened of uniformity. Who complained of the uniformity of the terraces of Bath, of Nash's London, or of the Bloomsbury Squares? It is an illusion to think that the Bijou Baronial and Mock Tudor villas and Cosy Palaces of the bypass are rendered less horrible by the fact that each differs from its neighbour. It was natural for the unhappy industrial worker rightly seeking to escape from the bye-law street to imagine that what he needed was variety. What he needed was light and air and good design, a good house in a good street. Uniformity of horror is, of course, horrible, but you do not get a better result by breaking the uniformity so as to get a variety of horror.

Two things are necessary for a civilized life: a good town and good country. The town which gives us the civic virtues and the arts, and the country which gives us natural beauty, greenness and solitude, recreation, serenity and peace. Each has its characteristic virtue and the distinction should not be blurred. Both must be preserved or both will decay. The countryside will not be preserved unless there is re-development of some of our towns. The inhabitants of the re-developed town will not be happy unless they have access to the countryside. Nothing is easier than to destroy both town and country as we have been doing for a generation, and to create in their place a universal suburbia without the charm of either town or country or any charm at all.

There is a real danger of destroying both town and country by slavish adherence to, and misunderstanding of, formulæ for density of building. "So many houses to the acre" may be right as an indication of the amount of open space required in a district as a whole. It is disastrously wrong if it is interpreted as a direction how to build, with the suggestion that each house or each group of houses should be physically separated from its neighbours and that we should never have continuous streets or crescents or squares, though built-up squares are, perhaps, the greatest contribution to the grammar of town planning that English genius has made. When districts which have been destroyed by enemy action are rebuilt, I trust that the street, the square and the crescent, and not the individual house, will be regarded as the unit. There is no reason whatever why we should not again create in our own idiom the compact and intimate beauty of our loveliest villages and towns. If, on the other hand, we decide to build detached houses at so many to the acre, we shall, in effect, be deciding never again to create a Sherborne or Stratford-on-Avon, a York or King's Lynn or Salisbury, a Burford, Marlborough, Stamford or Chipping Campden, and never again to construct a Bedford Square, Pump Court or King's Bench Walk. For the sake of a misunderstood slogan we shall destroy the noblest of the arts.

Transport is a good servant but a bad master. For some years we seemed to accept the barbarous doctrine that it was more important to travel from A to B quickly than that either A or B or the places between them should be fit to live in. If some perfect village made speeding difficult, that was a good reason for tearing the heart and guts out of that village. While on the one hand we madly sacrificed existing town and village to the imagined convenience of motor traffic, on the other hand we starved that traffic of the good communications which ought to have been provided and maintained. No sooner had a new road been built at great public expense, than its utility was destroyed by ribbon building. The process was familiar to all. After a short interval there was a demand for a bypass to bypass the bypass, and so on ad infinitum. The system might well have been devised by a perverse genius who wished to ruin as much country as possible while building as few houses as possible; to destroy the efficiency of the road as a vehicle of traffic, and to lay waste the loveliness of rural England without creating the possibility of a civilized life. The evil of ribbon building was universally recognized by the intelligent, and it was dealt with in every way except the right way. The right way, of course, was to stop it. It was never stopped. Every day we saw advertisements like this in the paper: "Attractive residence; superb gardens and ground comprising 102 acres with over 5,000 ft. of existing road frontages. . . . A high-class building estate, ripe for immediate development." Everyone knew why the frontages were mentioned. "Immediate development" meant immediate ribbon development. "Ripe for development" meant "doomed to destruction."

I plead, of course, for a higher status for the town and country planner in the hierarchy of local government. On him more than on anyone else, our environment will depend. He must make full use of the specialized knowledge of architect, engineer and surveyor, and since town planning is an affair of three dimensions and will fail unless good architecture is achieved, he must, if he is not an architect himself, enjoy architectural advice from the outset.

The public should not confuse physical planning with other and more hazy questions of reconstruction. We are dealing, not with a problem which may arise, but with a problem which must arise and which will demand urgent action. That urgent action must not be ill-considered. After the war an enormous amount of rebuilding must take place in any event. Shall we build well or badly, wisely or foolishly? Shall we increase or diminish our heritage of beauty? It is for us to decide. Our wisdom or our folly will mark the face of England for generations. May we be worthy of our task, and save for the ages the matchless beauty of the English scene.

