THE ARCHITECTS' JOURNAL

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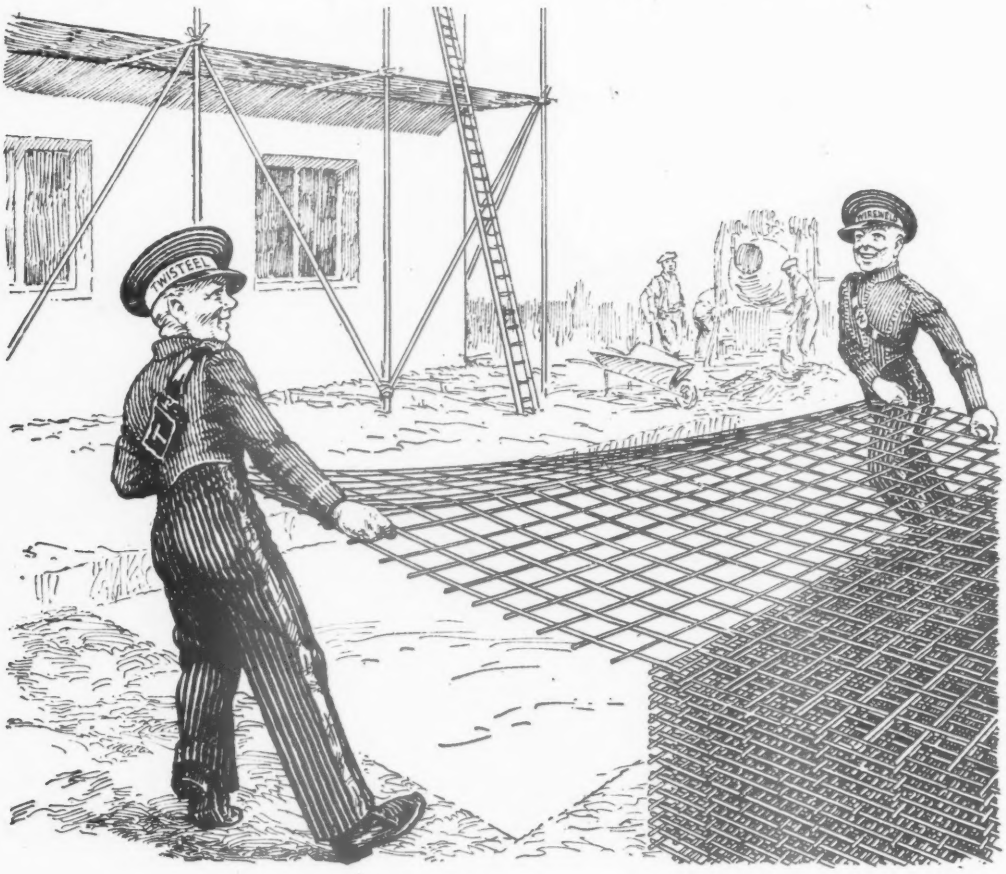
★ The war has both multiplied the number of Official Departments and encouraged Societies and Committees of all kinds to become more vocal. The result is a growing output of official and group propaganda. A glossary of abbreviations is now provided below, together with the full address and telephone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

AA	Architectural Association. 34/6, Bedford Square, W.C.1.	Museum 0974
ABT	Association of Building Technicians. 5, Ashley Place, S.W.1.	Victoria 0447-8
APRR	Association for Planning and Regional Reconstruction. 32, Gordon Square, W.C.1.	Euston 2158-9
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Welbeck 9738
ASB	Architectural Science Board of the Royal Institute of British Architects, 66, Portland Place, W.1.	Welbeck 6927
BC	Building Centre. 23, Maddox Street, W.1.	Mayfair 2128
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association, Shobnall Road, Burton-on-Trent.	Burton-on-Trent 3350
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1.	Euston 5385
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOE	Board of Education. Belgrave Square, S.W.1.	Sloane 4522
BOT	Board of Trade. Millbank, S.W.1.	Whitehall 5140
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 2246
BSA	British Steelwork Association. 11, Tothill Street, S.W.1.	Whitehall 5073
BSI.	British Standards Institution. 28, Victoria Street, S.W.1.	Abbey 3333
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Sloane 5255
CEMA	Council for the Encouragement of Music and the Arts. 9, Belgrave Square, S.W.1.	Sloane 0421
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.	Sloane 4280
CSI	Chartered Surveyors' Institution. 12, Great George Street, S.W.1.	Whitehall 5322
DIA	Design and Industries Association. Central Institute of Art and Design, National Gallery, W.C.2.	Whitehall 7618
DOT	Department of Overseas Trade. Dolphin Square, S.W.1.	Victoria 4477
EJMA	English Joinery Manufacturers Association (Incorporated), Sackville House, 40, Piccadilly, W.1.	Regent 4448
FMB	Federation of Master Builders. 23, Compton Terrace, Upper Street, N.1.	Canonbury 2041
GG	Georgian Group. 55, Great Ormond Street, W.C.1.	Holborn 2664
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 75, Eaton Place, S.W.1.	Sloane 3158
ICE	Institution of Civil Engineers. Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers, Savoy Place, W.C.2.	Temple Bar 7676
IOB	Institute of Builders. 48, Bedford Square, W.C.1.	Museum 7197
IRA	Institute of Registered Architects. 47, Victoria Street, S.W.1.	Abbey 6172
ISE	Institution of Structural Engineers. 11, Upper Belgrave Street, S.W.1.	Sloane 7128-29
HPS	Housing Production Society. 1, Old Burlington Street, W.1.	Regent 3380
LIDC	Lead Industries Development Council. Eagle House, Jermyn Street, S.W.1.	Whitehall 7264
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1.	Museum 3767
MARS	Modern Architectural Research. 46, Sheffield Terrace, W.8.	Park 7678
MOA	Ministry of Agriculture and Fisheries, 55, Whitehall, S.W.1.	Whitehall 3400
MOH	Ministry of Health. Whitehall, S.W.1.	Whitehall 4300
MOI	Ministry of Information. Malet Street, W.C.1.	Euston 4321
MOLNS	Ministry of Labour and National Service. St. James' Square, S.W.1.	Whitehall 6200.
MOS	Ministry of Supply. Shell Mex House, Victoria Embankment, W.C.	Gerrard 6933
MOT	Ministry of Transport. Berkeley Square House, Berkeley Square, W.1.	Abbey 7711
MOTCP	Ministry of Town and Country Planning. 32-33, St. James's Square, S.W.1.	Whitehall 8411
MOW	Ministry of Works. Lambeth Bridge House, S.E.1.	Reliance 7611
NBR	National Buildings Record. 66, Portland Place, W.1.	Welbeck 1881
	All Souls' College, Oxford.	Oxford 48809
NFBTE	National Federation of Building Trades Employers. 82, New Cavendish Street, W.1.	Langham 4041
NFBTO	National Federation of Building Trades Operatives. 9, Rugby Chambers, Rugby Street, W.C.1.	Holborn 2770
NFHS	National Federation of Housing Societies, 13, Suffolk Street, S.W.1.	Whitehall 2881/2/3
NT	National Trust for Places of Historic Interest or Natural Beauty. 7, Buckingham Palace Gardens, S.W.1.	Sloane 5808
PEP	Political and Economic Planning. 16, Queen Anne's Gate, S.W.1.	Whitehall 7245
PWB	Post War Building, Directorate of. Ministry of Works, Lambeth Bridge House, S.E.1.	Reliance 7611
RCA	Reinforced Concrete Association. 91, Petty France, S.W.1.	Whitehall 9936
RIBA	Royal Institute of British Architects. 66, Portland Place, W.1.	Welbeck 5721
RS	Royal Society. Burlington House, Piccadilly, W.1.	Regent 3335
RSA	Royal Society of Arts. 6, John Adam Street, W.C.2.	Temple Bar 8274
SPAB	Society for the Protection of Ancient Buildings. 55, Great Ormond Street, W.C.1.	Holborn 2646
TCPA	Town and Country Planning Association. 28, King Street, Covent, Garden, W.C.2	Temple Bar 5006
TDA	Timber Development Association. 75, Cannon Street, E.C.4.	City 6147
TPI	Town Planning Institute. 11, Arundel Street, Strand, W.C.2.	Temple Bar 4985



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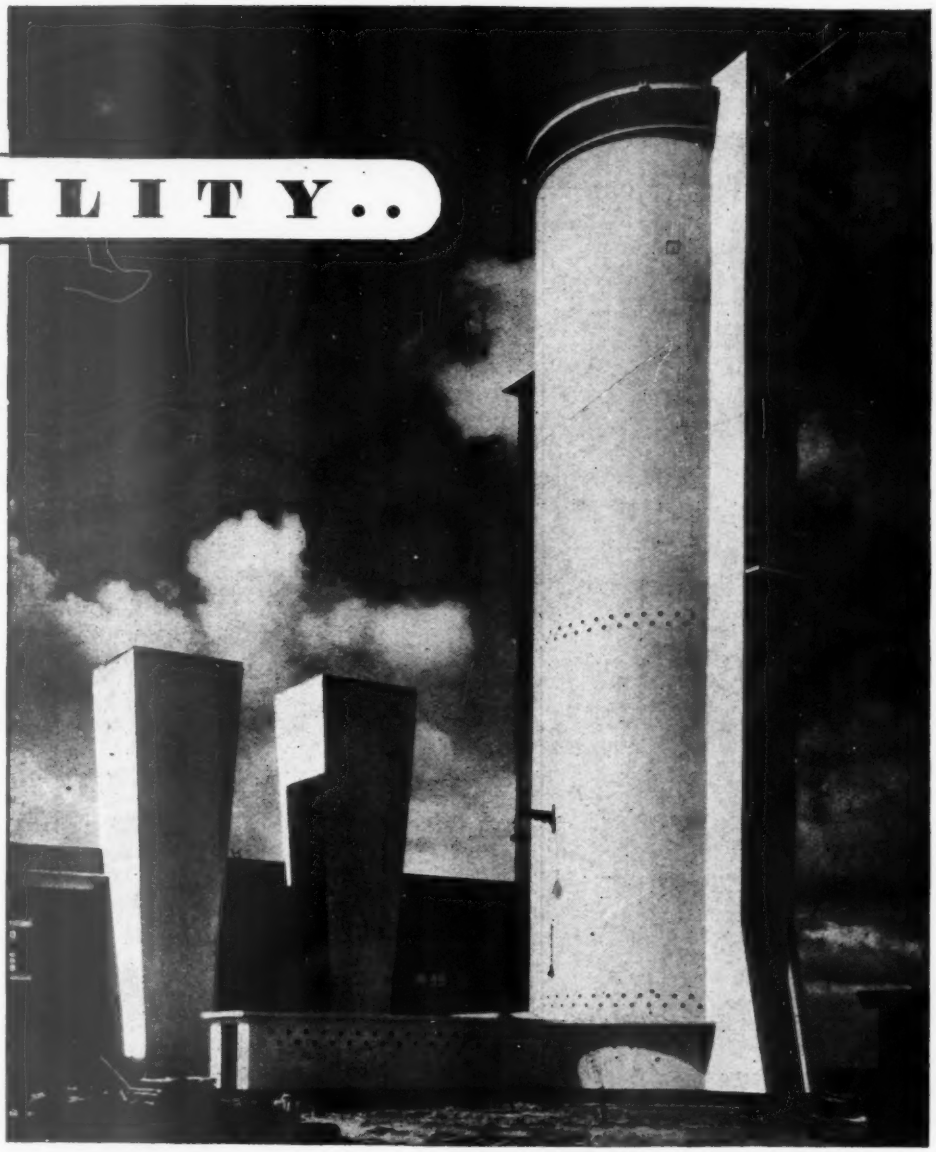
Alphabetical Index to Advertisers

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

UTILITY..



TIME was when Utility suggested drabness, even downright ugliness. As with many other words, a subtle change in meaning has occurred during recent years. Utility today can be coupled with Beauty—Beauty shorn of unnecessary ornament and typified by clean lines and suitability for a particular function. Representative of present-day Utility are these pit-head buildings, the clear-cut lines of which are characteristic of reinforced concrete. Easily adaptable to the needs of varying industries and localities, this material offers the industrial architect wide scope for combining Utility of purpose with Beauty of form. Added advantages of reinforced concrete are its great structural strength, resistance to fire, ease and speed of erection and low maintenance costs.

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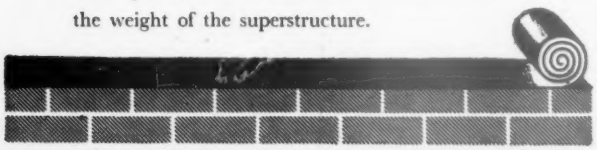

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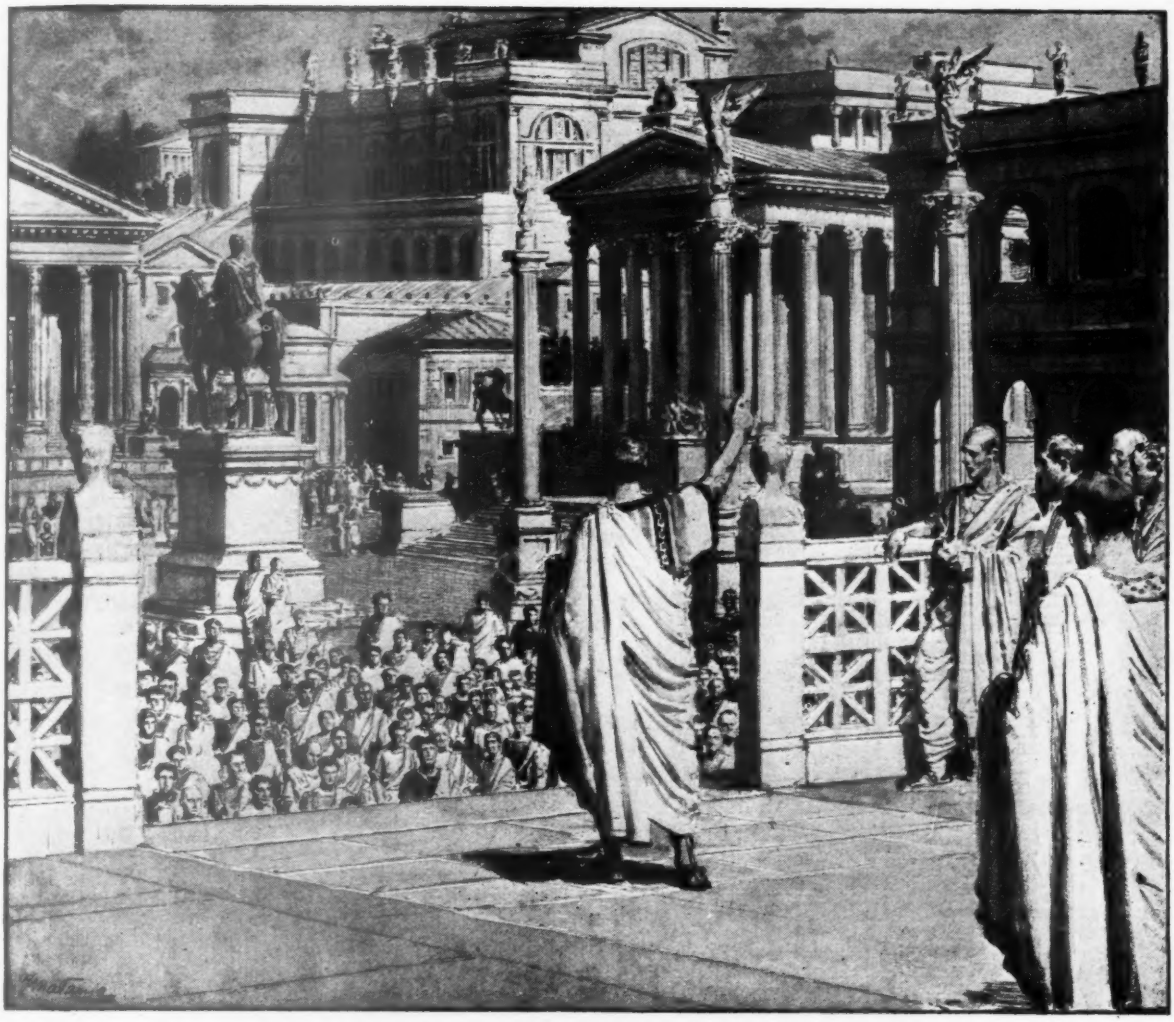

THE ROMAN FORUM, AS SEEN FROM AN ORATOR'S ROSTRUM

The Romans inherited by conquest the collected wisdom and craftsmanship of many centuries' search and discovery. For, as power shifted from race to race the culture of each was woven in the life pattern of its successor.

The Roman wove the strongest threads of his heritage into a design which is still traced in the plan of modern life.

But those who, centuries before, first spun threads of knowledge from the flax of discovery, are the men to whom posterity owes so much. They were astronomers from Carthage—goldsmiths from Memphis—architects and chemists from Babylon and Persepolis—philosophers and scientists from Athens. They, in their turn, were debtors—owing their energy to weather that was always kind.*

They lived in a climatic belt where areas of moderate humidity coincided with a yearly average temperature of 70° F. For 4000 years no nation outside this belt contributed to civilisation's progress. Then the Romans developed the hypocaust. This primitive central heating is recognisable as a rudimentary function of Air Conditioning and its use in the "unfriendly" climates became a vehicle for the extension of Roman civilisation.

The modern analogy is supplied by the Carrier installation, producing in any enclosed space, in any climate, an atmosphere in which we may live and work with maximum comfort and efficiency.

