

THE ARCHITECTS' JOURNAL



standard contents

every issue does not necessarily contain all these contents, but they are the regular features which continually recur.

DIARY

NEWS

from AN ARCHITECT'S
Commonplace Book

ASTRAGAL

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Wanted and Vacant

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★ The war has both multiplied the number of Official Departments and encouraged Societies and Committees of all kinds to become more vocal. The result is a growing output of official and group propaganda. A glossary of abbreviations is now provided below, together with the full address and telephone number of the organizations concerned. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association. 34.6, Bedford Square, W.C.1.	Museum 0974.
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8.
APRR	Association for Planning and Regional Reconstruction. 32, Gordon Square, W.C.1.	Euston 2158-9.
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Welbeck 9738.
ASB	Architectural Science Board of the Royal Institute of British Architects, 66, Portland Place, W.1.	Welbeck 6927.
BC	Building Centre. 23, Maddox Street, W.1.	Mayfair 2128.
BDA	British Door Association, Shobnall Road, Burton-on-Trent.	Burton-on-Trent 3350.
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2.	Temple Bar 9434.
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385.
BINC	Building Industries National Council. 110, Bickenhall Mansions, W.1.	Welbeck 3335.
BOE	Board of Education. Belgrave Square, S.W.1.	Sloane 4522.
BOT	Board of Trade. Millbank, S.W.1.	Whitehall 5140.
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246.
BSA	British Steelwork Association. 11, Tothill Street, S.W.1.	Whitehall 5073.
BSI	British Standards Institution. 28, Victoria Street, S.W.1.	Abbey 3333.
CEMA	Council for the Encouragement of Music and the Arts. 9, Belgrave Square, S.W.1.	Sloane 0421.
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280.
CSI	Chartered Surveyors' Institution. 12, Great George Street, S.W.1.	Whitehall 5322.
DIA	Design and Industries Association. Central Institute of Art and Design, National Gallery, W.C.2.	Whitehall 7618.
DOT	Department of Overseas Trade. Dolphin Square, S.W.1.	Victoria 4477.
EJMA	English Joinery Manufacturers Association (Incorporated), Sackville House, 40, Piccadilly, W.1.	Regent 4448.
FMB	Federation of Master Builders. 23, Compton Terrace, Upper Street, N.1.	Canonbury 2041.
GG	Georgian Group. 55, Great Ormond Street, W.C.1.	Holborn 2664.
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881.
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 3158.
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577.
IEE	Institution of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676.
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172.
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128-29.
ISPH	Committee for the Industrial and Scientific Provision of Housing. 3, Albemarle Street, W.1.	Regent 4782-3.
LIDC	Lead Industries Development Council. Rex House, King William Street, E.C.4.	Mansion House 2855.
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3767.
MARS	Modern Architectural Research. 8, Clarges Street, W.1.	Grosvenor 2652.
MOA	Ministry of Agriculture and Fisheries, 55, Whitehall, S.W.1.	Whitehall 3400.
MOH	Ministry of Health. Whitehall, S.W.1.	Whitehall 4300.
MOI	Ministry of Information. Malet Street, W.C.1.	Euston 4321.
MOLNS	Ministry of Labour and National Service. St. James' Square, S.W.1.	Whitehall 6200.
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.2.	Gerrard 6933.
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Abbey 7711.
MOTCP	Ministry of Town and Country Planning. 32-33, St. James' Square, S.W.1.	
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611.
NBR	National Buildings Record. 66, Portland Place, W.1.	Welbeck 1881.
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041.
NFBTO	National Federation of Building Trades Operatives. 9, Rugby Chambers, Rugby Street, W.C.1.	Holborn 2770.
NT	National Trust for Places of Historic Interest or Natural Beauty. 7, Buckingham Palace Gardens, S.W.1.	Sloane 5808.
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245.
PWB	Post War Building, Directorate of. Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611.
RC	Reconstruction Committee RIBA. 66, Portland Place, W.1.	Welbeck 6927.
RCA	Reinforced Concrete Association. 91, Petty France, S.W.1.	Whitehall 9936.
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335.
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Temple Bar 8275.
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646.
TCPA	Town and Country Planning Association. 13, Suffolk Street, S.W.1.	Whitehall 2881.
TDA	Timber Development Association. 75, Cannon Street, E.C.4.	City 6147.
TPI	Town Planning Institute. 11, Arundel Street, Strand, W.C.2.	Temple Bar 4985.

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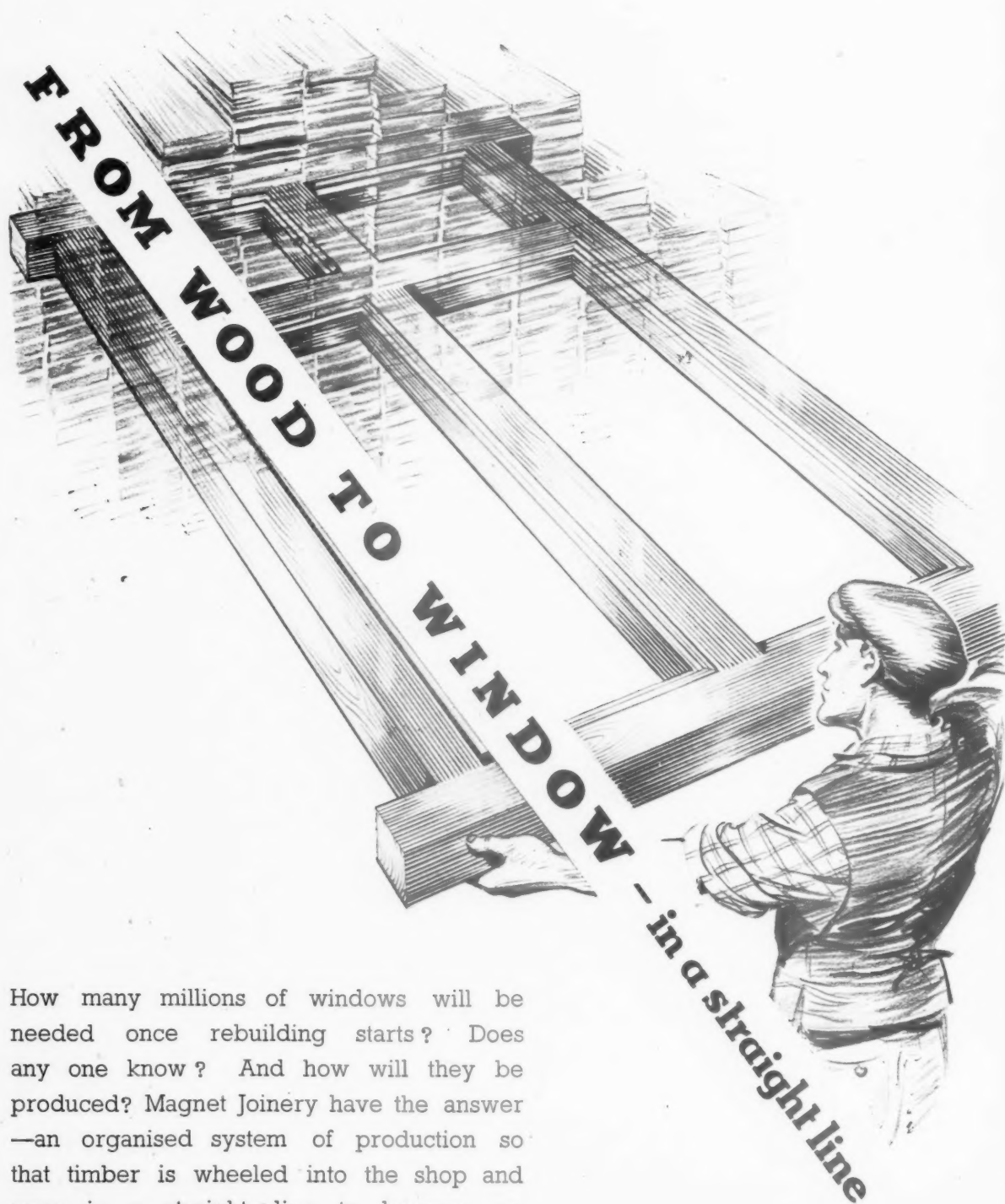
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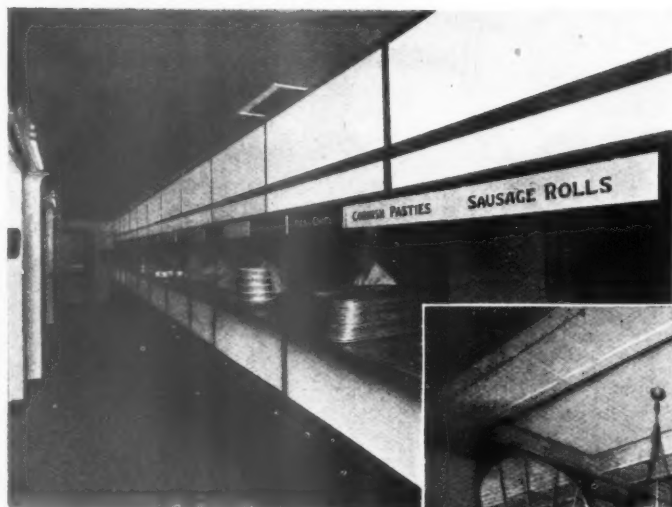
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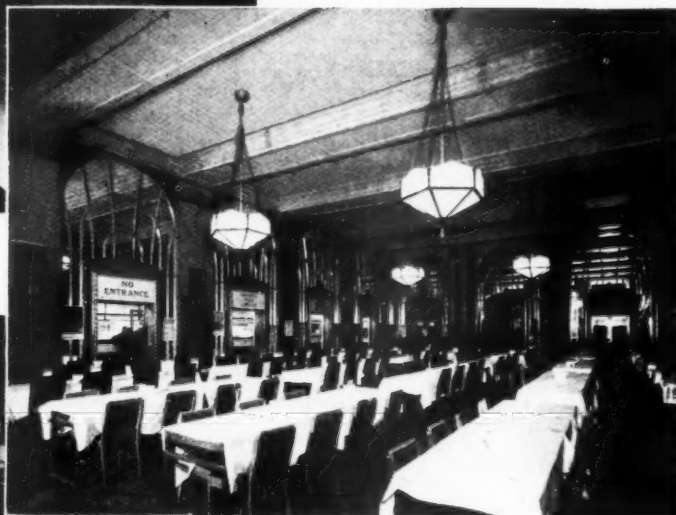
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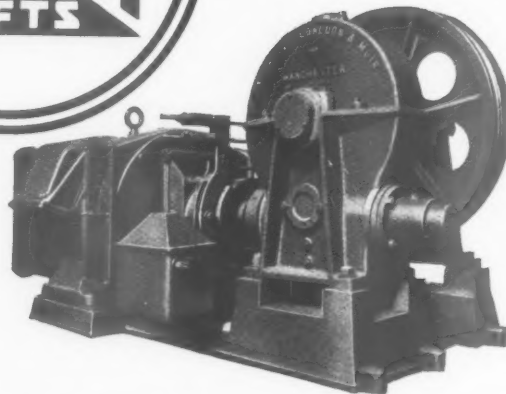
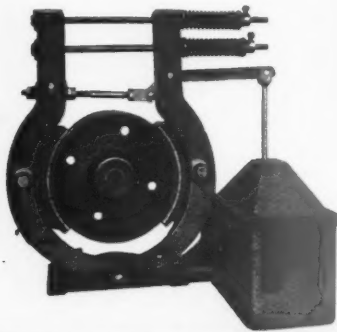
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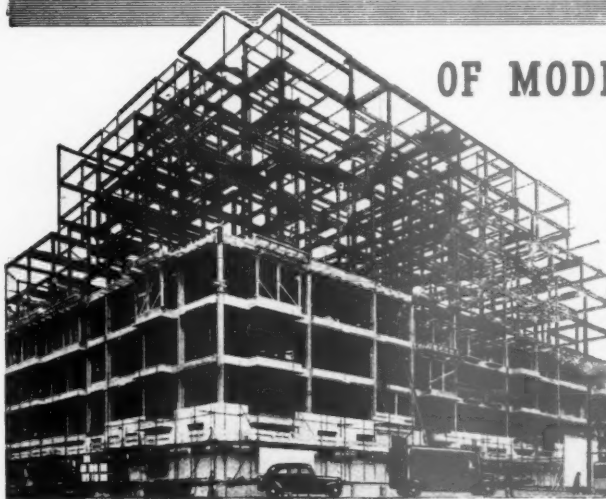
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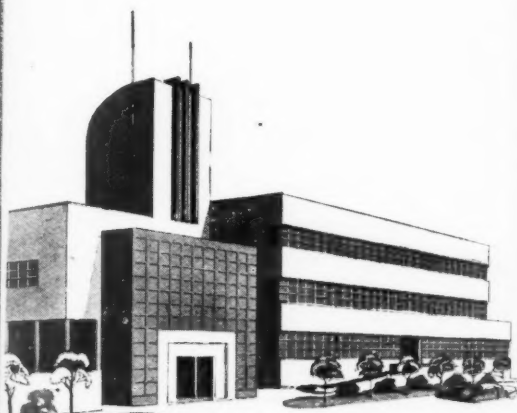
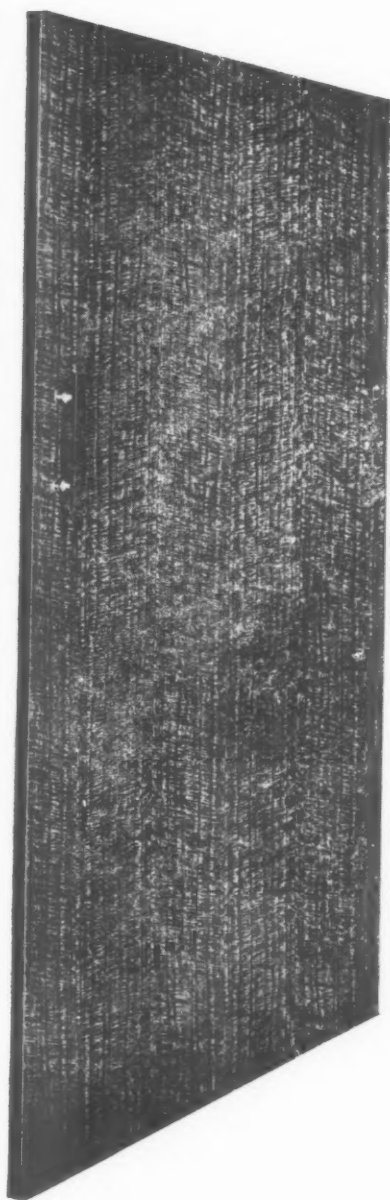
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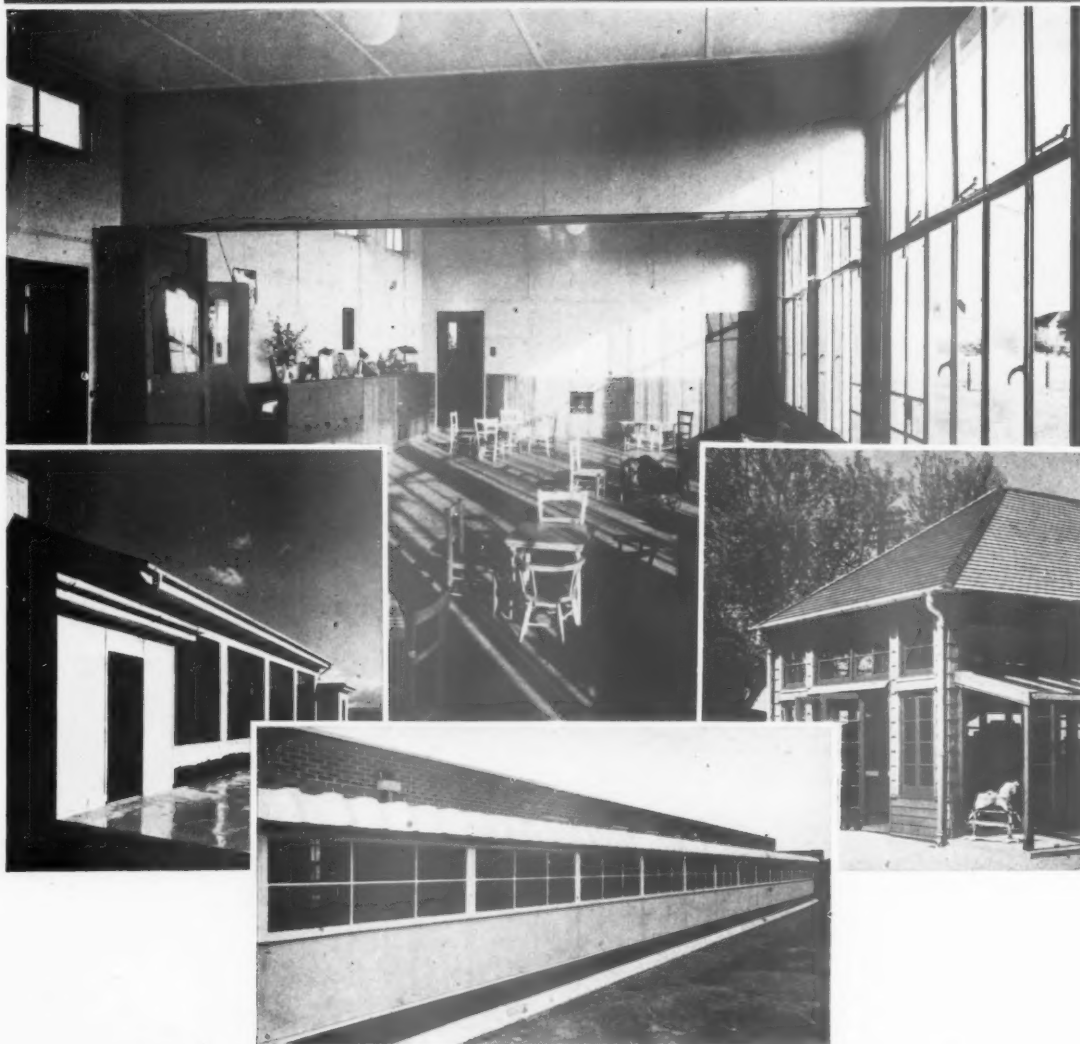
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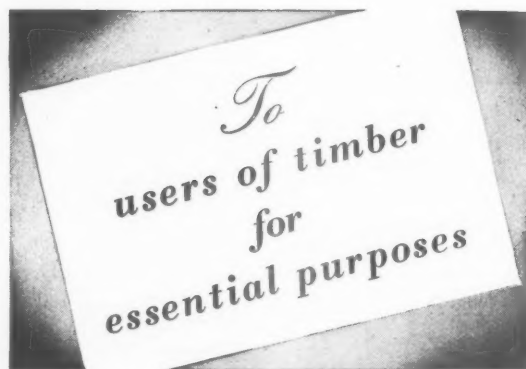
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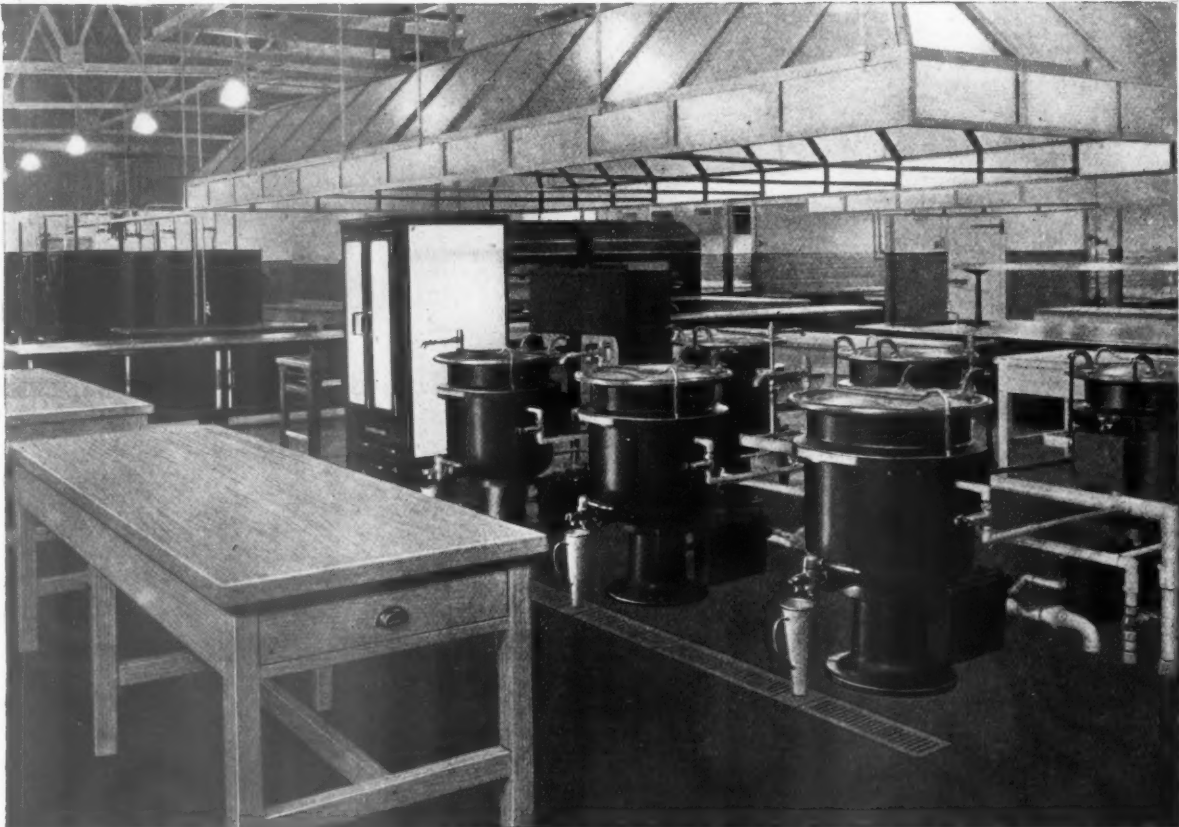
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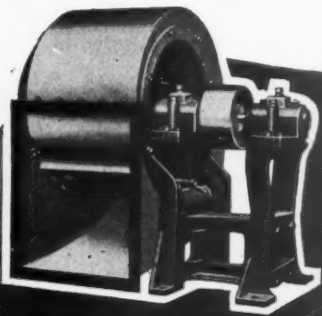
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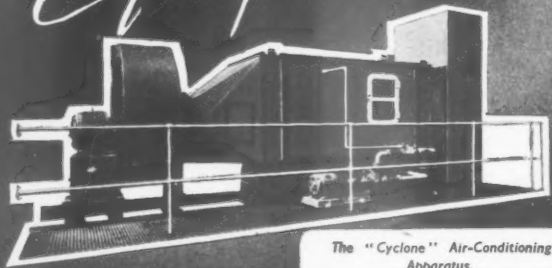
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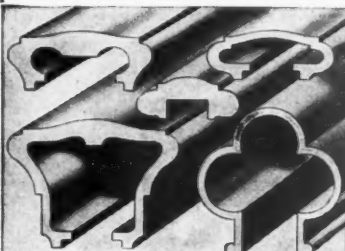
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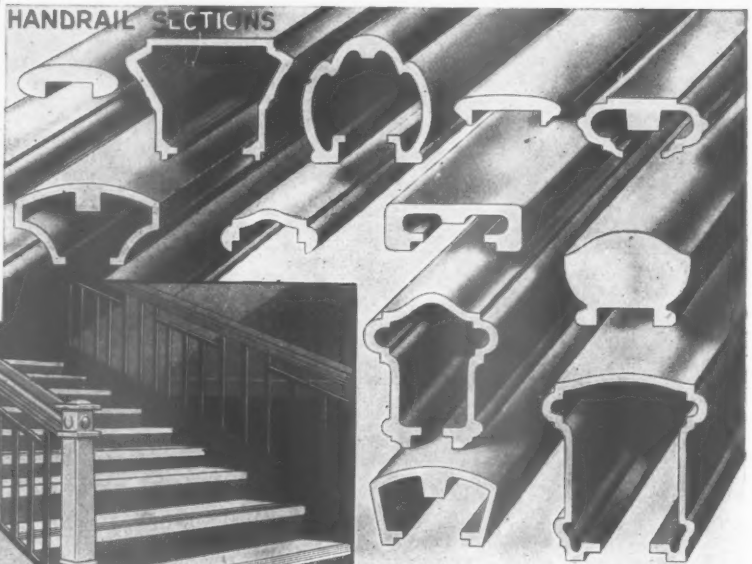
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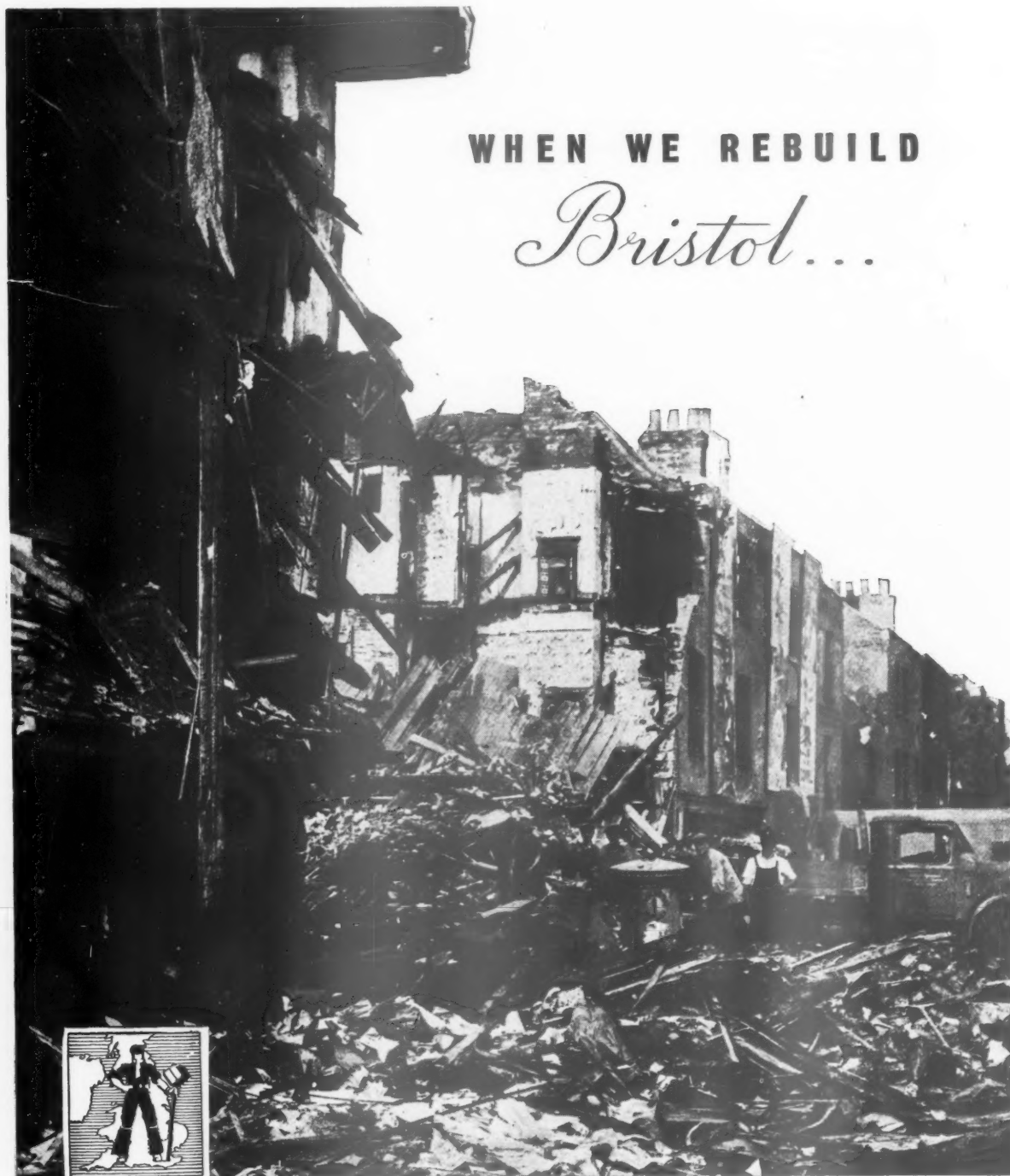
MORE than 12,000,000 tons of essential goods are carried each year over Britain's 2,000 miles of canals. The increased war-time traffic has necessitated the construction of reinforced concrete locks and warehouses to enable the canals to relieve the pressure on other forms of transport. To assist the canals in main-

