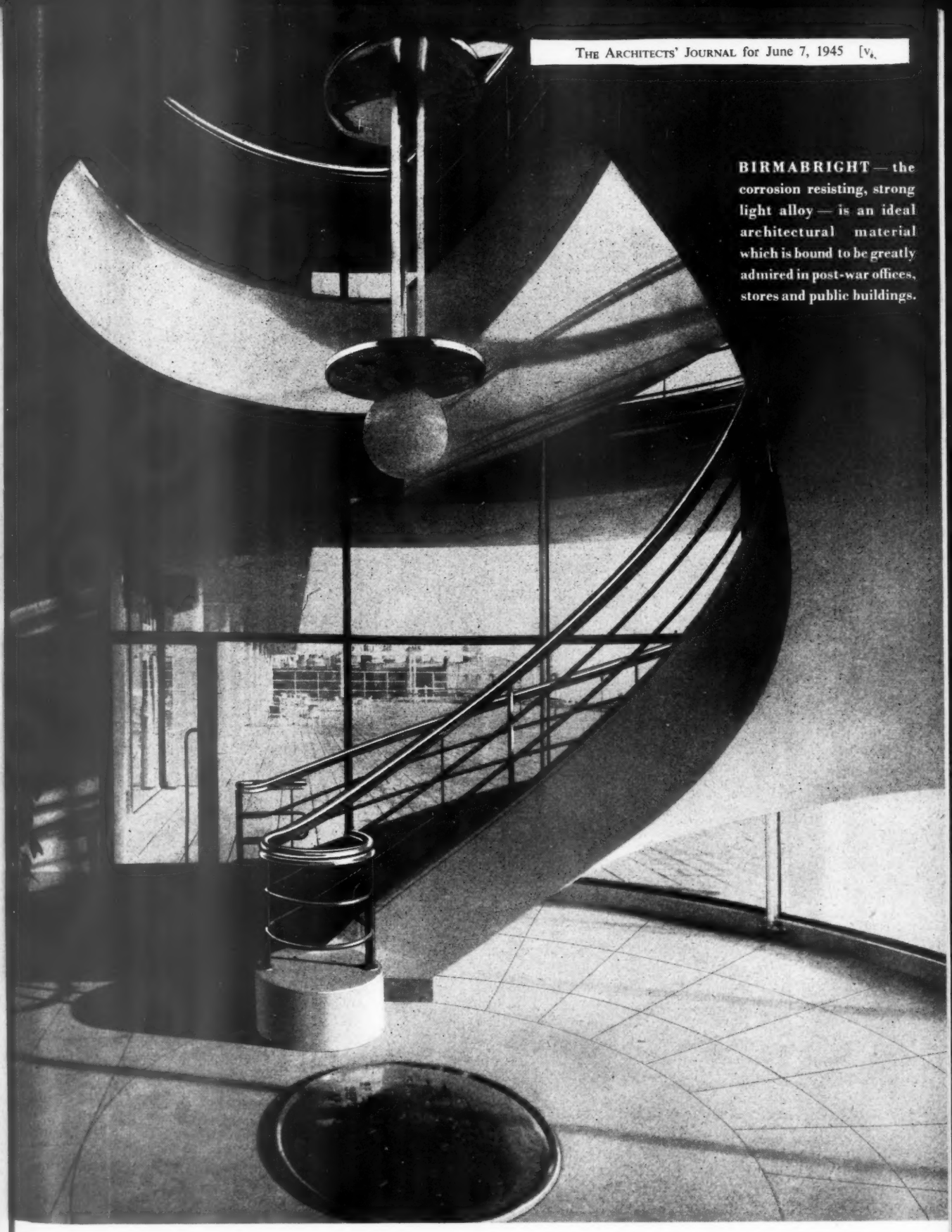


BIRMABRIGHT — the corrosion resisting, strong light alloy — is an ideal architectural material which is bound to be greatly admired in post-war offices, stores and public buildings.

BIRMABRIGHT

BIRMETALS LIMITED · QUINTON · BIRMINGHAM 32

De La Warr Pavilion, Bexhill-on-Sea.

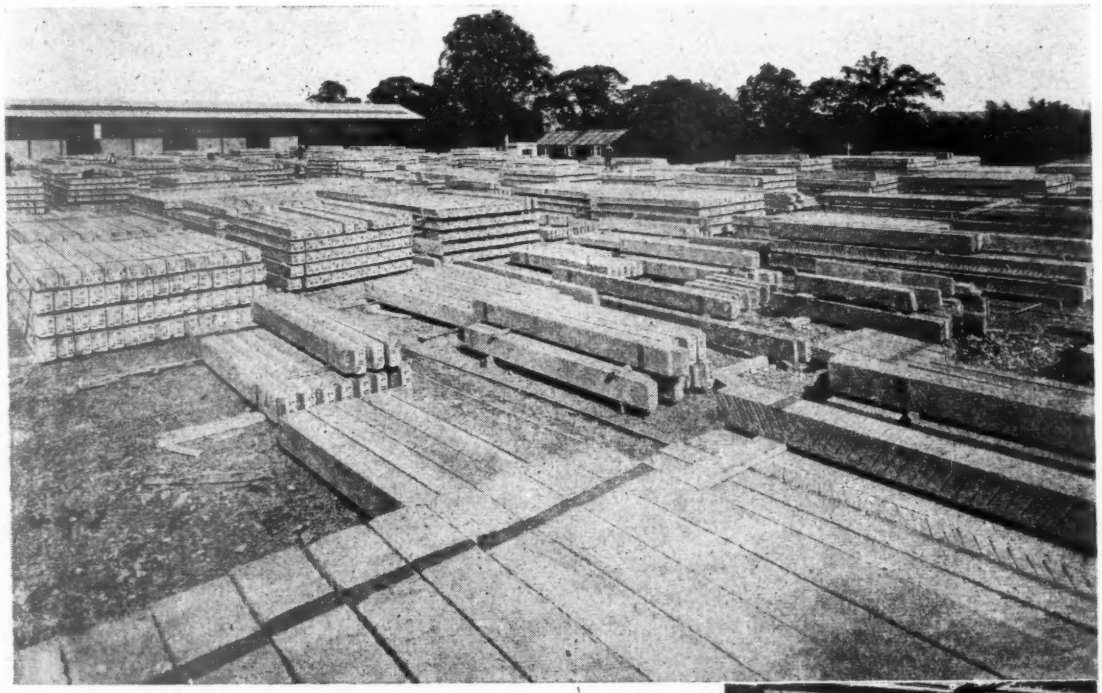
Architects: Mendelsohn & Chermayeff.
Metalwork: J. Starkie Gardner Ltd.

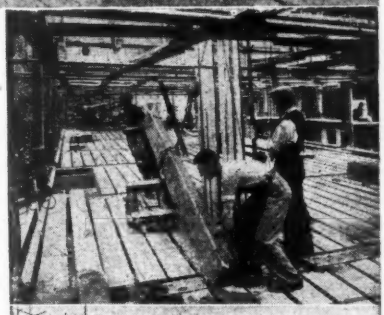
Entrance hall with balustrade hand railing of polished "Birmabright" Aluminium Alloy.

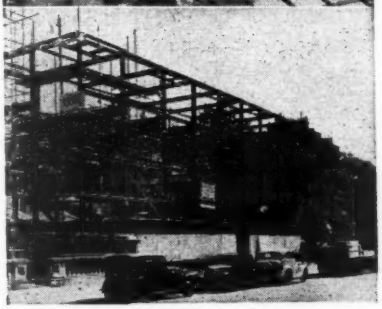
428A

The Siegwart System

Avoids congestion of the site . . .







The Siegwart system does not require the stacking of precast units on the site as the fixing work is organised so that units are delivered as they are wanted and they can be hoisted direct into place on arrival at the site.

The Siegwart precast system thus gives a double advantage in that it not only avoids congestion of the site but the precast units provide working space for other trades as soon as they are laid. The photograph above shows units stacked at one of the Siegwart factories ready for delivery to their jobs as required.

SIEGWART

PRECAST FLOORS

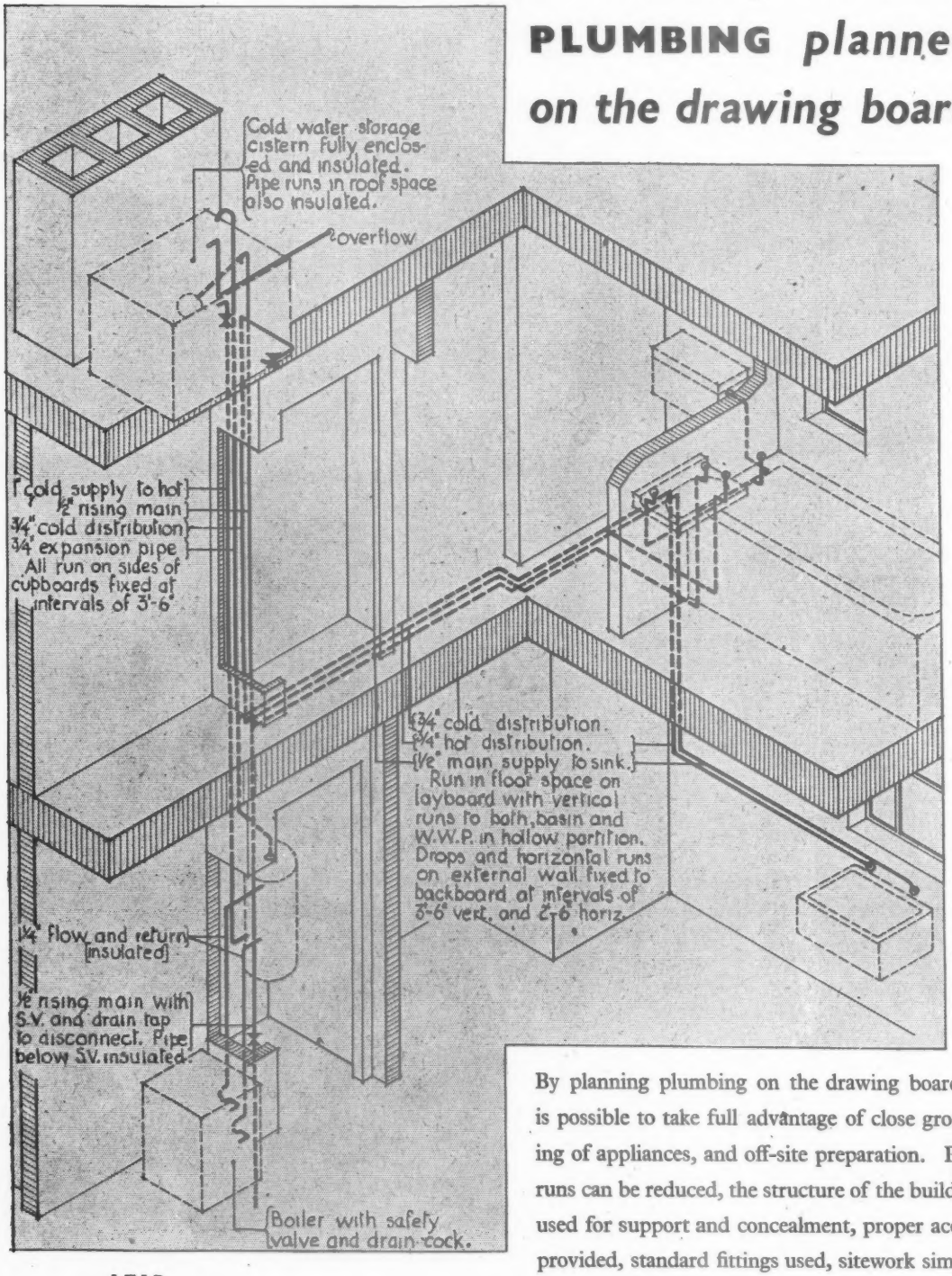
★ ***The new Siegwart housing booklet is still available to all interested on receipt of a 1d. stamp.***

THE SIEGWART FIREPROOF FLOOR CO. LTD.
CROXLEY GREEN, RICKMANSWORTH, HERTS. Tel.: 2268

Ref 3/45

Branch offices at Birmingham, Manchester and Glasgow.

Economy and efficiency demand **PLUMBING** *planned on the drawing board*



By planning plumbing on the drawing board it is possible to take full advantage of close grouping of appliances, and off-site preparation. Pipe runs can be reduced, the structure of the building used for support and concealment, proper access provided, standard fittings used, sitework simplified, and man-hours saved.

LEAD

LASTS

All enquiries relating to the use of LEAD for building purposes should be addressed to: **Technical Information Bureau** of Lead Industries Development Council, **34 Ebury Street, London, S.W.1**

B17

VICTORY

Slowly but surely the strength of the peace and freedom loving peoples has turned the tide against the evil and tyrannical aggressors in Europe. Out of the tragedy of this second universal conflict is born the promise of a new and just world by the welding together of the mighty Union of Allied Nations. Together they must and will achieve final victory. But the task is not yet done. Their combined efforts must be applied to improving the living conditions of mankind. The health of all peoples will be a vital problem. Sanitary arrangements and equipment must be absolutely hygienic. IDEAL VITREOUS CHINA — the most hygienic sanitary ware known — is ready to play its part.

SANITARY APPLIANCES

Made from IDEAL VITREOUS CHINA

IDEAL BOILERS & RADIATORS LTD · HULL · YORKS

BLACK MAGIC

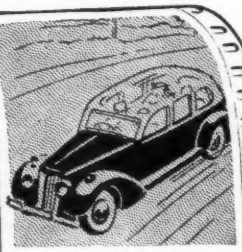
Carbon Black, the soot derived from burning the gas escaping from petroleum wells, magically increases the strength and durability of natural rubber. It exerts a similar effect on synthetic rubbers, which will be the medium of so much post-war progress, thus rendering them comparable with natural rubber in certain conditions.

COLOURFUL KITCHEN

Why should the kitchen be drab and uninteresting, its shelves and cupboards a medley of ill-assorted jars, tins, cardboard cartons and paper bags? Food containers, if made from plastics, could be dainty and colourful, and free from those awkward sharp angles and corners that make cleaning so difficult. They could be made to conform to an artistic scheme. Moreover, plastic containers impart no flavour to food.

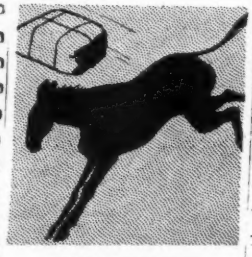
"VISIBILITY GOOD"

GLASS CLEAR PLASTICS date from 1924 when Pollak produced the first more or less clear urea resins. Now there are several better synthetic glasses—such as those used for the nose of bombing planes.



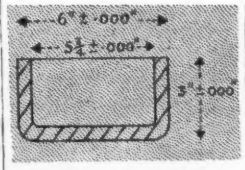
THINGS TO COME

Talking of visibility, when we abandoned the open tourer for the saloon car we lost the benefit of unobstructed vision. Experiments with plastic motor bodies that will be light, strong and permanently coloured are well in hand. So may we not look for glass-clear upper panels that will restore our lost view?



THROWING THE LOAD

The plastics age is freeing mankind from the bugbear of superfluous weight. Consider the electric light switch-cover. If all the switch-covers in Great Britain were still made of metal, the total weight would be approximately 3,500 tons. When made of plastic material, the total weight would work out at about 1,750 tons—a saving of 1,750 tons on this small item alone!



HINTS TO DESIGNERS

We are accustomed to working to fine limits but we cannot work to these! Do not call *unnecessarily* for close limits. Close tolerances, if essential, can be maintained. Unnecessary limits will add to the cost of the component.

UEL Present PLASTICS News Reel

No. 4

PLASTICS have many applications but new uses suggest themselves daily. In industries dealing with electrical insulation, for instance, plastics are well established and widely used. In others—perhaps yours—the advantageous features of plastics are less familiar.

New requirements are sometimes easily met. More often problems can only be solved by the combined efforts of chemist and engineer.

Our service* provides for co-operation between your technical staff, who know your requirements, and ours, who know the possibilities and limitations of plastics.

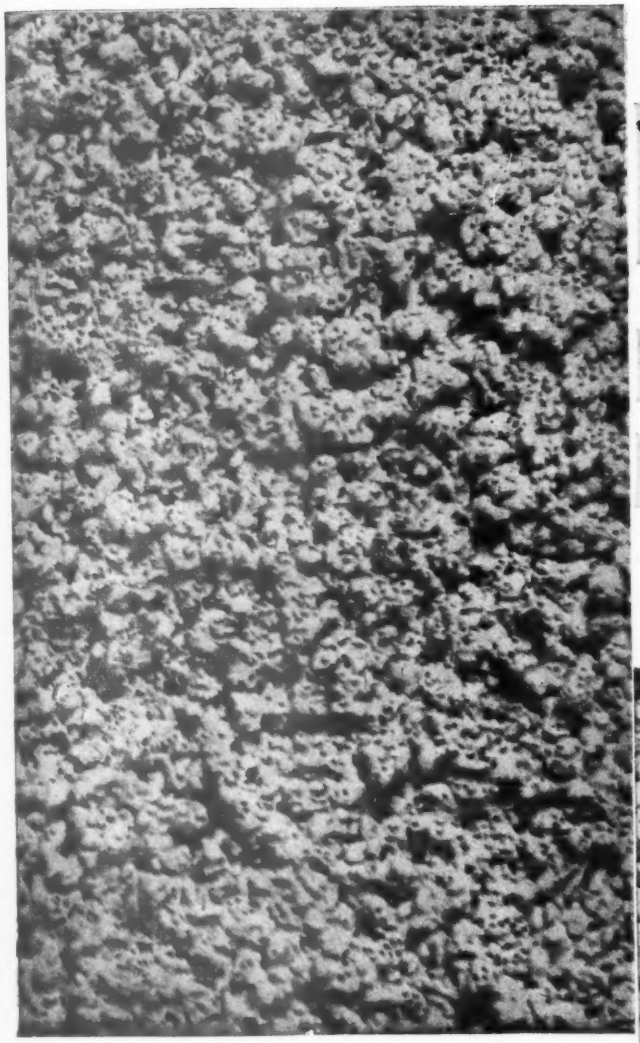
You may have a problem which we can mutually solve by the judicious use of plastics.

