THE ARCHITECTS' JOURNAL

No. 2530] [Vol. 98

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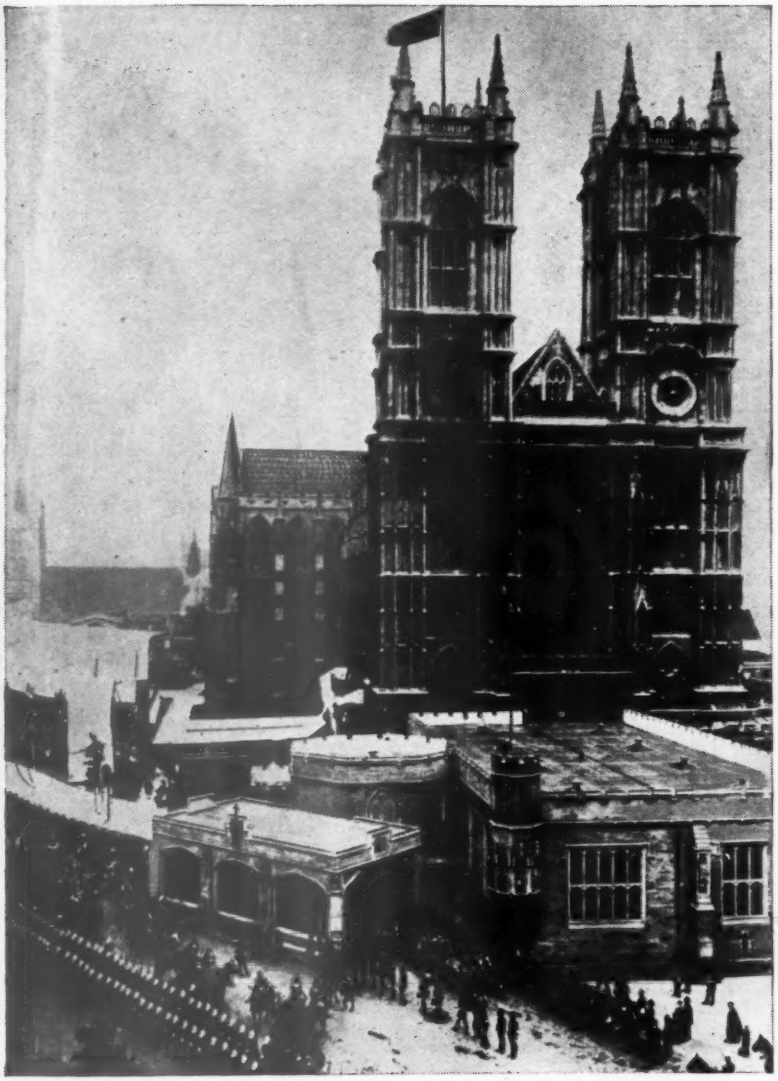
★ The war has both multiplied the number of Official Departments and encouraged Societies and Committees of all kinds to become more vocal. The result is a growing output of official and group propaganda. A glossary of abbreviations is now provided below, together with the full address and telephone 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.
BCGA	British Commercial Gas Assn. 1, Grosvenor Place, S.W.1. Sloane 4554.
BEDA	British Electrical Development Association. 2, Savoy Hill, W.C.2. Temple Bar 9434.
BIAE	British Institute of Adult Education. 29, Tavistock Square, W.C.1. Euston 5385.
BINC	Building Industries National Council. 110, Bickenhall Mansions, W.1. Welbeck 3335.
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.
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.1. 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), Goring Hotel, Grosvenor Gardens, S.W.1. Victoria 9787-88.
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, Victoria Embankment, W.C.2. Temple Bar 7676.
IHVE	Institution of Heating and Ventilating Engineers. 21, Tothill Street, S.W. 1. Whitehall 9609.
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.
ISPH	Committee for the Industrial and Scientific Provision of Housing. 3, Albemarle Street, W.1. Regent 4782-3.
LIDC	Lead Industries Development Council. Rex House, King William Street, E.C.4. Mansion House 2855.
LMBA	London Master Builders' Association. 47, Bedford Square, W.C.1. Museum 3767.
MARS	Modern Architectural Research. 8, Clarges Street, W.1. Grosvenor 2652.
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.2. 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.
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.
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.
RC	Reconstruction Committee RIBA. 66, Portland Place, W.1. Welbeck 6927.
RCA	Reinforced Concrete Association. 91, Petty France, S.W.1. Whitehall 9936.
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. 13, Suffolk Street, S.W.1. Whitehall 2881.
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.



WHEN WE WERE YOUNG

The dawn of a memorable reign. The Coronation procession of King George V. arriving at Westminster Abbey, June 22, 1911

Who could foretell on that glorious June day, the momentous events that would fill the years of the reign! The rhythm of progress was advanced to an unbelievable tempo. The air was mastered, the ether harnessed; all the sciences made greater strides in years than had been accomplished in centuries.

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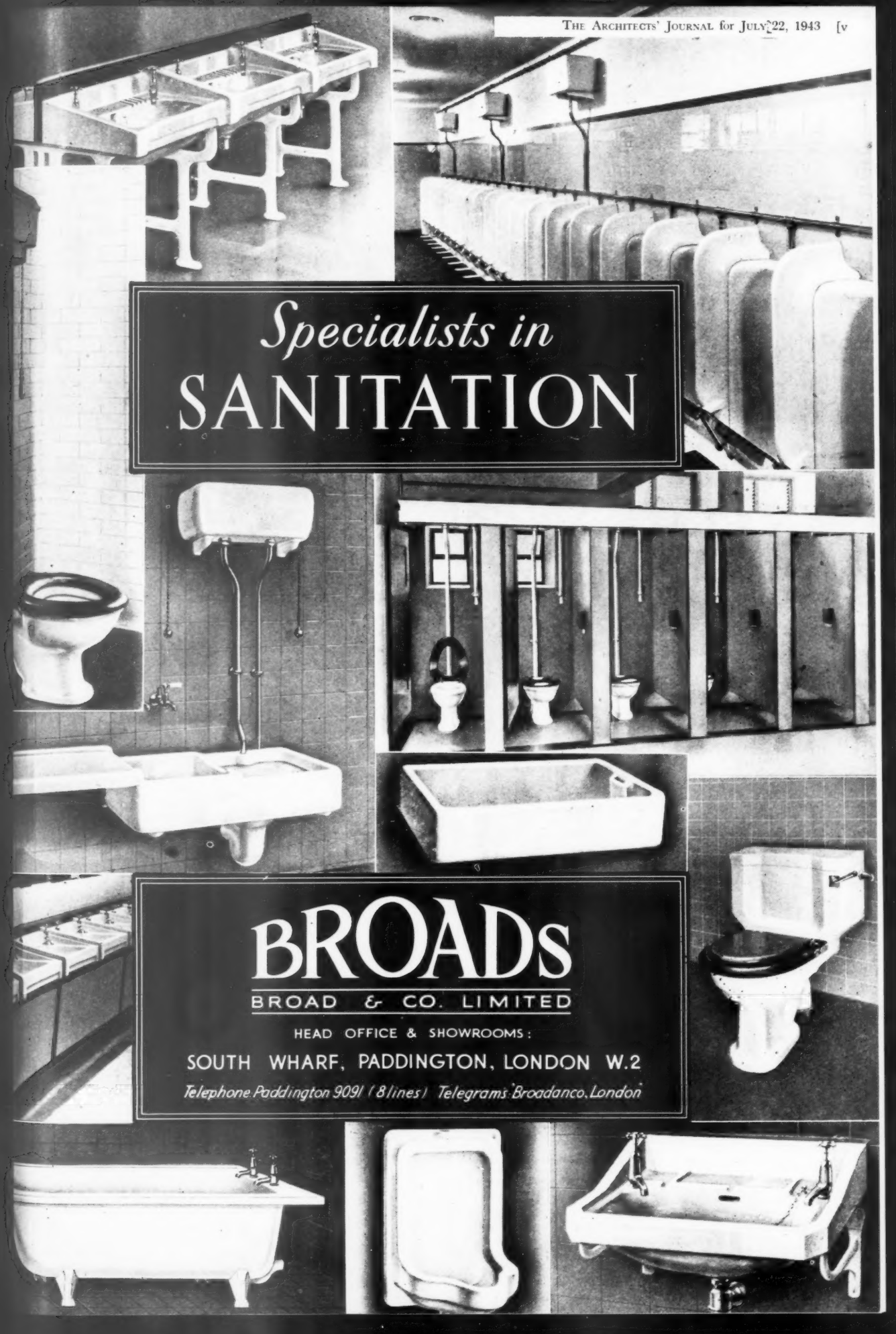
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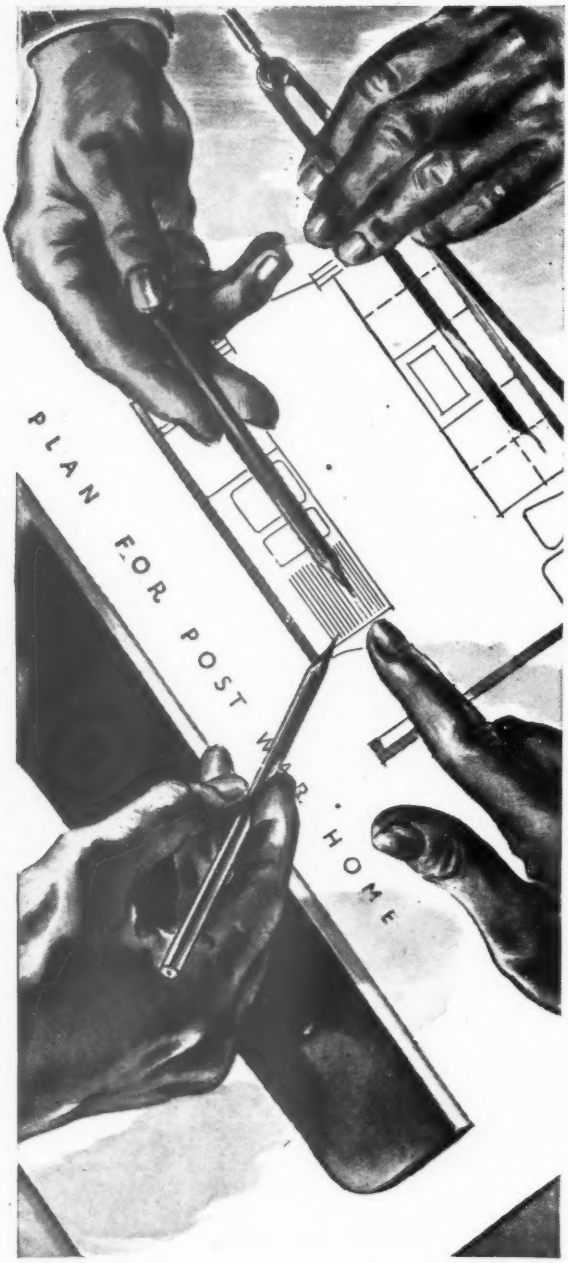
"Now is the time for all good men..."



"Now is the time for all good men to come to the aid of the party."

That good old manual-of-typewriting phrase makes as good a motto for today as any other.

Only the "party" we have in mind is not after the pre-war luxury pattern.

What we're thinking of is a much more practical — but not less interesting — gathering.

We're out for the aid of the party of post-war housewives. We too want bright new homes for them, planned for sunshine and labour saving and family health.

We want to get together with "all good men" who are concerned with planning for these post-war homes. Our contribution to the picture is specialised but (as we see it) necessary:

Refrigerators for use rather than for ornament, for practical service rather than for social prestige, for the little homes and not simply for the favoured few.

That's our programme. Now—can we all work together?

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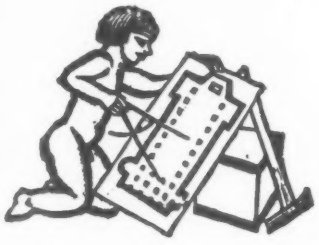
Prestcold Refrigeration

FOR POST-WAR HOMES

A PRODUCT OF THE PRESSED STEEL COMPANY LIMITED

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



DIARY FOR JULY

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.

AIRTON, near Skipton. *Twenty Women at Home Exhibition.* (Sponsor, HC.) JULY 22–31

BIRMINGHAM. *Living in the Country Exhibition.* At National Council of Social Service, Edgbaston. (Sponsor, HC.) JULY 26-AUG. 9

BRENTWOOD. *Living In Cities Exhibition.* At the Grammar School. (Sponsor, BIAE.) JULY 22–25

BROMLEY, Kent. *Your Inheritance Exhibition.* (Sponsor, HC.) JULY 22–24

BULFORD, Wilts. *Twenty Women at Home Exhibition.* (Sponsor, HC.) JULY 22–30

CHELMSFORD. *Living In Cities Exhibition.* At Mid-Essex Technical College. (Sponsor, BIAE.) JULY 26–31

GATESHEAD. *When We Build Again Exhibition.* At Shipley Art Gallery. (Sponsor, TCPA.) JULY 22 to AUG. 2

HUDDERSFIELD. *Englishman Builds Exhibition.* At Woodhead Memorial Lecture Hall, Tolson Memorial Museum. (Sponsor, BIAE.) JULY 22–31

LONDON. *Royal Academy's Summer Exhibition.* At Burlington House, Piccadilly. 9.30 a.m. until 7 p.m. Weekdays; 2 p.m. until 6 p.m. Sundays. Admission one shilling. JULY 22 to AUGUST 7

ABT LECTURES

ABT School of New Building Technique. At the Alliance Hall, Palmer Street, Westminster, S.W.1.

Third Session—July 22, at 6.30 p.m. Chairman: David Percival. *Steel and Other Metals.* F. J. Samuelly. *Plastics and Other Materials.* Lecturer to be arranged.

Fourth Session—July 29, at 6.30 p.m. Chairman: Professor W. G. Holford. *Site Experiences in the USA.* Mark Peter. *The Application of Prefabrication to Housing.* H. J. Spiwak.

The lectures will be illustrated by photographic material and drawings, and there will be opportunity for questions and discussion at the end of each session. A bibliography and a summary of the lectures and discussions will be available for those attending. Fees for the course, 5/; for individual lectures, 2/-. 50 per cent. reduction for members of the ABT and of the NFBTO on production of their Union cards. Applications for enrolment to: David Morrison, 3a, Heathway Court, Finchley Road, N.W.3.

Exhibition of the work of the London Regional Reconstruction Committee. At the National Gallery. The LRRC is a Committee appointed by the Council of the RIBA, with 12 members from the Institute and the AA respectively. It has been at work for nearly two years on the problems of reconstruction and post-war planning for the London Region. The latter for the purposes of the Committee's work has been defined as C.D. Region No. 5, the area of which is about 850 sq. miles, with a population of about 8,500,000. The exhibition consists of proposals for a Regional Plan illustrated by plans and a plan-model to a scale of 6 in. to 1 mile. Many other drawings and diagrams are exhibited to illustrate particular problems of the Region, such as transport, and to demonstrate the principles upon which the Committee has based its proposals. A Historical Section is included in the exhibition. (See A.J., June 10). JULY 22 to 31

Rebuilding Britain Exhibition. At Royal Exchange. Open at 1.45 p.m. Monday to Friday; 10 a.m. to 12 noon Saturdays.

Building Congress. (Organised by BINC.) Central Hall, Westminster, S.W.1. The object is to enable those in official and private positions to meet and consider some of the main problems involved in the work of the building industries and allied professions in the reconstruction period. It is hoped that time will be available for open discussion.

July 22. 10 a.m. The Mayor of Westminster, Councillor H. V. Day, will receive the delegates. 10 a.m. to 11.15 p.m., *Town Planning and the Building Industry.* Chairman: Sir P. Malcolm Stewart, Bart. (formerly First Commissioner for Special Areas). Opening speaker: W. S. Morrison (Minister of Town and Country Planning). 11.20 a.m. to 1 p.m., *Availability of Labour in Building.* Chairman: Sir Walter Citrine, K.B.E. (Secretary of the Trades Union Congress). Opening speaker: Malcolm S. McCorquodale (Joint Parliamentary Secretary to the Minister of Labour). 2 p.m. to 3.30 p.m., *Future Organization of the Building Industries.* Chairman: W. H. Ansell (President of RIBA). Opening speaker: George Hicks (Parliamentary Secretary to MOW). 3.35 p.m. to 6 p.m., *Place of Building in Economic Reconstruction.* Chairman: Viscount Sankey. Opening speaker: Sir William Jowitt, K.C. (Minister without Portfolio).