taining their position as a vital link in the country's transport system, further improvement schemes will be put into effect in post-war years. By virtue of its great strength and capacity for endurance, reinforced concrete will again be chosen as the most suitable material for all reconstruction schemes.

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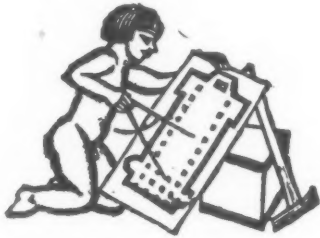
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In common with every other periodical this JOURNAL is rationed to a small part of its peace-time needs of paper. Thus a balance has to be struck between circulation and number of pages. We regret that unless a reader is a subscriber we cannot guarantee that he will get a copy of the JOURNAL. Newsagents now cannot supply the JOURNAL except to a "firm order."



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DIARY FOR OCTOBER NOVEMBER AND DECEMBER

Titles of exhibitions, lectures and papers are printed in italics. In the case of papers and lectures the authors' names come first. Sponsors are represented by their initials as given in the glossary of abbreviations on the front cover.

BOURNEMOUTH. *TCPA Conference.* OCT. 2

BRISTOL. *Rebuilding Britain Exhibition.* At the Art Gallery. (Sponsor, CEMA). SEPT. 30 to OCT. 6

CARDIFF. *Rebuilding Britain Exhibition.* (Sponsor, RIBA.) DEC. 20 to JAN. 17

CARLISLE. *When We Build Again Exhibition.* At Messrs. Binns Ltd. (Sponsor, TCPA.). OCT. 2-9

TCPA Conference. At the Town Hall. Speakers: Dr. Dudley Stamp, Percy Dalton and R. L. Reiss. OCTOBER 9

EXETER. *Rebuilding Britain Exhibition.* (Sponsor, RIBA.) OCT. 18 to Nov. 8

HYDE. *Englishman Builds Exhibition.* At Bayley Park, Hyde Park. (Sponsor, BIAE.) SEPT. 30-OCT. 9

LEICESTER. *Living in the Country Exhibition.* (Sponsor, HC.) SEPT. 30-OCT. 12

LONDON. *Homes to Live in Exhibition.* At Geoffrey Museum, Kingsland Road, E.2. (Sponsor, CEMA). SEPT. 30 to OCT. 2

L. B. Escritt. *The Supply and Disposal of Water and its Relation to Town Planning.* At 13, Suffolk Street, S.W.1. 1.15 p.m. (Sponsor, HC.) OCT. 5

Town Planning Joint Examination Board. *Exhibition of Set Pieces submitted by Candidates in the 1943 Examination.* At 66, Portland Place, W.1. Exhibition to be opened by Henry Strauss, M.P., Parliamentary Secretary to MOTCP, at 5 p.m., on October 6. Monday to Friday, 10 a.m. to 6 p.m.; Saturday, 10 a.m. to 1 p.m. OCT. 6-15

Sir Ernest Simon. *Rebuilding Britain.* At 34-36, Bedford Square, W.C.1. 6 p.m. (Sponsor, AA). OCTOBER 12

Arnold Whittick. *The Forces and Planning.* At 1, Grosvenor Place, S.W.1. (Sponsor, TCPA). OCTOBER 14

G. T. Cotterell. *The Problem of Sewage Disposal in Rural Areas.* At 90, Buckingham Palace Road, S.W.1. (Sponsor, Royal Sanitary Institute.) 2.30 p.m. OCT. 20

F. J. Osborn. *A National Planning Policy.* At Abercorn Rooms, Great Eastern Hotel. 12.30 p.m. (Sponsor, TCPA). OCTOBER 19

Conference on Country Towns in a National Policy. At Kingsway Hall, W.C.1. Speakers: Professor A. W. Ashby, George R. Bull, W. R. Davidge, Lord Harmsworth, Dr. Julian Huxley, Miss Mary Glasgow, F. J. Osborn, R. L. Reiss, G. N. C. Swift and representatives of country towns. (Sponsors, TCPA). OCTOBER 22-23

AA Members' Sketches Exhibition (including a section for photographs) completed since the outbreak of war. At 34-36, Bedford Square, W.C.1. All members of the AA are invited to send war-time sketches and photographs for the exhibition. These should be framed, or mounted, labelled and delivered to 36, Bedford Square not later than October 5. On account of limited accommodation not more than two sketches will be exhibited from those submitted by each member.

OCTOBER 12—NOVEMBER 5

Practical Planning Exhibition and Conference. At the Institution of Civil Engineers, Westminster. Exhibition will include graphic charts showing necessity for national and regional planning; models, photographs and plans illustrating development of existing towns and planning of new ones; examples of practical planning in twenty-six counties and cities; and a full-size model kitchen and a room with a second insulated floating floor. (Sponsor, Institution of Civil Engineers and Institution of Municipal and County Engineers.) To be opened by Mr. W. S. Morrison, M.P. Minister of Town and Country Planning on October 5. 10 a.m. to 6 p.m. Admission free.

Conferences in which several Ministers of the Crown have promised to take part are to be held in connection with the exhibition. Among those already arranged are the following: October 6, *the Engineer, the Architect and the Surveyor in Town and Country Planning*; October 13, *Development of Regional Water Supplies and Main Drainage*, chief speaker, Mr. Ernest Brown, M.C., Minister of Health; October 20, *Improved Layout and Construction of Roads and the Use of Motor-ways*, with special reference to Road Safety, chief speaker, Lord Leathers, Minister of War Transport; October 27, *Alternative Materials and Methods of Construction in Buildings*, chief speaker, Lord Portal, Minister of Works. On October 21 there will be two conferences devoted specially to questions of interest to women: in the morning, *The Planning of a Town as affecting the Home*, chairman, Miss A. M. Lupton, M.B.E., vice-chairman Housing Centre; in the afternoon, *The Planning of a Home*, Chairman, Miss Caroline Haslett, C.B.E., past president Women's Engineering Society. Special days have been set aside for visits. OCT. 6-30

MERTHYR TYDFIL. *Recording Britain Exhibition.* At Cyfarthfa Castle Museum. (Sponsor, CEMA). SEPT. 30 to OCT. 11

RHYL. *TCPA Conference.* Speakers: Clough Williams-Ellis and W. A. Eden. 11 a.m. OCTOBER 16

NEWS

THURSDAY, SEPTEMBER 30, 1943
No. 2530. VOL. 98

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Though no feature in the JOURNAL is without value for someone, there are often good reasons why certain news calls for special emphasis. The JOURNAL's starring system is designed to give this emphasis, but without prejudice to the unstarred items which are often no less important.

★ means spare a second for this it will probably be worth it.

★★ means important news, for reasons which may or may not be obvious. Any feature marked with more than two stars is very big building news indeed.

To meet the first post-war demand Romford Council has decided TO BUILD 1,000 HOUSES.

The Council has chosen three sites instead of developing one large estate. The houses meet the needs only of people now living in Romford, and no provision is being made for a possible influx from adjoining areas.

The rapid pace of industrial and social development in Palestine has necessitated the extension of facilities for the architectural and engineering professions in order to enable them to keep up with the URGENT NEED FOR NEW BUILDING caused by this expansion.

The conversion of the laboratory for testing materials in Tel-Aviv into a Palestine Standard Technical Institute was approved at the close of the 22nd annual conference of the Association of Engineers and Architects, a Jewish professional organisation, held in Tel-Aviv. The Standard Institute, which will be run on lines similar to the organisations of the kind in England and the United States, will supervise technical work to help the industry and building trades in Palestine to maintain accepted levels. It will function in collaboration with official bodies, and the Government has agreed to the proposal.



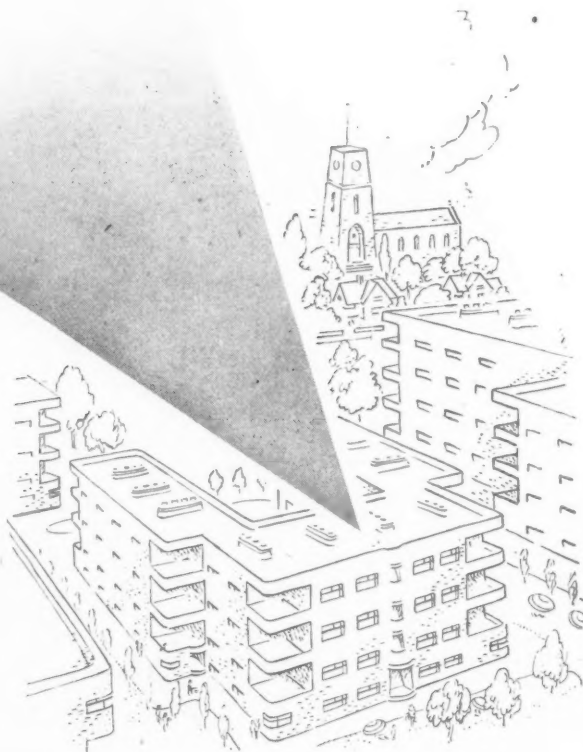
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For Tomorrow's Houses . . .

