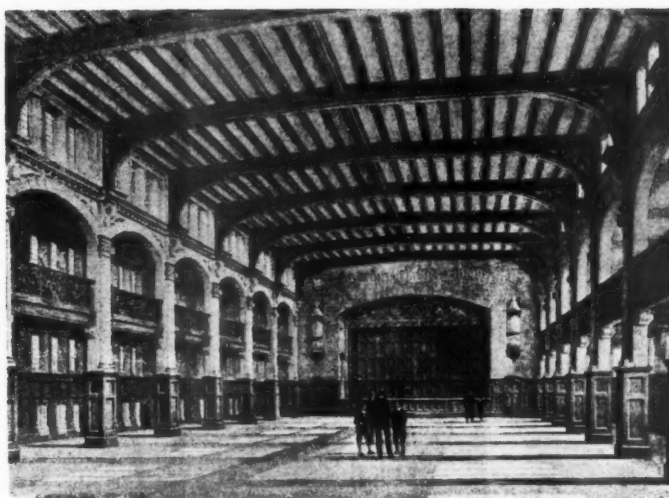


## PROPOSED GRAMMAR SCHOOL, BRADFORD

DESIGNED BY PETCH AND FERMAUD



**T**HE model of the proposed new Bradford Grammar School at Frizinghall on the Keighley Road, about a mile from the city. The school will have accommodation for 800 boys. On the right is a perspective drawing of the assembly hall. The architects for the scheme are Messrs. Petch and Fermaud.

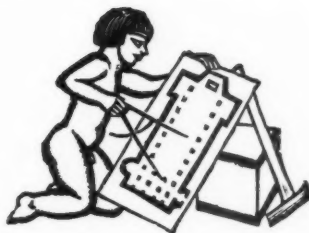




## CHURCH OF THE HOLY SEPULCHRE

*The major part of the present Church of the Holy Sepulchre at Jerusalem dates from the time of the Latin Kingdom, which lasted from 1099—1187, the original Byzantine building having almost wholly disappeared. Owing to the mixed nationality of the Crusades the decoration is composed of diverse elements: Byzantine, Saracenic and almost pure classic.*

*Above is a detail of one of the impost mouldings of the lower arches of the Calvary Porch.*



## PROGRESS OF THE NEW HOUSING ACT

CIRCULARS, memoranda and announcements from the Ministry of Health, in connection with the 1935 Housing Act, have been issued in profusion during the past few weeks. It is clear that this work of administrative interpretation and central guidance is of first-class importance, but it must be realized that the Ministry, like other bodies concerned, can only enforce its interpretations where it is specifically empowered by the terms of the Act itself.

The memorandum on the prevention and abatement of overcrowding, and the circular laying down a timetable for the work of local authorities in connection with the overcrowding provisions of the Act, have naturally attracted considerable attention.

It is clear that the inspections to be carried out by local authorities will not fulfil the requirements which this JOURNAL has frequently stressed. The memorandum notes the terms of the Act with regard to these inspections and states that "A comprehensive and detailed examination of all working-class accommodation in the district, including the measurement of all the habitable rooms in every house, may be regarded as the ideal form of survey. Not only would it disclose accurately all cases of overcrowding but it would provide a large amount of information including that required for the purpose of informing a landlord or occupier, on request, of the permitted number in respect of any particular dwelling-house."

With the deletion of the expression "working-class," and the substitution of "inhabited" for "habitable," this statement of the ideal would be satisfactory.

But the memorandum does not prescribe the ideal. It is recognized that measurement will "ultimately be generally necessary," but it is pointed out that such a method would be more elaborate than is necessary to comply with the duty imposed under the Act. The Minister has in mind, therefore, a more limited survey designed primarily to serve the specific objects of the Act. The Act does not prescribe any particular method by which the inspections are to be carried out, and local authorities are therefore at liberty to use the method they consider most suitable. To assist local authorities, however, a procedure and forms of survey have been drawn up (in consultation with the associations of local authorities) which the Minister considers could be generally adopted with advantage. This is just the sort of situation which we anticipated, the wording of the Act being as it is. The Minister has found himself unable to enforce a uniform and effective procedure; he has had merely to point out that uniformity is desirable, and in the hope of obtain-

ing a measure of such uniformity has had to make his requests extremely modest. It is clear that the returns will not give the complete picture of the housing position which is really necessary for an effective attack on the overcrowding evil.

The dates fixed for the various stages of the work of local authorities are: April 1, 1936, for completion of inspections; June 1, for submission of reports; August 1, for submission of proposals for provision of the new houses required. Many local authorities have already put in hand the work of inspection, and it is to be hoped that all will manage to keep to the time-table.

The names of members of the Central Housing Advisory Committee, appointed by the Minister under Section 24 of the Act, have now been announced. Its functions are very limited. The Committee must be consulted before any temporary increase of the permitted number of persons in relation to overcrowding is sanctioned; schemes providing for the establishment of House Management Commissions may make provision for imposing on the Commissions the duty of consulting the Committee. The Committee is to advise the Minister regarding any other matter arising in connection with the execution of the enactments relating to housing which he may refer to it; and it has power to consider the operation of those enactments and to make representations regarding matters of general concern arising in connection with their execution.

A recent Press notice of the Ministry states that "The Committee is also empowered to make representations to the Minister on any question of general concern in relation to housing."

The Act, however, carefully confines the advisory powers of the Committee to matters arising in connection with the execution of the enactments relating to housing; those important words appear even in relation to matters referred to the Committee by the Minister, not only in relation to the spontaneous work of the Committee.

We are also officially informed that "men and women of wide practical experience in every main sphere of the working-class housing problem have consented to serve on the Committee." Had the functions of the Committee been defined more widely we might have deplored the fact that large-scale town-planners are not very strongly represented on it, and that it contains no prominent social-statistician. As it is, it seems unlikely that it will be permitted to deal with many broad questions involving expert knowledge either of town-planning or of sociology.



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## NOTES & TOPICS

### CONTROL OF ELEVATIONS

**T**OWN planning legislation has given planning authorities the power to control elevations, and I heard recently of a decision under these powers from a friend who had had an application for approval of a large industrial building turned down on the grounds that it did not harmonize with some adjacent small Georgian houses. These houses were pleasant enough, but in no way outstanding, and were in the nature of things nearing the end of their useful life.

An intimation was given by the town planning authority that if the elevations of my friend's building were amended as desired the scheme would be approved.

The town planning authority was actuated, I have no doubt, by the very proper motive of trying to preserve amenities, but if the site was suitable for a factory at all, I am sure that allowing it—so long as it didn't look like a factory—was not the right way to go about it.

More and more Local Authorities are exercising town planning powers, and if this sort of decision becomes general it is going to be rather a poor outlook for any architecture which does not follow tradition, for it is this, rather than sheer bad design in traditional forms, which is likely to be checked.

### THE ARCHITECTURE CLUB

Cost of fog, £1,300,000; cost of traffic hold-ups, £35,000 a day; potential saving on health services and I forget what, add up to a sum which represents a capital outlay of over four hundred million pounds. Quite a tidy figure, as Mr. Bournemouth said at the Architecture Club dinner last Friday, to lay off against the cost of replanning London.

And Mr. Morrison, it seems, really means to replan London—"I am personally anxious in my lifetime to see the redevelopment of East, North-East, and South-East London," he said. "The L.C.C. is now embarked on

the world's greatest town-planning effort." And again—"Greater London ought never to have happened."

Familiar phrases, but Mr. Morrison is (if he will forgive me) a cockney. Furthermore, he is a Scot, and he has a chin—a real chin. There is something about Mr. Morrison which gives one the impression that he means what he says.

In another part of his speech he registered disappointment at the hullabaloo amongst town-planners over building on Hackney Marshes. (And, talking of hullabaloo, there could have been less of that and much more of manners, boys, manners, during the evening from a certain section of the audience.) What he forgets is that town-planners have never yet seen a piece of deliberate planning by the L.C.C. Isolated jobs of housing—yes—but no planning. If the Hackney Marshes scheme is the basis of a planned attack on East London, Mr. Morrison ought to make it clear that it springs from a larger plan, not a greater opportunism.

Failure to ask for a ticket before the morning of the day of this same dinner led to my slipping into a vacant seat beside a distinguished-looking stranger. After glaring at me through his monocle in silence, he said, "Hm, a Ginger Rogers fan, I see." I am, and said so, trying to hide whatever embarrassment I might feel at being so marked a man. He then touched lightly on Christianity, the Valley Section, the need of equating money with production, and the distinction between culture and civilization.

### EXPLANATORY BOOKLETS

I applaud the decision of the L.C.C. to issue a series of booklets explaining in simple and straightforward terms what the various departments of that vast organization are doing.

It seems to me to be very important that the L.C.C. should tell us exactly what they are doing, for example, in relation to milk supply—and even more important still to tell the public how they can obtain greater benefit from the activities of the L.C.C.

I have not yet seen a list of the proposed publications, but I can suggest one that is urgently needed—a booklet on the L.C.C. and building procedure. This would explain in simple terms the official machinery which controls building activities, and would indicate simply the procedure for obtaining all the permits, licences, approvals and sanctions which appear to be necessary for the erection of all types of buildings.

A useful appendix to such a pamphlet would indicate what approvals are required from all other authorities not, for one reason or another, under the L.C.C. And indicate, too, what procedure is expected in each case.

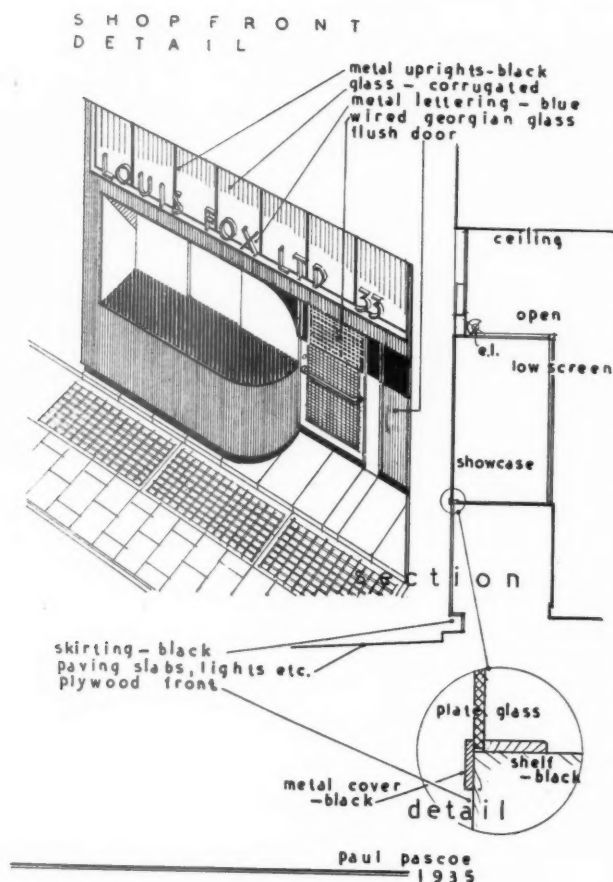
### I.A.A.S. . . .

Mr. J. R. Clynes put the cart before the horse in his speech at the tenth anniversary dinner of the I.A.A.S. on Friday last, according to the press cuttings I have been.

"There is a tendency," he said, "to do more and more to remove the slums, but there are limits both in respect of space and of money. It is for architects and surveyors to overcome the first difficulty, and for the State, to a great extent, to overcome the other."

Most architects know how to handle space. If the





From a shop in Gt. Portland Street, W.I.

Government offered to provide the money—and the opportunity—architects would most certainly provide the space—and lots of it.

#### ... PRESIDENTIAL FIREWORKS

Sir Edwin Lutyens evidently enjoyed himself at the dinner, for I see he had another fling at the "brutal brick and crazy concrete" which the young men are alleged to affect nowadays.

Yet I suspect that Sir Edwin does not always like brick, even when used with care; do I not remember an A.A. evening, soon after the opening of Gamage's new building, when he offered himself as a target to be shot at? The question was: "Does Sir Edwin admire large areas of brickwork, or is it the only way out?" The answer shot back instantly: "No, I do not, and anyway there's no need to go out along Oxford Street."

#### THE "REVIEW'S" EXHIBITION

There are all too many exhibitions that one wants to go to—indeed, ought to go to—but never does, for geographical or other reasons. I, personally, always seem to get there just after the thing has closed. So an exhibition of a most important kind that comes to you instead of your having to go to it, is an especially appealing idea.

The Editor has been showing me advance proofs of the December *Architectural Review*—a special issue entitled "Interior House Equipment." Its effect is an exhibition

(on paper) done in just the spirit that the several Art in Industry exhibitions of recent years ought to have shown.

The idea of the issue sprang from one of these efforts: the sadly disappointing one at Burlington House. The *Review*, at the time, called that one all sorts of names—ruder ones than "disappointing." Now it has behaved in the only logical way; justified its trenchant criticism by doing the same thing a good deal better itself. The objects included have been chosen by an anonymous (though, I understand, rather distinguished) selection committee. Displayed on page after page—as a kind of illustrated catalogue of a hypothetical exhibition—they have a most encouraging cumulative effect.

I, myself, had no idea there was such a mass of good stuff (not stuff, necessarily, of an absolute standard of perfection, but praiseworthy and decently and honestly designed) available to the general public; provided the public cares to seek it out, in all sorts of places, from Woolworth's onwards.

Is it too optimistic to hope that the *Review's* efforts in displaying it all together, will have a sort of snowball effect in providing a nucleus round which a far greater mass from lots more manufacturers will collect; so that one day the decently designed stuff will be apparent to everyone instead of having to be sifted from the indifferent?

I daren't think what a task Mr. Dudley Ryder, who did the sifting on this occasion for the *Review*, must have had.

#### THE CHINESE EXHIBITION

Today, Burlington House opens the seventh of its series of winter exhibitions. There doesn't seem to be much to say about it. The standard set by the previous six is more than sufficient recommendation.

The Chinese one will be even more the opportunity of a life-time than its predecessors. If they telescoped a tour of Western art galleries and collections, this one telescopes, in addition, an exploratory expedition over half Asia, including probably several months' peregrination in Jap- and bandit-ridden China.

The collection will be difficult to look at: that warning should be given. The Italian and the French Exhibitions, and particularly the Dutch, all belonged to the cultural world with which our own tradition has made us familiar. We could understand them without having to acquire a new vocabulary of appreciation.

But Chinese art belongs to such a different order of philosophy; it has been determined by so many other kinds of relationships and values, besides the formal sensuous ones or the representational ones to which we are accustomed, that we shall have to be patient in waiting for our æsthetic appreciation to develop.

Otherwise we shall find ourselves admiring things for their historical or rarity value—which, of course, have nothing to do with art values whatever.

In common with the Persian Exhibition, the Chinese will have the great advantage of covering all the arts and what we are apt to differentiate by calling crafts, instead of having to limit itself to paintings and drawings—a limitation that greatly reduces the value of an exhibition as an occasion for studying a national culture. ASTRAGAL

## NEWS

POINTS FROM  
THIS ISSUE

Large-scale planners are not very strongly represented on the new Central Housing Advisory Committee ..... 795

"If the Hackney Marshes scheme is the basis of a planned attack on East London, Mr. Morrison ought to make it clear that it springs from a larger plan, not a greater opportunity" ..... 796

"The sacred rights of ownership permit the replacement of good old buildings with sky-blocking monsters of brutal brick and crazy cement" .. 808

A new clothes' hanger is now available which has been designed to solve the problem of clothes' storage at swimming pools having the "continuous-use" system of changing boxes .... 824

## MORE HAMPSTEAD FLAT PROTESTS

The Hampstead Borough Council has again protested to the L.C.C. against proposals to build flats in its area—this time in Downshire Hill, a road with many historic associations.

A report made to the Council shows that since April, 1934, over 700 new flats have been erected and over 200 houses converted. But at the end of September last there were nearly 350 empty houses in the borough and 523 empty flats.

## THE DUKE OF KENT VISITS THE NATIONAL PHYSICAL LABORATORY

The Duke of Kent displayed his keen interest in industrial research, particularly in its engineering aspects, by paying an informal visit on November 25 to the National Physical Laboratory.

In the absence of the director, Sir Joseph Petavel, owing to illness, he was conducted by Sir Frank Smith, secretary of the Department of Scientific and Industrial Research, round several of the eight great departments of the Laboratory, which now cover fifty acres adjoining its original home, Bushy House, formerly a royal residence.

## BATH REPLANNING CONTROVERSY

A great deal of controversy has arisen in Bath over the City Council's decision, at a special meeting last week, to promote a Parliamentary Bill giving it power to remove the Royal Mineral Water Hospital and to acquire property for replanning.

The scheme put forward envisages demolitions which would make room for a piazza with fountains in front of the Assembly

THE  
ARCHITECTS'  
DIARY

## Thursday, November 28

INSTITUTION OF STRUCTURAL ENGINEERS, 10 Upper Belgrave Street, S.W.1. "The Control of Building by Public Authorities," by A. N. C. Shelley. 6.30 p.m.  
GEOFFREY MUSEUM, Kingsland Road, Shoreditch, E.2. "English Furniture of the Mahogany Period," by James Rudd. 7.30 p.m.  
ARCHITECTURAL ASSOCIATION, 36 Bedford Square, W.C.1. Exhibition of hand specimens of timber and veneers, photographs, a series of Information Sheets and Publications. Until December 17.

INTERNATIONAL EXHIBITION OF CHINESE ART. At the Royal Academy, Burlington House, Piccadilly, W.1. Open to the public at 9.30 a.m.

SOCIETY OF ANTIQUARIES, Burlington House, Piccadilly, W.1. "St. Manchan's Shrine: A Twelfth-Century Irish Reliquary," by T. D. Kendrick and (Miss) E. Senior. 8.30 p.m.

## Friday, November 29

R.I.B.A. "You English"—a play by Mr. Hope Baginval. 8.15 p.m.  
ROYAL SANITARY INSTITUTE. At the Town Hall, Barnsley. Seasonal Meeting in conjunction with the Yorkshire Branch of the Society of Medical Officers of Health. Discussions on "The Disinfection of Slum Houses and Furniture," to be opened by Dr. J. A. Scott; and a paper on "Some Notes on Water Supply," by J. R. Fox. 5 p.m.

NATIONAL HOUSING AND TOWN PLANNING CONFERENCE. At Scarborough.

## Saturday, November 30

INSTITUTION OF STRUCTURAL ENGINEERS. Midland Counties Branch. At the Midland Hotel, Birmingham. Annual Dinner. 6.45 p.m.

## Monday, December 2

R.I.B.A., 66 Portland Place, W.1. "The Work of Beresford Pile and Hasley Ricardo," by Professor H. S. Goodhart-Rendel, F.R.I.B.A. Presentation of the London Architecture Medal, 1934, to Sir John Burnet, Tait and Lorne, F.F.R.I.B.A. 8 p.m.

ROYAL SOCIETY OF ARTS, John Street, Adelphi, W.C.2. Canton Lecture. "Geological Aspects of Underground Water Supplies," by Bernard Smith. 8 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS, 10 Upper Belgrave Street, S.W.1. London Junior Members' Section. Discussion on "The Engineer and the Community." To be opened by W. H. Lathwaite. 6.30 p.m.

## Tuesday, December 3

CHADWICK PUBLIC LECTURES. At the Inner Temple Hall, E.C.4. "Town Planning and the Housing Act," by R. C. Maxwell. 8.15 p.m.

ST. PAUL'S ECCLESIASTICAL SOCIETY. At 66 Portland Place, W.1. "Durham Cathedral," by S. E. Dykes-Bower, M.A., F.R.I.B.A. 8 p.m.

Rooms, designed by Wood. The Bath Preservation Trust opposes on the ground that alteration of the eighteenth-century architecture would do great damage to the city. Those in favour of the scheme deny that any spoliation would take place.

## BOROUGH POLYTECHNIC

The annual exhibition of work executed by students of the Borough Polytechnic, Borough Road, S.E.1, is to be held on Friday, December 13 (6 to 9 p.m.), and Saturday, December 14 (4 to 9.30 p.m.).

## NATIONAL COAL CONVENTION

The first National Coal Convention was held at the Hotel Victoria, London, on Thursday and Friday of last week. The object of Convention (organized by the Coal Utilization Council) was "to provide a convenient focus for the ideas of those

engaged in the production and sale of British coal and in the construction and disposal of appliances for burning it; and to serve the further purpose of giving expression not only to the aims of the industry in regard to the utilization and future of coal but also to the day-to-day problems with which coal owners, coal merchants, appliance makers and architects are faced in their task of giving heat to the public.

The Convention was formally opened by Captain Crookshank, Secretary to the Mines Department, at a luncheon held on November 21. Mr. Robert Forrester presided in the absence through illness of Sir Evan Williams, President of the Mining Association of Great Britain.

At the business session in the afternoon (which was presided over by Mr. John Charrington) the result of the competition for designs for open fireplaces and surrounds was announced as follows:—

Designs bracketed first (30 guineas each): Messrs. A. L. and A. M. Osborne, of 2 Grafton Mansions, Duke's Road, W.C.1; and Mr. H. E. Burton, of 211 Galton Road, Warley Woods, Smethwick, Staffs.

Design placed second (10 guineas): Mr. J. W. Davidson, of 19, Roberts Road, Meadowhead, Sheffield, 8.

The assessors were the Directors of the Building Centre.

LIVERPOOL SCHOOL OF  
ARCHITECTURE

Dr. R. E. Stradling, Director of the Building Research Station, is to open the new Materials Gallery in the Liverpool School of Architecture on November 29. The Gallery, which is situated in the School of Architecture itself, will be open to all those professionally interested during the University terms, and should prove to be as useful to architects and builders in Liverpool and the surrounding districts, as it undoubtedly will be to the students and staff of the School.

The Gallery, though small by comparison with the Building Centre in London, is large enough for its purpose, which is to exhibit selected building materials and tried methods of construction. No attempt has been made to assemble a vast quantity of materials good, bad and indifferent, from which intending users of the Gallery must make a choice. A large measure of choice has already been exercised, and no material or method of construction that does not measure up to a certain architectural standard of usefulness and efficiency has been admitted.

At the same time it is interesting to notice what a wide range—even of absolutely essential exhibits—such a gallery must contrive to hold. Very ingenious use has had to be made of the floor, wall and ceiling space in the main gallery, the adjoining corridors and, in the case of lighting fittings, of other parts of the School building. To begin with, all the models are movable. Small exhibits are in standard cabinets with interchangeable linings and can be easily removed and replaced; larger exhibits and models are shown on movable stands or trolleys and can be turned round or even wheeled right out of the gallery into an adjoining lecture room as occasion



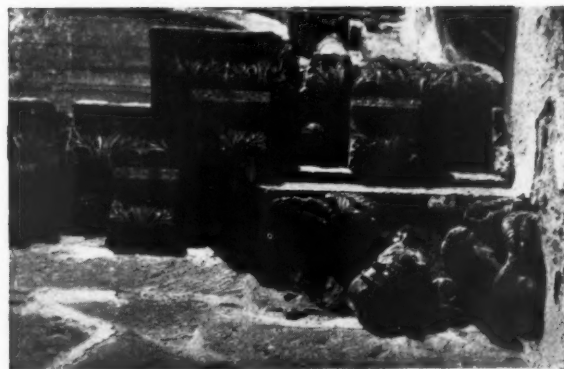
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*Stone Carvings, the Church of the Holy Sepulchre. (See also page 794.) The entrance façade to the south transept, including the entrance at its eastern side to the chapels built on the rock of Calvary, remains substantially in its original condition. The photographs of this front, shown above, were taken from scaffolding erected for a recent survey, the mouldings having been hitherto*

*inaccessible. 1: Archivolte carving in spandrel of lower arches. 2: Capital of upper order of the façade. 3: Archivolte moulding of upper arches returned as string course. 4: Lower cornice of the Chapel of the Franks in the Porch of Calvary, showing the cornice stopping against a return wall by breaking forward, supported by a carved corbel stone.*

demands. Furthermore, a most interesting policy has been followed in showing as many materials as possible, not in the brand new "shop window" exclusion of a solitary sample, but in conjunction with other materials with which they are normally employed, the whole forming an example of current building practice. To produce these models, most of which are

full size details of good practical building, two or more firms have been asked to combine. It is obvious that besides effecting an economy in space, this method offers mutual advantages to the collaborating firms and makes a much more realistic display. Thus doors are shown in combination with door frames and walls, concrete with methods of shuttering, marble

with metal trim or backing, plaster with wallboards, damp-proofing with brick walls and concrete flats, and acoustic materials in combination. These full-sized models are the chief feature of the Gallery.

What cannot be exhibited will be recorded. A catalogue is being compiled, complete with cross index, of all the products put on the market by manufacturers



of building materials; and this will soon be available for reference.

#### BLUE CIRCLE PLAYERS

"Laburnum Grove," a play by J. B. Priestley, is to be presented by the Blue Circle Players at the Arts Theatre Club, Newport Street, W.C., on December 3, 4, 5, 6 and 7. Tickets (6s., 3s. 6d. and 2s. 6d.) are obtainable from Mr. A. L. Steels, Portland House, Tothill Street, S.W.1. The whole of the proceeds of the sale of tickets are to be given to the Builders' Benevolent Institution.

#### R.I.B.A.

At the general meeting of the Institute, to be held on Monday next, December 2, at 8 p.m., the President, Mr. Percy Thomas, O.B.E., will present the R.I.B.A. Medal and Diploma for a London building completed between 1932 and 1934 to Messrs. Sir John Burnet, Tait and Lorne, F.R.I.B.A., the architects for the Royal Masonic Hospital, Ravenscourt Park, W. The presentation will be preceded by a paper on "The Work of Beresford Pite and Halsey Ricardo" by Professor H. S. Goodhart-Rendel, F.R.I.B.A.

#### ANNOUNCEMENTS

Mr. R. W. Symonds, Registered Architect, has removed his offices to 29 Bruton Street, Berkeley Square, London, W.1. Telephone No.: Mayfair 5232.

Mr. Oscar Bayne, A.R.I.B.A., has removed his offices to 19 Hobart Place, Eaton Square, London, S.W.1. Telephone No.: Sloane 0084.

