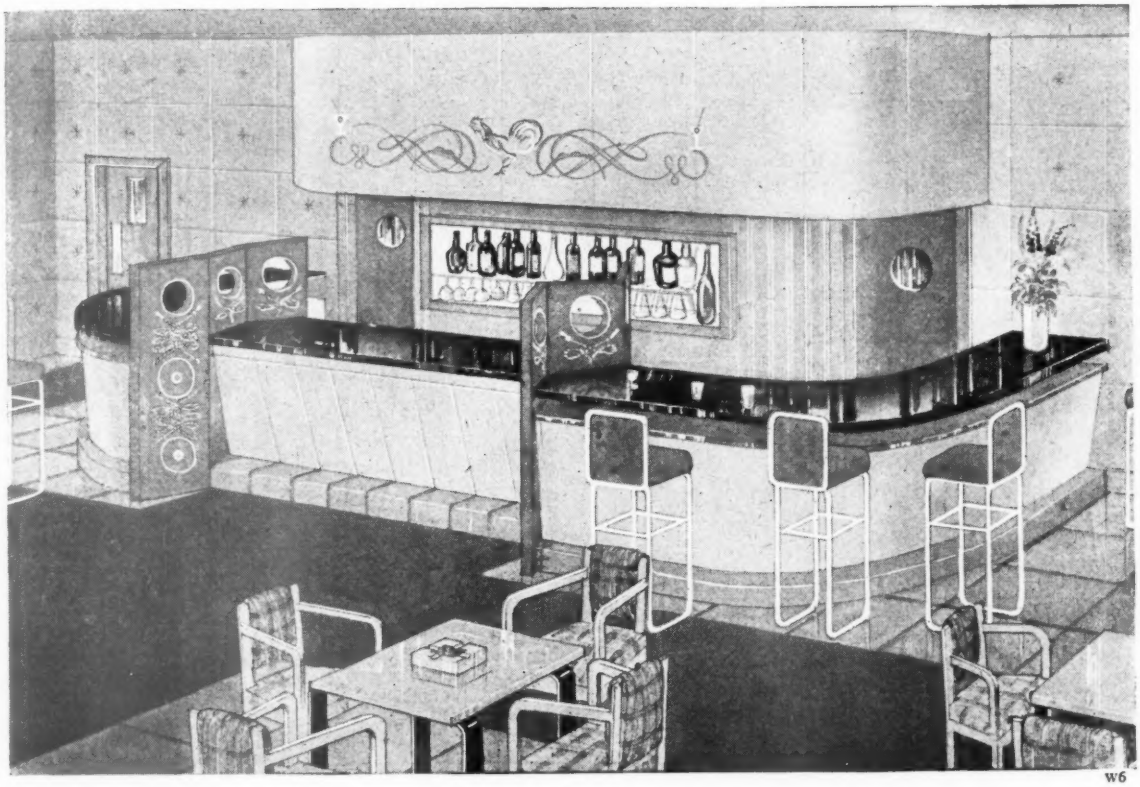
Design for a Cocktail Bar

BY GREY WORNUM. F.R.I.B.A.



W6

One of the most interesting things about this design is the decoration on the Warerite panels which cover the walls, screens and bar fitments. This decoration is not applied after the panels are made, as would be the case with other surfacing materials, but is done during the fabrication of the panels.

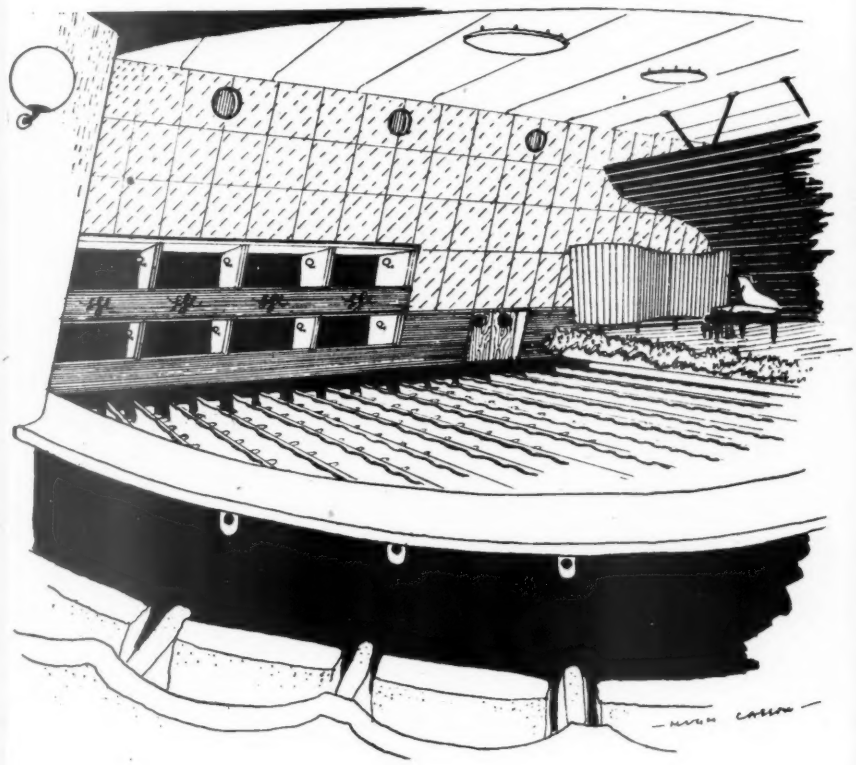
Such decorations can be painted, stencilled, sprayed, printed or even photographed on to special paper impregnated with synthetic resin Heat and pressure are then applied, and by a chemical change known as 'polymerization' the resin and paper with its design intact becomes an integral part of the substance of the panel.

The advantage of this is clear: the design, not being applied to the surface, can never wear off or lose its original brilliance. It is as permanent as the Warerite panel itself.

DETAILS OF THE DESIGN

The Warerite panels lining the walls are cool silver-grey decorated with blue stars. Panels of a warmer grey, decorated with pale green, are used for the concealed lighting hood which surmounts the bar fitment. Below this the rear fitment of the bar is treated in yellows ranging from pale cadmium to deep ochre. Black Warerite panels are used for the counter top with deep cream panels forming the sloping sides. The bar itself is divided into sections for greater intimacy by fixed screens of Indian red carrying line decoration in pale grey.

Colour scheme for a **concert hall?**

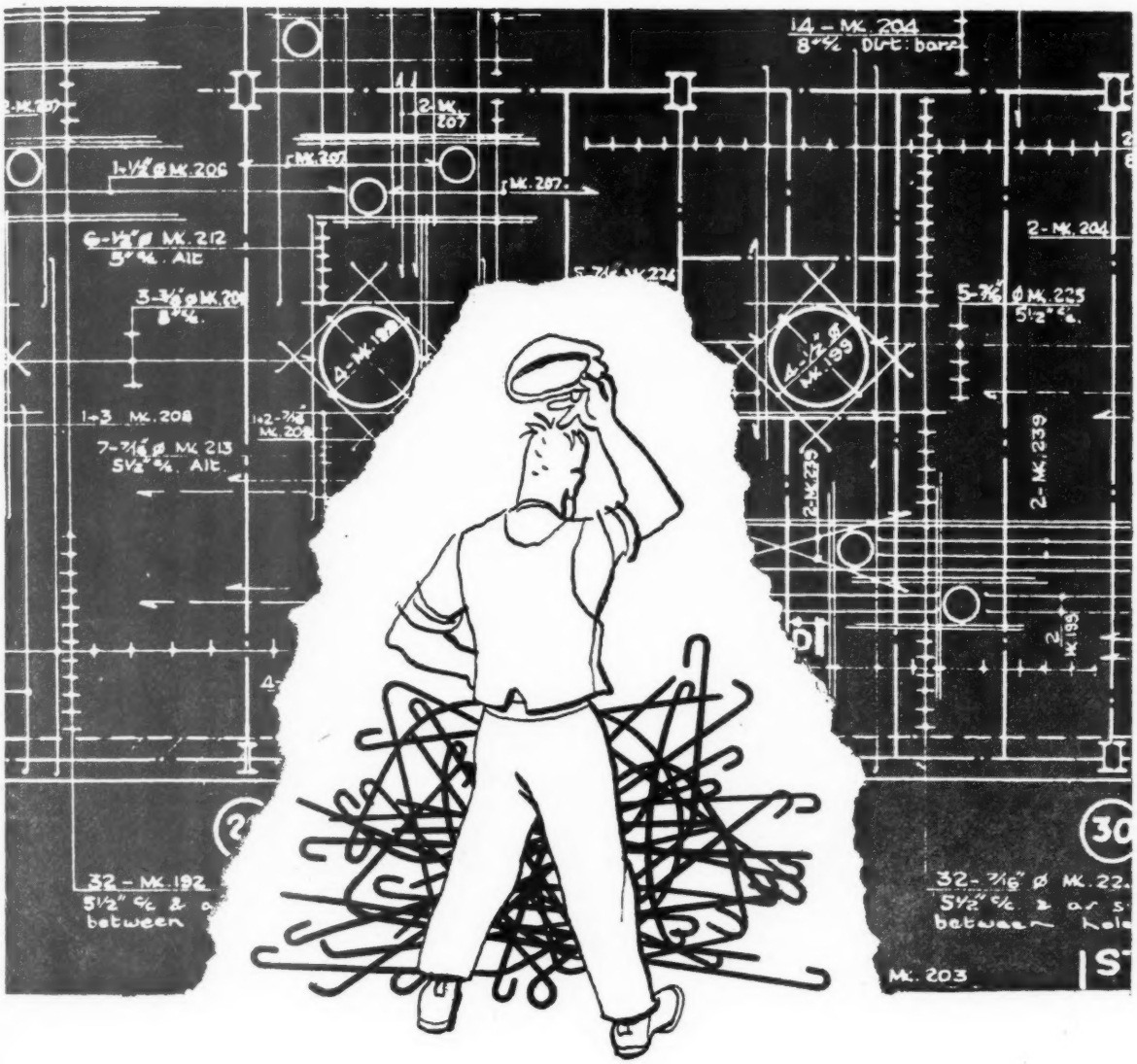


Because people come to a concert hall for recreation, the colour scheme should be warm and cheerful. But because they come to hear rather than to see, the colour scheme should be undistracting: less exhilarating than that of a restaurant or theatre. And the range of colours should naturally be confined to those which are not destroyed by artificial light. Within these limitations, colour might well be used to stress acoustic function—soft colours for shapes and surfaces that absorb sound, and 'harder' shades for those that reflect it.

Final and more obvious considerations are that the paints specified should have ample covering power, be free from scaling and flaking and assure long life.

Here is a suggested specification: (1) ceiling: peach; (2) walls: peach and white; (3) dado and box surround: polished hardwood (mahogany or pear-wood); (4) box walls and ceiling: peach; (5) back sounding board and canopy: dark chocolate with white joints; (6) side sounding boards: smoke grey with white joints; (7) seats and upholstery: silver grey velvet; (8) carpets: very dark chocolate.

★ Reproductions of this series, with actual colour references, on request, price 1d. each. Previous subjects include School, Portal Estate, Factory Corridor. Please write to The Silicate Paint Co., J. B. Orr & Co., Ltd., Charlton, London, S.E.7.



No head scratching on the site

From the time you let us have the specification we take off your hands all the worry concerned with the supply of reinforcing material; do all that's required in the way of bending, hooking, radiusing, etc., and get the material to the site not only when it's wanted but in the order it's wanted, and bundled and labelled for easy sorting and quick handling.

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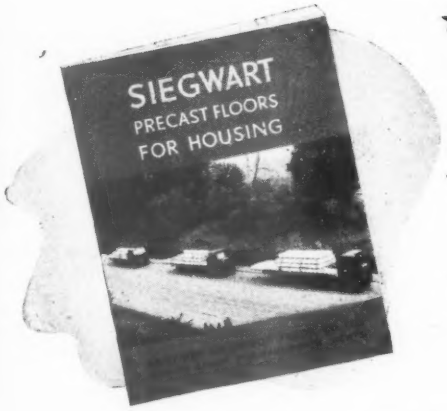
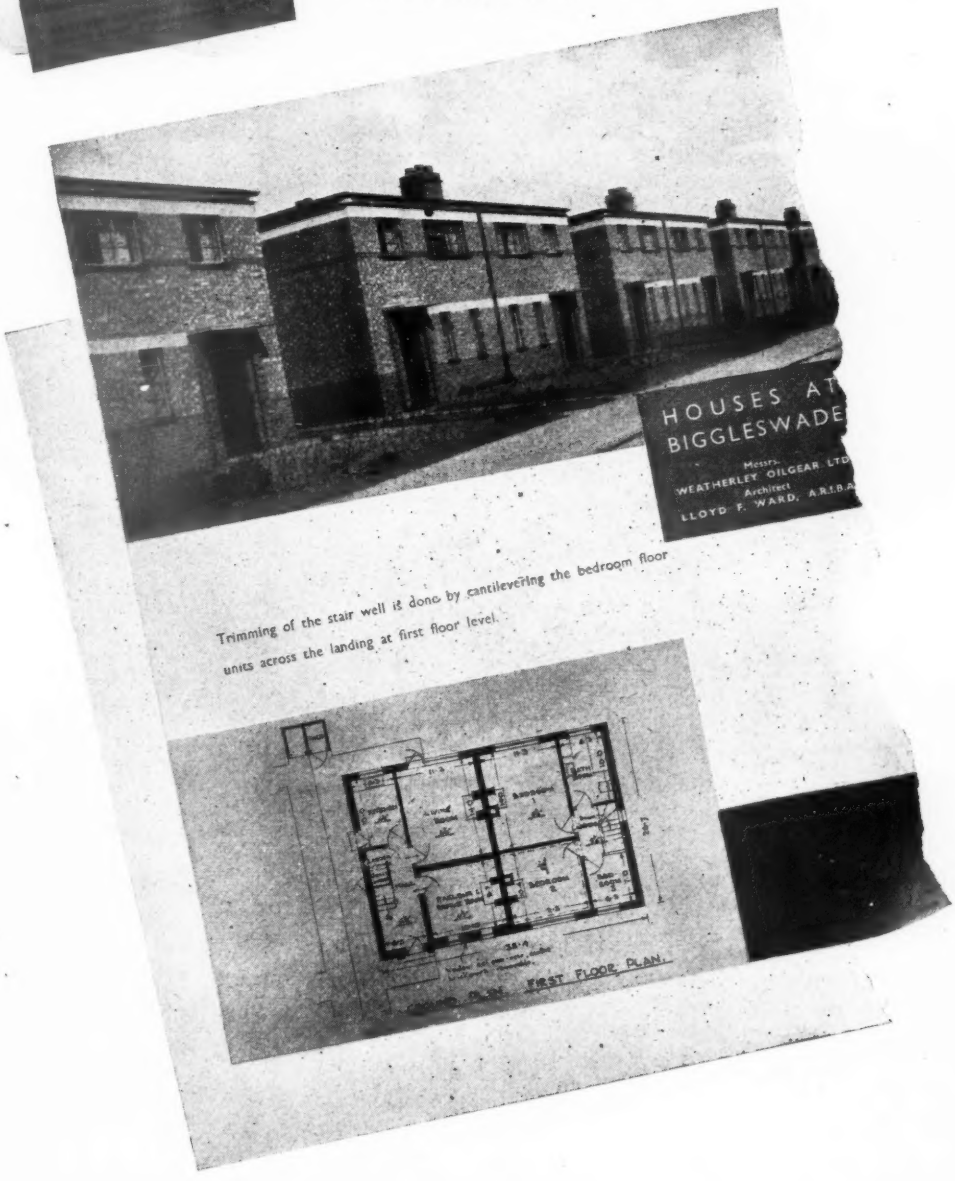


★PAGE 4 FROM THE NEW **SIEGWART** HOUSING BOOKLET

This is a new booklet illustrating the Siegwart precast floor system applied to housing. It contains typical plans showing the arrangement of Siegwart precast units in floors and flat roofs with photographs of fixing work in progress and of completed schemes. Technical details are drawn to large scale.

It is available to all interested in the Siegwart system but to comply with current restrictions it is necessary to send a 1d. stamp to the address below.



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No other type of structure imposes such severe and fluctuating loads upon the bricks. From footings to cap they must maintain a standard of performance far in excess of that which any other type of building demands . . . For many years the leading firms of Industrial Chimney specialists have preferred PHORPRES Bricks. One firm alone — Chimneys Limited — have built 259 industrial chimneys using PHORPRES bricks.

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POST-WAR HOUSING

No. 1. Heat Losses through Roofs

RECOMMENDED STANDARDS

Post-War Building Studies No. 15, "Walls, Floors and Roofs,"* paragraph 244, reads as follows :

> *"TRANSMISSION THROUGH STRUCTURE*
> *The loss of heat by transmission through the structure of a roof and its coverings should generally be reduced to a minimum. The following values of thermal coefficient 'U' are now recommended by the B.R.S.*
>
> | *STANDARD A* | *STANDARD B* |
> |---|---|
> | *Roof and top floor ceiling 0·30* | *Roof and top floor ceiling 0·20"* |

Notes :

STANDARD A is for houses with uncontrolled heating appliance being of the normal open fire type.

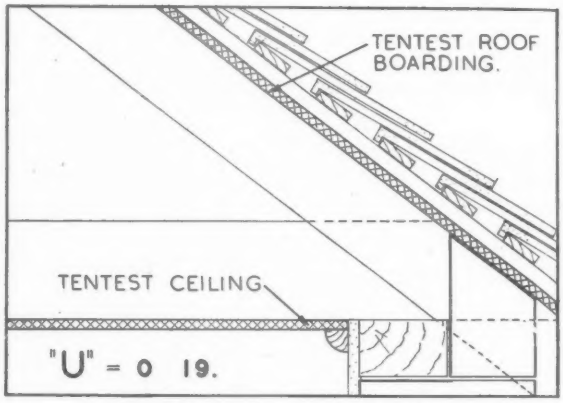
STANDARD B is for houses with controlled heating appliances, e.g., slow combustion, gas or oil stoves, electric heating or central heating.

THE THERMAL COEFFICIENT "U" represents the number of British Thermal Units lost per hour through one square foot of the structure for one degree F. difference between the indoor and outdoor air temperatures.

HOW TO ACHIEVE STANDARDS

The simplest and most economical way of improving insulation is, where possible, to use structural materials with high insulation value, *instead* of using those with low insulation value and then adding insulation separately. This method is particularly easy to apply to roof structures and the figures below (based on information given in recent official publications) show how the officially recommended thermal standards can be attained by inexpensive modifications of normal constructions.

*Pub. H.M.S.O. for M.O.W., price 9d.

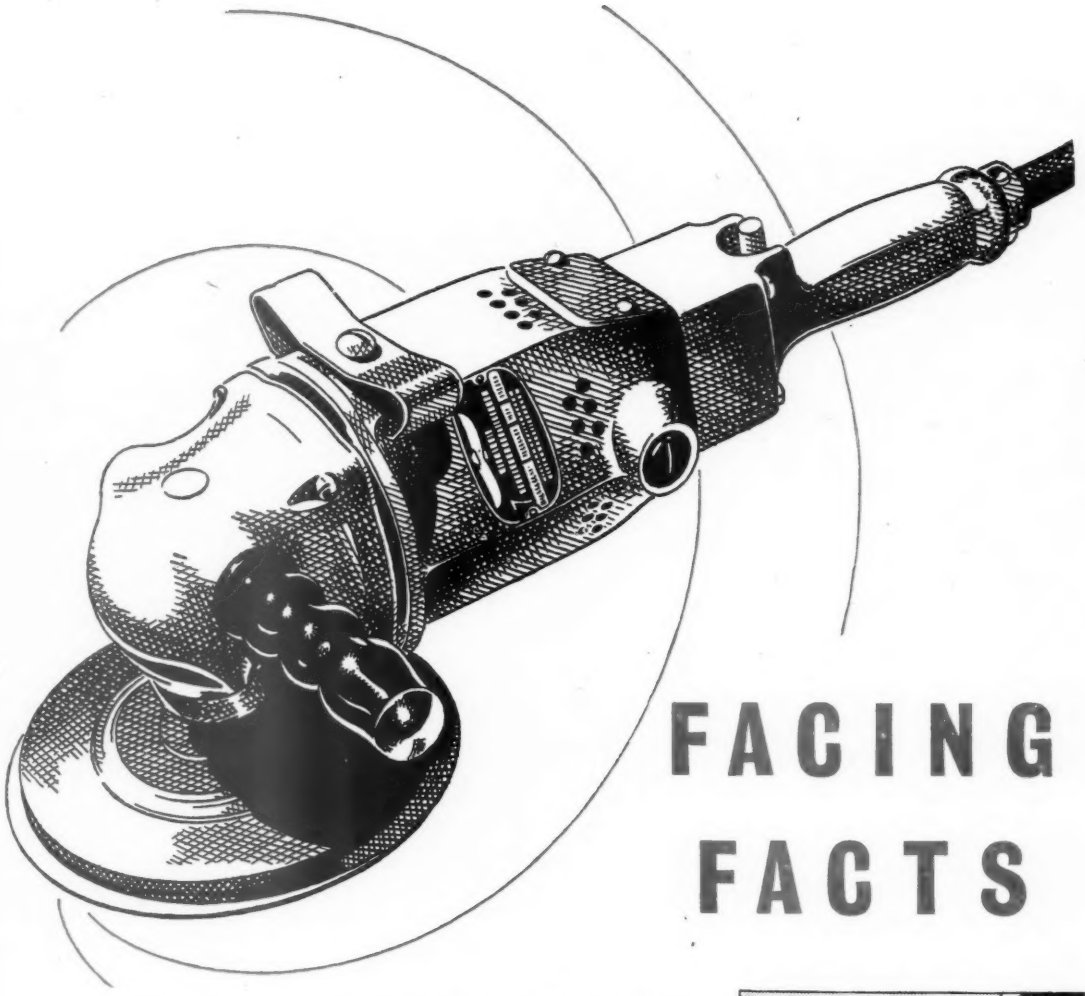


Standard B is easily attainable using ½in. TenTesT as roof boarding and as ceiling.