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from AN ARCHITECT'S *Commonplace Book*

ROYAL PALACE. [From *I Found No Peace*, by Webb Miller]. We rode through streets only five feet wide up the dry stony torrent bed which constituted the main street to the "palace" of Ras Siyom. He was the most important man in Northern Ethiopia and had married Haile Selassie's daughter. . . . Although his residence was the most elaborate structure in town, it consisted of only half a dozen low, tin-roofed, whitewashed stone buildings surrounded by a stockade. . . . After General Villa Sunta raised the Italian flag . . . we visited Siyom's "palace," which swarmed with flies. The floors were covered with straw and carpeted with rough rush mattings, and there were only a few pieces of furniture—three or four rickety chairs, a rude, wooden, canopied throne, and an old brass bed. The walls displayed childishly painted pictures of the Lion of Judah with moustaches and a crown, a coloured chromo of the Crucifixion, and some crude native paintings of African animals. . . . Across the cobbled courtyard stood an open thatched shed with terraced stone seats covered with bamboo matting. It was the tribunal where Siyom heard court cases; adjoining was Siyom's prayer house in which a dog abandoned by Siyom howled.

Salters Hall and The Chantry, Sudbury, two SIXTEENTH CENTURY BUILDINGS ARE TO BE SOLD next month.

In the sixteenth century Sudbury was one of the clothing towns of East Anglia, and it is believed that the two buildings were built by Suffolk clothiers and woollen merchants. The buildings (circa 1450) have moulded timbers, corner post carved with Tudor rose, leaves and angels, trefoil tracery headed windows, and an Oriel window supported by a brassmure carved with Man and allegorical animals. The buildings are to be sold by auction by Messrs. Hampton & Sons, of London, on October 21.

Hampshire estates have been SOLD BY THE DUKE OF WELLINGTON for £197,527.

Of this total £62,422 was for timber. Known as the Hampshire Parliamentary estates, the estates were among the properties purchased for the first Duke of Wellington out of large grants made to him by Parliament in recognition of his great military successes. The properties sold included Ewhurst Park, with its mansion, 940 acres of park, agricultural and shooting land, a lake of 16½ acres, three farms and fourteen cottages; Wolverton Park, 283 acres, with a Georgian residence; and the Hare and Hounds, Wolverton; the George and Dragon, Wolverton; and the Wellington Arms, Hannington. Plantation Farm, Kingsclere; and Manor Farm, North Oakley.



Tomorrow in the BBC Home Programme from 7.40 to 8 p.m. Professor Julian Huxley is to give the first talk in the new series of BBC Autumn talks entitled SCIENCE AT YOUR SERVICE. The series will consist of twelve talks, to be broadcast weekly.

The complete series is as follows: Group 1—Science of Materials:—October 1: Science and the House, by Professor Julian Huxley; October 8: The Science of Building, by Sir Edward Appleton; October 15: Plastics, by Sir Lawrence Bragg. October 22: Clothing and Fabrics (speaker not yet announced); October 29: Explosives, by Professor John Read. Group 2—Science of the Earth:—November 5: Sounding the Earth's Crust, by

Dr. A. O. Rankine; November 12: Our Weather, by Sir Nelson Johnson. Group 3—Science and the Sea:—November 19: the Housewife and the Fisheries, by Michael Graham; November 26: Saving Life at Sea, by Albert Parker; December 3: Scientific Ship Design, by J. L. P. Kent. Group 4—Engineering:—December 10: The Tunnel Builders, by G. L. Groves; December 17: Science and National Life; concluding talk on the general theme of the series.

The names of the members of the SCOTTISH HYDRO-ELECTRIC BOARD have been announced by Mr. Johnston, Secretary of State for Scotland.

In reply to Sir M. Macdonald, Mr. Johnston, Secretary of State for Scotland, said in the House of Commons that the Minister of Fuel and Power and he have appointed the following to be members of the North of Scotland Hydro-Electric Board: The Earl of Airlie (chairman), Mr. A. E. MacColl (deputy chairman), Mr. Neil Beaton and Mr. Hugh MacKenzie, Provost of Inverness. The Central Electricity Board had appointed Mr. Walter K. Whigham to be their representative on the board. Mr. Johnston added that he had appointed the following to be members of Amenity Committee and the Fisheries Committee: Amenity Committee—Colonel the Hon. Ian Campbell (chairman), Mr. John Bowman, M.INST.C.E., Mr. Robert Hurd,

F.R.I.A.S., Lady MacGregor of MacGregor and Dr. I. H. Maciver. Fisheries Committee—Colonel Sir D. W. Cameron of Lochiel (chairman), Colonel the Hon. Ian Campbell, Mr. W. Malloch, B.Sc., Mr. P. J. Robinson and Mr. F. H. Williams.



Michael Gaiger, Estate Agent and Surveyor, of 55/56A, Kingsley Road, Hounslow, was FINED £5 and £5 costs at Brentford Police Court on September 15, on information laid by the Architects' Registration Council of the United Kingdom that, not being a person registered by the Council, he was carrying on business under the title of architect.



Mr. S. A. Heaps, ARCHITECT TO LPTB IS RETIRING after forty years' service. Since 1925, when the Golders Green to Edgware extension was constructed, he has designed many stations and has re-designed many existing ones.



Salters Hall and the Chantry, Sudbury, sixteenth century buildings, to be sold by auction next month.



E. S. Watkins

The Physical Planning section of the JOURNAL presents this week the second part of Captain E. S. Watkins' article on the Private Property Bogie, in which the law governing ownership and the problem of amendments to it is at long last stated concisely and clearly. Captain Watkins was born in Liverpool in 1902 and educated at Liverpool University where he gained LL.B. (Hons.) in 1922. He passed the solicitors final in 1923 with Honours, holds the gold medal for conveyancing and practised as a solicitor in London from 1923 until the outbreak of war. He is a member of the Council of Toynbee Hall, where

he has worked as a poor man's lawyer. He was a member of the Stepney Borough Council from 1932 to 1935 and drafted the Parliamentary Bill which became the Hire Purchase Act 1938. He has been a contributor to *Punch* since 1938, and is author of *Credit Buying* (1938), *No Depression in Iceland* (1942), and under the name John Oliver Mayo, of several thrillers, the latest of which *On Target* will be published next month. His article on land ownership, the second part of which starts on page 234, illustrates his remarkable gift for explaining a complex subject in simple and straightforward language.

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Builders with individual HOLIDAYS WITH PAY schemes must operate the national scheme, says MOW.

In a statement, just issued, MOW state a joint agreement taking effect from February 1, 1943, was made by the National Organizations of Employers and Operatives in the building and civil engineering industries for the grant of an annual holiday of six working days with pay to operatives in those industries, the scheme to be operated through the Building and Civil Engineering Holidays Scheme Management Ltd. By an award of the National Arbitration Tribunal (No. 372, dated June 16, 1943), six building firms, which had been operating individual schemes for holidays with pay, were required to observe the terms and conditions of the national scheme as administered by the Management Company in accordance with clause 16 of the Scheme. The Ministry are advised that the provisions of paragraph (4) of Defence Regulation 56AB require all building and civil engineering undertakings registered under that regulation, employing labour of the classes whose wages are determined by the National Joint Council for the Building Industry and the Civil Engineering Construction Conciliation Board, to operate the national scheme for holidays with pay administered by the Management Company.

MOW has issued a Preservation Order to prevent any further DAMAGE TO HADRIAN'S WALL.

In reply to Mr. Lawson and Mr. Harvey, Mr. G. Hicks, Parliamentary Secretary to MOW, said, in the House of Commons, that the attention of the Ministry had been called to recent damage to Hadrian's Wall caused by quarrying in the Greenhead area. The Minister has therefore issued a Preservation Order which will restrict the working of this quarry so as to cause no further damage. The other active quarry in the district will cease by the end of 1944, and will be worked, in the meantime, in conformity with the wishes of the Ministry's archaeological advisers. There is another area in respect of which negotiations are in progress for the prevention of quarrying. The remainder of the Monument in the quarrying area is being protected by a preservation scheme which has just been confirmed.

Mr. C. U. Peat, Joint Parliamentary Secretary to MOS, states that FIFTY MILLION BOOKS HAVE BEEN COLLECTED in eleven months in the national book recovery and salvage campaign.

Arrangements are proceeding immediately for the collection of a further 50,000,000 books, making a new target of 100,000,000 in all. It is estimated that not more than 5,000 book scrutineers examined the 50,000,000 volumes collected. The scrutineers were made up of local committees who were responsible for sorting the books into three categories: those suitable for services' reading; those suitable for restocking war-damaged libraries; and those which, having no entertainment or instructional value, were suitable for repulping to make munitions. Out of the books collected it is estimated that approximately 7,000,000 will go to the services and approximately 1,500,000 will be made available for restocking damaged libraries.

BUILDING SOCIETIES

LAST week we outlined the present financial position of the building societies, the extent to which they have financed housing in the past, and broached the first of the major criticisms which have been levelled against them.

A second common criticism, especially from the left, is that building societies are used for political ends. On the whole, building societies cater only for those living at a standard above that of the working class, the housing of the latter being built, all too inadequately, mainly by municipal or state enterprise. Reactionary governments and interests, it is claimed, have encouraged and supported the societies to ensure that as many people as possible, especially in the great middle strata, became "good citizens" unlikely to support radical ventures of any kind when they have a stake in the *status quo*, however small.

But the most recent criticism against building societies—and perhaps a valid one—is that they are now being compelled in their own interests to oppose with all their power, any plans for the national control of land use, which is so essential if we are to recreate our environment in a more practical and beautiful way.

"A job well done should rattle," says an old saw of the Prussian artillery. The building societies are now bringing up their big guns. Hear their loud and formidable rattle. Mr. David W. Smith, general manager of the Halifax Building Society and past chairman of the Building Societies' Association, in his presidential address to the Halifax and District Property Owners' Association on September 9th last said:

"The building society movement, as custodian of over £1,000,000,000 worth of property will make a psychological blunder if it fails to come out boldly into the open and express its views clearly and forcefully on such matters as over-planning, the economics of housing and the principle of individual ownership and property rights . . . I have no hesitation in stating my view that the first essential to the successful solution of post-war housing is the rejection of the development rights recommendation of the Uthwatt Report. Building Societies should lose no time in linking up with every interest that feels itself threatened and opposing tooth and nail this amended measure of nationalisation."

Still considering the matter of the societies within the existing economic structure, let us see how they could best be adapted for the general welfare without acting as a break on progress particularly in the matter of land control and development. Clearly, they should return to their original function of local co-operative and democratic mutual aid societies for the benefit of the great mass of the people, in which the members, by helping each other, help themselves without having to pay exorbitant interest rates to a monopoly which makes large profits merely by lending out other people's savings. Sweden has shown us how to do this. The history of the co-operative housing movement in Sweden has not always been altogether savoury, but now it can boast in many ways the finest co-operative building society in the world, namely the HSB, the *Tenants Saving and Building Society*, founded in 1923.

The HSB takes a direct interest in the designing of the buildings it finances and one of the major benefits it has brought

is the use of properly trained architects in the designing of all its buildings. If the building societies in this country had taken such a magnanimous interest and been less greedily centred on making their balance sheets weigh heavily on the asset side, our island might now be less disfigured.

In Sweden, too, the state is taking over more and more housing finance, and is assisting and encouraging organisations like the HSB. No less than 70% of the new dwellings built in the Swedish towns during 1942 were under state subvention in the form of cheap loans. In some cases these loans were granted on the remarkably favourable conditions that no interest nor amortization need be paid by the prospective owner during the first ten years. The inference here needs no emphasis.



The Architects' Journal

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THE BROWN WAY

There hasn't been much to laugh at for the last few years, so we must be grateful for the Hildenborough comedy. As days roll by new details come trickling in.

★

First we have the motor cars.* You can count forty-five in the photograph but there may be more round the bend. Each brought a guest of the Tonbridge Council to watch Mr. Brown bless the fruits of a season's effort.

★

Look now at what they've come to see. A new sensible bathroom complete with gas lamp, plug hob and w.w.p. (old style)†, whose chief claim to the public's attention is the fact

† To be fair, one should add there are two Ascot Heaters, one for sink one for bath.

that 50—or is it 90?—agricultural labourers of the Hildenborough district are already struggling for possession of the bath.

★

For the moment, however, the bath is empty and there's not much else to occupy a visitor's attention. But there's a stove worth stooping to look at in the kitchen; and several unsolved problems to keep interest alive. Where will the future owner keep his overcoat and boots? How will his wife keep the floor clean without three strong men to help her?

USA REACTIONS TO UTHWATT

The first numbers of a stimulating little USA publication have just come to hand, by name *Tomorrow's Town*, published by the National

Committee on the Housing Emergency Inc. No. 1 for April of this year contains an interesting symposium of opinions on the question, *Can we adopt England's Uthwatt Report on a proposed land Program for Britain to a program of rebuilding American cities?*

★

The following are some extracts from the symposium:—

Dr. Frederick L. Bird, Director of Municipal Research, Dun and Bradstreet Inc.: "The Uthwatt Report deserves serious consideration in this country because of the forthright proposals it offers. . . . Real estate and building materials specialists are predicting an unprecedented building boom after the war and architects see vast changes in home designing which will stimulate this boom. But tempering enthusiasm for these prospects are recollections of the unrestrained and undirected building boom of the 1920's, with its speculative excesses, premature land sub-division, misuse of public credit, and acceleration of urban decay, and realization of the fact that legal and administrative procedures are not sufficiently advanced to prevent a recurrence of such a disaster. The Uthwatt proposals would need to be adjusted to our federal system of states. They would require creation of a planning authority for metropolitan areas as units."

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C. E. A. Winslow, President of the National Association of Housing Officials: "The Uthwatt Report is undoubtedly sound in maintaining that immediate steps should be taken for the acquisition of urban land which needs reconstruc-

* Here are reports of questions in the House of Commons with regard to the two farm workers' cottages at Hildenborough and of the investigation conducted by the *Daily Express* concerning the owners of the cars at the opening ceremony:

MR. ERNEST BROWN, Minister of Health, made a statement in the Commons about the two agricultural cottages he opened at Hildenborough, Kent.

MAJOR LYONS (Cons., Leicester E.) asked: When is it expected that these two houses will be occupied? Was not the flourish of trumpets utterly futile?

MR. BROWN: The rural district council asked me to go down. I went because it was my duty and I saw two very good cottages. (Cheers and laughter.)

MR. SHINWELL (Soc., Seaham): Can we have an assurance that when the next two are completed and there is an opening ceremony you will make arrangements with the Minister of Fuel to prevent so many cars being present?

MR. BROWN: That is not my responsibility. "The only cars for which I was responsible were one for myself and my staff from Whitehall and one from a few miles away at Tunbridge Wells for the regional staff. I believe there were as many Press cars as any there and that headline story was a sample of the basest kind of journalism. (Cheers and laughter.)

MAJOR LYONS: How many people who had nothing to do with the building of these cottages wasted their time there last week?

MR. BROWN: This kind of sneering does not do any good.

MR. DE LA BERE (Cons., Evesham): If it takes seven months to build two cottages can you tell us how many centuries it will take to build 3,000? (Loud laughter.)

The *Daily Express* asked Fleet Street and provincial newspapers and picture agencies for details of how their representatives travelled to report the visit of Mr. Ernest Brown to Hildenborough, where a *Daily Express* reporter counted 47 cars at the opening ceremony. Here is the report:

The *Daily Express*, *The Times* and *News-Chronicle* sent representatives from London who travelled by train and bus.

The *Daily Telegraph*, *Daily Mail*, *Daily Mirror*, *Daily Sketch*, the London evening papers and the Press Association relied on their local correspondents.

The *Daily Herald* sent its representative by car as "he had other assignments to cover in the district for which public transport was not available."

The *Manchester Guardian* and *Yorkshire Post* relied on their local correspondents.

The Associated Press photographers travelled by train and bus, the *Central Press* sent their photographer by train to Tonbridge, where he hired a local taxi. *Keystone Agency* sent their photographer by car. The *Farmers' Weekly* was not represented at all.

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tion and which is not likely to be developed soundly under private auspices. . . . The report attempts to outlaw future speculation in land values; although it seems unfortunate that the Commission has accepted existing pre-war values without questioning their probable inflationary effects. . . . The details of the Uthwatt Report, intricately woven into British legislative precedent, are of course not directly applicable to American conditions."

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Homer Hoyt, Director of Research, Chicago Planning Commission: "In my opinion, the purchase by the nation of all the rights of urban development as advocated by the Uthwatt Committee would be impracticable and unnecessary in a country as vast as the United States. In the period prior to 1929 there was great speculation in urban land near mass transportation lines outside of the built-up areas of American cities. . . . In the last decade, however, there has been very little speculation in vacant lots in the United States. The trend now is toward development of large tracts by builders who create entirely new neighbourhoods. As a result of the widespread use of the automobile, the development of private sewage disposal

systems and power driven water supplies, the builder is not compelled to buy sites along fixed transportation routes near city sewer and water pipes, but has available a wide selection of land. This prevents the owner of any one tract from demanding an excessive price. . . . It is my belief that proper guidance of new urban developments can be secured by the enactment of legislation requiring builders to conform to improved zoning acts, building codes, and site plans as recommended by local and national planning bodies."

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Alfred Bettman, Chairman, Committee on Legislation, American Institute of Planners: "In the final analysis, the value of land depends upon the use of land. As we move from speculative market value to use value, master planning assumes more and more importance. While under the law of eminent domain, private housing, industry and business are not public uses, the planning of where they shall fit into the general scheme of development may well be public uses. But at present we cannot, as the Uthwatt Report proposes to do, take the 'development rights' first and do the planning afterwards."

ASTRAGAL



LETTERS

(Gervase Bailey, F.R.I.B.A.)

(George L. Greaves, A.R.I.B.A.)

Post-War Light and Air

SIR,—Like most of us who are without the pale, I have little or no knowledge of the range and scope of the investigations which are now occupying the attention of those who will be responsible for the new town and country planning administration, but I devoutly hope that the problems of light and air will receive their earnest consideration. I feel sure that anything that can be done in the way of curtailing or putting an end to the abuses and delays which attended the development of every pre-war rebuilding scheme in the City of London and the West End will have the support of every architect concerned with these projects.