NATIONAL BUILDINGS RECORD

Through the generosity of one of its members of Council, the National Buildings Record is able to announce a scheme by which it is hoped to centralize the results of student measuring activities and to build up through this means a national collection of graphic records of buildings of artistic, historic, topographical and sociological interest. In the past the waste of effort, through the dispersal and loss of students' drawings, has been considerable. It is hoped that the scheme now initiated will put an end to this and at the same time encourage the further study and measurement of English architecture. The scheme will operate as follows:

1. The National Buildings Record invites the submission of measured drawings of English and Welsh buildings to be copied photographically at the expense of the National Buildings Record and returned to the owner.

2. The National Buildings Record is willing to pay a reproduction fee of 10s. 6d. for each measured drawing accepted for reproduction. In the case of a set of sheets relating to one building, 10s. 6d. will be paid for the first sheet and 5s. each for the remainder. No size is stipulated, but sheets are expected to comprise a reasonable amount of information.

3. The payment of the fee is to include the right of the National Buildings Record to exhibit or reproduce the drawing or allow it to be reproduced at the Director's discretion, with the author's name attached. If the drawing is required for professional purposes, however, the National Buildings Record will stipulate that the author must be approached and his consent obtained.

4. The National Buildings Record will require to have drawings in its keeping for about ten days for consideration and reproduction if accepted. The drawings will be treated with every reasonable care while in the possession of the Record, and will be insured to a limited extent against damage or loss.

5. Lists of buildings of architectural value covering the whole of England have been prepared and the Record will be glad to advise as far as possible on the choice of buildings in specific areas. The fact that subjects are suggested by the Record will, however, not necessarily mean that drawings of them will be accepted for reproduction.

6. The scheme will work retrospectively, and consideration will be given to drawings executed at any time in the past.

Drawings and all enquiries should be sent to the Director, National Buildings Record, All Souls College, Oxford.

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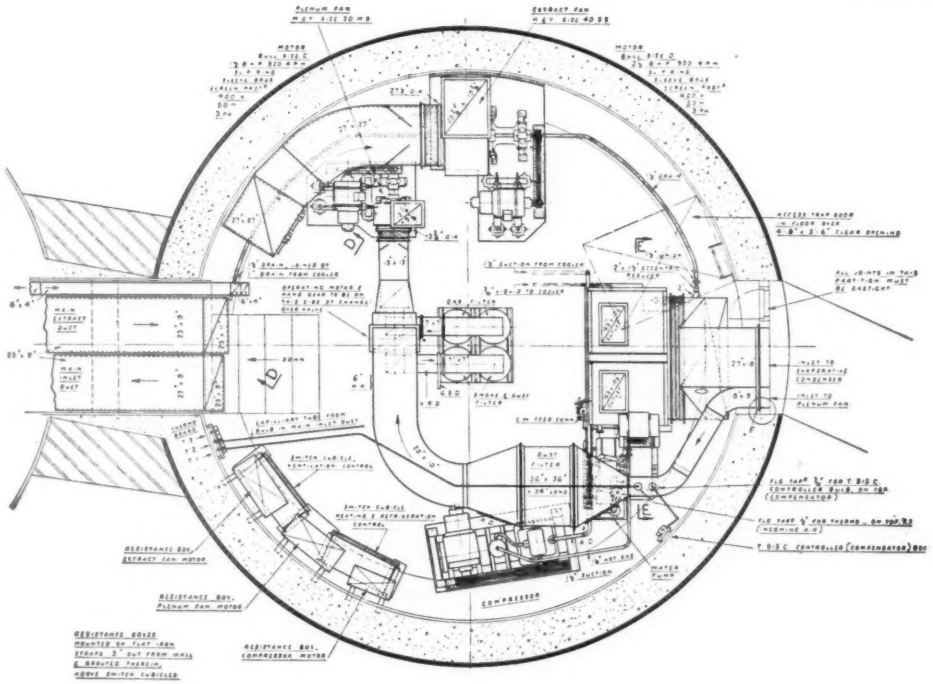

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D

PREFABRICATED HUTS

At a meeting of the Housing Centre, held recently at 13, Suffolk Street, London, S.W.1, Miss J. Blanco White spoke on the building of huts for war-time purposes.

Mr. E. J. Carter presided, and in introducing the lecturer said that white papers on reconstruction might not have much effect after the war, what would have effect was what we were actually doing.

