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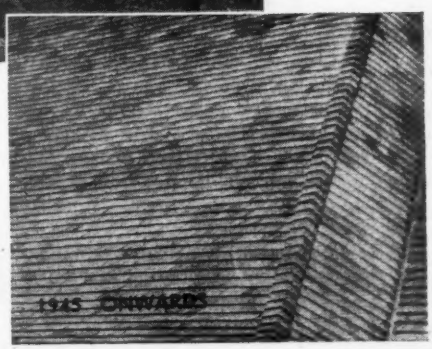

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Throughout the war, Colt's have maintained a continuous and uninterrupted supply and fixing service of Colt Shingles on War Department, Air Ministry and other Government and essential buildings. Our Technical Department is at the service of all Architects.

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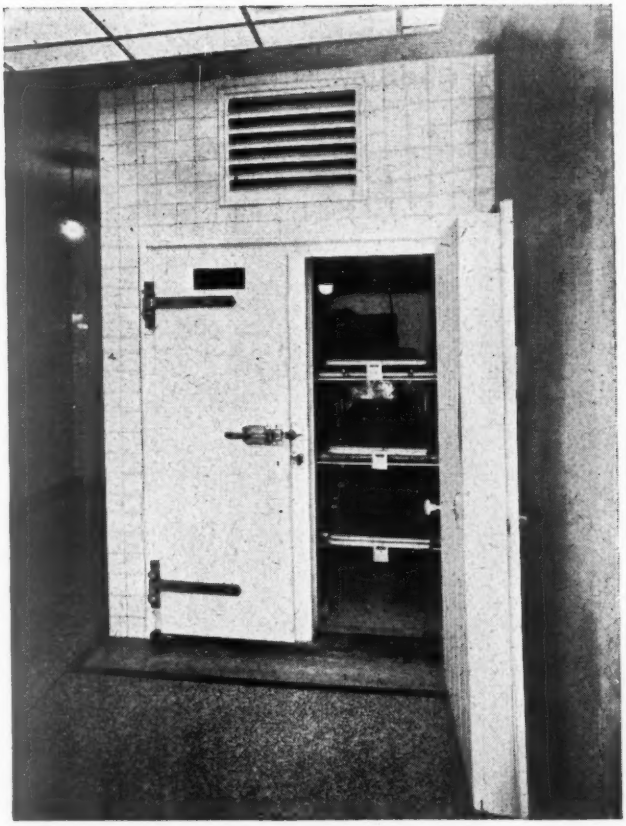

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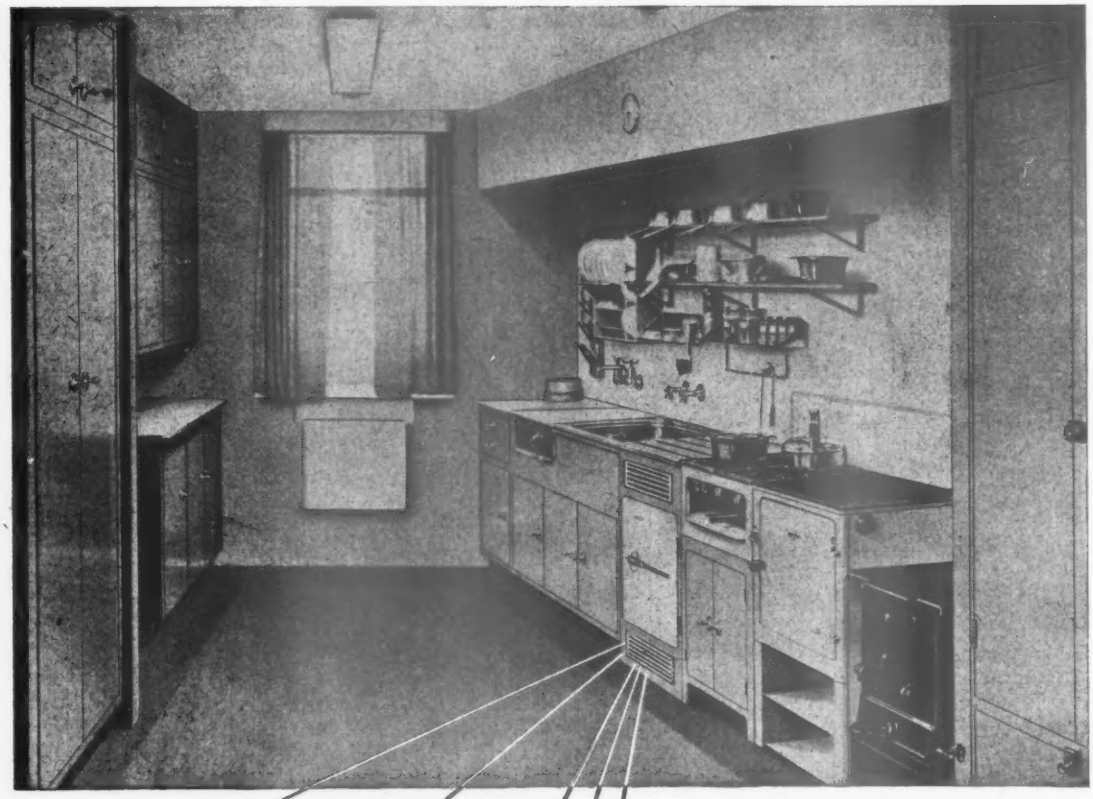
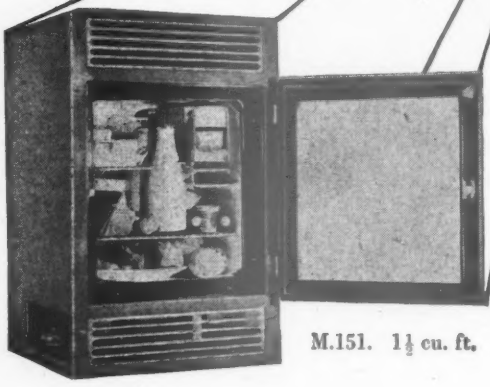


Post-war Kitchen Interior by courtesy of MESSRS. RADIATION LTD.



M.151. 1½ cu. ft.

Kitchen equipment must satisfy the housewife's needs and, by its adaptability, meet the requirements of the kitchen planners. That is why Electrolux 'built-in' refrigerators are so popular. The M.151 shown fulfils the needs of the average small family, and like all Electrolux 'built-in' cabinets, fits in to any kitchen design. Moreover, it is noiseless, has no moving parts, and does not interfere with wireless reception.

Electrolux Refrigerators operate equally well by Gas, Electricity or Paraffin. Free standing models will be available.

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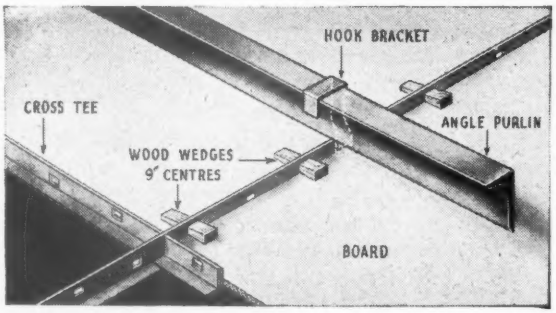
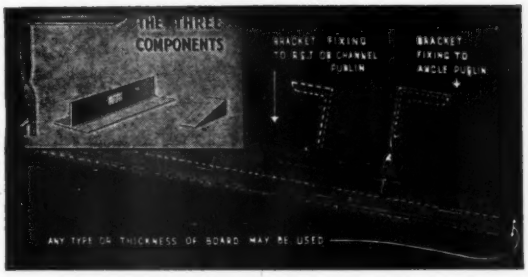
The Wallboard is secured to sherardised, pressed steel, slotted T-section by wedges. Below are shown the methods of attaching the support to various forms of purlin.

Escalator Tunnel of St. John's Wood Underground Station. Architect: S. A. Heaps.





8 POINTS TO BE NOTED

1. Fixed to UNDERSIDE of purlins—steel or wood—covering unsightly hook bolts, clips, etc.
2. Assures the insulating value of air-space between roof and underside of purlins. No dust or dirt.
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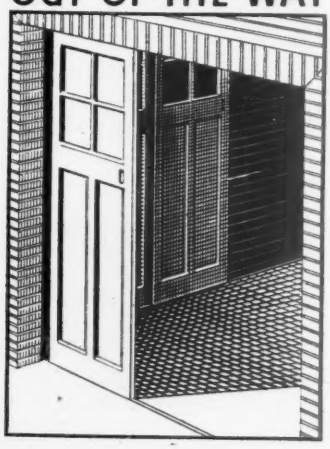
THE VALUE OF SLIDING

OUT OF THE WAY



In these days, to slide on a banana skin can be considered as something approaching a luxury. But that, of course, is only one way of sliding—and not very pleasant. The real pleasure of sliding comes from a sense of travelling swiftly and smoothly between one place and another with rare economy of time and effort. Now apply this perfect principle to doors and what do we find? Without a doubt we should be led to consider a door fitted with King Sliding Door Gear—and it is worth considering. A door that's hinged is a door that needs a lot of room; but with a sliding door it's different. If it's fitted with King Door Gear a touch of the hand takes it out of the way, gliding easily and quickly to nestle snugly against the wall, completely and unobtrusively out of the way. Doors that slide mean doorways that allow free passage all around them.

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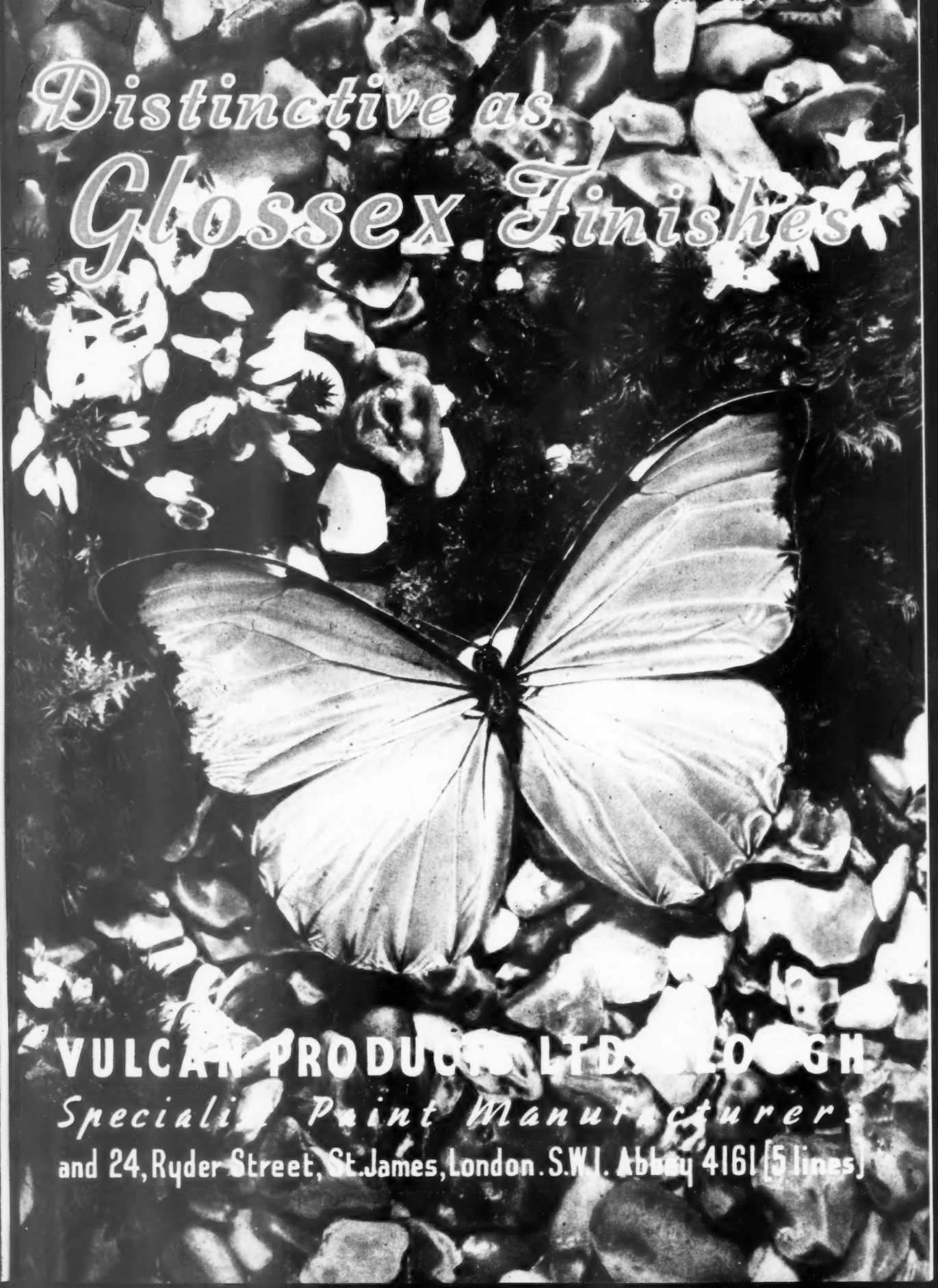
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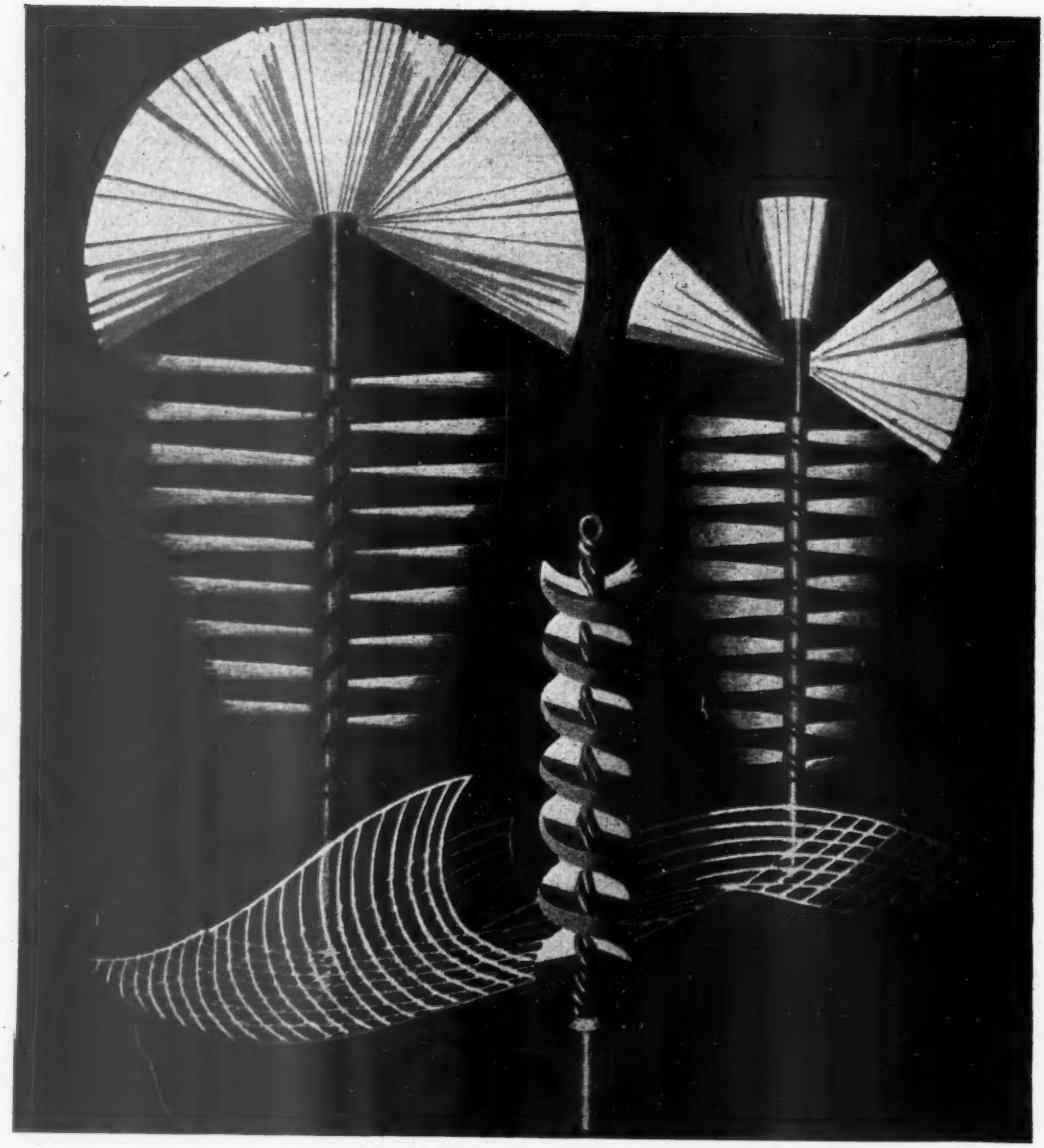

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For information on any type of plastics write to :—

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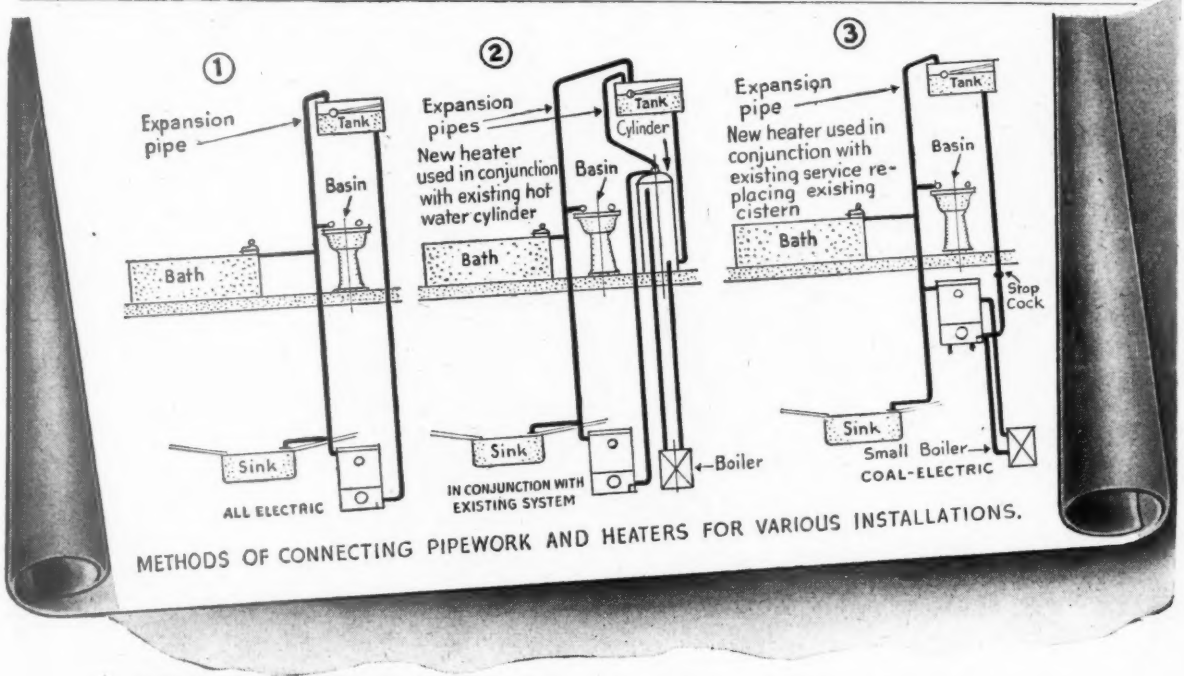
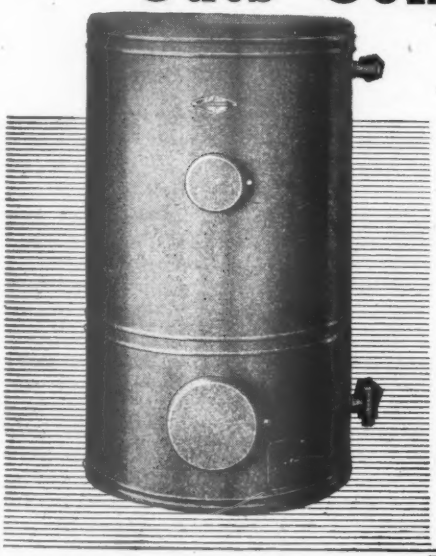
P.158

CONSTANT HOT WATER



METHODS OF CONNECTING PIPEWORK AND HEATERS FOR VARIOUS INSTALLATIONS.

Cuts Complicated Planning



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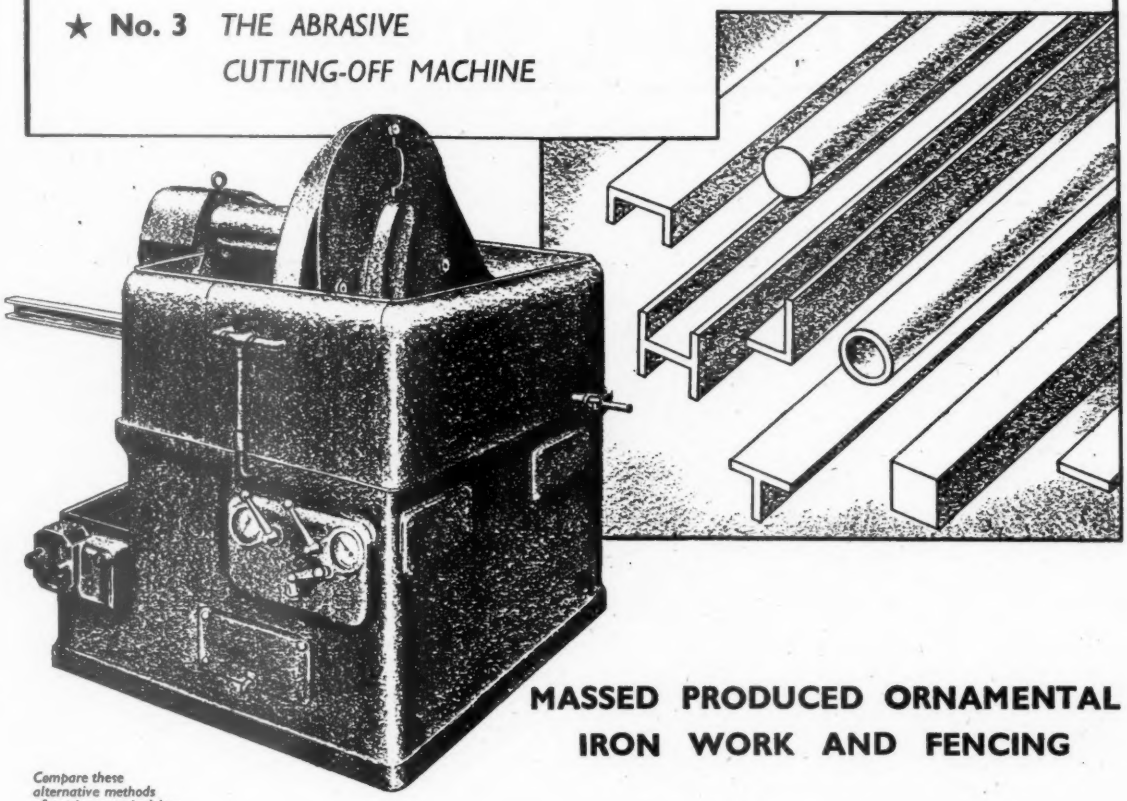

Compare these alternative methods of cutting a typical bar.

