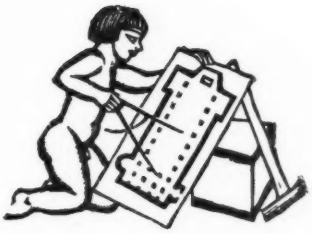
COSMOPOLITAN EXEMPLAR

A NEW CINEMA IN BOMBAY

A PERSPECTIVE of a cinema now under construction in Bombay which is to cost a million and a half rupees. To ensure that it shall incorporate the very latest ideas in design and construction, Mr. S. C. Cambata, the sponsor of the scheme, is making a world tour and is now stated to have reached London after passing through China, Japan and the United States. The interior decorations and arrangements are to be extremely novel.

DINING SALOON OF THE *HINDENBURG*

The passenger accommodation on the largest Zeppelin presented the architect, Fritz Breuhaus, not only with the problem of achieving a feeling of roominess in a very small space, but also with that of creating an apparent solidity with extremely light materials. The photograph shows the dining saloon with an observation gallery along one side of it. The furniture is of a special aluminium alloy and the upholstery of a light fabric. Structural members are of aluminium alloy, and the wall and ceiling panels of silk on a thin plywood backing.



PROSPECTS OF THE BUILDING INDUSTRY

FOR some time past the public has been repeatedly warned of the imminent decline of building activity in this country. The general opinion has been that the building of dwelling-houses was bound to decrease sharply owing to the saturation of the middle-class and artisan market, but that increased activity in the erection of other buildings would offset to some extent the decline in housing. There is now some sign that this view will be borne out—as, sooner or later, it was bound to be.

During the first half of this year the aggregate estimated cost of building plans approved by 146 local authorities in Great Britain was 7½ per cent. above the corresponding figure for the first six months of 1935; preliminary returns for July show an increase of more than 5 per cent. compared with July, 1935.

The most conspicuous feature of these returns, though it is one to which we have grown accustomed, is the large proportion of the total which is accounted for by plans for the construction of dwelling-houses. But at long last it would seem that activity in this branch is about to decline. The fall in the cost of plans approved during the first seven months of the year is only a matter of half a million pounds, and the whole of this is attributable to the fall in July. Such a movement in the aggregate figures for dwelling-houses might or might not be significant in itself—it would not justify an opinion that the peak had been reached. What does seem significant is that the confidently-expressed opinions which have been current for some time past now appear to have statistical justification. The July residential plans for Outer London and the Midlands show a considerable fall, while those for Northern England and for Scotland show a big increase. This latter is indeed cheerful news, not only for the building industry itself, but viewed from the standpoint of the national economy. The extent of the industrial "drift to the South" has been vastly exaggerated, as the Board of Trade Surveys of Industrial Development have shown. Transferences have been exceedingly rare, and the increasing industrialization of the South has almost wholly represented new development. Nevertheless, it is to be hoped that the modern desire for proximity to the Southern market will not become an obsession; especially since, for instance, there are as many people living within 130 miles of Newcastle-upon-Tyne as within 130 miles of Charing Cross. Fortunately, there are signs that industrialists are now appreciating the advantages of sites in the natural industrial areas. The increase in plans for the construction of industrial and commercial premises during the present year has been shared by all parts of the country except the south-east, while the figures for the northern counties show increases considerably exceeding the average for the whole country.

The outlook for the next two or three years thus appears fairly bright, for a serious decline in residential building activity will probably be confined to those parts of the country in which the building boom has continued for longer than was generally expected, and it is likely to be largely offset not only by a general increase in the erection of industrial and commercial buildings, but also by at least a maintenance of the present volume of house-building in the older industrial regions.

But the building industry ought to look further into the future than the next two or three years. The long-term outlook must take into account the coming fall in population; this has been hidden from view by the fact that births at present exceed deaths, owing to an abnormally large proportion of the women of this country being of child-bearing age and an abnormally small proportion of the population being very old or very young; with a net reproduction rate below unity the fall *must* take place, and the rate in this country is now about 0.75. The decline in the size of families which has brought this about means, of course, that the number of houses required will not decrease as rapidly as will the population, but the time is not very far off when there will be a superfluity of houses. It is to be hoped that this problem will be met by planned destruction, and that we shall permit to survive only those houses which are habitable from a sanitary point of view and which are in the places where they are wanted.

There is little indication as yet that the Government is sensible of the coming fall in population, but then Governments rarely are sensible of tendencies which will not become "live issues" during their own period of office. But issues which are "live" have to be met by measures which are piecemeal. It should be possible to take steps to meet a problem of this nature before it demands emergency measures.

The Architects' Journal
Westminster, S.W.1
Telephones: Whitehall
9212-7
Telegrams
Buildable
Parl
London

NOTES & TOPICS

THE GREEN BELT

THE last paragraph in *The Times* article last Wednesday on the Green Belt, or Girdle as it now seems to be called, may provide an explanation as to why so little and such slow progress seems to be made by local authorities in providing open spaces.

*

It is stated that the increase in prices which has followed the Kent County Council's decision to obtain options on land within the Green Belt has hindered progress. If it is indeed a fact that the Council's decision has had this effect, there appears to be a clear case of private persons endeavouring to profit from a public need; just one more case of something which should be stopped at once.

THE LAKE DISTRICT

The C.P.R.E. must be feeling rather pleased that it has succeeded in inducing the Forestry Commissioners to agree to refrain from tree planting over the greater part of the Lake District.

*

It is an unfortunate thing that practically all the tree planting done in this country seems to be fir of one sort or another. I'm sure there would be very little objection to beech or oak, but they are not, I suppose, commercially profitable.

PRESERVATION

I have always thought, or perhaps merely liked to imagine, that I was on the side of the angels in the matter of trying to use the surface of this country wisely and decently—in spite of an occasional confusion over the best way of doing so.

*

But every now and then my ideas get a jolt from a most unexpected source; and for a little while I wonder gloomily what is to be the end of it all.

*

And one such shock has just come from a report of the Town and Country Planning School's Conference at Salisbury. Addressing that meeting, the town planning consultant for Wiltshire said that the Air Ministry, in a scheme for a new aerodrome near Chippenham, has produced a very satisfactory scheme from a town planning point of view.

*

"All buildings, including cottages and hangars, were to be built in Bath stone rubble with roofs of brown tiles, except for large hangars, which were shown with green asbestos slates, but hipped back behind stone parapets so as not to be visible from the ground. The Ministry had also stated that there was no intention to put up any temporary buildings."

*

It would surely seem reasonable, since aerodromes are very much things of today, that they should set an example to the country in how to use the materials of today properly—not an example of being ashamed of them. The Air Ministry may be able to build "large hangars" of stone; nobody else can afford to build a cottage of it. And I must confess that the idea of an asbestos roof, hipped back so that no one can see it from the ground, seems just a shade nauseating.

*

The aerodrome at Chippenham might be a better lesson in town planning if it showed how to use steel and concrete, *uncoloured* asbestos-cement, timber and other light and, if necessary, temporary materials in a really fine, contemporary and decent way.

INTERNAL LITTER

Judging by the letters to the papers, as well as a light leader in *The Times*, more people are visiting village churches this year than is usual.

*

The anti-litter cries, having some time ago cleaned up most churchyards, are now raised about the churches. And really there is no end to the litter found therein.

*

Discarded bits of heating pipe, disused hassocks, hangings, trimmings, mattings, pictures, ink pots, notice boards and notices, crockery and coffers, ropes and railings, female figures embracing gas jets, and brass herbage which once dripped candle-grease. All are there.

*

But the greatest litter of all seems to have been overlooked—the litter of crudely coloured light. The famous church at Lavenham is one of a hundred examples where most internal litter no longer exists, except the crudest, vainest and most vulgar coloured glass windows which even the last quarter of the nineteenth century can have produced.

*

Scattered newspaper is nothing compared with such vitreously vicious litter.

CHARING CROSS BRIDGE

Once again we have a definite recommendation that a new Charing Cross bridge is both necessary and desirable. Something may now even be done.

*

I tremble to make such an outright statement. It is exactly eighty-two years since the first commission

Two reproductions of the new postage stamps which were on sale to the public last Tuesday. See note on this page.

of enquiry made its recommendation for a new bridge at Charing Cross.

*

And to anyone looking at a plan of London, Charing Cross appears to be the one obvious place on the river for a bridge.

*

All the southbound traffic from north-west London must pass through the space between Regent's Park and Hyde Park, and is then prevented from turning south and reaching the river by the Green Park and then St. James's Park—until it reaches Charing Cross.

*

It is a pity that *this* Committee was unable to make a unanimous report, but it is satisfactory to see that that of the majority realizes that the new bridge (if in fact there ever is one) will be more than a local affair connecting the Strand and Waterloo Station, and will involve replanning and new roads at least as far apart as Euston Road and the Elephant and Castle. At the same time I am extremely sorry that the Committee has been unable to recommend the removal of Charing Cross Station to the other side of the river.

LONDON REFUSE

There has been quite a lot of correspondence in the newspapers lately about London refuse disposal, various writers advocating its destruction by various methods.

