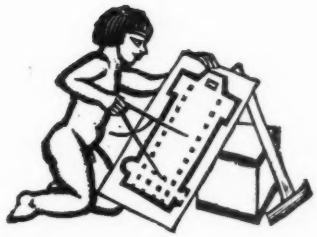
CONSECRATED LAST WEEK

ABBEY CHURCH OF DOWNSIDE

ON Thursday last Cardinal Seredi, of Hungary, consecrated the Abbey Church of St. Gregory at Downside, Somersetshire, which, to mark the event, has been raised to the dignity of a Minor Basilica—the only one in England. The church was begun about 1874, from plans prepared by Dunn and Harrison. The choir and sanctuary, designed by Thomas Garner, were opened in 1905, and the nave, designed by Sir Giles Gilbert Scott, was opened in 1925.

A BYZANTINE CHURCH IN THE PELOPONNESE

The photograph shows one of several small Byzantine colonial churches at Monemvasia in the Peloponnese, a district ceded to Byzantium by its Frankish conquerors in 1263. The building illustrated, the fourteenth-century church of Hagia Sophia, is of the normal cross-in-square plan with three apses, and is built of stone, brick and tile.



REGIONAL PRIDE

A HUNDRED years ago this month the passing of the Municipal Corporations Reform Act may be said to have marked the beginning of the system of democratic local government.

The promoters of that Act did not, of course, foresee future developments. In the manner of most English legislation the measure intended only the correction of intolerable abuses, and was not wholly successful even in that limited aim ; indeed, the Act might be summarized as the result of a recently reformed Commons coming to the very human decision that what is sauce for the goose is sauce also for the goslings.

Only very gradually during the course of the nineteenth century did the reformed corporations take over the functions of modern local government in the face of the delays and bickerings of political manœuvres, local corruption, competing authorities and inadequate powers. Public health became their responsibility in 1848, sanitation in 1875, housing in some measure in 1890, and town planning in 1909, though also in a most rudimentary and incomplete manner.

So chequered, in fact, has been the development of local government that its most superficial study compels the belief that the system must be both peculiarly suited to this country's needs and must have been supported by a very general sense of the duties of citizenship to have emerged triumphant over the influences which have constantly obstructed it.

Today, local authorities possess very great powers, and, upon the whole, employ them well. There can hardly be said to be a town in existence in which the drainage and water services, public health, education and local taxation are not efficiently maintained and administered. And the responsibility of many larger local authorities is much greater, embracing technical colleges, libraries and art galleries, electricity and gas supply, public parks and transport. The list of duties, constantly extending, has been recently increased by new powers concerning slum and overcrowding abolition, and regional and local planning.

There can be no doubt that the extension of the powers of local authorities during the last thirty years has not been wholly beneficial. The great and necessary increase in the numbers of paid officials has tended to make local government remote from the individual citizen. This sense of remoteness has induced apathy towards local government matters and local government elections, and has been intensified by the facilities of modern transport which enable an increasing number of the daytime population of each city to live beyond the municipal boundaries.

In brief, as local government powers have extended, the corporate sense which alone can ensure their good administration has steadily diminished, so that at a time when civic pride was never more needed it has become so rare as to be negligible in its good influence.

The results are plain to all who have eyes to see. Far too many prosperous provincial citizens regard their business premises only as places in which to make money—to be made, if they are shops, as " attractive " as possible, with no thought for their effect on the city as a city. In fact, they confessedly exploit the city upon which they depend for their livelihood, and never seem to appreciate the force of this reflection upon themselves.

Such a situation must be altered if local government is to continue as an effective means of administration. For the essence of the system is a genuine interest and pride in his city and its surroundings on the part of each citizen.

For architects such a renaissance of civic pride is a fundamental prerequisite for the development of any urban architecture worthy of the name. Architects have long deplored the results of its decrease—the steady decline from the urban standards of Bath and new Edinburgh to the final warning of Oxford Street. But architects are helpless amongst a community lacking civic pride, against the determination of a single individual to erect a building which squeals louder than any in the street, if possible louder than any in the town. The only cure for such a determination is in the development of the good taste which always follows close upon genuine civic pride.

At a time when local authorities are beginning the application of powers wider than any they have yet possessed, modern transport has also widened the area and increased the population which their decisions affect. But this does not excuse the lack of civic pride. It merely makes desirable its translation into a regional pride.

During the next few years the officials of local authorities will be fully occupied with the administration of their new duties ; it is for the public whom they serve to examine the scope and nature of those duties, to determine that what revisions are necessary will be obtained from Parliament, and that what is for the good of each particular city will be carried out.

That they employ salaried officials does not absolve citizens from seeing that their urban region is worth living in, and regional pride is a more effective weapon for that purpose than any number of parliamentary powers. That architects should do all in their power to encourage such a feeling goes without saying, for until each citizen has a real desire to make his city a " show " city, urban architecture can never achieve a civilized dignity, nor our streets be anything save a monotony of unrestfulness for those whose days are spent within them.

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NOTES & TOPICS

THE RIBBON DEVELOPMENT BILL

SOME recent paragraphs about ribbon development from the *North Mail and Newcastle Chronicle* strike me as being worth comment. Not that I have any particular disapproval of Newcastle, or that I believe it to be worse than the average locality; but this local expression of opinion demonstrates very clearly and accurately the two fundamental weaknesses of the Restriction of Ribbon Development Bill, exactly as they were foreseen even before the Bill was passed.

*

"In some quarters," says a writer in this newspaper, "there will be disappointment that Newcastle Corporation does not appear to be enforcing the Restriction of Ribbon Development Act just now. Plans have been approved for construction of premises within 25 ft. of the Coast Road—well within the prescribed limit were the optional restrictive Act adopted.

*

"But this one instance is not in encouragement of ribbon building, though all the arguments are not with the preserve-the-countryside gentry. No, it is given to me as a fact that if the City Council formally adopted the Act and banned building within 220 ft. of the centre of the highway it would itself have to forfeit land sufficient to accommodate 300 houses, and with present land values in Newcastle that would be a substantial loss."

*

Here, as I say, are the Act's two weaknesses abundantly illustrated in practice: first, it should *compel* local authorities to exercise the powers it gives them, not leave it to their good sense—which they may not have; or to their idea of the expedient—which may not be a very long-sighted one. Secondly, financial loss caused by the operation of the Act should not be a charge on the rates. Nothing is more likely to blind an already short-sighted authority to the real advantages of a mere "town-planning amenity" than the discovery that it means the voluntary expenditure of ratepayers' money.

*

But what are we to do about it now? The Bill is law for better or for worse. The usual answer, I suppose: propaganda. The local authorities must be made to see that the restriction of ribbon development is a thing worth almost any sacrifice—indeed, that no proper planning, which almost all of them must believe in by now, is possible without it.

*

And, more important, the public must be made to realize the continued urgency of the question so that they *demand* of the local authorities the expenditure of ratepayers' (that is to say, of their own) money on putting the Act into operation.

HANDS ACROSS THE SEA

It is always nice to greet the traditional gestures of international amity whenever there is occasion for them to be made.

*

On the occasion of Mr. Harvey Corbett's visit to this country the rôles in the little piece are nicely and aptly allocated—except in one case, which remains rather puzzling.

*

The occasion is the celebration of the completion by the Bush House Buildings of the whole of the Strand-to-Aldwych rebuilding scheme (at the bottom of Kingsway, remember, is a most appropriate group of statuary symbolizing Anglo-American friendship). The celebrant is Mr. H. G. Wells, who will preside at a luncheon—and no internationalist could be more appropriate. Mr. Corbett, straight from his triumphs in New York's Rockefeller Center, for which he is one of the associated architects, can suitably offer his masterpiece for the part of America's contribution to modern design; but—and here comes the puzzle—what part can Kingsway and Aldwych play, and what shall fill the part of England's contribution to modern design? I can't think.

MR. SILKIN ABROAD

Nothing but approval can be given to the news that Mr. Lewis Silkin, the chairman of the L.C.C. Housing Committee, has departed on a month's continental tour, to investigate flat-building in eight foreign countries.

*

I don't know if this is the first time so high an L.C.C. official has been officially abroad for such a purpose. If it is, it is good to see it happening. If not, it is good to see it happening again.

*

It can't happen too often as things are just now. We seem at last to be finding out (or being forced to admit) that English housing has an architectural standard about the lowest in Europe—that was seen clearly enough in the recent dismal International Housing Congress: we found there that we had practically nothing worth pointing out to the foreigner at all, except to the German delegates, who were dutifully and officially gratified by the acres of little cottages.

*

But we have an immense amount to learn from abroad. And now is our opportunity, when our great housing drive is on, to catch up a lot in one big step—to learn what we can from abroad *and apply it immediately*.

ANOTHER SEVERN BRIDGE

After my remarks last week about the proposed road

Ondarroa, a little Basque fishing village on the Bay of Biscay. See note on this page.

bridge over the Firth of Forth, I see that the old question of a Severn bridge has cropped up again, and that a very thorough scheme has been drawn up by Sir Alexander Gibb and Partners for a bridge either at Chepstow or at English Stones.

*

The original Severn barrage scheme was dropped, I believe, through fear of silting up the Bristol and Avonmouth ports, and since then there have been several bridge schemes, all of which have faded away for no apparent reason.

*

I hope this scheme won't go the same way, for the bridge *is* necessary. The present ferry service is pretty efficient, but not too easy to find, and a direct road route from London to Fishguard would save several hours in time, and help the traffic problem in overcrowded Gloucester.

HOUSING REPORT

An extremely interesting report on the housing conditions in the metropolitan borough of Southwark has just been issued by the Southwark Housing Association.

*

The report is the result of two surveys of housing conditions in the district, the first carried out by Mrs. Barclay and Miss Perry, the second by Mrs. Hare. The first survey, undertaken in 1929, gives a bird's-eye view of the position in the Borough of Southwark as a whole, which has unfortunately changed little during the last six years—it is still the most overcrowded large district in London. The second survey gives a detailed picture of certain areas, and of the personal circumstances of large numbers of the inhabitants of Southwark. The material of the two surveys has been welded together to form the present report.

*

"The problem of Southwark," we are told, "is the problem of Central London, and a comprehensive policy is urgently needed for the town-planning and re-development of this central area as a whole. It is to be hoped that the L.C.C. plans with regard to this problem will soon be crystallized." It is pointed out that "at present there is haphazard encroachment of industry on residential areas, while part of the former industrial area is left derelict. Moreover, it is necessary to decide how many people can and should be re-housed in Southwark, to replan large residential areas in which there will be little or no through traffic, in which unnecessary streets will be eliminated and ample open spaces left for gardens and playgrounds."

*

The report concludes with some remarks on the question of cottages v. flats. "Rehousing in flats is at present unfortunately a necessity in Central London owing to lack of space, and to high site-values . . . although there can be no doubt that the cottage with its own garden is infinitely preferable to a flat for families with young children, and the L.C.C. would be well advised to give preference, and to offer favourable rents, to families with young children prepared to move out to suburban estates."

*

I commend this report to all interested in housing.

MORE HOLIDAY

I'm beginning to wonder whether my English holiday is as good an idea as I first thought; letters forwarded seem all to be from people in the wildest and most exciting bits of Europe.

*

The latest comes from Spain, with a couple of amusing photographs, one of which is reproduced on this page. It is of Ondarroa, a little Basque fishing village on the Bay of Biscay, with a population of about eight thousand on an area about a quarter of a mile square. The village is crowded on to little more than two sides of a winding street, with no nonsense about street widths, or about the "density of dwellings and its effect on the open space available," that Sir Raymond Unwin is writing to *The Times* about. It stands in the mouth of a gorge at the foot of high mountains.

*

Buttresses to the foundations and walls of the church shown in the photograph rise against the cliff's edge, and the space between the feet of the buttresses is filled with "cottage development." All the flats, with large rooms, are properly divided, one or two per floor, from each other, with an ample common staircase, and each has its own balcony that is used chiefly for hanging out the frequent washing over the windows of the flat below.

*

It all looks great fun, and doesn't fill me with horror, although I know it ought to. My own holiday makes me very tolerant and lazy with occasional flashes of interest in places like Edinburgh, that subtle combination of Hamburg, Huddersfield and Heidelberg.

*

A long tour of the slum clearance schemes reveals new tenement blocks, rebuilt in stone, of course, in random squared rubble, better than the timid monotony of the nineteenth-century work . . . . but still missing any real contemporary character, which is surely as possible (and desirable) in stone as it is in brick or concrete.

*

And then there emerged a new ejaculation . . . "Suburbs of Edinburgh!" Why, when it possesses the planned area of George Street and the West-end squares, the magnificent terraced houses above Holyroodhouse, should Edinburgh be possessed of acres of rank villadom as appalling in taste as the suburbs of any reach-me-down industrial town?

*

But away to the Trossachs and the hills, away from this building, this architecture, which sometimes can be so terribly boring, even to

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

L.C.C. AND TOWN PLANNING

Architects are blamed for delays in building schemes in the reply made on behalf of the L.C.C. to charges that applications are being unduly held up since the Council's new town planning powers were obtained.

Mr. H. Berry, chairman of the Town Planning and Building Regulation Committtee, stated last week that in order to save architects the trouble of preparing in full a scheme which might be rejected the Council had made arrangements whereby applicants could send in an outline of their schemes and be told whether or not they would be allowable, but comparatively few architects had taken advantage of this facility, and only one had troubled to see the list of important waivers to the London Building Act which the Council went to the trouble of preparing some months ago.

Mr. Berry quoted figures to show that n recent weeks only between 3 and 5 per cent. of the applications for approval had not been disposed of within seven weeks of their receipt. He added that the Council's complaint was that its architectural staff "virtually designs buildings instead of the architects who are commissioned to do it. Far from the Council's officers being unhelpful, my experience is that they are helpful to a very great degree. Even before the coming of town planning architects submitted applications which did not in any way agree with the provisions of the London Building Act, which every good architect is presumed to know."

L.C.C. HOUSING TOUR

Mr. Lewis Silkin, Chairman of the Housing Committee of the London County Council, and representatives of the Architect's and Valuer's Departments of the Council have left for a month's tour of eight continental countries for the purpose of studying the methods of flat building in the principal cities.

THE ARCHITECTS' DIARY

Thursday, September 19

R.I.B.A. INTERNATIONAL EXHIBITION OF ARCHITECTURE. *At the Royal West of England Academy, Bristol. Until September 28.*

LONDON MUSEUM, *St. James's, S.W.1. Exhibition of photographs, "New London from the Air." Open until further notice. 10 a.m. to 6 p.m.*

SHIPPING, ENGINEERING AND MACHINERY EXHIBITION. *At Olympia. Until September 28.*

Sunday, September 22

INTERNATIONAL CONGRESS OF ARCHITECTS. *At Rome. Until September 28.*

Monday, September 23

LONDON SOCIETY. *Coach drive to the Greenford Factories of Messrs. Lyons. Depart from the Museum at 2.15 p.m.*

Tuesday, September 24

BUILDING TRADES EXHIBITION. *At Liverpool. Until October 5.*

HACKNEY MARSHES

Mr. Herbert Morrison, speaking at South Hackney last week, discussed the L.C.C.'s scheme to convert 30 acres of Hackney Marshes into a building site. "There is," he said, "a great army of people living under insanitary and overcrowded conditions in the East End of London. A large proportion of them are a material distance from any adequate public open space. They are without anything like a proper amount of fresh air, light, and sunshine. A large proportion are children. The only open space for most of them is the street. If they are left in their present housing conditions, the health of these children in after-life is going to suffer. If there were large vacant suitable housing sites in the East End which would enable us to get a big commencement with slum clearance there, I would not wish to touch Hackney Marshes, but there is no suitable available site, and the critics have not suggested one."

£100,000 LEEDS BATHS AND HALL

Leeds Corporation is considering details of a scheme to provide central baths, convertible into a hall accommodating some 5,000 persons, at a cost of £100,000. The site covers 5,000 square yards near the York Road traffic circus and the pool is to measure 100 ft. by 40 ft.

TOWN PLANNING INSTITUTE

Following is the programme of the seventeenth annual country meeting of the Town Planning Institute, to be held at Eastbourne from October 4 to 6. The headquarters of the party will be at the Grand Hotel.

Friday, October 4: 3 p.m.: Meeting at the Town Hall (Grove Road). Welcome by the Mayor, Miss Councillor Thornton, J.P. Paper by the President, Major Leslie Roseveare, O.B.E., M.INST.C.E. (M.), Borough Engineer and Surveyor, on the "Development and Town Planning of Eastbourne." Discussion. 5.0 p.m.: Council Meeting at the Grand Hotel. 7.45 p.m.: Reception and entertainment at the Devonshire Park by invitation of the Mayor. Invitations will be issued in due course to those attending the meeting.

Saturday, October 5: 10.30 a.m.: Motor coaches leave Grand Hotel for Central Parade Development, Redoubt, Princes Park, Archery Housing Site, Hampden Park, Victoria Drive Housing Site, Paradise, Holywell, Downs and Beachy Head. 1.0 p.m.: Luncheon by invitation of the Mayor and Corporation of Eastbourne at the Grand Hotel. Invitations will be issued in due course to those attending the meeting. 2.30 p.m.: Motor coaches leave Grand Hotel for new London-Eastbourne By-Pass Road, Hailsham, Battle Abbey, Bexhill-Eastbourne Road, Pevensey Castle. 7.15 for 7.30 p.m.: Institute Dinner at the Grand Hotel at which Sir Edward T. Campbell, M.P., Parliamentary Private Secretary to the Minister of Health, will be present.

Sunday, October 6: Morning, free. 2.0 p.m.: Motor coaches leave Grand Hotel for tour of Sussex villages, including East Dean, Jevington, Wilmington, visiting Wilmington Priory, the "Long Man," Lullington Church, Alfriston, and return.

The Secretary of the Institute is Mr. Alfred R. Potter, of 11 Arundel Street, W.C.2.

LEICESTER EXHIBITION

The Leicester Corporation is holding, in the City Museum, an exhibition to show the progress made in its public services during the past 100 years.

BRIGHTON'S DOME REBUILT

The Dome at Brighton was opened on Saturday last after its reconstruction at a cost of £40,000. A floor for dances, flower shows and exhibitions has been provided, the acoustics have been improved and a £9,000 organ is to be installed. A new roadway has been cut through the Royal Pavilion grounds.

GEFFRYE MUSEUM

The following lectures have been arranged by the Geffrye Museum, Kingsland Road, Shoreditch, E.2, to take place during the next three months:—

October 31: "London of the Sixteenth and Seventeenth Centuries." By Mr. D. Martin Roberts, M.A.

November 7: "English Furniture of the Oak Period." By Mr. Ernest R. Gribble.

November 14: "English Furniture of the Walnut Period." By Mr. Herbert Cescinsky.

November 21: "London of the Eighteenth Century." By Mr. H. Warren Wilson, A.R.C.A.

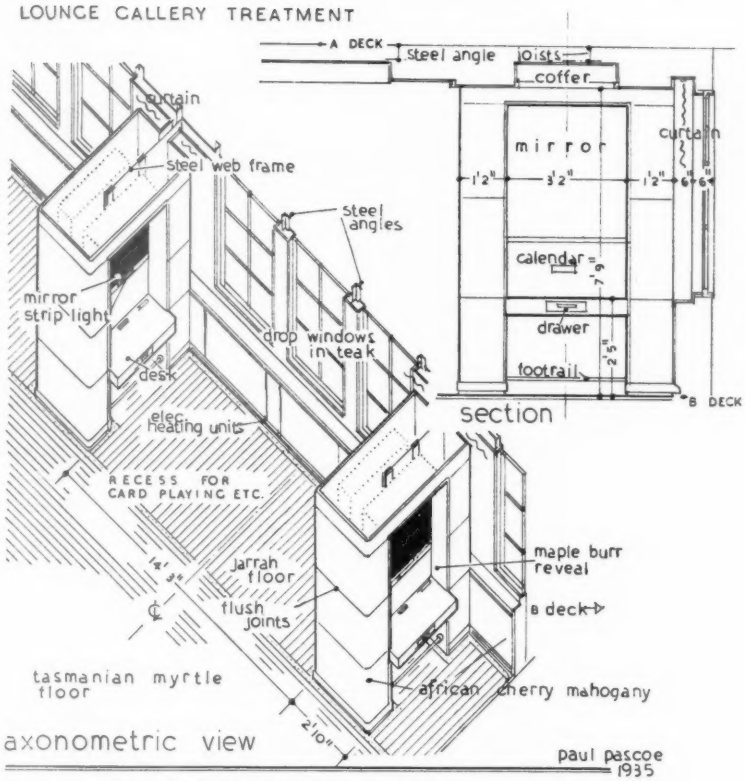
November 28: "English Furniture of the Mahogany Period." By Mr. James Rudd, J.P. (Examiner for the City and Guilds of London Institute).

December 5: "English Furniture of the Satinwood Period." By Mr. Hesketh Hubbard, R.O.I., R.B.A.

The lectures will commence at 7.30 p.m.

R.I.B.A.

The works submitted by candidates for the R.I.B.A. (Archibald Dawnay) Scholarships are now on exhibition at the Institute,



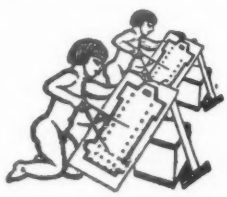
From the R. M. S. "Orion." Designer : Brian O'Rorke.

66 Portland Place, London, W.1. The exhibition will remain open until Saturday next, September 21, between the hours of 10 a.m. and 7 p.m. (Saturday, 10 a.m. and 2 p.m.).

ON THE AIR

National Programme, September 20, 7.10 p.m. Second of a series of three talks entitled : "Looking for the Town of Tomorrow." By Mr. Geoffrey Boumphrey.

COMPETITION



NEWS

MUNICIPAL OFFICES, SWINDON

As we go to press we learn that the award of the assessor (Mr. A. B. Knapp-Fisher) in the competition for municipal offices at Swindon will be announced today.

PAVILION AT ROTHESAY

Mr. J. Maurice Arthur, F.R.I.B.A., has been appointed assessor of the competition for a proposed pavilion at Rothesay, for the Rothesay Town Council. The building is estimated to cost £30,000 and premiums of £200, £100 and £50 will be awarded to the authors of the designs placed first, second and third respectively.

TIMBER HOUSES

We are informed by the Timber Development Association that over 650 architects have applied for conditions of the Association's competition for timber houses. The closing date is October 28.

Competitions Open

September 20.—Sending-in Day. Two schools at Boldmere for the Sutton Coldfield T.C. (limited to members of the Birmingham and Five Counties Architectural Association). Assessor : A. C. Bunch, F.R.I.B.A. Premiums : £100, £50 and £30 for each school. The latest date for submission of designs is tomorrow, September 20.

October 1.—Sending-in Day. Central county buildings, Hertford, for the Hertfordshire County Council. Assessor: Robert Atkinson, F.R.I.B.A. Premiums : £350, £250 and £150. Designs must not be submitted later than October 1. Particulars of the competition are obtainable from the Clerk of the County Council, Clerk of the Peace Office, Hertford. (Deposit £2 2s.)

October 5.—Sending-in Day. New Fire Station, Brighton, for the County Borough of Brighton. (Open to architects of British nationality resident in the British Isles.) Assessor : Stanley O. Livock, F.R.I.B.A. Premiums of £200, £125 and £75. Conditions of the competition may be obtained from J. G. Drew. Clerk, Town Hall, Brighton. (Deposit £1 1s.)

October 7.—Sending-in Day. The promoters of the Birmingham Building Trades Exhibition invite architects to submit competitive designs for a block or blocks of flats for working men in Birmingham. Assessors: W. T. Benslyn, F.R.I.B.A., Alfred Hale, F.R.I.B.A., and J. B. Surman, F.R.I.B.A. Premiums : £60, £30 and £20. Conditions are obtainable from the Promoters of the Exhibition, 71 Temple Row, Birmingham. The latest date for submission of designs is October 7.