**Manufacture of Products in Plastics, Rubber and Synthetic Rubbers.*

LORIVAL PLASTICS

UNITED EBONITE & LORIVAL LTD
LITTLE LEVER, NEAR BOLTON

Telephone: FARNWORTH 676 *(four lines)*
Telegrams: EBONITE, LITTLE LEVER

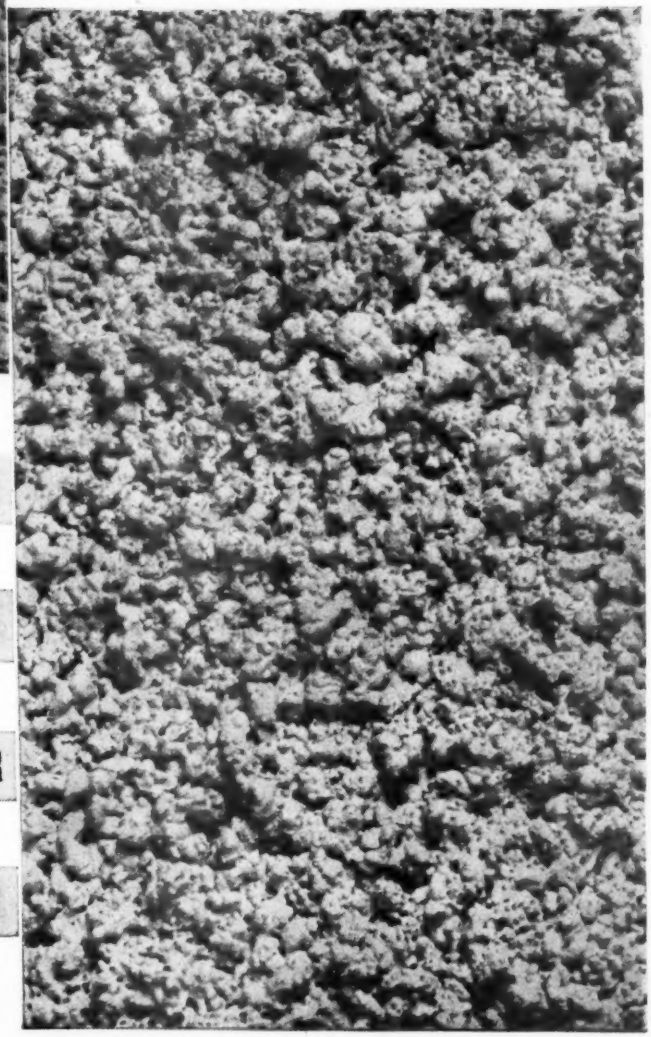


'CULLAMIX'

TYROLEAN FINISH

Patent No. 533915

A BLUE CIRCLE PRODUCT CMC



NON CRAZING

EVEN WEATHERING

UNIFORM TEXTURE & COLOUR

APPLIED BY MACHINE

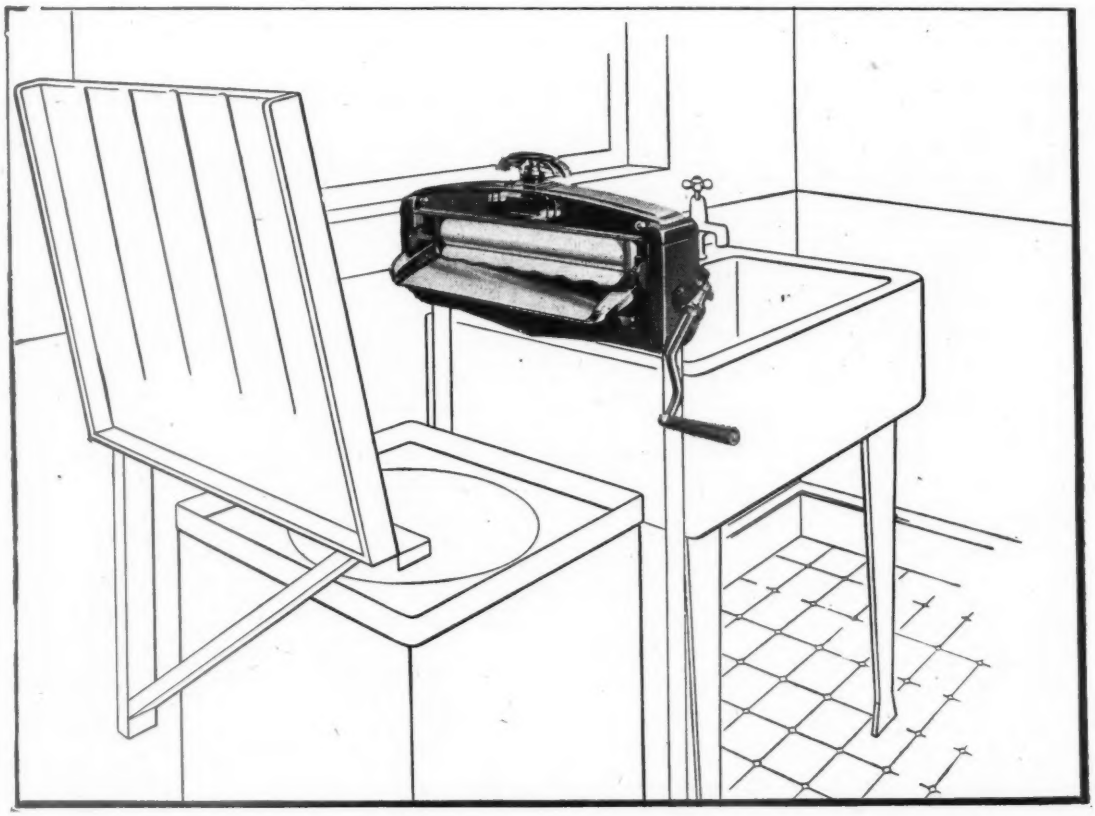
Further particulars from **THE CEMENT MARKETING CO LTD • COOMBE HILL • KINGSTON ON THAMES**

Agents for the North of England: G. & T. EARLE LTD • CEMENT MANUFACTURERS • HULL

O

ON
ON
IGH

236.



She dreamed .....

and in her dream time turned back thirty years. She was a housewife, busy with the weekly wash. With aching back and heated weary face she toiled between a sink she had to bend herself in two to reach, a copper boiling over a roaring roasting fire, and a monstrous mangle she barely had the strength to turn.

She woke .....

and there she was — a housewife, but of the pattern of today and tomorrow. With the weekly wash before her, nothing but the normal work of a normal day. With her pleasant kitchen, her just-right sink, her easy to use wash-boiler and her rubber roller wringer. What need had she to fear a back that ached, or a skin shrivelled by heat and exhaustion?

Modern woman demands a civilised standard for the kitchen where the biggest part of her work is performed. A survey undertaken to ensure that her standards are met has laid down what are the minimum requirements — the size and height of sink, the type of draining-board, the presence of wash-boiler. And always — room for a rubber roller wringer. The housewife herself will tell you *which* wringer — the Acme 55 — the BEST.

To plan a modern house without a modern kitchen would be like building a ship without an engine room. To fix the kitchen without equipment for the home laundry would be leaving the engine room bare of engines.

Ministries and local authorities have accepted and approved surveys which regard conditions for the home laundry as vital. Which emphasises that room should always be made in the sink-unit for a rubber roller wringer, which halves a woman's work and takes the nightmare quality out of wash-day.

If your work brings you any problem in connection with the fixing of wringers, please get in touch with us for advice or assistance. We will have much pleasure in helping you.

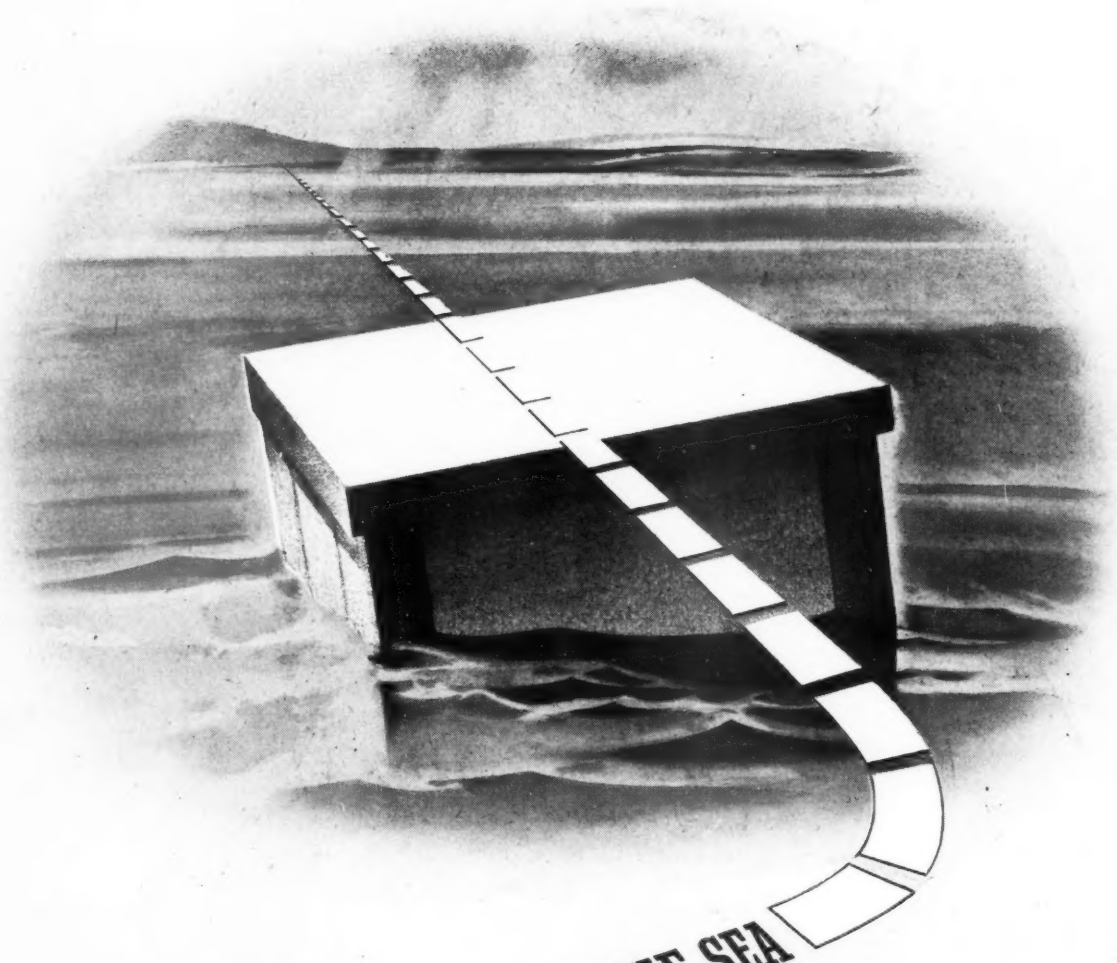
ACME

ACME WRINGERS LTD · DAVID STREET · GLASGOW · S · E

(5)

FLASHING PIECE

EAVES CLOSURE PIECE



LAYING A ROAD ACROSS THE SEA

What has a concrete box to do with a floating roadway? The reinforced concrete pontoons which we supplied to carry Mulberry Harbour's ten miles of floating pier had to be of shallow draught but not too wide. They had to be designed and constructed for towing broadside as well as bows on. They had to be light but strong enough, even if aground, to carry the weight of the flexible steel spans plus heavy military traffic. Following experiments with a concrete box we were able to proceed on a design in which pre-cast panels only 1¼″ thick were used. In every detail of construction nothing was left to chance and, when the time came, the pontoons did their job to perfection. We'll be glad to take just as much trouble for those who are interested in the work of reconstruction.

WATES BUILD

WATES LTD · BUILDING AND CIVIL ENGINEERING CONTRACTORS

1258-1260 LONDON ROAD, LONDON, S.W.16. TELEPHONE: POLlards 4401 (15 lines)

WIMPEYS AT WORK

Scientific methods in planned Building construction

OPERATIONS CONTROL ROOM

The brain centre of the Wimpey organisation is the Control Room where every operation is charted and the day by day progress is recorded. The precise timing and plotting of each stage, the determining of the type and amount of plant required, the working out of a balanced labour programme, these are constantly supervised by the experts at headquarters.

. . .

"ON TIME," "AHEAD OF SCHEDULE." These phrases are vital watchwords in Wimpeys, and fulfilment is greatly assisted by scientific co-ordination of the four complementary factors of building — men, machinery, materials, and methods. This unified control has enabled Wimpeys to complete punctually the most diverse and intricate contracts — from large air stations, ordnance factories and industrial buildings to offices and small dwellings — from one end of the country to the other.

The strength of Wimpey methods is planning, but not planning for planning's sake. Before work begins each job is carefully plotted out to the last man hour and the last ton of material and the last mile of transport. Because this anticipation is not only scientific but based on practical experience, the plan works. Wastage of time and effort is avoided. Time is the essence of the building contract, and planning ensures the best use of both time and of materials.

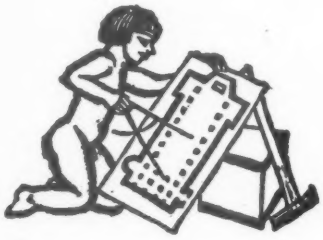
Where Wimpey is the contractor, there is order and smooth running and every man from director to labourer has his job to do and his time to do it.

Sixty years of steady growth have taken Wimpeys to the front rank of national building organisations.

WIMPEY

GEORGE WIMPEY AND COMPANY LTD.
Tilehouse Lane, Denham, Middlesex
BUILDING CONTRACTORS SINCE 1880

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



DIARY FOR 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.

ALBERFIELD, near Reading. *Traffic; Town House; New Homes for Old; Housing in Great Britain; Your Inheritance; County of London Plan.* Exhibitions. (Sponsor, H.C.) JUNE 7 and 8

LINCOLN. R. L. Stirling, Planning Officer, Lincoln and District Joint Planning Committee. *The Influence of Housing Needs on the Planning Scheme.* D. Whiteley, Water Engineer, Lincoln. *The Water Undertaking and its Contribution to the Nation's Health.* At the Usher Art Gallery, Lindum Road, Lincoln. Chairman: J. E. Swindlehurst. In the afternoon a visit will be paid to temporary bungalows, Outer Circular Drive, and the Lincoln Gas Works. (Sponsor, Royal Sanitary Institute.) 10.15 a.m. JUNE 9

LIVERPOOL. C. O. Stallybrass, Deputy Medical Officer of Health, Liverpool. *Public Health and the Social Services.* L. H. Keay, City Architect and Director of Housing, Liverpool. *Post-War Housing.* At the Royal Institution, Colquitt Street, Liverpool. Chairman: Lt.-Col. W. Butler. (Sponsor, Royal Sanitary Institute.) 10.45 a.m. JUNE 22

LONDON. *Royal Academy of Arts.* One Hundred and Seventy-Seventh Summer Exhibition. JUNE 7 to AUG. 15

Newer Heat Exhibition. To demonstrate the great advances in the design of solid fuel burning appliances for domestic heating, cooking and hot-water supply brought about by recent research. At the Building Centre, Conduit Street Entrance, London, W.1. Organized by the Coal Utilization Joint Council. The exhibition has been designed by Darcy Braddell, F.R.I.B.A., and Mrs. Braddell. The appliances themselves, some demonstrated under fire, are displayed in settings similar to their actual surroundings when in household use, and their suitability for the type of house envisaged in the Government's post-war building programme are clearly illustrated. Although open to the general public, the exhibition has been designed primarily to assist local authorities, housing officials, architects and builders, by indicating the types of solid fuel appliances that will be available for post-war housing schemes. (Sponsor, Coal Utilization Joint Council.) Week-days, 10 a.m. to 7 p.m. JUNE 7-30

R. M. Wynne-Edwards, Director of Labour Requirements and Plant, Ministry of Works. *Plant in the Building Industry.* Second of five lectures on *Post-War Problems for the Building Industry.* At the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. Admission 2s. (Sponsor, University of London.) 5.30 p.m. JUNE 7

H. W. Wells, War Damage and Reconstruction Areas Officer, Ministry of Town and Country Planning. *War Damage Reconstruction Under the Town and Country Planning Act, 1944.* At the Chartered Surveyors' Institution, 12, Great George Street, Westminster, S.W.1. (Sponsor, CSI.) 2.30 p.m. JUNE 13

Professor Lionel B. Budden. *The Future of Architectural Education.* Result of Council Election. At 66, Portland Place, W.1. (Sponsor, RIBA.) 6 p.m. JUNE 19

W. Stephenson, President of the National Federation of Building Trade Operatives, or R. Coppock, General Secretary of the National Federation of Building Trade Operatives. *Welfare, Working Conditions and Output in Post-War Building.* Third of five lectures on *Post-War Problems for the Building Industry.* At the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. Admission 2s. (Sponsor, University of London.) 5.30 p.m. JUNE 14

Nigel Hannen (Messrs. Holland & Hannen and Cubitts, Ltd.). *The Contractors' Site Organization.* Fourth of five lectures on *Post-War Problems for the Building Industry.* At the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. Admission 2s. (Sponsor, University of London.) 5.30 p.m. JUNE 21

A. Harris (Messrs. Widnell and Trollope). *Contract Preparation and Settlement of Accounts from the Quantity Surveyor's Standpoint.* Last of five lectures. At the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. Admission 2s. (Sponsor, University of London.) 5.30 p.m. JUNE 28

BINC Second Building Congress. At the Central Hall, Westminster. Congress to be opened by the Archbishop of York. (Sponsor, Building Industries National Council.) JULY 24-25

MANCHESTER. *Worthwhile British Products.* An exhibition of furnishing fabrics, glass, pottery and printing showing our pre-war attainment and chosen from the Manchester City Art Gallery Collection. At the Municipal School of Art, All Saints, Manchester, 15. Open during school hours. Closing 8 p.m. on Monday, Tuesday and Thursday and 12 noon on Wednesday and Saturday. JUNE 7-23

NEWS

THURSDAY, JUNE 7, 1945
No. 2628. VOL. 101

News 415
St. Paul's on the Night of May 8th 416
This Week's Leading Article .. 417
Astragal's Notes and Topics .. 418
Letters from Readers 419
School in Standard Bay Units: Designed by C. G. Stillman .. 421
Information Centre 428
Societies and Institutions .. 429

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.*

Seen by 100,000 workers, Your Paper Goes to War mobile exhibition, which has visited over 100 factories, has been INSPECTED BY QUEEN MARY at Badminton.

Queen Mary recently spent an hour inspecting the exhibition at Badminton, the country house of the Duke and Duchess of Beaufort, where Her Majesty lived during the war. Her Majesty was pleased to accept, as a souvenir, a nut and bolt made from a laminated paper-based plastic. Queen Mary was particularly interested in the tremendous potentialities of paper in the post-war world, and examined samples of building board, used for repairing blitzed properties and in the construction of new buildings of every type, from a bungalow to an aerodrome. Her Majesty remarked on the beautiful finish of coloured laminated plastics, and expressed the hope that the people of this country, both in their homes and in factories and offices, would permit no slackening off in the collection of waste paper, which could be transformed into such valuable products.

★

A social centre, nursery school, estate laundry and fourteen shops are included in a CHELSEA SCHEME OF 623 DWELLINGS TO HOUSE 2400.

The Chelsea Borough Council Housing Committee point out that this scheme is an extension of the Riley Street (Extended) Area Housing Scheme, and is about twice the size. The architect has reported the smaller scheme is not satisfactory for development. The Committee states that the larger site, covering 20½ acres, would allow open spaces and a chance to include a riverside park land which would become available between the new embankment roadway and the present irregular building line facing Cheyne Walk, if Chelsea Embankment were extended.

Rural Housing, Angus — *James McGregor, Master of Works*

From AN ARCHITECT'S *Commonplace Book*

RETREAT FROM GLORY. [*From* Hitler's Mountain-top Retreat, a Show for Allied Troops, *by Douglas Williams in the Daily Telegraph, 23 May,* 1945.] Hitler's Eagle's Nest, a mushroom-shaped solid stone house, built squarely atop the 6,000-foot mountain dominating Berchtesgaden, has survived the war undamaged, but its glory has departed. To-day a lone American soldier guards the "Berghof," where once the Fuehrer was wont to sit amid the clouds and dream dreams of world conquest. Early visitors from the invading armies, and especially the French troops, removed everything portable as souvenirs, but the house is still complete, with its heavy, handsome furniture, its solid oak panelling and its Puritanical simplicity. It contains no bedrooms, but has a series of enormous salons all fitted with vast windows offering magnificent views over the valley far below, with glimpses of the blue-green waters of the Koenig See and the foaming Salzach River. Its site, the solidity of its construction and the grandiose scale of its fittings are all in tune with the majestic scenery of snow-capped mountains surrounding it. The dining-room has a table 30 ft. long with 30 armchairs round it ; the centre of the main salon is occupied by an immense round table of solid oak, 15 ft. across. The fireplaces are large enough to burn whole trees, and the rooms are lit by wooden chandeliers each fitted with eight brackets. Scattered about are huge armchairs and long leather-covered divans. Outside runs a lofty porch 30 yards long and 40 ft. high looking sheer down the mountain side for thousands of feet. In the basement a white-tiled kitchen was installed equipped with the most modern electrical devices, including a bacon cutter, machines for grinding and brewing coffee and the latest model of electrical stove. Off this opens a spacious servants' hall, with red leather settees round the walls and blue chairs set round a dining table with places for a score of people. Access to the Eagle's Nest is from a broad parking-place within about 1,000 ft. of the mountain top, from which an electric elevator, its entrance screened by 12-ft. high bronze doors of elaborate design, brought the guest up to the house. To-day the lift no longer functions, and visitors have to scramble goat-fashion up a winding footpath cut out of the face of the mountain.

As the result of a bricklaying challenge made during a housing debate to ex-bricklayer Mr. George Hicks, Parliamentary Secretary to the Ministry of Works, 73-year-old ex-bricklayer, SIR HARRY SELLEY, M.P., LAID 200 BRICKS IN 58 MINUTES.

Sir Harry Selley built the wall of 200 bricks in one of the courts of the Palace of Westminster, and was watched by a crowd of MPs and Palace officials. Mr. George Hicks acted as umpire. Sir Harry Selley, member for South Battersea, is a former bricklayer and owner of a building firm. His challenge was that he could lay 800 bricks in an 8-hour day, and that for every brick unlaid he promised to give £1 to any hospital named by Mr. Hicks. Because of Parliamentary business the time limit for the challenge was fixed for one hour. Sir Harry Selley undertook the challenge because he is concerned with the present rate of bricklaying in private dwellings. He maintains that if we are to get the houses to set a target of 300 odd bricks a day is that fair to the public? Fifty-two years ago he started in the building trade by putting up three houses, and ended by employing 700 men and putting up 1,000 houses a year.

★

Major C. Taylor asks: What progress has been made for the LARGE SCALE PRODUCTION OF PREFABRICATED PERMANENT HOUSES?

