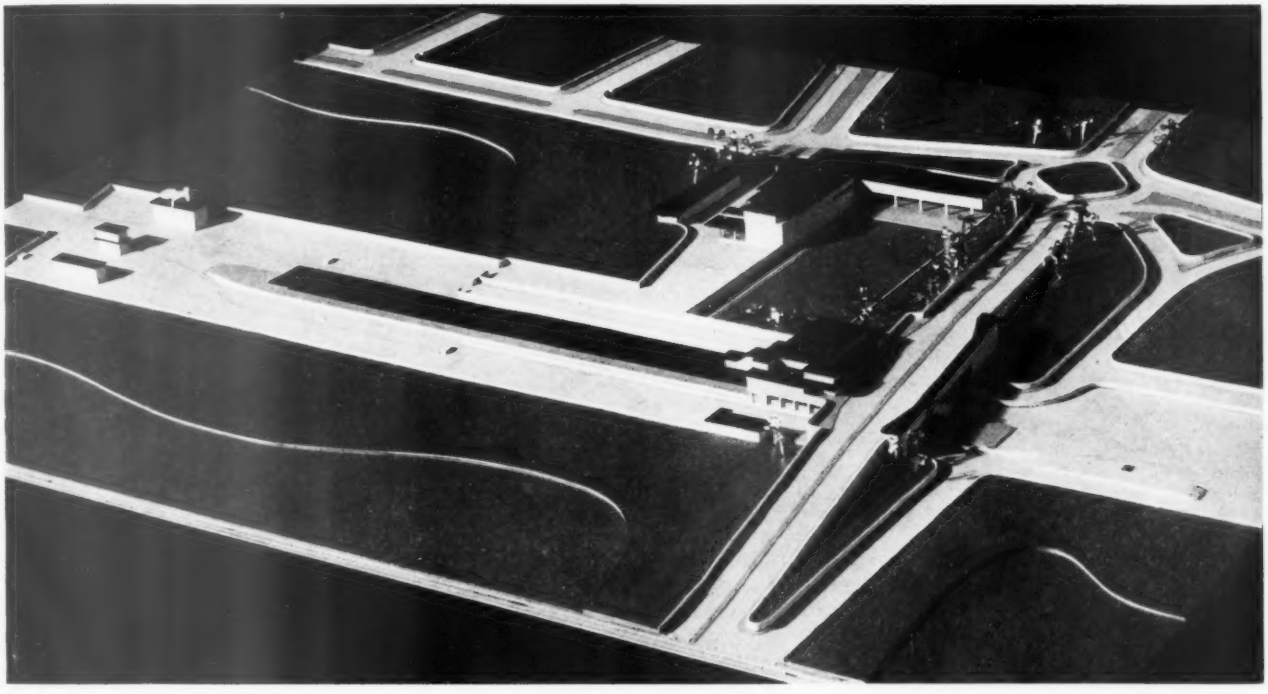
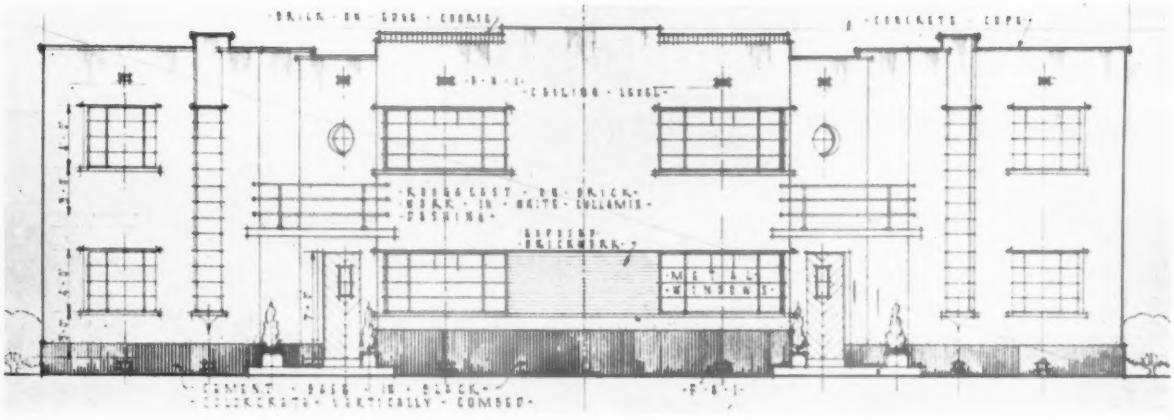
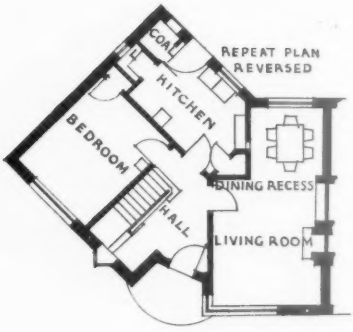
THE LIVERPOOL SCHOOL EXHIBITION

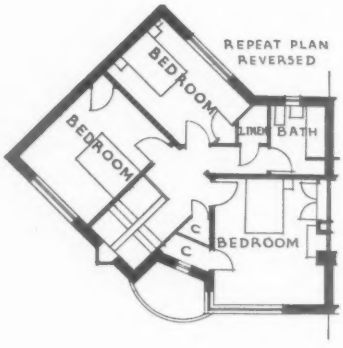


THE annual exhibition of the Liverpool School of Architecture was opened by Viscount Samuel on July 1 and will remain open until July 24. On this and page 110 some of the drawings and models are reproduced.

Above, model of a scheme for a new railway station and hotel at Formby, Lancashire, by Messrs. P. W. MacIver, R. Walters, J. H. Elliot, and A. H. Alexander (third-year students). Right, axonometric of a detached house, by Mr. W. A. Henderson (fourth-year student).







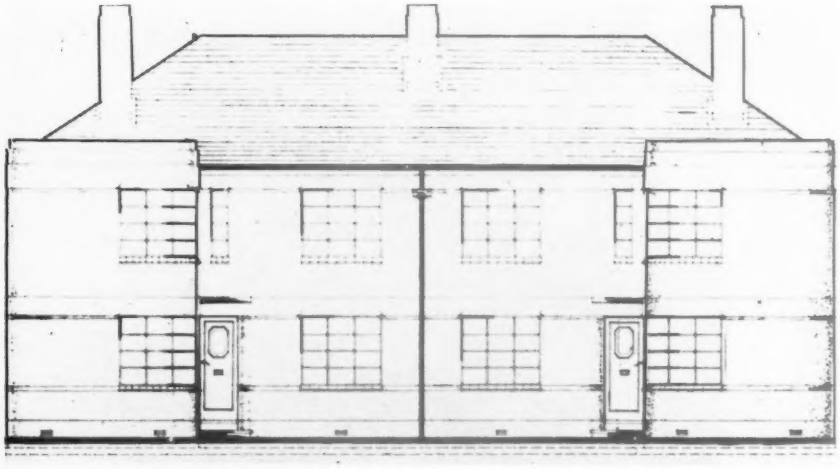
HOUSING AND HEALTH EXHIBITION AT GLASGOW

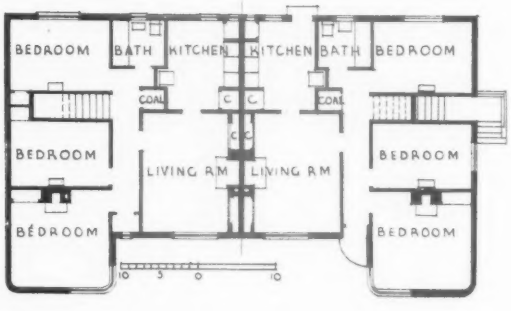
•

THE WINNING DESIGNS

The Awards have been made in the Competitions for a Five-Room Cottage and for a Flat Block of Four-Room Houses, held in connection with the Glasgow Health Exhibition. Above, the Winning Design for a Five-Room Cottage (£70) : by M. Cormie, 88 Hanover Street, Edinburgh.

Below, the Winning Design for a Four-Room Flat in a Two-Flat House (£80) : by J. G. Tedcastle, 7 Coltbridge Terrace, Edinburgh.





THE LOCATION OF INDUSTRY

ON Wednesday of last week the Prime Minister announced in the House of Commons the setting up of a Royal Commission to inquire into the geographical distribution of the industrial population, with the following Terms of Reference :

"To inquire into the causes which have influenced the present geographical distribution of the industrial population of Great Britain and the probable direction of any change in that distribution in the future ; to consider what social, economic or strategical disadvantages arise from the concentration of industries or of the industrial population in large towns or in particular areas of the country ; and to report what remedial measures, if any, should be taken in the national interest."

Not unnaturally, the Prime Minister was asked to explain a little more clearly what the main job of the Commission is meant to be, and he agreed that its primary duty is to inquire into the location of industry. This in itself, however, is a large and rather vague subject, and how it is handled depends very much on the approach adopted.

It is not easy to forecast from the composition of the Commission what that approach will be. The Chairman, Sir Montague Barlow, has been at one time or another Head of the School at Repton, Minister of Labour, and Chairman of such varied bodies as the Council of Malvern Girls College, a Committee on Tuberculous Soldiers, Sotheby & Co., the London Diocesan Fund and the Royal Commission on the Coal Industry in Alberta. With Professor Patrick Abercrombie we know rather better where we are, and it is to be hoped that as the Commission's only professional town-planner he will be able to show it the way it should go. Sir William Whyte, a solicitor who is Honorary Chairman of the Town Planning Institute's Scottish branch, has also special knowledge of this aspect and progressive ideas about it, which should prove useful. Mr. Ernest Bevin is presumably on as Chairman of the T.U.C. General Council, which has another representative in Mr. George W. Thomson. Mr. Sydney Smith, a leading surveyor, and Professor J. H. Jones of Leeds, the economist on the Commission, are both reputed to be able, and progressive in their outlook. Mr. Parker Morris, Town Clerk of Westminster, represents local government, and Mr. D'Arcy Cooper (Chairman of Unilever, Ltd.) and Sir Francis Joseph (lately President of the Federation of British Industries) stand for big business. Sir Arthur Robinson was Secretary of the Ministry of Health until two years ago, and his present appointment as Chairman of the Supply Board makes him a link with the strategic aspect of the problem. The two women on the Commission both have progressive connections, Mrs. Hill being a sister of Mr. J. M. Keynes and Mrs. Hichens the wife of one of our most broadminded industrialists.

Odd as the list may look at first sight, there is therefore no cause for despair just yet. Much depends on how the Commission goes about its work. Sir William Beveridge pointed out last week-end that "Fifteen people sitting round and asking questions of witnesses in the presence of the Press was not a way of discovering truth or experience. None of the value of the Royal Commission on coal mines, on which he served, came from the evidence taken at public sessions. It came from reports which they got written for them by people behind the scenes."

These words are especially true of the location of industry, a subject on which public opinion is rapidly evolving and on which factual material is still very limited. We hope that the new Royal Commission will go about its task in this spirit. If it does, it may assemble a coherent body of evidence which will speak more tellingly than any human witness it could call before it, and it may give a basis for far-reaching change in national policy.

One or two examples may be given of the type of information which might usefully be collected by the Commission. In the first place, what have been the facts of post-war internal migrations in Great Britain ? How many people have migrated to Greater London, to the South East, and to other towns and regions ? In what years has the movement been greatest and least in scale ? How far has it been composed of unskilled, skilled, clerical and other grades of worker ? Where exactly have they come from and where have they settled ? How many of them really settle down for good ? How many live near their work ? How does their new standard of living compare with the old, allowing for higher rents and travelling expenses ? What part is played by elderly persons and pensioners in the drift to the South ? All these questions could be answered by official investigators, largely from data already available to them. If we had all the answers we could see for the first time how and why London and other cities go on attracting migrants, and we would know how to control the movement intelligently.

To give another example, the Commission could do a good deal to show what sizes of communities make the best units for certain purposes. For instance, what population must a community have in order to support its own nursery school, its own central school, its own fire brigade, its own public library, its own fully-equipped hospital, its department store, its cinema, and so forth? Almost all modern services, from a chemist's shop to a University, have some approximate relationship to the population locally, regionally or nationally, and if these relationships were studied it could probably be found that some sizes of village or town are definitely more economic than other sizes. Just as we study the most convenient sizes, shapes and lay-out of rooms in a house so we must study the most convenient sizes, shapes and lay-outs of the town which is the community's dwelling. But the community, like the private client, must make up its mind what it wants and what it is prepared to pay if it is to enjoy the benefits of satisfactory design. The Royal Commission, if it does its job, should give the town planner a much firmer basis to build on, and a more educated public to deal with.

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NOTES & TOPICS

LATEST FROM PARIS

THIS time straight from the horse's mouth. Mystified by all the gossip about the Paris Exhibition, I decided that the only thing was to see for myself. And I return from a week-end in Paris exhausted but well-informed.

*

And now to answer, once and for all, the usual questions in the usual order :—

1 : Yes, emphatically, it *is* worth a visit. Nowhere but in Paris could you find a gigantic exhibition—an impressive metropolis by itself—occupying the heart of a capital city. The scale, the whole conception is grand. It gives a real outlet to the French genius for monumental planning. And the quality : amongst the inevitable areas of more or less standard exhibition stuff there is enough first-rate original design to keep an observant architect busy for a week.

*

2 : No, you are quite right, it is unfinished; but not to the degree I had been given to understand. The effect is not of lack of finish. If you pursue your explorations into the corners given over to, for example, the Paris Horticultural Societies or the crafts of French Indo-China you will find some of the scaffolding and unmade roads of rumour, and some of the French industrial pavilions are unfinished inside.

*

But the foreign section, where most of the architectural interest concentrates, is almost complete and a great success —(U.S.A. and a couple of the South American republics are incomplete inside; and it is not quite clear yet whether the beautifully gilded Vatican Pavilion is really one big restaurant inside or whether there is more still to be opened.)

*

3 : No, I would not say by any means that it was a disgrace to Britain (question number three is of course about the British Pavilion). On the contrary, when I first went in, remembering how Britain had been represented on previous occasions, I was astounded at the pleasant general effect and the imagination displayed. The new idea of a selection committee (replacing the old one of renting space) has thoroughly justified itself. Nevertheless the same thing is done much better by a dozen other countries (plus a great deal of non-commercial national projection that we never attempted), so I trust our organizers will not remain too complacent.

*

4 : Yes, I can think of one malicious story. You have heard about The Buttery (the restaurant attached to the British Pavilion, which, for some curious English reason, instead of taking advantage of the lovely riverside terrace as other nations have done, is tucked away behind on the edge of the main road).

*

The Buttery sets out to advertise native English food. Look in and you will see a simple circular room, tables laid for lunch and nothing else to catch the eye except, against the far wall, a large beer container prominently labelled " Carlsberg Pilsner."

U.S.A. EXHIBITION, 1939

And now a little more about the anti-British Pavilion campaign. I am told that Government Circles are not altogether satisfied with the show which we have in Paris, though it is a long way the best we've done yet. England, they have found, is not entirely populated by well-off contented sportsmen spending long week-ends playing games in Scotch tweeds and Lobb brogues.

*

And naturally the rumours now running around is that what is wrong is the money that has not been spent. The English country gentleman has not been put across big enough, perhaps.

*

The long and short of it is that the British Ambassador in Washington is maintaining that " national prestige " must be restored and that the U.S.A. Exhibition of 1939 is the place to do it.

*

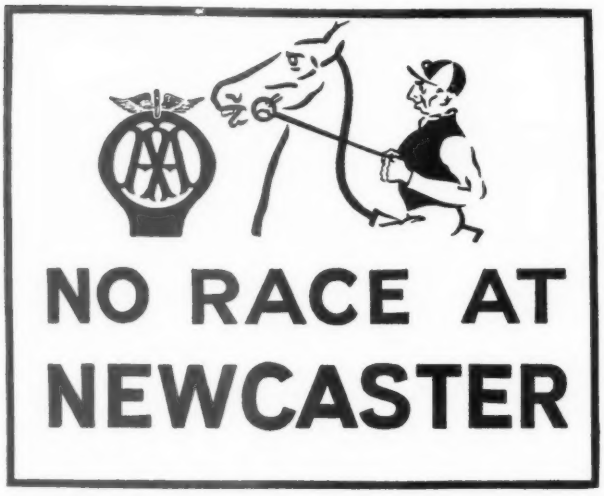
I agree, but will heaven grant the D.O.T. the proper degree of imagination to set about the thing in the right way? If, as I understand, an expenditure of a quarter of a million is contemplated then there is only one way to choose the designer—an open competition in the grand manner.

*

This would be the right approach and, if the right jury were chosen, would produce the right design ; for after all a young man is as likely to be inspired in this sort of competition as are his more experienced colleagues. Incidentally, a little judicious publicity about the competition itself would give the whole thing an admirable send-off—but what about the right jury ?

STAGGERING AND SHIFTING

The new Minister of Transport has already leapt into the headlines—what opportunities these non-party portfolios do provide to their holders; but, on the other hand, what a wrong-headed and defeatist method of dealing with the



rush hour. The Minister's suggestion for "staggered" office hours deals with the problem from the wrong end, or at best can only be regarded as a temporary expedient. I suggest to the Minister of Transport that his job is to make the channels serve the transport and not make the transport serve the channels.

*

The Royal Commission on the Shift of Population is of great importance and I have analysed its personnel with interest. Personally I am glad to see that it includes my friend Professor Abercrombie, but I am a little mystified by some of the inclusions and even more by the exclusions. There are one or two important and influential persons who, astonishingly, seem to be represented by their wives. The most extraordinary thing about this Commission on population is the entire absence of a population expert. After all, in Carr Saunders, Hogben and Miss Charles we have three of the world's leading demographists, but their existence has been ignored.

*

The big industrialists will not be displeased at the appointment of this commission. They, I gather, would like industry to be located exactly where it suits them. And it doesn't, so far, look as though this Royal Commission will upset them much.

WARNED OFF

"This new road sign, which will be displayed whenever racing is postponed or abandoned through bad weather or other unforeseen circumstances, has just been prepared by the Automobile Association, and . . . to save motorists completing useless journeys will be erected at A.A. telephone boxes. . . ." The design is reproduced herewith. *Amusing*, isn't it?

AMENITY'S MARTYR

Talking of signs . . . lime-burner W. Wallstead (this story has been told before) was approaching a particularly pleasant part of the South Downs one day recently, when he saw a gentleman get out of his car, pick up a stick, and proceed to do his best to demolish a hoarding advertising a new housing estate to be built on that part of the Downs.

The gentleman, it turned out, was a Mr. R. M. Darwall of Kent, who was later very properly fined for his ungentlemanly behaviour, and made to pay for the damage he had done, to the tune of some £20. When the case came on, it turned out that Mr. Darwall was not a professional smasher and grabber, nor an architect, but an ordinary citizen, of unspotted reputation, with a liking for the country, whose crime was the result of a deep-seated and slow-gathering disgust at the way he considered the English countryside was being made beastly by uncontrolled building development.

*

As I have said before, I deplore Mr. Darwall's action, but I share his rage, and I propose, with any others who see the matter in the same light, to share the expenses of its results.

*

What about you? Five shillings is all we want from you. It will be sent on to Mr. Darwall (who is ignorant of my missionary work on his behalf and unknown to me) as a gesture when the £20 is made up. I have already had subscriptions from Farnham, Brighton, Uffington, Sheffield, Croydon, New Cross, Great Ormond Street . . . fifteen in all. If Sheffield can do it, you can do it. I want sixty five-shillingses more, and them I mean to have, so don't hesitate unless you want me nagging at you again next week.

YOU PAYS YOUR MONEY AND YOU TAKES YOUR CHOICE

A correspondent at Sowerby Bridge sends the following cutting from the *Halifax Daily Courier and Guardian*:

WANTED

Workpeople, Assistants, Clerks, &c.

SOLICITOR, Architect, Hot Water Engineer, Chartered Account (*sic*), Land & Estate Agent requires PUPILS. Highest standard of training. Moderate Premium.—Write V17, Courier.

LAND OF OPPORTUNITY

My information bureau—a world wide organization—is always at the disposal of architects buying practices abroad. For the benefit of those contemplating Ecuador (6,000 ft. above sea-level, constant sunshine) I print my latest dispatch from Guayaquil.

16th June, 1937.

Here is complete corruption. The buildings are devoured by ants. The corrugated iron classical cornice of a cane house yawns, the pieces fall and millions of bats fly out. Millions and millions of bananas. Enormous luxurious American cars driven by illiterate half-clothed half-breeds. Radio loudspeakers in all the buses, deafening.

And after looking for some good building the best I can find is a split cane house made by some Indians of the coast. When I go to Quito I hope to photograph some baroque churches.

In Guayaquil there are various engineers: nothing but reinforced concrete, very raw and sordidly unfinished; now I am cured of the reinforced-concrete romanticism, what a foul material it is.

Nearly all the construction (pre-reinforced concrete) in Ecuador is split cane, sometimes plastered to look like masonry. They think nothing of using corrugated iron sheets for the flutes of columns, or marbled paper cut into squares imitating blocks of marble. Then some insects eat it and the effect is very Salvador Dali. The split cane is made into screens which are hung on a timber frame, some movable, others fixed. On the whole this is healthy, as the air circulates.

As soon as I have enough money to pay the fare I shall return to England. The climate and one thing and another are dreadful. It is maddening how commercially-minded the people are. They can put up a building for about 3½d. a cubic foot in reinforced concrete and they don't give a tinker's curse for the planning or the materials or the finish.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

THE LOCATION OF INDUSTRY ROYAL COMMISSION

On Wednesday, July 7, the Prime Minister announced in the House of Commons that a Royal Commission was to be set up with the following terms of reference :—

"To inquire into the causes which have influenced the present geographical distribution of the industrial population of Great Britain and the probable direction of any change in that distribution in the future ;

"To consider what social, economic or strategical disadvantages arise from the concentration of industries or of the industrial population in large towns or in particular areas of the country ; and

"To report what remedial measures, if any, should be taken in the national interest."

The members of the Commission are :—

SIR MONTAGUE BARLOW (Chairman)
PROF. LESLIE PATRICK ABERCROMBIE
MR. ERNEST BEVIN
MR. FRANCIS D'ARCY COOPER
MRS. HERMIONE HICHENS
MRS. MARGARET NEVILLE HILL
PROF. JOHN HARRY JONES
SIR FRANCIS JOSEPH
MR. PARKER MORRIS
SIR ARTHUR ROBINSON
MR. SYDNEY ARTHUR SMITH
MR. GEORGE W. THOMSON, and
SIR WILLIAM WHYTE.

Some biographical notes on the personnel of the Commission are printed below.

Sir Montague Barlow (Chairman) : A barrister. In 1935 he was chairman of the Royal Commission that investigated the Alberta coal industry. In 1920–22 he was Parliamentary Secretary to the Ministry of Labour, then appointed Minister of Labour, an office he held until 1924.

Prof. Leslie Patrick Abercrombie : Professor of town planning at Bartlett School of Architecture, University College, London, a post to which he was appointed in 1935.

Mr. Ernest Bevin : General Secretary of the Transport and General Workers' Union.

Prof. John Harry Jones : Professor of Economics and head of the Commercial Department of Leeds University. During the war he was attached to the Ministry of Munitions and the Ministry of Labour, and from 1919 to 1922 was a member of the Trade Boards.

Sir Francis Joseph : A member of the Board of Trade Advisory Council. He was a member of the Overseas Trade Development Council, and a member of the British Government Economic Mission to South Africa in 1930.

Mr. Parker Morris : Town Clerk of Westminster, and an authority on housing.

Sir Arthur Robinson : Chairman of the Supply Board since 1935. Previously was Secretary to the Ministry of Health from 1920.

Mr. Geo. W. Thomson : A member of the Post Office Advisory Council since 1936. He is vice-president of the National Federation of Professional Workers and a member of the General Council of the T.U.C.

Sir William Edward Whyte : He was a member of the Coal Mines Reorganization Commission and chairman of the Scottish Advisory Committee on Housing. He is now chairman of the Consultative Committee of the Department of Health for Scotland and a member of the Unemployment Grants Committee.

Mr. Francis D'Arcy Cooper : Chairman of Lever Brothers, Ltd., a post which he has held since the death of Lord Leverhulme in 1925.