*

What no one has mentioned, or at least I haven't seen it, is that quite a lot of London's refuse goes to the brick-makers of South Essex and North Kent, and is used in the making and burning of London stocks; quite apart from the amount taken by Mr. Ford at Dagenham.

THE STAMPS

The new stamps are without doubt an improvement on most British stamps of the last half-century, though they have nothing of the merit of the first British stamps issued.

*

Their simplicity is in itself commendable. The four elements—the price, the crown, the head and the descriptive "postage"—are devoid of the jam of ornament with which simple elements have been obscured far too long.

*

But because of this isolation it is essential that the design of each element and their interrelation should receive the utmost consideration. Here the new stamp fails.

The lettering and figures are not the best which this country can even now show, the crown is weak and the head is that of a decapitated king, too realistically photographed, instead of a simple vigorous design in two dimensions.

*

There is all the difference between a symbolic design by a master craftsman and a reproduced photograph.

*

The Post Office has shown itself so splendidly progressive in its other recent innovations, that I have no doubt that it can do something much better than this.

SHARED PEDIMENTS

I noticed the other day that the site of a group of three or four of the houses opposite the R.I.B.A. building in Portland Place has been sold on a building lease. It is rather unfortunate that one of the houses shares, to the extent of about a quarter, a pediment with one or two other houses which do not form part of the site which has been sold. In view of its position, I shall watch with interest to see if it arouses the same commotion as the somewhat similar affair in Maida Vale.

THE LIVERPOOL SKYLINE

A couple of years ago I wrote about the fine skyline that Liverpool would have half a century hence, when Sir Edwin's cathedral upraised its gracious bulk and helped Sir Giles's Gothic towers to diversify the city. But perhaps half a century was too long. For, when I was in Liverpool last week, I saw something of the speed with which work is proceeding on the Metropolitan Cathedral.

*

From the Mersey already the warm sandstone mass of Liverpool Cathedral is a dominant feature of the city. Behind Princes' Landing Stage, as you cross over from Birkenhead, there is an Edwardian miscellany of large buildings; but you miss those dark grey façades, and your eyes are drawn to the warm, glowing outlines of the great cathedral.

*

Incidentally, there is little disfiguring lettering on the banks of the Mersey. Very few sky-signs, and an air of decent reticence about the shipyards and warehouses on either bank.

ART AND THE STATE

The B.B.C. is now running a remarkably good series of talks on Art and the State, an international series which will explain what other countries do about it, the whole series to be finally summed up by Mr. Kenneth Clark.

*

Mr. Keynes has started off by criticising, amongst other things, the English habit of asking for public subscriptions to preserve buildings and open spaces, a duty which should really fall on the Treasury, since the preservation of open spaces is in the national interest.

*

This seems to be a series that is well worth listening to, or at least reading after publication. If other countries manage their Art better than we do, and it seems only too likely that they do, it's a very good thing that the public should be generally browbeaten about it.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

CHARING CROSS BRIDGE

An old question is again likely to become the object of keen discussion with the publication last week of the London and Home Counties Traffic Advisory Committee's report on Charing Cross Bridge. Its conclusions may be summarised by the statement that the committee considers that good cross-river traffic in the neighbourhood of Charing Cross can only be ensured by a new bridge.

That the present state of traffic congestion is almost intolerable was the verdict of all the most important evidence offered to the committee.

The committee suggests leaving Charing Cross Station untouched, and having a combined road and rail bridge, the road portion of which will have its approaches from the two roundabouts shown in the sketch plan reproduced on page 294. The importance of proper approaches is naturally emphasized; otherwise traffic congestion is threatened from the Elephant and Castle to the Euston Road.

The L.C.C. has for the present volunteered no opinion about the scheme, and until its views, and those of the Ecclesiastical Commissioners and the Commissioners of Crown Lands, are known, a definite project is not likely to make a rapid appearance.

But, for the moment the redevelopment of the South Bank seems again a possibility.

THE BUILDING EXHIBITION

Preparations for the Building Exhibition at Olympia are now beginning to be undertaken seriously, and one of the more interesting items for architects is the extension of the accommodation for them. The rooms made available at the last Exhibition were handicapped by their popularity, and next month this defect is to be remedied. The rooms will be available for meeting and telephoning, and light refreshments will be obtainable. The accommodation will be over the Addison Road entrance, on the first floor.

THE ARCHITECTS' DIARY

Saturday, September 12

ARCHITECTURAL ASSOCIATION. *Annual excursion to Czechoslovakia. Until September 26.*

Tuesday, September 15

NATIONAL FEDERATION OF MASTER PAINTERS AND DECORATORS. *At Hull. Annual Conference. Until September 18.*

Wednesday, September 16

BUILDING EXHIBITION. *At Olympia. Until September 30.*

Friday, September 25

INSTITUTE OF HOUSING ADMINISTRATION. *At Bristol. Annual General Meeting and Conference. Also September 26.*

BUILDING TRADES EXHIBITION AT NEWCASTLE

From August 26 to September 5 a Building Trades Exhibition is being held at St. George's Drill Hall, Newcastle-upon-Tyne. About a hundred exhibitors are showing their products, with particular emphasis upon kitchen equipment and decorative finishes.

READY-MADE FACTORIES

The increase in light industry around London during the last few years has led to a new development in speculative building in the direction of ready-made factories. The method employed is stated to be that the contractor purchases a site of one to two acres, erects about 10,000 superficial feet of north-lighted working space, some lavatories, and a dozen offices, and then advertises for a purchaser. Since 213 new factories were started last year in Greater London, it is more than possible that such enterprise (including a great saving in time to the purchaser) may prove a very good investment.

HALF-BRICKS

It is reported that a Leeds brick manufacturing company are making a certain proportion of their moulds for half-bricks. The chief interest of the announcement would seem to lie in its attendant statement that no one has ever thought of doing this before.

Although the saving of the usual waste of the other half of a half-brick may not be large, the idea would seem to have definite advantages in cavity wall construction, where, hitherto, any header bond has carried with it the possibility of a projecting end in the cavity on which mortar can collect.

ATTICS AND THE HOUSING PROBLEM

The Ministry of Health has decided that attics and other rooms with sloping walls or ceilings cannot be regarded as having the same accommodation as ordinary rooms. Any part of such a room which is less than five feet high is to be ignored when calculating how many people the room will hold without being "overcrowded."

This decision forms part of a large number of Regulations made by the Minister of Health, Sir Kingsley Wood, under the Housing Acts of 1930 and 1935; the regulations were originally made last year and have now been made substantive. Other subjects dealt with in the regulations are the extinction of public rights of way in connection with municipal housing operations, the establishment of an Equalization Account by each local housing authority, the information to be included in working-class rent books when the Overcrowding Act comes into full operation, and various forms and orders under the Housing Act of 1930.

The regulations have been published as Statutory Rules and Orders under the heading "Housing, England" by the Stationery Office, and can be obtained direct or through any bookseller.

MINISTER OF HEALTH'S TOUR

The Minister of Health is paying a series of visits to southern towns to investigate local government and open housing estates, hospitals, schools and other buildings.

The places to be visited include Portsmouth (September 14), Plymouth (15th and 16th), Bristol (16th to 18th), and various towns in Wilts and Somerset.

LUTON TOWN HALL OPENING

The Duke of Kent will open, on October 28, the new Town Hall at Luton, which is to replace at a cost of £140,000 the building destroyed by fire in 1919 as the result of a peace celebration riot.

The architects are Messrs. Bradshaw, Gass and Hope, of Bolton, who won a competition in 1930. Building was not begun until last year.

The new hall is five storeys high, with a tower rising 145 ft.

CIVIC FORESIGHT

Corporation Street, Birmingham, will this year become the freehold property of the city with the repayment of the last instalment of the loan raised to purchase it. The 44 acres of this street and its neighbourhood were a slum district when it was purchased in 1875 through the initiative of Joseph Chamberlain, and will now, when the last leases fall in in 1950, contribute a very large revenue to the City. The success of the investment makes an impressive example of the financial benefit, apart from other considerations, which can result from civic ownership and redevelopment of property in urban districts.

ACKNOWLEDGMENT

The photographs of the Hotel d'Assézat at Toulouse, which accompanied the review of *Brick in French Architecture* in last week's JOURNAL, are the copyright of the photographer, M. Jean Roubier.

NEW PARTNERSHIP.

Mr. Michael Dugdale, A.R.I.B.A., has entered into partnership with Mr. Fritz Ruhemann, Dipl.-Ing. (Munich), at 18A Elizabeth Street, London, S.W.1.