#### POCKET DIARY

Messrs. Collins and Sons, Ltd., of London and Glasgow, have just issued their *Architects' and Builders' Pocket Diary for 1936*. Copies are now obtainable, at prices ranging from 1s. 9d. to 7s., from all booksellers and stationers.

#### OBITUARY

A. C. BLOMFIELD

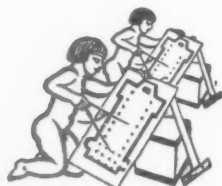
It is with deep regret we record the death of Mr. Arthur Conran Blomfield, M.A. (CANTAB.), F.R.I.B.A., which took place at his home in Wetherby Place, S.W., on November 22.

The second son of the late Sir Arthur Blomfield, A.R.A., he was born in 1863, and was educated at Haileybury and at Trinity College, Cambridge. He was articled to his father and also studied at the Royal Academy Schools and on the Continent. His chief works have been county houses, banks and churches. These included: Hollingdon House, Newbury; Stansted Park, Havant; banks in Fleet Street, E.C., Pall Mall East, S.W., Lothbury, E.C., Luton, Chelmsford, Guildford, Barnet, Brighton, Twickenham, Windsor, Woking and elsewhere; churches at Acton, Ealing and Southall; the Law Union and Rock Building, Chancery Lane, E.C.; Christ's Hospital Offices, Great Tower Street; and the Great School, the science and other buildings at Oundle School.

Mr. Blomfield was architect to King Edward at Sandringham, was architect to

the Bank of England, and was surveyor to the Grocers' Company. He was elected a Fellow of the R.I.B.A. in 1901.

## COMPETITION



## NEWS

PUBLIC HALL, HARPENDEN

The Harpenden Urban District Council invites architects of British nationality domiciled in the United Kingdom to submit competitive designs for a proposed public hall at Harpenden. Mr. Robert Lowry, F.R.I.B.A., has been appointed assessor, and the following premiums are offered: design placed first, £100; design placed second, £75; design placed third, £50. The last day for submission of designs is March 1. Names must be submitted to the Clerk to the Council, Harpenden Hall, Harpenden, before December 15. (Deposit £1 1s.)

COLLEGE OF ART, DUNDEE

The Dundee Institute of Art and Technology has decided to promote a competition for the Duncan of Jordanstone College of Art. Mr. Howard W. Burchett, A.R.I.B.A., has been appointed assessor. Conditions are not yet available.

TOWN HALL BUILDINGS, EDMONTON

Mr. E. Berry Webber, A.R.I.B.A., has been appointed assessor of the competition for new town hall buildings for the Edmonton Urban District Council. Conditions are not yet available.

The proposed new buildings will include: A Council chamber, three committee rooms, chairman's room or Mayor's parlour, members' room, ante-room; and cloakrooms; public offices with accommodation for increased staff; a concert hall with accommodation for 1,000, and a smaller hall with accommodation for 350; a maternity and child welfare centre; and a coroner's court and mortuary.

The estimated cost of the scheme is £100,000.

SHOPS AND OFFICES, NEWCASTLE-UNDER-LYME

The Borough of Newcastle-under-Lyme proposes to hold a competition for a new block of shops and offices. Mr. Harry S. Fairhurst, F.R.I.B.A., has been appointed assessor. Conditions are not yet available.

NEW LIBRARY, COLCHESTER

The Colchester Corporation has extended the closing date of its competition for a proposed new library until December 14.

JOINT RAILWAY RECEIVING OFFICES IN LONDON

The four main railway companies (L.N.E.R., L.M.S., G.W.R. and Southern) are proposing to hold a competition for a design for Standard Joint Railway Receiving Offices in London. The following have

been appointed to act as assessors: Messrs. L. H. Bucknell, F.R.I.B.A., C. Grasemann, W. H. Hamlyn, F.R.I.B.A., and Charles Holden, F.R.I.B.A.

NEW GENERAL OFFICE, GLAMORGAN

The Glamorgan County Council proposes to hold a competition for a new General Hospital. Mr. E. Stanley Hall, F.R.I.B.A., has been appointed assessor. Conditions are not yet available.

## Competitions Open

**November 30.**—Sending-in Day. Public baths and public health offices for the Coatbridge Town Council. (Open to architects resident and practising in Scotland for a period of at least two years.) Assessor: Wm. B. White, F.R.I.B.A. Premiums: £250, £150 and £75. Designs to be sent to the Burgh Surveyor, Coatbridge, not later than November 30.

**December 14.**—Sending-in Day. Public library for the Colchester Corporation. (Open to members of the Essex, Cambridgeshire and Hertfordshire Society of Architects.) Assessor: Professor A. E. Richardson, F.S.A., F.R.I.B.A. Premiums: £150, £125 and £75. Designs to be sent to R. L. Hiscott, Town Clerk, Town Hall, Colchester, not later than December 14.

**December 31.**—Sending-in Day. Proposed town hall, Bury, for the Corporation of Bury. Assessor: J. Hubert Worthington, O.B.E., M.A., F.R.I.B.A. Premiums: £500, £300 and £150. Conditions, etc., are obtainable from Richard Moore, Town Clerk, Municipal Offices, Bank Street, Bury. (Deposit £2.)

**January 24.**—Sending-in Day. Proposed offices for the Harrow U.D.C. (Open to architects of British nationality.) Assessors: C. H. James, F.R.I.B.A., and S. Rowland Pierce, A.R.I.B.A. Premiums: £350, £250 and £150. Conditions, etc., may be obtained on application to Mr. Vernon Younger, Clerk of the Council, Council Offices, Stanmore, Middlesex. (Deposit £2 2s.) The latest date for submission of designs is January 24.

**January 31.**—Sending-in Day. Proposed Parliament House, Salisbury, Southern Rhodesia, for the Government of Southern Rhodesia. (Open to architects of British citizenship.) Assessor: James R. Adamson, F.R.I.B.A. Premiums: £500, £300, £200 and £100. Conditions, etc., obtainable from the High Commissioner for Southern Rhodesia, Crown House, Aldwych, W.C.2. (Deposit £2 2s.) The designs must be sent to the Assessor at 19 Silverwell Street, Bolton, not later than January 31.

**January 31.**—Sending-in Day. The North British Architectural Students' Association invites members (i.e., members of Schools and/or Allied Societies at Manchester, Glasgow, Edinburgh, Leeds, Sheffield, Hull and Newcastle) to submit, in competition, designs for: (1) A Church of England Chapel. Assessor: Mr. H. L. Hicks, F.R.I.B.A. Premium: 10 guineas. (2) A Control Tower and Waiting Room for an Aerodrome. Assessor: Mr. R. Bradbury, A.R.I.B.A. Premium: 10 guineas. Conditions are obtainable from the Hon. General Secretary, N.B.A.S.A., School of Architecture, Armstrong College, Newcastle-upon-Tyne, 2. The latest date for submission of designs is January 31.



## EXTENSIONS, TUFTON STREET, S.W.

DESIGNED

BY

TATCHELL

AND

WILSON

**PURPOSE.**—Stack rooms for the National Library for the Blind. The administrative offices of the library are in the western adjoining building of 35 Great Smith Street, and the premises here illustrated, fronting on Tufton Street, were to accommodate about 250,000 Braille volumes, together with facilities for receiving the books and sending them out to blind readers.

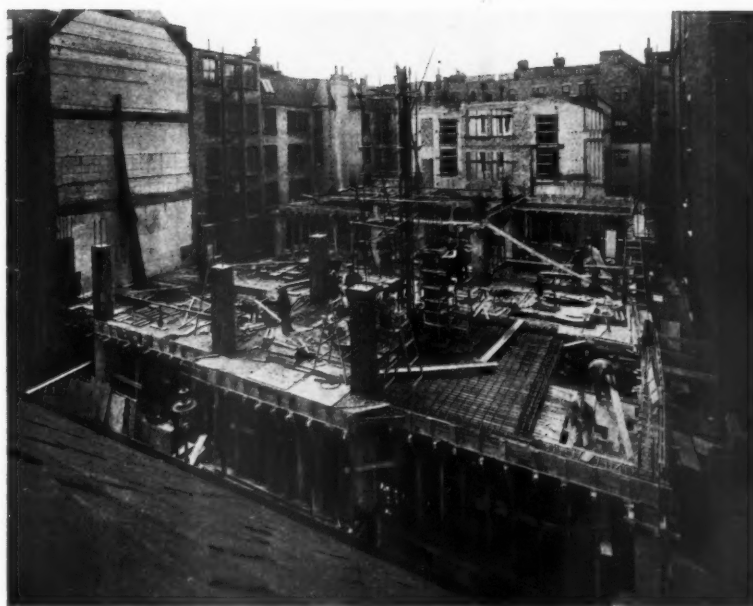
**PLAN.**—The plan form of the building was controlled by two factors: the specialized storage needed for Braille volumes (each volume averages 14 ins. by 11 ins. overall, weighing 5 lb.), and the lighting agreements negotiated with adjoining owners. The final building is five floors in height with storage accommodation as follows: basement, 70,000 books; ground floor, 20,000, together with receipt and dispatch departments; first floor, 60,000; second floor, 52,000, with tea-room and staff lavatory accommodation; third floor, 61,000.

Above the basement level there is a setback to all floors on the south side to form a light well, which is faced with white sand-lime bricks.

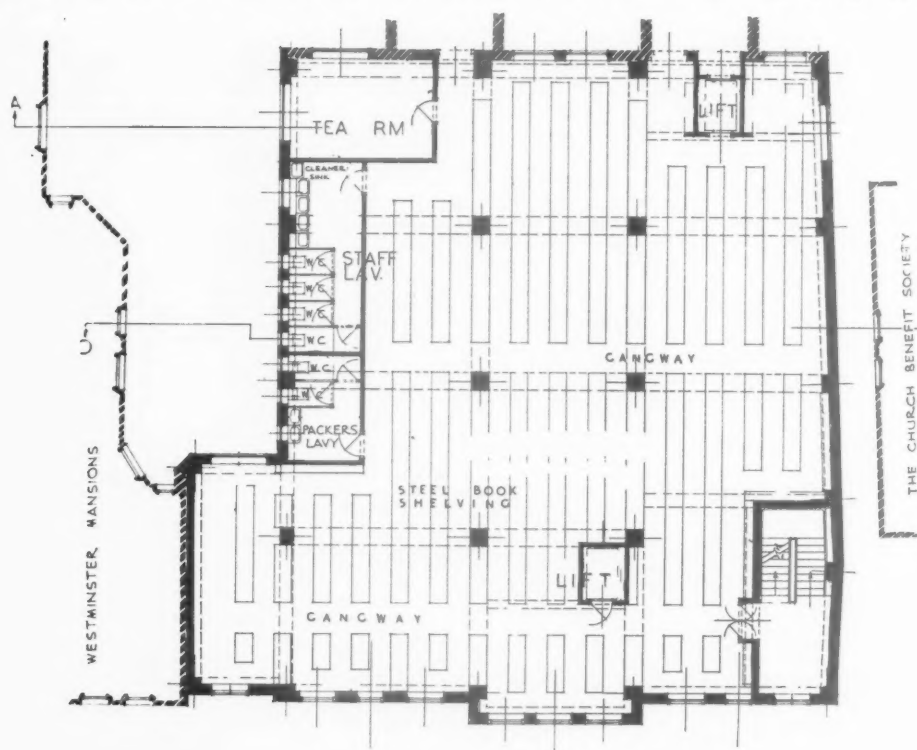
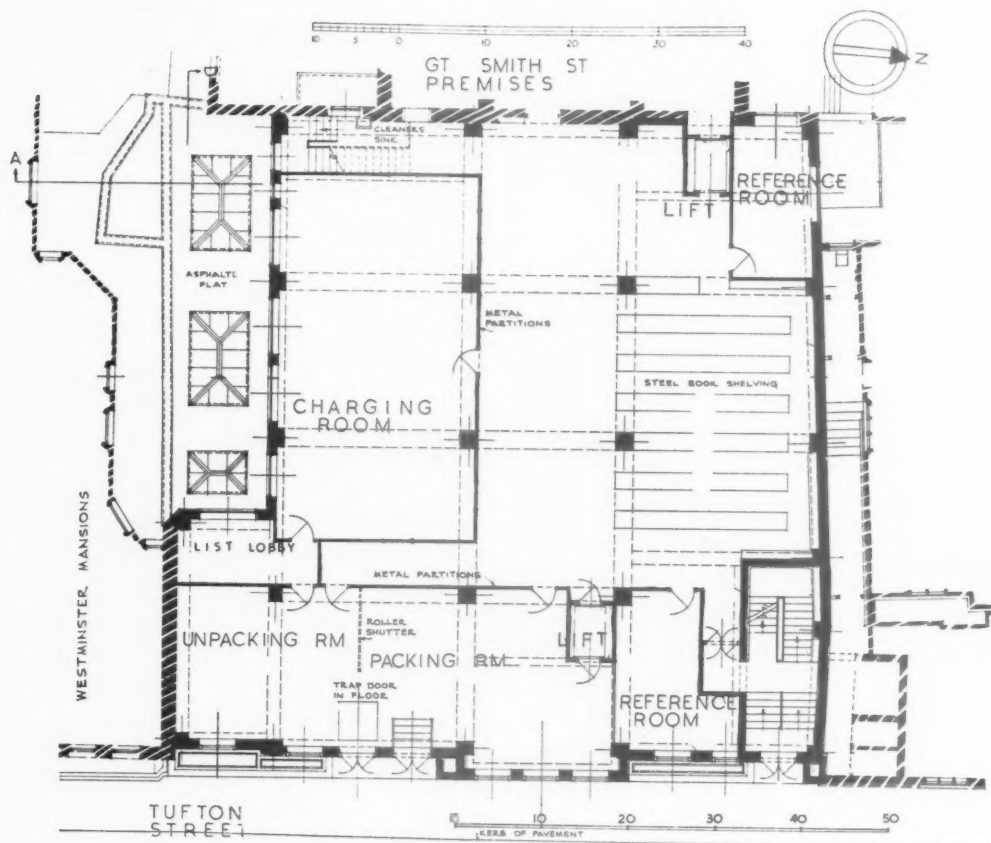
**DETAIL PLANNING.**—The spacing of the columns on plan was determined by the width (2 ft.) of the double bookshelves and of the 2 ft. 6 in. alleys between; the spacing is so arranged that the columns rank with a bookstack and not with an alley.

At the junction of the two buildings a combined passenger and goods lift has been installed in addition to doorway communication.

Above, a detail of the Tufton Street elevation; right, a progress photograph, showing the R.C. carcassing at first floor level.



## EXTENSIONS, NATIONAL LIBRARY FOR

SECOND  
FLOOR  
PLANGROUND  
FLOOR  
PLAN

## THE BLIND, TUFTON STREET, S.W.

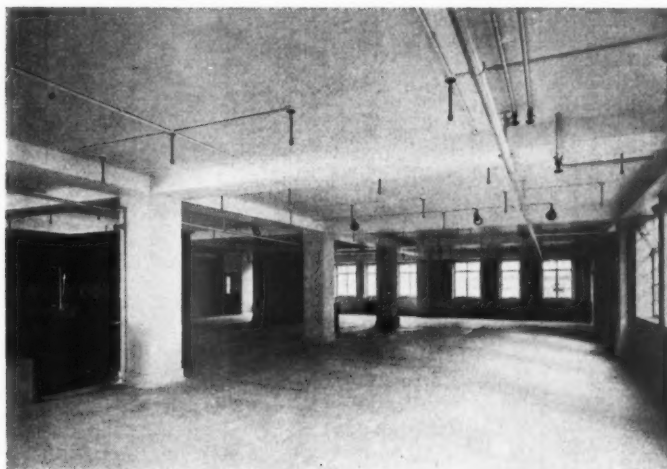
DESIGNED

BY

TATCHELL

AND

WILSON



**CONSTRUCTION.**—The building is reinforced concrete framed, with R.C. floors, roofs, and basement retaining walls. External walls are of 14 in. brick infilling, these being in accordance with the wishes of the ground landlord and adjoining owners. The basement is constructed on the asphalt-tank principle, and the roofs are finished with asphalt.

**ELEVATIONAL TREATMENT.**—The façade to Tufston Street and the return wall are in multi-coloured sand-faced red brick, and the plinth is of coarse dark purple brick. Coping and string are of Portland stone. Windows are metal casement throughout, with wood frames on the Tufston Street front.

**INTERNAL FINISH.**—The walls generally are unplastered, the fair-face brick and concrete being finished with enamel on ground floor and in tea-room and lavatories, other surfaces being distempered. The concrete, which was carried out on the Considere system, was left from the shuttering, which was lined with plywood.

The principal stair is left from the shuttering and its walls are finished with a patent concrete paint. Joinery is restricted to the oak fire-resisting doors to main stairway and lifts. Secondary stairs, all partitions, and shelving are in metal.

Flooring is of dust-proof grano with expansion joints except in tea-room and on the ground floor, which are lino covered.

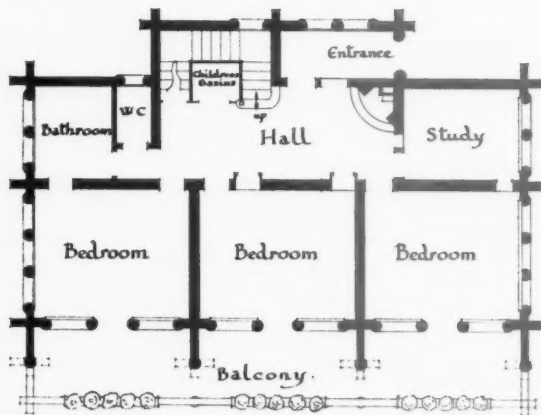
**SERVICES.**—The building is heated by radiators connected up with the system in the adjoining building, as is the hot water supply. Other equipment includes a vacuum cleaning installation and a complete house telephone system.

The photographs show: the third floor stack room; Braille volumes in steel stacks and handling trolley, on the second floor; and the steel counter around the charging room on the ground floor.

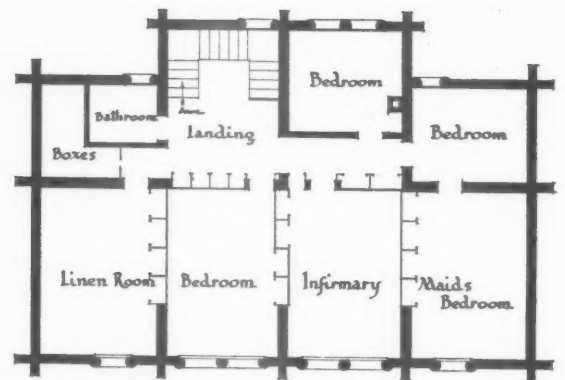
For list of general and sub-contractors see page 824.



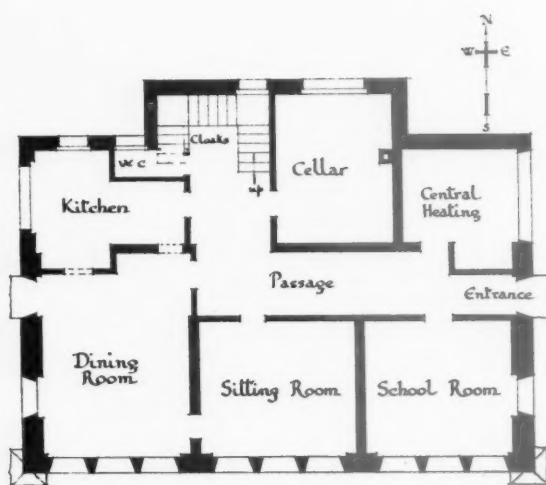
## SCHOOL AT WENGEN, SWITZERLAND :



FIRST FLOOR PLAN



SECOND FLOOR PLAN



GROUND FLOOR PLAN

**SITE.**—The school is situated at Wengen, Bernese Oberland, at an altitude of 4,200 ft. and faces south on a steeply sloping site.

**PLAN.**—The school is planned on the normal chalet lay-out, and has accommodation for about a dozen children.

**CONSTRUCTION.**—The ground floor walls are of Geissberger stone, whitened externally, and damp-proofed below ground. The first and second storeys are constructed of pine logs, the bark being stripped and the logs finished with stain and hard varnish. The roof is finished with granite slabs, and the tops of exposed angle trunks and balustrades are in copper.

The ground floor rooms are lined with insulating board, the first floor with walnut, golden birch and mahogany, and the second floor with Douglas fir. The staircase is of white maple.

All windows and doors are double. Heating is from an oil-fired boiler, and hot water can be heated by electricity or by oil, or by both together.

Above, a general view of the school from the south-east. On the facing page is a detail of the first floor balcony.



DESIGNED BY FRIEDRICH GRAF



## SCHOOL AT WENGEN, SWITZERLAND



D E S I G N E D

B Y

F R I E D R I C H

G R A F



*The photographs show: a detail of the east elevation; view from the first-floor balcony; and, right, the south-east bedroom and balcony.*

## LETTERS

FROM

## READERS

*Information Sheets*

SIR,—With reference to your recent leading article on Information Sheets and the method of filing them, I have a fairly simple system which seems to work satisfactorily.

As the sheets come in I file them alphabetically in an ordinary box file under Trades and Subjects, entering them up numerically in a list. Under the numerical list I underline the alphabetical heading under which the sheet is filed, and on the alphabetical sheets in the box file which separate the different letters the sheets are cross referenced. For example: Sheet No. 280 is entered under "Roof Glazing" and under "G" a note is put "For Roof Glazing, see under 'Roof.'"

I find that it is easy to locate any particular sheet, and also it groups sheets dealing with the same subject together. For example: I find under "Roofs" I get Sheets Nos. 70—"Roof," 9—"Roof Pitches and Drainage," 214—"Roof Construction," 77—"Roof Lights," etc.

L. M. A. AUSTIN  
Poole

*Private and Salaried Practice*

SIR,—The majority of the architectural profession, i.e., the salaried group, would do well to note that among various recent architectural pronouncements recurs a single motif: how to make the British public sit up and take notice of the higher things of architecture. The general aim is excellent—all of us who earn our living by supplying the architectural needs of our time must of necessity wish for an appreciative community—but the methods involved, and the ensuing values created in attempting to achieve this end along certain paths, may well be the subject of considerable controversy.

It is axiomatic that a high social appreciation of architecture leads to a high social appreciation of the architectural profession, and hence to its economic welfare. But the phrase "the architectural profession" needs some examination. It is unfortunately impossible to speak today of the profession as a unity, as a homogeneous entity. It is divided, not down the middle, but two-thirds the way across.

L. M. A. AUSTIN

V. LESLIE NASH (Hon. Secretary of the Public Relations Committee of the Association of Architects, Surveyors and Technical Assistant)

H. T. BROCK GRIGGS

One third of its personnel gain their living by private practice, dependent on the private patron, a fast disappearing phenomenon. The remaining two-thirds—equally well qualified and equally competent on the average—gain their living as salaried practitioners. These are dependent, on the one hand, on private architects who need their services, and on the other, and to an incomparably greater extent, on business and commercial firms, railway companies, local authorities, and government organizations. The economics of large scale specialized production have forced, and will continue to enforce, a growth in salaried employment as against the use of the non-specialist private practitioner. Private practice is, without doubt, and regrettable as it may be, an obsolescent method of architectural production. As the necessary and overdue expansion of housing and other municipal fields of work, such as schools, libraries, town halls, crèches and clinics, develops, private practice must willy-nilly dwindle almost to vanishing point.

For those who depend on private practice or hope, for one reason or another, ultimately to adopt this avenue of gaining a livelihood, such a prospect is, to say the least, unpalatable. And it is natural and understandable that this admitted minority of the profession should make the most strenuous efforts to enlarge its province of activity at all costs and attempt to save itself from extinction. That such strenuous efforts are being made, despite their apparent futility, is evident from some recent speeches: "... it is our duty to see that architects get from the community that recognition to which they are entitled, and with that recognition the work which they alone can perform. ... There are (other) cases where important municipal work is being carried out by totally unqualified men, and we must see that the letter which was addressed to all local authorities last year on this point is not allowed to be forgotten." These are the words (the italics are mine) of Mr. Percy Thomas, P.R.I.B.A., in his inaugural address to the R.I.B.A. on November 4 last. Similar points were made by Mr. Victor Bain in his presidential address to the West Yorkshire Society, while Mr. Norman Culley, speaking as Chairman of the Huddersfield branch of the same Society, went

further in his remarks, with an astonishing plea for a "limitation of officialism in architecture!"

It is clear from all this, particularly from Mr. Thomas's reference to the R.I.B.A. circulars, which caused such widespread indignation among salaried architects last spring, that propaganda for private practice is shortly to be enormously increased by the private practitioner minority of the R.I.B.A. It is further clear from these ominous statements, and from past events, that the policy to be pursued is one of denigration, on technical grounds, of the work of all architects other than private practitioner members of the R.I.B.A. On economic grounds, the battle is already lost—the very contraction of private practice itself alongside the national expansion of salaried staffs, is convincing proof of this. Hence private practice as a system can attempt to increase its status and economic well-being only by depressing the status and economic well-being of salaried practice, and this on the very nebulous grounds of aesthetics.

The prospect of a renewed campaign on these lines vitally concerns all qualified salaried practitioners, whether in commercial, industrial or municipal employ, and whether members of the R.I.B.A. or not. All such desire and are concerned to ensure that their status and consequent remuneration are raised, not lowered. They hold, with adequate reason, that, due to the traditional policy of the Institute, properly qualified and competent architects in commercial and municipal offices are rated already as being less valuable than salaried members of other professions, professions no more specialized or highly skilled than architecture.

A striking case in point is seen at Walthamstow while this letter is being written. Here, a fully qualified architect to the Education Committee is required, having experience in modern school buildings, an important technical branch of our work. The appointment is temporary, with a minimum of three years' service. The salary offered is £500 per annum. By contrast, the Borough Council is at present paying over £800 a year to the Borough Surveyor, about £900 a year to its Director of Education, and approximately £1,000 a year to its Medical Officer of Health. This Association has already protested to the Walthamstow authorities on this question, and, contrary to the view so strongly put forward by the R.I.B.A., believes that it is possible, by concentrating in every way and in every case upon raising the salaries and status of the majority of the profession, more readily to achieve a



wider appreciation both of architects and architecture in this country.