TABLE OF THERMAL TRANSMITTANCES

ROOF AND CEILING STRUCTURE.	"U"
PITCHED ROOFS	
Tiles on battens, plaster ceiling	0·56
Tiles on battens, ½-in. TenTesT ceiling*... ...	0·33
Tiles on boards and felt, plaster ceiling	0·30
Tiles on boards and felt, ½-in. TenTesT ceiling...	0·22
Tiles on battens on ½-in. TenTesT, plaster clg....	0·25
Tiles on battens on ½-in. TenTesT, ½-in. TenTesT ceiling	0·19
FLAT ROOFS	
Asphalt on 1-in. boarding, plaster ceiling ...	0·31
Asphalt on 1-in. boarding, ½-in. TenTesT ceiling	0·23
Asphalt on ½-in. TenTesT on 1-in. boarding, ½-in. TenTesT ceiling	0·17
Asphalt on 4-in. concrete, plastered soffit ...	0 62
Asphalt on 4-in. concrete, ½-in. TenTesT ceiling fixed to battens	0·26
Asphalt on ½-in. TenTesT on 4-in. concrete, ½-in. TenTesT ceiling fixed to battens ...	0·19

* *TenTesT is an ideal base for plaster finish.*



FACING FACTS

Builders are faced with the biggest reconstruction job of all time, and the latest and most efficient tools will be essential in every builders' plant. In the B & D range of Portable Electric Tools for the Building Trade is the 7" Heavy Duty Sander, specially designed for sanding wood, removing rust and scale, and surfacing concrete and stone.

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- CONCRETE SLABS CAST IN SITU
- SPEEDY CONSTRUCTION
- EASY TO ERECT

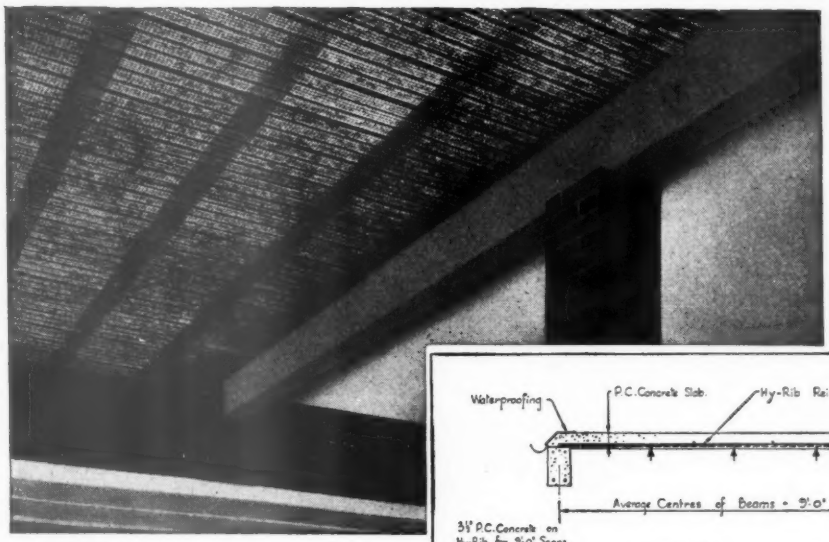
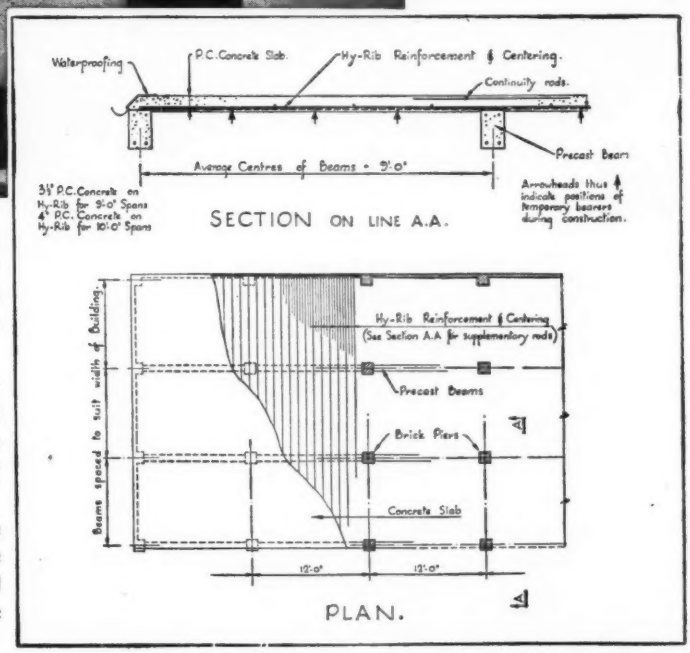


Illustration shows Hy-Rib centering and reinforcement after concrete of roof slab has set and temporary propping removed.

Typical details showing roof construction.



The use of Hy-Rib combined centering and reinforcement effects a double economy as timber shuttering is eliminated and the reinforcing steel is utilised in the constructional stages.

The use of Hy-Rib is a guarantee that the maximum strength is developed in the reinforcing steel. The sheets of Hy-Rib cannot "ride up" into the concrete during construction and become ineffective.

The Hy-Rib system of construction can be carried out by unskilled labour under the control of a competent foreman. Detailed working drawings are supplied for the guidance of the building staff.

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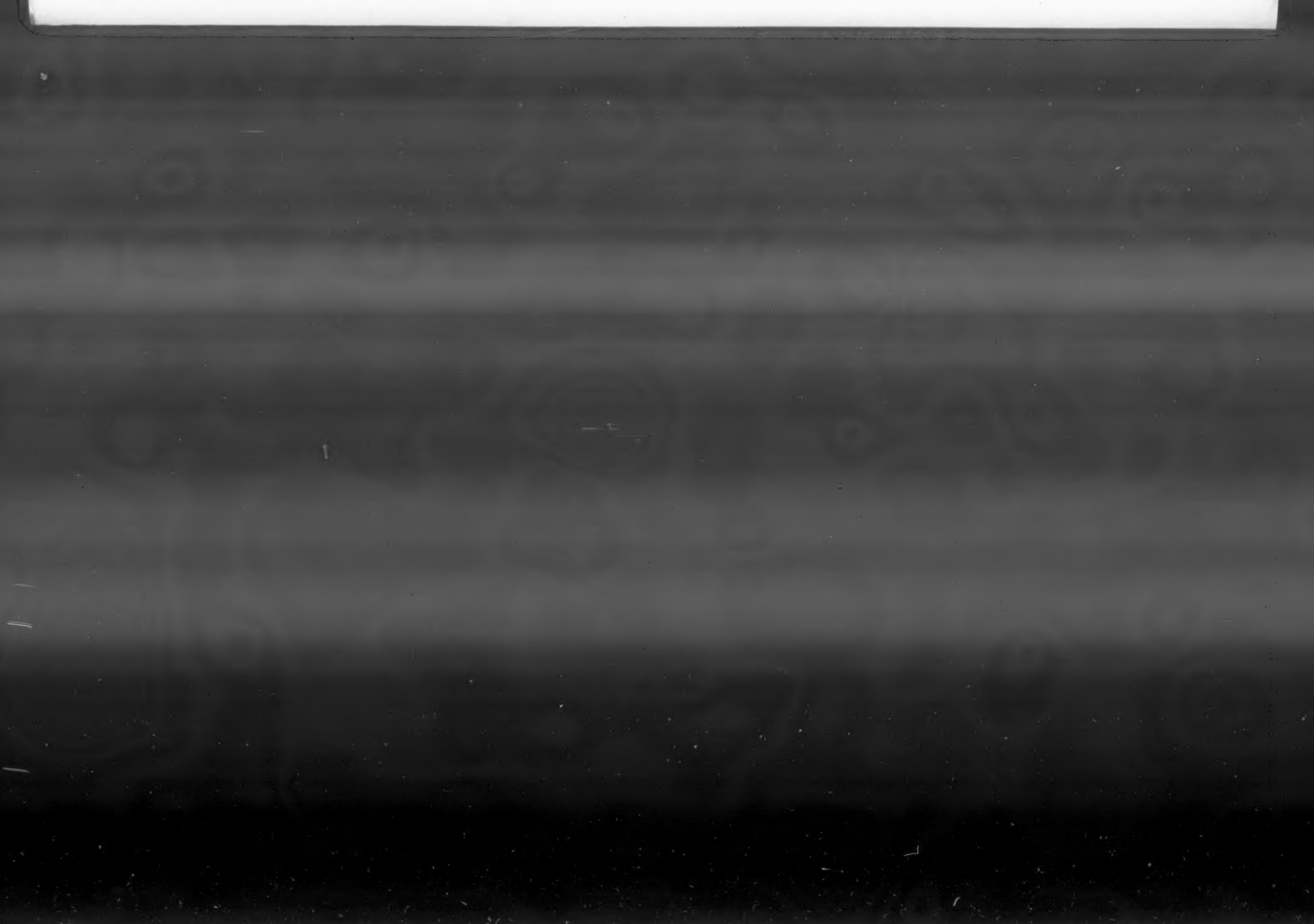

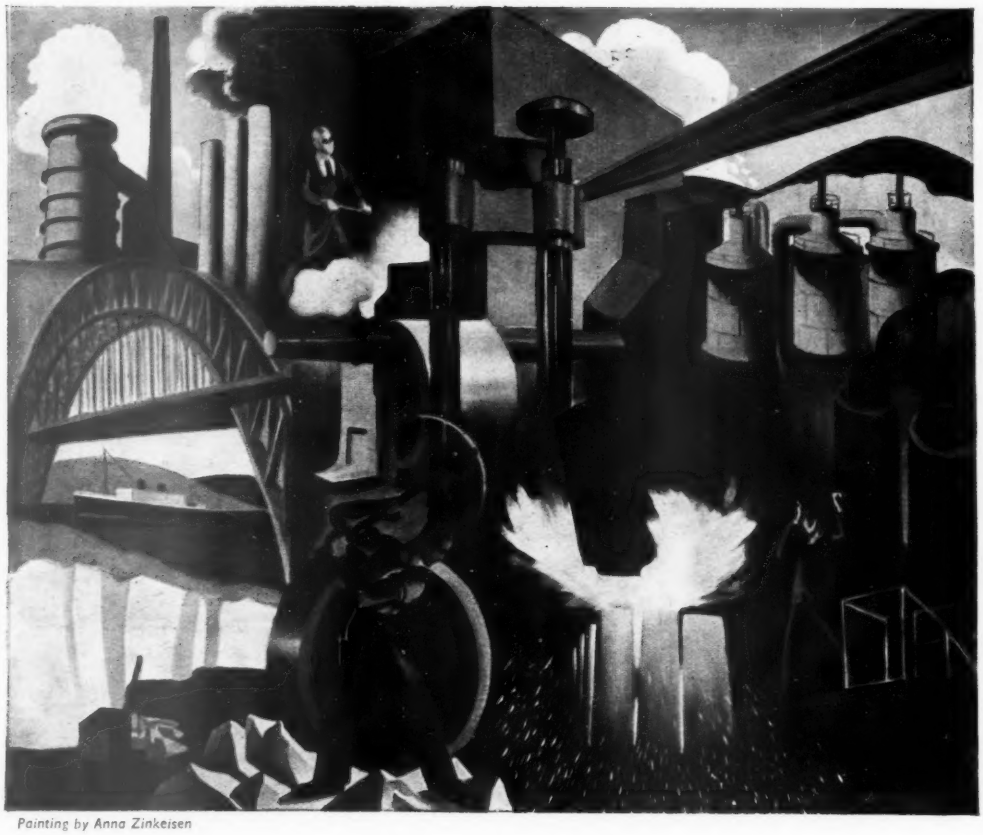

Painting by Anna Zinkeisen

This Present Age . . 1

As the largest steel producers in the British Commonwealth of Nations, we comprise not only a highly complex industrial structure, but also a vast community of human interests. In Cumberland, Yorkshire, Lincolnshire and Northamptonshire, the organisation operates collieries, iron ore mines, limestone quarries, blast furnaces, iron foundries, steel works, forges, rolling mills and other ancillary plant essential to its business. All these instruments of production are owned by a great number of small investors representing every section of the people. Thus, without exception, each employee is virtually a trustee of these properties with all the implied responsibilities of such stewardship. It is a source of pride that employment is provided for about 35,000 citizens of our Nation, each of whom, with his dependents, has a vital stake in the prosperity of our undertakings. The whole enterprise is an intricate relationship of human personalities and qualities. It is an integration of the varied combinations of administrative faculties, technical attributes and manual skill. Nature does not bestow the same talents on each of us, but within the organisation there is ample scope for the development of initiative and aptitude. Without distinction, every encouragement and help is given to those who possess the intrinsic endowments of character, diligence and intelligence. Social progress depends upon a just appreciation of widely differing human characteristics freely co-operating to achieve a common purpose.

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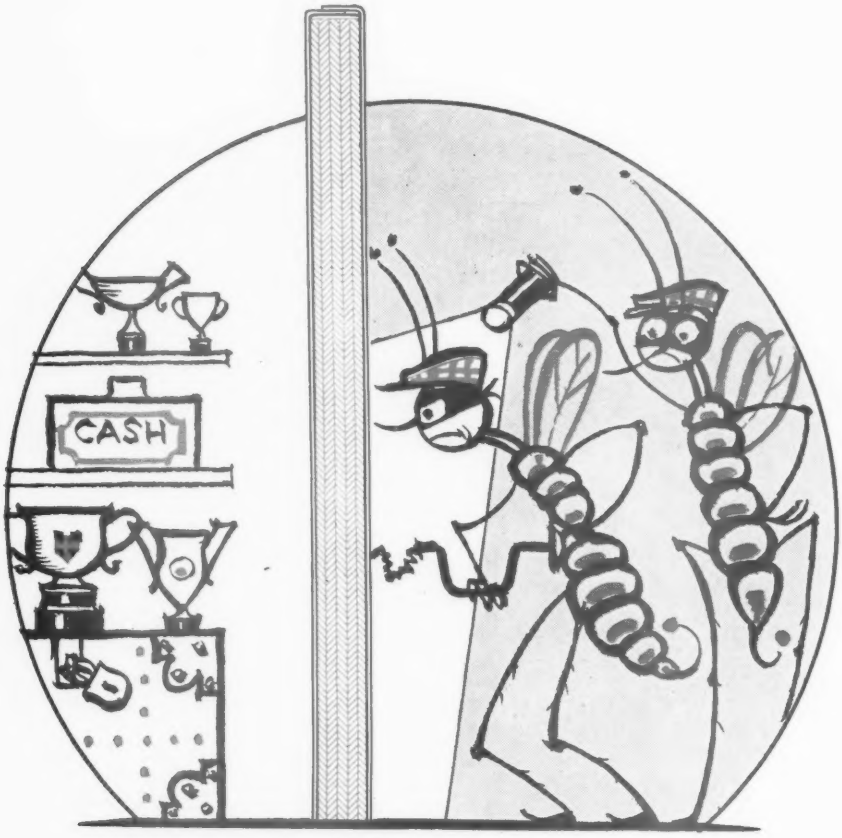

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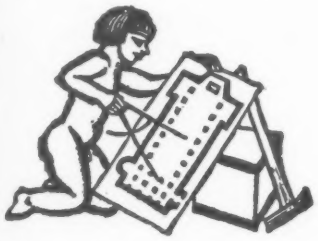
In common with every other periodical this JOURNAL *is rationed to a small part of its peace-time needs of paper. Thus a balance has to be struck between circulation and number of pages. We regret that unless a reader is a subscriber we cannot guarantee that he will get a copy of the* JOURNAL. *Newsagents now cannot supply the* JOURNAL *except to a "firm order." Subscription rates: by post in the U.K. or abroad, £1 15s. 0d. per annum. Single copies, 9d.; post free, 11d. Special numbers are included in subscription; single copies, 1s. 6d.; post free, 1s. 9d. Back numbers more than 12 months old (when available), double price. Volumes can be bound complete with index, in cloth cases, for 15s. each; carriage 1s. extra. Goods advertised in the* JOURNAL *and made of raw materials now in short supply, are not necessarily available for export.*



DIARY FOR MARCH APRIL AND MAY

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.

BIRMINGHAM. *Country Life and Country Needs.* Exhibition. At Barrow's Stores. (Sponsor, BIAE.) MAR. 15-26

L. A. Jordon, Director of the Research Association of British Paint, Colour and Varnish Manufacturers. *Paint and Applied Finishes: Wartime Developments and Their Application to Design.* At the Royal Birmingham Society of Artists, New Street, Birmingham, 2. (Sponsor, DIA, Birmingham Branch.) 5.30 p.m. MAR. 26

GLASGOW. *Exhibition of Timber House Designs.* At the National Gallery of Scotland, Princes Street, Edinburgh. The exhibition consists of photographs, drawings and some models of designs submitted for the Timber House Competition held by the Timber Development Association. There are about thirty-five sets of plans, etc., including the three prize-winning designs, six commended and a number of other interesting entries. The object of the competition was to put forward designs for a pair of semi-detached houses, 900 sq. ft., for a family of two adults and three children: three bedrooms to be provided. Competitors were invited to submit their own ideas as to type of construction to be used, and their attention was drawn to the following aspects:—(*a*) Ease, speed and economy of production and erection. (*b*) Efficiency in the use of timber and other materials which might be used. (*c*) Low maintenance cost. MAR. 16-25

HASLINGDEN. *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA). Town and Country Planning Association Conference, Mar. 24. Speakers, R. L. Reiss and W. Dobson Chapman, Vice-President TCPA. MAR. 22-AP. 7

LEICESTER. Gordon Stephenson. *Community Centre Buildings.* At the Leicester School of Architecture. (Sponsor, Leicester and Leicestershire Society of Architects in association with the Leicester School of Architecture.) 6.30 p.m. MAR. 20

LONDON. Chartered Surveyors' Institution. General meeting of members qualified as Quantity Surveyors at 12, Great George Street, Westminster, S.W.1. C. T. Every will introduce a discussion on the *Report on the Placing and Management of Building Contracts issued by the Central Council for Works and Buildings*, of which Mr. Every is a member. 5 p.m. MAR. 21

Maxwell Fry. *Planning in West Africa.* MARS Group Public Lecture. In The Henry Jarvis Hall, RIBA, 66, Portland Place, W.1. (Sponsor, MARS Group.) 7.15 p.m. MAR. 26

J. A. Steers. *Coastal Preservation and Planning.* At 28, King Street, Covent Garden, W.C.2. Chairman, Miss E. E. Halton. (Sponsor, TCPA.) 1.15 p.m. MAR. 22

C. W. Glover. *Acoustics and the Sound Insulation of Buildings.* At the Incorporated Association of Architects and Surveyors, 75, Eaton Place, S.W.1. (Sponsor, IAAS.) 2.30 p.m. MAR. 24

Thomas Sharp. *Planning a Cathedral City.* At 28, King Street, Covent Garden. W.C.2. Chairman, H. G. Strauss, M.P. (Sponsor, TCPA.) 1.15 p.m. AP. 5

F. J. Osborn. *The Garden City Idea in 1945.* At Caxton Hall, Caxton Street, Westminster, S.W.1. (Sponsor, TPI.) 6 p.m. AP. 5

C. Roland-Woods. *The Work of the Codes of Practice Committees.* At 66, Portland Place, W.1. (Sponsor, RIBA). 6 p.m. AP. 10

A. Trystan Edwards. *Sunlight and Sanitation in Relation to the Planning of Building.* At the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.1. Chairman, A. C. Bossom, M.P. (Sponsor, Chadwick Trust.) 2.30 p.m. AP. 10

F. A. Mercer, Editor of "Art and Industry." *The Industrial Design Consultant.* At the Royal Society of Arts, John Adam Street, W.C.2. (Sponsor, RSA.) 1.45 p.m. AP. 11

MALVERN. *When We Build Again.* Exhibition and Film. (Sponsor, TCPA, in collaboration with Messrs. Cadbury Bros.). *The English Town: Its Continuity and Development.* Exhibition. (Sponsor, TCPA). Town and Country Planning Association Conference, Mar. 17. MAR. 15-19

WALLASEY. *The English Town: Its Continuity and Development.* Exhibition. At the Education Department, Wallasey, Cheshire. (Sponsor, TCPA.) AP. 14-28

NEWS

THURSDAY, MARCH 15, 1945
No. 2616. VOL. 101

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.