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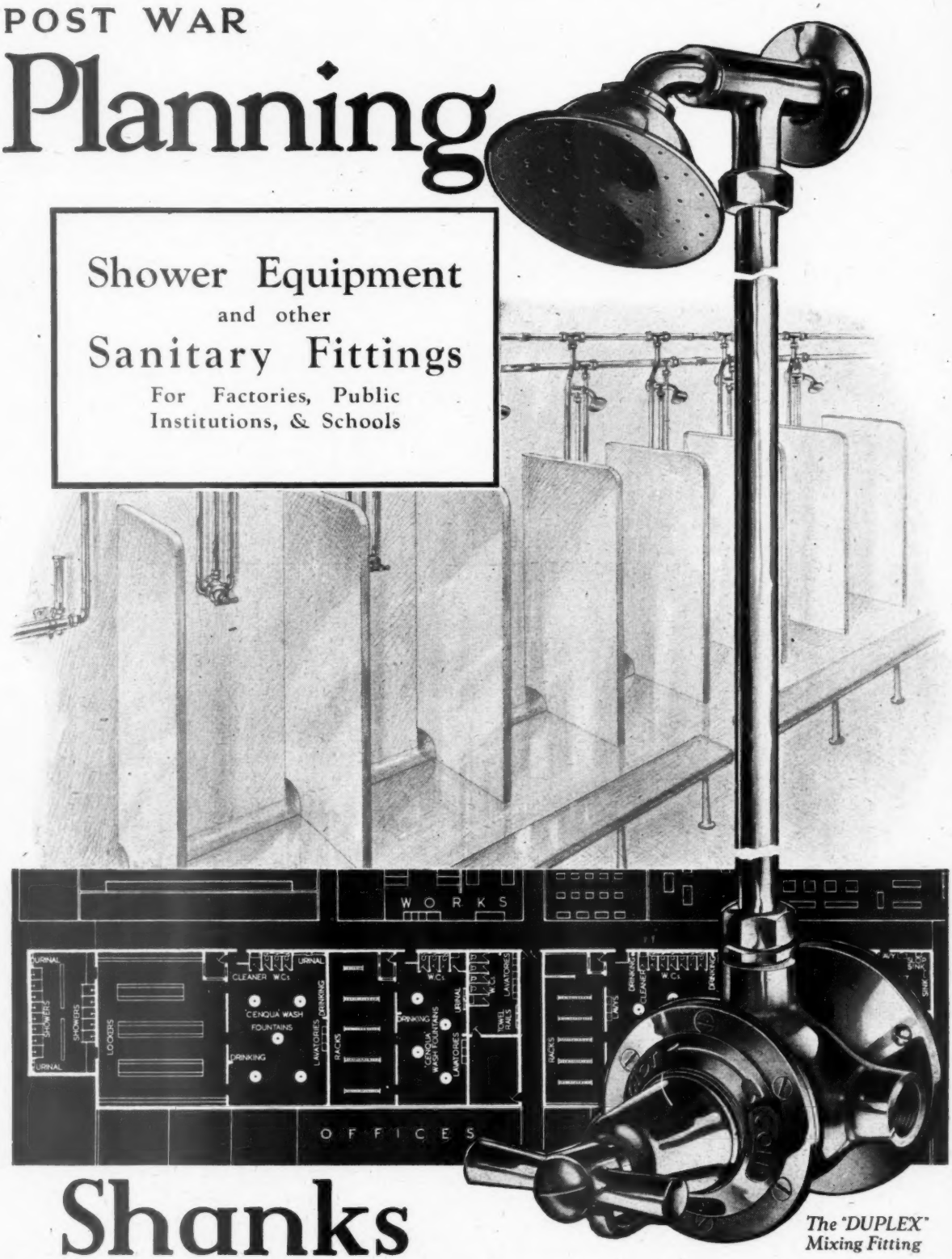

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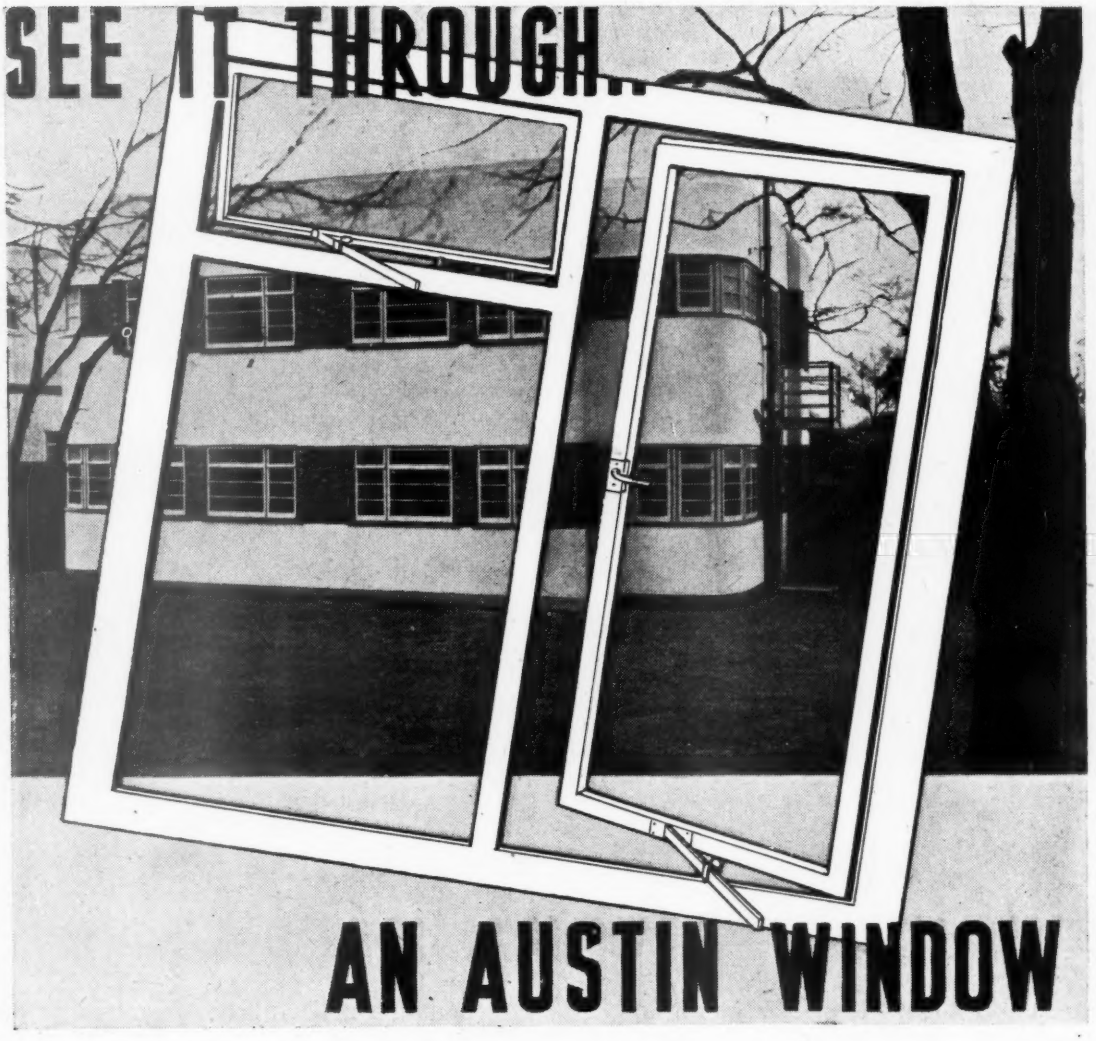

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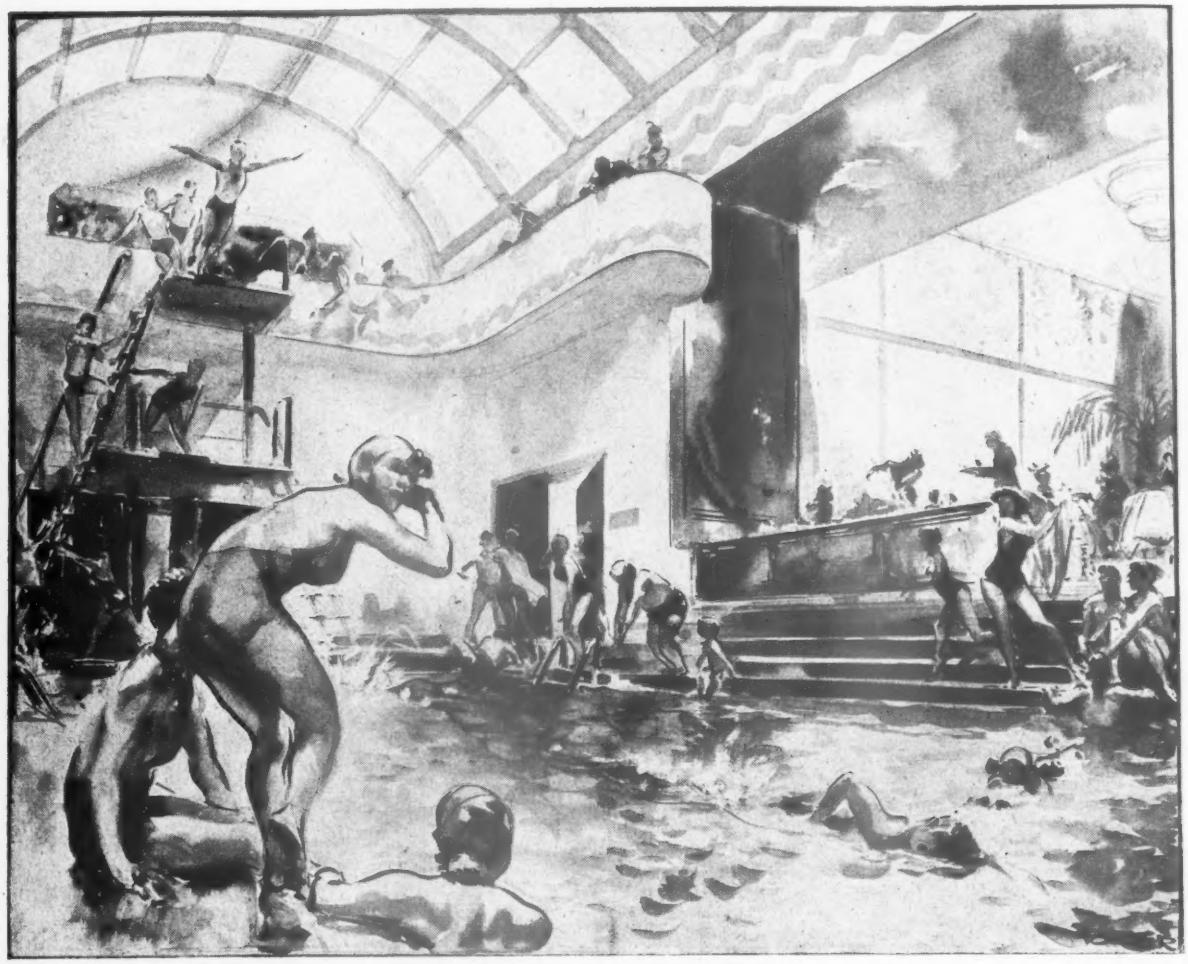

Tremendous strides have been made in the design, planning and control of swimming baths since the Education Act of 1918 included swimming in the list of approved physical exercises. What the future has in store in the shape of health development of the nation cannot yet be assessed, but it is safe to assume that there will be an intensive drive by both public and private bodies to promote the extension of a pastime which improves the physical and mental health of the community. In the planning of new or the renovation of existing swimming baths, paint will be required for the protection and cheerful decoration of dressing boxes, spectators' galleries and refreshment bars or cafés. In swimming-bath buildings designed for other temporary uses, such as dances, displays, etc., the need for good paint is even more important. "DULUX" meets the rigorous conditions of service encountered in swimming-bath buildings and when available will afford architects and builders the widest choice of finishes and colours. Advice on specifications and colour schemes will gladly be given.

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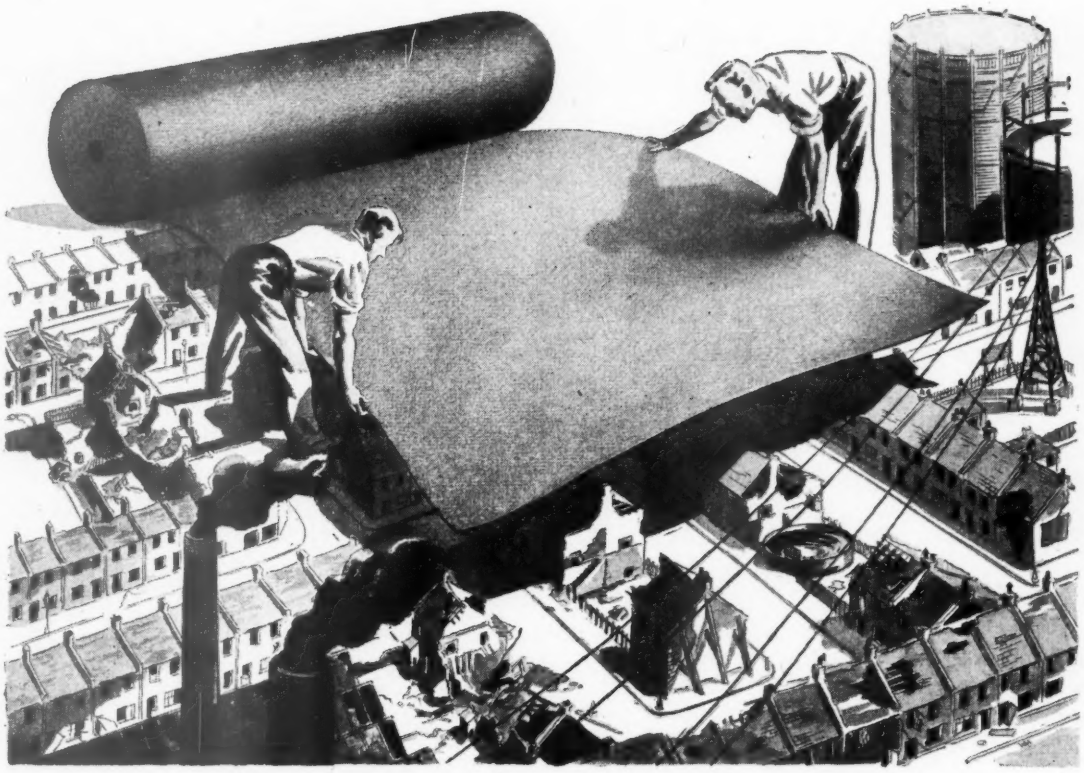

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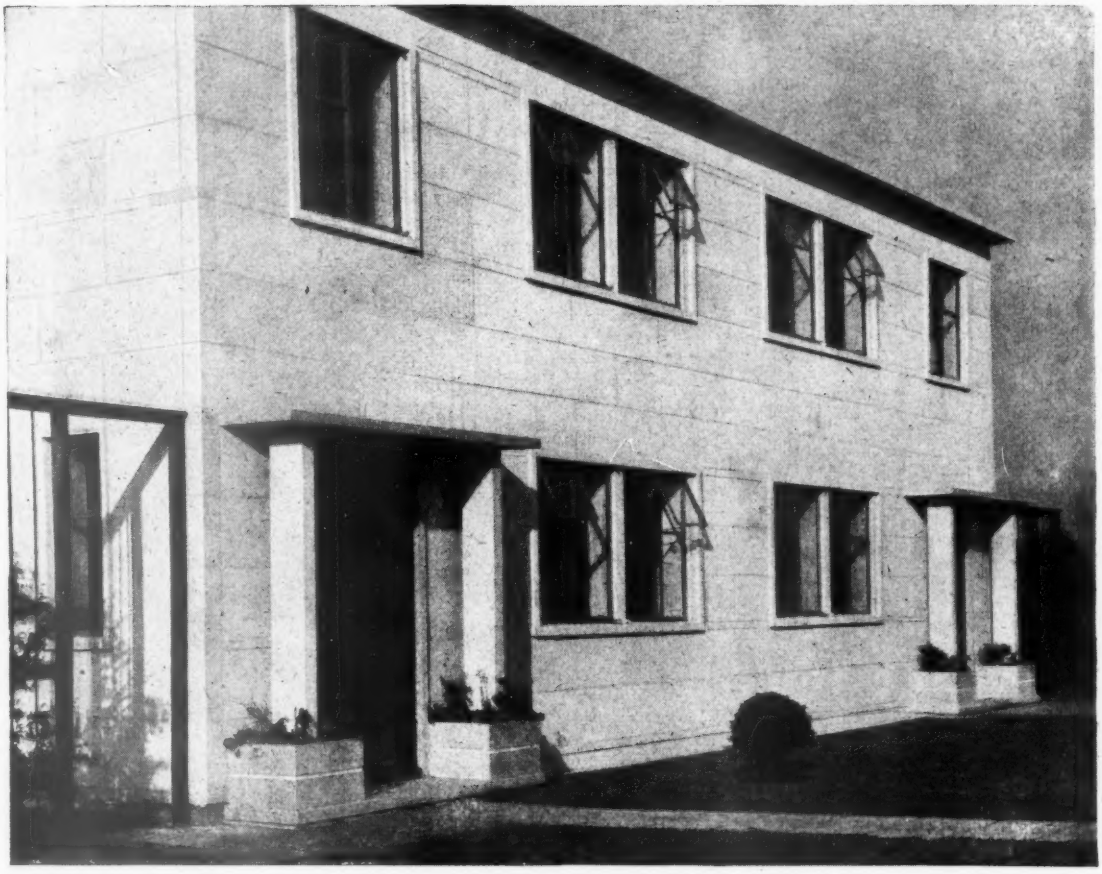

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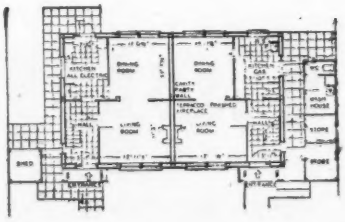

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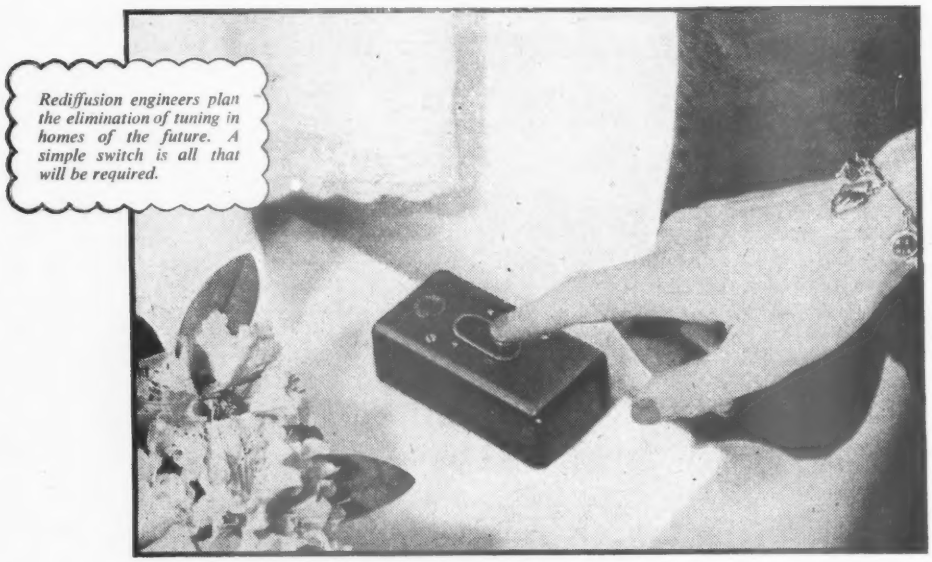

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THE simple movement of a switch from one position to another, and there is the radio entertainment you require — the pick of the world's programmes by private wire! Impossible? Not at all. According to the experts it is well within the realm of future possibility.

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From these aerials, programmes will go by direct line to the control room where they will be amplified and constantly checked by skilled radio engineers, before passing along the radio "main" to your home. Then, in any room in the house, a simple switch and a loud-speaker will give you the radio programmes you want.

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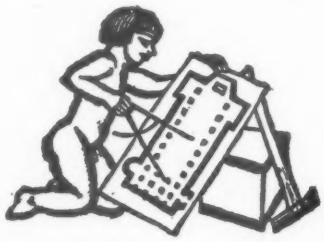


DIARY FOR JUNE JULY AND AUGUST

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.

