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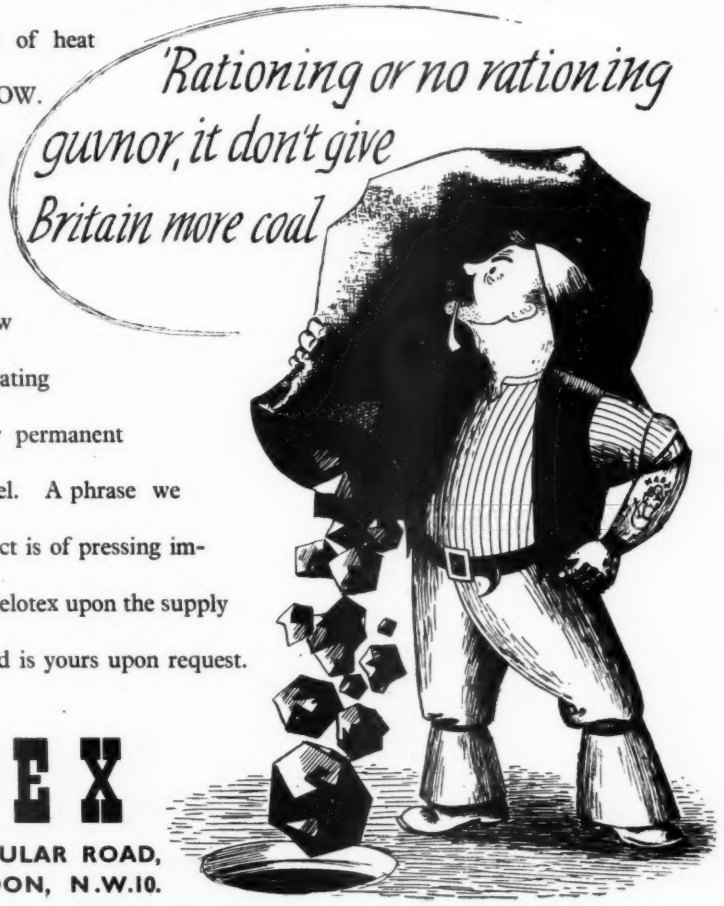

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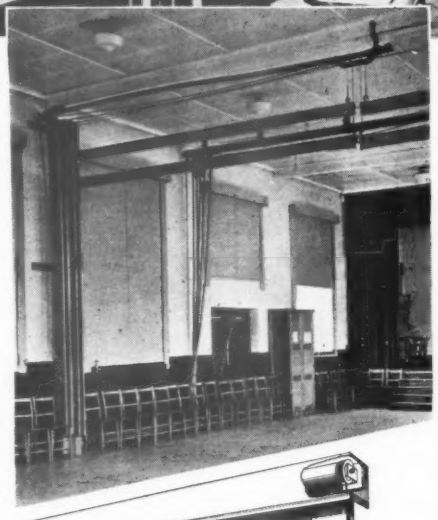

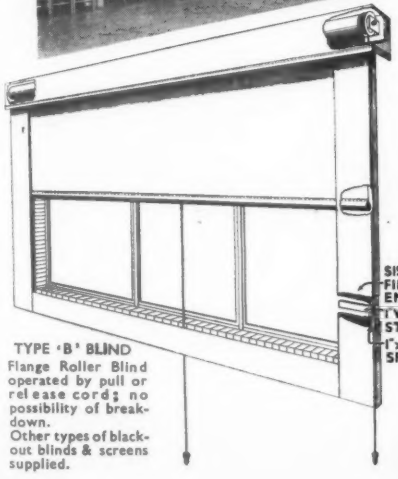

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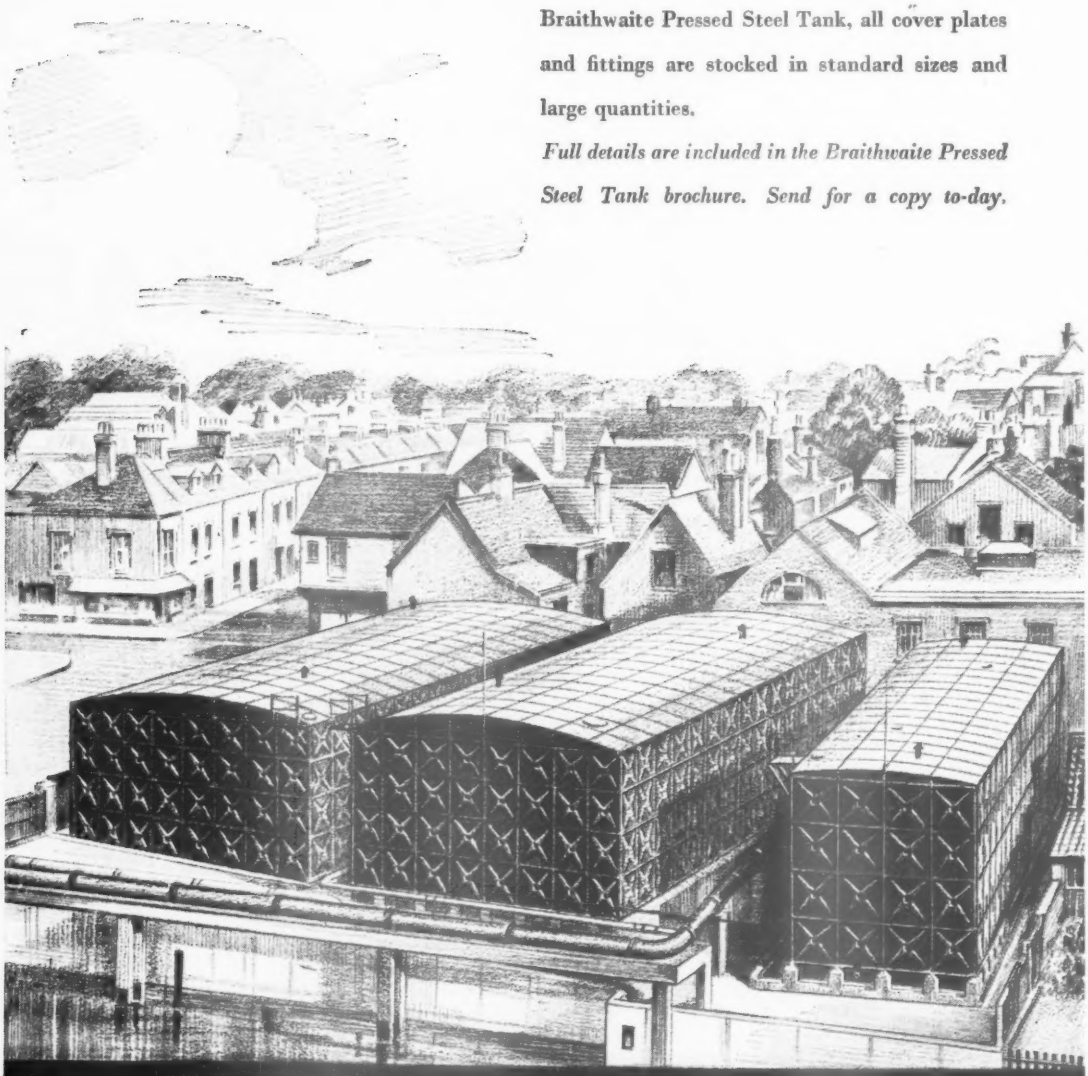

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THE ARCHITECTS' JOURNAL
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The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will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

THURSDAY, AUGUST 20, 1942. NUMBER 2482: VOLUME 96

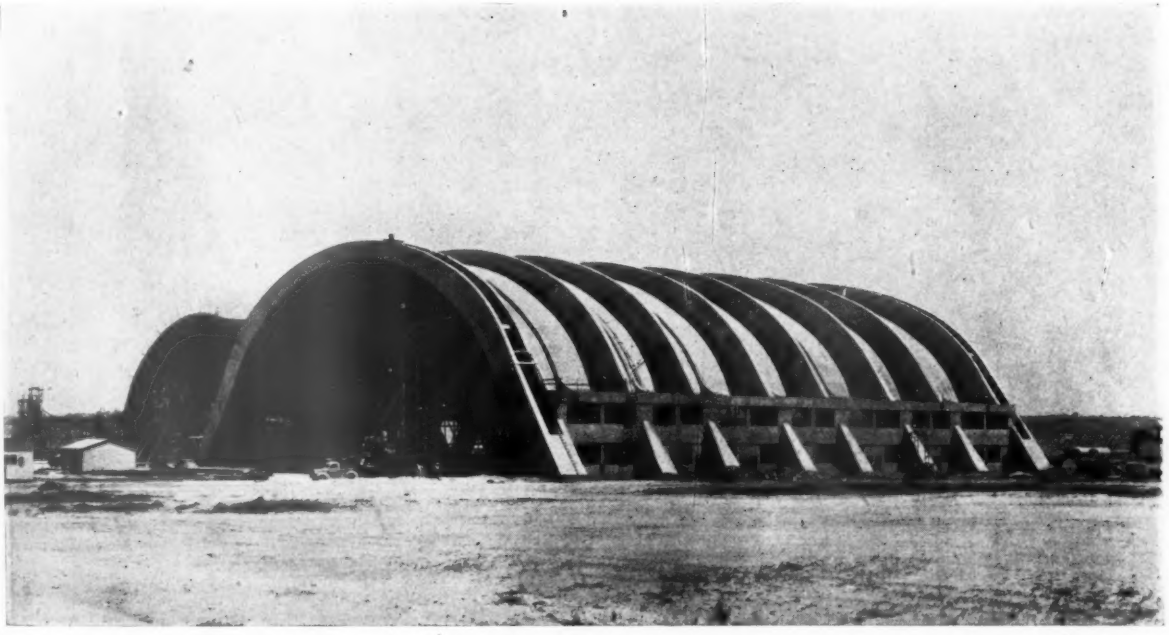
PRINCIPAL CONTENTS

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.*

Overwhelming evidence of the resistance to fire and the great structural strength of reinforced concrete has been provided during five years of aerial attack on cities. Whilst it may not be necessary to design against aerial attack in the future, it is only common sense to select for war-time and post-war construction the material which has been conclusively proved to possess the greatest structural advantages.

REINFORCED CONCRETE AND AIR TRANSPORT

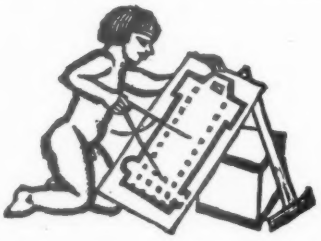


This reinforced concrete hangar, 294 ft. span and 81 ft. high, is being built at San Diego, U.S.A.

REINFORCED concrete is being employed for aerodromes, for their defence works, the factories in which aeroplanes are made, and for the protection of personnel concerned both in this country and in America. Considerable developments in air transport are to be expected during the post-war years and far larger aerodrome structures will be required in future. The greater economy and the increased speed of construction resulting from the experience gained in designing war-time structures make it certain that reinforced concrete will be the building material employed.

Portrait of a Gas Water Heater *by Ascot*

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*

"On the subject of architecture as shown in the Royal Academy, we refer our readers to a series of able articles in our zealous and judicious contemporary, *The Builder;* again, however, expressing our opinion that these works have no business here."

From *The Art-Union Monthly Journal*, June, 1848.

NEWS

★ *The Editor of one of the architectural journals was the first person to discover that the old Waterloo Bridge was falling down* *page* 114

★ *The Scott Report, over* 80,000 *words in length, was published last Saturday* *page* 119

D.I.A.

Miss Marjorie Morrison has been appointed Secretary of the Design and Industries Association for the war period. The new address of the Association is: Central Institute of Art and Design, National Gallery, W.C.2.

NEW R.A.

Mr. E. Vincent Harris, F.R.I.B.A., has been elected a Royal Academician.

APPOINTMENT

Mr. Denis Winston, a senior lecturer in the Liverpool School of Architecture, has just been appointed senior architect in the Ministry of Home Affairs, Government of Northern Ireland. In this capacity he is to initiate and co-ordinate reconstruction and planning schemes throughout Northern Ireland.

Mr. Winston, who is thirty-four years of age, received his architectural education at the Liverpool School of Architecture, where he qualified with first-class honours in 1931, subsequently pursuing a post-graduate course in the school's department of civic design. During his course in the school he was a Rome finalist and was also admitted to the final competition for the Soane medallion. On graduation he was elected to a University graduate scholarship and later gained a Commonwealth Fund Fellowship which took him to America for two years where he studied at Harvard University. After travelling extensively in the United States and in Europe he returned to England and was appointed lecturer in the School of Architecture, King's College, Newcastle. In 1936 he joined the staff of the Liverpool school as a senior lecturer. In 1937, in association with Clifford Holliday and Robert Gardner-Medwin, he was awarded first prize in the competition for the new satellite town at Kincorth, Aberdeen.

SCOTT REPORT

The Report of the Committee (Chairman, Lord Justice Scott) on *Land Utilisation in Rural Areas* was published last Saturday. One member of the Committee, Professor S. R. Dennison, writes a Minority Report. Professor Dennison maintains that it should not be accepted as a necessary principle that building and construction in the countryside must be prevented in the interests of agriculture and rural amenities: and he thinks that the introduction of industry into the countryside could be of considerable benefit to rural communities and should be encouraged. The report is dealt with in this issue.

EXHIBITION

An exhibition entitled *Wartime Nurseries* was opened last Monday at the Housing Centre, 13, Suffolk Street, S.W.1. The exhibition, prepared jointly by the A.A.S.T.A. and the London Women's Parliament, is intended to show women employed on war work what steps should be taken to induce their local authority to provide a wartime nursery in their area and the advantages to be gained from the provision of such buildings.

ARCHITECTURAL ASSOCIATION

The A.A. prizegiving party at the Mount House, Hadley Wood, on Friday last, was overshadowed by anxiety for the welfare of Mr. Gibberd, who was in hospital at the time he should have been receiving his guests with Mrs. Gibberd. An operation was performed on the day before the party, and the encouraging news that Mr. Gibberd had enjoyed a quiet night and was as well as could be expected was announced by Mr. Fairweather.

Over 200 people were present at the prizegiving. In previous years the annual prizegiving has been held in London and marked the opening of an exhibition of the work of the school. This year, however, the exhibition is to be held in the near future, when it is hoped that suitable accommodation will be available in London. List of prizewinners is printed on page 127.

The party was informal and, after the prize awards had been announced by Mr. Kenyon, President, tea was served on the lawn and parents were invited to visit the studios. The students had arranged the furnishings of their studios so that some of the more interesting and topical features of their work could be shown. In this way, visitors were able to see the studies of the current term in various stages of their development, and to examine the finished work of previous terms.

The long vacation that used to occupy the summer months has been filled by an extra term. By introducing this "extra Summer" term, the Architectural Association has reduced the time required for a full course of study by more than twelve months, and helps students who are "called up" intermediately to take full advantage of the limited time they are allowed for the continuation of their architectural studies. The four-term year places a heavy strain on the staff and the students, but does not seem to have lessened their vitality.