October 16.—Sending-in Day. Lay-out competition for Lump Fort site, for Portsmouth T.C. Assessor : E. Prentice Mawson, F.R.I.B.A. Premiums : £350 and further £200 divisible. Conditions are obtainable from the Town Clerk, Guildhall, Portsmouth. (Deposit £1 1s.)

October 28.—Sending-in Day. Competition for timber houses organized by the Timber Development Association. Assessors : Robert Atkinson, F.R.I.B.A., G. Grey Wornum, F.R.I.B.A. and E. Maxwell Fry, A.R.I.B.A. The competition is divided into two sections and competitors may enter for one or both. In each section there will be the following awards : first premium, £100 ; second premium, £30 ; third premium, £25.

SECTION 1 :—Designs to be submitted for a timber house suitable for a small family, the total cost to be £800. SECTION 2 :—Designs to be submitted for a week-end timber cottage, the total cost to be £350. Conditions, etc., are obtainable from the Manager, Timber Development Association, 69-73 Cannon Street, London, E.C.4. The latest date for submission of designs is Monday, October 28.

October 31.—Sending-in Day. New technical college, Manchester Road, Bolton, for the Bolton Corporation. (Open to architects of British nationality.) Assessors : John Bradshaw Gass, F.R.I.B.A., and Arthur J. Hope, F.R.I.B.A. Premiums : £500, £250 and £100. Conditions, etc., are obtainable from Mr. John A. Cox, M.A., Director of Education, Education Offices, Bolton. (Deposit £2 2s.) The designs must be submitted to the Director of Education before October 31.

November 1.—Sending-in Day. New municipal offices, clinics, etc., proposed to be erected in the grounds of York Castle for the Corporation of York. (Open to architects of British nationality domiciled in the United Kingdom.) Assessor : Henry V. Ashley, F.R.I.B.A. Premiums : £250, £150, £100 and £50. The last day for questions was July 29. Designs must be submitted to the Town Clerk, Guildhall, York, not later than November 1.

November 30.—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. Conditions, etc., are obtainable from R. L. Hiscott, Town Clerk, Town Hall, Colchester. (Deposit £1.) Latest date for submission of designs : November 30.

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 obtain-

able from Richard Moore, Town Clerk, Municipal Offices, Bank Street, Bury. (Deposit £2.)

January 31, 1936.—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.) Last day for questions was August 26. The designs must be sent to the Assessor at 19 Silverwell Street, Bolton, not later than January 31.

IN THAT CONTINGENCY

The following abstracts of inquiries represent a number of those recently submitted to the Building Research Station. The information given in the replies quoted is based on available knowledge. It has to be borne in mind that further scientific investigations may in the course of time indicate directions in which the replies might be supplemented or modified. Moreover, the replies relate to the specific subject of each inquiry, and are not necessarily suitable for application to all similar problems. [Crown copyright is reserved.]

Removal of Oil Stains from Brickwork

¶ *A CONTRACTOR required an effective method of removing oil stains from brickwork. The oil was a mineral lubricating oil which had dropped on to the brickwork from a block and tackle.*

It was stated that the use of petrol, caustic soda, and burning with a blow-lamp had been tried, but without success. The brickwork was composed of facing bricks with a thin, coloured, outer skin, and rubbing down to expose a new surface was therefore not desirable.

The method suggested for removing the oil stain is as follows:—Petrol or benzene should first be applied *around*, but not directly upon, the affected areas by means of a rag. A paste prepared from a mixture of petrol, or benzene, and whiting, or some other inert material which has a high suction when dry, is then applied to the affected area, and left in position until the solvent has evaporated, or until the whiting falls off. This treatment may have to be repeated, depending upon the depth to which the oil has penetrated into the brickwork.

The application of solvents alone may drive the oil further into the brickwork, but when mixed with whiting there is a definite suction of the solvent and oil from the brickwork into the whiting, and a test has shown that oil is effectively removed in this way.

Rendering Failures

¶ *AN architect desired information as to the causes of failures of renderings, and asked if some general recommendations could be given, which would be of assistance in the prevention of failures in future work.*

Renderings may fail in one or both of the following two ways:—

1. By breakdown of the adhesion to the backing.
2. By cracking and crazing of the body of the rendering.

1. Adhesion failures may be due to defective suction of the backing, to the presence of salts in the brickwork, or to poor workmanship.

Of these, the most troublesome is the presence of salts in the backing. If it is known that the bricks contain salts every precaution should be taken, both during the progress of the work and subsequently, to ensure as far as possible that excessive moisture does not reach the brickwork. The design of buildings at points such as eaves, cills, hoods, etc., will influence the penetration of moisture, while exposed parapets may often be a source of danger. In certain bad cases a wire mesh, nailed to wooden plugs fixed in the wall, would afford a greater guarantee of adhesion, and an impervious coating of a bituminous paint may be applied to the backing as an additional precaution. This would completely insulate the rendering from the brickwork.

2. The cracking and crazing of renderings may be due to several causes. In general, while it is not necessary to discuss the causes in detail, it may be stated that renderings rich in cement are more liable to failures of this type than leaner mixes, and further, the coarser texture or finishes of the latter type makes the cracking less apparent. Apart from the consideration of texture, the cracking in weaker mixes tends to assume the form of a mass of fine hair cracks, distributed over the whole area. A rich mix is more liable to isolated large cracks, which are readily visible and cause serious disfigurement of the work. It must not be assumed, however, that the cement content should be unduly lowered, since, apart from general weakness, the mix will be unworkable. To provide the requisite degree of workability, and a generally satisfactory mix, the addition of hydrated lime is recommended.

The two methods of failure described above may, and often do, act in conjunction, for when salts are present in the brickwork, and moisture is readily available, the salts combine with the cement in immediate contact with the brickwork, and the adhesion is destroyed. The shrinkage being now unrestrained, cracking can occur more easily. Moisture then gains access to the brickwork through the cracks, and further salts are extracted. The effects are therefore cumulative and complete failure of the rendering may occur.

As a result of work carried out at the Building Research Station, it has been found possible to suggest mixes based on these considerations which are suitable for renderings, and which appear to give good results: but, so far as is known, a rendering which will be entirely free from cracking has still to be found.

The following mixes have been found to satisfy the requirements fairly well:—

(i) *For undercoat.*

(a) 1 : 3 cement : sand.

or (b) 1 : 3 : 12 cement : hydrated lime : sand.

(ii) *For finishing coat.*

1 : 3 : 8 or 10 cement : hydrated lime : sand.

The undercoat should be fairly thin and the application of the finishing coat should be deferred as long as possible until the former has had time to harden and crack. In this way the cracking of the undercoat, which is more likely with mix (i) (a) than with mix (i) (b), will not affect the finishing coat to so great an extent as if the two coats were applied without delay.

Sweating of Magnesium Oxychloride Floor Finish

¶ *AN architect encountered trouble from dampness of a magnesium oxychloride floor finish:—*

The floor finish in question was stated to extend throughout the whole ground floor of a building, and was applied to a concrete sub-floor resting upon the ground. No damp-proof course existed under these floors, and it was thought that rising damp was the cause of the trouble.

Information was required as to treatments which could be applied to the floor finish to prevent it from becoming damp and, if this was not possible, suggestions for an alternative floor finish were desired. It was stated that experiments had been made by replacing the existing floor finish with waterproofed sand and cement, and although this treatment was found to remedy the trouble, it was felt that such a floor finish would not be ideal for living rooms.

No remedial treatment of the existing floor surface would be likely to prove entirely successful. It is fairly generally recognized that magnesite composition is an unsuitable flooring material to use in any situation where it will be subject to appreciable rising damp, and, if so used, trouble is likely to occur not only from dampness but also from expansion, lifting, and cracking.

There is a possibility, however, that the effects which are being experienced in this case are not, actually, due to dampness rising from the ground. An essential ingredient of magnesite composition is magnesium chloride, and this salt, being hygroscopic, absorbs moisture from the air whenever the atmospheric humidity is high. This phenomenon of "sweating" is thus liable to occur with these floors in any situation, but it is particularly troublesome if the composition has been prepared with an excessive proportion of chloride.

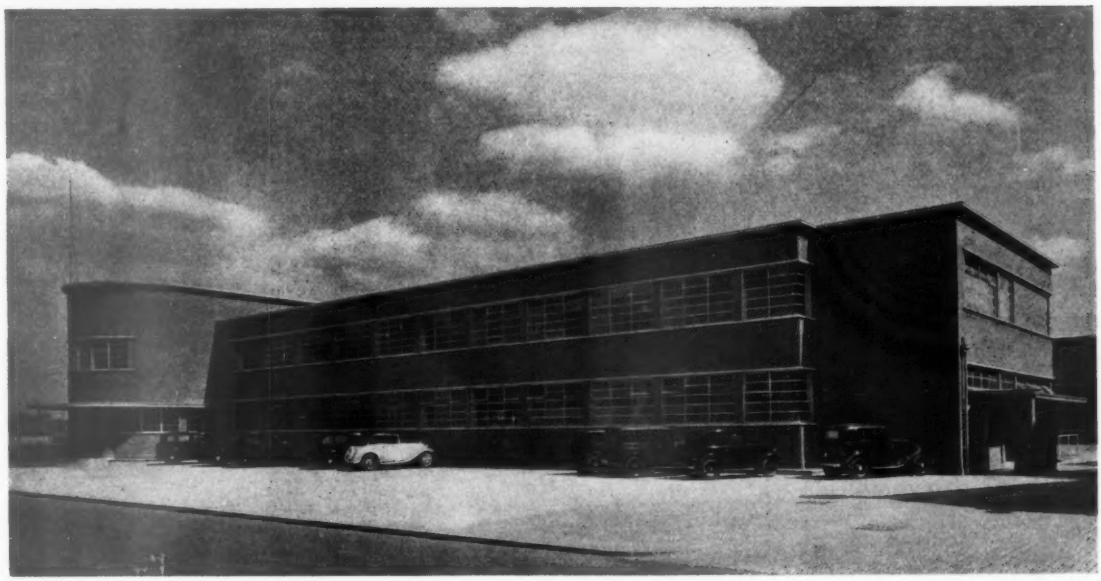
Magnesite composition floors are usually wax polished or oiled a short time after laying, and they should be maintained by wax-polishing at intervals. If this is carried out regularly, sweating is usually avoided. If, however, excessive sweating should still occur in spite of such treatment, the only course open is to remove the flooring.

Some benefit may be obtained by sponging over the floor with clean water when dampness appears and waxing or oiling them after they have been allowed to dry thoroughly, but such treatment is hardly likely to avail if the concrete sub-floor is porous and damp.

It is by no means a simple problem to find a satisfactory finish for floors of this kind. A dense Portland cement concrete, such as has been tried, should be unaffected by ground moisture, but is usually considered too cold and hard for living rooms.

Most flooring materials are injured by rising damp, and it follows that, where such conditions prevail, the choice of materials is limited. It might be possible to fix a good linoleum to the concrete, but there is always an element of doubt as to the behaviour of the adhesive in damp situations. Provided a damp-proof course were introduced, a magnesium oxychloride floor of good quality would behave well. Alternatively, a wood block floor laid in bitumen could be used, but it must be realised that the bitumen is required to act as a damp-proof course, and care must be taken that the mastic layer is continuous.

FACTORY ADMINISTRATION BLOCK, BIRMINGHAM



BY ALBERT BYE,

SIMMS AND GIFFORD

IN ASSOCIATION WITH

S. T. WALKER

GENERAL PROBLEM.—*The purpose of the building is that of administrative offices for an extensive steel-tube factory. The clients' requirements included that the plan lay-out should be capable of future rearrangement, that provision should be made for future extension either on plan or by the addition of a floor, and also for a considerable area of filing space for past correspondence.*

The upper photograph shows the position of the building adjoining the main road passing the works, with each department of which it is connected by telephones and by pneumatic tube conveyors.

Below is the main front of the building, showing the parking space for directors' and travellers' cars.

FACTORY ADMINISTRATION BLOCK

THE SITE.— *The canal bank adjoining the building consists for a depth of 12 ft. of ashes from tipping and the subsoil over the remainder of the site proved unsatisfactory. The filing department was therefore placed in a basement under the wing flanking the canal, its walls serving as retaining walls upon three sides to prevent any movement of the made-up ground towards the canal.*

PLAN.— *The present building was planned in L form to allow of its easy extension by the completion of the square. The buying department was placed adjoining the entrance, since it alone receives callers. The drawing and estimating departments were placed on the ground floor with a separate entrance to facilitate their constant communication with the works.*

The correspondence department upon the first floor was centrally placed to be available to all other departments, and the accounts department at the end of a wing to isolate the noise of their machines.

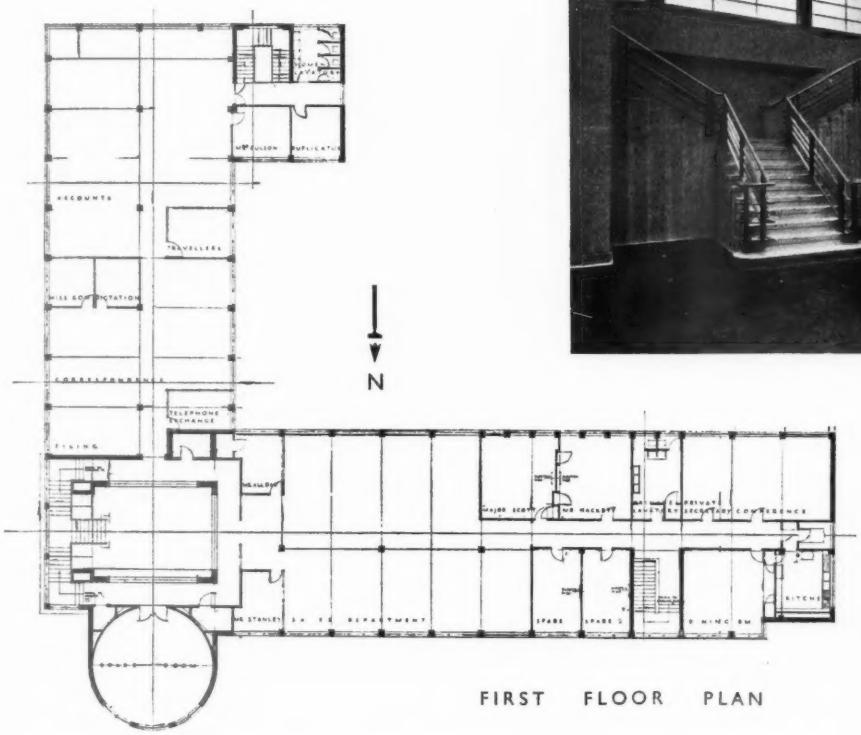
The directors' offices and dining room were grouped together with a private entrance.

ELEVATIONAL TREATMENT. — *Local facing bricks with pre-cast and in situ local reconstructed stone dressings. Windows are metal casement throughout, cavity sub-frames being used in the basement.*

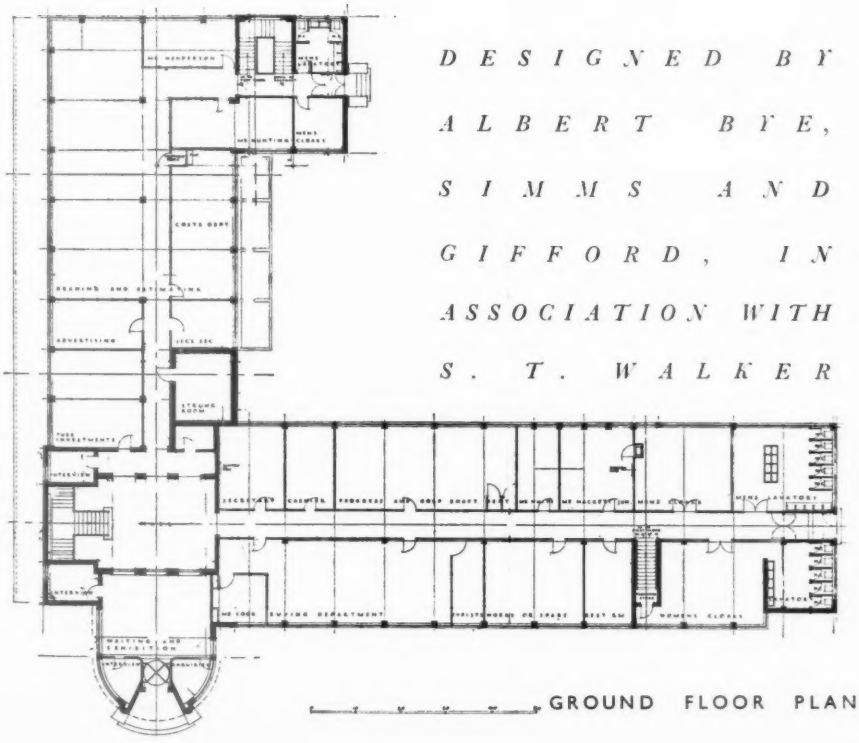
The photographs show: above, a detail of the main entrance; left, a director's office.

AT OLDBURY, BIRMINGHAM

On the right is a view of the entrance hall, looking towards the main staircase.



FIRST FLOOR PLAN



GROUND FLOOR PLAN

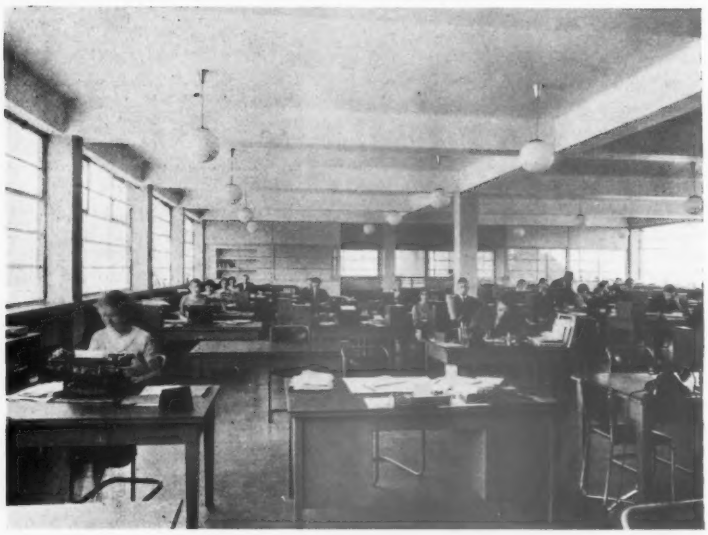
DESIGNED BY ALBERT BYE, SIMMS AND GIFFORD, IN ASSOCIATION WITH S. T. WALKER

CONTRACT.—*The excavation and building of basement and foundations were carried out by the clients' own building department at a cost of £1,948. The cost of the superstructure and furnishings was £21,645, the tubing of the decorative treatment being manufactured by the clients' firm, and the furniture by an associated company.*

CONSTRUCTION.—*Basement; of reinforced concrete with walls and floors on piles. Piles were also driven for the foundations of the other wing, and walls are carried on R.C. beams owing to ground being made up. Construction of steel frame save for entrance circle, which is of brick-faced reinforced concrete. Calculations for framing made allowance for the load of an additional floor. Walls; 11 in. cavity brick; flat roofs, 3-ply felting on boarding and joists; internal walls, cavity blocks of diatomaceous earth; office partitions, plywood-faced studding packed with slag wool, the top half of the partitions being glazed. These partitions are made in standard sections to facilitate removal and re-erection in accordance with any future re-arrangement.*

FACTORY ADMINISTRATION BLOCK, BIRMINGHAM

DESIGNED BY ALBERT BYE, SIMMS AND GIFFORD, IN ASSOCIATION WITH S. T. WALKER



INTERNAL TREATMENT.—*Walls generally are spray-painted grey, colour being restricted to the flush doors, each department having a distinctive colour, with lavatories and cloakrooms black. Ceilings are distempered white. Floors are of 12 in. square cork tiles save in lavatories and cloaks, which are finished in grey terrazzo. Main and directors' staircases are in pink terrazzo, and the south stair in granolithic.*

The directors' offices are panelled in walnut veneered plywood, and the boardroom has a dado treatment of continuous tubing.

SERVICES.—*Kitchens; a kitchen is provided to serve a maximum of 15 persons in connection with the directors' dining room, and a tea pantry in the basement to serve 200 persons. Lifts; a service lift is at present provided in a lift well designed for a future passenger lift.*

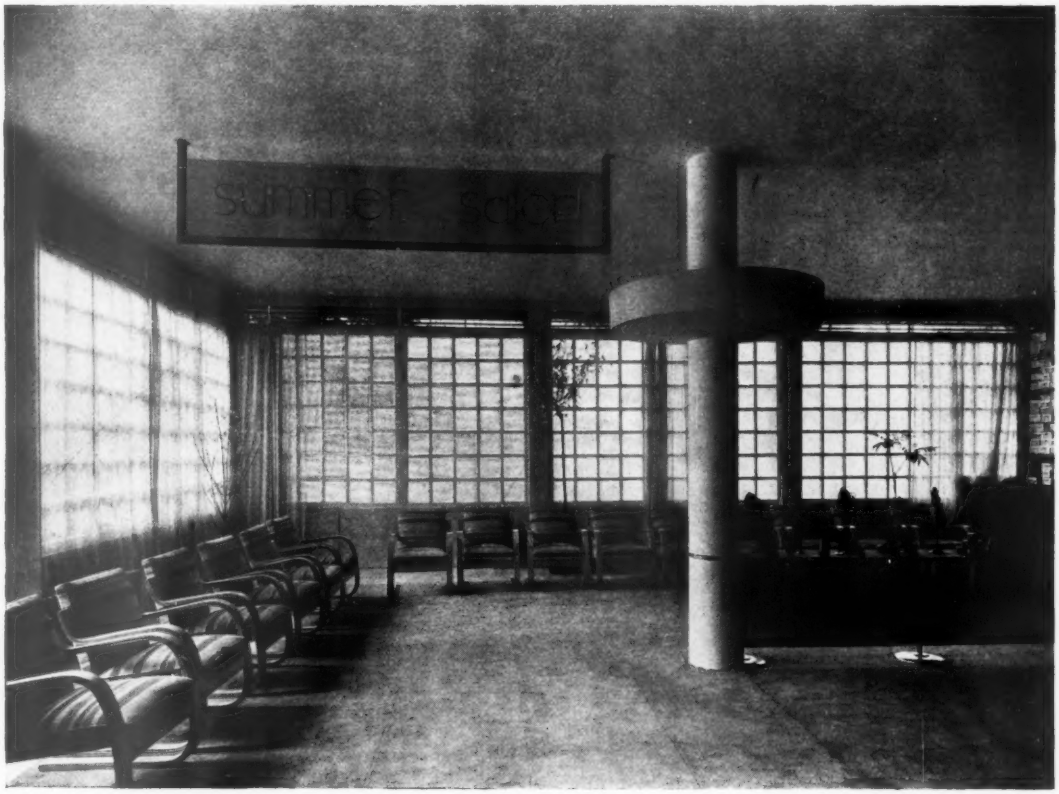
Heating; tubular electric heaters on walls. Electric fires in directors' rooms. Hot water; electric water heater to each basin, or battery of basins. Telephones, etc.; national, private, and pneumatic tube conveyors. Telephone wires are laid on grid system under floors, so that they may be picked up easily where required.