County of London Plan Exhibition. At the County Hall, Westminster Bridge, S.E.1. Large scale maps and drawings, etc., of the County of London Plan for redevelopment, prepared by J. H. Forshaw, architect to the L.C.C. and Professor Patrick Abercrombie. Open to the public Mondays, Tuesdays, Wednesdays, Thursdays and Saturdays, 10 a.m. to 8 p.m.; Fridays 10 a.m. to 9 p.m. The exhibition will not be open on Sundays. The Plan was illustrated in the *A.J.* for July 15. JULY 22 to AUG. 14

LOWESTOFT. *The Englishman Builds Exhibition.* (Sponsor, HC.) JULY 24-AUG. 7

SEATON, DEVON. *TCPA Conference.* At Colyton Grammar School. (Sponsor, TCPA.) JULY 22

NEWS

THURSDAY, JULY 22, 1943
No. 2530. VOL. 98

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.*

MOH has received proposals TO BUILD 130,000 HOUSES after the war from 586 local authorities.

This was revealed in Parliament by Mr. Ernest Brown, Minister of Health. When he was asked if he is considering offering building subsidies to private enterprise after the war Mr. Brown said: No. I would remind you that, despite the absence of subsidies, large numbers of houses were built in the years before the war. Asked for an estimate of the number of new houses required to provide each family with a separate dwelling, he said: It is not possible to be precise, but the figure is of the order of about half a million.

Shortage of materials and labour has made it impossible to proceed with the MUCH NEEDED REPAIRS TO WINCHESTER CATHEDRAL.

The repairs are needed to the stonework. But a more serious matter, says the Dean of Winchester, in the *Winchester Cathedral Record*, is the settlement taking place in the thirteenth century buttress in the crypt. The architectural surveyor has sought the advice of Mr. Ralph Freeman, of Sir Douglas Fox & Partners, structural engineers. A detailed report is expected shortly, and the Dean and Chapter hope to receive Government priority for whatever work might be regarded as urgently necessary. The deathwatch beetle appears to have been entirely exterminated in the roof timbers.

from AN ARCHITECT'S *Commonplace Book*

DESIRABLE RESIDENCES: ELIZABETH BENNET'S. [*From* Pride and Prejudice *by Jane Austen*]. They gradually ascended for half-a-mile, and then found themselves at the top of a considerable eminence, where the wood ceased, and the eye was instantly caught by Pemberley House, situated on the opposite side of a valley, into which the road, with some abruptness, wound. It was a large, handsome stone building, standing well on rising ground, and backed by a ridge of high woody hills; and in front, a stream of some natural importance was swelled into greater, but without any artificial appearance. Its banks were neither formal nor falsely adorned. Elizabeth was delighted. She had never seen a place for which nature had done more, or where natural beauty had been so little counteracted by an awkward taste. . . . The housekeeper came; a respectable-looking elderly woman, much less fine, and more civil, than she had any notion of finding her. They followed her into the dining-parlour. It was a large, well-proportioned room, handsomely fitted up. Elizabeth, after slightly surveying it, went to a window to enjoy its prospect. .. . . She looked on the whole scene, the river, the trees scattered on its banks, and the winding of the valley, as far as she could trace it, with delight. . . . The rooms were lofty and handsome, and their furniture suitable to the fortune of their proprietor; but Elizabeth saw, with admiration of his taste, that it was neither gaudy nor uselessly fine; with less of splendour, and more real elegance, than the furniture of Rosings. "And of this place," thought she, "I might have been mistress!"

In Parliament Mr. George Hicks, Parliamentary Secretary to MOW, said that LOCAL BUILDERS WILL GET THE FIRST CHANCE to build the farm workers' cottages.

The question of employing big builders, he said, would only arise if local authorities cannot obtain satisfactory tenders locally. Mr. W. W. Wakefield, who had raised the matter, said the answer will give great satisfaction to many excellent small builders who are well able to do this work, and who have felt that they are being squeezed out.

In the future Bath should not only be DEVELOPED AS A FOREMOST WORLD SPA, says Professor Patrick Abercrombie, but as a pleasant city of residence and recreation.

He is engaged with Mr. A. Mealard, Bath and District Town Planning officer, on a report on the general proposals for the replanning of Bath after the war. Among his suggestions, according to *The Times*, are an insistence that there shall be no mummification of Bath. It must not rely simply on its traditions. The city's Georgian buildings should be used primarily as residences. Bath must regard itself as a beautiful city set in beautiful surroundings, where peace and quiet can be enjoyed, and people can make a pleasant place in which to live. He sums up the future Bath as a city of health, residence, recreation and shopping facilities.

One of two resolutions passed at a meeting of the Liverpool District of ABT deplores the fact that the new plan for the City of Liverpool has evidently been PREPARED WITHOUT ARCHITECTURAL ADVICE.

The two resolutions were as follows:—*Resolution No.* 1.—This meeting deplores the fact that local authorities, who are being pressed by the Government to proceed with plans for post-war housing, are working entirely without relationship to a comprehensive national, regional or local town plan, and is of the opinion that such uncoordinated efforts can only magnify the chaotic state of building development existing before the war. The meeting calls upon the Government to give immediate implementation to the principal recommendations of the Scott and Uthwatt reports in order that all post-war planning work may be guided by a national planning policy. *Resolution No.* 2.—This meeting deplores the fact that the new plan for the City of Liverpool published in December, 1941, had evidently been prepared without any architectural advice and further deplores the apparent continued reluctance to invite the co-operation of the architects of Liverpool in the carrying forward of this plan. The meeting considers that architectural guidance of the finest quality is essential if a city of a high cultural order is to result, and therefore calls upon the Corporation to appoint forthwith a panel of architects to work in collaboration with the city architect, the city engineer and the Regional Town Planning Adviser on this project.

A big part in the house-to-house survey of Northern Ireland, which the Ministry of Home Affairs hopes to complete by the end of next month, is being played by CYCLIST FLYING-SQUADS OF TECHNICAL OFFICERS.

The purpose of the survey is to make a blue print on which plans for post-war housing in Northern Ireland can be framed. The work is being carried out for the Planning Advisory Board whose chairman is Mr. D. Lindsay Keir. The survey is divided into two parts, one covering the structural side of housing, the other overcrowding. Every house in every city, borough and urban district will be visited. To get a complete picture of the rural areas the Ministry decided to select sample zones, carry out a detailed survey of them and, by multiplication, get a fairly accurate picture of the complete position. In the cities, boroughs and towns the counting of residents in the overcrowding survey is being done by enumerators employed by the local authorities. This has been completed in the Ballymena Borough area. The Ministry's technical officers are doing the structural survey in cities, boroughs and towns, and the whole of the survey in the sample areas. It is in connection with the survey in outlying rural districts that the technical officers are formed into flying squads. This system has been tried in the two areas now completed—Moorfields in Co. Antrim and Dromore in Co. Down. Here the teams of technical officers resided at Ministry of Home Affairs' evacuation camps. They were conveyed to a convenient point by lorry or bus, and from this point they covered the different townlands by bicycle, meeting again in the evening at an agreed point for the return journey by road transport to the evacuation camp.

The Council of the West Yorkshire Society of Architects feels that a civic society, with strong architectural representation, is probably ONE OF THE BEST CHANNELS for dealing with the general problems likely to arise in reconstruction.

This feeling is expressed by the Council, in its annual report, in congratulating Bradford on forming a strong civic Society, sponsored by Mr. Harold Connolly, A.R.I.B.A. The Council hopes that the initiative of Bradford will result in similar civic societies being established in all the towns within the area of the Society, and that some effort will be made to re-instate the Leeds Civic Society to the strong position it once held. The Council also congratulates the Halifax Education Authority in forming a new scheme to provide scholarships direct to the Leeds School of Architecture. In recording that Councillor J. E. Lunn, L.R.I.B.A., has been appointed Mayor of Huddersfield, of which Corporation Mr. Clifford Hickson, F.R.I.B.A. is also a Councillor, the Council points out that it would appear a propitious time for members of the Society who are possibly marking time until the boom years prophesied for after the war, to follow some of the ideas on service to the community suggested in Alderman Illingworth's address. (See *A.J.*, June 3, 1943). At the annual general meeting of the Society, Alderman William Illingworth, F.R.I.B.A., of Bradford, was elected President for the second year and Messrs. H. Jackman, L.R.I.B.A. (Leeds) and C. Sunderland, F.R.I.B.A. (Halifax), senior and junior Vice-Presidents respectively. Messrs. Norval R. Paxton (Leeds) and J. R. Tolson (Leeds) were elected hon. secretaries and Mr. W. Broadbent (Leeds) hon. treasurer.

County Architect of Glamorgan

As far as we are aware the first appointment of a county architect since war began, has just been made at Glamorgan, where Mr. Lawford R. Gower succeeds Mr. J. Williamson, who has retired under the age limit. Mr. Gower has been deputy county architect of Glamorgan for the past three years. Before entering the service of the County Council thirty years ago, he was articled to the late Mr. J. Cook Rees of Neath and was afterwards assistant to Mr. J. Herbert Jones of Swansea. A Fellow of the RIBA, Mr. Gower is a Fellow and Member of the Council of the South Wales Institute of Architects, Chairman of the Executive Committee of the Central Branch of the South Wales Institute and honorary lecturer in modern architecture at the Welsh School of Architecture. During the last war he served in the Welsh Regiment. In Glamorgan, where he is now county architect, he has designed many educational and other buildings. Mr. Gower's successor has not yet been appointed.

★

After a three-hours debate last week THE LCC APPROVED THE PLAN for the re-building of the County of London.

The plan, prepared by Mr. J. H. Forshaw, architect to the LCC, and Professor Patrick Abercrombie, was illustrated and described in the JOURNAL last week. Having been approved in principle by the LCC the plan will be sent to MOTCP and various public bodies, and will be reviewed by the Council when their comments have been received. At the meeting the Finance Committee reported that the existing financial resources of the LCC will be quite inadequate to carry out the scheme with only the Treasury assistance which before the war was given towards essential projects. Lord Latham, Leader of the Council, declared that the Government should indicate its policy on the finance of planning. There must be provision for seeing that the burdens in compensation paid by local authorities for enhanced values, which may proceed from the spending of public money, can be relieved, he said. I sometimes wonder whether there are not some unseen influences and unseen interests at work, he went on, to delay and frustrate a declaration of policy by the Government on the lines I have indicated. Without these powers, planning becomes a dream. I do beg the Government to get on with the job and so ensure that real progress can be made.

★

During a discussion at the last meeting of the Court of Common Council of the City of London Mr. Syrett stated that there is NO MYSTERIOUS CONSPIRACY TO KEEP THE CITY PLAN SECRET.

The discussion arose on a motion by Captain Alfred Instone, who asked the Court to give instructions for the plan for the reconstruction of the City to be published. He said that complaint is being made that property-owners are hindered in their desire to formulate schemes, finding it impossible to do so until the Corporation publishes its plan. Mr. Syrett pointed out that, unlike the LCC proposal, the City scheme is a detailed and intricate plan. As a member of both committees concerned he could say that there is no ulterior motive or mysterious conspiracy to keep the plan secret. Mr. Claud Dennis, chairman of the Improvements and Town Planning Committee, stated that the plan has been sent to the Royal Fine Art Commission on the suggestion of the Minister of Town and Country Planning. It will also be sent to the Minister for informal and preliminary examination by his advisers. The LCC is under statutory obligation to consult 29 different local authorities. The Corporation has only to consult one—the LCC. The City's draft plan is intended to be more closely capable of translation into a statutory scheme. The committee wish all displaced firms to return to the City. They appreciate the difficulties of those who wish to re-establish their businesses. Everything possible has been done to help by giving decisions where they can be given with certainty and to withhold consent only when it appears likely that a consent might prejudice the position of the City as a whole. Their policy is to defer publication of the plan in the best interests of the Corporation and of the City in its future. Publication now will jeopardize the coming discussions with the Minister and the Royal Fine Art Commission. The motion was rejected.

HIGHLAND PLAN

IN the last fourteen years no fewer than six schemes for Hydro-Electric development in the Highlands of Scotland have been turned down by the House of Commons. Each scheme was proposed by a private company, and each aroused bitter opposition, the greater part arising from a widespread objection to the further vesting of monopoly powers over great natural resources in the hands of a private company, but part also coming from bodies like the Mining Association, landowners and sportsmen who saw in such development a potential danger to their interests.

The Hydro-Electric Development (Scotland) Bill 1943 has passed through both Houses with outstandingly unanimous accord from all sides. The Bill is the result of the Report, published in December 1942, of the Committee on Hydro-Electric Development in Scotland presided over by Lord Cooper.

This report presented a very complex subject with clarity and conciseness, but with limited imagination; its recommendations and the proposed means to carry them out, except in one instance, have formed the basis of the Bill, and have apparently made a sufficiently strong impression to override the previously powerful sectional interests.

The report emphasises the fundamental differences of electrical development in this northern area from all the other areas in Great Britain, *i.e.* the economic and financial differences between the use of coal-fired steam and water power, and those raised by the short-term problem that the present sparse population presents. The Highlands are truly a depressed area; it is estimated that in eighty years' time, if depopulation continues at the pre-war rate, there will be neither man, woman nor child left in the County of Ross and Cromarty, and this situation is reproduced on a smaller scale throughout the Highlands. The standard of living is very low and amenities which urban dwellers take as their right, Highlanders do not know. This in a region where there are vast unexploited resources of hydro-power, which in the last twenty years have been developed in other countries, through magnificent feats of engineering, to confer widespread benefits on the whole community.

Against this background the Cooper Committee has proposed a scheme which includes the creation of a North Scotland Hydro-Electricity Board for the production and distribution of electricity with the purpose of supplying local needs, attracting industry to the Highlands and exporting a surplus on the grid.

The recommendations of the Board for industry are based upon the existence of a growing demand for the products that come from electro-metallurgical and electro-chemical industries. A number of these industries have been started in countries such as Norway, Sweden, Switzerland, Canada and the USA in recent years but so far have not been

developed within the UK owing to the need of these industries for large quantities of cheap electricity, which can only be supplied by hydro-electric power. The future prosperity of the Highlands will depend upon the success of this scheme in attracting industry, and a great deal more consideration should be given to the regional planning of the whole area with regard to industry, housing, leisure, transport and harbours, than has been given in either the Bill or the Report. Both the Bill and the Report overlook the wider implications of the scheme and so risk losing a valuable opportunity for an experiment in democratic planning. Although the problems are in many ways different, useful experience could be gained by studying TVA procedure, which owes so much of its success to the pioneering spirit which has inspired its efforts to plan a region on a democratic basis.

The scheme would bring the Highlands to life not only in the prosperous urban centres which would be created, but throughout the whole region, since the necessary extension of national transport routes to the main urban centres would make it available as a National Park for all. The recreational and æsthetic possibilities arising from hydro-electric development can also be studied to advantage in TVA schemes, which present a strong argument to all who fear that hydro-electric development will bring the business environment of Manchester and the holiday environment of Blackpool to the Highlands.

Here we have a real job for the architects who are now working in the wide field of physical planning. Their work has previously lacked reality because of the broad assumptions they were forced to make on their own initiative. Their vision has been limited by the difficulty of obtaining detailed information without which they cannot make an accurate diagnosis and solution of the problem. The Highland Hydro-electric scheme presents a new and exciting opportunity.

The various assumptions which will have to be made in this case will still be largely speculative, but they will at least be based upon officially pronounced speculation. The information which is required to draw up the plan is ascertainable, and its collection will be a large enough undertaking to provide invaluable experience in co-operation amongst the specialists who must take part in physical planning, but who at present work in watertight compartments.

Above all, the scheme will afford an opportunity to express modern building and regional planning techniques, unhampered by the complex questions of short-term adaptation programmes, which arise in the case of existing cities. The unequalled background which the Highlands provide for leisure, engineering projects, architecture, town and regional planning is a challenge to all the experts concerned with these subjects.

The Architects' Journal

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

NOTES & TOPICS

SMOKE AT THE RIBA

During the past three weeks much tobacco must have been consumed in serious and meditative mood by those who attended the informal meeting at the RIBA at the end of last month. This was a sorry affair. Useful only by reason of the fact that it did so conclusively show that all is far from being well with the RIBA.

★

Mr. Michael Waterhouse's paper was uninspiring. The retiring President was charmingly and tactfully evasive. From the body of the hall about fifteen or twenty members spoke and, with only one exception, all expressed apprehension and dissatisfaction. The main grievances raised were :

(1) No election since the war.

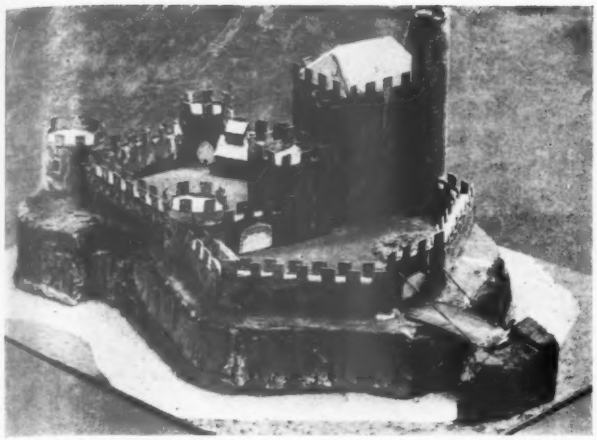
(2) Members, since the war, have only been given this one opportunity of expressing their views to the Council.