CARDIFF. *Kitchen Planning Exhibition.* At James Howell & Co.'s stores. JUNE 28-JULY 14

CHELMSFORD. *Country Life and Country Needs Exhibition.* At the Shire Hall. (Sponsor, BIAE.) JUNE 28-30

KETTERING. *Rebuilding Britain Exhibition.* At the Alfred East Art Gallery. (Sponsor, BIAE.) JUNE 28-30

LONDON. *Royal Academy of Arts.* One Hundred and Seventy-Seventh Summer Exhibition. JUNE 28 to AUG. 15

Donald Barber, Secretary of the Retail Distributive Association. *Planning of Shopping Centres.* At 13, Suffolk Street, Haymarket, S.W.1. Admission with buffet lunch (12.45 p.m.), 2s. 6d.; with coffee only, 1s. Talk and discussion 1.15 p.m. If lunch is required notify Housing Centre, Whitehall 2881, before 10 a.m. (Sponsor, HC.) JULY 3

Conversion and Reconditioning. One-day Conference at the Housing Centre, 13, Suffolk Street, Haymarket, S.W.1. Mrs. Muriel Gee, *Conversion of the Town House.* Walter H. Godfrey, *Conversion of the Country House.* Conference fee, 2s. 6d.; lunch, 2s. 6d.; conference report, 5s. (Sponsor, HC.) 10 a.m. to 5 p.m. JULY 6

Federation of Master Builders. Luncheon meeting preceding quarterly business meeting. At Connaught Rooms, Great Queen Street, W.C.2. Guest of honour, H. U. Willink, K.C. 1 p.m. JULY 10

AA Annual Prize Day and Exhibition of School Work. At 34-36, Bedford Square, W.C.1. Speeches in the Library 3.30 p.m., when the exhibition will be formally opened; afterwards tea will be served from 4.30 p.m. A dance, arranged by the AA Students' Club will begin at 8 p.m. and end at 5 a.m. Tickets 5s. each. The exhibition will remain open until August 10. (Sponsor, AA School of Architecture.) JULY 13

Daily Herald Post-war Homes Exhibition. At Dorland Hall, Regent Street, S.W.1. 10.30 a.m. to 8.30 p.m. (Sundays excepted). The purpose of the Exhibition is to present to the public a wide survey of some of the most up-to-date methods employed in construction, equipping and furnishing a home. (Sponsor, *Daily Herald.*) JUNE 28 onwards

News of the World Housing Exhibition. At Selfridges, Oxford Street, W. 10 a.m. to 5 p.m. Saturdays, 10 a.m. to 12.30 p.m. (Sponsor, the *News of the World.*) JULY 16-AUG. 11

National Federation of Building Trades Employers' Half-Yearly Meeting. At the Connaught Rooms. G. W. Buchanan will preside, and representatives of the eleven Regions into which the Federation is divided —they cover every county in England and Wales—will be present. JULY 18

BINC Second Building Congress. At Central Hall, Westminster, S.W.1. The general object of the congress will be to enable those in both official and private positions to meet and discuss the many problems facing the building group of professions and industries at the present time. 10 a.m. Opening of the congress by the Lord Archbishop of York. First Session: Dicussion on the *supply of labour and materials for post-war building.* Speaker: Ernest Bevin, M.P., Minister of Labour, 1940-45. Discussion opened by: J. W. Stephenson (President of the National Federation of Building Trades Operatives and Vice-Chairman, National Joint Council for the Building Industry), and Sir P. Malcolm Stewart, Bt. (President, National Council of BMP). 2.15 p.m. Second Session: Discussion on the position of the *building industries and the local authorities in relation to post-war housing.* Speaker: The Minister of Health (H. U. Willink, M.P.). Discussion opened by: E. B. Gillett (President, Chartered Surveyors' Institution). 10 a.m. Civic Welcome by the Mayor of Westminster (Councillor Douglas Wood, F.R.I.B.A.). Third Session: Discussion on the *organization of the building industries and their future relationships with Government Departments.* Speaker: The Minister of Works (Duncan Sandys, M.P.). Discussion opened by W. H. Forsdike (Senior Vice-President National Federation of Building Trades Employers and Chairman National Joint Council for the Building Industry). 2.15 p.m. Fourth Session: Discussion of the *place of the building industries in the resuscitation of economic activity and in the maintenance of full employment thereafter, and on the need in this connection for a balanced building programme.* Speaker: The Minister of Labour (R. A. Butler, M.P.). Discussion opened by Percy Thomas (President of the RIBA). 4.30 p.m. Summing up of congress by the President and Chairman of Congress Committee. Admission to the congress, open to all in any way interested in the activities of the building group of professions and industries, will be by ticket price 1 guinea, obtainable from the Building Industries National Council, 11, Weymouth Street, W.1. The fee will include Buffet Lunch, to be served each day between sessions in the Central Hall. (Sponsor, BINC.) JULY 24-25

PURTON. *Homes to Live In Exhibition.* At Stoke School. (Sponsor, BIAE.) JUNE 28-JULY 2

NEWS

THURSDAY, JUNE 28, 1945
No. 2631. 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.*

★

It is expected that WESTMINSTER ABBEY will be restored by the summer of next year.

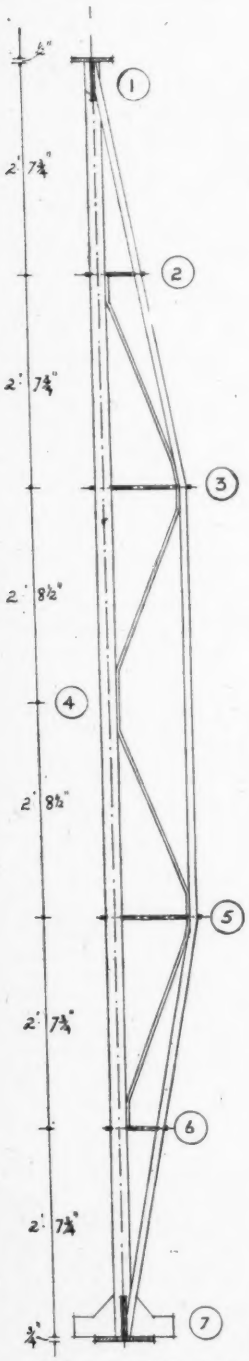
Air-raid damage is estimated at £135,000. Work has already begun on removing of the 80,000 sand-bags used to wall in the most precious monuments. The Abbey has not lost a single feature of historic interest. Five of the Abbey houses were lost, and the Cloisters and Little Cloisters suffered, as well as the buildings of Westminster School and the Choir School. The oldest stained glass was removed from the Abbey at the beginning of the war, and the damage done to the rest is not great. Although the Abbey is expected to be restored by the summer of 1946, it will be much longer before the houses are rebuilt.

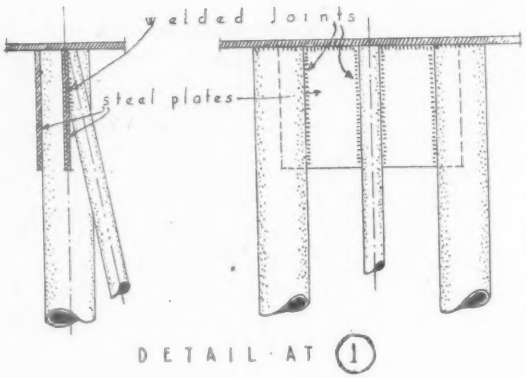
Mr. Hinchcliffe Davies, a Liverpool architect, has been appointed CONTROLLER OF BUILDING FOR THE BRITISH OCCUPATION ZONE in Germany.

He will accompany the Control Council to Germany. As Controller of Building for the British Zone in Germany his responsibilities, according to *The Times*, will include the co-ordination of programmes of building and civil engineering work sponsored by the various divisions of the Control Council, the control of all new building, of reinstatement work initiated by the Germans, and of constructional design. Mr. Davies went from Liverpool to the Ministry of Works in London nearly four years ago to devise and operate a system of regional building allocation governing the supply of man-power for constructional programmes of airfields, munition factories, invasion bases, and the Mulberry harbours.

PATENT WELDED TUBULAR CONSTRUCTION

Data Sheet No. 22

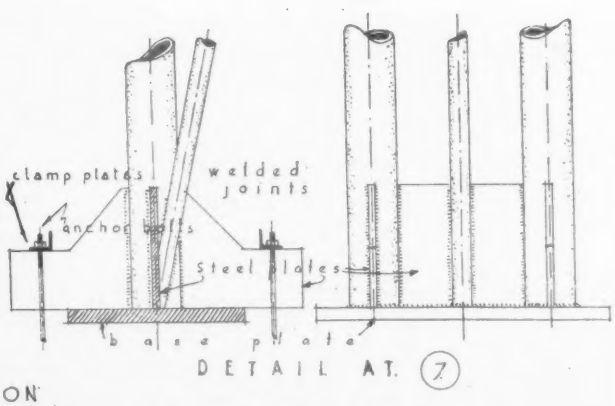




MAIN WALL COLUMNS—*(continued.)*

The detail at 1 shows the arrangement of steel plates and welded joints at the head of the column; the tie of the roof truss rests on the horizontal anchor plate and is bolted into position.

Detail at 7 shows treatment at the base of the column where two angles rest loosely on the vertical base plate and are anchored to the foundation, a method of anchoring that provides tolerance and movement at the initial fixing.



MAIN WALL COLUMN

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.*

From AN ARCHITECT'S *Commonplace Book*

REBUILDING LONDON IN 1817. [*From* Walks Through London, *by David Hughson, published in* The London Miscellany, *compiled by Robert Harling* (*Heinemann*).] On the 15th of July, 1816, orders were positively issued to stop the improvements north of Piccadilly. The perspective from Carlton House, is to extend only to the intended crescent in Piccadilly. St. James's Market and the houses in Jermyn-Street, which intersect the view, are to be removed. The new United Service Club House will be built on an extensive scale. The name of Waterloo-place has been given to the opening in front of Carlton House. The buildings here have been stuccoed, instead of being faced with Bath Stone, and are already of the shades between white and black, the smoky, and the dirty grey. Whether that side of Pall-Mall shall be a good thoroughfare, will depend upon the mode of paving this place. To afford safety to walkers, it has been proposed, that the foot pavement should be so continued as to leave a space for carriages not wider than the breadth of Pall-Mall, and that to mark the distinction between the two pavements, lamps should be placed on stone pedestals. It is still understood that Oxford-Road will be continued as far as Bayswater Brook, making it the longest street in Europe. When the new Post Office is finished the western mails are to go direct along Holborn, instead of passing Charing Cross and Piccadilly ; and a short cut is also to be made into the other western road angular from Shepherds Bush to Hammersmith. The old wall of Kensington Gardens on the Bayswater Road, has lately been repaired and lighted, the ditches drained, and an open gateway designed to be made, opposite the broad walk in Kensington Gardens, to give passengers a slight view of the beautiful grounds.

An appeal for Funds is being made by the Dean of Worcester for THE PRESERVATION OF WITLEY CHURCH.

The Bishop, in a letter in the *Daily Telegraph writes*:—May I appeal to Churchmen and lovers of Georgian art to help in the preservation of Witley Church, in my diocese? It is a unique example of early XVIII century Italian decoration. Built by the Foleys and maintained by them and the Dudleys till 25 years ago, its upkeep then came upon a country parish with two other churches to maintain. This cannot be done without help from outside. Money is needed for repairs, heating apparatus, organ and churchyard, and then an endowment of at least £100 a year. £5,000 is the sum aimed at. The parishioners have undertaken to raise £1,000 of this and cannot do more. Contributions may be sent to the Rector and Churchwardens. The Rector, Great Witley, Worcester.

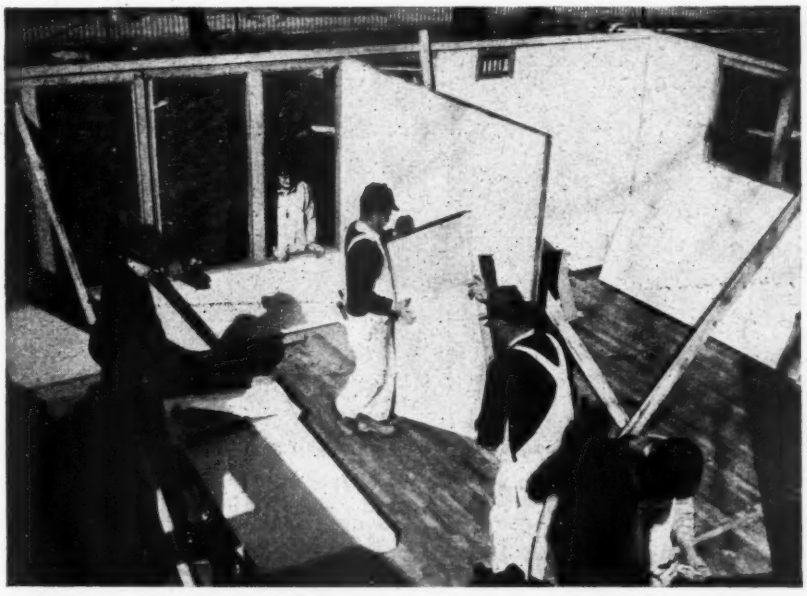
★

Sir Montgomerie Fairfax-Lucy has offered to present CHARLECOTE PARK, near Stratford-on-Avon, to the NATIONAL TRUST.

This was announced by Lord Zetland, chairman, at a luncheon held in London to celebrate the jubilee of the Trust. The gift includes the house, with many of the historic and valuable contents, the library, and the park of over 200 acres, with its deer and Spanish sheep. An endowment fund to meet the cost of maintenance is necessary, and an appeal is being made for £25,000 for this purpose. Charlecote has been Lucy property since the twelfth century. The present house was built for the Lucy family about 1558 and the brick and stone dressed gatehouse was reputedly built by John of Padua. This and other parts of the old house will be opened to the public as soon as the Trust can make the necessary arrangements. It is hoped that these can be completed by early next year. The rooms contain many fine furnishings, including some things which have associations with Queen Elizabeth and the Lucy in whose park Shakespeare is said to have poached, and who is said to be portrayed as Justice Shallow. An edition dated 1619 of the *Merry Wives of Windsor*, in which play Shakespeare caricatured Sir Thomas Lucy, believed to have been in the house since its publication, is to be exhibited on loan. The house was fairly extensively altered in the eighteenth century, and it is part of the arrangement that the Fairfax-Lucy family are to become tenants of a wing added at that time. Lord Zetland also announced that Flint Cottage, Box Hill, Surrey, has been presented to the trust by Mrs. Ralph Wood, subject to her life interest. There will be no access for the public at present. Flint Cottage was for 40 years the home of George Meredith. The gift is made in memory of Mr. Ralph Wood.

At Pont Street, London, the new St. Columba's CHURCH WILL HAVE A RESTAURANT.

St. Columba's Church of Scotland, Pont Street, London, destroyed by enemy action, is to be rebuilt at a cost of £150,000. It will have a lift for elderly people, a restaurant, kitchens and servery. The building, which will be on three floors, is to be so constructed that every member of the congregation will see the Communion table, the pulpit and the lectern from any part of the church.



Partition panels being placed in position in a model house built by the Federal Public Housing Authority at Scott Circle, Washington, DC, one of the thirty thousand prefabricated temporary houses of this type to be shipped to Great Britain to relieve the housing shortage. Materials have been allotted by the War Production Board and the Federal Public Housing Authority. The houses are being obtained by the National Housing Agency under the direction of the Federal Emergency Administration.

Spotlight on Parliament

On June 7 we illustrated a photograph of floodlit St. Paul's on VE Night. Here is another photograph taken on the same occasion of the Houses of Parliament—not without topical significance in view of approaching Polling Day. On pages 475 and 476 of this issue, for the information of our voting readers, we throw a floodlight on the housing and planning policies of the three main political parties by publishing a résumé of these policies so far as they can be discovered from various official publications.

★★★

The results of the RIBA ANNUAL COUNCIL ELECTIONS were made public at a General Meeting of the RIBA on June 19. The results are given below. A complete list of the new Council will be issued by the Institute after July 3.

PRESIDENT.

Percy E. Thomas, O.B.E., HON.LL.D., J.P. (Cardiff) (unopposed).

PAST-PRESIDENTS.

W. H. Ansell, M.C. (unopposed).
H. S. Goodhart-Rendel (unopposed)

MEMBERS OF COUNCIL.

Elected.

	Votes
1. Prof. Sir Patrick Abercrombie	1577
2. T. Cecil Howitt, D.S.O. (Nottingham)	1225
3. J. H. Forshaw, M.C.	1216
4. Howard M. Robertson, S.A.D.G.	1197
5. A. C. Bunch	866
6. Frederick Gibberd	844

Not Elected.

7. Anthony Minoprio.
8. Joseph Emberton.
9. William Milburn (Sunderland).
10. H. T. Seward (Manchester).
11. Stanley A. Heaps (Croydon).
12. Stanley C. Ramsey.
13. Joseph Hill.
14. W. Naseby Adams.
15. C. W. C. Needham (York).
16. J. W. M. Dudding (Nottingham)
17. P. V. Burnett.
18. Herbert Jackson (Birmingham).
19. F. J. Horth (Hull).
20. A. H. Barnes.
21. D. H. McMorran.
22. H. V. Lobb
23. J. Stanley Beard.
24. Leslie A. Chackett.
25. T. H. Birks.

ASSOCIATE MEMBERS OF COUNCIL.

Elected.

	Votes
1. E. Berry Webber	1442
2. Henry Braddock	728
3. Andrew Rankine (Hull)	630

Not Elected.

4. Arthur G. Ling.
5. R. A. Duncan.
6. Dr. J. Leslie Martin (Boxmoor).
7. P. F. Shepheard.
8. M. J. Slater (Ipswich).
9. R. L Townsend (Chippenham).
10. V. L. Nash (Caerphilly).
11. W. T. Jackson (Orpington).
12. Lt.-Col. Vivian H. Seymer, D.S.O., M.C.

LICENTIATE MEMBER OF COUNCIL.

Elected.

	Votes
1. Charles Oliver (Hull)	846

Not Elected.

2. F. C. Wakeford (Bromley).
3. Miss Marjorie V. Duffell (Bexhill).

Sir Peirson Frank, Chief Engineer of the London County Council, has been elected PRESIDENT OF THE INSTITUTION OF CIVIL ENGINEERS for 1945-46. Prior to his appointment to the LCC, Sir Peirson Frank was City Engineer of Liverpool.

DRY BUILDING

PREFABRICATION has been too much on the defensive. It began with offering to the public prefabricated bungalows of reduced capacity as a temporary measure. This word Temporary became at once attached to the structure of the bungalows, although it should have been related only to the intended short period of their commission ; and thence the idea got around that Prefabricated and Temporary were synonymous terms. It had to be explained laboriously that Prefabricated Permanent houses would be offered later. These would be just as good as brick houses. Indeed, the best of all systems was said to be the one most like an ordinary brick house, in which the bricks were laid flat in moulds, and the panels, after setting, hoisted up into position for the walls.

In our view, such a system, although it has substantial merits, should not be praised for being just brickwork done in a strange manner. That would on the contrary seem to be a demerit, for it neglects one of the best possibilities of prefabrication, which is DRY BUILDING.

For the past fifteen years or so, a great deal of research has been in progress amongst enthusiasts for Dry Building. This way of building which was the Cinderella of the by-laws (only fit for rabbit-hutches, dutch barns, temporary garages and mission churches) had in it the promise of the next big advance in architectural progress. It was nonsense for the by-laws to speak of short-lived materials, when every great city—yes, even London—possessed many examples of timber houses, sheathed with boarding or lath and plaster, that were two, three and four hundred years old, yet in excellent condition. Then there were the cast-iron fronts of some of the Victorian experiments : and tile-hanging on timber frame survived from the middle ages.

Why then should Bricks and Mortar be the only way the Englishman builds ? Bricks have been predominant for, say, 400 years : 300 years before that they were unknown, and had not been used for the thousand years since Roman times. During that millenium building was in timber, plaster, stone. But what after all is wrong with brickwork ? It is solid and strong and cheap : it is the most convenient and adaptable construction yet invented. To your Dry Building enthusiast brickwork is crude and dirty—a sort of mudpie-making. Knock a nail in the wall for a picture and part of your house runs out in a heap of dust. Brickwork does not keep out the weather, except in the elaborate complication of the cavity wall, which is a negation of the essence of brickwork—the bonding—and points the way clearly to sheeted dry construction. If it is thick enough for insulation and for weathering, it is nearly always grossly overstrong for the load it has to carry. And, significantly, the wet-built walls are normally surmounted by a dry-construction roof—the most exposed part of the building, where rain exclusion and insulation are most critical.

For Dry Building offers precision. The many functions of

construction are taken separately and precisely accommodated. Loads are carried by a framework, rain is excluded by an impervious external surface (not accepted into the structure in the hope that it will stop raining and begin to dry out again before it reaches the interior), insulation is provided by cellular fillings, internal surfaces of an unlimited range of colour and texture can be applied without the hazards of shrinkage and staining from moisture movement in the body of the wall. But what, it will be objected, about the formation of joints? Joints are indeed the central problem of all construction; we will return to this later. But for the moment this much may be said: Dry Building has the advantage that joints are fewer, so that better care can be afforded in their detailing and more costly materials for filling them; also, the most fruitful cause for failure in joints is absent—shrinkage-cracks upon drying out.

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

NOTES & TOPICS

RIBA ELECTION.

In a note on June 14 I quoted an architect's suggestion that a list giving biographical and objective facts about the candidates for the RIBA election should have been sent out with the voting list. An RIBA member now points out to me that the Bye-laws forbid the sending out of any material of this sort with the voting paper itself, but that the RIBA has done the next best thing by publishing a list of particulars about the candidates in the May issue of the RIBA Journal.

This issue arrived over a month late, and after my note of June 14 was written—a tardiness for which the editor, struggling under present extreme publishing difficulties, cannot be blamed. Nevertheless this is not likely to console members, especially those abroad, who receive their RIBA Journal too late.

*

But this publication of facts about the candidates in the RIBA Journal sets a valuable precedent. It is to be hoped that next time these notes will appear in time, and include, as well as biographical facts, brief statements of the policies and faiths of the candidates.

CEAPE

The Council for Education in Appreciation of Physical Environment—time this was changed to something more handy—has just published its second annual report, recording a year of modestly successful accomplishments ranging from the organization of conferences and the preparation of books and leaflets.

*

The Council seems undeterred by the augean task before it—the dead weight of existing ugliness—or as *Horizon* would say, *existential* ugliness—is enough to cramp the liveliest efforts, but more support is needed to help it in its useful job. Full particulars from 28, King Street, Covent Garden, W.C.2.

POWER OF THE PRESS

The contemporary columnist is often an ambitious and serious-minded fellow. He is no longer content merely to record the trivia of daily events or his encounters with the great. Men like Westbrook Pegler and Walter Lippman, Hannen Swaffer or William Hickey take themselves pretty seriously as moulders of the public mind, and daily propound their favourite systems for world security, and monetary reform.

*

Astragal, of course, has not escaped these temptations, and the fervour of his views on such global topics as national planning, financial orthodoxy, temporary housing, and Mr. John Gloag has only been equalled by his disappointment at the lack of action such views have inspired.

*

It is, therefore, with the greatest pride and pleasure that this week an achievement is announced. According to *Contact* (the Leicester School of Architecture Newsletter), the faulty radiator in Room 77 of the Leicester School was replaced by a new one within a few days of this column's publicity to complaints about it's efficiency. Coincidence perhaps. I prefer to think otherwise.

FACTS ABOUT THE MULBERRY

The full story of the Mulberry Harbour has yet to be told, but some idea of the design and production problems, which had to be solved by every branch of industry which contributed to the undertaking, can be gathered from the experience of Messrs. Wates of Norbury, one of the firms who collaborated on the job. They were called upon to supply the reinforced concrete pontoons which carried the ten miles of floating pier, the shuttles which were used for dropping the pontoon anchors in exactly the right place, and a number of concrete pier-head pontoons.