Miss Blanco White said the erection of the prefabricated hut under present conditions was a new thing in building. Being temporary brought with it the advantage that people were willing to try things out without stifling experiment to begin with by insisting on standards that could not be got when trying for something new. Scarcity of materials was an important factor. The first huts had been of timber and were stoutly built, but when the timber shortage became acute a light wood construction covered with plaster board was introduced with a weatherproof sheet of felt when required—panels for wall or roof being made in the factory and brought to the site. A great saving was thus made in materials, and a further saving was introduced by the use of rosin bonded plywood, factory made, light and strong. With this material you could have a wall panel of full height, which could be put up quickly. Work on the site was confined to joining the panels together. New principles of design came with stressed skin construction; because instead of requiring a light frame to support the panels the walling material was itself strong enough to take some of the stress. Steel in the Nissen hut was the first example of stressed skin construction, but the most important use of steel now was as pressed steel sheets welded together to form light trusses. By this method the amount of steel necessary for one Nissen hut was shared out amongst a number, because the trusses were as economical of steel as the plywood was of timber. Concrete was the only material of which there was an unlimited supply, but being heavy it could not be got quickly to the spot where it was wanted if that was far away. There was a type of design using wood wool slabs with asbestos cement facing which was an example of how materials in fair supply, and fairly light, could give excellent results. Manufacturers of various materials had produced designs for huts to be built throughout each in the material the particular manufacturer was interested in, but a much more efficient hut could be produced by using each material in its appropriate place.

Questions and discussion followed. In reply to one question Miss Blanco White said the huts were all one-storey buildings. Thousands of families were housed in them, and they were popular with the occupants.

B.S.I.

B.S. 1021-8 *Copper Alloy Ingots and Castings* has just been issued by the British Standards Institution and provides for cast copper alloys in four different alloys.

The present urgent need to enonomise in the consumption of virgin metals, and to utilise to the best advantage the supplies of bronze and brass scrap, has required the preparation of new specifications. The purpose of these is to bring into use gunmetals and bronzes of lower tin contents than have been customary in Great Britain and to extend the use of cast brasses that can be made from scrap arising from machining operations and from other sources.

For the duration of hostilities it is proposed that the use of Admiralty Gunmetal of the 88/10/2 type (B.S. 382 and 383) should be severely restricted, that leaded gunmetal of the 87/9/3/1 type (B.S. 900 and 901) should not be used, and alternative alloys prepared as far as possible from scrap be substituted as recommended hereafter. Since, however, scrap supplies will not suffice to produce all the gunmetal required it is proposed that when virgin metals have to be employed their use should be confined as far as possible to gunmetal of the 88/10/2 and 88/8/4 types. This will effect economy in the use of tin and, in addition, a high grade gunmetal will be available on remelting any scrap arising.

The use of large varieties of scrap involves the risk of producing alloys contaminated with a large number of elements. It has been realised that it is impracticable to specify limits for a large number of adventitious elements, but given the percentage of the main constituents of the alloys it is considered that mechanical tests are a satisfactory check on the presence of impurities in harmful amounts. It will, however, be appreciated that the preparation of a supply of ingots, made from scrap and of uniform composition, is best ensured by melting in large quantities, and small foundries are advised to purchase ingots of guaranteed composition only from ingot manufacturers dealing in bulk.

The following alloys are provided in the series:—

88/8/4/.	Gunmetal;
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70-80.	Copper cast brass;
62-70.	Copper cast brass.

Suggested applications for these alloys are given in the Foreword.

Copies of these specifications (under one cover) may be obtained from the British Standards Institution, 28, Victoria Street, S.W.1, price 2s. 3d., post free.

RESIGNATION

The President of the Board of Trade has accepted the resignation of Mr. Laurence Neal from the Retail Trade Committee, consequent upon his appointment to the post of Deputy-Secretary (Planning Department) in the Ministry of Works and Planning.