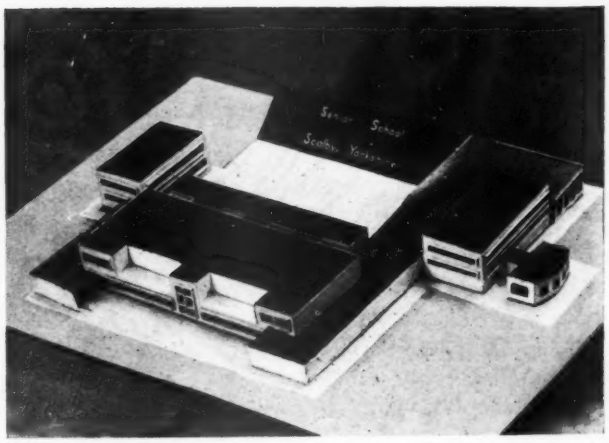
(3) The great lack of confidence there is in the technical ability of architects—as shown by the fact that all important jobs and administrative posts have been given to others.

(4) The deplorable antiquity of architectural education.

★

No smoke without fire. It is becoming ever more clear that certain matters relating to the profession must now be faced squarely and openly discussed, for we are at a point where a reorientation is needed (especially in education) if the architectural race is to survive and flourish, and fully to apply its particular powers to reconstruction.





Two of the models at the exhibition, Our Inheritance, *prepared by children at the Morpeth Central LCC School, Bethnal Green, recently on show at the Housing Centre. Left, a feudal castle ; right, a modern school.* *See Astragal's note and page* 55.

I believe that the JOURNAL can render a great service to the profession by asking its readers to give expression to their apprehensions, grievances and suggestions on the matters raised during the discussion at the RIBA meeting, on which a suitable statement could be prepared.

MR. BETJEMAN AGAIN

Those architects who waited up late the other night to listen to *How to Look at a Town* heard what to many of them must have been a familiar sound—the thundering hooves of John Betjeman's hobby horses in full career. They are still, of course, a splendid team, striking sparks as prettily as ever, and Mr. Betjeman continues to drive them with experienced energy along roads which if not yet scoured to the depth of ruts, are getting pleasantly well-worn.

★

The programme took the form of a dialogue — actually almost a monologue—between two railway passengers, an architect and a civil servant, who had been stranded at the imaginary little town of Cattleford. To while away the time they decided to explore the town, Mr. Wildbore (the architect) pointing out to Mr. Simpson (the civil servant) the things to notice—what to admire and what to abhor.

★

Mr. Wildbore was full of information and prejudices. Like Mr. Betjeman he was against motor-cars and cinemas, blocks of flats and bogus Tudor pubs, bay-windows and plate glass, stripped panelling and painted toe-nails, encaustic floor tiles and Children's Corners. He was in favour of Georgian houses and memorial sculpture, early non-conformist chapels and unrestored parish churches, coaching inns and cobbled alley-ways, box-pews and picture-postcards. It was in fact a stimulating walk and of course they both missed their train.

★

It must be recorded however with regret that Mr. Wildbore, despite his brilliance, was a horror. It was not perhaps Mr. Betjeman's fault that he spoke with an unbearably cocky manner. But it *was* Mr. Betjeman's fault that he was ill-mannered (intruding into the doctor's house by quite unnecessarily boorish methods), inaccurate (surely "old rooftiles" do not diminish in size from eaves to ridge unless they are of stone or slate ?), smug (the oh-so-casual prayer in the Parish Church) and, for a young man, too much of an antiquarian, more interested in Norman fonts than in kitchen sinks. Mr. Wildbore in fact is a poor follow-on to Signor So-So, the ITMA architect. Let's hope we don't meet him again.

MORE LOCAL YOUNGSTERS MAKE GOOD

Last April I wrote of an exhibition at Cheltenham, the high-light of which was a series of maps, diagrams and models submitted by local school children. A similar exhibition was on show recently at the Housing Centre, which was prepared by a class of children all around fourteen years old, at Morpeth Central LCC School at Bethnal Green.

★

This school exhibition is an example for educationists to follow. Credit goes to the headmaster, Mr. Bloom, to the history and geography teacher, Miss Abrahamson, and to the art master, Mr. Cope, not only for breaking down the old and sterile barriers between the areas of subject matter (one of the recommendations, incidentally, made in an article, *Planning the Post-war School*, which formed the subject of an Information Centre item last week), but also for combining in so alive a way, the work of hand and brain. The exhibits showed clearly how stimulated and enthusiastic the students must have been, and surely in obtaining the willing concentration of the restless young lies the whole art of teaching.

★

The models were extremely well made, and ranged from a mediæval castle to a modern form tractor. Many of the drawings, too, were full of character, as the reproductions on another page of this issue show. One of those illustrated is not less dramatic than its title of *Those Dark Satanic Mills*. Its lack of academic perspective seems to enhance, rather than detract from, its impressionistic power.

TVA AND THE HIGHLANDS

TVA* has set the pace for over-all, regional, democratic planning. The difficulties it has had to overcome and the energetic and imaginative way its planners tackled them, has won admiration from other democracies, who alone know the possibilities for prevarication and delay inherent in their valued but misunderstood system. It is natural then that the resurrection of the Highlands to which Hydro-Electric Development can contribute so much, should invite comparison between the two problems, but it is important that the differences be seen as well as the similarities.

★

Mr. Quigley's article in this issue makes those differences clear. It will be interesting to see whether the enthusiastic architect-town-planners who have so readily tackled the complex problems of urban reconstruction, follow up the suggestion in the leading article that they should use Highland Development as an experiment in Regional Planning. If the same enthusiasm and initiative that have produced plans for city reconstruction are shown in the production of a Highland plan, we may expect a scheme in every way as inspiring as that of TVA, and one which will give impetus to planning and reconstruction everywhere. ASTRAGAL

The roadway across the Wheeler Dam, one of the twenty dams built by the Tennessee Valley Authority, as part of its great hydro-electric development scheme. This roadway is typical of the clean, engineering character which typifies the whole TVA scheme. See Astragal's note above.

* *The Architectural Review* for June dealt specially with the TVA scheme.

LETTERS

R. V. Boughton, A.I.Struct.E.
Pre-Nouveaux
Thos. E. Scott, F.R.I.B.A.
Karo Alabyan

Architects and Prefabrication

SIR,—The recommendation made by TCPA to MOH on future housing policy that builders of houses should be compelled to employ qualified architects, needs analysing in conjunction with the statement by Mr. H. Dalton Clifford, that the recommendation indicates a lack of understanding of the function, training and position of the architectural profession.

If the recommendation of TCPA is to be effective, an architect should not only plan and design æsthetically and perform the other duties stated by Mr. Clifford, but be thoroughly capable to ensure, by an expert knowledge of structural essentials and economics compatible with good principles and details of construction, that art is not placed paramount to these other vital matters—or, in other words, that a builder of houses will not be in a position to pay an architect, or an "architect," a few guineas for "preparing plans for the Council," and then proceed to foul all decent canons of building.

The employment of architects for the complete duties outlined above raises other issues, including fees adding to the cost of houses, the interests of structural engineers and building technicians who are differently trained than are most architects.

It will be noted that Mr. Clifford limits some of his comments to prefabricated houses (or what the *A.J.* very aptly describes as any constructional system which reduces assembly work on site to an absolute minimum), and states that "architects are no better qualified to design houses for repetition or mass production than they are to design motor cars." This is certainly blunt; but it's true in a structural sense. However, I do believe, as I have stated recently in articles on pre-built houses by engineers, it is advisable that architects be employed on this work to ensure a good balance of æsthetical design with construction and thereby avoid that lack of art, variety and good proportion which the opponents of prefabrication fear.

Another subject of interest is the statement that architects were only employed on 20 per cent. of domestic building in the year before the war. I believe, if the years between this and the last war are considered—1919 to 1939—when over 4,000,000 houses were built, that the percentage of houses designed and supervised in accordance with usual architectural practice were much less than 20 per cent., and that an alarming percentage was left to the mercies of jerry builders. It is therefore just for me to state that if the TCPA wish its recommendation that architects be employed on future houses, it couples its recommendation with another enjoining that the architectural profession does more in the national interests in the future than they did between 1919 and 1939—when they did little to prevent the great scourge of jerry building to sweep over our country.

R. V. BOUGHTON

Streatham.

Articled Pupils

SIR,—I note with particular interest Mr. Yorath's suggestion that an articled pupil should take a University course, returning to the office at holiday periods. Mr. Yorath here points out that the pupil's parents have only to bear the University fees and the pupil's cost of maintenance.

There is going to be a shortage of young architects after the war. Will there be no chance for students with parents who, far from being able to afford an annual income for nearly five years at the rate of about £200 per annum, *require* an income from the boy of, say, £50 per annum?

Someone has expressed the view that intending architects should (*a*) be able to afford University or college fees, also the cost of living for five years or, (*b*) take Leverhulme, Art (Assoc.) Schools, or other scholarships available to day-art-school students, leaving the rest, I presume, ineligible?

Five years ago my people were in a position to pay for my architectural education. To-day, owing to war-time difficulties, I am required to donate about £1 a week to keep the home going. How can either of the above courses apply to myself and others in the same position. I am working in an architect's office but have no status.

I would be only too glad to bind myself to remain with an architect for a period of twelve months (to use Mr. Yorath's phraseology) or even longer, if there were any prospect of some sort of architectural education and a living wage, no matter how small, in order to make myself independent of living at home.

PRE-NOUVEAUX

Manufacturers' Catalogues for Students

SIR,—Post-war building practice is likely to involve the greater use of factory-made units of construction, with a corresponding decrease in specially designed and purpose-made units prepared in contractors' shops or on the site.

One important result of such a change would be that while it may still be necessary to instruct students of architecture in the principles and practice of the traditional crafts, they must also be made familiar with the ever-increasing number of factory-made units which they will ultimately use.

Such information as students should have is not to be found in textbooks, but must be derived from manufacturers' catalogues and information sheets, which can be more readily kept up to date with scientific and industrial progress. Some manufacturers have already recognized the needs of students, and supply the heads of schools with literature for use in libraries or distribution to individual students, but it is doubtful whether more than a small proportion of firms have yet appreciated the valuable service they could render to architectural education by the preparation and wide

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

• DOMESTIC WATER HEATING 3: ECONOMIC ASPECTS

COMBINED NATIONAL AND CONSUMER ECONOMY OF FUEL UTILISATION.

National economy and individual consumer economy were discussed in Sheets 1 and 2 of this series respectively.

The following Tables A and B summarise the combined aspects of National and Consumer economy.

TABLE A.—OVERALL EFFICIENCY OF COAL UTILISATION (%)*

FUEL.	Percentage of heat originally present in the coal. Available for consumption at :— Supply depot or generating station.	Dwelling House.	Percentage efficiency of utilisation of appliance.	Percentage heat originally in coal (or by-product fuel) available as hot water.** OR : Final efficiency of utilisation of coal. (OR : by-product fuel)	Appliance.
Raw Coal burned as such	94.5	90	10-15	9-13.5	Kitchen Range
Raw Coal carbonised at a Gas Works**					
Coke	47	35 (74)	20	7 (15)	Independent Boiler.
			65	23 (48)	Independent single-point heater.
Gas	24 (78)	18 (74)	55	10 (41)	Instantaneous multi-point heater.
			30	5 (21)	Circulator and lagged storage.
By-Products of gasification	7	—	—	—	
Electricity	20	16	80	13	Lagged Storage Set.
			65	10	Immersion Heater and lagged storage.

*This table allows for all dissipation of coal between mine and supply depot or generating station, between generating station or depot and consumer's dwelling (generation and distribution losses) and losses in water heating appliance.

**Figures in parenthesis in the case of coal carbonised at gas works give the percentage of heat originally present in the by-product fuel available for consumption. For example, in the case of gas 74 per cent. of the heat originally in the gas is available at the dwelling and 41 per cent. is available to the consumer in hot water obtained from an instantaneous multi-heater, and is, therefore, the final efficiency of utilisation of the gas. On a coal basis the final efficiency of utilisation is of course much lower, since the heat in the gas represents only 24 per cent. of the heat originally present in the coal.

TABLE B.—FUEL COSTS PER THERM OF HOT WATER.*[2]

Fuel	Cost at Dwelling	Cost per Therm of Fuel	Efficiency of Utilization	Final Cost of Fuel per Therm of Hot Water	Appliance
Coal	50s. per ton	1·86d.	10%	19d.	Kitchen Range.
Coke	2s. 3d. per cwt.	1·786d.	20%	9d.	Independent Boiler.
Gas	8d. per therm	8·00d.	65%	12d.	Instantaneous Single-Point Heater.
			55%	15d.	Instantaneous Multi-Point Heater
			30%	27d.	Circulator and lagged storage.
Electricity	½d. per unit	14·7d.	80%	18d.	Lagged Storage Set
			65%	23d.	Immersion Heater and lagged storage.

*This Table shows the final cost of hot water per therm from fuels taken at average costs at dwelling. These costs at dwelling are calculated from the original fuel costs modified by distribution losses and generation efficiencies.[3]

ALL-IN COSTS OF HOT WATER.

The hot water costs shown in Table B are derived from and expressed entirely in terms of fuel utilisation.

To arrive at an all-in cost for hot water other factors besides fuel utilisation must be taken into consideration.

1. DISTRIBUTION LOSSES.

Collieries use approximately 5 per cent. of coal production in order to mine and raise coal from the bed to the pit-head, to screen and grade it and load on trucks.

Rail Transport.

For transport the railways use approximately 0·5 per cent. of coal.

Road distribution.

Road vehicles, road tar, fuel, etc., used for local distribution of coal and coke represents approximate dissipation of 0.5 per cent.

Gas distribution.

Leakage losses in gas distribution amount to an approximate average of 5 per cent.

Losses in gas distribution vary in inverse proportion to the load.

Electrical distribution.

Average line loss 5 to 8 per cent.
Average transformer loss 8 to 10 per cent.
Line losses and transformer losses increase as the square of the load.

2. One Therm of hot water is equal to :
154 gallons raised 65°F. (from 45°F. cold to 110°F. hot).
100 gallons raised 100°F. (from 45°F. cold to 145°F. hot).

3. for generation efficiencies see table A and previous data sheets.

[TURN OVER

INFORMATION SHEET 903 (CONTINUED

These factors may be summarised as follows :—

1. Capital Cost of Appliances.
2. Maintenance Costs.
3. Efficiency of use.
4. Attention required.[4]
5. Cost of Fuel Storage and Installation Space required.[5]

These factors with the exception of 4 and 5 are allowed for in the Table below.

TABLE C.—ALL-IN COMPARATIVE HOT WATER COSTS PER WEEK FOR AVERAGE FAMILY OF 3.77 PERSONS.*

Installation	Price Fixed[6]	Maintenance and Repair for 10 Years	Efficiency of Use	Therms of Fuel per 10 Years	Approximate Cost of Fuel per 10 Years	Approximate Total Cost per 10 Years
	£ s. d.	£				
Kitchen Range (Coal)	10 0 0	5	10%	9470	£73	£88
Independent Boiler (Coke)	15 0 0	4	20%	7100	£53	£72
Gas Circulator and lagged storage	15 0 0	5	30%	4730	£158	£178
Instantaneous Gas water heaters	18 10 0	5	55%–65%	2180–2580	£73 £86	£96 £110
Electric Storage	19 0 0	nil	80%	1780	£109	£128
Electric Immersion Heater	4 10 0	nil	65%	2180	£134	£138

(Based on an annual hot water requirement of 142 therms per annum over a period of 10 years). Representing an average daily hot water requirement of 60 galls. raised 65° F. (from "cold"—average 45° F.—to average 110° F.).

Installation Efficiency.

In compounding the above Table "C" and others dealing with this subject a high average efficiency of installation has been assumed. Obviously efficiency could be considerably impaired by unsatisfactory installation arrangements.

TABLE D.—WATER HEATING CAPACITIES OF SMALL DOMESTIC INSTALLATIONS.[7]

The purpose of this table is to give some indication of the service which may be expected from some different types of domestic hot water systems. The most important criterion is the total quantity of hot water available and the time that will elapse before further supplies are available. In this table, the number of baths which may be drawn off consecutively before the supplies are exhausted and the time that would have to elapse before further baths may be drawn, are indicated.

Type of hot water system.	Number of baths available consecutively.	Recovery Time for One further bath. *Minutes.*
Kitchen Range	2	220–200
Independent Boiler	2	180–140
Instantaneous Bath Heater or Multi-Point Appliance	Unlimited	None (filling time of bath only—15 minutes).
Storage Heater—Gas...	1	50
Storage Heater—Electric 3 kw. ...	1	135

4. Although the time involved in attending to those water heating appliances which demand constant attention is a relatively small one, it does represent a charge in the cost of hot water. However this charge is by no means simple to estimate, any attempt to assess it would imply considerable assumption. No allowance has therefore been made for this factor in Table C.