*

The pier pontoons, known as Buttes, were a development from the reinforced concrete barges of 200 tons deadweight capacity which had been built for the Admiralty since the outbreak of the war. But the pontoons had to comply with a number of very definite requirements which did not apply in the case of the barges. They

had to be light, but strong enough, even if aground at low tide, to support the steel spans plus the weight of tanks and other heavy traffic. They had to be of shallow draught and not too wide, otherwise they would foul the spans in rough weather. They had to be constructed so that they could be towed broadside as well as bows on. Following percolation tests with a concrete box, it was decided to proceed on a design in which 1¼-in. thick panels were to be used.

*

Bearing in mind the high stresses to which these craft would be subjected, it was essential that the concrete should be of first-class quality and the jointing between the precast and *in situ* concrete—of which there were 1,400 feet in each vessel—should be as near perfect as possible. The precast panels were made under almost laboratory conditions. The specified mix was 11 cwt. cement, 13½ cub. ft. of sand and 26 cub. ft. of ⅜-in. aggregate. As much lightweight aggregate as could be obtained was used and the average weight of concrete was approximately 133 lb., as against 147 lb. per cub. ft. when shingle aggregate was used.

*

It was found that an excellent key was obtained by removing the side forms two or three hours after the panels had been cast, and then removing the cement skin only by spraying the edges with a spray jet of the type used for stirrup pumps. During the winter months aggregates and water were steam heated. At 28 days the average strength of 6-in. cubes (lightweight aggregate) for the precast work was approximately 6,000 lb. per sq. in. and for *in situ* concrete (shingle aggregate) 5,700 lb.

*

Four anchors per Pier Pontoon had to be laid at the quickest possible speed and for this purpose the War Office designed craft which were brilliantly original. Known as Shuttles, these craft made it possible to lay moorings in as many minutes as hours by ordinary means; 500 were built—approximately one to every Pier Pontoon. They were 27 ft. in length by 8 ft. in breadth and were of timber construction, consisting of two floats joined by bracings. Between the floats were two hinged flaps to carry the anchors and between them a revolving drum, which not only carried the anchor cables, but acted as a wheel so that the craft could be wheeled about by one or two men.

*

Unit construction was employed throughout and the jigs were so accurate that all the parts had to be prefabricated to an accuracy of plus or minus 1/64th of an inch. Synthetic waterproof cement was used for the laminated bent sections and heat-treatment by electricity made it possible to work on the laminated parts within an hour of their being formed.

ASTRAGAL

Top, one of the timber shuttles used on the Mulberry Harbour for laying pontoon anchors at great speed. Below, a number of reinforced concrete pontoons, or Beetles, after launching and before they were towed across to the French coast. See Astragal's note.

LETTERS

W. A. Fleming

Our Reviewer

Nathan Fielker

Thos. E. Scott, F.R.I.B.A.

W. J. Smith, L.R.I.B.A.

Portal Frames

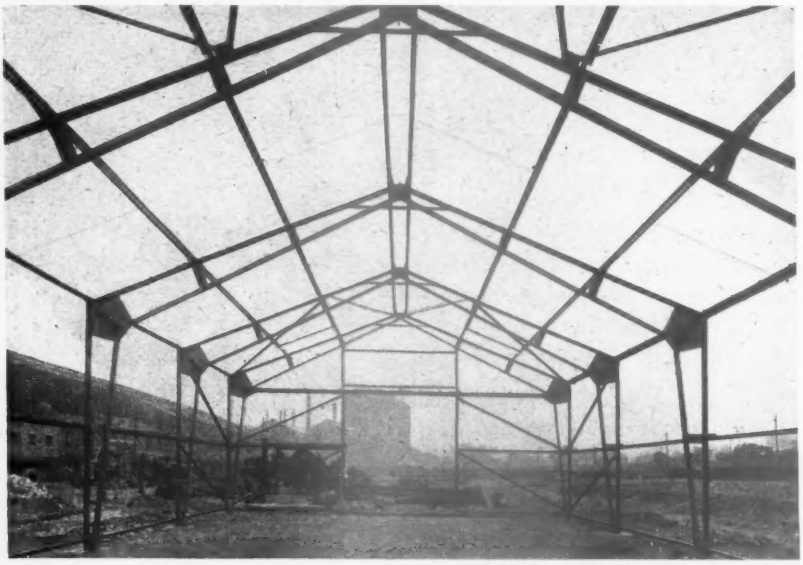
SIR,—While I appreciate and thank you for the very complimentary remarks on my Section Book* may I be allowed to reply to the criticism which the writer made in respect of the section devoted to Portal frames.

I agree that a tapered section is more pleasing to the eye than a joist or channel frame with parallel flanges, and in some cases (although not all) there is a wastage of material by adopting these rolled sections. There are, however, other considerations to be taken into account. It is not possible, as you are aware, to roll a section with tapered flanges. This means then, resorting to a built-up section with welded plates, and although there may be a slight saving in weight, the cost of manufacture and the time factor is very much increased, and it is doubtful if the total increased cost is worth the better appearance.

In some types of building it may be worth it; more so, I think, in the large spans, but in the ordinary workshop, store buildings, and the like, of reasonable spans, the appearance does not play a very big part.

Considering the building referred to in our illustration suitable for a crane gantry, I don't think, however, that tapered flanges

* Information Centre, No. 1909, May 3, 1945.



"A very light and economical frame fabricated in light angles." See letter from W. A. Fleming.

would save either very much weight nor would they be a practical proposition.

From the bending moment diagram it will be seen that the moment set up due to the eccentricity of the gantry is carried into the sloping portion of the frames and the bending moment does not decrease to any great extent. In fact, it would be noticed that occasionally it increases again to some degree as it reaches the ridge, so that a narrow tapered section here would be out of the question.

Then again, there is the question of lateral movement from the crane surge itself. This is a very important factor to be considered. Stiffness in these frames plays a very big part to overcome lateral sway from a heavily loaded crane, and it is not advisable to reduce the section for this reason. Not all buildings have cranes of course, and these objections would not apply to the ordinary frames.

There is just one other point: Your critic seems to think that we are adverse to using tapered flanges in all cases. This, however, is not the case, although in our portal frame tables from 20/80 ft. span we give joist section. It will be noted that we also give the bending moment at various points in each frame. The reason for this was that it is then a simple matter to design the frame to the shape conforming with these bending moments, *i.e.*, if these moments are plotted on the cross-section, the approximate shape of the bending moment diagram can be obtained for the complete frame and the outline for the steelwork can be made accordingly. There would, of course, require to be a slight adjustment in fixing the final inertia of the section as these moments were calculated on a constant inertia throughout, but this adjustment is not a laborious one, and requires very little additional calculation.

We have been doing some experimental work on these portal frames for many years now, and during the war years we have produced a very light and economical frame fabricated in light angles, and this has enabled us to take up the shape more or less of the bending moment diagram and thus save weight. This method is much cheaper than welding solid plates, but, of course, is only feasible and economical for small spans. The enclosed photograph shows one in course of erection.

W. A. FLEMING,
Fleming Brothers, Structural Engineers
Glasgow

Our reviewer replies: I agree that in certain cases, particularly with small spans, a frame made up of RSJ's is cheaper than a frame welded of solid plates. However, the example published with Mr. Fleming's letter shows a solution of this case which is more satisfactory both from the economic and æsthetic point of view, and is in line with my remarks on Mr. Fleming's book.

I cannot agree with Mr. Fleming's statement regarding frames carrying crane gantries. I have again to refer to the example published in A.J., July 8, 1943, pp. 25-26, which shows a portal frame of 80-ft. span, designed for heavy crane loads. The maximum and minimum bending moments, reproduced in Fig. 12, were determined on the basis of the actual shape of the frame (Fig. 13), and not under the assumption of a constant moment of inertia throughout In Fig. 12, as well as in the diagram in Mr. Fleming's book the bending moments are very substantial near the junction of the leg and the sloping portion, but gradually decrease towards the ridge so that in both cases the frame behaves almost like a three-hinged frame, pin-jointed at the ridge. This is the reason why a constant cross section throughout the whole frame is not satisfactory.

Mr Fleming also refers to the deformation of the frame, and rightly points out that " stiffness in these frames plays a very big part." It seems to me that this argument is in favour of the variation of the cross section, since the material in those portions of the frame where the bending moments are small contributes very little to the stiffness. On the other hand, it is easier substantially to increase the depth of the section within the range of the largest values of the bending moments where the additional material is efficiently used, if the cross section is varied than if the same cross section has to be maintained everywhere. Thus, if the main consideration in the design is not the limitation of working stresses, but the limitation of deformations, the advantages of varying the cross section in accordance with the bending moments are perhaps even greater.

Housing in the West Indies

SIR,—Your extract from the report shows the usual meagreness in planning which now prevails in that country. The basic grid should be extended from 34 in. to 40 in., which would provide a better minimum for overall room sizes; as illustrated one barely enters the bedrooms without tumbling over the beds, and the size of the living room leaves much to be desired if it has to contain a double bed! The storage space both for clothing and food is sadly inadequate.

It is customary to provide a verandah all round the house, thus planning in accord with the way of living which would appear to be ignored in view also of the lamentably small yard space shown in the layout, which is conducive to future slums and reminiscent of the layout for Portal huts.

Barbados (illustrated), which is one of the prettiest islands in the group, surely deserves better treatment. Pre-war Barbados was a show place for tourists who brought a certain prosperity to the island. The proposals as indicated would turn away any self-respecting tourist.

This minimum planning policy accords with a recent advert issued by the Colonial Office for an assistant draughtsman whose duties will be those of a senior assistant carrying great responsibility, the remuneration for which is in the neighbourhood of £350-£400 per annum.

London NATHAN FIELKER

Technical Information for Demobilized Architects

SIR,—With the end of the war in Europe, it is to be hoped that many architects now in the Forces will soon be able to return to their professional work.

I shall therefore be glad if you will allow me to repeat my previous request to manufacturers of building materials and equipment that they should circulate catalogues, information sheets and other data to all architects as and when they resume their practices.

All architects serving with the Forces have already been invited to notify the Institute immediately they return from service, and a notice of their names and addresses will be published in the technical press at regular intervals.

In order that the facilities already offered by a large number of manufacturers may be made available to all in need of them, this opportunity is taken of again reminding serving members of the importance of notifying the Institute immediately they return to civil life.

THOS. E. SCOTT,
Chairman,
London RIBA Demobilization Committee

Salaries

SIR,—The RIBA is pressing for the release of architects from the Armed Forces in order to ensure that technical personnel is available for planning the building of houses and reconstruction work.

It is generally agreed that there is at the moment a serious shortage of competent assistant architects, and yet in your issue of June 14 a County Council advertises posts for Fellows or Associates (not Licentiates) at yearly salaries of £300-£400, plus a bonus of a mere 14s. a week.

This example of the low salaries offered for qualified men is admittedly a very bad case, but it serves to support a feeling widely held that, with the Institute's endeavours to obtain the release of architects, should be coupled at least an equal enthusiasm to campaign for adequate remuneration, and so combine the national and individual interests. Otherwise, the future outlook for the great majority of the profession will be poor indeed.

Stanmore WILFRED J. SMITH

Polling Day is on July 5. For the information of our readers we give below a brief tabulated summary of the housing and planning policies of the three main political parties. The summary is objective and without comment. The information has been compiled from the following sources: (1) Looking Ahead—A Policy for Housing in England and Wales *(Report of the Conservative Housing Sub-Committee, published by the Central Committee on Post-War Reconstruction of the Conservative and Unionist Party Organization, 24 Old Queen St., S.W.1, 6d.). (2)* Land and Housing *(Report and Summary of the Liberal Land and Housing Committee, published by the Liberal Publications Dept., 8 Gayfere St., S.W.1, 4d.) (3)* Housing and Planning After the War *(The Labour Party's Post-War Policy, Transport House, Smith Sq., S.W.1, 2d.)*

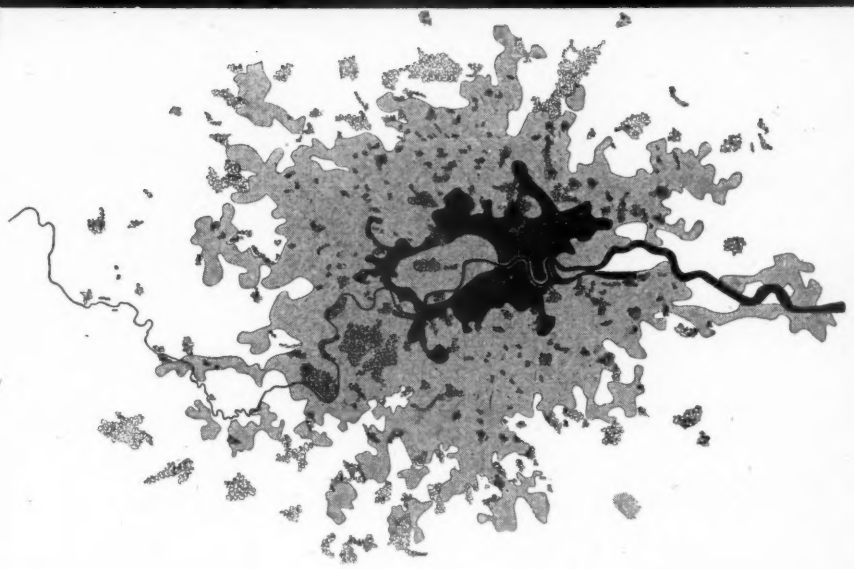
HOUSING AND PLANNING POLICIES

of the three principal political parties

	CONSERVATIVE	*LIBERAL*	*LABOUR*
TARGET	There is a present deficiency of nearly 1 million houses, ¾ million needed to provide bare minimum of shelter. 200,000 houses will have been completed in England and Wales in 2 years, remaining 550,000 must be temporary or non-traditional permanent. Temporaries to have a life of not more than 10 years.	An average of at most 400,000 houses a year for the 10 years immediately following the war. Uniform building rate undesirable as building industry should be expanded as soon as there are signs of slackening in other trades.	At least 4,000,000 houses over a period of ten years. Materials and labour to be planned for in 5-year periods.
NATIONAL PLANNING	Local authorities to make surveys of housing requirements and population changes, consulting the appropriate Ministries for the probable location of post-war industries.	National plan to be prepared by Minister of Planning, in conjunction with Regional Committees: to deal with main traffic routes, recreation areas, growth of towns, green belts and location of industry.	Industry to be located by a Ministry of National Development. Detailed planning to be carried out by Regional Planning Authorities. New towns will be necessary near some of the large munition factories.
CONTROLS	Rationing and price controls to be kept on essential materials by an inter-departmental committee.	No comments.	Control necessary over materials, prices and new construction.
LAND	It is considered most desirable that householders should also be house owners. No comments on major aspects of land ownership.	Immediate acquisition of the development rights in all land outside built up areas, as recommended by the Uthwatt Committee.	Land to be nationalized.
BUILDING DESIGN	All housing authorities to be required to employ architects.	Architects to be employed on all new building by local authorities, housing societies and large estate owners. Statutory panels of paid architects to be compulsory in all counties, according to Scott Report, Section 162.	Planning authorities to have panels of architects to ensure appropriate treatment of individual buildings and complete areas. Greater encouragement for the architectural profession.

	CONSERVATIVE	*LIBERAL*	*LABOUR*
HOUSES OR FLATS	House with own garden where possible: the terrace house to be investigated. Flats where essential, but to be planned together with some houses to avoid barrack-like blocks.	The house-flat problem mainly a question of town planning. Houses to be in satellite towns. There is a considerable demand for flats among the many families without young children.	Minimum sizes to be laid down for living rooms, bedrooms and kitchens. Barrack-like flats to be avoided: lifts in flat blocks over 3 stories.
NEW METHODS OF BUILDING	New forms of construction urgently needed: to be used only if they make less call on traditional materials and skilled labour.	No comment.	Research into new methods of building to conserve materials in short supply and to allow employment of labour not usually engaged in building industry. Fittings to be standardized.
STANDARDS OF BUILDING	The National House Builders' Registration Council's voluntary scheme to be developed with Government support.	Stricter control over quality of all new building. Local authorities to have greater responsibility.	Standards must, if anything, be raised. Building societies must be jointly responsible with the builder for defects.
RECONDITIONING	Large numbers of old but soundly built houses to be reconditioned and adapted.	No comment.	Existing houses to be brought up to prescribed standards: would probably mean dealing with most pre-1914 houses. Job to be finished in not more than 20 years.
SUBSIDIES	Subsidy for rural housing to be raised from £100 to £250 on houses up to £800 in value. General housing subsidy to vary with cost of building, but, in general, a £500 pre-war house to be pegged at £675 net. Balance to come from subsidy. Housing associations to obtain loans from a Public Works Loan Board.	A minimum wage and family allowances should help the worker to pay an economic rent. Revisions in the rating system to reduce rates payable on lower rent houses. Subsidies probably necessary for some time.	Subsidies to be discouraged and savings to be made by reducing land and building costs. Capital for building to be advanced by the State to local authorities at specially low rates.
RENTS	Must be within the occupier's means; rent restriction discourages new house construction.	Fair Rent Courts set up to replace Rent Restriction Act, and fix rents for all houses, allowing no more than a fair return.	Differential rents good, but involve too many personal inquiries. With high wages need for subsidy should disappear.
BUILDING INDUSTRY	Total of 1¼ million men in industry cannot be reached for 3 or 4 years; hence need for non-traditional forms of construction employing unskilled labour.	Building industry to be expanded to 1¼ million men.	1¼ million men necessary: must have security of employment and guaranteed weekly earnings.
BYE-LAWS	A single authority in every local government area to give all the necessary approvals. All bye-laws and restrictions to be regularly revised in the light of technical developments.	No comments.	Building bye-laws to be national and not local.

PHYSICAL PLANNING SUPPLEMENT

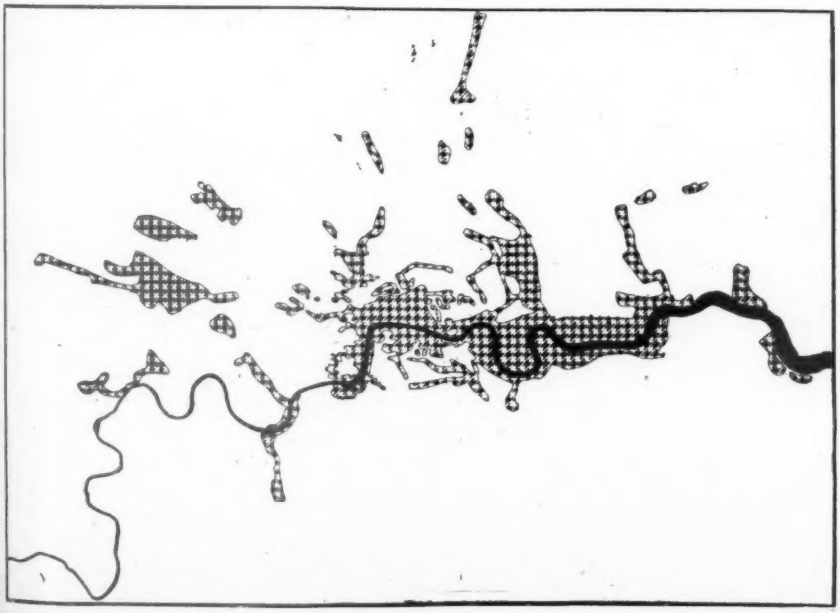


REGIONAL REPLANNING

an outline for a survey and plan

Although several admirable examples of survey methods exist, in presenting them to the public the tendency has been to show one or two of the most interesting maps and then to proceed to the finished plan in all its complexities, with little explanation of the diagnosis which has taken place in between. The natural result is that the layman fails both to see the story behind the plan and to understand planning as a continuous process. In the following article, condensed from a more detailed study, the authors describe and illustrate the stages in the production of a plan in the most simple terms, taking the London region as an example. The aim is to illustrate, not a plan, but a method of procedure and presentation for a plan of any region. In such a way it may be possible to bridge the gap which exists at present for the layman between surveys and final proposals. The authors are D. DEX HARRISON, A.R.I.B.A., A.M.T.P.I., PENELOPE WHITING, A.R.I.B.A., KENNETH SMITH, A.R.I.B.A.