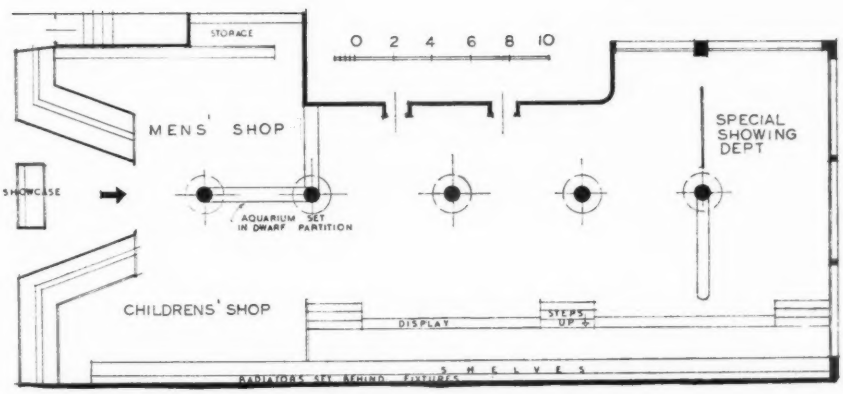
A continuous duct runs around the building on both floors carrying heating cables and electric wiring generally. The cover of this duct, which is completely removable, is recessed and filled to match cork or other floor finish.

The illustrations on this page show: top, the draughtsmen's office; centre, the typists' office; bottom, the sales office.

For list of general and sub-contractors, see page 429.

SHOE SHOP AT ILFORD





PLAN

DESIGNED BY CLIVE ENTWISTLE

GENERAL PROBLEM AND PLAN.—*In the design of this shop interior four sub-divisions were requested ; a men's shop, a women's shop, a children's shop ; and a space for special displays.*

By the provision of a gallery along one side of the shop the use of "steps" for reaching storage shelves was eliminated, whilst dwarf and removable partitions between the various departments both increase the sense of space and ease of supervision, and also facilitate the achievement of altered effects by re-arrangement.

The photograph above is a general view of the special show department.

SHOE SHOP AT ILFORD:

LIGHTING AND HEATING.—*Lighting is wholly indirect from fibrous plaster mushrooms. Heating is by hot-water radiators, principally concealed behind storage fittings, air currents being drawn in through grilles below gallery, and emerging from grilles above storage racks.*

A working detail of the heating system appears on pages 415 and 416 of this issue.

COST.—*The cost of the shop-fitting, exclusive of furniture, was £670.*

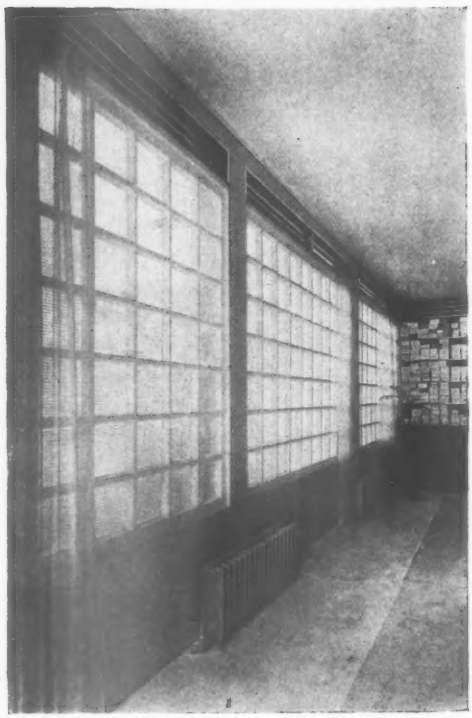
CONSTRUCTION AND DECORATION.—*The shelving is in deal with shelf edges faced with copper, and the heating grilles are in copper tubing and stainless steel. The windows are in sea-green roughcast glass on the glass-concrete system. The dwarf partitions are of plastered fibre board and brilliant-cut peach glass in stainless steel surrounds. Green roughcast glass is used as a finish below the windows and on doors and pilasters. The ceiling is of plaster, finished dead white, and the mushroom lighting troughs and stanchion casings are of stiffened fibrous plaster.*

The floors are beige carpeted, the curtains are in green artificial silk net, gallery stair treads in chocolate rubber, and mural paintings predominantly red.

FURNITURE.—*The birchwood chairs, designed by Alvar Aalto, are upholstered in oatmeal and green chenille. Fitting stools and desks are in painted deal, showcases in copper and stainless steel, and glass signs are in rose-tinted silvered plate and night-blue plate.*

The photographs show: top, the men's shop, with the aquarium recessed in the dwarf partition. Bottom, a dressing-out partition. Right, a detail of the windows showing ventilating grilles over.

For list of general and sub-contractors, see page 429.



DESIGNED BY CLIVE ENTWISTLE

A detail of the special show department. Colour scheme: ceilings and mushroom columns, dead white; carpet, beige; windows, piers and curtains, sea-green glass and net; sign and partition, brilliant-cut night-blue and rose-tinted glass; ventilation grille, copper and stainless steel; chairs, birch, green chenille upholstered.

L I T E R A T U R E

HOUSING (SCOTLAND) ACT, 1935

Housing (Scotland) Act, 1935; Circular 76; and two memoranda: "Changes in Housing Law and General"; "Prevention of Overcrowding." Issued by the Department of Health for Scotland. London: H.M. Stationery Office, 120 George Street, Edinburgh. Price 1s. (post free, 1s. 3d.).

A CIRCULAR and two memoranda have just been issued to local authorities by the Department of Health for Scotland. These arise out of the passing of the Housing (Scotland) Act, 1935, the main object of which is to deal with the problem of overcrowding, and are the first of a series of Memoranda which are being prepared explanatory of the Act.

Local authorities are in the first place urged to proceed at once with the preparation of first instalments of their schemes without waiting for the result of the survey to be made and which will reveal the total extent of the problem in each area. They are reminded that overcrowding is most rampant in houses of one and two apartments; that, accordingly, the new houses to be erected should be of larger sizes; and that, in general, no Exchequer subsidy will be paid for new houses, either under the 1935 or the Slum Clearance Act of 1930, which are of less than three apartments. Further, in order that the worst cases of overcrowding shall be dealt with first, local authorities are informed that the early instalments of their schemes should provide for a substantial proportion of houses of four and five apartments. Local authorities are asked to correlate their operations under these Acts to secure that small habitable houses which have been decrowded will, as far as possible, be available when required.

The Department has also something to say regarding the sizes of rooms in the new houses to be provided. They point out that the new Act lays down a *penal* standard which specifies the minimum accommodation which families of particular sizes may occupy. Housing standards are rising, and in the interest of true economy the new houses should be such that allowance is made accordingly, permitting the occupants not merely adequate space in which to sleep but space to live in reasonable comfort, with facilities for all the purposes incidental to family life. Local authorities are, therefore, urged to erect houses the rooms of which will, in general, accommodate the number of persons permitted by the standard. For the benefit of local authorities the Department indicates the sizes which will meet with their requirements, sizes which in general will be found to be somewhat larger than have been provided in recent years. In the case of five-apartment houses it is suggested that the living-room should be larger than that required for smaller houses. This is obviously advisable having regard to the number of occupants which the new standard permits.

Stress is laid by the Department on the need for securing attractive design and lay-out in housing schemes and provision for community life, such as shops, churches, cinemas, recreation grounds, schools and community centres. For these purposes large-scale schemes are favoured rather than haphazard building in scattered localities. Local authorities are advised to take skilled advice from qualified architects, even in the preparation of small schemes, and the larger authorities are urged to appoint local advisory committees, including representatives of architectural interests, as a means of tapping additional sources of knowledge and advice.

As the basis of the attack on overcrowding the new Act provides for a survey to be made by each local authority of its area, for a report to be made to the Department, and for the submission to the Department of proposals for the erection of the new houses required. The standard on which the survey is to be based, according to the Act, is fully explained by the Department, and the purpose of the survey is to ascertain what dwelling-houses are overcrowded and what additional accommodation is needed. The Department realizes that the detailed survey required for the control of overcrowding, necessitating the measurement of rooms, will take some considerable time, but points out that while this detailed survey will require to be made a more limited survey capable of being rapidly completed will serve the purpose of determining the immediate building programme. This limited survey will be carried out through the issue of simple forms to occupiers, who will be required to state the number, ages and sex of persons in occupation and the number of rooms in the house, with information regarding lodgers and sublets. On the recommendation of a committee of local authority officials the Department advises that the issue and collection of the forms should be done by a house-to-house visitation, by additional temporary staff, if necessary.

The information contained in these forms should be sufficiently accurate to enable local authorities to report and submit building proposals to the Department within a comparatively short time. The Act, however, provides for the fixing of dates by the Department, in consultation with local authorities, for the submission of these reports and proposals, and the Department accordingly intimates that, unless local authorities communicate with it on the matter before November 30, 1935, the prescribed dates are to be taken as December 31, 1935, in the case of burghs and January 31, 1936, in the case of counties.

A Memorandum which should be of value to local authorities is that which points out the most important changes in housing law consequent on the passing of the new Act. Amongst these are the extension to June, 1938, of the operation of the Rural Workers Act, which provides financial assistance towards the improvement and reconstruction of rural houses; provision for additional compensation to owners of good property included in a clearance area for environmental reasons and acquired by the local authority; provision for compensation in respect of property which, though condemned, has been well maintained; allowances at the discretion of the local authority to retail shopkeepers who suffer loss through the removal of customers consequent on clearance or redevelopment operations; extension of powers of local authorities to enable them to acquire land for housing purposes in advance of immediate needs; extended powers to make housing bye-laws; provision for independent commissioners to hold public local inquiries under the Housing Acts; provision for the appointment of a housing advisory committee to advise the Department, comprising two sub-committees to deal with urban and rural housing respectively; power given to any local authority to transfer the management of its houses to a housing management commission; and additional provision for the enlistment of the co-operation of voluntary housing associations in the provision and reconditioning of working-class houses.

●

Publications Received

Roman Britain. By C. M. Franzero. London: George Allen and Unwin, Ltd. Price 5s. net.

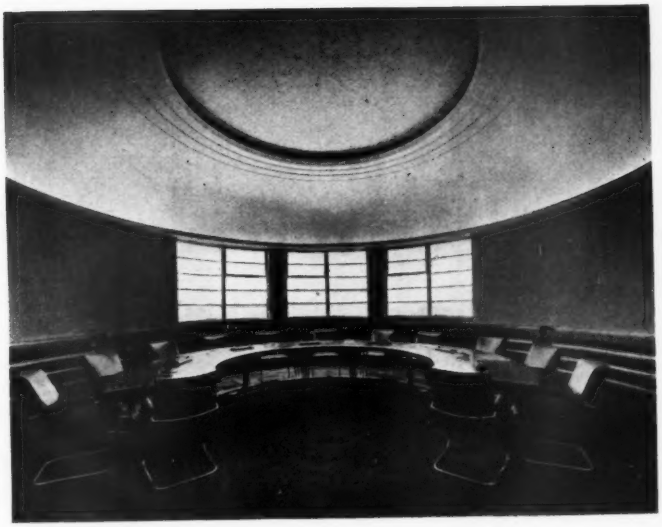
Country Houses of Dorset. By Arthur Oswald. London: Country Life, Ltd. Price 12s. 6d. net.

Art in the U.S.S.R. Special Autumn Issue of the Studio. Edited by C. G. Home. London: Studio, Ltd. Price 7s. 6d. (wrappers); 10s. 6d. cloth.

FILING REFERENCE:

WORKING DETAILS : 327

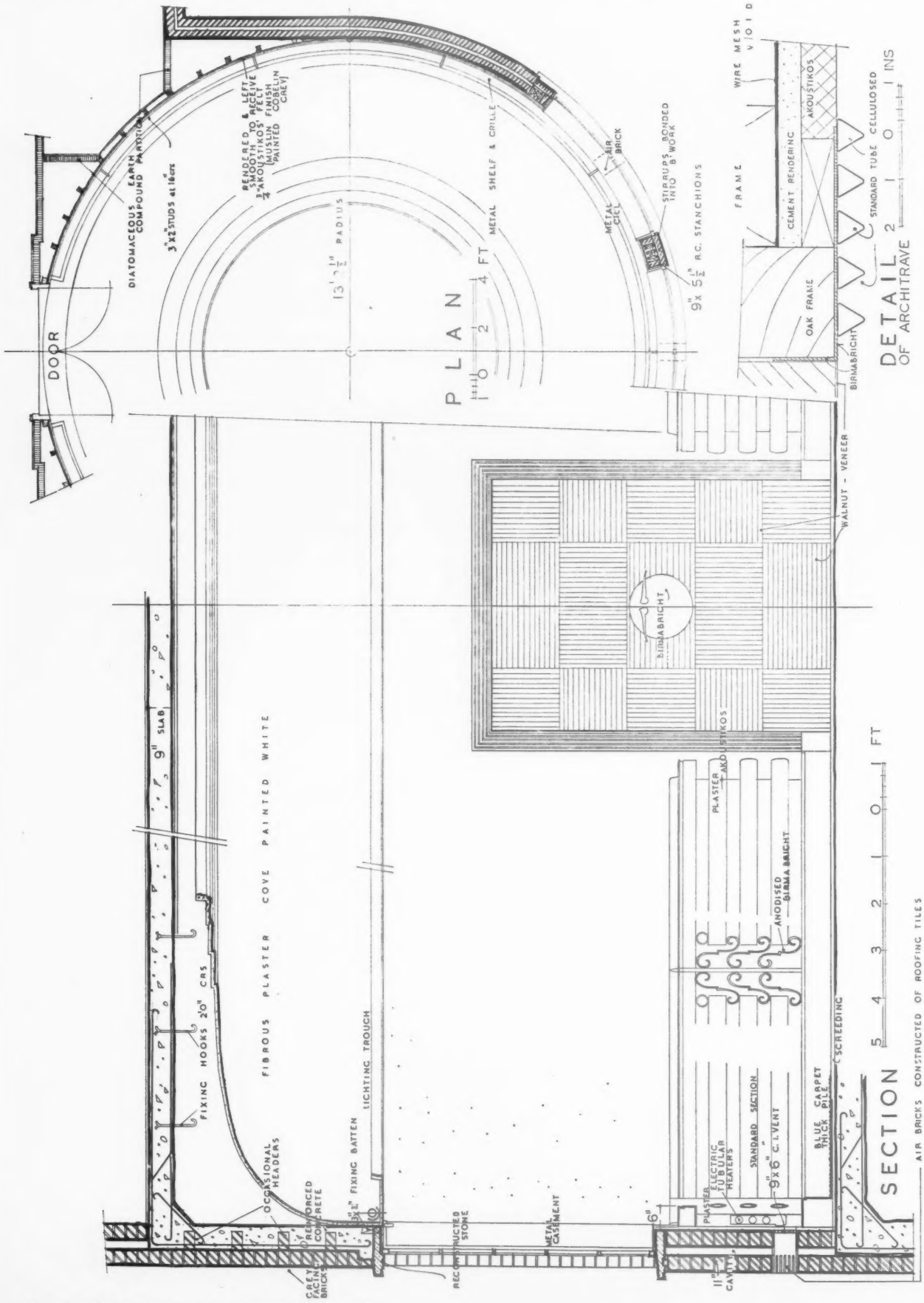
BOARD-ROOM ● FACTORY ADMINISTRATION BLOCK, BIRMINGHAM ● BYE, SIMMS AND GIFFORD, AND S. T. WALKER



The photographs show the circular board-room of a steel tube factory, constructed of reinforced concrete faced with silver-grey bricks. The products of the clients' firm were largely utilised in the internal decorative treatment which is illustrated overleaf.

WORKING DETAILS : 328

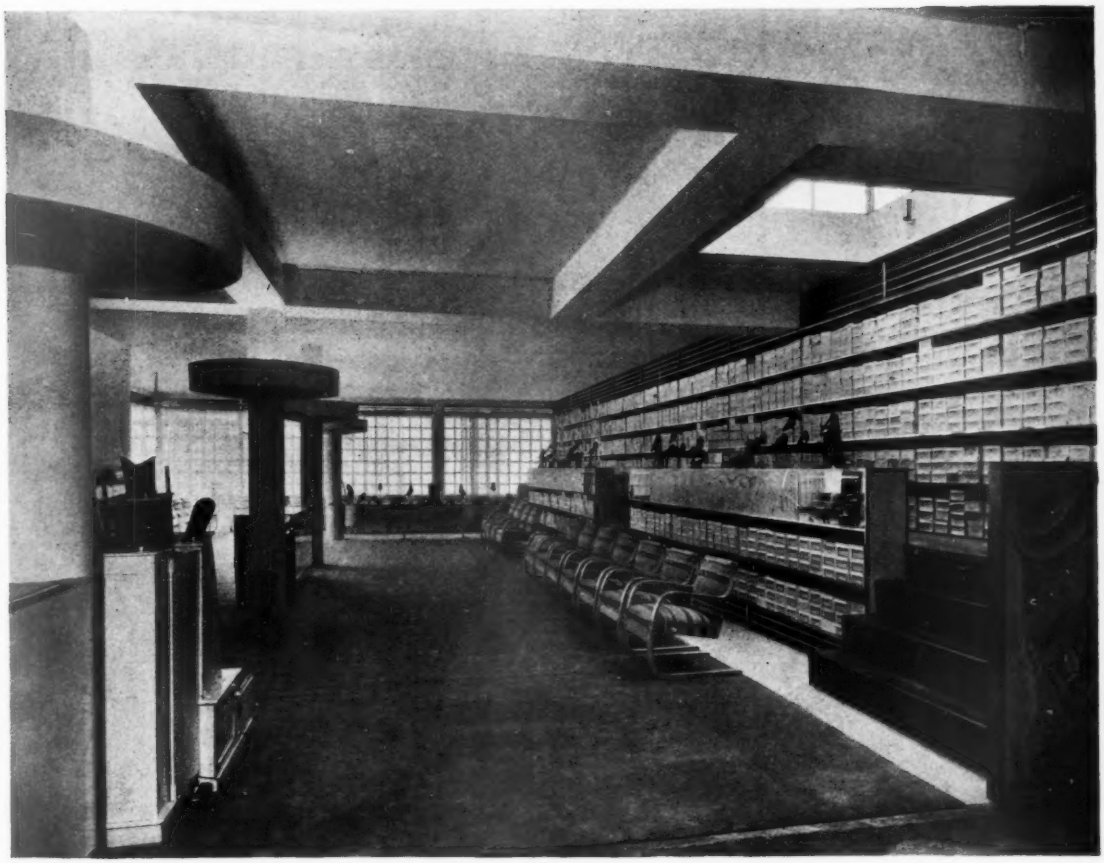
BOARD-ROOM ● FACTORY ADMINISTRATION BLOCK, BIRMINGHAM ● BYE, SIMMS AND GIFFORD, AND S. T. WALKER



Details of the board-room illustrated overleaf.

WORKING DETAILS : 329

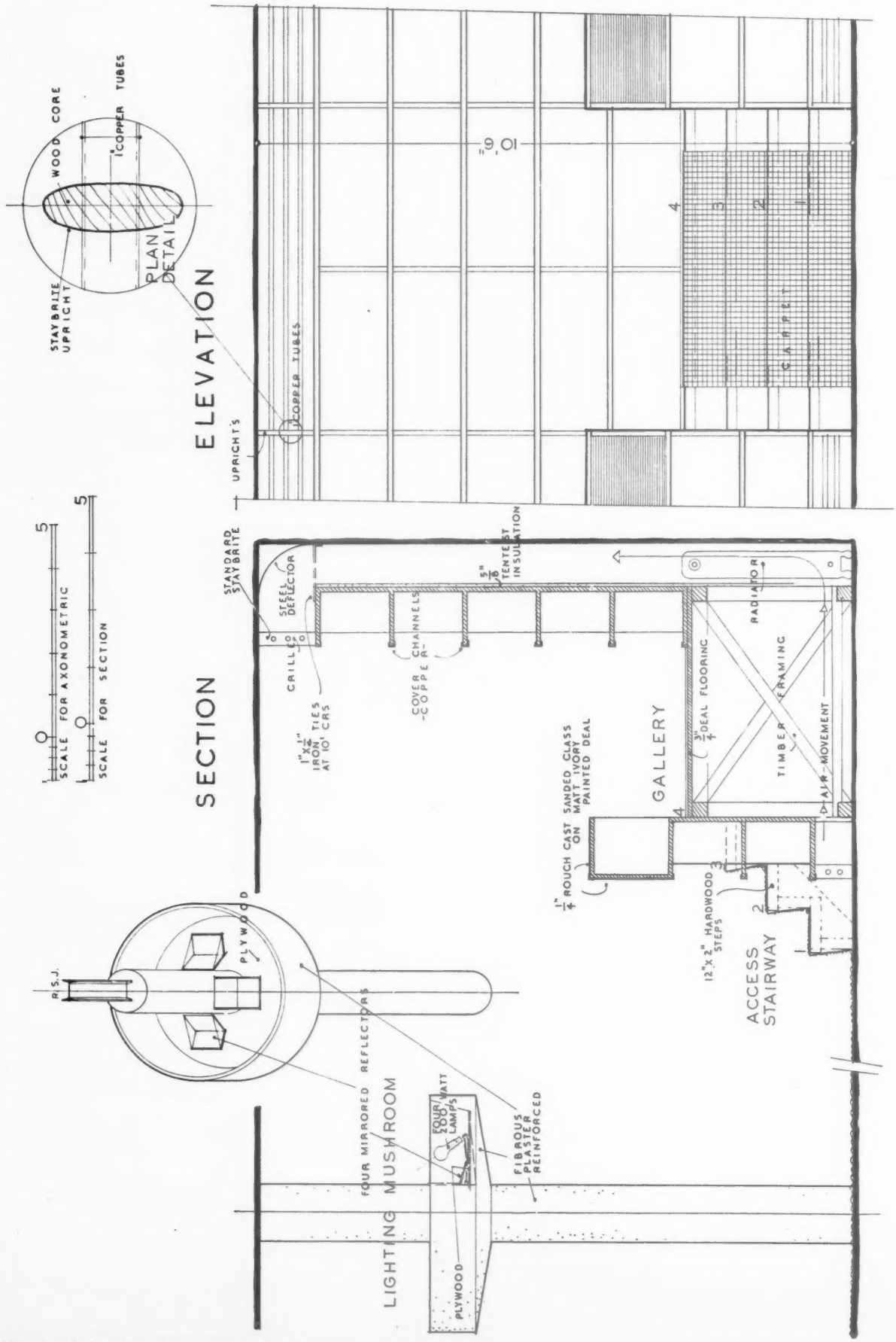
INTERIOR TREATMENT • SHOP AT ILFORD • CLIVE ENTWISTLE



The gallery shown to the right of this photograph of a shoe shop has been designed to eliminate the use of a step-ladder in reaching the higher storage racks, whilst maintaining the same number of shelves. An additional space for odd stock is provided behind the gallery front. A detail of the construction of the gallery, and of the heating system incorporated in it, appears overleaf.

WORKING DETAILS : 330

INTERIOR TREATMENT • SHOP AT ILFORD • CLIVE ENTWISTLE



Details of the shop illustrated overleaf.

ANALYSIS OF BUILDING : 3

This, the third of our series of building analyses, is a thesis submitted by four students for the Architectural Association School Diploma. The subject chosen was the replanning of an overcrowded working-class area, and the provision of healthy flats at a rent within reach of the worker. On this and the pages following are given the essential drawings and the relevant extracts from the thesis report.

REHOUSING IN ST. PANCRAS

BY R. G. BROWN, R. A. KIRBY, B. A. LE MARE and R. H. SHEPPARD

PROBLEM.—A congested working-class neighbourhood lying close to the centre of London. Almost entirely dormitory in function with the majority of inhabitants able to afford neither the time nor the money to live at a greater distance. Complete lack of all open-air recreational facilities. Houses congested, old-fashioned, and with high rentals.

RECREATION.—No spaces within the site, although the London Gardens Guild has recently opened some educational gardens for children in the Kentish Town Road.