C.9

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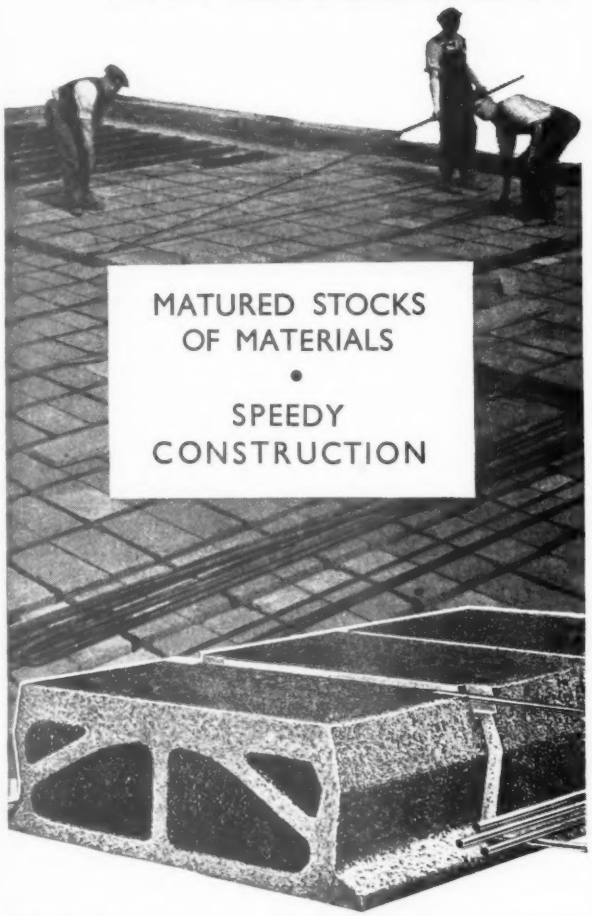

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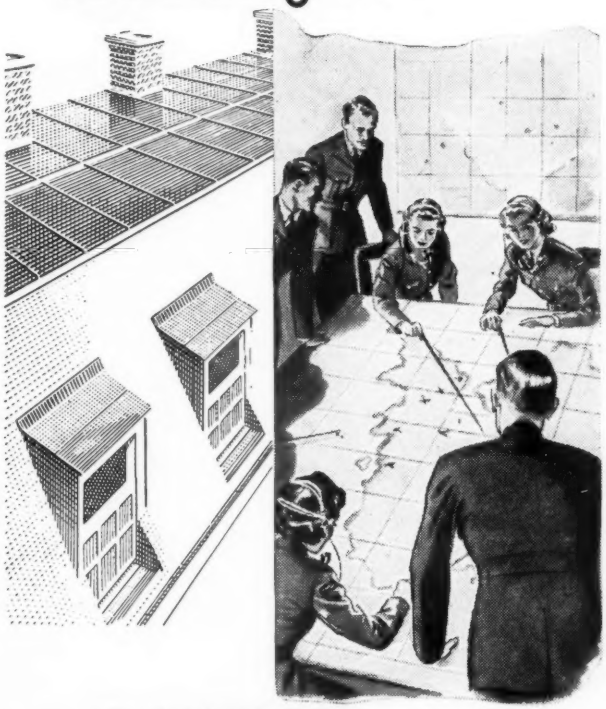

to RADIO LOCATION

The details of radio-location are secret. Yet it is one of the many war purposes vitally dependent on copper. But copper itself is no secret. Its valuable properties, which make it the ideal material for many building and plumbing purposes, are well known. Therefore, to those Architects and Builders who are planning its post-war use, the Copper Development Association offers the co-operation of its advisory service. In addition, they will gladly supply, free of cost, any of the following publications. When writing, applicants should state their particular interest.

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

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

Public and Official Announcements

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

The Incorporated Association of Architects and Surveyors maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. Address: **75 Eaton Place, London, S.W.1. Tel.: Sloane 5615** 991

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.—The Corporation is prepared to receive tenders for Interior and Exterior Painting, City Hospital for Infectious Diseases, Walkergate, Newcastle-upon-Tyne. Contractors desirous of tendering for this work are requested to send their names in to the City Estate and Property Surveyor, Town Hall, Newcastle-upon-Tyne, 1. No tender will be received except in the official envelope provided for that purpose, and such envelope shall not bear any mark or name indicating the sender. Sealed tenders to be sent in on or before 10 a.m. on 11th July, 1942. The Corporation does not bind itself to accept the lowest or any tender.

By Order,
JOHN ATKINSON,
Town Clerk.
781

Architectural Appointments Vacant

Advertisements from Architects requiring Assistants or Draughtsmen, and from Assistants and Draughtsmen seeking positions in Architects' offices will be printed in "The Architects' Journal" free of charge until further notice. Other "Appointments Vacant" and "Wanted" will be found under later headings, and are subject to the charges given under each heading.

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

WANTED. ASSISTANT ARCHITECT AND SURVEYOR to assist Company engaged on essential work in connection with extensive reorganisation of their buildings to increase production. Salary £6/£7 per week. Apply Box No. 779.

ARCHITECTURAL DRAUGHTSMAN wanted, period or part-time. South-West Midlands. Mainly drawings for non-industrial properties. Lady or non-British willingly considered. Replies to Box 471.

