For every type of work in which asphalte can be employed the name Val de Travers stands supreme for product and service. As the largest mine owners in the world and as the greatest producers of factory-made asphalte in the country, Val de Travers' unrivalled resources are destined to play a great part in the reconstruction which lies before us.

ACTIVITIES

of the Company and its Associates.

● ASPHALTE MINE OWNERS in France, Germany and Sicily ● QUARRY OWNERS ● ASPHALTE CONTRACTORS ● TAR PAVIORS ● TARMACADAM MANUFACTURERS ● ASPHALTE GROUT MAKERS ● TAR SPRAYERS ● ROAD LINE PAINT SPECIALISTS ● HARD TENNIS COURT and PLAYGROUND CONSTRUCTORS ● VALCOTHERM TILE MANUFACTURERS.

VAL DE TRAVERS VIT Associate Companies

VAL DE TRAVERS

The Largest Producers of Asphalte in the World

THE VAL DE TRAVERS ASPHALTE PAVING COMPANY LIMITED
VAL DE TRAVERS HOUSE, 21-22 OLD BAILEY, LONDON, E.C.4

Telephone : City 7001/5. Telegrams : Traversable, Cent., London.

ASSOCIATED COMPANIES

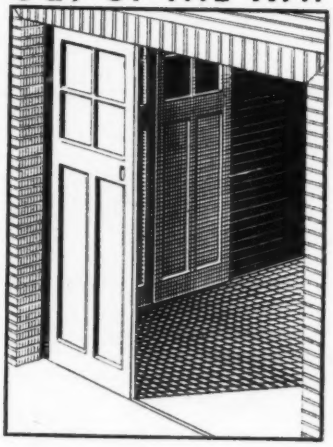
C. W. HOBMAN & CO. LTD. • TAROADS LIMITED • THE DIAMOND TREAD COMPANY (1938) LIMITED • THE LONDON ASPHALTE CO. LTD. • SICILIAN ROCK ASPHALTE CO. LTD. • UNITED LIMMER & VORWHOLE ROCK ASPHALTE CO. LTD. • THOS. FALDO & COMPANY (1929) LTD. • W. G. WALKER (GLASGOW) LTD.

BRANCHES

MINGHAM • CANTERBURY • ELY • EXETER • GLASGOW • LINCOLN • LIVERPOOL • MANCHESTER • NEWCASTLE-ON-TYNE

THE VALUE OF SLIDING

OUT OF THE WAY



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

KING SLIDING DOOR GEAR

For ante rooms, cloak rooms, garages, lifts, etc., and places where space is limited or traffic congestion is likely to occur, sliding doors are the perfect application.

WRITE FOR ILLUSTRATED BOOKLET

GEO. W. KING LTD. HITCHIN. HERTS

TELEPHONE HITCHIN 960 (10 LINES)

TEA
FOR THE WORKERS

An essential service in modern industry

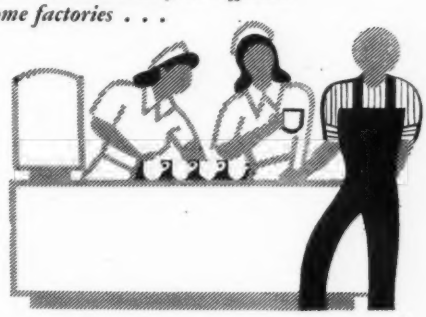
One of the factors responsible for the greater production and efficiency of our factories during the war was the mid-shift tea service. The benefits were so obvious that the provision of tea was given greater consideration than ever before in industry. Old-fashioned and haphazard ways were discarded. Systems were introduced, often after consultation with the Empire Tea Bureau, by which tea could be served without fuss and annoyance to the worker and without loss of time.

The levels of production achieved during the war must be exceeded if we are to regain our export markets. Britain will, therefore, have to extend the use of many proved means of stepping-up production, and not the least of these by any means is the tea break. Managements are realising this and in consultation with their architects and builders, are seeking ways and means of introducing improved facilities for tea-making and distribution. In existing factories, suitable adaptations are being made; in the planning of new factories architects are being asked to consider the tea service as an integral part of their plans.

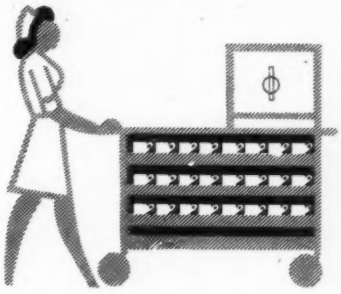
Tea has proved its efficacy in industry. Tea in industry has come to stay.

TEA CARS *are essential for dispersed building sites . . .*

A TEA KIOSK *may be sufficient for some factories . . .*



A TROLLEY SERVICE *will be necessary in others . . .*

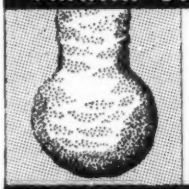


The Empire Tea Bureau was consulted by thousands of managements during the war years, and generally found satisfactory solutions to the problems. A very careful record has been kept of that exacting period and of the requirements of the different industries, trades, offices and types of service. This extensive experience is freely available to all concerned with planning a satisfactory tea service.

EMPIRE TEA BUREAU *If you have any Tea problems, write or 'phone to the Empire Tea Bureau. 22 Regent Street, Piccadilly Circus, S.W.1. Telephone: Whitehall 863[illegible].*

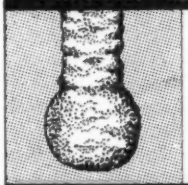
Leaders of the Underground Resistance Movement

FRANKI STANDARD PILES



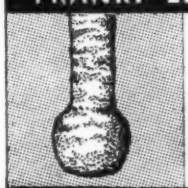
80-90 tons per pile with a wide margin of safety above maximum load.

FRANKI MEDIUM PILES



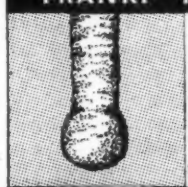
The "Maid of all Work" to carry 60 tons.

FRANKI LIGHT WEIGHTS



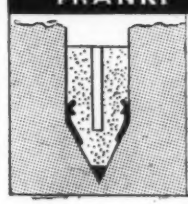
The Bantam Weight Champions—load 40 tons.

FRANKI FORUM PILES



Practically vibrationless piling. Suitable for congested sites.

FRANKI MIGA PILES



For underpinning existing structures No vibration at all.

The Advertisement Copywriter wanted that headline so we put it in to keep him quiet. Now to business.

Franki Piles are ready for 'Peace Work.'

We're as 'browned off' with six years of war work as you are. So—subject to Government priorities and controls—we can now accept both public and private contracts—and once again place Council Offices, Churches, Hospitals, etc. on a firm basis instead of helping to rush up Ordnance Factories, Depots and Barracks.

Remember . . . nothing too big or small, too tricky or too urgent, that we can't do the job a shade better, quicker, and/or cheaper than can any other piling system,

The reason? Perhaps you've forgotten all the advantages of the Franki method of cast-in-situ piling. Why not take a 'refresher course' by sending for copy of our Silver Brochure. Strangely enough you don't need a permit or a licence to own one!

FRANKI PILES

CARRY MORE TONS PER PILE

THE FRANKI COMPRESSED PILE CO. LTD., 39, Victoria Street, London, S.W.1

Telephone: ABBEY 6006-9 *Telegrams: "FRANKIPILE, SOWEST, LONDON"*

big - with big advantages' . . .

built in, by PRESTCOLD

This built-in Prestcold refrigerator, as shown, installed in the kitchen designed by the Wessex Electricity Co., has the following important advantages :

Storage capacity of approximately 4½ cubic feet, which will hold all the perishable foodstuffs for a family of four.

Larder space rendered unnecessary. Dry goods and non-perishable foodstuffs would be kept in kitchen cupboards.

Waist-high door, allowing access to interior without stooping. Height adaptable by varying position of supporting frames.

It can be built into kitchen fitments with cupboard space above and below it.

Design provides for adequate ventilation of mechanism without the necessity for special air-bricks or ducting.

Ice making and 'cold cooking' facilities.

Most important too, is the fact that this Prestcold refrigerator provides the food storage temperatures necessary for the proper safeguarding of perishable foods — for instance 35°F for fresh fish and poultry; 40°F for milk — and even the lower temperatures needed to store the frozen foods which will be available later on. In addition, it will be most economical in current consumption, using only one unit a day.

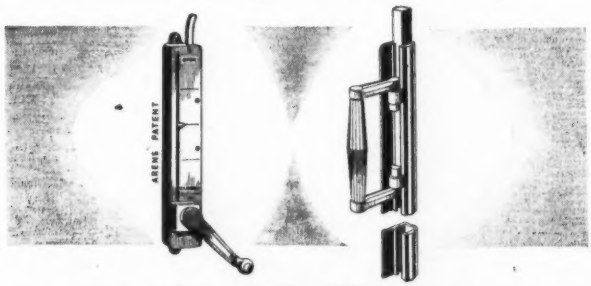
PRESTCOLD *Refrigeration*

A PRODUCT OF THE PRESSED STEEL COMPANY LIMITED · COWLEY · OXFORD

A WINDOW UMPTEEN STORIES HIGH!

A TALL ORDER, BUT EASILY MANAGED BY ARENS REMOTE CONTROL!

We do not anticipate that architectural visions of buildings of the future include windows that soar "umpteen" stories high—we would have great sympathy with the window cleaners!—but we ourselves would welcome just another opportunity to prove that Arens remote controls very easily bring the opening of such windows "under control." The simple movement of an Arens Control handle or slide will operate a window—however hung. And, best of all, the Arens installation *can* be æsthetically hidden behind plaster or panelling. Arens Controls are also ideal for operating Dampers in Air Conditioning Systems. Please ask us for advice and particulars!



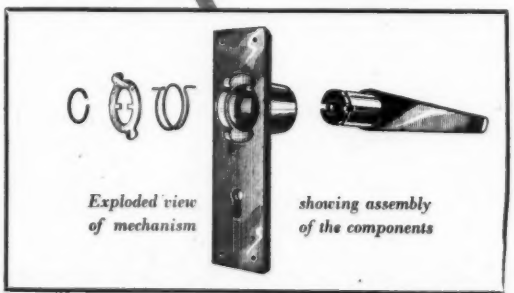
ARENS (Regd Trade Mark) **REMOTE CONTROLS** Covered by Patents

Arens Controls Ltd., Tunstall Road, East Croydon, Surrey Tel.: Addiscombe 3051/4 Grams: Unicontrol, Phone, London

380A STRATFORD ROAD, SPARKSHILL BIRMINGHAM, 11 TELEPHONE: VICTORIA 2621

HANDY

OF course it's handy — that's the essential idea in making door furniture. But Lacrinoid door furniture is something more than handy; it embodies entirely new principles. Consider this lever for instance. It operates on the 'roller' principle, the neck being moulded in one piece with the back plate and the shank of the lever rotating within the neck. The spindle floats, thus automatically compensating for variations up to 1 inch in door thickness. There are no grub screws at all. There is no risk of rattle or looseness. The spring is so made that an even pressure is exerted throughout the turn of the lever. These handles are being made at present in black and brown only, but later a full range of colours will be available.



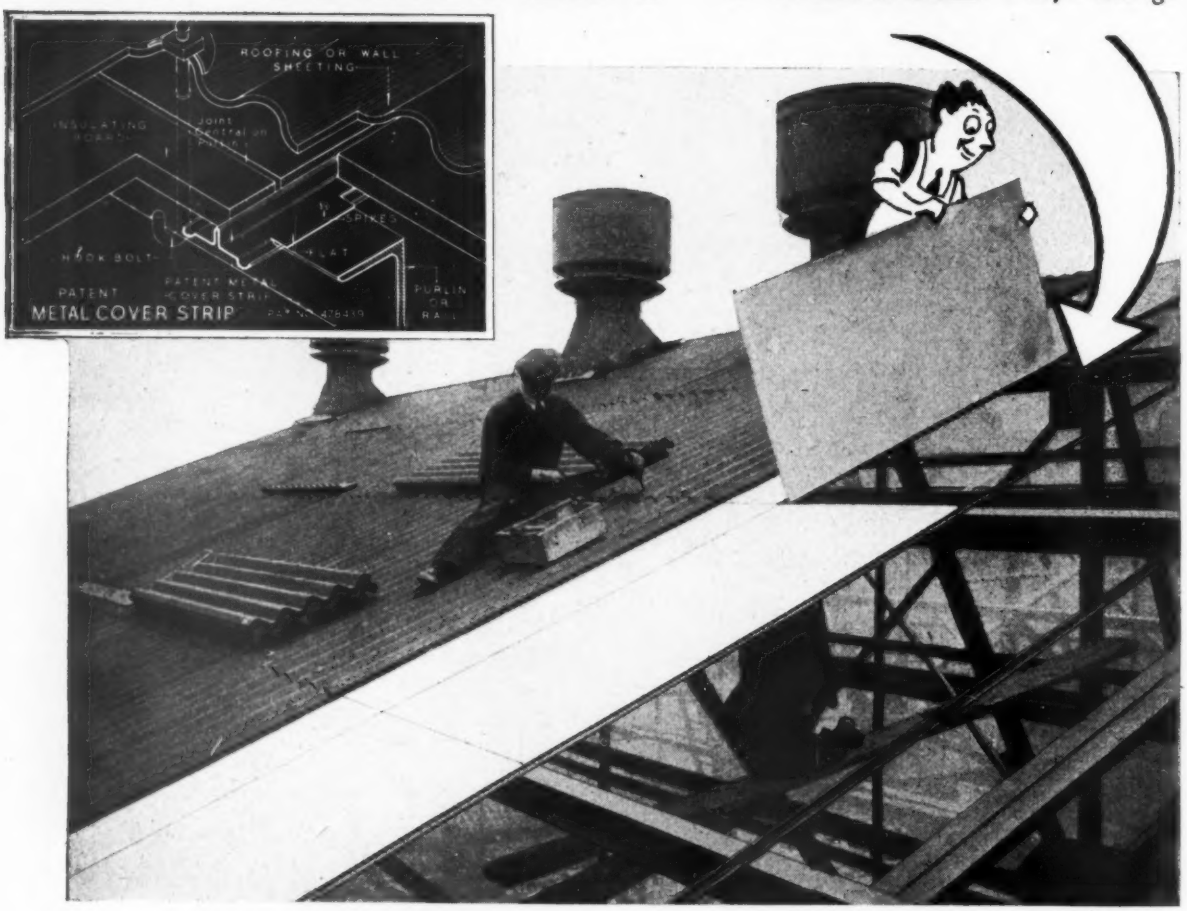
Exploded view of mechanism *showing assembly of the components*

LACRINOID

LACRINOID PRODUCTS LTD · 90 REGENT STREET · LONDON W.1 *Regent 5001*

Sole Distributors for Door Furniture in England. The London Tube & Hardware Co. Ltd., 19/21 *Morley St., London, S.E.*1

PUT TENTEST HERE — says George



For speed and economy insulate all new steel-framed roofs over the purlins by the PATENT METAL COVER STRIP method.

ADVANTAGES

1. **It's Quicker**—roofing and insulation are fixed simultaneously.
2. **It's Cheaper**—by about 25% compared with under the purlins.
3. **It Saves steel**—about 50% saved using no nails, screws, clips, etc.
4. **All Structural Steel exposed** within the building—no hidden corrosion.
5. **All Structural Steel protected** by insulation is free from condensation.

HEAT LOSS DATA

The following figures relate to a typical factory roof of 100,000 sq. ft. corrugated asbestos-cement, and are based on Chart 1 of Fuel Efficiency Bulletin No. 12*.

"U" of roof unlined	1.40
"U" of roof lined with ½in. TenTesT fixed by Patent Metal Cover Strip ...	0.37
Cost of roof lining at 9d. sq. ft.	...£3,750
Saving on Heating Plant ...	...£6,500
Fuel saved per heating season...	570 TONS
Annual value of fuel saved at 50/- per ton	£1,400

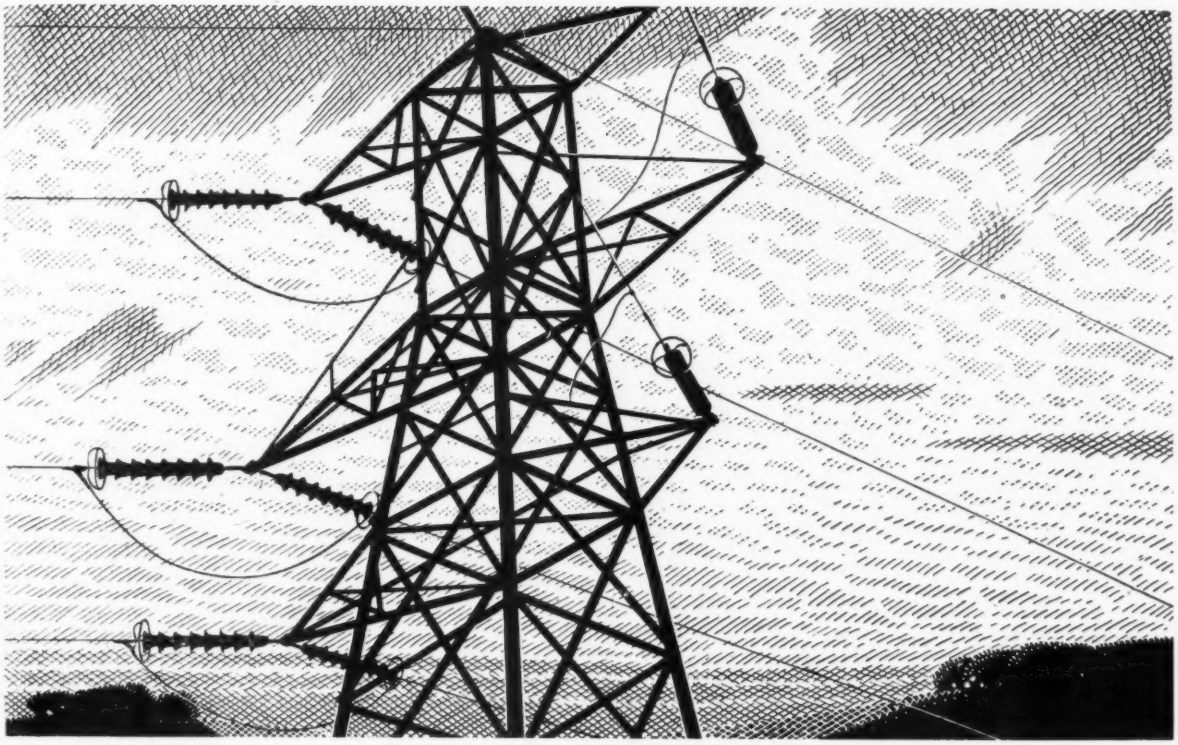
Ministry of Fuel and Power, free and post free.

If you would like to consider the full advantages of Structural Insulation in relation to the building designs you have in hand, let us put our technical representative in touch with you to make a free survey and give you facts and figures. Our Specialised Construction Department is fully equipped to undertake supplying and fixing complete to ensure satisfactory results.

TENTEST TRADE MARK

Made in Canada

TENTEST FIBRE BOARD CO. LTD., 75 CRESCENT WEST, HADLEY WOOD, BARNET, HERTS.
Telephone BARnet 5501 (5 lines). *Telegrams: Fiboard, 'Phone, London.*



Forward to the electrical age

The giant towers striding over hill and dale are evidence of the great future before the Electrical Industry of Britain. In the M.E.M. Factory, increasing quantities of switch, fuse and motor control gear for civilian use are already in production. As more labour and materials and fewer controls and restrictions improve conditions, so supplies of M.E.M. goods will be expanded until orders can all be filled without delay.

You will obtain supplies more speedily from your usual Wholesaler than by ordering direct. Wholesalers have anticipated your demands and will distribute promptly and fairly as supplies become available.

M·E·M

MIDLAND ELECTRIC MANUFACTURING CO. LTD., TYSELEY, BIRMINGHAM, 11

SWITCH, FUSE AND MOTOR CONTROL GEAR, ELECTRIC FIRES AND LOCALISED LIGHTING EQUIPMENT

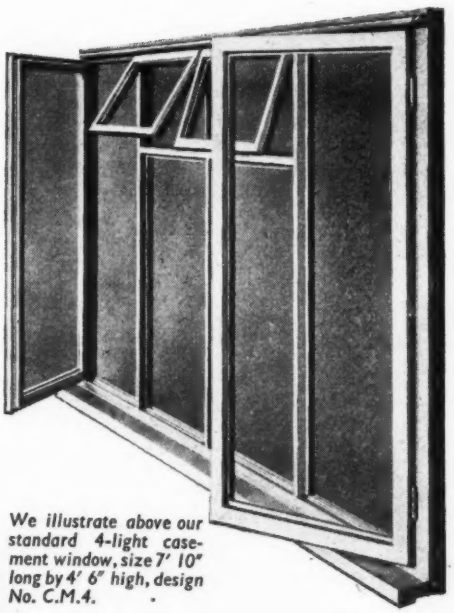
London Showrooms & Stores: 21-22 Rathbone Place, W.1 · **Manchester Showrooms & Stores:** 48-50 Chapel Street, Salford, 3

For All the Best IN JOINERY

HALLS Ejma standard windows provide more than twice the daylight area per cubic foot of timber than that afforded in the pre-war standards. They are designed with extremely strong laminated joints and are specially machined to avoid the bugbear of binding windows. The sizes have been co-ordinated with brickwork dimensions thus saving many man hours on site. They are weather, draught and dust resisting.