5. The superficial plan space and cubic dwelling space needed for fuel and appliances represents a definite economical outlay but one which, like attendance time, it is not possible to estimate, on a strictly comparative cost basis.

Fuel storage space necessarily implies the allocation of some part of a building which might otherwise be utilised and must therefore represent part of the capital cost of the structure.

Similarly, a hot water storage cylinder also takes up valuable space.

For obvious reasons the cost of space so used will depend entirely upon the general space utilization of the structure, the basic cost of the structure and the estimated cost of that part of the structure used.

6. It should be noted that the "price fixed" has little effect on the final cost to user. An alteration of £1 to the "price fixed" will affect the weekly cost by ¾d. if compound interest at 5 per cent. per annum is assumed.

7. In considering the maximum economic capacity of a system it is necessary to bear in mind that to increase the size or capacity of a storage system to an hourly rated output equivalent to an instantaneous system cannot be economic since :

(*a*) the system was not designed to be instantaneous

(*b*) with such a large capacity it ceases to require storage and becomes a new form of instantaneous water heater.

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

distribution of suitably prepared catalogues, pamphlets, or information sheets.

The number of students of architecture during the immediate post-war years is likely to be greater than ever before, and for a time there will be a rapid and extensive graduation from school to practice of men whose studies were interrupted by the war.

It is doubtful whether firms can afford to issue to each individual student the costly literature prepared for advertising purposes, but it would appear to be worth while preparing booklets containing the kind of information needed both in schools and drawing offices. Restrictions on printing may preclude the immediate issue of such booklets, but it would be encouraging to know that the firms whose products are likely to be in constant use after the war are preparing to meet the kind of demand I have outlined.

THOS. E. SCOTT,
Head of School of Architecture,
Holloway Northern Polytechnic

CABLEGRAM

from Moscow

The following article on the work of the Scientific Institute of Building Technique in Moscow on the reconstruction of Russia has been cabled to us by Karo Alabyan, Vice-President of the Academy of Architecture, USSR.

War has necessitated intensive construction in many parts Soviet Union. In country's eastern regions dozens industrial plants and settlements are under construction. These plants and settlements must be built at great speed and their construction has posed new problems building technique, made necessary finding new locally available building materials, new types structures and methods construction. Same problems confront Soviet architects and building engineers in vast restoration and reconstruction work in western regions Soviet Union which been devastated by Hitlerite invasion.

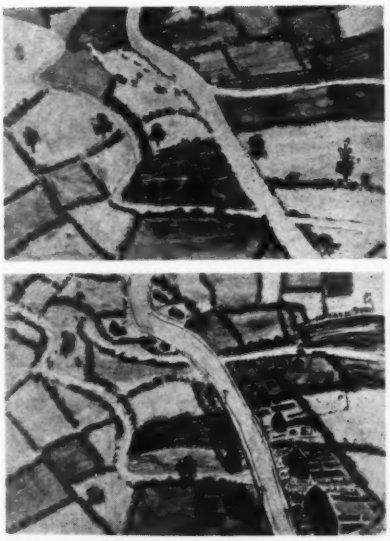
For study all these complicated problems Academy Architecture USSR has organized Scientific Research Institute of Building Technique headed by corresponding member Academy Architecture Engineer Grigory Kuznetsov. Institute devises and experimentally tests new types structures as well as standardized elements and parts of buildings, studies requirements buildings various types with regard resistance to fire, sound and heat conductivity, resistance to cold, etc.

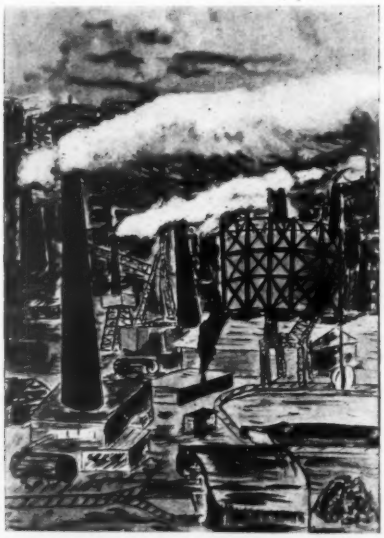
Institute is preparing series manuals for architects and construction engineers, handbooks on local building materials, construction small buildings from local materials and others. Dealing with problems post-war restoration towns and smaller settlements which been destroyed by barbarous invasion Hitler armies, Institute Building Technique envisages application various construction methods, including prefabrication and movable mechanized installations. Institute devotes special attention to study economics of mass housing construction in restoration demolished towns. For this purpose Institute investigates effect various degrees mechanization and mass production standardized building parts on lowering costs. Elaborating concrete suggestions for development post-war building industry Institute makes special study most effective forms mass production for walls, floors, roofs and other building elements, establishing types and capacities of plants in building industry as well as limiting possible use local and long haul materials.

Under auspices Institute work four large experimental laboratories and test sites whereon number test buildings of various materials will be erected in 1943. Institute publishes results its investigations in regular reports—scientific findings Institute Building Technique Soviet architects and engineers on vast constructive job restoration Russian towns and villages wrecked by Germans.—

KARO ALABYAN.

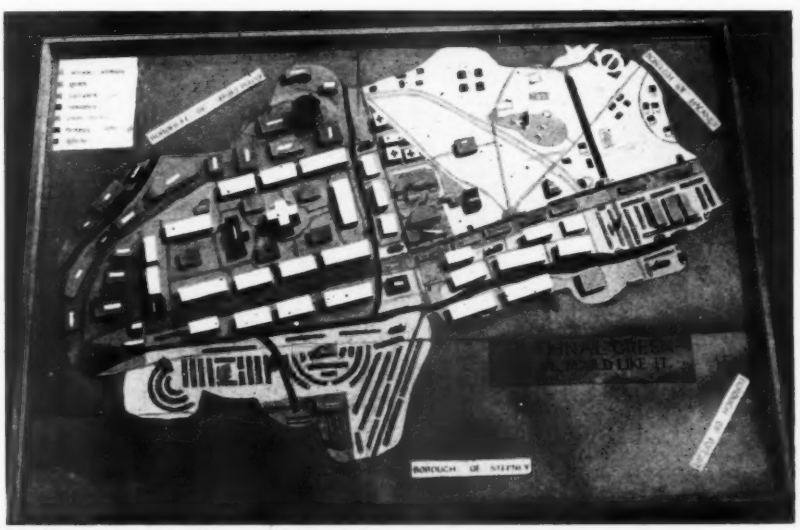
THE CHILDREN EXHIBIT





Spoiling the country

Spoiling the town



Bethnal Green as they would like it

***The above are photographs from an exhibition,* Our Inheritance, *prepared by a class of boys and girls of the average age of 14 at the Morpeth Central LCC School, Bethnal Green, London, recently on show at the Housing Centre. The students took as their text-book,* Our Inheritance (*published by the Architectural Press*) *and made sketches, plans and models of the social, economic and architectural developments of Great Britain from early times, thus combining in a stimulating way the usual distinct subjects of history, geography, drawing and citizenship. Top : spoiling the country and spoiling the town. Above : model of* Bethnal Green, *as we would like it, which formed the climax of the exhibition, showing the different zoning of industrial, residential, shopping areas and community centre.* *See also page 53.*

This week's leading article deals with the Hydro-Electric Development (Scotland) Bill, 1943, which recently passed successfully through both Houses. Here Mr. Quigley, formerly of the Central Electricity Board, describes the low economic state of the Highlands, analyses the functions and construction of the new Hydro-Electric Board of Northern Scotland and explains to what extent the development of hydro-electric power could bring back prosperity to this afflicted part of Scotland.

HYDRO ELECTRIC Development in the Highlands

[*BY HUGH QUIGLEY*]

The peculiar type of economic *malaise* which has afflicted the Highlands of Scotland for the last half century or so has served to hinder, and in some areas prevent altogether, large or even small scale water-power development. In a country in the last stages of decline, the construction of a great electro-chemical or electro-metallurgical plant does not appear to have in it alone the elements of a lasting revival.

It is just as well to be clear about the historical and economic background before any attempt be made to assess hydro-electric potentialities. The Highlands have suffered from certain long term, as well as short term, changes, which are not peculiar to that region alone, but can be found in widely distributed sections of the world—not least the Tennessee Valley in the USA—or the upper areas of the Niger in Africa. Chief among them may be listed :—

(1) The lessening capacity of agriculture to maintain the rural population in a condition of even tolerable comfort. The small subsistence farm or holding of a century ago which kept a minimum population in the Highland glens is no longer possible or tolerable. The contemporary generation requires a much more extensive apparatus of production, amenity and public utility than the actual economic production of the Highlands could support.

(2) The widening gap between collective responsibility and individual effort, particularly in the sense that the technical conditions of existence are becoming too complicated for small communities to control or determine.

(3) The increasingly limited freedom accorded to individual enterprise, mainly in industrial affairs. The industrial combine or trust or association now supported and actually imposed by the State makes the free action of independent firms in the market impossible.

Reduced to a few words, the possibility of bringing new population into the Highlands capable of living on the resources of the area may be dismissed unless it forms part of a great scheme planned and financed either by the State or by an organization with national resources at its disposal. Isolated smallholders and industries, unless they were employed in providing services for already established communities outside of the national market, would scarcely be able to exist. To suggest that the provision of electricity or any other public utility would, of itself, lead to re-population and industrialization is sheer nonsense.

Even compared with the Tennessee Valley, the Highlands are seen to present an extraordinarily difficult problem. They have no well-developed artistic and literary culture as expressed, for example, in architecture or landscape planning. No matter how tolerant the standard adopted, the Highland landscape with its small hamlets, villages and townships, its deer-forests and its more recent plantations is a confused and revolting mess. Only glorious hills and moors and skies cover up, with overwhelming beauty, a horrible man-made slum. Because the human part of the Highlands is a slum, the modern generation shrinks from prolonged contact with it. It requires clearance as urgently as the worst part of the Cowcaddens, or the South Side in Glasgow.

Exploitation of natural and human values could not go further than it has north of the Highland line : elaborate and ancient ceremonial are an excuse, an escape, a palliative. It is hypocritical to speak of the Highlands as being the sacred and inalienable possession of the Highland people if about one-half of the saleable land in the Highlands has been thrown on to the market in the last twenty years. The whole artificial convention of shooting-boxes, deer-runs, tied hotels, closed locks, and controlled local authorities has exhausted the life of the Highlands much more fully than even the ugliest contrivances of the electro-metallurgist or the money-grabbing dealer in electric franchises. It is quite in the pure tradition of exploitation that existing water-power plants and schemes, existing large scale power-using industries should be such as to make even the least bigoted observer shudder. The savagely protected isolation of Kintail is no more thoroughly protected or repellent than the dull sordidness of a Kinlochleven. From every point of view the Highlands are a mess, and will probably remain so unless some terrific planning is carried out by a capable and determined national authority.

Such an authority would have treated every part of the problem, neglecting none, as requiring examination and solution, or it might have said : This mess is beyond all cure, and the area must be abandoned. It cannot have that alternative because the Highlands do possess two elements of immense value to the modern state—scenic beauty of everlasting colour, and water. The function of providing great quantities of energy through water-power is much less important in the long run than beauty and inspiring air. Water-power has a substitute, but there is nothing in existence to rival the Cairngorms or the darkly shadowed Loch Hourn.

According to the theory of limited objectives which justifies itself in the science of government as little as in the science of war, an all-embracing authority would be much too ambitious. The Highland chaos should be examined section by section as it becomes visible, and treatment confined to that section, and, as a consequence, the control of the landscape, the repopulation of the area, the reconstitution of agriculture, the glorious opportunity of a slum-clearance beyond parallel in the history of our civilisation, the development of economic resources and the harnessing of the energy in water are taken in isolation without reference to each other.

The new hydro-electric scheme represents such a limited objective, such an isolated solution of what is only a small part of the great problem. Water-power schemes already in operation with a total productive capacity of over 1,000 million units per annum, have been carried out by private enterprise with the specific object of bringing profits to one interested group or another, either in the work of construction or in operation of the schemes themselves. The welfare of the Highlands has been no consideration, with the result that even Highland labour was displaced by Irish and non-Scottish labour in the construction camps. The processing stages have not even given employment to any local surplus. Unemployment at Fort William or Kinlochleven has certainly never been less than elsewhere in Scotland. Some of the schemes fed only a very small proportion into distribution for the Highlands, and exported the great bulk to the Grid at what was a handsome profit for use elsewhere in Scotland, also at a handsome profit. The only losers under this kind of organization were the people of the Highlands and Central Scotland. Such things as architectural propriety, landscape planning and observation of the amenities and the construction of modern factories on an effective design, such as one finds in Switzerland or Italy, were neither attempted nor imagined. It was all done in the fine old industrial Scottish tradition of make do and the devil take taste or culture or public decency. Can one be surprised that all other and subsequent attempts to promote hydro-electric schemes were attacked from all sides, and failed to get through Parliament ?

Confronted with the alternative of surmounting this impasse or stopping all future water-power development in the Highlands, the Secretary of State for Scotland appointed a Committee of all the interests other than those of the public to work out a plan or at least a compromise. The report of the Cooper Committee, which in the future will have much the same interest for the antiquarian as a defence of the stage-coach, was a badly argued, jejeune defence of those who had already despoiled Scotland, enlarged on the immense contribution of existing interests to economic welfare, but, in deference to public opinion, suggested that all *future* water-power schemes should be carried out by a public authority and such schemes should be devoted to electro-chemical and electro-metallurgical production and export to the Grid. The Highlanders, if they were lucky, might expect a few distribution lines here and there, if existing undertakings so willed, and energy at a price which would amply safeguard profits. A few kind words after a severe sermon to the amenity fanatics, but not a whisper about economic planning or the salvage of the Highland glens.

The Secretary of State, probably as much surprised by the tone of this report as the Scottish public who had no good word for it anywhere as soon as its real significance became plain, wisely decided to accept only the principle that the public should be responsible for water-power development as decently organized countries with great hydro-electric resources had arranged years ago. He was unwilling to go further and nationalize existing systems, and he adhered to the belief that electricity could be organized in advance of a broad economic plan.

The new Hydro-Electric Board of Northern Scotland conforms to the somewhat unhappy and uninspired model provided by existing boards, but the chief executive officer is not the chairman, but deputy-chairman. By this simple change, the Board becomes no longer a semi-Fascist authoritarian concept where the chairman is permanent with no responsibility to anyone inside or outside of Parliament, or is allowed to make the most damning mistakes and be as reactionary as he pleases in his treatment of staff and public. It has at least the appearance of democracy, and its activities are subject to rather more extensive and more careful scrutiny by public departments such as the Electricity Commission, and by the Secretary of State himself. The membership is limited to five, one to be nominated by the Central Electricity Board for no ascertainable reason, but all subject to approval by the Secretary of State. The remuneration will be pitched low enough to discourage retired trade union officials, decayed electricity directors or company promoters and, what is more important, remove some of the charm from longevity in office which characterizes existing boards.

The functions of the Board are simple :

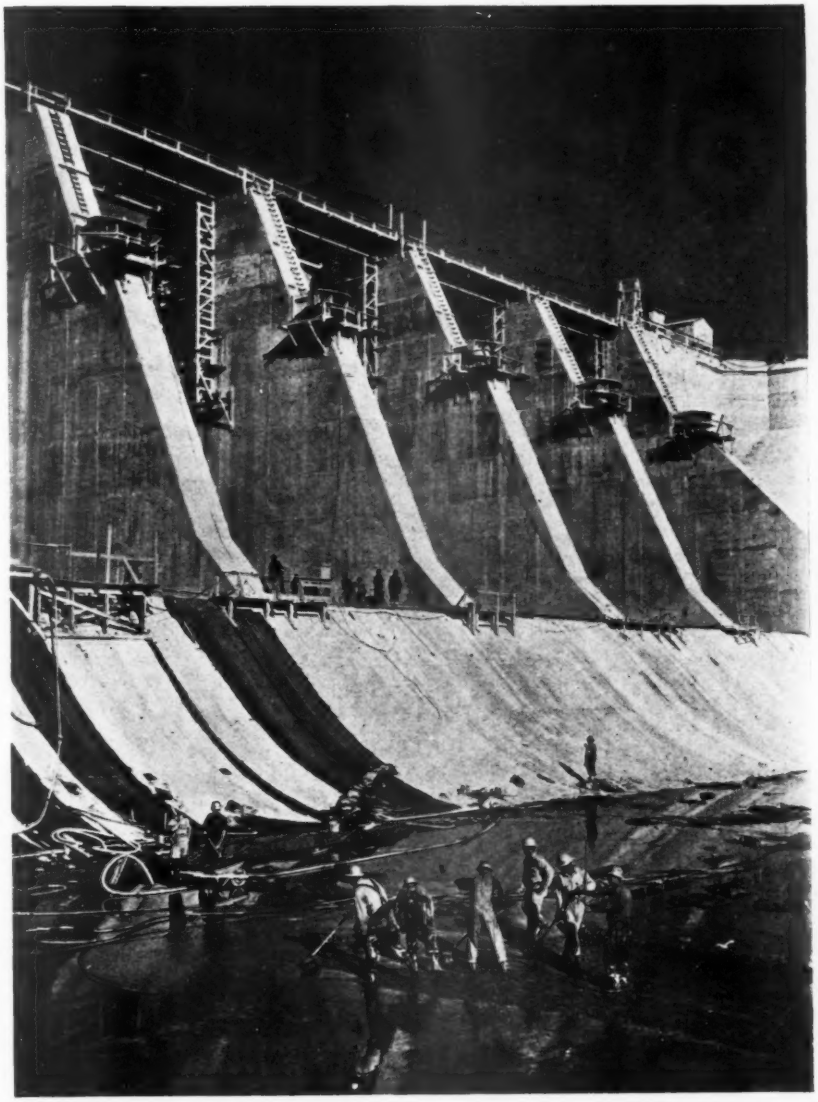
1. Survey water-power possibilities and draw up schemes covering the whole area surveyed ;
2. Construct and operate water-power plants resulting from such a survey, and deliver energy in bulk to existing undertakings ;
3. Distribute and sell electricity in areas not already covered by distribution orders ;
4. Sell electricity direct to large industrial consumers even in existing distribution areas with the consent of the authorities concerned ;
5. Devote some part of its surplus income to general economic development and the organization of model electricity areas.