The new Waterloo Bridge

At 10 a.m. on Tuesday of last week the new Waterloo Bridge designed by Sir Gilbert Scott was opened for two lines of vehicular traffic. There was no official opening ceremony. The adjoining temporary bridge is not now available for traffic, except in an emergency; pedestrians are, however, not allowed to use the new bridge and will continue to use the temporary bridge for a few more weeks. The new bridge, when completed, will accommodate six lines of vehicular traffic, besides pedestrian traffic, as compared with the three lines of the old bridge. It will not be possible to bring the new bridge fully into commission for six lines of traffic until the approaches to the adjoining temporary bridge, which encroach on the new roadway, are cleared away and reconstructed to levels to suit the new bridge. It is expected that these works will be completed early next year. The photograph above, taken the day the bridge was opened to traffic, shows a view from the north side of the river.

WATERLOO BRIDGE

The new Waterloo Bridge, which was opened to traffic on Tuesday of last week, has five spans, each of about 240 feet clear as compared with the nine 120-feet spans of the old bridge. The five wide spans of the new bridge will greatly facilitate navigation on this awkward reach of the river. The new bridge is of reinforced concrete construction, with a facing of Portland stone except for the piers, which, between highwater mark and low-water mark, are faced with granite from the old bridge. An interesting feature is the Memorial to Rennie (the architect of the original Waterloo Bridge) between the arches at the end of the new bridge on the south side, consisting of columns and balustrading from the old bridge.

The present railings along the new bridge are only temporary and will be replaced by railings of a more suitable design after the war, when lighting standards will also be added. In view of the war certain other works, besides the permanent railings and lamp standards, are being postponed for the time being. Of the two staircases connecting the new Bridge with the Victoria Embankment, only the one adjoining Lancaster House is being completed. Similarly on the South bank only the upstream staircase is being provided. The demolition of the old bridge pier at the edge of the Victoria Embankment and the removal of the masonry masses projecting into the river are also being postponed.

On the same day as the bridge was opened to traffic Mr. Christian Barman gave a broadcast talk on the old and the new bridges. Here is a full report of his talk :—

It must be just about twenty years ago that a young man was walking across Waterloo Bridge when he thought he noticed something unusual about the bridge parapet. As he looked along it it seemed to dip down and come up again. The young man was very interested because he was the Editor of one of the architectural journals published in London. He went home and thought about what he had seen, and he decided to have a photograph published. When the photograph appeared people suddenly realised that there was something wrong with Waterloo Bridge. One of its eight piers was sinking.

For some little time before this happened, the L.C.C., who look after a number of London bridges, had been a bit worried about Waterloo Bridge for another reason. The bridge was too narrow for its purpose. It was a long way to Blackfriars and a long way to Westminster, and yet Waterloo Bridge could only take two lines of traffic—one each way. There had been talk of widening as London Bridge had been widened. But all this talk stopped the moment it was found that part of the bridge was giving way.

The great question, of course, was to find out whether the sinking would stop or whether

it would go on getting worse. Well, it went on, and because it went on and because the bridge was too narrow anyway, it was decided to pull down the bridge and rebuild it.

I said it was decided, but it did not happen quite like that. You will remember that there were years of controversy, and the controversy went on, partly because the bridge was a very fine and valuable piece of architecture which many people did not want to lose, and partly because Waterloo Bridge traffic and Strand traffic met at a very awkward junction at the bottom of Drury Lane, and it was felt that an expensive new bridge deserved something better by way of planned approaches if we were to get the best for our money.

These arguments, naturally, were founded on the assumption that the bridge could be repaired, but it was also felt that London could do with more and bigger bridges, and many alternative schemes were put forward. The people who for years past had been advocating a fine new road bridge at Charing Cross where the old railway bridge now stands, brought forward their plans and proposals. There was one suggestion that Waterloo Bridge should be retained as a one-way traffic line and that a twin bridge should be built at the bottom of the eastern arm of Aldwych.

That was a good scheme; but the trouble about all these schemes was that they meant pulling down whole blocks of buildings and hacking out a way for a new street. Presently the L.C.C. made up their minds that this kind of thing was beyond their means; they also decided that Waterloo Bridge could not be repaired. And so the old bridge came down and we have a new bridge designed by Sir Giles Gilbert Scott, the architect of Liverpool Cathedral, in collaboration with distinguished engineers.

What was it about the old Waterloo Bridge that made people protest so loudly against its demolition? It was first of all an exceedingly fine bridge. The Italian sculptor Canova said it was the finest bridge anywhere in Europe, and that is very high praise.

Then, Waterloo Bridge and Somerset House taken together made one of those very rare spots in London that have the grandeur and majesty of a great Capital City. Perhaps you may say London is better without grandeur—that grandeur should be left to Paris and Rome and Edinburgh. Anyway, there it was, and we have lost half of it. But Waterloo Bridge was also our National War Memorial named to commemorate the Victory over Napoleon. It was our Cenotaph of 1815. You have to think twice before you begin to pull down cenotaphs. And last, but not least, Waterloo Bridge was the only bridge more than a century old left in London in an unaltered state. London Bridge, designed by the same architect, had been widened and did not look the same. To part with the last piece of old furniture in the house is always a wrench.

But however much we may regret the passing of the old, there is one thing we can be very pleased about. The old bridge was a first-rate bridge, and the new one is a first-rate bridge too. It is without question the best bridge built in London since the old Waterloo Bridge was built. For once we have shown that we can do as well as the great ones of the past—when we try.

★

The Scott Committee's Report is published this week. Here, in the space usually reserved for the leading article, we print extracts from the Committee's own introduction to the Report—a human and revealing document. Lord Justice Scott, the Chairman, was the subject of last week's frontispiece.

★

To the Right Honourable Lord PORTAL OF LAVERSTOKE, D.S.O., M.V.O., *Minister of Works and Planning.*

SIR,

We were appointed in October, 1941, by Lord Reith of Stonehaven as Minister of Works and Buildings, in consultation with Mr. Hudson as Minister of Agriculture, with the following Terms of Reference:

> "*To consider the conditions which should govern building and other constructional development in country areas* consistently with the maintenance of agriculture, and in particular the factors affecting the location of industry, having regard to economic operation, part-time and seasonal employment, the well-being of rural communities and the preservation of rural amenities.*"

The Royal Commission on the Distribution of the Industrial Population had taken the view that agriculture was outside its Terms of Reference; and consequently that it was precluded from considering the effects upon agriculture of the decentralisation and dispersal of industry and population which it recommended, or the conditions to be enforced for the protection of agriculture, or otherwise. One of the objects of our appointment would therefore seem to be to consider and advise upon these two matters thus left open by the Royal Commission.

We held our first meeting on 23rd October, 1941, and continued to sit regularly in morning and afternoon sessions until 23rd July, 1942—the 60th day of our meetings. During that time, in addition to a wide range of published works which we examined individually, we studied over a hundred memoranda specially prepared by 111 government departments, authorities, organisations and individuals and examined orally the representatives of 53 organisations and 18 individuals.

We are united in sharing a deep love for our countryside which has been expressed so eloquently by H. G. Wells:—

> "There is no countryside like the English countryside for those who have learned to love it; its firm yet gentle lines of hill and dale, its ordered confusion of features, its deer parks and downland, its castles and stately houses, its hamlets and old churches, its farms and ricks and great barns and ancient trees, its pools and ponds and shining threads of rivers, its flower-starred hedgerows, its orchards and woodland patches, its village greens and kindly inns. Other countrysides have their pleasant aspects, but none such variety, none that shine so steadfastly throughout the year . . . . None change scene and character in three miles of walking, nor have so mellow a sunlight nor so diversified a cloudland nor confess the perpetual refreshment of the strong soft winds that blow from off the sea, as our mother England does."

It is that countryside which we hope our children and our children's children will enjoy and which it is our duty to preserve for them, and which we regard is included in the phrase "the preservation of rural amenities." But we do not want a countryside which behind a smiling face hides much

---

*These Terms of Reference were for England and Wales and did not include Scotland.

human poverty and misery: the "drift from the land" has been occasioned in large measure by economic inequalities between town and country rather than by any deep love of supposed urban joys. We are unable to subscribe in any way to the view that the countryman is inferior to the townsman. Indeed, our views have been beautifully stated by G. M. Trevelyan:—

> "Without vision the people perish, and without natural beauty the English people will perish in the spiritual sense. In old days the English lived in the midst of Nature, subject to its influence at every hour. Thus inspired, our ancestors produced their great creations in religion, in song, and in the arts and crafts—common products of a whole people spiritually alive. To-day most of us are banished to the cities, not without deleterious effects on imagination, inspiration and creative power. But some still live in the country, and some still come out on holidays to the country and drink in with the zest of a thirsty man the delights of natural beauty, and return to the town re-invigorated in soul."

Much that we propose requires good will rather than money: and we do not consider financial arrangements to be an insuperable difficulty in any of our recommendations. Indeed we regard all our proposals as essentially and immediately practical and practicable: we have ventured to demonstrate this by suggesting the main lines of government machinery by which, we believe, they could be carried out.

Our Terms of Reference presuppose that industry will, to an unknown and perhaps unforeseeable extent, want to come into the countryside and hence to use, both for its immediate needs and for its attendant housing, land which is at present agricultural. This was the expectation of the Royal Commission, and an examination of the changes in population distribution between 1931 and 1938 leaves no doubt that this is the case. In every one of our great industrial cities of the central belt there is a *decrease* of population in the centre, where commercial buildings replace dwelling houses, and a huge *increase* in the surrounding fringes, where country is replaced by suburb or town. The continuance of this process we believe to have been but temporarily arrested by the war, and we would call attention to the extreme urgency of legislative action to give effect to our recommendations. We are convinced that otherwise the old unregulated sprawl of town into country with all its attendant evils will recommence immediately men and materials are released for the work of physical reconstruction.

It is our firm belief that a vital incentive to the war effort is the presentation of a clear picture of a better world which lies ahead and which, if plans are drawn up and the essential preparations made in advance, can be achieved after this struggle is over. To delay planning and the legislation to carry the plans into effect until the time for action is upon us—the end of the war—we believe to be a fatal error.

COMMITTEE ON LAND UTILISATION IN RURAL AREAS.

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

NOTES & TOPICS

FURTHER THOUGHTS ON THE MARS PLAN

I read the argument over the MARS plan for London on a trip from Liverpool to Tyneside and back by Birmingham with a high-up town-planning officer. The town-planning officer also studied the MARS plan; also read Brett; also digested Samuely. I asked him for his opinion, and this is what he said:

★

"The central point at issue, as I see it, is whether the MARS plan should be thought of as the definite recommendations of the MARS Group for the reconstruction of London, or whether it is intended to illustrate in a graphic way the 'conditions'—of spacing, grouping, transport routes, etc.—which planners should seek to bring about in all urban areas after the war in so far as existing local conditions allow. The JOURNAL gives no clear answer on this point. Yet surely if architects are not sure about the answer, and the right answer, there is no hope of a worth-while reconstruction policy ever being agreed, much less carried out.

★

"Physical reconstruction is so big a matter and the principles involved have been so poorly explained that the general public hasn't the slightest idea what it ought to want. It is therefore essential that architects, town planners, engineers

and members of other specially interested professions should become agreed at the earliest possible moment on what it is reasonable to expect from a national reconstruction policy. Once these professions have agreed an outline of minimum aims and of methods, not only will they form a powerful body of pro-reconstruction opinion but it will be possible to explain this outline programme to the public and so obtain the public support which will be so much needed.

★

"These things seem obvious and it is also obvious that any agreed policy will not go so far as some members of the professions would like. The point is worth repeating because the professions concerned have not so far tried to formulate an agreed policy among themselves although nearly every profession has its own reconstruction committee and sends memoranda to Ministries.

★

"But if an agreed policy among interested professions is the biggest reconstruction need, the second biggest is surely that the situation should not be further confused by any profession, or section of a profession, publishing suggestions which propose either no advance at all on pre-war methods or clearances and rebuildings so grandiose as to have no possible chance of being executed. If the MARS plan is meant to be much more than a study of principles it comes, in my view, well into the latter class and therefore increases the danger that all who advocate a planned reconstruction will be called impractical visionaries.

★

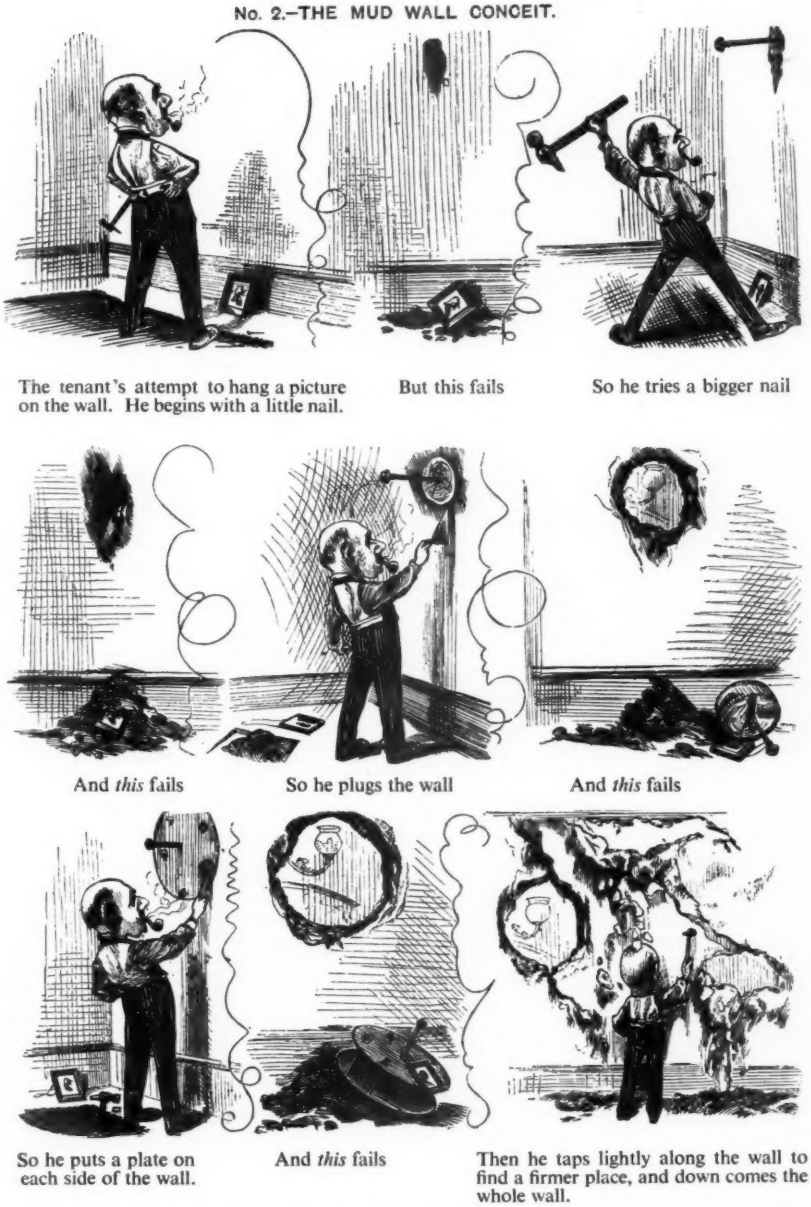
"We can still hope that at the end of the war a reasonably enlightened Central Planning Authority with regional branches will be set up. We can still hope that a few large scale works such as trunk roads and industrial estates and many new housing areas will be much better planned than ever before. But the bulk of reconstruction will consist, first, of thousands of insertions and twists in a better direction in built-up areas and secondly, of a prolonged campaign to expunge the 1919-1939 blight from thousands of square miles around existing towns and cities.