** Since that time it is significant that deterioration in climate has been followed by deterioration in national prosperity and world influence.*

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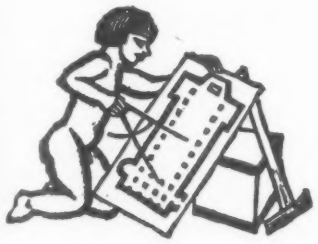
In common with every other periodical this JOURNAL *is rationed to a small part of its peace-time needs of paper. For this reason it is virtually impossible for Newsagents to accept new orders for the* JOURNAL *for the time being, and the Publishers are also now unable to enter new subscriptions. Intending subscribers should, however, send in their names either to their Newsagent or direct to the Publishers to be recorded on the "waiting list" when they would be advised as soon as a vacancy occurs. The annual post free subscription rate is £1 15s. 0d.. Single copies, 9d., postage 2d. Special numbers, price 1s. 6d. are included in the annual subscription. 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 extra. Goods advertised in the* JOURNAL, *and made of raw materials now in short supply, are not necessarily available for export.*



DIARY FOR JULY AUGUST AND SEPTEMBER

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

BISHOP'S STORTFORD. *When We Build Again.* Exhibition and film. At the Training College Hall. (Sponsor, TCPA in collaboration with Messrs. Cadbury Bros.). JULY 6-8

BRIGHOUSE. *Rebuilding Britain Exhibition.* At the Gas Showrooms. Guide lecturer, Miss Ivor Jones. (Sponsor, BIAE). JULY 6-8

CHELMSFORD. *The English Town: Its Continuity and Development,* Exhibition, and *When We Build Again,* Film. (Sponsor, TCPA.) SEPT. 1-9

GRANTHAM. *The English Town: Its Continuity and Development.* Exhibition. At the Guildhall. (Sponsor, TCPA.) JULY 6-26

KETTERING. *The Englishman Builds Exhibition.* At the Museum and Art Gallery. Guide lecturer, Miss M. McLeish. (Sponsor, BIAE). JULY 6-8

LEEDS. *When We Build Again* and *Homes of To-morrow.* Exhibition and film. (Sponsor, TCPA.) JULY 6-22

LLANDYBIE, SOUTH WALES. *When We Build Again.* Exhibition and film. At the National Welsh Eisteddfodd. (Sponsor, TCPA in collaboration with Messrs. Cadbury Bros.) AUG. 7-11

LONDON. *RA Exhibition.* Weekdays 9.30 a.m. to 7 p.m. Sundays 2 to 6 p.m. Admission: One Shilling. JULY 6-AUG. 7

National Buildings Record Exhibition. At the National Gallery. Photographs of buildings of architectural interest throughout the country taken during the past three years for record purposes. Most parts of England, from Northumberland to Cornwall, are represented and the subjects range from the Central Tower of Durham Cathedral to Georgian wallpaper in a house at Falmouth. (Sponsor, National Buildings Record.) 10 a.m. to 12.30 p.m., 2.15 p.m. to 6 p.m. JULY 6-15

Breughel Reproductions Exhibition. At the Geffrye Museum, Kingsland Road, E.2. A collection of reproductions of paintings by Pieter Breughel. (Arranged by CEMA.) Open daily, except Sundays and Mondays, from 11 a.m. to 8 p.m. (10 a.m. to 7 p.m. on Saturdays). JULY 6-8

Sir William Jowitt, K.C., M.P. *The Government's White Paper on the Control of Land Use.* At the Chartered Surveyors' Institution, 12, Great George Street, Westminster, S.W.1. 3 p.m. JULY 18

Sir Albert Howard. *Fresh Food and Town Planning.* At 2, Savoy Hill, Strand, W.C.2. Chairman, Lord Portsmouth. (Sponsor, TCPA.) 1.15 p.m. JULY 20

Reconditioning England Exhibition, 1944. At St. Martin's School of Art, 109, Charing Cross Road, W.C.2 JULY 24—AUGUST 7

F. J. Osborn. *Preservation and Progress.* At a meeting to be held by TCPA in conjunction with *Reconditioning England* Exhibition at St. Martin's School of Art, Charing Cross Road, W.C.2. Chairman, Lord Harmsworth. 3 p.m. JULY 25

London Master Builders' Association Half-Yearly Meeting. At the Connaught Rooms. Mr. H. C. Harland, President of the Association, will preside. Mr. Henry Willink, M.P., Minister of Health, is to be the guest of honour. JULY 27

Federation of Master Builders. Luncheon meeting preceding Fourteenth Quarterly Meeting. At the Connaught Rooms, Great Queen, Street, W.C.2. Guest of Honour, Lord Portal, Minister of Works. 12.45 for 1 p.m. JULY 27

NEW MALDEN, SURREY. *The English Town: Its Continuity and Development.* Exhibition. At the Public Library. (Sponsor, TCPA.) AUG. 19-26

PEMBREY. *When We Build Again.* Exhibition and Film. (Sponsor, TCPA in collaboration with Messrs. Cadbury Bros.) AUG. 5-15

SHIPLEY. *Royal Sanitary Institute. Sessional Meeting.* Chairman, Professor J. Johnstone Jervis, M.D., D.P.H. (Member of Council). Hon. Local Secretary, Dr. E. D. Irvine, Public Health Department, Town Hall, Shipley, Yorkshire. 10.15 a.m. At the Institute, Victoria Road, Saltaire. Welcome by Councillor C. M. Smith, J.P. (chairman of the Shipley UDC). *Post-War Housing—the Short View and the Long,* by P. J. Williams, Senior Regional Architect, Ministry of Health. Discussion opened by Dr. J. J. Buchan, Medical Officer of Health, Bradford. *The Future of County Districts as Units of Local Government Administration,* by H. S. Haslam, Deputy Clerk, Shipley. Discussion. 1 p.m. Luncheon, by invitation of the Shipley UDC in the York Room, Saltaire Institute (tickets essential). 2.30 p.m. (*a*) Visit to Graincliffe Reservoir: (subject to transport being available); or (*b*) Visit to Prefabricated BCF Nursery, Prefabricated School Canteen, and School Clinic, Somerset House, Manor Lane, Shipley, for demonstrations of Speech Therapy and Audiometric Testing.

NEWS

THURSDAY, JULY 6, 1944
No. 2580. VOL. 100

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.

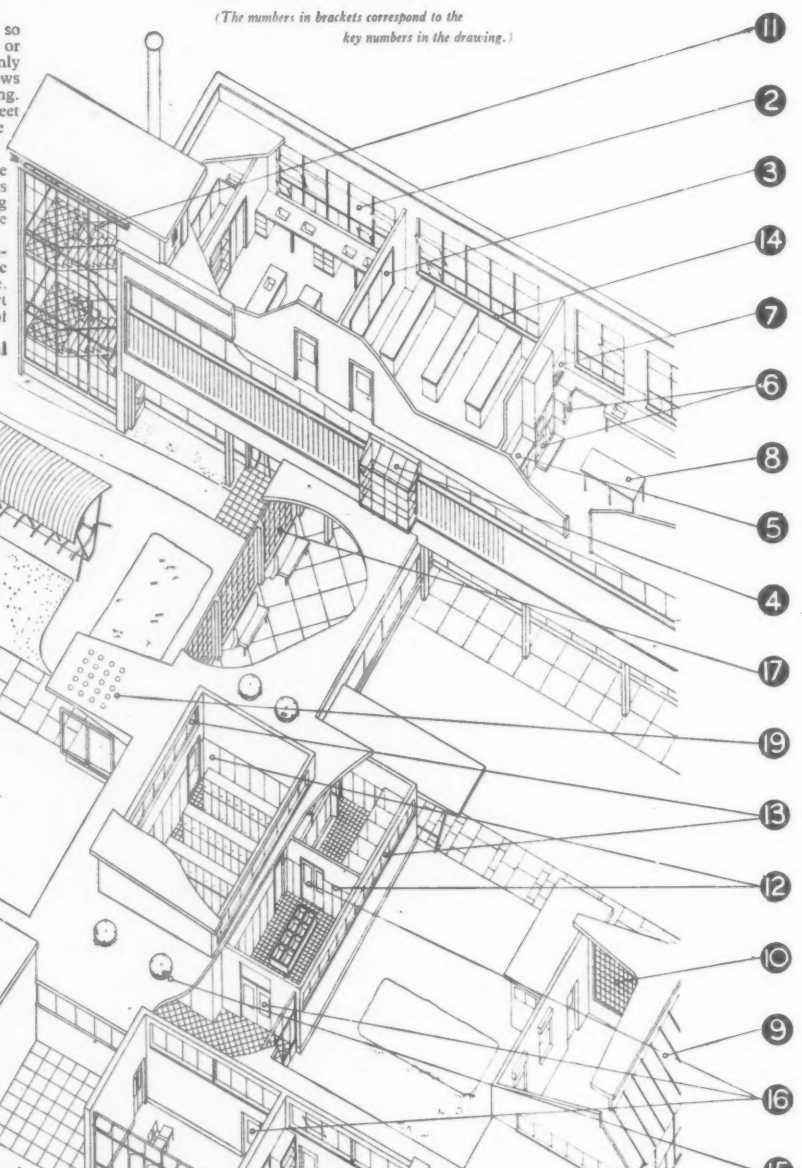
The Scale of ARCHITECTS' FEES for Speculative Builders' Work for a Minimum of Ten Houses printed on pages 755-756 of the 1939-40 RIBA Kalendar, has been formally withdrawn by the RIBA Council as being inapplicable to present-day conditions. The Housing Committee has been asked to consider the question of whether a revised scale should be issued.

Brighton Town Council is to be asked to requisition UNOCCUPIED HOUSES considered suitable for accommodating families at present inadequately housed. The scheme is subject to the prior consent of the Ministry of Health. There are 530 persons on a waiting list for council houses and no fewer than 1,967 vacant houses of a rateable value of less than £30. These figures are given in the report of the Medical Officer of Health (Dr. Cramb), who states the working-class population, at present earning more money, have moved from pre-war dilapidated houses to more recently-built property.

FACTS ABOUT GLASS FOR ARCHITECTURAL STUDENTS

SPECIFICATION FOR GLASS IN SENIOR SCHOOLS

(The numbers in brackets correspond to the key numbers in the drawing.)



CLASSROOMS *Windows:* Should be so distributed as to light every table or desk and the whole of the room evenly and sufficiently. Heads of all windows should be carried close up to the ceiling. (1): ¼" Polished Plate Glass or Sheet Glass, according to the size and type of window used.

SCIENCE ROOM *Windows:* The whole of the outside wall should be treated as a "window wall" with windows coming down to bench level and reaching to the ceiling. (2): ¼" Polished Plate Glass.
Blackboards: Behind the demonstration bench (3): Black Glass or Primrose "Vitrolite" with special matt surface, which eliminates glare. (See Report No. 7 of the National Institute of Industrial Psychology.)
Wardian case (4): 24 oz. Horticultural Glass.

HOUSECRAFT ROOM *Hotplate* (5): Toughened Glass.
Domestic cookers (6): "Armourplate" Glass door permits examination of the contents of the oven without opening the cooker door.
Walls: Hygienic finish up to 5 ft. high. (7): "Vitrolite" provides a clean, hygienic surface. It is unaffected by water, soap, grease or ordinary stains.
Table (8): "Vitrolite" top.

ART ROOM Lighting from the north side is desirable.
Windows: (9) Georgian Wired Cast or Polished Georgian Wired. (10): Hollow Glass Bricks provide diffused light with thermal and sound insulation.

STAIRCASES Should be well lighted and of fire-resisting material.
(11): Georgian Polished Wired Glass. Wired Glass provides daylight with protection against the spread of fire. (See A.R.P. Handbook No. 13, Fire Protection.)

CLOAKROOMS AND LAVATORIES *Walls* (12): Should be lined to a height of about 5 ft. with a hard, smooth surface which can be readily washed: "Vitrolite."
Windows (13): Pinhead Morocco Glass or other type of formal pattern Figured Rolled Glass provides privacy with light diffusion.

WINDOW SILLS Sills should be treated so as to facilitate the removal of dust and dirt. (14): "Vitrolite."

FLAT ROOFS AND CORRIDORS (15): Rough Cast Domes fitted direct to a timber or concrete curb. Easily cleaned, maintenance negligible, provide direct top lighting.

DOORS (16): Wired Reinforced Glass panels will provide safeguards against damage caused by broken glass due to slamming, etc.: Georgian Wired Cast or Polished Georgian Wired.

PARTITIONS AND CORRIDORS (17): Hollow Glass Brick walls provide a diffused "all-over" light with privacy, sound insulation and thermal efficiency.

COVERED APPROACHES (18): Georgian Wired Cast Glass. Wired Glass provides light with safety.

CANOPY OR BALCONY (19): "Armourlight" Toughened Lenses fixed in reinforced concrete.

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

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

from AN ARCHITECT'S *Commonplace Book*

WANTED—A MODULUS OF BEAUTY.[*From* Fine Building, *by Maxwell Fry* (*Faber & Faber*]). There remains a final enjoyment for the architect as yet insufficiently stressed by writers on contemporary planning. I refer to the actual resolving of the various structures and buildings into a coherent whole. If there is one thing we miss in our urban life to-day it is sense of coherence or unity. We live in a jumble of scales each competing for notice, and our eyes and brains grow tired of adjusting themselves from one to another level. We pass under a railway arch of brutal size and portent to find ourselves face to face with a branch bank dressed out in a fiddling refinement of some dead classic style. No sooner is this passed than we are invited to notice the genuine adze markings on the oak beams of a row of new-built antiques, with every expectation of this leading us to the bared-teeth opening of the local Odeon cinema. . . . The experience is unrestful to a degree. Now unless a single scale runs through every building and structure and every grouping of them, beauty will elude us. Congruity is the essence of urban beauty. The search for a modulus of beauty goes on in every age, but it is not to be applied. It must come from within. This sense of oneness you may feel most strongly in Bath, that most beautiful of pleasure cities ; and less strongly in what remains of mediæval York. It fairly sings to you in parts of the West End of London, and for me most movingly when I mount the Duke of York's steps. The rhythm of that composition of column, steps and receding blocks of buildings, part answering part down to the minutiæ of detailed modelling, is like music.

★★

Following are the RIBA COUNCIL ELECTION RESULTS.

Here is an extract from the Scrutineers' Report giving the result of the election for seven Members of Council, five Associate Members of Council and one Licentiate Member of Council. A complete list of the new Council will be issued later by the RIBA. *President*: Percy E. Thomas (Cardiff) (unopposed). *Past Presidents*: W. H. Ansell (unopposed), H. S. Goodhart-Rendel (unopposed). *Members of Council. Elected*: 1, J. Hubert Worthington, 1,266 votes ; 2, C. Cowles-Voysey, 1,255 votes ; 3, Sir Charles H. Reilly, 1,067 votes ; 4, Herbert J. Rowse, 1,036 votes ; 5, F. R. S. Yorke, 989 votes ; 6, John Murray Easton, 983 votes ; 7, A. W. Kenyon, 745 votes. *Not Elected*: 8, F. Gibberd ; 9, Stanley A. Heaps ; 10, T. P. Bennett ; 11, J. Alan Slater ; 12, William Milburn ; 13, A. W. Moberly ; 14, C. H. Aslin ; 15, Norval R. Paxton ; 16, C. W. C. Needham ; 17, Basil Ward ; 18, Gordon Stephenson ; 19, Kenneth M. B. Cross ; 20, Lt.-Col. H. P. Cart de Lafontaine ; 21, J. B. Surman ; 22, Geo. Fairweather ; 23, Thomas E. Scott ; 24, F. J. Horth ; 25, M. Hartland Thomas ; 26, D. H. McMorran ; 27, W. F. Granger ; 28, Alexander T. Scott ; 29, Digby L. Solomon ; 30, G. G. Macfarlane ; 31, E. J. Williams ; 32, H. L. V. Lobb. *Associate Members of Council. Elected*: 1, D. E. E. Gibson, 1,551 votes ; 2, Professor W. G. Holford, 1,403 votes ; 3, Ralph S. Tubbs, 1.090 votes ; 4, Joseph S. Allen, 878 votes ; 5, Colin Penn, 839 votes ; *Not Elected*: 6, A. D. Connell ; 7, Henry Braddock ; 8, R. H. Matthew ; 9, A. Rankine ; 10, Arthur Ling ; 11, C. G. Kemp ; 12, Herbert J. Cook ; 13, Denis Poulton ; 14, A. Calveley Cotton ; 15, B. H. Peake. *Licentiate Member of Council. Elected*: 1, Bernard H. Cox, 762 votes. *Not Elected*: J. W. M. Dudding ; 3, H. G. Kemp.

To be known as the JORDAN VALLEY AUTHORITY, a £37,500,000 irrigation and hydro-electric project is planned in Palestine.

The project is sponsored by the leaders of the Zionist movement. This has been announced in New York by Mr. Emmanuel Heumann, spokesman for the Commission on Palestine Surveys, says the *Daily Telegraph*. According to preliminary surveys already completed the River Jordan and its tributaries will be dammed and diverted. At the same time it is proposed to build a network of artificial streams and many power plants, dams, reservoirs and concrete-lined canals. One canal, 95 miles long, would carry water from the Mediterranean to the Dead Sea. The commission estimates that the development of cheap power and concentrated irrigation farming will make it possible to double the farm population of Palestine, and asserts that the scheme will prove of equal benefit to the Jews and the Arabs. The project, which will not be put into effect until after the war, will take between five and 10 years to complete.

★

The Hon. Lionel Brett, Viscount Esher's heir, has, with the consent of his Commanding Officer, ANNOUNCED HIS CANDIDATURE FOR PARLIAMENT for South Oxfordshire. He is a Liberal.

The Hon. Lionel Brett, an Associate of the RIBA, is at present serving in the Royal Artillery, which he joined in 1940. From 1941 to 1943 he was instructor in gunnery, since 1943 he has been adjutant of the regiment. His special interests are Town and Country Planning and Housing and International affairs.

A £1,000,000 scheme for MORE ATTRACTIVE LONDON PARKS has been submitted to the LCC.

The scheme submitted by the Parks Committee will add to the amenities of nearly all London's 75 parks, gardens and open spaces, by provision of sports facilities, new lidos and solaria, larger bandstands, shelters, more refreshment houses and flood-lighting effects. It is proposed to invite designs for new layouts, after the war, of three sections of the Victoria Embankment Gardens near Villiers Street, Whitehall, and the Temple Station. In 24 parks bandstands and concert platforms are to be equipped with dressing rooms and modern lighting. Solaria will be chiefly built of glass, and in winter these will be heated. New bowling greens will be laid out at seven parks, an approach golf course at Ken Wood, new bowls and cricket pavilions at Wormwood Scrubs, and in at least nine parks there will be paddling ponds, sandpits and gymnasia for children.

Seathwaite Farm, in Borrowdale, known as the WETTEST INHABITED PLACE in England, has been purchased by the National Trust.

Seathwaite is a beautiful addition to the dale heads already acquired or protected by the Trust. It is situated astride the walkers' and climbers' track to the tarn at Sty Head, in the very centre of the finest mountain ground in Cumberland. Seathwaite Farm—which must not be confused with Seathwaite in the Duddon Valley—is well known for its rain, its yew trees and its plumbago mine. In the 17th and 18th centuries this mine was extensively worked and became quite famous. The plumbago—or wadd, as it is called locally—was used, among other things, for making lead pencils at Keswick. The farm comprises 614 acres of enclosed land, with grazing rights over a further 2,118 acres of the surrounding fells.

★

The whole procedure of dealing with the repair or rebuilding of WAR DAMAGED PROPERTY will be altered and accelerated by a new pamphlet issued last week by the War Damage Commission.