Regent's Park and Parliament Hill Fields are the nearest open spaces; access to them for children is difficult. Regent's Park is the nearest, being approximately one mile away.

There are several cinemas in the Kentish Town Road, and some public baths, wash-houses and libraries.

POPULATION, ETC.

Families	1,435
Total population	4,800
Number of children	1,812
Number of unattached individuals	183
Number of separate dwellings	517
Number with shops	617
Number of acres	27·25
Population per acre	173·4
Families per house	2·9
Persons per family	3·13
Average persons per house	9·28

OBJECT.—To put forward a practical proposal for the replanning of this area, capable of being executed under present social legislation and, at the same time, to design in terms of the major replanning of London.

1,425 families were to be rehoused in such a way as to rehouse as large a percentage of site as possible.

SOLUTION.—Vertical planning reduces percentage of site occupied by buildings, and this releases space for recreation. Standardization of planning produces low rental and modern systems of construction give healthy dwellings.

PROPOSALS :

50	Shops
180	1-room flats
152	2-room ,,
615	3 ,, ,,
406	4 ,, ,,
72	5 ,, ,,
1,425	flats

FLATS TO BLOCK ANALYSIS.

540 flats (37 per cent.) in 15-storey blocks covering ·93 acres.

880 flats (63 per cent.) in 5-storey blocks covering 2·9 acres.

Total area built on, 3·38 acres, 12·44 per cent. of site.

ANALYSIS OF BUILDING : 3

SCHEDULE OF BUILDING COSTS.—The figures given in the first report of the Council for Research on Housing Construction have been used as a basis for the figures below.

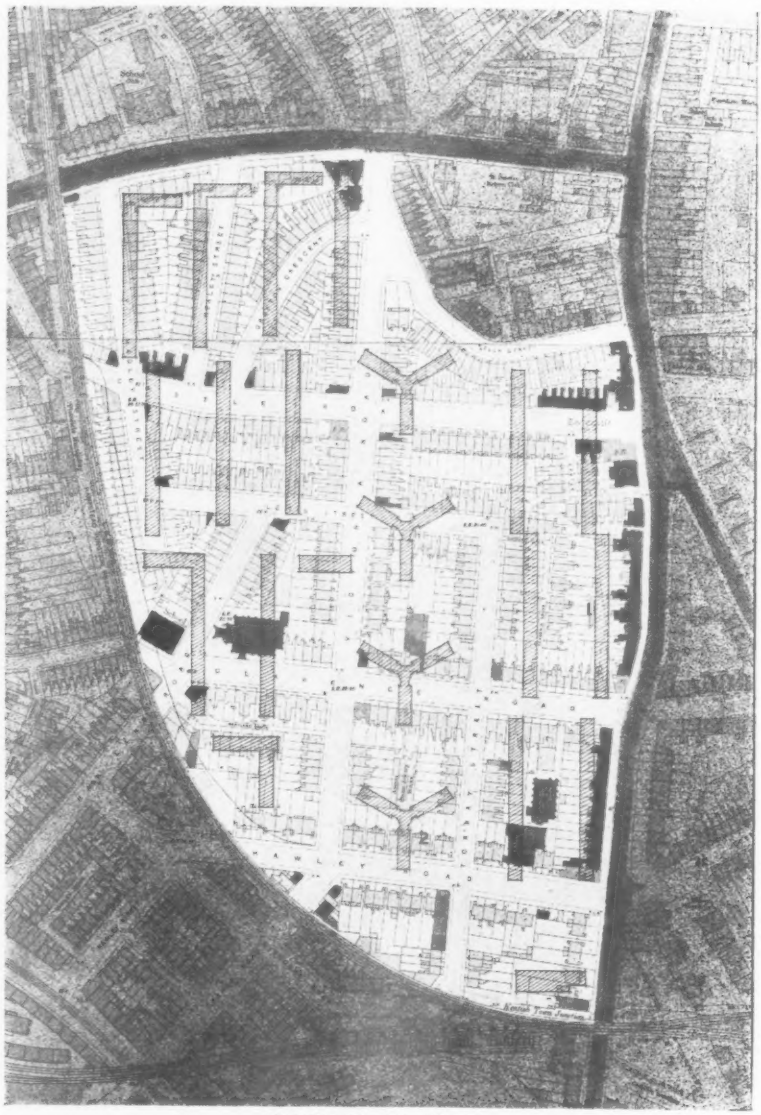
Building.	Unit price per cub. foot.	Unit.			
One 5-storey block ..	1/-	405,394	£20,269	14	0
One 15-storey block ..	1/1	970,261	52,555	16	0
Fifteen 5-storey blocks ..			£304,045	10	0
Four 15-storey blocks ..			210,223	4	0
			£514,268	14	0
Roads—1,100 feet at £1 per foot			1,100	0	0
Architects' and Consultants' fees, calculated at 6%, or approx. 1d. per cubic foot			30,852	0	0
Two-storey shops and flats over			8,671	0	0
6d. square foot for demolition and reconditioning			43,560	0	0
Total			£598,451	14	0
Cost of land : 27½ acres at £15,000			412,500	0	0
			£1,010,951	14	0
Plus heating and refuse disposal, say total..			£1,600,000	0	0

REVENUE :

Flat Type.	No. of Flats.	Rent.	Total Revenue.		
1-room	180	£22 2 0	£3,978	0	0
2-room	152	23 8 0	3,556	16	0
3-room	615	24 14 0	15,190	10	0
4-room	406	29 18 0	12,017	12	0
5-room	72	31 4 0	2,246	8	0
Shops	50 at	75 0 0 per annum (approx).	3,750	0	0
			40,739,	0	0
Less 40% for maintenance..			16,295	0	0
			24,444	0	0
Subsidy £18 per flat per annum			25,650	0	0
			50,094	0	0
3% on £1,600,000			48,000	0	0
Therefore surplus			£2,000 per annum	0	0

ALLOCATION OF BUILDING COSTS TO MAIN COMPONENTS.—From contractors' estimates from 5- and 10-storey blocks, designed by Slum Clearance and Rehousing, the first Report of the Council for Research on Housing Construction.

	% of Total Cost.	£ per hab. Room.		
1. Foundations and ducts	17·2	£24	0	0
2. Floors and roofs, including finishings ..	19·7	27	16	0
3. Stairs and balconies (includes lifts in 15-storey blocks) ..	7·3	10	0	0
4. Walls, partitions, flues (including plaster skirting)	23·3	32	16	0
5. Windows, doors, etc., including painting ..	13·2	18	12	0
6. Sanitary equipment, fittings, drains, rainwater and refuse disposal	9·3	13	0	0
7. Heating, hot-water, cooking equipment ..	7·9	11	0	0
8. Lighting equipment..	2·1	3	0	0
		£140	4	0

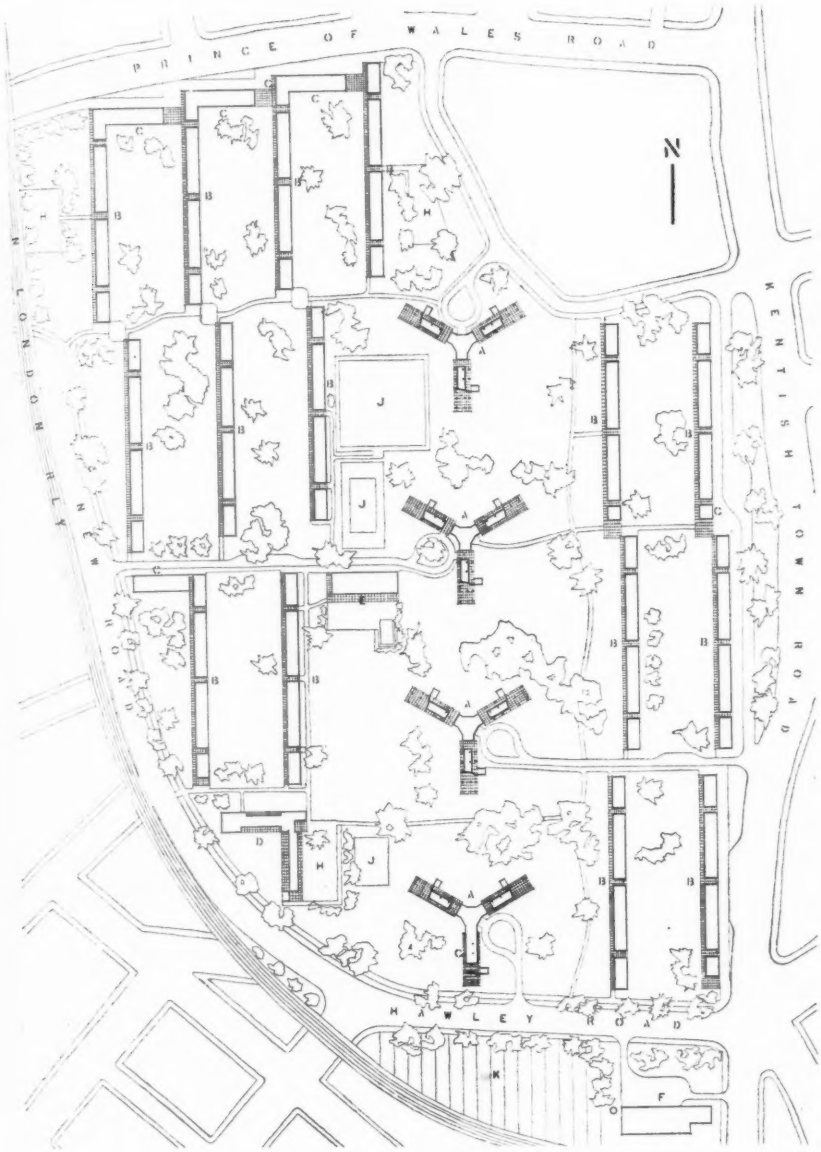


SURVEY OF SITE

BASED UPON THE ORDNANCE SURVEY MAP WITH THE SANCTION OF THE CONTROLLER, H.M. STATIONERY OFFICE

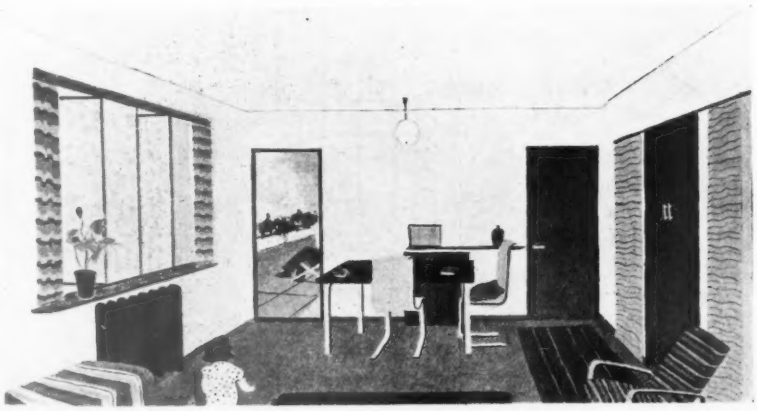
The illustrations show : top, survey of the site ; bottom, a perspective showing five and fifteen-storey blocks. Facing page : A typical living room.

REHOUSING IN ST. PANCRAS



KEY TO LAY-OUT PLAN

A : Fifteen-storey block.
B : Five-storey blocks.
C : Two-storey shops.
D : School.
E : Health Centre and Crèche.
F : Power House.
G : Public House.
H : Hard Playgrounds.
J : Sports.
K : Allotments.



PROVISION OF OPEN SPACES.

(a) An open space for recreation as large and uninterrupted as possible, giving adequate recreation—games—for adults and children.

(b) Use of space between 5-storey blocks was discouraged owing to noise and danger to young children, breakages, etc. A small playground for children directly under observation from the flats might be included.

The blocks are disposed to allow the minimum of traffic across the site and the maximum space uninterrupted by service roads.

Central core of 15-storey blocks release ground for recreation, diminishes reflected sound and results in less obstruction of sunlight across site.

ROADS.—Hanley Road carries most traffic—30 vehicles 30 mins. The remainder practically none. What traffic there is proceeds across site.

Hanley Road has, therefore, been preserved and carried up along beside the railway. This

(a) Keeps through traffic off site.

(b) Cuts off arches and railway from site and allows maximum space to be utilized. (c) Localizes noise. (d) Allows good junction with Prince of Wales Road.

SERVICES.—N. to S. orientation gives:—

(a) Straight runs for drainage and other services and links with existing sewers;

(b) Minimizes lengths of ducts, etc., full inspection under blocks, manholes, across site;

(c) This with natural fall of site gives economic drainage disposal.

All services—steam to calorifiers—Garchey system—drainage—water and power, carried in these ducts.

AMENITIES.—PLAYGROUNDS, three, with swings and slides; one next to school, others serving different parts of site.

CRECHE.—Combined with Health Centre and placed close to School.

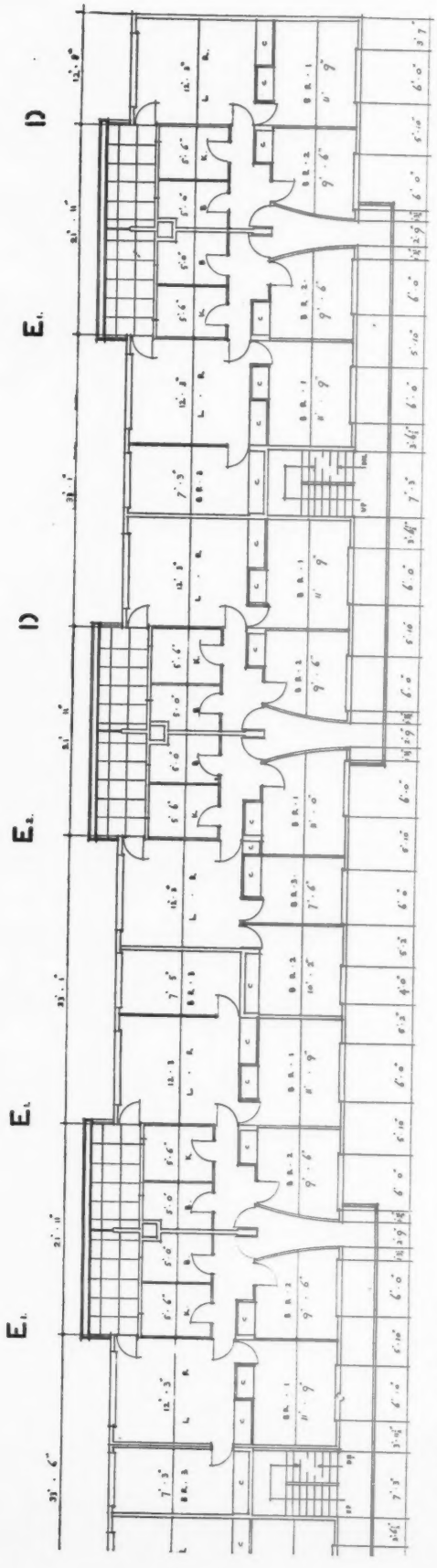
PUBLIC-HOUSES.— Three have been kept; it is assumed that the Health Centre will absorb the clientèle of the remainder. The three remaining—freehold leases — are planned after the continental café restaurant type.

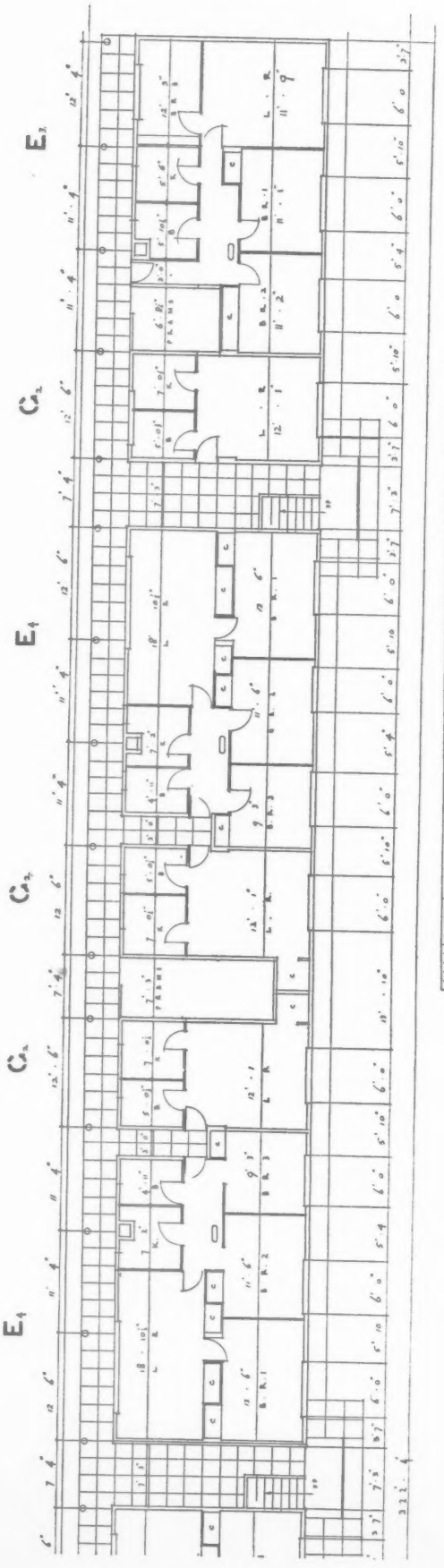
CHURCHES.—There are already more churches in the neighbourhood than the demand warrants. If churches were kept, the efficiency of the plan would be reduced.

PLANTING.—Exceptional number of well-grown trees on site, these have been retained as far as possible.

OTHER AMENITIES.—A shallow paddling pool next to the Health Centre, bowling greens, tennis courts, boys' and girls' recreations, basket ball, small football pitch adjoins school.

ANALYSIS OF BUILDING : 3

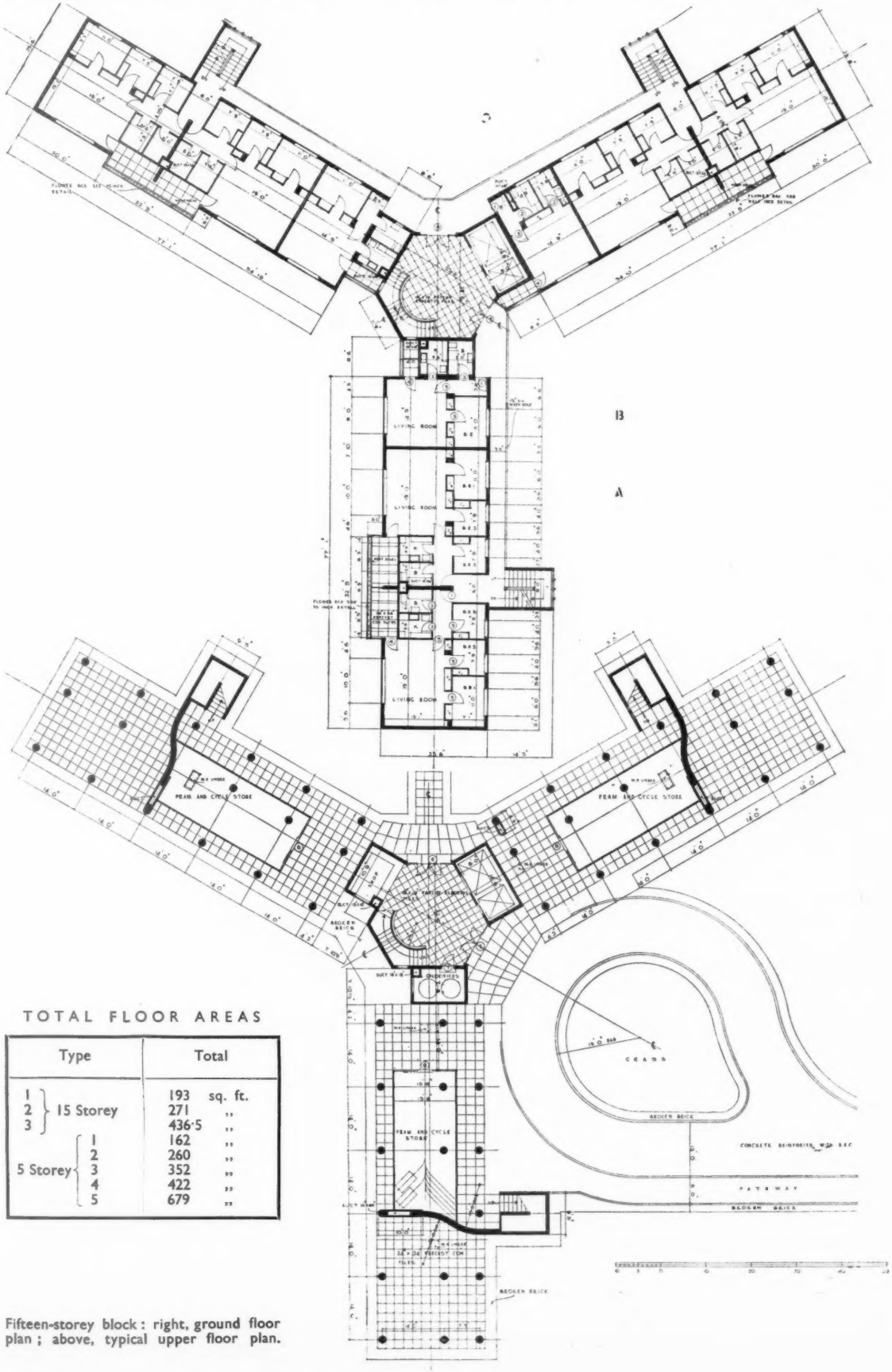




Left : part upper floor plan of a normal five-storey block.

Right : part ground floor plan of a normal five-storey block

REHOUSING IN ST. PANCRAS



TOTAL FLOOR AREAS

Type		Total
1	15 Storey	193 sq. ft.
2	15 Storey	271 ,,
3	15 Storey	436·5 ,,
5 Storey	1	162 ,,
5 Storey	2	260 ,,
5 Storey	3	352 ,,
5 Storey	4	422 ,,
5 Storey	5	679 ,,

Fifteen-storey block: right, ground floor plan; above, typical upper floor plan.

ANALYSIS OF BUILDING : 3

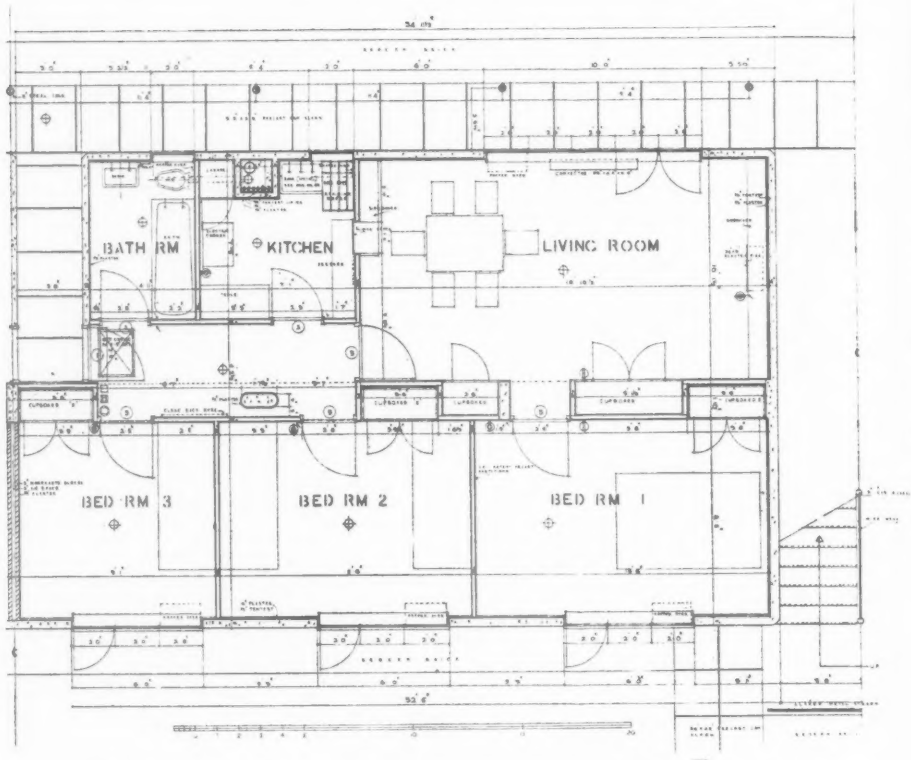
GENERAL CONSIDERATIONS :

1. All living-rooms to have a minimum of four hours' possible sun per day.
2. All flats separate, sun facing s. or w. balconies.
3. Living-rooms as large as possible—even at the loss of bedroom space. Increase in area regularly with size of flat.