★

"If one looks at England as it runs past the train on the Liverpool-Newcastle - Birmingham - Liverpool triangle, the difficulty of the last part of the problem grows larger and larger. Huddersfield is terrible but it is compact and therefore easier to put right than twenty square miles of countryside of which each half mile square has its short aimless row of new houses or small inconsequent eruption of shops and petrol pumps—all of them less than ten years old.

"To complete all three parts of reconstruction—large new works, alterations to built-up areas, reclamation of blighted areas—will take twenty years of most skilful guidance and most skilful building up of public opinion. And there will be work enough and to spare for all members of the building industry without any proposals to sweep away a whole city (together with its history, local associations and millions of pounds worth of underground services) and rebuild it in endless vistas of Vita glass and parkland."

ASTRAGAL



Another selection from the sixty-year-old feud with the jerry builder. From FUN, *1880.*

LETTERS

COLIN PENN, A.R.I.B.A.
President A.A.S.T.A.

W. H. GILL

G. B. J. ATHOE
General Secretary, I.A.A.S.

A. H. T. BRODERICK
Sales Manager, Tentest Fibre Board Co.

Registration Council Scholarships

Sir,—I write to draw your readers' attention to the recent decision of the Architects' Registration Council not to grant scholarships to aliens. Applications for such scholarships from British subjects are now very few, owing to the need for their services in the armed forces or in war production. But aliens still find it difficult to obtain employment of any sort. Yet the Council has taken a formal decision which will bar them from scholarships until the end of the war on the ground that funds must be conserved for the need that will then arise.

I submit that there are two main reasons why this decision should be reversed :

First, its manifest unfairness. Registration is not confined to British architects, and the Council does in fact accept registration fees from many aliens. Why should they be debarred, as a body, from one of the most important benefits accruing from the payment of fees ?

Secondly, the introduction of national discrimination of the very sort we must be careful to avoid. Every one of the students in question has been examined by the Home Office and his friendly feelings towards this country have been accepted. How much would the decision of the Council be worth to Goebbels ?

The funds involved are not large, but the principle is important. We do not refuse to take money from aliens, yet we refuse them a portion of what their money is supposed to buy—and this, too, when owing to their position in this country they are unlikely to make any considerable protest. I may add in passing that the reasons advanced now for denying scholarships to aliens will serve equally well after the war. Must our English traditions be violated for such a petty reason, and violated too in a way that will harm the cause for which we are fighting ?

The Architects' Registration Council is not responsible to Parliament and it is therefore impossible to raise the matter effectively there. Will your readers try, in every way they can, to impress on members of the Council the desirability of a quick reversal of this decision. It was adopted only by a majority and was powerfully opposed. It can be reversed and for the sake of the good name of the British architectural profession it should be.

COLIN PENN,

Examinations

Dear Sir,—In view of the Government's " unnecessary travel " plea, may I suggest that the R.I.B.A. hold its Examinations in other centres as well as in London and Edinburgh ?

As extra centres, I suggest the School of Architecture at Liverpool for the North Country, the Schools of Architecture of Cardiff or Bristol for the West Country, and Robert Gordon College, Aberdeen, for North Scotland.

The time taken in travelling to the two capitals by students and architects trying their " Special Final " sometimes involves two days extra leave from employment.

W. H. GILL.

Bath.

Unity in the Architectural Profession

Sir,—Your correspondent F.R.I.B.A., who prefers, under intensive bombing, to remain in his anonymity shelter, now makes his object clear—an attack on the I.A.A.S. The questions to which he seeks answers are addressed to this Association—and to this Association alone — whereas his earlier letters were in effect a plea for the abolition of all " alternative bodies " to the R.I.B.A.

I, myself, have never been ashamed to put my name at the foot of a letter written by me, and I do not feel disposed to enter into a wrangling correspondence with every inquisitive anonymity with a thirst for minor statistics.

There is no secrecy about the I.A.A.S. and genuine inquiries are always answered. Anyone of your readers who is prepared to disclose his identity will be courteously informed.

I assume that all corporate members of the R.I.B.A. have proved to the satisfaction of the Council of the Institute that they are entitled by their professional qualifications to use the description " Chartered Architect " not necessarily by examination. Otherwise I leave it to " F.R.I.B.A." to explain why some 900 fellows and 2,240 licentiates have not qualified via the associate examinations.

Westminster. G. B. J. ATHOE.

Sheet Materials

Sir,—In the article " Sheet Materials" in your issue for July 30 your contributor makes two misstatements which appear to be worth correcting.

Under the heading of " Thermal Insulation " he says : " Where heating is intermittent and mainly by radiation, the surfacing materials should possess a high value of thermal conductivity, and because of this they will respond to the changing temperatures very quickly. To minimize heat loss, these materials should be thin, and an effective form of insulation must be incorporated as near to the inside surface as possible."

This suggests that a building can be heated up more quickly if the lining of, say, fibre board were faced with a further lining of, say, steel or copper. It seems obvious that the temperature of the surface of a sheet of non-conducting material will rise more quickly to the temperature of the air or other substance making contact with it than the surface of a highly conductant material. That this is obvious may be demonstrated by placing the palm of the hand alternately on a non-conducting material, such as a carpet, and a conducting material, such as glass or a plastered wall surface. Your contributor largely destroys his own misstatement by saying that insulation should be incorporated as near to the inside surface as possible, the best way to carry out this advice being to select an insulating material which can act as the inside surfacing material as well as providing thermal insulation.

Under the heading " Condensation," he says : " Sustained heating of the surfacing materials will provide the only effective solution to the problems of condensation, but as this cannot always be obtained, the treatment must contrive to reduce the nuisance, and to eliminate the accompanying dangers."

It would be unfortunate if designers of post-war houses became imbued with this belief. It is true that sustained heating of the surface is an effective preventative of condensation, but it is not the only one. The desired result can be achieved by the proper thermal insulation of the structure, and where rapidly changing air temperatures and humidity are encountered, it is preferable to have the insulation as the wall and ceiling surface or immediately behind the surface, so as to reduce the time lag in surface temperature when the temperature of the air rises suddenly.

For further information on this subject, we would refer your contributor and other readers who may be interested, to Information Sheet 580.

A. H. T. BRODERICK.

The body popularly called the SCOTT COMMITTEE *(officially the Committee on Land Utilisation in Rural Areas) was set up last October to report on questions arising out of the findings of the Barlow Report. The Barlow Report recommended decentralization (or dispersal) of industry from the congested urban centres. Question: what would happen to agriculture, the countryside, and rural life in general, should these recommendations be adopted as an official policy? This is the main question the Scott Committee has dealt with in a magnificent report which may well become a historic document in the planning war. The Report* was issued last Saturday. The Committee sat for 60 full-day meetings and took evidence from well over 100 interested bodies and individuals. Owing to the length of the Report—it runs to 80,000 words—it is impossible to print it in full; we therefore publish a digest of the more important sections and a summary of the chief recommendations. The Report is divided up into five parts: 1, the present position; 2, recommendations; 3, planning and development—machinery and procedure; 4, a five-year plan for Britain; 5, summary of recommendations and suggestions. Each part is sub-divided into chapters. Also included is a minority report by Professor S. R. Dennison (see p. 113). The Committee estimates that the gross cost of the preparation of the Report was £1,129 13s. 2d., of which £178 5s. represents the cost of printing and publishing.*

THE SCOTT REPORT

1. THE COUNTRYSIDE

For every acre of " developed " land —buildings, streets and roads—in England and Wales there are some eight acres of fields, woodlands, and other " open " land. Yet when many people think of this country it is of the big cities that they think first. England is now primarily a manufacturing and commercial country. The majority of the population lives in towns; it is only natural that they should regard the four million odd acres of urban development as the real England and Wales and the other 33 million acres of countryside as a pleasant though unimportant adjunct whose main purpose is to provide recreation and holiday facilities for the townsman. Yet agriculture, considered purely as an industry, is not only the dominant industry of eight-ninths of the country's area but also provides work directly for nearly a million people, and indirectly for many more in the industries catering for its needs.

This conception of England and Wales as a predominantly manufacturing country is comparatively recent. A century or a century and a half ago England and Wales were mainly rural and the most populous counties were those most favoured agriculturally. The relative position of agriculture has steadily declined, but it is important to realise that the pattern of the countryside as we know it to-day is largely the work of agriculturalists during the last few centuries.

We are very fortunate in our land both in its scenic beauty and its agricultural value. All the evidence shows that the best agricultural land in England and Wales rivals any other in the world. On the other hand the quality of the land varies very considerably from, for instance, rich arable stretches in the Fens, or fertile grazing pastures in the Midlands, to poor light lands such as the heaths of the New Forest, or the mountain moorlands of the west. No complete soil survey of the country has yet been carried out, but an attempt has been made by the Land Utilisation Survey to arrive at a general classification of land according to its actual and potential productivity and its inherent fertility. This classification, which is based on present and past land utilisation and such other evidence in the form of soil and vegetation surveys as may be in some areas available, as well as on local knowledge, divides the land into ten principal types, from 1, the finest farm land suitable for intensive cultivation, to 10, land agriculturally almost useless such as shingle spits and rock outcrops. The first four categories, which comprise the good agricultural lands, both arable and grass, are roughly estimated to cover 16,579,500 acres or 44.2 per cent. of the land surface of England and Wales; the next two categories are the lands of moderate quality and cover about 12,886,500 acres or 34.2 per cent. of the land surface; while the last four categories are the poor quality land, mostly mountain moorland, lowland heath, ill-drained very heavy land, rough marsh pasture and saltings, and cover 7,423,000 acres or 19.8 per cent. of the land surface. The remaining 1.8 per cent. of land is occupied by the chief towns. Smaller towns, villages, roads, etc., are included in the acreages of the type of land they occupy.

2. WAR

The impact of war has fallen not only on the towns and cities, the factories and offices, but has also caused great changes in the countryside, in the farms and villages.

Agriculture is once again playing a vital part in the national effort. The urgent need to increase home production of food has radically altered both the look and the outlook of the majority of country districts. Farmers have been called upon to improve their standards and methods of farming and to bring back into cultivation land which before the war had been allowed to lie idle. The fixing of agricultural

**Report of the Committee on Land Utilisation in Rural Areas. Prepared for MOWP. (H.M.S.O. Price 2/-).*

POPULATION AND LAND

Country.	Area in sq. miles.	Population.	Population per sq. mile.
England and Wales	58,340	41,031,000	703
Belgium	11,750	8,250,000	702
Holland	13,514	8,560,000	633
Germany	226,435	78,526,000	347
Italy	130,714	45,056,000	345
France	212,895	42,000,000	197
U.S.A.	3,026,789	131,669,275	43

Table 1.

England	50,330	38,552,000	766

Table 2.

The condition of a large population in relation to land area exists markedly in England and Wales, as table 1 *for* 1939 *shows. Further, in* 1939, *the figures for England alone were as shown in table* 2*; this table shows a still more striking density, and one considerably in excess even of that of Belgium, which is often quoted as the world's most densely populated national area.*

Population is never, of course, spread evenly over the surface of any country. Increasing "urbanisation" or concentration in towns has been one of the most outstanding characteristics of the last two centuries. In this regard also, the position in Britain is remarkable: more than one-third of the population of England and Wales lives in the six largest city-groups or "conurbations" of Greater London, Birmingham, Manchester, Liverpool, Leeds-Bradford and Tyneside, and over half lives in or near the 14 *chief urban centres. The census returns of* 1931 *showed that over* 80 *per cent. of the population lived in areas classified as "urban" for local government purposes, and even this high figure needs to be increased in view of the fact that there are many small towns which are situated in districts that are classified as "rural." We are the most urban nation in the world.*

It does not necessarily follow that either average population density, or degree of urbanisation, bears any direct relation to the actual area of land devoted to urban purposes. The amount of land occupied by towns depends on the traditional conditions of living in different countries. English towns are different from most continental towns in this respect. They are more loosely knit: the tradition of living in family houses rather than in flats means that they spread more widely and occupy greater areas, though reliable comparative statistics do not exist. The Ministry of Agriculture and Fisheries has estimated that in 1937 *some* 4,162,000 *acres of land in England and Wales were occupied by towns, villages, houses and buildings of all kinds, and by roads, railways, canals, docks, harbours, aerodromes, industrial waste areas, etc. That area had increased by* 438,000 *acres, from* 3,724,000 *acres, in the* 12 *years between* 1925 *and* 1937: *and since* 1937 *a great deal more land has been diverted from agriculture for use in connection with various defence works.*

In 1937, *therefore, the* 41 *million people who lived in England and Wales occupied some* 4,162,000 *acres with the various structures associated with their homes and work—including buildings, roads, railways, sewerage works, cemeteries and industrial waste heaps (but not playing fields, commons, and other open areas which, while not used primarily for agriculture, still retained a potential agricultural value). In other words, there were* 10 *people per "developed" acre.*

Expressed briefly, the uses to which the 58,340 *square miles or* 37,133,000 *acres of land in England and Wales were being put in* 1937 *were as follows:— some* 82.1 *per cent. of the total area was in agricultural production (including rough grazings); 1.1 per cent. was open land of various kinds not being used for agriculture, but of potential agricultural value; 5.5 per cent. was woodland; and the remaining* 11.3 *per cent. was covered by buildings, roads and various other forms of constructional development, or was otherwise unaccounted for in agricultural returns.*

prices has played a large part in providing the essential stability of conditions. At the same time County War Agricultural Executive Committees have taken over and restored to productivity thousands of acres of derelict land. The face of the countryside is being changed; it is losing its former sad and neglected appearance.

A national minimum wage has been introduced for men working in agriculture. From the earlier figure of 48s. a week fixed in 1940 it has now been raised to 60s. a week and the former disparity between the agricultural and the industrial wage has to a considerable extent been removed. A vast increase in mechanisation has taken place both to assist in increasing production and to ease the difficulties which have arisen from the loss of men to the Armed Forces and to other industries. Agricultural labour has been supplemented by the Women's Land Army. This force, which has been largely recruited in the towns, tends to show that many townswomen, especially when confronted with a choice between factory and farm, have a preference for country life and are able to adapt themselves to country conditions. At the same time the needs of agriculture have again instilled life into many of the rural trades. Blacksmiths are busily engaged on the repair of agricultural implements; wheelwrights are undertaking the maintenance of farm implements and vehicles and village garage mechanics the new machines; carpenters are hard at work putting in order buildings, gates and fences which had been allowed to fall into disrepair; saddlers have again more work than they can easily undertake. The war has, indeed, emphasized the shortage both of those skilled in many rural trades and in the actual number of establishments where work can be carried out.