We have an ample range of standardised units and you cannot do better than SPECIFY HALLS Ejma windows and doors.

Whatever you need in KITCHEN UNITS, WINDOWS, DOORS AND FRAMES MANUFACTURED TO THE Ejma STANDARD, REMEMBER the name is HALL the mark of QUALITY for the RIGHT STANDARD at the RIGHT PRICE.



We illustrate above our standard 4-light casement window, size 7' 10" long by 4' 6" high, design No. C.M.4.

Continuous worktop can be provided over floor cupboards at convenient working level of 3 ft. above floor.
All drawers and cupboards interchangeable.
Specially designed dustproof drawers.
Ample toe space and comfort when working is provided by the use of a 3 in. recessed plinth.

HALLS of PADDOCK WOOD offer the fully approved range of Ejma kitchen units to British Standard Specification as approved by the Ministry of Health and the Ministry of Works. Our kitchen units will make old kitchens new and new kitchens the last word in utilisation. 16 individual units combine into 50 different arrangements and every unit is interchangeable with A.B.C. simplicity.

EJMA THE HALL MARK OF QUALITY

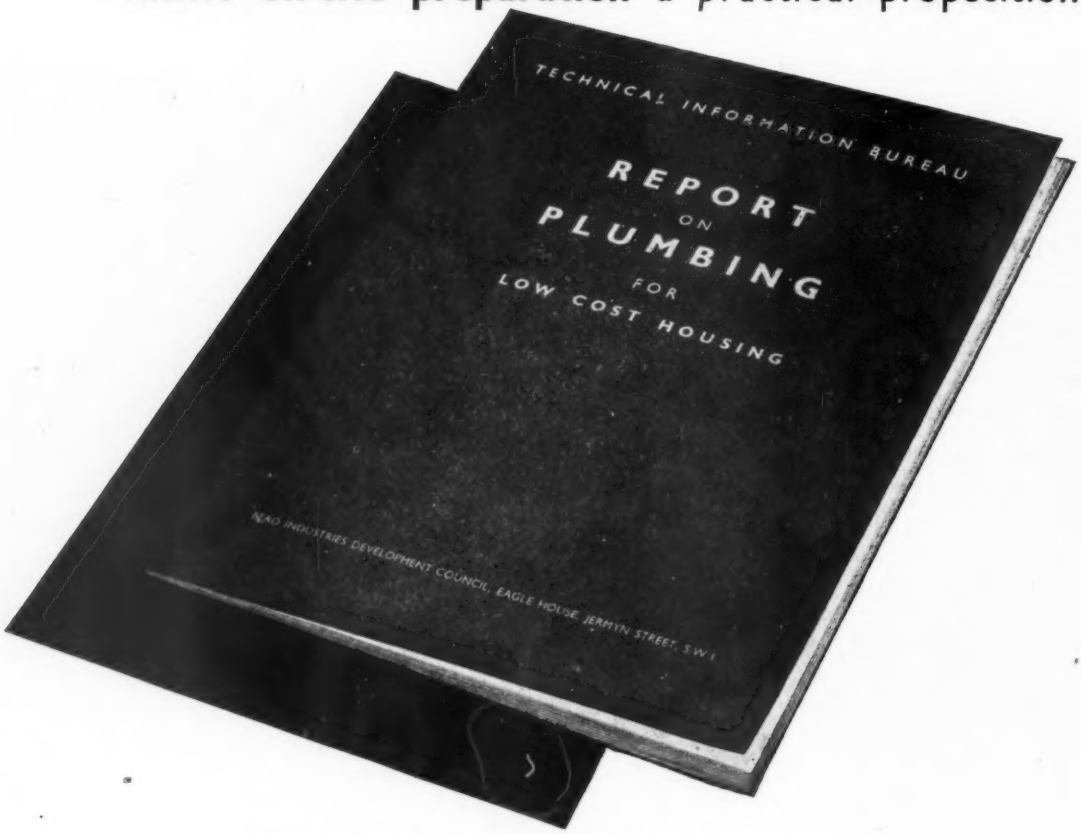
Ejma is the Certification Trade Mark of the English Joinery Manufacturers' Association.

ROBERT H. HALL & Co. (KENT) LTD.

Station Wharf S. PADDOCK WOOD KENT *TELEPHONE* PADDOCK WOOD 105. 107. 108. 3 LINES

The flexibility of LEAD PIPE

makes **off-site preparation** a *practical* proposition



Lengths of distribution pipe with connections and short branches can be prepared in the workshop thus saving site work hours. On the job, the pipe can be bent and deviated as required, and the flexibility of the material allows for the inevitable variations in the dimensions of building work and sanitary appliances.

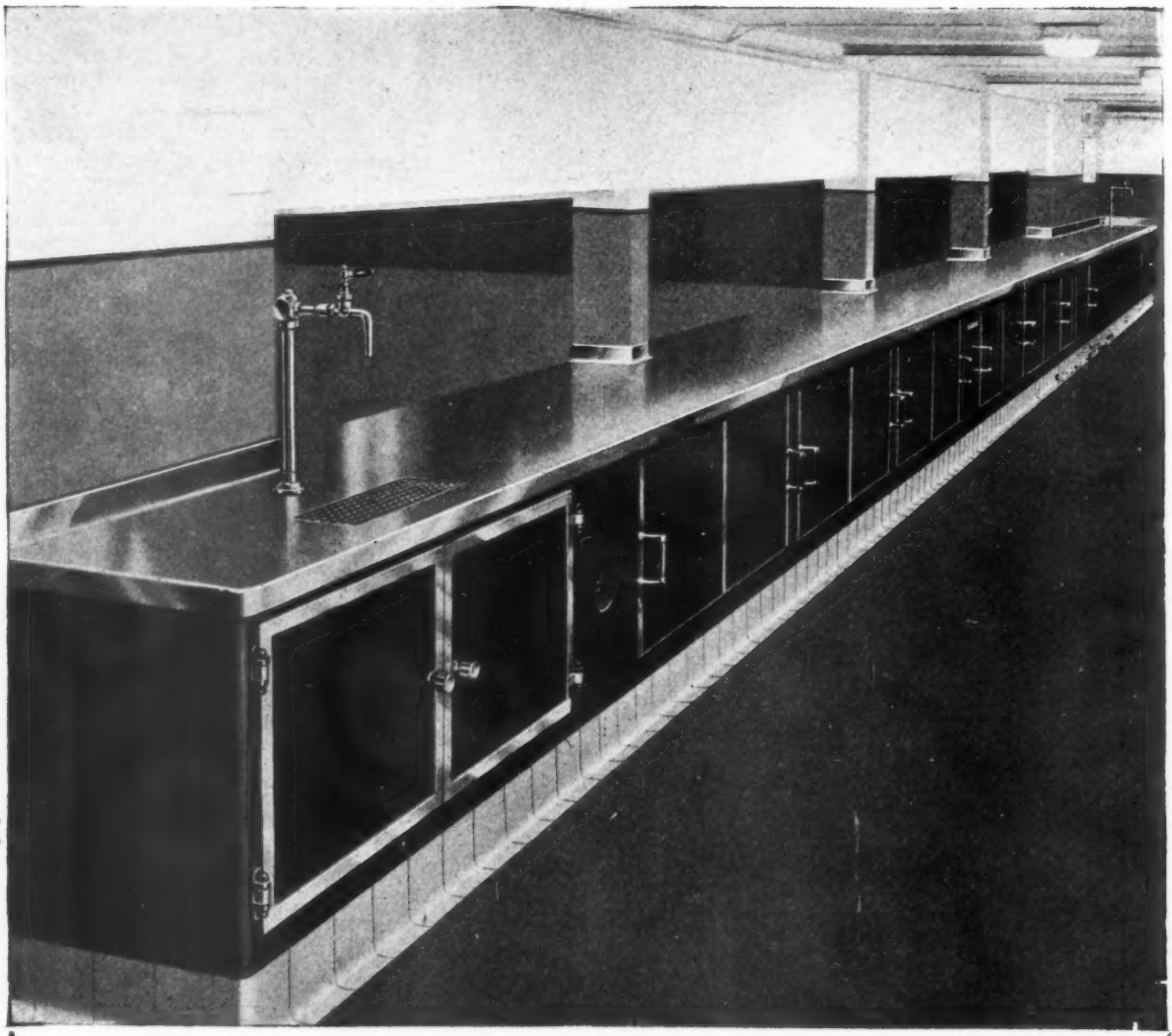
The report illustrated, copies of which may be had on application, deals with this and other factors relevant to the provision of efficient and economic plumbing for low cost housing.

LEAD

LEAD INDUSTRIES DEVELOPMENT COUNCIL

EAGLE HOUSE JERMYN STREET LONDON S. W. I

B20



Every Modern Convenience EXCEPT FIRE PROTECTION

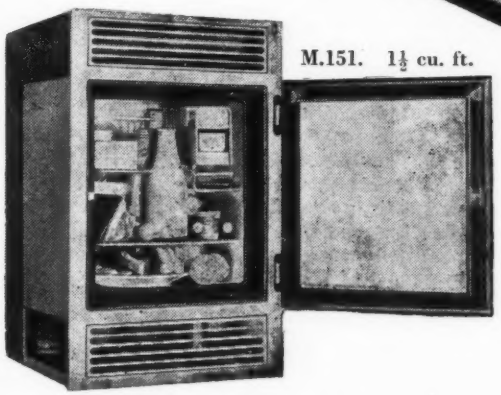
Buildings on which thought and labour have been expended, deserve adequate] safeguards against Fire and Lux CO_2. Gas is the most modern and efficient means of providing it. Lux Carbon Dioxide harms nothing, so that it can be used immediately on things that would be ruined by water. Papers, Books, Pictures, Tapestry, Curtains and Furniture can be doused with CO_2 without a moment's hesitation. It penetrates directly to the seat of the FIRE and is equally efficacious in dealing with flaming liquids or live electrical equipment. Plan for Safety.

LUX

Write for full particulars of Lux CO_2 Construction Service to—

THE WALTER KIDDE CO. LTD.,
LUX WORKS, BELVUE ROAD, NORTHOLT, MIDDLESEX, *or to*
JOHN KERR & CO. (Manchester), **LTD. NORTHWICH, CHESHIRE**

"Alpla" Kitchen Designed by Gaby Schreiber by courtesy of International Plastics, Ltd.



M.151. 1½ cu. ft.

Electrolux 'Built-in' Refrigerators operate equally well by Gas or Electricity. Free standing Models operate by Gas, Electricity or Paraffin.

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

ELECTROLUX LIMITED

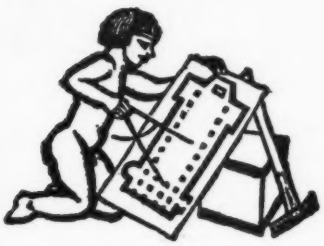
Works: **LUTON, BEDFORDSHIRE**

'Phone: **LUTON 4020**

BY APPOINTMENT
REFRIGERATOR MAKERS
To H.M. THE KING

BY APPOINTMENT
SUCTION CLEANER AND REFRIGERATOR MANUFACTURERS
To H.M. QUEEN MARY

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



DIARY FOR MARCH APRIL AND MAY

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

LEICESTER. Hope Bagenal. *Classic Architecture : A New View.* At the College of Art. (Sponsor, Leicester Society of Architects in association with the Leicester School of Architecture.) 6.15 p.m. MAR. 21

Frederick Gibberd. *Contemporary Architecture.* At the College of Art. (Sponsor, Leicester Society of Architects in association with the Leicester School of Architecture.) 6.15 p.m. APRIL 4

Criticism of Designs submitted in the Nesbit Competition. At the College of Art. (Sponsor, Leicester Society of Architects in association with the Leicester School of Architecture.) 5 p.m. APRIL 11

LONDON *Good Heating for Every Home Exhibition.* At the Royal Horticultural Hall, Vincent Square, S.W.1. (Sponsor, Solid Smokeless Fuels Federation.) MAR. 21-30

Exeter Phœnix. An exhibition illustrating the Exeter plan of Thomas Sharp. At the Housing Centre, 13, Suffolk Street, Haymarket, S.W.1. (Sponsor, HC.) MAR. 21-29

Old People's Welfare Exhibition. At the County Hall, Westminster. (Sponsor, National Old People's Welfare Committee in association with the Housing Centre.) MAR. 21-23

Christopher Columbus Memorial Lighthouse. Exhibition of a model of the design of J. L. Gleave, A.R.I.B.A., placed first in the International competition held before the war. At the RIBA, 66, Portland Place, W.1. (Sponsor, RIBA.) 10 a.m. to 6 p.m. MAR. 21-25

W. M. Whiteman. *The Place of the Caravan in a Planned Countryside.* At the Livingstone Hall, Broadway, Westminster, S.W.1. (Sponsor, TPI.) 6 p.m. MAR. 21

Miss Elizabeth Denby and Miss Nicholls, Kitchen Planning Consultants. *Domestic Design and Planning.* At the Library Hall, Stoke Newington. (Sponsor, ABT, Stoke Newington Branch.) 7.30 p.m. MAR. 21

Percy Delf Smith. *Signs and Amenities.* At the Town and Country Planning Association, 28, King Street, Covent Garden, W.C.2. Chairman, Clough Williams-Ellis. (Sponsor, TCPA.) 1.15 p.m. MAR. 21

Hulme Chadwick. *Modern Transport.* Third of five illustrated lectures on *Design in Daily Life.* At the London County Hall, S.E.1. Chairman, J. W. Waterer. Admission free. (Sponsor, DIA.) 6 p.m. MAR. 21.

R. E. Enthoven, lately Monuments and Fine Arts Officer, CMF. *Architectural Journey in War-time Italy.* At the AA, 34-36, Bedford Square, W.C.1. (Sponsor AA.) 6 p.m. MAR. 26

Modern Homes Exhibition. At Dorland Hall, Regent Street, S.W.1. To be opened by Aneurin Bevan, Minister of Health, on March 26. (Sponsor, *Daily Herald.*) MAR. 26

Steam. Sound film to be exhibited at the Royal Geographical Society, Exhibition Road, S.W. Admission free. (Sponsor, Institute of Fuel.) 6 p.m. MAR. 26

FBI Conference on Industry and Research. At Kingsway Hall. Sir Robert Robinson, President of the Royal Society, will open the Conference. The chairmen at the four sessions will be: Session 1 (Science, Industry and Community), Sir Clive Baillieu, President of FBI. Session 2 (Scientific Research and Production), Sir Stafford Cripps, K.C., M.P., President of the Board of Trade. Session 3 (Scientific Research and Industrial Expansion), Herbert Morrison, M.P., Lord President of the Council. Session 4 (The Application of Research in Industry), Sir John Anderson, F.R.S., M.P. The principal theme of the Conference will be the application of science by industry and the vital contribution research can make to industrial efficiency, the export drive, full employment, and a higher standard of living. Delegates will be present from industrial firms, large and small, from trade associations, and from research organizations. (Sponsor, FBI.) MAR. 27-28

Richard H. Sheppard. *Reconstruction of Our Public Buildings and Places of Amusement.* Fourth of five lectures on *Design in Daily Life.* At the London County Hall, S.E.1. Chairman, Norbert Dutton. Admission free. (Sponsor, DIA.) 6 p.m. MAR. 28.

William Allen. *Colour in Building.* At the RIBA, 66, Portland Place, W.1. (Sponsor, RIBA.) 5.45 p.m. APRIL 3

RICKMANSWORTH. *Building and Allied Trades Golfing Association First Post-War Spring Meeting.* At Moor Park. Singles (medal play) and Football Foursomes (¼ handicap) against Bogey will be played. Prizes for each event including a scratch prize for the singles. Members returning the best 20 net scores will qualify for the second half of the Dyke Cup Competition in the autumn meeting. Cheque for £1, which includes green fee, lunch and annual subscription to Hubert H. Hill, W. G. Hill and Son, Monument Station Buildings, King William Street, London, E.C.4, before April 23. MAY 8.

NEWS

THURSDAY, March 21, 1946
No. 2669. VOL. 103

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.

★

The Minister of Town and Country Planning (Mr. Lewis Silkin) has received from the Plymouth City Council an application under Section 1 of the Town and Country Planning Act, 1944, for an Order declaring 178 acres in THE CENTRE OF PLYMOUTH to be subject to compulsory purchase.

The application is based on the ground that the area contains land which has sustained extensive war damage and should be laid out afresh and redeveloped as a whole. (NOTE: Mr. Silkin, at a Press conference on January 17, stated that none of the blitzed cities had as yet applied to him for an Order under this section and urged them to expedite their applications. This is the first such application to be made.) The area in question comprised before the war the business, shopping and central residential district of Plymouth. It extends northwards to the GWR (North Road) Station; southwards to Citadel Road and the Hoe; eastwards to the Southern Railway (Friary) Station; and westwards to the Railway Bridge, Union Street. The next step will be for the Minister to satisfy himself that the particulars given in the application are sufficient. Provided he is so satisfied, he will authorize the Council to advertise the fact that they have applied for the Order, and that their application is about to be considered by the Minister. Full particulars of the application must at that point be made available for public inspection; and objections can be made to the making of the Order during the 28 days following the appearance of the advertisement.

as the Architect plans them—so they remain

Doors, frames, canopies and screens, made in aluminium alloys need very little upkeep to retain their good looks and uphold the architect's original conception. The bright, decorative appearance of aluminium may be preserved by a coat of clear lacquer: or by painting or anodising if desired. On this rustless foundation paint and lacquer films have exceptional length of life, and maintenance costs are very low. In service the user finds aluminium alloy units robust, and free from warping and swelling. They are light and strong and reduce handling and transport costs for the builder. We do not make these aluminium units: we only supply the extruded section to manufacturers. Architects and manufacturers are invited to *write to our Technical Development Department* for information and advice on all problems connected with aluminium.

NORTHERN ALUMINIUM COMPANY LTD. MAKERS OF NORAL PRODUCTS **BANBURY, OXON**

From AN ARCHITECT'S *Commonplace Book*

EUROPE'S LEAST AUTHORITARIAN CITY. [*From* Georgian London, *by John Summerson* (Pleiades Books)]. . . . London has never been planned. Beside other 18th-century capitals, London is remarkable for the freedom with which it developed. It is the city raised by private, not by public, wealth ; the least authoritarian city in Europe. Whenever attempts have been made to overrule the individual in the public interest, they have failed. Elizabeth and her Stuart successors tried bluntly to stop any expansion whatever. They failed. Charles II and his pet intellectuals tried to impose a plan after the Great Fire. They failed. Nearly every monarch in turn projected a great Royal Palace to dominate at least part of his capital. All failed until George IV conspired with Nash to cheat Parliament into rebuilding Buckingham House. The reasons for all this are embedded deep in England's social and political history. London is one of the few capitals where church property and church interests have not been an over-riding factor ; where Royal prestige and prerogative in building matters have been set at nought ; where defence has never, since the Middle Ages, dictated a permanent circumvallation to control the limits of development. London is above all a metropolis of mercantilism. The basis of its building history is the trade cycle rather than the changing ambitions and policies of rulers and administrators. The land speculator and the adventuring builder have contributed more to the character of the Georgian city than the minister with a flair for artistic propaganda, or the monarch with a mission for dynastic assertion.

★

The Reinstatement in Civil Employment Committee's Order to the Bournemouth Corporation to increase the salary of Mr. W. A. Summers has been UPHELD BY THE UMPIRE.

On behalf of one of its members the Association of Building Technicians took to the Committee set up under the Reinstatement in Civil Employment Act, 1944, a case for the payment of the salary which he would have received had he not joined the Forces. Mr. W. A. Summers, P.A.S.I., was employed as an Assistant Quantity Surveyor by the Bournemouth Corporation prior to his enlistment. On return to this employment he was offered the same salary as before, £350 p.a., plus cost-of-living bonus. On behalf of Mr. Summers it was contended that other unqualified staff who remained had received increases during the war and that it had been suggested to him before he left that he would be recommended for a permanent post at an increased salary. It was also pointed out that the chief of his section, who had resigned when he joined the Forces, had been given a new appointment upon his return at higher rates. The representatives of the Corporation contended that their Council intended to await the return of all employees, when the questions of salary increases and "establishment" would be considered, all increases to be made retrospective to the date of their return. The Committee ordered the Corporation to pay Mr. Summers £450 p.a., plus cost-of-living bonus, plus £20 for previous loss of salary, on the grounds that the Corporation had not discharged its duty under the Act. The Corporation appealed to the Umpire, whose decision is final, and he upheld the Order of the Reinstatement Committee. The case is the first of its kind to be brought before a Reinstatement Committee and appealed to the Umpire.