Mrs. Mary Hermione Hichens : A member of the Banbury Guardians Committee and a co-opted member of the Oxford County Education Committee.

Mrs. Margaret Neville Hill : Wife of Prof. A. V. Hill. Mrs. Hill is a member of the Hornsey Borough Council and chairman of the Hornsey Housing Trust.

Mr. Sydney A. Smith : A fellow of the Chartered Surveyors' Institution and a recognized authority on rating and valuation.

THE ARCHITECTS' DIARY

Friday, July 16

ARCHITECTURAL ASSOCIATION. *The annual prize-giving and exhibition of work by students of the School of Architecture. An address by the Rt. Hon. the Earl of Bessborough.* 3.30 *p.m.*

Friday-Saturday, July 16-31

ARCHITECTURAL ASSOCIATION. *Exhibition of work by the students of the School of Architecture.*

Saturday, July 18

ASSOCIATION OF ARCHITECTS, SURVEYORS AND TECHNICAL ASSISTANTS (METROPOLITAN BRANCH) *Ramble in Surrey in the Reigate District. To be conducted by Mr. J. A. Whittaker.* 10 *a.m.*

Wednesday, July 21

LONDON COUNTY COUNCIL. *Opening of the new headquarters of the London Fire Brigade by H.M. the King.* 3 *p.m.*

Friday, July 23

LONDON SOCIETY. *Annual River Trip by motor launch from Westminster Pier.* 6.15 *p.m.*

COMPETITION RESULT—GLASGOW

Messrs. John Wilson, T. G. Gilmour, and J. H. Ferrie, the assessors in the competition promoted by the City of Glasgow in connection with the Housing and Health Exhibition, have made their awards as follows :—

Section 1 : A Five-Apartment Cottage. Design placed First (£70) : M. Cormie, c/o James Miller, Architect, 88 Hanover Street, Edinburgh.

Design placed Second (£40) : David Hutton and William Leslie, Milfield, Cleland.

Design placed Third (£25) : Miss Helen L. Jackson, Ravenswood, Lenzie.

Section 2 : A Four-Apartment Flatted House.

Design placed First (£80) : John G. Tedcastle, Architect, 7 Coltbridge Terrace, Edinburgh, and Leonard J. Pond, Concrete Works Manager, 1 Dalkeith Street, Joppa, Edinburgh (joint entry).

Design placed Second (£50) : Design No. 6, R. E. Whiteford, 39 Brachelston Street, Greenock.

Design placed Third (£30) : Jas. J. Shannon, "Redsyke," Biggar, Lanarkshire.

The first design in each section is illustrated on page 92.

COMPETITION PENDING—NEWCASTLE-UPON-TYNE

At a meeting held on July 7, the City Council of Newcastle-upon-Tyne were asked to approve recommendations made by the Special Committee for the new Town Hall.

The Committee reported that the R.I.B.A. had suggested the appointment of one assessor at a fee of £2 per £100 of the estimated cost of the building, and that prizes of £750, £500 and £300 be offered, the winner's prize money to be merged into his fee.

The Special Committee further recommended that its chairman, vice-chairman, the city architect and the property surveyor be authorized to visit new municipal buildings erected in towns of comparable size to Newcastle.

THE CIVIL LIST

Among the grants made in the Civil List is an award of £50 to Mrs. Alice Mary Barnsley "for services rendered by her husband, the late Mr. Ernest Barnsley, to architecture."

CONFERENCES IN THE U.S.S.R.

"Broadly speaking, I would say that they are everywhere—these Russians—doing the right thing, though not always very well. We, it would seem, are too often doing the wrong thing, but with the greatest skill and finish. Their mistakes in detail can for the most part be put to rights whenever they have the time to attend to them, whilst ours can only be removed by dynamite—or by a new and greater faith."

Thus Mr. Clough Williams-Ellis after his recent Moscow visit for the All-Union Congress, which he attended as the officially invited British guest. The Congress itself, one gathers, was enlivened by criticisms of architecture and architects from laymen, authors, actresses, workers and school-children who, speaking as users or clients, explained exactly what they wanted and the ways in which architects failed to supply their needs.

SHEFFIELD CIVIC CENTRE

The details of a scheme for a new Civic Centre at Sheffield have just been made public.

The new buildings, alterations and street widening proposed are :—

Law Courts and Police headquarters : In

The interior of the German pavilion at the Paris Exhibition. The illustration is interesting as showing the latest developments in German architecture. The photograph is by courtesy of the Exhibition authorities.

Arundel Street opposite the exit of Surrey Street and occupying part of the site where the present College of Arts and Crafts stands.

New College of Arts and Crafts: On the opposite side of Arundel Street, on an island site bounded by Surrey Street, Arundel Street, Howard Street, and Eyre Lane. The college will be built over two small existing streets.

Town Hall extensions: A big site adjacent to the existing building and occupying St. Paul's Churchyard, and bounded by Pinstone Street and Norfolk Street.

Medical Centre: An addition to the Maternity Centre, with a frontage to Orchard Lane, and also extending into Leopold Street, as a part of new electricity showrooms which it is proposed to build. This recommendation is subject to modification, if necessary, on receiving details of the Health Committee's requirements as to a medical centre.

Electricity Showrooms: A triangular site, with its apex at the junction of Leopold Street and Fargate and bounded on its open side by Leopold Street.

Street Widenings: Streets which it is proposed shall be widened in the area of the Civic Centre Plan include Arundel Street to a width of 60 ft., Surrey Street to a width of 70 ft., and Norfolk Street, 60 ft.

The plan, which has been evolved by town planning experts working in collaboration with the Town Planning and Civic Centre Special Committee, of which Alderman F. Marshall, M.P., is chairman, involves an area of about a third of a mile square in the centre of the city. Many preliminary plans had been considered.

SALARIED ARCHITECT AND PRIVATE WORK

At a public audit in Durham last week, it was suggested that the District Auditor, Mr. H. W. Magrath, had exceeded his duties in comments made by him concerning the position of Mr. F. Willey, Durham County Education Architect.

Mr. Magrath said that the architect signed an agreement with the Education Committee in March, 1920, in which he undertook to devote his whole time to his office. In March, 1935, at the audit of the accounts of Durham County Council, objection was made that, in spite of the agreement, he had engaged in professional work on a considerable scale outside his county activities. Mr. Magrath quoted a particular case whereby, he said, Mr. Willey received £637 10s. in fees from Hartlepool Corporation in respect of services rendered by him in the preparation of plans for the building of a school.

It became incumbent on him to ask the extent of the work to which the architect had engaged in private practice, and the additional emoluments he had received in carrying out work outside the terms of his appointment. He was asked whether any part of that work was performed in the offices of the County Council, and whether he utilized the assistance of the staff or materials of the council. He had not given details of extra work undertaken by him or emoluments received by him.

Mr. F. T. Willey (for Mr. F. Willey) referred to a passage in the auditor's report as to the architect engaging in private work outside the terms of his appointment, and thereby competing with professional architects in the district who were ratepayers. He said that the Royal Institute of British Architects recognized that their members, in holding appointments, did outside work, and said that no complaint had been received by them in that instance.

The County Council had no right to the fees received by the architect. The way in which the audit was carried out in 1935 and 1936, Mr. Willey submitted, was illegal, and the auditor had no right to interrogate the architect. The form of the auditor's report in 1936 was irregular. It could not be construed as a report on the accounts of the County Council, which was the only thing with which the auditor ought to have been concerned.

R.I.B.A.

R.I.B.A. Architecture Bronze Medals: Nottingham, Derby and Lincoln Architectural Society: The award of the medal for the area of the Nottingham, Derby and Lincoln Architectural Society in favour of Miss M. E. Hardstaff's Charity Almshouses, Gedling, near Nottingham, designed by Mr. T. Cecil Howitt (F), was formally approved.

International Congress of Architects, Paris: Mr. H. S. Goodhart-Rendel (President-elect) and Mr. H. V. Lanchester (F) were appointed as additional delegates to the International Congress of Architects, Lt.-Col. H. P. Cart de Lafontaine (F) having been appointed at a previous meeting.

International Housing and Town Planning Congress, Paris: Sir Raymond Unwin (Past President) was appointed as the R.I.B.A. delegate to the International Housing and Town Planning Congress, held in Paris from July 5 to 11.

Concrete and Brickwork in Building Construction: Mr. Percy J. Waldram (L) was appointed to represent the R.I.B.A. on the British Standards Institution Technical Committee B/45, set up to prepare a British Standard Specification for concrete and brickwork in building construction.

Proposed National Survey of Cottages, etc.: The intention of the Town Planning, Housing and Slum Clearance Committee to make a national survey of cottages, etc., worthy of preservation was reported, and the Council approved the recommendation of the Committee that the co-operation of the Allied Societies in England and Wales and the Council for the Preservation of Rural England should be invited.

Election of Students: The following Probationers were elected as Students of the R.I.B.A.: H. C. Berneaud, H. C. Brown, I. Chaikin, S. H. Cruden, S. M. Desyllas, A. M. Eden, (Miss) M. D. Edwards, T. R. Evans, J. N. Graham, M. E. Harse, H. R. Hetherington, J. Hinchliff, C. Kinnear, R. W. Knowles, D. E. Lang, J. Okell, R. A. Pickmere, G. J. Powis, A. L. B. Raven, J. S. Reid, J. W. Solomon, J. D. Tetlow, E. F. Tew, (Miss) M. MacDonald Troup, (Miss) D. M. E. Turner, W. Turner, W. J. Urquhart, (Miss) J. E. F. Whyte.

BIRMINGHAM AIRPORT

For some months it has been doubtful whether the Birmingham City Council would proceed with their scheme for an airport at Elmdon. Shortly after the publication of the Maybury Report early this year, the Airport Committee postponed the scheme, and the model of the proposed terminal building was withdrawn from the R.I.B.A.'s Airports and Airways Exhibition. It has now been decided, however, that the scheme is to be proceeded with at once. The architects are Messrs. Norman and Dawbarn.

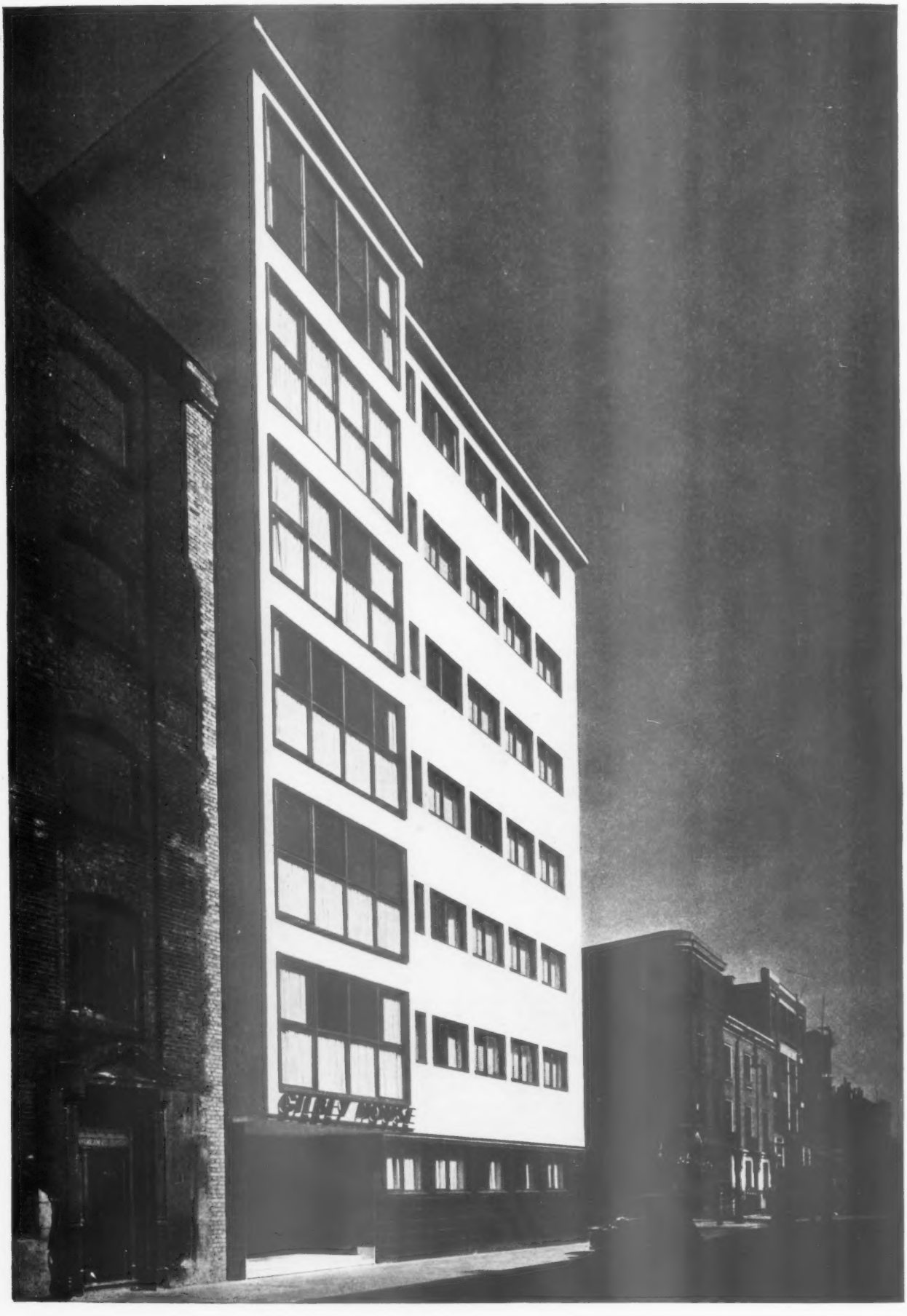
PROFESSIONAL ANNOUNCEMENT

Mr. Eric W. Chapman, A.R.I.B.A., has severed his connection with Messrs. Chapman and Jenkinson, and has opened an office at 2 Meetinghouse Lane, Sheffield. Telephone Number: Sheffield 22531.

CHANGES OF ADDRESS

Mr. Clifford Strange has moved his office to 9 Upper Montagu Street, W.1. Telephone, Paddington 7168.

Mr. Edwin D. Griffiths, F.R.I.B.A., has moved from Knightsbridge to 616 Bank Chambers, 329 High Holborn, London, W.C.1. Telephone number: Holborn 2239.



NEW OFFICES FOR W. & A. GILBEY

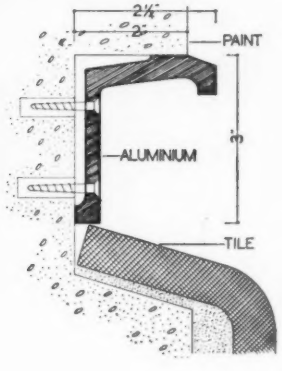
JAMES STREET, CAMDEN TOWN, N.W.

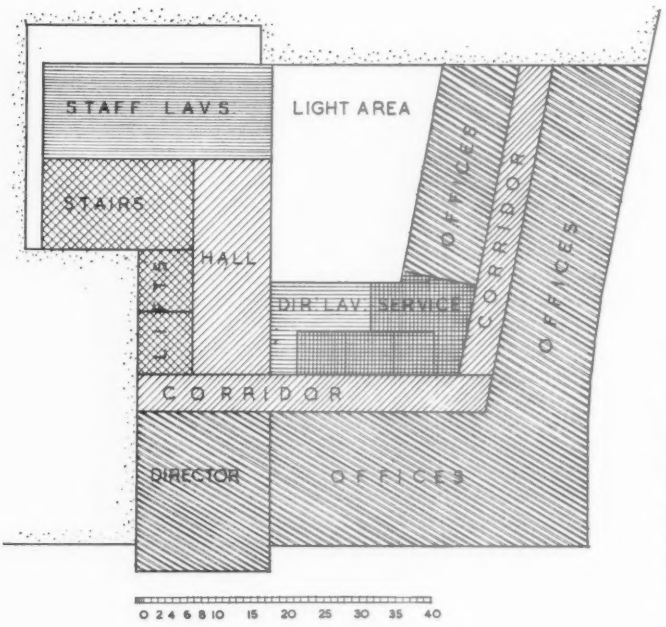
BY

SERGE CHERMAYEFF

A block of administrative offices serving adjacent goods' yards and warehouses.
The building, apart from its architectural qualities, which are obvious from the illustrations, is of particular interest owing to the completeness with which it has been equipped and the way in which it has been sound-proofed from structure and air-borne noises. The following notes and diagrams have been prepared to give some idea of the amount of work that has gone into the design of the building and selection of equipment, and the structural methods that have been evolved to solve the problem of soundproofing.

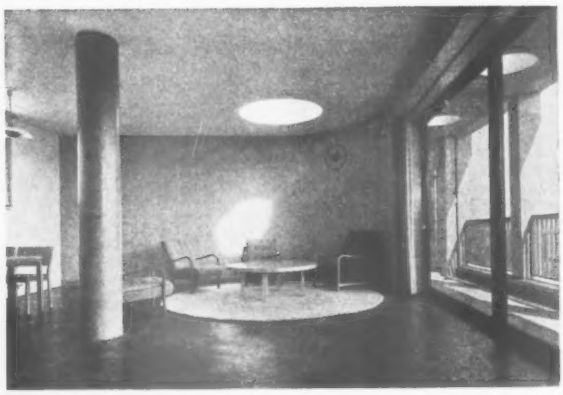
EXTERNAL FINISHES. — The building is faced at ground floor level with 10-in. by 4½-in. by ¾ in. brown faience tiles, finished with a capping of anodized aluminium. Above ground floor level the reinforced concrete walls are finished against tempered hardboard shuttering, making a smooth surface, which is painted with two coats of cream concrete paint. The windows are of teak, oiled, the main entrance doors of teak, cellulosed.





PLAN

SITE.—The site is on the corner of James Street and Oval Road, Camden Town, and has an area of 4,500 sq. ft. The angle of the site at the intersection of the two roads was obtuse, and as this was not considered possible to treat architecturally an agreement was entered into with the authorities whereby the building line was adjusted, a bottle neck eliminated and a right angle obtained at the corner of the new building which gave a curve to the James Street façade in picking up the building line of the neighbouring structure.

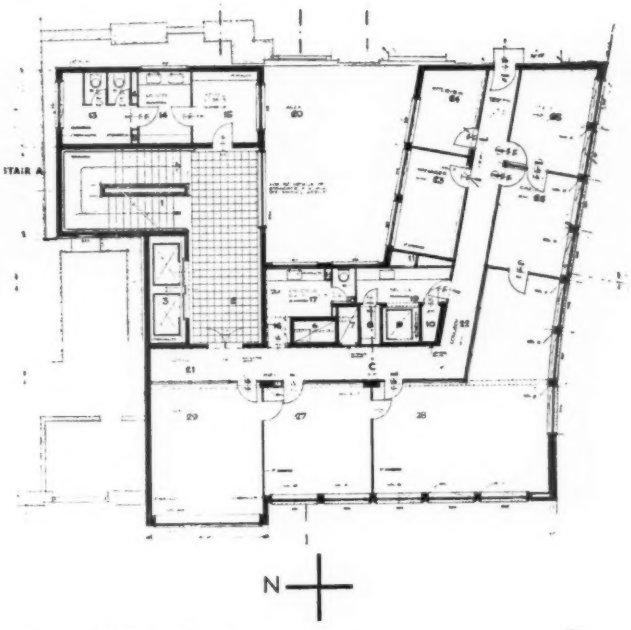


The main entrance hall is on the left and the directors' club-room above.

TYPICAL FLOOR—The offices face the roads on the south and east, and are served vertically by a staircase and two passenger lifts, and horizontally by a central corridor. The staircase, passenger lifts, and staff cloakrooms are placed in the dead space at the north-east corner of the site, and are lit and ventilated naturally by minimum wells between the new and old buildings.

The main vertical services—extract and intake ducts, service and ledger lift, postal chute, electrical and telephone ducts, and serveries—are placed centrally. The serveries have natural lighting from the light well.

KEY—6-10 : Vertical service ducts and lifts. 13-15 : Women's cloaks. 16-18 : Directors' cloaks. 19 : Service. 23-26 : Managers' and Waiting rooms. 27-29 : General offices.

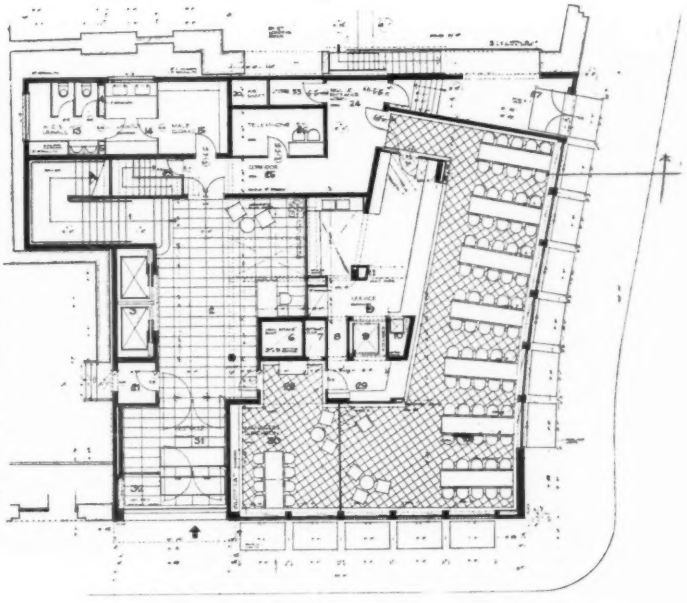


GROUND FLOOR PLAN—The ground floor entrance hall, vestibule, and outer porch have been designed as one space, separated only by full height glazed screens and doors, giving an impression of great scale to a comparatively restricted area.

The canteen and managers' dining room, silence not being an essential factor, have been placed on the ground floor where the various noise preventive measures are the least effective.

As the managers' club-room opens directly from the main entrance hall and is at the same time served directly from the main servery, this is separated from the canteen only by a full height sliding and folding partition, enabling the managers' dining room to be used as an extension foyer or buffet to the staff canteen for performances, dances, etc. out of office hours.

KEY—2 : Reception and Waiting. 6-10 : Vertical service ducts and lifts. 13-15 : Men's cloaks. 19 : Servery and crockery wash. 21 : Lobby to women's cloaks. 26 : Telephone exchange. 27 : Service entrance. 28 : Staff counter. 30 : Managers' clubroom.

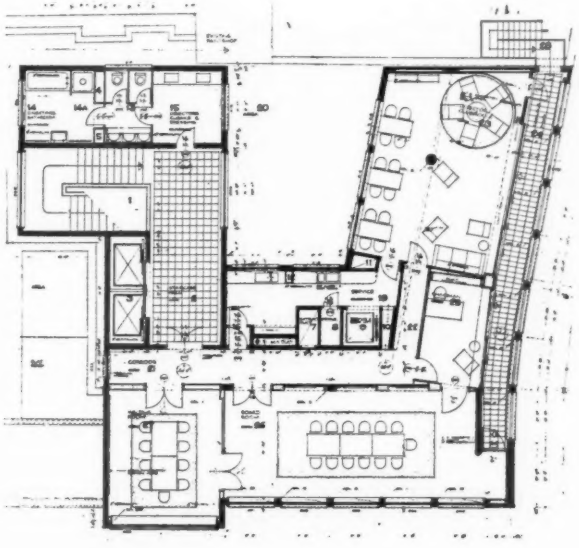


BASEMENT AND SIXTH FLOORS PLANS—Preparation of food is in the basement, with its own entrance to the east. The cooked food is taken by means of an electrically controlled lift to canteen level, where the "self-serving" counter is fitted with hot plates, food racks, etc. The pot and plate wash is in the basement ; the cup and saucer wash is at the canteen level in the servery. The service lift also communicates with a servery on the sixth floor, equipped with hot plates, for the directors' meals.