It is true that under the Town and Country Planning Acts of 1925 and 1932, the limitation of heights for rebuilding in the various streets and zones and the definition of such heights in lighting areas as interpreted by the London County Council went a great way towards clarifying the issue, representing as it did the considered view of experts as to what was a "reasonable enjoyment" of light and air that would accrue to the surrounding buildings. It no doubt stopped a certain amount of litigation and modified the threats of adjoining owners, but it did not stop to any appreciable degree the usual crop of demands for compensation for loss of light which frequently reached a total of 15 or 20 on a single building and which involved surveys, diagrams and negotiations often extending over three months of time that was invaluable in the early stages of the development. It is inconceivable that this state of affairs should be allowed to be perpetuated in the strenuous days of post-war building.

My tentative suggestions for the remedy would be on these lines:—

That a Central Board or Committee should be constituted within the Ministry with full powers to act in two capacities—(A) Directional; (B) Judicial.

(A) (i) That it should formulate basic principles with regard to the limitation of heights in streets of varying zones and in internal areas which should be adopted by every city, borough and district council, incorporated in their bye-laws and applied by them in detail to every street, existing or new, and every lighting area in their jurisdiction.

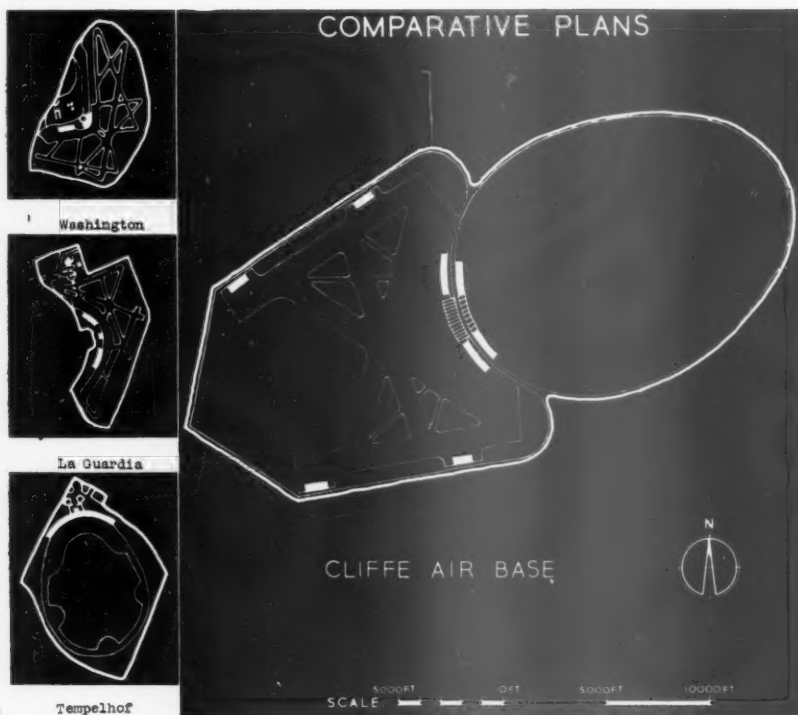
(ii) That all drawings of new buildings should be certified by those bodies as



Above left, the long line of cars which brought guests for the ceremony of opening exactly two of the 3,000 agricultural workers' cottages. Above right, bathroom in one of the cottages. Right, Mr. Ernest Brown inspects kitchen range. See Astragal's note. Other views of the ceremony showing the cottage exteriors were published in the JOURNAL last week.



LONDON AIRPORT SCHEME



This project for an airport for transcontinental land and seaplanes to serve London after the war has been sponsored by F. G. Miles, of Phillip & Powis Aircraft, and designed by Guy Morgan & Partners, F.F.R.I.B.A. The site selected is on the Kent shore of Sea Reach in the Thames Estuary, and the scheme is thus related to the airport on the Isle of Dogs proposed in the LRRC plan for London. The lay-out would, however, be applicable to other sites. Top, a bird's-eye view of a model of the airport. The large oval is a lagoon, three miles long, for seaplanes. The landing ground for land planes has runways $2\frac{1}{2}$ miles long by 600 ft. wide. The airport buildings include a main railway station linked with sub-stations on the edges of the airfield, and a hotel, restaurants and cinema. Above, the plan of the airport with comparative plans of the existing airports at Washington, La Guardia and Tempelhof.

conforming to their bye-laws and local regulations at an early date after their submission.

(iii) That thereafter the buildings so planned would be considered to afford a reasonable enjoyment of light and air to the surrounding buildings, and that no claim could result for compensation for loss of light and air.

(B) (i) Adjoining owners would be notified and would have the right of inspection of the drawings at the architect's office, and in extreme cases of supposed hardship would have the right to appeal to the central board or to their local county council at their own expense.

(ii) That the central board should have the powers of arbitration and final decision and of modification of the certified building heights at their discretion. This need not preclude minor mutual adjustments or agreements between building and adjoining owners provided that these did not infringe on the certified heights.

(iii) That no application to the courts for an injunction would be considered unless the decision of the Board had been disregarded or the certified heights infringed.

I admit that these suggestions involve a wholesale trespass upon the legal aspects of the question inasmuch as they would remove these matters from the jurisdiction of the civil courts; but an acquaintance with light and air lawsuits must, I feel sure, have convinced many architects of the difficulties experienced both by learned counsel and judges in appreciating all the highly technical points involved, and their solution by a body of experts might tend to be more equitable in many cases and less productive of new and subservice judgments.

It is also true that a small—a very small—body of experts who have relied on this work for their professional careers might be affected but their knowledge and experience would prove a great asset to the responsible work of the central board in the simplification and co-ordination of post-war building.

London. GERVASE BAILEY.

Physical Planning

Sir,—I have been delighted to read Astragal's diverting account of the future under Physical Planning No. 3, but I feel he must go further on the subject of his Land Purchase Bill. If he contemplates the enormous value of the whole land of this country and the crippling taxation which would be required to meet the interest only, without considering repayment, of a loan sufficient to cover such a vast expenditure, then outright purchase is impossible. Nevertheless there is so much that is sound in his thesis that it is perhaps ungrateful to criticize. May I then submit to him a few verses rather in extension and support of his own views?

Stoke-on-Trent. GEORGE L. GREAVES.

ON READING FUTURE SIMPLE.

Oh, Astragal, how truly Astragalian,
More daring than the adverb in Pygmalion,
To demonstrate a logic reconstruction
In terms of economical production.

In lauding much you thus are postulating
In turn I beg your ear whilst demonstrating
That ownership of land is fundamental
To reconstruction, "Spec" as departmental.

Such land embraces basic raw materials
As much as sites or meadows under cereals,
And yields her ore and clay, her timbered
treasure

To meet our building needs in ample measure.

Production on this land but labour needing
To implement the planning we are pleading
Reveals the power of money as fallacious,
Misleading if not purposely mendacious.

If widespread unemployment then returning
Betrays the promise present toils are earning,
If speculation threatens all we've planned,
Then free those idle men by freeing land.

PHYSICAL PLANNING

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i n d e x

The bogies

5. Freedom
Dr. Karl Mannheim
6. Democracy
E. M. Nicholson
7. Economics
F. Schumacher
8. Land Ownership
Part I. E. S. Watkins
9. Land Ownership
Part II. E. S. Watkins
10. Democracy
Harold Laski

Problems

11. Local Government
Part I. Dr. W. A. Robson
12. Local Government
Part II. Dr. W. A. Robson

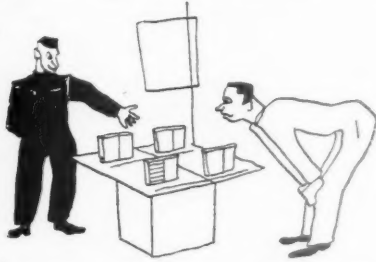
E. S. Watkins, author of this week's article, gained LL.B. (Hons.) at Liverpool University in 1922, and holds the gold medal for conveyancing. He practised in London as a solicitor from 1923 until the outbreak of the war, and drafted the Parliamentary Bill which became the Hire Purchase Act 1938. He is a member of the Council of Toynbee Hall, an author, and is now a Captain in the R.A.

The rule of law has advantages from many points of view but it cannot be said to have helped planning. The planner's job is to discriminate and to see that each piece of land is put to an appropriate use. The Town and Country Planning Acts have failed because they have turned planners into administrative officers enforcing laws favouring uniformity. They have obliged them to rely too much on zoning and zoning has been deprived of much of its usefulness by the fact that zones themselves have often had to be made ridiculously large in order to avoid claims for compensation. The unsatisfactoriness of existing legislation is beginning to be recognized on all sides. The question is how can we amend it without giving rise to injustice or abolishing private property in land. Mr. Watkins shows that the legal machine is much more adaptable than might at first sight be supposed and that provided we take the trouble to understand it we can use it to achieve whatever objective we decide upon. He suggests that private property in land should stop short of absolute ownership; that land about to be developed should revert to the State and that the management of land so acquired should be vested in a Holding Corporation. The Holding Corporation would not itself undertake development but would act as trustee for the public controlling developers, whether private firms, local councils, public utility companies or ministries by means of conditions inserted in leases on which title to the land would in future be based. Failure to comply with these conditions would result in forfeiture of the lease. In other words conditions incorporated in the leases of particular pieces of land would supersede Acts of Parliament as the instrument of planning. Plans themselves would be worked out by area planning committees in accordance with a policy laid down by a Central Planning Authority.

An arrangement of this kind would have many advantages. In the first place compensation and betterment would cease to be a problem. Rents could be related to the type of user permitted and the lease and rising returns in areas scheduled for further development balanced against lower rents in areas to be decongested. A way would still have to be found, however, of equalizing the effects of planning on rates and rateable values as between one local authority and another. In the second place the system provides an automatic check on obsolescence, that creeping blight that causes the planner's worst headaches. By adjusting the length of lease granted to whatever might seem an appropriate length of life for the particular type of development to be permitted amortization within a reasonable period could be provided for: the falling in of leases would bring the condition and fitness of purpose of all property under periodic review and find the Holding Company in a position to clear the site or renew the lease without prejudice. In this way power to plan constructively could be obtained, and excessive costs be made to disappear, with only a slight alteration of the existing legal framework.

THE BOGIES *Some say the only way to plan land is for the planning authority to own it. It has been suggested that local councils at present responsible for the administration of the Town and Country Planning Act should be empowered to buy up land and get control of it that way. Mr. Watkins points out that this solution has disadvantages. Apart from the fact that the areas and constitution of local authorities does not make them particularly suited to be planning authorities and that their financial interests are often opposed to a sound planning policy, an arrangement of this kind would give the local authority control over every aspect of development from planning to letting, and make it sole judge of its own case throughout an area of considerable size. As an alternative he suggests that the framing of policy should be in the hands of a central planning authority working through democratically controlled area committees; that the work of supervising and controlling development should be entrusted to a Holding Company; and that development should be left to individual owners, who should enjoy security of tenure subject to conditions laid down in leases, on which private title to land would in future be based. Nationalization need be no more of a bogie to the good landowner than the police force is to the good citizen.*

BOGIE NUMBER FOUR



PLANNING WILL END PRIVATE PROPERTY

by E. S. Watkins

SECTION III.

THE UTHWATT REPORT SOLUTION

All problems of land control finally descend to the question of finance, for the opposition of the landowner, in the vast majority of cases, arises from the fact that he fears, first, that he will be deprived of the present value of his land without receiving adequate compensation, and, secondly, that he will be deprived of a potential increase in the value of that land without any compensation at all. There are, of course, exceptional cases where the owner resents any interference with his rights as landlord at all, but the days when that attitude of mind was common have gone.

The Uthwatt Report starts from the very simple assumption that, granted that the capital assets of the country continue to increase in value, as so far they steadily have, the value of the total land in the country will likewise increase, at the moment to the benefit of landowners as a body, and quite independently of any improvement anyone may make to his own piece of land. But that increase in value will not be spread uniformly over the country. In short, every development of land will add something to the total value of land in the country, although its immediate and local effect may be to impoverish one individual landowner and add a disproportionate increase to the value of the land of another individual owner. What any scheme has to do is either to prevent any owner from acquiring any unearned increase in the value

of his land, at the same time compensating any owner who is adversely affected by any public action, or alternatively to take from the owner gaining this unearned increase in value enough to compensate the owner who has suffered an unforeseen loss. And, granted a continued increase in value, there will always be available in the hands of the fortunate owners more than sufficient to make up the loss suffered by the unfortunate. The first method would secure to the community as a whole the full net value of this continuous increase. The second would leave the net value of this increase in the hands of certain landowners only, and these fortunate owners would, so to speak, be capriciously selected from the total body of landowners in the country.

The plan embodied in the Report, in essentials, is on the following lines. Land is divided into developed and undeveloped land and each is treated differently. Developed land is to be valued both now and at intervals of five years henceforward, and the larger proportion of any estimated increase in its value in the future over its present value is to be taken by the State. The rights to develop undeveloped land are to be acquired by the State, or, in other words, the use to which that land is now being put cannot be changed. For that imposed restriction the owner of undeveloped land is to be compensated from the funds primarily raised from levies on the increase in value of developed land. If a proposal for development of undeveloped land is made, the whole interest in that land is acquired by the State, which directly or indirectly will

thus control its subsequent development. This control will be exercised through a new body to be known as the Central Planning Authority. It will be seen that financially the scheme should prove to be self-supporting.

It is impossible to deal here with the financial aspects or machinery implicit in the plan. They are involved and need a large creation of fresh administrative machinery. A wide variety of types of property, notably small residences, are taken out of the scope of the plan, and it is obvious that the plan is an earnest attempt at a compromise on a difficult subject, no doubt put forward with the hopes that the exceptions will make the plan just palatable enough for the inevitable opposition of the landowners to be overcome.

What we are concerned with are the composition of the Central Planning Authority and the machinery by which it will acquire land that is about to be developed and so control its development, and on those two subjects the Report is vague.

So far as Planning Authorities are concerned, we deal later in some detail with proposals by which planning may be given a wider and more positive approach to its tasks, and it is quite clear that any future plan for development must have as its backbone a national plan to which local plans must conform with appropriate local variations. What we suggest is a series of area planning committees with full-time chairmen, and those chairmen would be the natural liaison between the area committee and the Central body. What is much more difficult to envisage is the machinery by which the land about to be developed would be handled. There would always be two stages. First, the preparation of the plan for development, which would be the responsibility of the planning committee, and, secondly, the enforcement of the plan as the land was developed and afterwards.

Our suggestion on the second problem would be as follows:

(i) Land about to be developed would be transferred by the owner to a Holding Corporation, who would pay out to the owner the value of the land from money borrowed from the State.

(ii) The Holding Corporation would grant leases to the actual developers, be they public bodies or private individuals, the leases to run for, say, one hundred years and to contain the details of the development scheme in the form of covenants by the person to whom the lease was granted. Failure to observe the covenants

would result in the forfeiture of the lease and in the return of the land into the possession of the Holding Corporation.

(iii) The developer would pay for the land either by paying over its full value at once in the shape of a premium for the grant of the lease, which would mean that no annual rent would be payable under the lease, or he would pay an annual rent equal to a proper return on the value of the land, as paid by the Holding Corporation to the former owner. In that way the Holding Corporation would be financially self-supporting, receiving back either the capital it paid out, or rents sufficient to discharge the interest on any money it had to borrow from the State to make its capital payments.

At the end of the hundred-year lease the freehold of the land would come again into the possession of the Holding Corporation, and being a public corporation, it should be able to avoid the temptation that besets the commercial landlord in that position, that is, of re-letting antiquated property under slum conditions simply because the buildings are not so bad, from a health point of view, that they must be immediately demolished. Any buildings on the site would by then have been completely paid for, and it should be the duty of the Holding Corporation to re-develop the land again in the light of the conditions then prevailing.

Whether the Uthwatt Report is implemented by legislation or not is still uncertain, but if it is, the principle it establishes, namely, that the re-development of land should only take place where the State owns or controls, with legal sanctions, the land to be developed, will prove to be a major landmark in the improvement of both the efficiency and the appearance of this country.

NATIONALIZATION: CONCLUSIONS

Assuming that we were to be given a free hand, what system of land control would we advocate, to secure the ends in view, that is the efficient and rational use of land? Nationalization, as described above, must be our answer.

Nationalization is a political problem and will not, therefore, be considered on its merits. It is usually misrepresented as a plan to turn everybody out of the land or house they now occupy, with the result, presumably, as they must live somewhere, that a kind of General Post will take place, with Government officials, in excessive numbers, laughing heartily in the side lines. It is said that it

would destroy pride of ownership, kill the incentive to improve the land you occupy, and generally wipe out such remnants of the virtue thrift as are still apparent. The example of the family estate is brought forward, and touching pictures of the beneficent landowner are painted, showing him dispensing free coal, good advice, and the surplus of income over expenditure, not in other connections admitted to exist, with well-considered charity, to the poor, the ailing, and the distressed in his immediate vicinity.

Assuming this figure to exist at all, is he really typical, and, if he is, does it mean that we must never ask for control over such landowners as are cruel, grasping or inefficient because the many good would be insulted if we did? Do we dismiss our police because the majority of men are honest? And that despite the fact that it is easier for the individual to defend his possessions against thieves than it is for him to defend his countryside against vandals.

It is suggested that "nationalization," if intelligently planned and based on the use to be made of land, would be no more a burden to the good landowner than the police force is to the good citizen. A variation in the actual legal estates in land would leave untouched security, inheritance and continuity of possession of all land not being developed or not being abused. On the other hand, it would secure control over new development, change in use, and active waste of the land's inherent qualities. The Uthwatt Report is not revolutionary, nor can the members of the Commission be described as reckless visionaries, yet they were unable to stop short of national control of new development. To do that, they indicated, vaguely, that some sort of transfer of ownership of all land under development would be necessary. And, to control compensation and betterment, they have devised a scheme which every lawyer will welcome as a perpetual annuity to the profession.

Nationalization means, in brief, that the State becomes an intelligent reversioner to all land, and, therefore, actively interested in what is being done to it by the man in possession. If that is a bad thing, then, of course, nationalization stands condemned. If it is a good thing, nationalization is the only logical way of securing it. It does not mean that a man may be dispossessed capriciously (any more than the leaseholder suffers from the effects of caprice), nor that he will spend his life in filling up forms (any more than the leaseholder must send his landlord a weekly report of his doings). It means that the owner must recognise that the community has an interest in his activities as a landowner as it has in his activities as a citizen. If he starts on a career of murder, embezzlement, or highway robbery, he is not surprised if the police display an interest in what he is doing. Can he logically claim that he should be allowed to murder soil, embezzle sunlight and the beauty of the countryside, or hold the community to ransom, in the shape of compensation, and be left undisturbed?