The new procedure in the new pamphlet (*Repair of Damage No.* 1) means that owners of property damaged by enemy action will be told the amount to be paid for repairs by the Commission before they are carried out. The new arrangement applies to claims costing more than £250. It will come into operation on August 1 in England and Wales. Scotland and Northern Ireland will come in later. Explaining the new pamphlet at a Press conference, Sir Malcolm Trustram Eve, chairman of the Commission, said : "The whole object of the new procedure is that it should be speedy. Machinery has been devised whereby tenders can be brought to the Commission, and in consultation with the claimant we can arrive at agreement as to the amount to be paid. It is hoped that publication of a comprehensive scale of prime costs will eliminate many questions of doubt and difficulty which arose in the past, and will afford a basis on which owners and builders can contract in the certainty that the Commission will pay all costs properly incurred in accordance with the provisions. If extravagance in expenditure on labour or materials is

Good Manners in Commerce

From the great steel factory to the small retail shop, the buildings of modern commerce have been among the worst offenders of architectural decency, but here in the Gärdet district of Stockholm is one shopping centre which sets a good example. The distinction of this covered shopping way, where all the essential commodities needed for the routine life of the local community can be bought, has been made possible by the planning, designing and landscaping of the whole neighbourhood as one unit. A feeling of continuity has been obtained by repeating the covered walk across the entire front of the row of three-storey flat blocks. In this way also, the commercial aspect of the parades has been subdued so that the designers have indeed had no hesitation in placing the most expensive flats in the blocks immediately above the shops, which far from being a detraction are a distinct asset. Advertising has been controlled and limited to a few words of standard type, effective planting has given colour and charm, the shoppers are protected from rain and snow. Gay, sensible and human in scale and character, here is a successful solution, both æsthetically and practically, of the far from easy problem of incorporating a shopping centre in flat buildings.

suspected by the Commission it will question the accounts and generally investigate details of the claim as a whole." The new provisions mean that those holding application certificates C.2A must scrap those, and, before making a claim, apply for a new certificate called C.2A.B. If you want to make a claim after August 1, it is the new B certificate which must be submitted. The Commission is now prepared to arbitrate in advance in all cases of doubt. Doubt usually arises between what is land—which includes buildings—and what are goods. A case in point is the cupboard. A built-in cupboard is "land." A cupboard nailed to the wall is "goods." There has already been a law case concerning an electric light bulb. The claimant said that the bulb was "land" and the Commission insisted that it was "goods." The Commission won.

This month the Court of Common Council will be shown the CITY OF LONDON PLAN, after which it will be exhibited to the public.

Details of the plan have been kept secret, but well-informed opinion, says *The Star*, is that it will be something on these lines: *St. Paul's*: While it will not be built-in as before, it will not be thrown open to the extent provided for in the Academy plan. When Dr. Fisher, Bishop of London, referred to the present view of St. Paul's from Cannon Street as "one which no generation of Londoners had ever seen before," Mr. Claude W. Dennis, chairman of the Corporation Committee which has worked out the new plan, said: "We hope that St. Paul's will never be built-in upon again." *The Mansion House*: Is to remain, and there is expected to be no wholesale clearance in front of the Royal Exchange. *Billingsgate and the Central Meat Markets*: The belief is that these will not be moved, but they will have better access. New roads running north and south and east and west are expected to be cut. Many streets—chief of which, perhaps, is Gresham Street—will be considerably widened. An attempt has been made to abolish the "danger area" of the City, round Fore Street. All the narrow streets are expected to go. Liverpool Street and Broad Street stations, it is thought, will be amalgamated, and it is expected that there will be considerable alterations at London Bridge, Cannon Street and Holborn.

Mr. A. H. S. Waters has been appointed by the Minister of Town and Country Planning to carry out a technical INVESTIGATION OF THE IRONSTONE INDUSTRY of Northamptonshire, Lincolnshire and adjoining counties. Mr. A. H. S. Waters, V.C., D.S.O., M.C., M.INST.C.E., M.I.MECH.E., P.I. STRUCT. E., F.G.S., consulting engineer of Birmingham, is to carry out the investigation with a view to reporting upon the scope and efficiency of the measures at present employed by the industry for the restoration of land damaged by quarrying operations and ascertaining to what extent these measures could be extended or improved under present conditions, and in the future. Since a Departmental Committee of the Ministry of Health, under the chairmanship of Lord Kennet, reported on this problem in 1939, developments have taken place in machinery used by or available to the industry to restore land laid waste by iron ore extraction. The importance of these developments was recognised by the Scott Committee on the Utilisation of Land in Rural Areas, which recommended that they should be made the subject of a special investigation by the Government Departments concerned. The appointment of Mr. Waters arises out of these recommendations.

•

The Minister of Works has appointed Mr. W. A. Ross, F.R.I.B.A., to be DIRECTOR OF WORKS AND SERVICES (Scotland) in succession to Mr. J. M. Wilson, A.R.I.B.A., who has resigned. Mr. Ross, who is 53 years of age, was educated at St. Michael's School, Highgate, London, and studied architecture at the Regent Street Polytechnic and Royal Academy Schools, London. He joined the Office of Works in 1912 as architectural assistant, and from 1927 to 1941 was employed as architect at the War Office, mainly on the design of Army barracks. Mr. Ross served during the last war from 1915 to 1919 with the RNVR and the RAF, and was demobilized with the rank of captain.

From the point of view of building materials, it will be possible to provide something like 10,000 *HOUSES IN NORTHERN IRELAND during the first two or three post-war years.* This information is given in a letter to the Belfast Corporation Estates Committee, by the Northern Ireland Ministry of Home Affairs. The letter also states: Having regard to the preliminary results of the housing survey, it appears that the proportion of this number allocated to Belfast would be 4,000. The Ministry states that it would be prepared to sanction loans to cover the purchase of land to accommodate this number of houses, and if necessary to facilitate Belfast Corporation in the exercise of its powers of compulsory acquisition. Substantial financial assistance will be forthcoming which must bear relation to that which has yet to be fixed for Great Britain: it is not unreasonable to suppose that it would not vary to any considerable extent from the war-time subsidy of £390 which has been given for 750 houses in Belfast.

LIGHT METAL ALLOYS

NEW Materials—to-day in almost every discussion of post-war building these words occur. Often no indication of what these materials are, or for what purposes they might be used, is given, but it is certain that many people—architects and builders as well as laymen—expect materials new to the building industry to play some part in reconstruction. Of the new materials the light alloys probably possess the most interesting possibilities, especially in view of the wide range of different materials which the term includes. This was recently borne out by the paper read to the IAAS by Dr. E. G. West, which is reported on pages 16 to xxx of this issue.

The light metals of industry are aluminium and magnesium, but only aluminium and its alloys are likely to be used to any appreciable extent in building for some time to come. Their future application will, of necessity, be based on past experience, and it is of interest to recall that experience of aluminium in architecture extends from Gilbert's Eros—cast in pure aluminium in 1893—to decorative and structural items in many recent buildings, for which some of our leading architects were responsible up to the outbreak of war. Most applications in this country have been based on the pleasing appearance of aluminium and such uses will undoubtedly expand as this characteristic of the metal becomes more fully appreciated. Both in America and on the Continent the alloys have already been used widely for structural purposes proper.

New applications of aluminium alloys will undoubtedly be developed in both permanent and temporary buildings where traditional or factory methods of construction are employed. Aluminium alloys have a special value in schemes for large prefabricated units on account of their low weight, coupled with their relative freedom from corrosion.

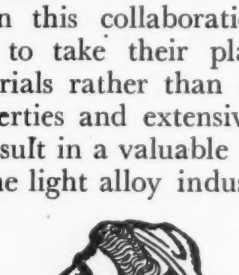
The wider employment of aluminium alloys in established directions would be accelerated by reason of their lower post-war price relative to other materials, the great increase in productive capacity (which amounts to a sixfold increase since 1937), better dissemination of knowledge about the alloys, and the greater awareness of the producing industry of the potentialities of its products (as instanced by the formation of the Wrought Light Alloys Development Association).

Reviewing the possible applications in the light of their properties, it is apparent that from the technical point of view the alloys are suitable for structural purposes where lightness is important: for the structure and covering of roofs—laid sheet, shingles or factory-made panels; external and internal wall cladding; glazing bars, window frames, cills and fittings; door jambs and door furniture; lighting fittings and reflectors; hand-rails, balustrades, grilles and trim of all kinds; kitchen and bathroom fittings; lifts and

escalators; and foil for thermal insulation. This summary shows clearly that post-war uses of aluminium alloys will not be confined to any single class of building.

It is apparent, however, that before aluminium alloys can be efficiently employed in building, improvements in the exchange of information between the light alloy industry and the building industry are essential. The aluminium alloy experts must provide full and reliable data for the architect who must in turn be ready to discuss his problems with the aluminium producers. Just as the metal technologists must take the lead in offering information on the characteristics and working properties of the light alloys, so must the architect be ready to accept advice on these new materials. Their future value to the building industry depends on ready collaboration and mutual trust of the professional man on each side.

Given this collaboration the aluminium alloys should be able to take their place as complementary to the older materials rather than as competitors. The wide range of properties and extensive experience now available is likely to result in a valuable contribution to the building industry by the light alloy industry.



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

NOTES & TOPICS

BLITZED, BLIGHTED AND BEWILDERED

A quick appraisal of the new Town and Country Planning Bill is a difficult job. Its sadly limited aim is clear, that is to facilitate public acquisition or control of three main types of land for priority reconstruction: blitzed, blighted and that which will be required for the overspill of population and employment when blitzed and blighted areas are replanned. Its demands on local authorities are, first in blitzed areas, that they should define the area over which compulsory powers of purchase are desired, indicate the outlines of their plan for the area and conduct a local inquiry (the Minister may then make an order declaring the land to be subject to compulsory purchase); secondly in blighted areas, which in the Bill are called equivocally areas of bad layout and obsolete development, that they should define the area over which compulsory powers of purchase are required, in piecemeal fashion, as and when they are ready to develop any particular part of that area. Here the procedure differs from that for blitzed areas in that a public inquiry must be held *before* a compulsory purchase order is made.

*

Procedure for compulsory acquisition of land for overspill is the same as that for blitzed and blighted areas, differing according to which type of area when replanned causes the overspill. The Bill contains what appear to be extremely inadequate provisions for financial aid to local authorities, and in addition it juggles skilfully but quite safely with the interests of landowners who will be affected by development proposals (surely a minute percentage of the community).

*

The aim and the method suggested in the Bill can only be judged against a statement of the Government's target for an all-over planning policy. This is set out at the beginning of the White Paper on the Control of Land Use, and very hopeful it sounds. After recounting the various related parts of a physical planning programme it declares "it is essential that their various claims on land should be so harmonized as to ensure for the people of this country the greatest possible measure of individual well-being and national prosperity." Whether the Bill and the proposals in the White Paper make a practical contribution towards this lofty and praiseworthy ideal, it is up to Parliament and the people of the country to decide.

*

The Times dubs the White Paper "a meagre and unsatisfying document," but Sir Harold Bellman thinks it "might well form the basis of an acceptable compromise." What is certain is that the contradictory approach of the Bill and the White Paper to certain basic problems will cause much confusion and unnecessary controversy. Perhaps a key may be found in the puzzling and all but meaningless negatives near the end of the White Paper. "It is not proposed that a single master plan should be devised by the Government and imposed on the country, nor that the existing pattern of land ownership or land use should be swept away." Either activity would be a practical impossibility, whatever meaning is derived from the sentences, and there are many meanings. The fact that such a statement is included at all savours unpleasantly of the keep-your-hands-off-big-business and save-us-from-the-bureaucrats type of anti-planning attitude. An odd criticism to have to make of a White Paper produced by the Ministry of Town and Country Planning.

THAT PAPER FROM CHEAM AGAIN

I must return to the subject of *Art and Reason*—that curious magazine which, you may remember, is the self-styled champion of "sane and competent art," and has such a long list of deceased supporters.

*

It now appears that this little paper was at the bottom of the

questions in the House and the correspondence in *The Times* concerning CEMA's taste in art. For those who do not see *The Times*, the correspondence is reprinted in the *Architectural Review* for May. For those who do not see the *Review* either, the main points of this brief but spirited engagement are repeated again.

*

In February, Captain Graham (Con., Wirral) asked for a reduction in the Government grant to CEMA in view of "the poor quality and debasing effect" of the pictorial art which it supported. A few weeks later Captain Graham was supported by a letter in *The Times* filled with words like "subversive," "disastrous" and "objectionable," and signed by a dozen gentlemen—all but one of whom were described by *Art and Reason* as "painters of eminence." Lord Keynes replied for CEMA, pointing out that the selection board contained as mixed a bunch of fogeys of repute as you could reasonably hope to expect. A running battle then ensued, in which such figures as C. B. Cochran, R. O. Dunlop and Lord Huntingdon put Ursula Ridley and Charles Pears to flight, and the incident came to a close with Captain Graham asking another question in the House.

*

In describing these events *Art and Reason* reveals that the Hon and gallant Captain was briefed by themselves, together with their fellow members of the Society of Individualists. (Of the aims and constitution of this Society I know nothing, but something of its glamour can be deduced from the fact that its Vice-President is Mr. Frank O. Salisbury, the painter, in whose well-known pictorial records of ceremonial occasions in St. Paul's, every face is a genuine portrait as far back, at least, as the eighth row.)

*

Art and Reason is undismayed by the "flippant and evasive" answers given by the Government to Captain Graham, and points out that the list of eminent signatories to *The Times* letter would have been longer except for the unaccountable reluctance to sign of some artists whose works had been included in CEMA shows, or who had not actually seen the pictures complained of. This delicacy of feeling is dismissed by *Art and Reason* as pusillanimous. "Who," it is asked, "would refrain from signing a petition against Japanese atrocities because they had not seen them in operation?" *Art and Reason* apparently doesn't need to *see* the pictures, it just *knows* they're nasty.

*

Other high-lights in recent issues are a letter of welcome to PRA, Sir Alfred Munnings who, it is hoped, will be able to exert more influence for good than was found possible by previous Presidents, and another from a Mr. Snow Gibbs, who writes to suggest that public art matters should be directed by the RA. "If," he continues, "the RA had been asked to select artists for *Recording Britain*, they would likely have chosen Lamorna Birch, Bertram Priestman and Stanhope Forbes. Then a good job would have been assured, and every sane person, artist and layman, would have been pleased" (to say nothing, presumably, of the seagulls of St. Ives).

*

So the battle continues. Captain Graham, we are told, is devising further methods of assault—things must be very quiet on the Wirral front—and "as for us"—adds *Art and Reason* with the desperate self-confidence of a German military commentator, "*we shall go on.*"

ASTRAGAL

LETTERS

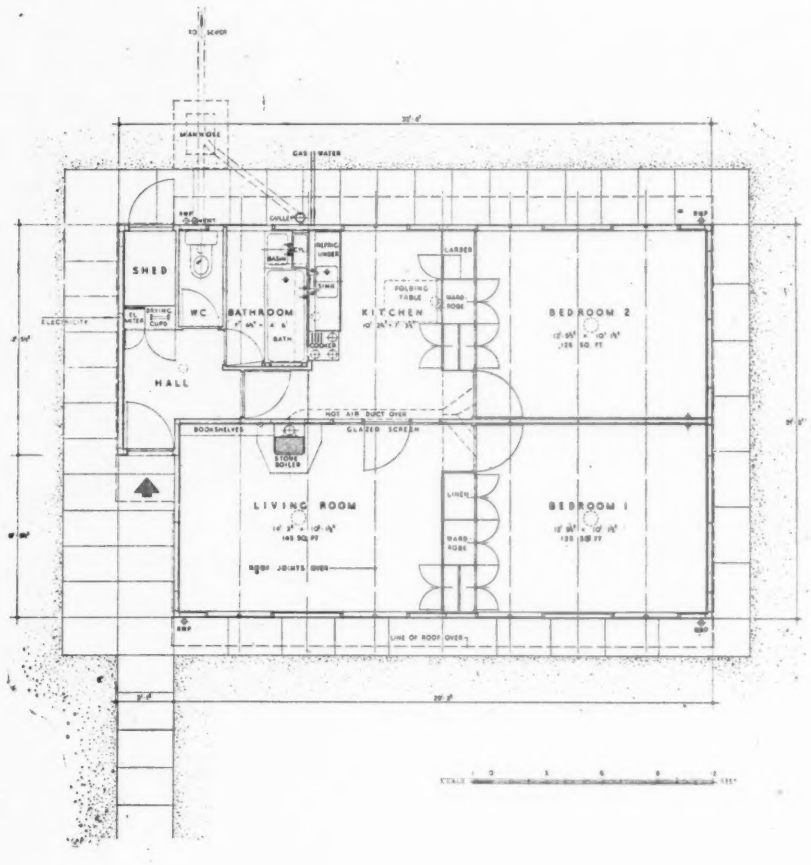
Hans Meyer
E. M. Westaway
W. A. Ross, F.R.I.B.A.
G. B. J. Athoe
W. Parker Thomas

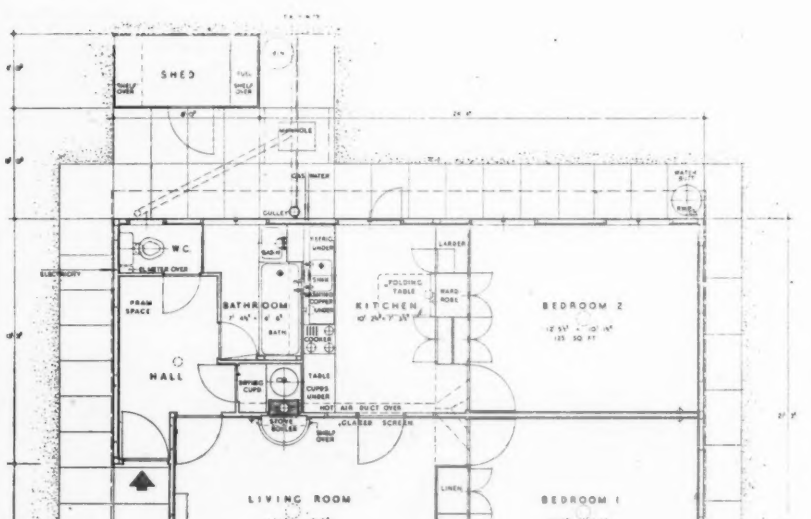
The Churchill House

SIR,—Although many of your readers have referred during the Churchill steel house controversy to the TVA demountable house, no one has drawn attention to two groups of Hauserman prefabricated steel houses, one at Fisher's Island, New York, and the other at Indiana Head, Maryland. These houses (see photograph), erected in the fall and winter of 1941-2, are one-storey high and are erected on concrete posts set into the ground below frost line.