3. DECENTRALIZATION IN BARLOW REPORT

The concentration of industry and industrial populations in congested urban areas formed the subject of the Barlow Commission's investigations. They came to the conclusion that such concentrations are socially undesirable and recommended the decentralisation or dispersal of both industry and the industrial population from such centres. We should like to emphasise the leap-frog movement by which belt after belt of industrial buildings and housing is added to the city which thus sprawls outwards over the surrounding countryside. While the Barlow Commission suggested that the best method of achieving dispersal should be studied by the Central Authority, which they recommended should be set up, we understand that their chief concern was to check the concentration of

population in the South Midlands and the South-east—particularly in London—and if possible redirect industry into industrial areas in the North and in South Wales.

The implementing of the Barlow Commission's recommendations does not therefore necessarily mean industry coming into country areas. But it is obvious that it would make the coming of industry into country areas more likely.

4. SCOTT COMMITTEE

Now our Terms of Reference are :—

" To consider the conditions which should govern building and other constructional development in country areas consistently with the maintenance of agriculture, and in particular the factors affecting the location of industry, having regard to economic operation, part-time and seasonal employment, the well-being of rural communities and the preservation of rural amenities."

In other words the main task which we have been set by our Terms of Reference is to consider the conditions upon which building and other constructional development should take place in country areas, without harming agriculture and the well-being of rural communities, or spoiling the beauty of the countryside.

We have accordingly assumed that the policy of the Government includes :—

(*a*) establishment of a Central Planning Authority ;

(*b*) encouragement of industry and commerce ;

(*c*) maintenance of a prosperous agriculture ;

(*d*) resuscitation of village and country life ;

(*e*) preservation of amenities.

5. PROBABLE POST-WAR TRENDS

For what is likely to happen after the war if the Government were to take no further action to regulate constructional development in country areas ?

Though the countryside may be in a stronger position than before the war to resist the invasion of the town, it can never be strong enough to hold on to its own even when it is in the national interest that it should do so, unless suitable conditions are created and suitable machinery and powers provided to enable it to fight its battle on terms of greater equality.

The broad conclusions reached, therefore, as a result of the review of the developments of pre-war years and the changes brought about by the war are that the former trends of constructional development, with perhaps some slight modifications tending to a greater diffusion into country areas, will, unless checked and directed, reassert themselves after the war. A post-war building boom, possibly even more intense than that which took place in the 1920's, if left to take care of itself, will lead to the same, and probably worse evils than those which took place in the inter-war period. The evils to the social well-being of town inhabitants as a result of ill-considered or uncontrolled urban spread are now well known and the evils from the point of view of the countryside are no less apparent in the years leading up to the present war. The future of the countryside will be profoundly affected whether on the one hand there is a continuation of the pre-war trend of industrial and urban development on the borders of existing concentrations of population or, on the other hand, a dispersal of the large concentrations of population under a Government policy—in other words whether future constructional development is haphazard or planned. Whether widespread dispersal of industry into the countryside does in fact come about or not, we have reached the conclusion, as a result of our survey of the position, that the continuation of *unregulated* constructional development following pre-war trends cannot be consistent with the maintenance of agriculture, the well-being of rural communities or the preservation of the beauty of the countryside, or indeed with the well-being of the nation as a whole.

6. REGULATION OF INDUSTRIAL LOCATION

One development which has arisen out of the war and which is of particular interest from the point of view of the regulation of industrial location is the setting up by the Board of Trade of the Factory and Storage Control. This body completely controls all factory and storage space in the country. Its consent must in general be obtained before premises are used for a particular purpose ; before any premises are extended ; before any change in use is permitted ; and before a new building is erected. In exercising this control its aim is, of course, to increase war production to the maximum possible extent. In working towards this end it is bound to take into consideration all the various problems such as labour, supply, transport, power, accommodation, which are linked up with factory and storage matters. It is thus building up a very considerable and important body of knowledge and experience in the working of an administrative machine for any post-war regulation of industrial location.

But industry varies greatly in character and the different types may be classified in many different ways. For the purposes of our consideration we have found it convenient to distinguish seven broad categories recognising at the same time that there are no hard and fast lines between the categories. Our classification is closely related to the problem of location.

The categories we have used are :—

(1) Extractive Industries and certain industries based thereon.

(2) Immobile or Rooted Industries.

(3) Linked Industries.

(4) Mobile Industries.

(5) Public Utility Undertakings.

(6) Rural Trades and Crafts.

(7) Trades providing the conveniences of life.

Whilst the evidence we have received has been to some extent contradictory, we have been impressed by the testimony of industrialists that the small factory is inconsistent with the trend of modern industrial organisation. To secure those economies essential if the commodity produced is to compete in costs and consequently in selling price with similar commodities produced elsewhere, a highly organised factory is essential in nearly all industries. This was stated to be the case even in such industries as canning and jam making which might be thought suitable for establishment as small units in country areas. Conditions differ widely with different industries but fifty employees was mentioned in evidence as a rough average for the smallest size possible for a modern economic factory engaged in one of the light industries. Bearing in mind the serious, even disastrous, consequences likely to result when there is local dependence on only one factory which for some reason or another closes down or on several factories all in the same industry if that industry becomes depressed, it seems clear that every endeavour should be made to " balance " industries and for that purpose, wherever possible, to group diversified industries together. Four or five such factories suggest a minimum number of employees of some 200 or 300 representing, with dependents, perhaps eight hundred to a thousand people. Without tying ourselves to these figures, we would point out that when account is taken of the families and dependents of workers and of the workers with their families in servicing and retail supply industries essential to any centre of population, as well as of the other inhabitants, the resulting total of that population becomes considerable. The general conclusion from this reasoning is that no modern factory can be located in a village (the ordinary village having less than 1,500

inhabitants) without the village changing its character and becoming in fact a small town. On the other hand the small country town suggests itself as a suitable place for small industrial units.

Although both the present practice and the trend of development differ in different industries, in many industries the tendency is towards a horizontal factory lay-out whereby even a small factory uses a considerable area of land. This is an additional disadvantage in a village.

We carefully examined evidence from industrialists who had actually established industrial works in recent years (*a*) in the open countryside and (*b*) in or on the outskirts of villages. In the former case we noted examples where, apart from key men compelled to live on the spot, the workpeople preferred to live in the neighbouring town and to cycle out to their work, and the evidence, notably in the case of milk processing factories in the heart of the country, that the employers considered a site on the margin of a town would have been more suitable. We had evidence of the very successful establishment of factories in villages and of the gradual fusion of social life of the industrial and rural workers but, on closer examination, we found that the villages as a result were more correctly described as small towns with populations of 2,000 to 5,000 or more inhabitants.

We have endeavoured to show that:—

(*a*) the locations of the extractive and many heavy industries are determined by immutable physical conditions which may sometimes necessitate their coming to country areas and that planning should be directed towards details of site, buildings and disposal of waste ;

(*b*) though many light industries are theoretically "mobile" they are in practice tied to a limited choice of localities ; where they are brought into rural areas they should be located in existing or new small towns rather than in villages or the open countryside ;

(*c*) rural trades and crafts or hand manufactures should on the other hand be located in villages and should be encouraged.

There remains the question, however, whether industry should be encouraged to assist in the establishment of new towns in what is at present the open country. Apart from the actual capital invested the nation has a moral obligation towards existing towns, for example in parts of the north where there are vacant or derelict industrial sites and an urban population, used to factory life, partially unemployed. By the creation of trading estates, or by the clearing of suitable sites and in other ways, industry should be encouraged to go to these existing industrialised areas. In our view it would be wasteful and against the national interest if such industries should be encouraged to go into country areas before urban sites which should be developed have been taken up.

There may still be industries which desire new sites and either prefer country areas or a new town. We deal next with new garden cities and satellite towns and factors which should be considered in their siting, but it will be useful to summarise here both the good and bad effects which industrial development has upon the countryside according to the evidence we received based on pre-war trends. The possible harmful effects of larger scale developments include :—

(i) Loss of productive agricultural land ; (ii) Dislocation of farming and break-up of farm units ; (iii) Harmful effects on agricultural production by noxious fumes and poisonous effluents ; (iv) Attraction of labour, especially the younger workers, away from agriculture ; (v) Social disturbance through contact between rural and urban mentalities ; (vi) Spoliation of the beauty of the countryside by bad siting and bad design of buildings.

These effects resulted mainly from the congregation of industry on the outskirts of big cities. They are obviously likely to be magnified if industry is dispersed into the heart of country areas, and particularly if it were sited in villages or in the open countryside. A few of these effects, as for instance the attraction away of labour and social disturbances, may be neutralised or mitigated if the steps which we have recommended are carried out.

On the other hand, other witnesses have urged the advantages of the establishment of industrial units in villages or the open countryside and suggest that such would help considerably in the revival of rural life and would therefore be in the national interest.

Their reasons for so thinking may be summarised as follows :—

(i) Suitable industries would revive country life and bring town and country closer together ; (ii) Suitable industries would provide employment for the wives and daughters of rural workers ; (iii) Suitable industries would provide alternative avenues of future employment for young boys and girls ; (iv) Suitable industries would provide seasonal work for agricultural workers in winter ; (v) Factories would bring in their wake an improvement in the physical and social standards of country areas, e.g., electricity, gas, water supply, educational and recreational facilities, etc.

By "suitable industries" most of those who expressed this view have meant those industries closely connected with agriculture, or forestry, or those relying particularly on female or juvenile labour, as, for instance, canning, jam making, agricultural implement manufacture, fertiliser production, furniture making, glove making or hosiery.

There are industries where noxious fumes and poisonous effluents are difficult to eliminate entirely and which are therefore capable of doing widespread harm to agriculture and the countryside. We consider that their location should be subject to most stringent control.

We have carefully considered the advantages which it is claimed the introduction of these industrial units into villages or the open countryside would bring. We believe that the maintenance of agriculture, together with the steps recommended elsewhere, will in themselves have the effect of reviving country life and bringing about an improvement in the physical and social standards of country areas.

The provision of alternative occupations for women and young people would be of advantage but certain dangers might be involved, as for instance, the attraction away from agriculture of the younger generation and the causing of discontent, at least amongst their menfolk, by attracting married women from their households for full-time paid employment. If industrial units were sited in existing or new small towns in country areas, they would rely less on labour from purely agricultural communities, and for those in the villages who so desired it would be possible to take up employment in the nearby town factories without living away from home.

Summarising, we recommend that industry should be encouraged first to make use of vacant or derelict sites in towns and that where industries are brought into country areas they should be located in existing or new small towns and not in villages or the open country.

On balance we consider the introduction of carefully regulated industry in this way would be beneficial to the countryside.

7. GARDEN CITIES

There is a widespread movement among town planners that new construction after the war shall take the form of well-designed towns with a spacious lay-out, where the areas devoted to housing are carefully sited in relation to the industrial sections and the shopping and community centres, where the houses are designed as

integral units in a well-conceived street lay-out and have abundant garden space and where indeed there are all the facilities for a complete and satisfying life both for the individual and the community as a whole. These are the ideals which the founders of the garden city movement had in mind and which the garden cities, despite the erroneous views frequently held about them, have endeavoured to achieve. It is possible that some of the war-time factories in rural areas may form the nuclei of such new settlements ; it may be that satellite towns to be built beyond the green belts of existing towns will be of this type. Their demand for rural land will be considerable and we are of the opinion that any proposed sites should be examined with the utmost care from both national and local standpoints.

We have pointed out that the amount of good farmland, and especially the amount of the best farmland, in England and Wales is very strictly limited, and we have noted that good land being well drained and relatively level is easily developed—that it is, in other words, also the best land, in the sense of being the easiest land to use, for constructional development.

Unless there are strong reasons to the contrary, new towns should not be sited on good agricultural land. We have examined carefully the view that the gardens, being intensively cultivated, of a garden suburb, provide more produce than if the whole area were farmed, but we are unable to accept this view. The comparison in the case of good land should be between the proportion of the gardens which is used in the growing of fruit and vegetables and the whole area if it were under intensive market gardening. Reliable figures of the proportion, after due allowance has been made for roads, footpaths, actual house area, garden paths, lawns, flower beds, etc., of the total area used productively are not available, but in cases examined it is not above 25 per cent., and we take the view that once good agricultural land is taken for housing, it is of necessity lost to agriculture for ever, no matter how desperately it may be needed in the future for food production.

8. ROADS

While we are not directly concerned with highway policy, we wish to place on record our opinion that increasing provision must be made for fast road traffic. We note that some of the newer main roads with dual carriage ways, grass verges, cycle tracks and neat hedges or borders of the American parkway type show what satisfactory results can be achieved with new roads, though other trunk roads of recent construction are unfortunately examples of most that is bad. We would prefer to see bold planning for a number of new trunk highways, even at the expense of using agricultural land and altering the character of the land through which they pass, rather than a continuance of piecemeal widening of existing roads which ruins them aesthetically and gives a final result far from satisfactory even to road users. With a co-ordinated system of Class A roads, some limitation of traffic on by-roads might be considered. The development of new ports (e.g., on the west coast) and new industrial areas may necessitate the construction of new trunk roads whilst other main roads may be needed for the opening up of hitherto little-used areas for recreational purposes. It is in this connection that we desire to see care, thought and boldness in planning. As we have already said in paragraph 206 we consider that the passage of main roads through villages and small country towns not only ruins the villages and towns concerned and has a disastrous effect upon the life in them, but is also dangerous to the road traffic itself. Wherever possible therefore we recommend that new trunk roads should be planned to avoid villages and small country towns, and, in the case of existing main roads which pass through villages and small country towns, by-passes should be constructed.

9. TRAINING OF PLANNERS AND ARCHITECTS

We are not satisfied that the training of either planners or architects is adequate for the work they will be called upon to perform if our recommendations are adopted. We are of the opinion that many employed as "town planners" are inadequately trained in the broader aspects of their work, especially in their knowledge of agricultural and rural matters and in their appreciation of landscape and landscape architecture. We are of the opinion that many architects have paid inadequate attention to the design of rural houses and to the design of village or town units rather than of individual dwellings or other buildings. We recommend that the universities, colleges and professional institutions concerned draw up comprehensive schemes for the training of young men and women to fulfil the requirements of the offices indicated in our proposals. We attach great importance to a very high standard being required and maintained for professional qualifications.

10. A FIVE-YEAR PLAN FOR BRITAIN

Planning is a continuous and evolutionary process in national development. We have emphasized specially the need for long-term policies, for example in agriculture, to secure the necessary conditions of stability for satisfactory development. In the realm of forestry, planning involves looking ahead for at least a century ; in constructional development possibly for even longer periods. In thus calling attention to the long-term character of planning there is danger that matters of real urgency, demanding immediate attention, may be deferred for future consideration. This is a very real danger : it is apparent at the present time when there is a not unnatural tendency to say that the immediate problem is the winning of the war and that all questions of planning and reconstruction can be considered when peace comes. Nothing could be more fallacious : for not only is the vision of the future the stimulus for the present, but plans must be made in advance and be ready when the time for their execution comes. As a nation we may have a genius for extemporisation ; but our great failures, both in war and peace, have been due to a failure to think ahead and to make plans in advance.