Architecture has many crosses to bear. One of them is the client who wishes to compromise between his own ideas and those of his architect. The man who will plan his own house is a fool but not a nuisance. The man who states his requirements and leaves everything else to the expert is a blessing and a rarity. If architects care for the proper use of land, they must interest themselves in the plans and the foundations on which the Britain of the next century will be built.

CONTROL OF THE USE AND DEVELOPMENT OF LAND: PRELIMINARY.

So far, we have considered methods of controlling land by either owning it or by changing the terms on which the individual owns it. Now we must pass to the control of land without any change in the nature of its ownership but by the creation of regulations that bind the individual who happens to own it. Regulations of that kind already exist in the form of Town Planning schemes, created and administered by the town planning committees of local authorities.

We are about to suggest that the existing machinery is not adequate and needs amendment. We do so because we make certain assumptions about the job that this kind of authority should do. If the job of a town planning committee is assumed to be confined to keeping its own town area reasonably tidy and decent and free from potential slum areas as the result of the activities of the local building sharks, the existing machinery can cope with it. And, since the machinery was created to cure bungalow growths, to perpetuate the garden suburb and to provide fast roads for the pleasure motorist, no one can have any complaint. But if our problems after the war are on that scale, if we are not compelled to plan nationally for agriculture, industry and re-housing, we shall be so lucky that we ought to accept bungalow growths as a small but very willing tribute to the kindness of the Gods.

EXISTING MACHINERY

The existing statutory regulations relating to Town and Country Planning are contained in the Town and Country Planning Act 1932, as amended by 1943 Act passed on July 22, 1943. These provisions may be briefly summarized as follows:

(i) The controlling authorities are the councils of county boroughs and county councils. There are provisions by which county districts may relinquish their powers to county councils and for the creation of special joint bodies covering areas larger than any single normal planning unit.

(ii) Until the passing of the 1943 Act, land could only be brought under a planning scheme on the initiative of a planning authority, or of the Ministry of Health, or of the owners of the land. As from three months after the passing of the 1943 Act all land is now subject to a planning resolution.

(iii) Interim development, that is, development taking place before the detailed plan of the Council is

complete and approved, is subject to control by the Council.

(iv) Schemes are brought into force by resolution of the authority, followed by the service of notice on the owner or occupier together with local advertisement, and are subject to public enquiry at various stages in the procedure for approval.

(v) All schemes must be approved by the Ministry of Health and laid before Parliament.

(vi) When a scheme is finally in existence, existing property as well as future building and use, must conform to it, but landowners who suffer damage to their existing interests by reason of it are compensated. After the approval of a General Interim Development Order (an order laying down the main lines along which the planning scheme is to operate), any future building takes the risk of receiving no compensation if it must be demolished or cannot be used as planned because it does not conform to the final scheme when settled.

The key-note of the Act as it stands is that it is largely permissive. A local authority may exercise its powers to initiate the formation of larger planning units to replace it, or to acquire land along new roads to control subsequent development, or to press claims for betterment against landowners who do in fact receive fortuitous advantage. But, apart from the existence of the Ministry of Health and of such limited drive as a Government department can inject into a large number of individual authorities under its surveillance, there is no positive effort in the direction of planning. The Town Planning Acts have a kind of Maginot Line quality. They are designed rather to prevent people doing things that are undesirable than to compel, or even encourage, them to do things that they would not otherwise do.

THE OBJECT OF CONTROL

But what object do we want to achieve by imposing any control at all?

There are two broad objects to be achieved:

- (i) to ensure that the best economic use is made of our land and resources, and
- (ii) to ensure that the best social use is made of our land and resources.

These two overlap in part but not entirely. They overlap because it is increasingly recognised that, in laying out an industrial centre or area, economic problems are helped and not hindered by making the best social use of the area in which the workpeople necessary for the industry are to live. But they may also conflict, as where the best economic site for, say, a new chemical works is in the centre of an unbuilt area which happens to be the only social amenity of a neighbouring town. Some balance must be struck between the two.

Prior to the war there was little positive direction in the location of industry exercised by any public authority on a national scale. Within a small area, town planning schemes usually compelled a new industrial unit to site itself within an industrial "zone," but there

was no authority on which was imposed the duty of seeing that a particular industrial unit went to a particular area. The nearest approach was the Government's use of financial inducement to attract new industries to the "Special" (or Distressed) Areas. During the war that has been changed. Agriculture is recognised as an industry of prime national importance. New industrial units, especially armament units, have been sited under Government direction. True, the intention behind this is strategic necessity, but, unless we are prepared to say that it is essential to be efficient in war but a matter of indifference in peace, the desirability of the principle must remain.

Of course, the practical consequences of any such principle can be exaggerated into a fictitious bogie. In peace time, no intelligent cement manufacturer would of his own accord establish a new factory in, say, the middle of Cornwall, nor would he be compelled to do so in war time, nor is it conceivable that he would be under any planned regime. But zoning within a comparatively small area may not be enough. It may well be that regional control over the location of industry, and so over population, is a necessity.

That brings us to the next problem, namely, what are the basic requirements of control? It is suggested that any plan must take into account the following factors:

- (i) The general regional lay-out of industry, involving a survey of how far the present distribution in the area is essential, desirable, or merely fortuitous.
- (ii) How far any change in this lay-out is to be encouraged, tolerated or prevented, both as regards the establishment of new factories and the removal of old.
- (iii) In what way is the balance between economic and social interests in any particular area to be decided.

It should be stated at once that factors (i) and (ii) must be considered on a Governmental level, and the methods by which each decision is enforced are beyond the scope of this article. We are concerned much more with the machinery by which the land itself is affected. That brings us to factor (iii).

This is already dealt with by planning authorities; in fact, it is their main task. Are they, then, adequately designed for it, or can their composition be improved?

COMPOSITION OF PLANNING AUTHORITIES: AREAS

The first question is whether the area covered by each planning authority under the Town Planning Act is really satisfactory. We are now entering on the rather dangerous problem of local government reform, but that is inevitable. The existing local government machine may be ideal for, say, education, or sewage disposal, or police purposes, but, if it is not ideal for planning, there is no reason why planning should be left within the present structure. Planning is too important for it to be hamstrung to fit into a particular bed.

So far as area is concerned, there are immediate parallels in both

transport and water. Water did not refrain from running downhill just because there was a local government boundary across its path, with the result that, when Catchment Boards were set up under the Land Drainage Act 1930, the area controlled by each Board was defined by geographical watersheds and not by historical accident. The industrial and residential development of this country has similarly not been tied by boundaries dating back to the bow and arrow era, and it is just as important that the right area, from a working point of view, to be included in any planning scheme should be determined by realistic considerations where land is concerned as it was with the flow of water. Whether these areas should correspond with the traffic areas defined by the Road and Rail Traffic Acts, or with the existing war-time Regions or be rather smaller in area, is a matter for debate, but it must surely be obvious that the planning of London's rebuilding and re-development after the war is going to be a much more satisfactory job if it is dealt with as a whole, and not left to the County Councils of London, Kent, Surrey, Middlesex, Hertfordshire and Essex, the County Borough of Croydon, Kingston, Wembley, Willesden, Watford and East and West Ham, to name but a few, plus the Common Council of the City of London.

COMPOSITION OF PLANNING AUTHORITIES : DIRECTION

There are two important points about the direction of a planning authority. It must be capable of positive action and it must be democratic in composition. The two are very much interwoven, for positive and determined action is not always an attribute of a large democratic assembly, whilst the amount of power that can safely be entrusted to a subsidiary authority depends very much on the composition of the authority itself.

Positive and determined action can be secured by various ways. The body should be small. It should have a specific and limited task within clearly defined limits. It should have some element of continuity in it. It should not be hampered by complicated procedure or by the necessity for having a large secretariat, which will inevitably develop pronounced Civil Service characteristics. The work of the authority should be the main interest of its members, but they should have some outside knowledge, so that time is not lost and prestige destroyed by making avoidable blunders.

And by democratic, we mean that the citizen should feel that in some way he participates in the control exercised, whilst those in control should feel themselves answerable to the community as a whole. This can be achieved without necessarily having a direct popular election of the personnel constituting the governing body.

CONSTITUTION OF PLANNING AUTHORITIES : SUMMARY

We have dealt at some length with the considerations under-

lying the formation of a planning authority before coming to the legal machinery by which it will function. This is inevitable, for the legal machinery must be moulded to fit the objects the authority has to achieve, and, if these objects are left vague, the argument in favour of any change in the existing machinery will be obscure.

We have sought to establish three main points. The first is that the area of responsibility of each planning authority must be large enough to constitute a region of recognisable industrial unity. It will then be possible to ensure that such general lines of development as may be laid down by the central government and the Central Planning Authority envisaged by the Uthwatt Report are fairly applied over the country as a whole. Next, the controlling body of the authority should be small, representative, and answerable in some way to a democratic assembly. And, finally, the function of the authority should not only be restrictive but should be positive in effect.

AMENDMENTS TO THE PLANNING ACT

The existing Town and Country Planning Act provides an excellent basis for a further advance, and it is suggested that the objects we have discussed can be achieved by amendments to the principal Act along the following lines.

(a) Planning should cease to be a function of the existing local government authorities and should be carried out by area planning committees.

(b) The area planning committee should be constituted as follows :

(i) It should have a full-time salaried chairman.

(ii) The committee, excluding the chairman, should be ten in number, consisting of five elected local government councillors and five nominated persons. Of the five nominated, two should be nominated by industry, two by labour and one by the Treasury. The local government councillors should be selected by the Ministry of Planning (when created) from a panel put forward by all the local government bodies in the area controlled by the committee. The word "industry" is intended to cover all gainful activity, and would obviously include agriculture where the area contained any appreciable percentage of land under agriculture.

(c) The boundaries of each area should be drawn with due regard to existing local government boundaries but with industrial considerations in mind.

(d) All existing planning schemes would remain in force.

(e) As from the commencement of the amending Act, all land not subject to a binding scheme should be deemed to be subject to a provision that it could only be used for a purpose similar to the purpose for which it was then being used. In short, any change in use would need the assent of the committee.

(f) Machinery would be required for the following special purposes :

(i) Control of the re-develop-

ment of areas damaged by enemy action.

(ii) Control of industrial buildings erected for war purposes, with the intention of either their preservation in their existing use, their adaptation to peacetime industry or their demolition.

(iii) Control of any re-siting of industry or population as determined on national lines.

(g) The committee would be given power to hold enquiries, summon evidence and hear witnesses or representations. It should make a half-yearly public report and the public should have the same right of access as it has to the proceedings of local authorities.

(h) The expenses of the committee would be borne from local government funds in the area covered. They should not be heavy, as only a small staff for administrative and record purposes would be necessary. Probably some reduction in the number of staff, as compared with the total number of local government employees engaged on planning work, could be achieved.

(i) All planning finance, that is, the national totals of money paid out in compensation and recovered in betterment, would be pooled.

It should be emphasized that these proposals would leave in the hands of existing local government authorities all health services affecting property, all supervision of building and the enforcement of local by-laws, and all provision of housing by local authorities. The housing activities of any body, whether Government, municipal or private would be treated on an equality by the committee.

CONCLUSION

Machinery is intended to be the handmaid of society, and that is as true of legal machinery as it is of the more mechanical. That is to say, it needs careful attention and frequent overhaul if it is not to become inefficient and, perhaps, dangerous. But it remains a servant and, if it is kept in working order, and the orders given to it are clear, it will do its job. And the suggestions set out above are only one of possibly many alternatives.

The parallel of the machine may be carried further. If we fail to grasp the mechanism of any machine we employ, we are as defeated by its smallest failure as by the most serious of calamities, and one cannot help thinking that, when people condemn the law root and branch, they do so because they understand no part of it at all, and are so ready to condemn a whole motor-car for a simple maladjustment of a brake. Very little is needed to make the legal machine a willing instrument in the hands of the resolute, but those who wish to use it must be resolute. Lawyers do not like change, but they accept it.

And, again like machinery, the law is essential. The soldier is told to keep his weapons in good order because he is useless without them. A tank will win a victory, but it needs three human attributes, command, direction and technical knowledge, inside it before it will even move.

CURRENT EVENTS

Hull Survey

An article in *The Times*, September 16, on the Hull Regional Survey, states that the survey has made the following points particularly clear : 1. The information illustrated in the survey, and a great deal more, can be obtained in every town from existing official sources. 2. Civic research should be organized under proper guidance and on uniform lines so that results are comparable between city and city. 3. Such research work is especially valuable in making people aware of the flaws in their physical environment. 4. MOTCP in conjunction with its own research departments might assume direct responsibility for initiating civic surveys, as distinct from regional research, in the municipalities. 4. A subordinate advantage of such a reform would be to enhance the function of the local planning officer, by giving him his own department.

Land Legislation

The compulsory registration after the war of all sales and purchases of land, starting with land in areas most likely to be developed, is recommended by the Local Transfer Committee in a report to Viscount Simon, published on September 16. The committee was set up under the chairmanship of Lord Rushcliffe to study the suggestion of the Scott Report that registration of title should be made compulsory throughout England and Wales.

RIBA and National Planning

In a letter to *The Times*, September 17, Mr. Percy Thomas, president of the RIBA, stated that a Central Advisory Committee on National Planning has been set up by the RIBA, and that this committee has organized its allied societies throughout the country to enable architects to prepare a co-ordinated national plan. It is intended to bring together the research undertaken both by industry and independent societies.

NEW BOOKS

The Economic Pattern of World Population : J. B. Condliffe. Planning Pamphlets No. 18. National Planning Association. 800, 21st Street, N.W. Washington, D.C. 2s. 6d.

Regional Development in Post-war Planning : Its effects on Industrial Political and Social Life. F. G. Thomas. Journal of Careers. June-July, 1943. 1s. 6d.

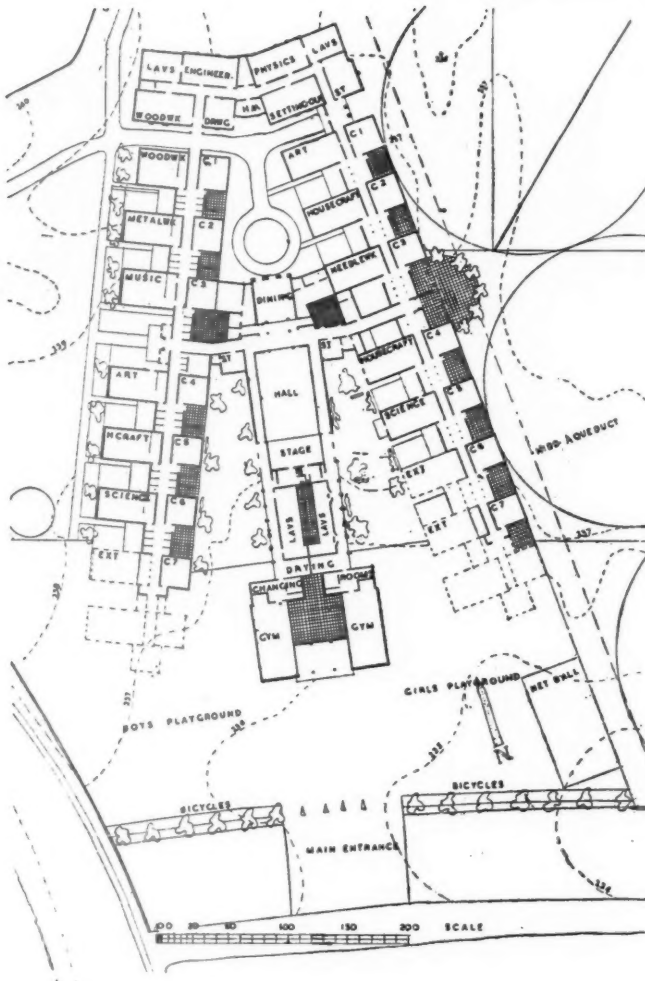
Chicago Plans : New Pencil Points. March, 1943. Reinhold Publishing Corporation, 330, West 42nd Street, New York. 50 cents.

New Towns for Old : Stanley D. Adshad. No. 24. Design for Britain series. J. M. Dent & Sons. 6d.

Use and Misuse of Transport : Planning No. 211. PEP. 16, Queen Anne's Gate, S.W.1. Free to subscribers.

Planning : Proceedings of the Annual Meeting held in New York City. May 17-19, 1943. American Society of Planning Officials. 1313, East 60th Street, Chicago. \$2.00.

The Living Soil : E. B. Balfour. Evidence of the importance to human health of soil vitality, with special reference to post-war planning. Faber & Faber. 12s. 6d.



The assembly hall and classroom blocks, as seen from the playing fields. Bottom, a view from the boys' playground, showing the gymnasium blocks (right), assembly hall and classroom blocks.

GENERAL—This is a senior modern school and technical institute erected for the West Riding Education Committee.

PLAN—The site faces south, but not with a wide frontage. Its chief dimension is south-north. Into the centre of this axis those rooms in which all children or, at any rate, especially large groups of them come together, have been placed behind each other as follows: the low entrance porch and entrance hall, with two gymnasia on left and right, still

SCHOOL

AT BINGLEY, YORKSHIRE

BY WILLIAM G. NEWTON AND PARTNERS



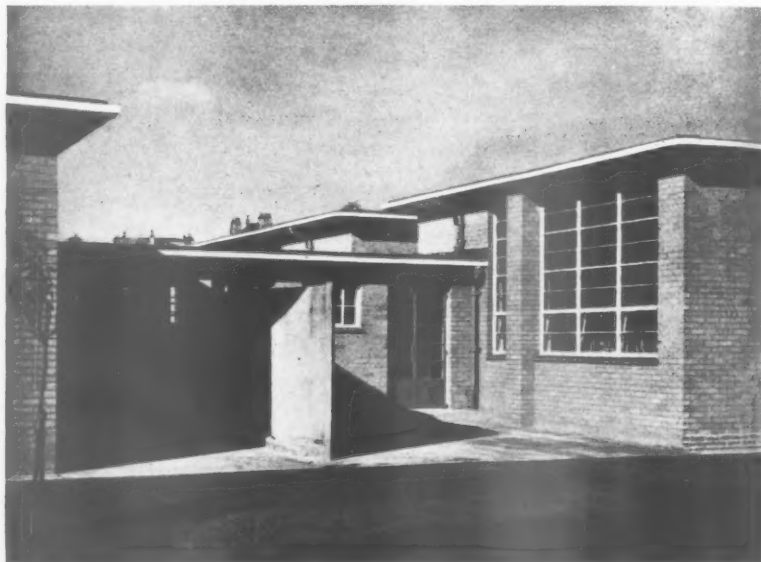
further back the assembly hall and, behind this, the dining hall with its pedimented portico towards north. The lavatories are placed between entrance hall and hall. Between hall and dining hall, the chief traffic stream of incoming children divides. Two short corridors branching off at right angles lead into the classroom wings. The principle is the spine with classrooms as spurs. The chief advantages of this system are evident. It provides quiet, ample light and plenty of connections with the grounds for all classrooms, and makes future additions easy. A central spine has been provided for each of the two wings, and short spurs either side. These are of different size, smaller classrooms and larger rooms for special subjects. Cloaks are not arranged in large special rooms, but divided up into small groups between the classrooms and between the special rooms along the spinal corridors. The two wings are not parallel, but splaying towards south. The reason for this was an underground aqueduct parallel with the east wing which was not to be built over, and sewer parallel with the west wing which also had to be touched as little as possible.