The flush exterior wall panels are 4 in. thick, solidly insulated with rockwool, and the interior partitions are 3 in. thick, insulated. Number 20 gauge steel panel plates with electrically welded reinforcements are used for all walls and partitions. Wall panels

Prefabricated Steel Houses in USA. See letter from Hans Meyer.





***The Churchill House**, designed by the Ministry of Works. Top, the original plan and below, the revised plan issued later.*

interlock and the flush single line joint is caulked with a permanently soft compound which keeps the joint tight through all expansion and contraction due to temperature changes. The 6 ft. by 13 ft. roof panels and the 6 ft. by 12 ft. floor panels are factory assembled and bolted together on the site.

These homes may be dissembled, moved and re-erected should a change of site become necessary.

London. HANS MEYER.

SIR,—Being one of the few architectural students in the Forces who manages to get the JOURNAL regularly I have been able to follow with interest the now weekly criticism of the Churchill prefabricated house, and if it is not too late, would like to put a suggestion forward myself.

The faults of the MOW house (Opus 2) have, I think, been dwelt upon sufficiently for us all to be familiar with them, so I will not enumerate them again, but rather give a brief summary of the points on which I have based my alternative scheme.

The plan (attached) has been worked out primarily, bearing in mind the following points :—

1. To improve the circulation with a minimum corresponding increase in passage area.
2. To include storage accommodation within the building and thus do away with the detached shed.
3. To increase the size of the kitchen and bathroom.

The plan, which is only 8 in. longer overall than the MOW house, does appear to satisfy these conditions and also has the following advantages :—

(*a*) A side entrance rather than a back entrance is provided.

(*b*) Ample storage space is provided near the side entrance for pram and cycle.

(*c*) Space is provided for fuel storage. (A metal hopper, at the base of the compartment, topped by removable boards spanning the width, could usefully be placed immediately inside the door, so as to hold a maximum of coal or coke, while above a shelf could take the firewood).

(*d*) Larder is a more useful size.

(*e*) The appearance of the house is more satisfying in that it has a symmetrical double-fronted elevation.

(*f*) Foul drains would normally be in one straight run from the front of the house instead of turning through two right angles from the back.

(Here it should be noted that the kitchen has gained 18 in. in width and the bathroom 9 in.).

One fundamental difference, you will notice, from all designs so far published is in the reversal from back to front of the kitchen and bathroom and the living room.

I consider this a better arrangement as the housewife can then command a view of the street, enabling her to prepare in advance for tradesmen and callers and to take advantage of some who might otherwise pass.

By facing on to the back garden the living room would be quieter, and have more privacy from passers-by ; also, the view is likely to be more attractive. In this room I would prefer to see a continuous window 11 ft. long, with a central unbroken stretch of double glazing 7 ft. long, and the end portions sub-divided into single units of the existing type.

This should not involve lintol difficulties provided the spinal wall takes its share of the roof load, but I have omitted it from the plan on account of the extra cost, the fact that so much glass tends to detract from the cosiness of the room and also the fact that many people still suffer from inhibitions regarding the subject.

The design has been worked out using MOW units and dimensions, and apart, perhaps,

from a slight re-arrangement of the plumbing necessitated by the reversal of the bath and sink unit, and redesigning of the kitchen folding-table unit, it would not present any serious problems to implement.

If this house is to be produced by the thousand, then it must be the last word in design. As the house is to be built as a single unit, the MOW must inevitably take full responsibility for every aspect of design—including, of course, the planning.

No doubt many months have already been spent by them in perfecting the details of construction and designing the fittings, all of which I consider admirable. The more is the pity that the plan was not published at the outset so that at least the criticism of those who can read a plan was available to them at a time when they could more easily have afforded to be influenced by it.

E. M. WESTAWAY.

Barracks and Blushes

SIR,—In a recent article under the title *Barracks and Blushes*, Astragal passed some remarks on a military station that he had visited somewhere in England. In case your readers misconstrue Astragal's remarks as applying generally to all post Boer-war period War Department building, I consider it my duty to write these notes in the hope that you will find space in your Journal to print them.

My plea for replying to Astragal is that for many years prior to 1942 I had the privilege of holding the appointment of Architect to the War Office in charge of the Designs Branch, which comprised some 100 architects and engineers, many fully qualified in their professions.

Astragal appears to have been particularly unfortunate in his choice of the military station that he visited and, without attempting to make excuses for what is obviously a bad development, I can only call attention to the fact that many districts throughout the British Isles other than military stations have also been developed in an ill-conceived manner. Miners' Rows and speculative builders' terrace-type developments dumped all over the countryside are typical examples and I can only conclude that the military station visited by Astragal was contemporary with these.

Astragal's concluding comments, "if only one felt confident that the Service Departments are incapable of doing the same thing again," indicates clearly that he has not kept abreast with the development of the design of military stations.

For his benefit I would point out that designs for all major War Department projects have for some years past been submitted to the Royal Fine Art Commission, and also give the following extracts from the Press:

Morning Post, February 23, 1937.—"A 'soldier's home away from home' is the ideal, and the Military Authorities have gone a long way to realize it."

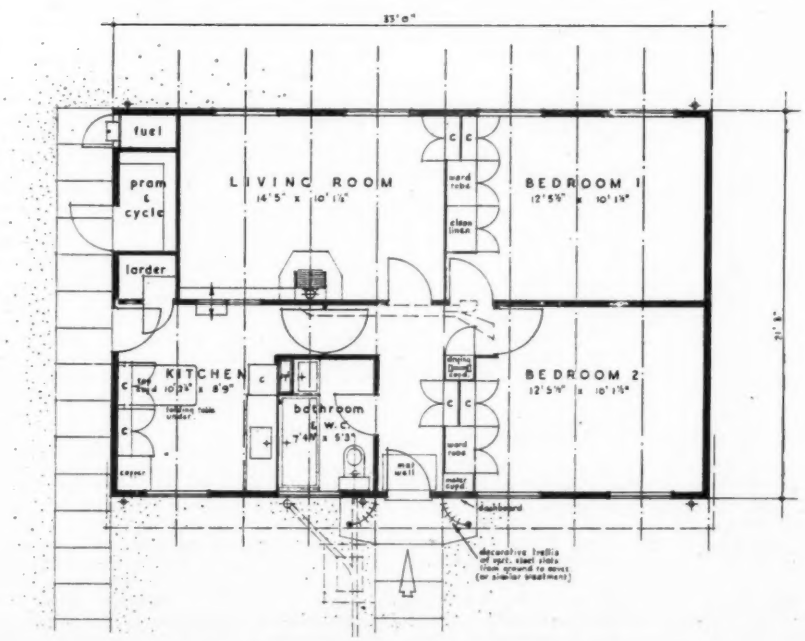
The Architects' Journal, May 6, 1937.—Reviewing Royal Academy exhibits. "The officers' mess at Aldershot gives a new interpretation of the hipped roof behind a parapet adorned with vases, a theme which Lutyens handled with such artistry."

Manchester Guardian, December 1, 1938.—"Better barracks." "What is particularly interesting is the trouble that is being taken over the design and appearance of the new buildings. They must harmonize with their surroundings."

The Architect and Building News, December 9, 1938.—"To-day the whole question of barrack design is being rigorously reviewed. It has occurred to the men in high places that if there were ever any good reasons for treating soldiers as sub-human species these reasons have long ago ceased to apply."

The Times, December 1, 1938.—"Military Villages or Villas." "An important stage in the provision of new accommodation for the Army has now been reached and with it

The Churchill House. Original design by the Ministry of Works.



Suggested plan and sketch for the Churchill House. By E. M. Westaway.

MURAL MONUMENTS RECORDED BY NBR

Two photographs from the panel of Mural Monuments *at the National Buildings Record exhibition at the National Gallery. The parish churches of England contain hundreds of thousands of such monuments, dating from the Middle Ages to the nineteenth century, often of both biographical and artistic value. Left, monument to W. Tucker and daughter, Church of St. Peter and St. Paul, Barnstaple, Devon, early seventeenth century. Above, monument to James Rudman, Exeter Cathedral,* 1805.

begins the disuse of the old term ' barracks,' which is inappropriate for the dwellings that are now being completed."

The Daily Mail, December 1, 1938.—" Residences replace Barracks." " Major General J. H. Beith (' Ian Hay ') was much impressed when he inspected the Designs Research yesterday, and said ' the contrast with conditions in the old days is outstanding.' "

The Builder, December 9, 1938.—" No longer can the term ' like a barrack ' be used disparagingly. Much thought has been given to the comfort of all ranks."

The Yorkshire Evening Post, January 18, 1939. —" Army Buildings." " Old type of ' terrace houses ' has been abandoned for the best style of town planning."

The Manchester Guardian, April 19, 1939.— At Building Trades Exhibition. " If the trend indicated in Army design by the plans and models to be seen in the exhibition is faithfully followed, it will soon be a compliment to call a building ' barrack like.' "

Edinburgh. W. A. ROSS.

London's River

SIR,—London's river is a national heritage, and its interest extends far beyond the confines of the Metropolis. Few chapters in the County of London Plan have been studied, I believe, with closer interest outside London than that which seeks to make the best possible use of our river. That Plan has been criticized, among others by the Port of London Authority, as not sufficiently realizing the basic factor of London as a great seaport, a centre of trade and industry which must be maintained at the highest possible level. It would seem at first sight that there is a conflict of interests; between the needs of trade on the one hand and open spaces and amenities along the river's banks on the other. But although the LCC Plan has somewhat drastically reduced the river frontage allocated to wharves and industry, yet the parts reserved for the latter are so much better planned and utilized that trade and industry would be far more effectively provided for than at present.

If this be so, then the supposed conflict of interests may be more imaginary than real. No one will deny the contention that London is primarily a great seaport, and unless it be maintained and still further developed as such our plans to enhance its beauty will be but idle dreams. So far, however, from these two ideals being incompatible, it may be possible to reconcile them in one great scheme, especially in regard to the south bank which, in my view, has always been strangely neglected; or, in other words, to provide not only vastly better facilities, such as wharves, warehouses and factory sites, but also much better access to the river for the general public.

If the principles and methods of mechanical conveying, now so widely applied in modern industry, could be utilized to the full in London's riverside traffic, there appears to be no reason why an elevated roadway should not be provided between the wharves on the river front and the warehouses and factories immediately behind. Such a scheme has been devised for the south bank of the river in the Upper Pool of the Bermondsey Reach. It fits in well with the Bressey-Lutyens suggestions for London roads, and utilizes to the best advantage the existence of this fine stretch of deep water in the heart of London, both from the point of view of public amenities and the needs of trade and industry. I believe, too, I am correct in saying that it is in no way incompatible with the general layout of the LCC Plan.

G. B. J. ATHOE,
Secretary, Incorp. Assn. Architects and Surveyors

London

Post-War Housing

SIR,—Sir Noel Curtis-Bennett, President of the Guild of Master Motorists, in his letter to THE ARCHITECTS' JOURNAL, certainly brings home a very important matter when he reminds planners of new houses that a larger number of the public when buying or renting a house will expect a garage either as part of the house or independent.

My chief object in writing this letter is to bring to the notice of architects and builders the need of building a garage worthy of the name.

I and many others know of so-called garages which are so narrow that one has to get out of the car before entering and then push the car in. This is due to the fact that there is not enough room to open the car doors when the car is in the garage.

Garages should be built deep enough to take a modern car and, if possible, have room for a perambulator and perhaps a couple of cycles. I would suggest a useful size would be: length 20 ft., width 8 ft., and height 7 ft. 6 in.

Southsea. W. PARKER THOMAS.

TWO-PIPE HOT WATER SYSTEM :

Water is pumped through the mains at high velocity (to keep pipe size to minimum), and returned after completing the circuit at a temperature some 100°F. lower than the flow temperature. At the consumers' premises it may be used as follows :—

(a) **For heating**—by direct connection through a mixing valve with thermostatic control to give the desired temperature for radiators, etc.

—or through a calorifier in which the water from the consumers' apparatus is kept separate and heated to a lower temperature than that in the mains.

(b) **For hot water supply**—through a storage calorifier to give hot water for taps.

(c) **For process plant**—at mains temperature—by direct connection to mains.

THREE-PIPE HOT WATER SYSTEM :

The object of this is to reduce mains losses in summer when the small load of hot water supply, process, etc., occurs. It also enables the heating circuit temperature to be kept down in mild weather without giving inadequate hot water supply and process temperatures.

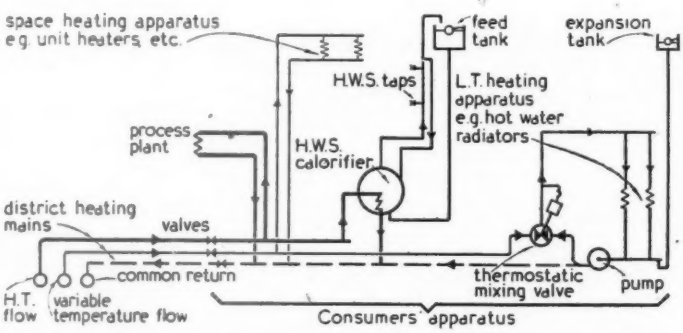


DIAGRAM ILLUSTRATING THREE-PIPE SYSTEM.

STEAM SYSTEM :

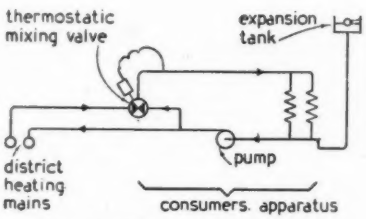
The general application of steam is in "straight" heating stations where it is generated in boilers, at pressures from 100—200 lbs. per sq. in., solely for the purpose of heating.

Condensate is generally discharged to drain to save the cost of return mains, although it is preferable to return it to the heat station for re-evaporation in the boilers.

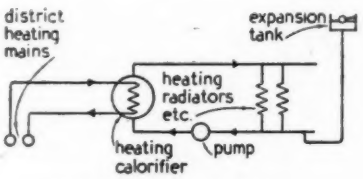
An economiser in the consumers' discharge outlet is used to save part of the heat wasted.

TWO-PIPE HOT WATER SYSTEM :

Hot water heating from a thermo-electric station possesses the advantage of using low temperature heat (with or without accumulators). In thermo-electric stations the water is heated in heat exchangers condensing the steam from the electrical generating turbines.



CONNECTION BY MIXING VALVE.



CONNECTION BY HEAT EXCHANGER.

METERING OF HOT WATER :

To measure heat supplied, for the purposes of costing it is necessary to measure volume × temperature difference flow to return. B.Th.U. meters are in process of development, but the absence of a cheap and satisfactory heat meter has proved one of the main disadvantages of hot water.

[TURN OVER

INFORMATION SHEET 944

CONT

Steam is supplied to the consumer through a reducing valve :

(a) For heating—by direct connection to steam heating systems with radiators, etc.
—through calorifiers for hot water heating systems.

(b) For hot water supply—through a storage calorifier to give hot water for taps.

(c) For process use—by direct connection to industrial plant, cooking equipment, laundry plant, etc.

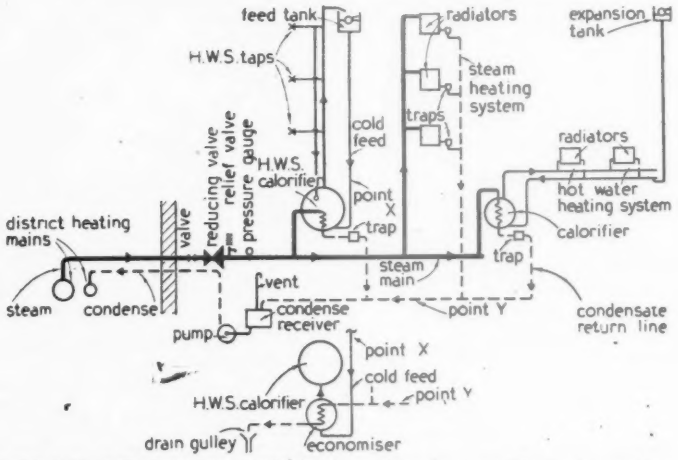


DIAGRAM OF STEAM SYSTEM : Showing condensate returned, and (small diagram) with condensate to drain.

COMBINED STEAM AND HOT WATER SYSTEM :

The thermo-electric station may be arranged to supply steam as required from one of the intermediate stages of the turbine by " bleeding." This steam may then be conveyed to industrial and other uses. The remainder of the steam passes through the low pressure stages of the turbine, and is rejected as before to the district heating water system.

The advantage of a part steam load lies in the improved load factor where such steam is required the whole year round for process plant. Against this must be set the higher relative cost of the higher grade heat.

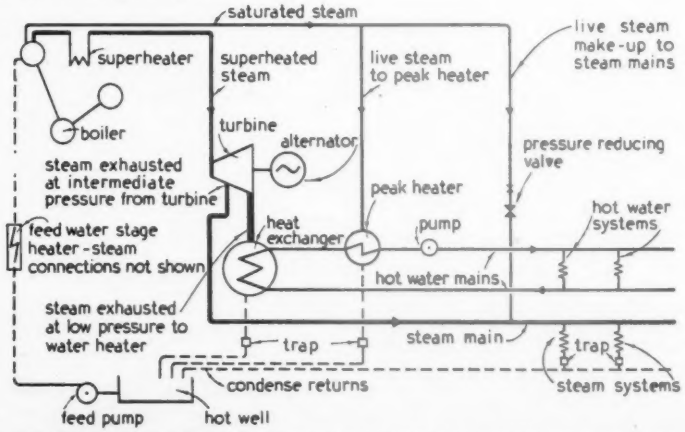


DIAGRAM OF COMBINED STEAM AND HOT WATER THERMO-ELECTRIC SYSTEM.

Exhaust steam from thermo-electric stations may also be used direct for district heating. A choice may be made between : *high exhaust pressure* giving low mains cost and losses, but low electrical output for given plant sizes, and *low exhaust pressure* giving high electrical output, but high mains cost and losses.

Small systems and short runs may use " low exhaust pressure " at pressures of 2 to 50 lbs. per sq. in. (gauge).

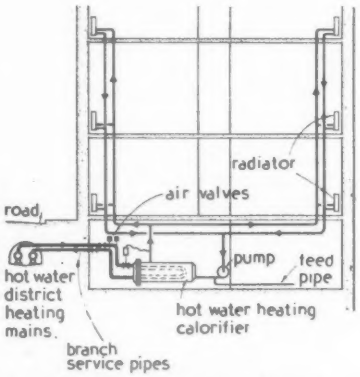
Extensive systems may use " high exhaust pressure " at pressures 100 to 200 lbs. per sq. in.