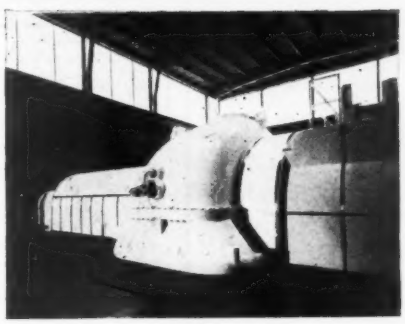
The Board is entitled to the usual Treasury guarantee of £x million pounds, the sum quoted being, in effect, immaterial with the usual concomitant of full Treasury control. If the Board is misguided or the Scottish people are misguided enough to allow the Board to borrow one farthing under such a guarantee, the New Order in the Highlands will be controlled by Whitehall, alias Threadneedle Street, and under such control will be stifled at birth. The Board has certain powers of pre-emption, of acquisition, of eminent domain, but it is an unhappy graft on a plant which suffers badly already from canker and would require a surgical operation to make it bear fruit. It will almost certainly be found that in the confusion of special interests involved—Scottish Office, Amenity Committee, Electricity Commission, Central Electricity Board, Treasury, Ministry of Fuel and Power, Ministry of Transport—the first hydro-electric station to be built will share the fate of the 3,000 rural houses of pious memory. Its birth may be its inquest.

It is because the principle of public control has been given legislative form that the far-sighted support the new legislation : they do not believe that it will work in its present form, or that the material reality of the scheme will be visible for at least ten years. Even without expert economic advice, a commodity which was evidently too expensive for the Cooper Committee, no sane organization would budget for a great public works scheme during a period of fantastically rising costs. They believe that the logic of the situation will prevail and that Scotland will have its first great planning organization—not a simple, circumscribed hydro-electric board, but something very much larger and possibly more democratic. The great issues in front of Scotland are not electrical, even in the second or third degree. They are in order of urgency if not of importance :

1. The reorganization of the Clyde Valley, and the salvaging of the population dependent on exhausted or dying coal measures ;
2. The rehabilitation of Scottish agriculture ;
3. The revival of the Highlands.

Those issues are implicit in an imaginative and well-conceived Scottish plan to which electricity can make a definite contribution though not necessarily a decisive one.





Pictures from the Tennessee Valley, where the TVA has created out of an area fast becoming desert a splendid precedent for all hydro-electric development schemes. Top : Fort Loudoun Dam, now nearing completion, one of the twenty dams supplying a total power of over two million kilowatts. Above, left ; generator hall of the powerhouse at Watts Bar Steam Plant. The big power dams through such generators, as well as supplying power to vast production plants, run electricity for the farmer, the shopkeeper, the housewife. Right, below : Mrs. Cox can now press her laundry in this up-to-date way—one of the minor personal advantages of the major prosperity the scheme has brought to the people of the Tennessee Valley.

PRICES

THIRTEENTH WARTIME LIST

EXPLANATORY NOTES

The 5% increase in the price of Stoneware pipes and fittings represents the most important change since the last wartime list.

Rates of Wages have not risen since April 2, 1943, and are now as follows :—

LONDON DISTRICT	*Craftsmen.*	*Labourers.*
Within 12 miles radius	2s. 1½d.	1s. 8d.
From 12-15 „ „	2s. 1d.	1s. 7¾d.

GRADE CLASSIFICATIONS

	A	A¹	A²	A³	B	B¹	B²	B³	C
Craftsmen ..	2s. 0d.	1s. 11½d.	1s. 11d.	1s. 10½d.	1s. 10d.	1s. 9½d.	1s. 9d.	1s. 8½d.	1s. 8d.
Labourers ..	1s. 7d.	1s. 6½d.	1s. 6¼d.	1s. 5¾d.	1s. 5½d.	1s. 5d.	1s. 4¾d.	1s. 4¼d.	1s. 4d.

F.S.I.

CURRENT MARKET PRICES OF MATERIALS

BY DAVIS AND BELFIELD, Chartered Quantity Surveyors

Prices vary according to quality and the quantity ordered.

Those given below are average market prices and include delivery in the London area, except where otherwise stated, but do not include overhead charges and profit for the General Contractor.

CONCRETOR

Cements

† All delivered in paper bags (20 to the ton) free.

* Paper bags charged at 7/– extra per ton; jute sacks charged at 35/6 per ton and credited on return at 1/6 each, when received in good condition within two weeks.

	6 Tons and over	In 80-ton freights F.A.S. Safe Wharf in River Thames, London Area.
*Portland	per ton 51/–	48/6
*"417" Ultra rapid hardening	per ton 71/–	—
*Rapid hardening ...	per ton 57/–	54/6
*Water repellent ...	per ton 81/–	—
Atlas White (1 barrel 376 lbs.)		per barrel — 6 ton upwards
*Colorcrete rapid hardening, buff and red	per ton	91/–
*Colorcrete rapid hardening khaki ...	per ton	91/–
†Colorcrete rapid hardening dark ...	per ton	—
†Colorcrete non-rapid hardening ...	per ton from 165/– to	235/–
†Snowcrete (paper bags free)... ...	per ton	225/–

	1–9 cwts.	10–19 cwts.	1 ton and upwards
*Ciment Fondu, delivered Central London area	per cwt. 15/3	14/9	12/8

Aggregate and Sands (Full Loads)

2″ Unscreened ballast	per yard cube	10/10
¾″(Down) Washed, crushed and graded shingle	per yard cube	10/4
¾″ (Down) Ditto	per yard cube	11/4
2″ Broken brick	per yard cube	14/6
¾″ Ditto	per yard cube	16/–
Washed pan breeze	per yard cube	9/6
Coke breeze 1″ to dust	per yard cube	—
⅛″ Sharp washed sand	per yard cube	13/9
White Silver Sand for white cement (one ton lots)	per yard	40/–

(For Sands for Bricklaying and Plastering *see* respective trades)

Pavings

Brick hardcore	per yard cube	—
Concrete ditto	per yard cube	—
Clean furnace clinker and boiler ashes ...	per yard cube	4/6
Coarse gravel for paths	per yard cube	—
Fine ditto	per yard cube	—
Clean granite chippings	per ton	38/2

CONCRETOR—(*continued*)

Pavings—continued

Red quarry tiles, 6″ × 6″ × ½″	per yard super	8/1
Ditto 6″ × 6″ × ⅜″	per yard super	6/9
Buff ditto 6″ × 6″ × ½″	per yard super	8/10
Ditto 6″ × 6″ × ⅜″	per yard super	7/5
Hard red paving bricks, 2″	per 1,000	230/6
Ditto 1½″	per 1,000	208/3

Reinforcement

Home trade maximum basis price for mild steel rods, ⅜″ diameter and upwards, ex mills delivered to station or siding	per ton £16 19 6
Extras for :—	
⅜″ and ½″ diameter...	per ton 10/–
⅝″ diameter	per ton 15/–
¾″ diameter	per ton 20/–
⅞″ diameter	per ton 30/–
1″ diameter	per ton 40/–
1¼″ diameter	per ton 60/–
Lengths of 40 ft. to 45 ft.	per ton 10/–
Lengths of 45 ft. to 50 ft.	per ton 15/–

Sundries

Retarding liquid, in 5-gallon drums (for exposing aggregate)	per gallon 21/–	Ex Warehouse, Southwark Bridge. Drums chargeable and credited, if returned.
Ditto (for obtaining a bond)	per gallon 13/1½	

BRICKLAYER

Common Bricks

†Rough stocks	per 1,000 —
†Third stocks	per 1,000 —
†Mild stocks	per 1,000 —
Sand limes	per 1,000 —
‡Phorpres pressed Flettons	per 1,000 59/9
‡Phorpres keyed Flettons	per 1,000 61/9
Blue Staffordshire wirecuts	per 1,000 257/9
†Lingfield engineering wirecuts	per 1,000 83/–
Firebricks, best Stourbridge 2½″	per 1,000 365/6
Firebricks, best Stourbridge 3″	per 1,000 465/6

Facing and Engineering Bricks

Sand Limes, No. 1	per 1,000 —
Sand Limes, No. 2	per 1,000 —
‡Phorpres rustic Flettons	per 1,000 79/9

‡ At King's Cross. For delivery in W.C. district add 6/6 per 1,000.

† Price ex works, delivery extra.

BRICKLAYER—(*continued*)

Facing and Engineering Bricks—continued

Midhurst Whites	per 1,000	121/–
†Hard stocks, firsts	per 1,000	—
†Hard stocks, seconds	per 1,000	—
Sand-faced, hand-made reds	per 1,000 from	153/–
Sand-faced, machine-made reds	per 1,000 from	—
Red rubbers (9¼-in.)	per 1,000	—
Uxbridge Flints (white)	per 1,000	78/–
Uxbridge Flints (creams, light greys, etc.) per 1,000	from	113/–
Dunbriks (concrete), standard greys, ex works ...	per 1,000	63/–
Dunbriks (concrete), in various colours, ex works	per 1,000	99/–
†Southwater engineering No. 1 (first quality red pressed)	per 1,000	128/–
†Southwater engineering No. 2 (second quality red pressed)	per 1,000	108/–
Blue pressed	per 1,000	303/–

† Price ex works, delivery extra.

Limes and Sand

		1-ton lots	6-ton lots
Lime, greystone	per ton	61/–	—
Lime, chalk	per ton	61/–	—
Lime, blue Lias (including paper bags)	per ton	—	—
Lime, hydrated (including paper bags)	per ton	70/6	—
Washed pit sand	per yard cube		12/–

(For cements, *see* "Concretor.")

Hire of jute sacks charged at 1/6 and credited at 1/6. If left charged at 1/9.

Sundries

Wall ties, self coloured	per cwt.	—
Wall ties, galvanized...	per cwt.	—
D.P.C. slates, size 18″ × 9″	per 100	38/–
D.P.C. slates, size 14″ × 9″	per 100	34/3
D.P.C. slates, size 14″ × 4½″	per 100	15/–
‡Ledkore D.P.C. Grade A	per foot super	7½d.
‡Ledkore D.P.C. Grade B	per foot super	9½d.
‡Ledkore D.P.C. Grade C	per foot super	11½d.

‡ Trade discount 5 per cent. and cash discount 5 per cent. Prices include delivery on minimum of £5 orders.

Earthenware airbricks:	9″×3″	9″×6″	9″×9″	12″×9″	14″×9″
Red, blue, vitrified and buff terra cotta ... each	1/–	2/1	4/7	—	12/7

Black cast iron, School Board pattern airbricks	9″×3″	9″×6″	9″×9″	12″×6″	12″×9″
per doz.	—	—	—	—	—
Galvanized ditto per doz.	—	—	—	—	—
Black hit and miss cast iron ventilators					
per doz.	—	—	—	—	—
Galvanized ditto per doz.	—	—	—	—	—

Buff terra cotta chimney pots ... ... each	1′ 0″ 3/8	1′ 6″ 4/4	2′ 0″ 6/4	2′ 6″ 8/4	3′ 6″ 19/–	5′ 0″ 32/5
Fireclay ... per ton	67/6					

Wall reinforcement supplied in standard rolls containing 25 yards lin.

*2″ wide black japanned ...	per roll	2/5
*2″ wide galvanized ...	per roll	—
*2½″ wide black japanned...	per roll	3/–
*2½″ wide galvanized ...	per roll	—

Greater widths pro rata 2½″ price carriage paid on orders of £5. Discounts for quantities

Partitions

		2″	2½″	3″	4″
Breeze ...	per yard super	2/3	2/8	3/2	4/2
Clay tiles	per yard super	2/8	2/11	3/6	4/–
Pumice ...	per yard super	3/6	4/6	5/3	5/9
Plaster ...	per yard super	3/8	4/9	5/9	6/6

Gas Flue Blocks

		Single Flues	Double Flues
Straight blocks	each	1/3	2/3
Building in set	per set of 3	3/1	5/6
Cover blocks	each	1/7	3/4
Raking blocks 45°	each	3/–	4/8
Raking blocks 60°	each	2/1	3/3
Offset blocks	each	3/8	5/3
Closer blocks	each	1/3	2/3
Closer flashing blocks	each	10d.	1/9
Straight flashing blocks	each	11d.	1/9
Terminal and cap	per set	7/–	12/–
Middle terminal and cap ...	per set	6/6	11/3
End terminal and cap ...	per set	6/9	11/9
Corbel block	each	5/2	10/5
Gathering block	each	—	5/3

DRAINLAYER

Agricultural Pipes

		2″	3″	4″	6″
Pipes in 12″ lengths ...	per 1,000	75/–	105/–	142/6	270/–

(Delivered in full loads Central London Area.)

Salt Glazed Stoneware Pipes and Fittings

		4″	6″	9″
Pipes (2′ lengths)	each	1/8	2/6	4/6
Bends, ordinary	each	2/6	3/9	6/9
Single Junction, 2′ long	each	3/4	5/–	9/–
Yard Gulley, without grating ...	each	6/3	6/10½	11/3
Ordinary round or square Grating, painted	each	–/7½	1/3	2/6
Ordinary round or square Grating, galvanized	each	1/0½	2/1	4/4½
Extra for Inlets, horizontal	each	1/6	1/6	1/6
Extra for Inlets, vertical	each	2/3	2/3	2/3
Intercepting Trap with Stanford Stopper	each	17/6	22/6	37/6
Grease and mud interceptor with bucket for removing silt and grease for 6″, 9″ and 12″ drains, with iron grating, painted	each	20/–		
Ditto, with iron grating galvanized	each	21/10½		

The above prices to be varied by the following percentages for the different qualities given. All subject to 2½ per cent. cash discount.

	British Standard	British Standard Tested
Orders for 2 tons and over	Plus 15%	Plus 40%
Orders under 2 tons, 100 pieces upwards	Plus 32½%	Plus 57½%
Orders under 2 tons, less than 100 pieces	Plus 42½%	Plus 67½%

	Best	Seconds
Orders for 2 tons and over	Plus 7½%	Subject to 15% off the price of best quality for all sizes
Orders under 2 tons, 100 pieces upwards	Plus 25%	
Orders under 2 tons, less than 100 pieces	Plus 35%	

Cast Iron Drain Pipes and Fittings

Socket and Spigot Pipes :—

Weight (per 9 ft.)	Size	9 fts.	6 fts.	4 fts. each	3 fts. each
1 . 1 . 8	4″ per yard ...	7/11	8/11	14/2	10/9
1 . 1 . 20	4″ per yard ...	8/3	9/2	14/6	11/1
2 . 0 . 6	6″ per yard ...	12/3	14/7	23/7	18/10
4 . 0 . 2	9″ per yard ...	22/3	29/2	50/6	38/6

		2 fts.	18 ins.	12 ins.	9 ins.
1 . 1 . 8	4″ each	8/11	7/6	6/10	6/1
1 . 1 . 20	4″ each	9/–	—	—	—
2 . 0 . 6	6″ each	14/1	—	—	—
4 . 0 . 2	9″ each	—	—	—	—

Tonnage Allowances :—
Orders up to 2 tons nett.
Orders 2 to 4 tons less 2½%
Orders 4 tons or over less 5%

		4″	6″	9″
Bends	each	7/10	16/4	50/4
Single junctions	each	13/10	28/4	86/9
Intercepting traps	each	37/9	62/11	154/8
Gulleys ordinary trapped ...	each	18/3	—	—
Extra for inlet 4″...	each	5/–	—	—
Grease Gulley trap	each	145/3	—	—
H.M.O.W. large socket gulley trap with 9″ gulley top and heavy grating and one back inlet	each	31/9	58/9	—

Channels in Brown Glazed Ware

		4″	6″	9″
Half round straight channels 24″ long	each	1/3	1/10½	3/4½
Half round straight channels 30″ long	each	—	—	4/2¼
Ditto, short lengths	each	1/3	1/10½	—
Half round ordinary channel bends ...		1/10½	2/9½	5/0½
Ditto, short	each	1/10½	2/9½	—
Ditto, long	each	3/9	5/7½	10/1½
Three-quarter round branch bends	each	5/–	7/6	—

		6″×4″	9″×6″
Half round taper channels 24″ long	each	3/9	6/9
Half round taper channel bends	each	4/8½	8/5½

The above prices are subject to the same discounts as those given for "Best" quality salt glazed stoneware pipes.