★★

In Sir Patrick Abercrombie's master plan for Bournemouth, Poole and Christchurch, the old town of CHRISTCHURCH HAS BEEN LEFT SEVERELY ALONE as a place for sightseers.

Sir Patrick Abercrombie, explaining to the borough councils his master plan for the future development of the three towns in the next 50 years, said he had taken into account that the towns would increase in popularity with visitors, but he wanted to try to provide for the increased numbers within the areas of the three towns. He did not want areas like the heathlands of Studland and the lovely area of the Isle of Purbeck scattered all over with houses, bungalows, and shacks. He wanted to keep those places and their like as open as possible. For Bournemouth he proposes an uninterrupted scenic coastal road from Hengistbury Head, Christchurch to Poole, with bridges across two of the Bournemouth Chines. For a new Bournemouth Pier his plan visualizes a structure shaped like the prow of an enormous ship, with a swimming pool near the shore end and decks on the sea end for a theatre, sun lounges, cafés, etc. Planning for the centre of the town provides for a garden in place of the present traffic centre in the Square, thus making a continuous garden from the sea, up the Bourne Valley into the Poole area and out to the heathland beyond. By means of a plan for loop roads it is proposed to break up the centre of the town into pockets for hotels and residences, shopping, and a civic centre. At Poole Sir Patrick Abercrombie has planned to retain the old-world buildings in the centre of the town and suggests that part of Poole could be devoted to basic industry. For Bournemouth he suggests some light industries such as plastics and cosmetics. The old town of Christchurch has been left severely alone as a place for sightseers.

Top, two of the twenty-six semi-detached houses being built in ten weeks at Newcastle-on-Tyne ; 592 houses are in hand. Bottom, roofing one of sixteen houses at Wythenshawe, Manchester. 782 houses are under construction and tenders for 235 more have just been accepted. Newcastle plans 2,000 homes by the summer, Manchester 25,000 houses by March 1951.

At the LNER architectural work is TO BE DONE IN THE CHIEF ENGINEER'S OFFICE.

The LNER announces: Following the resignation of Mr. Crossley, Architect in the Area Engineer's Office, London, the opportunity has been taken of reorganizing the work so as to cover Architectural matters in the Chief Engineer's Office and also in the office of the Engineer (London). Mr. J. N. Harrison, a candidate from outside the service, has been appointed as Assistant to Chief Engineer (Architectural) and Architect, Engineer's Office (London). Mr. H. H. Powell, Chief Assistant Architect, Area Engineer's Office (London), has been appointed Second Assistant to Chief Engineer (Architectural) and Chief Assistant Architect, Engineer's Office (London).

Mr. E. D. Hunt, B.A., has been appointed Assistant Secretary of the Town Planning Institute, and Miss Rachel Morrison Librarian-Editor.

Where the County of London Plan Begins

On this abomination of desolation the new London will soon begin to rise. In June, 1945, the West Ham Council applied under the Town and Country Planning Act, 1944, for confirmation by the Minister of a Compulsory Purchase Order covering 47 acres of blitzed land. Confirmation of this Order has now been received. The site, which is the Tidal Basin Area of West Ham, will be redeveloped at a net density of 100 persons per acre in accordance with the scheme illustrated in the Greater London Plan Report and prepared by the Council's Borough Architect and Planning Officer, Mr. Thomas E. North, F.R.I.B.A. The area now to be developed will be the first stage in the construction of a Neighbourhood Unit for 12,500 people covering 235 acres. Top, looking east along Charlotte Street from Silvertown Way Bridge. Below, looking east towards the Ground Rent Tavern. The photographs were taken on September 28, 1945, and show how unrestricted a planning opportunity the bombing has provided here.

To study housing and town planning ***GREEK ARCHITECTS ARE VISITING BRITAIN.***

Mr. Rennos Koutsouris, an architect and town-planner, and Chairman of the Greek Architects' Association, and Mr. Thucydides Valentis, a Greek architect and airport designer, are visiting this country under the auspices of the British Council. After a short stay in Plymouth they went to Bristol, Bath and Cardiff. After a stay in London they visit Oxford and Cambridge. The British Council has arranged for them to meet architects and town-planners and study housing and planning schemes in all these places.

★

Their Majesties the King and Queen paid an informal visit to the RIBA on March 12 to inspect the model of the Columbus Memorial now on view there.

They were received by the President, Sir Percy Thomas and Lady Thomas, and His Excellency the Dominican Minister, Senor Pastoriza, and Madame Pastoriza. The architect, Mr. J. L. Gleave, A.R.I.B.A., was presented to their Majesties and explained the design. His Majesty was particularly interested in the construction and the surface material, which is a local coral sandstone, in colour a pinkish yellow. The model was illuminated, the miniature lighting installation projecting a cross of light on the ceiling in the way that the lighting of the actual building will project a cross on clouds. Her Majesty the Queen said the design was a very inspiring and magnificent conception. She expressed the hope that Londoners would take the opportunity to see it while it was on view at the RIBA. Their Majesties remained about half an hour and, on leaving, congratulated the President and the Dominican Minister on the arrangements for placing the model on view.

Mr. J. L. Gleave, A.R.I.B.A., Head of the Edinburgh College of Art, who explained his design for the Christopher Columbus Memorial to their Majesties the King and Queen at the RIBA. The design of Mr. Gleave was placed first in competition with 445 architects from 48 different countries. See news item above and page 230.

PUBLIC RELATIONS: II

FROM the point of view of the architect, the term Public Relations might be defined as the acceptance of an obligation by the profession as a whole that it must make clear to the public the ideals which the individuals that make it up serve, the way in which they go about that task and the difficulties that stand in the way of the complete fulfilment of all that they desire.

That involves a much greater change in mental habit than many people will, at first, be prepared to admit. Professions and trades were once organized into Mysteries as well as guilds and something of the atmosphere of mystery still clings to the professions. Now, men in professions rarely put it as crudely as " I don't want the public to know all the details of how I do a thing." It is usually softened to " I don't think the public will be interested in the details of how I do a thing." All the professions are facing the same problem. The lawyers are happily unaware that it exists. The doctors seek to escape it by claiming that blind, unquestioning faith is an integral part in their methods of cure. But the work of the architect cannot be hid in a file or buried in a grave. It stands for all to see and it would be appropriate if architecture were, accordingly, to be the first profession to appreciate the full implications of what this revolution in public thinking really involves.

This change in outlook can best be summarised in the difference between a lecture and a discussion. In Victorian times it was the lecture that was popular. Now it is the discussion. The lecturer says to himself, " What do I want to talk about ? " The discussion leader says, " What do they want to hear ? "

Architecture, to the layman, is at first purely a visual matter. He sees the result. He starts with the result. He says that one building differs from another in appearance, that he prefers one to another and he is usually at a loss for words with which to explain why. The first task, therefore, is to give the layman a vocabulary, with which he can translate the thoughts that follow his visual impressions into words by which he can explain his preferences, his dislikes, his pleasures and, of course, in which he can ask his questions.

Next, the professional must remember that he and the layman see different things, just as the expert and the novice watching a game of football see different things. And always the novice sees less than the expert, so the next duty of the professional is to increase the power of the novice to see. To do that he must explain the detail. The professional is prone to think that the novice will be bored by detail. Nothing could be more wrong. The novice is bored by the detail of something he does not understand at all, but he is fascinated by the splitting up of something in which he is interested into its component parts, in the same way as a child is fascinated by the details of the interior of a watch or a clockwork toy. The main task is to start from that aspect of architecture that

captures the most interest of the layman and to see that thenceforward the thread of interest is not broken.

Finally, the man who attempts to explain architecture to the layman must remember that the interest of the layman is primarily practical. He sees a house or a factory or a bus station, not a structure that does or does not possess functional and æsthetic unity. A window is to him first of all a means of admitting light into a room, not an integral part in the design as a whole. The architect must start with the use of each facet of a building and its components and since most of the components of a building are there for use he is at least starting at the easiest end. We shall return to the discussion of the practical methods by which this plan can be carried out.

The Architects' Journal

War Address: 45, The Avenue, Cheam, Surrey

Telephone: Vigilant 0087-9

NOTES & TOPICS

THE CRITIC BACK ON THE HEARTH

We do at last seem to have realized that the mediaeval way we have been heating our homes is appallingly wasteful, a fact well illustrated at the current exhibition on Good Heating at the Horticultural Hall. It makes one wonder why we have hitherto made life during the winter so needlessly chilly that the most lasting impression on visitors to this country is one of goose-fleshed misery.

*

No doubt there are several answers, not the least of which is the Englishman's Calvanistic conviction that draughts confer benefits to the soul which are, if anything, increased by the bodily mortification gained by chronic catarrh. We seem never to be moved to action except by some strong moral urge, so now perhaps we are in luck. In the nation's interest, we must Save Fuel. Thus, purely incidentally, by using more sensible equipment, we have a decent excuse at last to make ourselves a little more comfortable in our God-forsaken climate.

*

At the Good Heating Exhibition, the latest solid fuel equipment, now in production, is on view, and for this reason alone architects should visit the show. The examples illustrate that far greater efficiency than the usual 10 per cent. or so is possible in the use of the open grate, as well as infinitely less pollution of our breath of life.

*

But in spite of this impressive new equipment can one honestly have faith in the open fire as a main source of house heating in the future? I asked Robert Thulman, *the* American expert on small house heating, who is over here on a visit, what he thought. Oh yes, he agreed that open fires are nice, but they are very inefficient. In the States, working class houses never contain them, though they are often found in middle-class living rooms. There they are not lit regularly, but maintained rather as an atavistic luxury and used, I suppose, more in the ceremonial way candles are at Christmas time.

*

As a last desperate defence of the open fire, I put forward the old aesthetic argument that it provides a focal point in a room around which the family can gather. "That's all bunk," said Thulman, bluntly American. You want to move about in your house, to *live* in it, and your focal point will vary according to what you are doing. When your daughter plays the piano, *that* becomes the focal point; when your wife is dressmaking, the sewing machine becomes the focus; when your son returns home from a term at school and unpacks in his bedroom, he is himself the focus. In fact the design of a room should be something dynamic rather than static—could one say Sharawaggi rather than Processional Way?

*

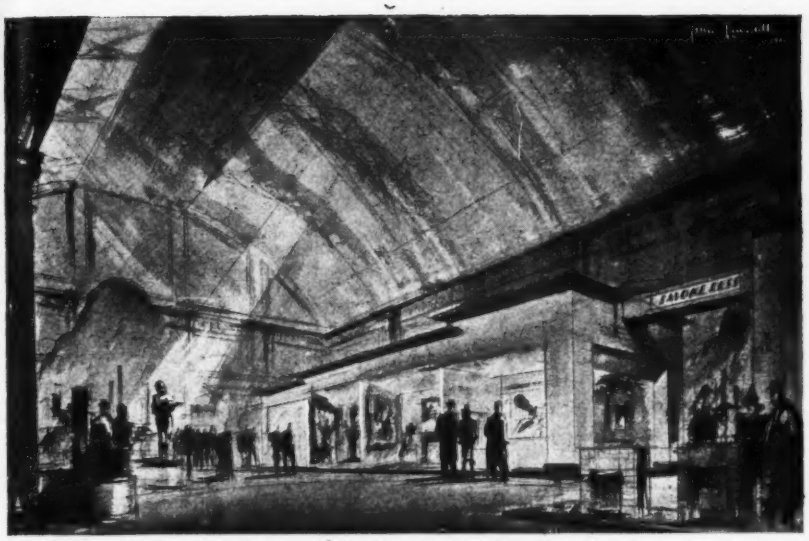
What then, is Mr. Thulman's solution to the space heating problem? You already know in detail if you heard his lecture at the Institution of Civil Engineers last night. In general, his solution is definitely central heating, evenly distributed all over the house, not merely as background heating requiring topping up. It might, therefore, seem paradoxical that Mr. Thulman's visit should have been arranged by Bratt Colbrans, famous makers of fireplaces. They are certainly to be congratulated on having had the courage to sponsor the visit, and so help the move towards the international exchange of technical ideas. But need they worry? Even with the increased efficiency of the new appliances to 60 or sometimes 80 per cent., the open fire would—at least in England—have flickered on for ever. As for America—well, even Mr. Thulman confesses that he has one himself in his living room.

OWNER-OCCUPATION IN SCOTLAND

Among the recent additions to the ever mounting tide of Government publications is one of considerable interest and value to architects and planners. It is a Report by the Scottish Housing Advisory Committee on the provision of houses for owner-occupation in Scotland. Its interest is twofold. It is a comprehensive and intelligent survey of all the factors that affect owner-occupation, which are not so very different in Scotland from those which operate in England.

*

The Committee considers that there have been three factors that discourages the private building of houses for owner-occupation; the fact that build-



A sketch of the Good Heating for Every Home *exhibition at the Royal Horticultural Hall, sponsored by the Solid Smokeless Fuels Federation, on which Astragal comments this week. The exhibition, designed by Ian Jeffcott, remains open until March 30. A feature of the exhibition is the central horizontal duct serving the range of fittings in which a window is cut; through this it can be seen that the fumes from these are invisible.*

ing by local authorities for letting is subsidised and the building by private individuals for sale is not, the fact that local authorities can borrow money for building more cheaply than can the private builder and, finally (and this is confined to Scotland), the fact that the rating system in force favours the local authority as against the private builder. In Scotland there is a rate payable by the owner of property as well as one payable by the occupier and this rate obviously does not fall on the local authority as it is one and the same person as the authority imposing the rate. By not paying this rate on property it owns, a local authority, in effect, increases the amount of the rates payable by all occupiers and by all private owners and so secures an additional subsidy in respect of its own houses.

*

But the Report has a second relevance at the moment, in that it raises directly the issue of whether the private ownership of a house by the occupier is a good thing or not. There is a minority report signed by five out of the fifteen members of the sub-committee that prepared the report. The minority states categorically that in their opinon the provision of proper housing accommodation should be made by the community and that this objective can only be achieved by the local authorities retaining the control of housing in their own hands.

*

In housing affairs, of course, this is the issue of the day. Until the advent of this Government no Government had gone as far as this. The utmost any had said was that it was the duty of the State to see that housing did not fall below a certain standard. It shrank from saying that there was any positive obligation on the State to provide all necessary housing. Of course, like most battles of this kind, the borderline between the two sides is apt to be blurred but it is equally clear that the main issue will be decided over the next five years.

*

If the Minister of Health succeeds in his campaign the building of houses for sale will become the exception rather than the rule, we will expect to find ourselves tenants, not landlords, and the ownership of a big house will then be as remarkable as the ownership of a steam yacht is now. I suppose that at this point some cynic should murmur, "Brave new world." None the less, I commend the Report as a document which is worth buying and reading. For one thing it taught me a lot about the Scottish system of land ownership that I never knew before.

ASTRAGAL

LETTERS

Gerald Haythornthwaite, A.R.I.B.A.

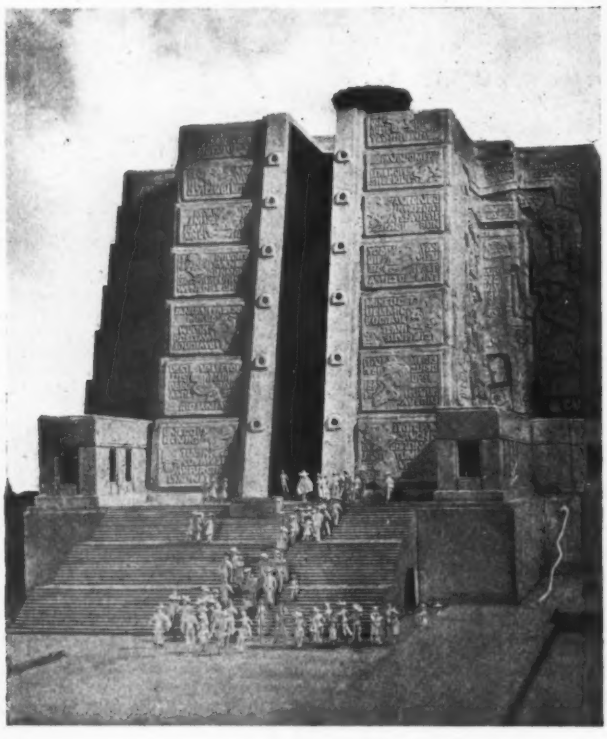
Tree in Cities

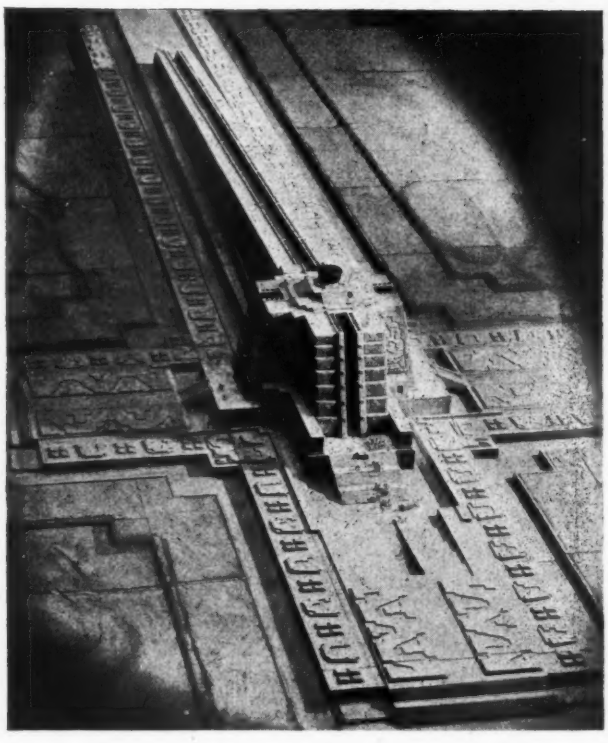
SIR,—I suppose in each town and city there must be a Municipal Mutilation Department. I had thought my own city was unique in this respect.

The ruthlessness with which the policy of tree chopping has been carried out in this northern city, where I live, is shown in the accompanying photographs which I took in 1939. Since my return from the wars I have noticed little change in this policy. The trees in our city are being transmuted into wooden cylinders shorn of all adornment.

Trees in Cities. See letter from Gerald Haythornthwaite.

THE COLUMBUS MEMORIAL LIGHTHOUSE





Fifteen years ago a young British architect, J. L. Gleave, won a world competition for a memorial to Christopher Columbus. The memorial was to be a great air and sea lighthouse built in the Dominican Republic in Central America, on a spot near where Columbus first landed. Now the reopening of the project has been approved by UNO and the Government of the Dominican Republic has arranged for a 40-ft. model of Mr. Gleave's design to be on view to the public at the RIBA until March 23. The design is based on the fact that the geographical location of the memorial is destined to become a great cross-roads for travel by sea and air in the New World. A building in the shape of a huge recumbent stone cross is to be built on a low ridge in park-like land to the east of the ancient city of Cuidad Trujillo. The memorial will be over three-quarters of a mile long and is to cost a million pounds. It is to be paid for largely by the twenty-one Pan-American republics. The site of 2,000 acres has been presented by the Dominican Republic. Down the centre line of each arm of the cross is a deep slit which is to be filled with powerful lighting. Thus the night traveller by air will see from far off a huge shining cross on the ground. Also there will be a great revolving light shining horizontally from the centre of the cross. The building is to have blank walls on which will be carved the names of those men and women who have contributed to the progress of the New World. In the heart of it will be a chapel containing the remains of Columbus which at present lie in the cathedral of Santo Domingo. The design was chosen from four hundred and forty-five sent in from all the countries of the world. The architect, Joseph Lea Gleave, at that time almost unknown, is now Head of the School of Architecture at the Edinburgh College of Art. He is a Master of Arts, Associate R.I.B.A., and a member of the Town Planning Institute.

Representations have been made to the Corporation, without much success. The usual reply is that the inhabitants of the houses on the road frontages require more light and have asked for the trees to be drastically pruned. In this connection it is of interest that in 1941 one gentleman, resentful of the shade given by the trees in the road and anxious for the Corporation Choppers' Department to start work early, organized a ballot among the frontage dwellers, which was designed to show that the inhabitants wanted the trees to be removed. 86 votes were cast, 11 for removal and 75 against, to the great disappointment of the organizer of the ballot. I think this shows that one noisy and active citizen may give a totally wrong impression of the desires of the inhabitants at large and often determine the action of the Corporation.

Two things could be of great assistance to those who are opposed to the mutilation of trees in our cities, a series of simple diagrams showing the correct method of pruning each of the species of trees commonly grown in our towns, and a campaign by architectural societies or individual architects against local abuses.

GERALD HAYTHORNTHWAITE

Being out of sight, the important if unaesthetic subject of drain-laying has perhaps received too little attention from architects. The following article should be of practical value to those who have previously left such matters to the builder, and a useful refresher to others. The author, who is an expert on drainage, here describes the proper methods of laying stone-ware pipes in excavated trenches, both in soil and in concrete. He also discusses questionable methods, stressing the false economy of cheap workmanship.