V. LESLIE NASH

Hon. Secretary of the Public Relations  
Committee of the A.A.S.T.A.  
London

### Architects and New Aerodromes

SIR,—It is not clear whether the meeting of the executive committee of the R.I.B.A. is the outcome of genuine anxiety for the temporary assistants engaged by the Air Ministry, or whether it is concern that the profession is not sharing in that expansion.

Quite rightly, the R.I.B.A. says, "Architectural work in the laying-out and building of new aerodromes is regarded by the profession as being very important"—but it goes on to say: "We feel . . . it would be better if the work were given out to established members of the profession acting under the present Air Ministry."

What has given rise to this doubt as to the existence at the Air Ministry of an experienced staff, who alone can grapple with such a highly technical problem as aerodrome lay-out and planning?

H. T. BROCK GRIGGS  
London



## SOCIETIES AND INSTITUTIONS

### THE ARCHITECTURE CLUB

The replanning of London was discussed at the twenty-fifth dinner of the Architecture Club held at the Savoy Hotel, London, on November 22. Mr. R. Holland-Martin presided, and the principal speakers were: Mr. Herbert Morrison, M.P., Mr. E. Maxwell Fry, A.R.I.B.A., and Mr. Geoffrey Boumphrey.

Greater London, said Mr. Morrison, was one of the greatest mistakes of urban development. It was larger than was healthy. Its unwieldiness was being accentuated by the attraction of industries to the Home Counties from the North, where depression was prevalent. London presented the greatest town-planning problem. Its central areas were composed of many narrow streets which had survived from the

past, and the rectification of the evils on a large scale would cost untold millions and must be regarded as impracticable for the time being. Moreover, the local government of Greater London, owing to the persistent neglect and jealousy of Parliament, was confused, and there were far more authorities than authority. It was true that the Greater London Regional Planning Committee existed, but it was a loosely organized body and its powers were advisory only. He was opposed to it becoming an independent executive *ad hoc* authority, for London Government was already afflicted with many such authorities.

He thought that the Ministry of Health, as the only State department concerned with town planning, should co-ordinate the town-planning schemes of Greater London and not push its responsibilities on to the Greater London Regional Committee, which could not be expected to be effective under existing conditions. Highway improvements and traffic control were essentially related to town planning, but those functions were under the Ministry of Transport.

Soon after the present Majority came into power at County Hall, said Mr. Morrison, the Council passed a resolution to town plan the whole of the county, and although the proposals were strongly fought at the Ministry of Health inquiry the Minister had now given authority to proceed. Thus the Council had embarked on the world's biggest town-planning effort. In the meantime, the London Development Sub-Committee was at work preparing plans which it was hoped would govern the future development and redevelopment of London.

He was particularly anxious to witness, in his lifetime, the evolution of a new east, north-west and south-east of London. He concluded: "Anybody who journeys out of Liverpool Street, Fenchurch Street, or London Bridge Stations can see from the train windows the sorry mess that inadequately controlled private enterprise has made of what ought to be the noblest city in the world. We seek the complete and worthy redevelopment of such London areas as these; to see the working people worthily housed in healthy and airy conditions and their children provided with safe places in which to play and exercise their lungs. I am anxious to see the proper siting, elevations and co-ordination of London's great buildings in the centre and the west. We must evolve a 'neighbourliness' and sympathy in building."

Mr. E. Maxwell Fry, A.R.I.B.A., said the ancient fabric of London was unworkable as a background for healthy and happy living, but the immensity of the problem of reorganization was baffling. We did not know clearly where to start, and we lacked both the principles and the machinery. Individual rights over land remained the greatest obstacle to planning, and in one way or another the commonly held expectation of some more active control of land uses must form part of the machinery of replanning.

### INCORPORATED ASSOCIATION OF ARCHITECTS AND SURVEYORS

The tenth anniversary dinner of the Incorporated Association of Architects and

Surveyors was held at the Dorchester Hotel, London, on Friday last, Sir Edwin Lutyens, R.A. (President) occupied the chair.

Lord Kennet, responding to the toast of the "Lords and Commons" (proposed by the Dean of St. Paul's), said that during the last five years there had been erected no fewer than one million houses. In the great housing movement which was now in progress, the professions of architects and surveyors played a most important part. The only criticism which they had had about some of the phases of this great movement was that in too many cases the houses had not been designed by architects. They looked to the future, in which much building of modern flats was necessary in the old bad areas of their great towns. It was sincerely to be hoped that in this form of construction the nation would be provided with the best designs and that the builders would not fail to seek the advice of architects and surveyors.

The Rt. Hon. J. R. Clynes, M.P., responding for the House of Commons, said there was a tendency to do more and more to remove the slums, but there were limits both in respect of space and of money. It was for the architects and surveyors to overcome the first difficulty and for the State to overcome to a great extent the other. He hoped, in this respect, that the workmen would not be forgotten. During the last twenty years architecture had shown enormous advances, and the workmen had laboured under difficulties, not always revealed.

Sir Edwin Lutyens, responding to the toast of "The Association" (proposed by Sir Patrick Hastings, K.C.), said that in travelling round the countryside one wondered where the architects had gone to—so rare was the pleasure of seeing fine work. The sacred rights of ownership permitted the replacement of good old buildings with sky-blocking monsters of brutal brick and crazy cement. It seemed that money must be made at any cost. Sky-signs, illuminated signs, flood-lighting—an uncultured form of decoration, the very antithesis of Nature's ruling—all joined in one loud clamour of advertisement. As things were moving it had been calculated that in less than a century they would be left without trees and little land to build upon. The land would be as desolate as though a plague of locusts had passed by.

The concluding toast, "Our Guests," was proposed and responded to by Mr. J. S. Swindlehurst, M.A., and Lord Strabolgi, respectively.

Lord Strabolgi said he believed profoundly in the saying that the spirit and soul of a nation was expressed in its architecture. The recent developments and advances in British architecture gave great encouragement. The blot on the landscape, however, was the jerry-building; not so much because the designs were bad but because the material used was faulty. Most of the builders were reputable, but there was a minority of unscrupulous profiteers who swindled inexperienced young couples into buying houses which began to fall to pieces before, in some cases, a year's instalments had been paid. The fault was partly caused by the slackness of certain local authorities and partly by the obsolete state of some of the building bye-laws.



# WORKING DETAILS : 363

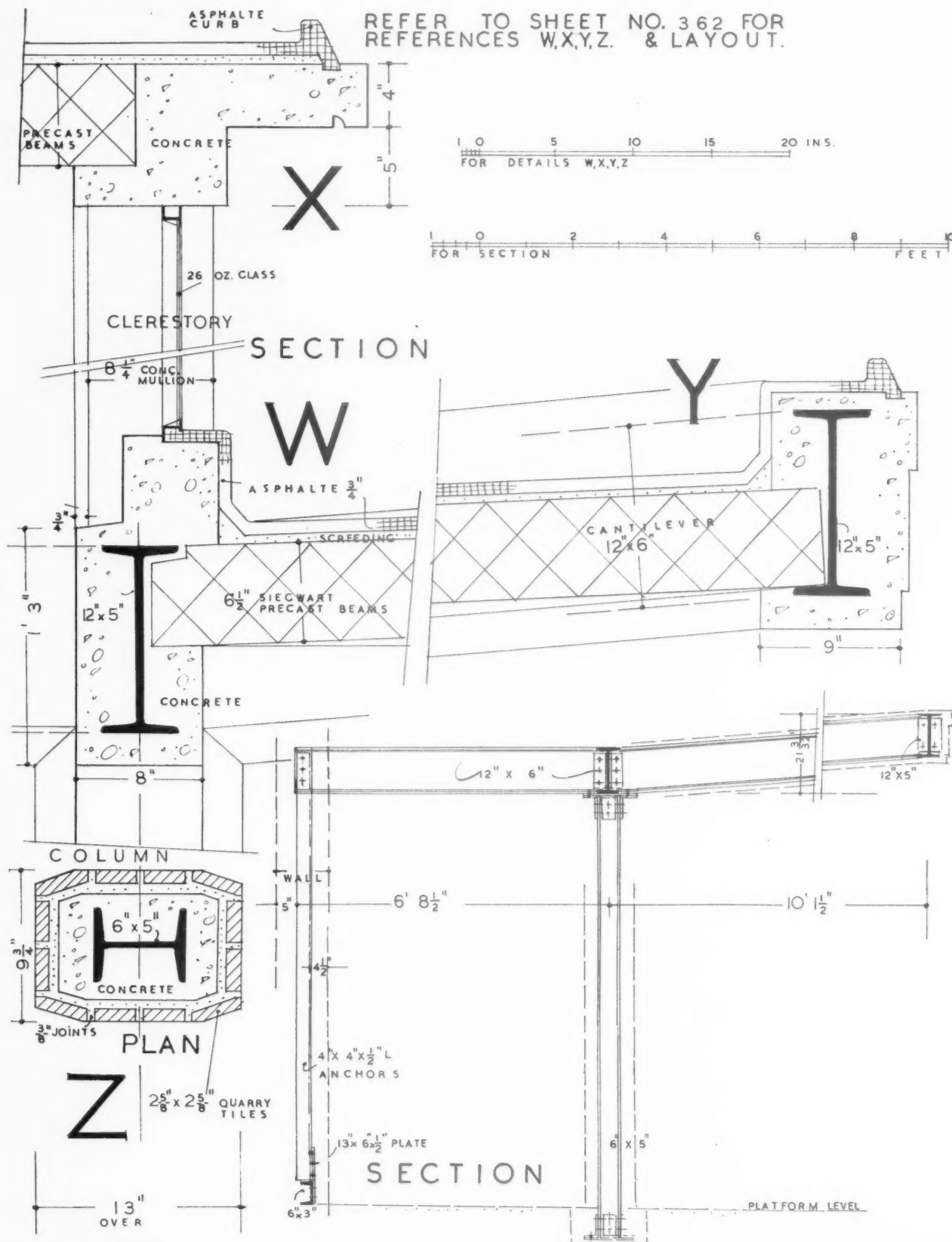
CANOPY • SOUTH HARROW UNDERGROUND STATION • S. A. HEAPS; ADAMS, HOLDEN AND PEARSON, CONSULTANTS



The detail drawings shown overleaf complete the general drawings published in our issue of last week, and show the arrangement of the main longitudinal beams and the angle ties.

# WORKING DETAILS : 364

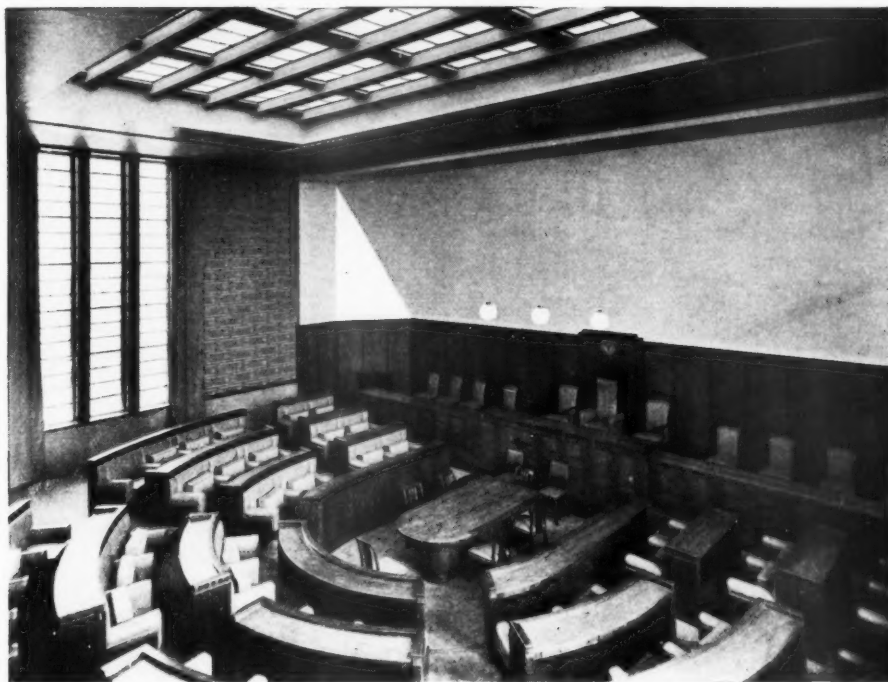
CANOPY • SOUTH HARROW UNDERGROUND STATION • S. A. HEAPS; ADAMS, HOLDEN AND PEARSON, CONSULTANTS



Detail drawings of the canopy illustrated overleaf.

# WORKING DETAILS : 365

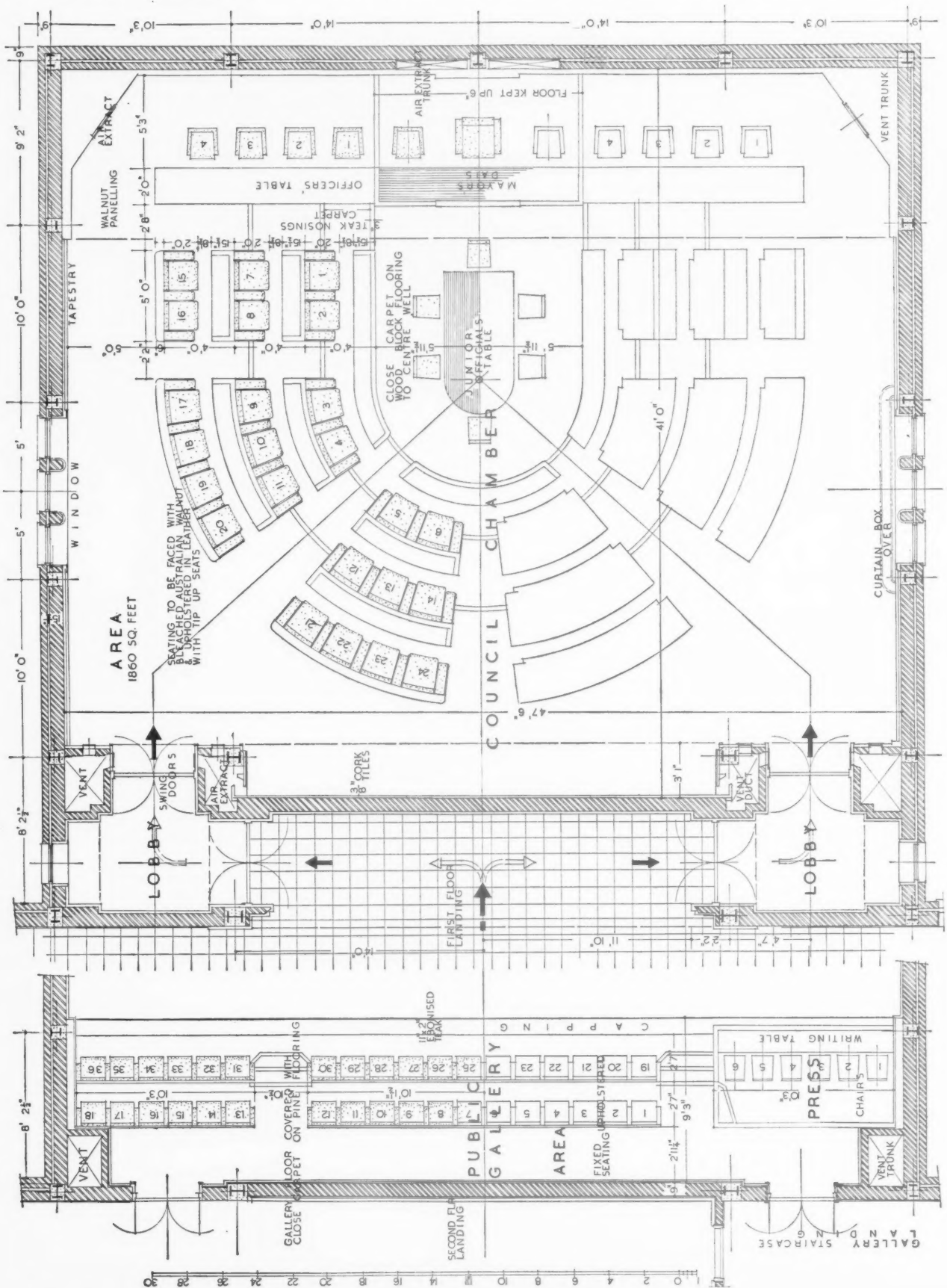
COUNCIL CHAMBER • HORNSEY TOWN HALL • REGINALD H. UREN



The council chamber is dado panelled in Australian walnut, Indian laurel and teak, and the seating is of Australian walnut veneer with red hide upholstery. The floor is of pine for close-carpeting. The tapestry wall panels mask acoustic slabbing, and the marble dados below the windows and tapestry panels cover heating coils. Detail plans and setting-out of the council chamber appear overleaf.

# WORKING DETAILS : 366

COUNCIL CHAMBER • HORNSEY TOWN HALL • REGINALD H. UREN



Ground and gallery plans of the council chamber illustrated overleaf.





*The South front of Crichel. From "The Country Houses of Dorset."*

## L I T E R A T U R E

### THE COUNTRY HOUSES OF DORSET

[BY DENIS W. DOBSON]

*The Country Houses of Dorset.* By Arthur Oswald. Country Life, Ltd. Price 12s. 6d.

HOW fortunate it is that, with Dorset as the setting, one is spared the necessity for those painful reflections on the lack of historical perspective—to name only one cause—which permits an avowed respect for the work and tradition of the past to co-exist with complete inability to appreciate the needs of the present and a bland disregard of the future.

Dorset seems to have successfully resisted the blandishments of the supporters of the Come-to-Britain movement, notwithstanding the existence of certain danger signals on its coastline. Whether or not it is, in Mr. Oswald's somewhat infelicitous phrase, "the most truly rural of our southern counties," there is no doubt that it provides an admirable background, as well as a wealth of material—to a reviewer, embarrassing in its extent—for the student of country house architecture. And the fact of the county's comparative isolation in the past and consequent immunity, in a large degree, from the more ephemeral whims of architectural fashion, together with

the existence of a strong local building tradition, most in evidence at Blandford in the eighteenth century, makes the subject in no small degree a part as well of the social history of England.

Whatever may be the grosser faults of those who would reduce all experience to the level of a mere branch of economics and who would explain all history by its teachings, there can be no doubt of the connection between the rising prosperity of the sheep-farmer in the latter half of the fifteenth century and the building—whether or not in place of, or in addition to, an earlier house on the same site—of the stone manor houses which add a singular beauty to such names as Purse Caundle, Bingham's Melcombe, Sandford Orcas, and a host of others. As Mr. Oswald points out in his Introduction, the greater part of the fine Dorset manor-houses which survive today (using the term "manor-house," as he does, in a loose sense, in contrast to the classic buildings of a later date) were put up in the first half of the sixteenth century and there are few important survivals of an earlier age. Castles became unfashionable in Dorset earlier than they did in Northumberland, and the family was glad to move to more comfortable quarters—although, of course, it took the gunpowder of the Parliamentary forces to dislodge the Bankes from Corfe. But the universal use of stone (golden Ham Hill stone in the north and Purbeck and Portland

limestone in the south) and a sense of continuity in the builders, prevented any abrupt transition, and to detect the work of different periods in many of these early houses is a task requiring considerable skill and ingenuity. There is, in fact, no great dissimilarity between Woodsford, the only castle inhabited in Dorset today (under a roof of thatch), and, say, the manor-house at Purse Caundle, although the latter is, of course, stone-slatted.

With increasing prosperity the early Tudor forms were enriched with Renaissance detail, of which the magnificent oriel bay at Bingham's Melcombe is a good example, showing obvious signs of Italian inspiration, if not workmanship. (This house is remarkable in having passed in unbroken descent from father to son from early in the thirteenth century until 1895.) Another is the magnificent north loggia on Cecil's "hunting-lodge" at Cranborne, which Mr. Oswald, with a good show of reason, attributes to William Arnold, the architect of Wadham College, Oxford. Notwithstanding these tendencies, the general characteristic of Elizabethan and Jacobean work is a simplification of design, an advance in house planning and greater regard for symmetry of elevation. This being so, the way is made easy for the transition to the classical house, which Mr. Oswald dates from the building of St. Giles' House, the home of the Ashleys, later Earls of Shaftesbury, in 1650. This he describes as "a change from a vertical to a horizontal basis of design, from vitality to



*Bingham's Melcombe. From "The Country Houses of Dorset."*

serenity," although some of Vanbrugh's work at Eastbury hardly merits this latter epithet.

Although Dorset can boast few "great houses" in the style of Blenheim—is this its misfortune?—it is well supplied with good examples of the eighteenth-century Englishman's passion for classical antiquity; in the case of Eastbury, that fantastic extravagance which Vanbrugh built for Bubb Doddington, this taste seems to have exceeded all bounds. However much the house may have appealed to those who fancied such conceits—and from the description of him there seems no doubt that its owner was one—some of us may, on looking at the painting reproduced by Mr. Oswald, be thankful that, on Doddington's death, his nephew, after vainly offering £200 a year to anyone who would

live in the place, was constrained to blow it up; so that nothing remains but a fragment of the kitchen block and two pine trees impudently perched on the top of a majestic Roman archway. As further evidence of the fact that English gentlemen of this date did not lag behind their French contemporaries in love of the magnificent, we may notice that Joseph Damer, in rebuilding Milton Abbey, was not content with turning Sir William Chambers (the architect of Somerset House!) into a Gothicism *malgré lui*, but transplanted the entire village of Milton so that it should be invisible from the windows of his new home. Time, however, has its revenges, and now a pink-roofed bungaloid looks down on Milton from St. Catherine's hill.

From what we have said it will, we hope, appear that Mr. Oswald's subject

is one of considerable interest in spite of its apparently limited scope. (The influence of Dorset builders, after all, was widespread, for did not the success of "Superior Dorset" Forsyte as a builder of Greater London enable his descendants to live in Park Lane?) The book is well arranged and bears evidence of careful research and, what is certainly more unusual, it is on the whole eminently readable, notwithstanding the amount of family history which it contains. The houses described are dealt with in chronological order and there is a good index, as well as a list of the houses which may be visited by the public. The publishers must by now be well accustomed to tributes to the excellence of the photographs which they produce, but that does not make the appreciation in this case any less sincere.

## THE LAW OF HOUSING

[BY PHILIP H. MASSEY]

*Housing Administration.* By Stewart Swift.  
London: Butterworth & Co. Price 25s. net.

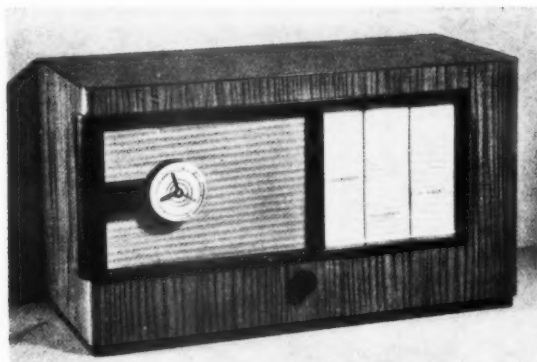
THE author of this book is the Chief Sanitary Inspector to the Oxford City Council, and his purpose has been to deal with housing from the administrative and practical standpoint. It is not a legal textbook, but a good deal of it is necessarily devoted to law, since administration is governed by the law. Sections of statutes are brought into the text in their logical position—i.e., by subject—but there is in addition a table of statutes, a brief historical introduction, and a chapter which sets out the Acts in date order, with short summaries showing which parts remain in force.

The author deals adequately yet concisely with every aspect of housing administration—inspections (the law, standards and methods), clearance and improvement areas and rehousing, individual unfit houses, rural housing, pests and housing records and registers.

The chapters devoted to housing inspections may be taken as an example of the author's method. He starts by showing the duty of local authorities as to the making of inspections, the powers of entry, and the procedure to be adopted under the Consolidated Regulations. He then deals with the question of standards, covers the legal definitions and the items of disrepair and sanitary defects frequently met with (and the Acts, model bye-laws, etc., relating to these items) and continues with notes on the arrangement of houses, width and arrangement of streets, overcrowding and the provisions of bye-laws in force in any district. "Practical Housing Inspections" gives admirable recommendations as to the method of carrying out inspections and the details that should be recorded.

The chapter on clearance areas, similarly, gives all the necessary information regarding the definition of a clearance area, the types of house commonly included therein, and the method of representation and subsequent procedure.

The whole book is written in similar straightforward fashion. It is certain to prove of the greatest value to persons engaged in housing work, whether as local councillors or officials or in other spheres. Those who are actively interested in housing matters, though not themselves concerned with the detailed work of administration, will find that the book provides sufficient description of practical housing work and housing law to be useful, without going into the intricacies inevitable in purely legal works.



A wireless set designed by H. A. Burgardt.  
(From "Moderne Bauformen")

## P E R I O D I C A L S

## O C T O B E R    A N T H O L O G Y

## A M E R I C A

*Architectural Forum*

(Monthly, \$1. 220 East 42nd Street, New York)

**O**CTOBER. A small house reference number. Photographs and plans of 101 houses, all of which come within the price limit for Federal insured mortgages; full details of cost and construction are given.

*Architectural Record*

(Monthly, 50 cents. 115 West 40th Street, New York)

October. Results of the "Modernize Main Street" competition. Prize-winning designs for a drug store, apparel shop, food store, car sales-and-service station; over three thousand entries divided about equally among the different groups, the food store being the least popular.

*Pencil Points*

(Monthly, 35 cents. 330 West 42nd Street, New York)

October. Results of the "Modernize Main Street" competition: some are reproduced in colour; an appreciation by Francis Sullivan of the late Mr. H. van Buren Magonigle; measured drawings of contemporary lighting fittings; and early Colonial architecture in Rhode Island.

## B E L G I U M

*L'Emulation*

(Monthly, 20 belgas per annum. 12, rue du Grand Cerf, Brussels)

No. 6. The first of a series of articles by Jean Hendrickx on the foreign pavilions at the Brussels Exhibition.