Major C. Taylor asked the Minister of Works in the House of Commons what progress has been made with the arrangements for the large scale production of prefabricated permanent houses. Mr. Sandys: Prototypes of prefabricated houses built by a number of different methods have been constructed. These have been subjected to thorough technical examination, as a result of which, structural and design modifications are, where necessary, being introduced. In the case of one or more of the most promising types, instructions to proceed with production will be given forthwith. It is proposed that the production of these prefabricated permanent houses should be financed by advances from the Consolidated Fund. The necessary legislation will be introduced as soon as possible.

Hammersmith's Old Town Hall is planned as the BLACKPOOL TOWER OF LONDON.

Hammersmith Borough Council has agreed to grant a 42-year lease to Hammersmith Palais, and Mr. Claude Langdon, managing director of the new company, hopes to make a start by September. The Tower is being planned to accommodate 2,500 dancers, with a special American restaurant, and a food reform section.

As the result of a bricklaying challenge made during a housing debate to ex-bricklayer Mr. George Hicks, Parliamentary Secretary to the Ministry of Works, 73-year-old ex-bricklayer, Sir Harry Selley, M.P., laid 200 bricks in 58 minutes. See news item above.

St. Paul's on the Night of May 8th

One of the few expressions of official celebration on VE night was the floodlighting of London's public buildings. Here is a photograph of St. Paul's taken on that historic occasion. It provides a fine example of the dramatic quality which floodlighting can give to architecture. Particularly striking here was the effect, perhaps unpremeditated, which was produced by the contrast of the local, fixed yellow effulgence of the dome and cross with the flickering, purple shafts focused on the Cathedral from the searchlights in Ludgate Hill and other surrounding streets.

**The LCC has accepted a tender for the construction of roads and sewers on THE HEADSTONE LANE HOUSING SITE, Middlesex.*

In a report to the LCC the Housing Committee states that development of the Headstone Lane, Middlesex, housing site will now begin as soon as possible. The committee has accepted the tender of Holloway Bros. (London), Ltd., of £130,969 for the construction of roads and sewers. The site was already scheduled for development as part of the first post-war year's programme. Islington Council is to renew at once negotiations to secure the site of Pentonville Prison, Caledonian Road, for housing. Its use as a housing site was considered before the war. We understand that post-war prison plans include the closing of Pentonville and more possibly Holloway, a member of the Islington Council told the *Evening News*. These two sites would make a substantial contribution to Islington's housing problem if they become available.

In the House of Commons Mr. Hugh Molson urged the EARLY RELEASE OF SURVEYORS, draughtsmen and other technical personnel from the army.

Mr. Molson urged a modification of the demobilization plans to allow, for housing purposes, the early release from the army of surveyors, draughtsmen, and other technical personnel. He hoped the armed forces will allow the release of qualified supervisory staff to control the German prisoners of war used to help in the housing programme. There is, he added, a very widespread impression that building costs are much too high and the Government should deal with that problem. Mr. L. Silkin said he was disappointed that the Minister has not taken energetic steps to deal with the question of building costs. The efficiency of the industry is also questioned. The existence of 80,000 employers handling 300,000 men certainly needs reorganization. Mr. H. U. Willink, Minister of Health, said there are still many fields in which technical men are required in the Services. In the forces and in industry there are many technical workers who can not yet be released.

The Ministry of Works has issued the following announcement concerning the RELEASE OF LAND AND BUILDINGS.

The end of the war with Germany does not mean that land or buildings requisitioned or held for emergency purposes can be released at once. The war against Japan will require the retention of many premises and, apart from this, if the efficiency of the fighting forces and other Government services is not to be seriously affected, the process of release must inevitably be gradual. All departments concerned have been instructed to release premises, especially the smaller types of houses, at the earliest possible moment, compatible with the discharge of their responsibilities, and unnecessary correspondence will be avoided if owners and tenants will refrain from writing to Government Departments or local authorities holding accommodation or in occupation of land. This announcement applies both to industrial and non-industrial premises.

CONTROL OF RENTS

IT is something of a shock to recall that control of rents has been a feature of our national life for thirty years, that some rents are still determined by the rent that happened to be payable on the 4th August, 1914, and that there are nine separate Acts of Parliament dealing with the subject, the majority of them interesting but involved examples of legislation by reference. How many decisions on these Acts there are in the Law Reports is a question that only a lawyer can answer. No excuse is necessary, therefore, for the appearance of a Report on Rent Control nor can there be any excuse for failure by Parliament to implement the Report by reasonably prompt action.

The Report comes from the Ridley Inter-Departmental Committee, appointed in November, 1943 (Cmd. 6621. Price 1*s*.). Its length is 63 pages and it is remarkably comprehensive. The Committee heard 51 witnesses and received written evidence from 28 public bodies or individuals. All its 15 members have signed the Report, but three of them add dissentient notes to one or two of the major proposals of the Committee.

These proposals deserve something more than brief summarization, but summarization is inevitable. Their main recommendations are that control as at present existing shall continue for another ten years, but that it shall not be extended to cover any additional classes of dwelling, as, for example, houses built since the outbreak of war, that all existing rents of controlled property shall be recorded by local authorities, that rents of furnished lettings shall also be brought under some control, and that owners of houses who have let them since the outbreak of war shall have an absolute right to recover possession for their own occupation. It is on this last point that two of the three dissentients disagree with the main body of the Committee.

The major novel recommendation in the Report is a proposal that special rent tribunals shall be set up to fix rents of controlled premises and that these rents, when fixed, shall replace the existing standard rents. The Committee suggests that each tribunal should be able in three years of sittings to give decisions that will govern the rents of 50,000 houses and their suggested number of 198 tribunals for England and Wales, and 30 for Scotland, is based on this desire to clean up the whole problem in this period. Each tribunal would have a full-time Chairman and two or four part-time members. It is not proposed that the Chairmen should necessarily be lawyers, or, indeed, that lawyers should be encouraged to appear before them, but that, with expert assistance where necessary, common sense should be the guide to their work. Their object, shortly, would be to provide a uniform level of rents within their area for corresponding lettings.

All other points under the existing law would continue to be dealt with by the County Courts and, in addition, local authorities would be given some quasi-legal powers, in that it is

left to them to find out, by hearing evidence, if necessary, what the existing rent of each dwelling in their area in fact is. The Committee has a very strong case in support of its proposal for Rent Tribunals. The present variations in rents between identical properties is both accidental and illogical, and unfair to both owner and tenant. Establishing uniformity is a matter of collecting facts and of exercising normal judgment. It does not demand a legal tribunal and existing County Courts could not cope with such an increase of duties. Nor can justice be achieved by any general percentage change in existing rents. That would leave untouched the fundamental unfairness of the variations in the basic standard rents.

So much for the Report. The next stage will be an announcement that the Government either accepts or rejects these proposals. And the succeeding stage? With the fate of the Barlow, Scott and Uthwatt Reports in mind, it would be a bold man who prophesied any further stage at all.

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

NOTES & TOPICS

NATIONAL PARKS

The Government has published the report prepared by Mr. John Dower for the Ministry of Town and Country Planning on National Parks as a White Paper, and I am glad to see that it has met with general approval. One of its major virtues is that it is not too ambitious to be practical.

*

But I wish I could feel some confidence in its translation from White Paper to Act of Parliament. It is no discredit to Mr. Dower's plan to say that in substance it is not novel. At various times various people have advanced parallel plans for the creation of National Parks and the National Trust, and its benefactors, have taken many practical steps to secure and make available land in various parts of the country, notably in the Lake District. But neither those plans nor those activities have produced anything that can properly be described as a National Park. On the contrary, the Government's latest inspiration on the subject of temporary housing seems likely to deprive us of some of our public parks for ten years or so.

*

The question of National Parks emphasizes what, to my mind, has always been a defect in our legislative machine. Whether we have a National Park, or a series of National Parks, is a straightforward issue, capable of being settled by one or two days' debate in Parliament. If the majority of our legislators passed a resolution in favour, then there should be some machinery capable of transforming that resolution into an effective statute without the whole paraphernalia of second and third readings and Committees in both Houses. A Finance Bill may need to be debated clause by clause, but surely not a Bill about National Parks.

TREES AND LAND

The late Government's forestry policy has now been embodied in a Parliamentary Bill, which was recently given its second reading. There was remarkably little opposition, possibly because the Government had a positive and considered policy. In the last war we cut some 450,000 acres of woodland, and between the wars the Forestry Commissioners planted no more than 466,000 acres.

*

Our position was worse than it had been at the end of the last war, since during this war we have had to find 76 per cent. of our timber requirements, while in peacetime we imported over 90 per cent. of the timber we used. To-day, as the Minister of Agriculture pointed out, we are left with no more than 1,000,000 acres of woodland, mostly either immature or second-rate woods. In short, the Minister went on, we need a long-term plan for replenishing our timber supplies.

*

Nobody will disagree with that pronouncement. Of all things, timber needs a long-term plan. There are no quick profits from planting trees. Very often there is no return at all, in money, to the planter during his life. If planting is not done by a Government it is only too likely that it will not be done at all.

*

But one remark that the Minister of Agriculture let fall was interesting. He said (according to *The Times* report): "The size of this island is limited, and the time is perhaps overripe to decide what is the best use of the land in the national as opposed to narrow secondary interests." This is a very remarkable statement to come from a Minister in the present Government.

*

However, he was only talking about forestry, and everyone knows that the only land you use for afforestation is land which has no value for anything else. To suggest that the same principles should be applied to land which is really valuable to its owner (such as, for example, land ripe for immediate development as a desirable building site) would be considered by too many Ministers to be carrying principle to the point of quixotry.

*

Still, it is nice to think that there is some planning for the use of land going on somewhere, even if it is only on the barren slopes of Scottish hills.

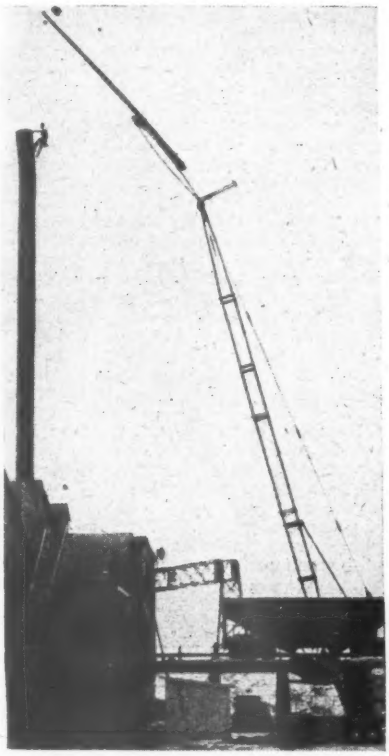
POETS' CORNER

F.D.R.

Himself a cripple, others did he stand
Upon their slow and hesitating feet,
Impelling them with heart and mind to meet
The chaos that beset a stricken land;
And with the potent weapons of the Planned,
Bringing green coolness to a yellow heat
And to a wilderness the golden wheat,
Did he subdue the grim insidious sand.

And so in Tennessee there was unfurled
A Flag so gay with vision, so imbuing
Men with the fervour of a message meant
For all the valleys of a wider world,
That sand and ugliness and their subduing
Became his everlasting monument.

EDWARD LEWIS



STRANGE BUT TRUE

The Engineering News-Record of America might well be sub-titled *Strange but True*, so often does one read in its pages curious tit-bits of building news. Two remarkable pictures culled from recent issues are reproduced below.

*

On the left is shown the photograph of a workman repairing a 110 ft. high stack damaged in a storm from the tip of a 135 ft. crane boom. To attain the necessary height for this unusual job, a 45 ft. pole was lashed to the end of a gooseneck jib-boom, which in itself provided an extended boom length of 100 ft.

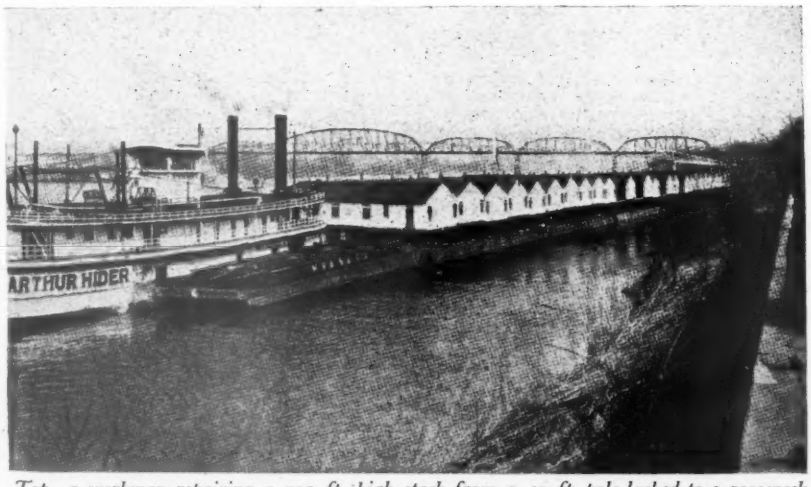
*

Below is another curious photograph. It could be a contemporary news picture of a flooded area in Holland. It is, in fact, a view of 45 demountable war houses being transported on barges down the Ohio River from Point Pleasant, W. Va., to Camp Breckenridge, Ky., a distance of 577 miles.

*

Buildings involved in this operation were of two sizes—a 24 by 56 ft. unit, and another 24 by 112 ft. The smaller units were moved intact while the larger houses were cut into two sections for convenient loading. The cost of transportation with equipment amounted to 1,602 dollars per unit, compared with a cost of 3,145 dollars for new construction of a similar type.

ASTRAGAL



Top, a workman repairing a 110 ft. high stack from a 45 ft. pole lashed to a gooseneck jib-boom. Below, forty-five demountable war houses being transported down the Ohio River. See Astragal's note.

LETTERS

Arthur Ling, A.R.I.B.A.

F. Chas. Wakeford, L.R.I.B.A., A.I.Struct.E.

Ove N. Arup

RIBA Council Election

SIR,—In answer to your request for a declaration of policy from those standing for election to the RIBA Council, I should like to mention several points which seem to me to be of first importance:—

1. The RIBA should have a progressive policy on the fundamental issues of land ownership, the planned location of industry and compensation and betterment—issues which, if left unresolved, will make our reconstruction plans a mockery.

2. Strong support should be given to the rationing of labour and materials to ensure that houses, schools and essential industries have priority and are provided where the need is greatest.

3. Unity in the profession can be achieved by the adoption of a policy which serves both salaried members and private practitioners and by collaboration with kindred associations and groups so that the RIBA is the centre of all architectural activity.

4. The Institute should give its authoritative backing to a salary scale for salaried members with a minimum salary for newly-qualified architects. The widest publicity should be given so that it becomes as well known and accepted as the scale for private practitioners. Vigorous action should be taken against authorities advertising positions at lower rates and representations made where the existing scales are inadequate.

5. The status of the architect and of architecture should be raised by pressing for (1) legislation which will make it compulsory for all buildings to be designed by architects; (2) the establishment of independent architect departments for local authorities where the size of their area justifies; and (3) the reorganization of large offices so that architects have direct responsibility for creative design, *e.g.*, by the group system.

6. The Institute should have a policy on housing which recognizes the urgency of the present situation and the need to use new methods and materials as well as the traditional ones. A lead is needed in the design of flats (with lifts) for the lower income groups. The RIBA could have a powerful influence on post-war schemes by holding a competition for flat designs, including the layout of surrounding gardens, etc.

7. A drive should be made to give the 1944 Education Act reality by the rapid provision of temporary and permanent schools. Moscow built 150 schools in three years (1935-38).

8. The building industry faces a vast reconstruction programme and the Institute can help to ensure that service to the public is placed before individual profit.

London ARTHUR LING

SIR,—In response to your editorial note in your issue for May 31, my policy is as follows:—

(1) The unification of the architectural profession. All professions are faced by morbid growths caused, may be, by the big representative bodies of high standing. The remedy for them is to show that the big body can do all that needs to be done, and can do it better.

(2) The defence and promotion of the special interests of the salaried architect.

(3) The vindication of the status of architects who should be responsible for all architectural work, and should be paid in accordance with that responsibility.

(4).The general adoption of the RIBA scale of salaries and to bring it to the notice of government, county, local, municipal and other authorities.

Bromley F. CHAS. WAKEFORD

Standardization of Reinforced Concrete Structural Members

SIR,—I was interested to read the review of the Reinforced Concrete Association's memorandum on *The Standardization of Reinforced Concrete Structural Members* in the Information Centre for May 17. The RCA asks for criticism of its memorandum, and in the hope of stimulating open discussion on this important subject in your columns which may be valuable and constructive, I am sending you a copy of a letter I have written to the RCA.

London OVE N. ARUP

To the Reinforced Concrete Association
94-98, Petty France.
S.W.1.

SIRS,—Thank you for your Memorandum on *The Standardization of Reinforced Concrete Structural Members.* It is timely for this matter to be taken up for discussion before the rush of post-war work, and, as requested, I give you herewith my view on the subject.

I fully agree with you that there is a great scope for economy in the item of formwork, and that the key to this economy is to be found in frequent re-use of purpose-made forms. This involves co-ordination of structure and formwork design; in other words, we are led *to design the concrete structure so that it contains a limited number of frequently repeated surface elements, corresponding to standard units of formwork.*

This is exactly what you propose to do, but in my opinion you are going too far; your proposal is too ambitious. You want to create conditions which will make it possible to use permanent, standard forms for almost all kinds of structures, and re-use them from job to job. You visualize forms as pieces of plant, to be hired out to contractors, gradually eliminating purpose-made forms which are only used a limited number of times.

To my mind this policy would inevitably lead to one or the other of two evils:

(1) Either a great number of standard forms would be required, in which case the purpose of economy would be defeated.

(2) Or, if the number of forms were drastically reduced, the result would be an intolerable and *uneconomic* restriction of the freedom of design.

If your recommendations for Standard Sizes of Structural Members were adopted, I believe the first of these evils would be most in evidence. It would simply not pay to keep all these different panel sizes in store. Even if they could be hired out at a reasonable figure, I doubt whether it would pay to use them. They would naturally have to be strong and heavy, being " permanent "; cost of transport and handling would be relatively high, and if each side of a beam or a column had to be made up of several different size panels (see your proposal for making up the length of all members of standard pieces of formwork made in three lengths— 2 ft. 0 in., 2 ft. 3 in., and 2 ft. 9 in.), the labour cost of handling, erecting and lining up would probably be high too. With all that, the marks left by irregular panels would be deplorable from an æsthetic point of view, and the restriction of design—again mainly from an æsthetic or architectural point of view—would be considerable.

It must be remembered that if we divide the cost of formwork into four items:

(1) *Material cost*—by which it will be convenient here to understand the cost of the forms themselves, *including* any labour required to make up the forms for the first time.

(2) *Labour cost*, of handling, lining up, erecting and cleaning the forms.

(3) *Transport cost*, the cost of transporting the forms from site to site, or to and from a yard, including loading and unloading, and

(4) *Storing cost*, including upkeep, interest on capital and overheads,

then it is the second item, the labour cost, which is the most important and repays careful study. The first item can admittedly best be reduced by frequent re-use, the more the better; but if we thereby increase the labour cost ,and add the expense of item 3 and 4, the total result may be negative.

The question of how to reduce the cost of labour cannot be solved in general; it depends so much on the nature, the magnitude, the layout, and the general organization of the job. That is why it is so important that the design of the structure and of the formwork as well as the planning of the work on the site—the scaffolding, the method of concreting, etc.—should be dealt with as part of the same problem. If the forms have to be handled by manual labour, they should be of a size and weight to facilitate such handling; if they can be handled by mechanical means—cranes, chain blocks, jacks—the units may with advantage be made much larger, which will probably also facilitate correct alignment. This is an important point, by the way, and if not properly attended to, the apparent simplicity of a system may be deceptive. The progress of each panel from one position to another, the method of cleaning, of inserting the reinforcement, of scaffolding, etc., should all be considered.

Undoubtedly the best way of reducing the cost of labour in formwork is to have the forms made to suit a particular job, or at least a particular type of job. A special tool is always better than a universal tool. Whether it is possible to do so depends on many factors, but mostly on the magnitude of the work, or rather on the number of times the forms can be re-used. If the forms are purpose-made, it may be difficult to re-use them on other jobs, but that does not matter if the forms can be re-used sufficiently on the same job to make their initial cost a matter of minor importance. The best results could, therefore, be obtained where one design organization controlled the design of a large number of similar structures.