The survey is a statement of the problem as it exists when the planner arrives on the scene. At this stage the historical background will be made clear, in our case the phenomenal growth of London during the last hundred years and, particularly, the last 25 years (map omitted). Present-day London *map* **has grown up by a continuous planless absorption of the surrounding countryside, and no considered open space zones are left in the urban spread. Slum surrounds the central core like a ligature. The Green Belt is too far out to be effective. To rehabilitate this planless growth we have to bring it back into a proper relation with the revitalizing countryside, to break up and thrust green wedges through the urban growth and to provide an adequate framework for the town. Our aim is, by careful land use planning, to try to allocate the most suitable land to the various functions of the town. This is a rather different approach to that of seeking a correct town shape or pattern, but the desired pattern must be borne in mind all the time.**

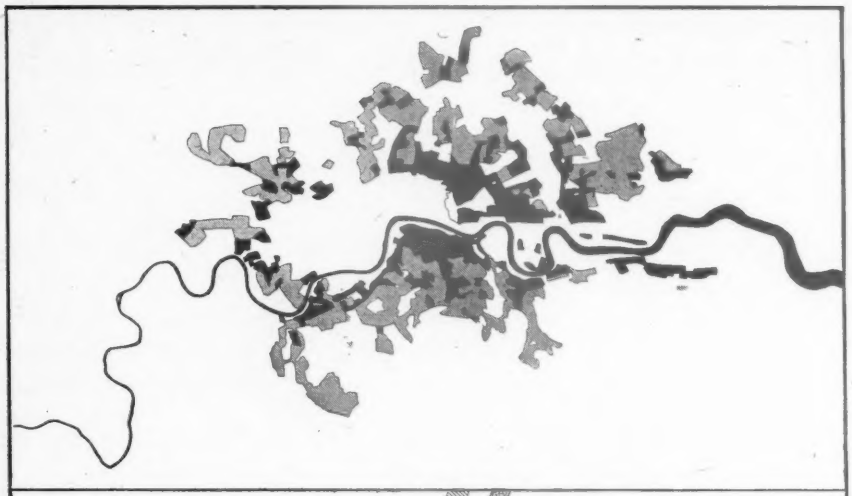


2 **The industrial pattern, its shape and its relation to the town will be shown. We propose to accept the basic pattern in London for there is much common sense in it. It is based on the docks and the attendant industries in the East, the commercial and warehousing zone in the centre, and a new industrial zone in the West, where good communications exist to the industrial heart of England. Tentacles thrust out to North and South along the river valleys. Here is a good framework for the city, if it is combined with a dispersal of light industry through the residential areas to provide local employment, and to administer to local needs.**

KEY

BUILT-UP AREAS

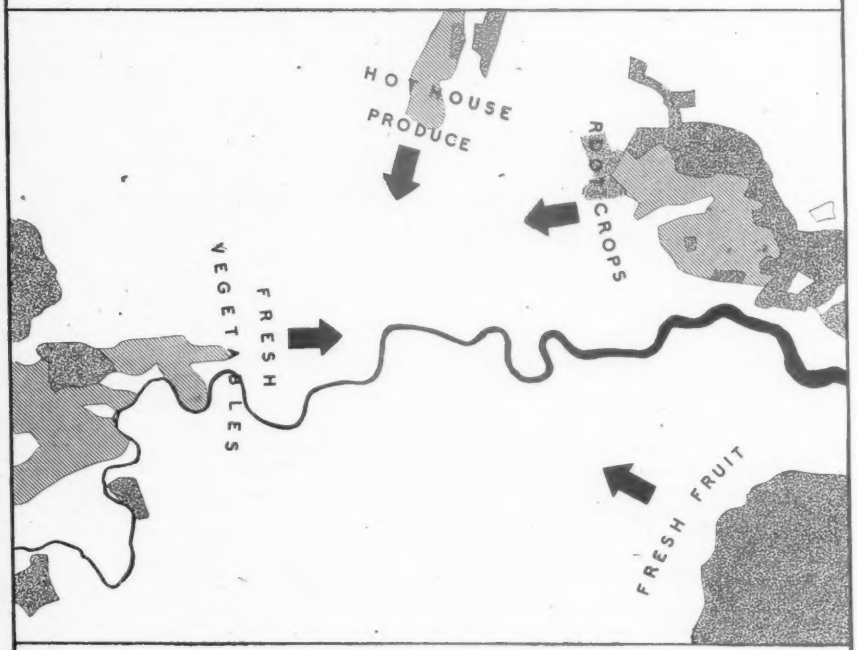
INDUSTRIAL AREAS



3 Blighted zones encircle the central areas of most of our big towns. In London, the slum belt is complete, it follows the lines of the railways and river valleys, it is at its deepest to the East, the side of the prevailing wind and the docks. The black area is ripe for immediate demolition, the shaded area will very soon be ripe. This map, read with the bomb damage map (not shown) will indicate where rebuilding should begin—from the centre in concentric rings moving gradually outwards.

KEY

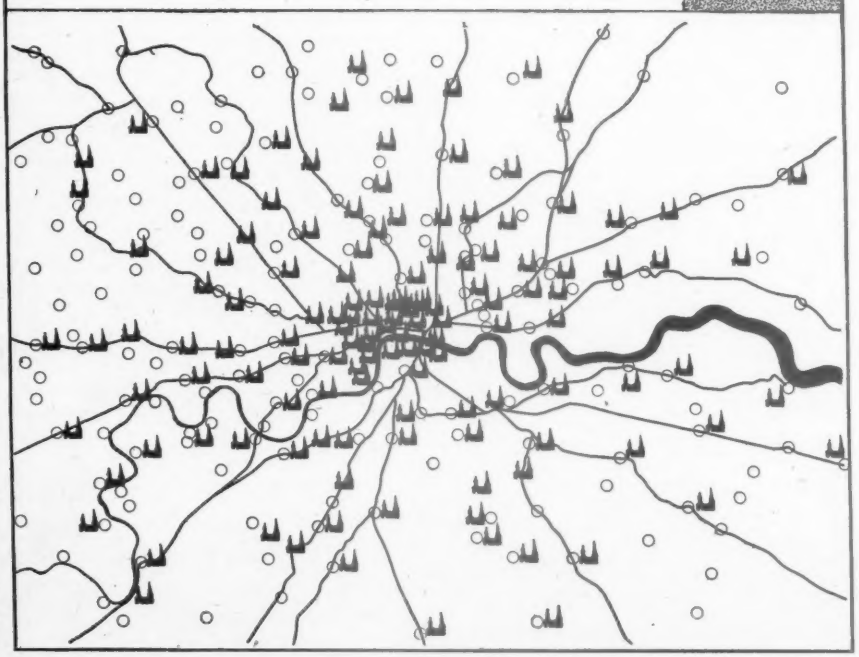
SLUM BELT



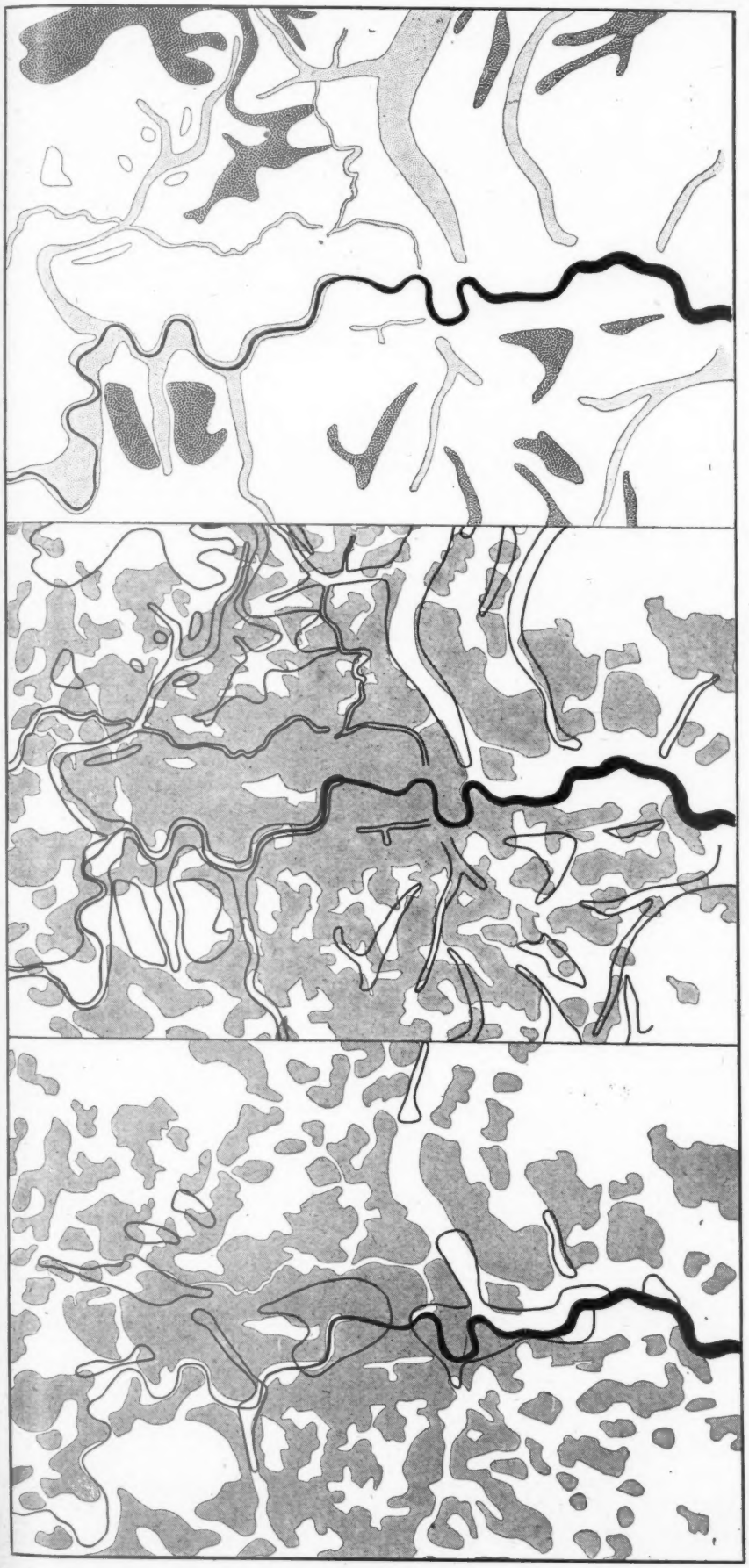
4 London's fresh food. First-class arable land abuts immediately on to the urban spread and is being rapidly eroded away by promiscuous building. It will be one of the objects of planning to stop this erosion by confining the built-up zone, as the health of the city's inhabitants ultimately depends on preserving this land. The hatched portion already partly built over may be recoverable. Here is a clue to the position of some of the wedges of country we require to push into the heart of the town, wedges, moreover, of practical value.

KEY

BEST AGRICULTURAL LAND



5 Historically, London grew from a Roman settlement with its framework of radiating roads, Watling St., Stane St., Ermin St., perpetuated in the present day pattern. Villages tended to congregate on these arterial roads and to form nuclei for the local centres that sprang up when urban spread engulfed them. This map shows the incidence of this factor, original villages are indicated by circles, where a local centre has arisen it is shown by a symbol. The basic cellular structure of the apparently amorphous town is brought out. Each locality tends to retain local colour and it becomes a point in planning to foster this spirit. Other things being equal, established centres should be adopted for the new nuclei.



6 The pattern of hills and valleys The city is situated in a great basin with bluffs of high ground around the edges and with subsidiary river valleys between, its streams are in culverts, its canals unapproachable, its hilltops frequently overbuilt. Hilltops and river valleys make the best open spaces, the river walk, the hilltop view, trees along the skyline, and the slopes between are best fitted for building.

KEY

VALLEYS

HILLTOPS

7 Suppose we take the original urban pattern (1), and subject it to a preliminary sifting. There is a good deal of open space not at present in use, in the form of waste land, cemeteries, land which is very sparsely built over, grounds of institutions, etc., which could make a big contribution to the open space pattern. The shaded area on this map is the residual urban area after extraction of all this land. The pattern of hills and valleys, which we now propose to extract, has been superimposed.

KEY

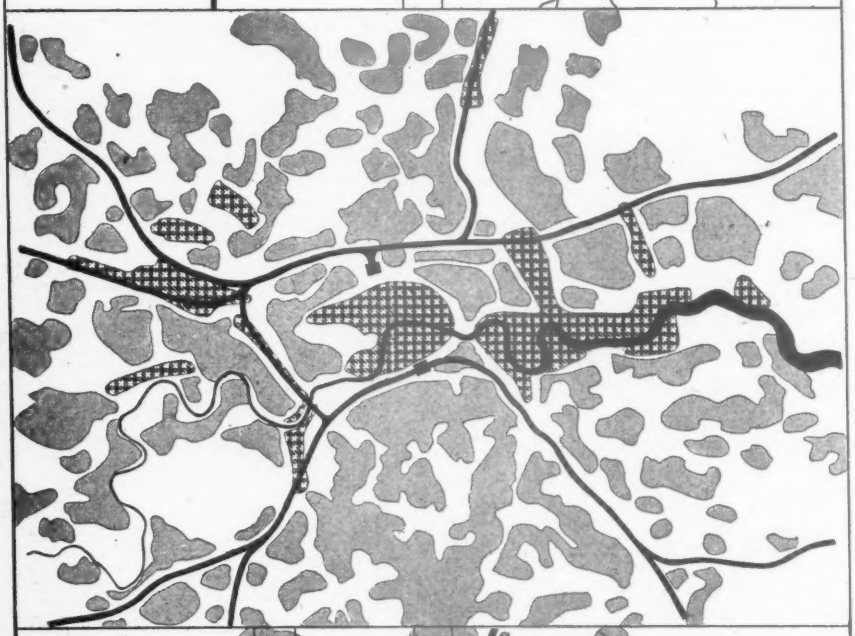
BUILT-UP AREAS

8 The residual urban zone on this diagram has already had abstracted from it the sum of existing open space and the hills and valleys. Now we superimpose the industrial pattern around which an open space will be reserved to preserve the amenity of the adjoining living zones.

KEY

BUILT-UP AREAS

9 We are now ready to consider the traffic system. For many reasons trunk traffic should be segregated from purely local traffic. Long distance rail traffic (a) can be canalized along a limited number of routes from which local traffic is excluded and which serve two or three interconnected stations. A trunk road system (b) can be dealt with on the same grid so that both road and rail enter the town at the same places and tap the industrial zones on the way in. The trunk routes are indicated by thick black lines. In the case of the railways, they are already in being, only the dotted sections being new, the roads would be newly constructed.



10 The trunk traffic system interposed on the urban pattern. The lines enter the city along parkways which have the dual purpose of providing an unimpeded traffic flow and freedom from noise and fumes for the adjoining living zones. Since such traffic parkways are useless for purposes of pleasure, their numbers are kept to the minimum and each holds both road and rail. The distinction between traffic parkways and pleasure parkways should be noted—these functions cannot be combined.

KEY

BUILT-UP AREAS

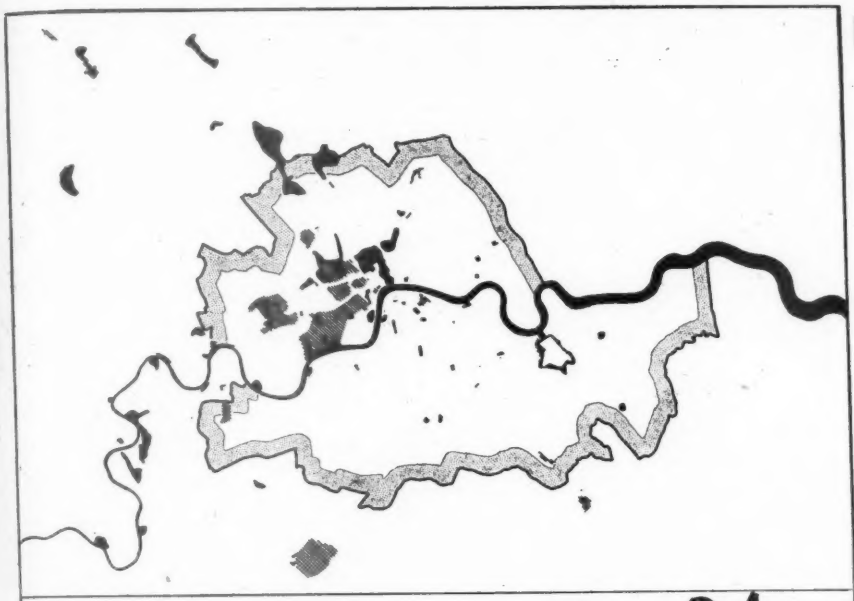
INDUSTRIAL AREAS

11 A diagrammatic presentation of map No. 10. The city is based on its E.-W. band of industry, its traffic decisively canalized, the pattern of greenways into the heart of the city is established. The superimposed grid represents the local traffic system, which will require strengthening laterally to bring living zones into relationship with the adjoining industrial area. The core of the city will be reserved for the functions of a capital city.

KEY

BUILT-UP AREAS

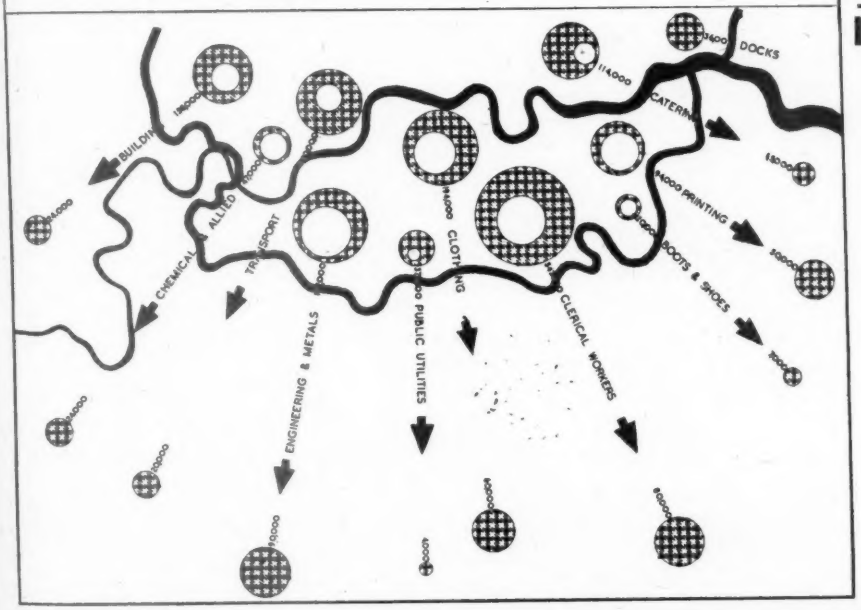
INDUSTRIAL AREAS



12 Worthwhile London. Historic and beautiful areas should be preserved at all costs, there is so little left, we cannot afford to lose these slender relics of past culture. This map, on which they are plotted, supersedes the master plan and the beauties it enshrines are to be bypassed if necessary as quiet oases in the metropolis. Clearly, such a map should be prepared with great care and form an integral part of every planning scheme. The county boundary is shown to locate the areas.

KEY

COUNTY BOUNDARY



13 In order to open up the urban area in this way, considerable decentralizing will have to take place. An industrial survey will indicate what proportions of each industry can profitably be moved, some are "loose footed," some are tied. This diagram has been prepared on the basis that 1,500,000 can be decentralized, obviously by gradual and progressive movement. We represent only a part of this problem here.

KEY

INDUSTRIES

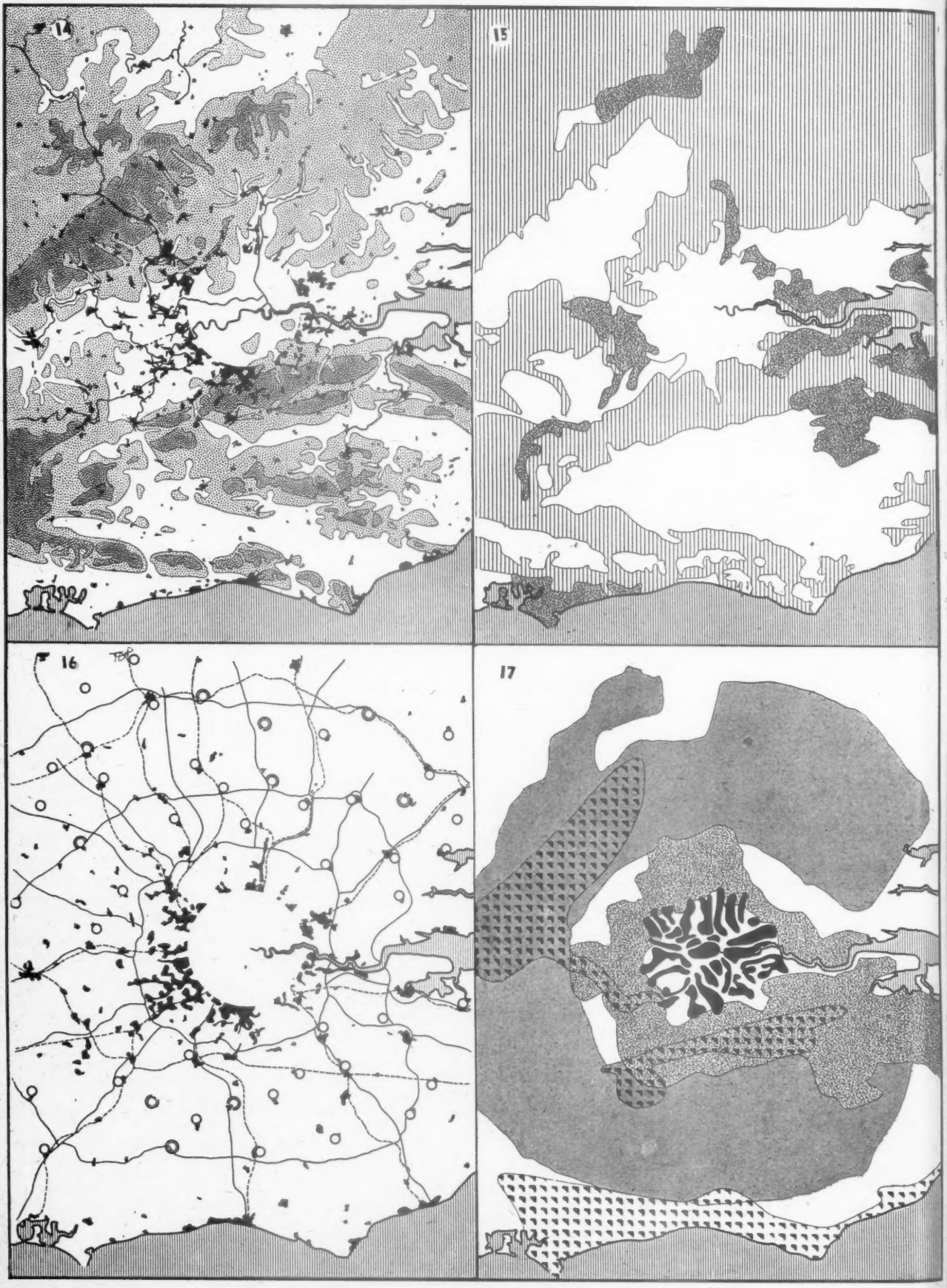
over page

14 This population has to be resited. Some will go outside the region altogether, but for argument we assume 1½ million people will require to be placed. The same process of careful survey and plan must be resorted to, reduced here to a few skeletal maps. We show first the physical pattern and existing population.

15 The agricultural map assumes primary importance. Clearly, the displaced population must not be deposited on the best agricultural land, which forms a belt immediately round the built-up zone and must be preserved for its present function. The displaced population must "leapfrog" over it as the London Regional Plan has it. Urban spread must be cordoned off within its present boundaries.

16 Finally, the plan. The new satellites to house 1,500,000 will normally be attached to and fill out existing townships which will be the better for the acquisition of new industries. Small units up to 10,000 population are shown by a simple circle, larger units of 50-70,000 by a double circle. The road and railway grid, shown by solid and dotted lines respectively, links up with the inter-city system and needs generally a strengthening of its peripheral services, but is otherwise fairly adequate.

17 In diagrammatic form the Region consists of the city, now brought into intimate relation to the countryside, the cordon of agricultural land which will form the "lung" of the city, the great horseshoe-shaped zone of land of moderate agricultural value suitable for the reception of the displaced population and, finally, the park areas of the Chilterns, N. Downs and South Coast.


14
15
16
17
KEY: Contours above 200′
Contours above 400′
Medium Agricultural Land
Best Agricultural Land
Built-Up Areas
Parkland

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.