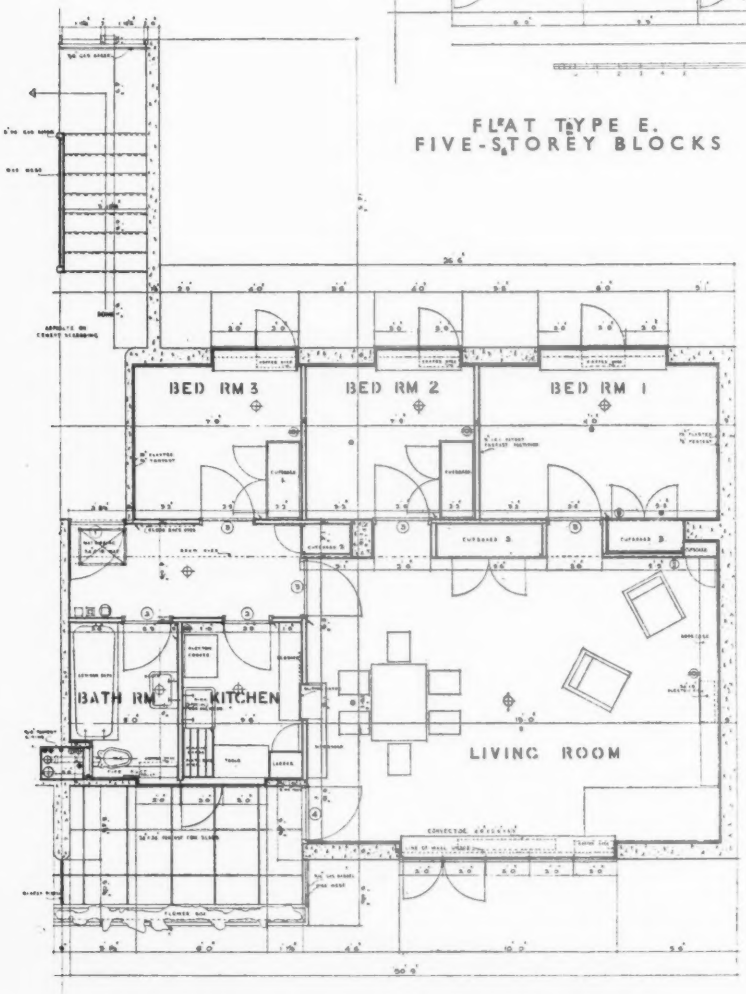
The single depth flat plan with centralized services that is rapidly becoming a standard, was adopted.

EQUIPMENT :

Central Heating. The collection of refuse by the Garchey system means a saving of fuel. The type of fuel burnt cannot be stated, but with the Garchey system pulverized coal is probably the cheapest. Electricity could also be obtained direct from grid, or coke firing used.



FLAT TYPE E.
FIVE-STOREY BLOCKS



FLAT TYPE A. FIFTEEN-STOREY BLOCK

System adopted. Steam fed to calorifier in each block. Calorifiers heat water (*a*) for hot water, (*b*) for heating.

The omission of central heating was considered, but it was thought that (*a*) the expense of providing separate boilers, fires, grates and flues and their cleaning; (*b*) expense and waste of coal stores and tenants' use of coal in winter, 1s. 3d. and 9d. per week, and impossibility of proper distribution over 15 storeys.

Heating within Block. Two calorifiers heat within block: (1) hot water, (2) heat. The hot water is distributed around to the flats with one radiator to each flat. It is suggested that tenants be charged a fixed amount per week as part of rent.

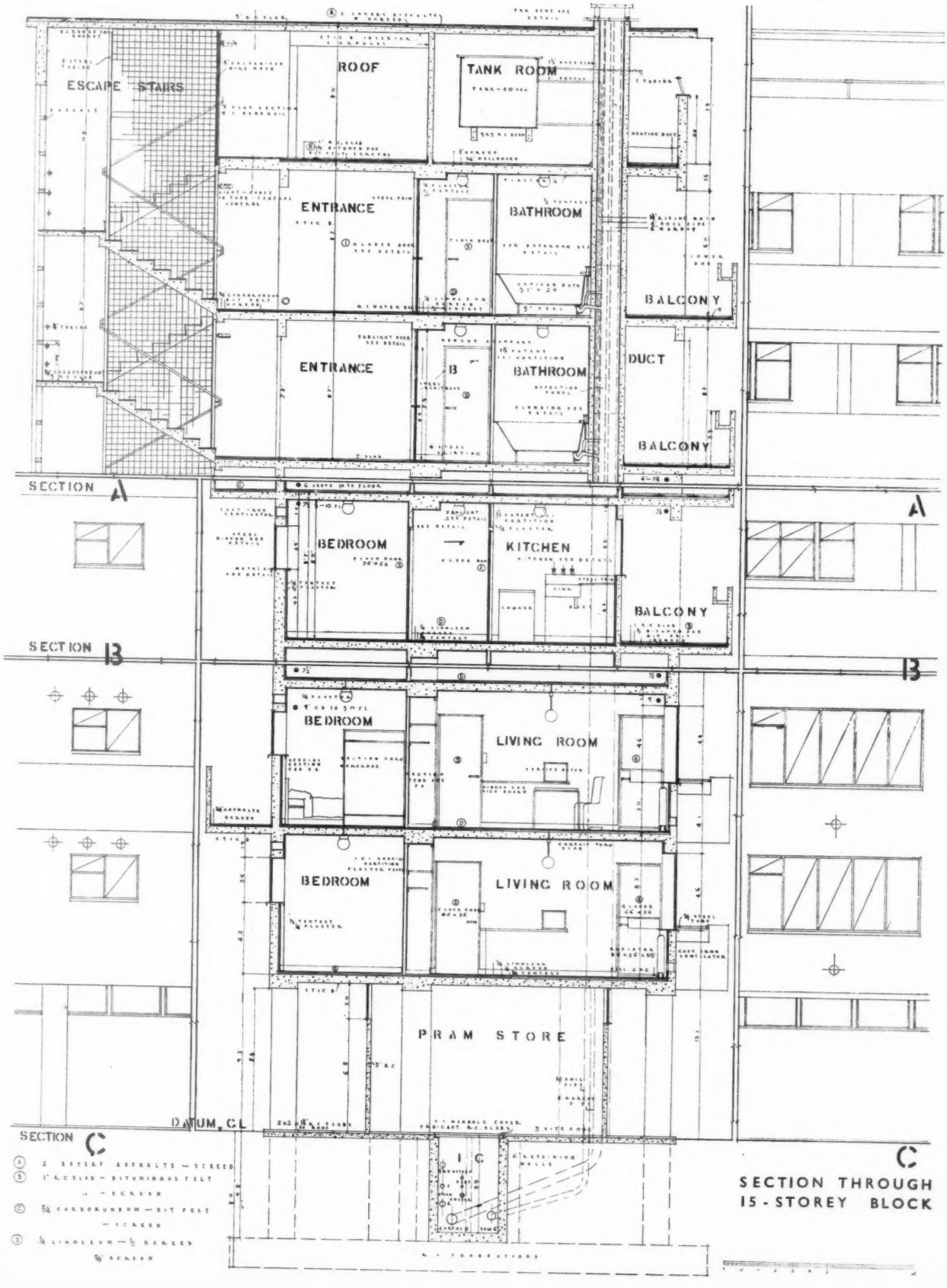
Furnishing Scheme. A Furnishing Society to be administered by the Estate out of the funds.

Cost. The estimated cost of furnishing the living-room is as follows :

	£	s.	d.
Bentwood table	0	18	0
4 chairs at 7/6 each	1	10	0
Carpets—5 yds. at 4/- yd. ..	1	0	0
Divan—Bentwood with rubber cushion	1	0	0
Fabrics—15 yds. at 2/6 yd. ..	1	15	0
Armchair—one at £2 5s. ..	2	5	0
Cabinet	2	0	0
Fire, E.	1	0	0
	£11	8	0

These prices are wholesale and it is intended that limited number of designs and patterns should be used. At this figure, a living-room could be furnished on hire at 1s. 3d. per week, including maintenance.

REHOUSING IN ST. PANCRAS

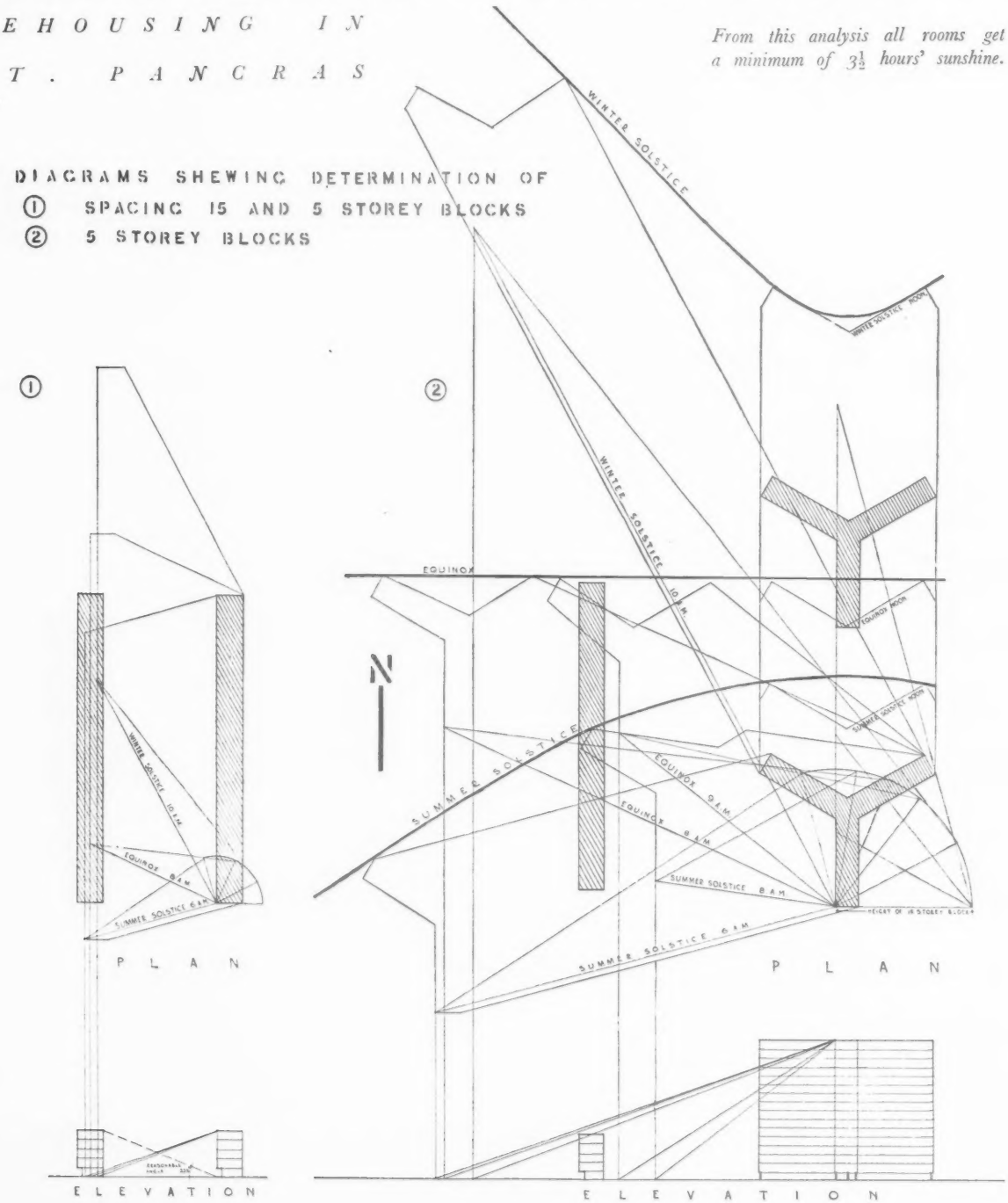


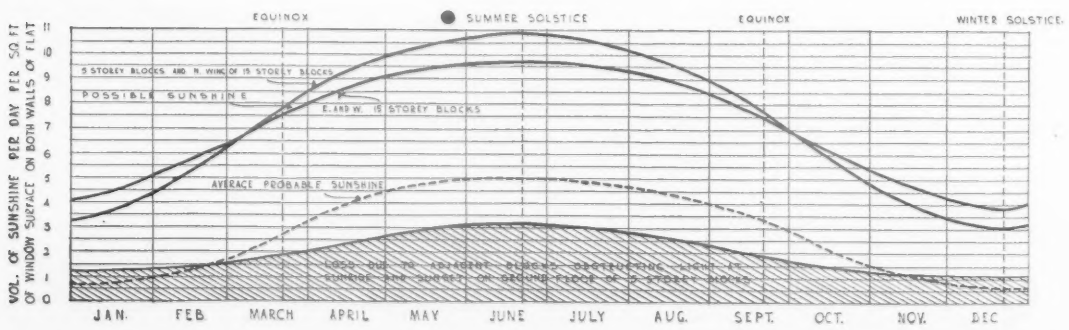
ANALYSIS OF BUILDING : 3

REHOUSING IN ST. PANCRAS

From this analysis all rooms get a minimum of 3½ hours' sunshine.

DIAGRAMS SHEWING DETERMINATION OF
① SPACING 15 AND 5 STOREY BLOCKS
② 5 STOREY BLOCKS





TECHNICAL SECTION: 31

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.

HEATING BY ELECTRICITY
(*Continued*)

PROPORTION OF HEATING LOAD

SOME idea of the relation which the heating load bears to the ordinary electric requirements of a modern building is given in Fig. 181. This will bear out what has already been said about the magnitude of the problem which these big heating loads present. The electrical industry will have to face up to this if it intends to take them on a large scale.

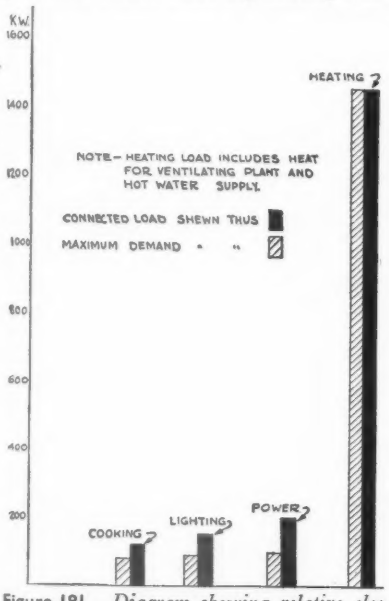


Figure 181. *Diagram showing relative electrical loads compared with that for electric heating. Taken for actual building of 1.43 million cubic feet gross cube.*

Direct Electric Heating Systems

Types of direct electric heating were discussed briefly in Section 8, page 347, and are shown in Figs. 40 to 45, repeated here for convenience.

Visible radiant heaters of the fire or bowl type (Figs. 41 and 42) give the most rapid response to a demand for heat, as by standing in the beam an immediate sensation of warmth may be felt, even in a cold room. They are therefore particularly useful in bedrooms or living-rooms occupied intermittently, but they cannot be regarded as a satisfactory solution for continuous heating, particularly for large buildings, as the effect is highly localized and high temperature rays playing on the face in time become objectionable.

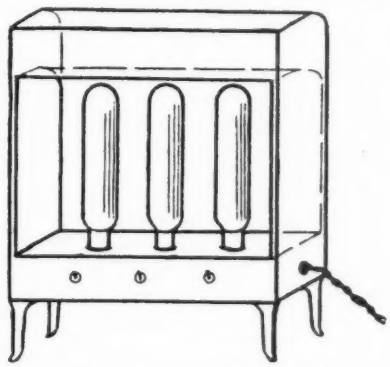


Figure 40. *Luminous electric radiator.*

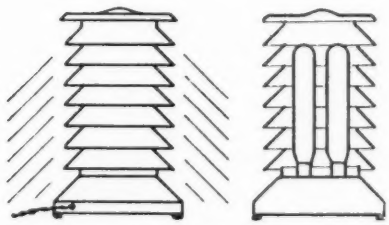


Figure 41. *Enclosed luminous electric radiator.*

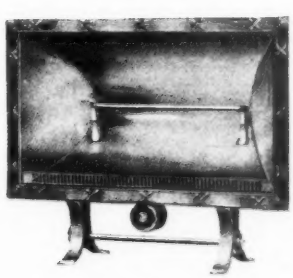
Convection type heaters and the low and high temperature non-luminous radiant panels are suitable for continuous heating, but thermostatic room control is essential for economy with any type.

Tubular heaters of the type shown in Fig. 182 are often a convenient form placed around the walls of the room near the floor. They have been used in churches placed under the pews, where they tend to keep the lower air warmed without necessarily heating the whole building, and this naturally leads to economy for intermittent use. Down draughts from the upper windows are prevented by further tubes on the cills at high level.

High temperature radiant panels, as Fig. 43, have been used with apparent success in a large number of schools, where again a measure of intermittent heating is possible.*

In this case no attempt is made to warm the air except indirectly, and thus the building may be said not to be fully warmed. The system is so arranged that the occupants receive a well-distributed heat radiation of sufficient intensity to counteract the cool air condition. Use is made for purposes of control of a device called an Eupatheostat, which is sensitive to radiation, air movement and sun effect, and which so regulates the electricity supplied as just to satisfy itself with radiation. When such is the case the human body, to which it conforms

A



B

C

Figure 42 (a, b & c). *Exposed resistance radiators.*

* For further discussion see Paper by Mr. Hays Hallett, M.A. I.H.V.E. proc. Jan., 1931.

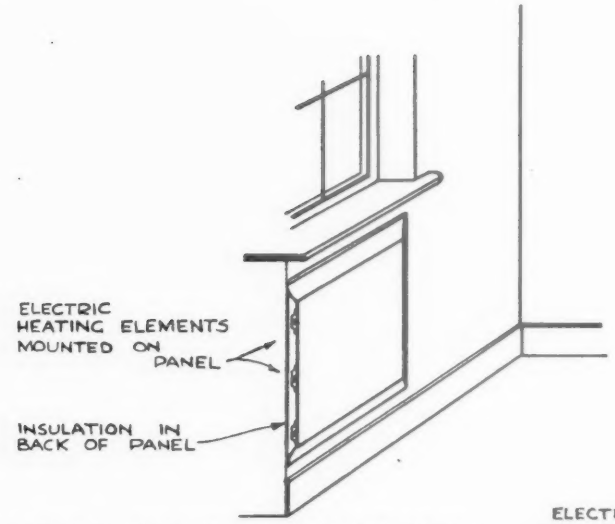


Figure 44. *Low-temperature electric heating panel.*

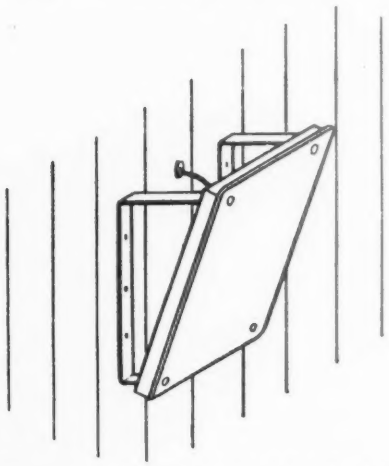


Figure 43. *High-temperature electric heating panel.*

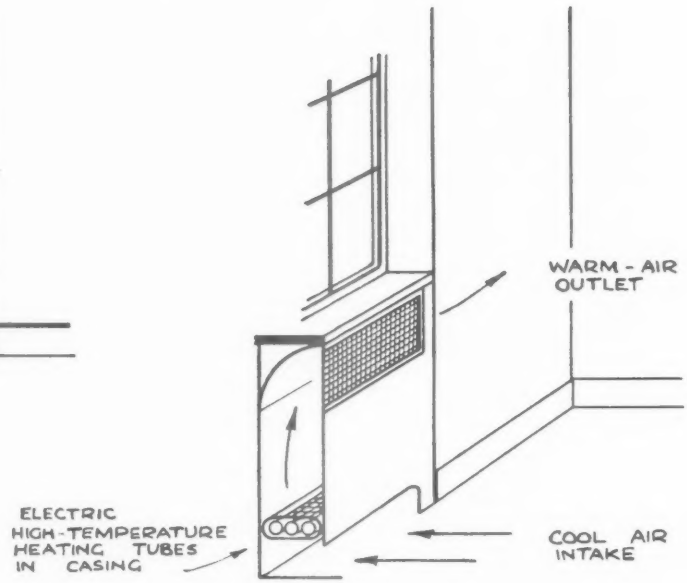


Figure 45. *Electric convector.*

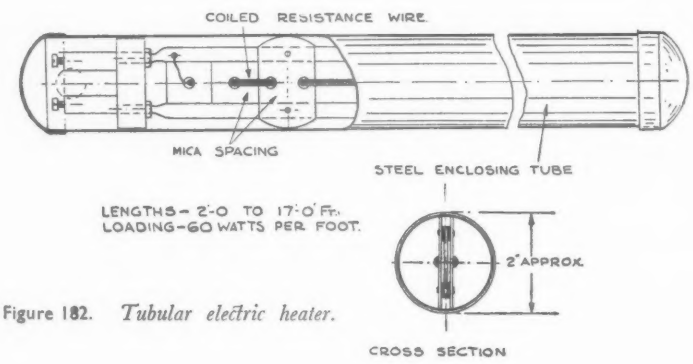


Figure 182. *Tubular electric heater.*

as regards surface temperature, is likewise stated to be in a condition of comfort.*

This system is naturally of limited application, but it is an interesting example of what can be done by radiation alone. It is furthermore a new departure in heating methods and one difficult of achievement with other fuels.

Low temperature electric panels of the metallic type, or the wallpaper-fabric type, simulate in effect their hot-water counterparts. In common, however, with all electric heaters they are of a fixed output which cannot be boosted or increased after installation without the greatest difficulty. A hot-water system can, of course, have its temperature raised above normal for a period for rapid warming up or for meeting very severe weather conditions, but this is not possible with electricity. Thus the heating load calculated for in the case of the latter should have an adequate margin to meet these contingencies, or failure is bound to ensue. This is in practice very seldom done; indeed, the arguments are generally for showing that less than normal will do. Coupled with thermostatic control, an increase of installed load does not mean increased consumption, though it does mean higher first cost, and this should be borne in mind when considering competitive estimates put forward by manufacturers or installers. The one with the most heating surface or electrical loading will, within reason, invariably give the greatest satisfaction ultimately.

The other forms of direct heater already mentioned need not be further discussed.

Indirect Electric Systems

Electricity used for heating water or generating steam for heating purposes without thermal storage is of such limited application that it need not be discussed here. Obviously such a method possesses none of the merits of direct systems and does not take advantage of cheap "off-peak" current.

Thermal Storage Systems

Fig. 29 is repeated to show the general arrangement of a typical thermal storage system. The principle of operation may be described as follows :

(*a*) The electrode water heater (or separate immersion heater) warms the water in the storage cylinder, the pump accelerating the circulation. If the immersion heaters are contained in the main storage no pumping is necessary.