Whereas I do not believe it is possible or profitable to standardize all or most concrete structures with a view to develop a universal system of formwork, I think it may be possible to develop certain standard types of formwork suitable for particular problems. Plain walls and floors occur in most jobs, and " permanent " forms to deal with these can be and have been successfully developed. It might also be possible to develop standard sliding forms for grain silos, or special systems for chimneys, hangars, or particular housing schemes, but only if there was a large programme of recurring work, the design of which could with advantage be standardized in certain respects. This would require a certain amount of centralization, either through the Government, or by voluntary organization of the interested parties, and the possibility of achieving this is remote. It would also require that standardization be looked upon from a different angle, namely the usefulness of the finished article. In your memorandum you only consider the ease of construction, but dimensional standardization of a finished structure or article can also have the purpose of co-ordinating its dimensions to those of other articles. A case in point would be, if the distance between floor slabs were standardized to allow for the use of prefabricated partitions of standard height, or in the case of grain silos, if the need for dimensional co-ordination of structure and equipment provided an additional justification for standardization.

Generally speaking, it is not possible to standardize ahead of development. Standardization must follow accepted practice. Only if there was already in existence a universal system of shuttering of proved superiority, which required standardization, could such a step be justified, but to my knowledge such is not the case. If I am right in this, it means, that we are not yet in a position to choose the right standards for reinforced concrete members, quite apart from the question whether such standardization is desirable.

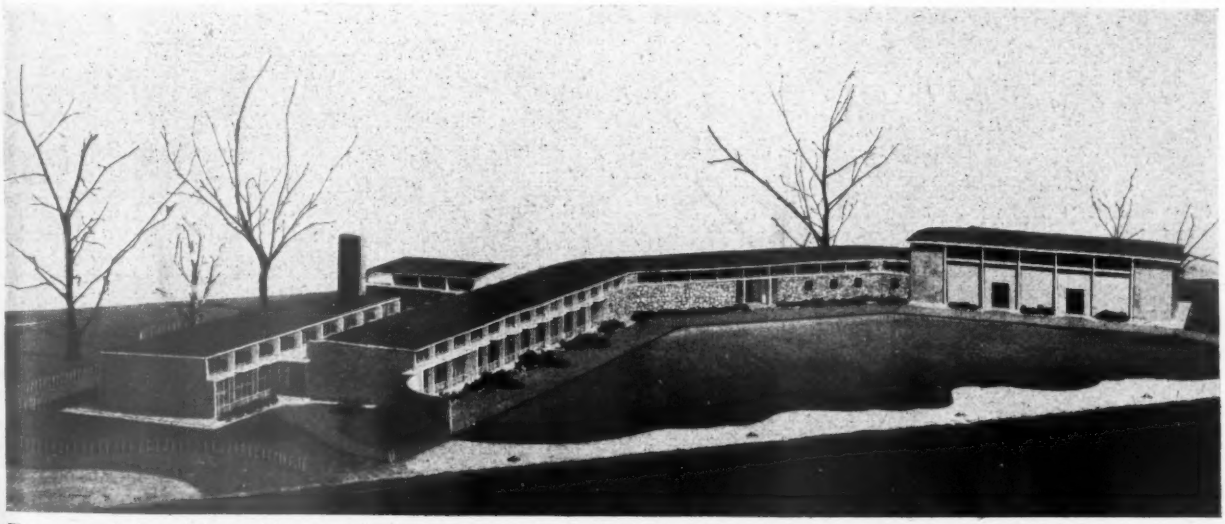
Standardization is a two-edged weapon. It may result in increased efficiency; it may also impede future progress. Standards imply a limitation of choice, they determine future development, and are not easily changed when once fixed. Standardization should, therefore, not be entered upon lightly. This applies with particular force to the standardization of reinforced concrete dimensions, because this is not one of those materials which naturally call for standardization. Indeed, the adaptability, the dimensional freedom of reinforced concrete is one of its chief assets, and its restriction would in itself be a matter for regret.

OVE N. ARUP

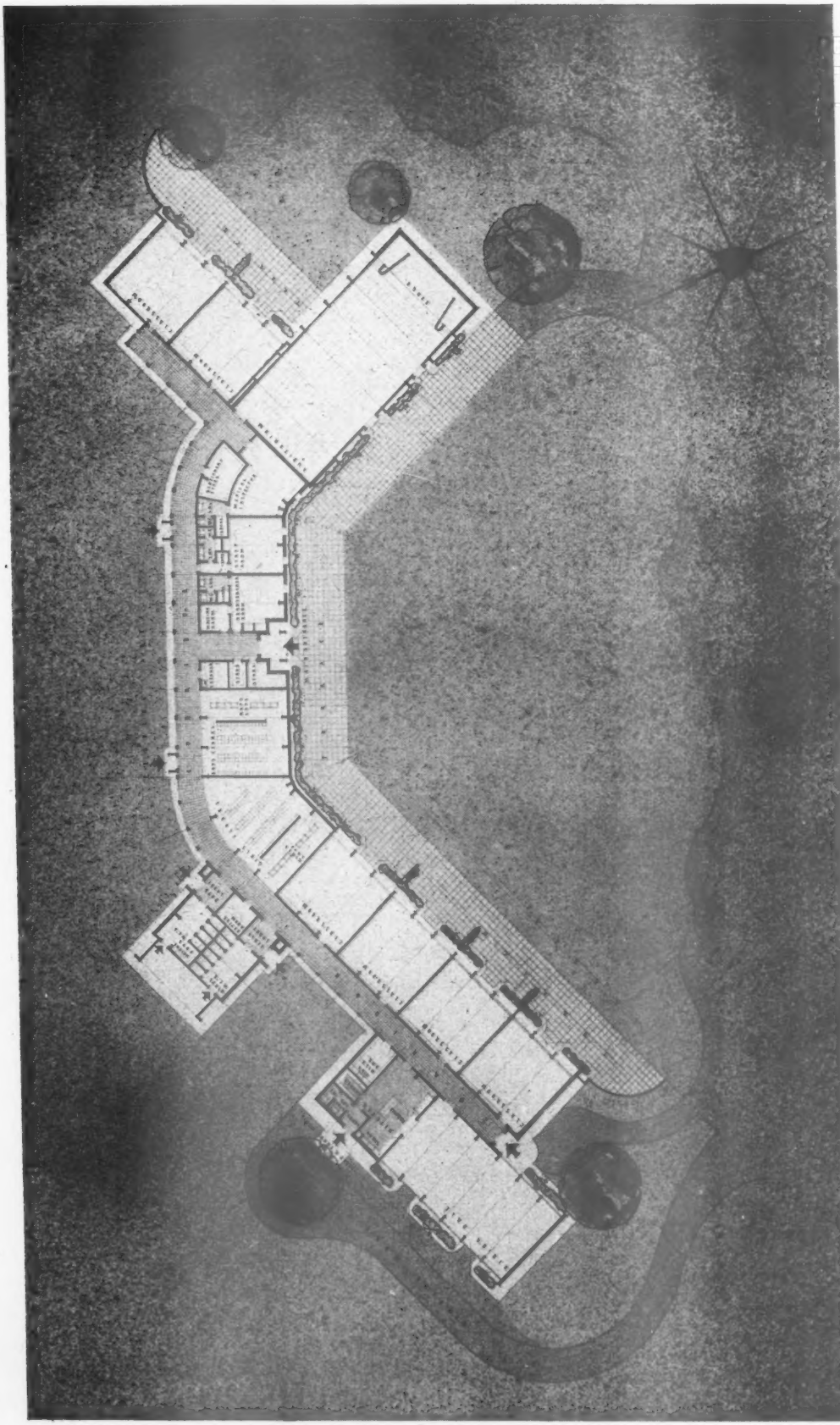
SCHOOL
IN STANDARD BAY UNITS
DESIGNED BY C. G. STILLMAN

Now the European war is ended, we are becoming increasingly aware of the problems which confront the building industry. Public concern is centred on housing and this is not surprising, when we find it will take nearly half the present building industry to deal with house repairs in London alone. Whilst recognizing the overriding need for houses, it must not be forgotten that where there are houses, there must be schools and also that the new Education Act cannot be implemented without an immense variety of new building work. In terms of labour and material, an average size primary school may be equal to between twenty and thirty houses, and a secondary school equal to about one hundred houses. This means that emergency measures of some kind or another must be taken with regard to schools in much the same way as with houses. For housing, we have already seen a variety of prototypes erected, but in schools we have not advanced beyond the Report stage. The MOW, Building Studies No. 2, *Standard Construction for Schools*, has been published, giving suggestions, and it is understood that some of these suggestions are being officially followed up by technical investigations.

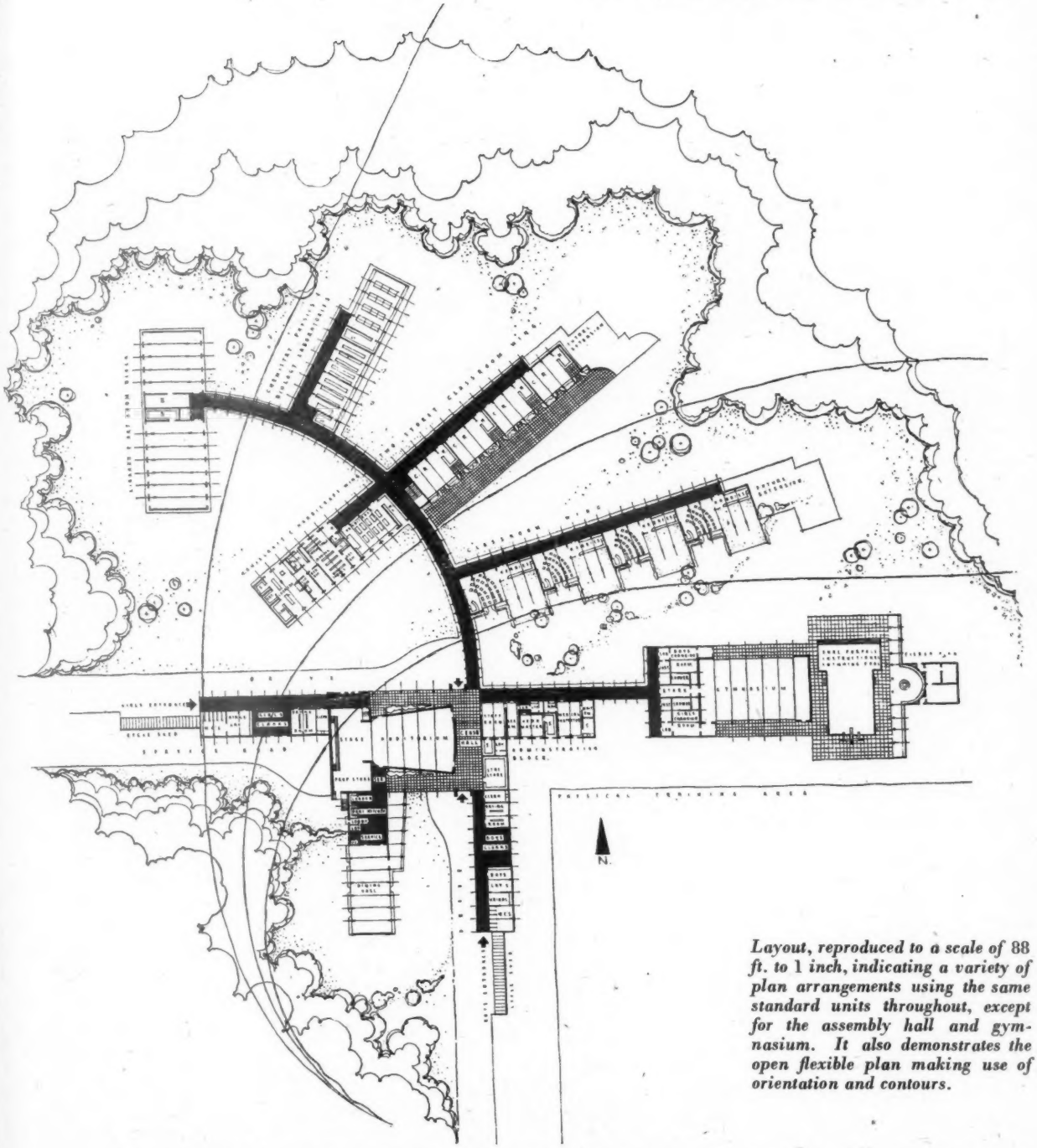
For the purpose of experiment, the school model illustrated is based on the second approach referred to in this Report. The school is conceived as being not an integrated framework, but as a combination of separate units—plan units—designed to provide for the several requirements of the three main categories of school accommodation, the classrooms, the practical rooms and the communal accommodation. These plan units could be connected up, if the site permitted, by standard corridor connections, or, where this was impossible, by *in situ* work as might be required. The primary reason for adopting



Top, general view of the model as seen from the main approach, indicating the variety of treatment in fenestration. Bottom, another view. The dining room and classrooms are seen on the left with the main entrance in the centre and the assembly hall on the right.



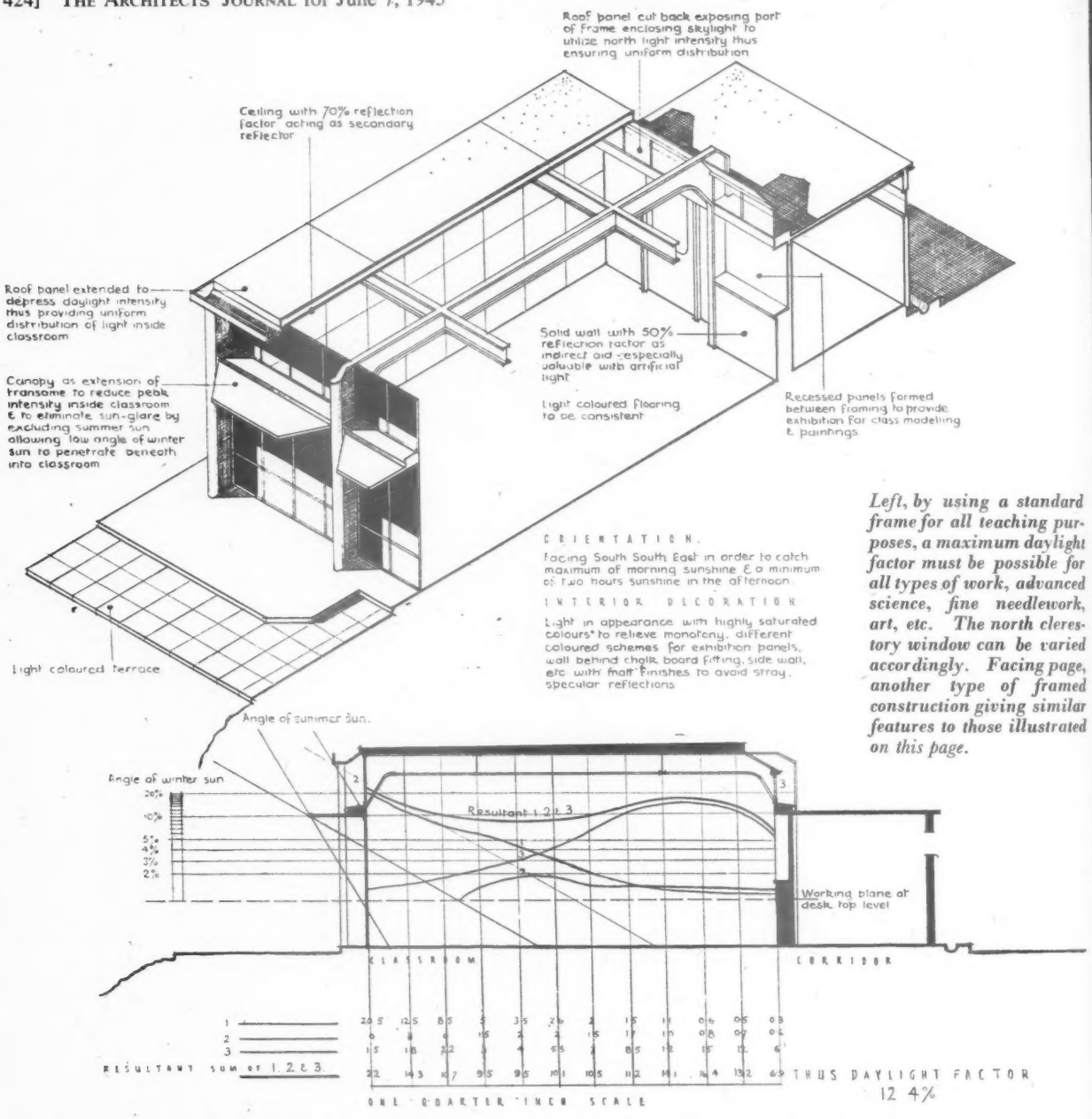
Plan of the model, to a scale of 40 ft. to 1 inch, showing how all the accommodation, with the exception of the assembly hall, is contained in multiples of the same bay unit.



Layout, reproduced to a scale of 88 *ft. to* 1 *inch, indicating a variety of plan arrangements using the same standard units throughout, except for the assembly hall and gymnasium. It also demonstrates the open flexible plan making use of orientation and contours.*

this approach is that from the point of view of mass production, the school cannot compare with the house as one unit for standardization. In its size it is far too large to be treated as one entity, and must therefore be considered as an assembly of a number of parts. Furthermore, any attempt to standardize a school as a whole, endangers the first principle of modern school design — maximum flexibility. Again, if we are to obtain the essential qualities of correct daylighting, ventilation and sound insulation, we must retain freedom to plan according to site variations, levels and orientation —in other words, freedom to arrange the units to the best advantage from every point of view. A further important point is to retain some means for regulating the degree of standardization found necessary to apply from time to time as the building programme proceeds. Standardized design must keep pace with development and will need to be revised as time goes on, and we should not therefore make commitments beyond which we need not necessarily go. It will undoubtedly benefit design if architects can make the fullest use of local resources and be given some discretion in balancing with normal methods the amount of standardized construction to be used. (By normal methods is meant individual design as opposed to large-scale mass production. It does not exclude light framed construction, which it is

SCHOOL IN STANDARD BAY UNITS



Left, by using a standard frame for all teaching purposes, a maximum daylight factor must be possible for all types of work, advanced science, fine needlework, art, etc. The north clerestory window can be varied accordingly. Facing page, another type of framed construction giving similar features to those illustrated on this page.

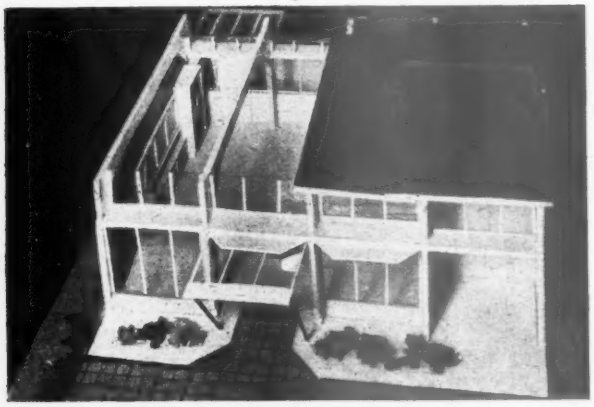
INVESTIGATION OF DAYLIGHT DISTRIBUTION

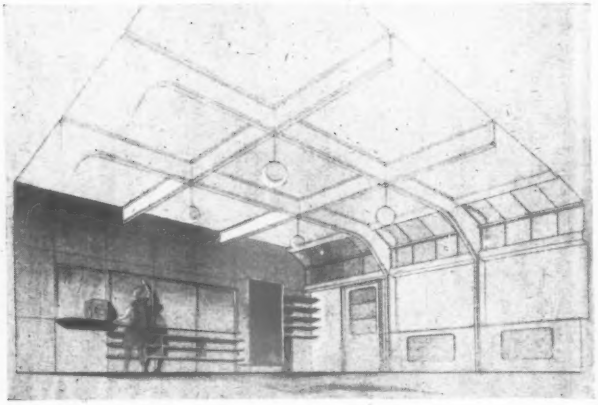
believed will prove most suitable for schools.) In many instances a combination of both methods might be speedier and more economical.