"CONNELL, WARD & LUCAS IN TROUBLE AGAIN"

Messrs. CONNELL, WARD & LUCAS'S XI

	First Innings	*Second Innings*
A. D. Connell b Lattey	0	c Morley b Laurie 1
Rolf Jensen b Lattey	1	c & b Tisdell 3
H. Durell b Tisdell	15	c Laurie b Ford 3
A. Meadley b Lattey	2	not out 55
S. Chermayeff b Lattey	9	b Tisdell 5
Basil Ward played on	0	c Bentley b Lattey 3
G. R. V. Powell b Lattey	5	b Lattey 11
H. G. Pursell b Laurie	2	b Lattey 4
J. Beardshawe c Snelgrove b Lattey	4	c Cripps b Lattey 2
Colin Lucas not out	2	c Bentley b Lattey 0
R. Taylor b Lattey	0	b Lattey 0
Extras	9	9
	49	96

Mr. CYRIL SWEETT'S XI

	First Innings	*Second Innings*
C. E. Laurie c Meadley b Powell	7	b Powell 8
A. D. Tisdell b Powell	0	lbw b Jensen 17
C. Ford lbw b Powell	6	
C. Sweett b Durell	0	
C. Lattey b Durell	5	b Powell 0
A. Vatcher b Powell	8	not out 17
J. H. Snelgrove st Powell	28	b Meadley 24
Miss Grant b Powell	0	
A. Cripps lbw b Meadley	7	b Powell 11
L. D. Bentley b Meadley	0	
F. A. Morley not out	1	
Extras	6	11
	68	88

OBITUARY

MR. F. W. RUCK

The death has been announced of Mr. Frederick William Ruck, head of the firm of Messrs. Ruck and Smith, Architects and Surveyors, of Stone Street, Maidstone. The death occurred at his home at Bearsted, Kent, in his eighty-third year.

Mr. Ruck was a son of Mr. George Ruck, who was County Surveyor and County Architect of Kent in the days previous to the formation of the County Council. Mr. Ruck was educated at Maidstone Grammar School, and he was articled to his father, upon whose death, 55 years ago, he succeeded to the position of County Surveyor and County Architect. A few years ago these two appointments were divided : Sir Henry Maybury came from Nottingham as County Surveyor, while Mr. Ruck continued his work as County Architect until seven years ago, when he retired.

Competitions Open

SEPTEMBER 14.—Sending-in Day. Town hall and municipal buildings, Barking, for the Barking Corporation. (Open to architects practising in the United Kingdom.) Assessor : H. V. Lanchester, F.R.I.B.A. Premiums : £500, £250 and a further £200 to be awarded as recommended by the Assessor. The last day for questions was May 1. Conditions of the competition may be obtained on application to S. A. Jewers, Town Clerk, Town Hall, Barking. (Deposit £2 2s.)

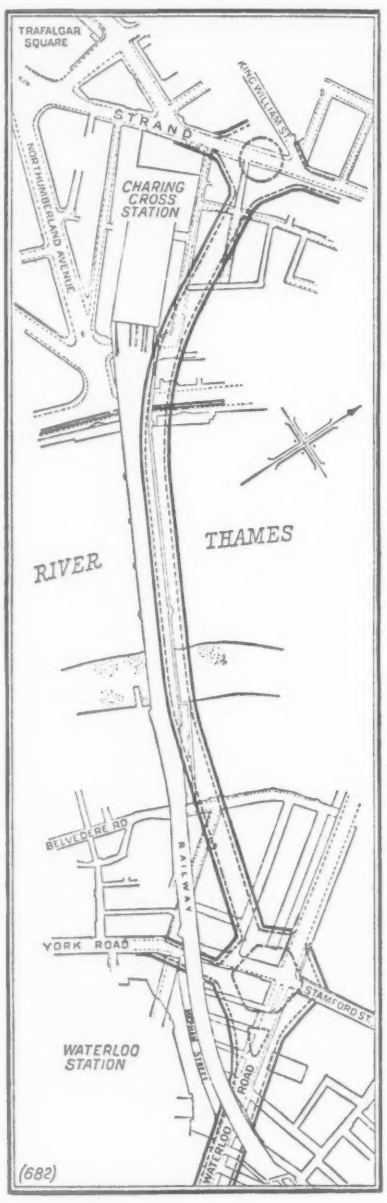
OCTOBER 26.—Sending-in Day. Layout and individual design of a group of camp buildings for a holiday camp, in timber, for the Timber Development Association. Assessors : E. Guy Dawber, R.A., F.S.A., F.R.I.B.A., G. A. Jellicoe, F.R.I.B.A., G. Langley Taylor, F.R.I.B.A., and John Gloag. Premiums : £150, £50, £25 and three special mention awards of £10 each. Conditions may be obtained on application to The Timber Development Association, 69-73 Cannon Street, London, E.C.4.

OCTOBER 29.—Sending-in Day. Central Baths, Leeds. (Open to architects of British nationality.) Assessor : Kenneth M. B. Cross, F.R.I.B.A. Premiums : £350, £200 and £100. Conditions of the competition and instructions with a plan of the site can be obtained on application to Mr. Thos. Thornton, Town Clerk, at Room 57, Civic Hall, Leeds, 1. (Deposit £1 1s.)

OCTOBER 31.—Sending-in Day. Shops and offices, Newcastle-under-Lyme, for the Newcastle-under-Lyme Borough Council. (Open to architects of British nationality.) Assessor : Harry S. Fairhurst, F.R.I.B.A. Premiums : £300, £200 and £100. Conditions of the competition may be obtained from the Town Clerk, Town Clerk's Office, Newcastle-under-Lyme. (Deposit £2 2s.) The latest date for submission of designs is October 31.

OCTOBER 31.—Sending-in Day. Council offices, Farnham, for the Farnham U.D.C. (Open to architects practising in the United Kingdom.) Assessor : E. Vincent Harris, A.R.A., F.R.I.B.A. Premiums : £250, £150 and £100. The last day for questions was August 31. Conditions of the competition may be obtained onapplication to A. A. Minns, Clerk of the Council, Council Offices, Farnham, Surrey. (Deposit £1 1s.)

OCTOBER 31.—Sending-in Day. New hospital at Llandudno, for the Committee of the Llandudno and District Hospital. (Open to registered architects of British nationality.) Assessor : R. Norman Mackellar, F.R.I.B.A. Premiums : £250, £150 and £75. The last day for questions was August 28. Conditions of the competition may be obtained on application to the Honorary Secretary, New Hospital Scheme, Town Hall, Llandudno. (Deposit £1 1s.)



The line of the proposed Charing Cross Bridge. See note on page 292.

NOVEMBER 30.—Sending-in Day. New civic buildings, which include a town hall, municipal offices, law courts and police station, Newport (Mon.), for the Newport Corporation. (Open to architects of British nationality.) Assessors : E. Berry Webber, A.R.I.B.A., and C. F. Ward, F.R.I.B.A. Premiums : £750, £500, £300 and £200. The last day for questions was September 1. The conditions are obtainable from O. Treharne Morgan, Town Clerk, Town Hall, Newport (Mon.). (Deposit £2 2s.)

FEBRUARY 28, 1937. — Sending-in Day. Extension of St. Andrew's Cathedral, George Street, Sydney, for the Authority in the Diocese of Sydney of the Church of England. (Open to architects who are British subjects, and members of the Royal Australian Institute of Architects, the R.I.B.A., or the Allied and Associated Societies.) Assessors : His Grace the Archbishop of Sydney, Sir Giles Gilbert Scott, R.A., F.R.I.B.A., and Bertrand J. Waterhouse, F.R.I.B.A. Premiums : £500, £300 and £200. The last day for submitting designs (which must be forwarded direct to Sydney) is February 28, 1937. The last day for questions was August 11.

NEW COMPETITIONS

LANCASHIRE MENTAL HOSPITAL

The Lancashire Mental Hospitals Board invite Chartered and/or Registered British and Irish Architects to submit designs in Competition for a new mental hospital for 1,000 patients, and a new institution for 2,000 mental defectives, proposed to be erected on a site at Lathom Park, near Ormskirk, Lancashire.

The Board have appointed Messrs. Charles E. Elcock, John Kirkland and Patrick L. Abercrombie, FF.R.I.B.A., to advise them on the conduct of the Competition, to act as their assessors, and to adjudicate on the whole of the designs submitted, and to make the award.

Premiums of £500, £400, and £300 will be paid to the authors of the designs placed by the assessors, 1st, 2nd and 3rd, respectively, in each group.

Applications for a copy of the conditions and other particulars must be made to the Clerk of the Mental Hospitals Board, County Hall, Preston, with a deposit of £3 3s., which will be returned on receipt of a bona fide design or on the return of the particulars before the specified date.