The Laying of STONEWARE PIPES for Drains and Sewers

[*by L. B. Escritt, A.M.Inst.C.E., M.I.S.E.*]

On the matter of how stoneware pipes should be laid there is some difference of opinion. This holds true when pipes are laid on the excavated surface, when they are laid on a concrete benching or when they are to be benched and haunched or to be surrounded with concrete. There is a good deal to be said for more than one method of pipe laying and it is not easy to refute many arguments with which one is not in agreement, because most methods of pipe laying have some drawbacks and some methods, although not the best when carried out under the highest quality supervision, have advantages over the preferred methods when supervision and workmanship are only moderately good and the best finish not required. There may be some difference of opinion as to what may be considered the classic method of pipe laying, but the following methods to be described will probably coincide with those preferred by a good many specialists in drainage work.

LAYING PIPES ON EXCAVATED SURFACE

Before any pipes can be laid to true lines and levels, it is necessary for the trench to be excavated to true bottom. For this to be done, sight rails should be erected no fewer than three at a time, truly set to the levels or falls of the proposed line of pipes, and these should be painted black and white so as to indicate the intended centre line of the pipe. Boning rods should then be made of such a length that when sighted in with the rails the feet of the rods are just at invert of pipe. The trench should be excavated carefully to invert level of pipes and pegs should then be driven truly in the excavation and on the dead centre line of the pipe line to the exact invert level, the pegs being not more than nine feet apart. When this has been done, the excavation should be trimmed by hand to very slightly less than a pipe thickness below the level pegs, a 12-foot straight edge being rested on the pegs so that the trimming of excavation may be executed accurately. On no account should excavation be too deep and afterwards refilled with earth, hard core or any material other than concrete.

After the excavation has been completed a line should be stretched parallel to the proposed line of pipes and at such a distance from the centre line as to be just clear of the collars of the pipe.

The next step in the pipe laying is to cut in the excavation "joint holes" sufficiently large to receive the collars of the pipes and to permit jointing, but these joint holes should be no larger than absolutely necessary. The pipes may then be laid and jointed, one at a time. The first pipe to be laid is set at the bottom of the gradient with the socket pointing up the gradient, and the centre line is carefully measured from the stretched line at the spigot end, the outside of the socket being near to, but not touching, the line. The straight edge is then placed in the invert of the pipe and resting on two of the level pegs. In this condition it should rest truly in the invert of the pipe, touching at both ends. It should not rock up and down but at the same time should touch both level pegs. When resting on the level pegs it should not be possible for one to spring it from side to side in the pipe, as if this were so it would indicate that the pipe had been bedded too low. Generally, the excavation should be slightly higher by a matter of a small fraction of an inch, to permit trimming down as necessary or pressing down the pipe to a true invert.

After the first pipe has been laid, each following pipe should be laid in a somewhat similar manner. Each pipe is lowered into the trench and struck at both ends with a mallet to make sure that it is sound. The spigot surrounded by a ring of tarred yarn is then thrust home into the socket of the pipe previously laid. The straight edge is then laid in the invert of the pipe previously laid on the nearest level peg up the gradient and in the invert of the pipe that is being laid, and the pipe similarly tested for line and level and securely bedded as before. The first pipe joint is then completed, the tarred yarn being driven into position with a wooden caulking tool in such quantity as to occupy not less than one-quarter of the depth of the socket. The remainder of the socket is filled with cement mortar consisting of one part of cement to two parts of sand, of such a consistency as regards moisture content that when the joint is completed there is no tendency for the fillet to fall away from the underside of the pipe. After the socket has been completely filled with cement mortar, a fillet of cement mortar is formed round the spigot of the second pipe at approximatedy 45° to the barrel and extending not less than two inches from the face of the socket. The fillet should then be flat surfaced with the aid of a trowel rather than rounded. When the joint has been completed any cement which may have entered the pipe through the joint should be removed with a semi-circular wooden rake. The remainder of the pipes are laid in similar manner until the length concerned is completed.

When a length of pipe has been laid and jointed complete, a test is made with air or water, and if the length of pipe is sound the trench may be refilled. Firstly, the small joint holes in the bottom of the excavation are refilled carefully with earth watered and pressed into position. The sides of the pipe are then surrounded with earth carefully pressed down with light rammers such as pick shafts, and this is continued until the pipe has been covered to a depth of nine inches, after which the trench is refilled in 6-inch layers, two men ramming and one man filling, the earth being watered as necessary completely to consolidate it.

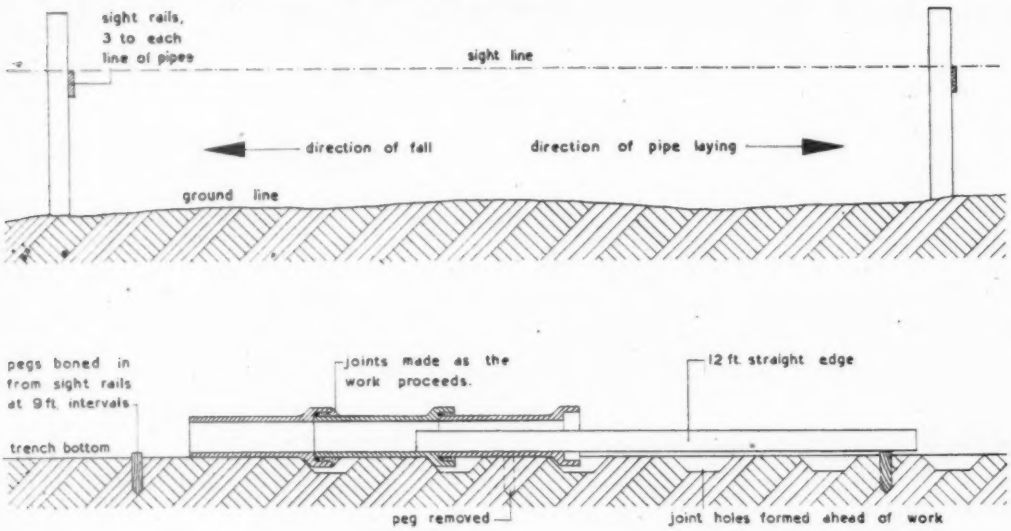
CONCRETING

There is perhaps more difference of opinion as to how pipes should be laid when they are to be benched and haunched or surrounded with concrete than on how they should be laid on excavated earth. This may be because proper laying of pipes on concrete pillars requires first class labour and high supervision if it is to be well done, while a fair job can be secured with much less trouble.

The method preferred for first quality work for all forms of concreting is to commence by laying to true falls a bench of concrete, the surface of which is just the thickness of the pipe below the level pegs, the surface being truly formed a minute fraction of an inch low and joint holes being cut in the concrete while it is green. Each pipe is then laid as before, the full length of the barrel from the back of the socket to near the end of the spigot resting on the concrete. In order that the pipes shall be truly level and properly bedded a thin layer of cement-mortar should be between the underside of the pipe and the surface of the concrete. One might say that the pipe is laid like a brick on cement-mortar. After the pipes have been jointed and tested, the joint holes below the sockets are carefully filled with comparatively wet fine concrete. If the pipes are to be haunched as well as benched shutters are placed vertically six inches from the outside of the pipe and up to the centre line of the pipe and concrete carefully filled to this level, after which it is chamfered off tangentially to the barrel of the pipe. If the pipes are to be surrounded with concrete, shutters are similarly formed but to a higher level and the concrete is brought over the crown of the pipe to a depth of six inches, the work being performed to a true curve with the aid of properly cut wooden templates and screeds. This last may be considered by some to be a refinement, but it is a means by which the engineer can make sure not only that the full depth of concrete is put in everywhere, but also that concrete is not wasted. Moreover, a concreted line of pipes so completed appears during construction a far more workmanlike job than concreting finished to a spade face. It satisfies both the workman and the engineer, but costs little more in the long run.

QUESTIONABLE METHODS

A method of pipe laying that is often advocated by the contractor because it is rapid and easy is as follows. Firstly, a concrete bench is formed in the bottom of the trench, its surface being slightly lower than the underside of the sockets of the



Above, diagrams showing the proper method of laying stoneware pipes in excavated earth. Left, pipes laid in concrete; the diagram on the left shows a bench and haunch, and on the right a complete concrete surround.

pipes. The pipes are then laid in the trench, a line being stretched in the usual manner to give a straight line on plan, while for level the pipes are boned in the usual manner or else by methods which do not deserve description. Inaccuracies of gradient are adjusted by propping up the sockets off the surface of the concrete with bits of wood or tile. Frequently, the whole length of pipe is laid in this manner, the yarned spigots being placed in the sockets before the joints are made in cement-mortar. When the joints have been made and have set, concrete is poured on one side of the pipe and pushed down until it oozes up at the other, after which the haunch or surround is completed.

An objection that has been raised to laying pipes with their sockets resting on the concrete is that the barrel of the pipe does not receive full support underneath. This objection, however, does not hold good if the concrete is pushed under in the manner above described. The real objection to this method of construction is that although it is possible in this way to lay pipes to an apparently even gradient and line, to obtain very often a satisfactory test after completion and, if the concrete is good, to be sure that the work will in the end be as structurally sound as any other, the pipes are not well and truly laid. When pipes are resting on their collars supported by the makeshift wedges above described, they are almost certainly out of level a little and very probably considerably out of level. Moreover, when resting in this manner in the trench they are in an unstable condition, easily moved, and this is one reason why pipe layers prefer to complete the laying of the line before the joints are made; a complete line of pipes is more stable than the individual pipe at the end of a line under construction. But laying pipes in this manner totally prevents raking out any cement that may be in the pipe as a result of jointing.

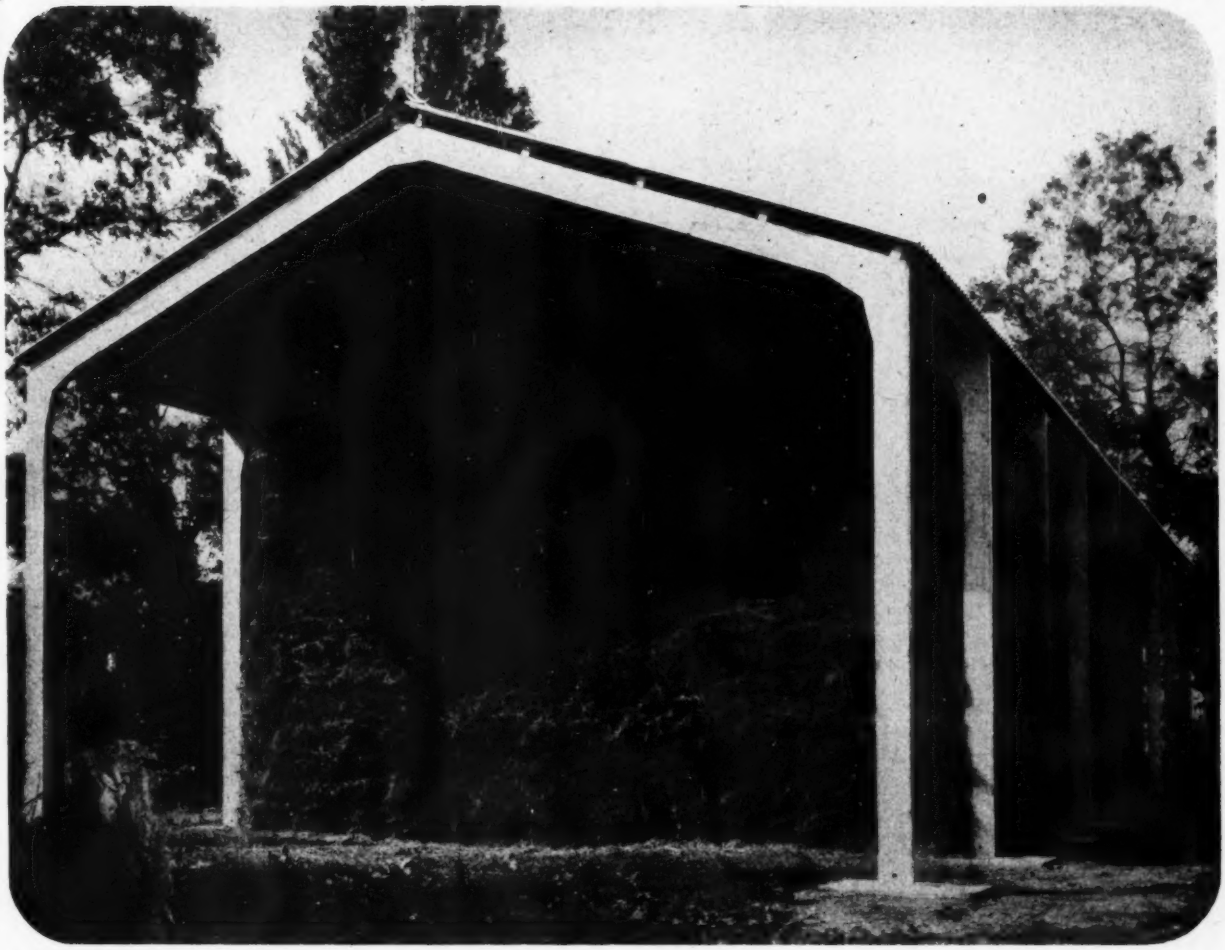
A method of concreting that has been advocated as an alternative to that of laying a bench of concrete, forming joint holes and then laying the pipes after the concrete has set, is to lay the pipes on wet concrete. After each pipe has been laid the next bench of wet concrete is formed ahead of it, and the next pipe laid and jointed in position, and so the work continues until the whole line is completed. The concrete may be put under the barrel of the pipe only, leaving the sockets clear for jointing, and when the line has been tested the joint holes filled and the bench and haunch or surround completed. The advantages claimed for this method are that the difficulty of accurately gauging the positions of joint holes is avoided, and that the concrete being wet and plastic it is possible for the pipes to be pushed down to the exact invert level with the knowledge that they rest securely on concrete which will shortly set.

The disadvantage of the method is most obvious to anyone inspecting the work during construction. Almost invariably the pipe layers are treading in concrete in the bottom of the trench as the pipes are laid in position and, when caulking, are sitting on a pipe that has just been laid on wet concrete. As a result of these two operations the bottom of the trench is liable to become a miry mixture of concrete, earth and infiltration water and there is a danger of the pipes being displaced after laying. But to the engineer and the pipe layer there is the no less real objection of the thoroughly unworkmanlike appearance of the line of pipes during construction.

The real test of a pipe laying method is whether it is one which would be adopted by a craftsman attempting to do the best possible job. When viewed from this angle the best method in use is fairly obviously that in which the pipes are carefully bedded one by one to a true line and gradient, each joint completed and inspected before the next is made, and the last pipe laid being always securely resting on sound earth or a set concrete bed.

There is no doubt that this last method is more costly to the contractor, as good workmanship always must be, and it requires more supervision on the part of the employing authority or their agent. The apparent difference of the two methods may be slight. Nevertheless, very well laid pipes are worth while.

The result of experience of existing sewers and drains is that where workmanship is of the highest quality, comparatively low velocities of flow and comparatively slack gradients are possible and will maintain self-cleansing conditions. Where, however, the standard of workmanship is not absolutely first class, minute irregularities occur in the invert and these, together with feathers of cement that have come through the joints or spots of cement that have been left in the invert, tend to hold up solids and make much steeper gradients necessary to ensure self-cleansing conditions. This is not theoretical supposition. It is fact that has often been observed, and it is of great importance to the drainage authority because when it is possible to lay pipes to comparatively slack gradients considerable economies in excavation can be made. Conversely, if the experience of the authority is (nearly always as a result of bad pipe laying) that steep gradients are necessary to maintain self-cleansing conditions, the designer is landed with considerable difficulties and the cost of the works is greatly increased. Surely it is better for the authority to design assuming good workmanship, to see that they get good workmanship and in the end to save money, and have satisfaction, than to design on the assumption of bad workmanship, to get what they expect and after paying more for a poorer job, land themselves with future maintenance troubles. This is an occasion where leniency towards the contractor is bad policy.



A Dutch barn.

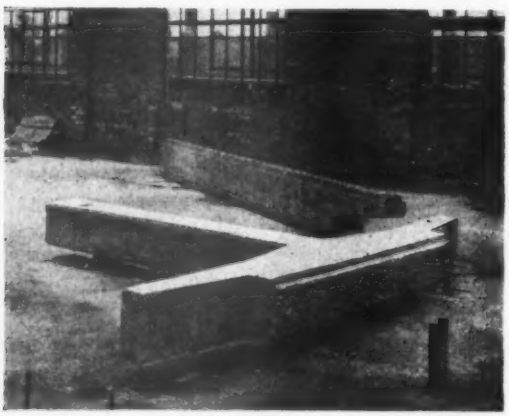
A NEW SYSTEM

FOR PRECAST CONCRETE FRAMES

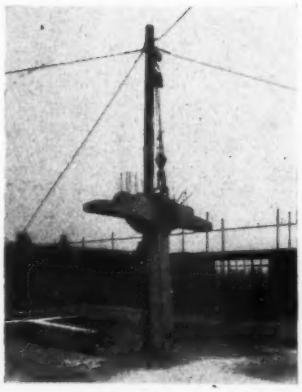
The wartime necessity of saving steel and timber produced several new types of construction which are likely to remain useful in peace-time. The illustrations here show an interesting example. This system of precast reinforced concrete frames, developed by R. E. Eagan Ltd., has been used in a large number of farm buildings, factories, canteens, etc. The main feature of this type of construction is the connection of precast units at the points of contraflexure by bolted scarfed joints. In this way a rigid hingeless frame is produced which, though composed of precast members, acts like a monolithic structure cast *in situ* and has all the advantages of a stiff structure. No shuttering for *in situ* work is required and the erection can be done mainly by unskilled labour. The units may be cast in a factory or on the site. A particular application of the system is in multi-storey buildings. The units are cast in horizontal position, on each floor directly underneath their final position, and then erected. This allows a great saving in shuttering and scaffolding. The concrete is mechanically vibrated, giving a very dense mix which enables the shuttering to be struck from the sides in a matter of hours, so that in a four-storey building as many as thirty uses can be obtained from the shutters.