(*b*) This heating takes place at off-peak hours, and in order to economise in capacity of storage the temperature is raised as high as possible without generating steam. This may be as high as 300 deg. F., and is determined solely by the height of the building. An artificial head can be produced with a mercury seal or "heat generator" in the feed and expansion pipe, but this is not considered safe in this country. The storage temperature is generally kept about 20 deg. F. below

* But the Eupatheostat does not appear to take variation of humidity into account, though this certainly affects the human body powerfully.

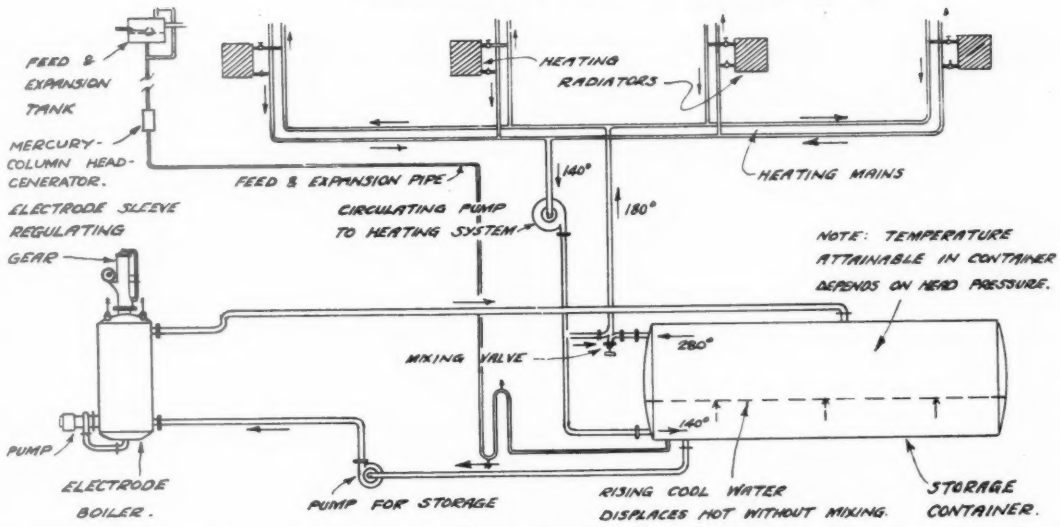


Figure 29. *Diagram of electrical thermal storage system.*

that at which steam would be produced.

(*c*) At a given time the current to the heater is cut off automatically by time switch, or from the supply company's sub-station. At the same time the storage pump is stopped.

(*d*) When heating in the building is called for the heating pump is started, high temperature water is drawn off from the cylinder and returned cold at the bottom. A proportion of return water is mixed with the flow through a thermostatically controlled mixing valve. Thus, with possibly 250 deg. in the cylinder, 150 deg. may suffice for the radiators. If the system has gravity circulation and no pump, the operation is controlled by an electrically operated valve.

(*e*) This process continues all day, the level of cool water at the bottom of the cylinder gradually rising, but not mixing with the hot, and by night time in cold weather probably little hot is left in reserve.

(*f*) When heating is no longer required the secondary pump is stopped.

(*g*) At a given time, when off-peak current is available, the supply is turned on to the boiler and the process repeated. The primary pump is simultaneously started.

(*h*) If the cylinder is completely emptied of high temperature water during the day it is possible to have what is called a "day boost." That is to say, power is turned on to the heater during on-peak hours. For this, however, a higher rate is charged, and it is only resorted to in an emergency. Thus the storage capacity is controlled by the heat output of the plant, its period of use and the temperature to which it can be run. The electrical loading of the heaters is likewise determined by the daily total heat load and the number of hours during which current is available.

The heater may be of two types according to the voltage and size of the installation:

(*a*) Immersion heaters consisting of resistance elements inside metallic tubes or blades. These are suitable for low voltages up to 250, or when in a balanced arrangement up to 500, and are generally of 3 to 4 kW loading each, arranged in groups or banks of 50 kW or more. This type of heater is often placed direct in the bottom of the storage vessel as in Fig. 183. Installations rarely exceed 300 kW. Fig. 184 gives an illustration of a typical plant.

(*b*) Electrode water heaters connected to a medium voltage (400-600 volts) or high voltage (600 to 11,000 volts) three-phase alternating current supply.

LAW REPORT

DAMAGES AWARDED FOR BREACHES OF COVENANT

Ruddle v. *Osborne—Official Referees Court, High Court of Justice. Before Mr. S. R. C. Bosanquet, K.C.*

THIS action dealt with the liability of a tenant for damages through failure to observe covenants to keep the interior of a house in repair, as well as the drains and gutters. Miss G. H. Ruddle, of Peterborough, let to Mr. C. H. Osborne a house in Westwood Park, Peterborough, and she now sued for rent and damages in respect of breach of covenant.

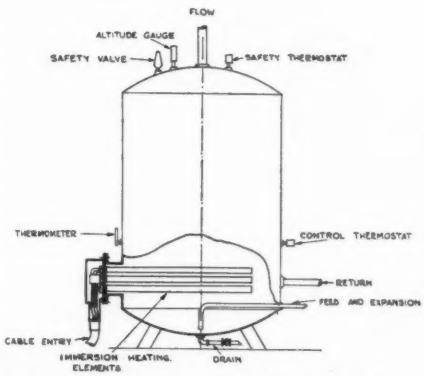
The case for Miss Ruddle was that she claimed £158 for interior repairs to the house and £222 for making good damage to the structure, due to the defendant failing to keep the drains and gutters in order. Miss Ruddle alleged that a settlement occurred in the south wall and damp and cracks showed themselves in various rooms, with the result that the interior of the house got into a deplorable condition. Miss Ruddle said this was all due to defendant allowing the drains and gutters to get out of order, so that the ground became soaked and the foundations of the south wall cracked and settled.

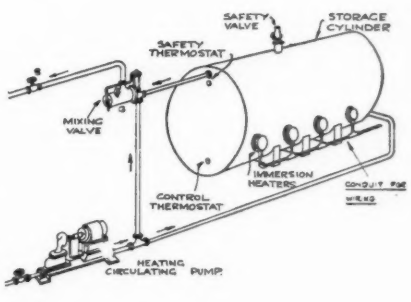
Defendant's reply to the claim was an allegation that Miss Ruddle failed to keep the exterior and the foundations in repair, with the result that it was impossible for him to carry out his covenants.

Mr. Sandlands, K.C., and Mr. G. Howard appeared for plaintiff, and Mr. F. Kingsley Griffith represented the defendant.

The Official Referee, in giving judgment, said he had had before him a mass of evidence, including that of an independent expert, who had examined the foundations and found them to be adequate. He therefore came to the conclusion that the version of Miss Ruddle as to the trouble was the correct one. Under these circumstances he awarded Miss Ruddle £130 in respect of the internal repairs, and £169 for structural repairs. With regard to rent, he awarded her £30 in lieu of notice by the defendant, to terminate the tenancy.

Judgment was entered for Miss Ruddle for £329, with costs.





Left: **Figure 183.** *Immersion type thermal storage heater. Right:* **Figure 184.** *Diagrammatic lay-out of electric thermal storage plant with immersion heaters fitted directs to torage cylinder.*

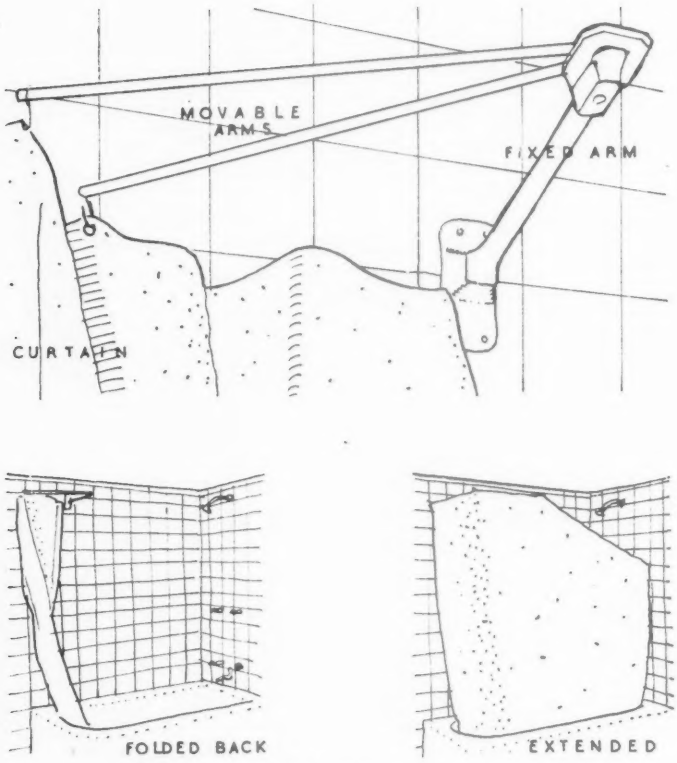


Figure 1

TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

Small Circuit Breakers

CONSIDERED purely as a means for the protection of electrical appliances, the ordinary fuse is a perfectly efficient device, but it suffers from one or two disadvantages, particularly when installed in a private house. Most householders are capable of replacing a blown fuse, but any troubles (other than those due to a simple lamp failure) are usually attacked by the trial and error method of plugging in the various appliances and hopefully replacing fuses until the fault is discovered.

•

This can be a wearisome process and, with the cartridge type of fuse, is not by any means cheap. For some years past the Westinghouse Company in America has been marketing circuit-breakers specially designed for small domestic work, and several breakers are now available in this country.

•

One of the neatest of these is made by the G.E.C., and is sold under the trade name Elf. This type is slightly larger than the ordinary 15 amp. tumbler switch (3 in. diameter with a total projection of 3 in.), and the different types are rated at 2, 5, 10 and 15 amps. (see illustration below).

•

A thermal overload protective device, which is unaffected by temporary overloads, is provided; sustained overloads of 30 per cent. or more open the circuit breaker after a time delay (see curve below). This is a useful feature, as a lamp failure, although it may be enough to blow a fuse, often gives only a temporary overload which would not be enough to open the breaker.

•

In addition to this, the device is perfectly simple to work, so that even the unmechanical householder should not be forced to remain in darkness until the arrival of an electrician; it is also foolproof, in that owing to the toggle action of the operating linkages it is impossible to jam or force the handle into the "on" position while the fault is still uncleared.

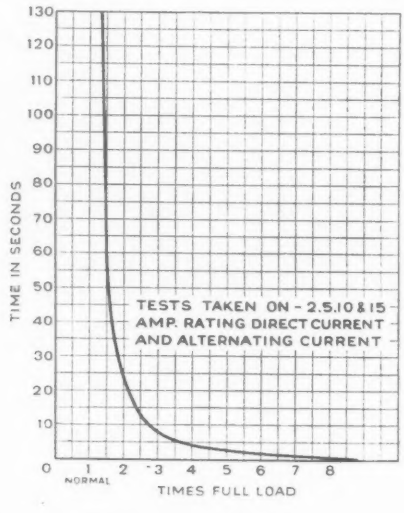
•

This breaker is of the single-pole type, and is suitable for a.c. or d.c. circuits up to 250 volts. Installation is simple, and the manufacturers recommend that the breaker should be connected in one pole, and a fuse, set to a higher rating in the other pole of the circuit. This breaker is, of course, equally suitable for the control of heating circuits; a ten-way board, with breakers, fuses and small neon lamps to indicate the live circuits measuring only 21 in. by 21 in.

•

The price is 11s. 8d. subject to the usual discounts.

Above, the Elf circuit breaker, and right, the approximate overload time lag curve (see accompanying note).



Shower Curtains

Continuing my search among foreign periodicals for equipment likely to be of use in this country I have found a new shower-curtain unit which seems to have several advantages.

•

The ordinary curtain needs an overhead rod about 6 ft. 6 in. from the floor, and this can be awkward to fix, frequently needing ceiling hangers. The head piece to these notes shows the Foldspray, recently patented by the Scovill Manufacturing Co., of

Waterville, Conn., and the drawing is more or less self-explanatory.

•

A single fixing is needed on the wall, and the curtain swings round on two pivoted arms, to be hooked to the return wall at the shower end of the bath. The result is very neat, whether open or closed, and there are no rings to bind on the rod.

•

So far as I have been able to discover, no firm in this country is marketing this device, presumably because the shower is not yet a universal fitting; but a visit to any one of the many new blocks of flats now being built will show that the demand is growing. Something on the lines of this fitting will have to be produced sooner or later, more particularly as one of the best of the American shower heads has been on sale in this country for some years.

THE BUILDINGS ILLUSTRATED

Sub-Contractors' List

Following are the names of some of the general and sub-contractors for the buildings illustrated in this issue :—

Office Building, Birmingham (pages 405-408). General contractors, C. Bryant and Son, Ltd. Basement and foundations : Building Department of Accles and Pollock, Ltd. Engineer for steel and reinforced concrete work : A. Noel Proctor, M.SC.(LOND), A.M.INST.C.E. Quantity surveyors : Henry Vale and Sons. Acoustical Advisor (Board Room) : Hope Bagenal, A.R.I.B.A. Sub-contractors : Rubery Owen Ltd., steelwork ; Concrete, Ltd., reconstructed stone ; Henry Hope and Sons, Ltd., windows ; Apparatus for heating and hot water supplied by Simplex Electric Co., Ltd., and wired and fixed by Accles and Pollock, Ltd. ; Venetian Flooring Co., terrazzo ; F. McNeill & Co., Ltd., roof covering ; Venesta, Ltd., doors and plywood ; Mundet Cork Products, Ltd., flooring ; John Mallin & Co., Ltd., fibrous plaster ; Jas. Gibbons and Birmingham Guild, staircases ; Birmingham Guild, metal work ; Parker, Winder and Achurch, Ltd., sanitary fittings ; H. W. Cullum & Co., Ltd., acoustic treatment ; Lamson Pneumatic Tube Co., Ltd., pneumatic tubes ; James Gibbons, Ltd., door furniture ; Marryat and Scott, hand lift ; Lockerbie and Wilkinson, Ltd., wire screens ; Accordo Blinds, Ltd., blinds ; J. A. King & Co., Ltd., pavement lights ; Pel, Ltd., and Roneo, Ltd., office equipment.

Shop at Ilford (pages 409-411). General contractors, J. M. Dykes. Sub-contractors : James Clark and Son, Ltd., glazing ; Lenscrete, Ltd., glass and concrete windows; Finmar, Ltd., chairs ; G.V.D. Illuminators, Ltd., lighting ; Wilton Royal Carpet Factory, Ltd., hand-tufted rugs ; Wigmore Fisheries, aquarium.

THE WEEK'S BUILDING NEWS

LONDON & DISTRICTS (15-MILES RADIUS)

KENSINGTON. *Rebuilding.* Work is shortly to commence on the first part of the scheme for rebuilding the stores of John Barker & Co., Ltd., of Kensington High Street, W.8. The architect is Mr. B. George.

OXFORD STREET. *School.* A new building is to be erected in Gray Street, Oxford Street, W.1., for occupation by St. Thomas's School. The architect is Mr. S. Burgoine.

PARK LANE. *Showrooms and Flats.* Work is shortly to commence on the construction of a building having frontages to Park Lane, Mount Street, Park Street and Aldworth Street, W.1. The building will contain about 50 flats on the upper floors, with showrooms under. The architects are Messrs. Val Myer and Watson Hart and the cost is estimated at £300,000.

WESTMINSTER. *Offices.* Plans are now being prepared for the erection of a large block of offices on a site in Page Street, Westminster, S.W. The architects are Messrs. T. P. Bennett and Son.

SOUTHERN COUNTIES

BURSTOW. *Shopping Centre.* Mr. Sutton Smith is to develop a shopping centre at the Rookery Hill estate, Burstow, Surrey.

TATSFIELD. *Houses.* Mr. Geary proposes to erect 36 houses in Parkwood Road, Tatsfield, Surrey.

TATSFIELD. *Housing Scheme.* The Godstone R.D.C. has purchased six acres at Tatsfield for a housing scheme.

TONBRIDGE. *Extensions to Police Station.* The Kent C.C. is to enlarge the county police station at Tonbridge to plans prepared by Mr. W. H. Robinson, the county architect.

SOUTH-WESTERN COUNTIES

BRISTOL. *Development.* Mr. P. E. Bailey is to develop an estate at Callington Road, Brislington, near Bristol.

DORCHESTER. *Extensions, etc.* Plans passed by the Corporation : Extensions, motor works, Maumbury Road, for Mr. E. Perkins ; children's homes, Gloucester Road, for Dorset County Council ; stores, London Road, for Messrs. T. and F. Adams ; two houses, Bridport Road, for Messrs. Moore and Samways ; warehouse, G. W. R. Yard, for Messrs. Blandford and Webb, Ltd.

DORCHESTER. *Extensions to Hospital.* The Corporation is to undertake the extensions at the isolation hospital by direct labour.

TRURO. *Development.* Messrs. Cowell, Drewitt and Wheatley are to develop land at Tregolls and Chapel Hill, Truro.

NORTHERN COUNTIES

BIRKENHEAD. *Telephone Exchange.* H.M. Office of Works is to erect a telephone exchange in Prenton Road, Birkenhead.

CARLISLE. *Municipal Buildings.* The Corporation has appointed a committee to prepare a scheme for the erection of new municipal buildings in the vicinity of Rickergate.

CARLISLE. *Houses.* The Corporation is considering the provision of a site for the Haig Home Trustees for the erection of a group of about 20 houses.

CARLISLE. *Houses, etc.* Plans passed by Corporation : Six houses, Criffel Road, for Mr. T. R. Watson ; 147 houses, Etterbea estate, Stanwix, and six bungalows, Highwood estate, Harraby, for Border Engineering Contractors, Ltd. ; development, Hillcrest estate, Harraby, for Mr. H. Irving Graham ; church, Shady Grove Road, for Messrs. Seeley and Paget, on behalf of the trustees of St. Barnabas Church ; four houses, Wigton Road, for Messrs. Benwell and Slack ; two houses, Blackwell Road, for Mr. J. Little ; extensions and alterations, English Street, for Mr. H. Foxall, on behalf of Messrs. Binns, Ltd. ; shops and garages, Port Road, for Mr. T. Williamson ; two shops and houses, Esther Street, for Messrs. J. and R. Bell, Ltd. ; 20 houses, Morton Park estate, for Mr. Fawcett Martindale ; six houses, Knowlefield estate, for Messrs. A. Blakeley and Sons ; six houses, Ferguson Road, for Messrs. J. Laing and Son, Ltd. ; eight houses, Hill Crest Avenue estate, for Mr. N. Willis ; six houses, Knowlefield, for Mr. J. W. Watt ; hall, Shady Grove Road, for Mr. O. Archer, on behalf of the Salvation Army ; eight houses, Irthing Street, for Mr. E. J. Hill.

CARLISLE. *Police and Fire Stations.* The Corporation has purchased Star Hall, Peter Street, for the scheme for the erection of new police and fire stations.

CREWE. *Swimming Baths.* At a recent meeting of the Crewe Town Council, the Borough Surveyor submitted amended plans of proposed covered baths to be erected in Flag Lane, together with estimate of cost (approximately £40,870). The plans were approved, subject to minor alterations, and it was decided to recommend to the General Purposes Committee that application be made to the Ministry of Health for sanction to the borrowing of £40,870, and for consent to the appropriation of the necessary land.

SCARBOROUGH. *Factory.* Mr. F. W. Plaxton is seeking sanction from the Scarborough Corporation for the use of land in Seamer Road for the erection of a factory.

SCARBOROUGH. *Houses, etc.* Plans passed by the Corporation : Two houses, Chatsworth Gardens, for Mr. F. Baker ; private hotel, Ryndleside, for Mr. J. F. Branbald ; factory, off Beaconsfield Street, for Mr. L. N. Sanderson; additions, The Convent, Queen Street, for Messrs. Jones and Rickaby ; two houses, Sandybed Lane, for Mr. F. W. Plaxton ; two houses, Sandybed Crescent, for Mr. E. Hunter ; additions, Alexandra Laundry, Columbus Ravine, for Mr. R. A. Sowersby ; two houses, Scholes Park Road, for Mr. W. Oldridge ; private hotel, off Northstead Road, for Mr. Wood.

SCARBOROUGH. *Building Sites.* The Corporation has sold six building sites on the Northstead estate to Messrs. Wilkinson and Guthrie.

SCARBOROUGH. *Hotel.* Messrs. Burkinshaw and Woodcock are seeking a site at Cayton Bay, Scarborough, for the erection of a hotel.

WESTHOUGHTON. *School.* The Lancashire Education Committee is seeking sanction to borrow £18,515 for the erection of a senior girls' school at Westhoughton.

SCOTLAND

GLASGOW. *Libraries.* The Corporation is to seek borrowing powers for £100,000 in connection with proposed extensions at the Mitchell library and the provision of district libraries.

GLASGOW. *Houses.* The Corporation is to erect 900 houses and shops at Househillwood and in this connection it is suggested that the Housing Committee should consider the question of carrying it out by direct labour.

WALES

TREHARRIS (GLAMORGAN). *Cinema.* A new cinema, with seating accommodation for 1,000 persons, is to be erected on a site in Treharris. The architect is Mr. J. B. Wride.