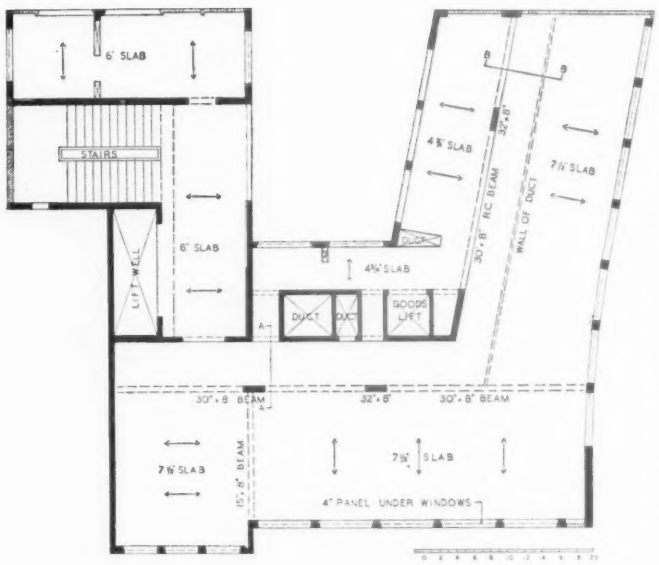
The board room and directors' restaurant and club room are on the sixth floor, and are divided from a balcony on the south by large sliding doors; they are sufficiently high for street noises to be unobtrusive when these windows are fully open in the summer.

SIXTH FLOOR PLAN

KEY—6-10 : Vertical service ducts. 11 : Kitchen and servery extract. 13-16 : Directors' cloaks. 19 : Service. 23 : Directors' clubroom. 24 : Terrace. 25 : Chairman's room. 26 : Boardroom. 27 : Committee room.



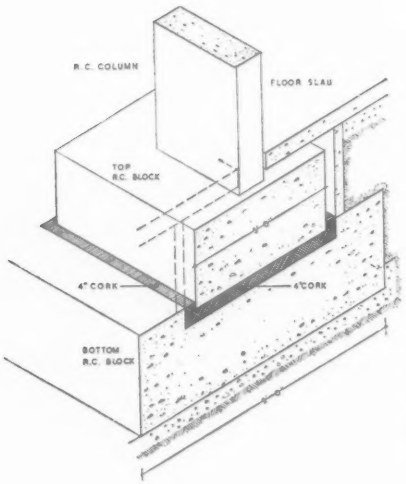
STRUCTURE



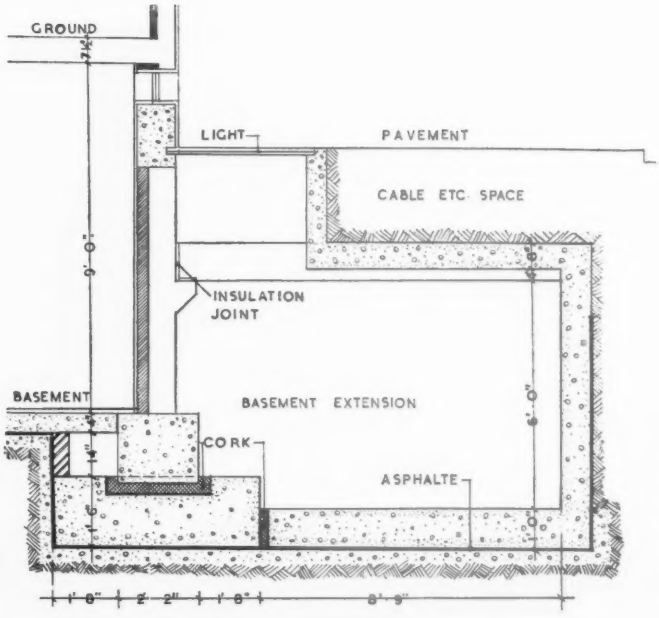
STRUCTURAL GRID — Reinforced-concrete framed structure with hollow tile floors, reinforced-concrete staircase, cork insulated footings to 4 ins. external R.C. panel walls.

Internally isolated columns carry deep beams forming a spine which carries the floors. This deep beam forms one side of the plenum duct over the corridor, and is pierced for the ventilator grilles. The comparatively large spans of the floor and beams and the ingenious way in which the beams form part of the plenum duct have made possible large office spaces, the ceilings and walls of which are uninterrupted by columns or beams.

The R.C. walls of the vertical ducts and goods lift are used for load-bearing purposes, and on the north side of the building the framed construction has been replaced for the most part by solid 8 in. or 6 in. R.C. walls which carry the vertical loads.

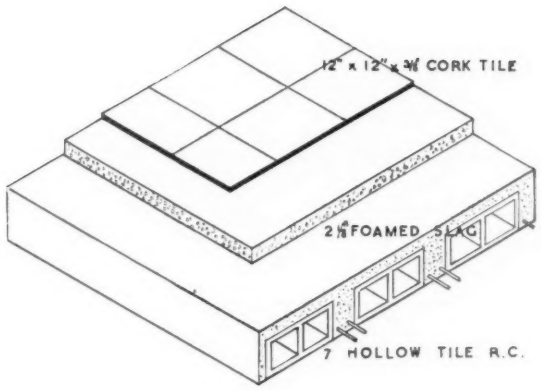


FOUNDATIONS—The structural grid is insulated from the foundations by 4 in. cork pads inserted between two R.C. foundation blocks. The cork pads consist of small particles of natural cork built up with glue, which gives a homogeneous texture and uniform compression over its whole area.



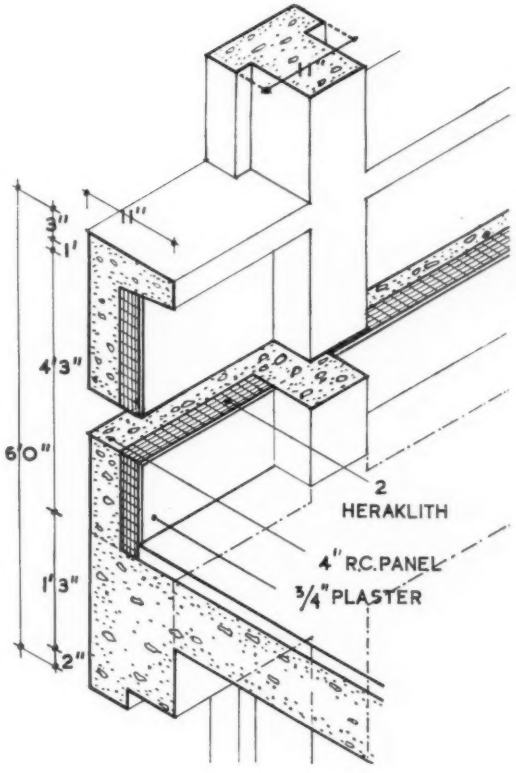
BASEMENT—An extension under the pavements insulates the building from traffic vibrations on the two cobbled streets.

Reinforced-concrete external walls and the floors of the basement extension are isolated from the basement floor, walls and columns, by cork or bitumen insulation. Cross-beams resting on, and insulated from, brackets on columns, carry the roof of the extension.



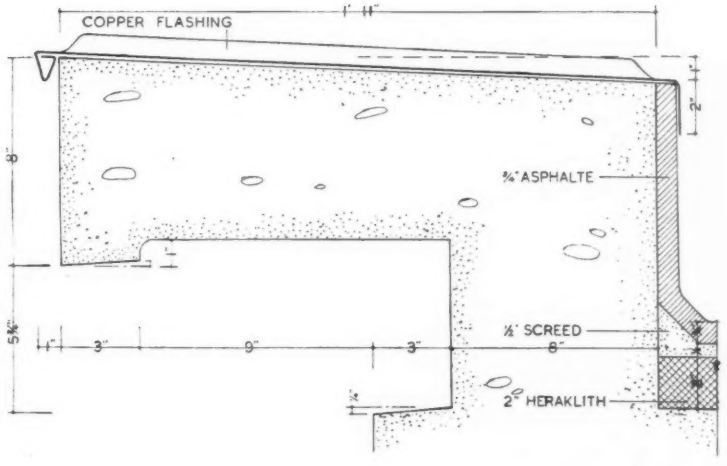
FLOORS—Floors are generally 7½-in. thick hollow tile, covered with a 2⅛-in. layer of foamed slag, forming a sound-insulating cellular screed.

The floors span 15 ft. 2½ ins. from the central spine beams to the external wall beams.
In order to deaden impact noises, the floors are finished with 12 ins. by 12 ins. by ⅜-in. thick cork tiles stuck down to the screed with a rubber paint.



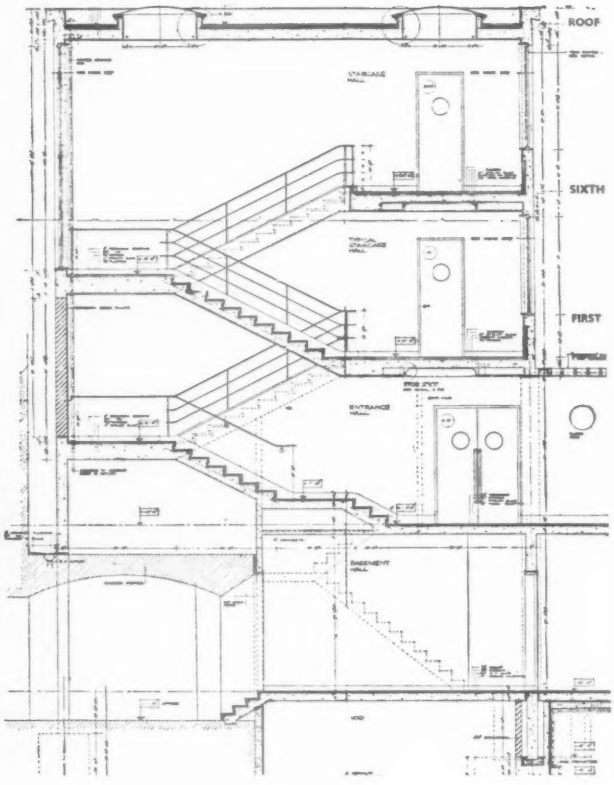
WALLS—External walls generally are 4-in. thick R.C. non-weight carrying panel walls cast on the outside against tempered hardboard shuttering, and lined on the inside with 2-in. Heraklith slabs for thermal insulation.

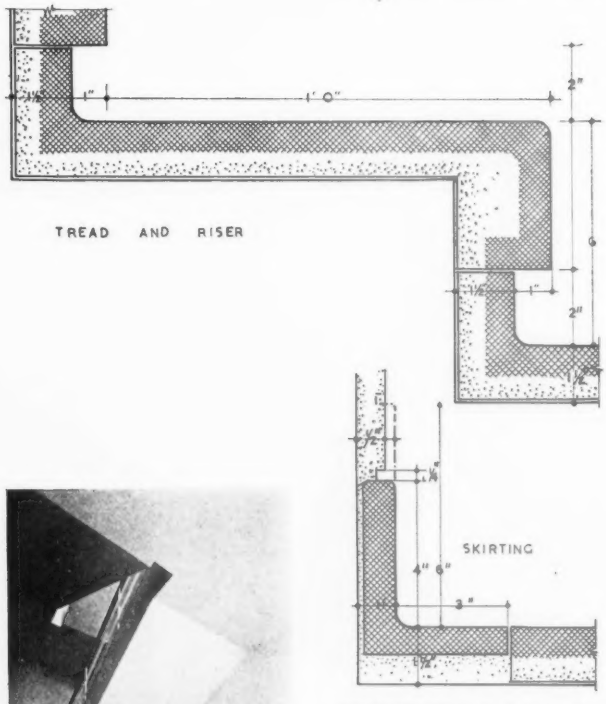
The panel walls under the windows have a cantilevered projection for a depth of 11 ins.—the same width as the columns—to form a concrete cill ; as the thickness of the panel wall, insulation slab, and plaster is 6¾ ins. this cill and the columns form a recess under each window for the radiators.

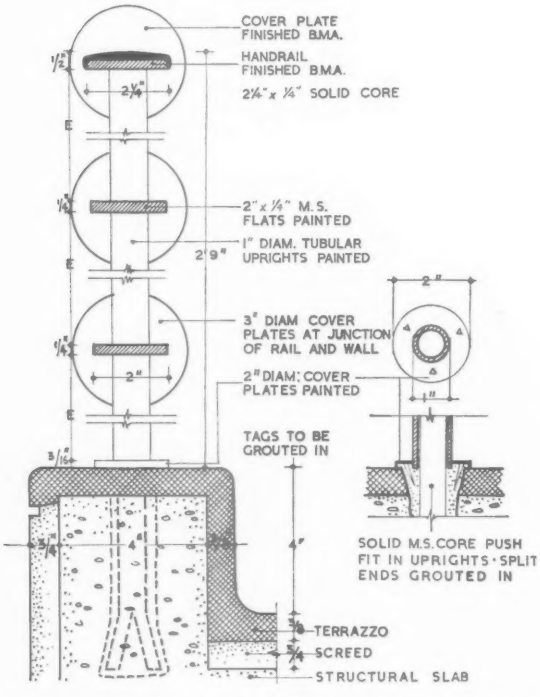


ROOF—The 7½-in. R.C. hollow tile roof slab is covered with 2-in. Heraklith slabs for thermal insulation finished with ½-in. screed and ¾-in. asphalt. There are no falls.

The coping around the building is of reinforced concrete covered on the top with copper flashing, which has a small drip on the front and is carried down for a depth of 2 ins. over the asphalt skirting on the back. The copper strip will prevent streaking from rain and soot on the visible surface of the coping.

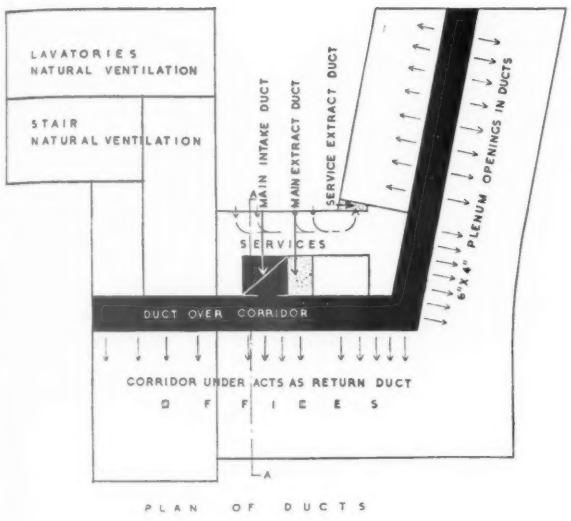




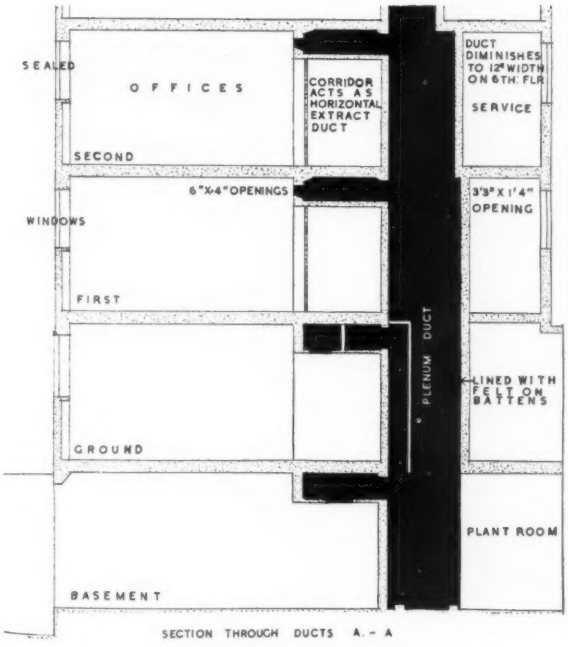


STAIRCASE.—Reinforced concrete staircase supported on stringers and 8 ins. thick reinforced concrete side walls. 1-ft. treads, 6-in. risers ; width of stair 5 ft. from walls to inside of stringer ; width of well, 9 ins. The thick landing slabs and stringers have allowed a continuous unbroken soffite.

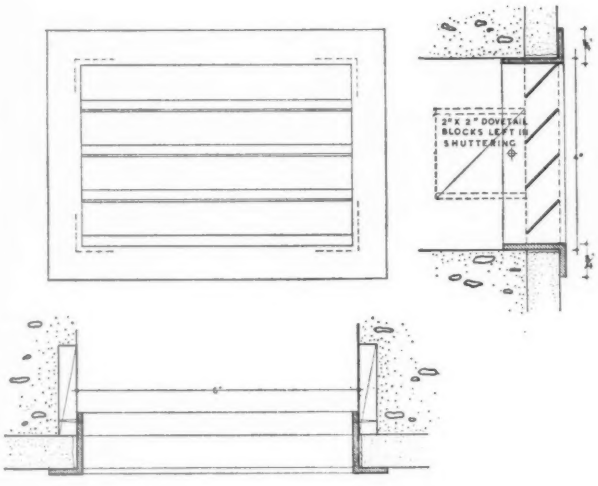
Stairs and landings are covered with pre-cast terrazzo tiles, and the cove skirting is in *in situ* terrazzo. Soffites are plastered and balustrade is of steel painted white, with a bronze handrail.



PLAN OF DUCTS



SECTION THROUGH DUCTS A. - A



SERVICES

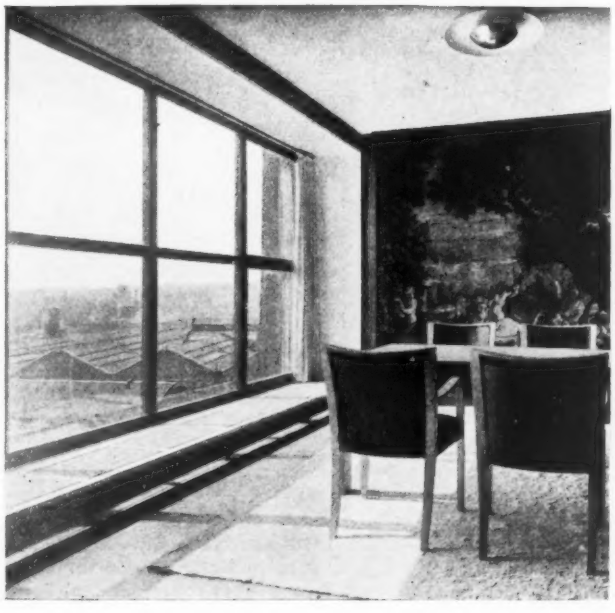
HEATING.—Hot water for the heating and hot water services is taken from calorifiers in the basement, which are fed from an existing high-pressure steam plant in the adjacent building. The direct heating by radiators is designed to raise the temperature in the rooms to 50° when the outside temperature is 40°. The warmed air from the plenum system raises the temperature a further 16° to 66°. When the building is not in occupation during week-ends the air conditioning is shut off, the radiators ensuring that the building is reasonably warm. Radiators generally are 3-in. hospital pattern, 18 ins. high, fixed on brackets in the recesses under the windows, an arrangement which is both easy to keep clean and of neat appearance. The directors' rooms, shown on the right, have heating coils in a casing under the cills.

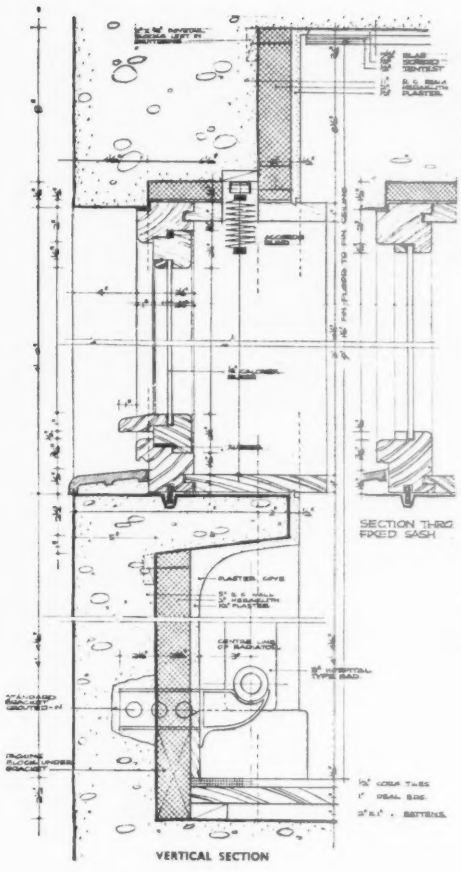
AIR CONDITIONING.—The entire office area of the building is air-conditioned, as the smallest aperture would immediately nullify to a large extent the various noise-preventive measures taken.

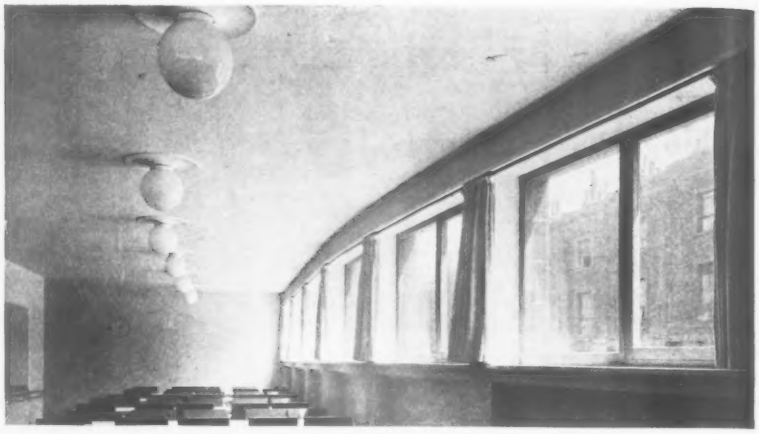
The air is warmed and cleaned by a plenum plant in the basement and is fed to the offices by way of the vertical duct in the service bay and the horizontal ducts over the corridors, through grilles into the offices, and then finds its way under pressure through door grilles into the corridors which form the horizontal return ducts. This returned air is drawn back to the plant by an extract duct in the Service bay, extracting immediately from the corridors.

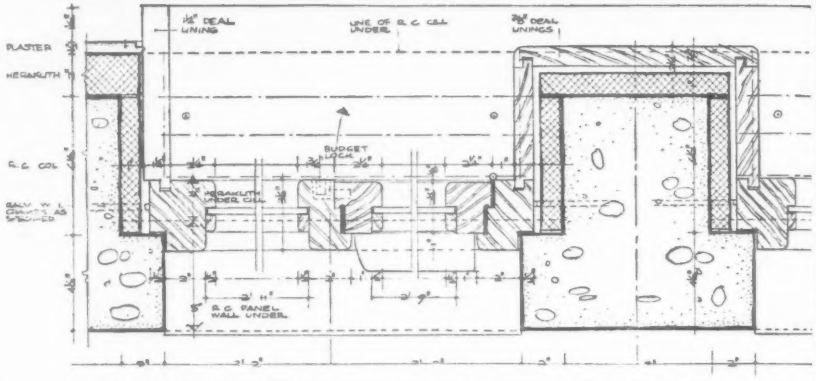
Both the vertical and horizontal ducts are in reinforced-concrete and form an integral part of the structure ; the office side of the horizontal ducts is the structural spinal beam, and is pierced for the vents.

The intake vent grilles are of sheet steel, cellulosed, and the grilles and openings through the beam are designed to deflect the air onto the ceiling to avoid dead pockets by the window heads.





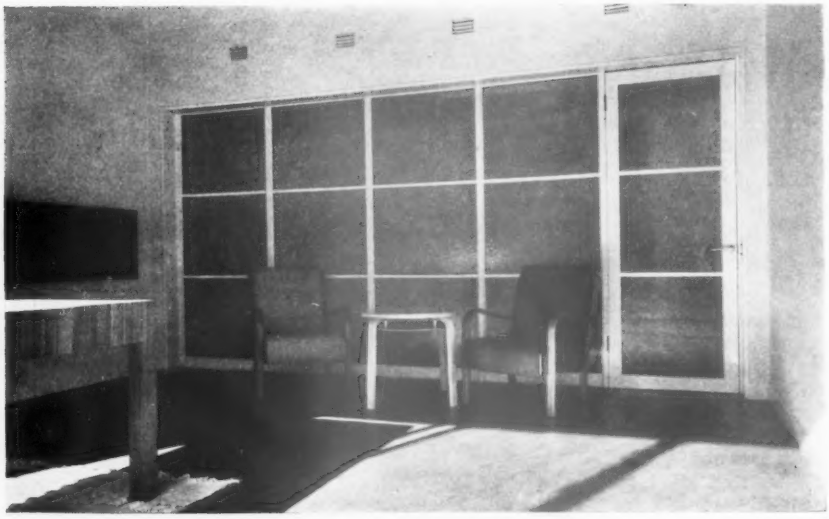


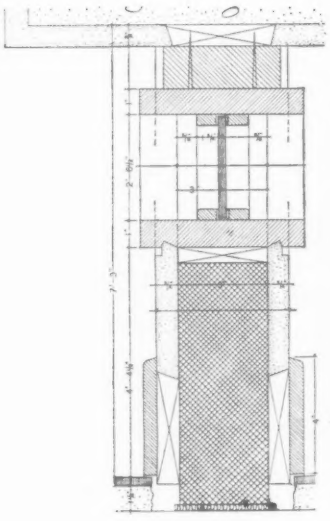


WINDOWS—The windows are of teak, which requires a minimal maintenance. Glass throughout is 32 oz.—just under ¼-in.—so that the building is completely sealed against the outside air which carries noise. The windows are opened by coach screws for cleaning purposes only.