★

Miss Elizabeth Denby has JOINED THE BOARD OF TARRANS as DIRECTOR OF HOUSING.

As a Leverhulme Research Fellow, Miss Denby travelled widely in Europe, studying the housing policy and the low-cost schemes built between 1919 and 1934. Miss Denby has written, lectured and broadcast on many aspects of housing and estate planning. She is an Honorary Associate of the RIBA, a member of the Board of Trade Advisory Committee on Utility Furniture and of the Furniture Production Committee, is co-opted on to the LCC Housing Committee and is on the Executive Committee of the Pioneer Health Centre.

Two Lakeland farms have been GIVEN TO THE NATIONAL TRUST.

The National Trust announces the gift of High and Low Arnside farms, a property of 310 acres which will form a valuable addition to the Monk Coniston Estate. The new property which lies a little to the north of Tarn Hows, presented 15 years ago by Sir Samuel Scott, of Yews, Windermere, is given by his family and some of his friends in memory of Captain Philip Scott, The King's Royal Rifle Corps. The land rises to a height of 750 ft., commands uninterrupted views north-west to Little Langdale, west to Tilberthwaite and Wetherlam, and south-west to Yewdale and Coniston, and is traversed by a footpath from Skelwith to the Tarns. The farmhouses are typical of the district and romantically situated.

From AN ARCHITECT'S *Commonplace Book*

HEAVENLY FOLLY: WOMB WITH A VIEW. [*From* The Clubs of the Georgian Rakes, *by Louis C. Jones (Columbia University Press).*] It was not the interior, for all its strangeness, not the six bells in the belfry, nor the curious mixture of Classic and Gothic architecture that gave the church its reputation as a curiosity; it was, rather, the gilded ball on the very top of the steeple. It was intended, among other purposes, to provide the focal point for the prospect from the Dashwood gardens, and this it still does. The church, it should be remembered, is on the crest of a high hill, and the ball on the steeple is another hundred feet above the ground. When one has climbed the tower stairs past the bell-pullers' room, around the bells, then from the top of the steeple ascended the swinging iron ladder to the interior of the ball, he can see the whole Wye valley, with the straight road Sir Francis built to High Wycombe, and to the south, the house and gardens of West Wycombe Park. The ball itself is seven yards in circumference and is divided by cross-beams into four equal parts. Round the interior of the ball on the sides of three of these parts is built a seat; the fourth quarter is occupied by the trap-door to the iron ladder. Four men could sit on each of the three segments—not four fat men like Bubb Dodington and Charles Churchill, but four lean and hungry men like Sandwich or Wilkes. There can be little doubt that Sir Francis had Bacchus more in mind than God when he had the ball set atop the church of St. Lawrence.

Mr. L. Allen Gerrard succeeds Mr. F. G. Hodges as TREASURER OF THE NATIONAL FEDERATION of Building Trades Employers.

At the adjourned annual general meeting of the National Federation of Building Trades Employers, held in the RIBA, Mr. L. Allen Gerrard, of Manchester, was elected Honorary Treasurer of the Federation in succession to Mr. F. G. Hodges, J.P., who has resigned owing to ill-health after holding the position for some fifteen years. Mr. Gerrard, a director of J. Gerrard & Sons, Ltd., of Manchester, was President of the North Western Federation last year, and has been a member of the Council of the National Federation for several years. At the same meeting a William and Mary table was presented to the Immediate Past-President, Mr. J. G. Gray, J.P., of Coventry, by the new President, Mr. G. W. Buchanan, who presided.

★★

Mr. Longstreth Thompson's plan for redeveloping Merseyside's 450 square miles foreshadows A MAJOR AIRPORT FOR INTER-CONTINENTAL SERVICES.

New communities to house 250,000 people from central Merseyside areas are foreshadowed in a plan, for redeveloping Merseyside's 450 square miles. The plan has been prepared by Mr. Longstreth Thompson, county planning officer for Essex, in conjunction with a local joint committee, for the Ministry of Town and Country Planning. Developments provided for include the expansion of industries, a new high-level bridge over the Mersey and the Ship Canal, and a major airport for inter-continental service. The plan rejects the policy of creating satellite towns as being unsuited to Merseyside conditions. It is estimated that it will be necessary to provide new industries employing a total of 100,000 people.

Blackburn Corporation has BOUGHT WITTON PARK.

Witton Park, the ancestral home of the Feilden family, Lords of the Manor of Blackburn, has 440 acres of parkland. The estate was offered to the town several years ago for £50,000. The present price has not been disclosed. The land is likely to be made into a Hyde Park for East Lancashire. Part may be used for housing. The park includes the wooded Billinge Hill, a landmark.

The Minister of Health has appointed the Dowager Lady Reading, Chairman of the Women's Voluntary Services, to be a member of the MOH CENTRAL HOUSING ADVISORY COMMITTEE.

Lady Reading has a wide knowedge of the views and practice of housewives all over the country, gained through the work done by WVS on evacuation and the care of the homeless. She has been asked to serve on the Sub-Committee recently set up under the Chairmanship of Sir Miles Mitchell to advise on suggestions submitted to the Minister for the amendment of the Housing Acts, and to consider whether further guidance can be given on standards of fitness and also on the Sub-Committee under Lord Balfour of Burleigh set up to consider whether further advice should be given to local authorities as to the management of municipal housing estates in the light of post-war conditions.

★

Designed by Mr. L. H. Keay, the City Architect and Director of Housing, a NARROW FRONTAGE BUNGALOW has been placed on exhibition at Liverpool.

Speaking at the opening ceremony, performed by Lord Sefton, the Lord Mayor, Mr. Keay explained the advantages of a bungalow planned with a narrow frontage as a replacement for dwellings destroyed by enemy action in the older and higher density areas of the city. Many of the houses so destroyed had frontages of less than 16 ft.; few exceeded 20 ft. If the corporation got authority to build houses of the type on exhibition, they could be produced for £547 each, and one firm could produce 20 a week now and 40 a week later. The bungalow provides two bedrooms, a living room, an equipped kitchen, bathroom, several cupboards, and modern heating arrangements.

★★

In the ten years following the war the Miners' Welfare Commission proposes to spend over NINE MILLION POUNDS ON PITHEAD BATHS.

The proposal to spend this further sum of £9,407,000 is made in a report issued by the Commission. So far, out of about 1,000 collieries employing over 50 men, 362, with 418,000 employees, possess baths provided by the fund. The report also suggests that laundries might be provided where a high proportion of the miners adopt the same pattern of clothing. At present clothes tend to be left in the baths and not taken home regularly for cleaning and repair. One experiment that appears to have been unsatisfactory is that of boot repair shops for the miners. Of six opened at pithead baths, three have never been used for this purpose, two have been discontinued and one is at an unfinished installation. In the past 24 years £23,000,000 has been spent on various welfare schemes in the mines.

★

Criticisms, observations and suggestions from the Ministry of Town and Country Planning and other interested bodies on the plan for REBUILDING THE CENTRE OF CANTERBURY are to be invited by the City Council.

The plan prepared by Dr. Charles Holden and the City Surveyor, Mr. H. M. Enderby, deals with that part of a reconstruction and development scheme which can be reasonably carried out within a period of 10 or 15 years from the end of the war. Proposing that the criticisms, observations and suggestions should be invited, Mr. J. M. Symns, chairman of the Town Planning Committee, said that although many of them think it is a good plan, they realize there is nothing final about it. The plan and another which will follow will, in all, cover a period of at least 50 years. They will need to obtain the best advice available, and he is assured they will get it free from the Fine Art Commission. That is an advantage of living in a city which is a national heirloom. The debate largely centred on the merits or demerits of the plan, and on the question of municipal purchase of blitzed areas. After considerable argument it was decided that early steps should be taken to consider such proposed purchase.

Bombed Buildings Abroad—IV

A view of the ruined Ardenne Abbey continues this series and takes us from Italy to France. The Abbey was built by Trappist monks some 800 years ago, and stands one mile from Caen. It was used as a German stronghold and held out for two days against the Canadian and British onslaught. A British soldier can be seen waiting patiently, with finger on trigger, to get one of the many snipers hidden in the debris.

★

The united building industry is to place before the Government a policy to PROVIDE HOUSES FOR SALE OR LETTING.

A considered policy for providing houses for sale or letting is to be formulated for presentation to the Government by the united building industry, stated Mr. G. W. Buchanan, President of the National Federation of Building Trades Employers, recently. At the headquarters of the Federation, Mr. Buchanan and Sir Jonah Walker-Smith, M.P., discussed problems with which the industry is confronted. The following views were expressed: *Temporary Houses.*—It is not a good policy to build temporary houses unless they can be manufactured by a small labour force, erected quickly and cost very little. *Labour.*—Builders, particularly key men, should have priority in their release from the Services. Instructors in building crafts should now be trained. *Central Authority.*—There are too many authorities dealing with housing. An over-riding department should be established. *Cost.*—The post-war house is likely to cost at least 50 per cent. more than in pre-war times, and may even cost 100 per cent. more. *Production.*— In peacetime 350,000 houses were built in a year. With modern methods 500,000 could be built with the pre-war man-power.

Suggestions are wanted by a Ministry of Health Committee on the CONVERSION OF HOUSES.

A Sub-Committee of the Minister of Health's Central Housing Advisory Committee has been set up under the chairmanship of Mr. Lewis Silkin, M.P., to look into the possibility of converting or adapting existing houses, so as to increase the number of dwellings available in the post-war period. The Committee will review all types of empty houses, and consider also whether anything can be done to make fuller use of houses which are likely to be only partially occupied. A number of organizations and individuals are being approached direct, but others who have suggestions to make are invited to write to the Secretary (Mr. I. I. Ungar), Conversion of Existing Houses Sub-Committee, Ministry of Health, S.W.1.

★

Britain's building trade has made an offer to the Minister of Works to erect £650 HOUSES TO LAST A HUNDRED YEARS.

Britain's building trade has offered to build two-bedroom maisonettes for £650 and three-bedroom types for £975. They would have permanent exteriors and prefabricated interiors, a life of 100 years, and be cheaper than temporary houses. This was disclosed by Mr. Charles Boot, president of the Federation of Master Builders, at a lunch before the Federation's annual meeting. He said the plan had already been presented to the Minister of Works, Mr. Sandys. He said: The function of the Ministry of Works should be limited to directing, allocating and supporting house-building, while releasing every measure of control which cramps the free exercise of initiative whether on the part of local authorities or private enterprise. The present state of interference and control leaves local authorities perfectly helpless in evolving well-considered schemes, and private enterprise is even more stagnant.

THE KETTLE IS GOING

THE current edition of the official Housing Manual, with its recently published Technical Appendices, marks a new concept in the planning of small houses. The house plan is now definitely—as in theory it always has been—to be related to the probable Way of Living of the future tenant, as expressed in the choice between the Working-Kitchen, Living-Kitchen, and Dining-Kitchen. It is now made clear that this choice must control the nature of the fixed equipment. In particular, the plan evolves round the methods of cooking, room heating and water heating.

At last, it is official policy that the house is expected to contain adequate fitted fuel appliances, that these are not to be added as an afterthought by the tenant wherever space can be found for them, and that the unequipped house (of which surprising numbers were built between the wars) will not be tolerated. This is not very far short of official acceptance of the doctrine of the house as the machine for living in. Logically, this step was inevitable, as soon as the cooking came to be done on an appliance more specialized than an open fire. The time which it has taken to accept the principle is a sad commentary on the irrational nature of our approach to building.

The greater the number of items of fixed equipment to be provided in the house, the more certainly must we ultimately accept the need for carefully planned and designed heating units such as the kitchen bathroom unit embodied in the Portal House. A further development for two-storied houses should be a central stack carrying all the flues and services. Until combined units of these types become widely adopted, it will be difficult to organize the mass production of domestic appliances, which will be essential if this complex equipment is to be provided for Local Authority housing at a reasonable cost.

Properly designed and mass-produced heating units should render possible a higher standard of room heating than has ever been allowed for before and, incidentally, could remove the recurrent menace of the frozen pipe. No particular method of attaining such improved standards of room heating is, however, laid down in the Housing Manual.

Reference is made in the Manual to the possibilities of Convection Heating. This has made great strides in America, where there is greater dependence on the use of the small motor-driven fans than has been seen in experimental work in this country. An alternative possibility would be to develop inexpensive background heating by hot water, although at present the capital cost of a traditional radiator installation may be more than will be accepted by the Authorities. It is, however, now generally agreed that some measure of background heating will before long be considered essential in any house.

It is good to see the plain statement that " an adequate piped hot water system should normally be installed in all housing erected after the war." It is too little realized how many

working class homes in this country depend for hot water supply largely on the kettle. An adequate supply of hot water is one of the essential amenities of living.

Another substantial change appearing in the Housing Manual is the insistence that efficiency in running cost is to be a matter considered by the Housing Authority, and that this may be of as great importance as low first cost. We hope that this may portend the end of the bad old practice of installing the cheapest possible coal ranges, without consideration of their efficiency from the housewife's point of view, or their powers of squandering our limited mineral resources.

The official attitude towards Government housing of the future can be criticized seriously on many of its wider issues, but on smaller issues such as equipment, especially that applied to heating, it is on the whole, encouraging.

The Architects' Journal

War Address: 45, The Avenue, Cheam, Surrey

Telephone: Vigilant 0087-9

NOTES & TOPICS

JUDGES DISAGREE

It is unfortunate for laymen when judges disagree, as they will, even in the House of Lords. I have been reading the judgments in the case of *Cricklewood Property & Investment Trust, Ltd.*, v. *Leighton's Investment Trust, Ltd.*, which are not without professional interest, as the case concerns the effect of the war and its inevitable restrictions on building agreements.

*

In this case there was an agreement for the building of some shops and for the grant to the lessee of a 99-year lease. Fourteen of the shops were uncompleted when building was stopped by the emergency regulations. The point was whether that state of affairs amounted to a frustration of the whole transaction or whether the lessee was still bound and must pay the rent due under the agreement.

*

Frustration of a contract is a rather technical matter. Lawyers say that it is a principle of the common law of the country and means that an entirely new set of circumstances has arisen since the contract was made as a result of which the court considers that the contract is brought to an inevitable end. Incidentally, the only way you can find out if the circumstances do amount to frustration in the legal sense is to go to court about it.

*

There seem to be two views as to whether the principle applies at all to contracts relating to land. Three of the law lords in the House of Lords held that view. Three others, including the Lord Chancellor, held that the principle could apply, but only in rare and exceptional cases. They agreed that it did not apply in this case, largely, it seems, because of the length of the term of years to be granted under the contract. It was, no doubt, an application of the principle, 'It'll all be the same in a hundred years.' Viewed from the aspect of a grant of a 99-year lease, emergency regulations and, indeed, the war that brought them into being, must look like a trivial incident.

*

Architects are very much concerned with whether building agreements of this kind, held up by the war, are to be treated as in abeyance and due to revive when the emergency is over or whether they are to be treated as finally disposed of and of no further legal effect. From this decision, it looks as though the first view should, in the vast majority of cases, be treated as the correct one.

ARE YOU ABSOLUTELY NORMAN SHAW?

There are certain buildings—like S. Sophia or Le Corbusier's Swiss Hostel in Paris—which are generally accepted as landmarks on the long road of architectural history. Between them stand those minor milestones which every architect chooses for himself—St. Stephen's Walbrook or Stockholm Town Hall, the Monastery of Melk or the churches of Ravenna, the Penguin Pool or the Ministry of Education in Rio. They are chosen not always for obvious virtues, sometimes just because they are *types*, but together they form a collection which is being constantly changed in every architect's mental museum.

*

One of the more precarious places in my own selection was held by New Scotland Yard—a building which has always fascinated me, more perhaps because of its associations than its architecture. Recently I had the opportunity of entering within its guarded walls. All was as had been imagined—barrel vaults, solid-looking doors, green paint and polished boots.

*

And there was MYSTERY, too—wild, inconsequent mystery. (Narrator's voice fades into a burst of music which fades itself into silence.)

*

A strong sun shone through the windows of the little waiting-room, making brilliant highlights on the polished pates of passing police-constables. An elderly policeman entered, his shoulders bent "like," as the Brooklyn lady remarked, "he was carrying an atlas or sump'n," and holding a dripping umbrella. "Not raining?" I asked foolishly, shading my eyes from the sun. "No," he replied darkly, "but the umbrella is

wet." He opened it, placed it on the hearth to dry, and left the room.

*

"——!" as the Ancient Mariner remarked, "that such a thing should ever be!" Shakily collecting my hat I left the building, and stepped, with coat-collar instinctively turned up, into the brilliant sunny street—puzzled, but convinced from that moment that the place of New Scotland Yard in my private collection is for some time at least secure.

TEAPOT HALL

The future of Teapot Hall is in doubt. It was inhabited and maintained in a good state of repair till nine or ten years ago; since then, deterioration has set in, the first signs of which—broken windows and deficiencies of thatch—were visible when the photograph shown here was taken; and a more recent picture would show evidence of much more extensive decay. Now, at the eleventh hour, somebody is doing something about it. The owner of the cottage has declared his willingness to hand it over to the Society for the Protection of Ancient Buildings, and an attempt is being made among Lincolnshire people to start a fund for its acquisition and repair.

*

To the fanciful eye a desirable residence for pixies, Teapot Hall is, in more practical terms, an unusual and possibly unique example of cruck construction. "Of clay and wattle made," it has no vertical side walls, but slopes at the same angle from ground level to roof-top, and its chimney-stack (unfortunately out of sight in the picture) is distinctly semi-detached.

*

Various estimates have been given of its age; varying, in fact, between pre-Norman and the mid-eighteenth century. But Nathaniel Lloyd says: ". . . Teapot Hall; all roof, no wall. This couplet is actually a description of most early buildings, for the development of the house was the development of the simple, protective roof. . . . A survival of an early type of building, which in this instance is itself ancient."

ASTRAGAL

A recent photograph of Teapot Hall. See Astragal's note.