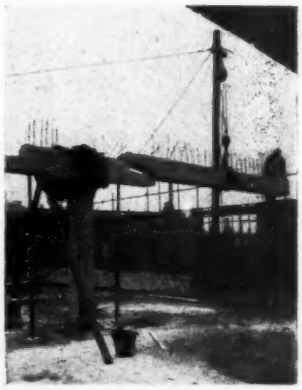
Frames up to a span of 60 ft. have already been erected in this system

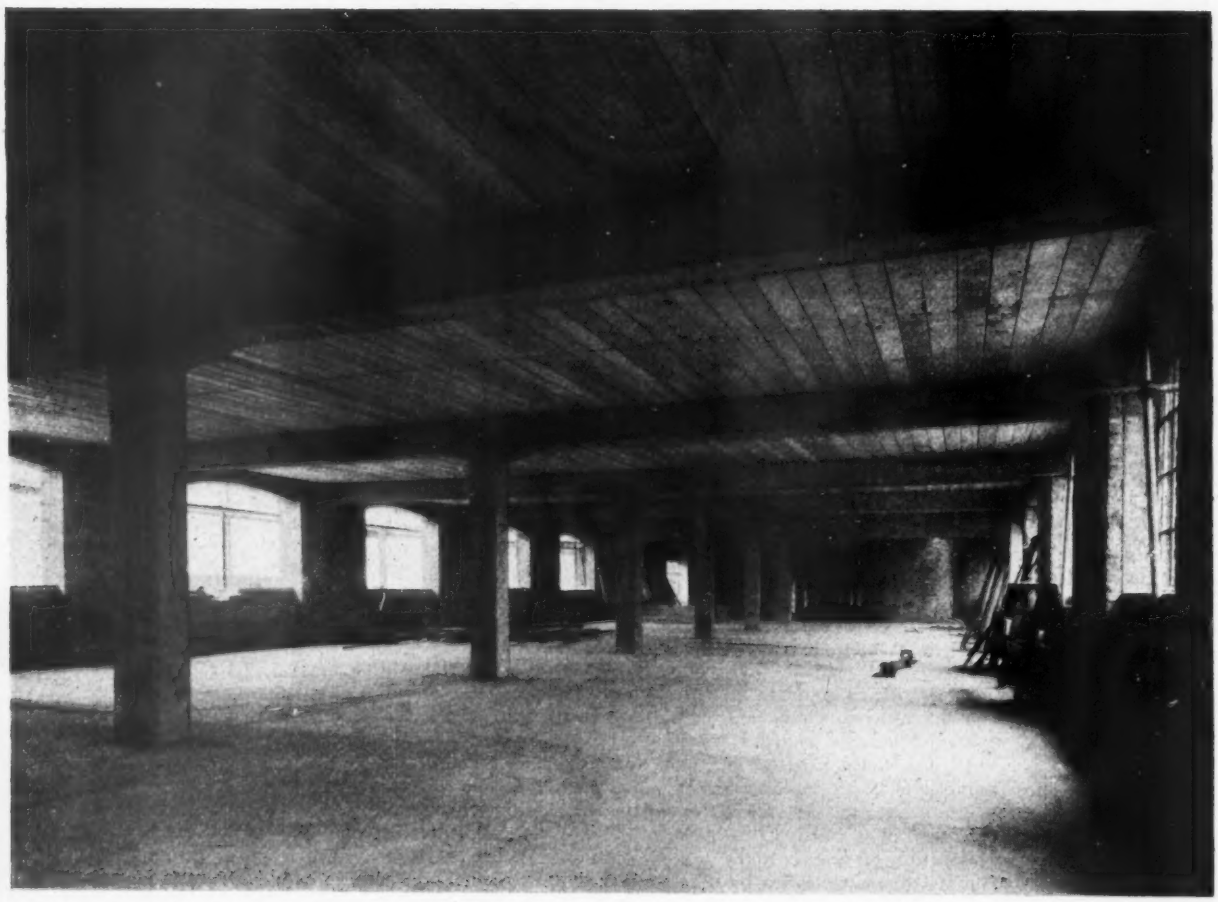
A NEW SYSTEM OF PRECAST REINFORCED CONCRETE FRAMES

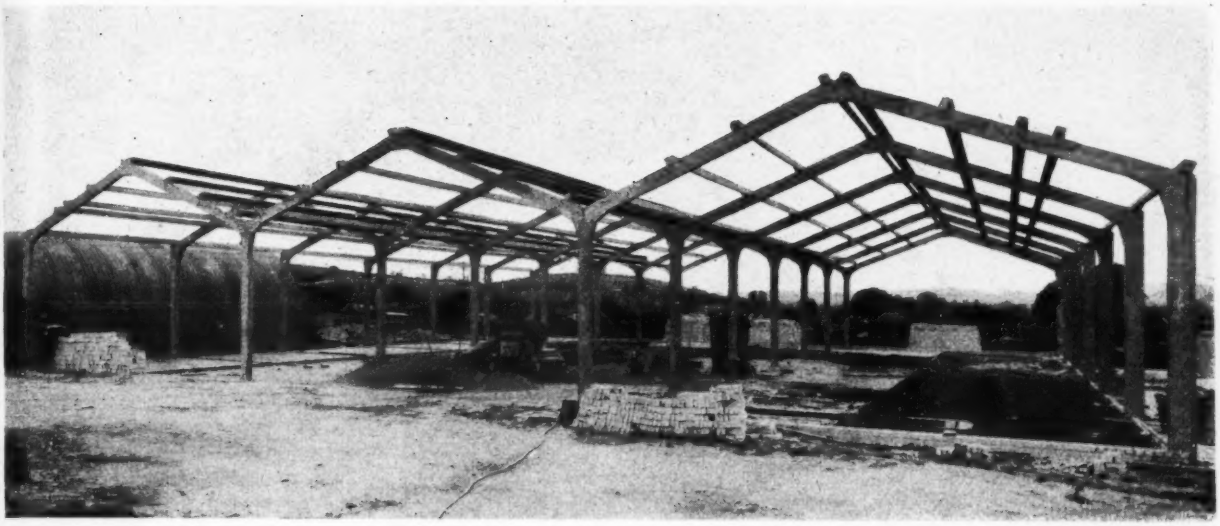


Above, a column unit and beam unit before hoisting; on the right is a steel dowel into which the column is fixed. Right, a column being hoisted into position and dropped over a dowel, and a beam being lowered into the wall bearing at one end and on to the scarfed joint of the column; a simple tackle is employed and a light winch operated by two men gives sufficient lifting power. Below, a general view of a completed floor









Above, a continuous structure consisting of three bays. Left, the interior of a cow shed. Below, a shed in which the precast units are manufactured; the scarfed connection of precast members may be seen on the left-hand side of the frames under the purlins; the steel joist running longitudinally under the apex should be noted; it is used as a runway

General view ; on the right is the projecting concert hall with roof covered with copper.

BROADCASTING HOUSE, OSLO

DESIGNED BY NILS HOLTER

GENERAL—Broadcasting House, Oslo, though new and, in fact, still uncompleted, is already a building with a history. Before the war, Nils Holter drew up plans for the future home of Norwegian State Broadcasting which were based on the anticipated requirements of some years ahead. It was intended to start by building one section only and to add the others later, when they were needed.

Construction had begun when the occupying German forces arrived. Working under German compulsion, the Norwegian builders went ahead, but evidently with no great rapidity, as Broadcasting House is only now nearing completion—constructionally. The amount of interior work to be done is still considerable, including the installation of a good deal of equipment which, owing to war demands, has not so far been available.

The building has already cost £750,000, against the initial cost of not more than £250,000 which had been envisaged. It is estimated that the total will have reached £900,000 by the time Broadcasting House is complete.

PLANNING—The building occupies an open site at Majorstua, on the outskirts of Oslo ; the only other buildings in the neighbourhood belong to the University and are of a similar character, though in a contrasting material.

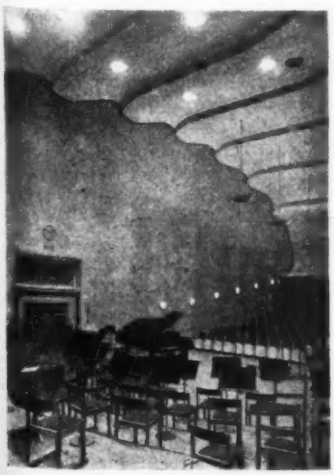
In plan, Broadcasting House is approximately H-shaped. The north wing contains laboratories, workshops, and—temporarily, a relic of the Nazi modification of original plans—a military hospital. The central block (corresponding to the crossbar of the H) is devoted to administrative and general offices. All the technical departments involved in broadcasts are in the south wing, which also contains the main entrance hall. Beyond this hall are the bulk of the studios (see plan). Projecting from the south side of the south wing, and connected to it only by a broad corridor, is the largest studio, a concert hall capable of seating a considerable audience.

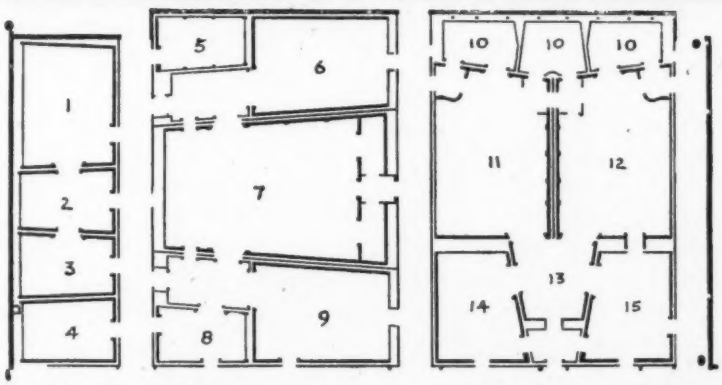
CONSTRUCTION—Broadcasting House is of mixed construction ; mainly concrete, partly brick, and the whole faced in sheets of white marble. The detached concert studio, mentioned above, is of concrete without windows, and is roofed in a sweeping curve of copper sheeting. Similarly, copper sheeting is used on both the top and the sides of the narrow bay which connects this studio to the main block.

SERVICES—There is an emergency electrical system which can be brought into use in the event of mains failure. Power for this is provided by a diesel motor in the basement of the north block.
Throughout the studios, the air is conditioned. The Carrier system is used.

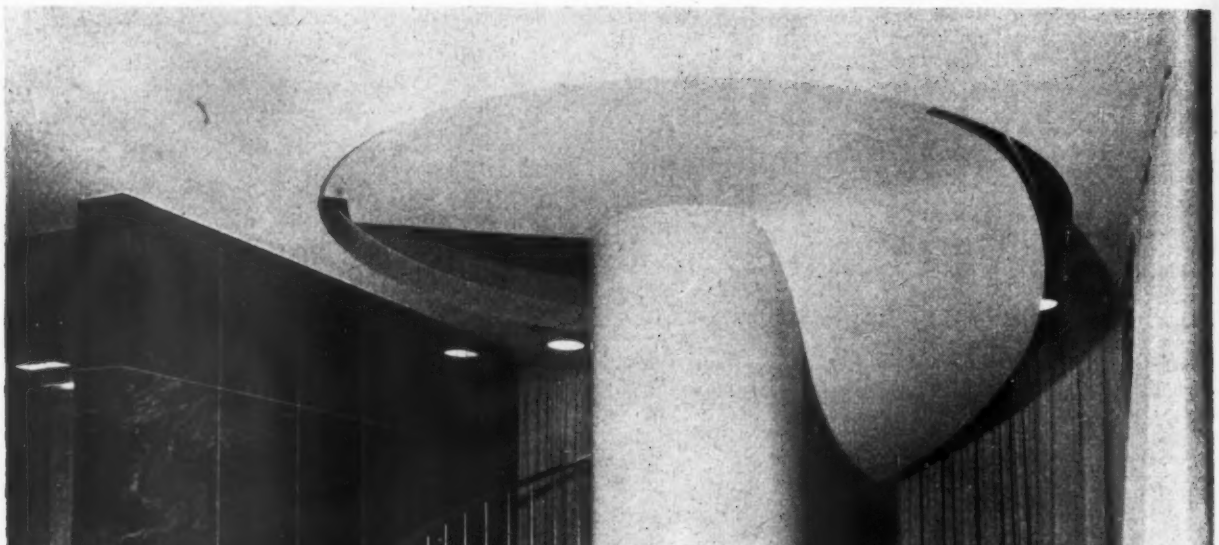
SOUND INSULATION—The studio block and concert studio are separate units from the rest of the building. Each studio is built on its own concrete base "floating" on rubber pads. The studios have no structural contact with each other, nor with the connecting corridors.
Other measures adopted for acoustical reasons include:
(1) Wall surfaces in the corridors of the studio block are broken up by "panelling" them with narrow slats of wood with intervals between. Where corridors join, the ceiling above their junction is similarly treated.
(2) Doors are placed obliquely, instead of at right angles to the corridors, to prevent sounds from travelling down them.
(3) Studio ceilings are either sloped gently or curved, so that they are nowhere at right angles to the walls below.
(4) Studio walls are panelled with sound-absorbent material. This is in panels of standard size, and considerable use is made of sound-proof panelling to give decorative effect—*e.g.*, in the concert studio, the panels are placed diagonally; while the small studio intended for folk music derives a somewhat bizarre appearance from the irregular placing of light and dark panels, suggestive of half-timbering.

STUDIOS—Of the fifteen studios, only five or six are at present in use. Considering its distance in both time and space from Broad-

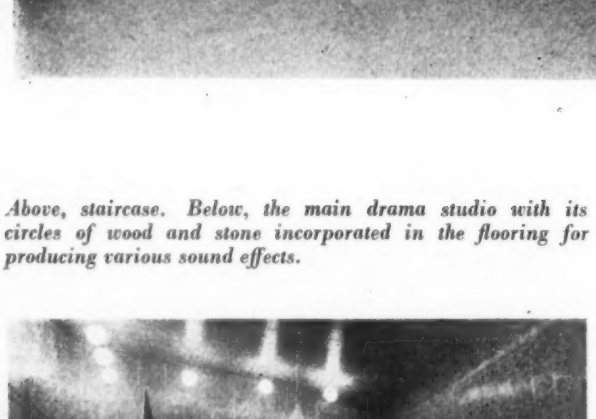




Top, the artists' waiting-room at the entrance to the studio wing. Centre, the main corridor running through the studio wing; slatted panelling to break up sound waves runs along the whole length of the wall and is also used on the ceiling at junctions with other corridors. Below, layout of the main studio block; 1, studio for interviews or discussions; 2, announcers' studio; 3, talks; 4, gramophone; 5, talks; 6, religious broadcasts; 7, small orchestra; 8, folk-music; 9, chamber music; 10, control rooms; 11, musical plays; 12, 15, drama; 13, control room; 14, effects room. Left, the main concert studio in the detached block; this will eventually have a public entrance at the rear.



Above, staircase. Below, the main drama studio with its circles of wood and stone incorporated in the flooring for producing various sound effects.



BROADCASTING HOUSE, OSLO

casting House, London, Oslo's Broadcasting House shows more similarities than might be expected. There is the same type of studio layout with control rooms adjacent, in which sit the engineers who control the broadcasts. There are similar facilities for "playing back," and a similar system of indicating when a studio is "live," by the use of coloured lights both inside and outside.

One of the most interesting studios is the larger of two which are intended for straight plays. It is designed so that all kinds of sound effects can be produced, on the spot, by the players. The main part of the floor is in two sections, one wood, one concrete: each section is partly covered by carpet and partly left uncarpeted. At one side there is a staircase which provides three different types of surface—concrete at one side, carpet in the centre, and uncarpeted wood at the other side. There are also panels in the floor which can be removed to uncover different types of paving—*e.g.* slabs and granite chips.

INFORMATION CENTRE

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

PHYSICAL PLANNING

2440 ***Planning Symposium***

HOMES, TOWNS AND COUNTRYSIDE: A PRACTICAL PLAN FOR BRITAIN. *Edited by G. and E. G. McAllister.* (*Batsford*, 1945, 18*s.* 0*d.*) Symposium on planning by various experts, divided into four main sections: Planning of Town and Country, Planning for Industry, Planning for Family and Community, Administration of Planning. Fully illustrated. Bibliography.

In an introduction G. McAllister surveys Britain as it was before the war and states outstanding defects. Before planning policy can be formulated a number of broad decisions have to be taken, including the future of Britain's ports; the future of coal utilization; the future of agriculture; the future of land ownership, and control; and the future of the building industry especially in view of the vast post-war housing programme. An account is given of the Barlow, Scott and Uthwatt Reports and of the Government's attitude towards them.

The following is a synopsis of the four main parts of the book:—

BOOK ONE: THE PLANNING OF TOWN AND COUNTRY.

Chapter 1: *Towns in the National Pattern*, by Sir Patrick Abercrombie. There must be agreement about the role of the town in the regional or national economy. The differentiation of towns according to functions determines the regional pattern and national grouping of communities, and questions are asked—and examined—as to what extent do functions affect the internal design of towns, and are there any standard plans providing ideal living and working conditions which can be used for most types of towns. It is essential to survey the whole distribution of urban population and work to be able to arrive at a satisfactory classification of functions of towns.

Chapter 2: *Agriculture in a Planned Britain*, by Sir Daniel Hall. An enquiry into the conditions which post-war agriculture ought to satisfy if it is to acquire the status of a national industry. Aspects examined include new and scientific methods in the production of crops and livestock; the size of holdings; the causes for the migration from the land. Suggestions are put forward for an Agricultural Development Corporation and for the adoption of a national dietary as a governing consideration of policy.

Chapter 3: *The Planning of Land Use*, by L. Dudley Stamp. Practical planning depends on the equitable allotment of the limited resources of the land, and on the careful study of the optimum use of each area in the national interest. It is stated that the Land Utilization Survey of Britain, which is described in detail, seems to be a suitable basis for a simple classification of land. The demarcation of broad areas of the country within which certain interests are to be regarded as paramount should be one of the first tasks of a Central Planning Authority.

BOOK TWO: PLANNING FOR INDUSTRY.

Chapter 4: *The Location of Industry*, by Sir Cecil Weir. The need for more permanent action in regard to the interwar problem of the distressed areas was first seriously recognised in 1937 with the appointment of the Barlow Commission. Since then the White Paper on Employment Policy has accepted a large degree of Government responsibility for the proper distribution of industry and has placed the major executive authority for the application of the policy with the Board of Trade. Many valuable lessons have been learned from the control of location of industry under wartime conditions, and it is suggested that future location be directed by a permanent controlling body appointed by and responsible to the Government. One of the first duties of such a body would be a survey of industrial Britain, examining the industrial potentialities and employment needs of the various regions in the light of town and country planning policy.

Chapter 5: *Transport*, by Sir Charles Bressey. Changes in the location of industry and in the utilization of land involving a redistribution of population will call for a corresponding change in the national transport system. Aspects discussed include the construction of tunnels and long span bridges at river estuaries for the creation of an ideal continuous route round Britain's coastline; the regional grouping of authorities for highway construction; the electrification of railways; and access to aerodromes.

Chapter 6: *The Place of Fuel in National Planning*, by E. W. Smith. Coal is described as a most important part of the foundation of Britain's whole economic structure. The various implications of the supply of heat, light and power are discussed with reference to the country's coal reserves and to the efficiency of the mining industry. The need is stressed for the development of a nationally planned fuel and power economy, and for statistical surveys. The most efficient use of coal at the least cost and the elimination of atmospheric pollution should be the nation's two main objectives towards achieving a planned and integrated fuel policy.

BOOK THREE: PLANNING FOR THE FAMILY AND THE COMMUNITY.

Chapter 7: *Space Standards in Planning*, by F. J. Osborn. The formulation of a definite policy of city planning depends on the question of standards of urban density, namely standards of maximum density for housing and of maximum time-distance regarding the journey to work. Problems examined include: the need for private space within and around dwellings; the maximum ratio of internal floor space to acreage of land unit; the basis of the twelve houses per acre standard; and floor space standard in relation to density of population.

Further chapters in this section deal with *The Culture of Living*, by L. Friedman, discussing the application of scientific principles of the home, and with *A Plan for the Arts*, by Ivor Brown, advocating the dispersal of the arts by organizing music and drama on a national scale.

BOOK FOUR: THE ADMINISTRATION OF PLANNING.

Chapter 10: *Planning Administration and Planners*, by W. A. Robson. A survey of the difficult problems of administration and personnel which arise in connection with planning is followed by an account of the defects of present planning organization. It is stated that planning should start at the centre, pass from there to the regions and thence to the localities. Other important points dealt with include planning as a profession and the need for a National School of Planning.

A postscript by the Archbishop of York on *Planning for Human Needs*, shows that the ultimate justification for planning is that "only through it can there be met satisfactorily some of the deepest and most persistent of human needs," such as home life, work and fellowship, and the need for open-air recreation.

2441 ***Caravan Control***

THE MOVABLE DWELLING: IS IT ADEQUATELY CONTROLLED? *Dr. T. L. Scott.* (*Journal of the Royal Sanitary Institute, January*, 1946.) Growing demand for sites, speeded by housing shortage and holidays-with-pay. Threat to rural amenities and beauty spots. Public health dangers. Inadequacy of existing statutory powers for control. Suggested remedies. Necessity for legislation.

The suggestion is made that the most profitable crop a fortunately-situated farmer can sow is caravans. It has been estimated that it is possible for an owner to take £600 per month from a camping site of two acres. There is an authoritative statement of the existing legal position, and it is shown that the powers of a Local Authority under Section 269 of the Public Health Act, 1936, are inadequate, while almost no control is given by the Planning Acts. Remedies put forward are in the direction of much stricter control of sites, and it is argued that this can be done without discouraging camping.

STRUCTURE

2442 ***Prestressed Concrete***

PRESTRESSED CONCRETE. SOME NEW DEVELOPMENTS. *G. Magnel.* (*Concrete and Constructional Engineering, November, December*, 1945, *January*, 1946, *pp.* 221-232, 249-254, 10-21.) Reasons for prestressing. Comparison between ordinary and prestressed reinforced concrete. Way to practical solution. New method of arranging reinforcement. Justification of high working stresses. Tests. Practical applications.

The article is a report on the work done by Prof. Magnel during the past four years, first in the laboratory at the University of Ghent and then on actual construction, with the object of improving the methods of Freyssinet and obtaining a practical and technically sound solution.

The principles and advantages of prestressing are explained in a very clear

manner and demonstrated on the example of a solid slab bridge of 66 ft. span. The article is confined to what is called 'Post-stretching,' *i.e.*, the application of prestress after the concrete has hardened (See No. 1175 : 8.7.45). Up to recently Freyssinet used cables made of wires and protected by a tube or by an impregnated paper strip wrapped around them in a spiral. The prestress was applied to all the wires of a cable at once. This method has several disadvantages: (1) Different wires are stressed differently. (2) It is impossible to protect the steel against rust by injection after prestressing, since the wires are in close contact. (3) A cable contains a maximum of only 18 wires and consequently too many cables are required in many cases to allow a reasonable spacing. (4) The stretching equipment is very costly and heavy to handle.

Prof. Magnel has worked on principles avoiding all these disadvantages. Only two wires are pulled at a time, no wire is nearer than $\frac{3}{8}$ in. to its neighbour, so that complete protection against rust can be obtained by the injection of cement grout. The wires are placed in layers of four in "sandwich cables," and are fixed in pairs of steel plates ("sandwich plates") by means of wedges. This method of fixing is so efficient that in a tensile test the wires break before they slip. The prestressing jack has a capacity of 4 tons only, it is light and easy to handle. The tubes around the cables are made of light sheet iron; an injection of cement grout is made by a small pump. About half of the cables is parabolic so as to avoid tensile stresses in the top near the supports and to obtain a more favourable distribution of shear stresses.