The window areas have been reduced as far as possible without light loss, and the height from floor to cill of 4 ft. 4½ ins. permits filing cabinets to be placed against any wall.

Above are shown the architect's working drawing, and a photograph, of the standard windows fixed in the canteen.

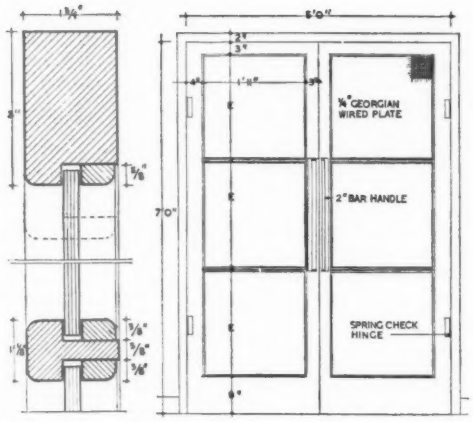


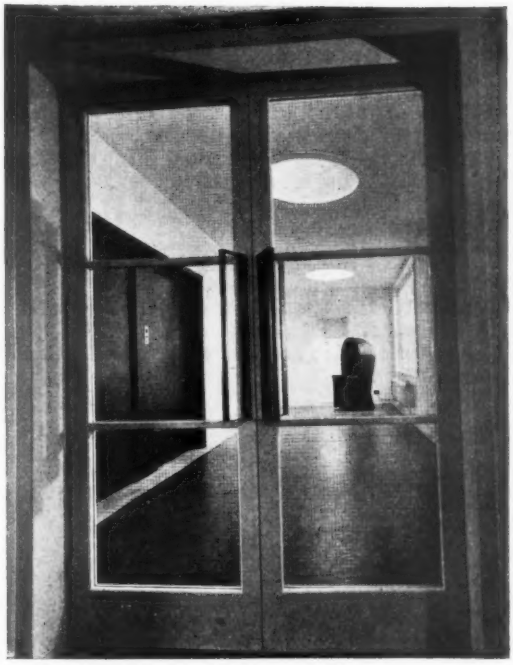


PARTITIONS.—The internal partitions generally—shown on the right—are of 3-in. breeze, standing on ¼-in. fibre insulating board for deadening sound due to vibration, with 2 ft. 6 ins. deep glazed lights at the head for lighting the corridors.

Partitions to managers' rooms—shown above—are totally glazed, and consist of 3 ins. by 1½ ins. upright bars, 1½-in. horizontal bars, ¾-in. glazing beads, and rough cast Georgian wired glass.

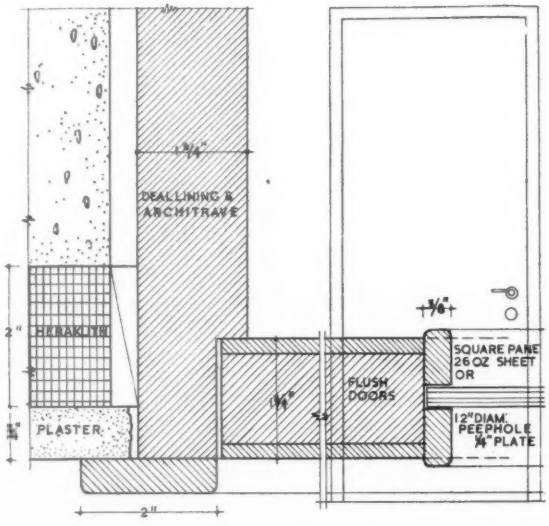
JOINERY

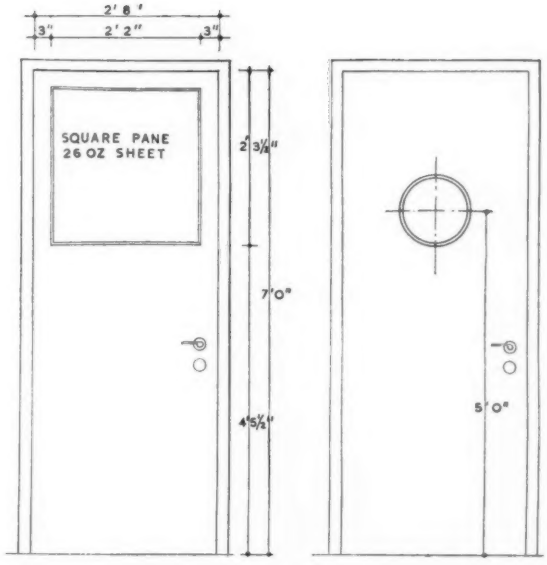




DOORS—Double-glazed swing doors to lift hall are 7 ft. by 2 ft. 6 ins. by $1\frac{3}{4}$ ins. teak with 4-in. inner styles, and 3-in. outer styles and head, and $1\frac{1}{8}$ in. by $1\frac{3}{4}$ in. glazing bars. Teak allows these small sections.

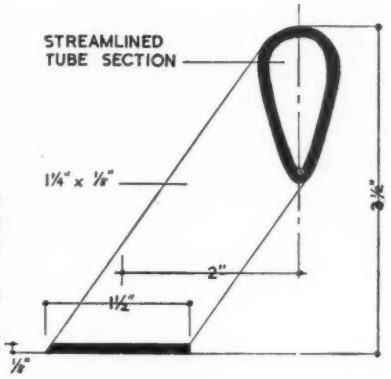
Doors generally are 7 ft. by 2 ft. 8 ins. by $1\frac{3}{4}$ ins. flush alder-faced with solid laminated cores. Those in glazed partitions have 2 ft. 3 in. square opening glazed with 26 oz. clear glass. Linings are $1\frac{3}{4}$ ins. deal, and architraves 2 ins. by $\frac{1}{2}$ in. Both the deal and teak doors and frames are painted finish.

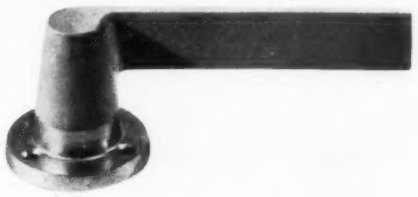




DOOR FURNITURE—Standard door handles with synthetic resin covers and matt chromium escutcheons are used generally.

Door handles to double swing doors are specially designed of drawn bronze, streamlined section, with bronze fixing plates.





D

FITTINGS

SANITARY FITTINGS—Lavatory basins generally are 22 ins. by 16 ins. standard pattern on towel rail brackets. The directors' lavatories, shown on the right, have special fittings with a large plate glass mirror above them. W.C.s are low level type partitioned off by Plymax sheets 6 ft. 6 ins. high.

The second photograph on the right shows the pot and plate washing room of the kitchen in the basement. The space under the sink is enclosed by cupboards with sliding doors, and the taps are raised so that articles can be easily placed under them.

LIFTS

LIFTS—Two passenger lifts carry a load of eight persons each at a speed of 350 ft. per minute. Owing to the large amount of overrun required for a high speed lift, the 15 h.p. tandem motors are contained in the basement, large concrete blocks holding them down.
The cars are 3 ft. 7½ ins. deep by 6 ft. long by 7 ft. 6 ins. high, with gate openings 3 ft. 6 ins., making a 3 ft. 3 ins. wide by 7 ft. high clear entrance. The lift cars are lined with metal-faced plywood with a cellulose finish.
One service lift for books, food to directors' room, and service generally, carries a load of 10 cwt. at a speed of 100 ft. per minute.
The lift is operated by push buttons at each entrance or push buttons by a passenger in the car. The car is 3 ft. 9 ins. deep by 4 ft. 9 ins. long by 7 ft. high with 6 ft. 6 ins. by 3 ft. 3 ins. entrance, and is lined with cork slabs.

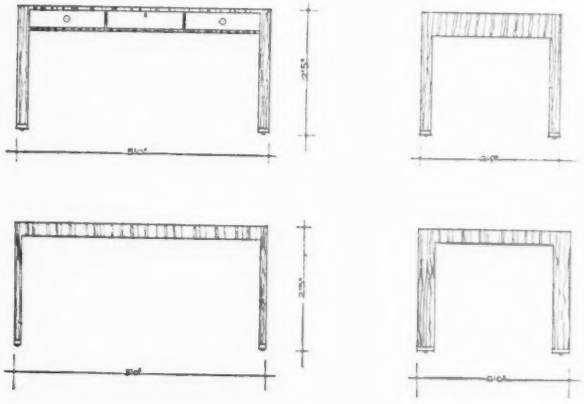
INTERNAL FINISHES

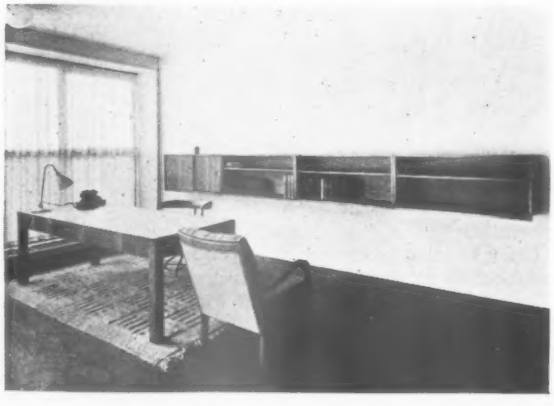
FLOORS—Office and corridors : 12 ins. by 12 ins. by ⅜ in. cork tiles. Lavatories and service bay 6 ins. by 3 ins. buff quarry tiles. Staircase and lift halls in-situ terrazzo margins and cove skirting with cork panels. Staircase : pre-cast terrazzo treads and risers and in-situ cove skirting. Main entrance hall : in-situ terrazzo divided by ebonite expansion strips.
WALLS—Offices, corridors, and halls : plastered and distempered. Staff lavatories : 6 ins. by 3 ins. white glazed tiles on lavatory basin wall ; remaining walls plastered and painted eggshell gloss. Directors' lavatories : 6 ins. by 3 ins. biscuit colour eggshell glazed tiles. The Directors' and Boardrooms on the sixth floor have certain walls faced with veneered plywood.

CEILINGS—Offices on road frontages : acoustic plaster. Remaining offices and corridors : plaster distempered. Lavatories : plastered and painted eggshell.

FURNITURE

The architect has designed the furniture for the offices. Below are shown the standard Directors' and Boardroom tables and a wall unit.





LETTERS FROM READERS

Salaried Architects

SIR,—In your issue for July the 8th, under the heading "Salaried Architects," appears a letter signed "Chartered Architect and Surveyor." I like the letter, and I feel I should like the writer, and in that light I may perhaps be permitted to criticize part of what he has said. For granted that the salaried men have the majority of votes, how can they possibly make them effective? Speaking for myself, I am as keenly interested in the social constitution of the profession as it is possible for anyone to be, and yet I unhesitatingly consign my R.I.B.A. ballot papers unopened every year to the waste paper basket!

Why do I do that? As at present constituted, the control of the R.I.B.A. is vested in a Council of 81 members, of which number about 60 *must* be Fellows. Eligibility for Fellowship (with unimportant exceptions) depends upon having been for not less than 7 years in private practice, or, if in salaried practice, in a position of responsibility. That is, the standard of control is not necessarily one of ability or qualification, but one of private economic opportunity. The R.I.B.A. must be controlled by "bosses," either private or salaried.

I will not blame anyone for that, for the position has come about from a variety of unforeseeable changes. But I do most emphatically blame those who want the injustice to continue. Today, as matters stand, four-fifths of the total membership (Associates and Licentiates who comprise the bulk of the "bossed") can have no voice in the Institute.

Why vote? What difference can it make? Representation cannot result either way. I may be wrong, but I do not think I am, when I say that to make a fuss about the non-representation of salaried men is to mislead and sidetrack the real issue. Salaried men, if they take the trouble, *can* be represented *if* they are "bosses." It is between "boss" and "non-boss"—between the successful and the relatively unsuccessful in the internecine economic scramble—that the real distinction exists.

Some 18 months ago, I suggested a census for drawing the attention of the 8,000 members of the R.I.B.A. to—

(*a*) the constitution of the Council;

(*b*) the condition governing Fellowship; and

(*c*) the proportion of the total R.I.B.A. membership as between Associates and Licentiates on the one hand, and Fellows on the other.

I suggested asking two questions, each capable of answer by a straight yes or no, namely:—

(1) should the Council of the R.I.B.A. be as representative as possible of the interests of the members of the R.I.B.A.?; and

(2) are the conditions prescribed for Fellowship representative of the interests of Associates and Licentiates as a whole?

I obtained the promised support of one of the leading architectural journals, which was prepared to receive, collate, and publish the results of such a census, provided I could obtain the support of a sufficient number of members to warrant such a move being made. At the end of a month of effort, I had found one Associate sufficiently disinterested to be prepared to give me the support of his signature!

The architectural profession (as I think, rightly) does not permit advertising, and consequently cannot claim to be *creating demand*. It supplies an existing demand. No one architect, therefore, can claim to be *giving* another architect a job he has not indirectly first taken away from him. The "boss" versus "non-boss" distinction is therefore both odious and irrelevant to the control of the R.I.B.A. Are any members interested in planning a census along the lines I have suggested? If so, do please let me know, c/o the JOURNAL.

DEMOCRAT

DEMOCRAT (LONDON)

•

SIR,—Everyone must realize that a considerable amount of architectural work will continue to be carried out by the staffs of Local Authorities—also of Public Utility Companies, Co-operative Societies and the like.

Nobody can dispute, therefore, that it is in the public interest that this work be handled by trained men.

This can only be ensured as a rule, I think, by the appointment of an official architect, who can *personally and continuously* impress upon the various committees concerned the necessity for good design in *everything* (large and small) upon which public funds are expended.

In most parts of the Continent this is recognized, and many readers of the JOURNAL can testify as to the beneficial results—especially on street-equipment. Officials who are *not* trained architects rarely have the skill or the enthusiasm for such work.

The A.A.S.T.A. can, and probably does, help to improve the material conditions under which its members work, but could hardly, of its very nature, bring about this ultimate object.

The R.I.B.A. will never seriously commence agitation in this direction, for reasons already well stated in your columns, and the same must fundamentally apply to the I.A.A.S., though this body has certainly shown itself to be more democratic in its outlook.

At the end of the nineteenth century an institution was founded to promote the professional interests of engineers and surveyors of Public Authorities, and to extend their professional knowledge. It is, incidentally, instructive to note, in view of the recent appointment of a City Architect at Gloucester, that their wide Memorandum of Association included the "Science and Practice of Architecture"—apparently as an afterthought.

Surely it is only by means of a similar course that the present unfortunate position in our own profession can be remedied, and the R.I.B.A. need be no more affected than was the Institution of Civil Engineers, many of whose members are also members of the other organization. The latter, by the way, fairly quickly attained an appreciable measure of influence.

Many schemes would still be thrown open to competition with the official architect as consultant, or carried out by him with an outside consultant when this was considered desirable.

I would be keen to aid any such scheme, and I know that many others take the same view. At present there are many able senior assistants, who are always likely to remain so, and who would be attracted by the slogan "every place its own architect," while those who are now official architects would surely give parental guidance.

For, while some of us may believe that under existing economic conditions, such an ideal is only likely to be attained in the larger places, that in itself would be bound to raise the status of the majority of the profession.

How about it?

D. SMITH

Sale of Land

SIR,—The following extract appears among the conditions for sale of land in a supposedly progressive midland city:—

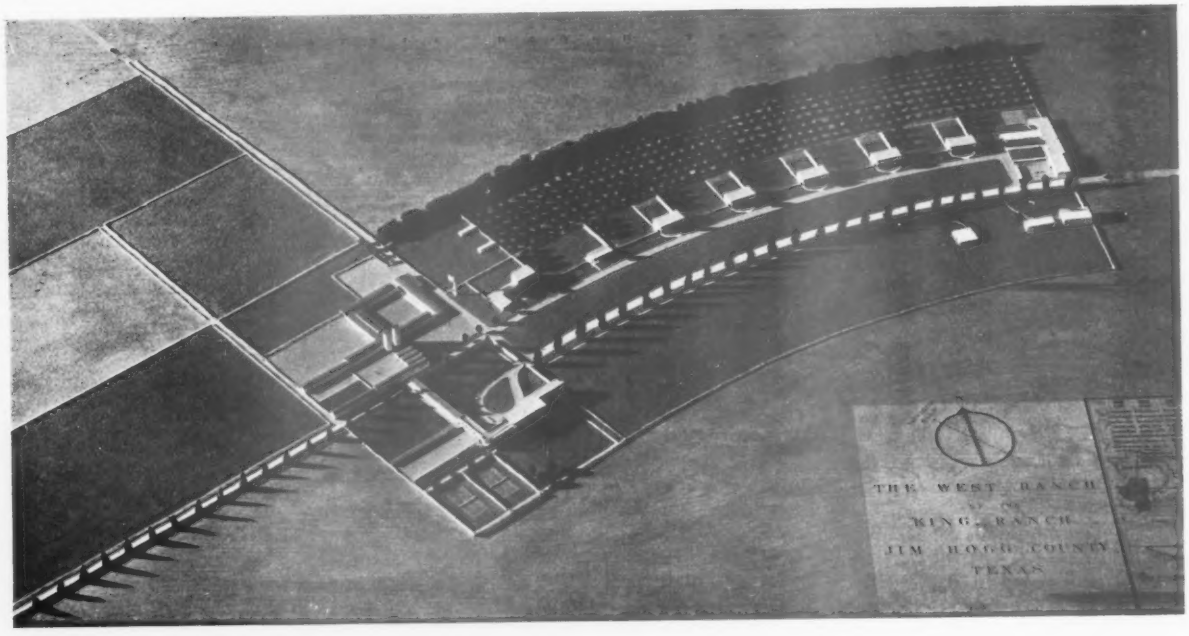
"... and the elevations of the buildings to be erected shall be of half-timbered construction with suitable gables so as to harmonize with the elevations of the adjacent cottages ..." And this for business premises!

One shudders to think of the bewilderment and contumely such a state of affairs will produce in the minds of the more enlightened, we hope, race of 2037. But perhaps the local authorities are looking further ahead and playing a somewhat lugubrious joke on the archæologists of 3037, who, discovering these adjacent remains of the years 1537 and 1937, and being struck by their similitude will in vain endeavour to date them correctly.

MARJORIE M. MOCATTA

MARJORIE M. MOCATTA

THE LIVERPOOL SCHOOL EXHIBITION



Three schemes from the Annual Exhibition of the Liverpool School of Architecture, now being held at the Walker Art Gallery, Liverpool.

Top, model of a cattle ranch, Texas, U.S.A., by Mr. G. E. Smith (fifth-year student); centre, a hostel for men, University of Liverpool, by Mr. J. A. Ashworth (fifth-year student); left, interior of station concourse, from a scheme for a bus and railway terminal at Liverpool, by Mr. T. Mellor (fifth-year student).

Other schemes from the Exhibition are reproduced on page 91.

WORKING DETAILS : 567

BANDSTAND AT WHITEHAVEN • J. A. DEMPSTER, MINERS' WELFARE COMMITTEE

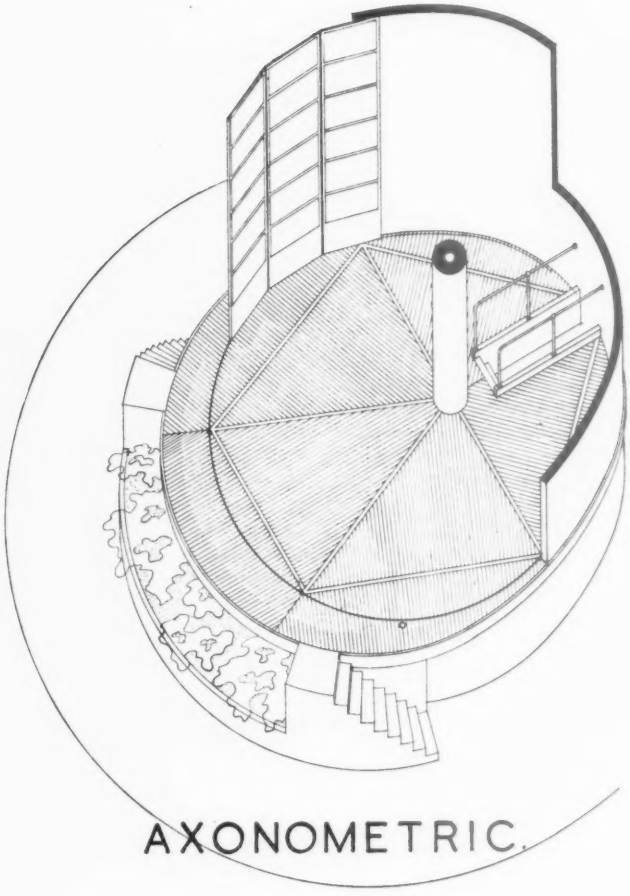
The bandstand is constructed in reinforced concrete, the exterior surfaces being painted in shades of ivory and pale green, and the interior plastered and painted in ivory and pale cinnamon.

The floor is of jarrah and the sliding screens of steel.

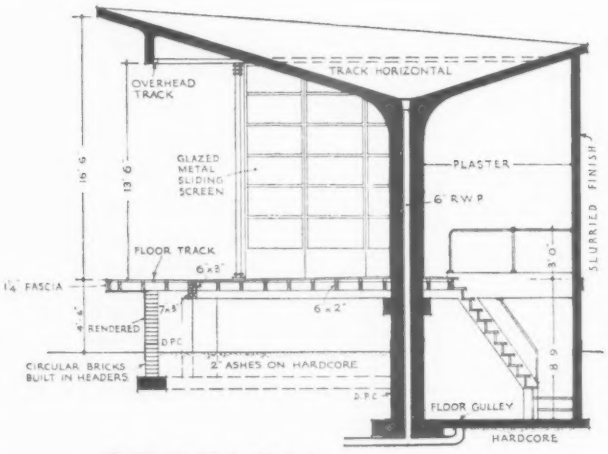
Details are shown overleaf.

WORKING DETAILS : 568

BANDSTAND AT WHITEHAVEN • J. A. DEMPSTER, MINERS' WELFARE COMMITTEE

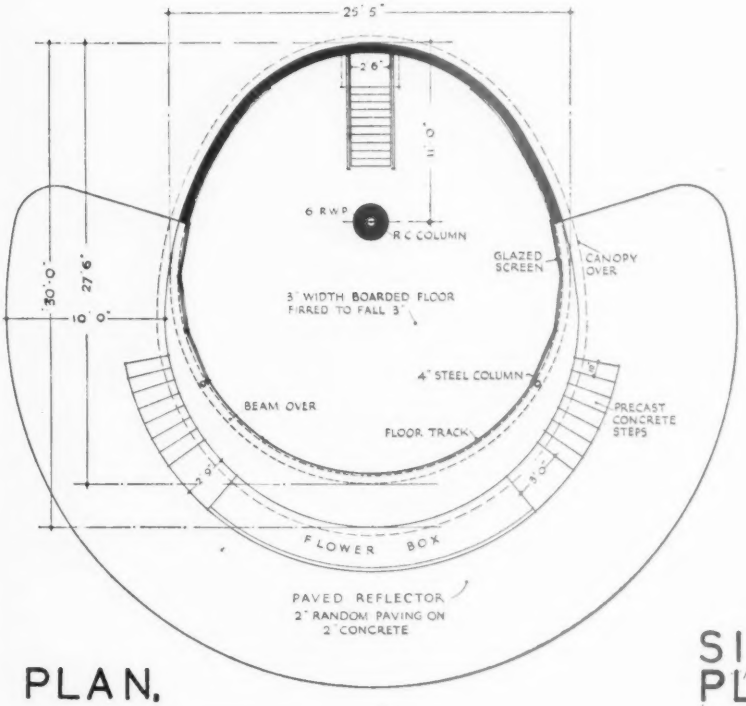


AXONOMETRIC.