## F I N L A N D

*Arkitekten*

(Monthly, 15 fmk. Ainsgatan 3, Helsingfors)

No. 8. An elementary school at Ulcaborg,

by K. Borg, a fairly large job with a gymnasium and several special-purpose class rooms. A discussion between O. Laisaari and P. E. Blomstedt, the former implying that the architect should act as a contractor, the latter retorting that he should remain an impartial technical adviser.

## F R A N C E

*L'Architecte*

(Monthly, 12 fr. 2 Rue de L'Echelle, Paris)

No. 4. New municipal work for the town of Asnières by Chevallier and Launay; numerous plans and photographs.

*L'Architecture*

(Monthly, 6 fr. 51 Rue des Ecoles, Paris 5e)

October. Work in Brittany by Lachand and Legrand; the 1935 Rome Prize drawings illustrated; a church by M. C. H. Besnard, designed in the traditional manner, but constructed largely of pre-cast concrete units.

*La Technique des Travaux*

(Monthly, 10 fr. 54 Rue de Clichy, Paris 9e)

October. The new Town Hall at Cachan, by Mathon, Chollet and Chaussat, a large job with a slight air of Dudok, good plans, interiors and structural information. Mount Royal flats, and a rather unattractive church at Nice with some very interesting parabolic domes in reinforced concrete.

## G E R M A N Y

*Baugilde*

(Fortnightly, 1 m.50. Grünstrasse 4, Berlin, S.W.19)

No. 22. The traffic problems produced by Cologne Cathedral.

No. 23. The International Congress of





*A proposed hotel and bathing beach lay-out for the island of Naxos. By Roland Grohmann. (From "Bauwelt.")*

architects in Rome; building for an exhibition of flowers and plants at Hamburg.

No. 24. The planning of large libraries, an article by Professor Richard Oehler, illustrated by numerous type plans, including Manchester, Cambridge, Tokyo and Berne.

#### *Baumeister*

(Monthly, 3 m. Georg Callwey, Munich)

October. Houses and gardens considered in conjunction with each other, illustrated with work by Alwin Seifert. Library planning—an article by Dr. Schürmeyer; and a small country cottage by Rudolf Lodders.

#### *Baukunst und Städtebau*

(Monthly, 1 m. 90. Bauwelt Verlag, Berlin, S.W.68)

October. Executed work and proposed schemes by Ernst Pfannschmidt. A Norwegian country house by Gudulf Blakstad and Herman Munthe-Kaas, the ground floor in concrete, the first weather boarded.

#### *Bauwelt*

(Weekly, 90 pf. Ullstein Verlag, Berlin, S.W.68)

October 3. Buildings by Konstanty Gutschow, for the Hamburg flower and plant exhibition.

October 10. The lay-out of shopping streets, an article by C. H. Wittig. See illustrations on the facing page.

October 17. The Carmelite church at Frankfurt.

October 24. A large café in Hamburg, by Gustav Mewes: a scheme for a large open-air bathing beach and hotel on the island of Naxos by Roland Grohmann.

October 31. The new Boymans Museum at Rotterdam by A. van der Steur.

#### *Deutsche Bauzeitung*

(Weekly, 3 m. 40 per month. Seydelstrasse 6, Berlin, S.W.19)

October 2. Notes on the acoustics of auditoria by Dr. Eugen Michel; a medium-sized country house by Werry Roth.

October 9. Two competition results: a school and a town planning problem.

October 16. Workers' housing near Berlin, semi-detached and terrace lay-outs.

October 23. Country housing for workers and agricultural labourers.

October 30. A new railway station at Glogau. (See illustration.)

#### *Innen Dekoration*

(Monthly, 2 m. 50. Neckarstrasse 121, Stuttgart)

No. 10. A country house in Hungary, by Ludwig Kozma, current interiors.

#### *Moderne Bauformen*

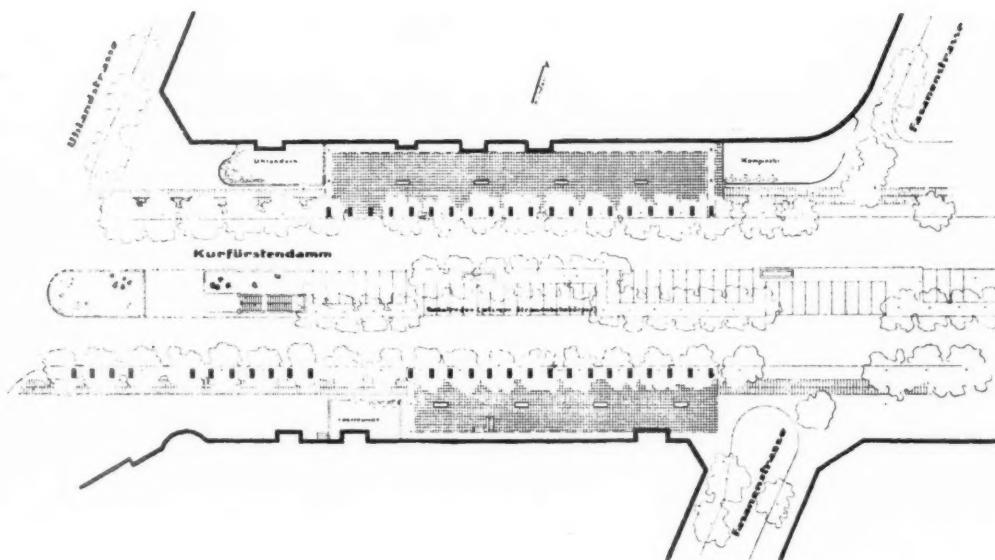
(Monthly, 2 m. 25. Julius Hoffman, Stuttgart)

October. A woollen mill, by Hugo Schlösser, well described and illustrated, and an open-air swimming bath for workers of the same factory. Radio cabinets by H. A. Burgardt.



*A new railway station at Glogau. By Otto Beringer. (From "Deutsche Bauzeitung.")*





## HOLLAND

*Bouwkundig Weekblad Architectura*

(Weekly, 15 florins per annum. Weteringshaas 102, Amsterdam)

October 5. Competition results, largely of academic interest.

October 12. The same competitions continued.

October 19. Housing for pensioners at Arnhem.

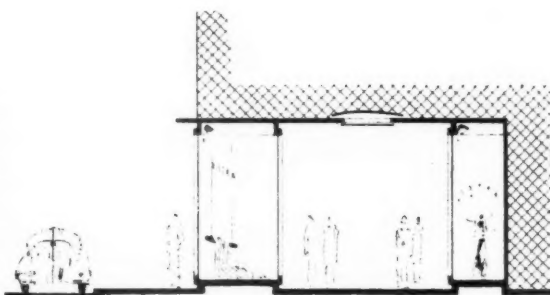
October 26. Bookbindings of the seventeenth century.

*de 8 en opbouw*

(Fortnightly, 30 cents. Amstel 22, Amsterdam, C)

No. 21. Book jackets, mostly chosen from Russian examples of collective publicity.

A scheme by C. Hermann Wittig for the replanning of the Kurfürstendamm as a shopping street. (From "Bauwelt.")



## SWITZERLAND

*Schweizerische Bauzeitung*

(Weekly, 1 fr. Dianastrasse 6, Zurich)

October 5. A church in Lucerne, by A. Zeyer.

October 12. A well-reasoned article by Eduard and Georg Gruner, on the possibility of motor road tunnels under the Alps,

at St. Gotthard and from Chamonix to Courmayeur.

October 19. The design of high towers built up from steel tube.

October 26. Mainly civil engineering.

*Werk*

(Monthly, 3 fr. 60. Muhlebachstrasse 59, Zurich)

August. The lay-out of large exhibition grounds—good plans and illustrations.

## ITALY

*Architettura*

(Monthly, 18 lire. Via Palermo 10, Milan)

September. New buildings at Sabaudia, by Cancellotti, Montuori, Piccinato and Scalpelli; some very full notes on the plan requirements of railway stations of all sizes.

## SWEDEN

*Boet*

(Monthly, 1 kr. 50. Kristinelundsgatan 11, Gothenburg)

No. 9. Upholstered chairs and sofas, some of the latter arranged in sections for different types of arrangement.

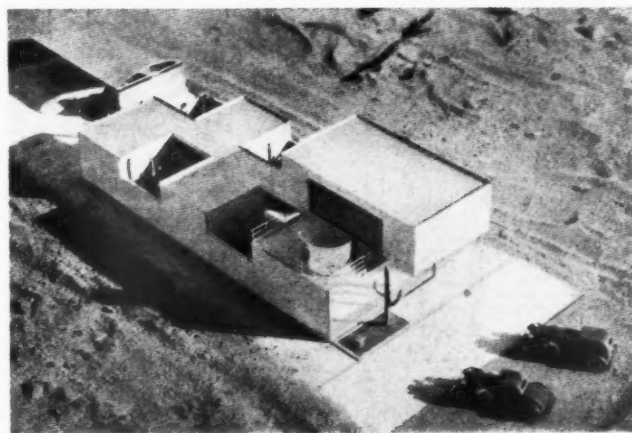
*Byggnästaren*

(Fortnightly, 15 kr. per annum. Kungsgatan 32, Stockholm)

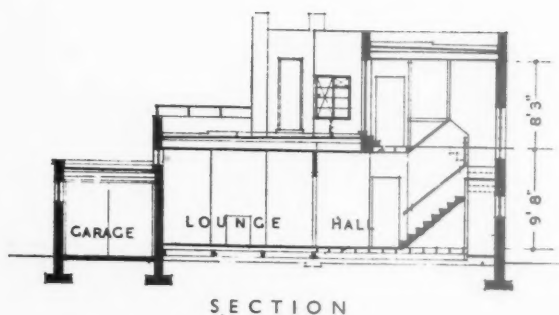
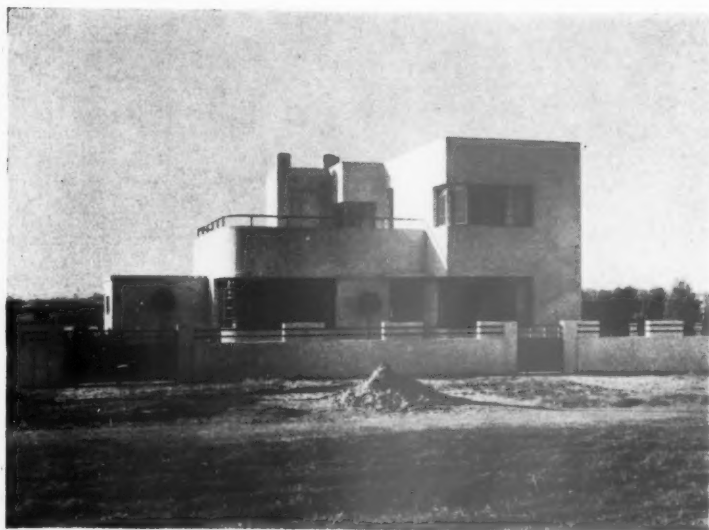
September 18. Housing congress at Prague report: competition designs for a new national theatre at Malmo.

September 25. Crematorium buildings in Sweden.

Model of an office and apartment building at Palm Springs, by Lawrence Kocher and Albert Frey. (From the "Architectural Record.")



## H O U S E A T H O L L A N D -



SECTION

**GENERAL PROBLEM.**—The house was designed as a seaside holiday dwelling for a London business man. The client's requirements were one large living-room only, roomy kitchen space, three bedrooms, garage and a flat roof; the owner's bedroom was requested on the ground floor, and it was desired that the planning of the house should take full advantage of fresh air and sunshine, and its equipment be such as to enable it to be made very quickly habitable at week-ends.

**SITE AND PLAN.**—The principal front of the house faces south, with a view seawards. The site is very exposed. The site governed the lay-out of the principal rooms, these having a south and south-west aspect. The client's strong objection to the appearance of garage doors of all descriptions was the reason for the placing of the garage entrance.

**CONSTRUCTION.**—11 in. brick cavity walls, and wood joisted floors and roofs. Partitions are of breeze concrete slabs. The flat roofs are ventilated by using the wall cavities as flues, and omitting half-bricks at intervals in the inner leaf between the joists. Windows are steel casements throughout.

**EXTERNAL FINISH.**—Ivory white cement rendering. The windows and roof and all balustrading are painted orange colour, and doors and gates light blue. Lounge flat roof of asbestos slabs on bituminous sheeting. Other roofs of bituminous sheeting, macadam finished.

The photographs show: top, a view from the south-west; left, the south elevation.

D E S I G N E D

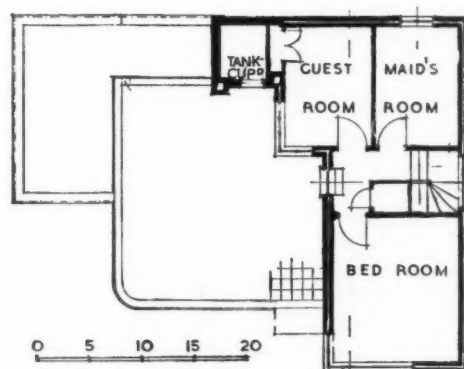
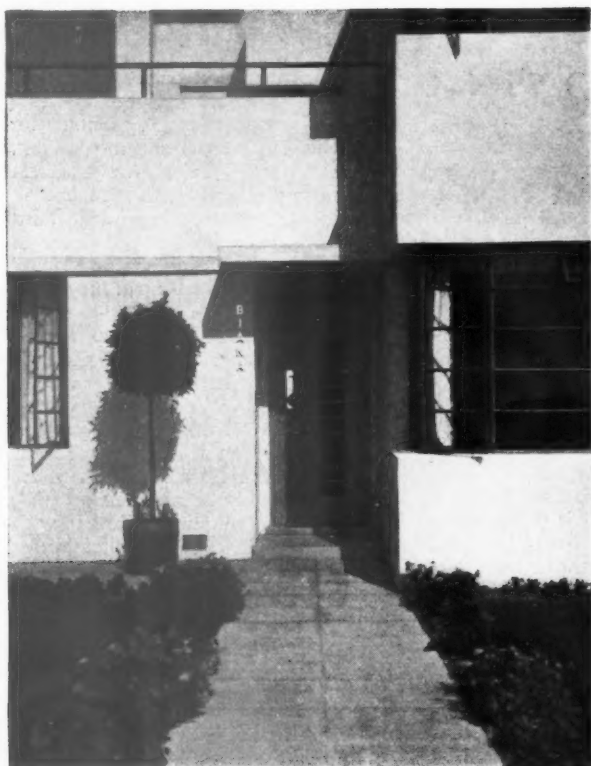
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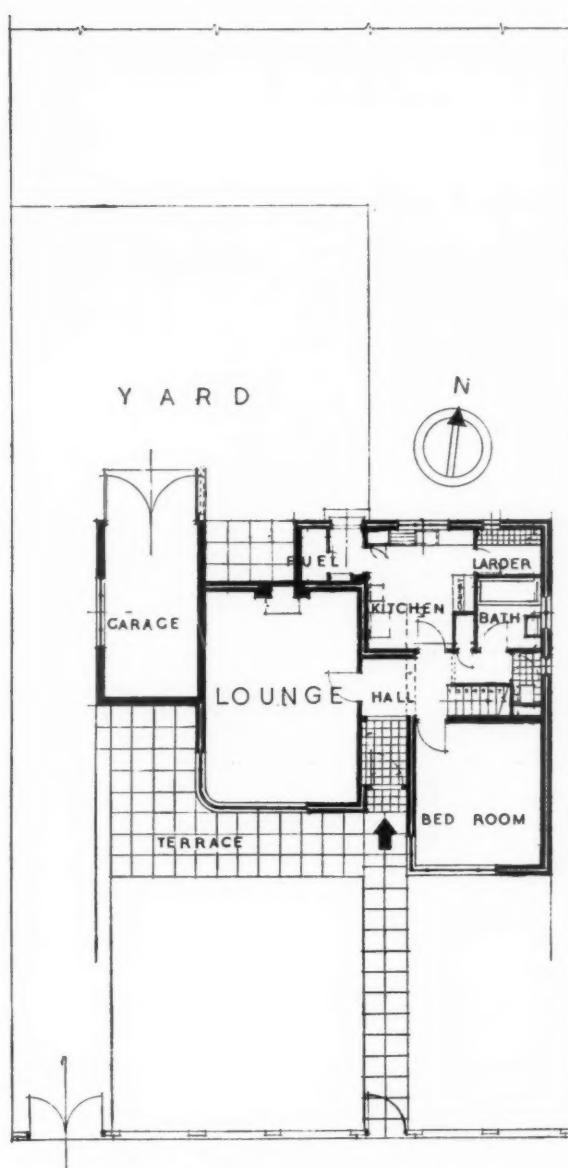
H. F R A N K S

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FIRST FLOOR PLAN



GROUND FLOOR PLAN

**INTERNAL FINISH.**—Walls and ceilings plastered. Cills of buff quarry tiles. Flush doors and internal joinery generally finished in green enamel. The hall and lounge floors are of oak strip, and the walls distempered stone colour. The lounge fireplace is of black and napoleon marble and stainless steel. Door furniture throughout of ivory-coloured composition. Entrance lobby floor is of quarry tiles.

Staircase walls are of flush plywood, enamel finished. Bathroom is white tiled floor to ceiling with rubber floor. Kitchen is dado tiled to a height of 4 ft. 6 ins., and has deal dresser cupboard and benches built in and quarry tiling under cookers. Dresser top and tops of cupboards are of glazed white tiles on expanded metal and boarding.

**HEATING.**—Heating is by electricity from wall panel heaters, with one coal fire in the lounge. Cooking is also done by electricity, and hot-water heating only by an independent solid fuel boiler.

**COST.**—The contract price was £1,148, and the final cost was £1,200.

Above is a detail of the entrance.

# TECHNICAL SECTION: 39

## HEATING, AIR CONDITIONING AND MECHANICAL EQUIPMENT

BY OSCAR FABER

O.B.E., D.C.L., D.Sc., M.Inst.C.E. Hon.A.R.I.B.A.,  
A.M.I.E.E., F.C.G.I., M.I.H.V.E., M.Am.S.H.V.E.

AND J. R. KELL, M.I.H.V.E.

### AIR CONDITIONING (Continued)

#### 8. REFRIGERATING PLANT

THE basic principle underlying all mechanically operated refrigerating machines is as follows: A quantity of gas is highly compressed, which raises its temperature. The latent heat is then removed by condensing the gas to a liquid. Following this, the pressure is lowered and the liquid re-evaporates, extracting the necessary (latent) heat from any surrounding material, the temperature of which is thereby lowered. The refrigerant is now in its original gaseous state at low pressure, and the cycle is repeated.

A refrigeration plant (see Fig. 242), therefore, consists essentially of:—

(a) A compressor to compress the refrigerating medium.

(b) A condenser to receive the compressed gas and liquefy it; the latent heat is taken out of the circuit by some external means. One method is to cool the condenser with circulating water, which may then be either run to waste or passed to a cooling tower for reuse.

(c) An expansion valve in which the pressure on the liquid medium is reduced.

(d) An evaporator in which the medium re-evaporates, extracting heat from the surrounding material, i.e., from the cooling water in an air-conditioning plant, or from the brine in a food refrigeration system.

The factors affecting the choice of refrigerant will now be clear. A substance is required which can be liquefied at moderate pressures and which has a high latent heat of evaporation. The size of the compressor will then be kept down, and a relatively small amount of refrigerant need be circulated for a given amount of cooling. Such gases include ammonia,

carbon dioxide, sulphur dioxide, and others mentioned later.

Air also may be used as a refrigerating medium. One method is to compress it to about 200 lb. per square inch and then allow it to expand through a valve. At this pressure the air is not, of course, liquefied, and the latent heat is not, therefore, available. The specific heat being small, very large volumes of air must be handled to achieve the desired amount of cooling.

Another method is to use pressures high enough to liquefy the air; at least 200 atmospheres are required. With either method large and expensive plant is necessary.

The Ideal Carnot refrigeration cycle may be represented as in Fig. 243, in which heat is absorbed along the line AB, this being at the cooling or evaporating temperature  $T_1$ , and dissipated along the line CD by condensation at a higher temperature  $T_2$ . Expansion takes place along the line DE.

The work done in compression of the gas (power input) is represented by the area X. The cooling effected is the area Y. The total heat to be disposed of in the condenser is represented by the area X + Y.

From this it will be seen that for a given power input X a much greater heat output is available at the elevated temperature  $T_2$ . This is the explanation of the Kelvin heat pump or Re-

versed Refrigeration cycle, which has often been toyed with for heating purposes as it appears to give efficiencies of anything up to 200 or 300 per cent. Except on a small scale, however, it has never been really put into use here.

The ideal Carnot cycle is not attainable in practice because of losses in compression, expansion, friction, leakage of valves, superheating of the gas on compression, etc.

From the diagram it will also be seen that the higher the refrigeration or evaporation temperature and the lower the condensing or cooling water temperature, the less work is necessary in producing a given refrigerating effect.

Table LXIV gives a list of the more commonly used liquefiable refrigerating media used in practice, together with their characteristics and application.

Figs. 244, 245, 246 and 247 show diagrammatically the three main types of plant using piston compression, centrifugal compression, and steam jet respectively. A fourth type is shown in Fig. 248 and is known as the ammonia absorption system, but is not used for air conditioning.

Ammonia, whilst high in efficiency and cheap, is ruled out in most cases for air conditioning by the danger of a leakage and the serious results which may follow a burst or serious leak.

$\text{CO}_2$  calls for higher power input and much higher pressures and requires a skilled engineer for its operation. Leakages are harmless but are very difficult to detect, the soap and water bubble test alone being possible.

Freon is an organic gas recently developed in the U.S.A. It operates at lower pressure than ammonia, is odourless, non-inflammable and non-toxic. For air conditioning it is the most suitable refrigerant for piston type compressors.

$\text{SO}_2$  and Methyl Chloride are only suitable for small plants on account of the large displacement necessary, and both are objectionable if a leakage occurs.

The centrifugal type of compressor,

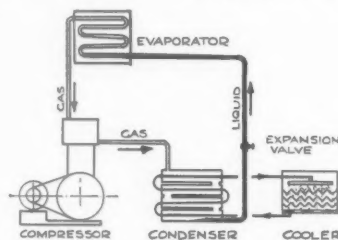


Figure 242. Diagram of refrigeration cycle.

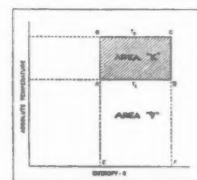


Figure 243. Theoretical temperature-entropy diagram (Carnot cycle).