CONSTRUCTION AND FINISHES—The chief building material is brick. Roofs are white spar, the pitched roof of the central wing has Westmorland slates.

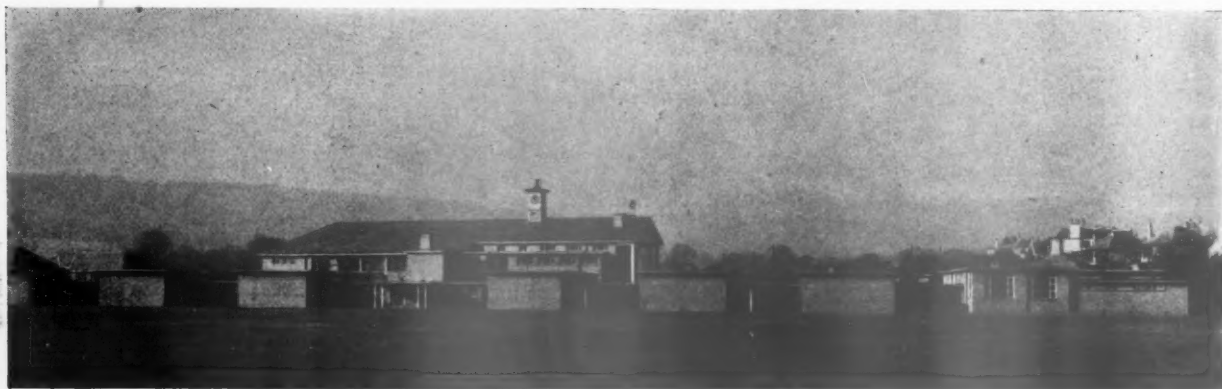
INTERNAL FINISHES—Partition walls are of white lime bricks with coloured and glazed cement dados. The paintwork also is brightly coloured, mostly light greens, blues and yellows, with a certain amount of lavender and black currant. The assembly hall has English oak-lined walls.

The general contractors were E. & T. Bower Ltd.; for list of principal sub-contractors and suppliers see page xxvi.

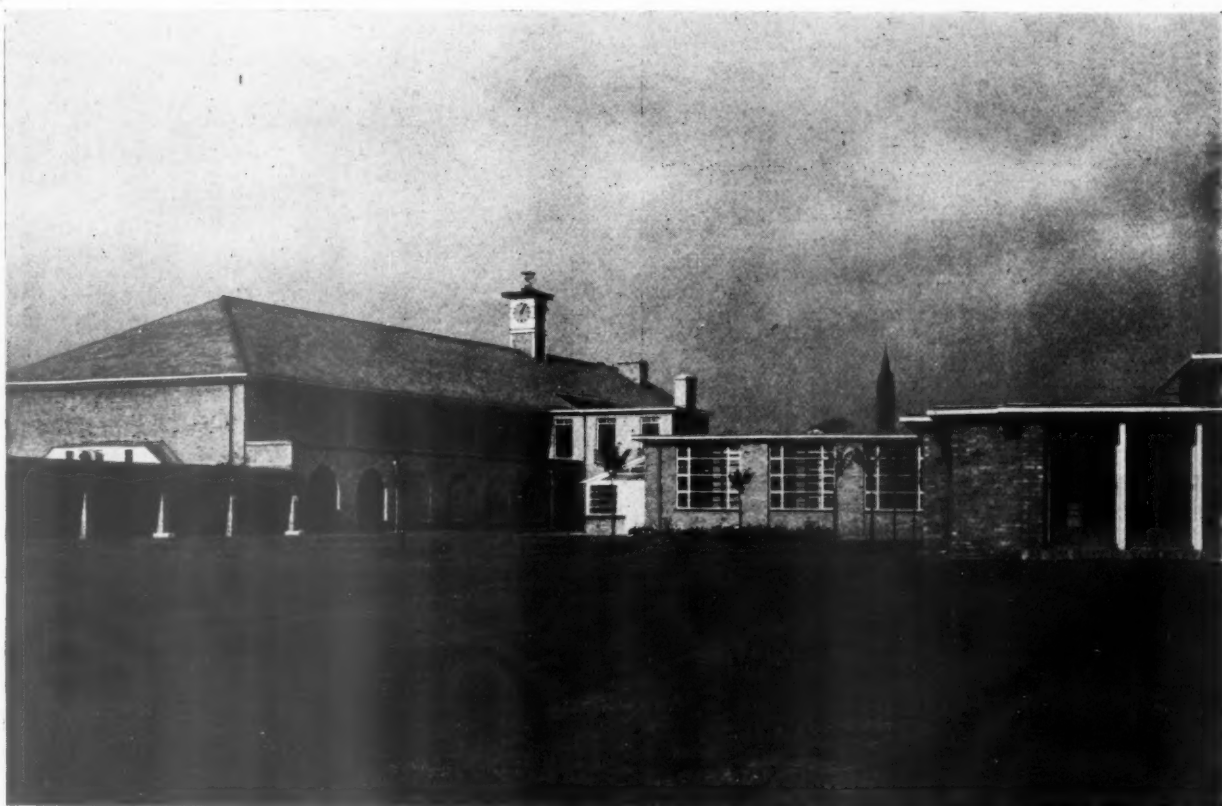
SCHOOL AT BINGLEY

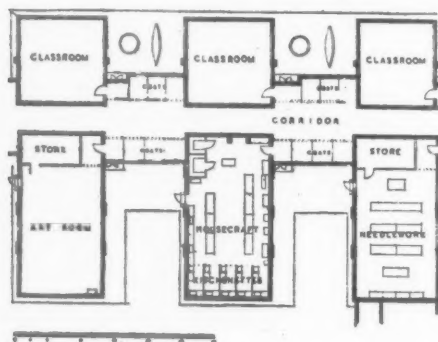


Top, the space between the classrooms ; above, the main (north) entrance ; below, view from the playing fields taken from the south : the spurs housing one set of classrooms are seen in the foreground, with the assembly hall block in the rear ; Facing page : top, the assembly hall (on the left) and biology room ; bottom, assembly hall, staff rooms and classrooms from the south-west.



BY WILLIAM G. NEWTON AND PARTNERS





Top, left, assembly hall, looking towards the stage; right, assembly hall, showing doors leading to small hall; centre, left, typical classroom; right, music room. The small illustration shows a typical washing room. The two side wings have central corridors with classrooms projecting as short spurs, as shown on the accompanying plan.

SCHOOL AT BINGLEY, YORKSHIRE
DESIGNED BY WILLIAM G. NEWTON AND PARTNERS

INFORMATION CENTRE

The function of this feature is to supply an index and a digest of all current developments in planning and building technique throughout the world as recorded in technical publications, and statements of every kind whether official, private or commercial. Items are written by specialists of the highest authority who are not on the permanent staff of the Journal and views expressed are disinterested and objective. The Editors welcome information on all developments from any source, including manufacturers and contractors.

PHYSICAL PLANNING

1243

Long Term Housing

POST-WAR HOUSING REPORT. R. A. H. Livett (City of Leeds Housing Committee, April, 1943). A long-term programme for 53,000 dwellings, to be completed within 20 years in Leeds, prepared by the City Architect.

(1) Every effort should be made to redevelop the inner ring of the city, and to provide modern housing accommodation, at a maximum of 40 to the acre, for those who must live within the centre of the city. Redevelopment of areas between the inner and outer ring of the City to take the form of terrace houses and 3-storey flats at a maximum of 30 to the acre, and the surplus requirements met by the development of one or more satellites in the outer ring of the City, or by an extension of the City boundary, this development to take the form of houses at a maximum of 12 to the acre and with varying densities down to 4 to the acre, designed and erected as self-contained communities and not as dormitories.

(2) In an Industrial City, such as Leeds, there is a large percentage of female labour employed, resulting in a demand for suitable housing accommodation from women who are not content to live in furnished rooms or to lodge with a family. In many cases their income is low, and as they are working they require accommodation within easy reach of their work, economically planned and equipped in such a way as to reduce housework to the minimum.

(3) Provision should be made for all classes in all types of accommodation, suitable for all

sizes of families, including the ageing persons, single women, small, medium and large families, and a limited amount of accommodation with six and seven bedrooms.

A fair distribution of dwellings can be estimated as follows: 15 per cent., one bedroom; 35 per cent., two bedrooms; 40 per cent., three bedrooms; 5 per cent., four bedrooms; and 5 per cent., five bedrooms.

(4) Each area should also contain a communal laundry, social centre, day nursery and nursery school, shops, café or civic restaurant, suitable accommodation for doctors, dentists and nurses, estate office, and other municipal or social services.

(5) Wherever possible services should be laid under grass verges and not under the carriage-ways or footpaths.

(6) Hitherto there have been far too many types of plans. The aim should be for good plans and few of them, building up plans around standard service units such as: (a) Hall and staircase; (b) scullery, larder, fuel store, etc.; (c) landing, bathroom, and water closet; leaving freedom in planning the habitable rooms for the various types of dwelling. This form of planning will assist in the standardization of service pipes and all expensive equipment.

STRUCTURE

1244

Timber Frames in U.S.A.

TIMBER RIGID FRAMES AND TRUSSED COLUMNS. C. G. Jennings and M. N. Salgo. (*Engineering News Record*, July 15, 1943, pp. 69-71.) Timber bents

composed of relatively small members used in several Navy shop buildings. Bowstring trusses knee-braced to trussed columns in one type of bent. Another building incorporated bents of strictly rigid frame design, with the columns in pairs to provide increased rigidity.

An appreciable saving of timber was made in the recent construction of several large Navy shop buildings by designing the roof trusses and trussed columns for continuity and columns restraint. Conservation of steel was the primary consideration that led to the use of timber construction, but because long timbers of large sizes were difficult to obtain in sufficient quantities, designs were adopted in which timbers not larger than 4 by 8 in. were used for the trusses and bent framing.

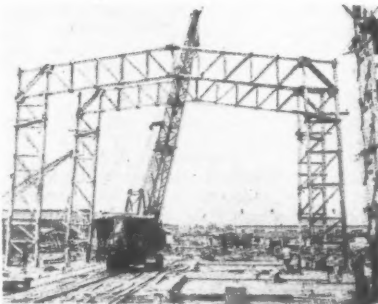
Three separate types of buildings were constructed, each type being of different size and design as required for its individual function. Standard designs were developed for one group of five shop buildings measuring 100 by 250 ft., and about 25 ft. high from finished floor to bottom truss. Bowstring roof trusses of 100 ft. span and having parabolic top chords were connected to trussed columns in such a way that the outer chord of the columns would take the entire vertical load while at the same time all transverse forces acting on the bents would be resisted by truss action of the columns. Inside column chords were braced horizontally by knee braces to the girt system. Unreinforced concrete footings provided sufficient column restraint. Upper chords of the trusses are glued-laminated construction, using 1 by 4 in. timbers. Solid 4 by 6 in. members were originally specified for lower chords, but because of the difficulty in obtaining the required quality and quantity, glued-laminated members were used instead. No timbers larger than 4 by 6 in. were used in the bents of these buildings although some girt framing was 6 by 10 in.

The functional requirements of a second group of buildings demanded special framing, one of which was a fabricating shop 200 by 350 ft. by 30½ ft. to bottom of trusses, two bays wide and spanned by two 100 ft.

Two 10-ton bridge cranes of 100 ft. span were provided in each bay, resting on crane runway girders of rolled steel sections supported by timber columns. The use of timber girders for crane runways was deemed impracticable.

Another building requiring special arrangement of framing and an unusual design was a sub-assembly shop, 79 by 550 ft. by 52 ft. high at the ridge.

All bowstring trusses and columns for the standard shop buildings were prefabricated, the trusses being assembled on the job, while the trussed columns were received ready for erection. Bents were assembled on the ground and set into place by a crawler-crane, using a two-point pick-up. Trusses and columns for the fabricating shop were fabricated and assembled on the job by the general contractor. After the members were drilled and grooved for timber connectors, they were assembled for erection on the ground adjacent to the foundations, and the complete 200 ft. bent, including crane columns, was erected as one unit. Building columns were necessarily stiffened for erection. Three crawler-crane working simultaneously erected each bent, using a six-point pick-up. Framing for the sub-assembly shop was prefabricated, the bents being received in four sections (two columns and two trusses). These were assembled on the ground adjacent to their footings and erected by a crawler-crane, using a two-point pick-up. Bents were erected at a rate of six per day for the standard shop buildings, one per day for the fabricating shop, and three per day for the sub-assembly shop. All timber used was yellow pine or Douglas fir, dense grade. Timber connectors, split rings and shear plates were used throughout the main framing and in a portion of the secondary framing.



Left (top), timber bents 79 ft. wide and 52 ft. high, designed as fixed end rigid frames: columns were laced together in pairs to provide lateral rigidity against buckling. Above, bents of 100 ft. span bowstrung trusses and 25 ft. columns erected with a crawler-crane. Left, two-span bents, 200 ft. long, 35 ft. high, erected by three crawler-crane operating simultaneously. See item No. 1244.

QUESTIONS

and answers

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.

1245 Meeting Room Seating

Q I am working on the design of a Friends' Meeting House for my Final, and would be grateful for the following information.

1. For the large meeting room, to seat 350-400 people, would I be correct in allowing 6 sq. ft. per person floor area, exclusive of the minister's gallery at one end of the room?
2. An institute has to be attached, containing among other things a tea room 600 ft. super. and kitchen suite large enough to provide light refreshments to the institute and to larger gatherings using the meeting room. On what basis do I calculate the size of and equipment necessary for the kitchen?

A 1. An allowance of 6 sq. ft. per person is sufficient for the meeting hall.

2. The Information Book of Sir John Burnet Tate & Lorne, suggests the following allowances for kitchens (excluding stores, pantries, etc.): Restaurants, 35 per cent. to 50 per cent. of dining area.

Cafeterias, 30 per cent. to 35 per cent. of dining area.

These are pre-war figures and since the war many canteens of cafeteria type have worked well with considerably less kitchen area. In some cases it might be as little as 15 per cent. We think that you will do better to design the kitchen in relation to the fittings rather than to assume a proportion of the dining area.

1246 Farm Construction

Q We should be much obliged if you could inform us of any recent publications on the subject of Farm Lay-out and Construction, particularly having regard to war-time conditions.

A We give below a list of publications which may be useful to you. We also suggest that you write to Messrs. Boulton & Paul, Norwich, for their catalogues, in which there are very good illustrations.

BOOKS AND PAMPHLETS.

Modern Farm Buildings, by D. N. McHardy. (Crosby Lockwood, 1932.)

Farm Buildings, New and Adapted, by Edwin Gunn, A.R.I.B.A. (H. C. Long.)

How Concrete can Help the Pigbreeder—Cement and Concrete Association.

How Concrete can Help the Dairy Farmer—Cement and Concrete Association.

Pig Keeping, by W. A. Stuart, M.A., B.Sc. (A booklet which includes information on construction of pigsties. Ministry of Agriculture and Fisheries, Bulletin No. 32. Obtainable from H.M. Stationery Office.)

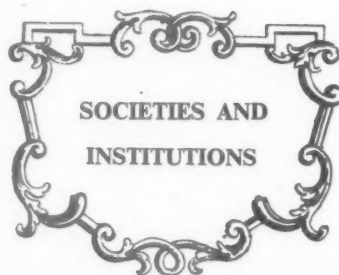
JOURNALS.

Dairy Farms—RIBA Journal (August 14, 1937, pp. 925-939.)

Current Notes on Planning Farm Buildings—Architect and Building News (January 13, March 10, 1939.)

The Design of Farm Buildings—The Builder, November 20, 1942, pp. 433-4 and 443.)

Adaptable Plans for Farm Buildings—The Builder, September 10, 17 and 24, 1943.



Speeches and lectures delivered before societies, as well as reports of their activities, are dealt with under this title, which includes trade associations, Government departments, Parliament and professional societies. To economise space the bodies concerned are represented by their initials, but a glossary of abbreviations will be found on the front cover. Except where inverted commas are used, the reports are summaries and not verbatim.

TCPA

Memorandum

Following is a statement containing constructive criticism of the County of London Plan, drafted by the Executive Committee of the Town and Country Planning Association. The statement has been sent to the LCC, Ministry of Town and Country Planning, Ministry of Health and the London Boroughs.

The main claim of town planning, and the reason for the great public interest in it, is that it can make possible the best physical surroundings for home life, working life and community life. Because this London Plan fails in the first and most fundamental of these purposes we cannot accept it as it stands. We cannot believe that the people of London will tolerate deliberate rebuilding on a large scale on the standards of housing proposed, and for that reason we consider the Plan impracticable without drastic revision.

Before expanding our criticism, we desire to add our tribute to the brilliant presentation and the many admirable features of the Plan.

The preamble is a valuable summary of the present situation and of the essential planning problem of London (to which we refer later).

The survey work done for the Report is excellent and has added much-needed data for the practical consideration of planning issues.

We would refer also with general approval to the comprehensive proposals for re-creating community or "neighbourhood" life in London (which in many parts has disappeared to a greater extent than the Report realises); to the recommendations for keeping main traffic routes away from residential and cultural "precincts"; to the sound principles adopted in the road and railway proposals; to the proposed sorting-out and re-grouping of business and residential areas; to the attractive schemes for making use of the River Front as an amenity; and to the suggestions for raising architectural standards by the appointment of panels of architects working together.