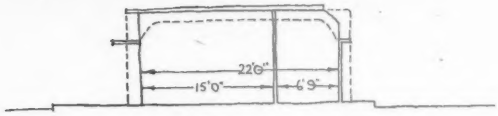
If the school is considered as a group of buildings made up of a number of standardized units linked together where necessary by *in situ* work, then a common dimensional factor or grid cannot be usefully applied to the whole. In the case of the design illustrated, no modular dimension has therefore been used, since an entire bay width of a suitable size and shape is taken as the standard special unit. This bay width is then multiplied and repeated with minor variations to make up any length of building. It is then divided internally according to the number and size of rooms required The span of the unit can be varied between 22 ft. and 24 ft. without alteration to the framework or roof, according to whether the external walling is placed on the inside face of the stanchion or allowed to run past on the outside. The bay widths are at 8 ft. centres, and the height from floor to ceiling 10 ft. 6 in., but these dimensions are not critical to the principles of the design. Multiples of this unit are capable of accommodating every description of teaching and non-teaching space required in all types of schools, except assembly halls and gymnasia. These are larger units and must be treated independently. The assembly hall or auditorium may not necessarily be rectangular and, with its stage and entrance lobby requires special consideration. Both this and the gymnasium, however, can also be built to standardized prefabricated designs. A simple type of hall suitable for infants, forms part of the design illustrated. A standardized corridor made up of similar bay widths can be attached to either

SCHOOL IN STANDARD BAY UNITS

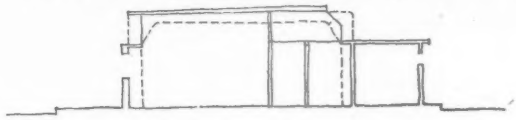
SUGGESTED CONSTRUCTIONAL DESIGN - OF EXPERIMENTAL SCHOOL



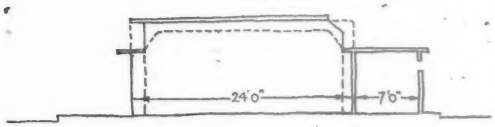




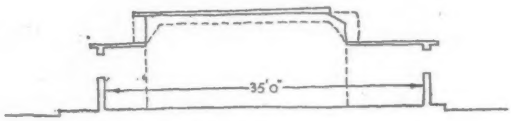
SECTION A
With 'internal' corridor & glass line & partition on inside of frames



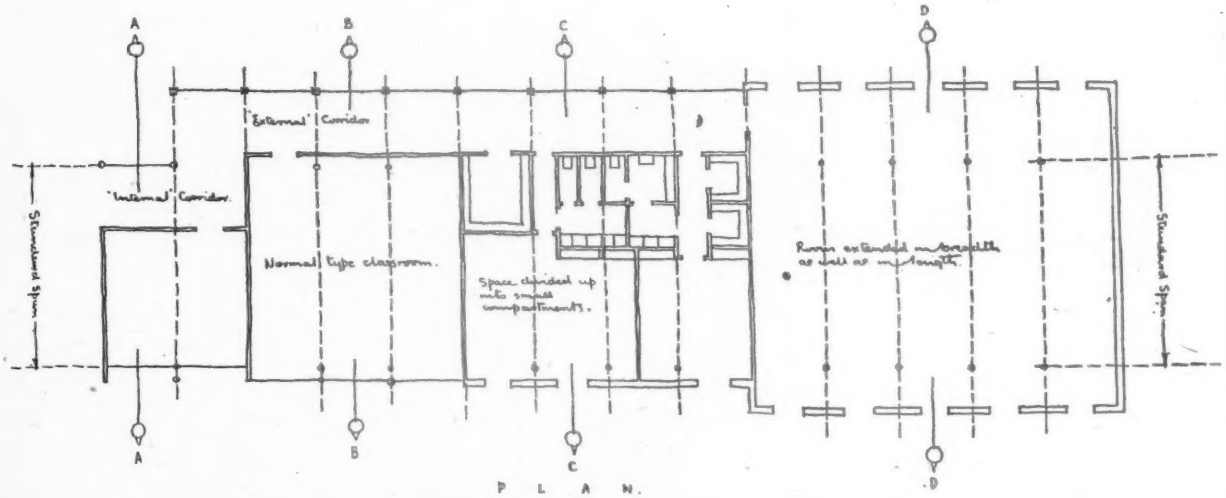
SECTION C
With internal divisions for smaller rooms.



SECTION B
With 'external' corridor & glass line & partition on outside of frames



SECTION D
For large rooms with wide spans

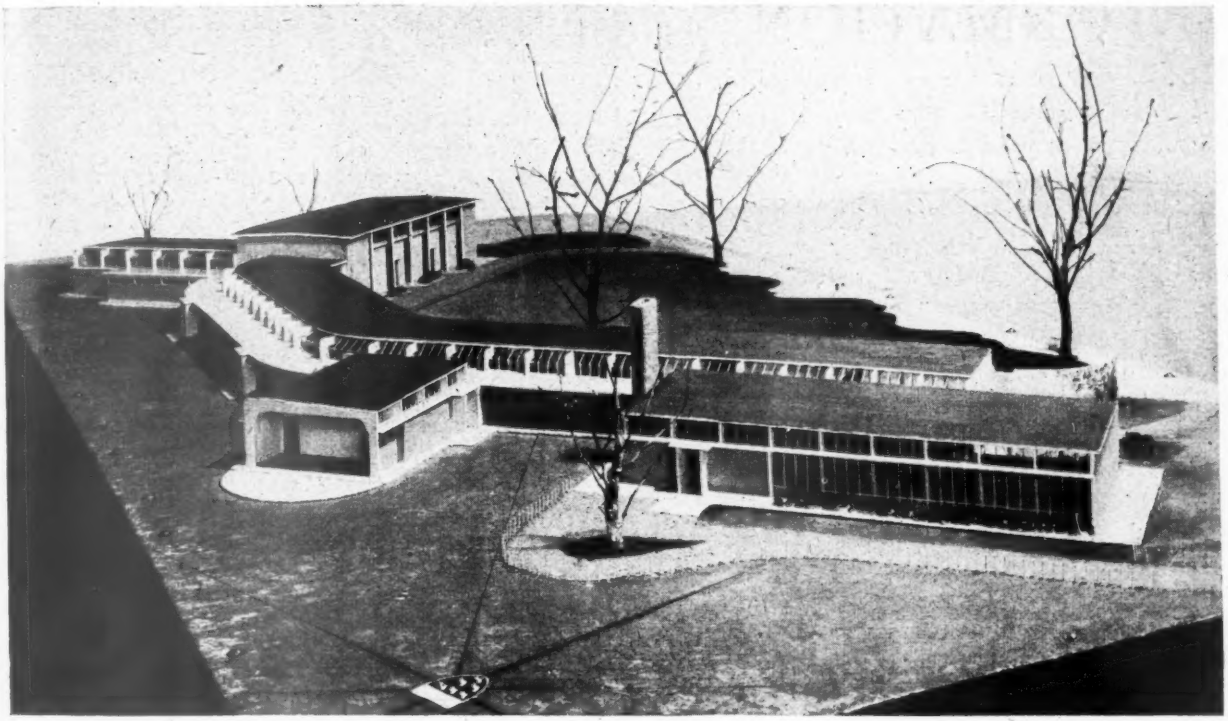


PLAN.

side of the class room unit, but when an outside corridor is not required, as may be the case where there are smaller rooms, such as staff rooms, cloak rooms, etc., the corridor can be formed inside. The facility to make internal divisions of every kind is assisted by the fact that uninterrupted lighting can be maintained on both sides of the building.

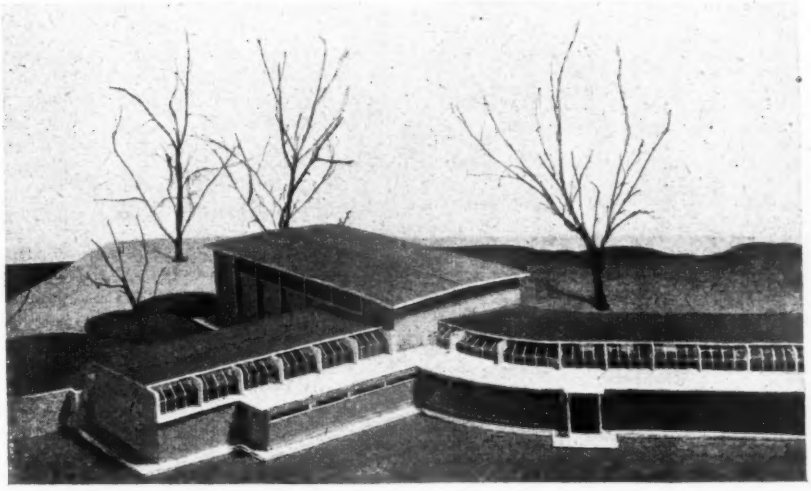
The windowing has been designed to secure a high standard of controlled daylighting (see cross-section). (It is believed that insufficient attention has been paid to the *quality* of daylighting in schools and that much can be gained by this type of experiment.) Sun glare is obviated by the roof projection on the main lighting side and, in addition, an extended hood can be provided at transom level. These devices also assist in depressing the light intensity where it is greatest, and the clerestory windowing on the opposite side is designed to raise it where it is generally at its worst.

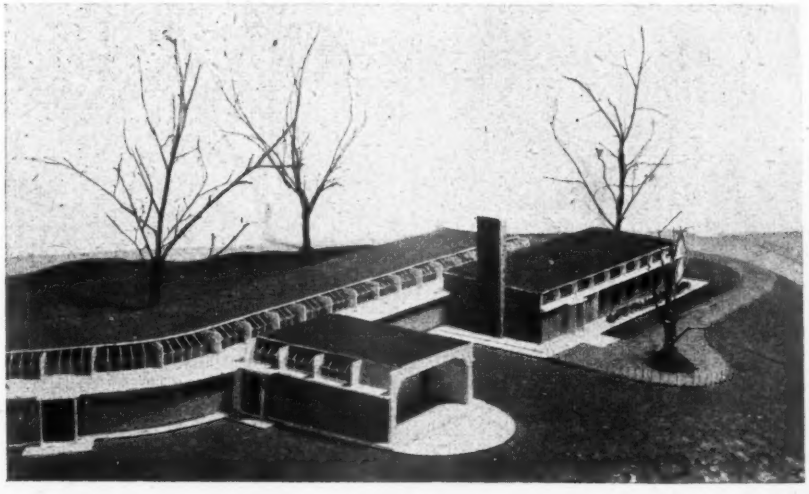
The window infilling above the transom remains standard throughout, but the infilling below the transom can, as already pointed out, be varied from the inside position to the outside position, where it provides extra space for wall benches and fitments, etc. (The lower panels of the windows below the transom are mainly for vision, and the



glass line is not considered important from the point of view of lighting.) This facility to extend the room both in its width and in its length, without disturbance to the main structure, is the ideal to be aimed at in flexibility.

The plan shows how the standard bay unit has been satisfactorily used for the dining room and kitchen, the classrooms, cloak rooms, lavatories and offices, staff room and stores, medical inspection room and entrance hall. The assembly plan has been dictated by site conditions, and in this case only the roof panels on the curved sections are non-standardized. The structural framework is not tied down to any one particular type of material and is capable of being developed in mild steel sections or light steel pressings, in concrete or timber, or in combinations of any of these. Similarly, the roofing panels, partitions and external walls can be made up of a variety of materials, both of the factory produced type and local brick, stone or weatherboarding.





Facing page, sketches demonstrating the flexibility obtainable by using the same framework: top, left-hand corner, photograph showing attachable extended hoods and lift-up window panel; top, right, interior of classroom. This page, views of the north side of the model illustrating the effect of the clerestory windows above the corridor and the open bay giving covered approach to the lavatories.

D

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

1975 — **US Army Post Office**

ARMY POST OFFICE. (*Architectural Forum, December,* 1944, *pp.* 85-95.) Huge sorting station erected to speed up Army's Christmas mail. Partly prefabricated structure of concrete and cinder block. Construction made easier by use of grid and module system. Typical truss used in almost any situation.

US Army and Post Office authorities have perfected a method to handle 50 million Christmas parcels on the assembly line principle. This operation has been made possible by the erection of a mammoth sorting station in Long Island City. Containing 630,000 sq. ft. of floor space, the structure was built in the incredibly short space of 3½ months, including the time spent in the preparation of plans.

Two prime difficulties confronted the architects and the US Army Engineers. First, to ensure rapid progress and beneficial occupancy by September 1 for Christmas mail operations, a simple construction system—preferably using prefabrication methods—was required. Second, non-critical materials in large quantities were called for. The designers solved both problems by using prefabricated timber roof trusses with bolts and split ring connectors, precast load bearing concrete walls, gypsum plank roofing and a concrete floor with a resilient asphalt surface. Time records were broken by the unique construction methods, by split-second timing of operations and organization of the job on the site, and by the commendable teamwork of architects, contractors and army engineers.

The design of the building was considerably influenced by the sorting process on which the new assembly line method is based, but it nevertheless has considerable flexibility for possible post-war use as storage or warehouse space.

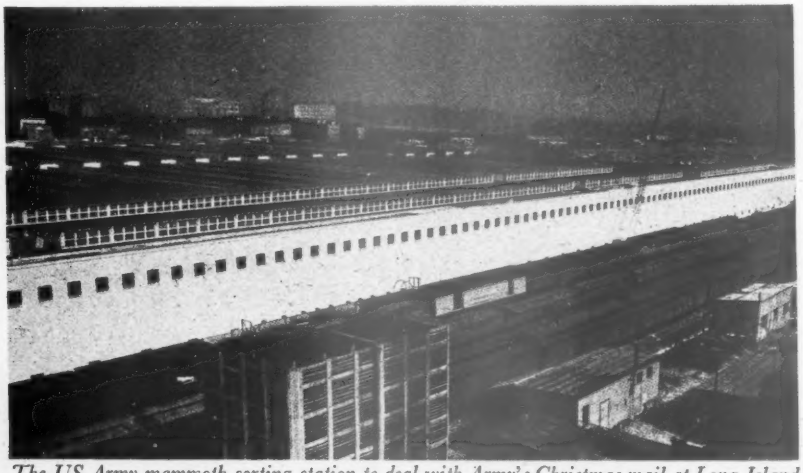
The outward appearance of the building is characterized by the long lines of windows and monitors and by the tremendous lengths of walls and beams. The use of standard units such as window frames in series of a hundred or so at a time lends an entirely new scale to a familiar technique of building.

HEATING and Ventilation

1976 — **Gas Installations**

DRAFT CODES OF PRACTICE (GENERAL SERIES CODES) ON GAS INSTALLATIONS. *Codes of Practice Committee of the Ministry of Works.* (*British Standards Institution, 2s. each.*) Drafts for comment, subject to revision. Four codes: (i) *Installation of Gas Service Pipes* (3.421). (ii) *Gas Metering and Consumer Control* (3.4211). (iii) *Gas Installation Pipes* (3.422). (iv) *Space Heating by Independent Gas Appliances* (*single family dwellings*) (3.4233).

(i) Deals with gas pipes from main to meter. (ii) Deals with provision and fixing of gas meters, controls, governors and connections and arrangements for bye-passes thereto. (iii) Deals with materials and methods of installation for internal pipe systems for all types of buildings. (In schools there are special requirements for practical science rooms.) (iv) Deals with selection and installation of apparatus of independent appliance type as distinct from gas fired central heating systems.



The US Army mammoth sorting station to deal with Army's Christmas mail at Long Island City. See No. 1975.

MATERIALS

1977 — **Resin Adhesives**

SYNTHETIC RESIN ADHESIVES FOR WOOD. *B.S.* 1203 *and* 1204, 1945. (*British Standards Institution.* 2*s.*) Synthetic resin adhesives for the manufacture of flat or curved plywood (B.S. 1203) and cold setting synthetic resin adhesives for constructional work in wood (B.S. 1204).

The two specifications provide the methods of test and technical provisions necessary in purchasing specifications for adhesives based on synthetic resins, with or without additional hardeners. The quality of the adhesives, either of the phenolic or aminoplastic type, is determined by tests made on wood joints. The adhesives may be required to show resistance to water at various temperatures, and corresponding types are provided.

1978 — **Dry Rot**

DRY ROT IN BUILDINGS AND ITS PREVENTION. *W. P. K. Findlay.* (*Journal of the Royal Sanitary Institute, April,* 1945.) Description of dry rot, causes, cure. Prevention in new buildings. Emphasis on severe damage caused by dry rot in war-damaged houses, particularly from dampness due to water used in putting out fires. Also in houses left empty for some time.

1979 — **Oil Stains**

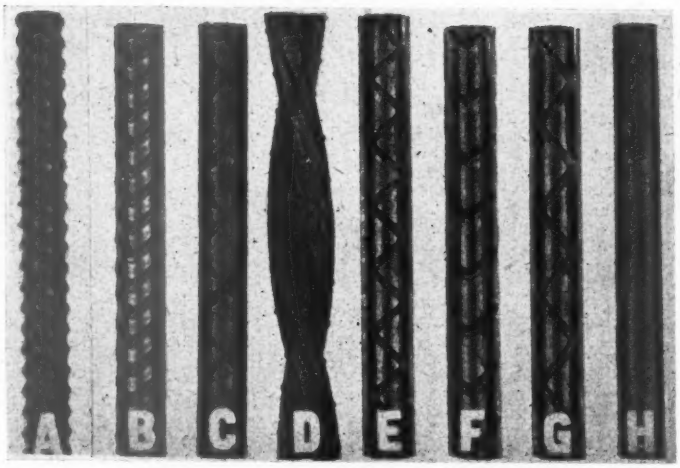
OIL STAINS. *B.S.* 1215:1945. (*British Standards Institution.* 2*s.*) Description and constitution, colour, light fastness, dying and resistance to rubbing, effect on varnish, flashpoint, storage and keeping properties, conditions of supply.

This Specification provides primarily for oil stains as required for the finishing of builders' joinery in normal housebuilding work, but is not necessarily limited to that application.

1980 — **Reinforcing Bars**

EFFECT OF TYPE OF BAR ON WIDTH OF CRACKS IN REINFORCED CONCRETE SUBJECTED TO TENSION. *David Watstein and Norman A. Seese, Jr.* (*Journal of the American Concrete Institute, February,* 1945, *pp.* 294-304.) Tests to determine effect of various kinds of deformations on width of cracks. Effect of repeated application of load. Width of cracks for most efficient type of bar less than 50 per cent. of that found for plain round bar at stress of 40,000 lb./sq. in. in both types.

The cracking of reinforced concrete subjected to tensile stresses is recognized as an unavoidable evil. In order to minimize the width of cracks in some structures, engineers frequently use steel in excess of the amount needed for strength. It is possible to avoid wide cracks with more economical use of steel, by securing better bond between concrete and steel. The tests described in this paper were made to determine the effect of the bonding efficiency of bars upon the widths of cracks in symmetrically reinforced cylinders under axial load. Eight types of bars were tested, all of approximately ½ in. diameter. The width of cracks was least for the deformed bar A which had the maximum bearing area of lugs per lineal inch, and



Types of reinforcing bars. The table below gives the relative width of cracks in concrete for the different types of bar at various stresses. See No. 1980.

greatest for the plain bar H, while for the remaining bars the widths of cracks varied between these extreme values roughly in the sequence of decreasing bearing areas of lugs.

Relative Widths of Cracks in 5- *by* 48-*in. Cylinders.*

Type of bar	Ratio of width of cracks to that observed for plain bar H at a stress of 40,000 lb./sq. in.	Stress (lb./sq. in.) in bar for the width of cracks observed in specimens with plain bar H carrying a stress of 24,000 lb./sq. in.
A ..	0·46	41,800
B ..	0·52	35,800
C ..	0·60	33,400
D ..	0·63	32,400
E ..	0·68	30,000
F ..	0·80	27,200
G ..	0·83	26,200
H ..	1·00	24,000

The widths of cracks observed for the various bars varied approximately linearly with the spacing of the cracks.

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.*

1981 Town Planning Qualifications

Q *As an architectural assistant as yet unqualified I should be grateful for information regarding the qualifications in Town Planning.*

In particular I should like to know:—

(a) Through whom can qualifications be obtained?

(b) Is it necessary to obtain registration as an Architect first, or would a Town Planning qualification suffice to qualify for registration?

(c) What are the subjects covered by Town Planning, additional to general architectural subjects, required for qualification for registration?

(d) Is there any scheme for the benefit of servicemen on demobilization to enable them to obtain qualification without undue financial loss during the period of study and qualification?

A (*a*) Qualifications in Town Planning can be obtained by passing the examinations of the Town Planning Institute, 11, Arundel Street, Strand, London, W.C.2, from whom all particulars can be obtained.

(*b*) It is not necessary to obtain registration as an architect in order to qualify as a Town Planner. Town Planning qualifications do not permit you to register as an architect. There is no such thing as a registered Town Planner.

(*c*) The syllabus of the Town Planning Institute examinations may be obtained from the Institute, price 1s. 0d.; subjects covered are set out below:—

Intermediate Examination.

Testimony of Study and Set Piece.
Elementary Construction of Buildings and Roads.
Surveying and Levelling.
Elementary History of Town and Garden Planning in Great Britain and of Architecture in relation thereto.
Principles of Design.
Town and County Planning Acts, etc.
Outlines of Town and Regional Planning.
Outlines of Local Government of England and Wales.