TABLE LXIV.—PROPERTIES OF REFRIGERANTS

| Refrigerant                                  | Symbol  | Pressure in<br>lbs./sq. " gauge |                          | Boiling<br>Point<br>(stand-<br>ard pres-<br>sure)<br>° F. | Critical<br>Tempe-<br>rature<br>° F. | Volume<br>of<br>vapour<br>at 5° F.<br>cub.ft./<br>lb. | Latent<br>heat of<br>evapora-<br>tion<br>at 5° F.<br>B.T.U./<br>lb. | Theore-<br>tical<br>H.P.<br>per ton<br>refrige-<br>ration | %<br>Effici-<br>ency<br>(Carnot<br>cycle=<br>100%) | Characteristics<br>of Refrigerant  | Uses                                 |        |
|--|---|---------------------------------|--------------------------|---|--------------------------------------|---|---|---|--|--|--------------------------------------|--------|
|  |   | Con-<br>denser<br>86° F.        | Evapo-<br>rator<br>5° F. |   |                                      |   |   |   |  |  |                                      |        |
| Ammonia                                      | NH <sub>3</sub>                                   | 154.5                           | 19.6                     | -28   | 271.2                                | 8.15  | 565   | .993  | 83   | Strong Irritant.<br>Forms explosive<br>mixture under<br>certain conditions | Large<br>Plants                      | Piston |
| Carbon-dioxide                               | CO <sub>2</sub>                                   | 1,024                           | 320                      | -108.4  | 87.8                                 | .267  | 115.3   | 1.75  | 47   | Odourless. Inno-<br>cuous. Does not<br>support combus-<br>tion             |                                      |        |
| Dichloro-difluoro-<br>methane<br>(" Freon ") | CCl <sub>2</sub> F <sub>2</sub><br>(or<br>" F12") | 93.2                            | 11.8                     | -21.5   | 222.7                                | 1.48  | 69.5  | 1.050   | 81.5   | Odourless. Non-<br>toxic. Non-in-<br>flammable.<br>Innocuous.              |                                      |        |
| Sulphur-dioxide                              | SO <sub>2</sub>                                   | 51.7                            | -2.9                     | 14  | 314.8                                | 6.66  | 170.7   | .962  | 85.5   | Strong suffocating<br>smell. Toxic.  | Small<br>Plants                      | Plants |
| Methyl Chloride                              | CH <sub>3</sub> Cl                                | 80.8                            | 6.2                      | -10.7   | 289.6                                | 4.53  | 178.5   | 1.025   | 82   | Almost odourless.<br>Anesthetic.<br>Inflammable.                           |                                      |        |
| Dichloro-ethylene                            | C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>     | -7.3                            | -13.9                    | 122   | 470                                  | 63.0  | 136   | .985  | 83.5   | As Freon.  | Centrifugal Plants                   |        |
| Water .. ..                                  | H <sub>2</sub> O                                  | -14.08<br>(1.25" Hg)            | -14.673<br>(.037" Hg)    | 212   | 706                                  | 9.880   | 1,088   | 1.15  | 71.5   |  | Steam Jet or Cen-<br>trifugal Plants |        |

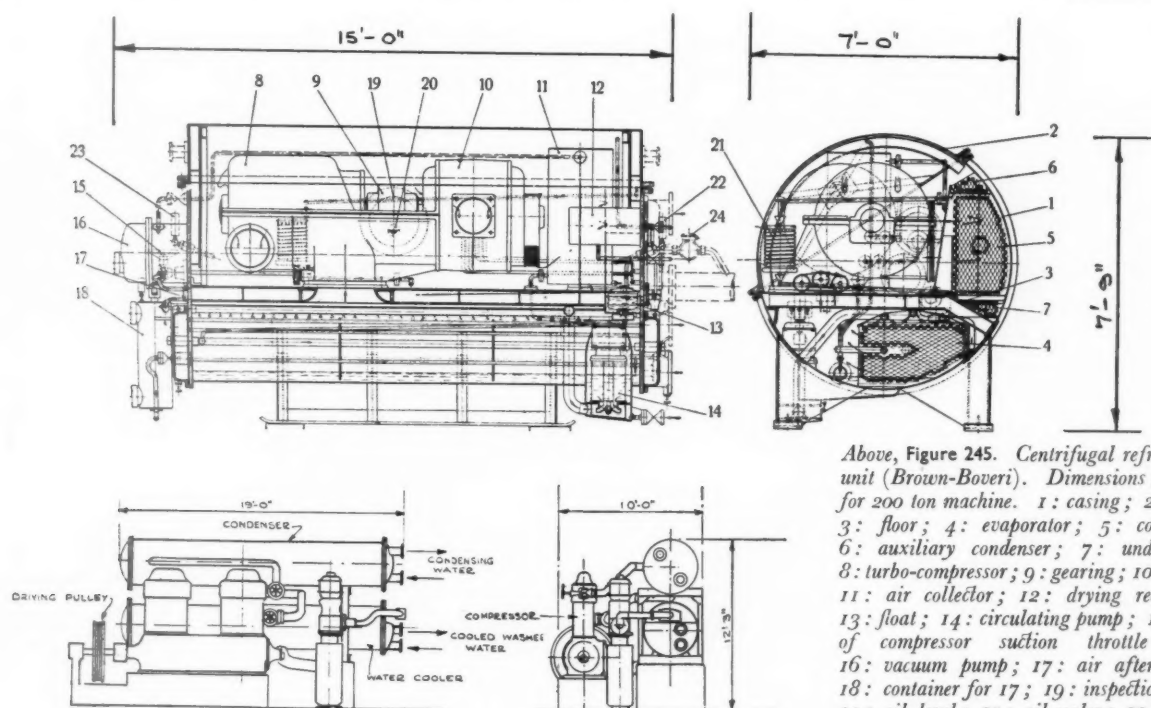
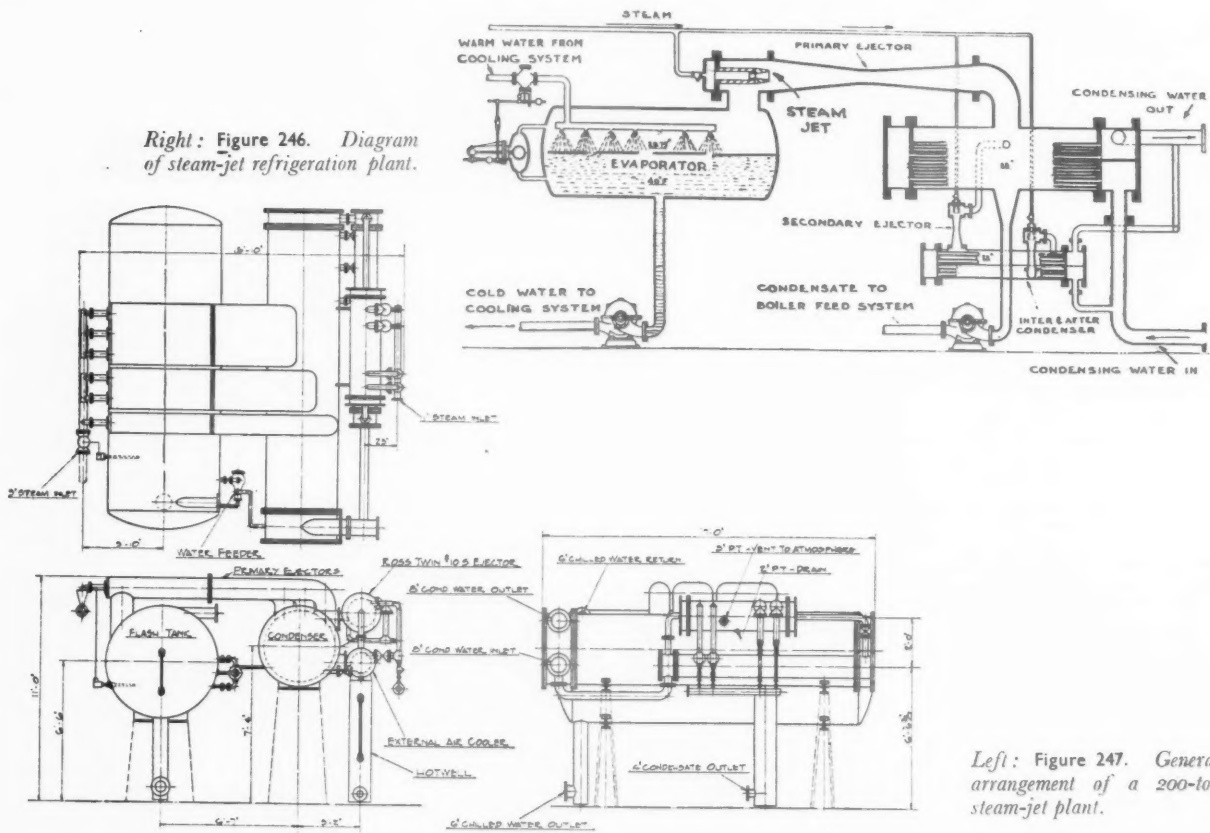


Figure 244. Piston compression unit, 200 ton capacity, using Freon.

Above, Figure 245. Centrifugal refrigeration unit (Brown-Boveri). Dimensions given are for 200 ton machine. 1: casing; 2: cover; 3: floor; 4: evaporator; 5: condenser; 6: auxiliary condenser; 7: undercooler; 8: turbo-compressor; 9: gearing; 10: motor; 11: air collector; 12: drying receptacle; 13: float; 14: circulating pump; 15: drive of compressor suction throttle valve; 16: vacuum pump; 17: air after cooler; 18: container for 17; 19: inspection glass; 20: oil level; 21: oil cooler; 22: contact thermometer for condenser; 23: contact thermometer for compressor; 24: water flow indicator.

Right: Figure 246. Diagram of steam-jet refrigeration plant.



Left: Figure 247. General arrangement of a 200-ton steam-jet plant.

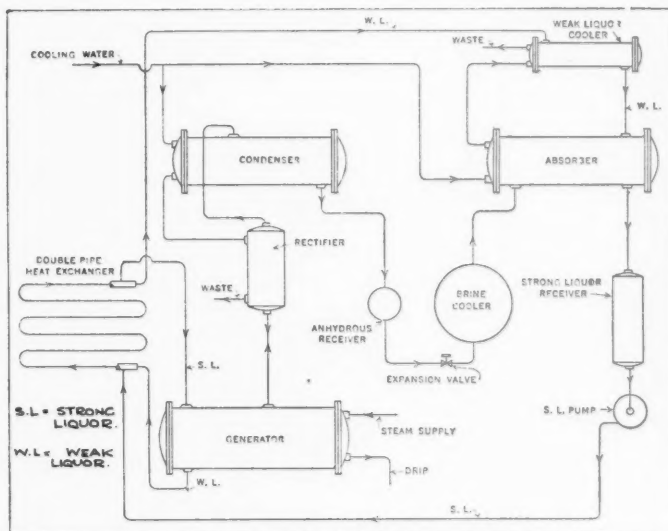


Figure 248. Diagram of ammonia absorption system.

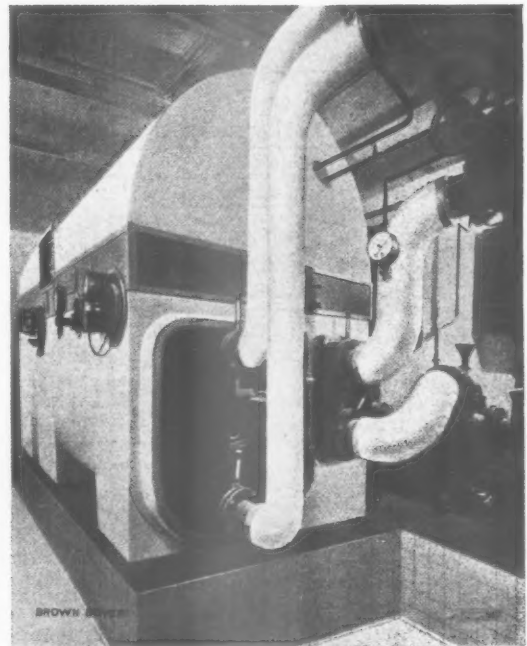


Figure 249. Typical centrifugal refrigeration plant.

one type of which is illustrated in Fig. 249, possesses many advantages for use with air conditioning systems. Like a centrifugal pump it maintains a

constant pressure head, and, therefore, a constant temperature head, almost regardless of load. Thus it automatically adjusts itself to varying cooling require-

ments, always maintaining a constant outlet temperature. With the piston type compressor the temperature varies with the load, unless hand regula-

tion or stop-and-start control is resorted to.

The refrigerants used with centrifugal compressors such as Ethylene Chloride (or dichlor-ethylene sometimes called dielene) are liquid at ordinary temperatures, are innocuous, transportable in drums instead of in high pressure cylinders, and operate under vacuum in the plant so that leakages are inward rather than outward.

Being mechanically balanced, the compressor presents less of a problem in vibration isolation than reciprocating plants.

The general arrangement, as will be seen from the figure, is compact by reason of the mounting of the evaporator and condenser in one unit with the compressor. Connecting pipes contain water only and losses and leakage are by this means materially reduced. It is only recently that a compressor of this type made in this country has been available.

An interesting type of refrigerator using water as the medium is that shown in Figs. 246 and 247. Its operation depends on the possibility of causing water to boil at low temperatures under high vacua. Thus, at 45 deg. F., water boils under a barometric pressure of .30 inches of mercury, equivalent to a vacuum of 29.62" mercury.

The water used is the same as that circulated to the washer so that all heat exchanging surface on the evaporator side, and expensive refrigerant, is avoided.

The heat input with this equipment is much greater than with the positive compression types owing to the inefficiency of jet compression and this calls for a greater amount of condensing water.

A variation of the same system, but using a centrifugal compressor in place of the steam jet compressor, has also been developed. It avoids the above mentioned disadvantage of high heat input. The great difficulty with both types is the maintenance of the extraordinarily high vacuum for long periods.

The refrigerants suitable for direct expansion into coils in the air-way are limited to CO<sub>2</sub> and Freon, the others all being objectionable owing to their smell or inflammability, or inefficiency if conveyed through long pipes.

It may be of interest to refer to the type of refrigerator used in small domestic appliances. Where these are operated by a motor they are invariably of the piston or positive compression type, and differ only from the larger plants in that the condenser is air cooled instead of water cooled. SO<sub>2</sub> is the most usual refrigerant.

Where of the non-motor type, i.e. "Electrolux" (electrically heated) or

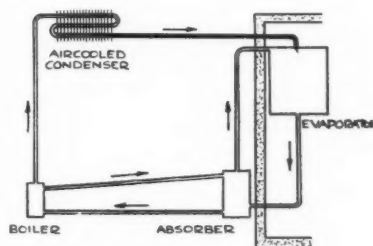


Figure 250. Diagram of motor-less refrigeration machine.

"Freezolux" (gas heated), use is made of the absorption system.

Fig. 250 shows the apparatus diagrammatically and the operation may be briefly described as follows:—

A mixture of ammonia and water in the boiler is heated. The ammonia boils off and passes under pressure to the condenser, where, on being cooled by the air in contact with the fins, the vapour condenses to liquid ammonia, and flows to the evaporator.

Owing to the drop of pressure in the evaporator the ammonia (in the presence of hydrogen) is able to evaporate and extract heat from the contents of the refrigerator.

The mixture of ammonia and hydrogen then passes to the absorber, where the former is absorbed in a weak solution of ammonia from the boiler, and the latter passes back to the evaporator. The ammoniacal solution then passes back to the boiler in its original condition and the cycle recommences.

This system has not been applied to air conditioning partly because of the difficulty of preventing leaks of ammonia from a large plant, and partly owing to the much greater heat input and condenser water supply necessary as compared with the positive types.

## QUESTIONS THAT ARISE

### Dampness in a Bungalow

"Architects" write: "About twelve months ago we had occasion to ask your advice regarding dampness in a bungalow. The bungalow has 9 in. solid walls, and we formed the opinion that direct penetration of rain was taking place, and further that the trouble was being aggravated by excessive condensation to which the coldness of the wet external walls contributed.

"Early in the spring the walls were treated externally with a rendering of cement and sand gauged with lime. The

rendering was given a stippled finish and seems to have been a success; it is singularly free from shrinkage cracks, and we have reason to think that direct penetration has been stopped.

"Unfortunately the condensation trouble is as bad as ever, and we are puzzled as to the source of all the moisture which results in this unduly heavy condensation. Assuming that the site is provided with an efficient slab of good concrete, we are offering the following as the most probable explanation of the present condition of the bungalow, and we would be glad if you would give us your observations upon it.

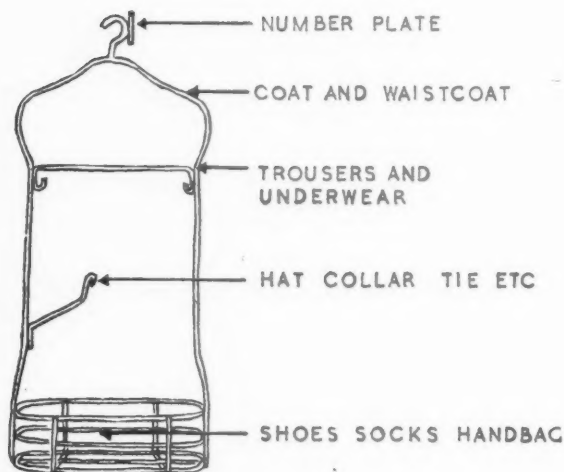
"We suggest that the rendering has entrapped a quantity of moisture in the walls, the only escape for which is now inwards. The speed with which it can evaporate is retarded by the trowelled face of the hard plaster which has been employed, so that the walls still contain a quantity of moisture and are still cold, and owing to the use of trowelled plaster, offer an ideal surface on which moisture can condense."

If it is certain that external penetration has been stopped, the continuing trouble must be due to internal condensation on cold walls. Undoubtedly trowelled finish encourages this, though it cannot cause it in the absence of the moist atmospheric state from which it arises. Bungalows—and particularly the bedrooms of bungalows—are singularly prone to damp walls, in situations where they are immersed in the low-lying moist air usual at certain seasons on all but the most well-drained soils. A house is less subject to this trouble for two reasons: firstly that the bedrooms are mounted above lower rooms in which there is usually some warmth causing internal circulation of air; and secondly because doors and windows on an upper storey can be and usually are left open with greater freedom. I have known several cases similar to that described, in which conditions were greatly improved by distempering the walls inside with a thick coat of heavy common distemper (not patent washable distemper but ordinary water-bound stuff of strongly absorbent character). Ventilation should also be carefully looked to, so as to secure cross currents of air in the affected rooms.

E. G.

### B.I.F. Exhibition

A large extension to the buildings used for the Engineering and Hardware Section of the British Industries Fair at Castle Bromwich, Birmingham, was approved last week by the Birmingham Chamber of Commerce which organizes this Section of the Fair in collaboration with the Department of Overseas Trade.



## TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

### Swimming-Pool Equipment

**N**EARLY all new swimming pools, whether open-air or closed, nowadays have their dressing arrangements planned on the locker system, which has many advantages over the "one bather—one box" plan. The arrangement is simple enough: each bather is provided with a small locker or suitcase in which he puts his clothes after changing, a numbered tally allowing him to regain his property after bathing.

The obvious advantage of this system is that dressing boxes are only occupied while bathers are actually changing, and this has become of greater importance in recent years, for visitors remain swimming, resting, or doing nothing at all for several hours at a time, while the ordinary dressing boxes would merely be acting as a rather extravagant form of storage space.

Lockers or suitcases have one or two disadvantages for clothes storage in that it is difficult or impossible to disinfect them, and space is necessarily restricted, which means that clothes are liable to be more than a little tangled. I was even offered an overgrown brown paper bag at one pool; very new and sanitary, but rough on hats.

An alternative means of clothes storage has now been evolved by James Sieber, and is illustrated in the headpiece to these notes. The idea is a simple and obvious one, but it seems to have several advantages: it keeps clothes in a reasonable and well-ventilated way, and the hangers, which are made up of electrically welded galvanized steel, can be easily disinfected.

Storage is arranged in a double-tier framework of galvanized tube built up with elbows and tees and 240 hangers can be kept in a space 13 ft. square, one attendant being capable of looking after 400 to 500 hangers. The proportion of hangers to

boxes may be anything from 5 to 1 to 11 to 1. Price works out to about 7s. 6d. per hanger.

### Mortice Locks

The ordinary mortice lock works well enough provided that it is fixed dead square in the door, but, as Messrs. Joseph Kaye and Sons point out, this does not happen as often as it should. The result is that the spindle does not project at right angles to the door, and the knobs or handles therefore bind on the roses, making the whole lock sticky in operation, with the possibility of binding handles.

Messrs. Kaye have therefore produced a lock which can be fixed considerably out of square without any unpleasant results. This they have done by making the "follow"—the part of the lock which is pierced by the spindle—in three separate pieces, so that the spindle is able to move through a considerable angle without binding. Even if the lock is fitted out of square it is only necessary to fix the knobs level.

Price, with 4 levers, is 9s. 6d.; if under a master key, 10s. This lock should, I think, be particularly useful, for the average lock spring has quite enough to do returning lever handles, and any improvement which will reduce the possibility of frictional hindrances seems to me very well worth while.

### Gas in the Country

It has for some years been quite common practice in the country districts of Germany to supply compressed gas in steel containers for houses which are beyond the reach of the ordinary supply system. Now the same system is available in this country under the name of Calor-Gas.

The gas is supplied in cylinders, compressed to 1½ atmospheres (about 23 lb. per square inch), at which pressure it is liquid. Pipe runs may be made smaller than with the usual coal gas supply, but it is suggested that, where there is a possibility of gas main extensions, it would be better to run

the piping at the full size and save extra expense at a change over.

Most of the ordinary coal-gas apparatus can be arranged to burn this fuel, which in cost works out about the same as coal gas in country districts. Two cylinders and a pressure regulator cost £3 5s., after which used cylinders are exchanged for fresh ones.

## Manufacturer's Item

### Roofing Tiles.

The Courtrai-du-Nord Tile Co., Ltd., have issued a new booklet on roofing tiles giving full schedule of the colours available and useful suggestions for laying and for proper specification. Technical data are given below:—

*Size.*—Overall, 11½ in. by 8½ in. Exposed surface, 9½ in. by 7½ in.

*Weight.*—Approx. 1 ton 13 cwt. per 1,000 tiles, 7 cwt. per 100 sq. ft., or 72 lb. per sq. yd.

*Cover.*—Approx., 208 tiles per 100 sq. ft., or 52 sq. yds. per 1,000 tiles.

*Gauge for Battens.*—The gauge will be approximately 9½ in., but it is necessary for the tiler to decide the gauge for himself after the tiles have been delivered on the job because it is important that the battens be spaced so that the tiles lie normally and easily clear the windstops of the tiles below.

*Size of Battens.*—1½ in. by ¾ in., with rafters 4 in. by 2 in. at usual spacing.

*Ridge/Hip Tiles.*—"Saddleback" butt to butt.

*Glass Tiles.*—Supplied to match.

## THE BUILDINGS ILLUSTRATED

**NATIONAL LIBRARY FOR THE BLIND** (pages 801-803). The general contractors were Holloway Bros., Ltd., who were also responsible for the reinforced concrete work on the Considère system. The principal sub-contractors and suppliers included:—

*Structure.*—Fredk. Braby & Co., Ltd., metal staircase; Luxfer, Ltd., pavement lights; Highways Construction Co., Ltd., asphalt; C. E. Westead, Ltd., metal windows and skylights; Thomas Lawrence and Sons, facing bricks.

*Finishes.*—John Wood, Ltd., linoleum floor coverings; Stic B. Paint Sales, Ltd., treatment of wall panels.

*Equipment.*—Shanks & Co., Ltd., sanitary fittings; British Vacuum Cleaner and Engineering Co., Ltd., vacuum cleaning; The Birmingham Guild, Ltd., external sign; Bainbridge Reynolds, Ltd., wrought iron balustrading; Dictograph Telephones, Ltd., house telephones; Durbin and Sons, sanitary and hot water engineering; Jacob, White & Co., Ltd., electrical work; Roneo, Ltd., metal partitions and office equipment; James Ritchie and Sons, lifts; Yannedis & Co., Ltd., door furniture.

**HOUSE AT HOLLAND - ON - SEA** (pages 818-819). The general contractors were Messrs. Evans and Munn, Ltd. The principal sub-contractors and suppliers included:—

D. Anderson and Sons, Ltd., special roofings and roofing felt; The Crittall Manufacturing Co., Ltd., casements and window furniture; W. N. Froy and Sons, Ltd., grates and sanitary fittings; Ideal Boilers and Radiators, Ltd., "Ideal" boilers; Parker, Winder and Achurch, Ltd., door furniture.



## THE WEEK'S BUILDING NEWS

## LONDON &amp; DISTRICTS (15-MILES RADIUS)

**BARKING.** *Factory, etc.* Plans passed by the Corporation: Factory, River Road, for Mr. J. Wormell; shop, Gale Street, for Grays Co-operative Society, Ltd.; additions, 60 Upney Lane, for Mr. A. Coe; house, North Street, for Mr. S. Bloomfield; factory, East Street, for Mr. G. Law; house, London Road, for Mr. T. O'Gorman.

**CAMBERWELL.** *Redevelopment.* The L.C.C. is to redevelop the Herring Street area, Camberwell, at a cost of £17,000.

**CHELSEA.** *Flats, etc.* Plans passed by the B.C.: Block of flats, Sloane Avenue and Makin Street, for Messrs. Val Myer and Watson-Hart; alterations, 150 Pavilion Road, for Messrs. H. W. Wensell, Ltd.; house, 70-2 Church Street, for Messrs. Adams, Thompson and Fry.

**EALING.** *Estate Development.* Messrs. Colcutt and Hamp have prepared lay-out plans for the further development of the Drayton Bridge Estate by the Housing Corporation of Great Britain, Ltd.

**EALING.** *Shops and Flats.* Mr. A. C. Geen has prepared plans for the erection of 22 shops, with flats over, at Hangar Lane and Queen's Drive.

**EDGWARE.** *Restaurant.* Messrs. Welch and Lander are to erect a restaurant in Station Road, Edgware, 2.

**EDMONTON.** *Shop and Flats.* Mr. J. A. Dartnall is to erect shops and flats in Cambridge Road, Edmonton.

**ENFIELD.** *Houses.* Mr. Alfred Williamson is to erect 34 houses at The Ridgeway, Enfield.

**ENFIELD.** *Civic Buildings.* The U.D.C. has agreed to the erection of civic buildings on the Church Street site.

**ENFIELD.** *Houses, etc.* Plans passed by the U.D.C.: Six houses, Turkey Street, for Messrs. Hilbery Chaplin, Ltd.; seven houses, Fotheringham Road, for Mr. W. Weenen; 624 houses, South Lodge estate, for Messrs. John Laing and Son, Ltd.; two houses, Green Dragon Lane, for Mr. G. W. Newman; three houses, Parsonage Lane, for Messrs. W. Goodchild & Co.; three shops, Lavender Hill, and 26 houses, Brookside Gardens for Mr. C. V. Cable; five houses, Ridgeway, for Mr. F. W. Palmer; factory extension, Cambridge Road, for Chase Side Engineering Co.; four houses, Beech Hill Avenue, for Mr. Noel Rees; 141 houses, off Green Street, for Messrs. McManus & Co.; two shops, Larmans Road, for Mr. H. C. Leach; 12 houses, Lincoln Way, for Mr. H. A. Oram; eight flats, off Grangeway, for Mr. A. W. Amos.

**FULHAM.** *Maternity Home and Clinic.* The Borough Surveyor has prepared plans for a new Maternity Home and Clinic, proposed to be erected on the site of 5 and 7 Parsons Green.

**FULHAM.** *Shops and Flats.* Mr. A. F. Benjamin, F.R.I.B.A., has prepared plans for the proposed erection of a block of shops and flats with a frontage to North End Road and Dawes Road.

**GREENFORD.** *Estate Development.* Messrs. Wallis Gilbert and Partners, 15 Elizabeth Street, S.W.1, are the architects for the proposed development of part 3 of the Greenford Green Farm Estate, by Messrs. Joseph Nathan & Co., Ltd.

**GREENWICH.** *Redevelopment.* The L.C.C. is to redevelop the Haddo Street area, Greenwich, at a cost of £53,000.

**HARROW.** *Development.* The U.D.C. has approved the development of Marlborough Hill by Messrs. Lambert and Cooke Estates.

**HARROW.** *Flats.* Mr. A. J. Butcher is to erect a block of flats in Edgware Road, Harrow.

**HENDON.** *Shops and Flats.* Mr. F. Howkins is to erect shops and flats in Hale Lane, Hendon.

**ISLEWORTH.** *Factory.* Messrs. Allnatt, Ltd., are to erect a factory at Great West Road, Isleworth.

**MIDDLESEX.** *Extensions.* The Middlesex C.C. has approved a revised scheme for the extension

of the nurses' home at the Central Middlesex Hospital, at a cost of £23,847.

**MOTtingham.** *Church.* The L.C.C. has sold a site to the Church of England authorities in St. Kenerne Road, Mottingham, for the erection of a church.

**MUSWELL HILL.** *Flats.* Messrs. Morris Joseph are to erect 30 flats on the Monkswell site, Colney Hatch Lane, Muswell Hill.

## SOUTHERN COUNTIES

**BEXLEY.** *Central School.* The Kent Education Committee has purchased a site at Dartford Road, Bexley, for the erection of a central school.

**BROMLEY.** *Courthouse, etc.* The Kent C.C. is to provide a new courthouse and offices at Bromley.

**CHARTHAM.** *Hospital, etc.* The Kent C.C. is to erect an admission hospital and extend the nurses' home at the Chartham institution, at a cost of £62,150, from plans prepared by Mr. J. L. Seaton Dahl.