ARCHITECTS' ASSISTANT wanted at once for busy Birmingham office. Capable draughtsman, R.I.B.A. Intermediate standard or higher; experience in factories, canteens and industrial buildings an advantage. State age, experience, salary and liability for military service to Harry W. Weedon, F.R.I.B.A., and Partners, Chartered Architects, 129, Lordswood Road, Harborne, Birmingham, 17. 473

Architectural Appointments Wanted

SURVEYS for war damage reinstatement, schedules of dilapidations, etc. Qualified architect (37) offers part-time services in London area and Surrey. Please write Box No. 444.

ARCHITECT (Registered), 33, general experience, at present on Canteen Buildings, Office alterations, and new buildings, Air-raid Shelters, Factory Alterations, Pickle Boilers, Storage Tanks, etc. Desires post on work of National importance in Birmingham area. Box 443.

SENIOR ARCHITECTURAL ASSISTANT, 40 years, A.R.I.B.A., exempt military service, with 22 years' experience in Private Offices, Public Works and present position permanent with Municipal Office requires position of advancement where knowledge and industry are appreciated. Box 445.

CHARTERED ARCHITECT, A.R.I.B.A., Cert., T.P., age 24, exempt from military service, 5 years' experience all types of work, including schools, clinics, factories, offices and reconstruction, A.R.P., etc., requires responsible position, salary about £400 p.a. Box No. 446.

SENIOR ASSISTANT with full experience in industrial buildings requires responsible post in Architect's or Civil Engineer's office. London area. Box No. 449.

ARCHITECT (pre-war private practice), offers qualified services. Building maintenance; Surveys (full experience of War Damage); Designing—draughting. London area. Box 453.

ARCHITECT AND SURVEYOR, Chartered and qualified, London, with many years' experience in general practice, flats, commercial buildings, conversions and domestic work, is prepared to undertake reinstatement of war damaged buildings, making any necessary application to the Ministry of Works and Buildings and the War Damage Commission, for licences and payments, or will consider co-operation with another architect who may have pressure of business. Replies to Box No. 457.

ARCHITECT'S ASSISTANT requires position, London area. Capable supervisor; large contracts; setting out of buildings; sites, etc. Over military age. 188, Great West Road, Hounslow. 455

Classified Advertisements continued on page xxxii.

CLERK-OF-WORKS OR BUILDING SURVEYOR requires an appointment, in Birmingham, or any part of the Midlands; over military age; rendered War Service during the 1914-18 first Great War; over 25 years' sound, practical and theoretical, general and varied experience, and knowledge of all the branches of the building, allied and specialists trades, on all classes of large and important contracts; reinforced concrete, steel and brickwork structures, etc., measuring, surveying, etc. Architects, Municipal Engineers and Surveyors testimonials, etc., on request. Salary to mutual arrangement, accordingly. Box No. 456.

SENIOR ASSISTANT (48) to first-class Consulting Practice, desires position offering greater scope. Capable of working without supervision. Would manage for younger man joining Forces. Chartered Structural Engineer and Corporate Surveyor. Experienced in Building Construction, Reinforced Concrete, Steelwork, Surveys, Valuations. Recently completed very large Underground Shelters and Industrial Civil Defence Scheme for County Borough. £400 p.a. Box 458.

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SENIOR DESIGNING AND SURVEYING ASSISTANT, experienced in factory planning, detailing, prefabrication in reinforced concrete, and in local government A.R.P., desires post preferably central London. Box 460.

A.R.I.B.A. (woman, 31 years), seeks position Sheffield or district. Free end July. For particulars write Box No. 462.

ASSISTANT, aged 21, recently discharged army, 4 years' country and W.D. offices. Good draughtsman and modeller. London preferred. Available immediately. Box 466.

ARCHITECT, experienced in carrying through large and small schemes, all parts country. Salary £800 to £1,000 per annum, according to locality. Box No. 468.

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REGISTERED ARCHITECT, exempt from military service, requires responsible position. Eight years in general practice and with public authorities. Experienced in design and construction of factories, housing, war buildings, etc., civil defence schemes. Reconstruction and post-war planning. Can drive car. Available immediately. Write: Architect, "Keeper's House," Roffey Park, Faygate, nr. Horsham. 470

A.R.I.B.A. requires part-time work, many years experience all types of work, including war damage. Box 472.

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SECOND READING, one week old, wanted of "Architects' Journal." Subscription shared.—Mackenzie, Bourtie House, Inverurie, Aberdeenshire. 467

Educational Announcements

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Prospectuses of Classes may be obtained on application to the Registrar of the University.

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