LETTERS

John Gloag

A. V. Sugden
(Chairman, Wallpaper Industrial Council)

G. V. Northcott
(Chairman, National Wallpaper Council)

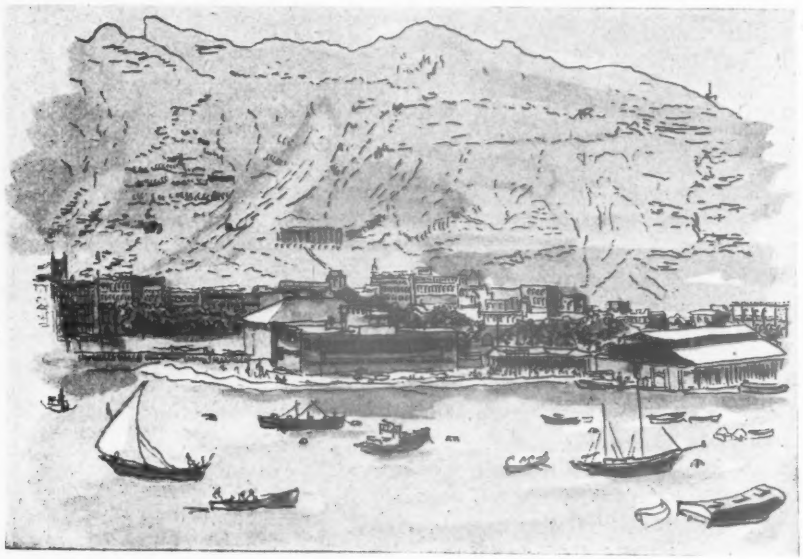
Postscript to Protective Architecture

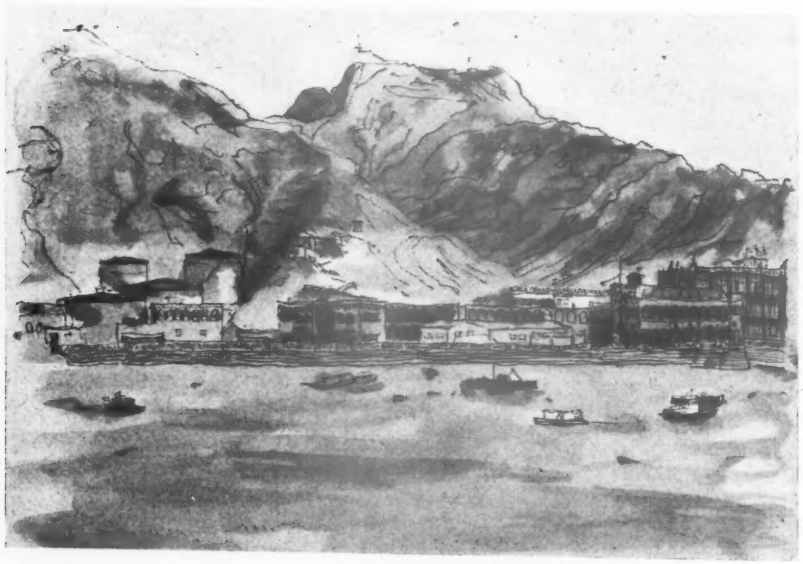
SIR,—Since the publication of my article on Protective Architecture, in November last, some letters in the ARCHITECTS' JOURNAL have indicated the not unnatural reluctance of professional and educated men to acknowledge the existence of disturbing facts. One of your correspondents—obviously a hearty, back-slapping Rotarian type—urges somebody to stand me a drink; another accuses me of being a spiritually bankrupt intellectual; a third denounces my lack of faith in the future, and indulges in some confused uplift about preserving peace in the post-war world. There seems to be an idea abroad that I am advocating underground cities for permanent occupation, and suggesting that we should abandon all our surface planning. We need not discard our accepted ways of life in order to evolve a new architecture of protection. But if we don't evolve such an architecture, we shall invite another war, and our ways of life will not survive it: the practical way of ensuring peace in our time, our children's time, and our grandchildren's time, is for the world to know that we have strong armour. Before this war we had no armour and few weapons. The nations of Europe thought we were weak: we were, save in will power.

In the past the skill of our shipwrights and naval architects has given us protective armour; but that floating shield cannot save us from the new forms of long range bombardment.

When a man insures his house against

ARCHITECT'S WAR SKETCHES





Three sketches of character, a few among many made by Oliver Cox, a lieutenant in the Royal Engineers and a Student RIBA. Above, views of Aden seen from a troop ship, and, left, an oil buoy in the Red Sea.

fire and burglary, normal people don't decry his prudence as lack of faith in the fire brigade and the police. To those who doubt the past, present and future significance of fortification to the well-being of civilisation, I would commend the study of a book published in 1937, called *Progress and Catastrophe*, by the late Stanley Casson, Hon.A.R.I.B.A., one of the few historians and archæologists who had an informed appreciation of architecture. When defence establishes and maintains an ascendancy over attack, the expansion and improvement of civilization become possible. The architectural profession could take a leading part in restoring the ascendancy of defence; the imagination and technical knowledge of architects could thus make a real contribution to the peace of the world. I find it difficult to believe that this great responsibility will be rejected by a body of men whose intelligence, imagination and acute sense of civic obligation are so consistently in evidence.

London JOHN GLOAG

Wallpaper

SIR,—Housing authorities will be able in the near future to avail themselves of an opportunity for increasing the attractiveness of the homes which they are proposing to build when the war ends.

Wallpaper, which gives a welcome glow to a house, is now generally accepted as a most useful way to bring colour and individuality into the homes of the people, whatever standard of income they may enjoy. Technical research shows that to-day wallpaper may be safely put on new plaster walls as soon as they are dry. Moreover, apart from the demand from those whose rooms have not been decorated for years, wallpaper is a practical and economic way to re-decorate houses which have been blitzed, or damaged, where the walls may be uneven.

Throughout the war the wallpaper industry has rendered valuable services to the national effort by turning over its factories, plant, and personnel exclusively to war production. Though prompt, on the outbreak of war, to appreciate the necessity to release large quantities of raw paper for urgent needs, the industry was soon compulsorily deprived of all raw paper supplies, and, by 1941, had totally suspended wallpaper manufacture.

Since then, considerable research and experimenting have been devoted to improvements in manufacturing processes, including that of making certain types of wallpaper capable of being cleansed on the walls. The standard of design, colour and printing technique have also received close attention. Problems arising from the complete cessation of normal activities have been faced, plans for reconversion of plant prepared, and a basis for the re-absorption of personnel established, as between employers and employees, on lines of happy augury for a wholehearted effort to recover lost ground when production begins again.

At an exhibition of historical and modern British wallpapers, to be held in May in the Royal Society of British Artists' Galleries, London, the public generally, and members of housing authorities in particular, will be able to see for themselves how alert the industry has been to improve design, colour and technique, nor has it overlooked the requirements of those with only moderate incomes.

A bureau of information will be happy to assist any housing authority which may have special problems of its own.

A. V. SUGDEN
(Chairman, Wallpaper Industrial Council)

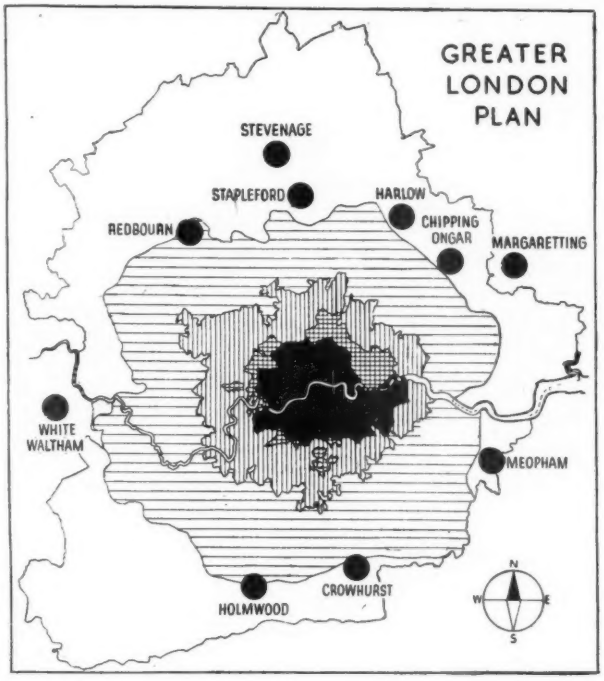
G. V. NORTHCOTT
(Chairman, National Wallpaper Council)

London

PHYSICAL PLANNING SUPPLEMENT

Last December a preliminary edition of the report on Sir Patrick Abercrombie's Greater London Plan was published by HMSO for limited circulation. An exhibition, illustrating the proposals, was held at the Ministry of Town and Country Planning, but was not open to the public. Few planners have, therefore, had an opportunity to study the proposals in detail, and the following synopsis is designed to provide a basis for study until general publication of the report. The map on the right shows London's four concentric rings and the location of the ten proposed new satellites.

Town & Country Planning.



INNER URBAN RING
The maximum net residential densities proposed are 100 and 75 persons per acre for different parts of this zone. It is from this ring that the greatest decentralisation from areas covered by the Report is proposed.

SUBURBAN RING
A general net residential density of 50 persons per acre is proposed as a maximum. The only increase to be allowed is the building up of vacant frontages.

GREEN BELT RING
This is to provide primarily for the recreation of Londoners and to prevent further suburban growth; therefore only small increases to existing towns are to be allowed.

OUTER COUNTRY RING This will be the principal reception area for the decentralised population. Here, the Report proposes, its new satellite towns should be located. But it contemplates that the agricultural (and not the recreational) background will predominate.

NEW SATELLITES
These are all sited outside the green belt area.

GREATER LONDON PLAN

a synopsis of the planning proposals

Introduction

The plan is complementary to the County of London plan, 1943, and to the City of London Plan. It covers the area from the County boundary to a radius of about 30 miles from the centre. The absence of any but piecemeal planning between the wars, during a period of intense development, has led to:—

1. Lack of any relation between housing and industrial areas.
2. Transport problems developing as fast as facilities are extended.
3. Lack of a comprehensive road system.
4. Sacrifice of good agricultural land.

Assets include:—

1. A Green Belt, established by the Act of 1938.
2. Good public services, which in this region are not a determinant of growth, but follow it.

The *general structure* of Greater London is one of concentric rings:—

1. Dense housing, which extends beyond the LCC area.
2. Fully developed suburbs.
3. Area where Green Belt has begun to take shape.
4. Outer zone where whole background is agricultural.

Movement of population is in two directions—into London from the provinces, and out from the centre towards the country.

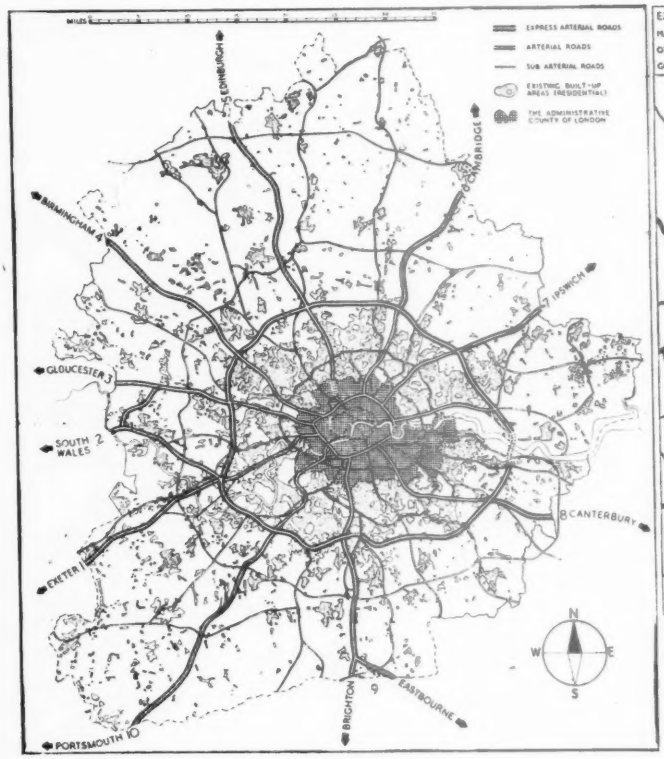
The assumptions on which the plan is based are:—

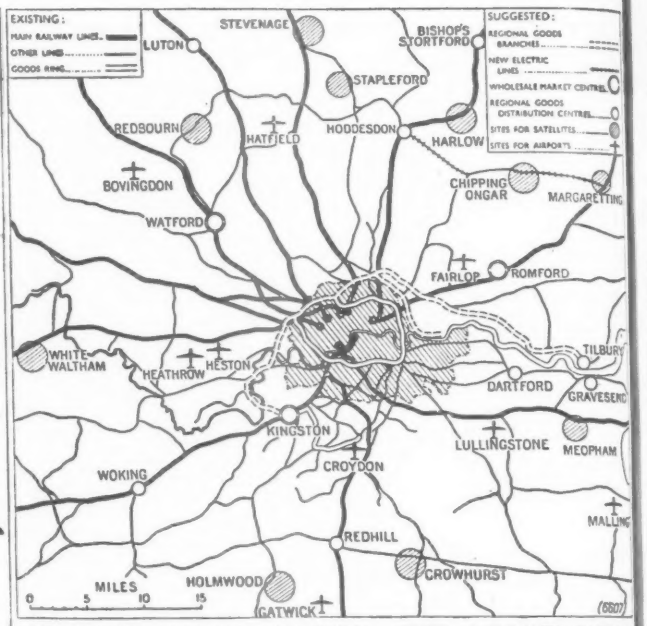
1. That new industry will not be admitted except in special cases.
2. That population will be decentralized.
3. That the total population of the area will be reduced.
4. That London will continue to be a world port.
5. That new planning powers will be available.

The plan itself is more general than those for the City and County of London, which relate to smaller areas, and are each based on the needs of a single authority. It is a plan for *reception* and *development*, rather than decentralization and replanning.

Four rings are conceived as follows:—

1. *The Inner Ring* spills over irregularly from the LCC area. Taking maximum densities of 75 and 100 persons per acre for different parts of the zone, there will be a decentralization of 415,000 persons.
2. *The Suburban Ring* is ragged on its inner edge, clearer on its outer. It has an average radius of 12 miles from Charing Cross. It is suggested that it should be kept roughly static, with a maximum net residential density of 50 persons per acre.
3. *The Green Belt Ring* will make up the open space deficiency of the County of London, by the purchase of land under the Green Belt Act and other means. No new centres will be established, and expansion will be strictly limited.
4. *The Outer Country Ring* will keep its general agricultural character, but new satellite towns will be established, and existing centres will be allowed to grow. The most attractive rural areas are to be preserved intact.





ROAD AND RAIL TRANSPORT

Left are road proposals and above those for rail and air. Ten express highways link up with the ten main radials of the LCC Plan. Sub-arterial roads carry all normal traffic. There are five ring roads (including two in LCC area). Rail suggestions mainly concern electrification. There is a trans-ocean airport at Heathrow.

The outer boundary of the Country Ring can only be arbitrarily defined, and some of the decentralized population will be received beyond it.

transport

A new outer ring-road is to run between the Suburban and Green Belt rings. The radial roads in the County of London Plan are projected into national arterial roads, and certain other main roads become sub-arterial, all-purpose roads.

The railways are to change over to electrical traction before entering the built-up area. The plan will not call for great lengths of new railway. Decentralization may mean that some local lines can be relieved and projected lines abandoned.

Airfields are located to allow quick access to central London by the radial roads, and to one another by the ring-road.

The transport system has been planned to serve existing communities as well as proposed development; no existing centres have been cut across; but old two-purpose roads have been differentiated.

Daily traffic in and out of London is likely to be less when the suggestions for re-grouping have been carried out.

Policy for Open Spaces

New building is conceived as being in built-up units against an open background, not as continuous development containing open spaces. For various reasons, including æsthetic, it is desired where possible to give each separate centre its own open belt.

Policy for Population Movement

Movement is of two kinds, sporadic and controlled.

(*a*) *Sporadic*

This consists of the continual "oscillation" of individual families from place to place, not always outwards. Existing vacant frontages on unfinished estates can provide a margin of housing for 386,000 persons, which represents 4 per cent. of the total population.

(*b*) *Controlled*

The way in which the decentralized population (618,000 from the LCC, 415,000 from the Inner Ring) will be distributed is as follows:

Additions to existing towns	261,000
New sites	383,250
Quasi-satellites	125,000
Total, within the region	769,250
Additions to towns within a 50 mile radius	163,750
Beyond the metropolitan influence ...	100,000
Total, outside the region	263,750

Thus there will be

a net reduction in the LCC area of ...	618,000
a net increase in the Greater London area of	354,250
a spill-over beyond the Greater London area of	263,750

The maximum population for each new centre is envisaged as 60,000. The plan suggests ten sites, from which eight are to be selected. This will accommodate the suggested 383,250, and allow for the existing small populations already living on most of the sites.

Public Services

These will have to be reviewed for the purpose of co-ordination. An important factor will be the need for increased water conservation, as the modern type of housing consumes more water than older property.

Quality of Design

The 600,000 new houses, and innumerable smaller items, comprised in the 2,599 square miles of plan, will call for carefully harmonized design on the part of a very large number of separate designers.

Amenities

The justifiable resentment of change felt by people living in pleasant environments who have seen large areas spoiled must be overcome by taking the visual effects into consideration at each stage. Factors are—

1. Pleasant groupings.

2. Prosperous agriculture (the only kind that has beauty).
3. Carefully-chosen advertising sites.
4. Avoidance of permanent litter such as dumps, old workings, etc.
5. Careful treatment of the sites of extractive industries, such as brick, cement and gravel, which will boom when the building starts.

Administration

The administrative problem in this region is unique. It is suggested that Joint Planning Committees be set up, representing all local authorities which have planning powers, and small enough in size to focus local interest. These will prepare and administer planning schemes in conformity with the master plan. From them there will be the right of appeal to the Minister of Town and Country Planning. Controlling them will be a Regional Planning Board, with over-riding powers, and appointed by the Minister.

The cost of executing the plan is hard to compute, and may well be less than the cost of having no plan. The biggest initial outlay will be on road construction.

A graded system of priorities will be needed to govern the order in which the stages of the plan are executed. With a few exceptions no attempt has been made to indicate these.

The Picture Aimed At

The aim of the plan can be expressed in terms of "homes, work and food for all." Homes are no good if:

1. They are too far from work.
2. They perpetuate overcrowding.
3. They form inconvenient units.
4. They have no community centres.
5. They waste good farm-land.

Factories are no good if:

1. They are badly sited for transport.
2. They are badly sited for labour.
3. They form unbalanced communities.

Food is wasted if farm-land is wasted.

The plan aims at integrating these aspects, adding to them good communications, and doing this in such a way that real communities emerge.

CHAPTER 1

growth of outer London

The plan covers an area of 2,599 sq. m., extending from the LCC boundary to roughly 30 miles from the centre. The population of the area in 1938 was about 6¼ millions. It surrounds the County of London, which, together with the City of London, covers 118 sq. m., and had in 1938 a population of just over 4 millions.

1. *The Inner Urban Ring*

Not strictly a ring, comprising only certain areas close to or adjoining the LCC boundary, and sufficiently densely populated to call for decentralization. There are a number of breaks, where more open development comes close to the County boundary.

2. *The Suburban Ring*

Occupied mainly by people whose work is not in the neighbourhood: workers travel an average of 16 miles a day and spend £12 a year getting to and from work. The ring is already built up to the limit of tolerable conditions. The inner edge is ragged, corresponding to the broken Inner Ring. The outer edge is better defined. The area needs a little decentralization, and cannot serve as a reception area. The existing open spaces are to be preserved, and vacant frontages used for the "oscillating" movement of population.

3. *The Green Belt Ring*

Largely open, but not to be used for re-housing, as an open belt here is urgently needed. The ring extends for about 5 miles beyond the Suburban Ring, and includes most of the land acquired under the Green Belt Act of 1938. The expansion of towns in this belt will be strictly controlled.

4. *The Outer Country Ring*

The predominantly agricultural character of this ring is to be preserved. The surplus population is not to be broadcast at random across it. Carefully graded expansion of existing towns, and a limited number of new ones, will leave it still mainly farm-land. The best farm-land, as indicated in the Land Utilization Survey, will be preserved as such.

CHAPTER 2

population distribution

Between the wars there was a net increase of 1,883,000 people in the Greater London area, and a net decrease of 626,000 in the City and County of London.

The influx was of two kinds:

1. Industrial workers from depressed areas in the provinces.
2. White-collar workers for commerce and government. This group is smaller, but increasing at a faster rate.

The plan assumes that this trend will continue unless controlled. Control machinery will require to be extremely sensitive on account of the very variable human factors involved.

It is suggested that a Population Controller be appointed to:

Advise the housing authority on the number and types of homes to be built;
Control amount of building round towns;
Regulate rate of construction of new towns;
See that population of Inner and Suburban Rings is kept constant;
Keep a balance between number of occupants and size of dwellings in each neighbourhood.

He would also work with the Ministry of Agriculture to control the growth of rural villages.

Town expansion should be encouraged within the limits of the plan, and prescribed densities should not be reduced; but limits of town expansion should not be increased except in case of overriding national need, for, *e.g.*, minerals. The Controller would be a member of the Regional Planning Board.

CHAPTER 3

decentralization

This has two objects:

1. To improve housing conditions.
2. Reduce the industrial congestion that has made Londoners "a race of straphangers."

The intention is to arrange that work is near to and yet not right on top of the place of residence. There must be a margin for those who choose not to move for the sake of avoiding travelling.

Continuous review will be needed, as all property deteriorates, and living standards may be expected to rise. The report envisages that the rehousing can be achieved in ten years after the interval prescribed by the Government. Industry will probably take longer to move than people; and new satellite towns will take longer than the expansion of existing centres.