GLOUCESTER TECHNICAL COLLEGE

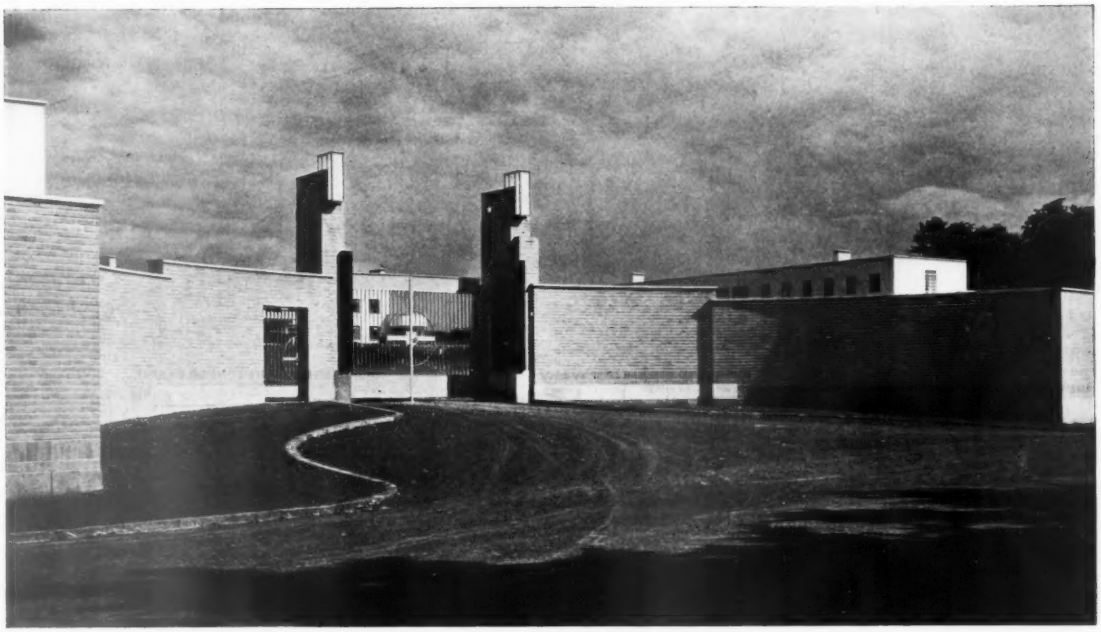
The Corporation of Gloucester invite architects of British nationality domiciled in the United Kingdom, to submit designs in competition for the erection of a technical college, etc., at Brunswick Road, Gloucester.

The Corporation has appointed Mr. Henry V. Ashley, F.R.I.B.A., of 14 Gray's Inn Square, London, W.C.1, to advise them on the conduct of the competition, to act as their assessor, and to make the award.

Premiums of £350, £250, and £150 will be paid to the authors of the designs placed by the assessor—first, second and third in order of merit.

Applications for the conditions of the competition, etc., should be made to the Education Officer, Belsize House, Brunswick Square, Gloucester, accompanied by a payment of two guineas returnable on receipt of a bona-fide design, or upon return of the conditions in good condition on or before November 17, 1936. The last date for receiving questions is Saturday, September 26, 1936, and the last date for sending in designs is 5 p.m. on Tuesday, December 15, 1936.

HOSPITAL AT PAISLEY

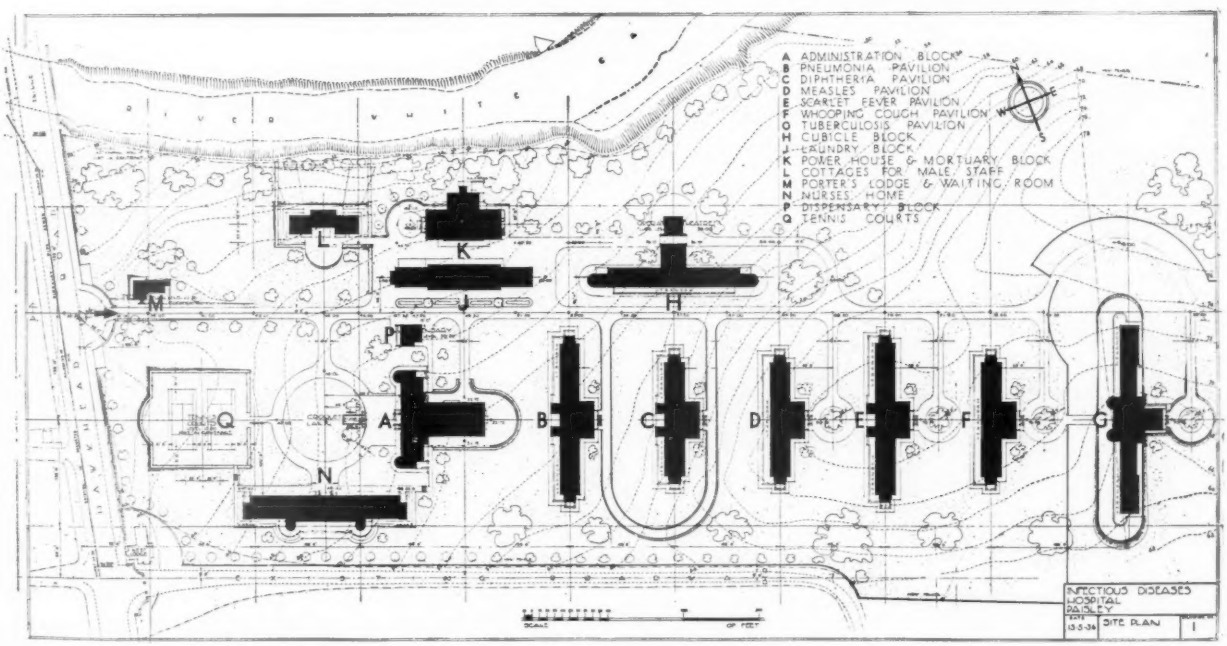


BY SIR JOHN BURNET, TAIT AND LORNE

PROBLEM—*An infectious diseases hospital adjoining the river White Cart on the Hawkhead Road near Paisley. The scheme was awarded first place in a limited competition of nine schemes in 1932. There is accommodation for 181 patients in the various wards; for 49 nurses and 6 sisters in the nurses' home; and for a matron, 3 resident M.O.'s and 25 maids in the administration block. The scheme also includes a porter's lodge, powerhouse, laundry and four three-room houses for such male staff as the engineer and ambulance driver.*

WARD BLOCKS—*The ward blocks are as follows: a cubicle block for doubtful diseases and surgical cases (30 beds), and six ward pavilions: pneumonia (30 beds); diphtheria (21 beds); scarlet fever (30 beds); measles (20 beds); whooping cough (20 beds); and tuberculosis (30 beds).*

Above is the main entrance gateway and below the general layout of the scheme.



HOSPITAL AT PAISLEY: BY

CONSTRUCTION—*The buildings have cavity weight-carrying brick walls, and slab concrete floors, the ward pavilion roofs being of light steel trusses. The plinths of external walls are of silver grey brick with wide horizontal joints, and elsewhere of fine-textured white cement rendering. All windows and vestibule doors are metal.*

Above is a general view of the main entrance to the administration block. The vertical pilaster bands are of black and cream tiles. The key to the administration block plans is as follows :—

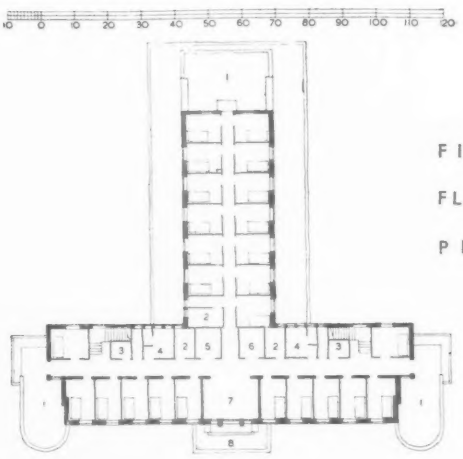
GROUND FLOOR PLAN

1 : Kitchen Entrance
2 : Cold Storage Plant
3 : Stores
4 : Vegetable Preparation
5 : Meat and Fish Preparation
6 : Wash-up
7 : Kitchen
8 : Service
9 : Trolley Dock
10 : Maids' Dining
11 : Nurses' Dining
12 : Doctors' Rooms
13 : Cloakrooms
14 : Telephone Exchange
15 : General Waiting
16 : Entrance
17 : Matron's Office
18 : Relatives' Waiting
19 : Linen
20 : Matron

FIRST FLOOR PLAN

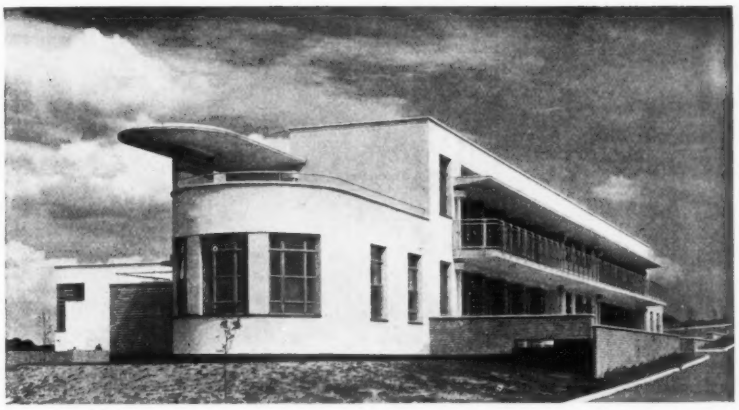
1 : Flat Roof
2 : Baths
3 : Stores
4 : Maids' Lavatories
5 : Trunks
6 : Linen
7 : Maids' Sitting-room
Other rooms, Maids' Bedrooms