Modern practice is to overcome the low electrical output of " high exhaust pressure " by employing extra high boiler pressures (cf : Sheet C, Waterside Station N.Y., 1,475 lbs. per sq. in.).

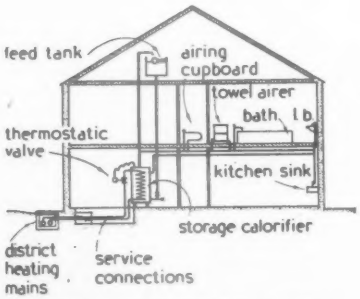
METERING WITH STEAM :

The condensed steam is metered through a volume meter, and charged on this basis. It is a much simpler problem than is the case with hot water.

Where steam is used and not returned through the meter (as with certain cooking and industrial equipment), the steam is metered on the inlet side by a suitable type of steam meter.



TYPICAL CONNECTIONS TO CONSUMERS' HEATING SYSTEMS USING CALORIFIERS.



TYPICAL CONNECTION TO DOMESTIC HOT WATER SERVICE SYSTEM.

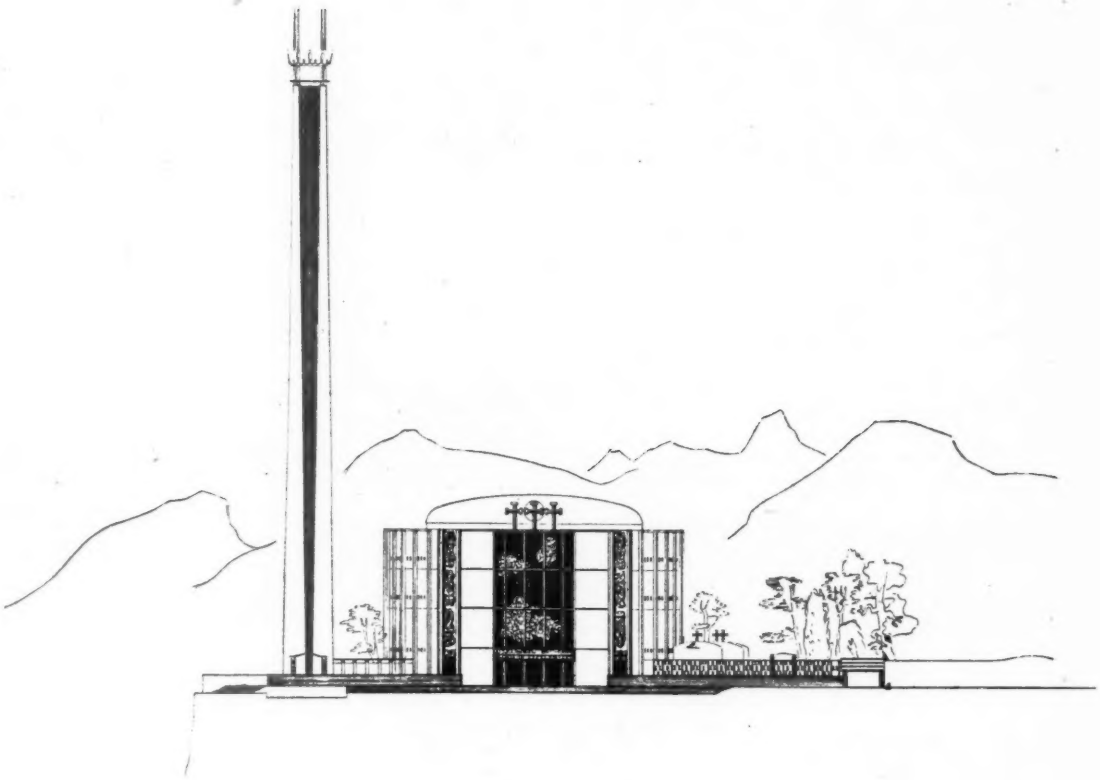
Ascot Gas Water Heaters Ltd., North Circular Road, Neasden, N.W. 10. Telephone : Willesden 5121 (14 lines).

Issued by Ascot Gas Water Heaters Ltd.

Compiled by Oscar Faber, O.B.E., D.C.L., D.Sc., M.Inst.C.E., M.I.Mech.E., Pres.I.H.V.E. and J. R. KELL, A.M.I.Mech.E., M.I.H.V.E.

INFORMATION SHEET: DOMESTIC WATER HEATING 7

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1



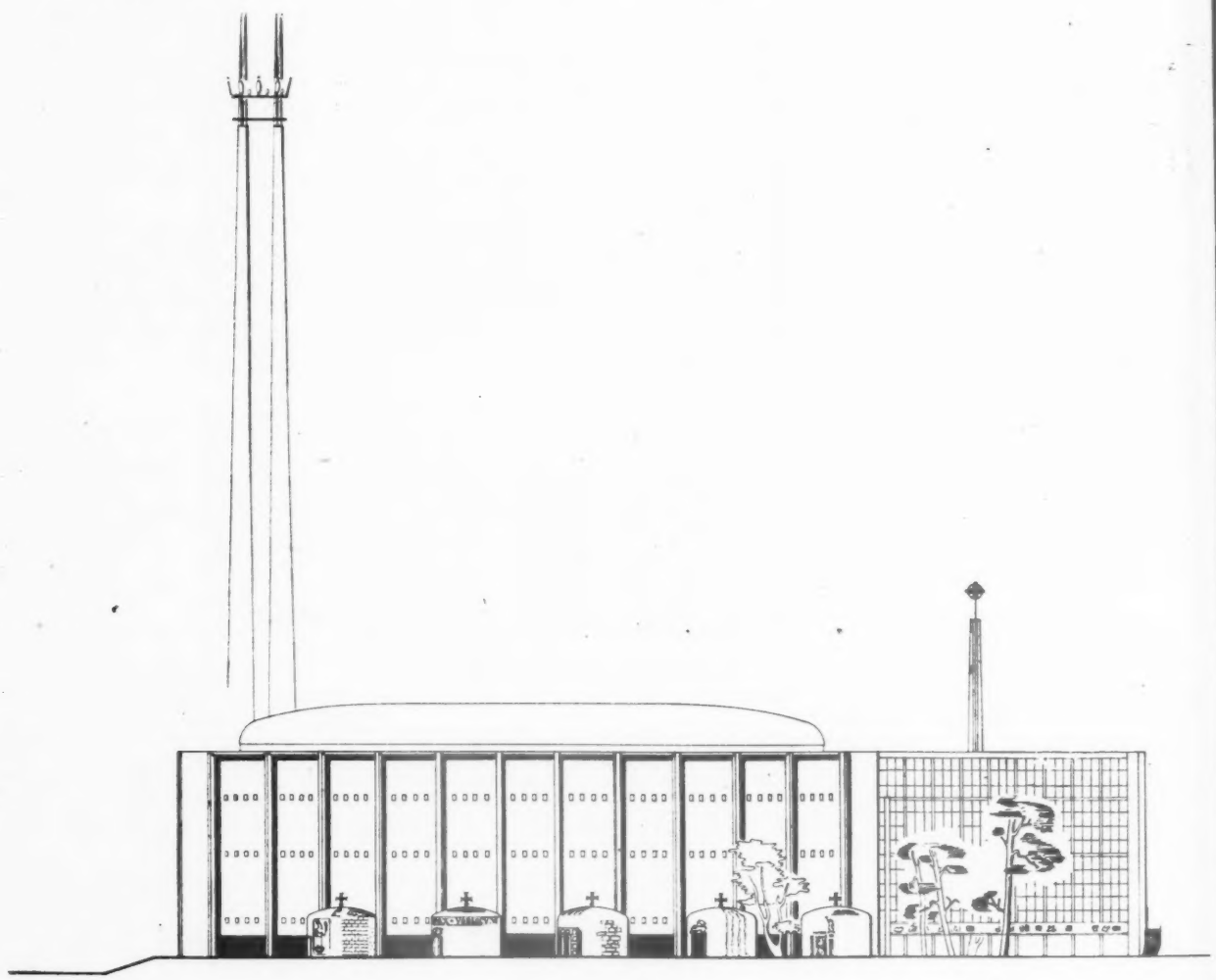
Above, Temple Monument at the Parliamentary Centre of the Federation of Central Europe. By Z. Borysowicz and L. Pietka, Principal. (East) Elevation.

TRAINING FOR POST-WAR RECONSTRUCTION

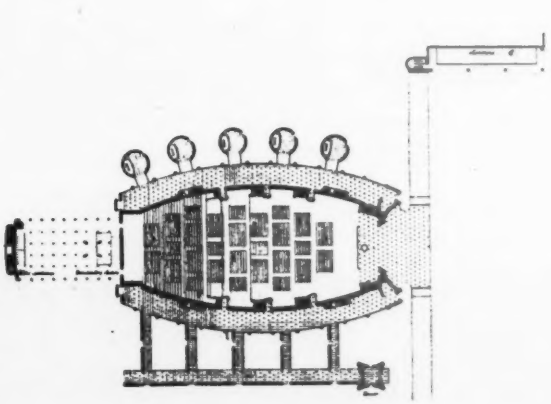
AT THE POLISH SCHOOL OF ARCHITECTURE, LIVERPOOL

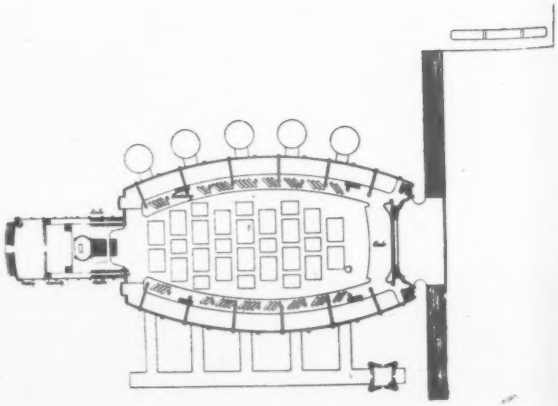
The Polish School of Architecture was opened at the University of Liverpool School of Architecture two years ago, by General Wladyslaw Sikorski, to provide a nucleus of architects for the post-war reconstruction of Poland. It was formed by agreement between the Polish Government, the University of Liverpool and the British Council, after all the academic centres of Poland had been closed, libraries looted and large numbers of the country's scholars, scientists and technical staffs annihilated. The inauguration of the school took place in the Philharmonic Hall, Liverpool, when the Honorary Degree of Doctor of Laws was bestowed upon General Sikorski by the University. In the school there are over forty Polish students, many of them approaching their final examination. Training is carried out in collaboration with the British and Polish staffs and is adjusted to the most urgent reconstruction problems, such as town and country planning, housing, civil, industrial, health and educational buildings and restoration

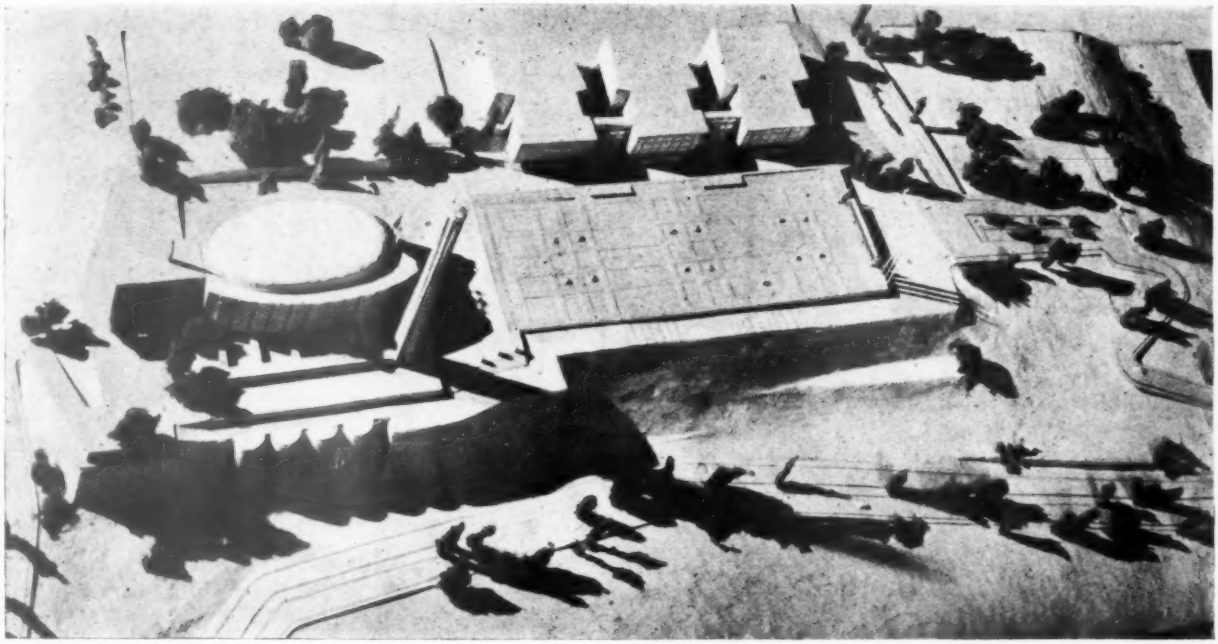
MONUMENT FOR A PARLIAMENTARY CENTRE



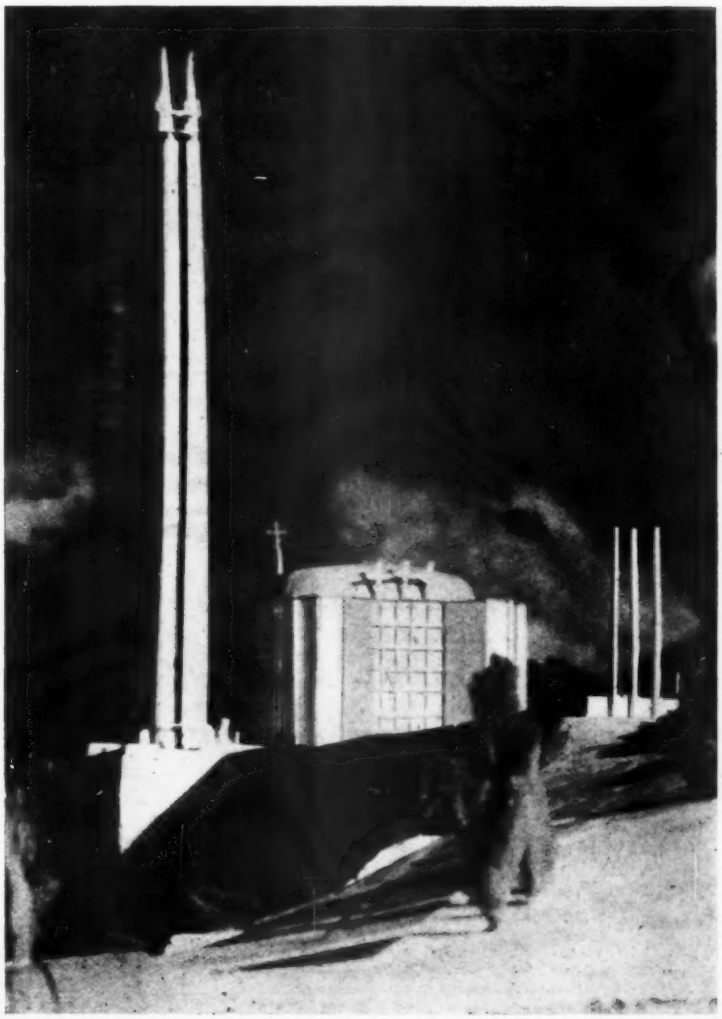
of churches and historical monuments. Modern work tends to be influenced by the traditional characteristics of Polish architecture. This is shown particularly in the design of details. Characteristic of Polish historical architecture are light proportions, simple lay-outs, bright materials and a conscientious relation to the individual site. These same tendencies are seen in the work of the Polish students. The lecturer in architectural design at the Polish School is Boleshaw Szmidt, S.A.R.P.





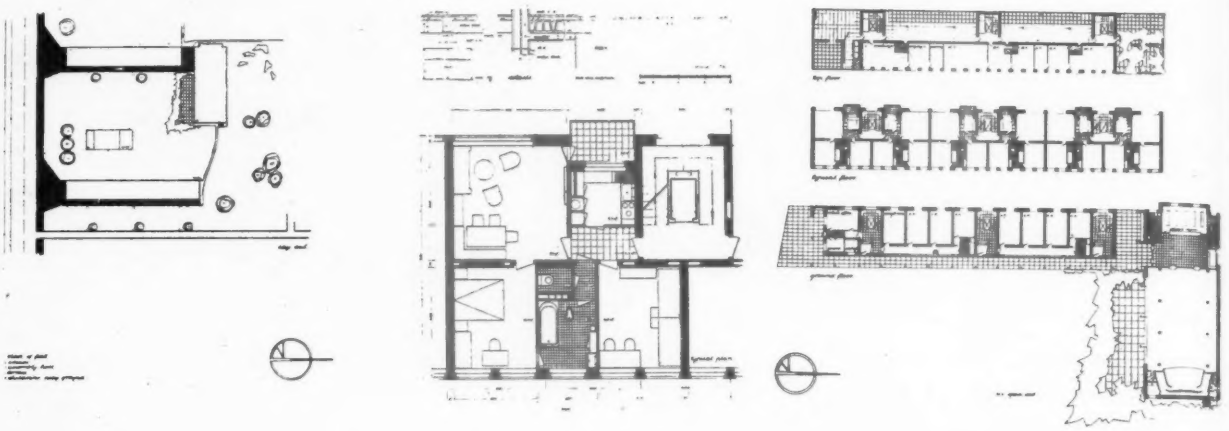


DESIGNED BY Z. BORYSOWICZ AND L. PIETKA



Thesis design for a Temple Monument at the Parliamentary Centre of the Federation of Central Europe. The tower symbolises Unity and the three carved panels of the main facade representing biblical scenes are hinged side by side as an altar piece (the most famous is by Wit Stwosz's in St. Mary's Church, Cracow). The Parliamentary Centre contains three sections—the House of Commons, the House of Corporations and the House of Cultural Institutions (see photograph of model). Facing page, north elevation, and plans of ground and balcony floors. This page, right, the temple monument.