The following types of dispersal are proposed:—

1. Immediate post-war programmes...	125,000	persons
2. Additions to existing towns, largely in the Outer Country Ring ...	261,000	,,
3. Additions to existing towns, outside the Greater London area ...	163,750	,,
4. Eight new satellite towns, outside the Green Belt Ring	383,250	,,
5. Outside the metropolitan influence	100,000	,,
	1,033,000	,,

Vacant frontages to take the "oscillating" population will accommodate:—

1. In the Inner and Suburban Rings	92,407	persons
2. In the Green Belt Ring	177,920	,,
3. In the Outer Country Ring ...	115,695	,,
	386,022	,,

The *effects* of decentralization will be:—

1. On the *Inner Ring*, a net reduction, down to densities of 100 and 75 persons per acre, in different areas.
2. On the *Suburban Ring*, a maximum density of 50 persons per acre, which is higher than some parts of the ring, lower than others.
3. On the *Green Belt Ring*, the prevention of further suburban growth, except for small additions to existing towns—with a "gross" density for the area, of 20 persons per acre, and (with a few exceptions) a "net" density for housing areas of about 30 persons per acre. The exceptions are for "quasi-satellites" to take the 125,000 persons included in the immediate post-war programme of the LCC and Croydon.
4. On the *Outer Country Ring*, a net growth to take most of the dispersed population, with new satellite towns, additions to some existing towns, and limitation of others, according to local needs. The new sites are to contain a balance of income groups, professional and salaried people as well as wage-earners. The different housing bodies should combine to provide these satellites, with large-scale builders experienced in "speculative" pre-war housing being responsible for whole areas, and smaller builders developing lesser units and individual houses.

With the 163,750 persons accommodated outside Greater London but within a 50 mile radius, and the 100,000 outside the metropolitan influence, a total of about one and a quarter million people are to be decentralized.

CHAPTER 4

industry

The proposals are based on eight assumptions:—

1. That location of industry will be nationally controlled.
2. That the London area will be largely banned to new industry.
3. That the problem will therefore be one of re-distribution.
4. That the Government will plan for full employment.
5. That there will therefore be no further drift of population from depressed areas.
6. That agricultural prosperity will be maintained.
7. That strategic considerations will not be dominant factors.
8. That there will be full co-operation between the various Government and Service departments concerned.

It is a mistake to assume that "Industry has moved South" between the wars. The increase in the south is largely independent, though many workers from the depressed export industries of the North have entered the consumer industries of Greater London.

Factors affecting the growth of industry in the area are the availability of electric power, neutralizing London's lack of coal and minerals, and the small bulk of raw materials required for new consumer industries, which can be supplied through the London markets. London is also the biggest market for consumer goods and distribution is economical. It is also a huge labour pool, and has first-class public services and transport.

About 30 per cent. of Greater London's factory growth since the last war represents decentralization from Inner London. This is increasing as industry turns over to mass-production in single-storey buildings with large floor space. The west, north-west and north sides are the most popular areas, as they combine proximity to the centre with transport facilities to the Midlands and North. The road suggestions in the plan should attract more industry to the east side where the labour-pool is bigger.

Evacuation during the bombing was mainly by:

1. Small clothing firms, to the north-west suburbs and provincial towns;
2. Engineering firms, to west and north-west, mostly within 50 miles.

The former will mostly return or be absorbed in the local economy. Many of the latter may stay, and in some cases cause new problems by rapid expansion in a locality which has no natural advantages for them. A detailed survey of evacuated industry is recommended; some may be allowed to remain, but not to expand. Where the sites are in areas suitable for planned expansion, housing will be urgently needed for the large numbers of workers living in hotels or billets, and will assist the process of decentralization.

Many war-damaged factories should be moved out, and compensation for re-building should be made conditional on its being done in accordance with the Regional Planning Board's proposals.

Many firms may leave clerical staffs in evacuation premises in the suburbs or the country. Probably the demand for separate business premises in London will be as large as before, but the space required for each will be less.

Industry and Population Movement

The discord between location of work and place of residence meant that, in 1937, 86 per cent. of the workers living in LCC cottage estates:

Travelled 8 miles a day, each way.
Travelled 4,800 miles a year.
Spent 4s. 8d. a week in fares.
Spent £12 a year in fares.
Spent £846,000 a year in the aggregate.

This sum represents the expenditure of only 70,000 workers, many using cheap workmen's tickets.

It is noticeable that the few industries, *e.g.*, printing, which depend on highly-trained workers, are much less liable to move. It is likely that as the population "ages" and the supply of young people entering industry dwindles, more attention will be paid to location near to supplies of skilled labour.

The housing development that usually follows the break-up of agricultural land by industry is mostly taken by black-coated workers, and the industrial workers stay in the older housing areas. Development of this type has already begun to eat into the Green Belt area.

Control of the location of industry is essential for control over the size of towns, which in turn is essential for effective planning of the region. The type of industry most amenable to control will be the "foot-loose" industries not tied to any transport or raw material facilities, and particularly the host of smaller firms who will have most need of guidance in choice of sites. Existing towns and new satellites will both be suitable; the latter are best built up in the first place by firms bringing with them skilled male labour and their families.

As roughly 50 per cent. of Greater London's population is at work, it will be necessary in order to decentralize just over a million people, to move out factories employing roughly 248,000 persons, or 1,720 factories with 150 workers each.

Inevitably, most of the new sites for industry will be north of the Thames, but some towns on the south will be suitable for industries serving the London market.

Up to now, decentralization has been a transference of congestion from one large unit to a series of smaller ones, and industrial expansion in any locality must not be allowed to

go on faster than local facilities can be developed. (Slough is the bad example.) The Regional Planning Board must study:

1. The type of industry most suitable.
2. The balance required between male and female labour.
3. The balance between expanding, declining and stationary industries.
4. The liability of industries to fluctuation.
5. The possibility of one industry attracting others.
6. The amount of land to be reserved for these and other late developments.

One-industry towns are not handicapped if the industry is a stable one, *e.g.*, Hatfield (aircraft), Staines (linoleum), High Wycombe (furniture).

Trading Estates

Their advantages are well known.

Their disadvantages are that the industries are often unstable, tending to close down or to move elsewhere if they expand, and to employ young and low-paid female labour, which is socially undesirable. The balance needs to be restored by staple industries employing skilled male labour. The short leasehold area in new trading estates should be limited to a quarter of the total.

Area Needed for Industry

Assuming that half the town population will be at work, and half of these will be in industry, a town of 60,000 inhabitants will need provision for 5,000 employees. In the Greater London area, this proportion may well be less. At 30 persons per industrial acre, the area needed will be 500 acres; but this will vary with the type of industry. Homes and factories should be built as nearly as possible simultaneously.

Banning of industry from London and other large centres will be no advantage in the long run if its location elsewhere is not carefully regulated.

The same principles should be applied to the routine work of commerce as to industry: though here a suburban location will often be preferable to one further out.

Experience has shown that the "zoning" principle is too crude and does not solve the problems of industrial location.

Industrial Proposals Within the Region

These are (*a*) negative and (*b*) positive.

(*a*) *Prohibition* of industry from certain areas, principally the three inner rings. This leaves only the re-location problem, which can be solved by:

1. Going outside the Region.
2. Going to a satellite or area of planned expansion inside the region.
3. Going to a vacant industrial site in the built-up area. This should not be encouraged.

(*b*) *Encouragement* of industry in the selected towns outside the Green Belt ring (some outside the Region).

The decentralization of commercial and business firms is largely unrelated to that of population, as most of the employees live in relatively uncongested regions.

For the possible types of site, the following policies should be adopted:—

(*a*) *New satellite towns*, into which industry should be guided.

(*b*) *Other market, residential and dormitory towns.* Industry should be admitted only if it can present a special case.

(*c*) *Rural villages.* Only industry associated with agriculture, or small scale rural craft industries.

(*d*) *The open countryside.* No industry except in the most exceptional circumstances.

Mineral Excavations

The problem mainly concerns sand and gravel, and chalk clay for cement works.

1. *Sand and Gravel*

A detailed survey should be made to determine where excavation should have priority over agriculture. When excavation ends, filling in and reinstatement of the top soil will be necessary, heaps should be levelled, and old plant and huts removed. The largest pits could become small lakes for boating, bathing and fishing, as at, *e.g.*, Rickmansworth.

2. *Chalk Clay*

This could probably be centralized in the lower Thamesside area, without invading the Chilterns any further. The workings do irreparable harm to the landscape, and the cement works cover the neighbourhood with cement dust. The workings are often too extensive for filling, but the companies could undertake landscaping schemes. Some could be used as open spaces. Control over depth and extent of workings is also needed.

3. *Fullers Earth*

The unique and restricted deposit at Nutfield should have priority over other development.

Brickworks

Regional control is needed. The extensive brickfield in Marston Vale, just north of the Region, could be expanded to cope with any increased London demand.

Industry and Transport

Industrial estates should not be planned where railway sidings cannot be provided for individual factories if necessary; they should also be planned in close collaboration with all transport authorities. Passenger transport is as important as goods.

Decentralization should ease transport congestion. In some areas (*e.g.*, south of Potters Bar) further development should be banned because of the heavy passenger traffic on the main lines.

Industry not using water transport should be banned from Thames frontages or canals (unless water is needed industrially).

Industry likely to need air transport, and industry for the servicing of aircraft, should have space for expansion reserved near freight-handling aerodromes.

CHAPTER 5

communications

The expansion of decentralized light industry using electric power is putting emphasis upon road transport instead of rail and water. Road communications will be essential to the delivery of industry's products. The wartime pooling of delivery vans might be continued and greatly decrease congestion.

A. Roads

Most of the road traffic goes radially in and out of London: a smaller amount is local cross-country traffic. Few of the radial roads (other than trunk roads) allow of more than one lane of traffic either way, which means danger in overtaking as well as congestion.

It would be wasteful to alter the existing roads piecemeal, as they would still have frequent intersections, as at present, to slow the traffic. The through traffic must be segregated on new routes so that it can flow in and out quickly unhindered by this local traffic. The present network would then be used for its original purpose.

Since 1910 motor traffic has increased by over 2,000 per cent., new road construction by only about 2 per cent. Britain's roads have the densest traffic in the world.

Automobiles per mile of road.

Britain	13.7
USA	9.7
Germany	7.0
France	5.6
Italy	3.0
Japan	0.2

Ministry of Transport classification and mileage:

1. Trunk Roads ...	...	4,456 miles
2. Class I ...	...	23,089 „
3. Class II ...	...	17,634 „
4. Unclassified ...	...	135,348 „
Trunk and classified total	...	45,179 miles
All roads	...	180,527 „ less than a 4 per cent. increase since 1899.

Material damage on the roads costs £25,000,000 a year. Defects of the regional system:

1. Lack of co-ordination.
2. Lack of a classification according to use.
3. Lack of mileage.
4. Lack of uniform widths, junctions, directional signs and surfaces.
5. Insufficient control of frontages.
6. Inadequate cross-river facilities.
7. Lack of a complete ring system.
8. Inadequate parking and fuelling facilities, off the highway.
9. Invasion of precincts, leading to accidents and congestion.
10. Lack of co-ordination planning by Highway and Planning Authority.
11. Futility of piecemeal improvement schemes.
12. Inefficient design.

A road should offer: Speed, Safety, Enjoyment.

Natural classifications are:

1. Local roads, with access to buildings.
2. Main roads, from town to town.

As existing main roads offer neither speed nor safety, this plan suggests the creation of the "express arterial" type of road, for motor traffic only—an extension of arterial roads in the County of London plan.

All the types in the Ministry of Transport classification (above) permit mixed vehicular traffic, though cycle tracks are provided.

Along the greater part of the highways a spacious, informal layout will be possible, with natural open landscape on either side.

There are three main advantages of such motorways:

1. Safety.
2. Amenity—as against destroying existing roadside features of the country by widening.
3. Cost, as there would be less dislocation of business.

The suggested new classification (Alker Tripp's) is:

1. *Arterial*
   - (*a*) Express arterial—the "D-ring" and radials.
   - (*b*) Their continuations, with the "B-ring" in the County plan.
2. *Sub-Arterial, or All-purpose*
   - (*a*) Certain Class I and Class II roads.
   - (*b*) Suggested parkway routes.
   - (*c*) Proposed traffic routes, including the "A" and "C-rings" in the County plan.
3. *Local*
   - (*a*) Major and minor local roads, including the Class I and Class II roads, not absorbed in the sub-arterial grid.
   - (*b*) Rural roads for farm work, cyclists, walkers, etc.

Junctions between types 2 and 3 will be at intervals of about 400 yards, which will mean some redistribution of domestic roads. Between types 1 and 2, underpasses and overpasses will be used for the entry of the more important sub-arterial roads, roundabouts for the others. Between arterials intersections will be by roundabouts with under and overpasses. Clover-leaves are unnecessary in the region.

The centres of urban roundabouts could accommodate entries to underground station or public conveniences.

The proposals include:

A Sub-arterial "A Ring"
for all-purpose traffic in the central area.

An Arterial "B Ring"
for fast traffic about the central area.

A Sub-arterial "C Ring"
for all-purpose traffic ("North and South Circular").

An Express-arterial "D Ring"
for express one-purpose traffic.

A Sub-arterial "E Ring"
of parkway types for all-purpose traffic ("North and South Orbital").

Some amendments to the County of London road plan are involved.

The express-arterial "D Ring," at a radius of 12 miles from the centre, is needed to distribute fast traffic between the radials on an orbit that would give definite relief to congestion in the Metropolitan area. Along with the Green Belt, it would girdle the general limits of the built-up area. It would give free access to Thamesside industries and dock-land; link existing and proposive civil airports; relieve any need for complicated intersections; and allow fast traffic to contact the existing road pattern.

B. *Airways*

As a central airport is impossible, a ring of airports is needed, equally accessible from the centre. Besides the surface traffic involved, air congestion is also an important factor. The development of vertical landing may make possible smaller landing-grounds nearer the centre. One airport will be of an international or trans-ocean type: this will need extremely careful siting. The alternative airport probably necessary to offer different weather conditions will be outside the region. The smaller airports will probably need to be graded in a few years for different types of aircraft for varying distances of traffic, but to begin with, the suggestion is to treat each site as all-purpose, and open them one by one. On wartime airfields, which are not needed for RAF or civil purposes, the concrete runways and roads could be used as foundations for buildings, and many of the roads and services put to use.

C. *Navigable Waterways*

Water is probably the cheapest form of transport. The centre of the inland waterway network is Birmingham; maintenance of the canal system from the Midlands to the Thames will be important. It will probably be widely used for petrol and the building industry.

Proposals are:—

1. Canal frontages to be planned.
2. Some locks to be reconstructed.
3. Increased access to Park Royal and Slough.
4. Central collection and distributing centres.
5. Cleaner and tidier canals.

D. *Railways*

Proposals for the railways in the region are largely governed by the proposals for the County of London Plan. One consideration affecting the region closely is the point at which steam traction is to give way to electricity.

Passenger Traffic

Decentralization should mean less daily travelling, but plans to increase carrying capacity should not therefore be scrapped. The County plan proposes closer connection between the Tubes and the electrified suburban sections of the main lines.

Goods Traffic

Decentralization may increase goods traffic. New industrial sites have been chosen with a view to access by rail as well as road, but new sidings will be needed: a few single tracks must be doubled, and the airport will need a short new line. Electric traction is suggested as advisable for goods as well as passengers; also fewer goods stations, to act as collecting and distributing centres; and more modern methods of hand-

ling, etc. Some sorting yards should be moved out of the inner residential areas. The outer Goods Ring suggested by the County plan would receive two main branches extending from its north-west sector, one to the West Ham and Tilbury Dock areas, and one south-westwards to Norwood Junction.

E. *Markets*

Decentralization has long been desirable, for better and cheaper distribution of food, as well as to relieve congestion. Major regional market centres, with refrigeration facilities, and some local distribution centres are suggested: they should have access by rail, road and water, if possible.

CHAPTER 6

land classification and agriculture

The region has extraordinary variety of soil, in kind and quality, ranging from extremely good to poor, as shown by the following classification:—

1. *Good*
   - (*a*) First-class land, *e.g.*, South Middlesex, South Essex, North Kent.
   - (*b*) Good general purposes farm-land, *e.g.*, North Essex, Hertfordshire.
   - (*c*) First-class but liable to flood, *e.g.*, Thamesside Marshes.
   - (*d*) Good but heavy, *e.g.*, the better-drained London Clay lands.
2. *Medium*
   - (*a*) Light, *e.g.*, the chalk downs.
   - (*b*) General purpose, usually patchy in quality, *e.g.*, Chilterns and North Downs.
3. *Poor*
   - (*a*) Heavy, *e.g.*, the worst London clay lands.
   - (*b*) Mountain (none in the region).
   - (*c*) Light, *e.g.*, lowland heaths of Surrey.
   - (*d*) Poorest.

CHAPTER 7

outdoor recreation: open spaces

The dominant factors are:

1. Acreage in relation to population.
2. Geographical limits to building.
3. The motive of urban escape.
4. Balance between games, walking and rest.

The plan distinguishes between:

1. Land reserved against building, to which the public has full access.
2. Land reserved against building, to which the public has no access beyond normal rights of way.

The proposals for open spaces are based on standards of either 7 or 10 acres per 1,000 of the proposed population, in each of the local authority areas of the Inner and Suburban Rings. When added to the 8,273-acre deficiency in the County plan, the resulting figures represent the total acreage of open space needed in the built-up area. Inside the Inner and Suburban rings a system of green wedges has been worked out from which building is to be banned, and to which full public access should gradually be obtained.

One important purpose envisaged for the open spaces is to allow of visits by schoolchildren from the central area to picnic and camping grounds or to parks and buildings of cultural value.

The revolutionary feature of the open space proposals is that on all the background land, outside the areas delimited for building, no new building is to be allowed. This lessens the need for wholesale public acquisition of open areas, but will mean revision of some projected sewerage schemes. One specialized type of reservation is that of the well-head intakes of water authorities, to avoid pollution. Other instances are old parks, village greens, focal points such as the Crystal and Alexandra palaces. Space will also be needed for allotments, which have not been allowed for in calculating the open space deficiency.

The suggested components of a park system for Greater London are:—

1. Young children's playgrounds, ¼ mile apart.
2. Rest Gardens, etc., within the built-up area.
3. School playgrounds and fields, if desired combined with—
4. Landscaped town parks.
5. Playing-fields for older children and adults.
6. Recreation and sports centres.
7. Connecting and radiating parkways.
8. Varied open wedges.
9. Small green belts and strips bounding communities.
10. Commons and heathlands.
11. Thames, Lea and other rivers.
12. Green Belt reservations, Downs, Hills, Forests, Woodlands, Outer Parks.
13. Areas of high scenic value.
14. The outer farm country.

The proposals will call for a highly skilled staff of landscape designers.

Forestry is essential to preserve woodlands, though there is little scope in the region for commercial afforestation.

Administration calls for an Open Spaces Board with a highly skilled staff, to be responsible for looking after these open spaces.

CHAPTER 8

community planning: standards

In the Inner and Suburban Rings the task is mainly one of defining, completing and reclaiming existing communities.

In the Green Belt and Country Rings it is one of preparing positive plans for existing, expanding and new communities.

Since town planning should envisage all the major interests of life, it is necessary to provide for these within the community or near to it. Motor traffic destroyed what remained of the nineteenth century community pattern; the regional road plan will remove its destructive effect.

Integrated communities are also necessary to enable the plan to be periodically reviewed, unit by unit.

The standards for the relative proportions of land for *housing, open spaces* and *other purposes* have been worked out for neighbourhoods with 10,000 of population, which is the suggested maximum for social units in the region. "Other purposes" include:—

1. Primary schools.
2. Shops, offices, etc.
3. Community buildings, churches, etc.
4. Public buildings.
5. Services, industry, workshops.
6. Main roads and parking.

The acreage allowed for each purpose increases with the distance from the centre, the population density decreasing in proportion.

Housing standards include the floor-space ratios of:—

3-bedroom house ...	...	200 sq. ft.	per person
2-bedroom flat ...	...	200 ,,	,,
1-bedroom flat ...	...	225 ,,	,,
Bed living-room flat	...	275 ,,	,,
Hostel (communal living)	...	250 ,,	,,
Hotel	...	175 ,,	,,

Each community would be composed of neighbourhood units, each of which would represent a stage in the development plan.

For outdoor recreation there should be at least 10 acres of open space to every 1,000 residents. The plan details the acreage required for sports and athletic grounds of various types.

The æsthetic dullness of playing-fields should be minimized by avenues of trees and shrubs, and by well-designed pavilions, terraces, etc.

Land for schools, which is likely to be increased under new legislation, is assessed at 269 acres for a satellite of 60,000

persons. The plan suggests rough principles for the location of different types of school.

For shops, the proportion of one shop to 75 persons is suggested, or about 800 in a town of 60,000. The acreage for shops and offices would be 35-50.

There would be 10-15 churches, with sites of at least half an acre, and space for a hall and other rooms.

A central library would be required, and branch libraries where the population is over 50,000.

From the other public buildings, swimming-baths have been chosen for detailed specification of type, area and number required.

The joint hospital authorities to be set up under the national health legislation would work closely with the planning authorities, to regulate the provision of hospitals and clinics.