We cordially welcome the great attention

paid to the systematic introduction, in all areas, of open spaces, though we think the standard of 4 acres per 1,000 population is too low. Even in inner London the standard should ultimately not fall below 5 acres per 1,000, in addition to school playgrounds and minor greens, squares, etc., in the residential lay-out. (The standard recommended by Raymond Unwin in the London Regional Reports of 1929 and 1933 was 7 acres of playing fields per 1,000, plus minor open spaces, but much of this was to be provided in the outer areas).

While recognising these great merits, our criticism of the Report is a radical one. In the preamble the essential dilemma of London development is frankly stated. Should London as a whole, it asks, continue to expand outward, or should it build upwards in the centre? And it answers NO to both questions. Outward expansion means fatiguing and costly daily travel, strap-hanging, and traffic congestion, and the sprawl eats up the already too-remote countryside. The second policy, in the words of the preamble, "would cram everyone into lofty close-packed tenements whose high architectural qualities might mask their social deficiencies, and would also keep factories within the town, thus avoiding any further encroachment on the countryside."

This second policy, the Report adds, "ignores inescapable facts." "To obtain attractive living conditions a much lower density... must be secured"—by decentralising "a large population and as far as possible a corresponding amount of industry." Moreover, says the Report, a great exodus was already taking place before the war. "The best elements, especially young married people" were leaving London.

The right policy, it says, should be neither of these two, but a third policy, to face some loss of population, indeed to "enhance it by a bold reduction." Wholesale rebuilding at lower density would then produce a really satisfying environment in inner London. With this statement we cordially agree.

It appears to us, however, that the actual proposals of the Plan are not in accord with the principle laid down.

The Report proposes in the Reconstruction Areas a housing density standard of 136 persons to the acre. This means that 4 out of 5 families would have to live in flats. In the Western Areas the density is placed at 200 per acre, which means 100 per cent. in 8 to 10 storey flats. As is now well known, less than 10 per cent. of families want flats. (See appendix).

The Plan contemplates the "decentralisation" (or moving out from overcrowded areas) of about 500,000 of the pre-war population of the "Reconstruction Areas." Many of these have already gone out for war reasons (in fact, the Report says nearly half the population is scattered). So, in reality, it is a question of not returning rather than of going out. The period over which this "decentralisation" is to happen is not clear (it may be anything from 15 to 50 years), but the rate is rather a slowing-up than an acceleration of the pre-war outward movement, which was proceeding at the rate of 50,000 persons a year. If this spontaneous movement had continued one million of the 1939 population would have moved out by 1959. The Report cannot be said to "enhance it by a bold reduction."

In our view the outward migration is not likely to be and ought not to be arrested until the central population comes down to a total permitting good living conditions, including family houses for at least 80 per cent. of the families remaining in the County. This means a reduction, over the rebuilding period (whatever that may be) of the order of 1½ million people. The uprooting of persons and businesses caused by the war makes a large step forward possible in the immediate post-war period, so that the decentralisation of a further million within 20/25 years would not be out of scale.

With a continued rise in real income, people will insist on better housing. The practical choice is, therefore, between (a) genuine



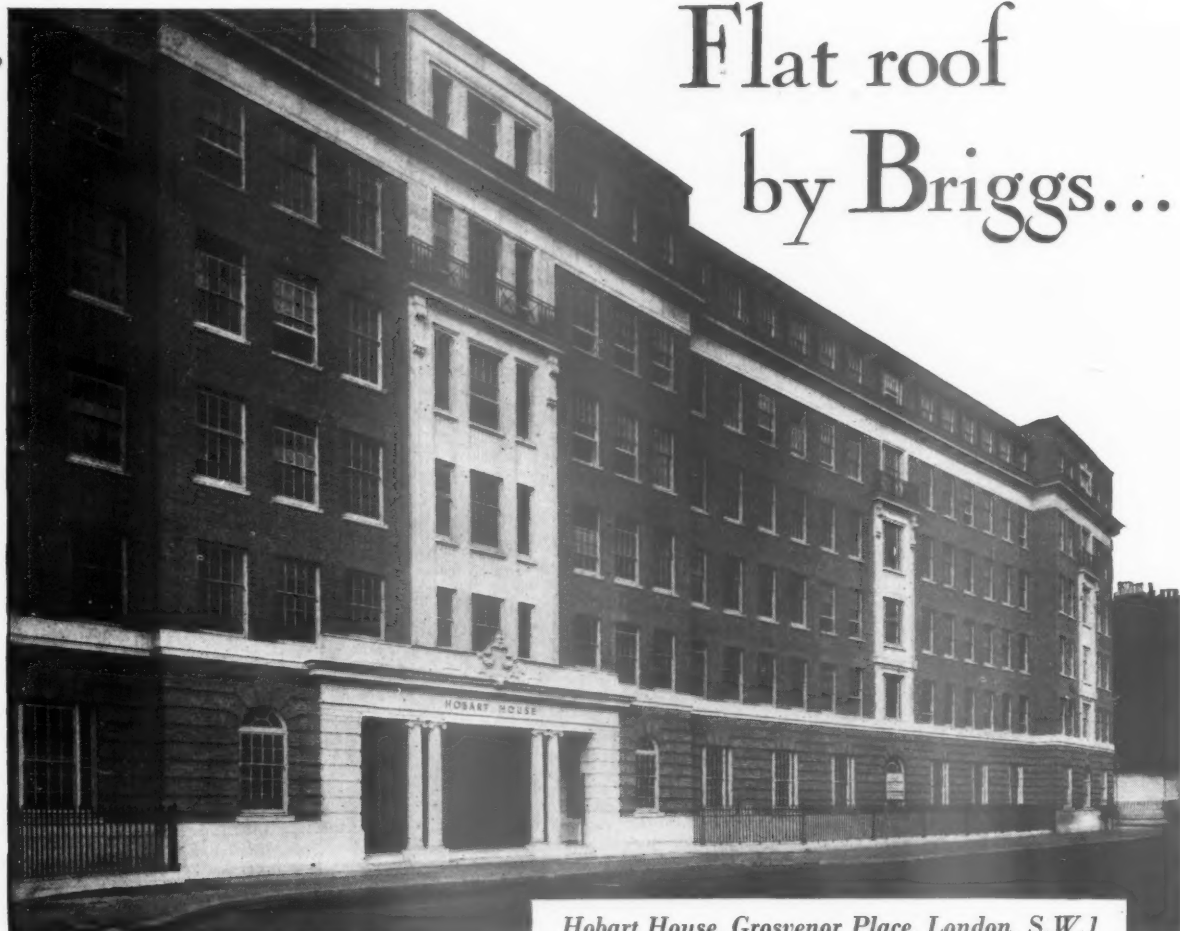
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in illis

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decentralisation of both industry and people to towns outside London's country belt, and (b) a large further unplanned migration of people to new suburbs, on the pre-war pattern. If the latter happens, in due course much industry and business will follow the people out. The reduction of population in the centre will probably in the long run be much the same in quantity in either case. But it will be advantageous to London if it is planned for, and injurious to London if it is not.

Definite decentralisation of industry and business, not to suburbs, but to towns outside a country-belt for London, is essential if both excessive density and fatiguing travel are to be avoided. While the Report theoretically accepts this, the proposals appear half-hearted. No definite indication is given as to a reduction of the area utilised for business in central London or of a lightening of the density of the business areas. On the other hand, a proposal is made for an extensive new business area on the South Bank. This suggests that the momentum of the pre-war policy of encouraging the increase in the amount of central business and industry has carried that policy into the body of the Report, though the preamble is clear as to the evils to which that policy led. New areas for business should not be provided in central London, unless some parts of the existing business areas are reclaimed for housing.

Relief to the pressure within London by the outward movement of a proportion of its industry and of its people will be of advantage to those remaining, including the businesses whose location in the Metropolis is a condition of their existence.

The redevelopment of central London's business and housing areas with reduced density will not necessarily mean an over-all financial loss or a total decline of rateable value. More room will be made for the types of business which was best carried on there, economic efficiency will be increased by relief to traffic congestion and improved working conditions, and some costly street improvements, railway extensions, and reconstructions of public services should be saved. Flat building in the period between the wars was nearly twice as expensive as housing in new towns. If, as is possible, decentralisation produces a decline in central land values any compensation falling on the London Local Authorities should be reimbursed to them by the Government under a National compensation-betterment system.

The Association suggests to London authorities, and to the people of London, that they should withhold their approval of this Plan as it stands, and ask for its re-casting on the basis of a decent housing standard with not more than 1 flat in 5 dwellings. Industrial requirements and community advantages can be provided for in the best possible way by a measure of decentralisation that would permit of this housing standard.

The planning of the County of London, and the City area, should be co-ordinated with the planning of the whole London Region.

New towns and new extensions of country towns in the outer parts of the Region should be planned to provide attractive conditions for a proportion of people and industry from the central areas.

Until inner London is made fit for children to grow up in, it cannot be said that either its business or culture is on a sound or lasting foundation. A long-term Plan which disregards this basic factor is throwing away a marvellous historic opportunity which is not likely to recur.

(At the end of the memorandum there appeared an appendix entitled *Houses versus Flats*. This is printed below.

APPENDIX

Numerous surveys have been made in 1941-43 as to the type of housing preferred by British people. These have covered "samples" of the population large enough to give scientifically reliable results. In all cases the results confirm those of the wide enquiries made by the Tudor-Walters Housing Committee, in 1918—that the overwhelming majority of people prefer the small house or bungalow and only a very small minority prefer flats. Details of the enquiries will be supplied by the Association on request. The results of the widest of these surveys may be summarised as follows:—

Lower Income Housewives: First three thousand replies

received to 40,000 questionnaires issued to all parts of England and Wales by the Women's Advisory Housing Council in co-operation with 28 other organisations. Preference for house or bungalow 94 per cent.; flat 6 per cent.

1,100 interviews by Mass-Observation in London Region (County, suburbs and a garden city) and certain representative Midland towns. Preference for house or bungalow 92 per cent.; flat 8 per cent. (The existing flat-dwellers were somewhat over-represented in this sample).

Men and Women in Forces: Voting at 20 lectures to 1,700 men by Mr. Arnold Whittick; preference for house or bungalow 97½ per cent.; flat 2½ per cent. Voting by 168 women at same lectures; preference for house or bungalow 88½ per cent.; flat 11½ per cent. Mr. B. S. Townroe, who has given 300 lectures to large audiences in the Forces, reports preference for houses or bungalows as 95 per cent.; flat 5 per cent.

Younger Women in Forces and Factories: 2,000 replies to 5,000 questionnaires to women in their "teens and twenties," believed to be a complete cross-section of all classes, including 2 per cent. from leisured classes and 98 types of work, trades and professions. About half of those in the sample are single women, and the result is of interest as revealing the ideals of those without, as well as with, experience as housewives. The former might be expected to be more influenced by current propaganda for flats. Preference for house or bungalow 85 per cent.; flat 14 per cent.

Birmingham Householders: 7,023 interviews, selected as scientific sample (1 in 35) in whole of the small-house occupiers in Birmingham. Preference for house or bungalow 96.7 per cent.; flat 3.3 per cent. (92.4 per cent. expressed a definite wish for a garden.)

In all these surveys, except those of the two lecturers to the Forces, qualified advice by statisticians was available, and the samples taken were representative within the defined groups. In no case were the promoters of the enquiries biased against flats; in the case of Mr. Whittick his former views in favour of flats strongly coloured the presentation of the case in his lectures. The only possibility of unrepresentativeness in the results is that the replies in the Women's Housing Council surveys may have tended to come from the more interested and intelligent, and that in the case of the "Younger Women" Survey the proportion of single women (and therefore of women not living in "families") must have been greater than in the nation as a whole.

Summary:—Altogether the enquiries named covered at least 25,000 people, of whom about 1,350 expressed a preference for dwellings of the flat type; or at most 5.4 per cent. of the whole sample. The maximum in any one group was 14 per cent. (the "younger women," who included 50 per cent. of single women). The minimum was 2½ per cent. (the men in the Forces who attended Mr. Whittick's lectures). The result must be regarded as establishing conclusively the overwhelming objection to flats and the preference of well over 90 per cent. of people for houses or bungalows.

BFCAA

Cyril F. Martin

September 10, at Birmingham. First general meeting of the new session of the Birmingham and Five Counties Architectural Association. Presidential address by Cyril F. Martin, M.A., F.R.I.B.A.

C. F. Martin: We are embarked upon a great adventure, with excitement in plenty and with prospects illimitable. The reconstruction of so much that has been destroyed; re-planning of our cities and countryside on a national basis; and the construction of homes for our people; and the variety of accommodation required for the social and welfare services complementary to the housing of large communities. To this end the architect is fitted, by virtue of his training, to take the lead, and we must convince the public that he is the proper person to do so.

I think that John Buchan in his memoirs describing his first reactions after the Armistice of the last war touches upon my point. He says:—

"I had a new confidence in human nature, in the plain man who for four years had carried the globe on his shoulders with no gift of expression, unperplexed by philosophies, and infinitely loyal, enduring and unconquerable. I believe that, although it would be a slow business, he might be trusted somehow to re-make the world. . . ."

The "powers that be" are not going to hold our hand and put us into jobs, and I am convinced that the sound common-sense of John Buchan's "plain man" is the source to which we must look for our survival. After all, although we are an integral part of the great building industry, we are more than that, and we must assert ourselves as architects to guide

that industry, and, in collaboration with, and with the co-operation of other professional bodies and commercial undertakings concerned with physical construction, ensure that the national planning is executed on sound and æsthetic lines. Much can come from small beginnings to create confidence and understanding, and we must make the start.

The profession has, on the whole, suffered badly by the war. The ordinary private practising architect on the outbreak of hostilities found himself with little or nothing to do; private and civil architecture came to an end; men were called to the fighting forces or drafted into Government departments; and he was left to carry on as best he could. War damage occupied him to a certain extent, and some Government work was handed out, but not adequate to compensate for the general stoppage of normal work. The inevitable result has been growing hardship, the closing of many offices, and consumption of savings. But we have not been idle, and in accordance with the policy laid down by the RIBA have been busy with problems of reconstruction involving much time and thought.

Now let me turn for a moment to the School of Architecture. The school is flourishing in spite of serious interruption to their training of the senior members, who from time to time are called up for active service.

There is much to be said still in my opinion for the articulated system and night schools. I would ask practising architects to do their best, however difficult it may be at present, to give students the opportunity of acquiring office experience, and do not be afraid of giving lady architects the opportunity of starting their careers with them. My own experience has been all to the good.

And now I wish to refer to a matter which must receive our earnest and earliest consideration—the welfare of the men who are serving their Country. When the time comes for their demobilisation, the interest of each man will have to be considered individually and not collectively, and we have appointed a Committee of this Association for the purpose, apart from the activities of the RIBA. We have approximately 128 men serving in the Forces, out of a total membership of 576. We must ensure that practical sympathy and understanding are extended to them.

We have tremendous problems ahead. Conditions for a time may necessitate improvisation, cheap building, and even prefabrication. It is vital that, in spite of every difficulty, we shall maintain the highest traditions of all that is best in the architecture of the past. We are on the dawn of a renaissance. It is a grand adventure and architecture is a grand calling.

No one wishes to see a repetition of the haphazard development of pre-war years, or be accused of indifference. I am wondering whether much of the work that lies ahead can be classified as purely architectural—if you understand my meaning. And yet I can think of no one better qualified to tackle the problem than the architect. I think he may have to widen the range of subjects under his control and broaden his vision to acquire a better appreciation of the social problems that confront us, and how people live and think. It is sometimes said, probably quite wrongly, that an architect can design a house but not a home. He must not be accused of being pedantic or that he thinks over the heads of his fellow-beings. Perhaps we can call it the Philosophy of Architecture, a fourth dimension to our present fund of architectural knowledge.

Reading between the lines of various Government reports that have been issued from time to time on the subject of reconstruction, there is much that comes within the sphere of the architect, and I suggest it might have been a good thing if the constitution of the Committee had included an architect. I believe that his particular mental make-up and the nature of his vocation and training and experience would have fitted him as well to sift as to give evidence.

And so I say—think nationally, think collectively, and withal with good sound common sense. We must play our part as

architects until we have secured for posterity a better country to live in than we found it. Only then can we set aside the T-square and protractor and enjoy once more the simple things of life.

HC

Herbert Read

September 21, at Housing Centre. DESIGN AND THE INDUSTRIAL SYSTEM, by Mr. Herbert Read. Mr. E. J. Carter presided.

Herbert Read: There may be a difference of opinion as to the industrial system towards which we are moving, but any alternative to competitive capitalism involves some form of centralised control, either governmental or industrial. If industrial the whole field of production will be gradually crystallised into a few powerful combinations, international in scope and to some degree competitive with one another—heavy metals competing with light alloys, synthetic rubber with plantation rubber, shipping with airways, and so on; but if the centralised control is governmental it will be nationalistic and totalitarian, coming into direct conflict with the international cartels.

Totalitarian control may be combined with either Socialist or Fascist ideology, monopolistic control does not yet aspire to an ideology, knowing the desired ideology can be evolved once the control is enthroned. With regard to technical tendencies the industrial revolution has been essentially mechanical: from the invention of the steam engine to that of the electric dynamo and internal combustion engine it has taken the form of the progressive development of more and better machines. But parallel with this physical revolution a chemical revolution has also taken place, and now chemistry has begun to take a lead and threatens the whole structure of industry.

A change is being effected from the exploitation of raw materials to the elaboration of synthetic materials. Not all the new materials are, strictly speaking, synthetic, but they are all preferable to the old ones. Thus plastics can replace wood, glass, rubber and leather; aluminium and magnesium alloys can replace iron, steel, tin and zinc; rayon and other synthetic fibres can replace cotton, wool, silk, etc., and even eliminate the process of weaving. The chemical phase of the industrial revolution will probably be more violent and far-reaching than the mechanical one has been.

I do not think design has anything to fear from the economic tendencies: it can hardly fare worse than it has done under *laissez faire* capitalism. The profit motive has always been detrimental to design: the number of people willing to pay more for a well-designed article has always been inconsiderable from the market point of view. But in recent years manufacturers have begun to realize that other things being equal good design can be made to pay. The lead in this direction has come not from capitalists and financiers but from the managers of great corporations; the first impact of design on the public being due to Frank Pick, of the London Transport Board. When not profit but public service became the guiding motive good design became important because it brought prestige to the managerial class.

It would seem as though the same considerations ought to apply to the totalitarian state, but in Russia aesthetic factors have been left out of both the five-year plans, although it would not have cost anything to put them in. Germany and Italy have been design conscious, but in their cases design has not arisen out of the industrial system: design has been imposed upon the system and is academic. As to the effect of international combines, these have so far been mainly confined to producing primary materials, metals and chemicals. With the possible exception of the electrical

industry they have not attempted to control the making up of their materials into articles for the retail market. That has been left to manufacturers, and the vulgarity of most plastic articles is because no research has gone into their design comparable with the chemical research that has produced the substance itself. When the utilisation of these raw materials becomes the concern of the cartels it is likely we shall see an immense improvement in their design.