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 s. d.	II s. d.
A_1	ABERDARE ..	S. Wales & M.	1 5	1 0½
A	Aberdeen ..	Scotland	1 6	1 1½
A_1	Abergavenny ..	S. Wales & M.	1 5	1 0½
A	Abingdon ..	S. Counties	1 4	1 0
A	Accrington ..	N.W. Counties	1 5½	1 1½
A	Addlestone ..	S. Counties	1 4	1 0
A	Adlington ..	N.W. Counties	1 5½	1 1½
A	Airdrie	Scotland	*1 5½	1 1½
C	Aldeburgh ..	E. Counties	1 1½	10½
A	Altrincham ..	N.W. Counties	1 5½	1 1½
B	Appleby ..	N.W. Counties	1 2	10½
A	Ashton-under-Lyne	N.W. Counties	1 5½	1 1½
B_1	Aylesbury ..	S. Counties	1 3	11½
B_1	BANBURY ..	S. Counties	1 3	11½
B_1	Banger ..	N.W. Counties	1 3	11½
A_2	Barnard Castle	N.E. Coast	1 4	1 0
A	Barnsley ..	Yorkshire	1 5½	1 1½
B	Barnstaple ..	S.W. Counties	1 3½	11½
A	Barrow ..	N.W. Counties	1 5½	1 1½
A	Barry	S. Wales & M.	1 5½	1 1½
B_1	Basingstoke ..	S.W. Counties	1 3	11½
A_2	Bath	S.W. Counties	1 4½	1 0½
A	Batley ..	Yorkshire	1 5½	1 1½
A_2	Bedford ..	E. Counties	1 4½	1 0½
A_2	Berwick-on-Tweed	N.E. Coast	1 4½	1 0½
A_2	Bewdley ..	Mid. Counties	1 4½	1 0½
B	Bicester ..	S. Counties	1 2	10½
	Birkenhead ..	N.W. Counties	*1 7	1 2½
A	Birmingham ..	Mid Counties	1 5½	1 1½
A_1	Bishop Auckland	N.E. Coast	1 5	1 0½
A	Blackburn ..	N.W. Counties	1 5½	1 1½
A	Blackpool ..	N.W. Counties	1 5½	1 1½
A	Blyth	N.E. Coast	1 5½	1 1½
B_1	Bognor ..	S. Counties	1 3	11½
A	Bolton	N.W. Counties	1 5½	1 1½
A	Boston	Mid. Counties	1 4	1 0
A_2	Bournemouth ..	S. Counties	1 4½	1 0½
B_2	Bovey Tracey	S.W. Counties	1 2½	11
A	Bradford ..	Yorkshire	1 5½	1 1½
A_1	Brentwood ..	E. Counties	1 5	1 0½
A	Bridgend ..	S. Wales & M.	1 5½	1 1½
B	Bridgwater ..	S.W. Counties	1 3½	11½
A_1	Bridlington ..	Yorkshire	1 5	1 0½
A	Brighouse ..	Yorkshire	1 5½	1 1½
A_2	Brighton ..	S. Counties	1 4½	1 0½
A	Bristol	S.W. Counties	1 5½	1 1½
B	Brixham ..	S.W. Counties	1 2½	11
A	Bromsgrove ..	Mid. Counties	1 4½	1 0½
B	Bromyard ..	Mid. Counties	1 2	10½
A	Burnley ..	N.W. Counties	1 5½	1 1½
A	Burslem ..	Mid. Counties	1 5½	1 1½
A	Burton-on-Trent	Mid. Counties	1 5½	1 1½
A	Bury	N.W. Counties	1 5½	1 1½
A	Buxton ..	N.W. Counties	1 5	1 0½
A_1	CAMBRIDGE ..	E. Counties	1 5	1 0½
B_1	Canterbury ..	S. Counties	1 3	11½
A	Cardiff	S. Wales & M.	1 5½	1 1½
A	Carlisle ..	N.W. Counties	1 5½	1 1½
B	Carmarthen ..	S. Wales & M.	1 3½	11½
B	Carnarvon ..	N.W. Counties	1 3½	11½
A	Carnforth ..	N.W. Counties	1 5½	1 1½
A	Castleford ..	Yorkshire	1 5½	1 1½
A_2	Chatham ..	S. Counties	1 4	1 0
A	Chelmsford ..	E. Counties	1 4	1 0
A	Cheltenham ..	S.W. Counties	1 4	1 0
A	Chester ..	N.W. Counties	1 5½	1 1½
A	Chesterfield ..	Mid. Counties	1 5½	1 1½
B_1	Chichester ..	S. Counties	1 3	11½
A	Chorley ..	N.W. Counties	1 5½	1 1½
B_1	Cirencester ..	S. Counties	1 3	11½
A	Clitheroe ..	N.W. Counties	1 5½	1 1½
A	Clydebank ..	Scotland	1 5½	1 1½
A	Coalville ..	Mid. Counties	1 5½	1 1½
A_2	Colchester ..	E. Counties	1 4½	1 0½
A	Colne	N.W. Counties	1 5½	1 1½
A_2	Colwyn Bay ..	N.W. Counties	1 4½	1 0½
A_1	Consett ..	N.E. Coast	1 5	1 0½
A_2	Conway ..	N.W. Counties	1 4½	1 0½
A	Coventry ..	Mid. Counties	1 5½	1 1½
A_2	Crewe	N.W. Counties	1 4½	1 0½
A	Cumberland ..	N.W. Counties	1 4	1 0
A	DARLINGTON	N.E. Coast	1 5½	1 1½
A	Darwen ..	N.W. Counties	1 5½	1 1½
B_1	Deal	S. Counties	1 3	11½
A_2	Denbigh ..	N.W. Counties	1 4	1 0
A	Derby	Mid. Counties	1 5½	1 1½
A	Dewsbury ..	Yorkshire	1 5½	1 1½
B	Didcot ..	S. Counties	1 3½	11½
A	Doncaster ..	Yorkshire	1 5½	1 1½
B_1	Dorchester ..	S.W. Counties	1 3	11½
A	Driffield ..	Yorkshire	1 4	1 0
A_2	Droitwich ..	Mid. Counties	1 4½	1 0½
A	Dudley	Mid. Counties	1 5½	1 1½
A_2	Dumfries ..	Scotland	1 5	1 0½
A	Dundee	Scotland	1 5½	1 1½
A	Durham ..	N.E. Coast	1 5½	1 1½
A_2	EASTBOURNE	S. Counties	1 4½	1 0½
A_1	Ebbw Vale ..	S. Wales & M.	1 5	1 0½
A	Edinburgh ..	Scotland	1 5½	1 1½
A_1	E. Glamorganshire, Rhondda Valley District	S. Wales & M.	1 5	1 0½
A_2	Exeter	S.W. Counties	*1 4½	1 0½
B	Exmouth ..	S.W. Counties	1 3½	11½
A_2	FELIXSTOWE	E. Counties	1 4	1 0
A	Filey	Yorkshire	1 4	1 0
A	Fleetwood ..	N.W. Counties	1 5½	1 1½
B_1	Folkestone ..	S. Counties	1 3	11½
A	Frodsham ..	N.W. Counties	1 5½	1 1½
B_2	Frome ..	S.W. Counties	1 2½	11
A_2	GATESHEAD	N.E. Coast	1 5½	1 1½
B	Gillingham ..	S. Counties	1 3½	11½
A	Glasgow ..	Scotland	1 6	1 1½
A_2	Gloucester ..	S.W.Counties	1 4½	1 0½
	Goole	Yorkshire	1 4½	1 0½
A_2	Gosport ..	S. Counties	1 4½	1 0½
A_2	Grantham ..	Mid. Counties	1 4	1 0
A_2	Gravesend ..	S. Counties	1 5	1 0½
A_1	Greenock ..	Scotland	*1 5½	1 1½
A	Grimsby ..	Yorkshire	1 5½	1 1½
B	Guildford ..	S. Counties	1 3½	11½
A	HALIFAX ..	Yorkshire	1 5½	1 1½
A	Hanley ..	Mid. Counties	1 5½	1 1½
A	Harrogate ..	Yorkshire	1 5½	1 1½
A	Hartlepools ..	N.E. Coast	1 5½	1 1½
B	Harwich ..	E. Counties	1 3½	11½
B_1	Hastings ..	S. Counties	1 3	11½
A_2	Hatfield ..	S. Counties	1 4½	1 0½
B	Hereford ..	S.W. Counties	1 3½	11½
A_2	Hertford ..	E. Counties	1 4½	1 0½
A	Heysham ..	N.W. Counties	1 5½	1 1½
A	Howden ..	N.E. Coast	1 5½	1 1½
A	Huddersfield ..	Yorkshire	1 5½	1 1½
A	Hull	Yorkshire	1 5½	1 1½
A	ILKLEY ..	Yorkshire	1 5½	1 1½
A	Immingham ..	Mid. Counties	1 5½	1 1½
A_2	Ipswich ..	E. Counties	1 4½	1 0½
B_2	Isle of Wight ..	S. Counties	1 2½	11
A	JARROW ..	N.E. Coast	1 5½	1 1½
A	KEIGHLEY ..	Yorkshire	1 5½	1 1½
A_2	Kendal ..	N.W. Counties	1 4	1 0
A_2	Keswick ..	N.W. Counties	1 4	1 0
A_1	Kettering ..	Mid. Counties	1 5	1 0½
A_2	Kidderminster	Mid. Counties	1 4½	1 0½
B_1	King's Lynn ..	E. Counties	1 3	11½
A	LANCASTER ..	N.W. Counties	1 5½	1 1½
A_1	Leamington ..	Mid. Counties	1 5	1 0½
A	Leeds	Yorkshire	1 5½	1 1½
A	Leek ..	Mid. Counties	1 5½	1 1½
A	Leicester ..	Mid. Counties	1 5½	1 1½
A	Leigh	N.W. Counties	1 5½	1 1½
B	Lewes	S. Counties	1 2	10½
A_2	Lichfield ..	Mid. Counties	1 4½	1 0½
A	Lincoln ..	Mid. Counties	1 5½	1 1½
	Liverpool ..	N.W. Counties	*1 7	1 2½
A_2	Llandudno ..	N.W. Counties	1 4½	1 0½
A	Llanelly ..	S. Wales & M.	1 5½	1 1½
	London (12-miles radius)		1 7½	1 2½
	Do. (12-15 miles radius)		1 7	1 2½
A	Long Eaton ..	Mid. Counties	1 5½	1 1½
A	Loughborough ..	Mid. Counties	1 5½	1 1½
A_1	Luton	E. Counties	1 5	1 0½
A	Lytham ..	N.W. Counties	1 5½	1 1½
A_1	MACCLESFIELD	N.W. Counties	1 5	1 0½
A_2	Maidstone ..	S. Counties	1 4	1 0
A_2	Malvern ..	Mid. Counties	1 4	1 0
A	Manchester ..	N.W. Counties	1 5½	1 1½
A	Mansfield ..	Mid. Counties	1 5½	1 1½
B_1	Margate ..	S. Counties	1 3	11½
A	Matlock ..	Mid. Counties	1 4	1 0
A_1	Merthyr ..	S. Wales & M.	1 5	1 0½
A	Middlesbrough	N. E. Coast	1 5½	1 1½
A_2	Middlewich ..	N. W. Counties	1 4½	1 0½
B_2	Minehead ..	S.W. Counties	1 2½	11
B_2	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1 2½	11
A	Morecambe ..	N.W. Counties	1 5½	1 1½
A_2	NANTWICH ..	N.W. Counties	1 4½	1 0½
A	Neath	S. Wales & M.	1 5½	1 1½
A	Nelson ..	N.W. Counties	1 5½	1 1½
A	Newcastle ..	N.E. Coast	1 5½	1 1½
A	Newport ..	S. Wales & M.	1 5½	1 1½
A	Normanton ..	Yorkshire	1 5½	1 1½
A	Northampton	Mid. Counties	1 5½	1 1½
A	North Staffs ..	Mid. Counties	1 5½	1 1½
A	North Shields ..	N.E. Coast	1 5½	1 1½
A_1	Norwich ..	E. Counties	1 5	1 0½
A	Nottingham ..	Mid. Counties	1 5½	1 1½
A	Nuneaton ..	Mid. Counties	1 5½	1 1½
A	OAKHAM ..	Mid. Counties	1 4	1 0
A	Oldham ..	N.W. Counties	1 5½	1 1½
A_2	Oswestry ..	N.W. Counties	1 4	1 0
A_1	Oxford ..	S. Counties	1 5	1 0½
A	PAISLEY ..	Scotland	*1 5½	1 1½
B_2	Pembroke ..	S. Wales & M.	1 2	10½
A	Perth	Scotland	*1 5½	1 1½
A_1	Peterborough ..	E. Counties	1 5	1 0½
A	Plymouth ..	S.W. Counties	*1 5½	1 1½
A	Pontefract ..	Yorkshire	1 5½	1 1½
A_1	Pontypridd ..	S. Wales & M.	1 5	1 0½
A_2	Portsmouth ..	S. Counties	1 4½	1 0½
A	Preston ..	N.W. Counties	1 5½	1 1½
A	QUEENSFERRY	N.W. Counties	1 5½	1 1½
A_2	READING ..	S. Counties	1 4½	1 0½
B	Reigate ..	S. Counties	1 3½	11½
A	Retford ..	Mid. Counties	1 4	1 0
A_1	Rhondda Valley	S. Wales & M.	1 5	1 0½
A	Ripon	Yorkshire	1 4	1 0
A	Rochdale ..	N.W. Counties	1 5½	1 1½
B	Rochester ..	S. Counties	1 3½	11½
A_1	Ruabon ..	N.W. Counties	1 5	1 0½
A	Rugby ..	Mid. Counties	1 5½	1 1½
A_2	Rugeley ..	Mid. Counties	1 4½	1 0½
A	Runcorn ..	N.W. Counties	1 5½	1 1½
A_1	ST. ALBANS ..	E. Counties	1 5	1 0½
A	St. Helens ..	N.W. Counties	1 5½	1 1½
B_2	Salisbury ..	S.W. Counties	1 2½	11
A_1	Scarborough ..	Yorkshire	1 5	1 0½
A	Scunthorpe ..	Mid. Counties	1 5½	1 1½
A	Sheffield ..	Yorkshire	1 5½	1 1½
A	Shipley ..	Yorkshire	1 5½	1 1½
A_2	Shrewsbury ..	Mid. Counties	1 4½	1 0½
A_2	Skipton ..	Yorkshire	1 4½	1 0½
A_2	Slough ..	S. Counties	1 4½	1 0½
A_1	Solihull ..	Mid. Counties	1 5	1 0½
A_2	Southampton ..	S. Counties	1 4½	1 0½
A_1	Southend-on-Sea	E. Counties	1 5	1 0½
A	Southport ..	N.W. Counties	1 5½	1 1½
A	S. Shields ..	N.E. Coast	1 5½	1 1½
A_1	Stafford ..	Mid. Counties	1 5	1 0½
A	Stirling ..	Scotland	1 6	1 1½
A	Stockport ..	N.W. Counties	1 5½	1 1½
A	Stockton-on-Tees	N.E. Coast	1 5½	1 1½
A	Stoke-on-Trent	Mid. Counties	1 5½	1 1½
B	Stroud	S.W. Counties	1 3½	11½
A	Sunderland ..	N.E. Coast	1 5½	1 1½
A	Swansea ..	S. Wales & M.	1 5½	1 1½
A	Swindon ..	S.W. Counties	1 4	1 0
A_1	TAMWORTH ..	N.W. Counties	1 5	1 0
B	Taunton ..	S.W. Counties	1 3½	11½
A	Teesside Dist. ..	N.E. Counties	1 5½	1 1½
A_2	Teignmouth ..	S.W. Coast	1 4½	1 0½
A	Todmorden ..	Yorkshire	1 5½	1 1½
A_1	Torquay ..	S.W. Counties	1 5	1 0½
B_2	Truro	S.W. Counties	1 2½	11
A_2	Tunbridge Wells	S. Counties	1 4	1 0
A	Tunstall ..	Mid. Counties	1 5½	1 1½
A	Tyne District ..	N.E. Coast	1 5½	1 1½
A	WAKEFIELD	Yorkshire	1 5½	1 1½
A	Walsall ..	Mid. Counties	1 5½	1 1½
A	Warrington ..	N.W. Counties	1 5½	1 1½
A_1	Warwick ..	Mid. Counties	1 5	1 0½
A_1	Wellingborough	Mid. Counties	1 5	1 0½
A	West Bromwich	Mid. Counties	1 5½	1 1½
A_2	Weston-s.-Mare	W. Counties	1 4½	1 0½
A_2	Whitby ..	Yorkshire	1 4½	1 0½
A	Widnes ..	N.W. Counties	1 5½	1 1½
A	Wigan ..	N.W. Counties	1 5½	1 1½
B	Winchester ..	S. Counties	1 3½	11½
A_2	Windsor ..	S. Counties	1 4½	1 0½
A	Wolverhampton	Mid. Counties	1 5½	1 1½
A_2	Worcester ..	Mid. Counties	1 4½	1 0½
A_2	Worksop ..	Yorkshire	1 4	1 0
A_1	Wrexham ..	N.W. Counties	1 5	1 0½
A	Wycombe ..	S. Counties	1 4	1 0
B	YARMOUTH ..	E. Counties	1 3½	11½
B	Yeovil ..	S.W. Counties	1 3½	11½
A	York	Yorkshire	1 5½	1 1½

* In these areas the rates of wages for certain trades (usually painters and plasterers) vary slightly from those given.

The rates for every trade in any given area will be sent on request.

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) . . . . "	1 12 6
" " underpinning . . . "	1 16 0
Finishing surface of concrete, space face . . . Y.S.	7

DRAINLAYER		4" s. d.	6" s. d.
Stoneware drains, laid complete (digging and concrete to be priced separately)	F.R.	1 6	2 3
Extra, only for bends	Each	2 8	3 9
" junctions	"	3 9	4 6
Gullies and gratings		16 6	18 0
Cast iron drains, and laying and jointing	F.R.	4 9	6 9
Extra, only for bends	Each	10 6	15 6

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 0½
Fair Face and pointing internally . . . . . F.S.	1½
Extra over fletton brickwork for picked stock facings and pointing	8
" " " red brick facings and pointing . "	11
" " " blue brick facings and pointing . "	1 4
" " " glazed brick facings and pointing . "	3 6
Tuck pointing . . . . . "	7½
Weather pointing in cement . . . . . "	3
Slate dampcourse . . . . . "	10
Vertical dampcourse . . . . . "	1 1

ASPHALTER	s. d.
½" Horizontal dampcourse . . . . . Y.S.	4 6
½" Vertical dampcourse . . . . . "	6 9
½" paving or flat . . . . . "	4 0
1" paving or flat . . . . . "	5 6
1" × 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 . . . . . "	13 0
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" × 10" . . . . . Sqr.	3 10 0
Do., 18" × 9" . . . . . "	3 7 0
Do., 24" × 12" . . . . . "	3 17 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" × 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
Fir and fixing in wall plates, lintols, etc. . . . . F.C.	3 9
Fir framed in floors . . . . . "	4 6
" " roofs . . . . . "	6 6
" " trusses . . . . . "	7 6
" " partitions . . . . . "	8 6
1" deal sawn boarding and fixing to joists . . . . . Sqr.	1 14 6
1" " " " " " . . . . . "	1 17 6
1½" " " " " " . . . . . "	2 3 0
4" × 2" fir battening for Countess slating . . . . . "	9 0
Do. for 4" gauge tiling . . . . . "	12 0
Stout feather-edged tilting fillet . . . . . F.R.	4½
Patent inodorous felt, 1 ply . . . . . Y.S.	2 3
" " " 2 " . . . . . "	2 9
" " " 3 " . . . . . "	3 3
Stout herringbone strutting to 9" joists . . . . . F.R.	10½
1" deal gutter boards and bearers . . . . . F.S.	1 2
1½" " " " . . . . . "	1 6
2" deal wrought rounded roll . . . . . F.R.	8
1" deal grooved and tongued flooring, laid complete, including cleaning off . . . . . Sqr.	2 1 0
1¼" do. . . . . "	2 10 0
1½" do. . . . . "	2 17 0
1" deal moulded skirting, fixed on, and including grounds plugged to wall . . . . . F.S.	1 6
1¼" do. . . . . "	1 9

CARPENTER AND JOINER—*continued*	s. d.
1¼" deal moulded sashes of average size . . . . . F.S.	1 9½
2" " " . . . . . "	1 11½
1¼" deal cased frames double hung, of 6" × 3" oak sills, 1¼" pulley stiles, 1¼" heads, 1" inside and outside linings, ¾" parting beads, and with brass faced axle pulleys, etc., fixed complete . .	3 7
2" " . . . . . "	3 10
Extra only for moulded horns " . . . . . Each	6
1¼" deal four-panel square, both sides, door . . . . . F.S.	2 0
2" " " . . . . . "	2 8
1¼" , but moulded both sides . . . . . "	2 4
2" " " . . . . . "	3 0
4" × 3" deal, rebated and moulded frames . . . . . F.R.	1 0
4½" × 3½" " " . . . . . "	1 4
1¼" deal tongued and moulded window board, on and including deal bearers . . . . . F.S.	1 9
1¼" deal treads, 1" risers in staircases, and tongued and grooved together on and including strong fir carriages . . . "	2 6
1¼" deal moulded wall strings . . . . . "	2 1
1¼" " outer strings . . . . . "	2 4
Ends of treads and risers housed to string . . . . . Each	1 9
3" × 2" deal moulded handrail . . . . . F.R.	1 3
1" × 1" deal balusters and housing each end . . . . . Each	2 0
1½" × 1½" " " . . . . . "	2 9
3" × 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, ¼" 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
Wrot-iron caulked and cambered chimney bars . . . . Per cwt.	1 10 0

PLUMBER	£ s. d.
Milled lead and labour in flats . . . . . cwt.	1 15 6
Do. in flashings . . . . . "	1 19 0
Do. in covering to turrets . . . . . "	2 6 6
Do. in soakers . . . . . "	1 11 0
Labour to welted edge . . . . . F.R.	3½
Open copper nailing . . . . . "	3
Close " " . . . . . "	4

		½" s. d.	¾" s. d.	1" s. d.	1¼" s. d.	2" s. d.	4" s. d.
Lead service pipe and fixing with pipe hooks	F.R.	10	1 0	1 3	2 0	2 10	—
Do. soil pipe and fixing with cast lead tacks		—	—	—	—	—	5 6
Extra, only to bends	Each	—	—	—	—	2 0	6 9
Do. to stop ends	"	6½	8	9	11	1 0	—
Boiler screws and unions	"	3 3	3 9	5 0	8 0	—	—
Lead traps	"	—	—	—	6 3	8 9	—
Screw down bib valves	"	6 9	9 6	11 0	—	—	—
Do. stop cocks	"	7 0	9 6	12 6	—	—	—

		£ s. d.
4" cast-iron ½-rd. gutter and fixing . . . . . F.R.		1 0
Extra, only stop ends . . . . . Each		1 0
Do. angles . . . . . "		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

PLASTERER 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
½" screeding in Portland cement and sand or tiling, wood block floor, etc. . . . . "	1 5
Do. vertical . . . . . "	1 7
Rough render on walls . . . . . "	1 2½
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 . "	2 9
Extra, only if on lathing . . . . . "	4
Keene's cement, angle and arris . . . . . F.R.	6
Arris . . . . . "	
Rounded angle, small . . . . . "	3
Plain cornices in plaster, including dubbing out, per 1" girth . "	1½
1" granolithic pavings . . . . . Y.S.	3 6
1½" " . . . . . "	4 6
6" × 6" white glazed wall tiling and fixing on prepared screed . "	17 6
9" × 3" " " " " . . "	1 2 6
Extra, only for small quadrant angle . . . . . F.R.	8

GLAZIER	s. d.
21 oz. sheet glass and glazing with putty . . . . . F.S.	6½
26 oz. do. and do. . . . . "	7½
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 2
Stripping off old paper . . . . . Piece	2 0
Hanging ordinary paper . . . . . from "	2 9

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, adjustment 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

		s.	d.
Bricklayer	per hour	1	7½
Carpenter	,,	1	7½
Joiner	,,	1	7½
Machinist	,,	1	8½
Mason (Banker)	,,	1	7½
,, (Fixer)	,,	1	8½
Plumber	,,	1	7½
Painter	,,	1	6½
Paperhanger	,,	1	6½
Glazier	,,	1	7½
Slater	,,	1	7½
Scaffolder	,,	1	3½
Timberman	,,	1	3½
Navvy	,,	1	2½
General Labourer	,,	1	2½
Lorryman	,,	1	5½
Crane Driver	,,	1	6½
Watchman	per week	2	10 0

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	,,	1	16	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
¾" Crushed Ballast	,,		6	9
Building Sand	,,		7	3
Washed Sand	,,		8	3
2" Broken Brick	,,		8	0
¾" ,, ,,	,,		10	3
Pan Breeze	,,		6	6
Coke Breeze	,,		8	9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4" s.	4" d.	6" s.	6" d.
Straight Pipes	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends	,,	3	6	5	3
Rest Bends	,,	4	3	6	3
Single Junctions	,,	3	6	5	3
Double	,,	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¾" 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

		£	s.	d.
Flettons	per M.	2	15	0
Grooved do.	,,	2	17	0
Phorpres 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
Phorpres 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*	,,	1	0	0
,, Buffs and Creams, *Add*	,,	2	0	0
,, Other Colours	,,	5	10	0
2" Breeze Partition Blocks	per Y.S.		1	7
2½" ,, ,, ,,	,,		1	10
3" ,, ,, ,,	,,		2	1
4" ,, ,, ,,	,,		2	6

MASON

The following d/d F.O.R. at Nine Elms:

		s.	d.
Portland stone, Whitbed	F.C.	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

		£	s.	d.
24" × 12" Duchesses	per M.	28	17	6
22" × 12" Marchionesses	,,	24	10	0
20" × 10" Countesses	,,	19	5	0
18" × 10" Viscountesses	,,	15	10	0
18" × 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" × 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

		s.	d.
Good carcassing timber	F.C.	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	2
,, Figured ,,	,, ,,	1	5
,, Austrian wainscot	,, ,,	1	6
,, English	,, ,,	1	11
Pine, Yellow	,, ,,	1	0
,, Oregon	,, ,,		4
,, British Columbian	,, ,,		4
Teak, Moulmein	,, ,,	1	3
,, Burma	,, ,,	1	2
Walnut, American	,, ,,	2	3
,, French	,, ,,	2	3
Whitewood, American	,, ,,	1	1
Deal floorings, ⅜"	Sq.	18	6
,, ½"	,,	1	1	6
,, ¾"	,,	1	2	0
,, 1"	,,	1	5	0
,, 1¼"	,,	1	10	0
Deal matchings ⅜"	,,		14	0
,, ½"	,,		15	6
,, 1"	,,	1	4	0
Rough boarding ¾"	,,		16	0
,, 1"	,,		18	0
,, 1¼"	,,	1	6	0
Plywood, per ft. sup.				4

Thickness	⅛"			¼"			⅜"			½"		
Qualities	A d.	B d.	BB d.	A d.	B d.	BB d.	A d.	B d.	BB d.	A d.	B d.	BB d.
Birch												
60 × 48	4	2½	2	5	3	2½	7	5	4	8	6	5
Cheap Alder	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine	–	2½	–	3	2½	–	4	3½	–	5	4½	–
Gaboon												
Mahogany	4	3½	–	5	4½	–	7	6½	–	8	7	–
Figured Oak	6½	5	–	7½	5½	–	10	8	0	1/–	9	–

	d.
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.)