CHAPTER 9

public services

Water

Extensions of the existing water supplies to new areas created under the plan will present no special difficulty.

Gas

The same is true of gas. Gas-producing units will continue to become fewer as companies are combined.

Electricity

There is need for much greater standardization of methods, voltages, equipment, etc., which calls for unification of undertakings. This is urgently necessary to avoid the need for drawing on different undertakings for the same new area.

A Regional Electricity Board seems desirable, to take over the existing undertakings.

Electricity might be used to pump water from local sources in rural areas.

If overhead cables are necessary, they should be sited with æsthetic values in mind. Smoke from generating-stations, *e.g.*, at Barking, also needs control.

Sewerage

The 1935 report on drainage recommended:—

1. Co-ordination within a 25 miles radius.
2. Ten, or fewer, disposal works.
3. Further sewerage and disposal works to conform to this.

The plan proposes detailed applications of these principles.

Sewage works passing into disuse should be kept as open spaces.

The system of refuse disposal by private contractors should be abandoned.

District Heating

This is still under investigation, but might be practicable where built-up areas are being reconstructed.

CHAPTER 10

detailed analysis of population and industry on existing and new sites

(This chapter consists of a detailed survey of the region, area by area.)

CHAPTER 11

detailed studies

(Sample proposals for Ongar and Hatfield.)

CHAPTER 12

the provision of dwellings

Up to a density of 75 persons per acre, all dwellings can be houses. Above this figure, 20 per cent. must be flats. The proportion of houses to flats in the combined areas of the County and Regional plans are likely to be:

8,408,000 persons in houses.
1,548,000 persons in flats.

An analysis of families ranging from 1 to 7 persons suggests that the 1,033,000 persons to be decentralized comprise 346,029 families, requiring as accommodation the following:—

60,245 1-bedroom flats,
100,643 2-bedroom houses,
133,891 3-bedroom houses,
16,903 4-bedroom houses,
10,330 5-bedroom houses,
and hostel accommodation for
24,017 further individuals.

Re-housing (as distinct from decentralization) in the Inner Urban ring is harder to estimate.

The appointment of a Regional Director of Population Distribution is suggested.

CHAPTER 13

design and amenities

It is not possible to give detailed guidance in the difficult matter of house design, but it is suggested that the public's alleged bias in favour of semi-detached types might be overcome by the attractions of other amenities.

Monotony can also be avoided by means of varied silhouettes utilizing public buildings and trees.

All the major engineering works involved in the plan should be considered from the standpoint of design from the start.

The preservation of existing amenities is a separate, and equally important task.

CHAPTER 14

administration

Parliament should be asked to create a Planning Authority, responsible to the Minister of Town and Country Planning, to ensure that future developments in the area conform to a Master Plan. This would be based on the County, City and Greater London plans. These, modified and unified by the Minister, would be handed to the Board, which would approve statutory schemes prepared by Joint Executive Committees representing the various local authorities in each area.

The board would also be responsible for executive functions, including those of:

A Regional Open Spaces Board.
A Housing Corporation.
An Industrial Controller.
A Regional Public Cleansing Department.
A Population Controller.

The Board will also take action to curb the excessive expansion of certain towns which are aiming to grow as big as possible.

Financial Aspects

Benefits which should accrue from the plan include:—

Reduction of transport costs.
Avoidance of wasteful development.
Reduction of accidents.
Saving in cost of land.

Period Realization

The actual constructional work of extensions to existing towns and creation of new towns, representing a population of 1¼ millions, could be reckoned as occupying a period of ten years, beginning two years after the war.

The whole change may take longer than a decade, as industry may not be able to move out at once, and some workers will be delayed.

The rebuilding of congested areas will inevitably take longer than the building of new houses.

The regeneration of obsolescent houses will be in a still lower category of urgency.

Some, but not all, of the road plan, would be accomplished in the first period.

The first period would also see some airport extensions, and certain railway developments, mainly electrification.

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

1835 FWA *Pamphlet*

POST-WAR URBAN REDEVELOPMENT. (*USA Federal Works Agency pamphlet*, 1944.) Suggestions for redevelopment to overcome distressing conditions resulting from gridiron street system. Free planning within grids ½ mile wide and 1 mile long.

The gridiron system ignores the functional differences between streets. Streets occupy far too much land. None are entirely satisfactory either as through traffic arteries or as local streets, and every intersection is a danger point.

The suggestion is made that neighbourhood blocks contained within gridiron rectangles of ½ mile wide and 1 mile long, should be created. Within each neighbourhood the gridiron should be entirely eliminated and new streets laid out to handle only local traffic. Access to the major traffic ways should be at intervals of only ½ mile.

(This FWA statement is reviewed in *The American City*, April, 1944, p. 39 and pp. 51-52.)

1836 *Education*

PATRICK GEDDES, MAKER OF THE FUTURE. *Philip Boardman.* (*University of North Carolina Press*, 1944, 5 *dollars*.) First full Biography of Professor Sir Patrick Geddes, Scots biologist and father of town planning surveys. Teacher of Mumford, and inspirer of regional planning and school of post-garden-city planners.

Geddes practised synthesis in an age of specialization, and stood for the insurgence of life in a world that submitted ever more completely to mechanized routine.

The Edinburgh Outlook Tower epitomized Geddes' teaching. It represented a vantage point from which could be seen a natural region between mountains and sea; a focal point at which to unify all the specific outlooks; an index museum wherein to show and interpret all that the region contains; an institute of active social planning; an educational force *par excellence*. Here ideas were to be seen rather than read.

"If you wish to shape effectively the growth of your town, you must first study it, and from every conceivable point of view. . . . Civic architecture and town planning are not merely the products of council chamber or drawing office; they are expressions of local history. . . . The only real and well-fitting shell is that which the snail—or city—throws out from its own life at its growing periods. That is no doctrine of *laissez-faire*; it is simply the recognition that each generation, each group, must express its own life, and thus make its contribution to the city in its own characteristic way." Thus Geddes in 1910.

In the field of town planning, Geddes directly affected work in India, Palestine, Ireland, Norway and Britain. Tel Aviv and Dublin in particular know the debt they owe to him.

Most people only know Geddes via Mumford, but if one would know something of him at first hand, there are: *City Development* (the Dunfermline report, 1904), *Cities in Evolution* (1915), *Ideas at War* (with Gilbert Slater, 1917), *Life: Outlines of General Biology* (with J. Arthur Thompson, 1931)—especially the last chapters in Vol. II.

STRUCTURE

1837 MOW *Building Study*

BUSINESS BUILDINGS. *The Ministry of Works Post-War Building Studies No.* 16. *By a Committee convened by the RIBA*, 1944 (*HMSO*, 1s.). Principles for planning and general treatment of office buildings, shops and stores, factories, warehouses and storage buildings. Site development. Plan analysis. Floor heights, column spacing, corridor widths, etc. Structure and materials. Services and equipment. Bibliography.

The terms of reference of the Committee were as follows: "To review practice in designing business buildings and formulate principles for the planning and general treatment of such buildings in the post-war period."

The Committee did not attempt to produce a text-book of formulæ or standard patterns. Its aim was to indicate the fundamental requirements which should govern the design of certain types of buildings. There are innumerable different types of business building, and it would be impossible to analyse within one report the requirements of each. Attention has been concentrated on four types, which are enumerated above. After an introductory section dealing with site development in general (with particular reference to in-city office buildings), a plan analysis of each of the four types is given separately. In the case of shops and stores, factories, warehouse and storage buildings, the particular site problems connected with each type are included in the plan analysis of that type.

The report purposely refrains from giving "typical" plans which might retard progressive planning. It suggests certain figures for floor heights, spacing of columns, widths of corridors, sanitary accommodation, etc.; describes several types of layouts, and stresses the importance of human values as one of the guiding principles of every design. In connection with factories, it points out that proper planning cannot start without the closest collaboration with the production manager and with the planning department of the factory organization. The plant equipment and floor area required for each department must be recorded on a Process Chart, and a Routine Chart must record the progress of all materials, starting with the reception of raw materials or components, and ending with the dispatch of the finished and assembled product.

The necessity of control in the erection of buildings is recognized, "but this control should imply the sympathetic supervision exercised by properly constituted bodies of qualified persons of informed and broad outlook in the administration of a new code of practice." "There is an obvious need for a drastic overhaul of existing legislation and by-laws. Improved standards should be adopted and brought under a new code of building practice *for general application throughout the country*." (Reviewer's italics.) "The

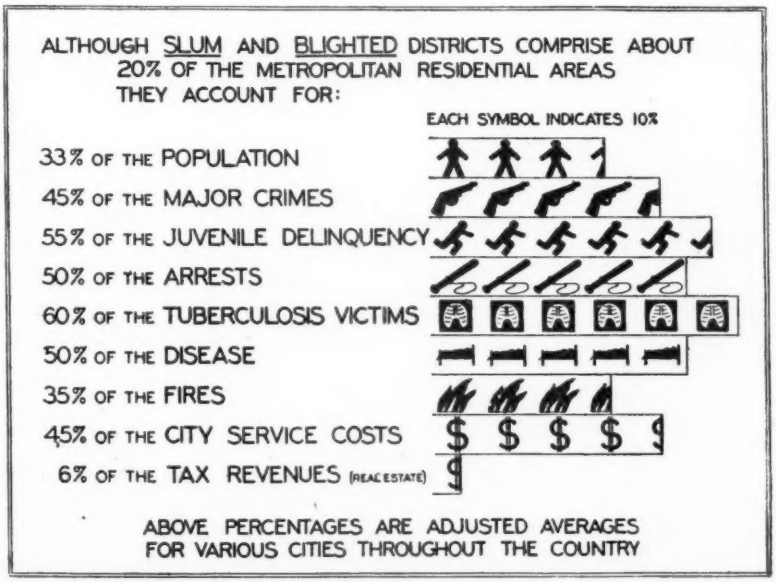


Diagram from the USA Federal Works Agency pamphlet, Post-War Urbn Redevelopment. *See No.* 1835.

new code of building practice should not only be revised at reasonable intervals to allow for further knowledge and further changes in outlook, but should also allow wide discretionary powers to be exercised by the qualified consultant bodies to ensure that schemes of outstanding importance and value to the community are not disqualified by restrictive terms intended to have a narrower application." One can only hope that these suggestions will be implemented by the responsible authorities.

Section 7 deals with "Structure and Materials." It is one of the main structural requirements that internal alterations must be easy in order to satisfy changing conditions and to delay obsolescence. "Ideally, each business building should be planned and constructed for a definite life-period after a careful balance of initial cost, maintenance and probable obsolescence, and its initial cost should be written off within this period."

Regarding superimposed loads, reference is made to the LCC By-laws, 1939, in which the load for slabs in offices is specified as 80 lb./sq. ft., with a minimum of 3/8 tons per ft. widths, uniformly distributed. The corresponding figures in the British Standard Code of Practice, CP4:1944, Chapter V, are 50 lb./sq. ft. and 400 lb. per ft. width respectively (see Inf. Centre No. 1776).

The statement that the vast majority of business buildings of all types to be erected after the war will be of the framed type rather than with load-bearing walls, is reassuring. The two alternatives—reinforced concrete and steel (either cased or uncased)—are compared. The Committee recomemnds that legislation should allow readier facilities for a combination of steel and reinforced concrete.

In England single-storey large-span business buildings have in the past been nearly always constructed in steel with all roof members uncased. The roof covering has then been applied as deadweight. "There is no doubt that this method will continue to be used, but it is also certain that large-span reinforced concrete construction should and will be used in England very much more than it has in the past. The stressed-skin structure—related to the system that has revolutionized aeroplane construction—is a logical outcome of the use of reinforced concrete and, before the war, remarkable instances of its successful application in markets and hangars were occurring on the Continent—notably in Germany, France and Switzerland. In England this development has been retarded partly owing to a steel tradition and a lack of skilled experience in the handling of reinforced concrete, and partly owing to severe building regulations. This Committee hopes that assistance may be given not only to research, but also to the education and training of operatives in the treatment and handling of this type of construction." (See A.J., September 21, 1944, pp. 211-9.)

The Committee realizes the advantages of welding in steel-framed construction. "Vast changes within the industry, both in layout and in training, must be put into effect before the general application of welding technique to steel-framed building can be made possible." It suggests the rolling of broad flange sections which are particularly suitable for columns and popular on the Continent.

The classification of suspended floors in four categories: reinforced concrete, hollow tile, hollow beam (or "precast slab") and filler joist is, perhaps, misleading. Hollow tile floors and hollow beams are also reinforced concrete floors. It would be more correct to distinguish between solid slabs and slabs with cavities or between pre-cast, partly pre-cast, and cast *in situ* floors.

Nine standard types of steel roof units are enumerated, and reference is made to a number of special types. An illustration of all these would have been desirable, since many readers may find it difficult to visualize the various types.

In Section 8, *Services and Equipment*, the duty of the architect is emphasized to direct "the work of the consultants and engineers on the schemes for the various services at an early stage in the development of the building plans," and, at the same time, to refer "all questions relating to the supply of water, gas, electricity and telephones to the local authorities and undertaking companies responsible for these supplies." This section considers the requirements of fire protection, plumbing and sanitation, heating and ventilation, artificial lighting and power, handling of goods and other services of equipment.

The bibliography at the end contains some useful references.

(On page 70 the following sentence occurs: "A lime-plaster skin on plasterboard can give a satisfactory ceiling finish." This sentence is, we understand, being withdrawn from future reprints, as it is incorrect. Lime plaster does not bond to plasterboard, nor does gypsum plaster if lime is mixed with it.)

MATERIALS

1838 — *Transmuted Wood*

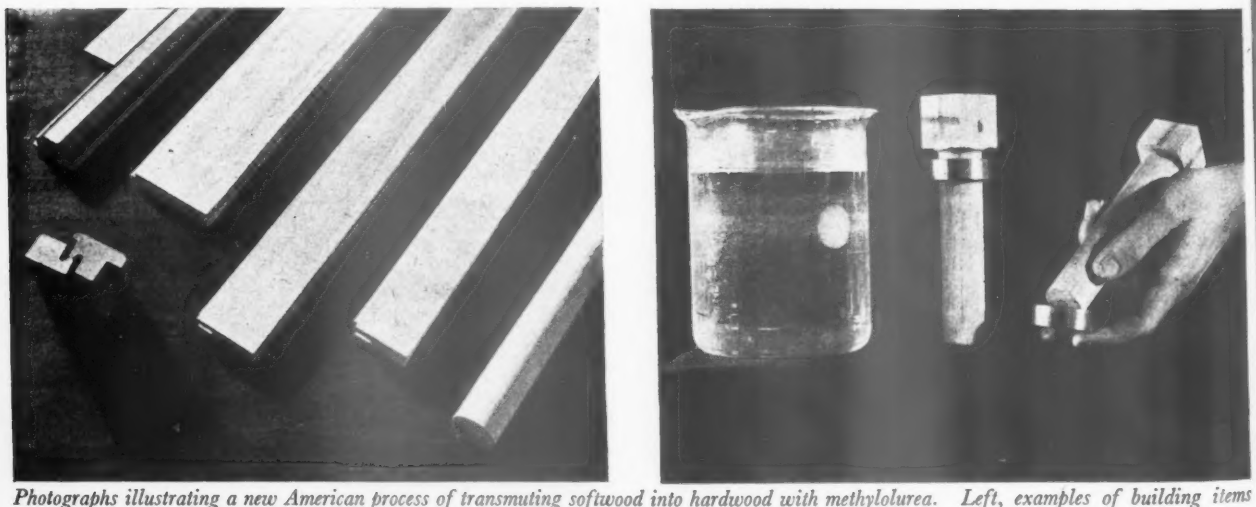
CHEMICALLY TRANSMUTED WOOD. *Treatments developed by Dr. J. F. T. Berliner (American Du Pont Company).* New American experimental process making softwood into hardwood with methylolurea. Greater strength, wearing qualities, hardness, resistance to warping and swelling. Retention of natural colour. Flame and rot resistance improved. Impregnated self-bonding veneers. Full cell impregnation.

New chemical treatments developed by Dr. J. F. T. Berliner, of the American Du Pont Company, virtually endow wood with properties of plastic, and give it added strength, wearing qualities, hardness and resistance to warping and swelling. For example, it is now possible to treat poplar, a very soft wood, so that it becomes as hard or even harder than maple, and to give it other desirable properties besides from the point of view of furniture manufacturing, building trade, and many other walks of industrial and commercial life.

Investigations on chemically transmuted wood, *i.e.*, on production procedures, properties and applications of methylolurea treated wood, give hopes for great development in post-war time. The process is just emerging from small scale tests towards industrial adaptation on a grand scale.

When sufficiently treated, the wood is more dimensionally stable under varying conditions of atmospheric humidity, does not show grain raising, is markedly hardened, can be highly polished, is stiffer, more durable, denser, has increased wearing qualities, and has much higher compressive strength as well as increased strength in tension, particularly across the grain. The treatment of wood eliminates the tendency of some woods, particularly softwoods and some soft species of hardwoods, to tear, shred, splinter, and crush when cut, turned or worked. Treated woods retain their natural colour. Water-soluble wood dye stains may be introduced with the impregnating chemicals, if colour is desired.

The treated wood may be compressed to any desired specific gravity up to about



Photographs illustrating a new American process of transmuting softwood into hardwood with methylolurea. Left, examples of building items which can be treated; in left foreground and at top left are sash window sections treated to eliminate sticking windows; at centre from left to right are sections of pine, gum and maple flooring with a dowel at right. Right, brass rings are slipped on identical treated and untreated dowels and the dowels placed in water for 24 hours. Water swelled the untreated piece so that the brass ring could not be moved. The treated dowel showed no observable dimensional change and the ring slipped off freely. *See No.* 1838.

PATENT WELDED TUBULAR CONSTRUCTION

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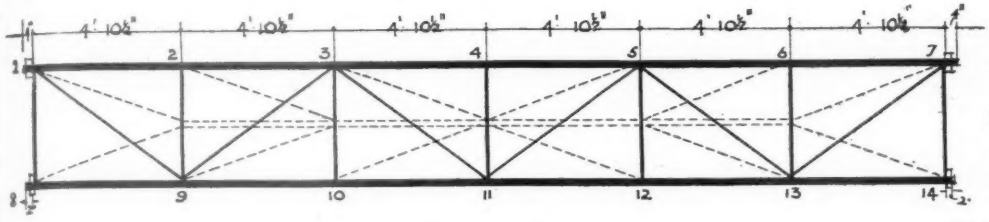
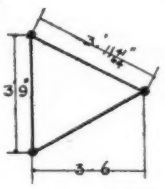
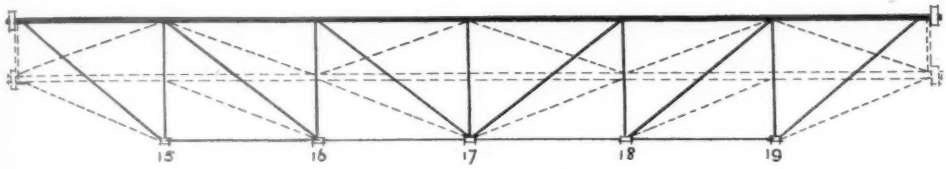


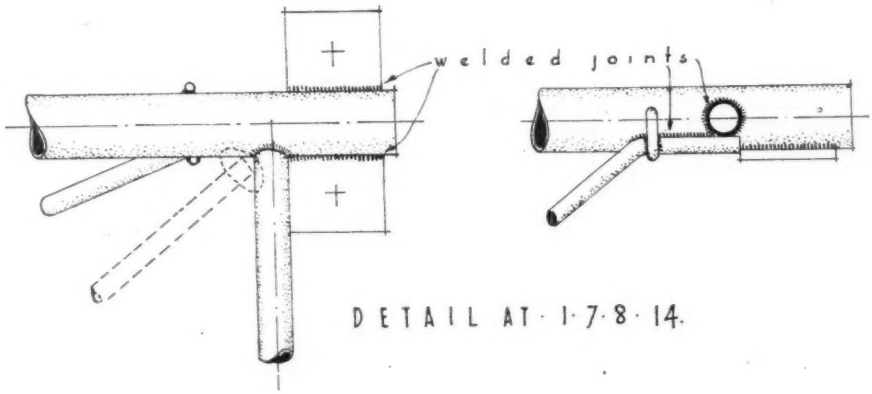
PLAN



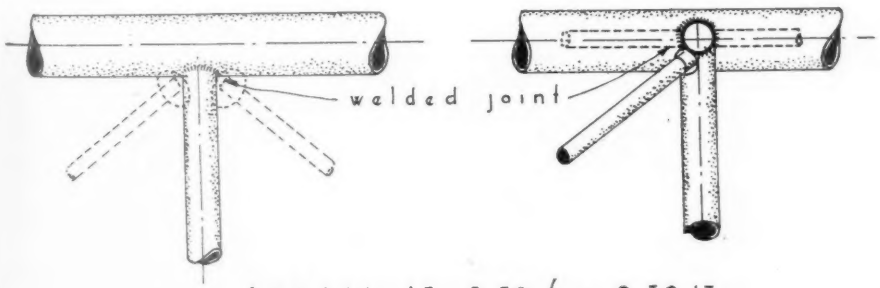
TYPICAL SECTION



ELEVATION



DETAIL AT 1·7·8·14.