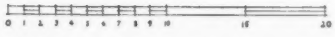


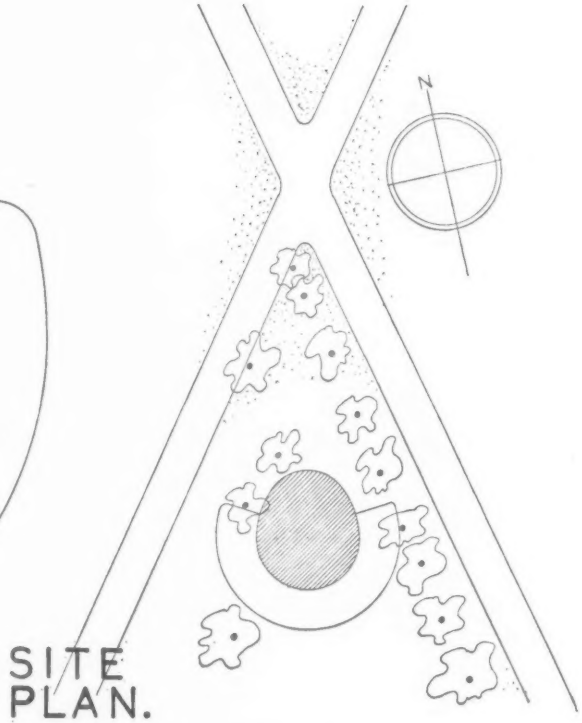
SECTION.

LOWER PLAN.



PLAN.



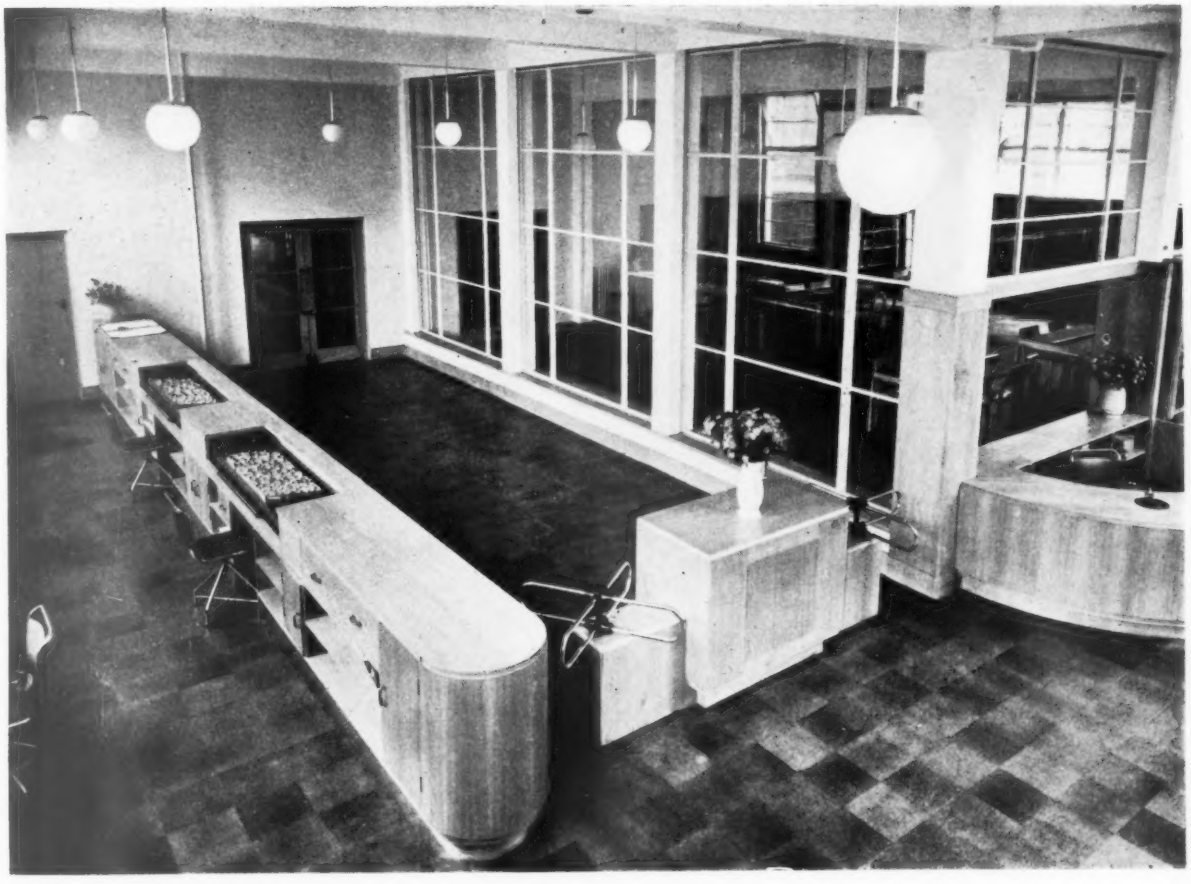


SITE PLAN.

Axonometric and details of the bandstand illustrated overleaf.

WORKING DETAILS : 569

SERVICE COUNTER • EXTENSION, PUBLIC LIBRARY, SCARBOROUGH • PATON WATSON



The service counter is in the lending library and is designed to facilitate rapid discharging of books and to reduce staff movements. Three points of service are provided ; two for the discharge of returned books, and one for miscellaneous enquiries.

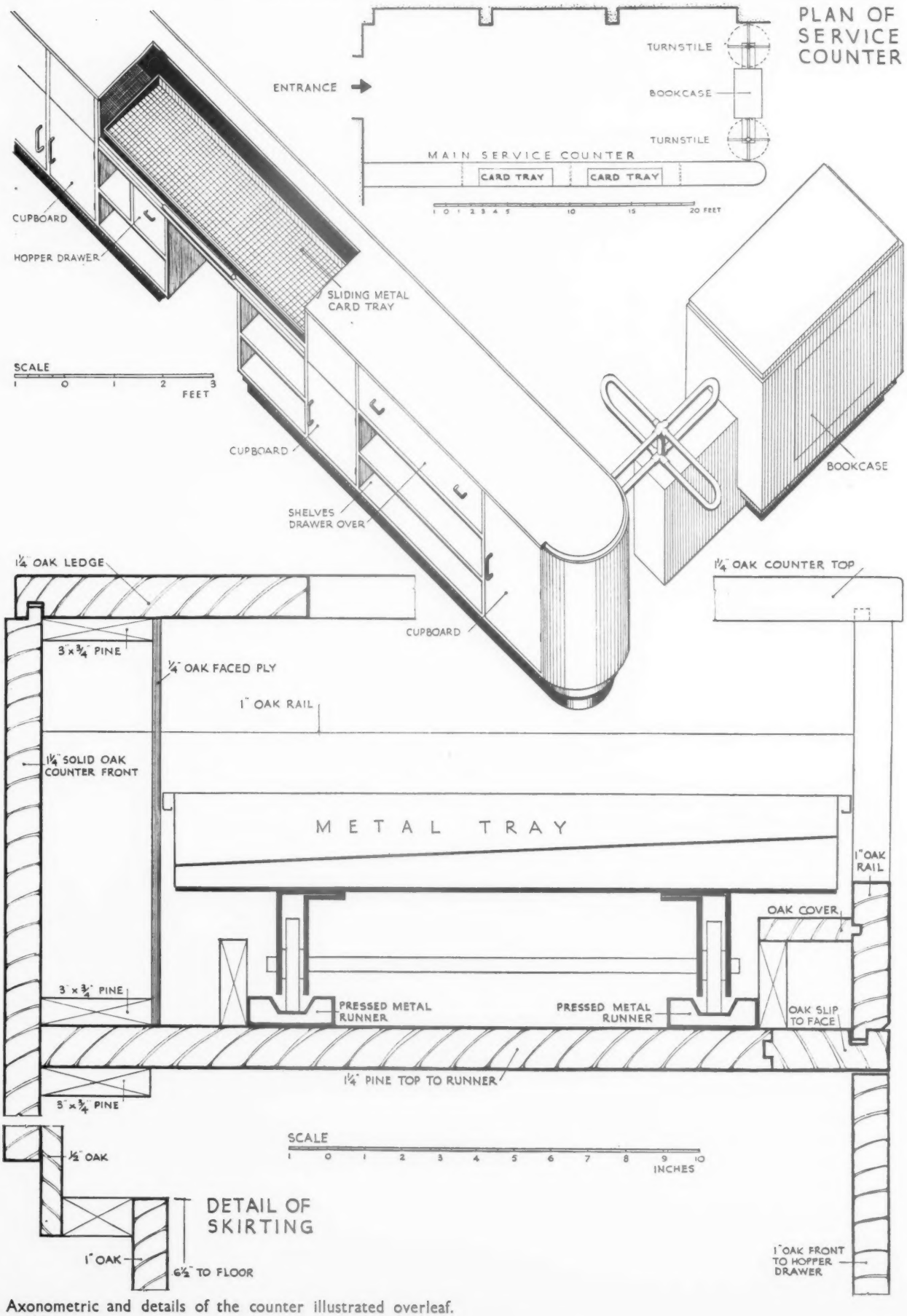
Readers' tickets are arranged on sliding metal trays manipulated by the assistant seated at the service point. Free-swinging turnstiles are provided.

The counter is constructed in oak, and the metal trays slide on pressed metal runners.

Details are illustrated overleaf.

WORKING DETAILS : 570

SERVICE COUNTER • EXTENSION, PUBLIC LIBRARY, SCARBOROUGH • PATON WATSON



Axonometric and details of the counter illustrated overleaf.

The Architects' Journal **Library** of Planned Information

INFORMATION SHEET

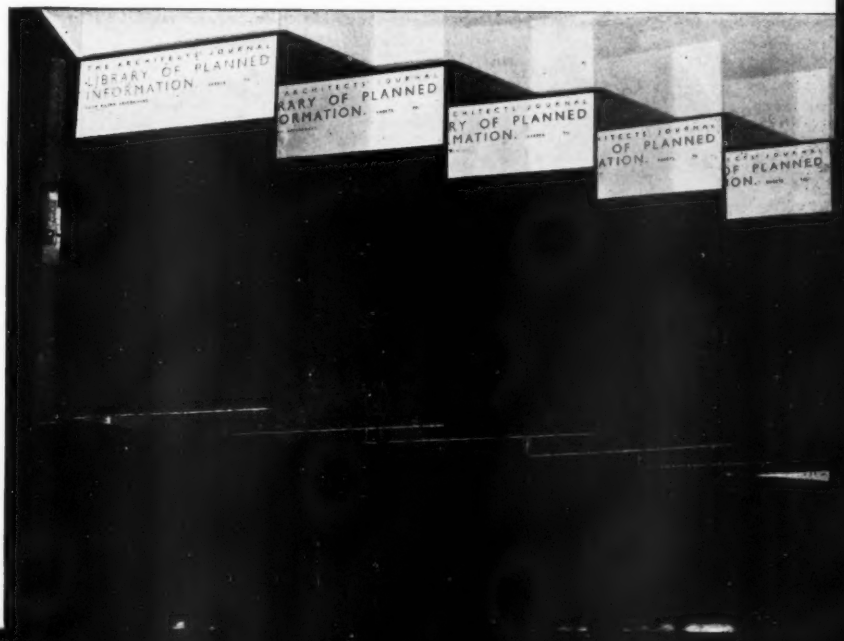
SUPPLEMENT

SHEETS IN THIS ISSUE

535 The Equipment of Buildings

536 Asbestos-Cement Ventilators

537 Slate Window Cills, etc.



Sheets issued since Index :

501 : Aluminium
502 : Fixing Blocks
503 : Approximate Estimating—XII
504 : Aluminium
505 : Aluminium
506 : Approximate Estimating—XIII
507 : Plumbing : Jointing of Copper Pipe
508 : Roofing—Valley Flashings
509 : The Equipment of Buildings
510 : Aluminium
511 : Elementary Schools—II
512 : School Lighting
513 : Approximate Estimating—XIV
514 : Air Conditioning
515 : Insulation of Buildings
516 : Cycle Parks
517 : Cycle Parks
518 : Plumbing Systems—II
519 : Kitchen Equipment
520 : Roofing—Flashings
521 : Motor Cycle Parks
522 : Reinforced Asbestos-Cement Roofing Tiles
523 : Poison Gas Precautions
524 : Kitchen Equipment
525 : Metal Reinforced Asbestos Cement
526 : Leadwork to Photographic Developing Tanks
527 : Asbestos-Cement Corrugated Sheets
528 : Cycle Parks
529 : Kitchen Equipment
530 : Asbestos-Cement Corrugated Sheets
531 : Plumbing
532 : Roofing—Flashings
533 : Asbestos-Cement Corrugated Sheets
534 : Insulation of Buildings

630.

630. THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION.

MATERIALS USED FOR GAS PIPING:

LEAD PIPING.

The use of lead piping in gas fitting is confined chiefly to the connections between the meter and the incoming and outgoing services. The pipe should be gas weight, solid drawn from best soft virgin pig lead, with impurities not exceeding ·2%. It is designated by weight per 15ft. run up to and including 1in. dia., and per 12ft. run for sizes of 1¼ in. and over.

A table of sizes and weights is given on the back of this sheet.

WROUGHT IRON & STEEL TUBING.

Wrought iron and steel tubing, which are used for general carcassing should be butt welded, gas weight, and the fittings used should conform with the British Standard Specifications for Malleable and Soft Cast iron pipe fittings

All threads on the tubing and fittings should be Taper British Standard Pipe threads, in accordance with the British Standard Specification. Tables of weights and sizes of W.I. Tubing & fittings are given on back.

COPPER TUBING (LIGHT GAUGE).

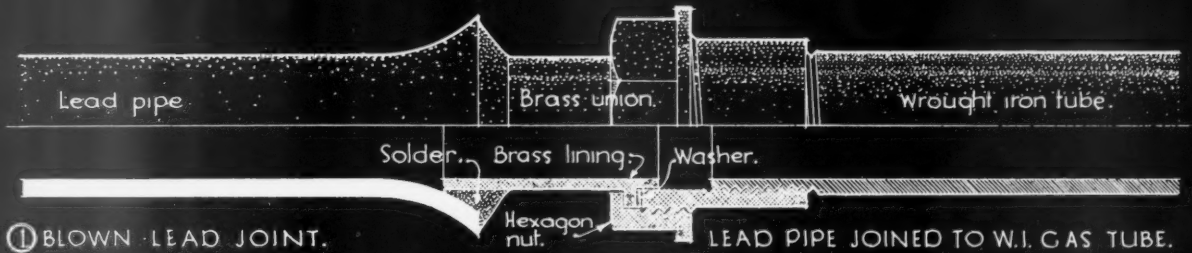
Light gauge copper tubing used for gas fitting should be manufactured from virgin copper, to the British Standard Specification for light Gauge Copper tubing.

Connection may be made by several methods, by welding, compression joints, or capillary soldered joints. Threads cannot be safely cut on light gauge tubing owing to the thinness of the walls.

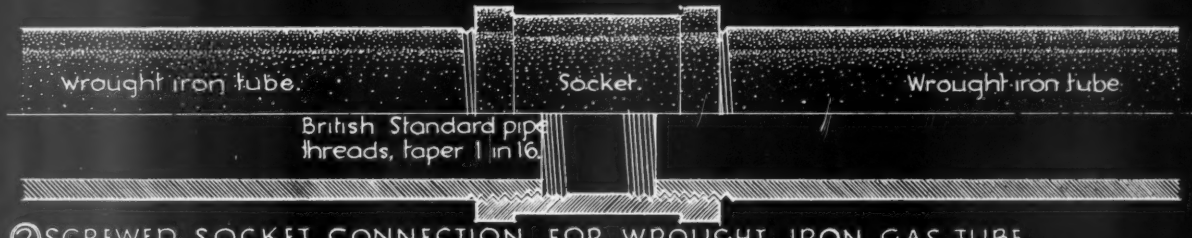
Tables of weights and sizes of tubing are given on the back.

OTHER MATERIALS. Less common materials used for gas fitting are the ternary alloys of lead, tellurium lead, and solid drawn brass tubing particularly for visible connections to gas fires.

DETAILS OF PIPE CONNECTIONS FOR GAS SERVICES.

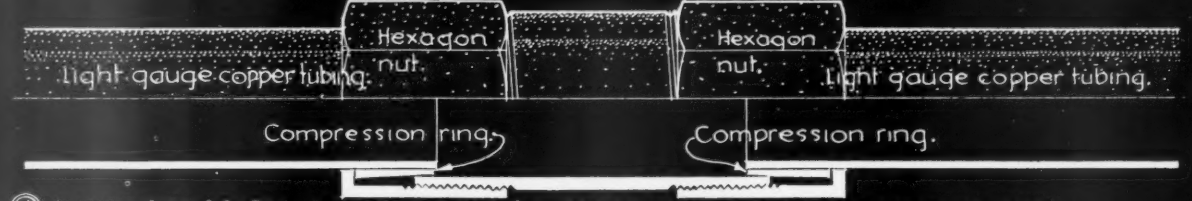


① BLOWN LEAD JOINT. LEAD PIPE JOINED TO W.I. GAS TUBE.



② SCREWED SOCKET CONNECTION FOR WROUGHT IRON GAS TUBE.

③ CAPILLARY SOLDERED SLEEVE CONNECTION FOR LIGHT GAUGE COPPER TUBING.



④ A COMPRESSION JOINT PRINCIPLE FOR LIGHT GAUGE COPPER TUBING.

Issued by The British Commercial Gas Association.

INFORMATION SHEET: THE EQUIPMENT OF BUILDINGS: GAS PIPING & CONNECTIONS: N°2.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Wm A. Boyne

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 535 •

THE EQUIPMENT OF BUILDINGS

Subject : Gas Installation : Pipe Sizes and Fittings

General :

This is the second Sheet of the series on the installation of gas services in buildings, and deals with materials and sizes of gas piping and methods of making connections with the different materials used.

Wrought-Iron and Mild Steel Tubing :

These are the materials most commonly used at present for gas fitting, and are used for carcassing generally. The tubing can be bent easily, the smaller diameters cold, and the larger diameters while hot. A full range of malleable or cast-iron fittings, standardized by the British Standards Institution, is available.

The following table gives approximate sizes and weights of wrought-iron gas tubing :—

Nominal Bore, Inches	Approx. Outside Diameter	Imp. Wire Gauge	Weight Lb. per ft.
⅛	13/32	14	·275
¼	17/32	14	·38
⅜	11/16	13	·58
½	27/32	12	·81
¾	1 1/16	11	1·61
1	1 11/32	10	1·6
1¼	1 11/16	9	2·36
1½	1 29/32	8	3·0
2	2⅜	8	3·79
2½	3	7	5·33
3	3½	7	6·33
3½	4	7	7·16
4	4½	7	8·28
5	5½	7	10·17
6	6½	7	12·57

Threads on Wrought-Iron Piping :

All threads on wrought-iron piping for gas work should be British Standard pipe threads, with a taper of 1 in 16. The pipe fittings made in accordance with the British Standard Specification have all threads with a 1 in 16 taper, so that a tight metal to metal joint may be made without the use of hemp. Brass fittings should also be threaded with taper threads. The male thread of all joints should be painted with jointing compound, usually linseed oil paint, or a proprietary compound, before making the connection.

Detail 2, on the front of this Sheet, shows a socket connection for wrought-iron gas tube with a taper thread cut on both socket and pipes.

Lead Pipes :

Lead piping is chiefly used for the short connections between the meter and the incoming and outgoing services. On the front of this Sheet, detail 1, is shown the joint between a lead pipe and a wrought-iron service pipe, by means of a blown joint and brass lining and union.

The following table gives the usual sizes and weights of lead pipe used for gas installations which are taken from the British Standard Specification for lead piping :—

Internal Diameter in inches	External Diameter in inches	Weight per yard in pounds
½	·71	3·0
⅝	·83	3·5
¾	·99	5·0
1	1·26	7·0
1¼	1·52	9·0
2	2·32	16·0

Compo tubing is used in a few districts, but iron and steel are preferred by the majority of gas engineers.

Light Gauge Copper Tubing :

Copper tubing is the neatest and least unsightly material for gas installations. The tubing is self-supporting over considerable spans, and it may be plated, or polished and lacquered if run on the surface. It can easily be bent cold, often without the use of a pipe bender.

Various methods of jointing may be used, copper welding, capillary soldered, and compression joints. The principles of the two latter types of joint are shown on the front of this Sheet, details 3 and 4. Several proprietary makes of these fittings are available being different methods of applying the similar principles.

The sizes and weights of light gauge copper tubing as laid down by the British Standards Institution are given in the following table :—

Bore of Tube	Outside Diameter of Tube	Thickness of Tube Wall		Weight per foot
Ins.	Ins.	S.W.G.	Ins.	Lb.
⅛	0·205	19	0·040	0·08
¼	0·346	18	0·048	0·17
⅜	0·471	18	0·048	0·25
½	0·596	18	0·048	0·32
¾	0·846	18	0·048	0·46
1	1·112	17	0·056	0·71
1¼	1·362	17	0·056	0·88
1½	1·612	17	0·056	1·05
2	2·128	16	0·064	1·60
2½	2·628	16	0·064	1·98
3	3·144	15	0·072	2·68
3½	3·660	14	0·080	3·46
4	4·184	13	0·092	4·55

Brass Tubing :

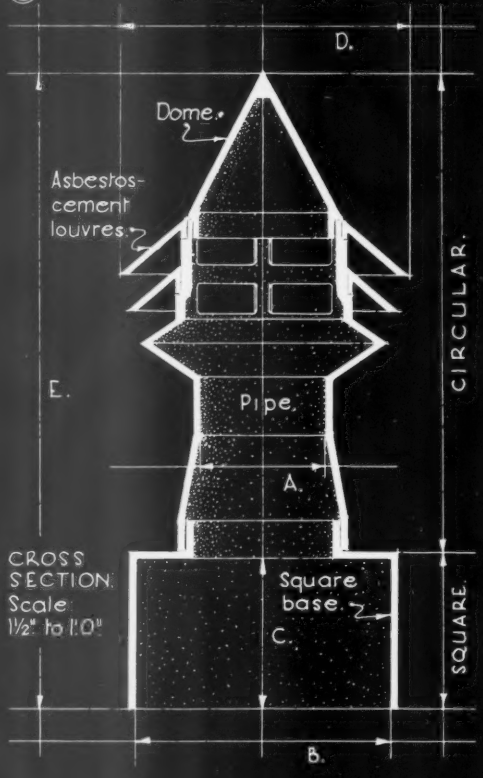
This should be solid drawn from virgin metal free from defects, and fully annealed.

Information from : The British Commercial Gas Association
Address : Gas Industry House, 1 Grosvenor Place, S.W.1.
Telephone : Sloane 4554

3. THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION.

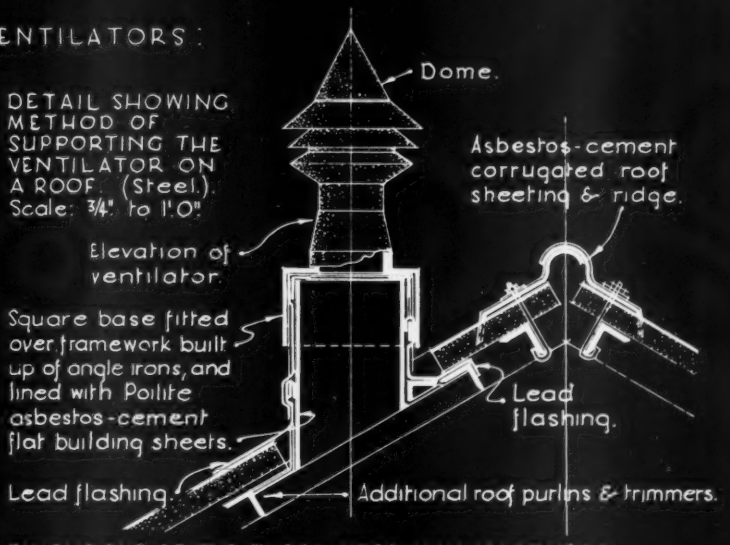
·EVERITE· ASBESTOS-CEMENT VENTILATORS:

(A) TWO-LOUVRE VENTILATORS.