BLOCK OF FLATS

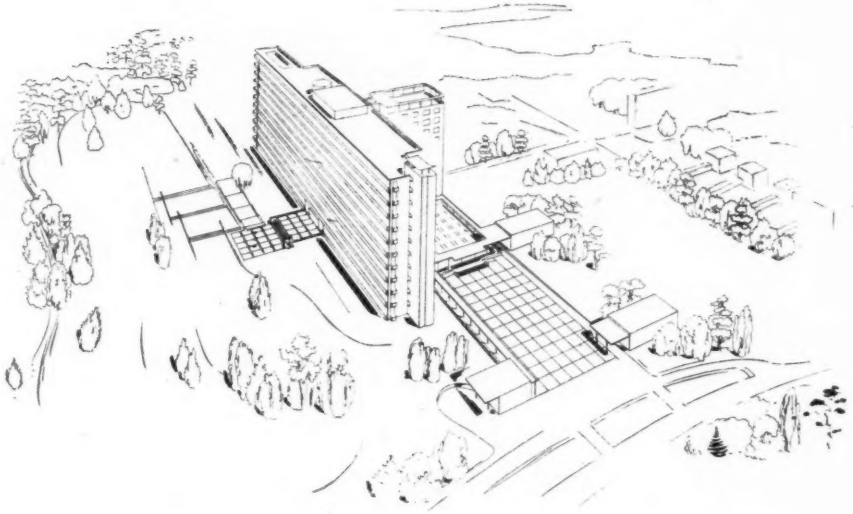


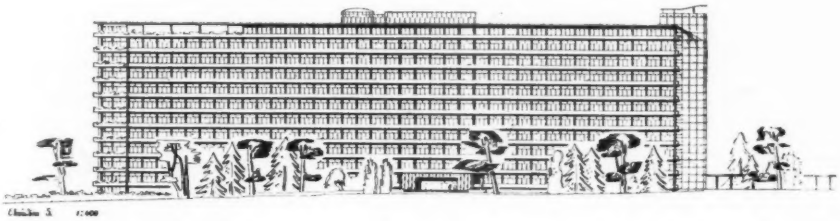
DESIGNED BY M. WESOLOWSKI

On the upper floors are three bedroom flats with kitchen, w.c. and bathroom, and on the ground floor a small community hall and bachelors' rooms. Top, plans of site and typical flat (left) and plans of ground, typical and top floors. Left and below, perspective and elevations.

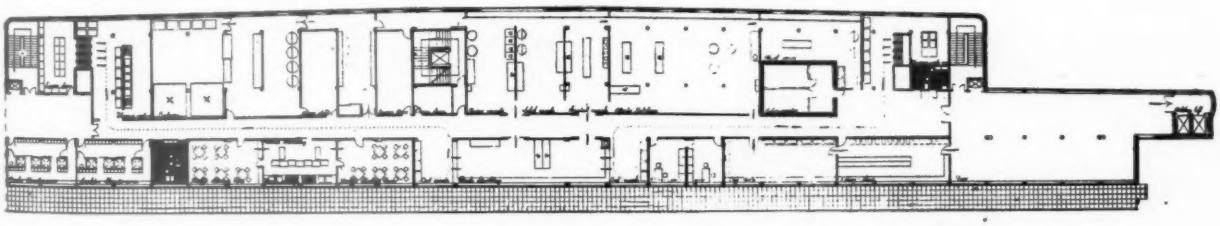
HOSPITAL IN THE WILNO REGION

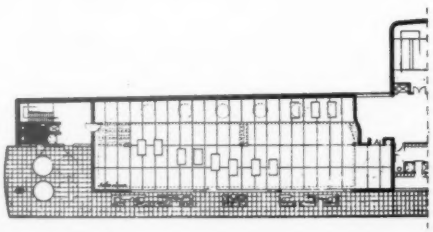
Hospital in Buchta Dolna, near Wilno (Thesis Design). The existing University Clinic and other hospitals had become inadequate through increasing population and the results of numerous wars. Wilno University was founded by the Polish King Stephan Batory in the sixteenth century. The design for the new hospital provides more than 600 beds and comprises internal diseases, surgical, gynæcological and X-ray departments, with separate buildings for the accommodation of the administration, doctors, nurses and staff. Right, perspective and elevation. Bottom, plans of central kitchen, solarium and staff dining room.

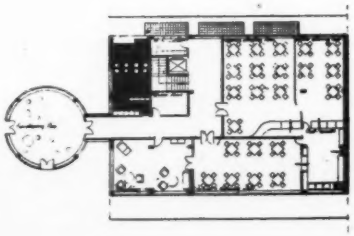




DESIGNED BY A. LANGE-DLUZYNSKI







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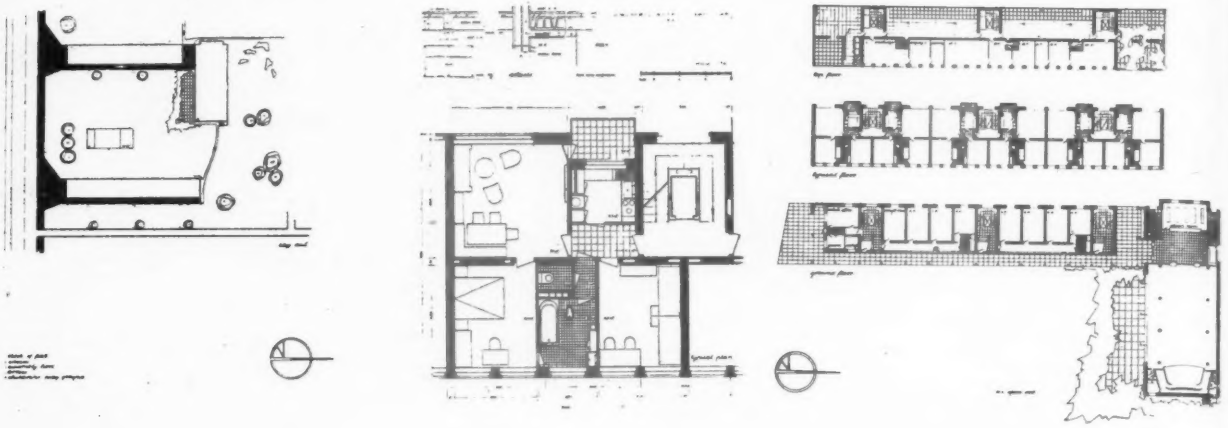

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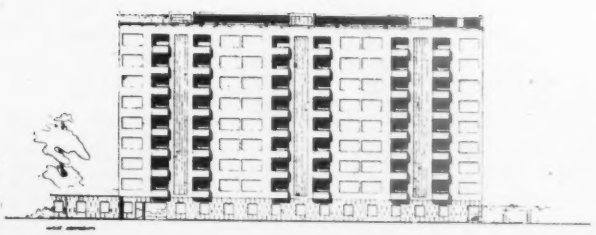

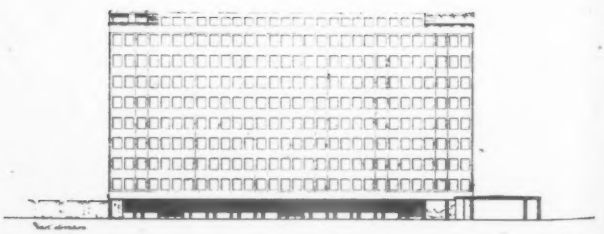

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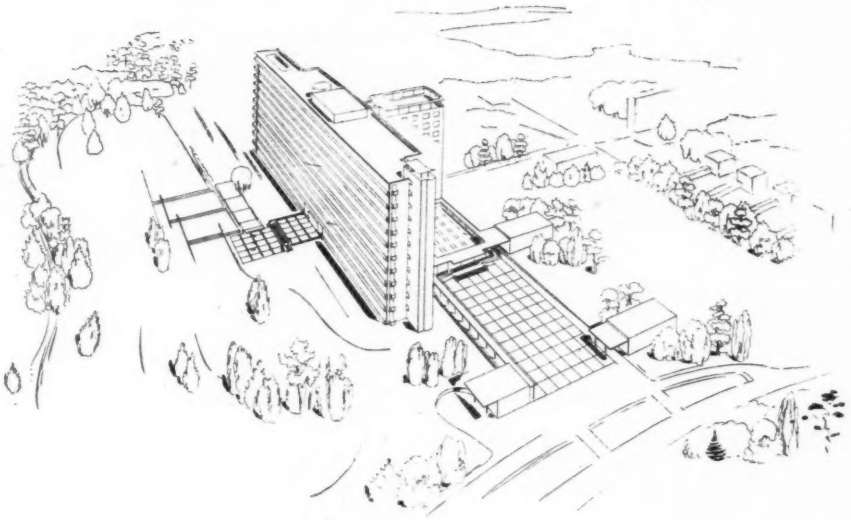

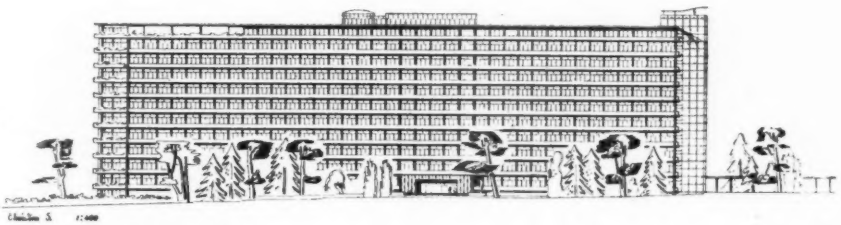

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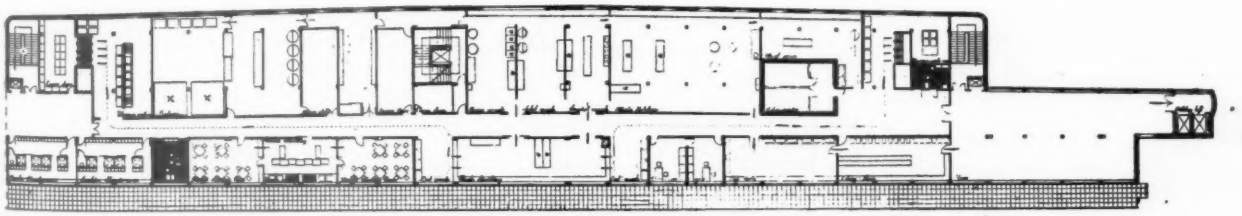
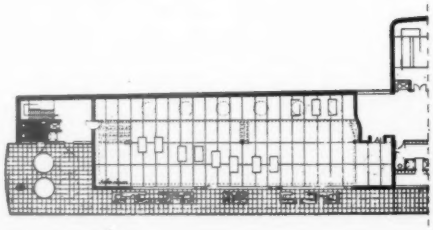
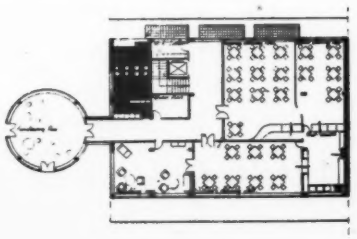
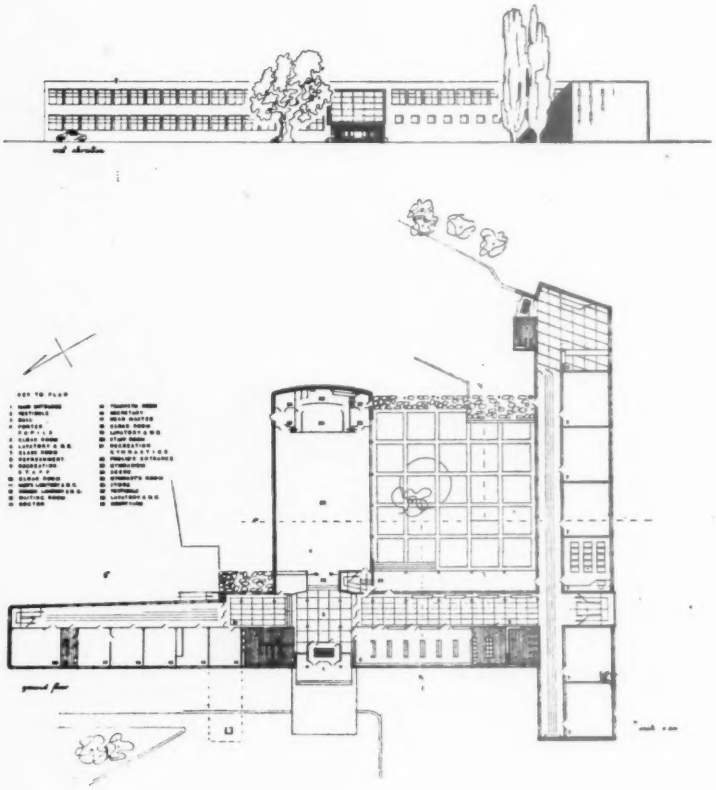






SECONDARY SCHOOL IN WARSAW

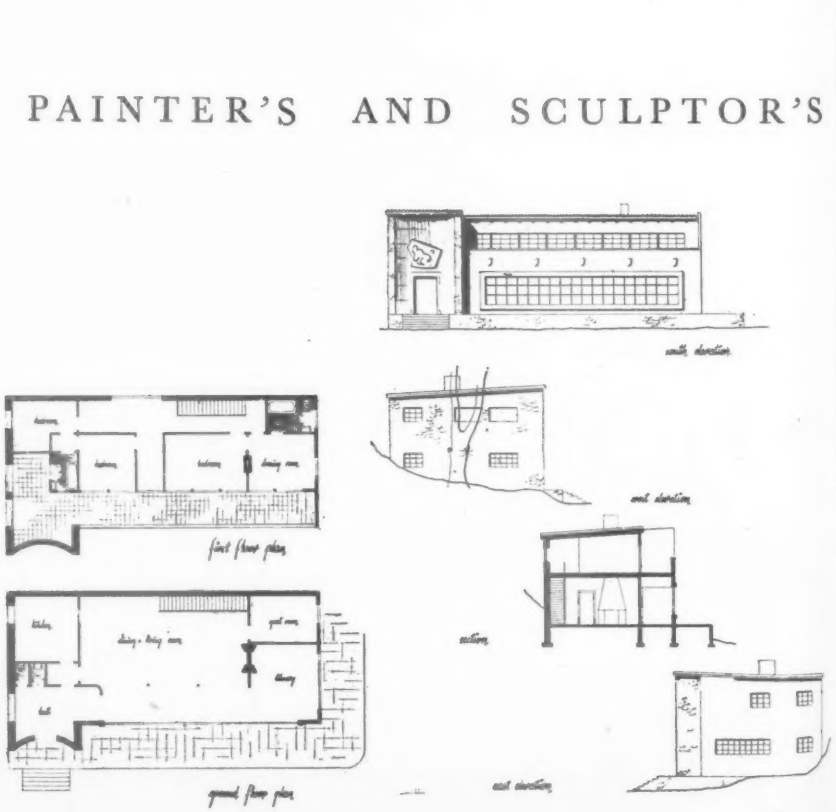
DESIGN BY S. MICHALOWSKI



Secondary school for a site in Warsaw, close to the large belt of parks and sports grounds. The main building includes a gymnasium, serving also as an assembly hall, and a hostel for the pupils and tutors. The courtyard is designed to form an open air theatre and recreation ground. Left, elevation and ground floor plan.

ARCHITECT'S, PAINTER'S AND SCULPTOR'S HOUSE

DESIGN BY W. A. WONDRAUSCH



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.

1521 *Toronto Master Plan*

THE MASTER PLAN FOR THE CITY OF TORONTO AND ENVIRONS. (*City Planning Board of Toronto, December* 31, 1943.) Brief explanation in booklet and maps of first stage of Master Plan for City of Toronto and Suburbs. Submitted to City Council by City Planning Board.

At the outset, the Board perceived that the political boundaries of the City bear no relation to the social and economic life of its people. Since in a planning sense political boundaries have no significance, the Master Plan encompasses the whole of the future built-up area.

The City Planning Board (formed 1941) has selected 30 years as the period during which the plan is intended to govern development.

The Board estimates that the population of the Metropolitan area in the year 1974 will be between 1,250,000 and 1,500,000 or a maximum increase of 600,000 over the present population of 900,000.

The area to be planned is 100 square miles or 45 square miles more than the present built-up area.

ZONING CONCLUSIONS

The Metropolitan area should be zoned to provide for the establishment of neighbourhoods, each providing all the essentials for satisfactory living, employment and recreation.

Certain residential areas have reached a point where age, obsolescence and actual physical dilapidation indicate that at no very distant date widespread demolition will become most desirable if not essential, and planned reconstruction of considerable areas either as public housing or by private enterprise is necessary if the objects of the Master Plan are to be upheld.

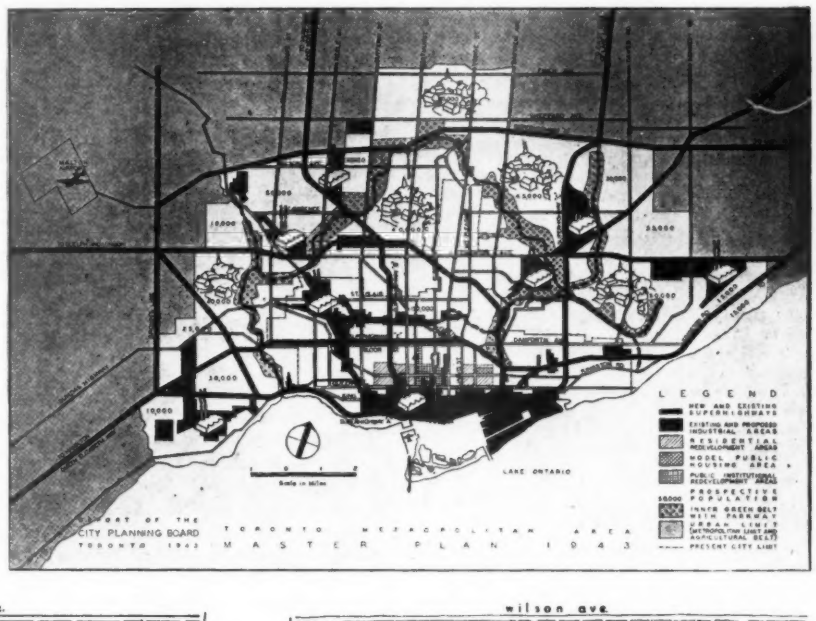
The assembling, clearing and replanning of these sites must be carried out by public agency aided financially by the Provincial and Federal Governments.

The Board has selected the 41 acres of the central part of this area bounded by Parliament Street, Gerrard Street, Dundas Street and River Street as being suitable for public low rental housing. This area is at present occupied by 785 families, 640 of whom live in single family houses, averaging from 60 to 70 years old. 676 families are tenants of whom 77 per cent. pay less than $25 per month rent.

It is estimated on a two-storey superblock development of this site involving the closing of 19 minor streets, lanes and culs-de-sac that 20 per cent. more dwelling units can be provided with an actual decrease of 8.4 per cent. in land coverage. This will permit adequate open space for recreation.