DETAIL AT 2 TO 6 & 9 TO 13

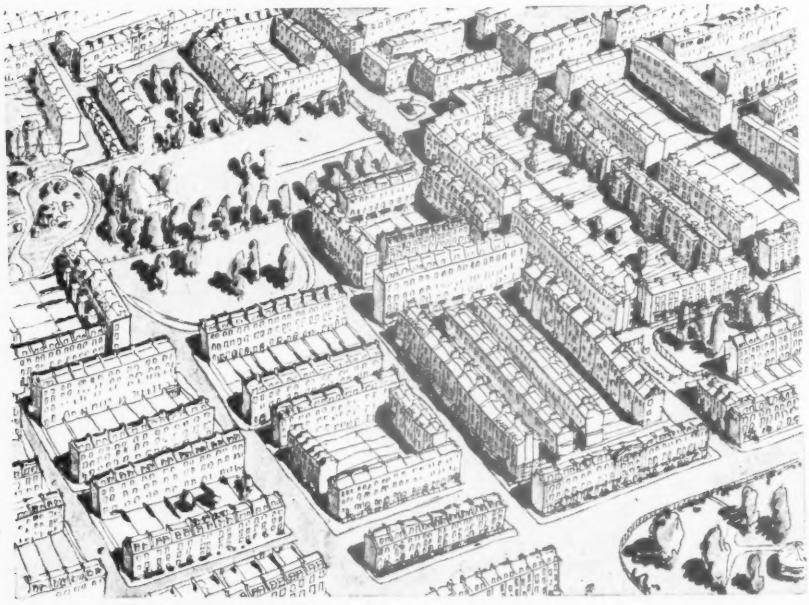
PURLIN FRAMES

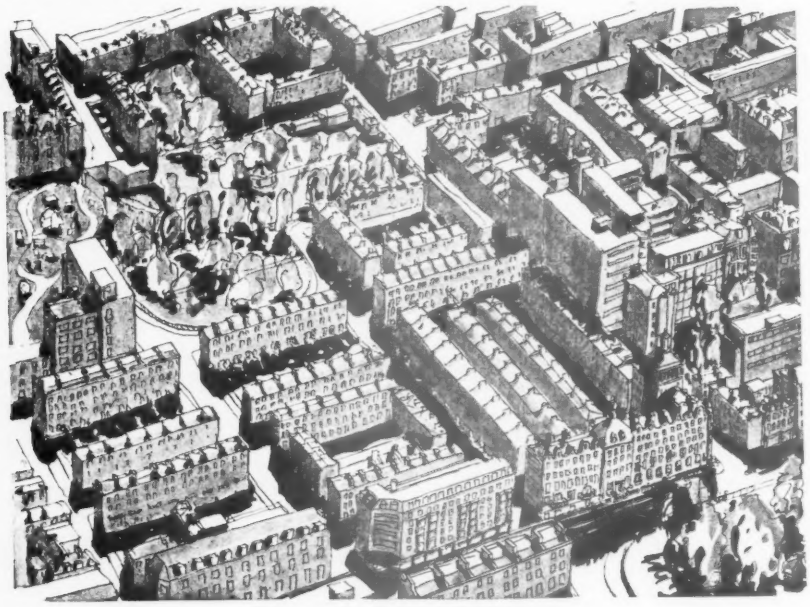
The purlins are space frame work acting as wind bracing at the same time. The great depth available allows economy to be made in the use of material. All compressive members are tubular, all tensile members are round steel bars.

Note the special connections of the members shown in the welded joint details.

NOTE.—These Data Sheets are appearing fortnightly in THE ARCHITECTS' JOURNAL *—the complete series is available in Folder Form and application for copies should be addressed to Scaffolding (Great Britain), Limited, Saunderton, Princes Risborough, Bucks.*

BUILDING FOR DAYLIGHT



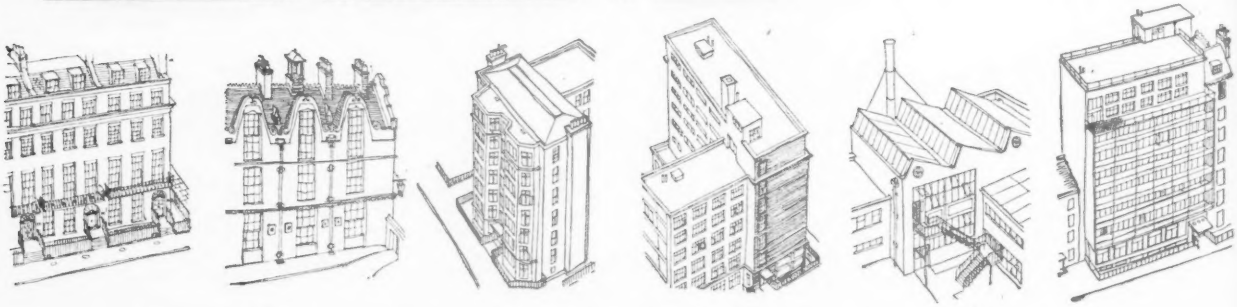


No. 4
FACTS ABOUT GLASS FOR ARCHITECTURAL STUDENTS

Area showing layout typical of late eighteenth and early nineteenth century building development. The three most widely used types of housing layout are included, each based on the terrace house : (a) houses facing direct on to street front without access from back, (b) street frontage with mews between blocks, with separate access, (c) houses planned round a square with central garden, with or without back access. Reasonable day-lighting is secured for ground floor rooms and floors above, though orientation is not considered, house plans being identical on each side of street or square.

Contemporary development of the same area has reduced the standard of day-lighting. This is due partly to the increase in height and extent of existing Georgian and Regency houses to give attic accommodation and additional rooms at the back, and to the demolition of original domestic buildings and their replacement by others much larger and higher. There has also been a general increase in density owing to other buildings being inserted between the terraces, often over, or in place of, mews.

The new buildings in such an area are cramped, not only by difference in height, but difference in function : the area ceases to be residential, and becomes a chaotic mixture, with small regard for the special day-lighting needs of each type of building.



This is published by Pilkington Brothers Limited, of St. Helens, Lancashire, whose Technical Department is always available for consultation regarding the properties and uses of glass in architecture.

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where architectural students may get advice and information on all questions relating to the properties of glass and its use in building.

1.4 to produce a stable and extremely strong, hard product with closed grain requiring no filling. If polished or embossed faces are used in the presses, these finishes are reproduced on the surface of the resinified wood. Thus, in some instances, items may be treated and then brought to their desired final dimension by pressure and heat, eliminating the usual finishing operations. Scratched or marred surfaces may be restored by polishing.

Within the limits of how well different species can be impregnated, one species may be substituted for another or used for purposes for which they were not previously suitable. Thus, lower cost or more available woods or woods having more favourable colour or grain characteristics may be utilized. Wood may be endowed with the properties required, and one need not be limited by the natural characteristics of wood.

Treated veneers have increased strength and stiffness, and may be used to form dimensionally stable plywoods and laminates that will resist checking and splitting. It may be practicable to treat plywoods and laminates if suitable adhesives have been employed.

When veneers are sufficiently impregnated and dried, they become self-bonding under the heat and pressure of the hot laminating presses, and no other adhesive is required to form plywoods. The heat of the press fuses the resin formed in the wood, resulting in a hard, densified product reproducing the surface finish of the platens. This surface or outer zone effect can also be obtained on heavier dimensions if the wood has been dried under conditions that have not completed the resinification of the methylolurea.

Preliminary tests indicate that the modulus of elasticity of treated wood, divided by the density, is a constant.

As far as is now known, the treatment does not have any adverse effect on the gluing and finishing characteristics of the wood. The flame resistance of the wood is improved and the wood is more resistant to the action of most chemical agents, to fungi, rot and pest infestation. These are properties on which further studies are required before quantitative information is available. The resin formed in the wood has no odour, is not toxic, is not affected by organic solvents or water, and does not affect the colour of the wood.

The process appears applicable to the sapwoods and heartwoods of a large variety of species of softwoods and hardwoods. Sapwoods impregnate easier than hardwoods, and apparently the heartwood of most hardwoods is more readily impregnated than the heartwood of softwoods.

A water solution of uncondensed methylolurea is impregnated into the wood structure. The methylolurea is converted to resin within the wood by the natural acids present in the wood. Heat, such as in normal kiln drying, speeds the conversion of the methylolurea in the wood to water-insoluble resins. However, this process takes place with sufficient rapidity at normal temperature to be completed in the usual air seasoning period. Resinification at normal or at kiln temperatures develops a hard, insoluble, permanent resin within the wood structure. If the kiln drying has not been at too high a temperature or if conducted rapidly enough, the resin will still be in a fusible state and will remain so for a period of time. If wood so dried is heated to 240 deg. F. or higher, the resin fuses and will flow under pressure, and the resinification is rapidly completed to the infusible state. The wood will then be set, that is, it will permanently retain the dimension and surface produced by the compression, showing no changes when subjected to the action of water or moisture at moderate temperatures.

The solution may be impregnated into wood by various means. The procedure that is believed to be the most satisfactory is the Full Cell impregnation process. The dry wood (as dry as practical, but in any event dried well below its fibre saturation point) is placed in a chamber and the air withdrawn. The solution is then introduced into the chamber in sufficient quantity to cover the wood and allow for the volume of solution which will be absorbed. The chamber is then opened to the atmosphere or air pressure applied. After a determined period, the solution is drained off and the wood removed for kiln-drying.

For most items a vacuum period of 20 to 50 minutes and an impregnating period at pressures up to 100 p.s.i. for 20 to 50 minutes result in sufficient impregnation to produce observable effects on the properties of the item treated.

It is preferable to treat the wood article in near its finished form rather than as the rough blank. This conserves chemicals, increases the capacity of the treating unit, and reduces impregnation time. The items to be treated need not be separated or spaced, but may be bulk piled in the treating chamber or loaded in bundles or baskets, if small items are being considered. During the treating operation, the wood will expand. Allowance should be made for this expansion in charging the cylinder with the wood to be treated.

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.*

1839 Whitewash

Q *Would you kindly inform me which is the traditional specification in the North of England for whitewash, for external use. I normally use a whitewash mixed with tallow and alum, salt to prevent flaking, and blue to procure a whiter surface. Is tallow now procurable? If so, what is a likely source of supply?*

A 1. Practice varies with the particular user and we have not been able to trace any publication which lays down a specific northern practice. In our opinion this is generally based on the particular user's experience and no general specification which can be applied to the North of England exists.

2. As might be expected, publications vary considerably in their recommendations and it is difficult to pick upon a typical specification. J. T. Rea gives the ingredients for a typical specification, in detail, in his book *How to Estimate*, and the two references in this book are quoted below.

3. In the absence of any specification which could be assumed to represent standard practice, we have been in touch with the Building Research Station. Their reply is also quoted below.

4. Tallow is obtainable in small quantities from builders' merchants, but we do not know of any source from which tallow can be obtained in large quantities, at the present time.

External limewhite: Extract from *How to Estimate*.

Page 151. *Limewashing on brick walls. Quantities per* 100 *yds.*

sup.	1 *coat.*	2 *coats.*
Slaked white chalk, common or fat lime ..	1 ft. cu.	1⅝ ft. cu.
Clean chopped tallow for binding	¾ lb.	1¼ lb.
Clean hot fresh water for dissolving	10 gals.	17 gals.
Two labourers mixing and brushing	6 hrs.	10 hrs.

8 lb. alum or 5 lb. salt, wetted in 2 gals. water will prevent scaling.

Page 639. *Limewashing and Limewhiting.*

External whitewash should have 2 lb. of sulphate of zinc and 2 lb. common salt to 1 bushel of slaked lime, to resist the weather. Sometimes 2 gals. of milk should be added.

Building Research Station reply to an enquiry about tallow washes. The basis of most recipes is the mixing of a quantity of tallow, which may vary from 2 to 20 lb., into a bushel of quicklime, which will melt and combine with the tallow in process of slaking and form a homogeneous mixture with the lime and water. One reason for the wide variation in the proportion of tallow is that when pigments are added in quantity considerably more tallow is required. A useful mean to remember is 5 lb. of tallow to a bushel of quicklime. It is necessary to place the tallow in the centre of the mass, and the heat can be increased by covering with sacking. If the quicklime is slow then hot water should be used. When the mix is cool, thin with water to the required consistency. A disadvantage of a tallow wash, in common with plain lime washes, is that when wet with rain it is no longer opaque. This may not be noticeable if there are existing coats beneath it, but may cause disappointment in wet weather in cases where a new wash is applied to brickwork. For this reason pigments are often added. These pigments must be "lime-fast," such as the earth colours or any pigments conforming to British Standard 1014. It is to be remarked that the addition of a little black to form a pale grey is sufficient to give opacity. A pigmented wash must be kept stirred during application. Tallow washes can only be applied in one coat and have good covering power. Where sites are not very exposed, a tallow wash will remain in good condition for at least a year.

When tallow is not available, a measure of waterproofing capacity can be given to a limewash by adding 1 per cent. of calcium stearate in powder form.

There are several traditional formulæ for plain limewashes which give fair results (see ARCHITECTS' JOURNAL, 1923, 57, June 13, *Washes for Outside Work*). They chiefly consist in a basis of lime (not whiting), thoroughly slaked and thinned to a cream to which various additions are made, such as salt, alum, powdered glue. Salt can be added in the proportion of 15 lb. common salt to 50 lb. of hydrated lime, or the putty obtained by a careful slaking of half a bushel of lump quicklime with 7½ gallons of water. The effect of the salt is probably to hold the moisture and facilitate the carbonation of the lime. The addition of a small quantity of alum improves the working qualities and is thought to increase the hardness of the surface. Lime-glue formulæ usually require a weight of glue about one-twentieth of the weight of lime used.

Since an important factor in the cost of renewal lies in providing access to the work, it is obvious that washes requiring frequent renewal are more suitable for buildings of moderate height. Also, where walls are sheltered by ample eaves or cornice projection they may be expected to remain longer in good condition.

Portland cement slurries applied at a cream consistence have been successfully used; often white cements are preferred as giving a better appearance. They impart a certain waterproofing effect to the wall but, as a rule,

are liable to surface crazing which renders them rather unsightly for close inspection. The crazing can be reduced, though not eliminated, by adding lime; a moderate waterproofing effect may be retained in mixes containing one part of cement to two parts of lime by volume. In application a slurry would be made of lime in the form of a hydrate or putty, mixed with water to a thin cream consistence and the cement would be stirred well in. The life of a slurry coating will be rather variable, but on brick it may last for periods up to ten years.

SOCIETIES AND INSTITUTIONS

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 economize 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.

NHTPC

W. S. Morrison

March 1, at the Central Hall, Westminster. At the opening session of the CONFERENCE OF THE NATIONAL HOUSING AND TOWN PLANNING COUNCIL. Speech by W. S. Morrison, Minister of Town and Country Planning.

W. S. Morrison: My Department intends to administer the Town and Country Planning Act of 1944 in a constructive spirit. Taken as a whole, this Act represents the greatest single legislative advance in the planning field since the Town and Country Planning Act of 1932. As regards positive planning, it is the greatest advance ever. In administering the Act, its underlying nature as a true planning measure will be kept constantly in view.

I regard this Act as a planning Act in the fullest sense of the term. It is much more than an Act for the mere acquisition of land. Under it the process of acquisition is in fact conditional upon proper planning by the Local Authority, who, having acquired ownership, will dispose of the land, principally by way of lease. I cannot read anything into the Act which would justify piecemeal redevelopment. The differences in procedure as between areas of blitz and blight carry with them no such implication. Of course, the job must be done by stages, but not by unrelated stages. The Act confers, too certain important new powers for the acquisition of land for planning purposes other than the redevelopment of blitzed or blighted areas. The public acquisition of derelict land can be of the utmost importance to the social and economic well-being of an area, and this Act makes an important departure in that direction. There are also important sections dealing with buildings of historic and architectural worth.

It is far from my intention that Authorities shall be impeded in their urgent task by over-meticulous demands for detailed information in support of their applications for authority to purchase. At the same time their proposals must be worked out in full detail before the process of reconstruction can proceed far. Accordingly it is of the utmost importance that they proceed with the preparation of detailed plans so soon as they are able to do so.

If the Act is carried out as intended, some borough Authorities will be launched upon a career of estate ownership which will constitute a new phase in our local government. I believe that local government, with proper support and guidance, will prove itself the agency best fitted to bring back these areas to a full measure of life and prosperity, and to secure to them their proper place in the social and economic life of the community as a whole. If, however, they are to discharge this new responsibility worthily, they must equip themselves, both centrally and locally, to do so.

I hope presently to have on my staff a small number of Estate Surveyors—men with the professional qualifications and experience required for the task—who will be available for consultation and who will work with the Local Authorities and with our own Regional Planning Officers. An arrangement has also been agreed in principle, and is now being worked out in detail, under which it will be possible for Local Authorities to have the assistance of the District Valuer in these matters. I am also in consultation with the professional bodies, and hope to be able in the immediate future to appoint an advisory body at the centre, consisting of men of eminent standing in the world of estate management, upon whom I and my successors may rely for counsel and advice.

It is the intention of the Government that, in general, Authorities who purchase land under the Act shall remain ground landlords of that land. The way is left open for exceptions, and I have in mind such cases as those in which land is required for ecclesiastical or university purposes. The principles of leasehold tenure are well established, and I would deprecate exaggerated views of the alleged disadvantages which they entail upon developers. I shall encourage Local Authorities to grant leases in accordance with the expected useful life of the buildings, so that the leases will fall in at the time when a further stage of redevelopment has become due. Ninety-nine years is a fairly long time for the life of a building, other than one which is in the nature of a public monument. Most other buildings—certainly most commercial buildings—have outlived their usefulness at the end of that period. It should, I think, be quite practicable for an Authority to cater for the needs of its citizens by a just and well-thought-out leasehold system.

The Town and Country Planning (Interim Development) Act of 1943 constituted a significant advance. The universal extention of interim development control which it achieves will involve both my Department and Local Authorities in a searching test, as building for normal peacetime needs begins to be resumed. I am not afraid of this test. If we can show—as we shall—a steadily growing body of sound practice in the field of interim development control, if we can show wisdom and despatch and a constant vigilance, then the testing-time will have been converted to an opportunity. A victory will have been won.

RIBA

New Members

As Hon. Fellows (3):—Fraser, the Rt. Hon. Peter, P.C., M.P., Prime Minister of New Zealand (Wellington, New Zealand); King, the Rt. Hon. William Lyon Mackenzie, P.C., M.P., LL.D., F.R.S.C., Prime Minister of Canada (Ottawa, Canada); Smuts, Field-Marshal the Rt. Hon. Jan Christiaan, P.C., C.H., K.C., D.T.D., Prime Minister of South Africa (Irene, South Africa).

As Fellows (10):—Benson, Eric Skipworth (Manchester); Jenson, Alexander George (London); Minoprio, Anthony, M.A., B.ARCH., A.M.T.P.I. (London); Phillips, Ronald Alfred, Major R.E. (Bournemouth); Spencely, Hugh Greville Castle (London); Turnbull, Bernard William (London); Wallace-Bateman, Robert, Major, M.C., C. de G. (Redruth, Cornwall); Dudding, John Walter Mackenzie (Nottingham); Jones, John Harold (Birmingham); Palmer, Elias William, Major (Enfield, Middlesex).