Two points emerge. One is the necessity of making plans for the use of land *now* and of passing the necessary legislation so that they can be put into operation immediately on the cessation of hostilities—this we have already emphasized in the Report. The other is the importance of drawing up a definite plan of work to be accomplished within a definite period of time—a definite plan which shall be part of the general long-term planning policy. There is no magic in a specified number of years but much that we have recommended can, and should, be completed within five years and hence it is suggested that a definite five-year plan be formulated. We presume that the necessary legislation will be passed before the "zero hour" for the plan, which should coincide with the cessation of hostilities. The legislation should include that for the setting up of the Central Planning Authority with the result that the Minister for National Planning and the Central Planning Commission with its research staff and at least a skeleton staff for organisation will be in existence before the end of the war. In addition the existing Town and Country Planning Acts will, we assume, have been amended.

SUMMARY OF RECOMMENDATIONS AND SUGGESTIONS BY THE SCOTT COMMITTEE

RURAL HOUSING

(i) The improvement of rural housing is an essential prerequisite of a contented countryside; (ii) New houses should be built ready-wired for electricity and appropriately constructed to receive gas and water supplies even if these services are not immediately available; (iii) The rating assessment position should be considered by the Government since at present it may hinder improvements; (iv) The condition of all rural dwellings should be investigated and restorations in harmony with traditional local house design carried out to bring old dwellings up to modern standards; (v) The number of rural houses fit for habitation is totally inadequate and a big building programme should be undertaken after the war; (vi) Rural housing designs should be subject to approval for plans and elevations as well as for materials by Statutory Panels of paid architects and others which should be appointed for the purpose; (vii) Women should be appointed members of all Housing Committees of Local Authorities.

TIED COTTAGES

(i) The number of tied cottages should be reduced to a minimum and such tied cottages should normally be reserved for appropriate workers; (ii) The supply of "untied" cottages should be always sufficient to house at least the agricultural workers of the district; (iii) Farm workers should be encouraged to have cottages built for their own occupation and with this end in view the subsidy provisions of the 1938 Housing Act should be more widely known.

AGRICULTURAL BUILDINGS

All agricultural buildings should be brought under planning control.

ELECTRICITY

(i) Electricity should be made available throughout the country at no higher price to the consumer than in the town. We do not anticipate that any increased burden will result for the town; (ii) The Electricity Commissioners should be instructed to prepare a scheme for consideration by the Government for the reorganisation of electricity supply to enable this to be done. Various special points for consideration are mentioned; (iii) Electricity undertakings should be subject to national planning control.

GAS

(i) The Ministry of Fuel and Power and the Ministry of Agriculture in conjunction with bodies representing the industry and in consultation with the Central Planning Authority should examine the possibilities of extending gas supplies to rural areas and prepare plans accordingly; (ii) Gas undertakings should be subject to national planning control.

WATER SUPPLY

(i) The Ministries of Health and Agriculture in conjunction with the industry and in consultation with the Central Planning Authority should review the whole position of water supply from the national point of view with special reference to the following matters, amongst others:—(*a*) the provision of a main supply to all towns and larger villages not at present supplied; (*b*) the reorganisation of supply areas; (*c*) the use of gathering grounds for additional purposes, e.g., hill sheep farming, afforestation, recreation; (*d*) the facilitation of a piped supply to all farms, market gardens and allotments. (ii) All water supply undertakings should be brought under national planning control.

WAY LEAVES

The position with regard to way leaves should be examined and electricity, gas and water supply undertakings put on a comparable footing; provision for rights of compulsory acquisition of land and way leaves should be embodied in local planning schemes.

VILLAGE INSTITUTIONS

(i) A permanent advisory Committee on village life and institutions should be set up; it should include representatives of the Board of Education, the Ministry of Agriculture, and the various other national bodies concerned as well as of the religious bodies interested; (ii) Steps should be taken to provide social centres of the village college type throughout the country; (iii) A village hall should be provided in all smaller villages; (iv) The performance of certain duties should be incumbent upon a properly elected Parish Council.

PLAYING FIELDS

Every village should be provided with adequate playing fields and the advice of the National Playing Fields Association sought.

FORESTRY AND ARBORICULTURE

(i) There should be an extension of afforestation on poor land together with the establishment of foresters' part-time holdings and national forest parks; (ii) The Forestry Commission should be empowered to enforce the proper management of all woodland in the country; (iii) More attention should be paid to the planting of trees and shrubs in the design and lay-out of housing development.

ACCESS TO THE COUNTRYSIDE

(i) There must be facility of access for all to the countryside but this must not interfere with the proper use of land in the national interest; (ii) The Board of Education and the Ministry of Agriculture should organise a publicity campaign with the bodies concerned to educate the urban public, the landowners and farmers in the better provision and enjoyment of access to the countryside; (iii) There should be an extension of organised visits officially recognised and supported by the Board of Education of parties of schoolchildren into the countryside; (iv) If educational publicity fails adequately to control the use of the countryside by the urban public, there should be severer penalties and a stricter enforcement of the law.

FOOTPATHS AND BRIDLE-PATHS

(i) There should be a statutory obligation on the local planning authority to record on maps and to signpost clearly all undisputed rights of way and to try and reach agreement with owners in disputed cases; (ii) A small Footpaths Commission should be set up to investigate all disputed cases and give decisions; (iii) The Commission should have the duty to recommend opening of new footpaths and closing of old—an order from the Central Planning Authority to make it legally effective; (iv) The local authority should be under a statutory obligation to supervise and keep up footpaths; (v) Footpaths in hilly and remote areas should be marked by bands of colour on trees, posts, stones, etc.; (vi) Main "hikers' highways" should be recognised; and a right of way for walkers round the whole coast-line provided; (vii) Bridle-paths should be dealt with by the Footpaths Commission by a similar procedure; (viii) Footpaths on the field side of existing hedges should be provided beside main roads in suitable cases.

CONTROL OF USE OF RIGHTS OF WAY

There should be regulation of use of rights of way on the basis of formula agreed by a Committee of interested bodies, and failing agreement by legislation.

NATIONAL AND REGIONAL PARKS AND OTHER OPEN SPACES

(i) National Parks should be delimited and a National Parks Authority set up; (ii) The Central Planning Authority in consultation with the Ministry of Agriculture should take steps to record details of common lands, safeguard public rights of access, and commoners' rights; also the upkeep of commons should be investigated.

NATURE RESERVATIONS

The Central Planning Authority, in conjunction with the appropriate Scientific Societies, should delimit nature reserves, and take the necessary steps for reservation and control.

CAMPS

Further holiday camps should be provided, subject to planning control of siting and design.

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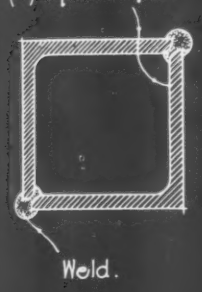
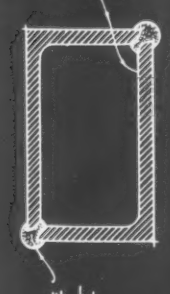
TABLE GIVING EFFICIENCY COEFFICIENTS FOR CENTRALLY-LOADED COLUMNS MADE UP OF TWO B.S.S. (EQUAL) ANGLES, TOE-TO-TOE.

TYPICAL DETAILS OF COLUMN SECTIONS.

(a) equal angles.



(b) unequal angles.



SIZE OF EACH ANGLE, INS.	WT. PER FT., LBS.	OVERALL SIZE, INS.	LENGTH OF COLUMN OR STRUT IN FEET. 6.	7	8.	9.	10.	12.	14.	16.	18.	20.
2 x 2 x ¼	6·38	2 3/16 x 2 3/16	0·50	0·40	0·33	0·27	·	·	·	·	·	·
2¼ x 2¼ x ¼	7·22	2 7/16 x 2 7/16	0·57	0·48	0·40	0·34	0·28	·	·	·	·	·
2½ x 2½ x ¼	8·08	2 11/16 x 2 11/16	0·64	0·55	0·47	0·39	0·35	0·24	·	·	·	·
3 x 3 x ¼	9·78	3 3/16 x 3 3/16	0·72	0·65	0·59	0·51	0·45	0·35	0·27	·	·	·
3½ x 3½ x ¼	11·48	3 5/8 x 3 5/8	0·77	0·72	0·66	0·61	0·48	0·43	0·36	0·28	·	·
4 x 4 x 3/8	19·46	4¼ x 4¼	0·80	0·76	0·72	0·67	0·62	0·51	0·42	0·35	0·29	·
4½ x 4½ x 3/8	22·00	4¾ x 4¾	0·81	0·79	0·76	0·72	0·68	0·59	0·50	0·41	0·35	0·29
5 x 5 x 3/8	24·56	5¼ x 5¼	0·84	0·80	0·79	0·76	0·72	0·65	0·57	0·48	0·41	0·36
6 x 6 x 3/8	29·64	6 3/16 x 6 3/16	0·86	0·84	0·81	0·80	0·78	0·72	0·66	0·60	0·52	0·45
7 x 7 x ½	45·90	7 5/16 x 7 5/16	0·87	0·86	0·84	0·82	0·81	0·77	0·72	0·66	0·61	0·55
8 x 8 x 5/8	65·36	8 7/16 x 8 7/16	0·90	0·87	0·86	0·84	0·83	0·80	0·76	0·72	0·67	0·63
(UNEQUAL ANGLES)												
3 x 2 x ¼	8·08	3 3/16 x 2 3/16	0·56	0·47	0·39	0·32	0·27	·	·	·	·	·
3½ x 2½ x ¼	9·78	3 11/16 x 2 11/16	0·68	0·61	0·52	0·45	0·38	0·29	·	·	·	·
3½ x 3 x 3/8	15·62	3 13/16 x 3 5/16	0·73	0·68	0·62	0·55	0·48	0·36	0·29	·	·	·
4 x 2½ x 3/8	15·62	4 5/16 x 2 13/16	0·62	0·52	0·45	0·37	0·32	·	·	·	·	·
4 x 3 x 3/8	16·90	4 5/16 x 3 5/16	0·70	0·63	0·55	0·48	0·41	0·32	·	·	·	·
4½ x 3 x 3/8	18·18	4 3/16 x 3 5/16	0·71	0·65	0·57	0·50	0·43	0·32	0·25	·	·	·
5 x 3 x 3/8	19·46	5 5/16 x 3 5/16	0·72	0·66	0·60	0·52	0·46	0·33	0·27	·	·	·
6 x 3 x ½	28·90	6 3/8 x 3 3/8	0·74	0·67	0·61	0·53	0·47	0·36	0·28	·	·	·
7 x 3½ x ½	34·00	7 3/8 x 3 7/8	0·78	0·74	0·68	0·62	0·56	0·45	0·36	0·29	·	·
8 x 3½ x ½	37·40	8 3/8 x 3 7/8	0·78	0·73	0·68	0·62	0·56	0·45	0·35	0·29	·	·

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INFORMATION SHEET
• 874 •
STRUCTURAL STEELWORK

Subject : Welding 37 : Comparative Efficiencies of Centrally Loaded Columns made up from two B.S.S. angles, Toe-to-Toe.

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 first of a group giving comparative Efficiency Co-efficients of welded steel columns, and deals with equal and unequal boxed angles (placed toe-to-toe).

Safe Loads :

The efficiency of a column depends upon its slenderness ratio, that is, its length divided by the least Radius of Gyration of its cross section. The ratio of the allowable stress in the column (which depends upon its slenderness ratio) to the maximum working stress for the material is known as the Efficiency Co-efficient.

From Sheet No. 11 of the Riveted series it will be seen that in the general case the safe load which can be carried by a plain joist column is 7.2eA, where A equals the cross sectional area of the column and e the Efficiency Co-efficient. In the case of built-up columns the Efficiency Co-efficients have been reduced to allow for the extra labour, etc., required. In the case of boxed angle columns the allowance assumed is 10 per cent., so that the corresponding Efficiency Co-efficients can never be greater than 0.9.

The safe load which can be carried by a boxed angle column is therefore

$$W = \frac{7.2eA}{.9} = 8Ae$$

or in terms of the weight per foot run of the column

$W = 2.35we$ where w = the weight per foot run of the column.

I Sections :

The Efficiency Co-efficients for I sections or plated I sections are the same for both welded and riveted construction and the values given on Sheet 11 of the Riveted series may be applied to welded construction.

Comparative Efficiencies of Joist and Boxed Angle Columns :

The Efficiency Co-efficient of one type of section obviously increases with the size of the section but it can be easily verified that for a given weight per foot run a section consisting of two angles has a greater efficiency than one of R.S.J. Section.

For Example :—A column composed of two equal angles 6 in. by 6 in. by $\frac{3}{8}$ in., having a weight of 29.64 lbs./ft. run has an Efficiency Co-efficient for a length of 12 ft. 0 in., of 0.72, while an R.S.J. section 10 in. by 5 in. having a weight of 30 lbs./ft. run has an Efficiency Co-efficient of only 0.34. For a 6 ft. 0 in. length the angle column would have a co-efficient of 0.86 and the R.S.J. of 0.76.

Unequal Angles :

In general, columns composed of equal angles are more efficient than those composed of unequal angles, as they have the same degree of stiffness in both directions. Columns of unequal angles, given in the second part of the table, would be used mainly in cases where it is necessary to keep one dimension as small as possible—for instance where it is desirable that the column should not project from the wall face.

For example :—A column consisting of two angles 6 in. by 3 in., having a length of 8 ft. 0 in., can carry a safe load of $2.36 \times 28.9 \times 0.61 = 41.3$ tons, a load which could not be carried by an R.S.J. only 3 in. in width. Thus it can be seen that the column made up of angles is not only more efficient than an R.S.J. but also requires less space.

Buckling, Etc.

For notes on buckling length, restraint, etc., see Sheet No. 11 of the series on riveted construction.

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, 867, 869, 870 and 871.

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INDUSTRY IN COUNTRY AREAS

Extractive Industries

(i) Extractive industries, though their location is determined by immutable physical conditions, which may often necessitate their coming into country areas, should be subject to effective planning control ; (ii) In principle it is wrong that any body or person should be allowed to work land for the extraction of minerals and leave it in a derelict condition. Legislation should be passed imposing an obligation on all those who derive benefit from the working of land for minerals to restore that land for agriculture or afforestation or other purposes within a short specified period of time after the land has been worked out ; the legislation to be passed as soon as the Government is satisfied that suitable equipment can be made available ; the technical question of machinery should form the subject of immediate investigation by the Government Departments concerned ; (iii) In future, where land is leased or bought for the purpose of extracting minerals the primary responsibility for restoring the surface should be placed on those working the minerals leaving it to them to make suitable financial arrangements with the landowners or other persons concerned ; (iv) Leave to prospect and develop minerals should be required and a deposit or security to cover the cost of restoration should be made ; (v) Provision should be made for the immediate or ultimate treatment of land rendered derelict through subsidence owing to deep workings where such treatment is economically feasible ; (vi) The Central Planning Authority should take steps to make a special investigation of derelict or decaying mining areas with a view to their more productive utilisation.