Final Examination.

Set Piece—History of Town Planning.
Town Planning Practice.
Town Planning in relation to Architecture and Amenities.
Town Planning in relation to Engineering.
Town Planning in relation to Surveying.
The Law relating to Town Planning.
Street Planning and Report.
Oral.

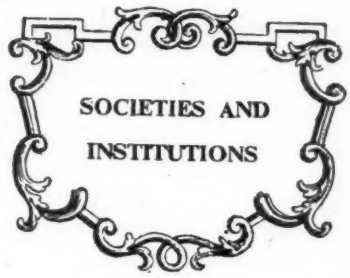
(*d*) The Town Planning Institute has no scheme of its own for the benefit of Servicemen on demobilization, but a Government Training Scheme was referred to by the Minister of Labour in a statement in the House of Commons on the 25th March, 1943, when he announced that plans had been approved for providing financial assistance to enable suitably qualified men and women to undertake or continue further educational training. The aim of the scheme is to replenish the supply of persons qualified to fill responsible posts in professions and industry, etc., and it would apply to those whose training has been prevented or interrupted by war service.

The scheme is primarily intended for persons serving in the Armed Forces or in Civil Defence, etc., and will normally be made available on general demobilization.

Enquiries should be addressed as follows:—

In the case of candidates normally resident in England or Wales, to the Secretary, Board of Education, Belgrave Square, London, S.W.1. In the case of candidates normally resident in Scotland, to the Secretary, Scottish Education Department, St. Andrew's House, Edinburgh.

In the meantime, it might interest you to know that correspondence courses in Town Planning are being run for the benefit of persons in the Forces. Full particulars can be obtained from The School of Planning and Research for Regional Development, 32, Gordon Square, London, W.C.1.



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.

RIBA
Schools Conference

April 27 and 28, at 66, Portland Place, W.1. Conference arranged by the Royal Institute of British Architects, the National Union of Teachers, and the Association of Building Technicians on PLANNING OUR NEW SCHOOLS. Session I: *The* 1944 *Act and the New Building Regulations.* Chairman, Sir Robert Wood, K.B.E., C.B. (Deputy Secretary, Ministry of Education). Session II: *Nursery and Primary Schools.* Chairman, I. J. Hayward (Chairman of the LCC Education Committee). Session III: *Secondary Schools.* Chairman, Miss I. Haswell (President, NUT). Session IV: *Buildings for Further Education.* Chairman, Dr. W. P. Alexander, M.A., B.SC. (Secretary, Association of Education Committees).

SESSION I

P. Thomas: (*P.R.I.B.A.*) With the exception of houses, I think that schools are going to be the most

important item in the post-war building programme. The RIBA is particularly anxious that the vast numbers of schools which are to be built in this country shall be not only efficient but also imaginative. Personally, I would rather see the operation of this great Act deferred for a year or two than fill the whole countryside with a lot of standardized, prefabricated study-boxes.

Sir R. Wood: The building problem which arises under the Act can be easily defined. In addition to bringing our existing accommodation up to date by repair, reconstruction, and often total replacement, we have to provide a vast addition to the accommodation in the next few years, ranging over the whole field from the nursery school to the technical college and the community centre, all on proper and approved standards.

The Regulations replace two little green booklets, entitled *Suggestions for the Planning of Elementary Schools* and *Suggestions for the Planning of Secondary Schools.* Suggestions are now being replaced by regulations. There may be some who see here the shadow of the clutching hand of bureaucracy. That was one of the first problems which confronted my colleagues who were concerned with the drafting of the Regulations; how and within what degree was it possible to reconcile the laying down of some absolute standards with a proper measure of freedom to local authorities, governors and managers, and above all to architects?

In certain respects it is essential to lay down absolute minimum standards. I am thinking of the area of the school site, the area of playing fields, the amount of lavatory accommodation, the dimensions of classrooms, and so on. These are matters on which there is no great room for differences of opinion, and on these standards are laid down, always subject, of course, to Ministerial discretion where discretion is needed. There are other matters, however, where some proper latitude is desirable and salutory. I am thinking first of all of the design and construction of the schools, the selection of the site, systems of heating, lighting and ventilation, and so on. All these are clearly matters for choice, initiative, enterprise and imagination. Here we are anxious, and I hope we have succeeded, in our Regulations and in the Memorandum which accompanies them to leave a proper freedom; and therefore emphasis is laid in the Memorandum on the great importance of bringing the architect in at the very first stage.

The exact dimensions of the building programme will not be known until the local education authorities have completed their surveys and development plans. When these plans are completed, we shall have the full picture of our needs in the realm of primary and secondary schools. We know that the requirements will be very large, but the programme of school building will be only one among other programmes of building and reconstruction, particularly for housing. We are starting on our educational advance under very severe handicaps. The old Black List issued in 1925 listed 2,800 schools, and by 1941 that had been reduced to 700, but in the meantime other schools have been deteriorating. In addition, our schools have not escaped the attentions of the enemy, and it is estimated (and I think it is an under-estimate) that some 200,000 school places have been lost through bomb damage. It is against that background that we have to consider the provision of the additional accommodation now required by the various reforms due to the Act—the raising of the school-leaving age, the reduction in the size of classes, the provision of county colleges, technical colleges, and so on.

It was from a realization of that position that the Ministry, when still the Board of Education, secured the co-operation of architects, teachers, directors of education and representatives of local education authorities in considering the possibilities of applying some measure of standardization and seeing what ecenomies could be secured (economies of time, labour and materials much more than of money) which would facilitate and speed up the provision of schools after the war, having in mind standardized construction combined, possibly, with some measure of factory prefabrication. That Committee had issued a report, but it could not go very far beyond tentative suggestions for further inquiry and experiment. The ground was clearly debatable, but it was very unfortunate that owing to the flying bombs in particular we have been unable to proceed with the two experimental schools which were to have been built in Surrey and Kent to try out the ideas in the Committee's report on standardized construction; it would have been very interesting and illuminating to all concerned to see them in being.

Despite what was said earlier by the President of the RIBA I am convinced that we ought to examine the possibilities of standardization, provided it is flexible, and of prefabrication, provided it is sensible, and see how far they can offer such savings as will enable us to get ahead.

Sir F. Mander: (*General Secretary, NUT*) At the rate achieved between the wars it would have taken 150 years to rebuild or recondition the schools of this country. I would describe the period between the wars as a period of token building; it was very little more. The problem to-day is not that of token building but if total building. I do not think it is an over-statement to say that more than three-quarters of the schools of this country fail to come up to the Ministry's requirements for the future. The problem is therefore of immense size, and I agree with Mr. Newton that we must make use of all the methods available in order to deal with it. If in a Cotswold village, for example, it is possible to build a school in the lovely local stone, by all means let us do so; but if not, the school must go up in some form or other. I am not afraid of the terms Standardization and Prefabrication, and I profoundly disagree with the dictum of the President of the RIBA when he said he would prefer the Butler reforms to be deferred rather than that the children should be put in what he called " prefabricated study boxes." There is nothing wrong with standardization, provided that the pattern is a good one. What we want is good standardization, and I fail to see how it is possible to cope with the problem in front of us unless we are prepared for a very large measure of standardization. I for one am not prepared to immolate a whole generation of the children on the altar of architectural æstheticism.

There is one material required for the building of a school which does not have to be prefabricated, because it is already there: the land. I welcome the more generous approach to the question of the size of the site made in the Ministry's Regulations, and I hope they will be regarded as minima, because the first essential for our new schools is space. Up to now our schools have never had living-room, and many of them have not had elbow-room. Forty years ago Chiozza Money startled the nation by declaring that land was cheaper than linoleum. And it does not wear out, and the longer you keep it the more valuable it becomes. Expenditure on land is not wasteful, but a sound investment; yet there are sources of local education authorities who will readily agree to appoint an additional teacher at £300 a year but who refuse to spend £300 once and for all to get an extra acre of land. I hope that the Ministry will be adamant in refusing to lower its standard of space and generous to those authorities who want an even higher standard.

SESSION II

Mrs. E. V. Parker: (*Past President, NUT*) The new Regulations, admirable though they are, leave the necessary co-operation between teachers and architects and authorities to be worked out. Some architects and some local authorities, when they come to build a school, do not consult the teachers, sometimes with disastrous results.

In the junior school there must be a large amount of apparatus, and we want places for storing it which are close to the classrooms. In every classroom there should be shelves big enough for us to keep there our flowers and our plants, our caterpillars and our mice, and all the other things so necessary in a junior school. A little shelf high up is no use. I hope, too, that the school will be built simply and not too strongly, so that if in twenty years' time it is considered old-fashioned it can be pulled down and rebuilt to meet the then requirements. We must expect that, because education must change from generation to generation in its presentation.

The materials used in the classrooms and the halls should be strong, durable and easily washed. We want walls that can be washed, woodwork that can be kept in good condition, and floors that can be easily cleaned. The furniture for the primary school must be able to stand hard wear. Children up to the age of eleven will use the furniture hard; you cannot expect them to take pride in a highly-polished desk. They should have furniture which they themselves can keep clean, and which they themselves can move about easily. Cupboards should be large and convenient. There should be a tap in every classroom, or at any rate a tap for every two or three classrooms; water is wanted for so many things. We shall all agree on the need for big windows, situated so that the children can look out of them.

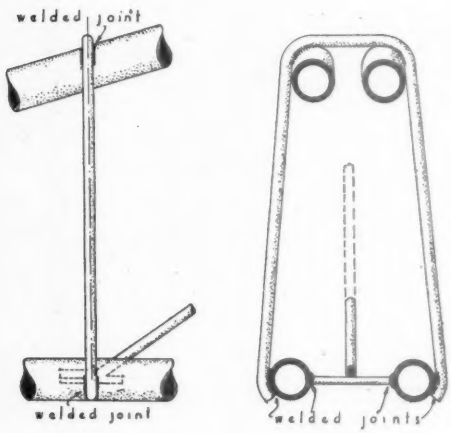
When we look at many of our school buildings we wonder what the architects and education committees who built them were thinking of. They could not have had many beautiful thoughts in their minds when they put up such barrack- or prison-like buildings; they must have been suffering from inhibitions and repressions of all kinds, because these are probably the ugliest buildings that have ever been designed. The playground is such that it is usually referred to as the Yard. I plead that a large part of the playground should be ground, and not concrete and cement. Particularly in nursery and primary schools a large part of the playground should be made into a garden, where the children can see things growing, and even in our cities there should be somewhere where they can grow things for themselves.

The Regulations give the space to be provided as three acres per form, and I believe that the school in which I am now working is supposed to have about nineteen acres. I doubt whether we have more than half an acre at present. Nineteen acres in London seems so fantastic that I doubt whether it will ever come about. I should have thought that in a congested area it might be possible to have playing fields for organized sports and games at the rate of one playing ground for two or three schools, and the other part used essentially for the education of the children.

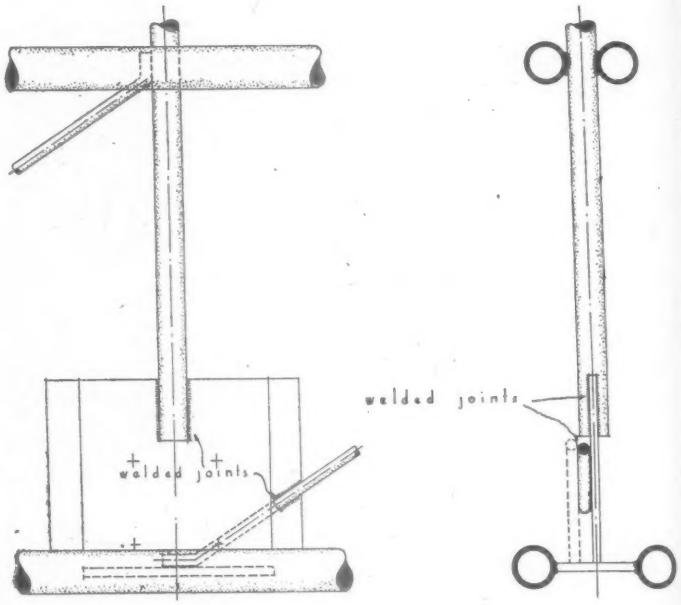
C. G. Stillman: (*County Architect, West Sussex County Council*) Education authorities must be prepared to keep in step with house production. If we are to do this in the face of all the competing claims on our building resources we must consider every possible means of increasing the speed with which we can build.

PATENT WELDED TUBULAR CONSTRUCTION

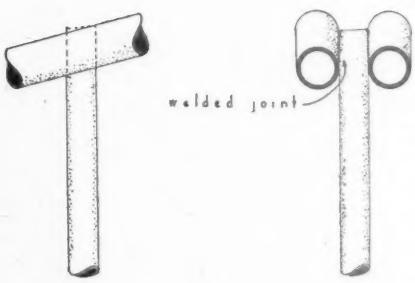
Data Sheet No. 20



DETAIL AT 2 & 2a.



DETAIL AT 4·7·11·14 & 14a



DETAIL AT 3·6 10·13 & 13a.

GABLE END WIND TRUSS

This Data Sheet should be studied in conjunction with Sheet No. 19. The details show the methods of connection and joint welding, at nodes 4, 7, 11, 14 and 14a in the gable end wind truss. The steel plates clamped between the vertical wall stiffeners (refer, also, to Data Sheet No. 23) are included in the frame and provide a general and simple method of obtaining transmission of stress at otherwise complicated nodes.

The details at 2 and 2a show the stirrup form of frame adopted in the design and fabrication of the wind truss.

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.*

We cannot waste time, and first of all we must speed up the administrative machinery. Official procedure in obtaining consents, approvals and sanctions to build, including the purchase of sites, takes as long as, if not longer than, the building itself. It is always possible to see how long a building takes; it is never possible to ascertain accurately how long administrative delays have taken.

It is my opinion that a good and rapid system of construction can be devised using the dry framed technique, without restricting variety of materials and treatment. For flexibility and adaptability units of a suitable bay width can be used, multiples of which can provide for rooms of various sizes. In the use of new and alternative methods of building, the architect's chief concern is to see that the full advantages of good design and technical knowledge are obtained. In nursery and primary schools in particular, the aim should be simple grace and dignity, situated in quiet spots away from traffic noises, in a natural setting among trees and gardens. Young children require plenty of space and freedom, fresh air and sunshine, with bright and attractive surroundings. We must seek a style and type of building which will echo this spirit of youth, fit into this background, and grow informally into the landscape.

With regard to more detailed features, in a recent publication of the Nursery School Association, *The New Nursery Schools*, some most useful information is given. There is also the Ministry of Works publication, *Standard Construction for Schools*, and there will soon be an excellent report on school buildings for Scotland. On the question of the size of nursery schools, the nursery school pamphlet to which I have referred says that assuming a density of 50 persons to the acre a district a quarter of a mile in radius would contain 6,000 people and require three nursery units of 40 children each. If individual sites are out of the question these units could be separately housed on one site, but it is recommended that no one site should contain more than four such units.

Space for free activity is an essential point of planning, and classrooms should be so furnished as to be readily adaptable for various forms of activity. The earlier codes regulated the floor space according to the size of the desk. Many of these desks are heavy and of antiquated design, and should be scrapped. Up to 1925, 8 sq. ft. per child was the allowance. It is now 15, with at least 25 sq. ft. per child for nursery schools.

Adequate and controlled daylighting is most important, and hitherto has received insufficient attention. The need for greater care and protection to young eyes engaged in intensive and continuous visual work is becoming increasingly realized. Nowhere is the scientific study and application of day lighting more important than in the school, and this dictates conditions of considerable influence on design. The diffusion, direction and distribution of light and the avoidance of glare are factors which combine to produce a fenestration unobtainable in the traditional manner. Anti-glare devices, direct access to the open air without draughts, a general lightness of structure and facilities for flexibility dictate a style peculiar to the school alone, calling for a high degree of specialized study and practice.

Even the best playgrounds are dull and uninteresting, and the paved courtyards of the older ones are ugly and often dirty and ill-kept. In my opinion, playgrounds should be kept as far as possible out of sight, and should not be near classrooms on account of the noise. I should like them to be away from the buildings, screened by shrubs and hedges. Paved areas are, of course, essential. Schools have to suffer much hard wear and rough usage, and often soon lose their original freshness. The cleaning carried out in them, especially of the walls, is often not considerable. We require a high quality of finishings and materials both inside and outside the classrooms. A good deal of research is required into the qualities of finishing materials.

Every encouragement should be given to the building of experimental classrooms for small-scale units so that we can carry out practical tests and obtain ideas, in much the same way as is being done for housing. The Government should sponsor this as soon as possible. We could begin with simple examples of primary schools, which require less equipment and less in the way of expensive fittings than secondary schools; they would be quicker to build and equally suitable for demonstrating new methods of construction.

K. Campbell: (*President, ABT*) I do not agree with putting the playgrounds where they cannot be seen; that is like burying one's difficulties instead of solving them. I feel strongly that the playground should be almost an extension of the classroom. We do not want courts nicely planted with grass and flowers where the children are not allowed to go. Mrs. Parker did not want asphalt; would she prefer dust in summer and mud in winter? That is the alternative. There are other ways of paving, however, besides cement and asphalt; there is, for instance, the old flagged courtyard. I do not think noise is important, because when the children are in the playground no work is being done.

I was deeply ashamed to hear a layman, Sir Frederick Mander, having to reprove our President for a remark which he made at the opening of the Conference. It is tragic that anybody should say he is prepared to face the putting back of educational reform in order to avoid "prefabricated boxes."

Mr. Gould: I speak as a secondary school master, and I wish to support what Mr. Campbell said about playgrounds. We have a nicely concreted terrace, and seven acres of what is sometimes grass but usually mud; what we need is more concrete, so that the boys can play. I should like to see covered playgrounds, where organized games can be played in all weathers. It is better to have something which can be used than something which is only ornamental.

Although a secondary school master myself, I agree that priority in new buildings should be given to the primary schools. Without the work of the primary schools, our work in the secondary schools would be impossible.

C. G. Stillman: The playground to-day has become a physical training ground, and as a place for physical education is just as necessary as the classrooms, and should be treated as such. As such, it is often used at the same time as classrooms, and that is why I suggest it should be set apart. As it cannot be made to look anything but dull, I suggest that it should if possible be surrounded by trees and shrubs. As for covered playgrounds, having regard to the size of the playgrounds laid down in the Schedule, it would mean covering very large areas.

W. A. Allen: (*Building Research Station*) I am sorry that those who organized this Conference followed the Regulations by grouping school types together, rather than a division according to the functional requirements of schools of all types—lighting, heating, and so on.

In the Regulations there is a higher standard of daylighting than before, and that gives a measure of intensity, and there is an implication that glare matters, but, as the report of the Lighting Committee with reference to schools indicates, the information on which that advice is founded, coming though it does from a scientific group, is not much more than opinion; but, as the Committee said, all we know about eyesight in child life is that it is the only major defect amongst children which increases steadily during school life. We do not know whether it is due to inherited characteristics or to malnutrition or to bad lighting, but in the absence of information we must take out an insurance policy on the whole lot.

It is not sufficient to stop there. The conception of research has not yet entered much into school life. We study people very largely after they have acquired the defects which they get during school life, but we ought to attack during school life the sources of ill-health in environment, and so arrive at a much better working population when the children grow up. We do not know why 25 per cent. of the children leaving school require glasses.

Individual architects do not as a rule discuss their failures in public, and the results of experiments are often lost to the community, though the individual architect may learn from them. In this case, where we have a single building type, the only way to attack the problem is to assume that the initiative must be primarily a central one, to examine the statistics as research material, and so bring together in a few years' time much of the information on which the design requirements should rest.

T. R. North: (*Educational Supply Association, Member of the School Furniture Manufacturers' Association*) During the past year a Schools Standards Committee, convened by the Ministries of Education and Works, has been meeting at the Ministry of Works, with the object of preparing standards for School furniture and equipment, which are to be issued as British Standard Specifications. I have been asked to give an outline of the Committee's work and of the probable trend of school furniture design in the coming years.

It is intended to lay down certain minimum requirements for the strength, durability and finish of the furniture, but to specify in detail only the principal dimensions of each article necessary to enable it to fulfil its correct function. In this way, and by arranging for all standards issued to be subject to periodic revision, it is hoped to give the furniture designer a free hand to introduce improvements, whilst ensuring to the manufacturer production runs of sufficient size to enable the articles to be produced and sold at the most economical price. The method of standardization adopted also allows of a measure of interchangeability of parts between various items of furniture, with consequent economy in manufacturing cost.