Whereas in ordinary reinforced concrete no stresses higher than half the yield point are admitted, in prestressed concrete the steel may be used up to 80 per cent. of its yield point provided the latter does not exceed 60 per cent. of the ultimate tensile strength. The stress in the steel is nearly independent of the load and every wire is tested separately up to a stress it will never reach under working conditions.

In the laboratory, not only the creep of concrete has been investigated, but also the creep of steel. Twenty-five beams of 10 ft. span have been tested and two beams of 66 ft. span composed of precast hollow blocks. Such a beam weighs only 7.2 tons, compared with nearly 5 tons of an equivalent steel girder.

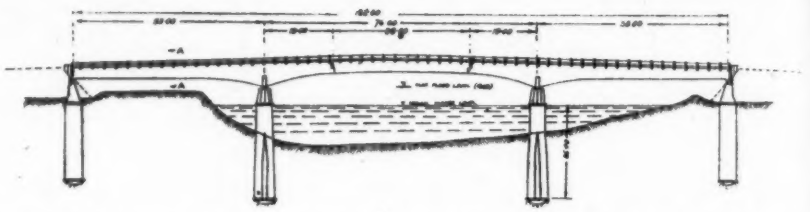
Several prestressed bridges, a cement silo, arched roofs are described, all carried out in Belgium. Two new systems of prestressed piles have also been developed.

2443 **Argentine Bridge**

HIGHWAY BRIDGE OVER THE RIVER LEYES. *W. W. Manslau.* (*Civil Engineering, January*, 1946, *pp.* 25-28.) Three span reinforced concrete bridge of box section.

The recently completed bridge over the River Leyes near Santa Fé, Argentina, is a reinforced concrete box girder with a central span of 249 ft. 4 in. and two side spans of 174 ft. each. The central span comprises a suspended central portion of 124 ft. 8 in. supported on each side by a cantilever of 62 ft. 4 in. and is second only to the span of the new Waterloo Bridge (See No. 1,210 : 28.8.43.) The cross section is in the form of two main girders. The width of the carriage way is 20 ft., the overall width 23 ft. 7 in. The architecture of the bridge was governed by the necessary clearance of the bridge above flood level. The maximum gradient of the two embankments (2.5 per cent.) was continued on the bridge itself as far as the suspended span which was itself continued in the form of a transition curve, uniting smoothly the two gradients. The soffit of the suspended span is formed by a curve parallel with the top surface; thus the overall depth of the suspended span does not change over its length. The bridge is left without any external ornamentation and is in perfect harmony with its surroundings.

The article describes details of calculation and construction.



Elevation of a new highway bridge over the River Leyes in Argentina, of reinforced concrete box girder construction. See No. 2443.

LIGHTING

2444 **Code of Practice**

PROVISION OF ARTIFICIAL LIGHT (HOUSES, FLATS AND SCHOOLS ONLY.) (*British Standard Code of Practice CP7* : 1945, *Chapter III(F), HMSO*, 6d.). General requirements. Factors affecting illumination. Type of fitting and size of source of light. Adequacy and location of supply. Standards of illumination. Appendix on choice of fixed fittings for bedrooms and living rooms. Appendix giving chart for determination of size of lamps and mantles for living rooms. This final version follows closely draft previously published.

2445 **Glare**

GLARE RATINGS. *Ward Harrison.* (*Illuminating Engineering, September*, 1945, *p.* 525.) Appraising glare in artificial lighting designs.

His proposal is that a formula be constructed taking account of the area of the light source, its brightness, its distance from the eye, its angle above the normal line of vision, and the brightness of the surrounding areas. Values for each of these are suggested which would be termed a unit of glare, but it is emphasized that the data on which to base them is meagre and that they will need more study than they have been given. Mr. Harrison obviously feels, however, that he has hit the mark fairly well, and he makes several example analyses which, apart from their interest as such, show that comparative appraisals by his method correspond more or less to common experience. One or two interesting points: high-intensity indirect lighting is less glaring than low; tube lights in line with the eye are less glaring than tubes at right angles; and glare factors for globes, and tubes at right angles increases directly with the length of room, but less quickly with indirect installations or tubes in line with the eyes. His examples and formula refer to general or indirect lighting; direct lighting usually is more glaring, but is not so amenable to his treatment; he makes suggestions to meet this type of case.

The discussion was critical. Professor Moon suggested the alternative of maximum brightness ratios instead of calculating glare ratings, and Dr. Spencer suggested an appraisal method based on what she calls adaptation-brightness, for which she claims certain real advantages, such as the fact that it can be measured, and is directly related to what the eye sees. Professor Kraehenbuehl arranged two comparative lighting systems, calculated their glare ratings by Harrison's method and found he agreed with the results.

Generally, no one claimed that the method omitted any desiderata, and in his reply Harrison claimed that it formed, therefore, a real basis on which to work. He mentions also one or two more interesting points about glare. For instance, he says time is important. Sources which at first seem pleasantly bright often become definitely annoying after a while, *e.g.*, sitting in front of a group of windows. Then he draws attention to the fact that a uniformly overcast sky, which one person instanced as satisfactory, is in reality glaring, and that on a sunny day, when the brightness of the sky goes down by about two thirds, and the brightness of objects goes up by about 5 to 1, there is much less discomfort.

2446 **Fluorescent Lamp Supply**

FLUORESCENT LAMPS—FUTURE SUPPLY. *Statement by ELMA.* (*Electrical Times, July* 12, 1945, *p.* 51.) Sizes, colours and voltages of post-war fluorescent lamps.

ELMA announces the following range of fluorescent lamps for post-war use:

Length, feet	Diameter, inches	Voltage, A.C.	Nominal watts
4	1½	200/250	40
3	1	"	30
2*	1½	100/130	20
2	1	200/250	20
1½*	1	100/130	15

(* These lamps operate 2 in series (*i.e.*, 2-20 w or 2-15 w.) on 200/250 v. A.C. mains or singly on 100/130 v. mains.)

All lamps will be available in daylight and warm-white colours.

The present 5-ft. lamp will continue to be made.

2447 **Office Lighting**

IMPROVED TECHNIQUE IN SMALL OFFICE LIGHTING. *A. W. Larson and W. H. Kahler.* (*Illuminating Engineering, September*, 1945, *p.* 570.) Common shortcomings. Glare. Examples of improved lighting.

A useful paper. Perhaps the most interesting item is the emphasis thrown on glare, caused either by bad sources, or very often by reflection from shiny surfaces, and also the importance of getting light from the right direction. The two are related, of course. The examples generally show extended sources in U or L arrangements, and the advantages of these as giving glare-free conditions, with proper direction of light, are discussed.

STOP

UNREGULATED FUEL BURNING

A Ewart Geyser gives INSTANTANEOUS Hot Water—any time of the day or night—at the turn of a tap. The Burner lights up only when you want hot water. There is no wastage of fuel—no unregulated burning—no storage to be maintained all the 24 hours, in case it is wanted. Come into line with today's critical need to save fuel by fitting Ewart Geysers. There's a Ewart model to suit every purpose. Full particulars on request.

FIT EWART GEYSERS

For Instantaneous Hot Water NIGHT or DAY

MULTIPOINT BATH SINK

EWART & SON, LTD. 169 REGENT ST. W.1. — WORKS: LETCHWORTH, HERTS. ESTD. 1834.

6457

Scottish Agents: JAMES R. THOMSON & CO., LTD., 10, Blythswood Street, Glasgow, C2
Northern Ireland Agents: CENTRAL MERCHANTS, Ltd., Upper Queen Street, Belfast

2448 **Cold Cathode Lighting**

COLD CATHODE AT WAR. *J. M. Smith.* (*Illuminating Engineering, September,* 1945, *p.* 558.) Data from war-time installations.

During the past three years these columns have recorded the remarkable growth of interest in cold cathode fluorescent lighting which in America followed close on the heels of the wide use of the more familiar hot cathode lighting. The present article looks back over those years to chronicle some of the data. Of mild interest is the fact that more than 4,000,000 ft. of it are said to have been installed; of much more interest is the discovery that the rated life of 10,000 hours is being consistently exceeded by 3,000 hours or more, without unreasonable deterioration in light output. It is recalled that another important reason for popularity is that it can often be installed in existing buildings without rewiring.

2449 **Floodlighting**

FLOODLIGHTING DESIGN BY GRAPHICAL METHOD. *R. L. Dearborn.* (*Illuminating Engineering, September,* 1945, *p.* 514.) Calculation of light intensity on working plane from floodlights.

ACOUSTICS and Sound Insulation

2450 **Music Shells**

THE ACOUSTICS OF MUSIC SHELLS. *H. L. Kamphœfner.* (*Pencil Points, September and October,* 1945, *pp.* 93 *and* 98, *respectively.*) Shapes of music shells. Relation between shell and seating area. Summary of 30 music shells in Canada and USA.

The author provides a summary of 30 music shells built in Canada and the USA: all the shells are illustrated. His note is in two parts, the first half discussing the characteristics of different shapes of shells, and the other the relationship between the shell and the seating area.

In Part I are noted several distinctive conclusions, *viz.*:—

(*a*) Concave sections of all types (spheroidal, ellipsoidal, etc.) are likely to concentrate unevenly in different parts of the audience and should be avoided.

(*b*) Shells with parallel floor and ceiling, or parallel walls, are undesirable because sound reverberates between them.

(*c*) The shell should be sited in a quiet area so that audibility is not impaired by traffic noise.

The author refers extensively to shells made of flat planes sloping outward and upward, but while he appears to argue in their favour generally, he devotes part of the second half of his note to the study of evidence which indicates that these splays do not add much to the intensity of sound for the audience. In fact, the conclusion on this point seems to be that a flat reflector behind the orchestra, or one which is slightly convex, is about as useful alone as with the splays.

The idea of the semi-conical shell finds favour, though he draws attention to the fact that it directs sound along the main axis and is bound therefore to control the shaping of the seating area. It is noted that the slope of the cone should be 45° if the seating area is flat, or 45° + ½ the slope of the seating area if the latter rises. The famous shell at Hollywood Bowl is apparently a semi-cone based on this rule, and its success is adduced as evidence that the shape is a good one, if not the best possible; and the author himself has designed a semi-cone shell which, being successful, is also used to support this argument.

But one is left without the feeling that the evidence has been interpreted satisfactorily. For instance, it is notoriously difficult, even in an enclosed auditorium, to get proper loudness for the audience if the seating area is flat, and is much more difficult in the open air where much of the sound will escape. Yet many of the failures quoted are shells associated with flat seating areas, and the three outstanding successes have seating sloped at 10° or more, which is well known to make hearing a great deal better. One is bound to ask therefore, how much influence has the shape of the shell compared with the slope of the seating? There is more than a suspicion that it is not much.

Nevertheless the article is a useful summary of open-air music shells, and contains real information on acoustic points.

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.*

2451 **Rigging a Flag Pole**

Q *How can a flag pole be rigged on a Church Tower without piercing the roof? Is there not some piece of timber framing for this purpose called a Tabernacle? If so, how is it made?*

A Flagstaffs on flat roofs are frequently let into a cast-iron base plate at the bottom, bolted to the roof and secured by four steel guy ropes fastened to suitable anchors on the roof, and to a steel or wrought-iron mast band at a height of one-third of the mast.

If it is desired to site the flagstaff immediately by a parapet wall, there can only be three supports instead of four. Two of these can consist of guy ropes, as before, possibly secured to the parapet wall itself, but the third "leg" should consist of a rigid Tee-section steel stay.

If you wish to lower the flagstaff, there should be a tabernacle. This consists of two short pieces of timber fixed upright at the base of the staff, with three holes in each. The base of the staff is usually of square section and similarly holed; it is hinged by a bolt passing through the top three holes which are in alignment. When in an upright position, bolts are passed through the two lower sets of three holes to secure it in position. The fixing of the tabernacle to the wall must depend upon circumstances, but it should not be difficult to devise a method of securing the base.

An alternative method is to fix the flagstaff to the external face of the wall by means of two mast bands and wall brackets. In this case the wall brackets should be securely fixed to structural members and not merely to the parapet wall. It reduces the strain if the two bands are placed further apart than one-third of the height, and this is usually done.

SOCIETIES AND INSTITUTIONS

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

AA

Students' Debate

February 26 at 36, Bedford Square, W.C.1, at an Ordinary General Meeting of the Architectural Association. Debate organized by the Students' Committee of the AA School of Architecture on the resolution: THAT ARCHITECTURE IN ENGLAND IS DEAD. Chairman: Colin Boyne, Chairman of the Students' Committee.

B. Keating Clay : (proposing the motion): I wish first of all to clarify the wording of the motion. I am taking architecture to mean structures designed by architects during the last ten years—1935 to 1945. My argument is that if architecture is to be living it must be contemporary at the time of its erection. To-day, architecture is still being built in accordance with the conditions of the society of the previous period, and there is no architecture parallel with the present age and society. The real architect throughout history has been an artist working with the medium of the structure and organization of buildings, but his work was conditioned by the age in which he lived. The conditions determining the architecture of the mediæval period were that there were considerable numbers of craftsmen, and cheap labour. The architect was the master craftsman. The architecture of the Renaissance period was conditioned by very rich clients and individual architects producing individual buildings designed for effect. Something of those two societies remained to-day but they are redundant, obsolete and dead.

In their place new conditions exist and a new society has developed. Since the Renaissance, revolutions and tremendous changes have taken place in every sphere and the one fundamental change has been the development of science and the use of scientific methods. That change has determined a new period. A new society has

been formed on the basis of the development of science in every sphere of life and representative of that society is the Trans-Atlantic liner, television, jet-propelled aircraft, nuclear fission and Radar. There is, however, no parallel architecture; there is no architecture which belongs to the new society. Instead, there are styles and escapism everywhere. Two types of architecture are dominant, both of which are considered to be the architecture of the age, but both of which are dead because they do not belong to the present age. Those two types of architecture are traditional architecture and the so-called Modern architecture.

Traditional architecture is the architecture of the mediæval period which is dependent upon the craftsman and cheap labour, but being mediæval, it is dead. So-called Modern architecture is that which blindly considers itself to be contemporary simply because it is designed to look modern. It is designed for effect, and recently yet another style has been added to it, that of the modern idiom. Architects dare not call it Modern Style because they know that style is dead. Modern architecture has been concerned with effect and not with method and therefore it is Renaissance in concept rather than twentieth century. For that reason it is redundant and dead. The life of the new period is concerned with scientific method and if the architect is to be in line with that period he must be an artist working as a scientist. This is an age of the increasing use of the scientific method in every part of life. Architecture is a part of life and until the scientific method is in use in it, it will not be in line with the age. Architects in England to-day do not use scientific methods and there still exists an architecture of the previous society but none of the present society. Consequently, all architecture built in the last ten years in this country has been born dead.

C. S. Knight: (opposing the motion): I wish to define first what is meant by the word Architecture. In its widest sense it can be divided into three parts. Firstly there is the philosophy of architecture—the basic ideas and theories without which no buildings can be built. Secondly, there is the practice of architecture—the attempt to produce buildings in the conditions existing at the time. Thirdly, there is the product, which means the buildings produced as a result of the first two conditions.

My principal point is that the existence of philosophy of architecture alone, without either the practice or the product, is sufficient to justify one in saying that architecture in the broad sense is alive. So long as the basic architectural impulse exists to provide shelter which is both beautiful and functional, it cannot be said that architecture is dead. In elaborating the three divisions to which I have referred, I feel that with regard to philosophy the proposer of the motion and myself are agreed that a living architecture is the expression in architectural form of the spirit of the age. But the spirit of an age is to be found in the realm of ideas, and therefore its expression in architecture, or in any other medium, has to be based on ideas, or on a philosophy.

The philosophy of the mediæval period can be summarised as the idea of co-operative service for the greater glory of God, which led to a composite, anonymous architecture which achieved a sublimity beyond that of more materialistic eyes. The Renaissance ideas cut right across the conception of a God-made architecture. The emphasis was on the individual architect, the master of a difficult science who understood the secret of proportion and design by a natural gift which was called his genius. There was a fundamental difference in his relation to the architecture he created. Man was the centre and knowledge was the means. Without that conception there could have been no Renaissance, just as without the mediæval religion there could have been no Gothic architecture.

The origin of the idea of morality in art was preached by Pugin and Ruskin whose descent can be traced directly from the Renaissance survival of antiquarian learning and the romantic fervour which grew up with it. From that great idea has arisen the modern conception of integrity in art —truth at all costs, a direct and honest use of materials, the analysis of function in line with the scientific analysis going on in other spheres. That idea exists in England at the present time and it is the conception on which modern architecture, as the proposer of the motion understands it, is based.

In considering the conditions in which the architect practises to-day, two points arise. First of all, society to-day is chaotic. Secondly, the feature of the age is the scientific progress which has been made, but in the main, and in the most important practical aspects, it has been destructive. The reason for that destructive tendency is that man's moral or spiritual development lags years behind his scientific development. The scientific attitude alone is inadequate. Man is not ruled by scientific or logical impulses so it follows that architecture, which in this age is made by man for man, will still be partly unscientific. Compromise must enter into it. That compromise is the adjustment which must be made to bridge the gap left by a lost belief and the gap between man's development in science and in ethics. Architecture, as inevitably representing the spirit of the age, will inevitably reflect the chaos and the drift between man and science.

The scientific architecture which the proposer talked about is an unattainable ideal, but it is none the less real. While that ideal, even if it only remains an ideal, lives, architecture is not dead. The proposer argued that a living architecture must be contemporary, in parallel with the scientific development of the age. My reply to that is that architecture in this age cannot be anything but a reflection of chaos and the backwardness of man's development. Moreover, it is justifiable to hold other ideas of what architecture is, and while they exist and are practised, architecture is not dead. The ideal is in existence and as long as any ideals exist there must be a philosophy of architecture. Architecture, which is essentially thought expressed in a particular medium, can never die while man thinks and creates.

Mr. Scorer: I do not agree with the opposer's idea that because one has a germ of an idea, architecture is therefore living. We are now living in a scientific age and we must face up to the fact. The progress we have been able to enjoy is entirely due to science and that attitude must be rigorously applied to architecture.

Mr. Goddard: I am happy to oppose the motion. If architects really thought that their craft was dead they would have given up long ago. Architects may have designed bad buildings in the past. In fact, buildings put up by the modernists before the war are by no means perfect. They still have a great deal to learn. Present-day architecture is in the chrysalis stage. It is dormant, perhaps, but not dead. I admit the changes brought about by science but there has, nevertheless, been little change in human values. Our moral and spiritual development lags sadly behind scientific progress, and architecture is a human thing.

Mr. Gordon Brown: It appears to me that the proposer is suffering from an inferiority complex which architects seem to have, that the problem should not be approached from the architectural standpoint but only from the scientific point of view, or some other point of view. It is all too obvious that the atom bomb has been invented and that Radar has contacted the moon, but the connection with the suggestion that architecture is dead is surely wide of the mark. The attitude which strives all the time to secure a solution to architecture through science is rather like a child who puts on a bearskin and says that it is a bear.

Mr. Buckmaster: I am on the side of the proposer, because I think that the last ten years of architecture are absolutely deplorable. Many architects—and that includes many distinguished ones—are always saying that this is a scientific age and that that is the root cause of all troubles. That is a very lame excuse because if architects had any grit they would survive the scientific age. There is a tendency to imagine that there was not a scientific age in Wren's time but there certainly was. St. Paul's Cathedral shows that there was a great deal of science at that time, particularly in the construction of the dome. It is quite ridiculous to say that things are in their present deplorable state because of the scientific age. Many people have been to the Science Museum recently to see machines of destruction and they must have seen how extraordinarily beautiful are the engines which propel the machines. There is art there for anyone who cares to look for it. It is a totally different type of art but it is there. There is one important factor about it. It is an advancing effort but the architecture of the present day is certainly not advancing. It is degrading and is, in fact, horrible. Architects must shed the illusion that science is responsible for the present shocking condition of architecture. It is not that at all; it is due to the fact that there is a certain spiritual insight lacking in the present age.

Mr. Rykwert: As a student I wish to support Mr. Buckmaster, but while I agree with his diagnosis there is perhaps a fault in his remedy. Mr. Buckmaster has told us that the present age lacks a fundamental spiritual insight, and that is perfectly true. It is quite true that there have been great advances in techniques and in the organising of a great volume of knowledge. What the present age lacks is integration. There has been a failure to understand that the processes of life fit into a scheme or plan and that techniques are part of that plan. As architects we have not recognised that and the spread of the scientific approach is a sign that we are realising that there can be no body of architecture which can be called living.

Mr. Molesworth: Although it may be true that the architectural achievements of the present day will not stand up against engineering and scientific achievements, it should be remembered that whereas Cæsar had no need to lay a pipe-line across the Channel and while Pharaoh had no need to contact the moon by Radar (which processes are apparently desirable now), people still sleep and eat and carry on a great many of the activities of those ancient times.