Immobile or Rooted Industries

(vii) Many heavy industries are immobile and must remain in the large urban concentrations ; (viii) The disposal and future use of war factories established in the countryside should be determined by the Central Planning Authority in conjunction with the other Departments primarily concerned, each case being examined on its merits : the review should begin as soon as possible.

Linked Industries

(ix) Linked industries should remain in existing urban concentrations or trading estates : the question of their dispersal into country areas only arises to a limited extent.

Mobile Industries

(x) Many light industries are theoretically mobile but in practice are often tied to a limited choice of localities : where they are brought into rural areas they should be located in existing or new small towns rather than in villages or the open countryside.

Public Utility Undertakings

(xi) Production and storage units of public utility undertakings must sometimes be located in villages or in the open countryside. They should be subject to strict planning control as regards siting and appearance.

Rural Trades and Crafts

(xii) Rural trades and crafts should continue to be sited in small towns or villages and should be encouraged. The creation of guilds of craftsmen and the whole question of apprenticeship to such crafts should be reviewed.

Trades Providing for the Conveniences of Life

(xiii) Such trades must find a place in country areas in those locations, namely small towns or villages, which are most convenient for the rural communities.

Seasonal and Part-time Employment

(xiv) No modern industry has been suggested which would provide seasonal or part-time employment for agricultural workers and their families : appropriate bodies should be asked to make a special study of this problem.

Noxious Industries

(xv) The location of industries which emit noxious fumes or poisonous effluents should be subject to stringent control

Location of Industry

(xvi) Before new towns are established in country areas vacant or derelict industrial sites in existing towns should be fully utilised, but on balance introduction of carefully regulated industry into the towns of country areas would be beneficial.

HOUSING AND PLANNING IN COUNTRY AREAS

(i) From the initiation of all town planning schemes involving the use of agricultural land there should be the closest collaboration with the Ministry of Agriculture and Fisheries ; (ii) Every local planning scheme should be agreed by the Ministry of Agriculture before approval by the Central Planning Authority and in the event of disagreement the suggested machinery for the resolution of inter-departmental differences should be utilised ; (iii) As far as possible tracts of good soil in the neighbourhood of towns and villages should be kept for the dual purpose of open spaces and market gardens and allotments and accordingly allotment holders should have security of tenure instead of the liability of being displaced by housing development ; (iv) Provision should be made for town-dwellers to keep pigs and poultry and to continue other rural occupations ; (v) The area and delimitation of " green belts " should be agreed with the Ministry of Agriculture ; (vi) Agricultural, soil, and land classification surveys should be made round each expanding urban area with the object of directing housing and other construction towards less productive land and of preventing the disruption of farm units ; (vii) New satellite towns, housing estates, garden cities and suburbs should be sited wherever practicable away from the better farm land and due attention should be paid to agricultural considerations in their siting : as in the case of the planning of existing towns the Ministry of Agriculture should be consulted from the inception of the planning schemes ; (viii) Sporadic building in villages and rural areas should be controlled and planning schemes designed so as to direct all new settlers into country towns and villages except where they can advance some decisive reason why they should be housed in the open countryside ; (ix) New villages and extensions of villages should be planned and should as far as possible be of a compact and closely knit character : no attempt should be made to re-create in new villages the irregularity and " quaintness " of old ones : the services of the statutory panels of architects and planners should be available for all planning and construction in villages as well as in the open countryside ; (x) All new villages and country towns should be situated away from main traffic roads though within easy access to them and all existing villages and country towns which have main traffic roads running through them should be by-passed as far as possible ; (xi) New buildings in country areas should use to the full all the possibilities which new materials and new building techniques have made available though the buildings should be designed so as to harmonise with their surroundings : building in block formation is to be preferred to building in scattered detached units, so far as scenic effect is concerned : the use of materials should be controlled.

AERODROMES

(i) Aerodromes have involved the use of much good agricultural land. The need for further Service aerodromes after the war is not likely to be great, but if new ones are required consultation should take place as at present between the Departments concerned under the supervision and direction of the Central Planning Authority : it is hoped that it will not be necessary to take further tracts of good agricultural land ; (ii) If some Service aerodromes can be disposed of after the war the question of their alternative use should be settled by the Central Planning Authority in conjunction with the Departments concerned and not by the Service Departments alone ; (iii) Civil aerodromes should form a part of local planning schemes and their siting and buildings should be controlled : it is hoped that it will not be necessary to withdraw first class farm land for this purpose.

DEFENCE WORKS

The Central Planning Authority in consultation with the Service Departments should draw up plans now for the removal of temporary defence works: this removal should be carried out by the Ministry of Works on behalf of the Service Departments and the land made available for other purposes.

ROADS AND RAILWAYS

(i) There should be greater co-ordination and collaboration between the Planning, Highway, and Agricultural Authorities in the case of the construction of roads; (ii) The exemption of railway undertakings from planning control should cease; (iii) There should be bold planning for a number of new trunk highways, even at the expense of using agricultural land, rather than the continuance of piece-meal widening of existing roads; (iv) New trunk roads should be planned to avoid villages and small country towns; (v) Railway level crossings on important roads should be eliminated and many old railway bridges should be rebuilt.

PETROL STATIONS

(i) Regulation of petrol stations should be exercised under planning powers rather than by a separate system of by-laws: the law should be amended accordingly; (ii) The control of petrol stations should be specially considered by the Central Planning Authority in conjunction with the Ministry of Transport and directions issued for observance by local planning authorities.

OTHER WAYSIDE CONSTRUCTION

Control should be exercised by local planning authorities subject to general directions by the Central Planning Authority over the construction and appearance of transport cafés, wayside cafés and restaurants, etc.

ADVERTISEMENTS

Control should be exercised over the siting and character of advertisements by means of a licensing system exercised by the local planning authorities in accordance with national principles.

CEMETERIES

Special consideration should be given by the Central Planning Authority to the question of cemeteries.

PLANNING

All land should be planned both nationally and locally.

CENTRAL PLANNING AUTHORITY

Paragraphs 216 to 222 state in an already condensed form our recommendations for the machinery which we believe to be the most suitable both for national planning in general and for carrying out our substantive recommendations in particular. Our views as there summarised form a complete and considered whole; and are hardly capable of further condensation without running the risk of misunderstandings.

National Planning

Every interest which in any respect transcends merely local interests, should be regarded as a national interest.

Local Planning

(v) Local planning must be compulsory and not permissive; (vi) The primary local planning unit should be the County or County Borough and its surrounding area, or a combination of local government units comparable in area, resources, or importance; (vii) Local planning authorities must employ qualified personnel; (viii) Consultation between neighbouring planning authorities must be compulsory, such co-ordination being a national interest; (ix) Local planning authorities should be freed from the restrictions in the zoning of agricultural land due to liability for compensation; (x) Where local authorities are carrying out their assigned part of a national plan the expense should not fall on their own financial resources; (xi) When approved, local planning schemes should be a complete code of enactments affecting both the development of the land and the functions of the statutory authorities within the area of the scheme; (xii) All local planning schemes actually in operation or awaiting approval must be reviewed.

Regional Organisation

(xiii) The Central Planning Commission should set up a regional organisation; (xiv) There should be a special Welsh Department of the Commission presided over by a Welsh Commissioner.

PROCEDURE

(i) A procedure similar to that adopted under the present Town and Country Planning Act of 1932 but considerably strengthened both locally and by the super-imposition of national planning is the best method of controlling land use in country areas; (ii) Certain land zones should be delimited nationally, e.g., national forest zones and national parks: in the case of national parks, the National Parks Authority should become the *ad hoc* Planning Authority; (iii) In future *all* considerations affecting land use should be taken into account in land planning, and in country areas one of the most important of these must be the agricultural aspect: in planning rural land particular importance should be attached to agricultural considerations: agricultural land should not be handed over unless a clear case in the national interest has been made out—onus of proof; (iv) It should be obligatory to obtain the consent of the local planning authority before any building or other constructional development is allowed to take place during "the interim period": before granting such consent the local planning authority should refer such cases to the Regional Officer of the Central Planning Authority who should have power, after consulting the Regional Officers of other Departments, to veto the proposed consent if it does not accord with the national interest: the local planning authority or the Regional Officers of any Government Department concerned should have the right to appeal to the Central Planning Authority if they disagree with the decision of the Regional Officer of the Central Planning Authority; (v) Adequate provision should be made for appeals by both sides.

CONTROL AND OWNERSHIP OF LAND

The power of compulsory acquisition of agricultural land by the State should be exercised where required in the interests of national planning or of providing agricultural efficiency.

REGISTRATION OF TITLE

Registration of title of land should be made compulsory over the whole of England and Wales.

ORDNANCE SURVEY

Maps on the scale of 1 : 25,000 (new 2½ inches to the mile maps) should be made available for all planning purposes: adequate funds should be made available to the Ordnance Survey for this purpose.

STATUS AND TRAINING OF PLANNERS AND ARCHITECTS

Universities, college and professional institutions should draw up comprehensive schemes for the training of young men and women to act as planners and architects.

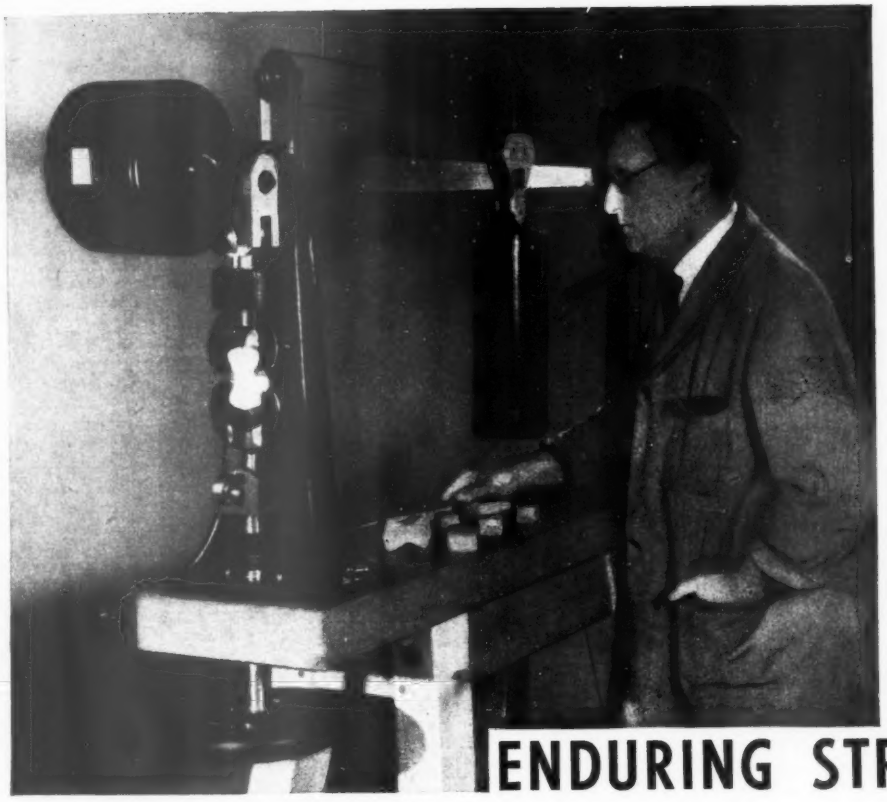
FIVE YEAR PLAN FOR BRITAIN

Most of the recommendations made in the report should be carried out within a fixed space of time after the end of the war and suggestions are made accordingly.

LESLIE SCOTT (*Chairman*).
L. DUDLEY STAMP (*Vice-Chairman*).
ROBERT COBB.
H. S. COOPER.
G. DENMAN.
*HERMIONE HICHENS.
A. E. MONKS.
RADNOR.
R. HUGH ROBERTS.
PHILIP ROBINSON.
R. ALEC WARD.

THOMAS SHARP,
B. C. ENGHOLM,
Joint Secretaries.

* With reservations.



TENSILE TESTING APPARATUS BY PATRICK ADIE, LONDON

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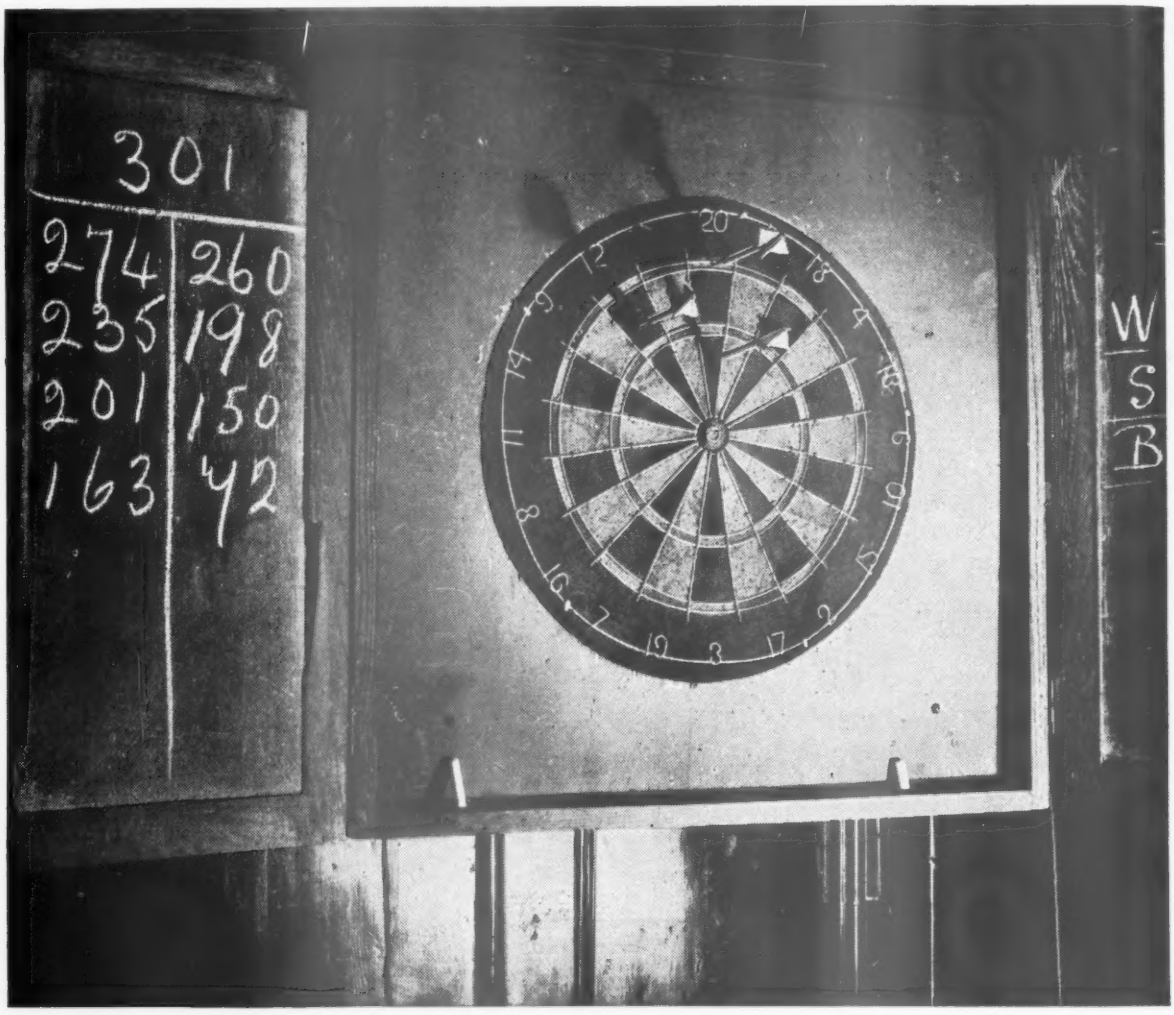

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Twelve and twenty's thirty-two—double-top wanted, double-top got. You may be able to get a finish like that quite often—if you're hot enough.