The furniture requirements of a nursery school are that all movable items should be light enough to be capable of being carried by the children themselves, whilst possessing ample strength and stability; that the designs should be simple and pleasing; that the shapes, especially of such things as tables, should be varied and interesting; that the dimensions should conform to the sizes of children to be accommodated; that the movable equipment should be suitable for use out of doors, though not necessarily for prolonged exposure to the weather; and that it should be easy to keep them clean, and safe in use, being free from sharp corners and finger traps.

The committee's recommendations for materials and colours are generally that where timber is used it shall be of good

quality hardwood, finished with a tough durable clear cellulose, the use of dark stains being discouraged. For nursery and infants' schools painted furniture in a number of attractive colours is desirable. Steel furniture and fittings will be specified stove enamelled, and for all-steel furniture non-resonant surfaces not cold to the touch are demanded for such things as desk or table tops.

The uses of plastics envisaged are generally for finishes, glues, fittings, etc., rather than for main structural members, but it is not the intention to debar the Plastics Industry from the school furniture field if it is able to produce satisfactory furniture at an economical price.

K. Campbell: With regard to painted furniture, to which Mr. North referred, my own impression of painted furniture before the war was that it was extremely nice for a time, and then gradually the paint became kicked off. I should have thought that clear cellulose on natural wood, to which Mr. North also referred, would be a much better finish.

T. R. North: I agree that the modern clear cellulose lacquers are more durable than paint, but the synthetic resin paints now being made are fairly good, and there is a call for colours, pastel shades and so on, in the nursery schools.

SESSION III

W. F. Herbert: (*Director of Education, Berkshire County Council*) Some people may say that we should not have three different types of school, and that these three different types of education ought to be given in one and the same building. That is an ideal, and I hope that wherever possible that ideal will be aimed at; but we have to face the fact that we already have large numbers of buildings in use for some form of secondary education, and they must be used to the best advantage in any schemes which we may plan. If we work on that basis, and realize that we have large numbers of buildings to get on with, I think that we have ample scope for developing both our initiative and our imagination.

Before we can build, we have to have sites, and the Minister has laid down in his Regulations what sites we ought to acquire. My own authority has already suggested the possibility of eight or nine being acquired, and we find that we are faced with every possible difficulty. It is difficult to get the sites allocated in planning schemes, and we are not allowed to acquire in war-time. When we do receive permission to go ahead, we are faced with the ridiculous position of having to negotiate on the basis of 1939 prices; and who is going to sell land in 1945 on the basis of a 1939 price? That, however, has been Government policy.

The position is absurd from the point of view of an authority who want to acquire a site. We are told that we have powers of compulsory acquisition, and that we can make an order, with the approval of the Minister, and go to arbitration; but that is a process which is entirely un-English. I hope we shall be able to acquire the sites that we need on the proper basis of agreed negotiation. Some authorities have said that they will never seek these powers of acquisition. We hope that the Minister, when he realizes what confronts authorities in this matter, will allow us a little more freedom in the matter of acquiring sites.

Most authorities have their own architectural staffs, but those staffs are going to be so overworked in the immediate post-war period that I hope authorities will have the good sense not to rely on them to carry out the enormous jobs in front of them. In Berkshire we have over 200 schools. There is not a single one of them—not even the good one erected by Mr. Milne—which comes up to the standard laid down in the Regulations. That is not because our buildings are worse than those elsewhere, but the Minister's standards are high, and I hope he will retain them so.

I hope that the authorities will employ first-class private architects in the enormous tasks in front of them. If they do, we shall get that co-operation which this Conference wishes to see, and an opportunity for experiment which we have not had in the past, and the possibility of a reasonable amount of imagination being exercised in the planning of the buildings.

G. C. T. Giles: (*Past-President, NUT*) I think it is safe to say that we shall want at least 3,000 secondary schools, and probably there will not be 1,000, or perhaps even 500, which are fit for their purpose to-day. That means a tremendous building programme.

With regard to sites, my own school was finished only in 1939, but its site is cramped. There is an excellent piece of land alongside, but the owner wanted too much for it, and the education committee was not prepared to use compulsory powers. We shall need that land in the future, and we shall probably have to pay more for it than was required some years ago. We cannot dismiss the idea of control; I think that very drastic controls will be necessary if we are to get these sites at a reasonable price. We cannot ignore entirely the question of cost. Land is soaring in price, and if the controls are removed building materials will soar in price as well so that not less but more control will be necessary if we are to get the thousands of schools we require.

Planning is necessary, too; I cannot imagine real beauty without planning. I do not know one great city in this country which can be regarded as beautiful. That is because they have grown up haphazard, and anybody with money could do what he liked. Planning is essential, but planning does not necessarily mean perfectionism; the best is often the enemy of the good, and we must plan not for twenty years' ahead but for next year and the year after, while keeping in mind the longer period. Nor does planning necessarily mean bureaucracy and red tape. To-day, unfortunately, there are so many people planning in different compartments that great delay is caused, and what is needed is a plan for the planners. I think that a committee arising out of this conference and representing the architects, the local education authorities and the teachers might have some very useful suggestions to make, particularly if it got to work at once.

I am not very concerned about the claims and counter-claims of prefabrication, temporary, provisional and permanent building. I am not altogether enamoured of permanence; there are very many buildings which are far too permanent, and if we build for ten years and not for a hundred we may be wiser. I am sure that we need variety, but that does not mean that some parts of the building cannot be standardized. I am sure that we need modern technique and science. We shall never do the job by the old method of laying brick upon brick. One of the loveliest schools I ever saw was at Altona, just outside Hamburg, which was entirely modern and entirely beautiful. Incidentally, it was never used as a school, but was turned into a Brown Shirt barracks. We must not neglect economy, in the true sense of the word, by which I mean providing what is really needed in the simplest possible form.

I believe that if we are to take advantage of this tremendous opportunity and to overcome the considerable obstacles—and there are obstacles in our own minds, as well as the vested interests—which always stand in the way of any great move, it is necessary for us to pool our experience and to use the experience and traditions of the past—because we have some lovely buildings and some fine schools—and to use also the tremendous advances in technique which have arisen during the war. I was told recently, for example, that a whole aerodrome, with all its buildings and runways and workshops, had been erected in six weeks. If we can do those things with the help of modern technique, we must not neglect it. We need scientific vision and artistic imagination.

W. A. Alden: I would point out that Prefabrication and Temporary are not synonymous; prefabrication can be temporary or permanent. A school can be built in a temporary manner or in a permanent manner by prefabrication or by ordinary means. The advantages of prefabrication are speed of erection and the possibility of flexibility, including the possibility of demountability, so that at some future date the layout of the interior of the school could be completely changed to meet the then requirements.

A. Rae: (*NUT*) I understand that when a training college was being rebuilt just before the war the architect said to his assistant: "We are going to rebuild this place. Go and live there for a fortnight and consult the staff and see what they want." That was done, and the result is marvellous. I hope it will be the policy for a member of the architectural staff to spend a week or a fortnight in any school that is to be replaced or extended, and talk to the people there and go round with a notebook and get ideas.

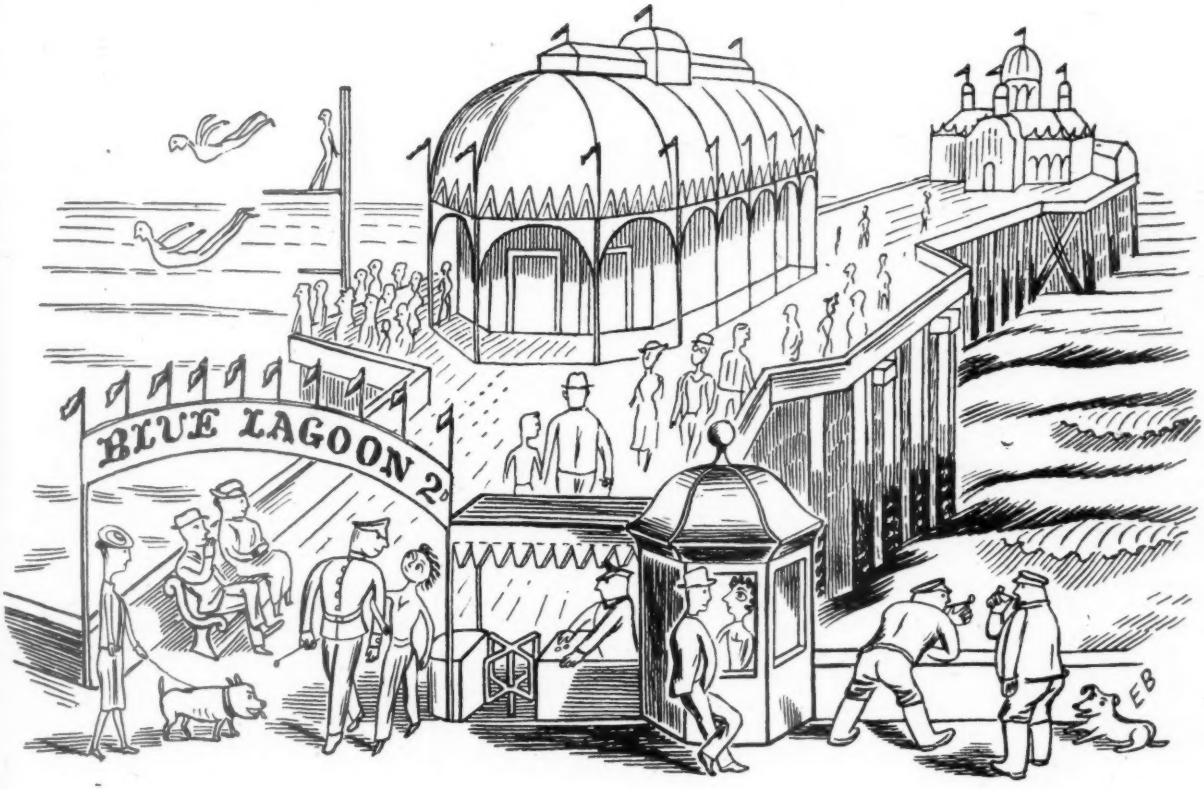
SESSION IV

H. Morris: (*Chief Education Officer, Cambridge County Council*) The state of affairs is so parlous that I do not think it is possible to put with sufficient force the need of architecture in all places of education. The age of industrialism and democracy has brought to an end most of the great cultural traditions of Europe, not least that of architecture. In the contemporary world, where the majority are half-educated, and many not even a quarter educated, and where large fortunes and enormous power can be obtained by exploiting ignorance and appetite, we are in the presence of a vast cultural breakdown which stretches from America to Europe and from Europe to the East. It affects thought and speech, religion and art, and the increase of speed, comfort and convenience serves only to emphasize our lack of standards. Modern society is a body without a Logos.

Nowhere is this cultural breakdown more evident than in the collapse everywhere of our visual environment. For me the ordering of the whole of our visual environment is the major premise of architecture, and in architecture thus conceived I include not only the architect, the engineer and craftsman, but also the painter, the sculptor and the landscapist. Ugliness is one of our modern diseases. We live, without complaint, in a wasteland of un-art. The evil consequences, of course, are profound. Art with architecture is not the whole need of man, but with science and religion it forms part of the permanent threefold need of our species. Much of the malaise of modern life is due to the lack of an environment ordered by the artist and the architect. There is consequent loss to every member of the community of balance, vitality and happiness.

We need

NEW PIERS



Many an old pier has spent some sad years lately. It has heard no cornets or comedians, only the cries of seagulls. The slot-machines are rusty. Madame Zompa's Temple of Fate has no roof. The Grand Pavilion has no glass. But the glory will return ; and zinc will play its versatile part. For zinc is very long of life, stoutly resistant to water and weather and wear. It has an enormous number of uses, constantly increasing. It is suitable for the modern building or the traditional, the site-built or the prefabricated. It is a metal to keep in mind when the piers of England come into their own.

new piers need ZINC

Zinc has been used on the roof of almost every pier pavilion along our coastline. But new techniques are being discovered and our publications describe them. If you would like to have our publication list or to know more about Zinc and the Zinc Development Association, write to the Z.D.A., Lincoln House, Turl Street, Oxford.

Zn

E

Where are we to turn to counter this disease of squalor and ugliness? Elsewhere, and on many occasions, I have said that a revival of art and architecture, inconceivable in its scope and exceeding in its significance what has previously happened in history, will come about as a result of the reconstruction of our visual environment at the hands of the architect and the artist. It involves the reconception and rebuilding of the towns as the instrument of the truly civilized life. I cannot pursue that theme further. But I suggest that we can, at least, make a beginning without schools, our places of further education, community centres—even with our art schools. Buildings that are well-designed and equipped and beautifully decorated will exercise their potent, but unspoken, influence on those who use them from day to day. This is true education. The school, the technical college, the community centre, which is not a work of architectural art, is to that extent an educational failure.

We sorely need an authentic corpus of sifted information and experience about the equipment and organization of school buildings, as well as a bibliography of work that has already been done, as, for instance, by the Ministry of Works, having in mind, of course, the pupil and the experience of the teachers. There is no consideration arising in the life of the school which should be left out. Unless we get this we shall have numerous architects in different places working alone on the same problems, oblivious to certain needs and errors, unaware of solutions that others have found elsewhere. Such a body of doctrine and detail, which will be cumulative and will change from time to time, can only be brought together by the central Ministry working with some instrument of permanent consultation between teachers, inspectors, administrators, architects and manufacturers.

I turn to my specific theme, buildings for further education. The school is not enough. For over twenty years I have been saying that the centre of gravity in education should be in that part which provides for youth and maturity, and Sir Richard Livingstone has said much the same thing in a book published during this war. It is only by some such universal development of adult education that we can begin to tackle all the problems that beset us, and I mean by adult education something much more than education by discourse. I mean what Whitehead means, the pursuit of science, the practice of art and the life of religion. We have not used sufficient courage and imagination in working out the scope of adult education for modern democracy. We have suffered from a vocational education which has not been made the basis of a liberal education. We have not associated the æsthetic with technical education, and have regarded them as two different worlds. The corporate and recreational have been left out. The one-sided idea of education for leisure has grown up. One of own deepest needs is somehow to significate the economic order and, social reform apart, I think that an essential step to take is to combine technical education with the community centre, and to provide in towns, and indeed the countryside, for the whole personalities of men and women.

K. Campbell: This idea of the work of architects being empirical is tragically true. We often have to work at a problem right from the beginning when there should be a body of experience and information to give us the answer without the need to start at the beginning. But I do not see at this stage how that can be avoided. It is tied up with Mr. Morris's remark about the necessity for architects to give a lead. I cannot imagine that would create a bigger dog-fight in the whole architectural profession than an endeavour to lay down standards of design as representing the whole profession. What would it be — modern, neo-Swedish, Georgian? We cannot give a lead, because there is no lead to give.

What was said about the redemption of the locality is true. We cannot save ourselves by means of architecture; what will save us is the redemption of the locality, the reorganization of town and countryside on the lines of modern town planning theory. The individual house has little effect; the rescue of the locality is all that can save us. Mr. Morris said that the man to save the world must be a philosopher rather than an architect. I feel that that is a bad division. For much too long philosophy has been separated from doing, and when it is that it is dead. It would be better to say that the architect should be a philosopher rather than that the philosopher should do the planning.

ANNOUNCEMENTS

Mr. J. E. Wright has been appointed secretary to E. R. & F. Turner, Ltd..

Messrs. Quiggin & Gee, chartered architects and surveyors, have moved to Harley Building, 11, Old Hall Street, Liverpool, 3. Tel.: Central 8624/5.

Messrs. W. H. Saunders & Son, architects, consulting structural engineers and surveyors, have moved to Bank Chambers, 1, Carlton Crescent, Southampton. Tel.: Southampton 2002.

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

WEDNESFIELD URBAN DISTRICT COUNCIL.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited for the temporary appointment of Architectural Assistant in the Surveyor's Department, at a salary of £350 per annum, plus cost of living bonus (at present £59 16s. per annum).

Applicants must be A.R.I.B.A., or hold equivalent qualification, and should have had practical experience of design, layout, and construction of Council Housing Estates, and other architectural works normally carried out by a Local Authority.

Applications, to be accompanied by copies of three recent testimonials, must reach me not later than 18th June, 1945.

F. O. SKIDMORE,
Clerk to the Council.

44, Queen Street, Wolverhampton. 803

CITY AND COUNTY OF THE CITY OF EXETER.

Applications are invited from Associates of the Royal Institute of British Architects for the appointment of a SENIOR ASSISTANT ARCHITECT in the City Architect's Department. The salary will be £400 per annum, rising by two annual increments of £10 to £420 per annum, plus cost of living bonus, at present £59 19s. 3d., the maximum salary being paid in the first instance to an experienced candidate.

The appointment will be subject to one calendar month's notice on either side and to the provisions of the Local Government Superannuation Act, 1937. The person appointed will be required to pass a medical examination.

Applications, stating age, qualifications, previous and present appointments, with salaries and exact designations, full details of experience, and date when available, together with copies of three recent testimonials, should be sent to F. R. Steele, F.R.I.B.A., F.S.I., A.M.T.P.I., City Architect, 2, Southernhay West, Exeter, not later than 15th June, 1945.

Applications from Architects serving with H.M. Forces will receive consideration.

C. J. NEWMAN,
Town Clerk.

Town Clerk's Office, Exeter. 782

AMERSHAM AND CHESHAM JOINT PLANNING COMMITTEE.

APPOINTMENT OF PLANNING OFFICER.

Applications are invited for the appointment of Planning Officer at a commencing salary ranging from £600 to £700 per annum, according to qualifications and experience, rising by annual increments of £50 to £900 per annum, plus bonus.

Applicants should possess the highest qualifications, and have had wide experience in all phases of Town and Country Planning.

The person appointed will be required to devote the whole of his time to his duties, and to carry out such duties for and on behalf of the Joint Planning Committee as they may direct. He will also be required to reside in or near Amersham, and to provide and maintain a motor car for use in connection with his duties, for which an allowance will be paid in accordance with the Bucks County Council's scale.

The appointment will be subject to three months' notice on either side, and to the provisions of the Local Government Superannuation Act, 1937. A medical examination will be necessary.

Application, endorsed "Joint Planning Officer," giving age and full particulars of qualifications and experience, together with copies of three recent testimonials, should be received by the undersigned not later than 1st August, 1945.

The appointment is open to members of H.M. Forces, who possess the necessary qualifications and experience, and applicants serving abroad are requested to cable the date of the despatch of their applications.

A. H. PRINCE,
Acting Clerk of the Committee

County Offices, Aylesbury, Bucks.
19th May, 1945. 776

COUNTY COUNCIL OF ROSS AND CROMARTY.

COUNTY ARCHITECT.

Applications are invited for the post of County Architect. Applicants must be Associates of the Royal Institute of British Architects.

Salary £750, rising by £25 per annum to £900, plus J.I.C. war bonus. Staff and office accommodation will be provided by the County Council. The post is superannuable, and medical examination is necessary. Further details of duties, terms and conditions of appointment may be obtained from the undersigned, with whom applications, stating age, experience, and present post, should be lodged (together with two copies thereof and of three recent testimonials) not later than 23rd June, 1945.

Canvassing either directly or indirectly will be a disqualification.

T. S. H. BURNS,
Joint County Clerk.

County Offices, Dingwall.
28th May, 1945. 806

HUNTS COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

ARCHITECTURAL ASSISTANT.

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

The salary will be between £240 and £305 per annum, according to qualifications and experience, plus an allowance of 5/78ths of the salary for wartime hours and plus a war bonus of £59 16s. per annum for men and £48 2s. per annum for women.

Applications, stating age, qualifications, and experience, and position with regard to National Service, and earliest date on which duties could be commenced if appointed, together with copies of two testimonials, should be sent to Mr. T. H. Longstaff, F.R.I.B.A., County Architect, Walden House, Huntingdon, by not later than Tuesday, 19th June, 1945.

J. B. KELLY,
Clerk of the County Council.

Gazeley House, Huntingdon. 807

WEST RIDING COUNTY COUNCIL.

EDUCATION (ARCHITECT'S) DEPARTMENT.

The West Riding Education Committee invite applications from qualified men for the undernamed appointments to be made on the permanent staff of the Education Architect's Section:—

ASSISTANT COUNTY EDUCATION ARCHITECTS (Two)—£650—£25—£750.

SENIOR ASSISTANT ARCHITECTS (Two)—£450—£25—£600.

Candidates must be Fellows or Associates of the R.I.B.A., and have wide experience in the planning and carrying out of all types of work connected with the erection of school buildings and other educational institutions, including the modernisation of existing school buildings. All the appointments will be subject to the provisions of the Local Government Superannuation Act, 1937.