STRUCTURE

2000 · *New USA Techniques*

POST-WAR BUILDING TECHNIQUES. 1, Construction. 2, Materials. (*Architectural Forum, January, February,* 1945, *pp.* 129-142, 139-158.) Analysis of building techniques and products developed in wartime. Likely effect on future building. New construction techniques and their more significant applications (foundations, new methods of framing, wall fabrication, roof construction). New materials and their anticipated uses (wood, masonry, metals, synthetics, paints and coatings, insulation).

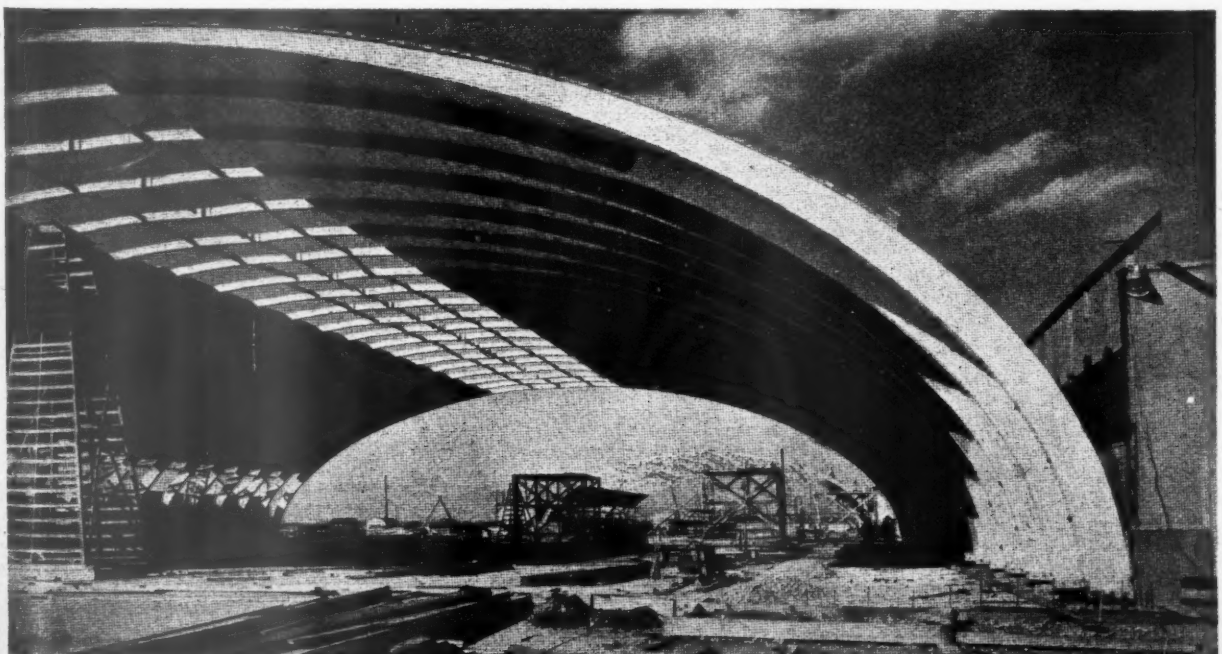
This series of articles reviews those war developments which are likely to influence post-war building of all types. Most of the techniques developed as a consequence of wartime shortage are not in themselves new, but actual experience has revealed unexpected potentialities in construction methods and new materials. Architects and builders will in the future be able to choose the material which best suits their needs with a more exact background knowledge of how to employ it.

In connection with foundations, the use of a concrete raft placed directly on the ground has increased tremendously. Tests conducted by the Bureau of Standards have shown that proper edge insulation of the raft can make a house capable of maintaining a more stable temperature level throughout an entire room than conventional construction with a crawl space. The mat-type slab is made stable by the use of more than ordinary amount of reinforcement. Its main advantage is a saving of excavation work with consequent reduction in costs. As an inexpensive and flexible solution to building on irregular sites, isolated pier construction has been applied with success.

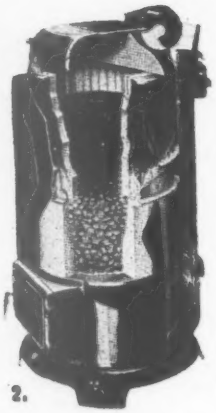
In the field of structural framing, wood and concrete have come into greater prominence. They can now be used for huge arches which span over 200 ft., and as framing members which require a strength formerly obtainable only with steel. In reverse, advanced framing ideas and materials once reserved for large-scale building have been applied to small houses. The success of timber construction is primarily due to the ring connector. This simple device converts wood into an engineered material capable of competing with structural metals. In addition, the ring connector may find its way into house construction, as an aid in the development of a more suitable frame for the big-windowed modern house. Laminated wood is another important innovation for large construction. It can be curved to almost any desired shape, designed and built to exact dimensions, in sizes and spaces unheard of with solid timbers. These many advantages combine to form a structural material unique in building history which shows the way toward a whole new field for timber construction. I-beams and gusset plates in plywood have proved eminently satisfactory in connection with heavy timber construction. Extra large-sized plywood panels are another development; they are manufactured in sizes up to 80 ft. long made from standard size sheets joined together with scarf joints that are as strong and weather resistant as the material itself.

In the field of concrete, movable forms for use at the site have been developed which successfully solve the complex requirements of speed, ease of erection, and minimum of expense. An entire acre of roofs and columns can be poured in a single day. Used on large one-storey plants it has reduced costs below those of wood or steel. These movable forms have also made possible the mass production of thin concrete shell structures. The shells are only 3 in. to 3½ in. of reinforced concrete, but can span huge areas without intermediate supports. This is because the reinforcing system makes the whole structure act as a homogeneous load-bearing member. Similar in principle to the shell, concrete arch ribs have also been developed which can span several hundred feet, supporting incredibly thin concrete domes and providing completely unobstructed floor space. The electrical prestressing of reinforced concrete is another new method which has permitted hitherto impossible applications of this material. It fully utilizes the potential strength of both concrete and steel, making possible the use of large thin slabs lightly reinforced. The resulting structure is low in initial cost, has no maintenance problems, and is highly fire resistant.

Panel wall construction has been more extensively used during the war. Wallboard which combines an insulation core with hard surfaced outside coatings to withstand climatic exposures and furnish a smooth washable wall surface, has been found highly satisfactory. Another widely employed innovation is the use of jumbo sheets of wallboard, large enough to cover the whole of one side of a room. The studless wall is another relatively new construction method which has been made possible where walls are assembled as panels. When



Laminated timber arches spanning over 100 ft. were designed to replace steel in USA war-time construction—one of many new developments which will effect post-war building. From Post-War Building Techniques. *See No.* 2000.



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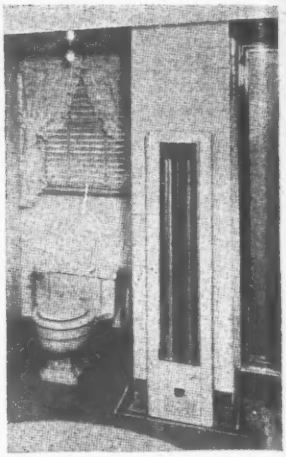
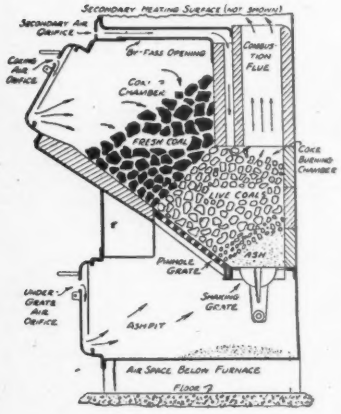


4.

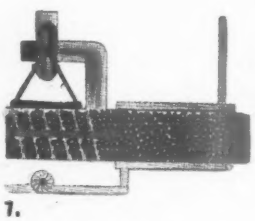
SMALL HOME HEATING can be done by a midget portable heater developed for the AAF (1), by the Conservator Circulating Heater, burning both coal and its gases (2), by a Chrysler space heater supplying radiant and convection heat (3).

INDIVIDUAL ROOM HEATING which allows separate temperature control is possible by using Panelray (4), a wall-installed radiant heater. Infra red lamps (5) are an auxiliary heat source applied where extra warmth is needed.



6.

LARGER HOMES can be heated by a new down-draft furnace (6) designed to burn bituminous coal without producing smoke. A down-draft conversion unit can be applied to old furnaces. New principle of burning anthracite (7) uses tube-like furnace only 18 in. long.



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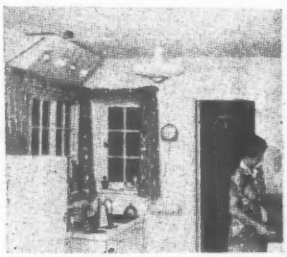

5.

New developments in USA house heating equipment. *From* Post-War Building Techniques. *See No.* 2001.

complete prefabrication of wall panels is wanted stressed skin construction is the technique usually employed. The panels are manufactured both as separate sections from which walls may be constructed and as complete walls with window and door-frames included in the unit. Stressed skin construction will undoubtedly be more than able to compete with conventional building in the small house market after the war. In the field of industrial building, " breathing walls " are the most important developments in wall construction. They combine thermal insulation, acoustical control and light reflection in a minimum package with the most economic use of material.

For roofs, one of the most widespread developments of war housing is a simple system of truss construction which eliminates the necessity of partition walls to bear the roof. This development is important, because of the new freedom it has introduced into house plans. Partitions can be placed wherever desired to make the most efficient design. Such roof trusses have also been used for large scale housing and a system has been worked out for assembling a complete set of trusses on the ground and lifting the entire bundle into place with a crane.

One of the outstanding characteristics of post-war building will be a wider choice of materials than was ever before possible. The many new products which have been developed during the war have in many cases proved to be far better than the materials they replaced. Wood, one of our oldest materials, has been basically transformed by research. It may now be considered a chemical substance which can be analysed, rearranged and recombined to form completely new structural materials. Soft wood can be transmuted into hard wood; colour can be impregnated into wood. Wood compressed across the grain gives a wood of great stability. The most interesting products are the new impregnated woods. Impregnation with synthetic resins under heat and pressure is the basic method forming new treated woods of special qualities. " Compreg " is one of the best known among them, a hard dense, beautifully grained material, it has a high natural surface gloss without polishing—an excellent flooring material. Plasticized wood is wood impregnated with a urea compound under heat treatment which renders it extremely pliable. It can be bent, twisted, even tied in a knot, and upon cooling it retains the shape it was given when heated. Because of its unique shaping qualities it is the new material for jobs which formerly called for skilled cabinet work. With advance in moulding technique, tubular plywood shapes have been produced for the first time. The tubing is stronger than steel tubing, rust and rot resistant and impervious to wind and rain.

In masonry, the simplification of sizes with the choice of the 4 in. module as a basic unit for post-war manufacture is an important step in eventual development of modular dimensions in all building products. Post-war modular masonry will include brick, structural tiles, glazed and unglazed facing tile, cinder-blocks and concrete blocks. If produced on a countryside basis, this would make possible the fitting together of diverse materials from many sources without cutting and fitting at the site.

In the metal industry, the standardization of steel window designs and dimensions in co-ordination with modular masonry is a very promising development. Increased production with possible lowered prices is another significant step which will result in wider use of metal products (doors, structural panels, etc.), where expense would formerly have ruled them out.

Lamination of all types of materials has made great strides during the war, almost entirely because of the new glue developments. The moulding of all laminates is a direct result of glue improvements. One of the most interesting of these is the Fiberglas laminate which is stronger weight for weight than metals. It can be shaped, drilled, punched, sawed, ground, turned, threaded, or planed. Complete kitchen and bathroom units can be moulded of the laminate which has the added advantage of being fireproof.

There is no room to review in detail all the new finishes, fireproof fabrics, packaging materials, paints, coatings, insulating materials, sandwiches, etc., that have been developed in recent years. The choice in all fields is bewildering and stimulating, and will call for good critical faculties and thorough practical knowledge on the part of designers.

EQUIPMENT

2001 *New USA Equipment*

POST-WAR BUILDING TECHNIQUES. 3, EQUIPMENT. (*Architectural Forum, March,* 1945.) General article on equipment likely to be available soon, mainly for houses. Heaters, laundry machines, dish washers, lamps, doors, windows, etc.

This article, which does not go into any technical detail, is useful in giving a general description of equipment which may be available in the post-war USA. Some of the things described are still in the experimental stage, and certain of the descriptions may prove to have been over-optimistic, but the article gives a useful

The Basic Requirements of DOMESTIC HOT-WATER SUPPLY

REQUIREMENT	CENTRAL SYSTEM		LOCAL SYSTEM	
	BACK BOILER	DOMESTIC BOILER	ELECTRIC STORAGE	GAS GEYSER
BATH — Large supply at infrequent intervals day or night, with possibility of following baths.				Excellent
WASH BASIN — Small supplies at irregular intervals day or night.				Excellent
SHAVING — Very small supply of very hot water at infrequent intervals.				Excellent
KITCHEN SINK — Moderate supplies at frequent intervals. Day only.				Excellent
COOKING — Small supplies of very hot water. Day only.				Excellent
CLOTHES WASHING — Large supplies of hot water on certain days only.				Excellent
SUNDRIES — Illness, hot water bottles, cleaning etc. Very hot water day or night.				Excellent

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and stimulating glimpse of future trends.

The following items are covered. New anthracite heater. A smokeless bituminous coal furnace, small airplane heaters adapted for domestic use, panel heating, thermostatic control, humidity control. Dishwashers, laundry machines and refrigerators and freezers. New types of lamps, heavier wiring. Doors made complete with frame and furniture. Windows of new types and new materials. Many of the items mentioned have been dealt with in special and more detailed articles which have previously been reported in the A.J. Information Centre.

2002 *Electrical Appliances*

SPACE REQUIRED FOR DOMESTIC ELECTRICAL APPLIANCES. *BS* 1183:1944. (*British Standards Institution*, 2*s.*, 12 *pp.*) Covers maximum sizes of electric cookers, refrigerators, wash-boilers, washing machines, water heaters. In latter case, notes on installation also included.

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.*

2003 *Price for Factory Building*

Q *Can you furnish me with an up-to-date price per cubic foot for factory buildings of 4 or more storeys, steel framed with hollow brick walling, precast concrete slab floor to carry 3 cwts. per sq ft., roof of steel trusses, boarding, and natural asphalte? The price will only be required for costing post-war proposals for discussional purposes, but should, if possible, include for electric lighting, sprinkler installation, etc.*

A It is extremely difficult to give you an accurate present day price per foot cube of a factory building of the construction as detailed in your letter. So much depends on the locality of the proposed building, sited conditions and availability of materials in that locality. Also there is a considerable difference of opinion as to the increase in building costs since 1939.

In our opinion the present day cost of a factory building proposed to be erected under normal conditions would be about 2s. per foot cube.

2004 *Office Floor Space*

Q *Has the LCC Bye-laws relating to the minimum floor space or cubic capacity to be allotted per person in London offices, and if so what are their requirements?*

A The LCC building bye-laws relating to rules for offices are contained in Bye-laws Nos. 141 and 149. The only reference in these bye-laws to the minimum floor space or cubic capacity to be allotted per person is in Bye-law 149 (7), as follows:—

"In any cases where, owing to the position, level or unsuitable surroundings of any room used for any of the purposes mentioned in paragraph (1) of this bye-law natural ventilation cannot in the opinion of the district surveyor be provided, other additional means of ventilation shall be provided to the satisfaction of the surveyor, and such ventilation shall be capable of supplying fresh air to all parts of such room at the rate of not less per hour than 750 cubic feet of air per occupant or per 50 square feet of floor area whichever requires the greater ventilation."

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.

ASB

R. C. Bevan

April 25, at 66, Portland Place, W.1. Architectural Science Board lecture on FIRE GRADING IN BUILDING, by R. C. Bevan, M.A., B.SC. (of the Building Research Station). Chairman: A. Pott (Building Research Station).

R. C. Bevan: The object of fire grading is to give the architect and all others concerned with the safety of people and the safety of property all the data they require to ensure that the building is satisfactory from the fire protection standpoint, The problem covers almost every item in building—the walls, floors, roofs, the height of the building, floor area, or, as is sometimes adopted, the cubic capacity of the building, internal planning, the layout on the site, ending finally in town planning. It is a very complex problem, and there can be no simple solution.

In this talk I can give you only the very barest of outlines. In due course we shall be having the report of the Joint Committee of the Building Research Board and the Fire Offices Committee on this subject. I cannot anticipate their findings, but that report will, of course, treat the subject in rather greater detail.

Fire grading is concerned with the establishment of standards. How those standards are attained is not a matter of immediate concern; that is for further consideration.

There are two basic items which we have to consider: on the one hand the fire hazard, and on the other the fire precautions which must be taken to minimize that hazard. As the title implies, we have to balance the precautions against the fire hazard to attain a good standard of safety.

First of all, we must appreciate what fire hazard is. It is not a simple quantity which we can measure in pounds or inches or degrees. For the purpose of analysis, I always find it helpful to consider the fire hazard of any building under three heads: (1) the fire hazards to the occupants of the building; (2) the hazard to the structure and its contents; and (3) the hazard to the surrounding property. I separate them in this way because it may help to make it clear that precautions in respect of, say, the structure and contents are by no means necessarily adequate from the life safety standpoint, and *vice versa;* nor may they be adequate from the standpoint of the adjoining buildings.

Before we can assess the precautions required in any particular case, we must know what the fire hazard is. To take an analogy, we cannot design a building structurally until we know what the load is. Again, there is the question of the order in which we should take the hazards. The order of importance is not always the most convenient for analysis, and I propose to start with the last one in order of importance, the hazard as it affects the structure and the contents.

CLASSIFICATION OF OCCUPANCIES

With the very wide range of occupancies, the first task is to attempt some classification from that standpoint. There are many ways in which occupancies have been classified for this purpose. The common one in this country is domestic, trade and manufacturing, and warehouse, but the modern basis is by means of what is known as fire load. The fire load is merely the load of combustible material in the building, both its contents and any parts of the structure which may be combustible. Just as floor loads can be given for different occupancies, so we can have fire loadings for different occupancies.

The fire load can be expressed in pounds per square foot, but it should be related to the total calorific value of the contents, and it is more accurate to express it in terms of the amount of heat which can be liberated by the complete combustion of the fire load, usually in B.Th.U. per square foot. The fire load—and this is quite an important point—bears little or no relation to the floor load used in design.

Unfortunately, the numerical value of the fire load is not the only factor that comes in. We may have, for example, a fire load of 100,000 B.Th.U. of petrol, and a fire load of 100,000 B.Th.U. of heavy timber. Obviously there is a very great difference between those two fire loads which is not taken into account by the numerical value. That factor represents what is usually called the degree of hazard, and unfortunately that degree of hazard cannot be expressed in any definite terms. Steps are being taken in that direction, but for practical purposes, at any rate for the time being, we must leave it to be expressed in a qualitative way, and rely largely on experience and on our general knowledge of the combustible properties of different types of material. Again, there is the very great difference between, say, a fire load of wood shavings and a fire load of heavy timber.

The importance of this fire load conception —which, by the way, originated in America many years ago—lies in the fact that it does give us some indication of the kind of fire which is likely to occur.

If we turn now to the question of personal risk, I think it is clear that any classification of occupancies must be considered from a different standpoint. A warehouse will carry a heavy fire load, but from the life risk standpoint there is very little cause for concern, simply because there will be only two

or three people in it, and they will be able-bodied. On the other hand, a hospital has a light fire load, but if a fire broke out in a hospital there would be considerable danger to the patients. Therefore, when considering the grading of occupancies from the aspect of life safety, we must take into account not only the characteristics of the fire load but the characteristics of the population.

Ideally, then, from the design point of view we should have a grouping of occupancies both from the fire load standpoint and from the population standpoint.

That leaves us with the question of exposure hazard. The first two divisions—the contents and the safety of life—are concerned mainly with the inside of the building; when we come to consider exposure hazard we are concerned with conditions outside the building, and for that reason I propose to leave this question until later.

GRADING OF PRECAUTIONS

That, then, brings us to the question of the grading of precautions. We have seen that it is possible to classify occupancies according to fire hazard, and that is our first step. Our second step is to consider the precautions which must be taken to meet those hazards. In this I shall assume, of course, that fire fighting is always available, but, apart from that, fire precautions in any building can be divided broadly into construction and planning, and fire extinguishing.

The first item to take, then, is the basic construction of the building. In this country the practice has been, broadly, to consider buildings in three groups: the fire-resisting building, the brick-and-timber building, or ordinary building, as it is often called, and the unprotected building.

In BS 476, which deals with the measurement of fire resistance, elements of structure are graded according to the time for which they resist certain standard conditions of fire load and water. That is measured in hours of exposure to the conditions; and to make proper use of those data—*i.e.*, to know when we should use elements of structure of one-hour or two-hour fire resistance—we must know the relation between the test conditions and fires in buildings having a different fire load. That link is provided by some occupancy tests carried out in America. In those tests, in a specially-constructed brick chamber, various weights of timber and paper were set alight, and the temperature conditions measured throughout the complete burning of the contents.

The answer can be shown in a table. In the left-hand column we have the weight of furniture and combustible material generally expressed in lb. per sq. ft. of floor area. In the next column we have the calorific content per sq. ft. In general, of course, the calorific value of paper and timber is round about 8,000 B.Th.U. per lb. The interesting feature is the third column. Here we see that the combustion of 10 lb. per sq. ft. of combustible material is approximately equivalent to 1 hour exposure in the British Standard fire test, 15 lb. per sq. ft. to 1½ hours, 20 lb. to 2 hours, and so on. That means that if we have a building where the combustible content is of the order of 10 lb. per sq. ft. we should expect any element in the structure of that building which had a fire resistance of 1 hour to withstand the complete burn-out of those contents.

Our original grouping of fire resistance, therefore, must, if we are to have due regard to economy in construction, be divided up to cater for the different fire loads.

We can divide the first-resisting construction into a number of different sub-grades, each of which is nevertheless fully fire-resisting for its particular fire load. So much, then, for fire-resisting construction.

Our next group consists of the brick and timber building. That is defined by the materials of which it is constructed; but, in order to be in line with the general modern trend of defining the requirements by standards rather than by the actual materials of which the building is constructed, we can see that the brick and timber building is one which from the fire-resisting standpoint has external walls of a high grade of fire resistance and an internal structure of more or less negligible resistance; in fact, the timber floor does not fall within any of the grades of the British Standard definition. We can, then, classify all buildings of this type—and it will cover, of course, a very large number of buildings in this country—under a generic grade defined by external walls of a high grade of resistance and internally none.