As Associates (34):—Collins, Robert (King's College, University of Durham) (Newcastle-upon-Tyne)(Sunderland); Collyer, William (Edinburgh); Cooper, George (Pelsall, Staffs); Couch, Miss Beryl Stanley (University of London) (Southport, Lancs); Dessau, Heinz (London); Edwards, Arthur Middleton (London); Elliott, Edward Proctor, B.ARCH. (HONS.), Liverpool (University of Liverpool) (Barnsley, Yorks); Esslemont, Gordon Stansfield (Robert Gordon's Technical College) (Oldmeldrum, Aberdeenshire); Freeston, Thomas Andrew (The Technical College, Cardiff) (Cardiff); Greenfield, Lewis Bevil Godwin (London); Gregory, Frederick William (Birmingham); Grose, William Peter Jackson (Truro); Grove, Donald Edward (Wylde Green, near Birmingham); Hobbis, Charles Iredale (Rochester, Kent); Hodgson, Frederick Archibald (King's College, University of Durham, Newcastle-upon-Tyne) (Carlisle); Hoyles, Fred Hornby (Bury, Lancs); Landaw, David (London); MacLaughlin, Miss Mary Teresa, B.ARCH. (University College, Dublin) (Sandycove, Co. Dublin); Mills, Kenneth Sydney, DIP. ARCH. (The Polytechnic, Regent Street, London) (Ilford, Essex); Mitchell, William Porter (Blackburn, Lancs); Moya, John Hidalgo (Architectural Association) (London); Parker, Cyril Antony (Lincoln); Phillips-Howard, Basil Adrian (Burnham, Bucks); Smith, Eric Sidney (London); Southall, Reginald Edward Joseph (Kidderminster); Sparrow, Ronald James (Elmstead Market, near Colchester, Essex); Stedham, Ronald Arthur (Carlisle); Taylor Alastair Anderson (Bothwell, Lanarkshire); Thomas, William Stephen (Newport, Mon.); Ward, Arthur Neville, B.ARCH. (HONS.) (University of Liverpool) (Warrington); Waring, Arnold Shaw (Southampton); Wilson, Granville Howard (University of London) (Birmingham); Worthington, Clifford (Chichester); Wright, Frederick (Aberdeen).

As Licentiates (10):—Cloke, Donald George William (Bournemouth, Hants); Halton, Leslie Frank (St. Mary Cray, Kent); Hand, William Reginald (Oxted, Surrey); Johnson, Thomas Ransford (Wolverhampton); Jolley, Thomas Richard (Northampton); Lodge, Francis Graham (London); Oldham, Charles Henry Hughes (Swinton, Lancs); Percy, Stanley Frank (Oxted, Surrey); Warren, George Archibald (London); Watt-Low, Arthur Mackenzie (Rutherglen, Lanarkshire).

As Fellows (4): Brooke, Donald (Liverpool); Davies, Edward Foulkes, B.Arch. (Liverpool) (Aberdeen); Hoare, Eric Lester

Treadaway (London); Ward, Ronald, Major RE (London).

As Associates (6): Farrow, Geoffrey Denis King's College (University of Durham) Newcastle-upon-Tyne) (Seaham, Co. Durham); Hunt, Norman Habgood (The Polytechnic, Regent Street, London) (London); Marquis, Miss Frances Mary (Edinburgh College of Art) (Birkenhead); Murray, John Oliver Benedict, B.Arch. (University College, Dublin) (Dublin); Parker, William Norman, B.Arch. (Liv.) (University of Liverpool) (Ecclesfield, near Sheffield); Yarrow, Alfred Richard, Capt. (London).

As Licentiates (7): Austin, Horace John Minard (London); Brereton, John (Barry, South Wales); Heath, Ralph Leslie (London); Ingram, David Eric Major, Major RE (Richmond, Surrey); Millington, Arthur Henry (Pinner, Middlesex); Taggart, Redmond Thibeaudeau, Commander RNVR (Belfast); Waite, Alwyn (Calder Grove, near Wakefield, Yorks.).

As Fellows (11): Clarke, Edmund Blayney (Purley, Surrey); Cox, Frank Russell (Burford, Oxon); Maunder, Fred Allard Charles, Dip.Arch.Durham (Portsmouth); Richmond, Sidney Mark (Newcastle-upon-Tyne); Clayton, Arthur (Manchester); Hill, Robert Sharpe (Belfast); Scarlett, Alfred Benjamin (Liverpool); Shearer, James, A.R.S.A. (Dunfermline). *Overseas:* D'Alwis, Hylton Theodore Shirley, Dip.Arch.(Dist.)-Liverpool (Colombo, Ceylon); Elsworth, Capt. Lancelot Andrew (Cape Town); Policansky, Max, B.Arch. (Cape Town).

As Associates (21): Clokey, Thomas (Capt. R.E.) (University of Liverpool) (London); Crowe, Ralph Vernon (Capt. R.E.) (Architectural Association) (Bedford); Hodsman, Miss Betty Dalton, Dip.Arch.-Leeds (Leeds School of Architecture) (Bradford); Merrill, Alfred (Orpington, Kent); Peter, Miss Marie Pauline, Dip.Arch.Leeds (Leeds School of Architecture) (Selby, Yorkshire); Phillips, Harold Vernon Seward (Birmingham School of Architecture) (Birmingham); Taylor, William (Architectural Association) (Surbiton, Surrey); Thompson, Major John Seymour, Dip.Arch. (University of Liverpool) (Liverpool). *Overseas:* Corne, Charles Frederick, B.Arch.(Auckland) (University College, Auckland, New Zealand) (New Zealand); De Bruyn, Johannes, B.Arch.(Rand) (Johannesburg); Dold, Arthur Cedric (Bulawayo, Southern Rhodesia); Douglas, Kenneth Walter (University College, Auckland, New Zealand) (Plimmerton, New Zealand); Durr, Frans Jacobus, Dip.Arch.(Cape Town) (Johannesburg); Gardner, Kenneth Hall (Muizenberg, C.P., South Africa); Khambata, Phiroze Jijibhoy (Bombay); Nipane, Ganpati Pandwrang (Bombay); Rabie, Christiaan, Dip.Arch.(U.C.T.) (Newlands, Cape); Satsangi, Sant Prasad, G.D.Arch. (New Delhi); Spence, Miss Elizabeth Mary, B.Arch.(Rand) (Johannesburg); Te Water, Frans Karl (Cape Town); Trope, Elijah Julius (Johannesburg).

As Licentiates (19): Amy, Hedley James Yole, A.M.T.P.I. (Capt. R.E.) (Leeds); Atkin, Samuel Pilgrim (London); Bailey, George Frederick (London); Caldwell, Ian (Lincoln); Carroll, Stanley Edward (Weeley); Clive, Robert McMillan (Stranraer); Dunn, Leslie James (Major R.E.) (Eastbourne); Fox, Charles Edward (Dewsbury); Gillo, Robert Seward (London); Jack, Thomas (Glasgow); Johns, John Hoamans (Portsmouth); Johnstone, Alexander William (Manchester); Lott, Wilfred Henry (London); Portwood, Valentine Thomas Henri (Watford, Herts.); Shannon, Harold James (London); Stephens, Clifford Henry (Bristol); West, Richard Harold (Taunton, Somerset); Wild, Cliford (Manchester); Wingate, John Basden (Capt.) (Bearsden, Dumbartonshire).

RIBA Examinations

THE FINAL EXAMINATION

The Final Examination was held in London, Edinburgh and Belfast from December 6 to 14, 1944. Of the 55 candidates examined, thirty-two were relegated. The successful candidates are as follows:—

Whole Examination: Astins, Norman P.; Bland, Kenneth W.; Carlin, William P.; Dixon, Beryl M. (Miss); Godfrey, James A. (distinction in thesis); Gotelee, F. Alan; Jones, Thomas M.; Kelsey, Norman G.; King, E. Platton; Lacey, W. Daniel; McKnight, Gordon K.; Miller, Hedley W. (distinction in thesis); Moore, Ernest R.; Mustapha, Ahmed S.; Nightingale, George W.; Stevens, George E.; Stiles, Peter H. F.; Wilson, Ian B.; Wright, Lance A.; Yard, Gilbert H. (subject to approval of thesis). *Part I only:* Chandler, George R. (subject to approval of remaining testimony of study); Hayhoe, Harold R. (subject to approval of remaining testimonies of study); Parnes, Helen (Mrs.).

THE SPECIAL FINAL EXAMINATION

The Special Final Examination was held in London, Edinburgh and Belfast from December 6 to 13, 1944. Of the 40 candidates examined, 14 passed, as follows:—

Whole Examination: Branson, Norman R.; Carter, William M.; Collins, Edward W.; Crow, Harold V.; Fudge, Alan G.; Garlick, Alfred; Hare, Albert F.; Smyth, Roy J.; Thompson, A. Roy; Wright, Keith. *Part I only:* Pettengell, Edward E.; Shelton, Joseph T.; Vigour, I. John J.; White, W. Douglas. Twenty-six candidates were relegated.

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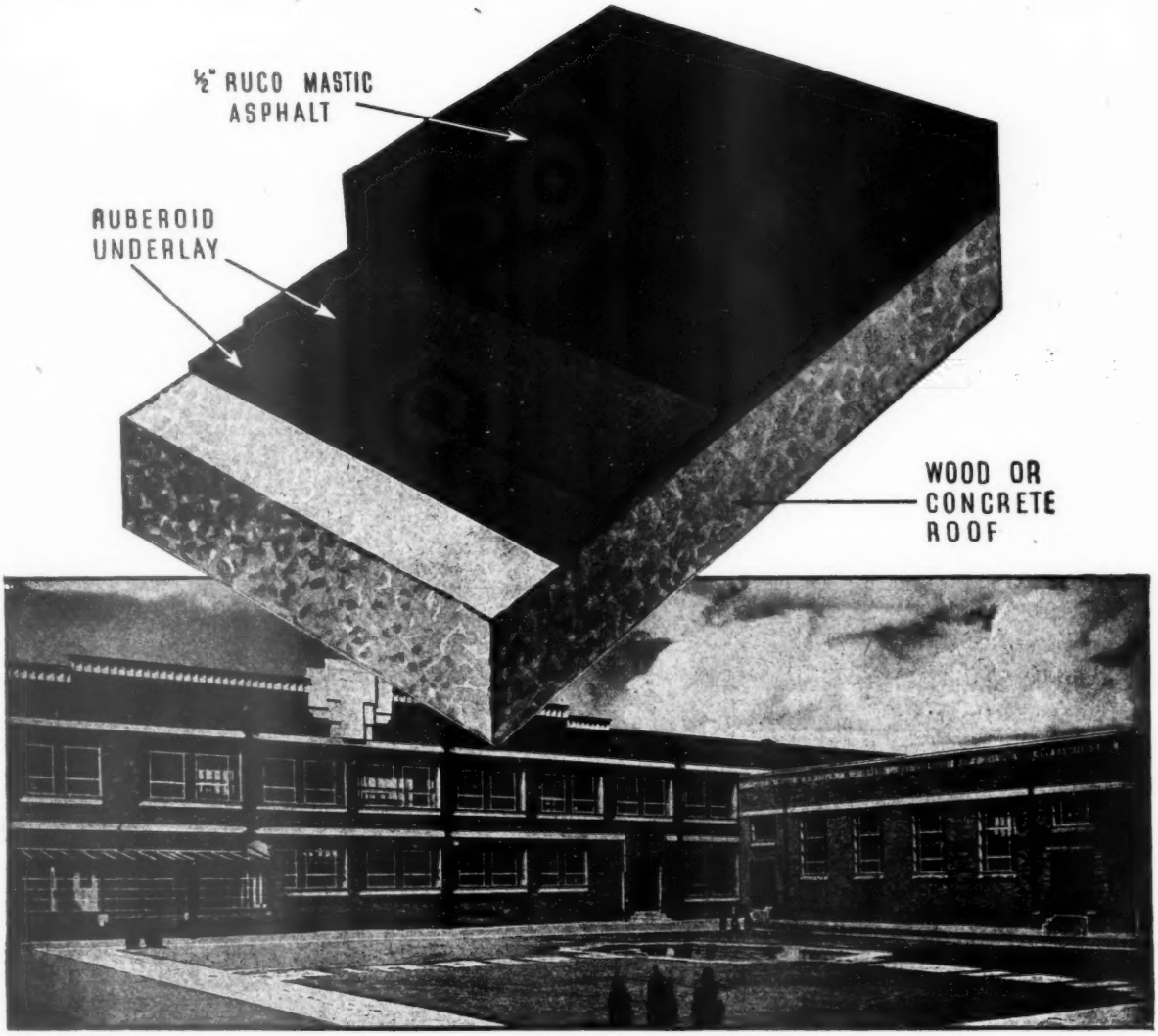

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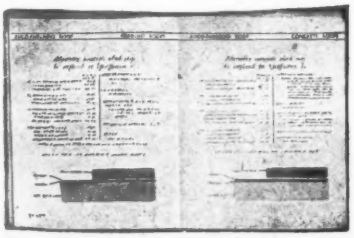

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Replies to Box Numbers should be addressed care of "The Architects' Journal," War Address: 45 The Avenue, Cheam, Surrey.

Public and Official Announcements

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

THE INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS maintains a register of qualified architects and surveyors (including assistants) requiring posts, and invites applications from public authorities and private practitioners having staff vacancies. ADDRESS: 75 EATON PLACE, LONDON, S.W.1. TEL.: SLOANE 5615 991

SOMERSET COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of CLASS II ARCHITECTURAL ASSISTANTS, at a salary within the scale £310 per annum, by annual increments of £10 to £350 per annum. The commencing salaries will be determined by experience and qualifications. War bonus in accordance with the Council's scale to be paid in addition to the above salaries.

Successful candidates will be required to pass a medical examination by the County Medical Officer of Health.

Applications, stating age, training, experience, qualifications, position in regard to Military Service and length of time required to take up new appointment, together with copies of three recent testimonials, should be sent to the undersigned not later than Saturday, the 24th March, 1945.

R. O. HARRIS, A.R.I.B.A.,
County Architect.
Park Street, Taunton. 589

CUMBERLAND COUNTY COUNCIL.

ARCHITECTURAL ASSISTANTS.

Applications are invited for two appointments of Temporary Architectural Assistants in the County Architect's Department.

The salary of each appointment will be in accordance with Grade C of the Whitley Council Scale, commencing at £320 per annum, rising, subject to satisfactory service, to £350 per annum, plus Whitley Council war bonus.

Each appointment will be subject to the Local Government Superannuation Act, 1937, and will be terminable by one month's notice on either side.

Forms of application may be obtained from the County Architect, 4, Alfred Street North, Carlisle, and should be completed and returned to him, accompanied by copies of three testimonials, not later than Monday, 26th March, 1945.

G. ANDREW WHEATLEY,
Clerk of the County Council.
The Courts, Carlisle.
23rd February, 1945. 562

WEST SUSSEX COUNTY COUNCIL.

COUNTY PLANNING DEPARTMENT.

Applications are invited for the appointment of an ASSISTANT in the County Planning Department.

The appointment will be to the temporary staff, on a salary scale of £260 p.a., rising by annual increments of £15 to £355, plus overtime and war bonus. The commencing salary will be fixed according to ability and experience.

Applicants should be neat and efficient draughtsmen, and have knowledge of Ordnance Sheet revision, and preferably should have had experience in a Planning Department. Any qualification will be an additional recommendation.

Applications, stating age, qualifications, experience, and any other relevant particulars, together with the names of two persons to whom reference could be made, must reach me at the County Hall not later than first post on Monday, 26th March, 1945.

T. C. HAYWARD,
Clerk to the County Council.
County Hall, Chichester, Sussex. 582

NORTHERN POLYTECHNIC, HOLLOWAY ROAD, N.7

Applications are invited for the post of TEACHER OF ARCHITECTURE. Applicants should be Fellows or Associates of the Royal Institute of British Architects, and should preferably have been trained in a Recognised School. Burnham Scale salary. Further particulars and forms of application, which should be returned not later than 22nd March, 1945, will be forwarded on receipt of a stamped, addressed foolscap envelope.

R. H. CURREL,
Clerk.
553

LONDON COUNTY COUNCIL.

Required at Hammersmith School of Building, Lime Grove, W.12. Full-time TEACHER of Building Construction, Architectural Drawing and Design, and Building History, as from Easter, 1945. The post is temporary, subject to review at any time, and, in any event, at the end of the war, but may lead to permanency. Previous teacher experience desirable. New Burnham technical salary scale applicable. Application forms, T.1/40, obtainable from the Education Office, T.1, County Hall, S.E.1 (stamped addressed foolscap envelope necessary), returnable by 26th March, 1945. 583

Amended Advertisement.

COUNTY OF LINCOLN—PARTS OF KESTEVEN.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of ARCHITECTURAL ASSISTANT in the County Architect's Department. Experience in Education and general County work is desirable.

Salary will be £260 per annum, rising by annual increments of £15 to a maximum of £320 per annum, plus bonus of 19s. per week on the Council's scale. Commencing salary in accordance with experience.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, to a satisfactory medical certificate, and to the termination of the appointment by one month's notice in writing on either side.

Canvassing either directly or indirectly will be a disqualification, and candidates in their applications must disclose whether to their knowledge they are related to any members of the Council or the holders of any senior office under the Council.

Applications, stating age, present appointment, experience and qualifications, and liability for National Service, together with copies of two recent testimonials, should be sent to the undersigned not later than the 31th March, 1945. This advertisement is inserted with the permission of the Ministry of Labour and National Service.

J. E. BLOW,
Clerk to the County Council.
County Offices, Sleaford, Lincs. 579

ESSEX COUNTY COUNCIL.

COUNTY LAND AGENT'S DEPARTMENT.

APPOINTMENT OF TEMPORARY BUILDING SURVEYOR AND ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of a Temporary Building Surveyor and Architectural Assistant in the County Land Agent's Department.

Candidates must be competent draughtsmen and be fully experienced in the preparation of working drawings, specifications and estimates, and the supervision of contracts for the erection, maintenance and reconstruction of buildings. Experience in connection with farm buildings and rural houses will be an advantage.

Salary will be between £390 and £435 per annum, according to experience and ability, plus cost of living bonus as decided by the Council from time to time (at present £49 8s. per annum).

Candidates will be required to pass a medical examination.

Applications, stating age, qualifications, experience and position in relation to National Service, together with copies of three recent testimonials (which will not be returned), should be sent to the undersigned in a sealed envelope, endorsed "Assistant Building Surveyor," on or before Tuesday, the 3rd April, 1945.

JOHN E. LIGHTBURN,
Clerk of the County Council.
County Hall, Chelmsford. 587

COUNTY BOROUGH OF BARNSLEY.

Applications are invited for the appointment of an ASSISTANT ARCHITECT on the Borough Engineer and Surveyor's staff.

The salary will be £360 per annum, plus war bonus, rising subject to satisfactory service by increments of £10 to £400 per annum, in accordance with the Corporation's grading scheme.

The applicant will be subject to the Local Government Superannuation Act, and the successful applicant will be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with copies of two testimonials, should reach the Borough Engineer and Surveyor, Town Hall, Barnsley, on or before 31st March, 1945.

A. E. GILFILLIAN,
Town Clerk.
590

Architectural Appointments Vacant

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

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

ARCHITECT'S or BUILDING SURVEYOR'S ASSISTANT—whole or part time—required by Chartered Surveyor; London, N.W.1. Particulars, with age and salary, to Box 519.

ARCHITECT, with long-established provincial practice, requires assistant, either sex; house available; view to partnership if qualified. Write, stating experience and salary required, to Box 535.

WEST RIDING Yorkshire firm of Architects require competent Architectural and Surveying Assistant as Site Architect for Industrial Works in South Wales. State age, experience, references, and salary required. Box 578.

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BUILDING and VALUATION SURVEYOR required by West End firm; able to take charge of London managements (not weeklies) and handle Dilapidation Claims, War Damage, London Valuations, etc. Applicants (any age) must give details of experience and salary required. All replies will be acknowledged. Box 555.

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Architectural Appointments Wanted

Advertisements from Architectural Assistants and Students seeking positions in Architects' offices will be printed in "The Architects' Journal" free of charge until further notice.

ARCHITECTURAL ASSISTANT, aged 24, Inter. R.I.B.A., with 6½ years' experience, requires position in London area. Box 452.

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SECRETARIAL post required by Lady (exempt); several years' experience with architects and surveyors; available one month. Box 461.

YOUTH (17 years) seeks post in Architect's Office; London or Bromley district; has studied 3 years' architectural drawing, building construction, etc.; view to taking preliminary examinations. D. J. Gilbert, 14, Prescott Avenue, Bromley, Kent. 460

SENIOR DRAUGHTSMAN requires spare time work for Architects, Contractors, or Manufacturers; any class of work; factories, domestic, or schemes of prefabrication; Bristol or West Country areas. Write Box 459.

A. R.I.B.A. (37) offers spare time assistance to Architects in London area; industrial and commercial buildings, including detailed layouts and specifications for electrical and heating services, etc. Box 458.

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JUNIORS, either sex, interested in Architecture and Building, required for Office work in Central London; five day week. Write, stating age and standard of education, to Box D.316, Willing's, 362, Grays Inn road, W.C.1. 545

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For Appointments (Wanted or Vacant), Competitions Open, Drawings, Tracings, etc., Educational, Legal Notices, Miscellaneous Property and Land Sales—*see* pages l and lii.