TRAFFIC CONCLUSIONS

That a mixture of street car and automobile traffic on the same street destroys highway efficiency and that every effort should be made to provide for the separation of these two types of traffic is one conclusion. Another is that a gridiron street system providing innumerable routes of the same length between the business centre and most of the other



Top, a general master plan for Toronto showing proposed and existing superhighways and industrial areas, residential development areas, model public housing area, public institutional redevelopment areas, greenbelt, and present and proposed city limits. Above, typical subdivision under existing conditions (left) compared with subdivision for proposed neighbourhoods.

parts of the City offers an invitation to traffic to wander through residential areas on streets designed for local traffic only, thereby greatly increasing the danger of injury to pedestrians (particularly children) and of collision with other vehicles.

The Board recommends the construction of a framework of new depressed or elevated superhighways from which any part of the City would be reasonably accessible. It is proposed that these highways shall be fully separated and connect directly with the existing provincial highway system and certain new provincial highways.

The Board strongly resists any suggestion that the highway programme recommended is designed to assist decentralisation. The history of this City is that decentralisation is brought about by the lack of residential amenities in the older residential areas and central traffic congestion, and that it will continue so long as the areas in question fail to be a proper place in which to live and raise a family.

That in view of the fact that a place to park is essential to the use of an automobile, municipal parking lots should be established as a public utility, and that such vacant lots now operated privately as are improperly located from a traffic standpoint be dedicated as public parks.

RECREATION CONCLUSIONS

The Board unhesitatingly recommends the preservation, free from encroachment and vandalism, of the valleys of the Don and the Humber and their tributaries, and their incorporation in a Green Belt encircling the present built-up area that will not only act as a buffer between present and future development but will also provide accommodation for every age and group in active sports or passive relaxation in unspoiled natural scenery.

GENERAL CONCLUSION

If ever the decay which is eating at the heart of the City is to be stopped, if the City is not to be strangled by its own traffic, if children are to have safe and proper places in which to play, and if citizens are to live in convenient and congenial surroundings, planning must be made a continuing function of civic government, under a partnership of all municipalities in the Metropolitan area.

LIGHTING

1522 — *New Developments*

POST-WAR LIGHTING. *Ward Harrison.* (*Lighting and Lamps, December*, 1943, *p.* 21.) Indication of new developments in lighting, including ultra-violet germicidal lamps.

Mr. Harrison is head of the G.E. Lamp engineering division in America. He is here putting some of his company's new wares in the window. Several of the lamps, such as the sealed beam types, projection lamps and photo flash lamps are of no general interest to architects. But his reference to germicidal lamps is important. These are much more popular in America than in this country and consequently are well advanced. Their immediate future spheres are said to be in hospitals and schools, but the idea of a simple source of ultra-violet radiation, suitable for ordinary lamp sockets, is too attractive not to find an ultimate market in homes. It has obvious advantages in preventing the spread of infections, but would also be an important source of sunshine vitamins in winter.

1523 — *Shops*

LIGHTING IN SHOPS—A POST-WAR MUST FOR STORES. *K. A. Stoley.* (*Lighting and Lamps, December*, 1943, *p.* 14.) Use of local lighting in shops. Too much general lighting used.

The author expresses his view that shop-owners use too much general lighting and overlook the value of localized high intensities. He is thinking largely in terms of reflector lamps with louvred fittings, but some of his remarks show an appreciation of sound basic psychology in lighting which is not always evident among engineers. For instance, he points out that a high general level of brightness means that the eye is tempted to focus at nothing in particular, and the customer may simply receive the impression of size that betokens something too much like a warehouse to be attractive; this, as he says, can be counteracted by suitable local lighting, though the type he suggests is not the only, or even necessarily the best, one.

1524 — *Railway Carriages*

RAILROAD LIGHTING. *L. Schepmaes.* (*Lighting and Lamps, February*, 1944, *p.* 18.) Some general trends in railway carriage lighting, with emphasis on fluorescent tubes and use of plastic shades.

This is an interesting side-line of the designer's problem. Railway lighting has several special aspects. Installations must be robust so that rolling stock is not tied up for repeated repairs. They must also be durable, simple, accessible and economical of power.

After several experiments with plastic shades it was determined to use white translucent Plexiglas, with a transmission factor of 82 per cent. (.06 in. thickness). This is a thermoplastic softening at 140°F. In order to avoid temperature of this order fluorescent tubes were brought into use. The shades were generally of the flush panel types and were springy enough to be flexed into place.

Some interesting general views are shown.

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.*

1525 — *Plastics*

Q *Has the Building Plastics Research Corp., Ltd., London, published any of its research material and, if so, can you let me have its address?*

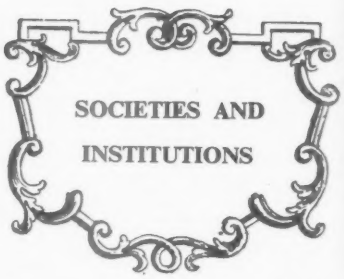
A The Building Plastics Research Corporation, Ltd., of 11, Bentinck Street, London, W.1, has not published any of its research material officially, but we understand that information may be obtained privately from the Corporation.

1526 — *London Houses*

Q *Can you let me know the number of houses which were built in the Metropolitan Area of London between March* 31, 1939, *and March* 31, 1941 ?

A The number of houses built in the Metropolitan Area of London between March 31, 1939, and March 31, 1941 was 504,156, made up as follows:—

Not subsidized :		
Local Authorities	..	13,993
Private Enterprise	..	439,863
Subsidized :		
Local Authorities	..	48,200 (approx.)
Private Enterprise	..	2,100 ,,



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

IAAS

Dr. E. G. West

June 14, at 75, Eaton Place, S.W.1. Paper read to the Incorporated Association of Architects and Surveyors, on SOME POSSIBLE APPLICATIONS OF ALUMINIUM ALLOYS IN BUILDING, by Dr. E. G. West. Paper written by E. G. West, PH.D., B.SC., and D. V. Pike, A.M.I. STRUCT.E., A.M.I.C.E., both of the Wrought Light Alloys Development Association.

E. G. West: Information has been given previously concerning the production of aluminium alloys and their constitution (* and †), the methods employed for their manufacture in forms suitable for fabrication; the differences between the non-heat-treatable and heat-treatable alloys; and the comprehensive range of available alloys and their physical, mechanical and chemical properties.

The present paper attempts to reflect the trend which now appears to be shaping in projected applications and whilst only a few components will be discussed at length, reference will be made to many other building applications.

The provision of sufficient houses after the war is now recognized as one of the most serious questions for which a solution must be found. Whether the conventional building materials will be available in sufficiency for the required programme is apparently uncertain, but it appears that lack of building personnel will, in any case, prevent its fulfilment by old-established methods.

In contrast to this, the conditions in other industries will be very different and, with war-time requirements ended, other outlets for their expanded production will be sought to avoid the immediate unemployment of trained personnel.

* *Wrought Aluminium Alloys in Post-War Building.* Paper read to the Association of Building Technicians on November 12, 1943, by Dr. E. G. West: see *Light Metals*, January, 1944, 7 (72) pp. 11-19.

† WLADA Information Bulletins, Nos 2, 3, 5 and 6.

These considerations have given great impetus to investigations into factory production of houses, schools, etc., and such methods, which have been steadily progressing since the last war, are concerned not necessarily with houses of a limited length of life, but also permanent dwellings.

The properties of aluminium alloys, of which the most noteworthy are low weight (approximately one-third that of steel), high resistance to corrosion, great strength and pleasing appearance, have appealed to many authorities as being especially valuable in a material for prefabricated units.

The probable extent of their application varies; some envisage an almost completely aluminium alloy building whilst others have hitherto considered the light alloys are suitable for small components only. It must be emphasized that aluminium alloys are suitable for use in permanent buildings of all kinds—indeed, their pre-war application in building has been confined almost exclusively to high-class office blocks, hotels, civic and other public buildings, luxury flats, shops, hospitals and the interiors of ocean liners. There is no doubt that the employment of aluminium by discerning architects will continue to increase for such buildings and, furthermore, expansion into the field of housing will certainly occur.

Past attempts in the prefabrication of houses have indicated that commercial success depends on mass production being possible, the cost per house falling as the number made increases. This is fully recognized, and one of the chief problems which is seriously engaging the architect is how to arrange for maximum flexibility in design to be obtained whilst keeping the number of components to a minimum. They must be suitable for simple repetition manufacture on a large scale, and at the same time provide dwellings of a pleasing character.

Another very important factor is that erection must be speedy and require only unskilled or semi-skilled building labour. In this connection much attention has been given to the possibility of manufacturing large units such as complete walls, roofs and floors in the workshop and erecting them by a small crane.

Here the proper use of aluminium enables large units to be handled with comparative ease through all the stages of manufacture, transportation and erection. It should be emphasized that another great advantage in manufacturing large units is that site jointing can be reduced; jointing is much more efficiently dealt with in the workshop, where methods may be employed which would be impracticable or uneconomic at site (e.g. spot welding).

It is emphasized that, in the view of the authors, the post-war application of aluminium alloys in building will be governed by their properties, which unfortunately are not yet familiar to a great many engineers, architects and designers.

It is now proposed to discuss a number of applications based on their favourable characteristics.

STRUCTURAL SYSTEMS

Wholly prefabricated house systems appear to fall into two main groups—one in which complete rooms or portions of rooms are factory made in their entirety for assembly on the site, and one in which the walls, roofs, floors, etc., are transported as flat panels to the site. In each case, the panels may be composed either of skeleton structural framing and infilling, or of panels only, capable of carrying sufficient load to dispense with framing. The procedure of first raising the complete roof sufficiently for the walls above first floor to be connected to it and the first floor to be connected to the walls, and then raising this construction to its final position and finally adding walls from ground to first floor, together with variations of this general method, has been studied at some length. The adoption of aluminium alloys would help to bring such schemes within the range of practicability.

The patented systems employing metals as the basis of their construction even in pre-war days would require a volume to describe and during the war their number has increased. There is little technical reason why aluminium alloys could not be used in all of them with very little change, but by so doing it is probable that the advantageous properties of the alloys would not be used to greatest advantage. It is by exploiting their characteristics of lightness, strength, corrosion-resistance, unlimited range of section shapes possible by the extrusion process, workability, finish, etc., that the most successful system of construction will result, rather than by merely substituting aluminium alloys for other metals.

Suitable Alloys for Structures

In considering the most suitable aluminium alloys for house construction it is found that in many cases practical considerations govern the dimensions of the sections and that aluminium alloys of the non-heat-treatable type usually provide sufficient strength.

The maximum strength obtainable in this group is over 20 tons per square inch, against an ultimate strength exceeding 35 tons per square inch in the heat-treatable group.

Importance of Young's Modulus

The value of Young's Modulus for aluminium being 10 by 10^6 lb./sq. in. against 30 by 10^6 lb./sq. in. for steel means that for geometrically similar sections an aluminium alloy member deflects three times as much as steel. That is, the resilience of the aluminium alloy is greater and offers better resistance to impact stresses. The difference in modulus also suggests that continuity in construction is even more important in the case of aluminium alloys than steel. The deflection of a beam with fixed ends, for instance, is only $\frac{1}{3}$ of that which could occur if it had pin ends. An intermediate state between these two conditions may be fairly easily accomplished and, in fact, is more desirable than full fixity for, in addition to reducing deflection, such partial fixity may produce positive and negative bending moments nearer to each other in magnitude than with completely fixed ends. That is, the ideal state gives equal positive and negative bending moments of $\frac{WL}{16}$ when ends have a certain measure of restraint, whilst with ends fully fixed negative bending moment of $\frac{WL}{12}$ occurs over supports, with a positive bending moment of $\frac{WL}{24}$ at the centre of beam.

The most desirable amount of give in a floor may well receive consideration. Certain regulations specify maximum deflection for beams, but these have been made primarily to avoid cracking of plaster ceilings rather than out of regard for persons using the floor. It may well be that more springiness than that afforded by such regulations is desirable for it is well known that personal fatigue is greater when walking over a solid ground floor than over suspended floors, the deflection of which reduces the impact on the feet.

ROOFS

The use of aluminium alloys for roofing purposes is not a new development for a very successful roof of aluminium corrugated sheets was used on a Government building in New South Wales before the end of the last century. When examined some 40 years later the metal was in excellent condition except where copper fixing nails were wrongly used.

Aluminium alloys may be employed to-day for tiles, for seamed sheet roofs (flat, domed or pitched) and for composite roofing slabs or boards. A great deal of attention has recently been devoted to each of these systems, and roofs have also been designed in which aluminium alloys were used for the structure as well as the weather-resistant covering.

Flat Roofs

Flat-roof construction seems to be distinctly attractive to many architects on both æsthetic and economic grounds. As mentioned above, troughing of aluminium alloys may be used to provide the required rigidity, but there are many other structural forms possible, e.g. box sections. Weathering may be of aluminium alloys either spot welded or welded in the conventional manner; insulation may be considered sufficient if a hardboard ceiling is connected to the underside but, if desired, further insulation may be added by insulation boards between weathering skin and troughing, etc., or by aluminium alloy foil inside the boxes. A composite slab consisting of aluminium alloy filled with an inexpensive insulator such as sawdust or sawdust concrete may find very useful adaptation here or in the construction of floors.

For roofs of comparatively small span, ribs or trusses may be dispensed with if the roof is broken up into self-supporting panels. In the case of pitched roofs, the walls may be capable of providing the horizontal reactions, or alternatives such as tie bars introduced at suitable spacings.

The facts that aluminium alloy sheets may be obtained pressed or corrugated to any pattern and that they possess great ductility so that they can be bent and shaped, ensure a wide scope to the designer. As with other ductile metals, joints may be welted when employing flat sheets, but less expensive methods are possible, such as lapping the ends and sides, turning the sides up and providing special cover junction strips or turning the sides down into a channel formed in the aluminium alloy extruded support and filling up the channel with a bituminous material. The use of plastics for jointing is also worthy of exploration.

The extrusion of special aluminium alloy sections having thin outstanding arms which may be easily bent down over the bent-up edge of sheeting so that a sound joint is provided, should be noted. This system is applicable where aluminium alloy sheets are used to cover roofs of any material. The junction sections are first connected to the base material by plugs or screws, then the sheets with sides turned up are laid, and finally the thin lapping portions of the extrusion bent over. This idea may be extended and the extrusion used structurally, e.g. as the rafter of the aforementioned ribs spaced 2 ft. 6 in. apart. Here again may be emphasized the great advantage to be gained for the manufacture of units covering as wide an area as possible, so that site joints, always a source of concern, may be eliminated.

Gutters and Spouting

Rainwater goods are preferably of aluminium alloy where this material is used for the roof. Aluminium gutters and down-pipes may be manufactured in the same manner as with other metals but greater lengths may be readily handled. Maintenance is lower than with ferrous materials and there is no risk of staining due to corrosion products.

PARTITIONS

The application of aluminium alloys to partitions has not as yet been made to any great extent although decorative aluminium panels and other fixtures have been used for many years. The chief reason for this is that detailed information has been lacking whilst price considerations have hitherto militated against such applications.

For partitions which may be removed and re-used elsewhere, and for sliding partitions, the low weight of aluminium alloys suggests their extensive application. The weight of aluminium alloy partitions would be so small that in rooms of the average height it would probably be permissible to omit allowance for them when designing the floor and they may be safely introduced to floors which would not have the necessary safety margin to carry heavier partitions.

They may be designed to act as load-carrying members forming part of the structural scheme, in which case the heat-treatable alloys would be used to provide maximum stress resistance properties. Suitable alloys are available in a range of ultimate strengths from 22 tons per sq. in. to at least 30 tons per sq. in.

The aluminium alloys suggested for non-load-carrying partitions, including panelling,

are of the aluminium-magnesium non-heat-treatable type which may be readily welded by the electric arc, gas and spot methods.

The weight of such partitions constructed wholly of aluminium alloys should not exceed 2 lb. per sq. ft.

Plastics for jointing may be particularly suitable for use in aluminium alloy partitions, and one partition system, lately evolved, comprises aluminium alloy facing sheets about 3 in. apart, connected by an internal troughed sheet, the joining of this internal trough and the external sheets being by a plastic compound.

The high thermal insulation of aluminium alloys is advantageous here and it could be further improved by filling the panels with an insulative material such as cork or arranging aluminium foil inside the panels ; the polished foil may be stapled to wood battens connected to the inside of one of the aluminium sheets by an adhesive.

Services may be accommodated within the panels and hollow parts. Features such as skirting, dado, cornice, etc., may be arranged by shaping sheets or strip as required.

Periodic cleaning with warm soapy water is sufficient to maintain aluminium alloy surfaces in an unimpaired condition for an indefinite period except for the possible fading of dyed anodic coatings. The control of tints obtained by anodizing and dyeing is not always perfect, and some slight variation between individual sheets may occur. This variation would not be noticeable in partitions in which the area is broken up into panels with thin cover strips of a contrasting colour.

The decorative scheme may be arranged to satisfy almost any taste, using metal alone or combined with other materials. Panelling or coverings, such as plasterboard, glass, plastics, etc., may be used with aluminium alloy framing, or alternately, aluminium alloy panels or covering may be used with framing of other materials.

That the aluminium alloys are non-inflammable is sufficient to allow the general installation of aluminium alloy partitions, but as the melting points of these alloys range between 530°C. and 640°C. should special circumstances require it a fire-resisting material such as asbestos may be incorporated inside the components.

Sliding Partitions

Sliding partitions may be formed of panels generally similar to those of fixed partitions. Aluminium alloys appear to be ideal materials for such construction to ensure maximum ease of opening and minimum impact on walls, thus conferring maximum life to the fittings, especially those bearing on the guide and runner bars. Bottom cills, covers to top track and wall posts may also be constructed of aluminium alloys to match with the partition.

DOORS

Doors may range in size up to those which are fitted to airship hangars and with their increase in size the difficulty of opening and closing increases. It is recognized therefore that simplification follows the use of aluminium alloys for the large type of door since a reduction of 50-60 per cent. of the work required to operate such doors could be obtained. In the case of sliding doors the reduction in weight enables the section of the supporting structure from which they hang to be proportionally reduced in size.

In cases where a considerable span is required, as for a level crossing, the forces in the bars of the gate itself would be reduced by using aluminium alloys.

It follows from the foregoing that this advantage of the lighter material is cumulative and it may well be that doors may be constructed of aluminium alloys of a size which would otherwise be prohibitive. The corrosion resisting properties of aluminium alloy are also of great advantage where maintenance is difficult, as may be the case with large sliding doors.