GROUND FLOOR PLAN



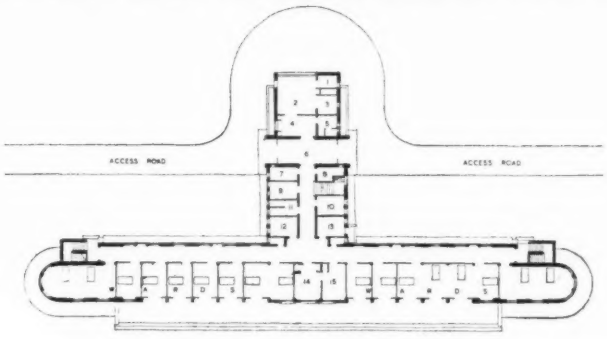
FIRST FLOOR PLAN

SIR JOHN BURNET, TAIT AND LORNE

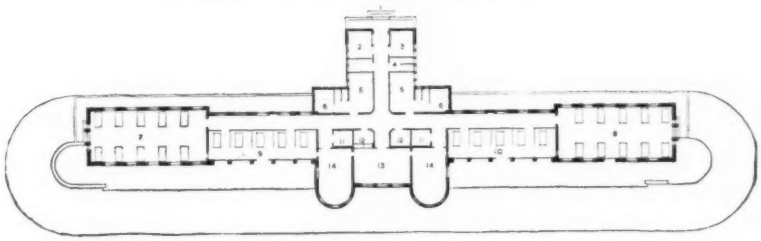


DECORATION — *Simple colour surfaces have been extensively used in the scheme. Windows externally are painted turquoise blue and tiles are blue, sunshine yellow and black. Internally, walls are light cream, ward doors a full green and service doors dove grey.*

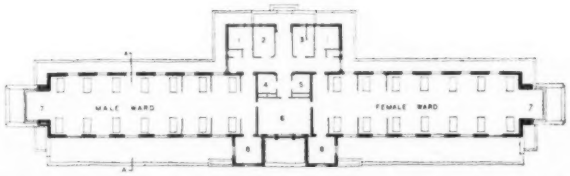
On the right is the Cubicle Block for special cases, and at the bottom one of the pavilions for particular diseases.



GROUND PLAN: CUBICLE BLOCK



GROUND PLAN: TUBERCULOSIS PAVILION



GROUND PLAN: SCARLET FEVER PAVILION

The key to the plans is as follows :—

CUBICLE BLOCK

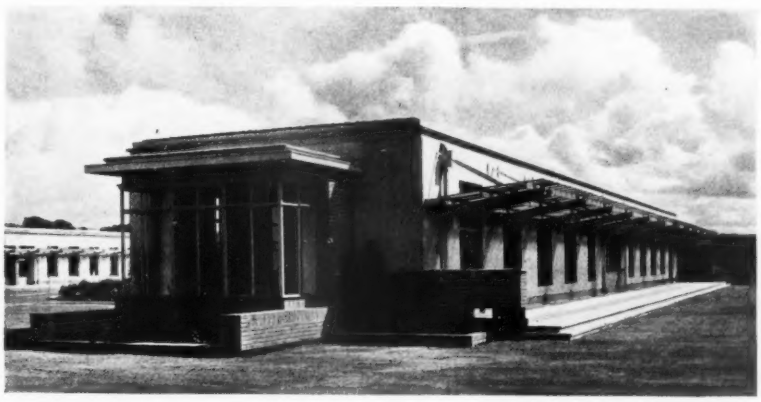
1 : Wash-up
2 : Operating theatre
3 : Sterilizing room
4 : Anæsthetic lobby
5 : Surgeons' lavatory
6 : Lobby
7 : Patients' clothes
8 : Cleaner
9 : Linen
10 : Children's bathroom
11 : Staff lavatory
12 : Adults' bathroom
13 : Sink room
14 : Ward kitchen and duty room
15 : Pantry

TUBERCULOSIS PAVILION

1 : Entrance
2 : Sink room
3 : Doctors' room
4 : Lavatory
5 : Locker rooms
6 : Bathrooms
7 : Male Ward, semi-ambulant cases
8 : Female Ward, ditto
9 : Male bed cases
10 : Female ditto
11 : Box rooms
12 : Linen rooms
13 : Ward kitchen and duty room
14 : Day rooms

SCARLET FEVER PAVILION

1 : Bathrooms
2 : Sink room
3 : Staff lavatory
4 : Calorifier room
5 : Patients' clothes
6 : Ward kitchen and duty room
7 : Solarium
8 : Private wards

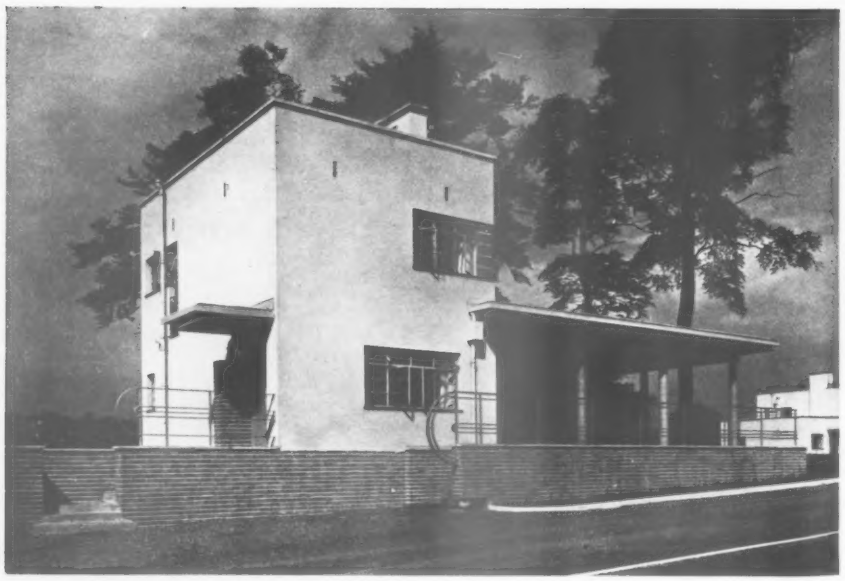


HOSPITAL AT PAISLEY

SERVICES—*Heating is on a very low pressure, or water vapour, system. Main steam supply lines are carried in trenches to each building and supply sterilizing apparatus and kitchen services as well as radiators. Hot water service uses steam-heated calorifiers; main flow and returns, pump accelerated, are carried to each building. The whole hot-water service, including tanks and calorifiers, is in copper. Lighting is from corporation mains with an automatic stand-by service. Ventilation is natural save for extract fans and ducting in operating theatre. The hospital has a full system of inter-communication by telephone, and both a local chemical and hose-reel and hydrant fire-fighting service.*

Left, a corridor in the cubicle block; the floor is of oak strip, walls and ceiling cream, and doors and metal strip architraves, dove grey. Below, porter's lodge and waiting room. The recessed quoin of the first floor window and the columns of the verandah are in blue tiles and metal windows and handrails are also light blue.

DESIGNED BY SIR JOHN BURNET, TAIT AND LORNE



RAILWAY RECEIVING OFFICES COMPETITION

THE CONDITIONS REVIEWED

[BY H. A. SNOW]

Premiums : £300, £125, £50 and £25.

Questions : September 17, 1936.

Sending-in-day : Saturday, November 7, 1936.

The Competition is promoted by the railway companies of this country acting jointly as "British Railways." It is open to all British-born architects.

Assessors : Mr. Charles Holden, F.R.I.B.A., Mr. L. H. Bucknell, F.R.I.B.A., Mr. W. H. Hamlyn, F.R.I.B.A., (Chief Architect, L.M.S. Railway) and Mr. C. Grasemann (Southern Railway).

A GLANCE through these conditions leaves one with the impression that much useful information has been withheld — an impression, indeed, which subsequent investigation does little to dispel. It is not enough, in my view, that full and sufficient information as to *what* is required be supplied (and this, in the present case, has been sufficiently done); equally important is it that competitors should know something of the *why* and *wherefore* of the problem, if a wholly satisfactory solution is to be obtained. In this respect the conditions under review appear somewhat deficient.

One gathers that it is the intention of "British Railways" to establish centres at which tickets and information relating to any of its component companies may be available, and where (in certain cases) parcels may also be dealt with. Whether the scheme is to embrace the country in general or is to be confined to London in particular—or indeed only to the three premises illustrated in the conditions—is not revealed.

The *fons et origo* of this competition, however, would appear to be a desire on the part of the promoters to find some fitting yet distinctive, easily-recognisable way of treating the frontages and interiors of these offices, and one moreover which may be readily adapted to suit varying conditions.

The admirable, unaffectedly modern style one associates with the new Underground Stations is probably what, in principle, the promoters of this competition have in mind.

That "British Railways" should have decided to avail itself of architectural assistance in the matter—despite the existence of numerous public-spirited bodies willing, nay anxious, to perform similar services *gratis*—is commendable and gratifying.