Finally, we have the unprotected structure, in which none of the elements of structure have a grade of fire resistance as specified in the British Standard.

That grouping is one of many, but it has this advantage. In the first class we have buildings in which all the main elements of structure have a specified grade of fire resistance. In the next type, the brick and timber, it is only the brick walls which have a grade of fire resistance. I say "brick," but perhaps I should not do so, because I am not specifying materials, and so I will say that only the external walls have a grade of fire resistance. Lastly, there is the unprotected category, where none of the structure has a specified grade of resistance. We can go on subdividing to our heart's content. A building of combustible construction may have a fire resistance equal to that of one of incombustible construction, but, of course, there are very obvious differences between the two.

What I have tried to show you is how we can group methods of building construction according to the degree of resistance to fire, without making any reference to the type of material that is used. It opens the way, in fact, to the use of any type of material, provided it is used in such a way that the element of structure which is formed of it attains that standard of fire resistance.

LIMITS OF HEIGHT AND SIZE

That brings us to the rather controversial question of the limits of height and limits of size of buildings which would be permitted from the fire protection standpoint for any combination of occupancy and type of construction.

Let us first consider height. The objects of limiting the height of a building from the fire protection standpoint are mainly (1) to ensure that the people in it are not trapped in rooms at considerable heights, from which they could not be rescued by the fire services, and (2) to make sure that all parts of the building are within the range of attack on a fire.

From the standpoint of fire protection, it is not easy to justify applying a limit of height in the case of fire-resisting buildings. An important point there is that in the fully fire-resisting building there is no risk of collapse, and accordingly fire-fighting can be carried on more effectively from the inside than is possible in a building in which there is danger of collapse. Where, on the other hand, there is a risk of collapse, the height should be limited so that every part of the building can be attacked from the outside.

That brings us to the question of fire-fighting. I believe that in general hose streams from branches at ground level lose most of their efficiency at 50 ft. With modern turntable ladders it is possible to go up to 100 ft., but then other questions enter.

Size limitation is a more difficult problem. The object of limiting the size of buildings, or the size of sections or divisions (as they are commonly called) of buildings, is to restrict the amount of property at risk and to restrict the size of the fire which may develop. That very largely minimizes, of course, the risk to adjoining property. In London we still have the almost classic restriction of 250,000 cubic feet in trade and warehouse buildings, which can be exceeded only by the consent of the Council. In the case of fire-resisting construction, more generous limits are permitted. In American codes it is the practice to allow unlimited areas where the building is of a high grade of fire resistance; with buildings of other types, the size is restricted. Much is often said on the question of limitation, and the American basis is often quoted in favour of no restriction being applied, but the full benefits of fire-resisting construction cannot be obtained without proper subdivision.

SAFETY OF OCCUPANTS

I want now to say a few words about the question of the safety of occupants in relation to any building. It is a very difficult subject. To some extent it is catered for in fixing the size and the height of the building; but the major feature of precautions from the life safety standpoint is means of escape. We saw earlier that the factors which need consideration are the population characteristics and the fire load characteristics, and they must be considered in relation to the type of building.

One of the major features which has to be taken into account is the density of the population in the building. It is quite customary in the American building codes, and for that matter in London, to grade buildings according to the number of square feet per person, according to the occupancy.

The common practice is to adopt a basic unit of exit width, and a certain rate of movement along corridors, through doorways and so on, and to lay down a limiting distance to travel. The unit of width varies in different codes from 18 in. to 22 in. The assumed rate of movement of crowds also varies; in some codes it is taken as 40 persons per minute for a unit of exit width, while in others it goes up as high as 60. The other factor, the limiting distance of travel from any point in the room to an exit, is again a variable factor in different codes, though again there is usually taken into account the occupancy and the type of construction. That distance varies in different codes from 50 ft. in buildings with hazardous occupancies and inflammable construction to 150 ft. in the least hazardous cases.

SPRINKLERS

We have still to consider the many items which go to form the complete system of fire protection. There are, for example, special provisions for high buildings. There are all the questions relating to accessibility for fire-fighting—the provision of adequate streets, access of all kinds, provisions with regard to staircases and basements, water supplies, fire-resistant doors, and so on. It is quite impossible to deal with all these things to-day.

There is, however, one question which perhaps I ought to mention, and that is sprinklers. Sprinklers are a very effective means of extinguishing fires. American practice allows the size of buildings to be doubled if sprinklers are installed; where 10,000 sq. ft. are allowed, you can go up to 20,000 when sprinklers are used. Where the figure is unlimited there is nominally no need for sprinklers, but in many codes there is a special provision that in all buildings in which combustible material is handled or stored sprinklers shall be installed when the floor area exceeds 10,000 sq. ft.

EXPOSURE HAZARD

A few words about exposure hazard, the last of the three groups of fire hazard. It is concerned, of course, with the risk of the spread of fires in built-up areas from building to building and across streets and back yards and other open spaces between buildings. Fundamentally, the best protection is obtained by the proper spacing of buildings, so that the fire cannot jump across streets. That brings us into the field of town planning. It would be possible so to design and plan our cities that the risk of spread of fire was almost eliminated by that means, but we have other means of protection available. In general—and this applies throughout fire protection—the most economic method of

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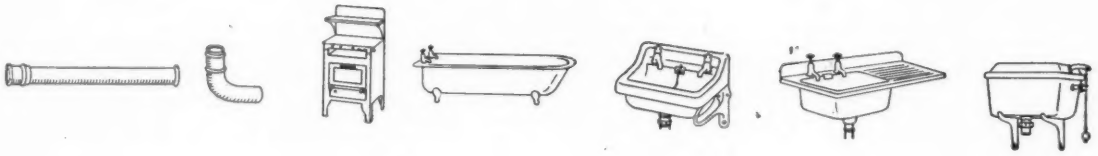
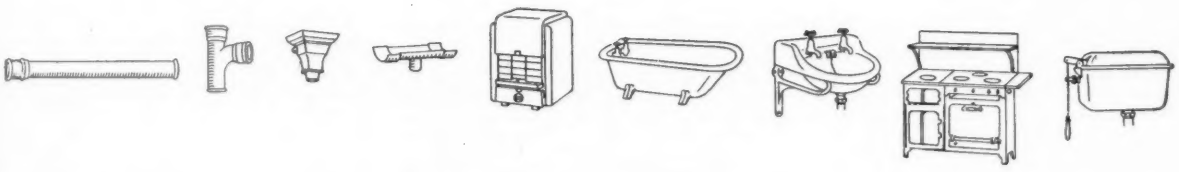
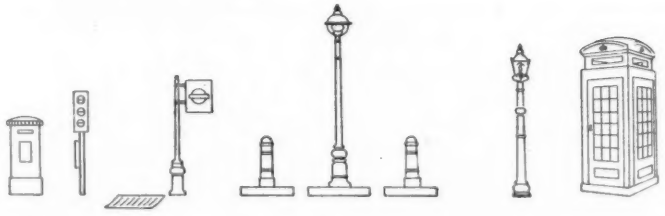


In the hundreds of new schools that will be needed, and the old schools that will be enlarged, cast iron will obviously be used for



In the miles of new streets that will be needed for the new towns and extensions to towns, cast iron will obviously be used for



But there are hundreds of other uses in modern building and equipment for this old, tried, but very up-to-date material. They are worth looking into.

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FACTS ABOUT THE BUILDING USES OF CAST IRON

The British Cast Iron Research Association has a Building Uses Department which is available for dealing with enquiries from architects and builders about cast iron. Mr. Derek L. Bridgwater, F.R.I.B.A., is Consultant to the department.

Enquiries should be addressed to THE BUILDING USES DEPARTMENT, BRITISH CAST IRON RESEARCH ASSOCIATION
Alvechurch, Birmingham

protection is by a combination of the three major methods, structure, plan, and fire-fighting or fire-extinguishing. Nevertheless, town planning should be the proper approach, not only for fire protection, but for the provision of other amenities such as good daylighting which are obtained by good town planning.

ZONING

Much discussion is going on now about zoning, so that there shall be a factory zone, a commercial zone, and so on. An important fire problem arises there, because that zoning will eventually lead to a concentration of high fire risks in one area. In the past we have had a haphazard mingling of houses and factories which led to a distribution of high fire risks amongst a number of low ones. In these new developments, therefore, it is important to ensure that adequate fire protection is provided in those areas which contain the higher risks.

RIBA

Statement

The following statement on ARCHITECTS IN POST-WAR BUILDING has been issued by the RIBA.

The Royal Institute of British Architects have taken every possible opportunity of impressing on Government Departments the vital necessity of employing architects in the preliminary stages of all post-war building. They have pointed out that the architectural and surveying professions are the design and planning services of the building industry which, unlike other industries, does not design for its own production; further, that design work must be practically completed before building can start, and that the preparation of lay-out plans, detailed designs, working drawings and contracts takes time, and cannot be unduly hurried without loss of efficiency.

In particular, the Government's housing programme is likely to be retarded or inefficiently carried out unless the services of architects are properly employed in the preliminary stages.

The Royal Institute of British Architects do not observe that the Government's demobilization policy reveals a realization of these facts. In spite of the fact that the Minister of Health and the Minister of Works, recognizing that the services of qualified architects are essential to good quality housing, have strongly urged local authorities to employ them on the lay-out and design of post-war housing schemes, the demobilization plans laid before Parliament do not indicate any provision for the release of architects in sufficient numbers and at a suitable stage to enable these recommendations to be implemented.

The profession of architecture has not been a reserved occupation under the National Service Act, and in consequence a considerable proportion of its members are serving in the Armed Forces. Whereas it was necessary to reserve from military service on the outbreak of war various categories of men and women whose services in civilian capacites were deemed necessary to the efficient prosecution of the war, it now appears clearly necessary to the successful and rapid provision of good housing to release from military duties sufficient numbers from all sections of the building industry, including architects and surveyors.

The Royal Institute of British Architects have produced and agreed with the interested Ministries statistics on the ratio of architects needed in respect of numbers of building craftsmen and labourers in full employment. The Royal Institute have urged that if the work of the building industry is to be properly planned the appropriate ratio of architects should be available at a sufficiently early stage.

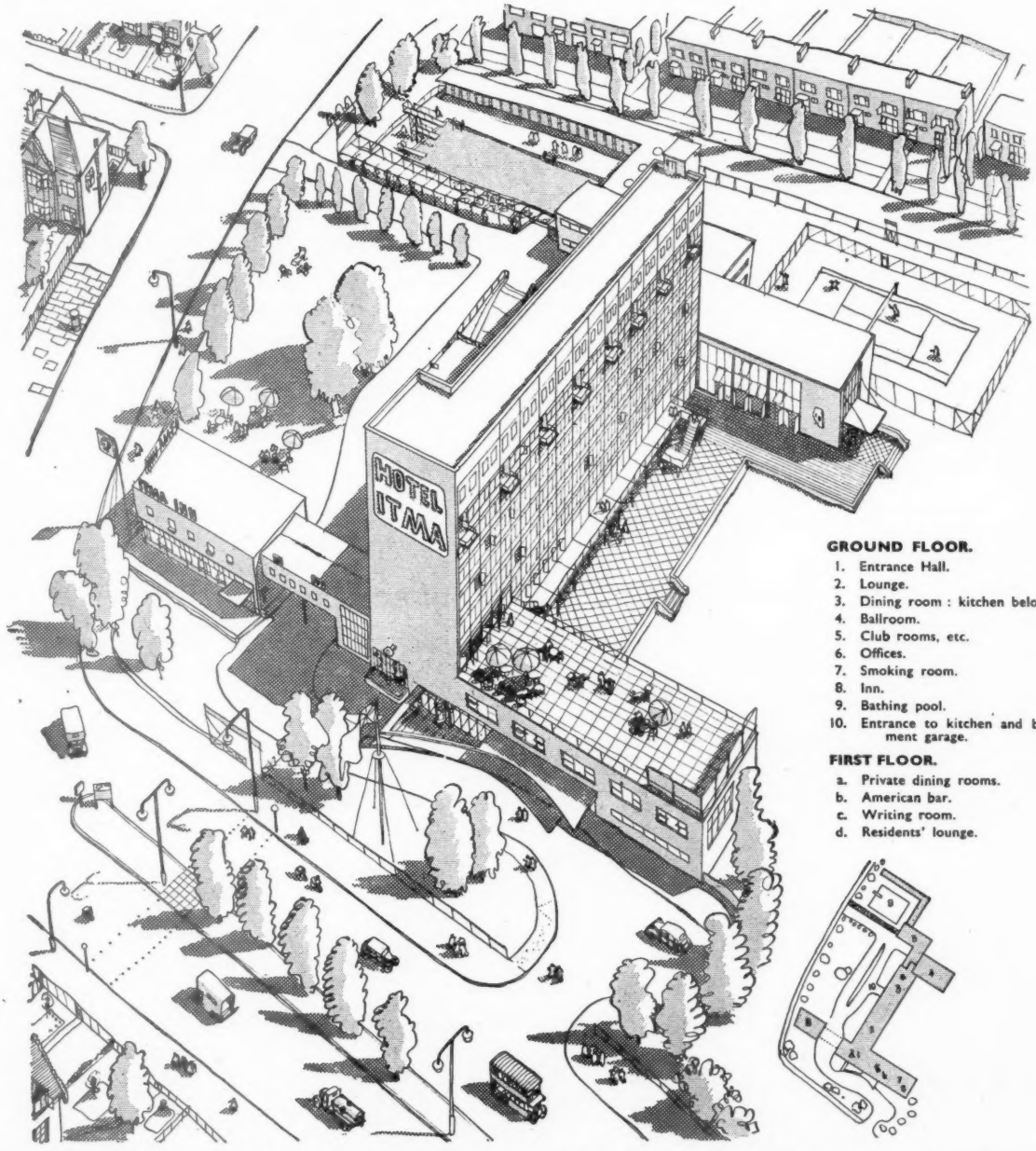
Three general classes of architectural services are required, namely, the salaried staffs of the larger local authorities, a proportion of private practitioners to meet the needs of the many smaller local authorities who do not employ salaried architectural staffs and a sufficient number of assistants for both.

The Royal Institute of British Architects have, therefore, submitted proposals to the Government for the release of architects based on the principle of age and length of service in all three of the above classes, keeping pace with the release of craftsmen and labourers, but with the requisite degree of acceleration to allow the planning of temporary and permanent housing schemes to be done before work starts.

At the same time the Royal Institute of British Architects wish to direct attention to the fact that housing cannot be separated from the large amount of reconditioning of schools, hospitals, etc., in blitzed areas. These buildings will be required so soon after the provision of housing as almost to form part of the housing programme itself. Further, as one means of meeting the housing shortage, it is proposed to modernize much obsolescent house property. Conversion work of this type cannot be begun without preparation beforehand of surveys, working drawings, specifications, contracts, etc. Finally, hard on the heels of the housing programme will follow the huge school building programme consequent on the Butler Educational Act, the provision of factories and warehouses for export trade, shops to serve the new housing areas, etc. At present the Government are rightly concentrating on housing, but advanced planning for these other needs in the immediate future should not be overlooked.

BUILDING FOR DAYLIGHT

No. 10 FACTS FOR ARCHITECTURAL STUDENTS



GROUND FLOOR.

1. Entrance Hall.
2. Lounge.
3. Dining room : kitchen below.
4. Ballroom.
5. Club rooms, etc.
6. Offices.
7. Smoking room.
8. Inn.
9. Bathing pool.
10. Entrance to kitchen and basement garage.

FIRST FLOOR.

a. Private dining rooms.
b. American bar.
c. Writing room.
d. Residents' lounge.

This suggests a scheme for a medium sized hotel, which combines the services of a roadhouse with residential accomodation. It is sited on the outskirts of a town. The Hotel is orientated N.E. to S.W. for the bedroom block and chief public rooms, giving S.E. aspect to all bedrooms and S.E. and N.W. to dining room and lounge. A high block for bedrooms secures maximum daylighting for all rooms without excessive ground coverage. The orientation of the main block admits daylight to all rooms at some time during the day all the year round. There is a link to the public house and basement garage, with a covered ramp which affords a good aspect for public rooms facing over it on that side.

Gordon Jeeves, F.R.I.B.A.

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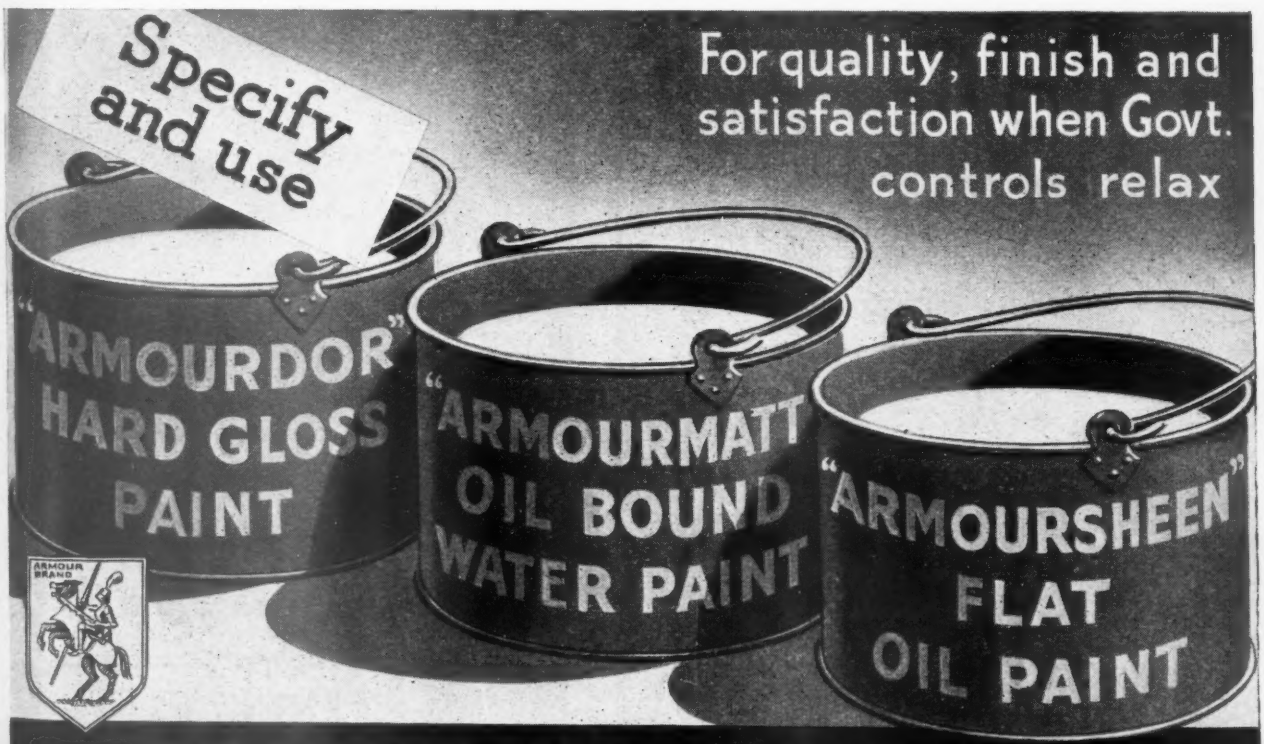

GRIFFITHS ARMOUR BRAND PAINTS

GRIFFITHS BROS. & CO., LONDON, LTD., MACKS ROAD, BERMONDSEY, LONDON, S.E.16. Telephone: BER. 1151

CLASSIFIED ADVERTISEMENTS

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

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

CARMARTHENSHIRE COUNTY COUNCIL.

Applications are invited for appointment on the temporary staff of the County Architect's Department, with the possibility of a permanency, of two thoroughly qualified and capable Assistants. Experience of the design of Schools, Police Buildings, etc., an advantage. Salary offered, up to £550 per annum according to capabilities.

Applications, stating age and experience and accompanied by copies of two recent testimonials, should be delivered to the undersigned not later than the 7th July, 1945.

W. VINCENT MORGAN, A.R.I.B.A.,
County Architect.

County Offices, Carmarthen. 870

BOROUGH OF ILFORD.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant in the Borough Engineer and Surveyor's Department.

Applicants must have had previous experience of housing work, and should be Registered Architects, and preference will be given to Associates of the Royal Institute of British Architects.

The commencing salary will be between £320 and £400 per annum depending upon the experience and qualifications of the candidate, rising by annual increments of £20 to a maximum of £400 per annum. The salary is subject to the addition of a war bonus at present amounting to 23s. per week.

The appointment is temporary, but is likely to be for a minimum period of two years in the case of a suitable candidate, and will be subject to the provisions of the Local Government Superannuation Act, 1937.

Applications, stating age, present and previous positions and experience, must be delivered to the undersigned not later than first post on the 2nd July, 1945.

CHARLES N. ROBERTS.
Town Clerk.

Town Hall, Ilford.
11th June, 1945. 853

COUNTY BOROUGH OF WALLASEY.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

(*a*) SENIOR ENGINEERING ASSISTANT, Grade 2A (Permanent). Salary £300 by £15 to £425 per annum, plus War Bonus at present £59 19s. 3d. per annum. Candidates must have had good experience in general municipal engineering, and must possess at least one of the following qualifications:—Engineering Degree, A.M.Inst.C.E., Testamur—Municipal and County Engineers.

(*b*) ASSISTANT ARCHITECT (Temporary), in connection with Architectural work for the Education Department. Salary, £500 by £25 to £600 per annum, plus War Bonus at present £59 19s. 3d. per annum. Candidates must have had previous municipal experience particularly in design of Primary and Secondary Schools, school extensions and maintenance; and must be Associates of the Royal Institute of British Architects.

(*c*) ASSISTANT ARCHITECT (Temporary). Salary, £400 by £15 by £10 to £425 per annum, plus War Bonus at present £59 19s. 3d. per annum. Candidates must have had previous municipal experience, particularly in connection with large housing schemes, lay-outs, survey, etc., and must be Associates of the Royal Institute of British Architects.

Appointment (*a*) is an established post. The successful applicant will be required, under the Local Government Superannuation Act, 1937, to join the Superannuation Scheme, and to pass a medical examination.

Appointments (*b*) and (*c*). The Local Government Superannuation Act, 1937, would apply in appropriate cases.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, must be received by the undersigned not later than Wednesday, 4th July, 1945.

EMRYS EVANS,
Town Clerk.

Town Hall, Wallasey.
8th June, 1945. 868

STAFFORDSHIRE EDUCATION COMMITTEE.

ARCHITECTURAL ASSISTANTS.

Applications are invited from Architectural Assistants as under:—

Senior Assistants—Salary, £400 to £450.