There is another perfect finish—Cerrux, that is appreciated wherever it is used. To-day, naturally it is somewhat restricted for non-essential purposes but we shall be happy to supply you, if we are permitted to do so. CELLON, Ltd., Kingston-on-Thames, Telephone: Kingston 1234.

CERRUX
DECORATIVE FINISHES

CVS-497C

LITERATURE

BUILDING BULLETIN

The Building Research Station of the Department of Scientific and Industrial Research has just issued Wartime Building Bulletin No. 20 on *Sand-Lime Bricks* (H.M. Stationery Office, price 3d.), which provides, in a concise form, up-to-date information on the properties and uses of sand-lime bricks, including points of direct war-time interest such as fire resistance, and resistance to blast and earth shock effects and splinter penetration. It is noted that the quality of sand-lime bricks is defined by the newly-revised British Standard Specification for Sand-Lime Bricks (No. 187—1942).

BOMB DAMAGE

Only a qualified expert on the spot can decide what to do to a bomb-damaged house, after taking into account all the complex factors which affect the decision in a particular case. One of these factors, on which data have hitherto been lacking, is the strength of damaged walls. Wartime Building Bulletin No. 21 (*Notes on the Repair of Bomb-Damaged Houses*, H.M. Stationery Office, price 1s. net), just issued by the Building Research Station of the Department of Scientific and Industrial Research, to help the expert in making his decision, gives him the results of laboratory and field tests carried out by the Building Research Station on the strength of damaged walls. The Bulletin also contains some general suggestions on repair problems, including the treatment of dry rot and the decoration of damaged houses.

FACTORY VENTILATION

A pamphlet, *Factory Ventilation in the Black-out*, was issued in the early part of the War and has now been re-issued in a slightly revised form by the Factory Department of the Ministry of Labour and National Service. The pamphlet describes briefly the various measures which can be taken to improve ventilation without permitting the escape of interior artificial light, such as mechanical ventilation, provision of light-trap ventilators and stimulation of air movement. A number of drawings are included showing simple ideas for the construction of light-traps at ventilator openings, such as windows and other wall and roof openings. Copies of the pamphlet may be purchased from H.M. Stationery Office, price 3d.

B.S.I.

A War Emergency Code of Practice for Electrical Wiring Installations, prepared by the Institution of Electrical Engineers on behalf of the Codes of Practice Standardisation Committee which has been set up under the aegis of the Ministry of Works and Planning has just been published by the British Standards Institution as a War Emergency British Standard, together with a series of specifications for various types of installation. The series at present consists of the following documents: B.S. 1062, Code of Practice for the Planning of Electric Wiring Installations; B.S. 1063, Specification for Wiring on Cleats; B.S. 1064, Specification for Wiring in Conduit; B.S. 1065, Specification for Outdoor Distribution Systems; B.S. 1066, Specification for Bell and Alarm Systems.

In the preparation of these documents the primary object has been the reduction of material and labour costs to a minimum. The adoption of some of the provisions of the Code will entail a degree of risk which would not be accepted in normal times, and the life of the installations will be considerably reduced, a period of not less than three years being the "target" life. These British Standards are intended to be used as a basis for all war emergency electrical work, whether in permanent, semi-permanent or temporary buildings. In cases where special conditions have to be met or where risks have to be taken (e.g., in danger buildings) previous standards should be followed.

The Code gives general recommendations regarding the basis of the design of an installation, and it enumerates the permitted departures from the I.E.E. Wiring Regulations. It also deals with the arrangement of final sub-circuits, the design of the lighting installation, etc., and makes recommendations regarding external services and special applications.

The Code is not intended to form part of the contract for an electrical installation, but to give guidance to the planner of the installation. The specifications, on the other hand, are intended to be used as part of the contract, but will, of course, have to be supplemented by drawings and/or schedules of work.

These specifications are based on such departures from the I.E.E. Wiring Regulations and the Electricity Commissioners' Regulations as are necessary for compliance with the Code.

Copies of these five standards may be obtained (price 1s. each, post free 1s. 3d.) from the Publications Department of the British Standards Institution, 28, Victoria Street, S.W.1, or from the Institution of Electrical Engineers, Savoy Place, W.C.2.

SOCIETIES AND INSTITUTIONS

L.M.B.A.

Mr. Ernest Brown, speaking at the half-yearly meeting of the London Master Builders' Association, said:—

I will not let this opportunity pass without thanking you most earnestly for the unexampled services that you rendered to the nation during the worst winter that London has ever known. I shall not forget, nor the local authorities, nor will the citizens of London, the swift and uncomplaining way in which you came to the rescue of your fellow citizens. When the history of those days comes to be written the record of the London Master Builders will, as I have particular reason to know, fill an especially brilliant page. By helping to repair as quickly as Hitler has damaged, you are helping to win the war.

You will expect me, however, not merely to congratulate you on the past, but to tell you what are the principles on which in the future my Ministry wishes to proceed in this matter. These are, in one sentence, to bring back into use after raids all houses which can be made habitable. Our housing position deteriorates considerably each month, do what we will. I want no house that could be made habitable by the use of the labour and material that we are allowed, to remain out of currency. We are not to be deterred by considerations which may appear momentarily valid—such as, for example, that there does not appear to be a shortage of accommodation in the particular borough or part of a borough, concerned. I think it will always be found that an adjacent borough has a pressure of population which would welcome some relief. Nor must it be forgotten that we must have a reserve of usable houses, to accommodate the victims of a blitz which may descend upon us at any time. We must be restrained only by the limitations of men and materials.

In any case, and without any exception, we must continue to give what are called "first aid" repairs to all houses which are repairable. Even if we cannot, during war-time, make them habitable, we must do protective repairs which will prevent them falling into ruins.

At the risk of appearing optimistic, I will go one step further forward, and tell you that I have not given up hope of resuming house building even during the war. Not, indeed, at the present moment. But before long, we trust, the skies will lighten. A time will come when we can see a little further ahead, and then I shall hope to be able to authorise new building to relieve some of the worst housing shortage.

Since I have begun to look into the future, let me peer a little further and discuss with you our plans for after the war. You know that I have called together again my Central Housing Advisory Committee, and that it is actively engaged in drawing up proposals for our new programme. It has divided itself into several sub-committees, of a highly practical nature and their work has advanced in varying degrees. It is not my intention, here, to estimate their relative importance or the extent of their work. But there is one sub-committee to which I must call your attention, because it affects something in which I am especially interested. I have always wished that a greater interest in housing could be taken by women, and that more attention should be paid to their views. I have asked, and I ask again, for the fullest co-operation and interest from the women of the country.

We shall certainly have big housing tasks on our hands after the war, and my Department is at work on this question. I should like to see the building of millions of houses at twice the pre-war rate—and in accordance with a planned programme which takes into account the work of repairing war damage and of overtaking the heavy arrears of maintenance which will have accumulated by the end of the war. Every family who so desires must be able to live in a separate dwelling possessing all the amenities necessary to family life in its fullest sense. This large number of houses must be well built and built in the right place; such evils as ribbon development and the spoliation of the countryside must be avoided; time spent on travelling must be reduced to a minimum; facilities for recreation must be provided and the creation of towns of unmanageable size avoided.

The tasks are tremendous ones, they may very well take two decades, and I look to you, gentlemen, to help me see them through.

D.I.A.

The result of the Design and Industries Association's essay competition (open to school children) is as follows:—First and second prizes combined (15 guineas), divided between K. C. Harfitt, St. Alban's School, Herts. and R. N. Radford, Nottingham High School. The third prize was increased to 4 guineas and divided between Eleanor Godfrey, Wycombe Abbey School, Bucks. and C. S. Knight, Highgate School, London, N.6.

A travelling exhibition, entitled "Design Round the Clock," devised by Mr. John Gray, is to be held at the Architectural Association, 36, Bedford Square, W.C., on Wednesday, August 26, at 4.30 p.m. The President of the D.I.A. (Lord Sempill) and Mr. H. G. Strauss, M.P., assisted by a boy and a girl from among the prize-winners of the D.I.A. Essay Competition, will open the exhibition. The exhibition will remain open until September 4 (Weekdays: 10 a.m.—12.30 p.m.; 2.30 p.m.—7 p.m. Saturdays: 10 a.m.—2 p.m.).

ARCHITECTURAL ASSOCIATION

The scholarships and prize awards are as follows:

Leverhulme Scholarship for current session (value £1,000) is awarded to D. S. Roberts, Lord Wandsworth College.

Minter Open Entrance Scholarship (value £75 12s.) to W. White, Preston Catholic College.

Sir Walter Lawrence Open Entrance Scholarship (value £75 12s.) to A. S. Hunt, Southend Municipal College.

Royal West of England Academy School of Architecture (affiliated to the A.A.). Prize in Design (value £5 5s.) to R. A. Robertson.

Alec Stanhope Forbes prize for the best colour work in the School (awarded annually, value £5) to Miss M. F. Crittall.

First Year Prizes.—Howard Colls Travelling Studentship (value £15 15s.): I. C. Baker. Second Prize (value £1 1s.): H. N. Conder. Honourable Mentions: J. T. Briars, J. R. Dartford, Miss P. D. Eglington, J. W. W. Lyde, Miss B. E. Priestley.

Second Year Prizes: A.A. Travelling Studentship (value £26 5s.): R. H. Sims. Second Prize (value £1 1s.): I. E. Colquhoun. Honourable Mentions: Miss M. F. Crittall, R. R. Lockyer, G. E. Michell, W. Taylor.

Third Year Prizes.—Third Year Travelling Studentship, Certificate of Honour (nominal value £1 1s.): W. Taylor. Second Prize (value £1 1s.): No award. Honourable Mentions: S. W. Chong, Miss J. MacArthur, P. R. Rees Phillips.

Holloway Scholarship, tenable for two years (value £250): R. R. Lockyer.

Fourth Year Prizes.—Certificate of Honour for Year Prize (nominal value £10 10s.): J. D. Broadbent. Honourable Mentions: A. J. P. Powell, J. R. Weeks.

Fifth Year Prizes.—Henry Florence Travelling Studentship (value £50): Miss A. K. S. Scott.

Certificate of Honour for Fifth Year: Miss J. Lloyd-Jones. A.A. Travelling Studentship (nominal value £1 1s.): Miss M. Smirke. Honourable Mentions: None

★ *Are there any publications dealing with Richard Neutra's experiments in, and developments of, PREFABRICATION?* - - - - - - Q 947

★ *For FIRE INSURANCE purposes we are reviewing the values of buildings at these works, which are constructed mainly of thick brick walls, wood floors and slated roofs. What is the percentage cost of building to-day over pre-war prices?* - - - Q 950

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.

Answers are sent direct to enquirers as soon as they have been prepared. The service is confidential; and in no case is the identity of an enquirer disclosed to a third party.

Questions should be sent to—

THE ARCHITECTS' JOURNAL
45 THE AVENUE, CHEAM, SURREY.

Telephone: VIGILANT 0087

Q 943

ARCHITECTS, STAFFS.—*Manufacturers of canteen equipment appear to have standardized the height of service HOT CUPBOARDS at 2 ft. 9 in. or 2 ft. 10 in. above the kitchen floor. Some canteen authorities, however, appear to recommend a height of 42 in. for hot cupboards which have a top width of 2 ft. 6 in. Why these two points of view?*

A schedule of austerity appliances for kitchen equipment for New British Restaurants and Canteens has been published for the Ministry of Works and Planning by H.M. Stationery Office, price 1s. This schedule replaces that issued in September, 1941, and considerably reduces the number of designs, types and sizes then approved. It was produced with the full co-operation of manufacturers and all interested Government Departments, and includes all the equipment necessary for canteen kitchens in wartime. This schedule should provide the information required as to the latest types of fittings which have been officially approved.

Q 944

CONTRACTORS, SURREY.—*Are there any firms in the Midlands or the West Country who supply KILN-DRIED SAND in 1 cwt. bags?*

We have no records of firms able to supply kiln-dried sand. It would seem that it is useless for us to make enquiries without knowing the place at which delivery is to be made, as it is most unlikely that any firm would undertake to deliver very long distances, apart from the fact that it would make the cost prohibitive.

We suggest that, having selected a place or places where delivery is required, you should get into contact with local suppliers and builders' merchants. If you cannot find the names of local suppliers and merchants in ordinary trade directories, etc., we would advise you to get in touch with the Ballast and Sand and Allied Trades Association (Phone: POPesgrove 1791) for the former, and the *Builders Merchants Journal and Builders Ironmongers* (Phone: TERminus 6905) for the latter.

Q 945

ENQUIRER, DEVON.—*Were any firms before the war engaged in manufacturing ALUMINIUM WINDOW OR DOOR FRAMES in this country? If so, I would like to have their addresses.*

Prior to the war, Messrs. Williams and Williams Ltd., of Victoria House, Southampton Row, London, W.C.1, and Messrs. James Gibbons, St. Johns Works, Wolverhampton, manufactured and supplied window and door frames. The actual sections for manufacture were supplied by the Northern Aluminium Company, Ltd., 212, Pentonville Road, London, N.1.

Q 946

ENQUIRER, SURREY.—*I am an architect's assistant working entirely on Ministry of Aircraft Production work which includes, amongst other things, the erection of various types of hangars. I have had a great deal of experience in surveying sites, taking levels and supervising the erection of these hangars and now I wish to ENTER the ROYAL AIR FORCE. Can you kindly inform me if there is a branch of this Service dealing with this type of work, and if so how I can contact them with a view to volunteering.*

We should advise you to write to the Air Ministry, Department W.9.A, Room 525, Bush House, Strand, London, W.C.2, giving all particulars of qualifications, experience, etc., and you will be informed in due course whether there is any opening suitable for you and what steps should be taken.

Q 947

ENQUIRER, CHESHIRE.—*Are there any publications dealing with Richard Neutra's experiments in, and developments of, PREFABRICATION. Should you have the information could you supply me with authors and publishers?*

We are sending you the list of the references to Richard Neutra's work in the R.I.B.A. Library, which is the most comprehensive list you are likely to be able to obtain. Most of the periodicals referred to give illustrations of his work rather than notes of his experiments. *Pencil Points* (New York, 1937), p. 408, is probably the most useful reference for you as it contains a full review of Richard Neutra's work up to that date :—

Pencil Points (New York, 1937), p. 408.—A full review of this important architect's work.
Shelter (Detroit), 1938, March, p. 22.—The architecture of R. G. Neutra.
Building, 1938, June, p. 234.—A short article on R. G. Neutra.
Arquitectura Y Decoracion (Mexico), July, 1938.—Article on R. G. Neutra's work with a lecture given by him in Mexico in 1937 in English.