CROSS SECTION. Scale 1½" to 1'0"

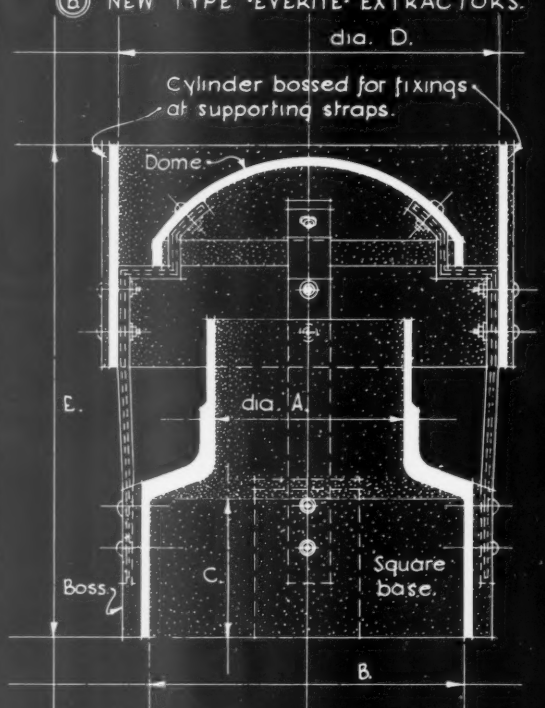
DETAIL SHOWING METHOD OF SUPPORTING THE VENTILATOR ON A ROOF. (Steel.) Scale: ¾" to 1'0"



DIMENSIONS OF THE THREE SIZES MANUFACTURED.

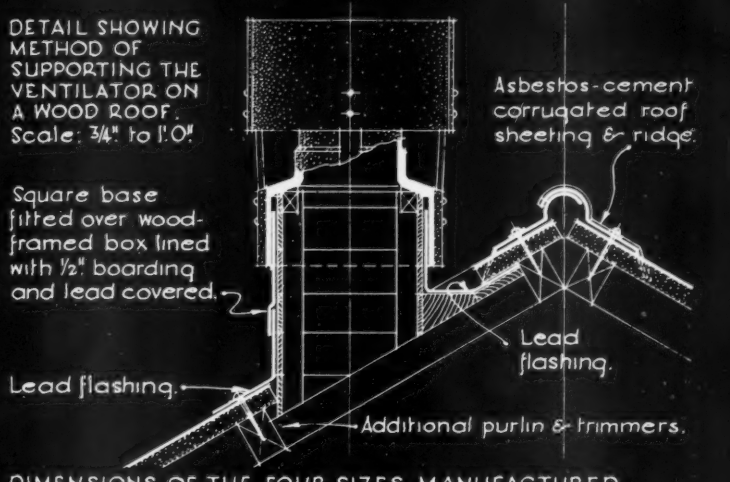
Diameter of pipe.	·A·	6"	9¼"	14½"
Square base (inside).	·B·	12"	15"	18½"
Height of base (inside).	·C·	7"	7"	7"
Diameter of dome.	·D·	13½"	20"	32½"
Height overall.	·E·	30⅛"	43"	60¼"
Size of square purpose-made box. (over flashings).	—	11"	14"	17½"

(B) NEW TYPE ·EVERITE· EXTRACTORS.



CROSS SECTION. Scale: ¾" to 1'0"

DETAIL SHOWING METHOD OF SUPPORTING THE VENTILATOR ON A WOOD ROOF. Scale: ¾" to 1'0"



DIMENSIONS OF THE FOUR SIZES MANUFACTURED.

Diameter of pipe.	·A·	9"	12"	18"	24"
Square base (inside).	·B·	1'3"	1'6½"	2'4"	3'1"
Height of base (inside).	·C·	6½"	6¾"	10½"	1'2"
Diameter of cylinder.	·D·	1'6"	2'0"	2'11"	4'0"
Height overall	·E·	1'11¼"	2'2¾"	3'2½"	4'6"
Size of square purpose-made box (over flashings).	—	1'2"	1'5½"	2'3"	3'0"

Information from Turners Asbestos Cement Co. Branch of Turner & Newall Ltd.

INFORMATION SHEET: ASBESTOS-CEMENT NATURAL VENTILATORS.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Olca A. Bayes

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 536 •

ASBESTOS-CEMENT VENTILATORS

Material :

" Everite " asbestos-cement roof ventilators are manufactured of built-up layers of non-burning mineral rock fibre in conjunction with Portland cement, and are weatherproof and immune from corrosion under all normal weather conditions. The fittings require no painting or preservative treatment either before or after erection.

Design :

The efficiency of a natural ventilator is its capacity to make use of the kinetic energy of passing winds to create an extracting effect on the atmosphere beneath. The principal factors affecting this function are firstly the design, secondly, the difference in temperature between the inside and outside atmospheres, thirdly, the velocity of the passing winds. In addition, the area of the ventilator stack, and also the height of the extractor above the air inlets must be taken into consideration.

The second and third factors are liable to considerable variation, according to the weather conditions and the type of building being ventilated, but the design has been extensively tested by the Company over long periods. The resultant shape of the fittings enables buildings to be equipped with them along the roof, at intervals which will provide an entire change of air over a known period.

Application :

Both the " Everite " extractor and the " Everite " two-louvre ventilator are supplied in standard sizes with a square base for fitting over a timber or metal framed box erected on trimmers between the roof purlins. Details are given for both steel and wood construction, with the ventilators erected just below the ridge level.

It is generally simpler to erect the ventilators in this position rather than on the actual apex of the roof, and efficiency is not impaired in any way.

TABLE No. 1—9″ diam. of pipe A

Temp. Difference Fahrenheit	Height of Ventilator above intake	Wind velocity in miles per hour			
		4	8	12	16
0°	25′	58	117	176	235
	50′	58	117	176	235
	100′	58	117	176	235
10°	25′	148	211	273	339
	50′	183	245	307	368
	100′	229	291	352	414
20°	25′	179	241	303	365
	50′	232	294	355	417
	100′	301	363	424	486
30°	25′	213	275	337	398
	50′	269	331	392	454
	100′	355	417	479	541

TABLE No. 2—12″ diam. of pipe A

Temp. Difference Fahrenheit	Height of Ventilator above intake	Wind velocity in miles per hour			
		4	8	12	16
0°	25′	104	209	313	418
	50′	104	209	313	418
	100′	104	209	313	418
10°	25′	264	374	484	594
	50′	325	435	545	655
	100′	407	517	627	737
20°	25′	319	429	539	649
	50′	412	522	632	742
	100′	535	645	755	865
30°	25′	379	489	599	709
	50′	478	588	698	808
	100′	632	742	852	962

TABLE No. 3—18″ diam. of pipe A

Temp. Difference Fahrenheit	Height of Ventilator above intake	Wind velocity in miles per hour			
		4	8	12	16
0°	25′	232	468	704	940
	50′	232	468	704	940
	100′	232	468	704	940
10°	25′	592	844	1,092	1,356
	50′	732	980	1,228	1,472
	100′	916	1,164	1,408	1,656
20°	25′	716	964	1,212	1,460
	50′	928	1,176	1,420	1,668
	100′	1,204	1,452	1,696	1,944
30°	25′	852	1,100	1,348	1,592
	50′	1,076	1,324	1,568	1,816
	100′	1,420	1,668	1,916	2,164

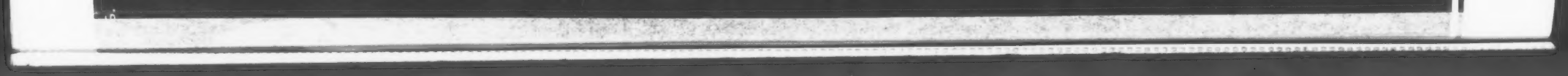
TABLE No. 4—24″ diam. of pipe A

Temp. Difference Fahrenheit	Height of Ventilator above intake	Wind velocity in miles per hour			
		4	8	12	16
0°	25′	416	836	1,252	1,672
	50′	416	836	1,252	1,672
10°	25′	1,056	1,496	1,936	2,376
	50′	1,300	1,740	2,180	2,620
20°	25′	1,276	1,716	2,156	2,596
	50′	1,648	2,088	2,528	2,968
30°	25′	1,516	1,956	2,396	2,836
	50′	1,912	2,352	2,792	3,232

Exhaust Capacity :

The above tables set out the exhaust capacities of the four sizes of " Everite " asbestos-cement extractors in cubic feet per minute. N.B. — The average wind in the United Kingdom is 10 miles per hour inland and 15 miles per hour near the coast (approx.).

Information from : Turners Asbestos Cement Co. Branch of Turner & Newall Ltd.
Address (Central Office) : Trafford Park, Manchester, 17
Telephone : Trafford Park 2181 (8 lines)
London Office : Asbestos House, Southwark Street, S.E.1
Telephone : Waterloo 4041



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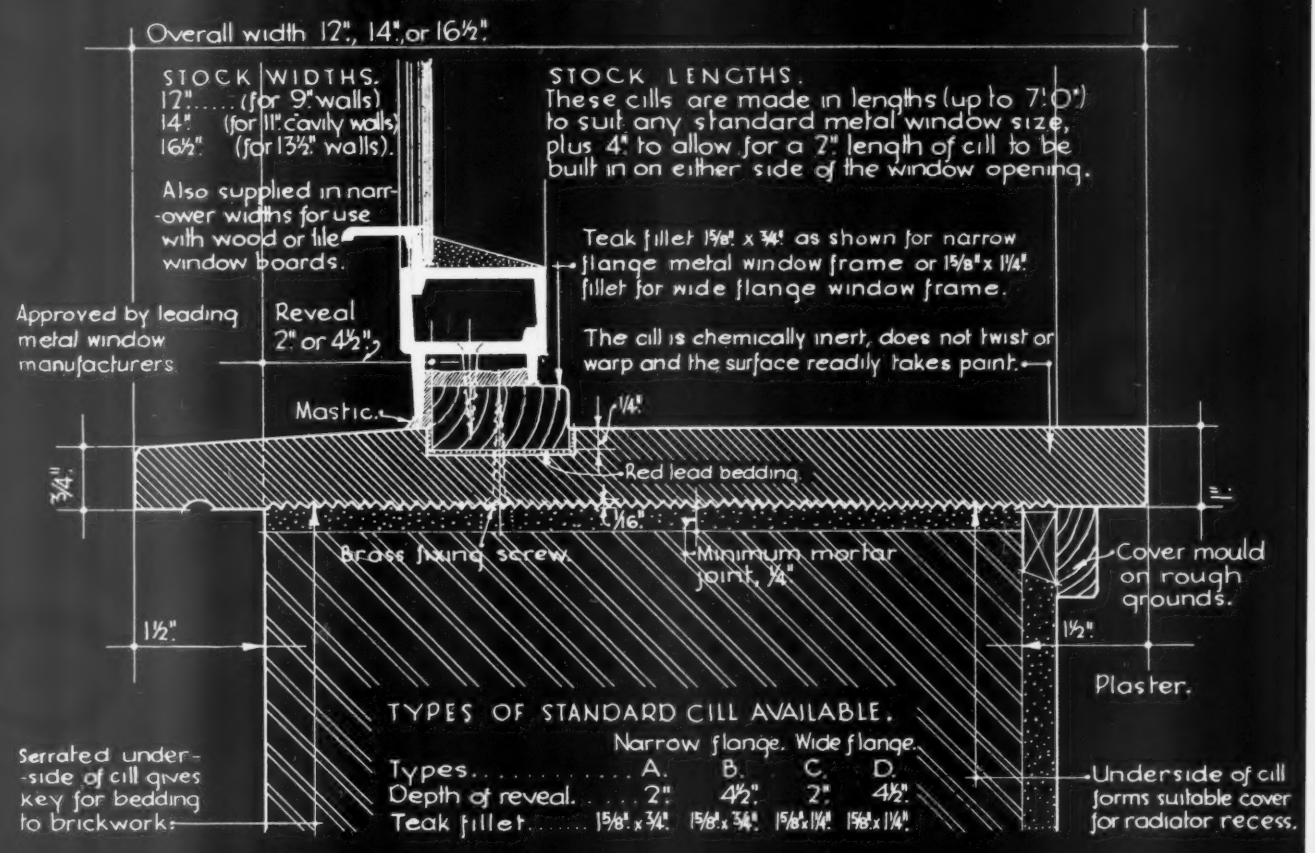
HALF FULL SIZE SECTION THROUGH COMBINED SLATE CILL AND WINDOW BOARD.

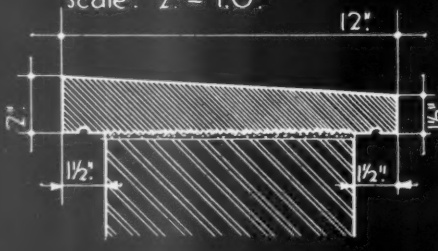
British patent No. 456,156.



TYPES OF STANDARD CILL AVAILABLE.

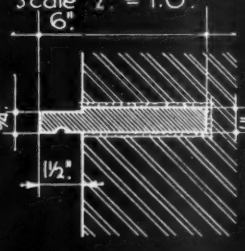
	Narrow flange.		Wide flange.	
Types	A.	B.	C.	D.
Depth of reveal	2"	4½"	2"	4½"
Teak fillet	15/8" x ¾"	15/8" x ¾"	15/8" x 1¼"	15/8" x 1¼"

SLATE COPING.
Scale: 2" = 1'.0"



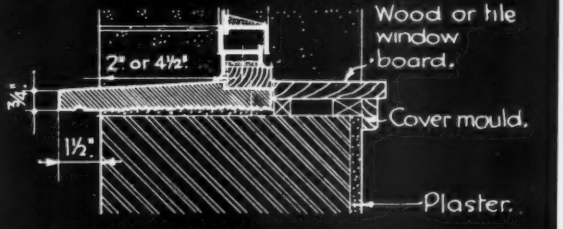
Slate copings are made in all lengths up to 7'.0". They are chemically inert, non-porous, and damp-proof, and will not twist or warp. They can be painted or left unpainted as desired.

SLATE CREASING.
Scale 2" = 1'.0"



For use as creasings in chimneys, etc., or to form a string course either independantly or as a continuation of the cill line of the window.

SLATE CILL IN NARROW WIDTH.
Scale 2" = 1'.0"



These cills in general principle resemble the cill detailed at the head of this sheet, but are stopped off immediately behind the hardwood fillet to permit the use of a wood or tile window-board.

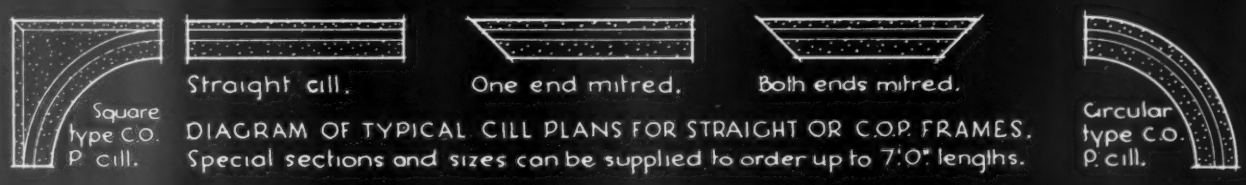


DIAGRAM OF TYPICAL CILL PLANS FOR STRAIGHT OR C.O.P. FRAMES.
Special sections and sizes can be supplied to order up to 7'.0" lengths.

Information from Slate Slab Products Ltd..

INFORMATION SHEET: SLATE WINDOW CILLS, COPINGS AND CREASINGS.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar A. Bayne

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INFORMATION SHEET
• 537 •
SLATE WINDOW CILLS, Etc.

Product : Slate Slab Products : Combined Slate Cill and Window Board, Copings and Creasings. British Patent No. 456,156

General :

These cills, copings and creasings are made of natural slate, which is characterised by being chemically inert, non-porous and damp-proof, and does not warp, shrink, twist or rot ; consequently they are exceedingly durable and need little or no attention after installation. They are supplied in a natural blue-grey slate-colour, and can be painted or left unpainted as desired.

They are designed with a view to ease and economy of labour during fixing. The serrated undersides of the cill and coping form a key for bedding to brickwork, etc., by means of a mortar joint (minimum thickness ¼ in.).

Cills :

Slate cills are designed for use with metal windows and are classified in four types, A, B, C and D, according to the depth of reveal and teak fillet, as follows :—

Type	Reveal	Fillet	Remarks
A	2″	1⅝″ × ¾″	For use with narrow flange frame.
B	4½″	1⅝″ × ¾″	Do.
C	2″	1⅝″ × 1¼″	For use with wide flange frame.
D	4½″	1⅝″ × 1¼″	Do.

Each type is manufactured in 3 stock widths :
12 ins. for 9-in. walls.
14 ins. for 11-in. cavity walls.
16½ ins. for 13½-in. walls.

Stock lengths, up to a maximum of 7 ft. overall, correspond to those of standard metal windows, plus 4 ins. in every case to allow for 2 ins. of cill to be built into the wall on either side of the window-opening. If the cill is not intended for building-in, this should be stated when ordering. Straight lengths are supplied with both ends square, one end mitred, or both ends mitred. Curved cills are also manufactured for use with curved-on-plan metal windows, in the following standard radii : 1 ft. 10¼ ins., 2 ft. 4¼ ins., 2 ft. 7¼ ins. and 2 ft. 10¼ ins.

Prices :

PRICES FOR STRAIGHT COMBINED CILL AND WINDOW BOARD.

	Price per foot run (Measured overall)
12 ins. wide for 9-in. walls	2s. 3d.
14 ins. wide for 11-in. cavity walls ...	2s. 7d.
16½ ins. wide for 13½-in. walls ...	3s. 1d.
Cill only (no Window Board)	
7⅝ ins. wide allowing 4½-in. reveal ...	1s. 11d.
5⅛ ins. wide allowing 2-in. reveal ...	1s. 6d.

Mitred end 1s. extra.
Extra labours to be quoted for, i.e. :—
Masoned ends—Holes for mullions, etc.
Prices for curved cills on application.

When ordering cills, the make and type of metal window should be stated, together with the letters and numbers in full ; the thickness of the wall, and the type of cill required (A, B, C or D).

These cills are also manufactured in narrow widths for use with window-boards, of materials other than slate.

Copings :

Slate copings are stocked in a standard thickness of 2 ins. and a standard width of 12 ins. (suitable for 9-in. walls), in plan shapes straight, mitred, curved, etc., and all lengths up to 7 ft. overall to correspond with the cills already described. The price for straight lengths is 3s. per foot run measured overall. Prices for extra labours, special and curved copings will be supplied on application to the manufacturers.

Creasings :

These can be used in chimneys, etc., wherever a creasing is normally used, or to form a string course. A special feature of their design is that the profile of the nose of the creasing corresponds exactly to that of the standard window cills, so that they can be used to carry on the cill line unbroken as a string course.

Creasings are made in straight and curved lengths up to an overall length of 7 ft., all in a standard width of 6 ins. (To be built in 4½ ins., giving a 1½-in. projection.)

Prices for 6-in. wide standard slate creasings in straight lengths : 11d. per foor run, measured overall.

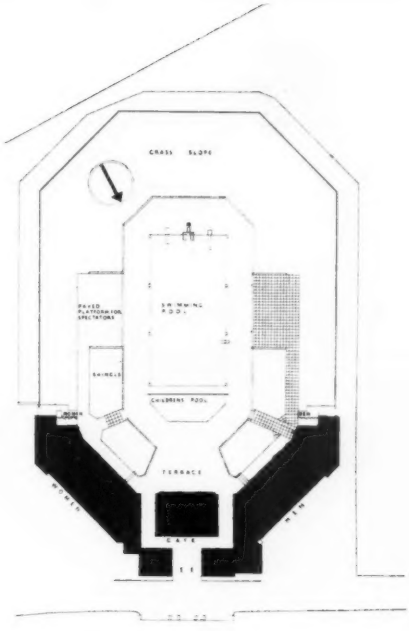
Prices for curved work, etc., on application.

A modified section is also manufactured. Details will be supplied by the manufacturers on request.

Manufacturer : Slate Slab Products, Ltd.
Head Office and Showrooms : Stevenage Wharf, Stevenage Road, London, S.W.6
Telephone : Fulham 4211

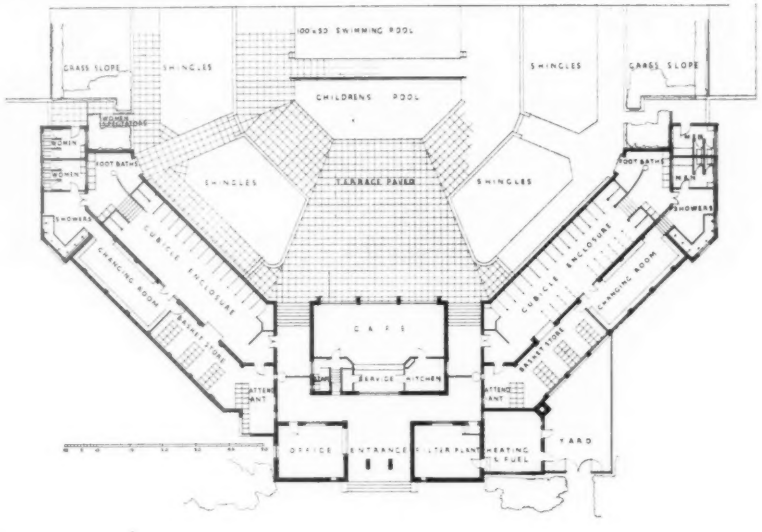
SWIMMING POOL AT BOURNVILLE

BY STANLEY HALL AND EASTON AND ROBERTSON



GENERAL PROBLEM—*New open air Swimming Pool at Rowheath Recreation Grounds, Bournville, for employees at Messrs. Cadbury. Green background to minimise glare. Dressing room accommodation as much concealed as possible to preserve open-ness of effect. Slope of land from South to North suggested arrangement by which they are at a lower level than the pool.*

PLAN—*The Dressing-rooms and Café are situated at the north end of the Swimming Pool. The main pool is 100 ft. long by 50 ft. wide with diving boards at the south end and a children's pool at the north end. It is surrounded by a paved deck, sun-bathing beaches, and grass slopes.*



CONSTRUCTION—*The swimming pool is built of concrete with a reinforced concrete diving stand. The outbuildings are of brick. Roofs of timber joists boarded, covered with asbestos fibre roofing, green finish. Floors granolithic. The water in the pool is heated, and the entire contents pass through the filtering plant every eight hours.*

Above, a general view of the bath.

G

SWIMMING POOL AT BOURNVILLE

ELEVATIONAL TREATMENT—*The elevations of the outbuildings are in white facing bricks. The café has French windows opening direct onto the terrace in front of the children's pool.*

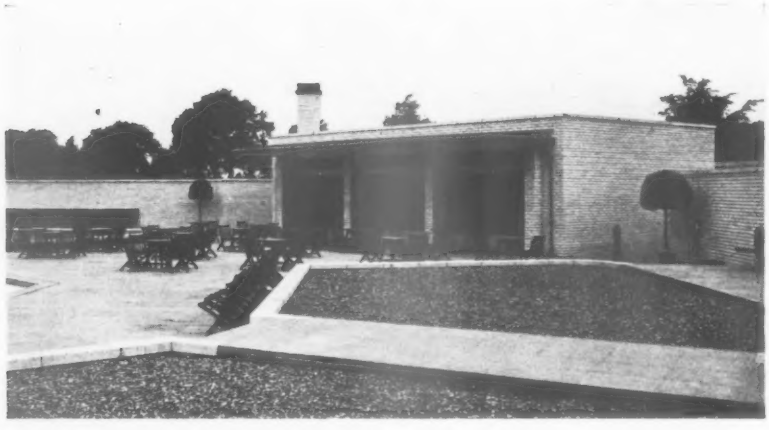
The photographs show a general view of the café and bar, and, below, the café front and terrace.