## SOUTH-WESTERN COUNTIES

**PAIGNTON.** *School.* The Devon Education Committee has purchased land in Higher Polsham Road, Paignton, for the erection of a school.

**TORQUAY.** *Houses, etc.* Plans passed by the Corporation: Seven houses, Moor Lane, for Mr. H. W. Best; four houses, Pine View Gardens, for Messrs. Cruse and Bridgman; six houses, Newton Road, for Mr. E. G. Milford; 12 houses, Shipway Park estate, for Mr. J. Lloyd; nine houses, Audley Avenue, for Messrs. S. Hawkins and Son; two houses, Woodville Road, for Mr. W. H. Seaward; seven shops, Sherwell Valley, for Chelston Building Co.; new wing, Stoolley Knowle Convent, Anstey's Cove Road, for Sister Superior; two houses, Barton Hill Road, for Mr. A. J. Colbourne; five houses, Meadfoot Road, for Messrs. A. Matthews, Ltd.; 19 houses, Newton Road, for Mr. B. W. Stedham; 107 houses, Thatcher Rock estate, for Messrs. Dashwood and Partners.

## MIDLAND COUNTIES

**BIDFORD-ON-AVON.** *School.* The Warwickshire Education Committee is to erect a seniors school at Bidford-on-Avon at a cost of £11,200.

**KENILWORTH.** *School.* The Warwickshire Education Committee is to erect a junior school for 200 at Kenilworth.

**ORSTON.** *School.* The Notts Education Committee has acquired a site at Orston for the erection of an elementary school.

**SOLIHULL.** *Flats.* Mr. W. E. Wright is to erect a block of flats on the Warwick main road at Solihull.

## EASTERN COUNTIES

**BUCKHURST HILL.** *School.* The Essex Education Committee has approved plans for the erection of a county boys' school at Buckhurst Hill, at a cost of £45,236.

**COLCHESTER.** *Houses, etc.* Plans passed by the Corporation: Two houses, Ipswich Road, for Messrs. H. G. Pryke and Sons; seven houses, Cowdray Avenue, for Mr. E. Baillie; garage and stores, Hawkins Road, for Messrs. Duncan Clark and Beckett; eight houses, Harwich Road, for Mr. E. E. Chamberlain; new premises, Head Street, for Boots Pure Drug Co., Ltd.; alterations, Methodist Church, Culver Street, for Mr. T. F. Winterburn.

## NORTHERN COUNTIES

**HULL.** *Branch Fire Station.* The Corporation has selected a site on the Grove House estate for the erection of a branch fire station.

**HULL.** *Shops.* The Corporation has approved plans by the city architect for the erection of shops in Cranbrook Avenue and Greenwood Avenue.

**HULL.** *Extensions.* Messrs. F. Robinson & Co., Ltd., are to extend their works in Southcotes Lane, Hull.

**SHEFFIELD.** *Houses, etc.* Plans passed by the Corporation: 20 houses, off Ridgehill Avenue, for Hallowell Estates, Ltd.; six houses, Norton Lane, for Mr. F. Talbot; five houses, Folds Lane, for Mr. A. Yearley; four houses, Norton Lees Crescent, for Messrs. Bonser Bros.; six houses, Kent Road, for Mr. W. H. Killner; house, shop and factory, Middlewood Road, for Messrs. Willis and Vear; five houses, Basford Street, for Mr. H. Gadd; 20 houses, Marston Crescent, for Mr. C. L. Marcroft; six shops and 17 flats, Infirmary Road, for Mr. E. Roper; four flats, St. Thomas Road, for Mr. L. R. Langley; 10 houses, Glen View Road, for Messrs. Wright and Walton; eight houses, Richmond Road, for Messrs. E. and H. Oliver; 248 houses, Shiregreen Estate, for Corporation Estates Committee; two flats, two shops and café, Ridgeway Road, for Mr. E. H. Banks; two houses, Balmoral Road, for Mr. J. D. Lyon; two houses, Abbey Lane, for Mr. F. Crawshaw; 24 flats, Southey Avenue, for Graves Trust; factory and workshop, Cemetery Road, for Sheffield Co-operative Society, Ltd.; two houses, Sterndale Road, for Mr. C. W. Hill; four houses, Dransfield Road, for Mr. W. Croft; 45 houses, off Elm Lane, for Mr. S. G. Bailey; eight houses, Hurlfield Avenue, for Newhouses (Builders), Ltd.; house and shop, Cawdor Road, for Mr. J. H. Cam; six houses, Naylor Road, for Mr. H. Simpson; two houses, Langsett Avenue, for Mr. J. N. Reed; 10 houses, Firshill Avenue, for Messrs. Rhodes and Mitchell.

**WALLSEND.** *Library Premises.* The Corporation is negotiating for a site in Station Road for new central library premises.

**WALLSEND.** *Houses.* The Corporation has approved a scheme for the erection of 206 houses on the Westmoreland estate at a cost of £70,000.

**WALLSEND.** *Houses.* The Corporation is to erect 152 houses on the Bewicke estate at a cost of £53,040.

**YORK.** *Cinema.* Messrs. Odeon Cinemas, Ltd., have submitted plans to the Corporation for the erection of a cinema in Blossom Street, York.

**YORK.** *Houses, etc.* Plans passed by the Corporation: Eight houses, Abbotsford Road, for Messrs. Abbott and Son; two houses, Northcote Avenue, for Mr. W. W. Leggett; six houses, Mill Lane, for Messrs. Sorrell and Scaife; four houses, Trentholme Drive, for Mr. T. F. Clark; 12 houses, Ash Drive, for Mr. T. Gledhill; four houses, Windmill Drive, for Mr. F. Shepherd; two houses, Malton Road, for Messrs. Collins and Murray, Ltd.; seven houses, Greenclyffe Drive, for Messrs. R. J. Pulleyn and Sons; two houses, Woodlands Grove, for Messrs. W. Birch and Sons, Ltd.; four houses, Langdale Avenue, for Mr. R. A. Cattle; additions, York Minster and at 2 Precentor's Court, for Dean and Chapter; six houses, Elm Bank estate, for Messrs. Shepherd and Son, Ltd.; additions, Fishergate, for National Glass Works Ltd.; six houses, Bargain Lane, for Mr. F. M. Dixon; additions, Picture House, Coney Street, for York Cinema, Ltd.

## WALES

**CARDIFF.** *Houses.* The Corporation proposes to erect 3,600 houses on various sites in the city, and has asked the city engineer to prepare plans for the erection of 730 houses at Hancocks Field.

We regret that in the description of Hornsey Town Hall, published in our issue for November 14, we omitted to state that pitched roofs on these buildings were slated with Old Delabole Ordinary Grey-Green Randoms, which were supplied by Setchell & Sons, Ltd., and fixed by Roberts, Adlard & Co., Ltd.

# RATES OF WAGES

The initial letter opposite every entry indicates the grade under the Ministry of Labour schedule. The district is that to which the borough is assigned in the same schedule. Column I gives the rates for craftsmen; Column II for

labourers. The rate for craftsmen working at trades in which a separate rate maintains is given in a footnote. The table is a selection only. Particulars for lesser localities not included may be obtained upon application in writing.

|                |                      | I             |         | II      |                |   |               | I       |         | II             |                     |               |         | I       |                | II                  |               |         |         |
|----------------|----------------------|---------------|---------|---------|----------------|---|---------------|---------|---------|----------------|---------------------|---------------|---------|---------|----------------|---------------------|---------------|---------|---------|
|                |                      | s. d.         |         | s. d.   |                |   |               | s. d.   |         | s. d.          |                     |               |         | s. d.   |                | s. d.               |               |         |         |
| A <sub>1</sub> | ABERDARE ..          | S. Wales & M. | 1 5     | 1 1 1/2 | A <sub>2</sub> | EASTBOURNE ..                               | S. Counties   | 1 5     | 1 0 1/2 | A              | Northampton ..      | Mid. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Northampton ..      | Mid. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Aberdeen ..          | Scotland      | 1 6     | 1 1 1/2 | A <sub>1</sub> | Ebbw Vale ..                                | S. Wales & M. | 1 5 1/2 | 1 1 1/2 | A              | North Staffs ..     | Mid. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | North Staffs ..     | Mid. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Abergavenny ..       | S. Wales & M. | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Edinburgh ..                                | Scotland      | 1 6     | 1 1 1/2 | A <sub>1</sub> | North Shields ..    | N.E. Coast    | 1 6     | 1 1 1/2 | A <sub>1</sub> | Norwich ..          | E. Counties   | 1 5 1/2 | 1 1 1/2 |
| A <sub>1</sub> | Abingdon ..          | S. Counties   | 1 4 1/2 | 1 0 1/2 | A <sub>1</sub> | E. Glamorgan-shire, Rhondda Valley District | S. Wales & M. | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Nottingham ..       | Mid. Counties | 1 6     | 1 1 1/2 | A              | Nuneaton ..         | Mid. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Accrington ..        | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Exeter ..                                   | S.W. Counties | 1 5     | 1 0 1/2 |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Addlestone ..        | S. Counties   | 1 4 1/2 | 1 0 1/2 | A <sub>1</sub> | Exmouth ..                                  | S.W. Counties | 1 4     | 1 0     |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Adlington ..         | N.W. Counties | 1 6     | 1 1 1/2 |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Airdrie ..           | Scotland      | 1 6     | 1 1 1/2 | A <sub>1</sub> | FALKESTONE ..                               | E. Counties   | 1 4 1/2 | 1 0 1/2 | A              | OAKHAM ..           | Mid. Counties | 1 4 1/2 | 1 0 1/2 | A              | Oldham ..           | N.W. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Aldeburgh ..         | E. Counties   | 1 2     | 10 1/2  | A <sub>1</sub> | Fleetwood ..                                | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Oldham ..           | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Oswestry ..         | N.W. Counties | 1 4 1/2 | 1 0 1/2 |
| A <sub>1</sub> | Altrincham ..        | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Folkestone ..                               | S. Counties   | 1 3 1/2 | 11 1/2  | A <sub>1</sub> | Oxford ..           | S. Counties   | 1 5 1/2 | 1 1 1/2 |                |                     |               |         |         |
| B <sub>1</sub> | Appleby ..           | N.W. Counties | 1 2 1/2 | 11 1/2  | A <sub>1</sub> | Frodingham ..                               | N.W. Counties | 1 6     | 1 1 1/2 |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Ashton-under-Lyne .. | N.W. Counties | 1 6     | 1 1 1/2 | B <sub>1</sub> | Frome ..                                    | S.W. Counties | 1 3     | 11 1/2  |                |                     |               |         |         |                |                     |               |         |         |
| B <sub>1</sub> | Aylesbury ..         | S. Counties   | 1 3 1/2 | 11 1/2  |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
|                |                      |               |         |         |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
| B <sub>1</sub> | BANBURY ..           | S. Counties   | 1 3 1/2 | 11 1/2  | A              | GATSFHEAD ..                                | N.E. Coast    | 1 6     | 1 1 1/2 | A <sub>1</sub> | Paisley ..          | Scotland      | 1 2 1/2 | 1 1 1/2 | A <sub>1</sub> | Pembroke ..         | S. Wales & M. | 1 2 1/2 | 1 1 1/2 |
| B <sub>1</sub> | Banger ..            | N.W. Counties | 1 3 1/2 | 11 1/2  | B              | Gillingham ..                               | S. Counties   | 1 4     | 1 0     | A              | Perth ..            | Scotland      | 1 6     | 1 1 1/2 | A <sub>1</sub> | Perth ..            | Scotland      | 1 6     | 1 1 1/2 |
| B <sub>1</sub> | Barnard Castle ..    | N.E. Coast    | 1 4 1/2 | 1 0 1/2 | A <sub>1</sub> | Glasgow ..                                  | Scotland      | 1 6 1/2 | 1 2     | A <sub>1</sub> | Peterborough ..     | E. Counties   | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Peterborough ..     | E. Counties   | 1 5 1/2 | 1 1 1/2 |
| A <sub>1</sub> | Barnsley ..          | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | Gloucester ..                               | S.W. Counties | 1 5     | 1 0 1/2 | A <sub>1</sub> | Plymouth ..         | S.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Plymouth ..         | S.W. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Barnstaple ..        | S.W. Counties | 1 4     | 1 0     | A <sub>1</sub> | Goole ..                                    | Yorkshire     | 1 5     | 1 0 1/2 | A <sub>1</sub> | Pontefract ..       | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | Pontefract ..       | Yorkshire     | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Barrow ..            | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Grantham ..                                 | Mid. Counties | 1 4 1/2 | 1 0 1/2 | A <sub>1</sub> | Pontypridd ..       | S. Wales & M. | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Pontypridd ..       | S. Wales & M. | 1 5 1/2 | 1 1 1/2 |
| A <sub>1</sub> | Barry ..             | S. Wales & M. | 1 6     | 1 1 1/2 | A <sub>1</sub> | Graveland ..                                | S. Counties   | 1 5     | 1 0 1/2 | A <sub>1</sub> | Portsmouth ..       | S. Counties   | 1 5     | 1 0 1/2 | A <sub>1</sub> | Portsmouth ..       | S. Counties   | 1 5     | 1 0 1/2 |
| A <sub>1</sub> | Basingstoke ..       | S.W. Counties | 1 3 1/2 | 11 1/2  | A <sub>1</sub> | Greenock ..                                 | Scotland      | 1 6     | 1 1 1/2 | A <sub>1</sub> | Preston ..          | N.W. Counties | 1 6     | 1 1 1/2 |                |                     |               |         |         |
| A <sub>1</sub> | Bath ..              | S.W. Counties | 1 5     | 1 0 1/2 | A <sub>1</sub> | Grimsby ..                                  | Yorkshire     | 1 6     | 1 1 1/2 |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Batley ..            | Yorkshire     | 1 6     | 1 1 1/2 | B              | Guildford ..                                | S. Counties   | 1 4     | 1 0     |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Bedford ..           | E. Counties   | 1 5     | 1 0 1/2 |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Berwick-on-Tweed ..  | N.E. Coast    | 1 5     | 1 0 1/2 |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
|                |                      |               |         |         |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Bewdley ..           | Mid. Counties | 1 5     | 1 0 1/2 | A              | HALIFAX ..                                  | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | READING ..          | S. Counties   | 1 5     | 1 0 1/2 | A <sub>1</sub> | Reading ..          | S. Counties   | 1 5     | 1 0 1/2 |
| B <sub>1</sub> | Bicester ..          | S. Counties   | 1 2 1/2 | 11 1/2  | A              | Hanley ..                                   | Mid. Counties | 1 6     | 1 1 1/2 | B              | Religate ..         | S. Counties   | 1 4     | 1 0     | B              | Religate ..         | S. Counties   | 1 4     | 1 0     |
| A <sub>1</sub> | Birkenhead ..        | N.W. Counties | 1 6     | 1 1 1/2 | A              | Harrogate ..                                | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | Retford ..          | Mid. Counties | 1 4 1/2 | 1 0 1/2 | A <sub>1</sub> | Retford ..          | Mid. Counties | 1 4 1/2 | 1 0 1/2 |
| A <sub>1</sub> | Birmingham ..        | Mid. Counties | 1 6     | 1 1 1/2 | A              | Hartlepool ..                               | N.E. Coast    | 1 6     | 1 1 1/2 | A <sub>1</sub> | Rhonda Valley ..    | S. Wales & M. | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Rhonda Valley ..    | S. Wales & M. | 1 5 1/2 | 1 1 1/2 |
| A <sub>1</sub> | Bishop Auckland ..   | N.E. Coast    | 1 5 1/2 | 1 1 1/2 | A              | Harwich ..                                  | E. Counties   | 1 4     | 1 0     | A              | Ripon ..            | Yorkshire     | 1 4 1/2 | 1 0 1/2 | A              | Ripon ..            | Yorkshire     | 1 4 1/2 | 1 0 1/2 |
| A <sub>1</sub> | Blackburn ..         | N.W. Counties | 1 6     | 1 1 1/2 | B <sub>1</sub> | Hastings ..                                 | S. Counties   | 1 3 1/2 | 11 1/2  | A              | Rochdale ..         | N.W. Counties | 1 6     | 1 1 1/2 | A              | Rochdale ..         | N.W. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Blackpool ..         | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Hatfield ..                                 | S. Counties   | 1 5     | 1 0 1/2 | B              | Rochester ..        | S. Counties   | 1 4     | 1 0     | B              | Rochester ..        | S. Counties   | 1 4     | 1 0     |
| A <sub>1</sub> | Blyth ..             | N.E. Coast    | 1 6     | 1 1 1/2 | A <sub>1</sub> | Hereford ..                                 | S.W. Counties | 1 4     | 1 0     | A <sub>1</sub> | Rusdon ..           | N.W. Counties | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Rusdon ..           | N.W. Counties | 1 5 1/2 | 1 1 1/2 |
| B <sub>1</sub> | Bognor ..            | S. Counties   | 1 3 1/2 | 11 1/2  | A <sub>1</sub> | Hertford ..                                 | E. Counties   | 1 5     | 1 0 1/2 | A <sub>1</sub> | Rugby ..            | Mid. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Rugby ..            | Mid. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Bolton ..            | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Heysham ..                                  | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Rugeley ..          | Mid. Counties | 1 5     | 1 0 1/2 | A <sub>1</sub> | Rugeley ..          | Mid. Counties | 1 5     | 1 0 1/2 |
| A <sub>1</sub> | Boston ..            | Mid. Counties | 1 4 1/2 | 1 0 1/2 | A              | Howden ..                                   | N.E. Coast    | 1 6     | 1 1 1/2 | A              | Runcorn ..          | N.W. Counties | 1 6     | 1 1 1/2 |                |                     |               |         |         |
| A <sub>1</sub> | Bournemouth ..       | S. Counties   | 1 5     | 1 0 1/2 | A              | Huddersfield ..                             | Yorkshire     | 1 6     | 1 1 1/2 |                |                     |               |         |         |                |                     |               |         |         |
| B <sub>1</sub> | Bovey Tracey ..      | S.W. Counties | 1 3     | 11 1/2  | A              | Hull ..                                     | Yorkshire     | 1 6     | 1 1 1/2 |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Bradford ..          | Yorkshire     | 1 6     | 1 1 1/2 |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Brentwood ..         | E. Counties   | 1 5 1/2 | 1 1 1/2 |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Bridgend ..          | S. Wales & M. | 1 6     | 1 1 1/2 | A              | ILKELEY ..                                  | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | ST. ALBANS ..       | E. Counties   | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | St. Albans ..       | E. Counties   | 1 5 1/2 | 1 1 1/2 |
| A <sub>1</sub> | Bridgwater ..        | S.W. Counties | 1 4     | 1 0     | A <sub>1</sub> | Immingham ..                                | Mid. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | St. Helena ..       | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | St. Helena ..       | N.W. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Bridlington ..       | Yorkshire     | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Ipswich ..                                  | E. Counties   | 1 5     | 1 0 1/2 | B <sub>1</sub> | Salisbury ..        | S.W. Counties | 1 3     | 11 1/2  | B <sub>1</sub> | Salisbury ..        | S.W. Counties | 1 3     | 11 1/2  |
| A <sub>1</sub> | Brighouse ..         | Yorkshire     | 1 6     | 1 1 1/2 | B <sub>1</sub> | Ile of Wight ..                             | S. Counties   | 1 3     | 11 1/2  | A <sub>1</sub> | Scarborough ..      | Yorkshire     | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Scarborough ..      | Yorkshire     | 1 5 1/2 | 1 1 1/2 |
| A <sub>1</sub> | Brighton ..          | S. Counties   | 1 6     | 1 1 1/2 |                |   |               |         |         | A <sub>1</sub> | Scunthorpe ..       | Mid. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Scunthorpe ..       | Mid. Counties | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Bristol ..           | S.W. Counties | 1 6     | 1 1 1/2 |                |   |               |         |         | A <sub>1</sub> | Sheffield ..        | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | Sheffield ..        | Yorkshire     | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Brixham ..           | S.W. Counties | 1 3     | 11 1/2  | A              | JARROW ..                                   | N.E. Coast    | 1 6     | 1 1 1/2 | A <sub>1</sub> | Shipley ..          | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | Shipley ..          | Yorkshire     | 1 6     | 1 1 1/2 |
| A <sub>1</sub> | Bromsgrove ..        | Mid. Counties | 1 5     | 1 0 1/2 | A <sub>1</sub> | KENILWORTH ..                               | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | Shrewsbury ..       | Mid. Counties | 1 5     | 1 0 1/2 | A <sub>1</sub> | Shrewsbury ..       | Mid. Counties | 1 5     | 1 0 1/2 |
| B <sub>1</sub> | Bromyard ..          | Mid. Counties | 1 2 1/2 | 11 1/2  | A <sub>1</sub> | Kendal ..                                   | N.W. Counties | 1 4 1/2 | 1 0 1/2 | A <sub>1</sub> | Skipton ..          | Yorkshire     | 1 5     | 1 0 1/2 | A <sub>1</sub> | Skipton ..          | Yorkshire     | 1 5     | 1 0 1/2 |
| A <sub>1</sub> | Burnley ..           | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Kewick ..                                   | N.W. Counties | 1 4 1/2 | 1 0 1/2 | A <sub>1</sub> | Slough ..           | S. Counties   | 1 5     | 1 0 1/2 | A <sub>1</sub> | Slough ..           | S. Counties   | 1 5     | 1 0 1/2 |
| A <sub>1</sub> | Burslem ..           | Mid. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Kettering ..                                | Mid. Counties | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Solihull ..         | Mid. Counties | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Solihull ..         | Mid. Counties | 1 5 1/2 | 1 1 1/2 |
| A <sub>1</sub> | Burton-on-Trent ..   | Mid. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Kidderminster ..                            | Mid. Counties | 1 5     | 1 0 1/2 | A <sub>1</sub> | Southampton ..      | S. Counties   | 1 5     | 1 0 1/2 | A <sub>1</sub> | Southampton ..      | S. Counties   | 1 5     | 1 0 1/2 |
|                |                      |               |         |         | B <sub>1</sub> | King's Lynn ..                              | E. Counties   | 1 3 1/2 | 11 1/2  | A <sub>1</sub> | Southend-on-Sea ..  | E. Counties   | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Southend-on-Sea ..  | E. Counties   | 1 5 1/2 | 1 1 1/2 |
|                |                      |               |         |         |                |   |               |         |         |                |                     |               |         |         |                |                     |               |         |         |
| A <sub>1</sub> | Bury ..              | N.W. Counties | 1 6     | 1 1 1/2 | A              | LANCASTER ..                                | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Southport ..        | N.W. Counties | 1 6     | 1 1 1/2 | A <sub>1</sub> | Southport ..        | N.W. Counties | 1 6     | 1 1 1/2 |
| A              | Buxton ..            | N.W. Counties | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Leamington ..                               | Mid. Counties | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | S. Shields ..       | N.E. Coast    | 1 6     | 1 1 1/2 | A <sub>1</sub> | S. Shields ..       | N.E. Coast    | 1 6     | 1 1 1/2 |
|                |                      |               |         |         | A <sub>1</sub> | Leeds ..                                    | Yorkshire     | 1 6     | 1 1 1/2 | A <sub>1</sub> | Stafford ..         | Mid. Counties | 1 5 1/2 | 1 1 1/2 | A <sub>1</sub> | Stafford ..         | Mid. Counties | 1 5 1/2 | 1 1 1/2 |
|                |                      |               |         |         | A              | Leek ..                                     | Mid. Counties | 1 6     | 1 1 1/2 | A              | Stirling ..         | Scotland      | 1 6     | 1 1 1/2 | A              | Stirling ..         | Scotland      | 1 6     | 1 1 1/2 |
|                |                      |               |         |         | A              | Leicester ..                                | Mid. Counties | 1 6     | 1 1 1/2 | A              | Stockport ..        | N.W. Counties | 1 6     | 1 1 1/2 | A              | Stockport ..        | N.W. Counties | 1 6     | 1 1 1/2 |
|                |                      |               |         |         | A              | Leigh ..                                    | N.W. Counties | 1 6     | 1 1 1/2 | A              | Stockton-on-Tees .. | N.E. Coast    | 1 6     | 1 1 1/2 | A              | Stockton-on-Tees .. | N.E. Coast    | 1 6     | 1 1 1/2 |
|                |                      |               |         |         | B              | Lewes ..                                    | S. Counties   | 1 2 1/2 | 11      |                |                     |               |         |         |                |                     |               |         |         |

## CURRENT PRICES

The wages are the standard Union rates of wages payable in London at the time of publication. The prices given below are for materials of good quality and include delivery to site in Central London area, unless otherwise stated. For delivery outside this area, adjust-

ment should be made for the cost of transport. Though every care has been taken in its compilation, it is impossible to guarantee the accuracy of the list, and readers are advised to have the figures confirmed by trade inquiry. The whole of the information given is copyright.