Forms of application may be obtained from the Education Officer, County Hall, Wakefield. Last date for the receipt of applications, 23rd June, 1945. 802

COUNTY BOROUGH OF NORTHAMPTON.

APPOINTMENT OF ARCHITECT TO THE EDUCATION COMMITTEE.

Applications are invited for the position of Architect to the Education Committee, salary £550 per annum, plus bonus, rising, subject to approved service, by annual increments of £25 to £700 per annum, plus bonus; the commencing salary to be determined in accordance with previous experience and qualifications. Applications from members of H.M. Forces will be considered. Applicants must be Associate Members or Fellows of the Royal Institute of British Architects, and have had experience in School architectural work. The position is a designated post under the Local Government Superannuation Acts, and is subject to the Council's general conditions of service. The successful candidate will be required to pass a medical examination. Applications, stating age, experience and qualifications, accompanied by copies of not more than three testimonials, together with the names of three referees, and endorsed "Architect to the Education Committee," should reach the undersigned, from whom further particulars can be obtained, not later than Saturday, the 30th June, 1945.

H. C. PERRIN,
Chief Education Officer.

Education Office. "Springfield,"
Cliftonville, Northampton. 791

TOWN PLANNING ASSISTANT required to Local Authority (London area). Capable of preparing schemes under supervision; knowledge of the Acts. Salary £300-£360, according to ability. State qualifications and experience. Box 787.

ASSISTANT ARCHITECT (HOUSING).
BOURNVILLE VILLAGE TRUST.

Applications are invited for the position of Assistant Architect to take charge, under the direction of the Chief Architect, of the Housing Section of the Architectural Department.

Candidates must be properly qualified Architects, experienced in Municipal and Private Housing Schemes. They must be thoroughly conversant with both traditional and new types of construction, able to prepare accurate layouts, working drawings, details, specifications, and to take responsibility for day to day administration of contracts and for settlement of accounts.

Applications, stating age, training, experience, position with regard to military or other National Service, and date when free to begin new appointment, to be forwarded to the Secretary, Bournville Village Trust, Estate Office, Bourneville, Birmingham, 30. 812

CORPORATION OF THE CITY OF GLASGOW.
HOUSING DEPARTMENT.

Applications are invited for the position of CONTROLLER OF NEW WORKS. The person appointed will be responsible, under the Director of Housing, for the construction of houses and roads and sewers by Direct Labour.

Applicants, who should be under 45 years of age, should have had wide experience in the organization and carrying out of large scale Building and Civil Engineering Contracts, utilizing the most up-to-date mechanical equipment, and should be familiar with modern methods of personnel management. 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.

The appointment will be made, according to qualifications, within a salary scale at present fixed at £600—£10—£700, plus war increase (at present £60 per annum).

Applications, stating age, training, qualifications, experience, and giving the names of two referees, should be addressed to the undersigned in an envelope marked on the top left-hand corner "Controller of New Works," and should be received not later than 16th June, 1945.

RONALD BRADBURY,
Director of Housing.
20, Trongate, Glasgow, C.1. 813

CITY OF PLYMOUTH.

Applications are invited for the following appointments in the City Architect's Department:—

(*a*) SENIOR ASSISTANT ARCHITECT (Hospitals Section), at a salary of £450, rising to £530 per annum, plus cost of living bonus, at present £59 16s.

(*b*) SENIOR ASSISTANT ARCHITECT (Housing Section), at a salary of £435, rising to £480 per annum, plus cost of living bonus, at present £59 16s.

(*c*) ASSISTANT ARCHITECTS, at salaries of £270 to £380 per annum, according to experience and qualifications, plus cost of living bonus, at present £59 16s

The posts will be subject to the Local Government Superannuation Act, 1937, and will be terminable upon one month's notice on either side. The persons appointed will be required to pass a medical examination.

Candidates must not be over 40 years of age, but this condition may be relaxed in the case of a person up to 45 years of age, employed by another Local Authority.

Applications, endorsed appointment (*a*) (*b*) or (*c*), stating age, qualifications, previous experience, and date when available, together with copies of three recent testimonials, should be sent to the City Architect, Compton Park House, Plymouth, not later than the 6th July, 1945.

Applications from Architects serving with H.M. Forces will receive consideration. 816

Technical Assistants required by the Borough of Weston-super-Mare.

CHIEF TOWN PLANNING ASSISTANT, permanent. Candidates must be A.M.T.P.I. by examination and possess a recognised Architectural, Engineering or Surveying qualification, and have had Town Planning experience, preferably in a Municipal Office. Salary £435 to £500 p.a., plus bonus at present £59 16s. p.a.
Reference EA.1489XA.

HOUSING ASSISTANT, temporary. Should preferably have passed the final exam. of the R.I.B.A., and have had considerable experience of Housing design and layouts. Salary £315—£360 p.a., plus bonus at present £59 16s. p.a.
Reference EA.1490XA.

Write, quoting appropriate reference, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 20th June, 1945. 798

SENIOR ARCHITECTURAL ASSISTANT, permanent, required by the Corporation of Saltash. Candidates should have had experience in the construction of houses, including estate layout, sewers, etc., and preference will be given to those who are A.R.I.B.A., A.M.Inst.M. & Cty. Eng. or Registered Architect.

Salary: Commencing £350 per annum.

Write, quoting EA.1420XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 19th June, 1945. 799

Technical Assistants—temporary—required by Colne Borough Council.

(*a*) ENGINEERING ASSISTANT. Candidates should hold Testamur of Institution of Municipal and County Engineers or be A.M.I.C.E. Should have Municipal experience, be competent draughtsmen and surveyors, able to prepare schemes for new roads and sewers, to supervise constructional works, and have had experience in Local Authority Building Inspection.

Salary £320—£15—£350 per annum, plus war bonus £59 16s. per annum at present.
Reference E.1391XA.

(*b*) ARCHITECTURAL ASSISTANT. Candidates should hold an Architectural qualification and be able to prepare housing plans and layouts, and plans for general architectural works. Salary £320—£15—£350 per annum, plus war bonus £59 16s. per annum at present.
Reference EA.1473XA.

Appointments subject to the provisions of L.G.S. Act, 1937, and service terminable by notice of one month on either side.

Write, quoting appropriate reference number, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned, together with copies of three recent testimonials completed, by 22nd June, 1945. 811

ARCHITECTURAL ASSISTANT, permanent, required by the St. Pancras Borough Council. Salary £750 per annum, rising by £25 annually to £850 per annum, plus cost of living bonus £59 16s. Candidates should be A.R.I.B.A. or hold equivalent qualifications; experience in town planning, housing, alterations and additions to properties, planning of new buildings, and the preparation of bills of quantities, specifications and estimates. Previous Local Government experience an additional advantage.

The appointment is subject to the L.G.S. Act, 1937, and the successful candidate will be required to pass a medical examination.

Write, quoting EA.1488XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 18th June, 1945. 801

ARCHITECTURAL ASSISTANT, temporary, required by the Bridgwater Town Council, for preparation of plans, specifications and quantities in connection with the Council's housing schemes Candidates must be A.R.I.B.A. or equivalent.
Salary: £700 per annum, plus war bonus.
Write, quoting EA.1466XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 18th June, 1945. 800

ARCHITECTURAL ASSISTANT required by the Borough of Newbury. Candidates must be registered Architects, with experience in housing, including layouts, specifications, etc.
Salary: £500 per annum, plus cost of living bonus.
Write, quoting EA.1447XA, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 20th June 1945. 796

SENIOR PLANNING ASSISTANT required by the Portsmouth Corporation. Candidates must be A.R.I.B.A. or A.M.T.P.I., and should have knowledge and experience of Civic Design.
Salary: £390 per annum to £435 per annum, plus war bonus.
Write, quoting EA.1491X, to Ministry of Labour and National Service, Central (T. and S.) Register, Room 5/17, Sardinia Street, Kingsway, London, W.C.2, for application form, which must be returned completed by 21st June, 1945. 797

Architectural Appointments Vacant

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

ARCHITECTURAL ASSISTANT required; modern outlook, and preferably with experience of or interested in hospital work; Reading and London office; full details, salary, etc., to Box 749.

JUNIOR required by Croydon Architects; some knowledge of drawing desirable; either sex. Full particulars to Box 792.

WORCESTER Architect wants Junior Assistant immediately; able to measure existing buildings and plot the plans; neat draughtsman; probationer R.I.B.A. Full particulars to Box 793.

ARCHITECTURAL ASSISTANTS required—Junior and Senior—for Housing and Industrial work. Write, stating experience and salary required, to Sir John Brown and A. E. Henson, 117, Sloane Street, S.W.1. 805

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. 817

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

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. 809

ESTATE Department of an Assurance Company (London office) require qualified Architects and Architects' Assistants; a good knowledge of general practice with good draughtsmanship essential; progressive posts. Reply in writing, giving age, training, qualifications, experience, and salary required, to Box 810.

Architectural Appointments Wanted

CONTINENTAL Student of Architecture, specialized in furniture, keen interest in industrial design, seeks position in progressive Office. Box 11.

ARCHITECT'S ASSISTANT seeks position in Southern England, preferably London; studying final R.I.B.A.; perspectivist. 14

TWO ASSISTANTS, one an A.R.I.B.A., willing to do part-time work; surveys undertaken; in or around London. Please apply to B. Daly, 17, Maidstone Road, Bounds Green, N.17. 17

L. R.I.B.A. (Victoria and Sutton area) offers spare time assistance. Box 20.

YOUTH (16½ years) requires position in Surveyor's Office (London area); left building school Easter after 3 years' course; excellent testimonials, etc. Box 24.

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

QUANTITY Surveyor's Assistant, 5 years Q.S. office, ex-R.A.F., experience in squaring-out, billing, abstracting and measuring work, seeks progressive position. Box 22.

TO Architectural Sculpturers.—Student desires vacation work; expenses only; if possible would like bronzes, in addition to stone, plastic modelling, etc. Box 19.

REGISTERED Architect and Surveyor, with energetic and capable abilities, requires position immediately; good designer, quantities and specifications. c/o 304, Blossomfield Road, Solihull, Warwickshire. 21

YARMOUTH-LOWESTOFT area, or near.—Architect's Assistant (23), 2 years' office experience, seeks employment (full-time or spare-time) in above area; keen, healthy, studying for R.I.B.A. Intermediate; ex-Serviceman; exempt from further call-up. Box 23.

Other Appointments Vacant

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

JUNIORS, either sex, interested in Architecture and Building, required for office work in Central London; five-day week. Write, stating age and standard of education, to Box N.410, Willings, 362, Grays Inn Road, London, W.C.1. 771

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.

For Sale

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

"MODERN Practical Carpenter and Joiner" (3 vols.), by Newbolt; £2 2s. Lowe, 29, Hampton Street, Warwick. 794

ARCHITECT'S PRACTICE in the North of England for Sale; work in hand includes housing schemes; progressive district; reasonable terms. Box 795.

Property for Sale

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

LAMBETH LOWER MARSH, S.E.1.—Freehold site in established trading position; frontage 33 ft., depth 100 ft.; for erection of modern shop or showroom premises; price £4,500. Box 814.

APPROX. ½ acre Freehold Building Plots for Sale; 70 ft. by 320 ft.; situated on the Dorking/Reigate/Rusper Road; main water now available; gas and electricity available shortly; price £150 each; others at £75. Travel to Ockley Station, where a car will meet all trains arriving between 11.13 a.m. and 5.13 p.m. on Saturdays and Sundays, and convey intending purchasers to and from the estate. For further particulars apply Box 808.

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 2562. 584

"ARCHITECTS' Journal Library of Planned Information," published by Sir John Burnet, Tait & Lorne, wanted; all vols. Box 815.

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

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

MONOMARK Service. Permanent London address. Letters redirected immediately. Confidential, 5s. p.a. Royal Patronage. Key tags 3 for 1s. 3d. Write BM/MONO5R, W.C.1. 44

YOUR HOUSE.

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

AUTHORS are invited to submit MSS for book publication, particularly Stories for Children and Poems. Stockwell, Ltd., Elms Court, Ilfracombe. 790

CENTRAL HEATING OIL BURNERS.—Insist on the British-made Parwinac—no stoking, clean, trouble free; no waiting for coal or coke deliveries; available now if oil permit obtainable. Parker, Winder & Achurch, Ltd., Makers, 80, Broad Street, Birmingham, 1. 992

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.

Alphabetical Index to Advertisers

	PAGE
Accrington Brick Co.	lviii
Acme Wringers, Ltd.	xxv
Aero Pipe & Glass Co., Ltd.	
Aga Heat, Ltd.	lvii
Aidas Electric, Ltd.	
Air Conditioning & Engineering, Ltd.	
Airscrew Co., Ltd., The	
Allied Paints & Chemicals, Ltd.	lvi
Anderson, C. F., & Sons, Ltd.	
Ashwell & Nesbit, Ltd.	xx
Bailey, Sir W. H., & Co., Ltd.	lv
Baker, W. A., & Co., Ltd.	lxiii
Baldwin, Son & Co., Ltd.	
Bath Cabinet Makers & Artcraft, Ltd.	lxiii
Bigwood, Joshua, & Son, Ltd.	
Birmetals, Ltd.	v
Blackburn, Thomas, & Sons, Ltd.	
Black & Decker, Ltd.	xxxii
Bone, Connell, & Co., Ltd.	lviii
Booth, John, & Sons (Bolton), Ltd.	xliii
Braby, Fredk., & Co., Ltd.	
Braithwaite & Co., Engineers, Ltd.	
Bratt Colbran, Ltd.	
Briggs, William, & Sons, Ltd.	xiv
British Electrical Development Assoc.	
British Ironfounders' Assoc.	
British Steelwork Assoc., The	
British Trane Co., Ltd.	l
Broadcast Relay Service, Ltd.	
Brush Electrical Engineering Co., Ltd.	xxiv
Burn Bros. (London), Ltd.	lxv
Carrier Engineering Co., Ltd.	lxiii
Cellactite & British Uralite, Ltd.	
Cement Marketing Co., Ltd.	xxi
Chance Bros., Ltd.	xxxiii
Clarke, T., & Co., Ltd.	lxi
Clarke & Vigilant Sprinklers, Ltd.	lxii
Colt Ventilation, Ltd.	lvi
Constructors Ltd.	li
Crittall Manufacturing Co., Ltd.	
Crittall, Richard, & Co., Ltd.	
Cutting, R. C., & Co., Ltd.	lviii
Davidson, C., & Sons, Ltd.	xxiii
Dunlop Rubber Co., Ltd.	ix
Duresco Products Ltd.	xli
Eagle Range & Grate Co.	xxxvi
Easiclene-Porcelain Enamel (1938), Ltd.	
Ellison, George, Ltd.	lxi
English Joinery Manufacturers' Assoc.	
Esavian, Ltd.	lxii
Etchells, Congdon & Muir, Ltd.	liv
Evered & Co., Ltd.	liii
Ewart & Son, Ltd.	
Expandite Products, Ltd.	xii
Foyles	lxi
Franki Compressed Pile Co., Ltd.	xl
Frazzi, Ltd.	lv
Freeman, Joseph, Sons & Co., Ltd.	iii
Fullwood & Bland, Ltd., R. J.	li
Fyvie Gate Co.	liii
General Cable Mnfg. Co., Ltd.	liv
Gray, J. W., & Son, Ltd.	lxii
Greenwoods & Airvac Ventilating Co.	
Griffiths Bros. & Co. (London), Ltd.	
Guest, Keen & Nettlefolds, Ltd.	x
Hammond & Champness, Ltd.	
Harvey, G. A., & Co. (London), Ltd.	iii
Head Wrightson & Co., Ltd.	lxiii
Henderson, P. C., Ltd.	ii
Henleys Telegraph Works Co., Ltd., The	xlvii
Hiduminium Applications, Ltd.	
Hills, F., & Sons, Ltd.	xxxvii
Hilton, James, & Son (Leigh), Ltd.	
Holden & Brooke, Ltd.	lx
Hope, Henry, & Sons, Ltd.	xlvi
Hopton-Wood Stone Firms, Ltd.	xlii
Horseley Bridge & Thomas Piggott, Ltd.	
Hunting Aerosurveys, Ltd.	lvii
Ideal Boilers & Radiators, Ltd.	xi
Imperial Chemical Industries, Ltd. xxvii,	xxxviii
Industrial Engineering, Ltd.	
International Correspondence Schools	lx
Jenkins, Robert, & Co., Ltd.	ii
Kautex Plastics, Ltd.	xlii
Kerner-Greenwood & Co., Ltd.	
Kerr, John, & Co. (M/r.), Ltd.	
Ketton Portland Cement Works	xxvi
King, Geo. W., Ltd.	
Laing, John, & Co.	
Lamont, James H., & Co., Ltd.	
Lancashire Dynamo & Crypto, Ltd.	
Lead Industries Development Council	viii
Limmer & Trinidad Lake Asphalte Co.	
Lockerbie & Wilkinson (Tipton), Ltd.	
Logicol Coal Bunkers	xii
London Brick Co., Ltd.	xxviii
Mallinson, William, & Sons, Ltd.	
Matthews & Yates Ltd.	lix
McArd, Robert, & Co., Ltd.	vi
McCarthy, M., & Sons, Ltd.	
McKechnie Brothers, Ltd.	lix
Metropolitan-Vickers Electrical Co.	
Midland Bank, Ltd.	li
Midland Woodworking Co., Ltd.	
Mint, Birmingham, Ltd., The	
Mills Scaffolding Co., Ltd.	lxvi
M.K. Electric, Ltd.	lii
Molar Products, Ltd.	lviii
Morris, Herbert, Ltd.	iv
Morris Singer Co.	lii
Negus, W. & M., Ltd.	
Newsum, H., Sons & Co., Ltd.	lx
Nobles & Hoare, Ltd.	xvi
North Wales Slate Quarries Assoc.	
Oliver, Wm., & Sons, Ltd.	lxi
Parnall, George, & Co., Ltd.	xliv
Partridge, Wilson & Co., Ltd., J.	
Penfold Fencing Co., Ltd.	lvi
Plysyl Formwork, Ltd.	
Positive Flow Ventilators, Ltd.	
Precision Roofs, Ltd.	
Prodorite, Ltd.	xxxiv
Range Boilers, Ltd.	
Redfern's Rubber Co.	lvii
Restall, Fredk., Ltd.	
Roberts, J. W., Ltd.	
Robinson & Kershaw, Ltd.	xxxvi
Ross, S. Grahame, Ltd.	
Rownson, Drew & Clydesdale, Ltd.	
Ruberoid Co., Ltd.	lvi
Rustproof Metal Window Co., Ltd.	
Sadd, John, & Sons, Ltd.	xxix
Sanders, Wm., & Co. (Wednesbury), Ltd.	
Sankey-Sheldon	xvii
Scaffolding (Gt. Britain), Ltd.	xlviii
Sebel, D., & Co., Ltd.	
Sharman & Sons	lxi
Siegwart Fireproof Floor Co., Ltd.	vii
Smith, Henry (Constructional Engineers)	lxi
Smiths' Fireproof Floors, Ltd.	xx
Southern Lime Assoc.	xxx
Stott, James, & Co. (Engineers), Ltd.	
Sutcliffe Speakman & Co., Ltd.	xix
Tentest Fibre Board Co., Ltd.	
Thompson Beacon Windows, Ltd., John	
Thames Board Mills, Ltd.	xxxix
Tretol, Ltd.	xvi
Trussed Concrete Steel Co., Ltd.	xiii
Tubular Furniture, Ltd.	lviii
Tudor Accumulator Co., Ltd.	ii
Tullis, D. & J., Ltd.	ii
Twisteel Reinforcement, Ltd.	xviii
Uni-Seco Structures, Ltd.	lxii
United Ebonite & Lorival, Ltd.	xv
United Steel Companies, Ltd.	xxii
Universal Asbestos Mnfg. Co., Ltd.	xxx
Vulcan Products, Ltd.	
Walker, Crosweller & Co., Ltd.	xxxiv
Warwick Rim & Sectioning Co., Ltd.	
Wates, Ltd.	xxxi
Wimpey, George, & Co., Ltd.	xxxv
Wood Wool Building Slab Mfrs.' Assoc.	
Youngstown Kitchens	
Zinc Development Assoc.	xlix
Zinc Alloy Rust-Proofing Co., Ltd.	lxiv

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

PAGE
lx
xvi
lxi
xliv
lvi
xxxiv
lvii
xxxvi
lvi
xxix
xvii
xlviii
lxi
vii
lxi
xx
xxx
xix
xxxix
xvi
xiii
lviii
ii
ii
xviii
lxii
xv
xxii
xxx
xxxiv
xxxi
xxxv
xlix
lxiv