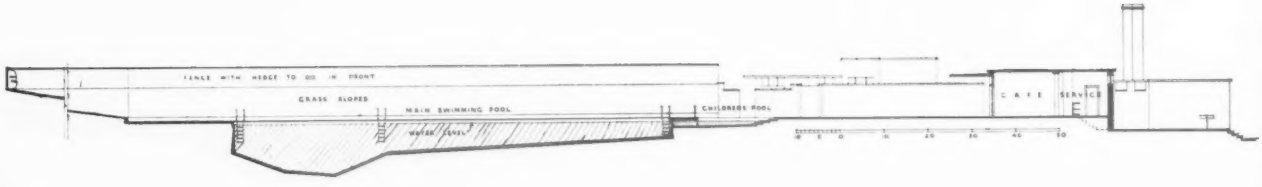
BY

STANLEY HALL

AND EASTON

AND ROBERTSON





L I T E R A T U R E

A GOOD COMPANION

[*BY THOMAS SHARP*]

The Wayfarer's Companion. By Arnold Fellows. Humphrey Milford, Oxford University Press. Price 6s.

IT has often been commented on as a remarkable fact that there has never been such an interest in the countryside as at this time when we seem to be doing our best to destroy it. The ruin of England proceeds precisely as the mountain of books on Northland, Southland, Eastland, Westland, Chalkland, Fenland, Highland, Lowland grows vaster and vaster, and one is apt to feel something very like nausea when one is confronted with still another addition to the mountain. One would like to think that as the books multiplied, the understanding of what lies at the heart of the English scene would gradually be deepened till the destruction would stop. That it doesn't is partly at any rate due to the fact that the majority of the books in the mountain are just sentimental tittle-tattle that actually corrupts rather than enlarges the understanding.

Mr. Fellows' book is pleasantly different. He doesn't merely splosh nostalgic phrases, reports of bucolic encounters and descriptions of Merrie England in between a hundred odd pages of arty photographs. He sets out to be a real wayfarer's companion, and to give an informative account of the historical background of the landscape. The sub-title of his book is "England's History in her Buildings and Countryside," and he declares the book to be addressed to "all holiday-makers whose interests lead them further than the golf-links, the band-stand and the beach." The intention is wholly admirable, and Mr. Fellows, at least partially succeeds in it.

He doesn't entirely succeed because, like so many other guides, he suffers from a heavy antiquarian bias. Thus he is not really very interested in anything that happened after the end of the seventeenth century. He is quite frank about this. He "excludes modern churches and chapels, for these are not architecture but just buildings." Then "I do not like the Palladian style. . . I am convinced that the majority of their buildings are second-rate." He has nothing to say on country towns and villages. As with most antiquarians it is the bits and pieces, the separate buildings more than their collective meaning and effect, which particularly interest him.

Mr. Fellows forestalls criticism by confessing in his Foreword to certain shortcomings, saying that no man can be expert in a dozen subjects. That is true, and Mr. Fellows displays both his courage and his knowledge in tackling so much as he has done. Nevertheless it is a considerable fault in a book with the intention of this one that Mr. Fellows has confined himself so much to buildings. The countryside is more than churches and large houses and castles. It is fields, woods, parklands, hedgerows. Mr. Fellows hasn't a word to say about these features and how they came into being: nothing about the development of agriculture, or the inclosure which did so much to shape what is the most individual characteristic of the English scene. It is the more surprising that he not tackled this side of his subject since he starts off, very properly, with a consideration of geology, and that should surely have led him on.

Still, despite its omissions and bias, this book is a most welcome change from the usual run. There are chapters on Early Man, Roman and Viking England, and Place Names; there are three on the Parish Church, one on Monasteries and another on Cathedrals; three more chapters are devoted to the English House, and one to Castles, and there is a very full appendix (nearly 100 pages) setting out the various places of interest in each of the counties of England and Wales. It is certainly a remarkable six shillingsworth.

CARDBOARD SUBURBIA

House Modelling for Building and Estate Agents. By Edward W. Hobbs. The Technical Press, Ltd., 5 Ave Maria Lane, Ludgate Hill, E.C.4. Price 7s. 6d.

THIS book is confined to a description of the making of small-scale mdels of houses. Models in plasticene, plaster, papier mâché or soap are not dealt with, but the author's Bristol board technique is described in minute detail. Manipulation of tools, application of secondary materials, all things necessary to achieve interior and exterior of every style of house complete with garden, are explained so that the youngest amateur cannot possibly go wrong. There are even photographs showing how to sharpen a penknife and how to apply seccotine to a card.

The designs chosen to demonstrate technique (barring a few badly reproduced photographs of models by well-known professional firms) are shockingly illiterate. The author, Mr. Edward W. Hobbs, is probably not responsible for the designs, but he is certainly to blame for choosing such poor examples of houses to illustrate the art of model making. If, as he claims, one of the purposes of models is to help buyers to visualize and builders to sell houses, it should also be their purpose, assuming there is any conscience left in this degenerate world, to demonstrate the merits of well-designed houses which do not blight the countryside. These illustrations might so easily have been good models in another sense.

Among the models which appear in different stages throughout the book is a "modern bungalow." Not only is this the worst possible design for a bungalow, it is also, judging by the photographs, in every sense a bad model.

Mr. Hobbs believes that "the ultimate judgment of a model must be based on realism." The result of his too meticulous realism is the reverse of what he intends: models which are obviously models.

The types illustrated are mostly for show-window purposes, which is partly, perhaps, why they are unsuccessful in photographs. The interesting problem of designing for photographic reproduction has not been touched upon.

This is not a book for architects. It seems woefully suited to the average estate developer.

R.G.M.

THOSE PERSPECTIVES

[*BY BRIAN HERBERT*]

Applied Perspective. By John Holmes: London. Pitman's. Price 5s. 6d.

WHEN architectural perspective first appears on the student's horizon, it is just another of life's little troubles. The lecturer's demonstration of the subject may seem very lucid and straightforward, but tackling an example oneself afterwards is a different matter. Reference to text-book illustrations on the subject is even more confounding—the pages are covered with a network of intersecting lines. To the student's succour now comes Mr. John Holmes with a book which throws new light on old problems.

In this the laws of perspective are first demonstrated by means of a photograph of a house, a different but sensible method of approach. Matters having thus been placed, logically enough, on a concrete footing, the student is taught to regard the Picture Plane as a sheet of glass through which the building is being viewed, and by means of this and similar easily understood explanations the theory of perspective is clearly expounded. Practical application of theory follows, and examples are given of the setting-up of perspectives of building exteriors seen from different points of view; interiors with and without furniture; reflections and shadows; and buildings standing on hillsides. Aerial perspectives requiring three Vanishing Points are more complicated, but these too are fully explained, and apart from the centro-linead—two methods of the use of which are given—five ingenious ways whereby one may deal with Vanishing Points which occur off the drawing-board are detailed.

If you know about these matters but occasionally wish to confirm some

little point on which you are not quite clear, then this is the book for you.

The drawings illustrating the text are clear and easily read, and the whole is attractively bound, no small point in the book's favour.

BRICK HOUSES

Houses: Advice to those about to buy or build. Edited by Joan Woollcombe. Clay Products Technical Bureau, 19 Hobart Place, S.W.1. Free on application.

HOUSES is a booklet which tells the general public a thing or two. And if the section of the general public expressly mentioned (the "about to buy or build" brigade) do get it and do read it, those who are interested in good building will find earning a livelihood an easier business. This applies to architects, and it is part of the publisher's idea that copies of the booklet should be given away by architects to their clients.

Houses is, of course, propaganda. But it is a special kind of propaganda in that it advocates the use of brick and tiles in proper ways. And since the houses of 99 out of 100 people are built of these materials, its general effect must be to raise all building standards. In fact, one would not be surprised to hear that the booklet is highly unpopular amongst all but the best kind of estate developers.

The booklet begins with the beginning of a house: mentions *pros* and *cons* of sites; describes and illustrates proper foundations, damp-proof courses and brick bonds, moves on to roofs and window-jamb details, by no means forgets flashings and soakers to chimneys—and generally illustrates what is and is not good normal building with a clearness which is likely to make jerry-building flesh creep. In the hands of determined home-makers this booklet might become a trumpet.

Faults? *Houses* is not without them. It is, after all, published by its publishers; and therefore dismisses what it calls synthetic materials with a generalization of "not proven" which empties too many fine babies away with the bath water. And when one reads that the prospective owner of (one supposes) an £800 house must make sure that structural timbers, if exposed or entering the ground, are of oak, jarrah, gurjun or iroko and the window-cills of teak, one wonders if even architects always build well.

If one strays into wider aspects of houses there are a lot more objections one could make. But they would not be fair. The point is—are the majority of people going to continue to buy or build during the next ten years much the same sort of houses as they are now buying or building? If they are—and they probably will—then let each of them be given a copy of *Houses*. They will learn an enormous amount that they ought to know and only a little that raises their hopes too much above their bank balances. H. M. W.

TRADE NOTES

[EDITED BY PHILIP SCHOLBERG]

Reinforced Brickwork

THE photograph at the head of these notes shows a reinforced brick balcony under construction at a block of flats in Kingston. This is admittedly a rather specialized form of reinforcement, and it suffers from the disadvantage that the bricks in every alternate course have to be pierced to take the reinforcing rods; the architects, however, wished to avoid the weight of a 9-inch wall, and adopted this reinforced type to make certain that the wall should remain where it was originally put. Apart from this example, and a cantilevered canopy on the stand of the London Brick Company at last year's Building Exhibition, there are hardly any examples of reinforced brickwork to be found in this country, though it is understood that the Building Research Station are investigating its possibilities.

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There is, admittedly, something inherently unsafe-looking in, for example, a cantilevered brick canopy, but a little logical thought will show that, if brickwork is a satisfactory material for resisting compressive stresses (and everybody has been using it that way since bricks were first made), and if it is possible to introduce a certain amount of reinforcement, either in the mortar joints or in grooves formed in purpose-made bricks, the result will not, in principle, be very far removed from reinforced concrete. This, at any rate, is one of the arguments put forward in a recent booklet issued on the subject by the Clay Products Technical Bureau, who have gone to a good deal of trouble to explain how the necessary reinforcement should be worked out and the permissible brickwork stresses (compression and shear) on which the calculations are based.

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The balcony shown in the illustration at the head of these notes is referred to in this booklet, and, while I am perfectly prepared to believe that Messrs. Armstrong and Bayne were justified in adopting this form of construction, I believe that it would have been helpful if some form of cost analysis could have been made to show exactly what is involved. Assume a 9-inch wall and we should have, presumably, a slightly thicker floor slab, a brick's width off the balcony, and twice as many bricks to buy and lay. With the reinforced wall you score over the slab thickness and the number of bricks, and the balcony is slightly wider: *add* however, the extra cost for pierced bricks, reinforcement, and the nuisance to the bricklayer of having to work from two stacks of bricks. How the result comes out on balance I have no means of telling: costs are, I know, deceptive things, for if they are made to show a saving, people think they're too good to be true, and then if no costs are given at all, one assumes that it's all very expensive—so the manufacturer loses either way. None the less, I feel that a booklet such as this, which deals most thoroughly with so many aspects of the problem, might well have given some indication of costs, even if it were only as generalizations showing that it came out more or less even.

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The booklet suggests various possible lines of development for reinforced brickwork, foundations, general wall construction, panel

walls, partitions, columns, chimney stacks, ceilings and floors. For the present, however, it seems probable that architects will be content to employ it for relatively small span lintels until such time as the Building Research Station finish their investigations and decide exactly what brickwork stresses should be allowed. The values chosen for the examples in the booklet are based largely on current practice in America and Japan, and the figures seem to err on the conservative side (20 lb. per square inch for shear in the brickwork as against the 30 lb. allowed in America for instance) which is all to the good from the publicity point of view, for it may be assumed that the B.R.S. figures, when they appear, are not likely to be lower, and may well be somewhat higher.

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The booklet contains a dozen or so pages of useful information, and a short historical note, from which it would appear that the whole question of reinforcing brickwork was first investigated by Brunel as far back as 1825, though nothing further seems to have been done about it until 1918, when the subject was reopened by the Indian Public Works Department. Little or nothing seems to have been published in this country save for a couple of articles in the engineering papers about 1930 and a short article in the R.I.B.A. Journal, of which this article is an expanded version. While it seems unlikely that the subject is one of really epoch-making importance, it is one which should be of very definite interest to architects, and the clay industry as a whole deserves to be congratulated for trying to find new methods of using its product instead of sitting back happily and going on doing the same old thing, a simple form of retrogression which is only too common in the building industry. (*Clay Products Technical Bureau of Great Britain, 19 Hobart Place, Eaton Square, London, S.W.1.*)

Cement Paint

The Adamite people are now marketing a particularly tenacious cement paint called Ellicem. It is composed very largely of white cement (about 80 per cent.), but the rest of the mixture is kept secret. It is Dutch in origin, and if it works in Holland (and judging from the amount of it used over there, one may assume that it does), there seems to be no reason why it should not work equally well over here. The Germans, too, use a good deal of what I suspect to be a similar sort of paint, and seem to think very well of it.

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So far, hardly any of it has been used in this country, but, on the claims made for it, it would seem to be well worth a trial. It is sold in powder form, and all you have to do is add water, after which it can be brushed or sprayed, the only proviso being that it must be used not more than two hours after mixing, a proviso which should not be too much for even the most opinionated workman. Incidentally, how often are failures in proprietary materials due to the manufacturer's instructions for its use being ignored? Craftsmen always seem liable to use a new material in the same old way, and never realize that the manufacturer may perhaps know what he is talking about; simple instructions, therefore, make success more likely.

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The chief claim made for Ellicem is that it really *does* stick to brick, concrete or plaster without the necessity for any particular degree of roughness, and it is weatherproof when used externally: I have seen samples of it applied to metal sheets and to glass, and it's very hard indeed to scratch it off, even with a knife, while the metal sheet can be bent backwards and forwards indefinitely, the paint being flexible enough not to mind, so that it therefore ought not to crack or craze. Internally, you use it either as a finish coat or as a base for any kind of decorative finish, for which latter purpose it is sometimes mixed with two parts of sand and applied as a screed $\frac{1}{16}$-in. thick.

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When used as a paint (two coats), 1 lb. of the powder has a covering capacity of 2 to 3 yards super, according to the texture of the surface, and cost (again two coats) is $7\frac{3}{4}$d. per yard, this figure covering materials and labour, but not scaffolding. Price is 1s. 2d. a pound in 56-lb. tins. (*The Adamite Company, Limited, Manfield House, Strand, London W.C.2.*)

THE BUILDINGS ILLUSTRATED

SWIMMING BATH, BOURNVILLE (page 123) The sub-contractors were: The Trussed Concrete Steel Co., Ltd., reinforced concrete and diving stage; Tarmac, Ltd., paving tiles; Standard Brick Co., white facing bricks; Crittall Manufacturing Co., Ltd., casements; Doulton & Co., Ltd., sanitary fittings; United Filters and Engineering, Ltd., filtrations plant; Electrical Installations Ltd., electric lighting; Lockerbie and Wilkinson, Ltd., door furniture; Le Grand, Sutcliffe and Gell, Ltd., turnstiles; Haywards, Ltd., water shutes and springboards; Ruberoid Co., Ltd., roofing; Dennison Kett, rolling shutters; Potter Rax Gate Co., Ltd., folding gates; N. F. Ramsey & Co., door furniture; Brookes, Ltd., land drains; Joseph Freeman, Sons & Co., Ltd., cementone to inside of bath; Shaws Glazed Brick Co., Ltd., scum channels; John Daymond, lettering.

NEW OFFICES FOR MESSRS. W. AND A. GILBEY, LTD., CAMDEN TOWN (page 98). Architect: Serge Chermayeff. The general contractors were Messrs. Holland & Hannen and Cubitts, Ltd. Among the sub-contractors and craftsmen were the following: Sabey & Co., demolition and excavation; Mitchell and Snow, special cork for foundations; Excel Asphalte Co., Ltd., asphalt; Carter & Co., Ltd., internal and external tiles and terrazzo; Armstrong Cork Co., Ltd., cork floor finishings; Sika-Francois, Ltd., waterproofing in basement; Pilkington Bros., Ltd., special glazing, glass dome lights, fluted glass screens; Lenscrete, Ltd., pavement lights, ground floor and first floor level; Hall and Kay, Ltd., heating and ventilating, design and equipment; Greenwoods Ventilating Co., Ltd., ventilating grilles; J. Starkie Gardner, Ltd., metalwork all to architect's design; J. D. Beardmore & Co., Ltd., metalwork all to architects' design; Taylor Pearse & Co., Ltd., metalwork all to architect's design; Helical Bar and Engineering Co., Ltd., steel for reinforced concrete work; Crittall Mnfg. Co., Ltd., metal windows, standard sections; General Signal and Time Systems, internal telephones and electric; Bective Electrical Co., Ltd., electrical wiring; Troughton and Young, Ltd., electric light fittings; Oswald Hollmann, Ltd., electric light fittings; Clark and Fenn, Ltd., fibrous plaster domes to special fittings and stairs; James Slater & Co., Ltd., kitchen equipment; Dent and Hellyer, Ltd., plumbing; John Bolding and Sons, Ltd., sanitary fittings; Brown and Tawse, Ltd., folding gates to architect's design; Fireproof Shutter and Door Co., fireproof shutters and doors; Haywards, Ltd., internal iron staircases to architect's design, external standard iron staircases; Accordo Blind Co., blinds; Honeywill and Stein, Ltd., acoustic plaster; Millars, pioneer plaster; James Latham, Ltd., special veneers for panelling; J. Whitehead and Sons, Ltd., marble work; Edinburgh Weavers, Ltd., rugs to architect's design, fabrics; Duncan Miller, Ltd., rugs and furniture to architect's design; D. Burkle and Son, Ltd., special furniture to architect's design; Finmar, Ltd., standard furniture, canteen and occasional tables; Plan, Ltd., armchairs throughout; Roneo, Ltd., office furniture in steel; Pel, Ltd., office furniture in steel; Oscar Kanter, "Wehag" cloakroom fittings; Marryat and Scott, Ltd., lifts; Waygood-Otis, Ltd., lifts; Eric Munday and William Pickford, Ltd., external and internal lettering; J. W. Gray & Co., Ltd., lightning conductors; Pilchers, Ltd., external concrete paint, internal distemper and paint; Best and Lloyd, Ltd., tubelights; E. Harding, curtains; K. McCutcheon, model maker; F. Parker & Sons, chairs for board room to architect's design.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 MILES RADIUS)

CAMBERWELL. *Rehousing.* The L.C.C. is to erect dwellings on the Friary Estate, Camberwell, at a cost of £165,110.

CROYDON. *Houses, etc.* Plans passed by Croydon Corporation: 14 houses, Brownlow Road, G. E. Clare and Son; Factory and new roof to shop, Spring Lane, H. and W. Bourne, Ltd.; 40 shops with dwellings over, Lodge Lane, Addington, First National Housing Trust, Ltd.; Factory, Cedar Road, Creed & Co., Ltd.; 19 houses, off Foulsham Road, Mr. S. Cronk; 62 houses, Convent Hill and Beaumont Road, Upper Norwood, Mr. R. T. Grove; 15 houses, Dunheved Road, Croydon and South London Building Co., Ltd.

CROYDON. *Police Section House.* The Commissioner of Police is to erect a new police section house, having seven storeys fronting Duppas Hill Road, six storeys at the rear and two wing projections one storey high, at Duppas Hill Road, Croydon.

FINCHLEY. *Flats and Shops.* Mr. B. Ewart Dixon is to erect six shops and 12 flats in East End Road, Finchley.

FINSBURY. *Rehousing.* The Finsbury B.C. is to clear the Busaco Street area of two-and-a-half acres and arrange for rehousing.

FINSBURY. *Health Centre.* The Finsbury B.C. is to erect a health centre at a cost of £39,184.

GREENWICH. *Rehousing.* The L.C.C. is to clear an area in the vicinity of Creek Road, Greenwich, and provide rehousing at a cost of £37,000.

GREENWICH. *Council Houses.* The L.C.C. is to erect 95 dwellings on the Eastney Street Area, Greenwich, at a cost of £60,370.

MIDLAND COUNTIES

BIRMINGHAM. *Municipal Buildings.* The Birmingham Corporation has obtained sanction to borrow £305,737 for the erection of municipal buildings on part of the civic centre site.

BIRMINGHAM. *Extension of Refuse Disposal Works.* The Birmingham Corporation is to extend the refuse disposal works at a cost of £30,300.

BOTLEY. *School.* The Berkshire Education Committee has obtained sanction to borrow £21,331 for the erection of an elementary school at Botley.