## WAGES

|                  | per hour | s. | d.   |
|------------------|----------|----|------|
| Bricklayer       |          | 1  | 7½   |
| Carpenter        |          | 1  | 7½   |
| Joiner           |          | 1  | 7½   |
| Machinist        |          | 1  | 8    |
| Mason (Banker)   |          | 1  | 7½   |
| (Fixer)          |          | 1  | 8    |
| Plumber          |          | 1  | 7½   |
| Painter          |          | 1  | 6½   |
| Paperhanger      |          | 1  | 6½   |
| Glazier          |          | 1  | 7½   |
| Scaffolder       |          | 1  | 7½   |
| Timberman        |          | 1  | 3½   |
| Navy             |          | 1  | 2½   |
| General Labourer |          | 1  | 2½   |
| Lorryman         |          | 1  | 5½   |
| Crane Driver     |          | 1  | 5½   |
| Watchman         | per week | 2  | 10 0 |

## MATERIALS

## EXCAVATOR AND CONCRETOR

|  | per ton  | £  | s. | d. |
|--|----------|----|----|----|
| Grey Stone Lime  |          | 2  | 2  | 0  |
| Blue Lias Lime   |          | 1  | 10 | 6  |
| Hydrated Lime  |          | 3  | 0  | 9  |
| Portland Cement, in 4-ton lots (d/d site, including Paper Bags)        |          | 2  | 0  | 0  |
| Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags) |          | 2  | 6  | 0  |
| White Portland Cement, in 1-ton lots                                   |          | 8  | 15 | 0  |
| Thames Ballast   | per Y.C. | 6  | 3  | 3  |
| Crushed Ballast  |          | 6  | 9  | 9  |
| Building Sand  |          | 7  | 3  | 3  |
| Washed Sand  |          | 8  | 3  | 3  |
| Broken Brick   |          | 8  | 0  | 0  |
| Pan Breeze   |          | 10 | 3  | 3  |
| Coke Breeze  |          | 6  | 6  | 6  |

## DRAINLAYER

## BEST STONEWARE DRAIN PIPES AND FITTINGS

|                   | per F.R. | each | s. | d. | s. | d. |
|-------------------|----------|------|----|----|----|----|
| Straight Pipes    |          |      | 1  | 6  | 2  | 6  |
| Bends             |          |      | 1  | 9  | 2  | 6  |
| Taper Bends       |          |      | 3  | 6  | 3  | 3  |
| Rest Bends        |          |      | 4  | 3  | 6  | 3  |
| Single Junctions  |          |      | 3  | 6  | 5  | 3  |
| Double            |          |      | 4  | 9  | 6  | 3  |
| Straight channels | per F.R. |      | 1  | 6  | 2  | 6  |
| 1" Channel bends  | each     |      | 2  | 9  | 4  | 0  |
| Channel junctions |          |      | 4  | 6  | 6  | 6  |
| Channel tapers    |          |      | 2  | 9  | 4  | 0  |
| Yard gullies      |          |      | 6  | 9  | 8  | 9  |
| Interceptors      |          |      | 16 | 0  | 19 | 6  |
| IRON DRAINS:      |          |      |    |    |    |    |
| Iron drain pipe   | per F.R. |      | 1  | 6  | 2  | 6  |
| Bends             | each     |      | 5  | 0  | 10 | 6  |
| Inspection bends  |          |      | 9  | 0  | 15 | 0  |
| Single junctions  |          |      | 8  | 9  | 18 | 0  |
| Double junctions  |          |      | 13 | 6  | 30 | 0  |
| Lead Wool         | lb.      |      | 6  |    |    |    |
| Gaskin            |          |      | 5  |    |    |    |

## BRICKLAYER

|  | per M.   | £  | s. | d. |
|--|----------|----|----|----|
| Flettons   |          | 2  | 15 | 0  |
| Grooved do.  |          | 2  | 17 | 0  |
| Phorprea bricks  |          | 2  | 15 | 0  |
| Cellular bricks  |          | 2  | 15 | 0  |
| Stocks, 1st quality                                      |          | 4  | 11 | 0  |
| 2nd  |          | 4  | 2  | 6  |
| Blue Bricks, Pressed                                     |          | 8  | 17 | 6  |
| Wirecuts   |          | 7  | 17 | 6  |
| Brindles   |          | 7  | 0  | 0  |
| Bullnose   |          | 9  | 0  | 0  |
| Red Sand-faced Facings                                   |          | 6  | 18 | 6  |
| Red Rubbers for Arches                                   |          | 12 | 0  | 0  |
| Multicoloured Facings                                    |          | 7  | 10 | 0  |
| Luton Facings  |          | 7  | 10 | 0  |
| Phorprea White Facings                                   |          | 3  | 17 | 3  |
| Rustic Facings   |          | 3  | 12 | 3  |
| Midhurst White Facings                                   |          | 5  | 0  | 0  |
| Glazed Bricks, Ivory, White or Salt glazed, 1st quality: |          |    |    |    |
| Stretchers   |          | 21 | 0  | 0  |
| Headers  |          | 20 | 10 | 0  |
| Bullnose   |          | 27 | 10 | 0  |
| Double Stretchers  |          | 29 | 10 | 0  |
| Double Headers   |          | 26 | 10 | 0  |
| Glazed Second Quality, Less Buffs and Creams, Add        |          | 1  | 0  | 0  |
| Other Colours  |          | 5  | 10 | 0  |
| 2" Breeze Partition Blocks                               | per Y.S. | 1  | 7  |    |
| 3" " " "   |          | 1  | 10 |    |
| 4" " " "   |          | 2  | 1  |    |

## MASON

|  | per F.C. | s. | d. |
|--|----------|----|----|
| The following d/d F.O.R. at Nine Elms: |          |    |    |
| Portland stone, Whitbed                |          | 4  | 4½ |
| Basebed                                |          | 4  | 7½ |
| Bath stone                             |          | 2  | 10 |
| York stone                             |          | 6  | 6  |
| Sawn templates                         |          | 7  | 6  |
| Paving, 2"                             | F.S.     | 1  | 8  |
| 3"                                     |          | 2  | 6  |

## SLATER AND TILER

## First quality Bangor or Portmadoc slates d/d F.O.R. London station

|   | per M.  | £  | s. | d. |
|---|---------|----|----|----|
| 24" x 12" Duchesses   |         | 28 | 17 | 6  |
| 24" x 12" Marchionesses   |         | 24 | 10 | 0  |
| 20" x 10" Countesses  |         | 19 | 5  | 0  |
| 18" x 10" Viscountesses   |         | 15 | 10 | 0  |
| 18" x 9" Ladies   |         | 13 | 17 | 6  |
| Westmorland green (random sizes)                                  | per ton | 8  | 10 | 0  |
| Old Delabole slates d/d in full truck loads to Nine Elms Station: |         |    |    |    |
| 20" x 10" medium grey per 1,000 (actual)                          |         | 21 | 11 | 6  |
| " green   |         | 24 | 7  | 4  |
| Best machine roofing tiles  |         | 4  | 10 | 0  |
| Best hand-made do.  |         | 5  | 0  | 0  |
| Hips and valleys  | each    | 9½ |    |    |
| hand-made   |         | 10 |    |    |
| Nails, compo  | lb.     | 1  | 4  |    |
| copper  |         | 1  | 6  |    |

## CARPENTER AND JOINER

|                                       | per F.C.                | s. | d. |
|---------------------------------------|-------------------------|----|----|
| Good carcassing timber                |                         | 2  | 2  |
| Birch                                 | as 1" F.S.              | 9  |    |
| Deal, Joiner's                        |                         | 5  |    |
| 2nds                                  |                         | 4  |    |
| Mahogany, Honduras                    |                         | 1  | 3  |
| African                               |                         | 1  | 1  |
| Cuban                                 |                         | 2  | 6  |
| Oak, plain American                   |                         | 1  | 0  |
| Figured                               |                         | 1  | 3  |
| plain Japanese                        |                         | 1  | 3  |
| Figured                               |                         | 1  | 3  |
| Austrian wainscot                     |                         | 1  | 11 |
| English                               |                         | 1  | 0  |
| Pine, Yellow                          |                         | 4  |    |
| Oregon                                |                         | 4  |    |
| British Columbia                      |                         | 4  |    |
| Teak, Moulmein                        |                         | 1  | 3  |
| Burma                                 |                         | 1  | 2  |
| Walnut, American                      |                         | 2  | 3  |
| French                                |                         | 2  | 3  |
| Whitewood, American                   |                         | 1  | 1  |
| Deal floorings,                       | Sq.                     | 18 | 6  |
| " "                                   |                         | 1  | 6  |
| " "                                   |                         | 1  | 2  |
| " "                                   |                         | 1  | 5  |
| " "                                   |                         | 1  | 10 |
| Deal matchings                        |                         | 14 | 0  |
| " "                                   |                         | 15 | 6  |
| " "                                   |                         | 1  | 4  |
| Rough boarding                        |                         | 16 | 0  |
| " "                                   |                         | 18 | 0  |
| " "                                   |                         | 1  | 6  |
| Plywood, per ft. sup.                 |                         |    |    |
| Thickness                             |                         |    |    |
| Qualities                             | A B B B A B B B A B B B |    |    |
| Birch                                 |                         |    |    |
| 60 x 48 . 4 2½ 2 5 3 2½ 7 5 4 8 6 3   |                         |    |    |
| Chap Alder . 2 1½ 2 3½ 2 4 3 1½ 5 4½  |                         |    |    |
| Oregon Pine . 2 1½ 2 3½ 2 4 3 1½ 5 4½ |                         |    |    |
| Gaboon                                |                         |    |    |
| Mahogany 4 3½ 5 4½ 7 6½ 8 7           |                         |    |    |
| Figured Oak 6½ 5 7½ 5½ 10 8 0 1½ 9    |                         |    |    |
| Scotch glue                           | lb.                     | 8  |    |

## SMITH AND FOUNDER

## Tubes and Fittings:

(The following are the standard list prices, from which should be deducted the various percentages as set forth below.)

|                                 | 2"           | 3"      | 4"      | 6"      | 8"      | 10"     | 12"     | 14"     | 16"     | 18"     | 20"     |
|---------------------------------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Tubes, 2'-14' long, per ft. run | 4 5½         | 9½      | 11 1/10 | 12 1/10 | 13 1/10 | 14 1/10 | 15 1/10 | 16 1/10 | 17 1/10 | 18 1/10 | 19 1/10 |
| Pieces, 12"-23" long            | each 10 1/10 | 11 1/10 | 12 1/10 | 13 1/10 | 14 1/10 | 15 1/10 | 16 1/10 | 17 1/10 | 18 1/10 | 19 1/10 | 20 1/10 |
| 3"-11½" long                    |              | 7 9     | 1/3     | 1/8     | 3/4     |         |         |         |         |         |         |
| Long screws, 12"-23½" long      |              | 11 1/3  | 2/2     | 2/10    | 5/3     |         |         |         |         |         |         |
| 3"-M-1½" long                   |              | 8 10    | 1/3     | 1/11    | 3/6     |         |         |         |         |         |         |
| Bends                           |              | 8 11    | 1/7½    | 2/7½    | 5/2     |         |         |         |         |         |         |
| Springs not socketed            |              | 5 7     | 1/11½   | 1/11½   | 3/11    |         |         |         |         |         |         |
| Socket unions                   |              | 2/-     | 3/-     | 5/6     | 6/9     | 10/-    |         |         |         |         |         |
| Elbows, square                  |              | 10 1/1  | 1/6     | 2/2     | 4/3     |         |         |         |         |         |         |
| Tees                            |              | 1/-     | 1/3     | 1/10    | 2/6     | 5/1     |         |         |         |         |         |
| Crosses                         |              | 2/2     | 2/9     | 4/1     | 5/6     | 10/6    |         |         |         |         |         |
| Plain sockets and nipples       |              | 3 4     | 6       | 8       | 1/3     |         |         |         |         |         |         |
| Diminished sockets              |              | 4 6     | 9       | 1/-     | 2/-     |         |         |         |         |         |         |
| Flanges                         |              | 9 1/-   | 1/4     | 1/9     | 2/9     |         |         |         |         |         |         |
| Caps                            |              | 3½      | 5       | 8       | 1/-     | 2/-     |         |         |         |         |         |
| Backnuts                        |              | 2 3     | 5       | 6       | 1/1     |         |         |         |         |         |         |
| Iron main cocks                 |              | 1/6     | 2/3     | 4/2     | 5/4     | 11/6    |         |         |         |         |         |
| with brass plugs                |              | 4/-     | 7/6     | 10/-    | 21/-    |         |         |         |         |         |         |

## Discounts:

|       | Per cent. | Tubes.         | Per cent. | Fittings. |
|-------|-----------|----------------|-----------|-----------|
| Gas   | 65        | Galvanized gas | 52½       |           |
| Water | 61½       | water          | 47½       |           |
| Steam | 57½       | steam          | 42½       |           |
| Gas   |           | Galvanized gas | 47½       |           |
| Water |           | water          | 42½       |           |
| Steam |           | steam          | 37½       |           |

## SMITH AND FOUNDER—continued.

|   | per length | cwt. | s. | d.   |
|---|------------|------|----|------|
| Rolled steel joists cut to length                               |            | 12   | 9  |      |
| Mild steel reinforcing rods, 1"                                 |            | 10   | 6  |      |
| " "   |            | 10   | 3  |      |
| " "   |            | 10   | 0  |      |
| " "   |            | 9    | 6  |      |
| " "   |            | 9    | 6  |      |
| " "   |            | 9    | 6  |      |
| " "   |            | 9    | 6  |      |
| " "   |            | 9    | 6  |      |
| Cast-iron rain-water pipes of ordinary thickness metal. F.R.    |            | 8    | 10 |      |
| Shoes   | each       | 2    | 0  | 3    |
| Anti-splash shoes   |            | 4    | 6  | 8    |
| Boots   |            | 3    | 0  | 4    |
| Bends   |            | 2    | 7  | 3    |
| with access door  |            | 6    | 3  |      |
| Heads   |            | 4    | 0  | 5    |
| Swan-necks up to 9" offsets                                     |            | 3    | 9  | 6    |
| Plinth bends, 4½" to 6"   |            | 3    | 9  | 5    |
| Half-round rain-water gutters of ordinary thickness metal. F.R. |            | 5    | 6  |      |
| Stop ends   | each       | 6    | 6  |      |
| Angles  |            | 1    | 7  | 1 11 |
| Obtuse angles   |            | 2    | 0  | 3    |
| Outlets   |            | 1    | 9  | 2 3  |

## PLUMBER

|                              | per cwt. | s.   | d.       |
|------------------------------|----------|------|----------|
| Lead, milled sheets          |          | 26   | 3        |
| drawn pipes                  |          | 26   | 3        |
| soil pipe                    |          | 26   | 3        |
| scrap                        |          | 18   | 0        |
| Solder, plumbers'            | lb.      | 9½   |          |
| fine do.                     |          | 1    | 0        |
| Copper, sheet                |          | 8½   |          |
| tubes                        |          | 11   |          |
| L.C.C. soil and waste pipes: |          |      |          |
| Plain cast                   | F.R.     | 1 0  | 1 2 3 6  |
| Coated                       |          | 1 1  | 1 3 2 8  |
| Galvanized                   |          | 2 0  | 2 6 4 6  |
| Holderbats                   | each     | 3 10 | 4 0 4 9  |
| Bends                        |          | 3 9  | 5 3 10 3 |
| Shoes                        |          | 2 10 | 4 4 9 6  |
| Heads                        |          | 4 8  | 8 5 12 9 |

## PLASTERER

|                 | per ton | £  | s. | d. |
|-----------------|---------|----|----|----|
| Lime, chalk     |         | 2  | 5  | 0  |
| Plaster, coarse |         | 1  | 10 | 0  |
| fine            |         | 4  | 15 | 0  |
| Hydrated lime   |         | 3  | 0  | 9  |
| Sirapite        |         | 3  | 6  | 0  |
| Keene's cement  |         | 3  | 6  | 0  |
| Gothite Plaster |         | 3  | 6  | 0  |
| Pioneer Plaster |         | 3  | 6  | 0  |
| Thistle plaster |         | 3  | 6  | 0  |
| Sand, washed    | Y.C.    | 11 | 6  |    |
| Hair            | lb.     | 6  |    |    |
| Laths, sawn     | bundle  | 2  | 4  |    |
| rent            |         | 3  | 9  |    |
| Lath nails      | lb.     | 3  |    |    |

## GLAZIER

|  | per sq. ft. | s.       | d.  |
|--|-------------|----------|-----|
| Sheet glass, 21 oz., squares n/e 2 ft. s.F.S.                              |             | 2½       |     |
| 26 oz.   |             | 3        |     |
| Flemish, Arctic, Figures "white"   |             | 7        |     |
| Blazoned glasses   |             | 2        | 6   |
| Reeded; Cross Reeded   |             | 11       |     |
| Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite |             | 6        |     |
| Crown sheet glass (n/e 12 in. x 10 in.)                                    |             | 2        | 0   |
| Flashed opals (white and coloured)   |             | 1 0      | 2 0 |
| rough cast; rolled plate   |             | 5½       |     |
| wired cast; wired rolled   |             | 9½       |     |
| Georgian wired cast  |             | 11       |     |
| Polished plate, n/e 1 ft.  |             | 10 to 11 |     |
| " " 2  |             | 12 3     |     |
| " " over 2 ft.   |             | 12 9     |     |
| " " plate, n/e 1 ft.   |             | 13 7     |     |
| " " 2 ft.  |             | 13 11    |     |
| " " 3 ft.  |             | 14 7     |     |
| " " 4 ft.  |             | 15 0     |     |
| " " 5 ft.  |             | 15 7     |     |
| " " 6 ft.  |             | 16 0     |     |
| " " 7 ft.  |             | 16 6     |     |
| " " 8 ft.  |             | 17 0     |     |
| " " 9 ft.  |             | 17 6     |     |
| " " 10 ft.   |             | 18 0     |     |
| " " 11 ft.   |             | 18 6     |     |
| " " 12 ft.   |             | 19 0     |     |
| " " 13 ft.   |             | 19 6     |     |
| " " 14 ft.   |             | 20 0     |     |
| " " 15 ft.   |             | 20 6     |     |
| " " 16 ft.   |             | 21 0     |     |
| " " 17 ft.   |             | 21 6     |     |
| " " 18 ft.   |             | 22 0     |     |
| " " 19 ft.   |             | 22 6     |     |
| " " 20 ft.   |             | 23 0     |     |
| " " 21 ft.   |             | 23 6     |     |
| " " 22 ft.   |             | 24 0     |     |
| " " 23 ft.   |             | 24 6     |     |
| " " 24 ft.   |             | 25 0     |     |
| " " 25 ft.   |             | 25 6     |     |
| " " 26 ft.   |             | 26 0     |     |
| " " 27 ft.   |             | 26 6     | </  |



# CURRENT PRICES FOR MEASURED WORK

The following prices are for work to new buildings of average size, executed under normal conditions in the London area. They include establishment charges and

profit. While every care has been taken in its compilation, no responsibility can be accepted for the accuracy of the list. The whole of the information given is copyright.

| EXCAVATOR AND CONCRETOR  |          | £  | s. | d. |
|--|----------|----|----|----|
| Digging over surface n/e 12" deep and cart away  | Y.S.     | 2  | 9  |    |
| " to reduce levels n/e 5' 0" deep and cart away  | Y.C.     | 8  | 6  |    |
| " to form basement n/e 5' 0" and cart away   | "        | 9  | 0  |    |
| " " 10' 0" deep and cart away  | "        | 9  | 6  |    |
| " " 15' 0" deep and cart away  | "        | 10 | 0  |    |
| If in stiff clay   | add      | "  | 6  |    |
| If in underpinning   | "        | 4  | 0  |    |
| Planking and strutting to sides of excavation  | F.S.     | 1  | 0  |    |
| " to pier holes  | "        | 5  |    |    |
| " to trenches  | "        | 5  |    |    |
| " extra, only if left in   | "        | 3  |    |    |
| Hardcore, filled in and rammed   | Y.C.     | 10 | 0  |    |
| Portland cement concrete in foundations (6-1)  | "        | 1  | 6  | 0  |
| " " (4-2-1) underpinning   | "        | 1  | 12 | 6  |
| Finishing surface of concrete, space face  | Y.S.     | 1  | 16 | 0  |
|  |          | 7  |    |    |
| DRAINLAYER   |          | £  | s. | d. |
| Stoneware drains, laid complete (digging and concrete to be priced separately)   | F.R.     | 1  | 6  | 2  |
| Extra, only for bends  | Each     | 2  | 8  | 3  |
| " junctions  | "        | 3  | 9  | 4  |
| Gullies and gratings   | "        | 16 | 6  | 18 |
| Cast iron drains, and laying and jointing  | F.R.     | 4  | 9  | 6  |
| Extra, only for bends  | Each     | 10 | 6  | 15 |
| BRICKLAYER   |          | £  | s. | d. |
| Brickwork, Flettons in lime mortar   | Per Rod  | 26 | 10 | 0  |
| " " in cement  | "        | 27 | 12 | 6  |
| " Stocks in cement   | "        | 34 | 0  | 0  |
| " Blues in cement  | "        | 50 | 0  | 0  |
| Extra only for circular on plan  | "        | 2  | 0  | 0  |
| " backing to masonry   | "        | 1  | 10 | 0  |
| " raising on old walls   | "        | 2  | 0  | 0  |
| " underpinning   | "        | 5  | 10 | 0  |
| Fair Face and pointing internally  | F.S.     | 1  | 2  |    |
| Extra over fletton brickwork for picked stock facings and pointing   | "        | 1  | 2  |    |
| " " " red brick facings and pointing   | "        | 1  | 4  |    |
| " " " blue brick facings and pointing  | "        | 1  | 4  |    |
| " " " glazed brick facings and pointing  | "        | 7  | 6  |    |
| Tuck pointing  | "        | 3  |    |    |
| Weather pointing in cement   | "        | 3  |    |    |
| Slate dampcourse   | "        | 10 |    |    |
| Vertical dampcourse  | "        | 1  | 1  |    |
| ASPHALTER  |          | £  | s. | d. |
| 1/2" Horizontal dampcourse   | Y.S.     | 4  | 6  |    |
| 1/2" Vertical dampcourse   | "        | 6  | 9  |    |
| 1" paving or flat  | "        | 4  | 0  |    |
| 1" paving or flat  | "        | 5  | 6  |    |
| 1" x 6" skirting   | F.R.     | 1  | 0  |    |
| Angle fillet   | "        | 2  |    |    |
| Rounded angle  | "        | 2  |    |    |
| Cesspools  | Each     | 5  | 0  |    |
| MASON  |          | £  | s. | d. |
| Portland stone, including all labours, hoisting, fixing and cleaning down, complete  | F.C.     | 17 | 9  |    |
| Bath stone and do., all as last  | "        | 13 | 6  |    |
| Artificial stone and do.   | "        | 10 | 6  |    |
| York stone templates, fixed complete   | "        | 10 | 6  |    |
| " thresholds   | "        | 13 | 6  |    |
| " sills  | "        | 1  | 0  | 6  |
| SLATER AND TILER   |          | £  | s. | d. |
| Slating, Bangor or equal, laid to a 3" lap, and fixing with compo nails, 20" x 10"   | Sqr.     | 3  | 10 | 0  |
| Do., 18" x 9"  | "        | 3  | 7  | 0  |
| Do., 24" x 12"   | "        | 3  | 10 | 0  |
| Westmorland slating, laid with diminished courses  | "        | 6  | 0  | 0  |
| Tiling, best hand-made sand-faced, laid to a 4" gauge, nailed every fourth course  | "        | 3  | 0  | 0  |
| Do., all as last, but of machine-made tiles  | "        | 2  | 16 | 0  |
| 20" x 10" medium Old Delabole slating, laid to a 3" lap (grey)   | "        | 2  | 16 | 0  |
| " " " " (green)  | "        | 4  | 15 | 0  |
| CARPENTER AND JOINER   |          | £  | s. | d. |
| Flat boarded centering to concrete floors, including all strutting   | Sqr.     | 2  | 2  | 6  |
| Shuttering to sides and soffits of beams   | F.S.     | 7  |    |    |
| " to stanchions  | "        | 7  |    |    |
| " to staircases  | "        | 1  | 6  |    |
| Fit and fixing in wall plates, lintols, etc.   | F.C.     | 3  | 9  |    |
| " roofs  | "        | 6  | 6  |    |
| " trusses  | "        | 7  | 6  |    |
| " partitions   | "        | 8  | 6  |    |
| 1/2" deal sawn boarding and fixing to joists   | Sqr.     | 1  | 14 | 6  |
| 1" " " " " "   | "        | 1  | 17 | 6  |
| 1 1/2" " " " " "   | "        | 2  | 3  | 0  |
| Do. for 4" gauge tiling  | "        | 9  | 0  |    |
| Stout feather-edged tilting fillet   | F.R.     | 12 | 0  |    |
| Patent inodorous felt, 1 ply   | Y.S.     | 2  | 3  |    |
| " " " 2  | "        | 2  | 9  |    |
| " " " 3  | "        | 3  | 3  |    |
| Stout herringbone strutting to 9" joists   | F.R.     | 10 | 4  |    |
| 1" deal gutter boards and bearers  | F.S.     | 1  | 2  |    |
| 1 1/2" " " " " "   | "        | 1  | 6  |    |
| 1" deal wrought rounded roll   | F.R.     | 8  |    |    |
| 1" deal grooved and tongued flooring, laid complete, including cleaning off  | Sqr.     | 2  | 1  | 0  |
| 1 1/2" do.   | "        | 2  | 10 | 0  |
| 1 3/4" do.   | "        | 2  | 17 | 0  |
| 1" deal moulded skirting, fixed on, and including grounds plugged to wall  | F.S.     | 1  | 6  |    |
| 1 1/2" do.   | "        | 1  | 9  |    |
| CARPENTER AND JOINER—continued   |          | £  | s. | d. |
| 1 1/2" deal moulded sashes of average size   | F.S.     | 1  | 9  |    |
| 1 1/2" " " " " "   | "        | 1  | 11 |    |
| 1 1/2" deal cased frames double hung, of 6" x 3" oak sills, 1 1/2" pulley stiles, 1 1/2" heads, 1" inside and outside linings, 1 1/2" parting beads, and with brass faced axle pulleys, etc., fixed complete | "        | 3  | 7  |    |
| Extra only for moulded horns   | "        | 3  | 10 |    |
| 1 1/2" deal four-panel square, both sides, door  | F.S.     | 2  | 8  |    |
| 1 1/2" " " but moulded both sides  | "        | 2  | 4  |    |
| 4" x 3" deal, rebated and moulded frames   | F.R.     | 3  | 0  |    |
| 4 1/2" x 3 1/2" " " " " "  | "        | 1  | 0  |    |
| 1 1/2" deal tongued and moulded window board, on and including deal bearers  | F.S.     | 1  | 9  |    |
| 1 1/2" deal treads, 1" risers in staircases, and tongued and grooved together on and including strong fir carriages  | "        | 2  | 6  |    |
| 1 1/2" deal moulded wall strings   | "        | 2  | 1  |    |
| 1 1/2" " " outer strings   | "        | 2  | 4  |    |
| Ends of treads and risers housed to string   | Each     | 1  | 9  |    |
| 3" x 2" deal moulded handrail  | F.R.     | 1  | 3  |    |
| 1 1/2" x 1" deal balusters and housing each end  | Each     | 2  | 0  |    |
| 1 1/2" x 1 1/2" " " " " "  | "        | 2  | 9  |    |
| 4" x 3" deal wrought framed newels   | F.R.     | 1  | 3  |    |
| Extra only for newel caps  | Each     | 6  | 0  |    |
| Do., pendants  | "        | 6  | 0  |    |
| SMITH AND FOUNDER  |          | £  | s. | d. |
| Rolled steel joists, cut to length, and hoisting and fixing in position  | Per cwt. | 16 | 6  |    |
| Riveted plate or compound girders, and hoisting and fixing in position   | "        | 1  | 0  | 6  |
| Do., stanchions with riveted caps and bases and do.  | "        | 19 | 0  |    |
| Mild steel bar reinforcement, 1/2" and up, bent and fixed complete   | "        | 17 | 6  |    |
| Corrugated iron sheeting fixed to wood framing, including all bolts and nuts 20 g.   | F.S.     | 11 |    |    |
| Wrought-iron caulked and cambered chimney bars   | Per cwt. | 1  | 10 | 0  |
| PLUMBER  |          | £  | s. | d. |
| Milled lead and labour in flats  | cwt.     | 2  | 0  | 3  |
| Do. in flashings   | "        | 2  | 3  | 9  |
| Do. in covering to turrets   | "        | 2  | 9  | 3  |
| Do. in soakers   | "        | 1  | 15 | 9  |
| Labour to welded edge  | F.R.     | 3  |    |    |
| Open copper nailing  | "        | 3  |    |    |
| Close " "  | "        | 3  |    |    |
| Lead service pipe and fixing with pipe hooks   | s. d.    | 10 | 1  | 0  |
| Do. soil pipe and fixing with cast lead tacks  | s. d.    | 1  | 3  | 2  |
| Extra, only to bends   | Each     | 2  | 0  | 6  |
| Do. to stop ends   | "        | 6  | 8  | 9  |
| Boiler screws and unions   | "        | 3  | 3  | 3  |
| Lead traps   | "        | 3  | 9  | 5  |
| Screw down bib valves  | "        | 6  | 9  | 9  |
| Do. stop cocks   | "        | 7  | 0  | 9  |
| 4" east-iron 1/2-rd. gutter and fixing   | "        | 13 | 6  |    |
| Extra, only stop ends  | F.R.     | 1  | 0  |    |
| Do. angles   | Each     | 1  | 6  |    |
| Do. outlets  | "        | 2  | 9  |    |
| 4" dia. cast-iron rain-water pipe and fixing with ears cast on   | F.R.     | 1  | 2  |    |
| Extra, only for shoes  | Each     | 1  | 3  |    |
| Do. for plain heads  | "        | 5  | 6  |    |
| PLASTER AND TILING   |          | £  | s. | d. |
| Expanded metal lathing, small mesh   | Y.S.     | 2  | 0  |    |
| Do. in n/w to beams, stanchions, etc.  | "        | 2  | 9  |    |
| Lathing with sawn laths to ceilings  | "        | 1  | 3  |    |
| 1/2" screeding in Portland cement and sand or tiling, wood block floor, etc.   | "        | 1  | 5  |    |
| Do. vertical   | "        | 1  | 7  |    |
| Rough render on walls  | "        | 1  | 2  |    |
| Render, float and set in lime and hair   | "        | 1  | 9  |    |
| Render and set in Sirapite   | "        | 1  | 11 |    |
| Render, backing in cement and sand, and set in Keene's cement  | "        | 8  | 9  |    |
| Extra, only if on lathing  | "        | 4  |    |    |
| Keene's cement, angle and arris  | F.R.     | 6  |    |    |
| Arris  | "        | 1  |    |    |
| Rounded angle, small   | "        | 3  |    |    |
| Plain cornices in plaster, including dubbing out, per 1" girth   | "        | 1  | 1  |    |
| 1" granolithic pavings   | Y.S.     | 3  | 6  |    |
| 1 1/2" " " " " "   | "        | 4  | 6  |    |
| 6" x 6" white glazed wall tiling and fixing on prepared screed   | "        | 17 | 6  |    |
| 9" x 3" " " " " "  | "        | 1  | 2  | 6  |
| Extra, only for small quadrant angle   | F.R.     | 8  |    |    |
| GLAZIER  |          | £  | s. | d. |
| 31 oz. sheet glass and glazing with putty  | F.S.     | 6  |    |    |
| 26 oz. do. and do.   | "        | 7  |    |    |
| Flemish, Arctic Figured (white) and glazing with putty   | "        | 1  | 1  |    |
| Cathedral glass and do.  | "        | 1  | 2  |    |
| Glazing only, British polished plate   | "        | 7  |    |    |
| Extra, only if in beads  | "        | 2  |    |    |
| Washleather  | F.R.     | 4  |    |    |
| PAINTER  |          | £  | s. | d. |
| Clearcolle and whiten ceilings   | Y.S.     | 6  |    |    |
| Do. and distemper walls  | "        | 9  |    |    |
| Do. with washable distemper  | "        | 1  | 1  |    |
| Knot, stop, prime and paint four coats of oil colour on plain surfaces   | "        | 3  | 3  |    |
| Do. on woodwork  | "        | 3  | 6  |    |
| Do. on steelwork   | "        | 3  | 0  |    |
| Do. and brush grain and twice varnish  | "        | 5  | 6  |    |
| Stain and twice varnish woodwork   | "        | 1  | 11 |    |
| Stain and wax-polish woodwork  | "        | 4  | 6  |    |
| French polishing   | F.S.     | 1  | 3  |    |
| Stripping off old paper  | Piece    | 2  | 0  |    |
| Hanging ordinary paper   | "        | 2  | 9  |    |