The following deal only in each case with one particular building :—

California Arts and Architecture (Los Angeles), 1940, December, p. 21.—House.
Architectural Review, November, 1939, p. 189.—House.
Architectural Forum (New York), September, 1938.—Wood framed house.
Architect and Building News, 1940, November 1, p. 74.—House.
Architectural Design and Construction, August, 1939, p. 309.—House.
Building, October, 1938, p. 408.—Steel house.
Architectural Record (New York), August, 1939, p. 57.—Steel and wood house.

Q 948

MANUFACTURERS, LANCS.—*Would you furnish us with the names and addresses of firms who supply CHICKEN WIRE, CAMOUFLAGE NETTING and*

PATENT WELDED TUBULAR CONSTRUCTION

Data Sheet No. 6

METHODS OF FABRICATION

This form of construction lends itself admirably to the prefabrication of single storey buildings of any size. The standard sections (roof trusses, wall frames and columns, and door and window frames) are light in weight and conveniently transportable. Assembly on the site is simply and rapidly effected, the sections being bolted or welded together according to specification. The buildings can be dismantled with equal facility, and only the loss of foundations is involved since the various sections all remain available for re-erection—thus it may be said that this form of construction has all the essentials of a permanent building plus the facilities of a portable building. A further consideration is the flexibility of the system, allowing alterations or extensions to be made to existing buildings simply and quickly.

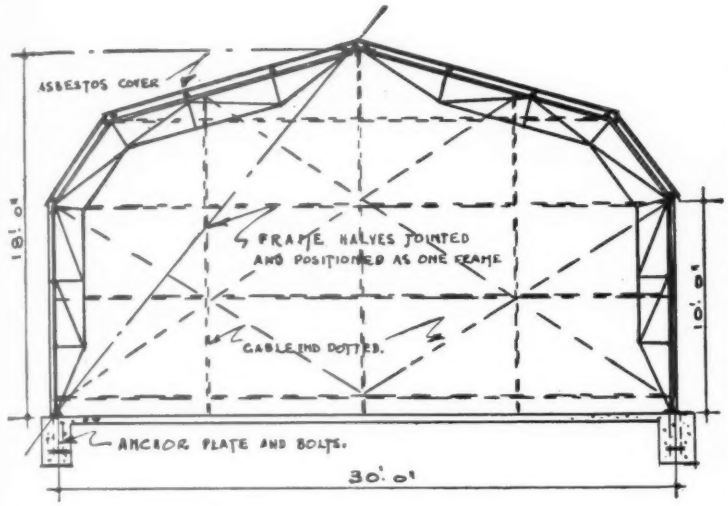
Three alternative methods of fabrication are available :—

(1) Complete factory prefabrication, leaving assembly only to be carried out on the site.

(2) Site welding. The welding of the final fixings and connections is sometimes more satisfactorily effected on the site ; where site welding is not practicable or economical special bolt joint or joint plates are supplied for such connections (see Figs. 3 and 4 reproduced from data sheet No. 3).

(3) Site fabrication and welding. In certain circumstances complete site fabrication is advantageous. Though more costly than factory prefabrication, in cases where transport costs are heavy and access to the site difficult, and where the fabricated sections required are large in number and simple in design, it sometimes proves economical to erect temporary portable workshops on the site where the fabricators and mobile welding units can execute the whole of their work.

The method to be adopted is in each case dependent upon the circumstances prevailing, and the type and size of the building, or buildings, to be erected, and it is well that proper consideration should be given to these factors before a decision is made.



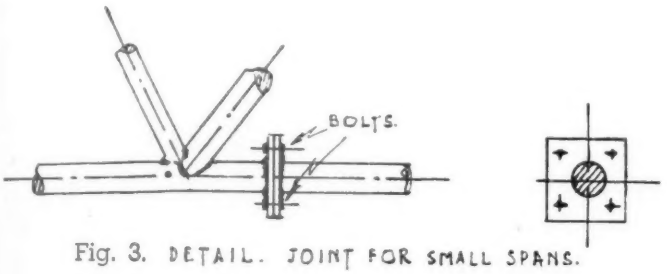


Fig. 3. DETAIL. JOINT FOR SMALL SPANS.

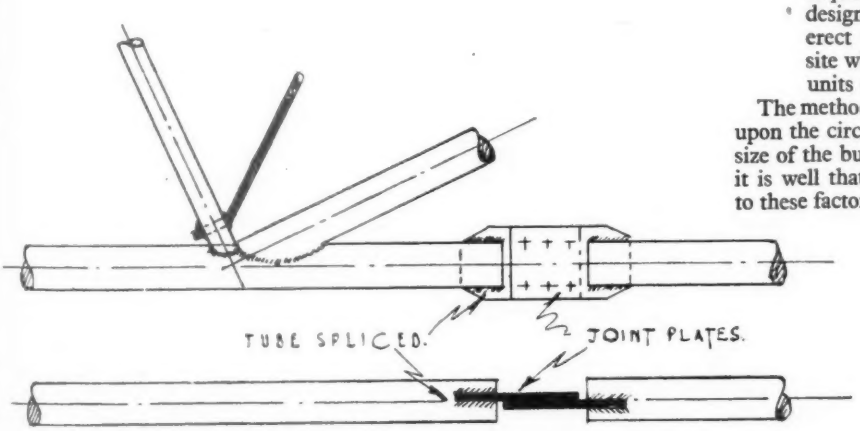


Fig. 4. Bolt connection for larger trusses.

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*

WOOD SPLINTERS, which are applied to a bituminous adhesive to flat surfaces for camouflage purposes.

We know of no firm supplying both chicken wire and wood chips. There are a large number of firms manufacturing chicken wire, but we are giving you the names of a few within a reasonable distance :—

British Wedge Wire Co., Ltd., Warrington, Lancs.
Richard Johnson (Clapham) and Morris Ltd., Jacen House, Trafford Park, Manchester.
Proctor Bros. (Wireworks) Ltd., Calls, Leeds.
Rylands Ltd., Warrington, Lancs.
White Cross Co., Ltd., Warrington, Lancs.

We suggest that you should obtain wood chips from a woodworker or wood-wool manufacturer who wants to dispose of his waste. There are obviously a large number of firms who might wish to dispose of waste chips and we should advise you to look through a trade directory for the nearest convenient district. We happen to know that Messrs. James Root and Son of Bletchley, Bucks, who are brush manufacturers, were trying a short time ago to find a way of disposing of their wood chips, and it would be worth while contacting them if they are not considered to be too far away.

You will need a licence to purchase chicken wire.

Q 949

ENQUIRER, LEICESTER.—*There is a restriction on private householders spending more than £100 in any one year on any BUILDING WORK. I am not clear whether a licence has to be obtained to spend not more than £100 on ordinary repairs and decorating.*

The necessity, referred to in your enquiry, to obtain a licence to spend more than £100 in any one year on any building work, applies to repairs, maintenance and decoration as well as ordinary building work, demolition, etc. It is not necessary to obtain a licence if the amount to be spent totals less than £100 in any one twelve months.

Q 950

MANUFACTURERS, NORFOLK. *For FIRE INSURANCE purposes we are reviewing the values of buildings at these works, which are constructed mainly of thick brick walls, wood floors and slated roofs. What is the percentage cost of building to-day over pre-war prices?*

It is very difficult to give you a definite figure without having exact details of the building, but we are of the opinion that the cost of building has, on the average, risen by 33⅓ per cent. since pre-war days. A large amount of timber in the construction would undoubtedly raise this figure very considerably but it must be borne in mind that reconstruction would not take the original form if it was uneconomic.

Bearing in mind the fact that you probably have long spans and would require a good deal of either timber or steel, we consider that 40 per cent. would be a reasonable compromise.

Q 951

ARCHITECT, CAMBRIDGE.—*Can you tell me what extra STATUTORY POWERS Local Authorities now have in Town Planning over and above the powers given them in the Town and Country Planning Act, 1932? I am not working for any Local Authority, but have heard that a leaflet was sent out to them explaining their new powers. Where can I obtain such an explanatory leaflet?*

No new statutory powers have been granted to Local Authorities since the outbreak of war, and we do not know to what leaflet you can be referring.

Owing to the necessity for obtaining a licence no new building is being done except in connection with work of National importance, and all Local Authorities are withholding decisions in connection with rebuilding as far as possible until after the war.

STANDARD SPECIFICATIONS FOR EVERY TYPE OF ROOF

This publication entitled "Standard Specifications for Ruberoid Roofs" provides Architects and Engineers with a comprehensive reference to the best methods of weather proofing all types of wood or concrete roofs

Ruberoid Contract Departments located in London, Birmingham, Manchester, Newcastle, Edinburgh, Dublin and Belfast, promptly undertake work on any scale and in any part of the country. Estimates sent on receipt of particulars

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ARCHITECTS AND ENGINEERS ARE INVITED TO WRITE FOR A COPY OF THIS RUBEROID PUBLICATION No. 326 ENTITLED "STANDARD SPECIFICATIONS FOR RUBEROID ROOFS."

CLASSIFIED ADVERTISEMENTS

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

Architectural Appointments Wanted

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.

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.

EXPERIENCED SURVEYOR offers part-time services in connection with war damage repairs, bills of quantities, estimates, specifications, etc. North-west London area. Box No. 477.

ARCHITECTURAL ASSISTANT (24), invalided from army after active service, desires post in the London area; not liable to further call-up. Will have completed full-day course at the Polytechnic School of Architecture, W.1, and taken Part II R.I.B.A. finals by the end of July. Will be free in August. Public School and University education. Drive car. Some office experience during vacations. Salary by agreement. Patrick B. Sweetnam, 166, Roxeth Green Avenue, Harrow-on-the-Hill, Middlesex. 481

QUANTITY SURVEYING—drawing office (architectural). Youth 16½, Technical School training, seeks opening, London. Box 482.

YOUNG MAN, exempt military service, studying for R.I.B.A. Final, seeks constructive post of national importance. P. H. F. Stiles, East Lodge, Vigo, South Holmwood, Surrey. 479

DRAUGHTSMAN (Architectural), requires change, aged 17, 2½ years' experience in preparing working drawings of small structures under supervision, constructional details, tracing and building surveys. Write A.H., 61, Openview, Earlsfield, S.W.18. 483

ARCHITECTURAL STUDENT, at present engaged as Engineering Draughtsman, requires part-time Architectural Drawing work. D. Wheeler, 28, Endymion Road, Hatfield, Herts. 484

ARCHITECT, Alien, Swiss and Hungarian University Degree, 10-years' practice, good draughtsman, experienced designer, desires full or part-time work with firm or at home. Box No. 489

ARCHITECTURAL ASSISTANT, just completed 5 years' course at Regent Street Polytechnic School of Architecture and qualified for election as A.R.I.B.A., seeks employment. London or Kent preferred. Write, J. T. Dannatt, Church Road, Halstead, Nr. Sevenoaks, Kent. 490

REGISTERED ARCHITECT, available shortly, requires whole or part-time post. Experienced in supervising work on site. Designing and drafting, building maintenance and surveys (W. D. claims), variations builders accounts. Salary £450—£500 per annum. Box 491.

THOROUGHLY EXPERIENCED ESTATE CLERK-OF-WORKS desires post as CLERK-OF-WORKS, MANAGER, &c. Experienced in Estate Manage,ent; control of all contract work; estate and maintenance staffs; supervision all branches of the building, allied and specialists trades; all office work; plans; specifications; and rent collecting; keen, energetic, alert and conscientious. Not liable for military service. Highest recommendations. Please apply Box No. 492.

REGISTERED ARCHITECT, R.I.B.A. Diploma, with over 15 years experience in building and architectural work abroad, photographs, drawings, testimonials, references, Hungarian nat., is anxious for the utilisation of his services in any professional capacity and invites correspondence. Box 493.

DRAUGHTSMAN, last 2½ years civil engineering' requires engineering or building appointment, available September 1. London area. Box 494.

PART TIME WORK, surveys, war damage, etc. Qualified and experienced Senior Assistant offers services in London area. 496

ARCHITECTS' AND SURVEYORS' ASSISTANT (25). Exempt from military service, desires post preferably in Midlands. Has passed R.I.B.A. Final, Part I. Nine years general experience in design and construction including war damage repairs and A.R.P. work. Excellent testimonials. Write E.W.D., 6, Beloe Road, Bristol, 7. 497

ARCHITECT AND SURVEYOR (Registered), requires responsible position (West or Mid-Wales preferred). Age 36, married, experienced in Factories, Commercial Buildings, Licensed Premises, Hospitals, Alterations to Existing Buildings, One-Eighth Scale Working Drawings, Details, Specifications, Preparing Bills of Quantities, Estimating, Land Surveying and Levelling, Checking Building Contractors' Accounts, Measuring War Damage and Preparing Schedules of Repairs. Salary £9 per week. Box 498.

Miscellaneous

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

A. J. BINNS, LTD., specialists in the supply and fixing of all types of fencing, tubular guard rail, factory partitions and gates. 53, Great Marlborough Street, W.1. Gerrard 4223-4224-4225.

Classified Advertisements continued on page xxx.

SPECIFICATIONS AND BILLS OF QUANTITIES, etc., expeditiously and accurately typed or duplicated. Translations and Facsimile, Typewriting. All work treated confidentially. Miss G. Saunders, Typewriting Bureau, 17, Dacre Street, Westminster, S.W.1. Telephone: Whitehall 2605.

WANTED. Copy of the "Architectural Review" for September, 1940 Box 475.

SUBSTANTIAL FIRM of Building and Civil Engineering Contractors in the Midlands, desire to contact a reputable firm of Quantity Surveyors with a view to measuring for interim payments, payment by result scheme and settlement of final accounts. Box No. 796.

REQUIRED, R.I.B.A. Journals in good condition, January, 1938, to May, 1941, inclusive. What offers? Box 793.

WANTED. Complete set of copies of "The Architectural Review," July, 1940—June, 1942. Box 495.

Educational Announcements

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

R.I.B.A. QUALIFYING EXAMINATIONS

Mr. C. W. Box, F.R.I.B.A., M.R.San.I.
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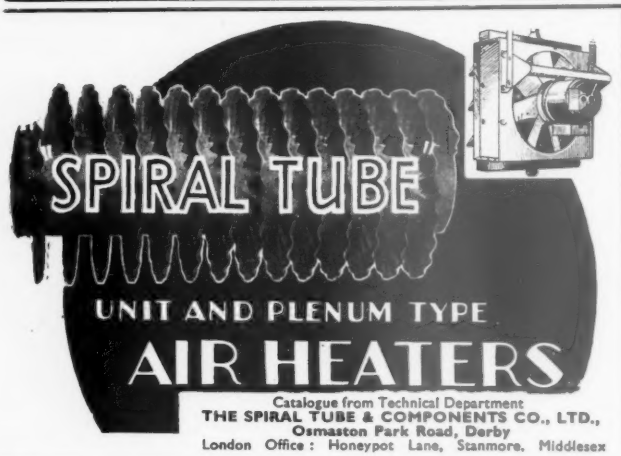

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