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.	I. d.	II. s.	II. d.
A	ABERDARE ...	S. Wales & M.	1	7	1	2½
A	Aberdeen ...	Scotland	1	7	1	2½
A_1	Abergavenny ...	S. Wales & M.	1	6½	1	2
A_2	Abingdon ...	S. Counties	1	5½	1	1½
A	Accrington ...	N.W. Counties	1	7	1	2½
A_2	Addlestone ...	S. Counties	1	6	1	1½
A	Adlington ...	N.W. Counties	1	7	1	2½
A	Airdrie ...	Scotland	*1	7	1	2½
C	Aldeburgh ...	E. Counties	1	3	0	11½
A	Altrincham ...	N.W. Counties	1	7	1	2½
B_2	Appleby ...	N.W. Counties	1	3½	0	11½
A	Ashton-under-Lyne	N.W. Counties	1	7	1	2½
B	Aylesbury ...	S. Counties	1	5	1	0½
B	BANBURY ...	S. Counties	1	5	1	0½
B_1	Bangor ...	N.W. Counties	1	4½	1	0½
A_2	Barnard Castle	N.E. Coast	1	5½	1	1½
A	Barnsley ...	Yorkshire	1	7	1	2½
B	Barnstaple ...	S.W. Counties	1	5	1	0½
A	Barrow ...	N.W. Counties	1	7	1	2½
A	Barry ...	S. Wales & M.	1	7	1	2½
B	Basingstoke ...	S.W. Counties	1	5	1	0½
A_2	Bath	S.W. Counties	1	6	1	1½
A	Batley ...	Yorkshire	1	7	1	2½
A_2	Bedford ...	E. Counties	1	6	1	1½
A_2	Berwick-on-Tweed	N.E. Coast	1	6	1	1½
A_2	Bewdley ...	Mid. Counties	1	6	1	1½
B	Bicester ...	S. Counties	1	5	1	0½
	Birkenhead ...	N.W. Counties	*1	8	1	3
A	Birmingham ...	Mid. Counties	1	7	1	2½
A_1	Bishop Auckland	N.E. Coast	1	6½	1	2
A	Blackburn ...	N.W. Counties	1	7	1	2½
A	Blackpool ...	N.W. Counties	1	7	1	2½
A	Blyth	N.E. Coast	1	7	1	2½
B	Bognor ...	S. Counties	1	5	1	0½
A	Bolton ...	N.W. Counties	1	7	1	2½
A_2	Boston ...	Mid. Counties	1	5½	1	1½
A_2	Bournemouth...	S. Counties	1	6	1	1½
B_2	Bovey Tracey	S.W. Counties	1	4	1	0
A	Bradford ...	Yorkshire	1	7	1	2½
A_1	Brentwood ...	E. Counties	1	6½	1	2
A	Bridgend ...	S. Wales & M.	1	7	1	2½
B	Bridgwater ...	S.W. Counties	1	5	1	0½
A_1	Bridlington ...	Yorkshire	1	6½	1	2
A	Brighouse ...	Yorkshire	1	7	1	2½
A	Brighton ...	S. Counties	1	6	1	1½
A	Bristol ...	S.W. Counties	1	7	1	2½
B	Brixham ...	S.W. Counties	1	5	1	0½
A	Bromsgrove ...	Mid. Counties	1	7	1	2½
B	Bromyard ...	Mid. Counties	1	5	1	0½
A	Burnley ...	N.W. Counties	1	7	1	2½
A	Burslem ...	Mid. Counties	1	7	1	2½
A	Burton-on-Trent	Mid. Counties	1	7	1	2½
A	Bury	N.W. Counties	1	7	1	2½
A_1	Buxton ...	N.W. Counties	1	6½	1	2
A_1	CAMBRIDGE	E. Counties	1	6½	1	2
B_1	Canterbury ...	S. Counties	1	4½	1	0½
A	Cardiff ...	S. Wales & M.	1	7	1	2½
A	Carlisle ...	N.W. Counties	1	7	1	2½
B	Carmarthen ...	S. Wales & M.	1	5	1	0½
B	Carnarvon ...	N.W. Counties	1	5	1	0½
A_1	Carnforth ...	N.W. Counties	1	7	1	2½
A	Castleford ...	Yorkshire	1	7	1	2½
A_2	Chatham ...	S. Counties	1	5½	1	1½
A_2	Chelmsford ...	E. Counties	1	5½	1	1½
A_2	Cheltenham ...	S.W. Counties	1	5½	1	1½
A	Chester ...	N.W. Counties	1	7	1	2½
A	Chesterfield ...	Mid. Counties	1	7	1	2½
B	Chichester ...	S. Counties	1	5	1	0½
A	Chorley ...	N.W. Counties	1	7	1	2½
B_1	Cirencester ...	S. Counties	1	4½	1	0½
A	Clitheroe ...	N.W. Counties	1	7	1	2½
A	Clydebank ...	Scotland	1	7	1	2½
A	Coalville ...	Mid. Counties	1	7	1	2½
A_2	Colchester ...	E. Counties	1	6	1	1½
A_1	Colne	N.W. Counties	1	6½	1	2
A_2	Colwyn Bay ...	N.W. Counties	1	6	1	1½
A_1	Consett ...	N.E. Coast	1	6½	1	2
A_2	Conway ...	N.W. Counties	1	6	1	1½
A	Coventry ...	Mid. Counties	1	7	1	2½
A_2	Crewe	N.W. Counties	1	6	1	1½
A_2	Cumberland ...	N.W. Counties	1	5½	1	1½
A	DARLINGTON	N.E. Coast	1	7	1	2½
A	Darwen ...	N.W. Counties	1	7	1	2½
B_1	Deal	S. Counties	1	4½	1	0½
A_2	Denbigh ...	N.W. Counties	1	5½	1	1½
A	Derby	Mid. Counties	1	7	1	2½
A	Dewsbury ...	Yorkshire	1	7	1	2½
B	Didcot ...	S. Counties	1	5	1	0½
A	Doncaster ...	Yorkshire	1	7	1	2½
[illegible]	Dorchester ...	S.W. Counties	1	4½	1	0½
A_2	Driffield ...	Yorkshire	1	5½	1	1½
A_2	Droitwich ...	Mid. Counties	1	6	1	1½
A	Dudley ...	Mid. Counties	1	7	1	2½
A_2	Dumfries ...	Scotland	1	6	1	1½
A	Dundee ...	Scotland	1	7	1	2½
A	Durham ...	N.E. Coast	1	7	1	2½
A_2	EASTBOURNE	S. Counties	1	6	1	1½
A_1	Ebbw Vale ...	S. Wales & M.	1	6½	1	2
A	Edinburgh ...	Scotland	1	7	1	2½
A_2	Exeter ...	S.W. Counties	*1	6	1	1½
B	Exmouth ...	S.W. Counties	1	5	1	0½
A_2	FELIXSTOWE	E. Counties	1	5½	1	1½
A_2	Filey	Yorkshire	1	5½	1	1½
A	Fleetwood ...	N.W. Counties	1	7	1	2½
B_1	Folkestone ...	S. Counties	1	4½	1	0½
A	Frodsham ...	N.W. Counties	1	7	1	2
B_2	Frome ...	S.W. Counties	1	4	1	0
A	GATESHEAD	N.E. Coast	1	7	1	2½
B	Gillingham ...	S. Counties	1	5	1	0½
A_1	Glamorgan-shire, Rhondda Valley District	S. Wales & M.	1	6½	1	2
A	Glasgow ...	Scotland	1	7	1	2½
A_2	Gloucester ...	S.W. Counties	1	6	1	1½
A_2	Goole	Yorkshire	1	6	1	1½
A_2	Gosport ...	S. Counties	1	6	1	1½
A_2	Grantham ...	Mid. Counties	1	5½	1	1
A_1	Gravesend ...	S. Counties	1	6½	1	2
A	Greenock ...	Scotland	*1	7	1	2
A	Grimsby ...	Mid. Counties	1	7	1	2
B	Guildford ...	S. Counties	1	5	1	0
A	HALIFAX ...	Yorkshire	1	7	1	2½
A	Hanley ...	Mid. Counties	1	7	1	2½
A	Harrogate ...	Yorkshire	1	7	1	2½
A	Hartlepools ...	N.E. Coast	1	7	1	2½
B	Harwich ...	E. Counties	1	5	1	0½
B	Hastings ...	S. Counties	1	5	1	0½
A_2	Hatfield ...	S. Counties	1	6	1	1½
B	Hereford ...	S.W. Counties	1	5	1	0½
A_2	Hertford ...	E. Counties	1	6	1	1½
A	Heysham ...	N.W. Counties	1	7	1	2½
A	Howden ...	N.E. Coast	1	7	1	2½
A	Huddersfield ...	Yorkshire	1	7	1	2½
A	Hull	Yorkshire	1	7	1	2½
A	ILKLEY ...	Yorkshire	1	7	1	2½
A	Immingham ...	Mid. Counties	1	7	1	2½
A_2	Ipswich ...	E. Counties	1	6	1	1½
B_2	Isle of Wight ...	S. Counties	1	4	1	0
A	JARROW ...	N.E. Coast	1	7	1	2½
A	KEIGHLEY ...	Yorkshire	1	7	1	2½
A_3	Kendal ...	N.W. Counties	1	5½	1	1½
A_3	Keswick ...	N.W. Counties	1	5½	1	1½
A_1	Kettering ...	Mid. Counties	1	6½	1	2
A_3	Kidderminster	Mid. Counties	1	6	1	1½
B_1	King's Lynn ...	E. Counties	1	4½	1	0½
A	LANCASTER ...	N.W. Counties	1	7	1	2½
A_1	Leamington ...	Mid. Counties	1	6½	1	2
A	Leeds	Yorkshire	1	7	1	2½
A	Leek	Mid. Counties	1	7	1	2½
A	Leicester ...	Mid. Counties	1	7	1	2½
A	Leigh	N.W. Counties	1	7	1	2½
B	Lewes	S. Counties	1	5	1	0½
A_2	Lichfield ...	Mid. Counties	1	6	1	1½
A	Lincoln ...	Mid. Counties	1	7	1	2½
	Liverpool ...	N.W. Counties	*1	8½	1	3½
A_2	Llandudno ...	N.W. Counties	1	6	1	1½
A	Llanelly ...	S. Wales & M.	1	7	1	2½
	London (12-miles radius)		1	8½	1	3½
	Do. (12-15 miles radius)		1	8	1	3
A	Long Eaton ...	Mid. Counties	1	7	1	2½
A	Loughborough ...	Mid. Counties	1	7	1	2½
A_1	Luton	E. Counties	1	6½	1	2
A	Lytham ...	N.W. Counties	1	7	1	2½
A_1	MACCLESFIELD	N.W. Counties	1	6½	1	2
A_3	Maidstone ...	S. Counties	1	5½	1	1½
A_3	Malvern ...	Mid. Counties	1	5½	1	1½
A	Manchester ...	N.W. Counties	1	7	1	2½
A	Mansfield ...	Mid. Counties	1	7	1	2½
B_1	Margate ...	S. Counties	1	4½	1	0½
A_3	Matlock ...	Mid. Counties	1	5½	1	1½
A_1	Merthyr ...	S. Wales & M.	1	6½	1	2
A	Middlesbrough	N.E. Coast	1	7	1	2½
A_2	Middlewich ...	N.W. Counties	1	6	1	1½
B_2	Minehead ...	S.W. Counties	1	4	1	0
B_2	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1	4	1	0
A	Morecambe ...	N.W. Counties	1	7	1	2½
A_2	NANTWICH ...	N.W. Counties	1	6	1	1½
A	Neath	S. Wales & M.	1	7	1	2½
A	Nelson ...	N.W. Counties	1	7	1	2½
A	Newcastle ...	N.E. Coast	1	7	1	2½
A	Newport ...	S. Wales & M.	1	7	1	2½
A	Normanton ...	Yorkshire	1	7	1	2½
A	Northampton	Mid. Counties	1	7	1	2½
A	North Shields...	N.E. Coast	1	7	1	2½
A	North Staffs ...	Mid. Counties	1	7	1	2½
A_1	Norwich ...	E. Counties	1	6½	1	2
A	Nottingham ...	Mid. Counties	1	7	1	2½
A	Nuneaton ...	Mid. Counties	1	7	1	2½
A_2	OAKHAM ...	Mid. Counties	1	5½	1	1½
A	Oldham ...	N.W. Counties	1	7	1	2½
A_2	Oswestry ...	N.W. Counties	1	5½	1	1½
A_1	Oxford ...	S. Counties	1	6½	1	2
A	PAISLEY ...	Scotland	*1	7	1	2
B_2	Pembroke ...	S. Wales & M.	1	3½	0	11½
A	Perth	Scotland	*1	7	1	2½
A_1	Peterborough....	E. Counties	1	6½	1	2
A	Plymouth ...	S.W. Counties	*1	7	1	2½
A	Pontefract ...	Yorkshire	1	7	1	2½
A_1	Pontypridd ...	S. Wales & M.	1	6½	1	2
A_2	Portsmouth ...	S. Counties	1	6	1	1½
A	Preston ...	N.W. Counties	1	7	1	2½
A	QUEENSFERRY	N.W. Counties	1	7	1	2½
A_2	READING ...	S. Counties	1	6½	1	2
B	Reigate ...	S. Counties	1	5½	1	1½
A_2	Retford ...	Mid. Counties	1	5½	1	1½
A_1	Rhondda Valley	S. Wales & M.	1	6½	1	2
A_2	Ripon	Yorkshire	1	5½	1	1½
A	Rochdale ...	N.W. Counties	1	7	1	2½
B	Rochester ...	S. Counties	1	5	1	0½
A_1	Ruabon ...	N.W. Counties	1	6½	1	2
A	Rugby ...	Mid. Counties	1	7	1	2½
A_2	Rugeley ...	Mid. Counties	1	6	1	1½
A	Runcorn ...	N.W. Counties	1	7	1	2½
A_1	ST. ALBANS ...	E. Counties	1	6½	1	2
A	St. Helens ...	N.W. Counties	1	7	1	2½
B_2	Salisbury ...	S.W. Counties	1	3½	0	11½
A_1	Scarborough ...	Yorkshire	1	6½	1	2
A	Scunthorpe ...	Mid. Counties	1	7	1	2½
A	Sheffield ...	Yorkshire	1	7	1	2½
A	Shipley ...	Yorkshire	1	7	1	2½
A_2	Shrewsbury ...	Mid. Counties	1	6	1	1½
A_2	Skipton ...	Yorkshire	1	6	1	1½
A_2	Slough ...	S. Counties	1	6	1	1½
A_1	Solihull ...	Mid. Counties	1	6½	1	2
A_2	Southampton...	S. Counties	1	6	1	1½
A_1	Southend-on-Sea	E. Counties	1	6½	1	2
A	Southport ...	N.W. Counties	1	7	1	2½
A	S. Shields ...	N.E. Coast	1	7	1	2½
A_1	Stafford ...	Mid. Counties	1	6½	1	2
A	Stirling ...	Scotland	1	7½	1	2½
A	Stockport ...	N.W. Counties	1	7	1	2½
A	Stockton-on-Tees	N.E. Coast	1	7	1	2½
A	Stoke-on-Trent	Mid. Counties	1	7	1	2½
B	Stroud ...	S.W. Counties	1	5	1	0½
A	Sunderland ...	N.E. Coast	1	7	1	2½
A	Swansea ...	S. Wales & M.	1	7	1	2½
A_2	Swindon ...	S.W. Counties	1	5½	1	1½
A_1	TAMWORTH ...	N.W. Counties	1	6½	1	2
B	Taunton ...	S.W. Counties	1	5	1	0½
A	Teesside Dist....	N.E. Counties	1	7	1	2½
A_2	Teignmouth ...	S.W. Coast	1	6	1	1½
A	Todmorden ...	Yorkshire	1	7	1	2½
A_1	Torquay ...	S.W. Counties	1	6½	1	2
B_2	Truro	S.W. Counties	1	4	1	0
A_2	Tunbridge Wells	S. Counties	1	5½	1	1½
A	Tunstall ...	Mid. Counties	1	7	1	2½
A	Tyne District....	N.E. Coast	1	7	1	2½
A	WAKEFIELD	Yorkshire	1	7	1	2½
A	Walsall ...	Mid. Counties	1	7	1	2½
A	Warrington ...	N.W. Counties	1	7	1	2½
A_1	Warwick ...	Mid. Counties	1	6½	1	2
A	Wellingborough	Mid. Counties	1	6½	1	2
A	West Bromwich	Mid. Counties	1	7	1	2½
A_2	Weston-s.-Mare	S.W. Counties	1	6	1	1½
A_2	Whitby ...	Yorkshire	1	6	1	1½
A	Widnes ...	N.W. Counties	1	7	1	2½
A	Wigan ...	N.W. Counties	1	7	1	2½
B	Winchester ...	S. Counties	1	5	1	0½
A_2	Windsor ...	S. Counties	1	6	1	1½
A	Wolverhampton	Mid. Counties	1	7	1	2½
A_2	Worcester ...	Mid. Counties	1	6	1	1½
A_3	Worksop ...	Yorkshire	1	5½	1	1½
A_1	Wrexham ...	N.W. Counties	1	6½	1	2
A_3	Wycombe ...	S. Counties	1	5½	1	1½
B	YARMOUTH ...	E. Counties	1	5	1	0½
B	Yeovil ...	S.W. Counties	1	5	1	0½
A	York	Yorkshire	1	7	1	2½

* 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. The rates of wages have been revised consequent upon the increase in wages which came into operation on February 1, together with all revisions following authorized annual regradings.

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 8½
Carpenter . . . . . ,,	1 8½
Joiner . . . . . ,,	1 8½
Machinist . . . . . ,,	1 9½
Mason (Banker) . . . . . ,,	1 8½
,, (Fixer) . . . . . ,,	1 9½
Plumber . . . . . ,,	1 8½
Painter . . . . . ,,	1 7½
Paperhanger . . . . . ,,	1 7½
Glazier . . . . . ,,	1 8½
Slater . . . . . ,,	1 8½
Scaffolder . . . . . ,,	1 4½
Timberman . . . . . ,,	1 4½
Navvy . . . . . ,,	1 3½
General Labourer . . . . . ,,	1 3½
Lorryman . . . . . ,,	1 6½
Crane Driver . . . . . ,,	1 7½
Watchman . . . . . per week	2 10 0

MATERIALS

EXCAVATOR AND CONCRETOR

	£ s. d.
Grey Stone Lime . . . . . per ton	2 2 0
Blue Lias Lime . . . . . ,,	1 18 6
Hydrated Lime . . . . . ,,	2 5 0
Portland Cement, in 4-ton lots (d/d site, including Paper Bags) . . ,,	1 19 0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags) . ,,	2 5 0
White Portland Cement, in 1-ton lots ,,	8 15 0
Thames Ballast . . . . . per Y.C.	6 6
¾" Crushed Ballast . . . . . ,,	7 0
Building Sand . . . . . ,,	7 6
Washed Sand . . . . . ,,	8 6
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. d.	6" s. 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.	2 3	3 8
Bends . . . . . each	6 4	13 1
Inspection bends . . ,,	11 5	14 4
Single junctions . . ,,	11 2	22 10
Double junctions . . ,,	17 2	30 9
Lead Wool . . . . lb.	6	—
Gaskin . . . . . ,,	5	—

BRICKLAYER

	£ s. d.
Flettons . . . . . per M.	2 12 0
Grooved do. . . . . ,,	2 14 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 14 0
,, Wirecuts . . . ,,	7 12 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

	s. d.
The following d/d F.O.R. at Nine Elms:	
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 5 0
Best hand-made do. . . . ,, ,,	4 17 6
Hips and valleys . . . . each	9
,, hand-made . . . . ,,	9½
Nails, compo . . . . . ,,	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, ¾" . . . Sq.	18 6
,, ⅞" . . . ,,	1 1 6
,, 1" . . . ,,	1 2 0
,, 1¼" . . . ,,	1 5 0
,, 1½" . . . ,,	1 10 0
Deal matchings, ⅞" . . . ,,	14 8
,, ¾" . . . ,,	15 6
,, 1" . . . ,,	1 4 0
Rough boarding, ¾" . . . ,,	16 8
,, 1" . . . ,,	18 0
,, 1¼" . . . ,,	1 6 0

Plywood, per ft. sup.:

Thickness	⅛" d.			¼" d.			⅜" d.			½" d.		
Qualities	A	B	BB	A	B	BB	A	B	BB	A	B	BB
Birch 60 × 48	4	2½	2	5	3	2¾	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	–	11–	9	–

Scotch glue . . . . . lb 8d.

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"	⅜"	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	1/7½	2/7½	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 . . .	66⅔	Galvanized gas .	56⅔
Water . . .	61⅔	,, water .	51⅔
Steam . . .	58⅔	,, steam .	46⅔
	FITTINGS		
Gas . . .	57½	Galvanized gas .	48½
Water . . .	53½	,, water .	46½
Steam . . .	48½	,, steam .	41½

	s. d.
Rolled steel joists cut to length . . cwt.	15 6
Mild steel reinforcing rods, ⅜" . . . ,,	16 0
,, ,, ,, ½" . . . ,,	15 9
,, ,, ,, ⅝" . . . ,,	15 3

SMITH AND FOUNDER—*continued*

	s. d.
Mild steel reinforcing rods, ¾" . . . owt.	15 3
,, ,, ,, ⅞" . . . ,,	15 3
,, ,, ,, 1" . . . ,,	15 3
,, ,, ,, 1¼" . . . ,,	15 3
,, ,, ,, 1½" . . . ,,	15 3

	¾" s. d.	4" 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.	33 6
,, drawn pipes . . . . ,,	33 0
,, soil pipes . . . . ,,	36 0
,, scrap . . . . ,,	21 0
Solder, plumbers' . . . . lb.	1 1½
,, fine do. . . . . ,,	1 4
Copper, sheet . . . . ,,	1 0½
,, tubes . . . . ,,	1 2½

L.C.C. soil and waste pipes:	3" s. d.	4" s. d.	6" s. d.
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 0 0
Plaster, coarse . . . . ,,	2 15 8
,, fine . . . . ,,	4 7 6
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, 24 oz., squares n/e 2 ft.	s. F.S.	2½
,, ,, 26 oz. ,, ,,	,,	3½
Flemish, Arctic, Figures (white)*	,,	7½
Blazoned glasses	,,	2 6
Reeded: Cross Reeded . . .	,,	11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	,,	6
Crown sheet glass (n/e 12" × 10") .	,,	2 0
Flashed opals (white and coloured) .	,, 1 0 and 2	0
⅛" rough cast; rolled plate . .	,,	6
⅛" wired cast; wired rolled . .	,,	10½
⅛" Georgian wired cast . . .	,,	11½
⅛" 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 1 ,, ‡3	9
,, ,, 45 . .	,, †3 3 ,, ‡4	0
,, ,, 100 . .	,, †4 ,, ‡4	10
Vita glass, sheet, n/e 1 ft. . .	,,	1 8
,, ,, 2 ft. . .	,,	1 3
,, ,, over 2 ft. . .	,,	1 9
,, ,, plate, n/e 1 ft. . .	,,	1 6
,, ,, 2 ft. . .	,,	3 0
,, ,, 5 ft. . .	,,	4 0
,, ,, 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 ⅛" and ¼" .	,,	8¾ ,, 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 17 9
Linseed oil	gall. 3 2
Boiled oil	,, 3 5
Turpentine	,, 3 9
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 6
Flat varnish	,, 14 6
Outside varnish	,, 16 0
White enamel	,, 1 15 0
Ready mixed paint	,, 13 6
Brunswick black	,, 7 6

CURRENT PRICES FOR MEASURED WORK

The following prices are for work to new buildings of average size, executed under normal conditions in the London area. They include establishment charges and profit. While every care has been taken in its compilation, no responsibility can be accepted for the accuracy of the list. The whole of the information given is copyright.

EXCAVATOR AND CONCRETOR		£ s. d.
Digging over surface n/e 12" deep and cart away	Y.S.	2 9
" to reduce levels n/e 5' 0" deep and cart away	Y.C.	8 6
" to form basement n/e 5' 0" and cart away	"	9 0
" " 10' 0" deep and cart away	"	9 6
" " 15' 0" deep and cart away	"	10 0
If in stiff clay add	"	6
If in underpinning "	"	4 0
Planking and strutting to sides of excavation	F.S.	1 0
" " to pier holes	"	5
" " to trenches	"	5
" " extra, only if left in	"	3
Hardcore, filled in and rammed	Y.C.	10 0
Portland cement concrete in foundations (6–1)	"	1 6 0
" " (4–2–1)	"	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.	5 9	8 3
Extra, only for bends (cast iron)	Each	12 3	18 4

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
" rising on old walls	"	2 0 0
" underpinning	"	5 10 0
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 9
½" Vertical dampcourse	"	7 9
½" paving or flat	"	6 3
1" paving or flat	"	7 6
1" × 6" skirting	F.R.	1 0
Angle fillet	"	2½
Rounded angle	"	2½
Cesspools	Each	5 6

MASON		£ s. d.
Portland stone, including all labour, 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 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
⅞" deal sawn boarding and fixing to joists	Sqr.	1 14 6
1" " " " " "	"	1 17 6
1½" " " " " "	"	2 3 0
¾" × 2" fir battening for Countess slating	"	9 6
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
1½" do	"	1 9

CARPENTER AND JOINER—*continued*		s. d.
1¼" deal moulded sashes of average size	F.S.	1 9½
2" " " " " "	"	1 11½
1½" deal cased frames double hung, of 6" × 3" oak sills, 1¼" pulley stiles, 1¼" heads, 1" inside and outside linings, ⅝" parting beads, and with brass faced axle pulleys, etc., fixed complete	"	3 7
2" " " " " "	"	3 10
Extra only for moulded horns	Each	6
1½" deal four-panel square, both sides, door	F.S.	2 0
2" " " " " "	"	2 8
1½" " but moulded both sides	"	2 4
2" " " " " "	"	3 0
4" × 3" deal, rebated and moulded frames	F.R.	1 0
4½" × 3½" " " " " "	"	1 4
1½" 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
1½" " " outer strings	"	2 4
Ends of treads and risers housed to string	Each	1 [illegible]
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.	18 6
Riveted plate or compound girders, and hoisting and fixing in position	"	1 3 0
Do., stanchions with riveted caps and bases and do.	"	1 2 0
Mild steel bar reinforcement, ½" and up, bent and fixed complete	"	1 2 0
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.	3 4 0
Do. in flashings	"	2 7 6
Do. in covering to turrets	"	2 13 0
Do. in soakers	"	1 18 9
Labour to welted edge	F.R.	3½
Open copper nailing	"	3
Close " "	"	4

		½" s. d.	¾" s. d.	1" s. d.	1½" s. d.	2" s. d.	4" s. d.
Lead service pipe and fixing with pipe hooks	F.R.	1 2	1 4	1 8½	2 7	3 6	—
Do. soil pipe and fixing with cast lead tacks		—	—	—	—	—	7 3
Extra, only to bends	Each	—	—	—	—	2 3	7 6
Do. to stop ends	"	6½	8	9	11	1 0	—
Boiler screws and unions		3 3	3 9	5 0	8 0	—	—
Lead traps		—	—	—	8 0	11 6	—
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 nw 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 under on walls	"	1 2½
Render, refloat 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	"	1½
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.	"	7¼
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 beds	"	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