That, further, it should have been considered worth while (and money) to embark thus on a full-dress competition is extraordinarily encouraging. One trusts that the response to their invitation will fully justify the companies' action.

Accompanying the conditions are plans, sections, elevations and photographs of three typical examples of existing premises : (*a*) The L.M.S. ticket office and parcels office at 151 Oxford Street; (*b*) the L.M.S. ticket office, information bureau and parcels office at 33 Cannon Street; and (*c*) the G.W.R. ticket office and information bureau at 407 Oxford Street.

These are supplied with various dimensions and particulars, and in fact form the basis of the competition although there is a proviso which states, with a certain *naïveté*, that ". . . it does not necessarily follow that any one of the three examples given will be selected for actual conversion." One need not, however, be unduly discouraged by this, since Clause 5 (in at least partial compensation) contains the assurance that "It is the intention of the 'Promoters' to proceed with certain of the work. . . ." Upon this let the competitor pin his faith.

The following drawings are required to be submitted :—

(i) Half-inch scale plan, section and elevation of the design as applied to (*a*), together with a perspective drawing of the same.

(ii) Plan and elevation to ¼-inch scale of the design as applied to (*b*), and

(iii) Plan and elevation to ¼-inch scale of the design as applied to (*c*).

(My advance copy of the conditions gives the scale of (iii) as ¾-inch, but on enquiry I find that this should, rather obviously, be ¼-inch as stated above.)

The ½-inch section is to show details of the internal treatment of ticket office and information bureau, including the furniture and equipment.

Those offices which deal only with tickets and information must include a public space, counter and space for booking clerks. There should be a stall-board in the window for the display of brochures and the like, and provision must be made for removal of the window back when necessary.

Chairs or a settee for the use of the public are also to be included in the design.

Offices which conduct a parcels business in addition to ticket and information services (as for example the L.M.S. centre in Cannon Street) require a separate entrance from the street to the parcels office. It is also stipulated that there should be a door leading from the space behind counter in the ticket office to a similar space in the parcels office, so that in off-rush times the ticket office attendant can also deal with persons at the parcels counter.

It is suggested that there should a pass door for the public between these two offices, if this can be arranged conveniently.

A detail-sheet of standard office equipment also accompanies the conditions, but this is included only as a guide to sizes, general arrangement, etc., the

The existing L.M.S. office at 151 Oxford Street, one of the "three typical examples of existing premises" illustrated in the conditions. The plan is shown on page 300.

actual design being very naturally left to the competitor.

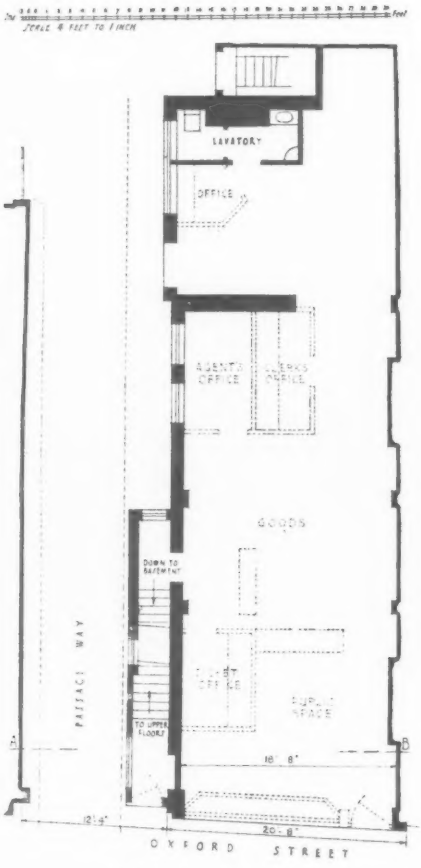
Space for the display of standard railway posters is also to be provided, a fact which must be borne in mind when considering the design of the interior.

The materials for interior and exterior treatment are left to the discretion of the competitor, but stress is laid on the fact that they " are to be such that necessity for cleaning and maintenance is reduced to a minimum."

Stainless steel or other bright metal, however (and here the assessors are emphatic) will not be allowed. Further, the only lettering to be shown on the exterior is to be " British Railways."

The method of finishing drawings, their size and whether they are to be mounted or not is apparently also left to the discretion of competitors. The conditions, at all events, are silent thereon. Drawings must be accompanied by a concise typewritten description of the work explaining the construction, finish and materials, and such other information as cannot clearly be shown on the drawings.

An estimate of the cost must also be submitted, based (one assumes) on the work involved in converting No. 151 Oxford Street. It will presumably be necessary to take out quantities, at least roughly, in order to arrive at the approximate cost, but the conditions do not require copies of such calculations to be submitted with the drawings.



GROUND FLOOR PLAN

Right, the plan of the existing L.M.S. receiving office at 151 Oxford Street, W., one of the offices to be re-designed in the Competition. Below, the front of the office at No. 33 Cannon Street, E.C.4, another of the fronts to be re-designed.

HOUSE AT HENDON

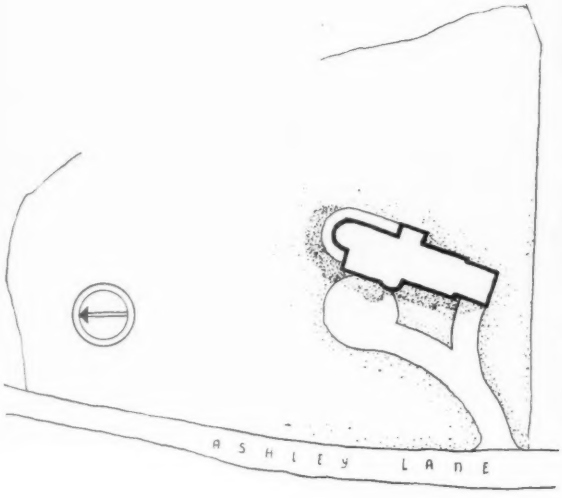
DESIGNED BY WELCH AND LANDER

SITE—*In Ashley Lane, Hendon. The house is planned to take advantage of the view to the north over Hendon golf links, and to admit the maximum sunlight into the principal rooms.*

CONSTRUCTION—*Cavity walls, wood floors and an asphalt flat roof laid on wood joists and boarding. The balcony and the hood over the front door are of reinforced concrete. The balcony railings are wrought iron.*

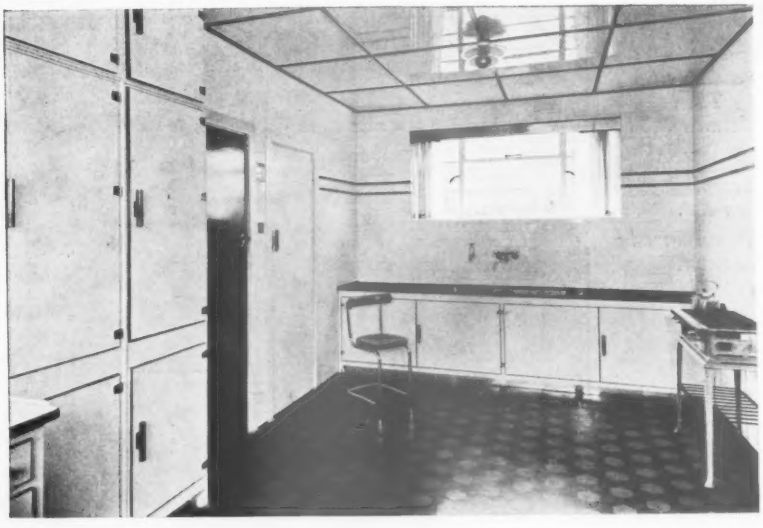
ELEVATIONAL TREATMENT—*External walls are rendered in white cement, doors and casement windows are metal.*

The photographs show : above, a view from the north-west ; left, a detail of the front entrance and staircase tower.



HOUSE AT HENDON

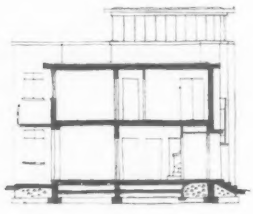
DESIGNED BY WELCH AND LANDER



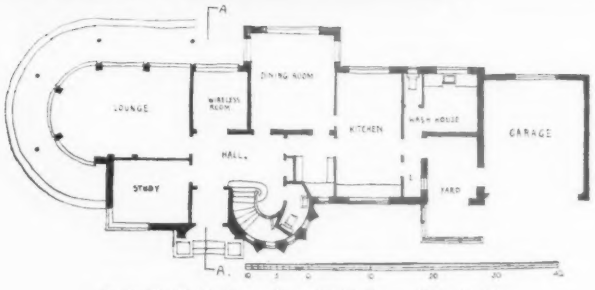
SERVICES—*Central heating with low-pressure radiators and electric fires. No fireplaces were required, and there are therefore only two stacks, one for the incinerator, the other for the hot water boiler.*

For list of general and sub-contractors, see page 318.