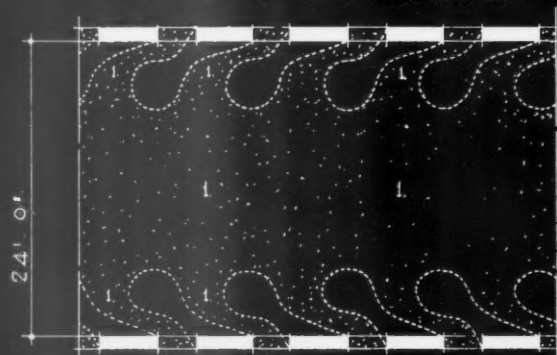




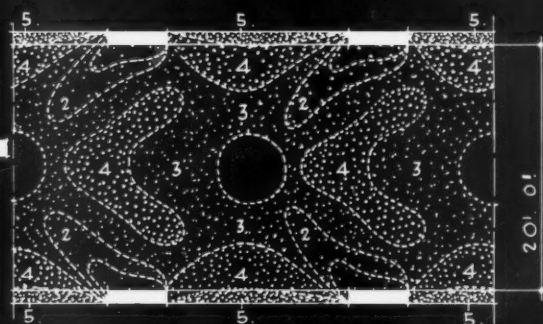
3-16

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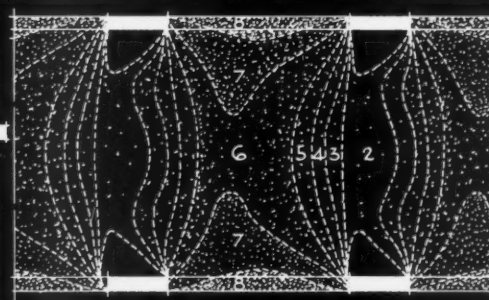
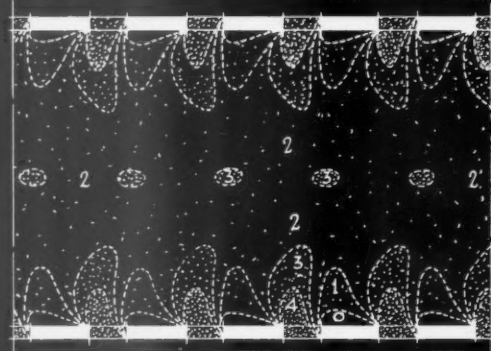
USUAL TYPE WARD:



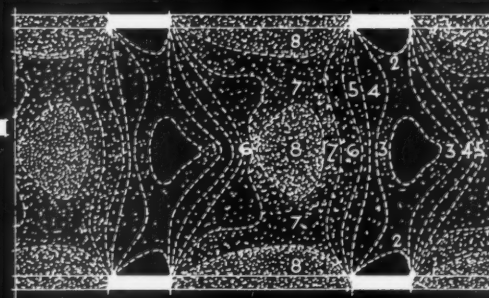
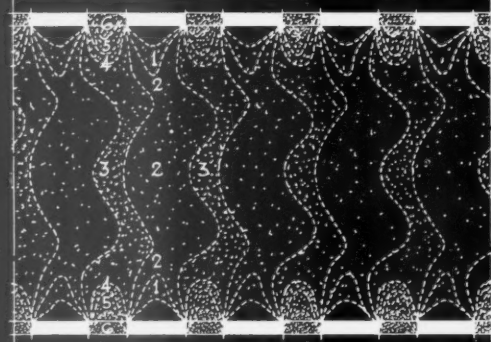
'VERANDAH' TYPE WARD:



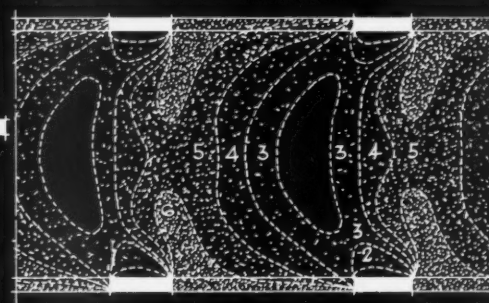
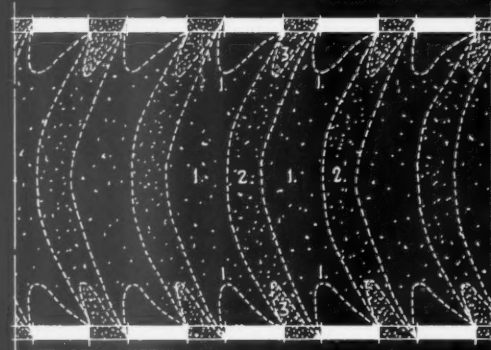
WINTER JANUARY 17<sup>TH</sup>



SPRING APRIL 15<sup>TH</sup>



SUMMER JULY 17<sup>TH</sup>



AUTUMN OCTOBER 16<sup>TH</sup>

Dotted lines indicate the number of possible hours sunshine per day.

INFORMATION SHEET: ORIENTATION OF WARDS.2.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS, ONE MONTAGUE PLACE BEDFORD SQUARE LONDON W.C.1.

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## INFORMATION SHEET

• 281 •

### HOSPITAL WARDS

(ii)

THE plans reproduced ~~overleaf~~ compare the maximum possible hours of sunshine in wards of the normal and verandah type and should be considered in conjunction with the relevant plans and sections published on Sheet No. 275. The amount of sunshine is indicated by the contour lines of equal insolation, which will be seen to be, on the average, fully three times as much in the verandah ward as in the older type.

The long sliding windows of the verandah type ward may be swung back, giving a complete open air effect without the need for balconies, which would shade the windows of the lower floors. Supervision of the wards is no more difficult than before since the upper panels of the partitions are glazed; the patient has the advantage of being in a small cubicle with only three other people, instead of in an open ward exposed to the gaze of nineteen others.

For further information see *The Orientation of Buildings*, 1933 R.I.B.A. Joint Committee Report. Price 5s.

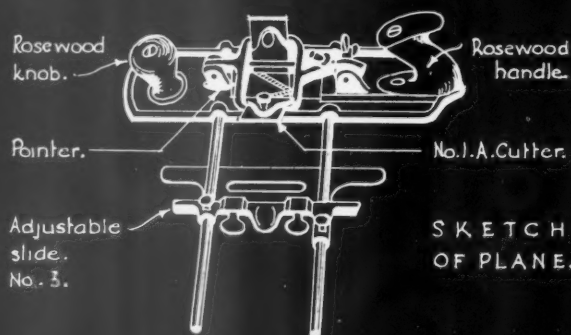






## THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

## THE FIBRE BOARD CUTTER:



## CUTTING BLADES:

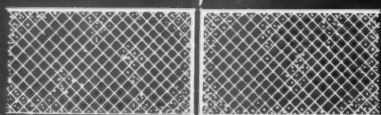
Resharpener type for making all cuts, & Razor Blade type for grooving. (Later discarded when dull.)

## SEPARATE CUTTERS, GUIDES, &amp; ATTACHMENTS.

- No. 1 A. Groove and Bevel cutter holder for resharpener type blades.
- No. 1. Groove and Bevel cutter holder for resharpener or for Razor Blade type blade.
- No. 2. Slitting cutter holder. (For entirely cutting through boards.)
- No. 3. Slide. (Attached to arms of plane to act as adjustable gauge.)
- No. 4. Bevel guide. (Attached to arms when making bevel cuts.)
- No. 5. Groove guide. (Attached to arms when making groove cuts.)
- No. 6. Ship lap cut attachment. (For ship lap jointing.)

## TYPES OF CUTS, GROOVES, BEVELS, MITRES, ETC. MADE WITH VARIOUS ATTACHMENTS ABOVE SQUARING BUTT EDGES.

Smooth Cut edges of fibre board.



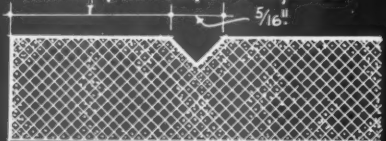
## ATTACHMENTS •

Slitting Cutter Holder No. 2.

REMARKS • Straight edge or the pointer may be used for alignment.

## GROOVING FROM SQUARE EDGE.

Distance from edge as required.

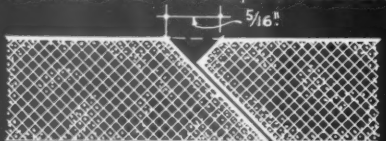


ATTACHMENTS • Groove & Bevel cutter Holder, Bevel Guide No. 4, & Slide No. 3.

REMARKS • For succeeding grooves use Groove Guide No. 5, for Bevel G. No. 4.

## GROOVED MITRE JOINTS.

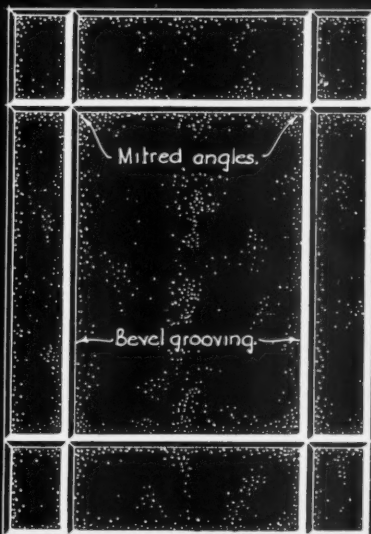
Joint made from two separate boards.



ATTACHMENTS • Groove and Bevel Cutter Holder, No. 1.

REMARKS • Straight edge required and R.H. and L.H. cutting blades.

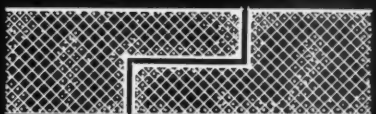
## GROOVING TO FORM PANELS:



Walls and ceilings may be divided into panels, etc. by bevel grooving.

## SHIP LAP JOINTS.

Length of lap to suit thickness, etc.

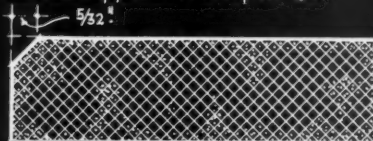


ATTACHMENTS • Slitting Holder No. 2, Ship Lap No. 6, and Slide No. 3.

REMARKS • The joint is made from two separate boards.

## BEVEL EDGING:

Bevels approximately at 45°.

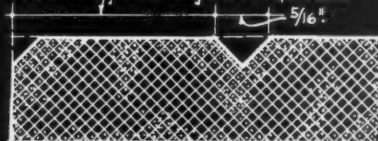


ATTACHMENTS • Groove and Bevel Cutter Holder, Bevel Guide No. 4, Slide No. 3.

REMARKS • Depth of mitre is adjusted by screw on holder.

## GROOVING FROM BEVELLED EDGE.

Distance from edge as required.

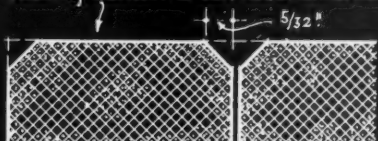


ATTACHMENTS • Groove & Bevel cutter Holder, Groove Guide No. 5, & Slide No. 3.

REMARKS • Squares and similar patterns may be formed with grooves.

## BEVEL-EDGED BATTENS.

Width of battens to suit requirements.



ATTACHMENTS • Bevel Cutter Holder No. 1, Bevel Guide No. 4, Grooving Guide No. 5, Slide No. 3, and Sliding Holder No. 2.

REMARKS • Board is bevelled after slitting.

Information from The Tentest Fibre Board Co. Ltd.

INFORMATION SHEET • CUTTING MOULDING AND JOINTING FIBRE BOARD •  
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WCI. Oscar A. Bayne.

THE ARCHITECTS' JOURNAL  
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INFORMATION SHEET

• 282 •

WALLBOARD

(CUTTING AND GROOVING)

This Sheet deals with the cutting and grooving of Tentest fibre board, with a tool especially designed for the purpose.

The especial value of the tool is that with it cuts can be made in a variety of ways, the surface and edges of the cuts being always clean and smooth. Bevelled edge joints may, therefore, be made on the job, a great advantage where special shapes and sizes of board are being used.

Grooves may be run to any pattern, the grooves matching the bevelled edge joints.

Previous Sheets:

This is the seventeenth of a series of Information Sheets dealing with Tentest Fibre Board, and its uses and value in architectural work ; previous Sheets in the series were :—

No. 58. The Board and its properties.

No. 59. Thermal Insulation of roofs.

No. 63. " " , miscellaneous construction.

No. 68. Sound Insulation of floors.

No. 73. Calculations of Condensation Conditions.

No. 89. Sound Insulation of Wood Floors.

No. 94. Sound-resisting Partitions.

No. 146. Sound Insulating of Patent Floors.

No. 170. Methods of Jointing (1).

No. 178. " " " (2).

No. 220. Cost Analysis of Insulation (1).

No. 230. " " " " (2).

No. 236. " " " " (3).

No. 250. " " " " (4).

No. 256. " " " " (5).

No. 265. " " " " (6).

Manufacturers : The Tentest Fibre Board Co.,  
Ltd.

Address : Astor House, Aldwych, London,  
W.C.2

Telephone : Holborn 8018

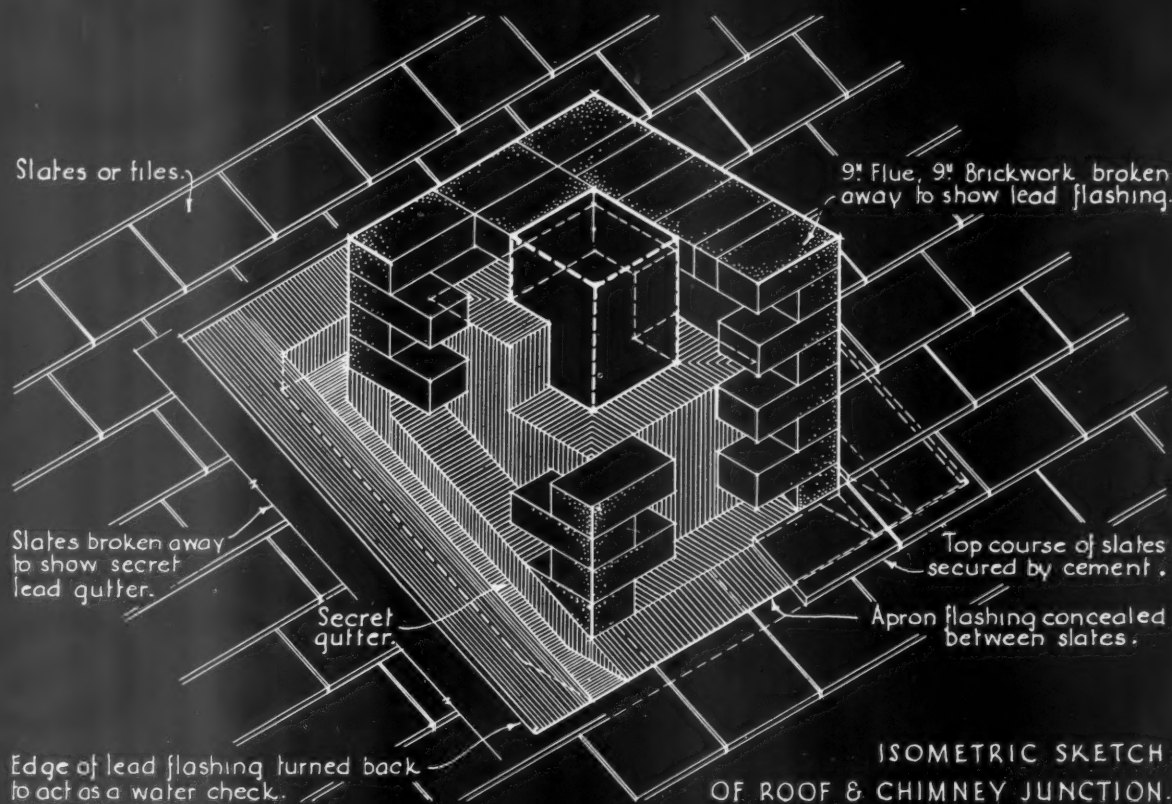




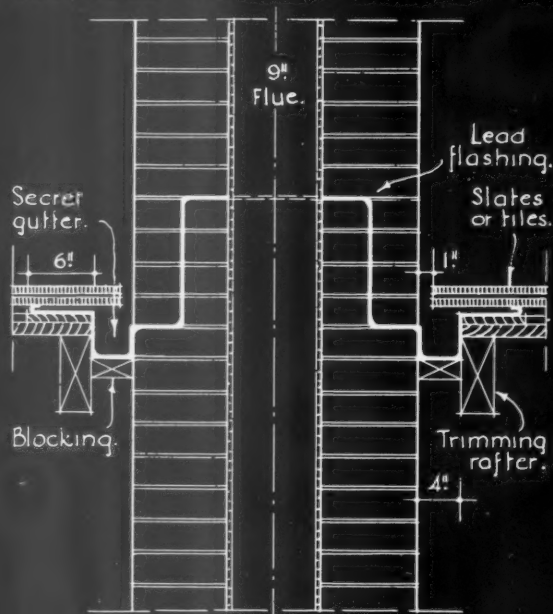


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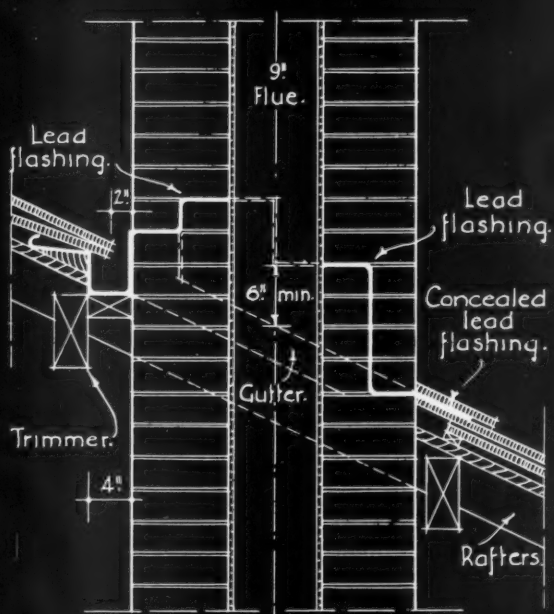
## SECRET FLASHING TO CHIMNEY STACKS :



## SECTIONS THROUGH CHIMNEY STACK :



Chimney and roof junction.  
Section across slope of roof.



Chimney and roof junction.  
Section along slope of roof.

*Information from the Lead Sheet & Pipe Development Council.*

INFORMATION SHEET: THE USES OF LEAD IN BUILDING CONSTRUCTION • 13 •  
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON, W.C.1. *Grazz. A. Bayne.*

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INFORMATION SHEET

• 283 •

FLASHINGS TO  
CHIMNEYS

Product : Lead Flashing

This is the first of two Sheets on flashings to chimneys, and shows a method of secret flashing a chimney stack, which is uncommon in this country but is used in the U.S.A. in some work of the best quality.

It may be objected to for the reason that the lead work completely severs the brickwork horizontally and for the greater part of four courses prevents through bonding of brickwork between the inner and outer skin.

However, neither of these points are important if the stack is a low one. In a higher stack the same construction may be used but with increased thickness of brickwork, or with the addition of a concrete or other core to the stack.

If the brickwork is increased in thickness, the inner skin behind the flashing becomes fully bonded 9 in. brickwork and the stack has ample stability even if of unusual height.

Joints :

The flashing illustrated has been drawn without joints in the lead. In practice, the plumber would make welted joints at his discretion, but there should be as few as possible.

It would be possible to lead burn all joints and avoid the thickening of welted joints, but if lead burning were used, care would have to be taken that first-class joints were obtained throughout.

Protection of Lead :

As a protection for the lead against possible chemical action by the cement in which the brickwork is bedded, it is well to coat the lead work where it is to be built-in with a bituminous paint or other protective coating.

Tiling :

The tiling and slating may, if considered desirable, be kept back at a greater distance from the brickwork to give a more open gutter. The dimensions shown on the drawing are adequate to cope with rainwater, but should the chimney be near large trees, the gutters may be liable to become choked by fallen leaves and they should then be made wider and more open.

The tile course abutting the chimney on the low side if bedded in cement as shown are sufficiently secure, but additional security may be obtained by chipping the edge of the brick course away sufficiently to allow the top edge of the tiles to be let in and pointed up.

Information from : The Lead Sheet and  
Pipe Development Council

Address : Golden Cross House,  
Duncannon St., W.C.2

Telephone : Whitehall 3715