Manhole Covers, etc.

	Black	Galvanized
24″ × 18″ single seal for foot traffic. (Weight 0.0.3 in lots of 24) ... ... each	14/3	28/6
24″ × 18″ single seal for light car traffic. (Weight 2 cwts. in lots of 24) ... each	40/6	81/–
24″ × 18″ Wood Block pattern. For road traffic. (Weight 3 cwts.) ... ... each	Coated 67/6	

DRAINLAYER—(*continued*)

Manhole Covers, etc.—(continued)

	Fine Cast	Galv.
Cast iron steps, 13½″ long, 6″ wide, 9″ in wall, approximate weight 5½ lbs. each per dozen	14/9	25/6
Galvanized fresh air inlets with cast brass fronts (L.C.C. pattern) ... ... each	4″ 6/9	6″ 26/6

MASON

Yorkstone

Building quality Robin Hood and Woodkirk Blue Stone.	
Blocks scrappled, random sizes... ... per foot cube	6 1
Add for blocks to dimension sizes ... per foot cube	8d. (each dimension)
Templates with sawn beds, edges rough (up to 4 ft. super and not over 2′ 6″ long) ... per foot cube	6/9
Templates with sawn beds, sawn one edge, per foot cube	8/1¼
Templates with sawn beds, sawn two edges, per foot cube	9 5½
Prices f.o.r. Yorkshire, railway rate to London Station per ton. (Minimum 4-ton loads.)	29/1

Artificial Stone

6″ × 3″ Copings and sills ... ... per foot run	1/10
6″ × 6″ Copings and sills ... ... per foot run	2/10
9″ × 3″ Copings and sills ... ... per foot run	2/2½
9″ × 6″ Copings and sills ... ... per foot run	4/0½
12″ × 3″ Copings and sills ... ... per foot run	2/10
12″ × 6″ Copings and sills ... ... per foot run	4/7
Cornices according to detail, per foot cube (from)	8/3

SLATER, TILER AND ROOFER

Best Bangor Slates

	£ s. d.
24″ × 12″ ... ... per 1,000 actual	—
20″ × 10″ ... ... per 1,000 actual	—

Prices include for delivery to site in lots of 1,000 and upwards.

Tiles

	£ s. d.
Hand-made sandfaced 10½″ × 6½″ red roofing tiles per 1,000	—
Machine-made sandfaced 10½″ × 6½″ red roofing tiles per 1,000	—
Berkshire rustic pantiles... ... ... per 1,000	—

Asbestos-cement

†6″ corrugated sheets, grey ... ... per yard super	3/0¾
†Standard 3″ corrugated sheets, grey ... per yard super	2/9½

Slates (*Manufacture temporarily suspended*) :—

* 15¾″ × 7⅞″ grey ... ... per 1,000	£6 15	9
* 15¾″ × 15¾″ diagonal, grey ... per 1,000	£13 11	6
* 15¾″ × 15¾″ diagonal, russet or brindled per 1,000	£21 19	6

Pantiles (*Manufacture temporarily suspended*).

* Large russet brown ... ... per 1,000	—

* Prices are for minimum two-ton loads, and are subject to 5% trade discount.

† Do., but 3¾% advance and 5% trade discount.

JOINER

Asbestos-cement and Asbestos Products

†3/32″ Semi-compressed flat building sheets, grey per yard super	1/3½
†3/16″ Ditto ... ... per yard super	1/4
†¼″ Ditto ... ... per yard super	1/11

†Prices are for orders of two tons and over and are subject to 10% advance and 5% trade discount.

*¼″ Asbestos wallboard (in sheets 8′ 0″ × 4′ 0″), per foot super	–/4⅝
*3/16″ Ditto ... ... per foot super	–/3⅜
*3/16″ Asbestos wood (in sheets 8′ 0″ × 4′ 0″) per yard super	2/2¾

*Prices are for orders of 2 tons and over and are subject to 5% advance.

The following asbestos prices are subject to 10 per cent. trade discount :—

Asbestos-cement stipple glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″) ... per yard super	8/–
Marble glazed sheets (in sheets 8′ 0″ × 4′ 0″ and 4′ 0″ × 4′ 0″) ... per yard super	8/–
½″ Asbestos Insulating Board ... ... per foot super	—

	25–75 yards	150–300 yards	Over 600 yards
¾″ Fireproof plaster board per yard super	2/5	2/1	1/9
½″ Ditto ... ... per yard super	2/3	1/11	1/7
Joint tape (approx. 250 feet run) per roll	—	—	1/6
Joint filler ... ... per lb.	—	—	–/4

Sundries

Slaters or sarking felt ... ... per yard run–	/9
Roofing felt (1-ply bitumen) ... ... per yard sup	1/–
Bituminous hair felt ... ... per roll	58/–

All rolls 25 yards long by 32″ wide.

JOINER—(*continued*)

Sundries—(continued)

Building paper, 50″ wide (B.I. 20) ... ... per yard run	1/1
,, (K. 40) ... ... per yard run	–/5¼

"Cabots" Quilt :—(Ex Works) Twenty roll lots delivered carr. free.

Double ply ... ... per roll —	per half-roll —

All rolls 28 yards long by 36″ wide. Special terms for quantities.

Cut steel clasp nails	1″	per cwt.	40/3	4″ per cwt.	31/3
,, ,, floor brads	2″	,,	30/9	3″ ,,	29/6
Bright oval wire nails	1″	,,	43/4	4″ ,,	31/3

Galvanized wire staples with slice cut points ... ... 1″ × 12 gauge per cwt.	52/–
Scotch glue ... ... per cwt.	—

STEEL AND IRONWORKER

Steelwork

	£ s. d.
Basis price for rolled steel joists sections 5″ × 3″ to 16″ × 6″, in 10 ft. to 50 ft. lengths ex mills per ton	15 10 6

PLASTERER

Plaster and Cement

	1-ton loads
Sirapite (coarse) ... ... per ton	88/6
,, (fine) ... ... per ton	87/6
Victorite No. 1 ... ... per ton	110/–
,, No. 2 or non-sweat per ton	105/–
Thistle (browning) ... per ton	88/6
Thistle (haired) ... ... per ton	—
Pink plaster ... ... per ton	84/–
White plaster ... ... per ton	93/–
Keene's pink ... ... per ton	138/–
Keene's white ... ... per ton	—
Super Carbo ... ... per ton	—
Carbo-setting ... ... per ton	—
Snowcrete (Rendering Mixture) 1 ton lots and upwards per ton	—

Sundries

Sharp washed sand ... ... per yard cube	13/9
Cow hair ... ... per cwt.	54/–
Goat's hair ... ... per cwt.	93/–
Expanded metal lathing, 9′ 0″ × 2′ 0″ ⅜″ mesh × 26 gauge ... ... per sheet	2/9
Wire Slate nails (galvanized) 1½″ × 15 gauge per cwt.	62/5
,, ,, ,, (bright wire) ,, ,, per cwt.	—

	Less than 150 yds.	Less than 300 yds.	Over 300 yds.	Over 600 yds.
⅜″ Plaster board per yard super	2/–	1/8	1/7	1/6
1¼″ Galvanized nails ... per cwt.	56/7			
Scrim cloth in 100-yard rolls per roll	3/10			

Wall Tiles

The following prices are subject to 75 per cent. addition :

Commercial quality.	
Ivory, white, etc., glazed 6″ × 6″ × ⅜″ ... per yard super	10/1
Angle beads (1½″ wide) ... ... per yard run	1/2¾
,, ,, (1″ ,,) ... ... per yard run	–/10
Rounded edge tiles ... ... per yard run	2/6½
Coloured enamelled bright glazed, 6″ × 6″ × ⅜″ ... ... per yard super	14/3
Angle beads (1½″ wide) ... ... per yard run	1/4½
,, ,, (1″ ,,) ... ... per yard run	–/11¼
Rounded edge tiles ... ... per yard run	2/7
Eggshell gloss enamelled, 6″ × 6″ × ⅜″ ... per yard super	15/–
Angle beads (1½″ wide) ... ... per yard run	1/7¼
,, ,, (1″ ,,) ... ... per yard run	1/0¾
Rounded edge tiles ... ... per yard run	2/8¼
Special rates for quantities	

PLUMBER

Lead

3½ lbs. and upwards milled sheet lead in quantities of 5 cwts. and upwards ... ... per cwt.	38/–
Add if cut to sizes ... ... per cwt.	3/–
Lead ternary alloy, No. 2 quality extra over sheet lead ... ... per cwt.	7/–
Allowance for old lead delivered to merchant per cwt.	18/–

PLUMBER—(*continued*)

Cast Iron Goods

	Percentage Adjustment on List No. 3100 A.B, 1/2/40
Rainwater Goods (painted or unpainted) ...	*Plus* 12½%
Soil goods (coated or uncoated)	*Plus* 12½%

Mild Steel Rainwater Goods

The following prices are subject to 2½ per cent. trade discount and 40 per cent. advance.
24 gauge rainwater slip jointed pipes.

	2″	2½″	3″	3½″	4″
Galvanized round pipes with ears ... ... per 6′ 0″	2/7½	3/1½	3/9	4/3	4/9
Painted round pipes with ears per 6′ 0″	2/4½	2/9	3/1½	3/7½	4/–
Painted or galvanized short lengths with ears, extra each	–/6	–/6	–/6	–/6	–/6

18 Gauge gutters.	3″	3½″	4″	4½″	5″	6″
Galvanized half round gutters per 6′ 0″	2/–	2/3	2/4½	2/9	3/–	3/7½
Painted half round gutters ... per 6′ 0″	1/6	1/9	2/–	2/3	2/6	3/–
Painted or galvanized short lengths extra each	–/3	–/3	–/3	–/3	–/3	–/3

Asbestos-Cement Rainwater Goods

The following prices are subject to 15 per cent. advance and 12½ per cent. trade discount.

Orders over £30 are subject to 17½ per cent. trade discount.

Rainwater pipes.

Prices are for 6′ 0″ lengths, and 10′ 0″ lengths in 2″, 2½″ and 3″ diameters. Short lengths up to 2′ 0″ are charged as one yard. From 2′ 0″ to 4′ 0″ charged as 1½ yards. From 4′ 0″ to 6′ 0″ charged as 2 yards. Over 6′ 0″ charged as 10′ 0″.

Round pipes.

2″	per yard run	1/10
2½″	per yard run	2/0¾
3″	per yard run	2/5¾
3½″	per yard run	2/11¼
4″	per yard run	3/4¾
4½″	per yard run	4/10¼
5″	per yard run	5/9½
6″	per yard run	7/1¾

Gutters.

Short lengths of gutter up to 2′ 0″ charged as 1 yard; from 2′ 0″ to 4′ 0″ as 1½ yards, and over 4′ 0″ as 2 yards.

Half round gutters	3″	4″	4½″	5″	6″	8″
per yard run	1/3¾	1/6¾	1/7¾	1/11	2/8	3/3½
Ogee gutters per yard run	—	1/11	2/0¾	2/5¾	3/0¼	3/11¼

INTERNAL PLUMBER

Lead pipe in coils, 5 cwts. and upwards ...	per cwt.	38/6
Lead soil pipe	per cwt.	42/6
Add if ribbon marked	per cwt.	–/6
Lead ternary alloy, No. 2 quality extra over lead pipe	per cwt.	7/–
Plumber's solder	per cwt.	145/–
Tinman's solder	per cwt.	200/–

Drawn lead traps with brass screw eye, 6 lbs.

		1″	1¼″	1½″	2″
S. trap	each	2/9	3/2	3/11	5/8
P. trap	each	2/5	2/7	3/3	4/7
Extra for 3″ deep seal ...	each	–/8	–/8	–/8	–/8

Screwed and Socketed Steel Tubes and Fittings for Gas, Water and Steam, etc.

Tubes.

Tubes 2 ft. long and over	½″	¾″	1″	1¼″	1½″	2″
per ft.	–/5½	–/6¾	–/9¼	1/1	1/4½	1/10
Pieces 12″ to 23½″ long each	1/1	1/5	1/11	2/8	3/4	4/9
Bends ... ... each	–/11	1/2	1/7½	2/7½	3/2	5/2

Fittings.

Elbows, square ... each	1/1	1/3	1/6	2/2	2/7	4/3
Elbows, round ... each	1/2	1/5	1/8	2/4	2/10	4/8
Tees ... ... each	1/3	1/7	1/10	2/6	3/1	5/1
Crosses ... ... each	2/9	3/3	4/1	5/6	6/7	10/6
Sockets, plain ... each	–/4	–/5	–/6	–/8	–/10½	1/3
Sockets, diminished each	–/6	–/7	–/9	1/–	1/4	2/–
Flanges ... ... each	1/–	1/2	1/4	1/9	2/–	2/9
Caps ... ... each	–/5	–/6	–/8	1/–	1/3	2/–
Plugs ... ... each	–/4	–/5	–/6	–/8	–/10	1/3

INTERNAL PLUMBER—(*continued*)

Screwed and Socketed Steel Tubes and Fittings for Gas, Water and Steam, etc. (continued)

Fittings and flanges and tubes ordered in long random lengths are subject to the following trade discounts:—

	Tubes	Fittings	Flanges
"Light Weight" ...	51½%	47½%	28%
"Heavy Weight" ...	44%	39¾%	15¼%

COPPERSMITH AND ZINC WORKER

Copper

Hot rolled copper sheeting in 1 cwt. lots, all gauges to 24 wire gauge	per lb.	1/0½
Light gauge copper tube, solid drawn	per lb.	1/3½
Copper tube, solid drawn screwing sizes ...	per lb.	1/2½
Copper wire, 10 and 12 gauge	per lb.	1/2
Copper nails, 1″ and up	per lb.	—

GLAZIER

Sheet Glass cut to size (ordinary glazing quality)

18 oz. clear sheet	per foot super	3½d.
24 oz. ditto or "R" quality	,, ,, ,,	4½d.
26 oz. ditto	,, ,, ,,	5½d.
32 oz. ditto	,, ,, ,,	7½d.
⅛″ figured rolled and cathedral glass (white)	,, ,, ,,	7½d.
⅛″ ditto, approved tints	,, ,, ,,	10½d.

British Polished Plate Glass cut to size

Ordinary ¼″ Substance In Plates not exceeding		Glazing for Glazing Purposes	Selected Glazing Quality	Silvering Quality
2 ft. super ...	per foot super	2/2	2/4	2/10
3 ,, ...	per foot super	2/9	3/–	3/9
5 ,, ...	per foot super	3/–	3/6	4/3
*45 ,, ...	per foot super	3/6	4/–	5/5
*100 ,, ...	per foot super	4/6	5/7	7/2

*Plates exceeding 100 ft. super or 160 in. long or 100 in. wide at higher prices.

Special quotations should be obtained for other qualities and thicker substances.

Wired Glass Cut to Sizes

¼″ Wired rolled or wired cast	per ft. super	10½d.
‡¼″ Georgian wired cast	per ft. super	11d.
‡¼″ Polished Georgian wired plate	per ft. super	3/2

‡ For cutting to allow for wires in adjacent pieces to be "lined up," add 4d. per foot super.

PAINTER

Snowcem paint	per cwt.	56/–
White ceiling distemper	per cwt.	22/–
Washable distemper	per cwt. from 44/– to	66/–
Ready mixed white lead paint (best), 5 cwt. lots, 14 lb. tins	per cwt.	96/6
Aluminium paint	per gallon	—
White enamel	per gallon	—
White enamel paint	per gallon	30/–
Stiff white lead (genuine English stack process, 1 ton lots, 1 cwt. kegs)	per cwt.	68/3
Liquid driers	per gallon	23/–
Linseed oil raw (5 gallon drums)	per gallon	6/6
,, ,, boiled (5-gallon drums)	per gallon	6/9
French polish	per gallon	15/–
Knotting	per gallon	24/–
Oil stain (scumble)	per lb.	3/–
,, ,, red oxide	per cwt.	62/6
,, ,, middle Brunswick green	per cwt.	88/–
,, ,, dark umber	per cwt.	78/6
,, ,, golden ochre	per cwt.	88/–
Varnish (outside quality) oak	per gallon	18/–
,, ,, ,, copal	per gallon	20/–
,, ,, ,, flatting	per gallon	24/–
Turpentine, genuine American 5 gallon lots	per gallon	—
,, substitute	per gallon	4/–
Creosote, 1 gallon lots	per gallon	1/6
Putty	per cwt.	22/9
Size	Per ¼ cwt.	30/–
Best quality English gold leaf, 23 carat ...	per book	3/6
Extra thick, ditto	per book	4/6

INFORMATION CENTRE

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

PHYSICAL PLANNING

1184 Dwelling Design

DESIGN IN DWELLING. *Society of Women Housing Managers* (*Memorandum, May*, 1943). Result of enquiry by 25 experienced housing managers who interviewed over 2,000 of their 2,600 tenants.