Discussion: In the course of discussion the Chairman said that from the housing point of view there are two aspects of design. First, there is the quantity problem: enough houses must be provided, and there is a danger of the best programmes being held up because of their being designed by architects whose work is out of sympathy with the mass of the people. In that case the goods put forward will not be willingly accepted, and he believed this happened after the last war. The best architects have been able to provide a good technical solution but often the design factor made no appeal; and the result has been that the mass of the people have gone over to something much more symptomatic of their own temperament. Half timber has been the essential expression of the popular will. Architects and designers should find out what the people want, and they should meet and elevate that demand. In this direction very little has been done so far.

Mr. Arnold Whittick said that in the majority of cases people are entirely ignorant of design. The purpose of education is to stimulate an instinct already there, and we must begin with children three or four years old. If we can create a demand for good design in standards which the industrial development can produce, we shall have gone a long way towards solving the problem.

MABS

Wm. McKinnell

September 24, Mr. William McKinnell, Chairman of the Building Societies' Association, commented on the Uthwatt Report in an address to the Metropolitan Association of Building Societies at Connaught Rooms, London.

William McKinnell: Speculation in land to be used for housing large numbers of our countrymen after the war is to be deplored. With this situation in prospect, it is not surprising that the Government asked an expert committee to make inquiries regarding the best policy to make such speculation impossible, or, at the least, very difficult in future. This is elementary political wisdom, but it will doubtless require more than elementary political wisdom to determine the lines of actual legislation to deal with this problem. Surely, however, it is not beyond our ingenuity to devise a policy which will prevent undesirable speculation, and, at the same time, provide such forms of widely acceptable land tenure as will properly protect the individual's rights and the community's interests alike. In the past freehold tenure has not had the monopoly of public appreciation. Building Societies have done a great volume of business on suitable leasehold securities.

It has always been a source of satisfaction to building societies that the more thoughtful in all the leading political parties have recognized home-ownership as something which, broadly speaking, is as beneficial to the individual as to the nation. Thus building societies—and as a corollary the Building Societies' Association—have not so far been called on to defend the right of our John Citizen to own his own house, if he so desired. As a result, building societies, and thereby our Association, have been able to stand aloof from the arena of party politics. I hope that we shall always be

in this fortunate position, and the Building Societies' Association itself will certainly strive to maintain it.

The major object of building societies is to enable the citizen to own his own house, where this best serves his interests. It is admittedly important that only those whose circumstances were such that home-ownership would benefit them should be encouraged to follow this path. All the signs seem to suggest that after the war there will be favourable opportunities for extending the advantages of home-ownership to a further substantial section of the community.

IH

George Hicks

September 24, speech by Mr. George Hicks, M.P., at the Annual Conference of the Institute of Housing at Friends House, Euston Road, N.W.1. Speeches were also made by Miss Elizabeth Denby and Mr. D. E. E. Gibson.

George Hicks: The view has been expressed that we shall require between three and a half and four and a half million houses in the first 10 or 12 years after the war. This includes replacement of houses or flats on existing sites in place of slums or obsolescent property.

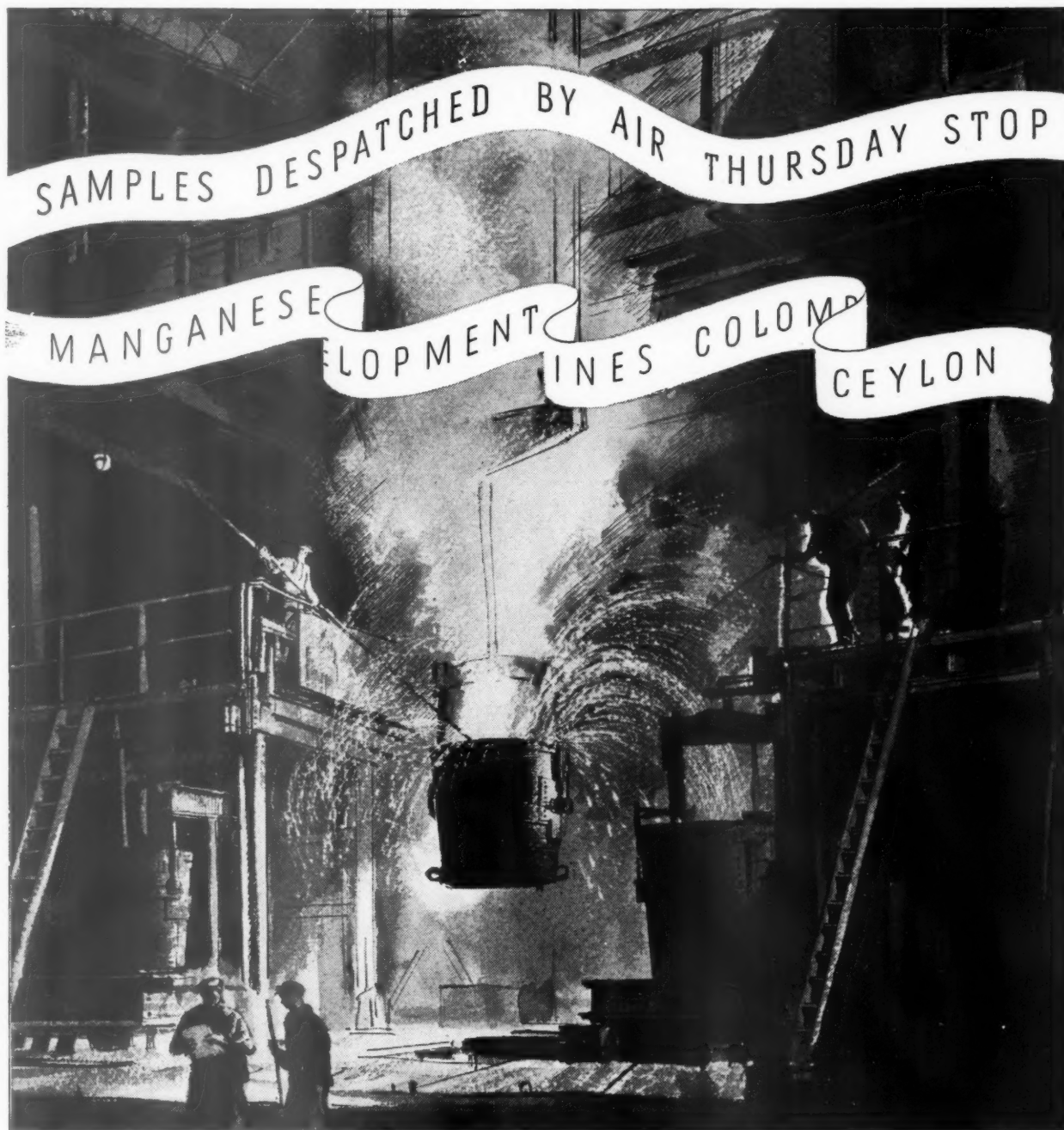
The problem is, therefore, to see how quickly the building industry can get back to the immediate pre-war output of houses and to step it up from that level; this boils itself down to a question of man-power and materials.

The Government has promised in the White Paper that the building industry (for the most part building craftsmen and labourers) will be built up to a ceiling of one and a quarter million "after a period of years." Assuming that the number of craftsmen and labourers is built up to this ceiling within a few years after the war, we can get some idea of what the production of the industry in building is likely to be. But though houses will be a high priority in the early post-war years, not the whole of the building industry can be put on to building houses. There will be many other calls upon it, such as the immense amount of jobbing building which is always going on, repairs, redecorations, etc. There will be the repair of bomb damage, and demands for the rehabilitation of industry, and for all kinds of buildings ancillary to housing such as schools, shops, and clinics; and still much more: such as the tremendous amount of work envisaged in the many plans of urban reconstruction.

If we are to average 400,000 houses per annum over twelve years, our production curve after the initial post-war period may have to reach something like 450,000 per year to make up for the lean years at the beginning, when production will be lower. After the last war it took seven years to reach a production of 200,000, and during the 20 years, 1919-1939, we produced an average of only 200,000 houses, although for the three years immediately before this war we were averaging about 350,000 dwellings per annum.

There seem to be two ways to step up production to what is now contemplated and both are necessary. The first is to build up the allocation of man-power for house building to its greatest possible extent. My Ministry has this matter in hand. The second is to get greater output per man/hour by more modern and more scientific methods. My Ministry also has this very much in mind. Here two main things are necessary:—

- (a) Improved organization to get greater economy and speed in building.
- (b) Simplification of design to reduce labour and materials, including standardization and manufacture of building components.



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There are many questions related to these more rapid precision methods. There is the extent to which standardization, mass-production and prefabrication—in whole or in part—can assist this greater output. My Ministry, in its Directorate of Post-War Building, is studying these matters with a sense of their great urgency. My Minister has recently appointed a Controller of Experimental Building Development whose business it is to facilitate the building of experimental structures. These, in regard to housing, are examined by the Interdepartmental Committee on House and Flat Construction under the chairmanship of Sir George Burt. When these experimental models, employing new methods of construction, have been built, we shall be able to see them and give our views on them. We shall then get some clearer picture of what we ought to do in the future.

We have already received a great number of proposals for post-war houses from a great variety of sources; from private individuals, inventors, designers, and from industrial, engineering, and other organizations; and not a few from well-established building firms who are looking into the future. Nearly all of these proposals are based upon some measure of prefabrication and standardization.

Some of them are quite weird and wonderful: some are far too costly (we have a costings research section in the Ministry which checks up on the costs). But many of the proposals are sensible and well thought out; these are carefully examined by the Controller of Experimental Building and the Interdepartmental Committee, and every assistance is given to promising schemes in the way of advice and licences.

The main thing about the house of the future will be its improved kitchen planning and equipment. This is where standardization and mass-production can be of the greatest help. After the first two or three years when

we have got into big-scale production, there is no reason why we should not have kitchens and bathrooms and fittings in every home which will really be a joy to behold and a pleasure to work in.

Research is now going on under the auspices of my Ministry into all sorts of things of concern to the housewife, heating, fire-place design, natural and artificial lighting, clothes-washing machines and, of course, our dear old friend plumbing. If we have our way, frozen pipes will be a thing of the past. Through the Building Research Station and others, we have experiments going on in prefabricated plumbing sets which can be made in the factory and rapidly assembled on the site—with every part numbered for spare parts.

But to get down to low costs on all these improvements requires a tremendous joint effort. It depends on standardization and highly organized production. I am told, for instance, that refrigerators could be produced for a few pounds apiece if a precise order were placed for one standard type for, say 200,000 per annum. On the other hand, I am also told that almost every man (or is it woman?) will want his or her own special style of refrigerator. Incidentally, I have heard it said that in the future every town and village should have its own style of architecture. That would be delightful but I have wondered if there are enough styles of architecture to go round.

The only way to solve the housing problem is by a big co-operative effort where individual interest will have to be adjusted to the needs of the community as a whole. And I am certain that no one bright idea, nor one method of building, whether traditional or modern, is going to save the situation. We shall need every sound material, every reasonable and economic method, and every craftsman and mechanic who is willing to learn and lend a hand in this mighty task.

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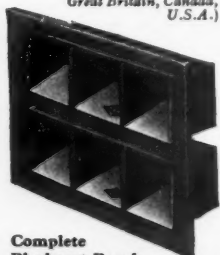
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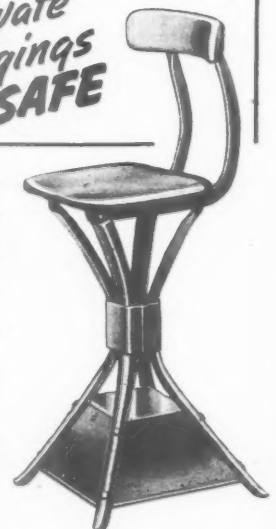
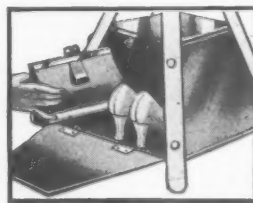


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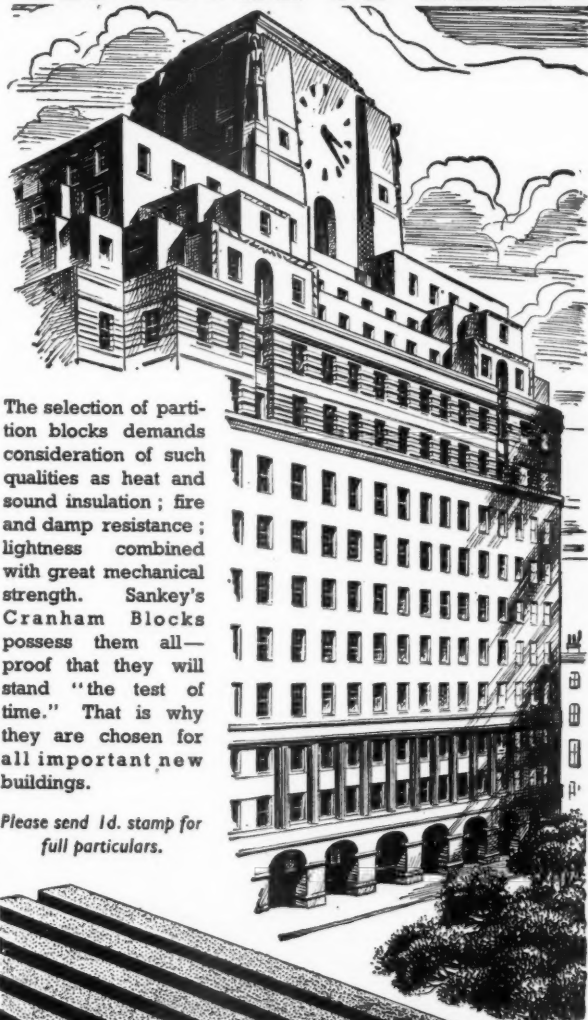
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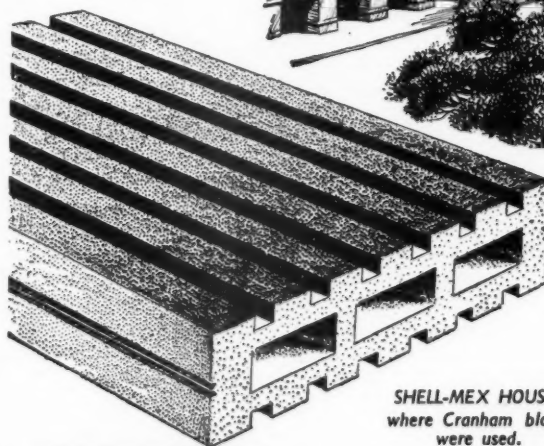
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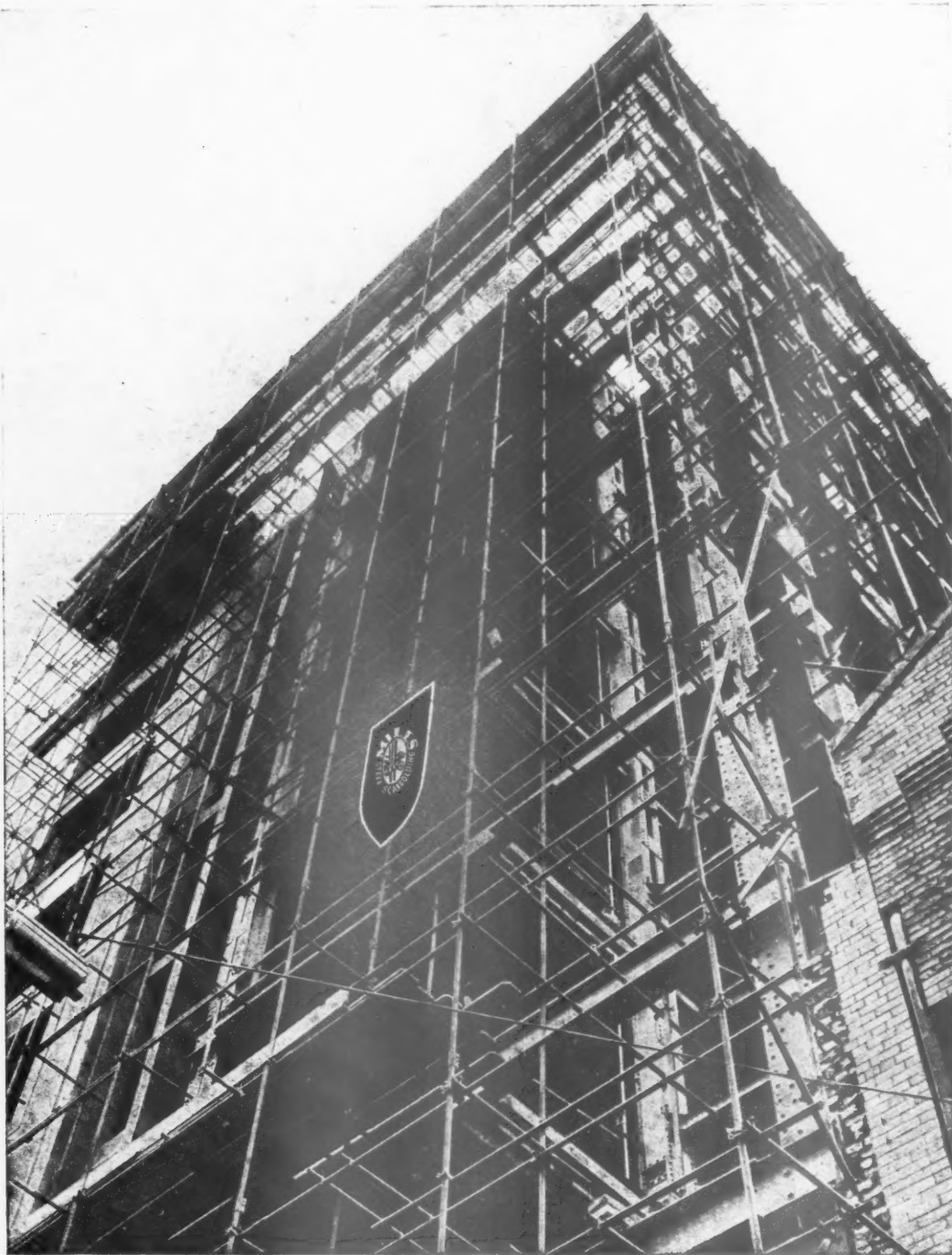
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