Mrs. Scorer: I am one of the people who carry on the activities of the days of Pharaoh; I scrub floors. How nice it would be, if, when choosing where to live, I did not have to make a choice between something built 300 years ago—which I would like to live in, but which entails a great deal of work—and a modern house which I would hate but which would give me time to do things other than scrubbing floors.

Mr. Olins: I agree with the speaker who suggested that what is required is an integrating philosophy. The opposer of the motion has suggested that any philosophy will do. I disagree, because what is needed is a unified philosophy. That is just the thing which scientists have got: they have a method of working and they are trained men. They have analytical minds and they use them. The architect of to-day has not

got a trained mind and the majority of architects do not recognise the need for a trained mind or for an analytical approach. Until architects possess that type of approach architecture will lack policy and direction and will lose whatever foothold it has.

Mr. H. Wright: I have never been able to understand why it is so much more pleasant to live in a room in a Georgian house than in a room in a block of modern flats. It might be interesting to try to analyse the reason for that.

Miss Caldicott: Part of the trouble is economic and the question of space is also involved. In the Georgian house there is plenty of space, but architects nowadays are in the grip of economic factors. Architects ought not to be in the grip of economics and if they are, architecture will probably die. Surely the way in which to obtain a release from that grip is to use science properly.

Mr. Steppery: There are Georgian rooms which are nice and Georgian rooms which are not. Equally, it is possible to have a good modern room and a bad modern room. Architecture in England is dead, but I do not think that it is in other countries. In England during the last ten or more years there has been no architecture of note that is not either powdered or scented, or which is a revival of some previous style. We have no architecture which can stand up to the progress made in the spheres of the engineer and the scientist. There is no architecture which has come up to the standard of the work produced by men who have had a scientific training.

One speaker has pointed out that architects are human. That is true, but so also are the scientists. The scientists design and create for human consumption. The house can be described as a machine for living in, but in England there are few houses which are machines for living in. Living is not something which happens day by day. It is organised, and the more it is organised the better it is. There is an organised State system which is organising people's lives and those lives will be the better for that organisation. Every time people move it is through the State organisation, as, for instance, when they take a 'bus from Bedford Square to Victoria. In the same way as people's lives are organised, so should their architecture be organised. The work of the architect should reflect the scientific progress which has come from the last century and so far it has not done so in England.

(The motion was put to the meeting and defeated by 45 votes to 13).

Announcements

Mr. Walter Rosser, F.R.I.B.A., has removed his offices from 38, Kingsley Road to 20, Derngate, Northampton (telephone, No. 4906), and would be pleased to receive trade catalogues, particularly those relating to schools.

Lt.-Col. Donald A. Goldfinch, R.E., has been released from the Army and would be glad to receive catalogues of modern materials and fittings with special reference to hospital design, at 9. Carisbrooke Drive, Bitterne, Southampton.

Mr. G. A. Goldstraw, B.A., A.R.I.B.A., now appointed Government Architect, Jodhpur, Rajputana, India. Trade catalogues and information about new materials, including furnishings, will be appreciated.

Additional telephone lines have been installed in the London sales office of Ascot Gas Water Heaters, Ltd., 8, South Street, London, W.1, and the telephone number has been changed to Grosvenor 4491.

TWO AGES OF TIMBER

By Courtesy of the Victoria and Albert Museum.

THE TEST OF TIME

THE craftsmen of the Jacobean period, exercising their skill upon the fine wood of their day, produced furniture whose charm has lasted three centuries. Fine wood is still to be had; and craftsmen, working with modern methods, can produce masterpieces suited to the needs of today.

WILLIAM MALLINSON & SONS LTD

TIMBER AND VENEER MERCHANTS AND PANEL MANUFACTURERS

130-142 HACKNEY ROAD · LONDON · E2

TELEPHONE · BISHOPSGATE 1234 8038

TELEGRAMS · 'ALMONER' LONDON

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

THE UNIVERSITY OF MANCHESTER.

Applications are invited for the post of BUILDINGS AND ESTATES OFFICER. Qualifications and/or experience in fields of Civil and/or Constructional Engineering, Architecture and Building Contracting. Salary £800 to £1,000 per annum, according to qualifications, with membership of the Federated Superannuation System for Universities; a children's allowance scheme is in operation. Full particulars can be obtained from the Bursar of the University. 826

DERBYSHIRE COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of DEPUTY COUNTY ARCHITECT, at a salary of £800 per annum, rising by annual increments of £50 to £900 per annum, plus cost-of-living bonus, at present £59 16s. per annum.

Applicants must be fully qualified and accustomed to the control of architectural staff.

The person appointed will be a contributory employee under the provisions of the Local Government Superannuation Acts, and will be required to pass a medical examination.

The appointment will be terminable by three months' notice on either side.

The successful applicant will have to provide his own motor car, for which an allowance will be made for use on county business.

Applications, stating age, present salary and position, qualifications and previous administrative experience, accompanied by copies of three recent testimonials, should reach the undersigned by 29th March, 1946, in an envelope endorsed "Deputy County Architect."

F. HAMER CROSSLEY,
County Architect.

County Offices, Derby.
14th March, 1946. 855

COUNTY BOROUGH OF DERBY.

BOROUGH ARCHITECT'S DEPARTMENT.

Applications are invited for the temporary appointment of CLERK OF WORKS to supervise various contracts, including housing work, at a salary within the scale £300-£375 per annum, plus war bonus, the commencing salary to be determined according to experience.

Applications, stating age, experience, etc., with copies of three recent testimonials, should be forwarded to the Acting Borough Architect, Council House, Corporation Street, Derby, not later than first post on Thursday, 28th March, 1946, endorsed "Appointment of Clerk of Works."

C. ASHTON, M.A.,
Town Clerk.

Market Place, Derby. 850

COUNTY BOROUGH OF SOUTH SHIELDS.

APPOINTMENT OF ARCHITECTURAL ASSISTANT (PERMANENT).

Applications are invited for the appointment on the staff of the Borough Engineer (Lt.-Col. John Reid, O.B.E., M.Inst.C.E.) from persons having suitable qualifications for an Architectural Assistant, at a salary of £315 per annum, rising by annual increments of £15 to a maximum of £360 per annum, plus war bonus, at present £59 16s.

Applicants should have completed successfully the Intermediate Examination of the A.R.I.B.A.

The appointment will be subject to the provisions of the Council's Superannuation Act, and the candidates selected will be required to pass a medical examination.

Applications, suitably endorsed, stating age, present and past appointments, qualifications and copies of not more than three recent testimonials, must be received by the undersigned not later than the 11th April, 1946.

Applications will be considered from persons serving in His Majesty's Forces, who when applying should give their Group Number and probable date of release.

Canvassing, either directly or indirectly, will disqualify.

HAROLD AYREY,
Town Clerk.

Town Hall, South Shields.
7th March, 1946. 866

CITY OF WESTMINSTER.

DIRECTOR OF HOUSING.

Westminster City Council invites applications for the permanent appointment of Director of Housing (male), on a salary scale of £1,600—£100—£2,000 per annum, plus cost of living bonus (at present £33 16s. per annum), the commencing salary to be dependent on the experience of the person appointed.

The person appointed will be responsible for the direction of all new housing schemes undertaken by the Council, for which architects in private practice will be retained; and such additional housing duties, including the management and maintenance of the existing housing estates as the Council may from time to time determine.

Applicants, who must not be over 50 years of age, must have had wide general experience in administration.

The appointment will be subject to a satisfactory medical report, and to the provisions of the Council's Standing Orders, General Regulations and Superannuation Scheme. Canvassing will disqualify.

The appointment is open to architects, but is not limited to them. Persons in H.M. Forces with the requisite experience are invited to apply.

Applications stating (*a*) age, (*b*) war service, (*c*) professional and academical qualifications, (*d*) present appointment, (*e*) previous appointments, and (*f*) general experience in administration, accompanied by copies of three recent testimonials, should be sent in an envelope marked "Appointment of Director of Housing," so as to be received by the undersigned not later than 20th April, 1946.

PARKER MORRIS,
Town Clerk.

Westminster City Hall, Charing Cross Road, London, W.C.2.
8th March, 1946. 870

BOROUGH OF LUTON.

BOROUGH ENGINEER'S DEPARTMENT—APPOINTMENT OF TECHNICAL STAFF.

Applications are invited for the following appointments:—

(*a*) SENIOR ARCHITECTURAL ASSISTANT. Salary on one or other of the following grades: £460—£15—£15—£20—£510 per annum; £535—£20—£20—£25—£600 per annum. The commencing salary to be commensurate with the qualifications and experience of the successful candidate.

(*b*) TWO SENIOR ENGINEERING ASSISTANTS. Salaries £460—£15—£15—£20—£510 per annum.

(*c*) BUILDING INSPECTOR. Salary £310—£15—£355 per annum.

(*d*) CLERKS OF WORKS on various Council housing estate contracts. Salaries according to capabilities and experience.

Appointments (*a*) and (*b*) are to the permanent staff, and appointments (*c*) and (*d*) are temporary in the first instance. A temporary cost-of-living bonus of £59 16s. per annum will be payable in all cases, and all appointments will be subject to the provisions of the Local Government Superannuation Act, 1937.

Applicants for appointments (*a*) must be A.R.I.B.A., and have had extensive experience in the design and construction of public buildings and municipal houses, and in particular have had recent experience in the design and development of housing schemes.

Applicants for appointments (*b*) should be A.M.Inst.C.E. or A.M.Inst.M. & Cy. E., and have had considerable experience of road and sewer works. In one of the two appointments preference will be given to those who have been responsible for the design and checking of structural steelworks and reinforced concrete works.

Applicants for appointment (*c*) must have had experience in the control of building works and administration of bye-laws.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, should be delivered, suitably endorsed, to the Borough Engineer, Town Hall, Luton, not later than Saturday, 6th April, 1946. Canvassing will be a disqualification.

W. H. ROBINSON,
Town Clerk.

Town Hall, Luton.
12th March, 1946. 877

COUNTY BOROUGH OF WALLASEY.

APPOINTMENT OF DEPUTY BOROUGH ARCHITECT.

Applications are invited from persons under 45 years of age, by the 5th April, 1946, for the appointment of Deputy Borough Architect. Salary £700 per annum, rising by two annual increments of £50 to £800 per annum, plus war bonus.

Applicants preferably should be Fellows or Associates of the Royal Institution of British Architects, and have had a wide experience of municipal work of all kinds. A form of application and further particulars will be sent on receipt of a stamped and addressed foolscap envelope.

EMRYS EVANS,
Town Clerk.

Town Hall, Wallasey.
11th March, 1946. 883

BOROUGH OF YEOVIL.

Applications are invited for the following appointment:—

TEMPORARY ARCHITECTURAL ASSISTANT, with architectural qualifications and experience in surveying, levelling, preparation of plans, working drawings and quantities, and layout of housing estates. Salary £330—£15—£405 per annum, plus cost-of-living bonus, with possibility of appointment being made permanent.

Forms of application and particulars of the appointment may be obtained from, and applications with copies of two recent testimonials sent to, the undersigned not later than 1st April, 1946.

A. J. PRICE, A.M.I.C.E.,
Borough Surveyor and Water Engineer.

Municipal Offices, Yeovil. 865

BERKSHIRE COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications from qualified persons are invited for the following appointment on the permanent staff of the County Architect:—

QUANTITY SURVEYOR, at a salary on a scale at present £330—£15—£375, according to age and experience, plus the appropriate cost-of-living bonus, amounting to £59 16s. The salary scale will be adjusted if the National Joint Councils Scheme of Conditions of Service are adopted by the County Council.

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

Applicants should have considerable experience in the preparation of bills of quantities, specifications and accounts. Preference will be given to the Members of the Chartered Surveyors' Institute.

The possession of a car would be an advantage, and a motor car allowance would be paid in accordance with the appropriate County Council scale.

Application forms are available from the County Architect, Shire Hall, Reading, on receipt of a stamped addressed envelope, which must be returned on or before Thursday, 4th April, 1946.

H. J. C. NEOBARD,
Clerk to the Council.

Shire Hall, Reading, Berks. 878

BOROUGH OF BROMLEY.

BOROUGH ENGINEER'S DEPARTMENT.

Applications are invited for the following positions:—

(*a*) ENGINEERING ASSISTANT, Grade 1. Inclusive salary £500, rising by annual increments of £15 to £550 per annum.

(*b*) TWO ENGINEERING ASSISTANTS, Grade 2. Inclusive salary £450, rising by annual increments of £15 to £500 per annum.

(*c*) ARCHITECTURAL ASSISTANT, Grade 1. Inclusive salary £550, rising by annual increments of £15 to £600 per annum.

(*d*) ARCHITECTURAL ASSISTANT, Grade 2. Inclusive salary £450, rising by annual increments of £15 to £500 per annum.

Subject in each case to satisfactory service, in accordance with the Council's salaries and grading scheme.

Applicants for (*a*) and (*b*) should be Associate Members of the Institution of Civil Engineers and/or the Institution of Municipal and County Engineers, or possess equivalent qualifications, and have had experience in a Local Government office.

Applications for (*c*) and (*d*) should be registered architects, and preferably Associate Members of the Royal Institute of British Architects.

The successful candidates will require to pass a medical examination and to contribute to the Superannuation Fund under the Local Government Superannuation Act, 1937.

Applications, stating age, experience, and qualifications, accompanied by copies of not more than three recent testimonials, must be received by me not later than Wednesday, April 3.

Canvassing, directly or indirectly, will be a disqualification.

S. CRITCHLEY AUTY,
Town Clerk.

Municipal Offices, Bromley, Kent.
11th March, 1946. 869

EDINBURGH CORPORATION.

CITY ARCHITECT.

Applications are invited for the appointment of City Architect. The salary scale is £1,320, rising to £1,870 per annum by annual increments of £50, plus war increase (at present £120). Placing may be given on scale according to experience. The appointment will be whole-time, and will be subject to the Corporation's superannuation scheme. Applicants must not be over the age of 55 years at 1st January, 1947, and must be registered architects and members of the Royal Institute of British Architects.

Further particulars and conditions of appointment may be obtained from the undersigned, with whom applications, stating age, qualifications, and experience must be lodged not later than 1st June, 1946.

J. STORRAR,
Town Clerk.

City Chambers, Edinburgh. 873

CORPORATION OF LONDON.

PUBLIC HEALTH DEPARTMENT.

CITY ENGINEER'S OFFICE: TEMPORARY ARCHITECTURAL ASSISTANT (HOUSING).

Applications are invited for a temporary Architectural Assistant, in the City Engineer's Office, conversant with the preparation of surveys, design and working drawings, and specifications for housing purposes, and supervision of work, etc. Applicants should have passed the final examination of the Royal Institute of British Architects (or equivalent), and additional recognised professional qualifications will be deemed an advantage.

The salary will be between £400 per annum and £500 per annum (exclusive of war bonus), according to experience and qualifications.

Applications, giving full information as to age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, and endorsed "Temporary Architectural Assistant (Housing)," must be received not later than 1st April, 1946, addressed to the City Engineer, Corporation of London, 55-61, Moorgate, E.C.2.

ROACH.

March, 1946. 863

GLAMORGAN COUNTY COUNCIL.

Applications are invited for the following acting appointments (with prospects of permanency) in the Architect's Department:—

(1) TWO QUANTITY SURVEYORS. Salary, £425 per annum, rising by annual increments of £25 to £500 per annum, plus appropriate cost-of-living bonus. Candidates must be Fellows or Professional Associates of the Chartered Surveyors' Institute (Quantity Division), and have had considerable experience in the preparation of bills of quantities, estimates, valuations, and the settlement of accounts in connection with local authority buildings, including schools.

(2) ARCHITECTURAL ASSISTANT, Grade 1. Salary £425 per annum, rising by annual increments of £25 to £500 per annum, plus appropriate cost-of-living bonus. Candidates must be Associates of the Royal Institute of British Architects.

The above appointments will be subject to the provisions of the Local Government Superannuation Act, 1937. Applicants must not be over 45 years of age, but this condition may be relaxed in the case of a person already in the service of the Authority or a specially suitable candidate employed by another Local Authority.

Applications are also invited for the following appointments:—

(3) ARCHITECTURAL ASSISTANTS (TEMPORARY). Salary £8 8s. per week, plus cost-of-living bonus. Applicants must be registered architects.

(4) DRAUGHTSMAN (TEMPORARY). Salary to be according to experience within the following scales:—Grade 1, £305 to £400 per annum, plus cost-of-living bonus; Grade 2, £255 to £300 per annum, plus cost-of-living bonus.

All appointments will be subject to the general regulations of the County Council with regard to conditions of service. Appointments (1) and (2) will be determinable by one month's notice on either side, and (3) and (4) by one week's notice on either side.

Applications, on forms which may be obtained from the County Architect, Glamorgan County Hall, Cardiff, must be returned to him in sealed envelopes not later than 1st April, 1946.

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

A. CLIFFORD WALTER,
Deputy Clerk of the County Council.

Glamorgan County Hall, Cardiff.
8th March, 1946. 861

COUNTY BOROUGH OF EAST HAM.

APPOINTMENT OF TEMPORARY TOWN PLANNING ASSISTANT.

Applications are invited from qualified persons for the temporary appointment of Town Planning Assistant, in the Borough Engineer and Surveyor's Department.

Candidates must be competent to undertake town planning work in all aspects of post-war redevelopment. Preference will be given to Associate Members of the Town Planning Institute or holders of an equivalent qualification.

The salary will be £600 per annum, rising by annual increments of £25 to a maximum of £700 per annum, plus war bonus, at present £59 16s. per annum, but the commencing salary may be at an incremental stage up to the maximum, according to the qualifications and experience of the person appointed.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, to the Council's conditions of service for temporary staff in force from time to time, and the successful candidate will be required to pass a medical examination.

Application forms are obtainable from the Town Clerk's office, and must be delivered to the undersigned, together with copies of three recent testimonials, not later than 29th March, 1946.

Canvassing in any form will be a disqualification.

H. A. EDWARDS,
Town Clerk.

Town Hall, East Ham, E.6.
7th March, 1946. 862

BOROUGH OF ROYAL LEAMINGTON SPA.

APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of Junior Architectural Assistant in the office of the Director of Housing.

The salary will be £255—£15—£300 per annum, plus cost-of-living bonus.

The appointment will be subject to the provisions of the Local Government and other Officers' Superannuation Act, 1937, and will be terminable by one month's notice.

Candidates should have passed the intermediate examination of the R.I.B.A., have had good housing experience, and be able to prepare half-inch and full-size details, etc.

Forms of application may be obtained from the undersigned, to whom applications are to be delivered by Saturday, 30th March, 1946.

J. SUTCLIFFE, B.Sc., A.M.I.C.E.,
Borough Engineer.

Town Hall, Leamington Spa.
3rd March, 1946. 853

GLAMORGAN COUNTY COUNCIL.

COUNTY PLANNING DEPARTMENT.

Applications are invited for the following appointments:—

(*a*) PRINCIPAL PLANNING ASSISTANT, at a commencing salary of £525 per annum, rising by annual increments of £25 to £600 per annum, plus cost-of-living bonus, at present £59 16s. per annum.

(*b*) Grade 1 PLANNING ASSISTANT, at a commencing salary of £425 per annum, rising by annual increments of £25 to £500 per annum, plus cost-of-living bonus, at present £59 16s. per annum.

Applicants should have had extensive experience in planning, and should have passed the Final Examination of the Town Planning Joint Examination Board, and, in addition, they should have obtained a B.Sc. (Eng.) degree or have passed the final examination of either:—

(1) Institution of Civil Engineers.
(2) Institution of Municipal and County Engineers.
(3) The Royal Institute of British Architects.
(4) The Chartered Surveyors' Institution.

Applicants must not be over 45 years of age on the 1st day of December, 1945, unless they have exceptional qualifications and are already in the permanent employment of a Local Authority.

Both appointments are subject to the Local Government Superannuation Act, and the successful candidate will have to pass a medical examination. The appointments will be subject to the County Council's general conditions of service, and will be determinable by one month's notice on either side.

Applications, accompanied by three recent testimonials, in a sealed envelope endorsed "County Planning Appointments," should be delivered to the County Planning Officer, Glamorgan County Hall, Cardiff, not later than 1st April 1946.

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

Applicants, who are members of H.M. Forces and serving abroad, are requested to cable the date of the despatch of their application. Telegraphic address: "Morgannwg, Cardiff."

D. J. PARRY,
Clerk of the County Council.

868

BOROUGH OF MALDEN AND COOMBE.

TOWN PLANNING ASSISTANT.

Applications are invited from Corporate Members of the Town Planning Institute for the above appointment, at a salary of £420 per annum, rising by three annual increments of £15 to £465 per annum, plus temporary cost-of-living bonus, at present £59 16s. per annum.