1. *The size of unit*: The Society strongly supports the proposal of the RIBA that the unit should be small enough for the family to feel that it belongs to a community in whose life it can fully share. This unit must form part of a larger unit which can provide all the services necessary for the well-being of the citizen.

For the estate of flats the first unit should not be larger than 120 families; where it is necessary to develop large sites, the planning of the blocks should still allow for this grouping within the whole.

2. *Playgrounds*: Immediate research should be undertaken into the provision and lay-out of adequate open spaces for estates both of cottages and flats.

3. *Sound-proofing*: Cheap and effective methods of sound-proofing are urgently needed, both for houses and flats.

4. *The cottage estate*: The quiet through-road is preferable to the main road or the cul-de-sac; every house should have a shed provided and maintained by the landlord; high-boarded fences for a few feet between the backs of adjoining houses should be provided.

5. *The estate of flats*: For families flats are to be avoided wherever possible; a higher standard in the provision of space should be established; the design of flats should aim at securing as much individual privacy as possible; three storeys above the ground floor should be the maximum height of blocks without lifts; where there is no passenger lift, a goods lift or coal hoist should be provided; dwarf walls should be built on ground floors to enclose a space corresponding to the balconies of the flats above; common access balconies should be avoided wherever possible; separate access balconies are desirable; private balconies as large as is practicable should be provided for every flat; the unit of 120 (see recommendation (1) above) should be provided with its own room for tenants' meetings and its own communal workshop; a greater number of sheds in proportion to the number of flats should be provided than is now usual; further experiments should be made with properly constructed chutes of adequate size.

6. *Internal planning*: The architect should be required in all cases to show on plan the position of the necessary furniture in the room; rooms should be as nearly square as possible; fireplaces should not be in corners or opposite doors; several doors should not open off one room; every room should be provided with gas points or electric power points, and every dwelling with one portable fire.

7. *The living room* should be at least 180 square feet for the medium-sized family; it should have an open coal fire; the scullery and living room should both vary in size with the number of rooms in the dwelling; further experiments should be made with the back-to-back fire.

8. *Bedrooms* should contain no great variation in floor space or in shape; every room should be large enough to take two single beds; at least one of the other bedrooms should be the same size as the "first"; at least two bedrooms should have an open fire.

9. *The bathroom and w.c.*: The bathroom should be at least 45 square feet when separate from the w.c. It should preferably be upstairs. The w.c. should be separate from the bathroom, except where a second one is provided for the large family.

10. *The larder*: The larder should vary with the size of the dwelling and be in a cool position; mass production of cheap and efficient refrigerators should be accelerated.

11. *Storage*: There should be more cupboards, particularly in the scullery; they should be of suitable design and good workmanship, recessed wherever possible; considerably more coal storage should be provided than is now usual, especially for flats.

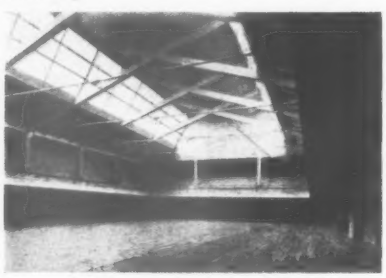
12. *Decoration*: The use of distemper, even of good quality, is to be deprecated except in bedrooms.

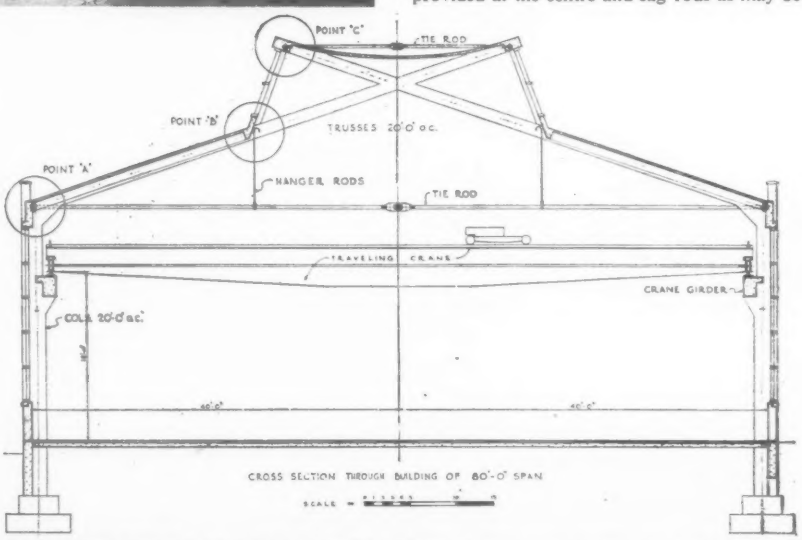
13. *Cooking*: Cooking by coal should always be supplemented by some form of gas or electricity.

14. *Water heating*: Water heating by coal or coke should likewise be supplemented by a gas or electric heater; mass production of cheap and efficient heaters should be accelerated; where the size of the unit justifies it, a system of constant hot water from an outside source should be installed.

15. *The aged*: There should be some special provision for housing the aged on every estate.

16. *The problem family*: Segregation of the problem family is to be avoided; so also is specially designed accommodation with cheap or inferior equipment.





Concrete roof spanning 80 feet. Top: completed building. Above: cross section. See item No. 1185.

STRUCTURE

1185 Concrete Roof

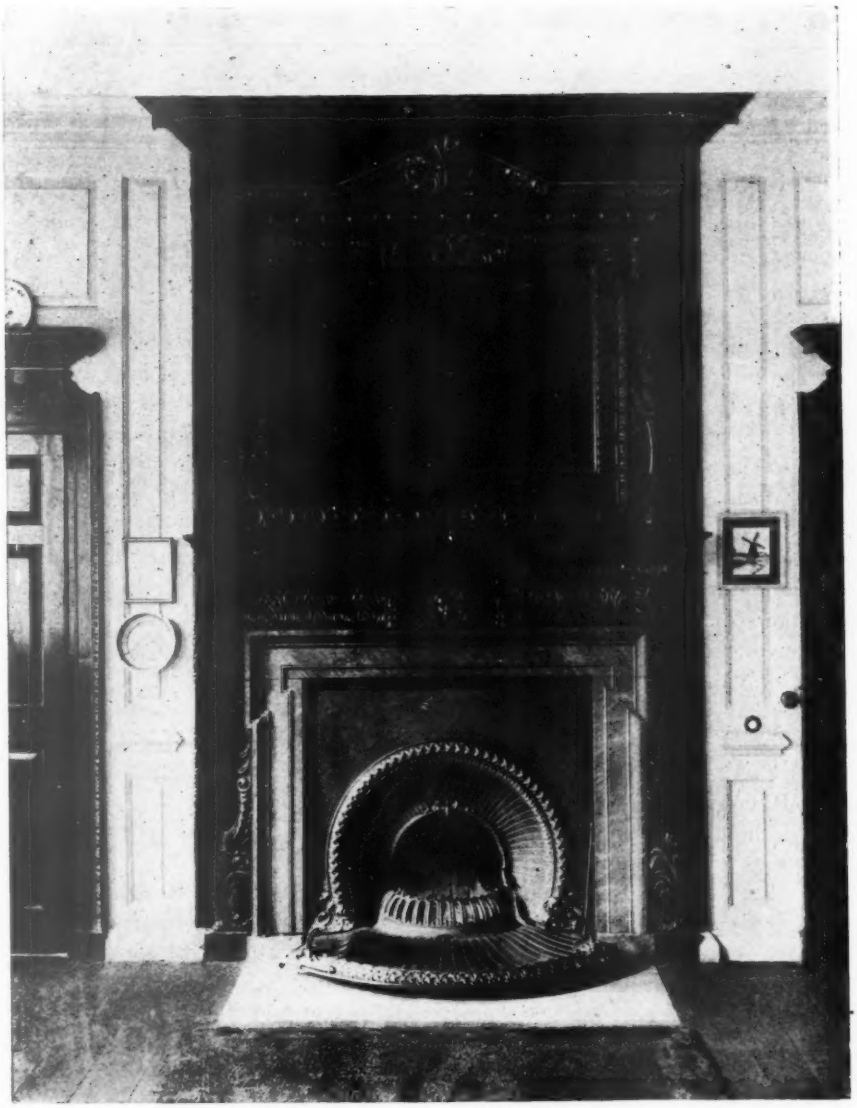
LONG SPAN CONCRETE ROOF CONSTRUCTION. *C. H. Mayer.* (*Journal of the American Concrete Institute, April*, 1943, *pp.* 389 *to* 396). Simple Howe truss supporting a continuous monitor for light and ventilation.

The type of long span reinforced concrete roof described has been successfully used during the last 25 years. It consists of a Howe truss in which the top chord members are extended beyond the apex of the roof to support a continuous monitor admitting light and ventilation (see illustrations).

The roof of the monitor is formed on the curve of a catenary, eliminating all bending stresses in the roof slab for normal loading. The reinforcing steel hence must carry this load in direct tension, and the thickness of the concrete shell encasing the rods may be reduced to a minimum.

The main roof slab of the building consists of an ordinary reinforced slab supported on rafters. The rafters are framed into the spandrel beam on the one side and into a continuous beam formed to include the sill of the monitor sash on the other side, the latter being supported on the top chord member of the trusses. To eliminate excessive flexural stresses due to load concentrations on the truss members, the reactions from these main roof supporting beams are carried through an inclined tie to the end of the cantilever above, there combined with the reaction from the monitor roof and the resultant carried through a horizontal tension rod across the monitor and there counterbalanced by equal loads acting in opposite direction.

The bottom of the truss consists of an ordinary tie rod embedded into the building columns with proper plates to transfer the roof loads into the rods. Turnbuckle is provided at the centre and sag rods as may be



L. E. Walker, Photo.

CHIMNEY PIECE, 81, HIGH STREET, KING'S LYNN.

THIS chimney piece was made in the early years of the 18th century, and the design has every sign of being the work of Henry Bell, the architect of the King's Lynn Custom House. The carved emblems suggest that the room was intended for the practice of music, and it marks the change in social habits that such provision should have been made in a house of quite modest size. The march of time has also brought the necessity for economy, and we can no longer afford the thick walls that kept the rain out, but the added protection which thin walls need is adequately provided by renderings of sand and cement made impervious by the addition of 'PUDLO' Brand cement waterproofer.

THEY MIGHT HAVE SAID THIS—

QUESTION MASTER: To-night we are giving another of our technical series, so we have our anonymous expert again as our guest. Surrounding him are the resident members—Dr. Treat M. Roughly, Professor Noad-Hall and Captain Campstool. The first question comes from a machine-shop operative in Nether Fidget, Mr. Stanley Cotterpin. "Why," he asks, "is glass strengthened with wire netting?" Noad-Hall, will you begin?

Professor Noad-Hall: The question is, of course, ambiguous. It might mean "Why does wire netting strengthen glass?" Two entirely different things. Wire netting strengthens glass, I should think, for precisely the same reason that a wire mesh reinforces concrete. By adding the tenuous strength of steel wire to the diffused adhesion of the glass particles, the wire helps to prevent shock or vibration splitting these particles apart. I imagine that wire netting is chosen for this purpose because it is most efficient, most economical, or both.

Question Master: Dr. Roughly?

Dr. Roughly: I have nothing to add to what Noad-Hall has said. It requires some clarification, of course. It seems evident to me that wire netting is used for strengthening glass simply because experiment has shown this to be the most practical method of reinforcement.

Professor Noad-Hall: You have abbreviated my remarks: you can hardly claim to have clarified them.

Dr. Roughly: Twenty words are always clearer than two hundred.

Question Master: Well, we—er—won't stop now to count. Captain Campstool? You have something to say?

Captain Campstool: I don't know much about these things, but it seems reasonable that a product like glass, which is easily broken by uneven strain, would become much tougher when combined with anything like wire netting which, I suppose, spreads the effect of strain. It's sort of like the ropes to a bell tent, if you see what I mean. Get them pulling evenly and the tent stops up, even in a gale.

Question Master: At least we hope it does. And what is the expert's view?

The Expert: Wire netting is put into glass because, as everybody knows, glass is apt to be broken and flying glass is dangerous. Wire netting holds the fragments of a shattered pane together. Bombs have proved that. If a workman drops a hammer on a wired glass roof the glass is broken but does not fall down on the people below. The wire netting holds it in place, and the hammer does not fall through. A burglar can cut the glass, but he can't push the piece out. A smash-and-grab-raider can break the glass on the cash counter, but he can't grab the cash. Wired glass also prevents the spread of fire. The heat may crack the glass, but the window does not fall out, so the flames cannot get through to the next room or the adjoining building.

Question Master: There, Mr. Cotterpin, I hope you will now understand that wire netting is put into glass to enable it to break graciously. Now we pass on to the next question, from a Home Guard: Mr. Oldsweat, of Much Lying. He asks, "What is anti-fly glass?" Campstool?

Captain Campstool: Well—all I can say is that I remember once, in a bar in Aden, coming across a drinking mug which had a tsetse fly embedded in the glass. We used to play practical jokes with it upon squeamish tourists.

Question Master: Noad-Hall?

Professor Noad-Hall: The term "anti-fly" glass is new to me, as flies cannot get through glass anyway. It would seem that the term "anti-fly" is extraneous. It suggests that other types of glass are "pro-fly," which they obviously *aren't*.

Question Master: Roughly?

Dr. Roughly: Isn't it true that flies, like most sentient beings, are attracted by light? This being so, the nearer to opaque a glass might be, the more certainly will it fail to attract flies.

The Expert: If I may be allowed to cut in—the description "anti-fly" glass is technical. It has an interesting story behind it. The proprietors of a jam factory once asked Pilkington Brothers to instal some glass which would prevent rays of light coming in and disturbing the process of fermentation, which must take place before the jars are sealed. For this purpose, amber glass was used. Now, it was found that where there was amber glass, no flies appeared. So Pilkingtons conducted some separate fly-tests with saucers of beer placed under different coloured glasses. It was proved that flies disliked red glass most and yellow next. They also avoided blue, but not so much as red and yellow. It was obviously not practical (on account of illumination) to use red as anti-fly glass, but yellow is used with great success in food factories, larders, store-rooms and so forth.

Question Master: Well—er—now we know the truth, straight from the lion's mouth. For you will have gathered that our expert belongs to Pilkington Brothers Limited, the glass manufacturers of St. Helens, Lancashire. So that now, after 100 years of glass making, they are able to keep flies out of their beer.

needed. Haunches are formed at the intersection of the columns and truss members to resist the wind pressure.

LIGHTING

1186 *Measuring Light*

A STANDARD METHOD OF MEASURING AND REPORTING ILLUMINATION. (*Journal of the Illuminating Engineers' Society, USA, February*, 1943, *p.* 75). Recommendations for a standard method for measuring and reporting illumination from artificial light sources in building interiors.

Useful for architects with industrial and commercial practices who may have occasion to supervise remodelled lighting systems.

1187 *Electric Wiring*

NOTES ON ELECTRIC WIRING. *Megohm.* (*Electrical Times, June* 3, 1943). Quality, ageing and maintenance of wiring.

Maintenance and renewal has been cut down during wartime but in spite of low standard of wiring in pre-war houses very little trouble has occurred. Can cheaper standards therefore be allowed in future? Methods are very briefly discussed. In permanent buildings first cost of wiring is not very important being about 5 per cent. of total cost, therefore a saving of 20 per cent. on wiring means only 1 per cent. on the building. Type of floor constructions may require special consideration and some of the rubber substitutes which are likely to be available may not be too good. Much of the trouble on cheap installations has been at cable ends where they enter accessories without proper protection. Iron boxes are recommended. Disadvantages of the closed ring main, controlled by one fuse, are mentioned.

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.*

1188 *Concrete Floors*

Q *What materials are available for the treatment of dusty concrete floors? I am conversant with Sealocrete and similar materials but want something which will also give a colour —preferably dark green or red.*

A There are many products made for the treatment of dusty concrete floors, but if you wish for a colour we should advise you to use R.I.W. cement floor enamel, made by R.I.W. Products, 2, Orsman Road, London, N.1.

1189 *Plan Colours*

Q *Could you tell me where to get a book or leaflet which would give me the correct key to plan colours, i.e. brick plan, light red, etc.*

A Standard colours for plans can be seen in the British Colour Council Dictionary of Standard Colours, which can be obtained from the British Colour Council, 28, Sackville Street, London, W.1., price £3 3s. The dictionary is in the Reference Library of the Royal Institute of British Architects, 66, Portland Place, London, W.1.