Junior Assistants (qualified to inter standard of R.I.B.A.)—Salary, £300 to £360.

Junior Assistants—Salary, £200 to £300.

War Bonus in addition (at present £59 16s. 0d.).

Appointments subject to provisions of Local Government Superannuation Act, 1937, subject to medical examination.

Applications from men in H.M. Forces will be considered.

Applicants should apply by letter giving full particulars of qualifications and experience, together with copies of three recent testimonials. Experience of school buildings desirable.

Applications should be submitted by the 10th July, 1945, to the Architect, County Education Offices, Stafford.

F. A. HUGHES,
Director of Education.

E.M. 861

CORPORATION OF THE CITY OF GLASGOW.

HOUSING DEPARTMENT.

Applications are invited for the position of LABOUR SUPPLY AND WELFARE OFFICER. Salary scale £600 by £10 to £700, plus war increase (at present £60 per annum).

Applicants should have had wide experience in personnel management, should be conversant with the working rules of the building and civil engineering industries, and should have experience of welfare schemes as applied to Housing Contracts.

The position is a permanent one, and the successful applicant will be required to pass a medical examination for admission to the Corporation's Superannuation Scheme.

Applications, stating age, training, qualifications and experience, and giving the names of two referees, should be addressed to the undersigned, and should be received not later than 30th June, 1945.

RONALD BRADBURY,
Director of Housing.

20, Trongate, Glasgow, C.1.

COUNTY BOROUGH OF WALSALL.

PUBLIC WORKS DEPARTMENT.

Applications are invited for the following appointments:—

(1) ARCHITECTURAL ASSISTANT (permanent) Grade F salary, £440 per annum, rising by £15 annual increments to £485.

Candidates must be A.R.I.B.A. and experienced in School work. Although the successful applicant will ultimately be engaged exclusively on School work, his duties at first will be on general work, including Housing.

(2) ARCHITECTURAL ASSISTANT (permanent), Grade E salary, £390 per annum, rising by £15 annual increments to £435.

Candidates must be A.R.I.B.A. and experienced in Housing and general work.

The above salaries are basic salaries, and are exclusive of cost of living bonus at present £59 16s. 0d. per annum.

The appointments will be subject to the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination.

Applications, stating position applied for, age, qualifications and experience and accompanied by copies of three recent testimonials, must reach the undersigned not later than 30th June, 1945.

M. E. HABERSHON,
Borough Engineer and Surveyor.

Council House, Walsall.
8th June, 1945. 855

ELLAND URBAN DISTRICT COUNCIL.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the temporary appointment of Architectural Assistant, in the Engineer and Surveyor's Department, at a salary under Grades D and E of the scale of the Yorkshire Provincial Council for Local Authorities Administrative, Professional, Technical and Clerical Services, according to age and experience, plus cost of living bonus at present £59 16s. 0d.

Applicants must be registered Architects and A.R.I.B.A., or equivalent, and have had considerable experience of Local Authorities' Housing Schemes and in the design of Municipal Buildings generally.

Applications, endorsed "Architectural Assistant," stating, age, qualifications, details of experience, and position regarding National Service, together with copies of three recent testimonials, to be sent so as to reach the undersigned not later than the 7th July, 1945:

Applicants should state whether, to their knowledge, they are related to any member or Senior Officer of the Council.

Canvassing will be a disqualification.

A. W. HOWARTH,
Clerk of the Council.

The Council Offices, Southgate, Elland, Yorkshire. 860

METROPOLITAN BOROUGH OF BETHNAL GREEN.

TWO ARCHITECTURAL ASSISTANTS (Temporary Staff), Bethnal Green Metropolitan Borough Council, Borough Engineer and Surveyor's Department, for work in connection with Post-War Housing. Candidates must have had wide experience in the preparation of Designs, Working Drawings, Specifications, Bills of Quantities and Estimates. Preference will be given to Associate Members of the RIBA., fully conversant with the principal Building Acts and Regulations. Salary £400 per annum, plus cost-of-living bonus (at present 23s. per week). Applications, in own handwriting, stating age, qualifications and experience, with copies of three testimonials endorsed "Architectural Assistant," must reach the Borough Engineer and Surveyor, Town Hall, Bethnal Green, E.2, before noon on MONDAY, 9th JULY, 1945. 877

COUNTY BOROUGH OF HUDDERSFIELD.

EDUCATION COMMITTEE.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT in the EDUCATION (ARCHITECTS) DEPARTMENT. Preference will be given to candidates with accepted professional qualifications and experience in the design and erections of school buildings. The appointment will be temporary, subject to one month's written notice on either side. Salary £300, rising by annual increments, subject to satisfactory service, of £25 to £400, plus cost of living bonus at present £59 16s.

Applications, stating age, present salary, qualifications, experience, date when at liberty, with copies of three recent testimonials, should be received by the undersigned not later than 10 a.m. on the 5th July, 1945, endorsed "Architectural Assistant."

H. KAY,
Director of Education.

Education Offices, Peel Street, Huddersfield. 891

DURHAM RURAL DISTRICT COUNCIL.

TEMPORARY ASSISTANT ARCHITECT.

Applications are invited for the appointment of an Assistant Architect in the Housing Architect's Department.

The appointment will be to the Temporary Staff on a salary scale of £360 per annum, rising by annual increments of £15 to £420 per annum, plus cost of living bonus (at present £1 4s. per week).

Applicants must be Registered Architects, and be fully experienced in the preparation of sketch and working drawings, quantities and specifications, surveying and levelling, preferably relating to Housing works.

Forms of application may be obtained from the Clerk to the Council, and should be returned to him, accompanied by copies of three testimonials, not later than 6th July, 1945.

FRANK KIRBY,
Clerk to the Council.

Byland Lodge, Hawthorn Terrace, Durham.
20th June, 1945. 883

COUNTY BOROUGH OF GREAT YARMOUTH.
BOROUGH ENGINEER'S DEPARTMENT.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant in the Borough Engineer and Surveyor's Department, Grade 'D.' at a commencing salary of £420 per annum, rising by annual increments of £20 to a maximum of £480 per annum, plus cost of living bonus (at present £59 16s. per annum): Applicants must have had considerable experience of design and construction, particularly in relation to housing, schools and public buildings, and should be Associates of the Royal Institution of British Architects. The successful candidate will be required to pass a medical examination, and must contribute to the Corporation's Superannuation fund. Applications, stating age, qualifications and previous experience, together with copies of three testimonials, should be enclosed in an envelope endorsed "Architectural Assistant," and must reach the undersigned not later than 6th July, 1945.

Canvassing directly or indirectly will be deemed a disqualification, and candidates must disclose in writing whether to their knowledge they are related to any member of, or holder of any senior office under the Council. A candidate who fails to do so will be disqualified, and, if appointed, will be liable to dismissal without notice.

FARRA CONWAY,
Town Clerk.

Town Hall, Great Yarmouth.
14th June, 1945. 867

MINERS' WELFARE COMMISSION.

Applications are invited for six Architectural Assistants. Salary £360-£400 (including bonus), according to qualifications and experience.

Subject to satisfactory service, the Assistants will be eligible for appointment to the regular staff, and membership of the staff pension scheme, upon the occurrence of vacancies.

Preference will be given to candidates who are members of the R.I.B.A., and who have a good knowledge of building construction.

Forms of application may be obtained from the Establishment Officer, Miners' Welfare Commission, Ashley Court, Ashtead, Surrey, to whom applications, accompanied by three recent testimonials, must be sent not later than 31st July, 1945 888

COUNTY BOROUGH OF TYNEMOUTH.

BOROUGH SURVEYOR'S DEPARTMENT.

CHIEF TOWN PLANNING ASSISTANT.

Applications are invited for the above position at a salary of £500 per annum, plus war bonus. Candidates will require to have passed the final examination of the Town Planning Institute, and preference will be given to those with Engineering qualifications. Previous experience in a Municipal Engineer's Office is essential.

The appointment is subject to the Local Government's Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, must be received by Mr. D. M. O'Herlihy, B.Sc.(Eng.), M.I.C.E.; Borough Surveyor, Howard Street, North Shields, not later than 10 a.m. on the 28th July, 1945.

Canvassing, either directly or indirectly, will be deemed a disqualification.

The Ministry of Labour and National Service have been given permission under the Control of Engagement Order, 1945, for the advertisement of this vacancy.

Dated the 22nd day of June, 1945.

FRED G. EGNER.
Town Clerk.

14, Northumberland Square, North Shields. 890

CITY OF LEEDS.

HOUSING DEPARTMENT.

Applications are invited for the following appointments :—

(1) SENIOR STRUCTURAL ENGINEER. The present salary scale is £550 to £650 per annum, and the commencing salary will be £550 per annum, plus cost of living bonus of £59 16s. per annum.

Applicants must be fully qualified and experienced in the design and construction of large blocks of flats in steel and reinforced concrete.

Three ASSISTANT ARCHITECTS (Temporary). The present salary for the post is £350 per annum, plus cost of living bonus of £59 16s. per annum.

Applicants must be Registered Architects and have had a wide experience in large scale housing.

Six ENGINEERING AND SURVEYING ASSISTANTS (Temporary). The present salary scale is £310 to £350 per annum, and the commencing salary will be £310 per annum, plus cost of living bonus of £59 16s. per annum.

Applicants must be qualified, good draughtsmen, fully conversant with Estate surveying and development, and be able to undertake the making and plotting of large surveys, setting out, contouring and levelling.

Position with regard to National Service must be stated.

Applications, on forms obtainable from the undersigned, accompanied by copies of not more than three recent testimonials (not returnable), must be received by me in the envelope supplied therefor, not later than 10 a.m. on Thursday, 12th July, 1945.

Canvassing in any form either directly or indirectly will be a disqualification.

R. A. H. LIVETT, O.B.E., A.R.I.B.A.,
Housing Director.

Priestley House, Quarry Hill, Leeds, 9.
June, 1945. 886

CITY OF SALFORD.

Applications are invited for the appointment of an Architectural Assistant. Salary £330, rising by annual increments of £10 to £360 per annum, plus cost of living bonus (at present £59 16s.) Preference will be given to applicants who are Associates of the Royal Institute of British Architects. The appointment is pensionable.

Applications should be forwarded in an envelope appropriately endorsed, and addressed to the City Engineer, Town Hall, Salford, 3, so as to be received not later than 11th July, 1945.

H. H. TOMSON, *Town Clerk*
871

BLACKWELL RURAL DISTRICT COUNCIL.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of an Architectural Assistant. Salary £300, rising by £15 to £375, plus cost of living bonus.

Candidates must be holders of recognised professional qualifications, and be accustomed to making surveys, taking levels and preparing plans of layouts and other incidental work in connection with the Council's housing scheme.

The post will be subject to the Local Government Superannuation Act, 1937, and will be terminable upon one month's notice on either side at any time.

The successful candidate will be required to pass a medical examination.

Applications, stating age and experience, together with copies of three testimonials, should reach the undersigned not later than 31st July, 1945.

W. S. COCKERHAM,
Clerk to the Council.

Dale Close, 100, Chesterfield Road South, Mansfield, Notts. 887

URBAN DISTRICT COUNCIL OF HORNCHURCH.

APPOINTMENT OF ARCHITECT.

Applications are invited for the permanent appointment of an Architect at a salary of £700 per annum, plus war bonus, at present amounting to £59 16s. per annum.

Applicants must be Fellows or Associate Members of the Royal Institute of British Architects.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful applicant will be required to pass a medical examination.

Applications, stating age, experience and qualifications, accompanied by copies of three recent testimonials, must be received by me, the undersigned, endorsed "Appointment of Architect," not later than Saturday, the 7th July, 1945.

Canvassing, directly or indirectly, will be a disqualification.

WILLIAM C. ALLEN,
Clerk of the Council.

Council Offices, Billet Lane, Hornchurch.
18th June, 1945. 881

BOROUGH OF CHELMSFORD

TECHNICAL ASSISTANTS.

Applications are invited for the following temporary appointments in the office of the Borough Engineer and Surveyor :—

(*a*) Planning Assistant. Salary, £420 per annum, rising by annual increments of £20 per annum to £460 per annum, plus cost of living award, at present 23s. 0d. per week for adults. Preference will be given to persons who have passed the Final Examination of the Town Planning Joint Examination Board or who hold equivalent qualifications.

(*b*) Architectural Assistants (two appointments). Salary, £365 per annum, rising by annual increments of £15 per annum to £410 per annum, plus cost of living award, at present 23s. 0d. per week. Preference will be given to persons who have passed the Final Examination of the Royal Institute of British Architects or who hold equivalent qualifications. Applicants should have had previous experience in the design of Council houses, housing lay-outs, etc.

The appointments will be terminable by one month's notice on either side. Applications, stating age, qualifications and experience, accompanied by copies of three recent testimonials and endorsed "Planning Assistant" or "Architectural Assistant" respectively, should reach the undersigned not later than noon on Wednesday, 4th July, 1945.

VINCENT J. WILLIS,
M.Inst.M. & Cy.E., Reg. Arch.,
Borough Engineer, Surveyor and Planning Officer.
Municipal Offices, Rainsford House,
Duke Street, Chelmsford.
13th June, 1945. 862

CITY OF LEEDS.

APPOINTMENT OF PLANNING ASSISTANT.

Applications are invited for the appointment of a Planning Assistant at a commencing salary of £400 per annum, plus cost of living bonus (at present £59 16s. per annum). The maximum salary for the post is £450 per annum, and the first increment of £25 will have effect on the 1st April following the completion of twelve months' satisfactory service.

Applicants should be Corporate Members of the Town Planning Institute, and previous experience in the department of a Municipal Engineer or Surveyor or of a Town Planning Consultant is essential.

The post is superannuated, and the successful candidate will be required to pass a medical examination.

Applications on the forms provided, which are obtainable from the undersigned, to be delivered not later than July 12th, 1945, accompanied by copies of not more than three testimonials.

Canvassing in any form, either directly or indirectly, will be a disqualification.

W. S. CAMERON, M.Inst.C.E.,
City Engineer.

Civic Hall, Leeds, 1. 879

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.

ARCHITECTURAL ASSISTANT required immediately; in private practice; permanent position; must be capable of war damage schedules, surveys, and general post-war development. Clark, 44, Great Russell Street, W.C.1. 804

ARCHITECTURAL ASSISTANT required in West Norfolk for busy practice, principally housing and small commercial buildings; man with experience in private practice and quantities preferred; salary by arrangement, according to qualifications; car owner/driver. Box 827.

ARCHITECTURAL DRAUGHTSMEN required in West Norfolk; preferably Juniors studying for R.I.B.A. examinations; must be good surveyors and car drivers; salary by arrangement. Box 828

WANTED, immediately, Senior and Junior Architectural Assistants, South-West area. State experience and salary required. Gallannaugh & Nicholls, L/A.R.I.B.A., Chartered Architects, 30, High Street, Bridgwater. 849

ARCHITECTURAL ASSISTANT required, having 5 to 10 years' experience. Must be able to make surveys, take levels, and prepare working drawings from sketches. Write, stating age, experience and salary required. Welch & Lander, F.R.I.B.A., 38, Gloucester Place, Portman Square, W.1. 850

REQUIRED immediately, experienced Architectural Assistants. Must be first-class draughtsmen and well trained, for important large scale work. Apply, stating age, salary and experience, Herbert J. Rowse, F.R.I.B.A., Martins Bank Building, Liverpool 2. 848

ASSISTANT REQUIRED by Chartered Surveyors in London in connection with works of Alteration, Reconstruction, Conversion, etc. Permanent and progressive post. Write fully, stating age, experience and salary required, Box 889.

ARCHITECTS. — Architectural Assistants Wanted. Applications in writing, giving details of experience and qualifications and salary desired, should be sent to Robert W. Leckie, Secretary S.C.W.S., Ltd., 95, Morrison Street, Glasgow, endorsed "Architect." 892

ARCHITECTURAL ASSISTANTS required, various grades. General practice, Housing, Industrial Design, etc. Forshaw & Greaves, 45, Trinity Street, Hanley, Stoke-on-Trent. 872

INDUSTRIAL DESIGN.—Vacancy for apprentice or junior. Some training in architectural or engineering drawing desirable. Norbert Dutton, 12, Bedford Square, W.C.1. 885

SENIOR ASSISTANT, thoroughly experienced in prefabrication and housing design and with modern outlook, required in London office. Box 875.

JUNIOR Architectural Assistant required by Professional Firm in London, preferably with 2-3 years' training in General Draughting and Building Construction. Good prospects and varied experience in all branches of Agricultural and Surveying Professions to suitable applicant. State experience, N.S. liability and salary required, to Box 876.

ESTIMATOR-DRAUGHTSMAN required, permanency for the right man, by a large firm of Joinery manufacturers in the Midlands. Reply, giving full particulars of previous experience, stating age and salary required, to Box 880.

CAPABLE Architectural Assistant required for industrial, commercial and similar work. Apply, giving full particulars, to W. H. Saunders & Son, Architects, 1, Carlton Crescent, Southampton. 884

QUANTITY SURVEYORS.—Assistants Wanted. Applications in writing, giving details of experience and qualifications and salary desired, should be sent to Robert W. Leckie, 95, Morrison Street, Glasgow, endorsed "Surveyor." 893

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.

DESIGNER (light welded construction); interested in post-war appointment with progressive firm; has practical experience and valuable contacts. Box 8.

YOUNG MAN, discharged from Forces, 2 years Army Surveyor, with previous experience as Architectural Assistant, seeks post in progressive office. Box 42.

QUALIFIED ARCHITECT, part or full time, specialised in Housing and Factory work. Full control of work. London district. 12 guineas per week. Box 33.

SPARE TIME Evening Work executed at home by Architect, 15 years' experience in working drawings and details. Specialist in house planning and design. Surveys undertaken preferably in the North London area. Box 34.

ENGINEER and SURVEYOR (32), 15 years Local Government. Wide experience Housing, Roads, Sewerage, seeks appointment offering scope. Box 35.

REGISTERED ARCHITECT, now in Local Government office, seeks change. L.G. or progressive firm engaged on re-housing preferred. London area only. Box 36.

SITE-RESIDENT Senior Assistant Architect, i/c Large Works, seeks appointment as Staff Architect, Building Manager, etc., or would accept responsible and interesting work in Architect's office. 29. Exempt school trained, experienced in structural alterations, departmental stores, licensed hotels, large war projects. Accustomed supervision of work, quantities specifications. Testified as excellent draughtsman. Good at design. Box 37.

PART TIME WORK at home, or permanent progressive post for full time employment required. London area. Qualified Architect; neat quick draughtsman. Box 38.

EXPERIENCED qualified Senior Architect, now teaching, offers part-time services during August in London area. Private Architects only. Box 39.

ARCHITECTURAL ASSISTANT, Merchant Navy Officer, ex P.O.W., no disability, and exempt further service, requires post as Architectural Assistant in Manchester. Four years' building school; passed for Associate Member Clerk of Works Association. Box 40.

ARCHITECTS' ASSISTANT, who served four years indentured apprenticeship as Architect. Good knowledge of general practice, supervision of building work, etc. Also four years' experience of use of arc lamp for making prints of tracings, seeks position along South or South-West Coast. Please apply to Box 41.

EXPERIENCED Industrial Art Designer seeks contact with progressive Furniture Manufacturer on free-lance basis. Box 874.

For Sale

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

STIPPLED PANELS, 6 ft. by 2 ft., 6 ft. by 3 ft., 8 ft. by 2 ft., and 8 ft. by 3 ft., by 3/16 in. thick; in pastel shades of grey, pink, primrose, brown and white, at 6s. 9d. per sq. yd.; free delivery in London area on orders of 350 sq. yds. or more. Stamford Trading Co., Ltd., King William Street House, Arthur Street, London, E.C.4. 836

Other Appointments Vacant

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

ARTIST-DESIGNER required for product styling; must have flair for presentation and draughtsmanship; technical and inventive ingenuity an advantage; good position with industrial design team. Write Sir William Crawford & Partners, Ltd., 233, High Holborn, W.C.1. 834

Planning

As originators of the Auto-Recorder System of Machine Milking, we have had extensive experience of planning layouts to accommodate the new technique. The Ministry of Agriculture's Clean Milk Bill, when passed, will mean a large increase in the number of new or modified farm buildings required. The position will be affected also by the findings of the English and Scottish Commissions on this important subject. The service of our Technical Department is available to any Architect who may be consulted in these matters. Write in confidence to: Gascoignes (Reading), Ltd., Berkeley Avenue, Reading.

Miscellaneous

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

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

F. J. BAYNES, LTD., established over 100 years. Heating, Ventilating and Sanitary Engineers. 99/101, St. Paul's Road, N.1. Cannonbury 2552. 584

FENCING AND GATES of every type, supplied and erected. Specialists in chain link. Boulton & Paul, Limited, Norwich. 662

FENCING FOR ALL PURPOSES.—Supplied and erected; established 100 years. Parker, Winder & Achurch, Ltd., 80, Broad Street, Birmingham, 1. 979

WANTED.—One set of "Arts Et Matiers Graphiques. Please reply to Box 5.

YOUR HOUSE.
An Exhibition of Modern Building Methods applied to Houses to suit individual needs. HEAL'S, 196, Tottenham Court Road, W.1. 744

TWO LIGHT ROOMS, and share dead filing room, available 3rd floor. Bedford Row, £175 inclusive. Phone: HOL. 2406. 882

LARGE MODERN FACTORY in Southern England turning over from Aircraft to commercial products has machine, press and process capacity for sub-contract work on all types of medium and light engineering or domestic items. Well-equipped toolroom and inspection organisation available. Enquiries invited for manufacture and assembly of light steel or alloy products. Box 873.

CONSIDERABLE Surplus Funds Available at low interest rates in sums of not less than £10,000 for industrial securities. Enquiries entertained only from principals or their accredited Solicitors or Agents. Chas. B. Buxton, Ltd., Local Authorities Loans Brokers, 9, Clements Lane, Lombard Street, London, E.C.4. 878

Educational Announcements

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

R.I.B.A. QUALIFYING EXAMINATIONS.
Mr. C. W. Box, F.R.I.B.A., M.R.San.I.
Courses by Correspondence and Personal in Studio 115, Gower St., London, W.C.1.
TELEPHONE: EUSTON 3305 and 3906.

R.I.B.A. and T.P. INST. EXAMS. Private Courses of Tuition by correspondence arranged by Mr. L. Stuart Stanley, M.A., F.R.I.B.A., M.T.P.I. Tutor, 161, West Heath Road, N.W. 3. Tel.: SPE 5319. 415

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