	¼"	½"	1"	1½"	2"
Tubes, 2'-14' long, per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"-23" long each	10	1/1	1/11	2/8	4/9
,, 3"-11½" long ,,	7	9	1/3	1/8	3/–
Long screws, 12"-23½" long ,,	11	1/3	2/2	2/10	5/3
,, ,, 3"M-½" long ,,	8	10	1/5	1/11	3/6
Bends ,,	8	11	1/2½	2/2½	5/2
Springs not socketed ,,	5	7	1/1½	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:

TUBES.

	Per cent.		Per cent.
Gas	65	Galvanized gas	52½
Water	61½	,, water	47½
Steam	57½	,, steam	42½

FITTINGS.

Gas	57½	Galvanized gas	47½
Water	52½	,, water	42½
Steam	47½	,, steam	37½

SMITH AND FOUNDER—*continued.*

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ⅜"	,,	10	6
,, ,, ½"	,,	10	3
,, ,, ⅝"	,,	10	3
,, ,, ¾"	,,	9	6
,, ,, ⅞"	,,	9	6
,, ,, 1"	,,	9	6
,, ,, 1¼"	,,	9	6
,, ,, 1½"	,,	9	6

		s.	d.	s.	d.
Cast-iron rain-water pipes of ordinary thickness metal	F.R.		8		10
Shoes	each	2	0	3	0
Anti-splash shoes	,,	4	6	8	0
Boots	,,	3	0	4	0
Bends	,,	2	7	3	9
,, with access door	,,		—	6	3
Heads	,,	4	0	5	0
Swan-necks up to 9" offsets	,,	3	9	6	0
Plinth bends, 4½" to 6"	,,	3	9	5	3
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	2	6
Outlets	,,	1	9	2	3

PLUMBER

		s.	d.
Lead, milled sheets	cwt.	22	0
,, drawn pipes	,,	21	6
,, soil pipe	,,	24	6
,, scrap	,,	13	0
Solder, plumbers'	lb.		9½
,, fine do.	,,	1	0
Copper, sheet	,,		8½
,, tubes	,,		11

L.C.C. soil and waste pipes:	3"	4"	6"
Plain cast F.R.	1 0	1 2	2 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

		£	s.	d.
Lime, chalk	per ton	2	5	0
Plaster, coarse	,,	1	10	0
,, fine	,,	4	15	0
Hydrated lime	,,	3	0	9
Sirapite	,,	3	6	0
Keene's cement	,,	5	0	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

	s.	d.	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	and	2 0	
¼" rough cast; rolled plate			,,	5½
¼" wired cast; wired rolled			,,	9½
¼" Georgian wired cast			,,	11
¼" Polished plate, n/e 1 ft.			†10 to ‡1	1
,, ,, 2			,, †1 2 ,, ‡1	4
,, ,, 4			,, †2 3 ,, ‡2	6
,, ,, 8			,, †2 9 ,, ‡3	2
,, ,, 20			,, †3 7 ,, ‡4	2
,, ,, 45			,, †3 11 ,, ‡4	7
,, ,, 100			,, †5 0 ,, ‡5	7
Vita glass, sheet, n/e 1 ft.				1 0
,, ,, ,, 2 ft.			,,	1 3
,, ,, ,, over 2 ft.			,,	1 9
,, ,, plate, n/e 1 ft.			,,	1 6
,, ,, ,, 2 ft.			,,	3 ●
,, ,, ,, 5 ft.			,,	4 ●
,, ,, ,, 7 ft.			,,	5 0
,, ,, ,, 15 ft.			,,	6 0
,, ,, ,, over 15 ft.			,,	7 6
"Calorex" sheet 21 oz., and 32 oz.	2 6	and	3 6	
,, rough cast ¼" and ½"	5½	,,	1 0	
Putty, linseed oil	lb.			3

* *Colours, 1d. F.S. extra.*

† *Ordinary glazing quality.* ‡ *Selected glazing quality.*

PAINTER

		£	s.	d.
White lead in 1 cwt. casks	cwt.	2	8	6
Linseed oil	gall.		2	3
Boiled oil	,,		2	9
Turpentine	,,		4	1½
Patent knotting			14	0
Distemper, washable	cwt	2	6	0
,, ordinary	,,	2	0	0
Whitening	,,		4	0
Size, double	firkin		3	0
Copal varnish	gall.		13	●
Flat varnish	,,		14	0
Outside varnish	,,		16	0
White enamel	,,	1	15	0
Ready mixed paint	,,		13	6
Brunswick black	,,		7	6

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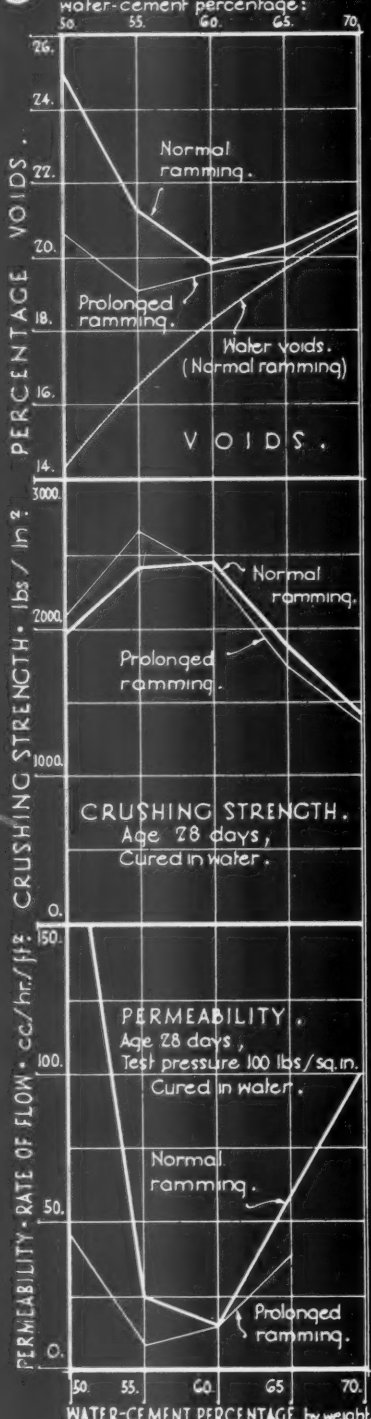
PERMEABILITY : THE EFFECT OF THE METHOD OF PREPARING THE CONCRETE :

THE METHOD of preparing the concrete may include any or all of the following operations : mixing, ramming, casting, trowelling, surface treatment.

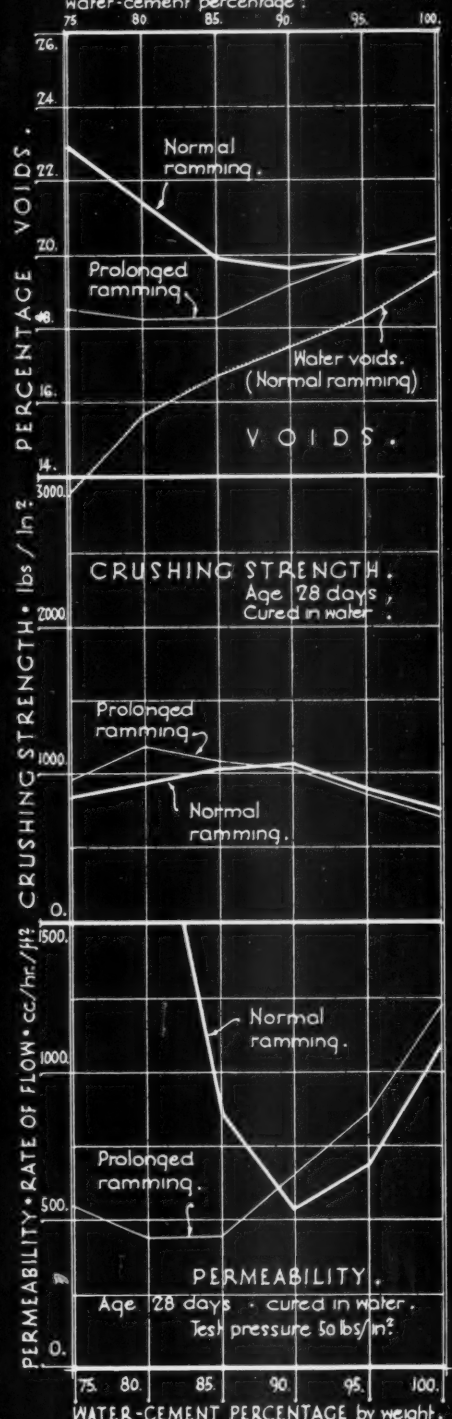
(1.) MIXING : The necessary duration of the mixing period for the production of impermeable concrete increases with the leanness of the mix.

GRAPHS SHOWING THE EFECTS OF RAMMING CONCRETE MIXES OF VARYING WATER-CEMENT PERCENTAGES.

(2.) 1 : 2 : 4 MIX BY WEIGHT.

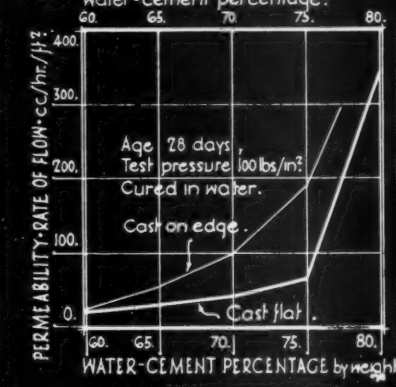


1 : 3⅓ : 6⅔ MIX, BY WEIGHT.



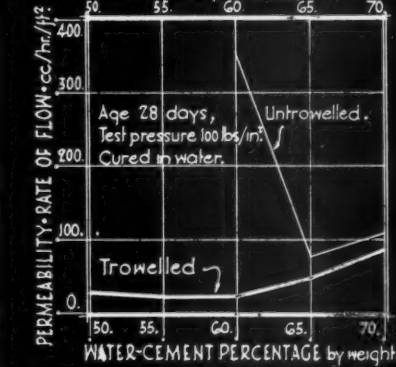
GRAPH SHOWING THE EFFECT OF METHOD OF CASTING.

(3.) 1 : 2 : 4 MIX, BY WEIGHT.



NOTE • the lower permeability of the flat cast concrete is probably due to the rich trowelled surface & to the flow in this case being perpendicular to the direction of the spread filling layers.

(4.) GRAPH SHOWING EFFECT OF SURFACE-TROWELLING A 1:2:4 MIX.



NOTE • the results plotted were obtained from specimens 8½" x 8½" x 2"; cast flat and all equally rammed. Trowelling was continued until an unbroken surface extended over test area.

(5.) SURFACE TREATMENT :

When concrete is moulded in any type of mould there is always a surface of rich material formed contiguous thereto, varying considerably according to the particular material of the mould and the richness of the mix.

Tests on 1 : 2 : 4 concrete of normal water content show that the ratio of permeability of wire-brushed & unbrushed specimens is about 2 : 1.

Data from B.R.S. Technical Paper No. 3, by permission of the Controller, H.M. Stationery Office.

Issued by A.H. Rownsley, Associated Building Products (Leicester) Limited.

INFORMATION SHEET : FACTORS IN THE WATERPROOFING OF CONCRETE·2·

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1 • Oscar A. Bayne.

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INFORMATION SHEET

• 257 •

WATERPROOFING OF CONCRETE

Type of Product : Aquex Waterproofing Powder and Liquid

This Information Sheet is the second of a series dealing with the subject of waterproofing concrete.

Aquex Powder :

A full description of Aquex waterproofing powder and details of the proportions in which it should be used for various purposes is given on the first Sheet of this series (No. 244).

Aquex Liquid :

Aquex waterproofing liquid is added to the gauging water for the concrete mix, thus ensuring even distribution of the waterproofer throughout the whole mass of the concrete.

Characteristics :

The following are the more important characteristics of the waterproofer :—

(*a*) The temperature in the mass of concrete remains unchanged as a result of using Aquex liquid.

(*b*) The liquid does not cause any slowing up of the setting of the concrete.

(*c*) The liquid does not affect the colour of the concrete.

(*d*) The liquid does not deteriorate, whether mixed with water or not.

(*e*) The liquid tends to increase the crushing strength of the concrete.

Water :

All water should be clean and free from foreign matter. Sufficient water should be used, but excess should be avoided. Too little water forms air voids, too much forms water voids, but it is better to err on the side of too much water than too little.

Cement :

Cement should be fresh Standard Portland Cement. Lean mixes should be avoided in all waterproofing work.

Aggregates :

Aggregates should be of sand and gravel, both clean and sharp, well-graded, and sufficient fine aggregate should be present.

Sand :

Sand should all pass through a 30 mesh sieve and remain on a 40 mesh sieve.

Gravel :

Gravel should pass a half-inch and remain on a three-eighths inch sieve.

Mixing :

Mixing should be very thorough, it is of great importance and cannot be stressed too much.

Ramming and Trowelling :

These are important, but prolonged ramming and trowelling are unnecessary. Where possible always finish with a steel trowel, and avoid over-trowelling.

Curing :

The ideal treatment is to cure in water, but where this is not possible every endeavour should be made to approach this condition as closely as possible, e.g., cover all work with damp sacking or sand, take care that the covering does not dry out and keep damp for at least seven days.

Waterproofed Renderings :

These should be applied in one operation. Where this is not possible, rendering should not be finished at an angle, but between angles, i.e., on the side of the wall, equidistant from the corners. A broad splay should be left and covered with slurry of neat cement before continuing rendering.

Renderings should be scratched to form a key for succeeding coats, which should be applied as soon as the undercoat is set sufficiently hard to hold the coat.

Joints in succeeding coats should not occur in the same place.

Applications of Renderings to Floors, Walls and Roofs :

In order to form a good key, walls should be punched and floors and roofs chipped and brushed and cleaned thoroughly, flushed with water and, while the surface is still wet, slushed with a thick waterproofed slurry of neat cement. The rendering should be applied before the slurry has dried.

Renderings should be in two or three coats, three-quarters to one inch thick.

Condensation :

To avoid trouble due to deposition of condensation moisture, internal renderings to walls of rooms should be finished with a porous skimming of lime plaster about one-sixth inch thick.

Cast Concrete :

Concrete waterproofed with Aquex liquid should always be cast flat.

Proportions to be Used :

For all work below ground level, and in all cases where there is water-pressure, mix : One part Aquex to twenty parts of water.

In all other cases mix : One part of Aquex liquid to 25 parts of water.

Proportions of Cement to Aggregate.

(All proportions are measured by weight.) For cement renderings for sand or pebble dash, rough-cast or plain stucco, use :—

One part of Portland cement, three parts of clean sharp sand.

Mass Concrete for Reservoirs, Swimming Pools, etc :

Use one part Portland cement, two parts fine aggregate, four parts coarse aggregate.

Concrete for Basements and Work Subject to Water-Pressure :

Garage pits, stokeholes, etc., use for floors : One part Portland cement, one part sand, three parts coarse aggregate.

And for Walls :

Use one part Portland cement, two parts sand, rendering three coats one inch thick.

Flat Roofs :

One part Portland cement, two parts sand, three parts coarse aggregate, finish with a three-quarter inch rendering composed of : One part Portland cement, two parts sand.

Manufacturers : Associated Building Products (Leicester), Ltd.
Address : 19 Albion Hill, Leicester
Telephone : Leicester 59209
London Office : 109 Kingsway, W.C.2
Telephone : Holborn 7670

83.

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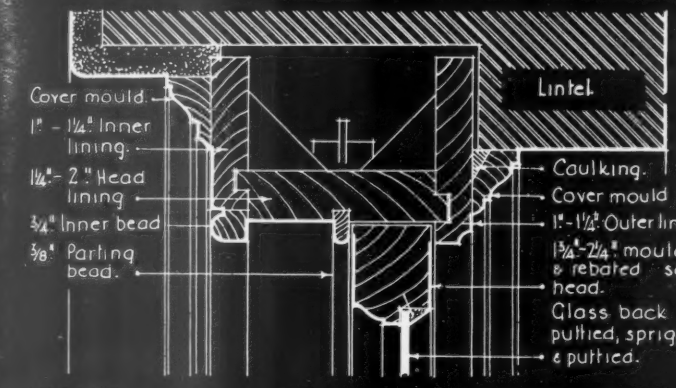
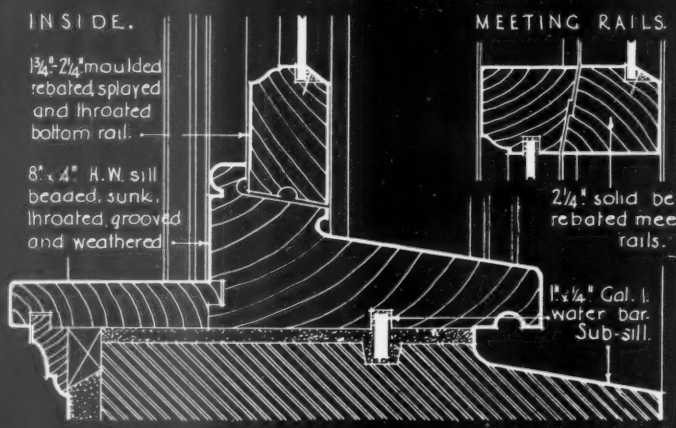
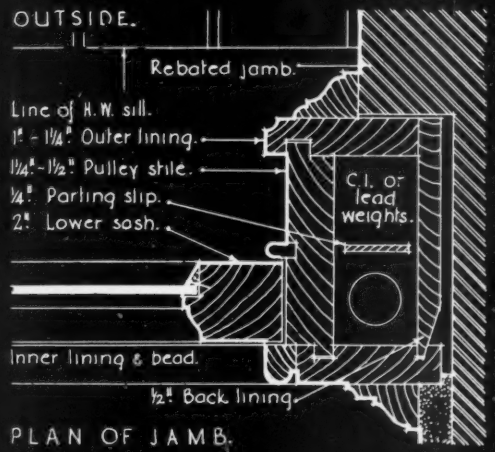


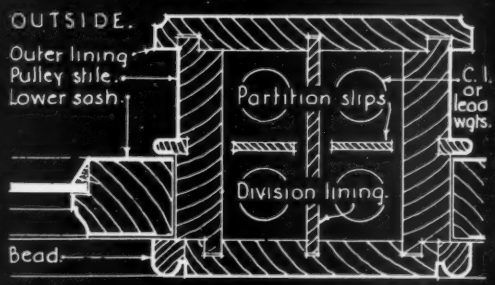
VERTICAL SECTION THRO' SPECIAL TYPE SASHES:





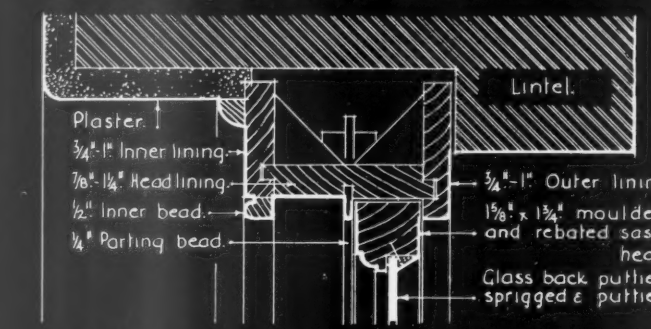
PLAN OF JAMB.

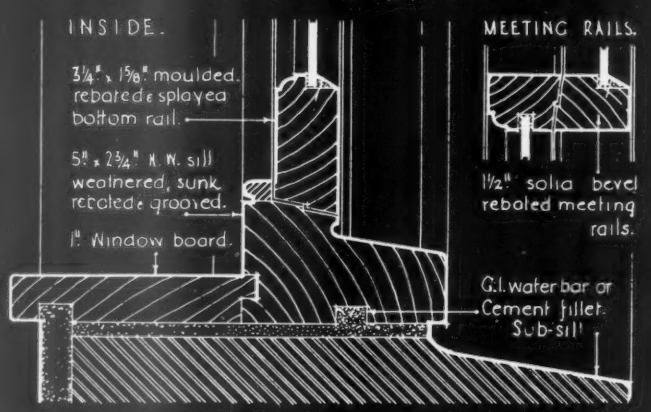
PLAN OF DOUBLE BOX MULLION.



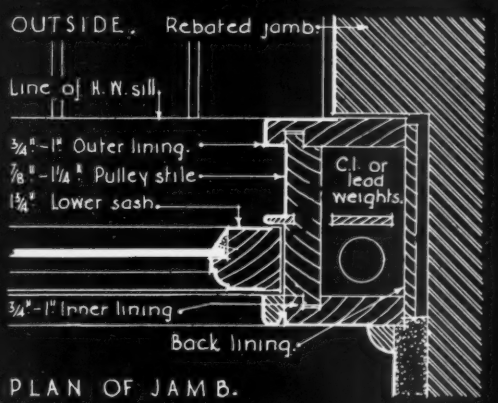
DETAILS OF SPECIAL TYPE SASHES:

VERTICAL SECTION THRO' STOCK TYPE SASHES:



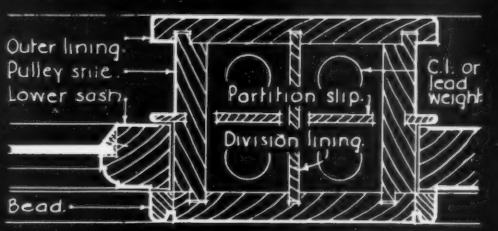


DETAILS OF STOCK TYPE SASHES:



PLAN OF JAMB.

PLAN OF DOUBLE BOX MULLION



Information from The Timber Development Association.

INFORMATION SHEET: TYPES OF SLIDING SASHES.

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

Supplement to THE ARCHITECTS' JOURNAL for September 19, 1935

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INFORMATION SHEET

• 258 •

TIMBER

Type of Product : Sliding Sash Windows

This Information Sheet is one of a series dealing with the various uses of timber in building construction.

Details are given of sliding sash windows, one of the special-made type and one of the stock type made by joinery works.

It will be noticed that the sizes of the members used, the shaping of the members and the waterproofing devices used are the main points of variation in each case.

The details given are intended to be representative of general practice in each class of work, the immense variation in the detail used by different Architects and different joinery works, make it impossible to give any standard or typical details.

Timbers :

Woods commonly used for such joinery work as that shown on this Sheet are :

Redwood.
Whitewood.
Douglas Fir.
Western Red Cedar.
Teak.

Information from : The Timber Development Association

Address : 69-73 Cannon Street, London, E.C.4

Telephone : Mansion House 7586