The appointment is terminable by one month's notice in writing on either side, and will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Preference will be given to candidates who in addition hold a recognised qualification as an architect, surveyor, or engineer, and candidates must have had experience in the preparation and administration of planning schemes.

Applications, giving particulars of age, experience, present and previous appointments, with salaries, accompanied by copies of not less than two recent testimonials, endorsed "Town Planning Assistant," should be delivered to the undersigned not later than Monday, 8th April, 1946.

The Council will provide the successful candidate with housing accommodation if deemed necessary.

Canvassing, directly or indirectly, will be a disqualification.

Candidates when making application must disclose in writing to the Town Clerk whether to their knowledge they are related to any member of or the holder of any office under the Council.

HAROLD E. BARRETT,
Town Clerk.

Municipal Offices, New Malden, Surrey.
13th March, 1946. 885

COUNTY OF RENFREW.

EDUCATION COMMITTEE.

Applications are invited for the appointment of an ARCHITECTURAL ASSISTANT, in the Master of Works' Department, at a salary of £350, rising by six annual increments to £450 per annum, plus current war bonus.

The above appointment is superannuable, and applicants will require to pass a medical examination.

Applications, stating date of birth, details of professional qualifications, experience (with particular reference to schools), and copies of recent testimonials, should be addressed to the undersigned not later than 28th March, 1946, at 10 a.m.

Applicants should also state when they will be available to take up duty.

ROBERT URQUHART,
County Clerk.

16, Glasgow Road, Paisley.
9th March, 1946. 860

COUNTY OF WARWICK.

ARCHITECT'S DEPARTMENT.

Applications are invited for the following posts:—

(1) CLERK OF WORKS. Salary at the rate of £343 per annum, plus cost-of-living bonus (at present £59 16s. per annum).

(2) JUNIOR ARCHITECTURAL ASSISTANT. Salary £255 per annum, plus cost-of-living bonus (at present £59 16s. per annum). These posts will at present be on a temporary basis. Applications, in applicant's own handwriting, giving full particulars as to age, experience, present employment (war service if any), and accompanied by not more than three copies of testimonials, to be sent to the County Architect, Shire Hall, Warwick, on or before the 30th March, 1946.

L. EDGAR STEPHENS,
Clerk of the Council.

Shire Hall, Warwick. 867

THE COUNTY COUNCIL OF CLACKMANNAN.

Applications are invited from qualified persons for the following appointments, in the County Architect's Department:—

(1) ARCHITECTURAL ASSISTANT, with experience in Local Authority Housing. Knowledge of town planning will be considered an advantage. Commencing salary will be at the rate of £325 per annum, plus appropriate war bonus.

(2) SURVEYOR, with previous experience in land survey, conversant with field surveying instruments, and thoroughly competent to carry out an extensive land survey. Salary will be at the rate of £350 per annum, plus appropriate war bonus.

The appointments will be subject to the Local Government Superannuation (Scotland) Act, 1937, and the successful applicants will require to pass a medical examination.

Applications, stating age, qualifications and experience, together with copies of not more than three recent testimonials, should be lodged with the undersigned not later than 26th March, 1946.

N. A. SCORGIE,
County Clerk.

County Buildings, Alloa.
21st March, 1946. 893

BOROUGH OF GRANTHAM.

HOUSING ARCHITECT'S DEPARTMENT.

APPOINTMENT OF TECHNICAL STAFF.

Applications are invited for the following appointments on the established staff:—

(*a*) SENIOR ARCHITECTURAL ASSISTANT. Salary £360 per annum, rising by annual increments of £15 to £405 per annum.

(*b*) JUNIOR TECHNICAL ASSISTANT. Salary in accordance with age, being £120 per annum at 19 years.

Cost-of-living bonus, at present 23s. a week, will be paid in addition to the basic salaries stated above.

Applicants for (*a*) should be Registered Architects, with good housing experience, used to making surveys, preparing layouts, sketch designs, details and working drawings, and specification writing. Experience in preparing bills of quantities for housing schemes will be an advantage.

Applicants for (*b*) should be neat and accurate draughtsmen, capable of working up sketches for working drawings and details, and used to making surveys and taking levels. Experience on housing schemes will be an advantage.

The candidates selected will be required to pass a medical examination before the appointments are confirmed, and to contribute under the Local Government Superannuation Act, 1937. The appointments will be terminable by one month's notice on either side.

Applications must be made in writing, giving age, details of training and experience, together with any qualifications, and copies of recent testimonials, to the Town Clerk, Guildhall, Grantham, and received not later than the first post on Tuesday, 9th April, 1946.

JOHN F. GUILE,
Town Clerk.

Guildhall, Grantham.
14th March, 1946. 896

COUNTY BOROUGH OF HALIFAX.

ASSISTANT ARCHITECTS.

Applications are invited for the appointment of Two Assistant Architects, each at a salary of £350 per annum, plus war bonus, at present £59 16s.

Applicants must be fully trained Architects and good draughtsmen, experienced in the preparation of plans, working drawings, details and specifications, and be capable of preparing estimates, also surveying and levelling. Preference will be given to candidates who have had experience of housing work and the preparation of bills of quantities.

The appointments will be subject to one month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937, and to the General Conditions of Service adopted by the Corporation. The successful candidates will be required to pass a medical examination.

Applications, stating age, qualifications, and detailed experience, accompanied by three recent testimonials, and endorsed "Assistant Architect," should be sent to the undersigned not later than first post Tuesday, 2nd April, 1946.

W. USHER,
Town Clerk.

Town Hall, Halifax.
13th March, 1946. 892

DERBYSHIRE COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

Applications are invited for the appointment of CONSTRUCTIONAL ENGINEER, at a salary of £625 per annum, rising by annual increments of £25 to £700 per annuh, plus cost-of-living bonus, at present £59 16s. per annum.

Applicants must be fully qualified, and have had considerable experience in the preparation of design calculations and details for steelwork, reinforced concrete and timber framed structures as applied to building, and should preferably have had experience in an Architect's office.

The person appointed will be a contributory employee under the provisions of the Local Government Superannuation Acts, and will be required to pass a medical examination.

The appointment will be terminable by one month's notice on either side.

Applications, stating age, present salary and position, qualifications and previous experience, accompanied by copies of three recent testimonials, should reach the undersigned not later than 5th April, 1946, in an envelope endorsed "Constructional Engineer."

F. HAMER CROSSLEY, Dipl. Arch., A.R.I.B.A.,
County Architect.

County Offices, Derby.
21st March, 1946. 891

CITY OF COVENTRY.

CITY ARCHITECTURAL DEPARTMENT.

Applications are invited for the appointment of a SENIOR ASSISTANT ARCHITECT, in the City Architectural Department, at a salary of £500 per annum, rising by annual increments of £20 to a maximum of £600 per annum, subject to satisfactory service, exclusive of cost-of-living bonus. Appointment subject to one month's notice on either side.

The appointment will also be subject to the provision of the Local Government Superannuation Acts, as amended in regard to annuities to widows by the Coventry Corporation Act, 1936, and a satisfactory certificate will be requisite from the Council's medical referee. The person appointed will be required to contribute to the Coventry Municipal Officers' Widows' and Orphans' Pensions Fund.

Application must be made on the form obtainable from the undersigned, and should be returned completed, together with copies of not more than three recent testimonials or names of three persons to whom reference may be made, not later than the 30th March, 1946, endorsed "Senior Assistant Architect."

Canvassing, directly or indirectly, will be a disqualification.

D. E. E. GIBSON,
City Architect.

1a, Warwick Row, Coventry.
21st March, 1946. 884

CITY OF CANTERBURY.

ARCHITECTURAL ASSISTANT.

Applications are invited for the appointment of a temporary Architectural Assistant, in the City Architect's Department, at a salary of £310 by £15 to £355 per annum, plus cost-of-living bonus, at present 23s. per week.

Preference will be given to candidates who are A.R.I.B.A.

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

Applications, endorsed "Architectural Assistant," giving age, full particulars of experience and qualifications, and accompanied by not more than three copies of recent testimonials, should be received by the City Architect not later than Friday, the 12th April, 1946.

J. BOYLE,
Town Clerk.

Municipal Buildings, Canterbury. 897

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 erection of a large number of houses and the construction of roads and sewers for the Corporation by operatives employed by the Department (*i.e.*, Direct Labour). The Department possesses extensive workshops, depots, plant, etc., and at present employs 3,000 men on its building and civil engineering operations.

As the construction of houses will form the major part of the Controller's duties, applicants should have had wide experience in the organisation and carrying out of large scale building contracts.

The appointment will be made, according to qualifications, within a salary scale £750—£25—£1,000, plus war increase, which on the minimum salary is at present £90 per annum, and on the maximum salary, £105 per annum. The position is a permanent one, and the successful applicant will be required to pass a medical examination for admission to the Corporation Superannuation Scheme.

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 23rd April, 1946.

RONALD BRADBURY,
Director of Housing.

Housing Department, 20, Trongate,
Glasgow, C.1. 899

Partnerships

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

ASSOCIATE, A.A.Dip. (age 33), recently released R.A.F., wishes to obtain active Partnership in established London firm; own connection and capital available. Box 898.

Architectural Appointments Vacant

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

EXPERIENCED Architectural Draughtsman required; must have a thorough knowledge of building construction, and be capable of preparing detailed working drawings and specifications from sketch designs for large commercial and industrial buildings; a knowledge of estimating and preparing of bills of quantities an advantage; salary according to age and experience. Write, stating age, qualifications, and full details of experience, to Box 805.

MEASURING SURVEYORS and ASSISTANTS required for work in the London area; must have experience in measurement and settlement of builders' accounts. Please apply, with full particulars of experience, salary required, and when free, to H. M. Doughty & Partners, Quantity Surveyors, 55, Pall Mall, Westminster, S.W.1. 790

ARCHITECTURAL or STRUCTURAL ENGINEERING DRAUGHTSMEN required for work in Building and Civil Engineering Contractors' London office. Write, giving details of experience and salary required, to Box 812.

ENGINEER requires Manager, having such practical and technical capacity in design and detailing for reinforced concrete engineering construction as applied to roofs, floors, and staircases as fit him to supervise and control the work of this department; must be able to conduct all technical correspondence and negotiations. Write, giving full particulars of past experience, qualifications, age, and salary required, to Box 845.

QUANTITY SURVEYOR required by large Multiple Organization, having head offices in the Oxford Street area; permanent position, carrying good salary and expenses. Write, in confidence, full details of experience and qualifications, to Box QS.3274, Everetts Advertising, Ltd., 10, Hertford Street, W.1. 828

ARCHITECT'S ASSISTANT, not less than 3 years' office experience, required by important Industrial Company. Replies in strict confidence, stating experience, qualifications, and salary, to Box 836.

INTERNATIONAL Correspondence Schools require for immediate full-time employment Junior Architectural Assistant; qualified by R.I.B.A. examination. Write or 'phone (HOLborn 3971), stating age, experience, and salary required, to Director of Instruction, International Correspondence Schools, 71, Kingsway, W.C.2. 843

DRAUGHTSMAN wanted by London roofing contractors specialising in asbestos cement sheeting and tiling; excellent opportunity for young, energetic, and fully experienced man. Box 830.

ARCHITECTURAL ASSISTANT required immediately in the South; must be good draughtsman. Apply, with copies of testimonials, stating age, experience, and salary, to Box 900.

JUNIOR ASSISTANT required by Architects and Diocesan Surveyors in West Country; experience in making surveys and working drawings. Write, stating age, training, and salary required. Box 887.

ARCHITECTURAL ASSISTANT required for Industrial, Housing, and General Work; able to prepare sketch plans, working drawings and surveys, with knowledge of quantities. Write, stating salary and when available, to Alan Sunderland, Architect and Surveyor, Manor Buildings, Bradford, or 6, Lord Street, Keighley, Yorks. 888

DRAUGHTSMEN required for Builder's Office, East Midlands; plans, quantities, completion of contracts; good opportunity; house vacant. Apply, stating salary, Box 890.

BATH ARCHITECT requires the services of a fully qualified Senior Assistant, and of one who has passed Intermediate R.I.B.A. Box 871.

ARCHITECTURAL DRAUGHTSMAN required in Drawing Office of important industrial Company in Maidstone district; position offers good prospects for suitable applicant. Write, stating age, experience, and salary required, to Box 872.

ARCHITECTURAL ASSISTANT, efficient draughtsman, with some knowledge detail design, specifications and surveys; interesting and secure position, with opportunity advancement; salary £260-£300, according suitability. Write full particulars to Architect, Estate Department, Northampton Brewery Co., Ltd., Northampton. 875

CHIEF ARCHITECTURAL ASSISTANT required in W. Riding, Yorks office; must be fully experienced in design, construction, supervision of works, and have knowledge of quantities; permanent position; salary £400-£500, according to experience and qualifications. Write with all details to Box 889.

QUANTITY SURVEYORS (Senior and Junior), experienced in preparation of estimates, contract documents and bills, also measurement of work, required by Main Line Railway Co.; engagement on temporary basis at from £7 7s. to £10 10s. per week, plus war advance (at present 28s. per week), according to qualifications and experience. Applications, stating age, experience, etc., with copies of recent testimonials, to Box 879.

QUALIFIED ARCHITECTURAL ASSISTANT required by East Midlands brewery; experience of licensed premises design, alterations, maintenance and general drawing office routine essential; must be neat and quick draughtsman; salary £450 to £550 per annum, according to experience; please state if married, age, qualifications, and when available, and enclose copies of testimonials. Box 874.

ASSISTANT ARCHITECTS (Senior and Junior), experienced in the design of modern buildings, required by Main Line Railway Co.; engagement on temporary basis at from £7 7s. to £10 10s. per week, plus war advance (at present 28s. per week), according to qualifications and experience. Applications, stating age, experience, etc., with copies of recent testimonials, to Box 880.

WANTED, for a Railway Civil Engineer's Office in Edinburgh, Temporary Architectural Assistants, capable of preparing working drawings from rough sketches, estimating and supervising works in progress. State age, qualifications and salary expected to Box 881.

JUNIOR ARCHITECTURAL ASSISTANT required for South-West Country Office; state age, experience, and salary required. Box 882.

THE ALUMINIUM DEVELOPMENT ASSOCIATION desires to make the following Senior appointment to its permanent staff: Architect, with some industrial design experience. The successful applicant will be required to carry out development investigations on the application of aluminium and its alloys; knowledge of light alloys, whilst not essential, is desirable, but facilities are available for close contact with the aluminium industry; salary will be in accordance with the applicants' qualifications and experience. Applications, giving full details, should be forwarded to the Secretary of the Association, at 67, Brook Street, London, W.1. 886

Architectural Appointments Wanted

ARCHITECTURAL ASSISTANT; willing to undertake part-time work in conjunction with own studies (R.I.B.A.); age 30; experienced in war damage, specifications, schedules, surveys, etc. Box 315.

ARCHITECTURAL DRAUGHTSMAN desires situation in University town; 6 years with architects and surveyors; experienced in public and private buildings, housing, surveying and levelling, working drawings, details, etc.; salary about £360. Box 323.

ARCHITECTURAL and SURVEYING ASSISTANT; age 24; 4 years' training; 4 years' office experience; Part I. R.I.B.A. final. London or Southern England. Box 330.

SECOND Year Architectural Student requires part-time drawing work, tracings, etc.; carried out in own time; London district. Apply Box 329.

ARCHITECT (31), Registered, A.R.I.B.A., B.A.(Cantab.), ex-Major (Infantry), 3½ years on staff, M.B.E., 3 years' varied architectural experience, including domestic, school and hospital work, just demobilized, seeks responsible position, with prospects, London; ready start middle of April. Box 321.

FEMALE TRACER requires position in an Architect's Office in the West End for general draughting duties. Box 322.

OVERSEAS Junior Architectural Assistant, with 6 years' practical experience, Prob. R.I.B.A., studying for Special Final Exam., will be in England very shortly, and seeks temporary employment. Apply, stating salary offered, "Britisher," c/o The Architects' Journal, Box 324.

YOUNG MAN (18), exempt from Military Service, requires post in London Architect's Office; good draughtsman, able to make surveys, prepare working drawings, details, etc.; good knowledge of building construction; 2 years' experience; salary by arrangement. Box 325.

JUNIOR (16 years) seeks position as Draughtsman to Architect; specimens of work available; knowledge of building construction and surveying. J. Christenson, 2, Park Mansions, Alltisen Road, N.W.8. 326

ARCHITECTURAL DRAUGHTSMAN (35). 10 years' experience of large variety of work, requires permanent or temporary position immediately; good, quick draughtsman, prepare all necessary drawings, surveys, supervision of building work; moderate salary required. Box 327.

JUNIOR ARCHITECTURAL ASSISTANT (20), exempt from National Service, seeks post in Bradford, Yorks; 2 years' experience survey, construction, planning, alterations, and general office work; available immediately. Box 328.

Other Appointments Vacant

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

LIGHTING Fittings and Illuminations, Commercial and Technical Work.—Large Electrical Manufacturers require for London office a well-educated British subject, with electrical and illumination training and commercial experience; varied work, sales correspondence, lighting schemes, etc.; permanent and progressive post. Particulars and salary required to Box 818.

DESIGNER of Commercial and Industrial Lighting Fittings, for Fluorescent, Discharge and Tungsten Lamps, required for London by large electrical manufacturers; British national, with electrical and illumination training and practical experience. State salary required and full particulars to Box 788.

Other Appointments Wanted

Four lines or under 2s. 6d. each additional line, 6d.

ARCHITECTURAL Storefitting Draughtsman offers spare-time service to Architects; wide experience in all services; moderate fees. Box 770.

For Sale

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

ELECTRICITY FOR COUNTRY HOUSE.—Complete equipment for Sale, including 20 h.p. Oil Engine, Electric Generator and Booster Set, Switchboard, Battery and Motors, 200 volts supply; in good running order; inspection.—Apply Bally, Grundy & Barrett, Ltd., Electrical Engineers, Cambridge. 685

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. Canonbury 2061-3. 584

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

FLAT FOR EXCHANGE. — London-Birmingham; S.C. Flat, N. London, consisting bedroom, dining room, large kitchen, bathroom, separate w.c., etc.; rent £73 10s. p.a.; required similar Birmingham area; would accept house. Write Hillier, 48, Addison Road, Birmingham. 894

BUILDING ESTATE DEVELOPMENT.—Ample funds available; liberal advance on cost of land; then building finance; then up to 90 per cent. long term mortgages to owner-occupiers, free of brokerage; low interest rates and charges. Chas. B. Buxton, Ltd., Local Authorities Loans Brokers, 9, Clements Lane, Lombard Street, E.C.4. 588

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

£5,000 to £250,000

INVESTMENT TRUST wishes to purchase PROPERTY LET to good tenants. Details of Houses, Flats or Shops to John Swait & Sons, Surveyors, The Mall, W.5. EAL. 2866 804

FACTORY wanted urgently by Company engaged on Export drive; covered area to be not less than 20,000 square feet, on a site area of at least 2½ acres; requisitioned property would be considered; confidential information leading to the above suitably rewarded; Greater London area if possible. D. Sebel & Co., Ltd., 55, Lant Street, S.E.1. HOP 3803. 844

SYNDICATE, specialising in the design and detail of reinforced concrete and steel structures for industrial and building work, is now in a position to undertake further commissions. Competitive designs for foundations; floors; water towers; bunkers; silos; retaining walls; chimneys; framed buildings; factories, including plant layout, etc.; quantities abstracted; specifications prepared; plans submitted, with calculations where required; approximate estimates free. Write in confidence, Box 895.

M. & E. EQUIPMENT (CONSTRUCTIONS), LTD., 71, Lots Road, Chelsea, S.W.10 (Tel. No.: Flax 1423), are prepared to accept work for:—Spraying: Cinemas and Hotels our speciality—we have expert spraying operatives, with the latest plant and equipment. Plants for Hire: We can supply petrol and electric compressors—£5 weekly. Steel Erection: We have trained specialists in light steel erection, sheeting, metal lathing, steel rope, and tube construction, etc. 859

JENNIFER WRIGHT, A.A.Dipl., can give spare-time assistance to Architects from own home. 11, Campden Hill Road, W.8; ring Western 8483. 864

REINFORCED CONCRETE SPECIALIST (B.Sc., A.M.Inst.C.E.), with wide experience of architectural and industrial projects; resident in N.W. England; services available privately for the preparation of schemes and working details. Write Box 876.

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

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 of Correspondence and Personal in Studio. 115, Gower St., London, W.C.1 (Tel.: Euston 3906), and at 23, St. James's St., Derby (Tel.: 45648).

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

LANDSCAPE DESIGN

A two years' evening course in landscape design is being held at the School of Planning, 34, Gordon Square, W.C.1. The second term opens on **APRIL 8th.**

Lectures will be given on :—

Introduction to Landscape Design • Garden Construction • Plant Material • Ecology

Enrolments can be received for individual courses o lectures at the rate of Two Guineas for ten lectures. 285

Alphabetical Index to Advertisers

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