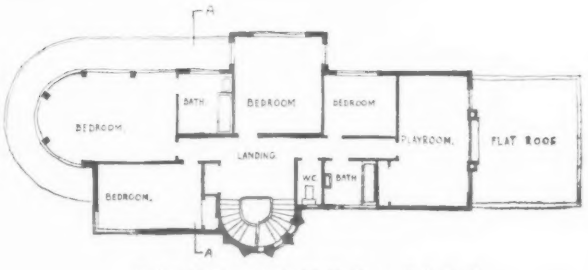
The photographs show : above, the sun room above the staircase ; left, the kitchen.



SECTION A-A



GROUND FLOOR PLAN



FIRST FLOOR PLAN

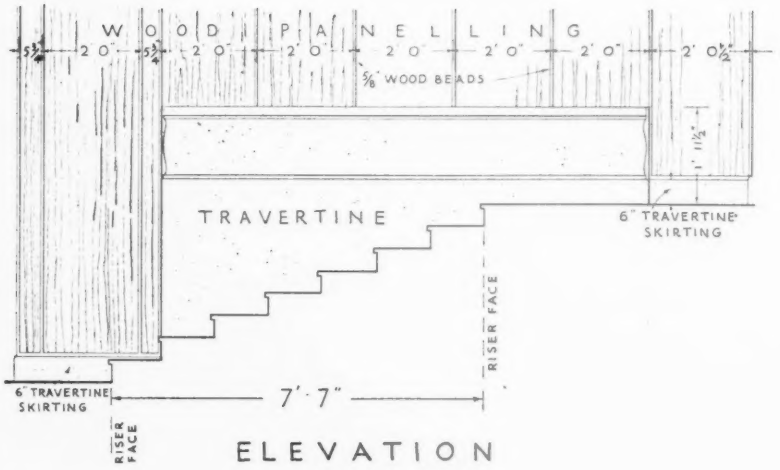
WORKING DETAILS : 483

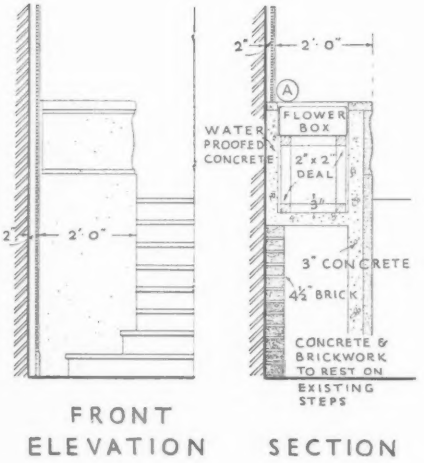
FLOWER BOXES • ARLINGTON HOUSE, ST. JAMES'S, S.W. • MICHAEL ROSENAUER

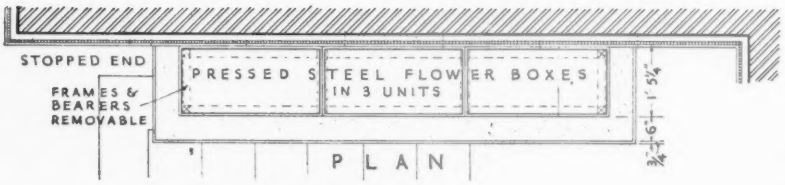
Above is the entrance hall to a large block of flats: the staircase is in travertine. At either side of the staircase are pressed-steel flower boxes cased in waterproofed concrete, which is in turn faced with travertine slabs. An axonometric and details are shown overleaf.

WORKING DETAILS : 484

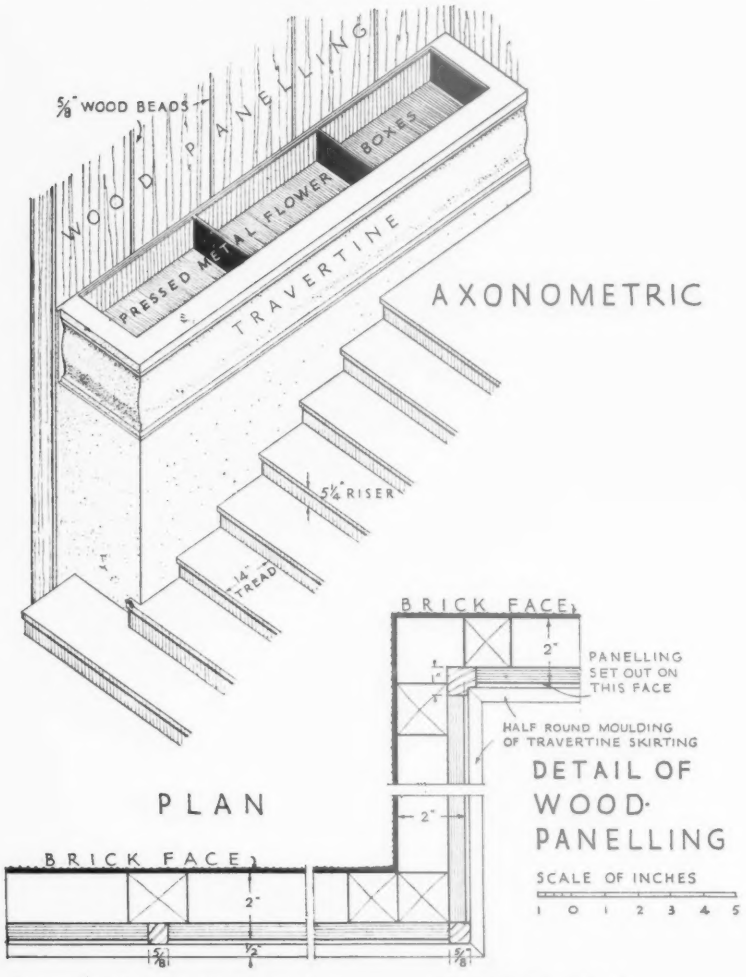
FLOWER BOXES • ARLINGTON HOUSE, ST. JAMES'S, S.W. • MICHAEL ROSENAUER

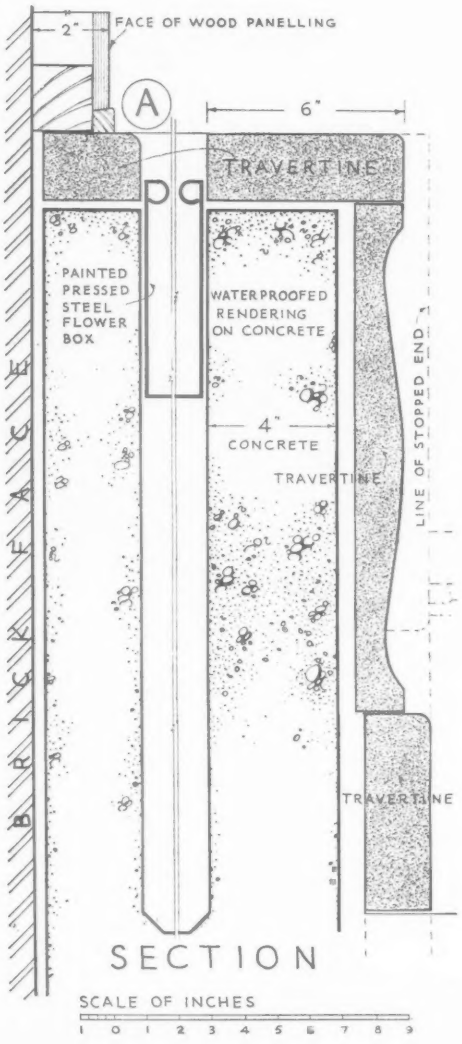






SCALE
1 0 1 2 3 4 5 FEET





Axonometric and details of the entrance illustrated overleaf.