SOCIETIES AND INSTITUTIONS

Speeches and lectures delivered before societies, as well as reports of their activities, are dealt with under this title, which includes trade associations, Government departments, Parliament and professional societies. To 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.

RIBA

ASB Lecture

May 8, at 66, Portland Place. Lecture in a series arranged by the Architectural Science Board of the RIBA on HYGIENE AND SANITATION by Dr. Charles F. White, O.B.E., M.D., D.P.H., D.T.M., Medical Officer of Health of the City of London. Chairman: Alister MacDonald, F.R.I.B.A.

C. White: The modern tendency is for medical officers of health to get away from what we call environmental hygiene. In the early days, the medical officer of health was concerned solely with environmental hygiene, but to-day he is in most cases becoming an administrator of public medical services, and the environmental hygiene is passing more and more out of the hands of the Ministry of Health and into the hands of the borough engineer.

This matter of sanitation, as we now understand it, began a remarkably short time ago, only about a hundred years. The end of the eighteenth century and the early years of the nineteenth saw the beginning of the industrial era in this country. Industry thrived, the population grew at an enormously rapid rate, houses were put up at as many to the acre as could be crammed in, and the conditions under which the working classes lived were appalling.

Into this state of affairs came a disease which you probably now look on as a tropical disease, but which is not really necessarily a tropical disease—cholera. In 1831, cholera came to England for the first time. Cholera will thrive in a temperate climate like ours just as it will in the tropics, if sanitation is not attended to. Cholera was really the origin of public interest in improvements in sanitation, because although at that time the bacterial theory of disease had not been evolved, and so the bacteriology of cholera and of typhoid fever was not understood, nor even conceived, it was realized that the diseases—cholera, typhoid fever and also typhus fever were what were known as "filth diseases," and thus we got the beginnings of the idea of sanitation and of cleanliness in its widest sense.

At that time the separation of sewage or excretory matter from water supplies was very inefficient indeed, and that is why cholera took hold here and killed some 30,000 to 40,000 people in this country in a very short space of time. The diseases against which we are protecting ourselves in this matter of sanitation so far as plumbing, drainage and water-supplies are concerned are the intestinal diseases. We are no longer afraid of cholera, because conditions are sufficiently developed to prevent any outbreak of cholera, or to suppress it immediately if an odd case occurred.

But typhoid fever remains, and I think always will remain, a danger against which we have to protect the community.

We have always to look upon sewage as possibly containing the typhoid organism; and it can be said with certainty that sooner or later if there is communication between the water-supply system and the sewage system—any sort of communication—there will inevitably be a typhoid outbreak. You will remember the Croydon outbreak, which was water-borne, due to a carrier going down a well there. Outbreaks do occur from time to time, but I have to admit that to-day, owing to the control of drainage systems and the control of water-supply systems, and particularly the chlorination of the water-supplies, most of our cases of typhoid are not water-borne.

Even if there are typhoid organisms in the sewage, the smell of that sewage will not cause typhoid fever. Similarly, it is safe to say that drain air in a house will not cause diphtheria. Both diseases are due to specific organisms which we can recognise.

No doubt architects would like to see the soil pipe put inside the house instead of on an outside wall. I am a little afraid of putting the soil pipe inside the house—an ordinary house, at any rate—not only because of the difficulty of making absolutely tight joints but because of the difficulty of keeping them tight; and, quite apart from the possibility of the escape of smell, in bad cases there may be the escape of sewage matter, and you may get actual soiling of floors or walls, soiling of hands, and the possibility of the transmission of specific contamination from the hands to articles of food, and from articles of food to the human intestine, thus leading to the creation of disease. If, therefore, we are going to put soil pipes inside buildings, we have to be extremely careful that there is no chance of leakage at any time during their life.

I now come to another point—noise. Most people are very intolerant of bad smells, but they are remarkably tolerant of noise, yet noise has a definitely deleterious effect on health, much more in the case of some people than in the case of others. I should like to put in a plea for doing everything possible to limit the noise in pipes in a house, whether water-pipes or waste-pipes, and in the various appliances such as the flushing cisterns. Think of it in your own house, and think of what happens in blocks of flats. I have no special knowledge of the subject, but I do know how extraordinarily difficult it is in modern buildings to have anything approaching soundproof conditions.

I would plead that in designing any class of building, whether it be working-class houses and tenements or offices or factories, you should approach the provision of water-closets with the idea that it is not just something which has to be done but that it is really a most important health measure. There should be an ample supply of them, they should be readily accessible and they should not be unattractive.

Where water-closets are provided in big office buildings, for example, in rows, the question of ventilation arises. The by-laws and other requirements with regard to the

ventilation of these places are very important, and you cannot judge the position merely by visiting them when they are not in use.

In houses and restaurants in particular I would put in a plea for the provision of washing accommodation in very close association with the lavatory compartments. If we are to prevent outbreaks of food poisoning, typhoid and para-typhoid, it is most important to ensure that people wash their hands after defæcation, and generally after urination too. Everybody who handles food should never think of doing so without washing their hands after defæcation or urination.

There is a small point about the height of sinks and lavatory basins and baths which I want to mention. You have, of course, to try to strike an average to meet all demands, but I have been specifically asked about the type of closet with the backward-sloping seat. The idea of that is that you approach the natural squatting position for defæcation, and you have the thighs against the abdominal wall and support the groins where the orifices are through which herniæ protrude, and you can get up a certain amount of pressure. Personally, I do not favour that type of closet. It may be all right in a way, but you have to remember its use by young children, and still more by old people, who may find it, particularly if their joints are stiff, extremely difficult to get up from. I should, however, like to see the seats of water-closets as low as they can possibly be made. If you want to achieve the squatting position, it is perfectly simple to have a small wooden washable footstool in the water-closet compartment, and anyone who is fussy about the squatting attitude can then very nearly adopt it by putting their feet on that. I do not think that I should make any attempt to instal the sloping-backward seat.

With regard to baths, I would again plead for the fittings to be as low as they possibly can be. It is an advantage both for children and for old people to have a low-fitted bath, and it is important in the matter of baths to cater for the old. Young people have baths because they like them ; old people are much more inclined to have baths because they feel that it is necessary, though troublesome.

You do not want sinks to be too high or too low, and the same applies to lavatory basins ; but in every case I would err on the side of being too low rather than too high.

I propose now for a few minutes to ask for your attention to a matter which normally you tend to ignore, but with which only you and the builders can really deal—the rat menace.

The only way to obtain any permanent result in the campaign against rats is to build the rat out of existence. So long as there are good nesting places for rats, and available food and available water for them, those good homes for rats will be occupied. If you go with traps and poisons and gas and clear those homes out, as long as you leave the homes there other families will come along after a little while, and you have to begin again at the beginning, and matters will soon be as bad as ever, because the rat is very prolific. The only thing to do, therefore, if you do not want to go on trapping and poisoning and gassing over and over again, is so to build that you do not provide rat harbourage, that is nesting places for rats, and that you do not provide means of communication which allow the rats to wander all over the building in search of food and water.

First of all, you can refrain from making spaces behind panelling, in pipe casings and so on. That is one of the difficulties where you have internal pipe lines, internal stack pipes and so on ; you want to case them in, and that makes a fine place for rats. In ships they have to have pipe casings, as otherwise cargo when lowered into the hold might bump into various pipes and damage them, so that they have to be protected with casings ; but in that case we have got down to either a skeleton casing or a fascia board in front of the pipe, not an enclosed casing. Secondly, if you must provide these spaces, then shut them off into small compartments. You can use expanded metal of not more than ½-inch mesh. That may sound very small, but the black rat, which is the rat which infests the offices and restaurants in London—it is not the sewer rat but the black rat—is an amazing climber and very active, and when he stretches himself out it is extraordinary what a small opening he can get through.

Again, you have to prevent rats chasing about the building in search of food. A rat will not stay in a place where it cannot get food and water ; do not allow him to go about the building to places where he can find it. Where a pipe goes through from one room to another, there is often a hole which is bigger than is necessary for the pipe ; and that hole, small though it may seem to you, provides an easy way for the rat to get through into the next compartment.

The same applies, of course, to bed bugs. The degree of bed-bug infestation in working-class houses is appalling, and there is always the possibility that they will get into better-class houses and into offices, and sometimes they do. Cracks and crevices in skirting-boards, picture rails, the architraves of doors, and so on, are the places where the bed-bug lives, and it is therefore of vital importance to construct rooms in houses, for the poorer section of the community in particular, in such a way that they provide no nooks and crannies in which the bed-bug can harbour.

I want also to say a word about water storage tanks in houses. They are a great source of difficulty, but it is not possible to eliminate them, at any rate in London. That question has been very fully discussed, and we know that the main reservoir of water in London is the water-storage tanks in the buildings. Without that reservoir, the Metropolitan Water Board would not be able to meet the peak load requirements of London in relation to water-supply, so that we have to have water-supply cisterns. They are up in the roof, at the tops of the buildings, and they do get very dirty. When water tanks are installed they must be protected from contamination, and protected in such a way that when the protection is temporarily removed to do any work on the tank or to clean it out, that protection will be put back again and the tank left in a sound condition.

PWB

Study Committees

The following is the ninth extract from the booklet issued by the Directorate of Post-war Building of MOW containing reviews of ten of the *First Draft Reports* of its twenty-three Study Committees. See leading article for April 22, and these columns for April 22, 29, May 6, 20, 27, June 17, 24 and July 8, 15.

17. PAINT COMMITTEE. First Draft Report, October, 1942.

31 pp. plus 5 pp. summary, divided thus :

Introduction.
Synopsis.
General nature of paint.
Application and use of paint.
Durability of oil paints.
Preparation of surfaces for painting.
Types of paint recommended for post-war use.
Recommendations for immediate post-war painting.
Specification. Bibliography. Summary.

Introduction.

Terms of Reference and Constitution of Committee.

The Committee has held eight meetings ; the Sub-Committee two.

The Draft Report is being followed by further investigation of problems arising from study of matters discussed therein, which may result in some revision of recommendations. Modifications will be embodied in the Final Report, which will also deal with any further matters arising within the terms of reference.

In post-war period, paint industry will be faced with urgent demands and shortage of materials. Some 300 raw materials are involved in modern paint production. Many will be scarce, some almost unobtainable. Economy in use, and some variation on pre-war practice will be inevitable. Economy will not be obtained through inferior paint, but by improving quality, raising standard of application, ensuring well-prepared surfaces and avoiding waste. Report is preliminary guide to architects and paint users based on these requirements.

General Nature of Paint.

General outline of composition, properties, durability and suitability of various products in the three principal classes : oil paints, water paints and cellulose paints. Nature of oils, varnishes, bitumens, synthetic resins, wool grease, silicates, etc., described. Special types of paint : aluminium, luminous, fire-retarding, etc., and painters' materials : putty, stopping, size, petrifying liquid, etc., explained.

Application and Use of Paint.

Explains principle underlying established practice of applying oil paint in series of thin coats.

RECOMMENDED that for economy in post-war period, number of coats should not exceed three for interior and four for exterior work, including priming. Too much importance cannot be attached to efficiency of priming coat ; without proper priming reliable protection cannot be afforded by subsequent coats. Relative importance, and composition, of undercoat and finishing coat explained. Notes on brush and spray application, and painting prefabricated fittings.

Skilled application essential, to combine effective protection and decorative value with economy in use.

Durability of Oil Paints.

Discusses destructive agencies, process of decay, and life to be expected from external and internal paint work.

Decay in parts exposed to weather discussed with reference to re-painting. Parts which "chalk" on exposure provide better surface for re-painting than those which crack or scale. Explains failure of internal work due to presence of moisture and alkalies in surface painted.

Notes on paint removers.

Preparation of Surfaces for Painting.

Proper condition of surface to be painted is essential.

RECOMMENDATIONS for surface preparation are made under the headings :

Old and neglected surfaces (with special reference to buildings damaged by enemy action).

Woodwork, external stone, brick, cement, etc., internal plaster (including stained ceilings), metal surfaces, structural steel, casements, galvanized steel.

New surfaces.

Woodwork, stone and brick, cements and plasters, asbestos cement, fibre and plaster boards, iron and steel work, zinc and galvanized steel, lead, copper and aluminium.

Types of Paint Recommended for Post-War Use.

Descriptions, in general terms, of nature and quality of material for a number of types of paint, etc., considered suitable for immediate post-war use. The list includes :

Oil Paints, priming coat, undercoat, finishing coat.

Water Paints, emulsion paints and distempers.

Varnishes, gold size and knotting.

Miscellaneous, tar paint, plastic paint, glazes and wood stain.

RECOMMENDED : Twenty-nine paints, etc., for various purposes under the above headings. Not to be regarded as specifications.

Recommendations for Post-War Painting.
Recommendations, tabulated, for painting on various surfaces with the paints previously listed.
Each type of surface is considered under four headings :
Old and neglected interior surfaces ; new interior surfaces.
Old and neglected exterior surfaces ; new exterior surfaces.

Specification.
General advice on the framing of paint specification. Difficulties discussed. Desirability of a scheme for official certification of paints, indicated in the terms of reference, is recognized, but its organization presents many difficulties.

Bibliography.
List of 10 publications and references to B.S.S.

RIBA

Fees for Farm Workers' Houses

The following scale of fees for the 3,000 agricultural workers' cottages has been issued by the RIBA : It has been decided, in cases where sufficient progress has not been made by the local authorities or where the tenders are too high, that complete drawings (plans, sections, elevations) and specifications shall be supplied to them by MOW. The question has, therefore, arisen as to the fee to be paid to the architect engaged by the local authority where the architect is supplied with complete drawings and specification. The Minister of Works has discussed the matter with representatives of the Royal Institute, and the following special scale has been agreed :—

In considering these arrangements regarding the fees for the 3,000 agricultural workers' cottages, the Council of the Royal Institute express the view that the method adopted in this case of issuing plans to local authorities is not in the interests of the country or the profession. In agreeing to it, to meet an emergency, the council are in no way agreeing to this method of procedure for the future.

In cases where ⅛ in. scale detail and full-size drawings and specification are provided by the Ministry, the architect's services to be limited to the following :—

1. Taking instructions from the authority.
2. Survey of site, exploration of services, existing or potential.
3. Layout of site—foundations to be designed to suit levels.
4. Adjustment of drawings (provided by the Ministry) to suit levels.
5. Drainage plan to connection with sewer, or alternatively, up to and including disposal tank (septic).
6. Obtaining and advising on tenders.
7. Selecting local and other materials, bricks, tiles, slates, etc.
8. Supervision of the work during erection.
9. Issue of certificates from time to time after valuation of work done.
10. Settling final accounts and certifying.
11. Inspection and supervision of work done under any period of retention and maintenance clause.

The fees proposed for the above services are :
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In cases where much groundwork, terracing, or retaining walls are necessary, an extra fee will be payable based on the work involved.

This scale is exclusive of reasonable travelling and out-of-pocket expenses and printer's charges for additional copies of drawings and documents which the architect may be called upon to supply.

RIBA

Examinations

The RIBA Intermediate Examination was held in London, Manchester, Leeds and Belfast from May 21 to 27, 1943. Of the 111 candidates examined, 41 passed and 70 were relegated.

The successful candidates are as follows : Austin (Miss) Patricia R., Bancroft, Bernard (subject to completion of testimonies of study), Baxter, Gerald M., Belam, Leonard H. G., Bennett, Simon de C., Blyth, Philip J., Brooks (Miss) E. Kathleen, Downie (Mrs.) Margaret N., Duckworth, R. Bryan, Elliott, E. Graham, Fenwick, Hubert W. W., Fiford, Lionel A. F., Finch, John H., Gazzard, Roy A. J., Harries (Miss) M. Wendy, Hewish, Ronald A., Huggett, Bernard W., Johnson, E. Austen, Kelly, Gerard A., King, E. Platton (subject to completion of testimonies of study), Lancaster, Frank W., Luck, Leonard E., McCulloch, Allan G., McMordie, Harold M., Mellor, Raymond W., Miller, Kenneth G., Miller, P. Gordon, Moss, Arnold, Nibbs (Miss) Margaret, Parker, Cyril A., Peachey, Norman A., Polti, Aristide F., Radford, Hedley G. (subject to completion of testimonies of study), Smith, Harold, Sprinz, Hellmut, Thorne, George E. (subject to completion of testimonies of study), Tingey, Francis J., Tranter, James H., White, D. Ivor, Wright, John, Wrigley, Derek F.

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Classified Advertisements continued on page xxvi

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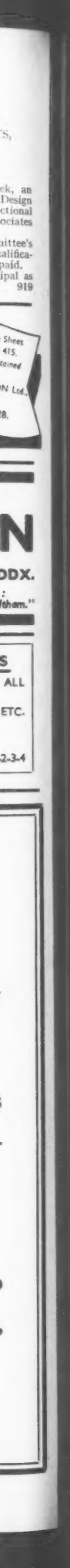

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