Smaller doors would also benefit by using aluminium alloys on account of ease of opening, resistance to corrosion and the fine finish possible. Hinged doors may be of hollow construction with features formed by pressing and the space inside filled with an insulating material. Each side of the door may be pressed from a single sheet, their edges bent and welded edge to edge forming the thickness of the door.

A great many glazed doors of aluminium alloy have been made for shops, restaurants, hotels, etc., and particularly good examples are swing doors, which weigh considerably less than similar types of wood.

GLAZING BARS AND WINDOWS

Aluminium alloy glazing bars were in use over fourteen years ago, and competed successfully with bars of other metals. The effect of weathering on many of these installations has recently been investigated and in all cases the findings have been considered very satisfactory.

The fact that by the extrusion process shapes too complicated for rolling may be obtained is a great asset to the design of suitable glazing bars. Apart from the good appearance of aluminium alloy bars their weight is low, and hence it is often possible to reduce sections of the supporting structure.

For some years prior to the war aluminium alloys were used for windows in many notable buildings and recent examinations of them have encouraged the extension of their application to all types.

The maintenance of aluminium alloy windows is low even in the presence of a very damp or polluted atmosphere. If it is considered that the alloy window frames should have some further protection than that afforded by the protective film which forms on exposure, anodizing or chemical oxidation may be specified or the metal may be painted.

Sea air conditions are dangerous to most metals, but the aluminium alloys of the magnesium-bearing type are highly resistant to marine conditions, and it is probable that alloys of this type will be widely used for all aluminium alloy frames.

Sliding windows and sashes in which lightness is desirable, call for the application of aluminium alloys ; this type of window appears to be exceedingly popular and easier manipulation would ensure still wider adoption. Further detailed design work is necessary on this aspect, however.

Extruded aluminium alloy sections have been exclusively used heretofore, the corners of the frame being welded, and it appears that such construction may predominate in the future especially in view of probable improvements in welding. Experimental work has been carried out on the manufacture of pressed aluminium alloy and cast aluminium alloy frames, and it appears probable that these methods will provide competition, especially for the smaller windows.

CANOPIES

This is an instance where four properties of aluminium alloys—high strength, high corrosion-resistance, pleasing appearance and ability to extrude almost any section—may be used to great advantage.

These qualities are found together in no other material used in canopies ; consequently either the conventionally shaped structural members are exposed from below, camouflaged by some form of decorative treatment, or the whole of the structure is encased with a decorative and protective covering.

When using aluminium alloys, no added covering to the structure is required, the structure, roof covering and all other features being combined and treated homogeneously. The reactions of such cantilevered canopies in aluminium alloys are, of course, considerably reduced on account of the much lower weights involved.

KITCHENS AND BATHROOMS

Lockers and cupboards in aluminium alloys were adopted before the war by at least one very well-known multiple caterer and received great approval. The metal is non-toxic (hence its wide application in dairies, breweries, etc.) and food may be stored with absolute safety. Such cupboards are easily kept perfectly clean whether the metal is anodized or is untreated. Other advantages are that they may be easily moved, are vermin-proof and present an impeccable exterior.

Construction may be on the basis of sheet aluminium of requisite stiffness pressed and stretched to the required contours with stiffening ribs incorporated or of a sandwich board made up of a core of material acting as a base, such as plywood, plastics, cork, etc., with surface facing both sides of aluminium alloy.

The application of aluminium alloys to refrigerators appears to offer success, for here the insulation properties of the material may be utilized. Suitable alloys resist corrosion by most of the refrigerants.

Aluminium covering for table and counter tops has been used for some years, and an extension of application is here being pursued by considering the table as mainly constructed of the metal. The surface may be easily kept clean and shows no staining, its appearance is pleasing and the lighter weight is an asset.

Wall and ceiling panelling to kitchens may be treated very successfully by facing with aluminium alloys. Its use for such features as mouldings, junction strips, etc., has long been appreciated.

In the bathroom the application of aluminium alloys to the walls and ceiling is attractive. This is encouraged by the variety of finishes possible and the ease with which the surfaces may be cleaned.

Baths in aluminium alloys have been experimented with in pre-war days, but the cost then prohibited any serious attempt to interest the public. Further investigations are required on this and similar items such as washing basins.

INSULATION

Great interest has been taken recently in the insulation of buildings, and it came as a surprise to many people to learn that the Portal factory-made house was insulated with aluminium foil.

Although the heat conductivity of aluminium alloys is twice that of steel, its value as an insulator is notably high on account of the high percentage of radiant heat which is reflected. The thermal and optical reflectivity of the alloys " as produced " is high, and although weathering reduces the reflection value somewhat, if used externally, the inner surface retains its original condition.

Insulation, by using a material of low-conduction, is widely appreciated but the control of radiant heat has been given less attention. Some idea of the importance of the latter may be noted from the heating of rooms by open fires. The heat rays are projected to the surrounding walls, furniture and air. Air is a poor conductor but carries heat by circulation and of the heat projected by the fire the great portion reaches the surrounding walls as radiant heat.

The absorption of these rays varies from 100 per cent. in the case of a completely black surface to nil for a perfect reflector. In insulating against external heat or cold, consideration of radiation is of first importance. In tropical countries the value of a covering which will reflect most of the heat rays is well known ; this has been exemplified in the case of oil storage tanks, which lose a considerable fraction of their contents per day by evaporation. When covered with aluminium foil the loss is greatly reduced.

As a good reflector is a bad radiator, aluminium when used for exterior cladding in cold atmospheres retards the flow of heat from the building.

Where heat insulation without strength is wanted, aluminium foil has been found remarkably effective and cheap. It is inserted in an air space inside the wall or roof panels

and typical figures for insulation are given below :

BTUs per sq. ft. per hour for 1 *in. thickness and* 1°*F. difference in temperature*

Slab cork	0.3 average
Slag wool	0.35
Glass silk	0.2 to 0.3
Cellular rubber	0.3 ,, 0.4
Eel grass	0.31 ,, 0.34
Cellular concrete	0.49 ,, 0.9
Common timbers	0.81 ,, 1.11
Asbestos slabs	0.33 ,, 0.37
Wood fibreboard	0.38 ,, 0.41
Plaster board	1.1
Asbestos cement sheeting	2.0
Concrete with gravel aggregate	6.7
Do. with light-weight aggregates	1.1 ,, 2.3
Single layer aluminium foil in 1 in. air space	0.25

OTHER APPLICATIONS IN BUILDING

The following represents a summary of building applications other than mentioned already. These applications are typical and the list is by no means complete.

Grills, balustrading, handrails, shop fronts and general architectural metalwork have become fairly commonplace in aluminium alloys.

Other countries, especially USA and Germany, were far ahead of this country before the war in the application of aluminium alloys, and it is possible to note some interesting examples and to profit from their experience.

Lifts comprising a big percentage of aluminium have been installed in Paris, Chicago and New York. It has been possible to reduce the weight of the lifts by up to 50 per cent. with such application. Less counterweighting is required ; less power is necessary ; acceleration and deceleration are more easily accomplished. It may be added that collapsible lift gates in aluminium alloys are remarkably easy in operation. In this country a lift in which is used a high percentage of aluminium alloys may be seen at Unilever House, London, whilst another British example is that of the lifts in the *Queen Mary*.

Roller shutters, fire escapes, roof walkways, chimney cowls, copings, cill flashings, and ventilating systems are other instances where aluminium alloys have been used.

Escalators wholly of aluminium alloys have been built in this country for Messrs. Simpsons, of Toronto, and a good example of facings and mouldings may be seen in the escalator at Messrs. Harrods, of Kensington. There appears to be no reason why escalator treads and risers should not be made of aluminium alloys instead of wood for here lightness is desirable and length of service is considerably greater.

A use of aluminium already followed in this country but particularly in the USA, is for wall-facing or cladding in the form of spandrels, pier casing and panels. The chief advantage of the use of the metal is the great reduction in dead weight of walls, this being considerable in multi-storey buildings.

Spandrels are often cast, the technique affording good opportunity for intricate detail at little extra cost, though solidly backed sheet can be used equally well, this type being the lightest in weight. Pier castings are generally extruded and where one section may not be sufficiently wide the whole can be built up from a number of extrusions. Panels are generally of a thin gauge sheet solidly backed (fibreboard, plywood, etc.) and fixed to framed walls and partitions as mentioned elsewhere. Solid backing is necessary to obtain rigidity and freedom from an appearance of waviness, this being particularly noticeable when a high specular finish has been specified.

CONCLUSION,

Before any new material can be accepted it must be shown that its employment is technically sound and also economically practicable. In so far as the aluminium alloys are concerned, past experience and more recent investigations have shown that there are valid technical reasons for their use in a number of applications, but there is as yet little definite indication of the post-war price level of this group of materials.

In this connection, however, it should be noted that fundamental changes have taken place during the war, of which the most important are :

(i) World capacity for producing aluminium at the end of the war has been estimated six times the 1935 tonnage, at least.

(ii) There will be large stocks of both virgin and secondary metal throughout the world.

(iii) There will be a considerable increase in the amount of plant available for the production and fabrication of the aluminium alloys, together with very large numbers of workmen skilled in the working, joining and finishing of these materials.

It is apparent, therefore, that the cost of finished articles of aluminium alloy will tend to be reduced, to the benefit of the consumer.

Immediately prior to the war the price range of the light alloys, volume for volume, was approximately in line with that of copper and the alloy steels. Aluminium alloys were rather more costly than lead, zinc and the cheaper brasses, and considerably more costly than iron or mild steel. Post-war reorientation of the prices of the common metals is likely to show a change of position, although it is too early as yet to forecast what the relative prices will be.

ANNOUNCEMENT

The Zinc Development Association has formed a Technical Committee to act in an advisory capacity to the Council on all questions of a technical character. Dr. H. Mills, of Orr's Zinc White, Ltd., is the first chairman of the Committee.

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★Owing to war conditions, it is greatly regretted that considerable unexpected delay is occurring in the delivery of reprints of Information Sheets and those applying are requested to note that it may be some time before the sheets they ask for can be sent.

Information Sheets on LEAD & LEADWORK

Copies of sheets of special interest may be obtained free of charge by architects, housing authorities, builders, plumbers and students who will write for the list of Lead Technical Publications and indicate thereon the sheets they wish to receive. Any number of sheets is available in this way without charge. Alternatively "complete sets" are obtainable at a charge of 5/-. Lead Industries Development Council, Eagle House, 109 Jermyn Street, London, S.W.1.

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

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

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Candidates for (3) should be Members or Associate Members of the Town Planning Institute.

Salaries in accordance with the Burnham Technical Scale for London (plus war-time bonus), subject to the usual 5 per cent. deduction for superannuation. Commencing salary according to qualifications and experience.

Further particulars and forms of application, which must be returned by 29th July, 1944, can be obtained by sending a stamped addressed foolscap envelope to the Director of Education, The Polytechnic, 309, Regent Street, W.1. 682

NEWTON-le-WILLOWS URBAN DISTRICT COUNCIL

Applications are invited for the position of General Assistant in the Engineer and Surveyor's Department of the Council at a salary of £260 per annum, plus bonus at present amounting to £49 8s. 0d. per annum.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937. The person appointed will be required to pass a medical examination.

Architectural or Town Planning experience or the possession of a recognised professional qualification will be an advantage.

Applications, accompanied by copies of three recent testimonials, should be submitted to the undersigned by first post on Saturday, the 15th July, 1944.

M. W. COUPE,
Clerk of the Council.

Town Hall,
Market Street,
Newton-le-Willows. 692

COUNTY BOROUGH OF SOUTHEND-ON-SEA EDUCATION COMMITTEE

MUNICIPAL COLLEGE

Principal: P. F. R. VENABLES, PH.D., B.Sc., F.R.I.C.

Applications are invited for a Lecturer in Architecture, Fellow or Associate of the Royal Institute of British Architects. Required to commence duties as soon as possible. For teaching in the Department of Architecture and Building, which is recognised by the Royal Institute of British Architects.

Salary is in accordance with the Burnham Technical Scale for the Provinces.

Fuller details of the post and forms of application may be obtained from the undersigned, on receipt of a stamped and addressed foolscap envelope. Applications should be returned to the Principal, as soon as possible.

H. BOYES WATSON,
Chief Education Officer.

Education Offices,
Warrior Square,
Southend-on-Sea. 691

BOROUGH OF CLITHEROE.

BOROUGH SURVEYOR'S DEPARTMENT.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

Applications are invited from Registered Architects for the above appointment at a salary of £325 per annum, plus war bonus (at present, £49 8s.).

The appointment will be temporary, but may lead to a permanency.

Applications in a plain sealed envelope endorsed "Architectural Assistant," stating age, qualifications, previous experience and position in respect of National Service, and accompanied by copies of three recent testimonials, must be delivered to the undersigned not later than 12 noon on Friday, 14th July, 1944.

G. HETHERINGTON,
Town Clerk.

The Castle,
Clitheroe, Lancs.
27th June, 1944. 694

ARCHITECTURAL ASSISTANT, temporary, required by the Property Department of the County Council of Lanark.

Candidates must not be less than 35, unless medically unfit for military service, and must be qualified architects with experience in designing and developing drawings, and a knowledge of surveying and levelling.

Salary £250 to £300, according to qualifications, plus war bonus.

Applicants should write, quoting E.A.862XA, to the Ministry of Labour and National Service, Room 432, Alexandra House, Kingsway, London, W.C.2, for the necessary forms, which should be returned completed on or before 18th July, 1944. 695

Architectural Appointments Vacant

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

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

JUNIOR ASSISTANT (Male) required in architect's office for drawing, tracing, etc. Apply, stating age, salary and experience to Henry C. Smart & Partners, Architects and Surveyors, 251/253, Finsbury Pavement House, 120, Moorgate, E.C.2. 671

Architectural Appointments Wanted

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

ASSISTANCE. A/A.R.I.B.A.'s will prepare schemes and drawings, etc., in own office, spare and part-time work. Total experience 25 years. Central Scotland area. Write Box 301.

ASSISTANT, seven years' experience domestic, commercial, industrial structures and prefabrication, is available immediately for professional firm, contractor, industrial concern or research organization. Salary about £6 6s. Box 305.

SURVEYOR, BUILDING SURVEYOR, INSPECTOR, Etc., with over 30 years' varied experience, qualifications (theoretical and practical), in all branches of the profession, and building trades, seeks responsible position in Birmingham, or surrounding five counties; with Local Authorities, or public bodies, etc.; experience in public offices; and includes war damage, dilapidations, etc.; exempt military service, over military age. Box 306.

MALE ARCHITECTURAL STUDENT, second year Liverpool school of Architecture, wants work of national importance in an architect's office, London preferred, during summer vacation after July 8th. Box 308.

BOY (aged 16½), trained draughtsman, very interested in architecture, requires post in architect's office. Box 310.

ARCHITECT AND SURVEYOR, L.R.I.B.A., A.I.A.S. (Quants.), Age 37, seeks contact with firm offering post-war prospects, preferably with view to partnership; 20 years varied experience; very excellent credentials. Box 309.

JUNIOR DRAUGHTSMAN (aged 17), 4 years' technical college (building) training; some experience; wants position in either architect's office or drawing office in London area. Box 311.

ASSISTANCE OFFERED by A.R.I.B.A. (exempt) in Birmingham and district. Box 312.

ASSOCIATE, medically discharged from the Army and now free, with over 20 years' varied experience, since leaving public school and architectural association, desires working partnership where real prospects of post-war work exist. Advertiser is useful designer and first-class draughtsman. London or country preferred. Reply Box 313.

ARCHITECT (registered), L.R.I.B.A. quantity surveyor, desires responsible position with post-war prospects. Experienced housing, factories, licensed premises, hospitals and nurses homes, alterations to existing buildings, working drawings, details, specifications, bills of quantities, checking accounts, land surveying and levelling, etc. Salary £450 p.a. Box 314.

CHARTERED ARCHITECT, 35 (school trained), on deferred service with RAFVR, seeks position in Yorkshire. Specialist in school design and quantities. Salary by arrangement. Box 315.

Classified Advertisements continued on page xlii.

TWO COMPETENT DRAUGHTSWOMEN, third year students Regent Street Polytechnic School of Architecture, want office experience with architect or town planner, during summer vacation, starting July 31, London. Box 316.

ARCHITECTURAL ASSISTANT, with first-class experience, layouts, perspectives, details, surveying and levelling; age 35; exempt from military service; now available. Hugh R. H. Eades, 13, Stoke Road, Guildford, Surrey. 317

DRAUGHTSMAN TRAINEE. 16 years. 2 years Civil Service. Seeks position in South Yorkshire. Good Tracer. References. Carnley, 41, The Crescent, Bolton-on-Dearne. 318

ARCHITECTURAL ASSISTANT, 22, desires post in Architect's Office; Intermediate R.I.B.A., four years' architectural training and varied office experience since 1939; exempt. Box 319.

ARCHITECTS' ASSISTANT (Junior) requires a situation in London Area in Architect's Office. Box 320

ARCHITECT'S ASSISTANT (25), ex army officer invalided present emergency with over 4 years' experience, requires permanent progressive post with N. Wales architect. All scale and F.S. working drawings, surveying (chain and theodolite), levelling, etc. Slight knowledge quantities and specification compiling. Box 321.

ARCHITECT, fully qualified, with wide experience, T.P. qualification, would accept temporary post from August 1st to September 15th. Box 322.

ARCHITECT (**Chartered**), experienced carrying through works in London and Provinces, requires position in London or Home Counties with first class practice with view to partnership. Willing to bring own connection. Box 323.

Other Appointments Vacant

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

ASSISTANT EDITOR wanted for Architectura Paper. Write, with full particulars of qualifications salary required, &c., to Box 51.

Other Appointments Wanted

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

CONSULTANT available to advise on Schemes for Sanitary Services, Drainage, Plumbing, Heating, etc., for new construction or adaptations. Box 672

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As originators of the Auto-Recorder System of Machine Milking we have had extensive experience of planning layouts to accommodate the new technique. The service of our Technical Department is available to any Architect planning or modifying farm buildings for this purpose. Write in confidence to:—The Planning Dept., Gascoignes (Reading) Ltd., Gascoigne House, Berkeley Avenue, Reading. 603

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COMPANY ENGAGED ON ESSENTIAL ENGINEERING WORK requires factory with covered area of not less than 10,000 square feet, on site area of at at least 2½ acres. Bombed building with sound foundations would be considered; district as near Central London as possible. Immediate post-war possession also considered. Replies treated in strictest confidence. Agents please note. D. Sebel & Co. Ltd., 55, Lant Street, S.E.1. HOP 3803. 693

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, Great Marlborough Street, W.1. Gerrard 4223-4224-4225.

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