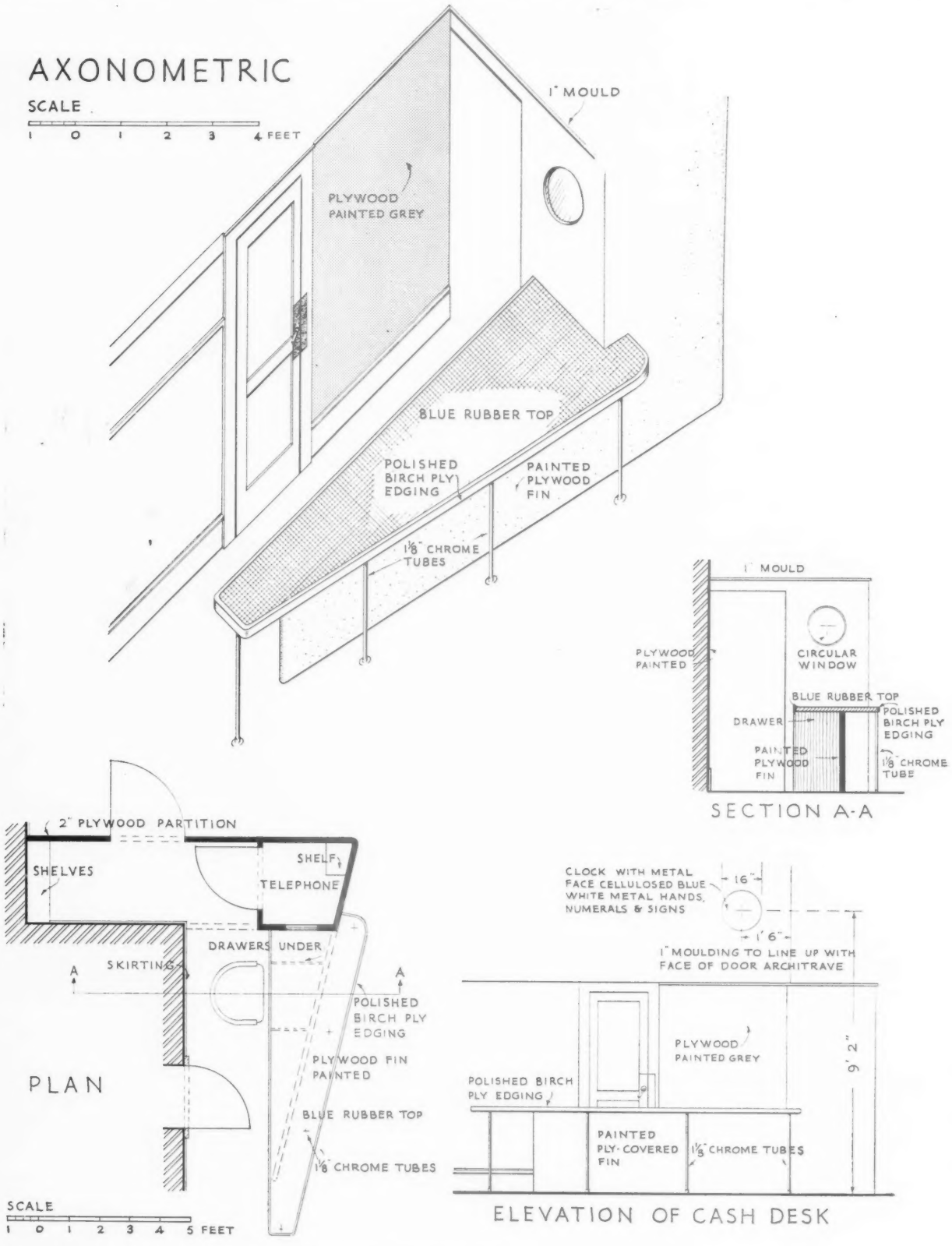
WORKING DETAILS : 485

INQUIRY COUNTER • CHELSEA ELECTRICITY SHOWROOMS, SLOANE ST., S.W. • E. MAXWELL FRY

Above is the inquiry counter and cash desk at the showrooms of an electricity supply company. The counter is tapered, and has a blue rubber top with an edging of polished birch ply. An axonometric and details are shown overleaf.

WORKING DETAILS : 486

INQUIRY COUNTER • CHELSEA ELECTRICITY SHOWROOMS, SLOANE ST., S.W. • E. MAXWELL FRY



Axonometric and details of the inquiry counter illustrated overleaf.

L I T E R A T U R E

SCHOOLS

[*BY G. BRIAN HERBERT*]

Elementary School Buildings : Board of Education Educational Pamphlets No. 107. London : H.M. Stationery Office, 1936. 2s.

THE most noticeable fact about the Board of Education's pamphlet "Suggestions for the Planning of Buildings for Public Elementary Schools" is the broad-minded attitude that has been adopted with regard to the whole subject. It is sensibly and fully realized that no collection of hard and fast rules can be made, as every case must be interpreted freshly in terms of local conditions, both financial and geographical.

Experience, however, has naturally shown which arrangements have proved their worth, and the various points that go to make up the best working conditions are here set down simply and clearly.

Education in the art of education has grown with leaps and bounds and continues to progress. Knowledge, no longer cut into the child's body with the cane of a Creakle or Squeers, is now imparted to him less painfully and more enduringly. It is realized that the receptivity of the child's mind is definitely lessened by badly lit or badly ventilated classrooms with cheerless atmospheres and outlooks. It is necessary to encourage and guide the young scholar's natural interest, and in this respect his surroundings play their own part as importantly as the teacher does his.

A school's aim should be to create useful members of society rather than prize-hunters, so that education is not limited to the theoretical bookwork of the classroom. Handicraft rooms and laboratories provide for the practical side, the assembly hall for the social, the gymnasium and the playgrounds and fields for physical development; and it is suggested that even the lavatory, in the case of the infant, may be made to serve an educational purpose by providing opportunity for learning the manipulation—and no doubt the possibilities—of basin taps, a small though useful accomplishment.

It is obvious that the administration is as dependent on the architect for planning and smooth running as the linking up of the various departments is on the administration. The pamphlet devotes a chapter to the discussion of organization and one to planning in general with an eye always on the future, remembering that thirty years is the useful life of a school today. This is followed by a discussion on construction and materials, taking into account cost, and the likelihood of permanency or non-permanency. The other chapters give information as to the accommodation necessary for infants', junior, and senior schools respectively, and more detailed departmental requirements with suggestions and recommendations, together with useful data on sizes of furniture and fittings.

Five appendices provide tables of playground areas; number and size of pitches required for each type of school; schedule of accommodation for senior schools; notes on the uses of the hall stage, and a memorandum by the Ministry of Health on drainage and water supply. There are, moreover, some rough rules for good acoustics and notes as to where further information on these and on illumination can be obtained.

Throughout, one is conscious of the Board's statement at the beginning that they are prepared to welcome any alternative proposals by way of modification or development of their suggestions, if by so doing they can secure their joint aim of combining efficiency with economy more effectively. The pamphlet itself is small, easily handled, and is not guilty of flimsiness. The text is usefully cross-referenced, and the index at the end is full, but would be even better were it slightly more so. The searcher after "Doors," for example, would not then have to investigate each of pages 16, 39, 50, 58, 63, 64, 69, 88 and 91 in order to find the particular information he is seeking. But this is a small grumble indeed.

TWO SERVICES

[*BY J. R. KELL*]

The Students' Text Book of Heating and Ventilation. By Norman Wignall, A.M.I.MECH.E., M.I.H.V.E. Published by "The Heating and Ventilating Engineer." Price 7s. 6d.

MR. WIGNALL is well known as a combustion engineer and boiler designer. He has written this book primarily for students in technical schools, dealing with the subject from first principles and giving examples and test questions on each chapter.

The sections on Fuels and Combustion, Chimneys, Boilers and Controls will probably be found the most interesting, since the author has had such vast experience on these problems.

Heat losses, hot-water heating, steam heating, hot-water supply and ventilation are dealt with simply, without introducing any of the complications which have to be faced in practice. Naturally nothing of an advanced nature is to be found ; embedded panel heating, electric and gas systems, and air conditioning are not even touched upon. Within the limited range which it sets out to cover, it is excellent.

Design Problems of Heating and Ventilation. By A. T. Henly, A.M.I.H.V.E., A.F.A.S. Published by Crosby Lockwood and Son, Ltd. Price 42s.

IT is not often that one finds in technical literature old problems tackled in an entirely new way, yet the greater part of this book is devoted to the subject of heating calculations and shows how these may be carried out completely by the use of monographs. Mr. Henly is certainly thorough, and gives abundant examples and frequent reference to the assumptions and short cuts which may be made in practice.

The experienced designer will probably at first sight regard the methods as somewhat involved. This impression is no doubt due to the author's desire to leave nothing to chance. Every step, and sometimes several alternative methods, are considered by the way. When all this is left on one side the main principle of working the system may more readily be grasped, and after working out a few examples it is clear that it leads to great saving of time and labour.

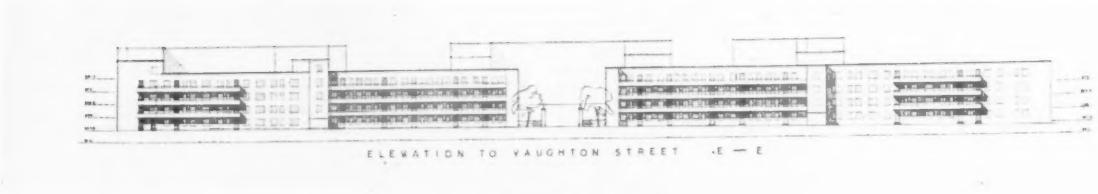
In addition to this the book sets out to cover ground hitherto largely unexplored in British bibliography. It starts where most others leave off. Mention of only a few of the items dealt with will make this apparent : Control of radiator circulations by orifice plates or discs ; design of hot-water supply for hotels, flats, hospitals and mental colonies ; ventilation of restaurants, kitchens, offices, hotels, lavatories, sound picture studios, laundries and boiler-houses ; air conditioning applied to industry — cotton, wool, dry cleaning, printing, tobacco and tea ; drying systems for timber, bricks, food crops, hay and sugar beet.

Apart from this, chapters are included on district heating (though here we fear he is flogging a dead horse, in this country); steam distribution and boiler plants ; dust and fume extraction and pneumatic conveying ; swimming bath and public washhouses; and special requirements for factories and schools.

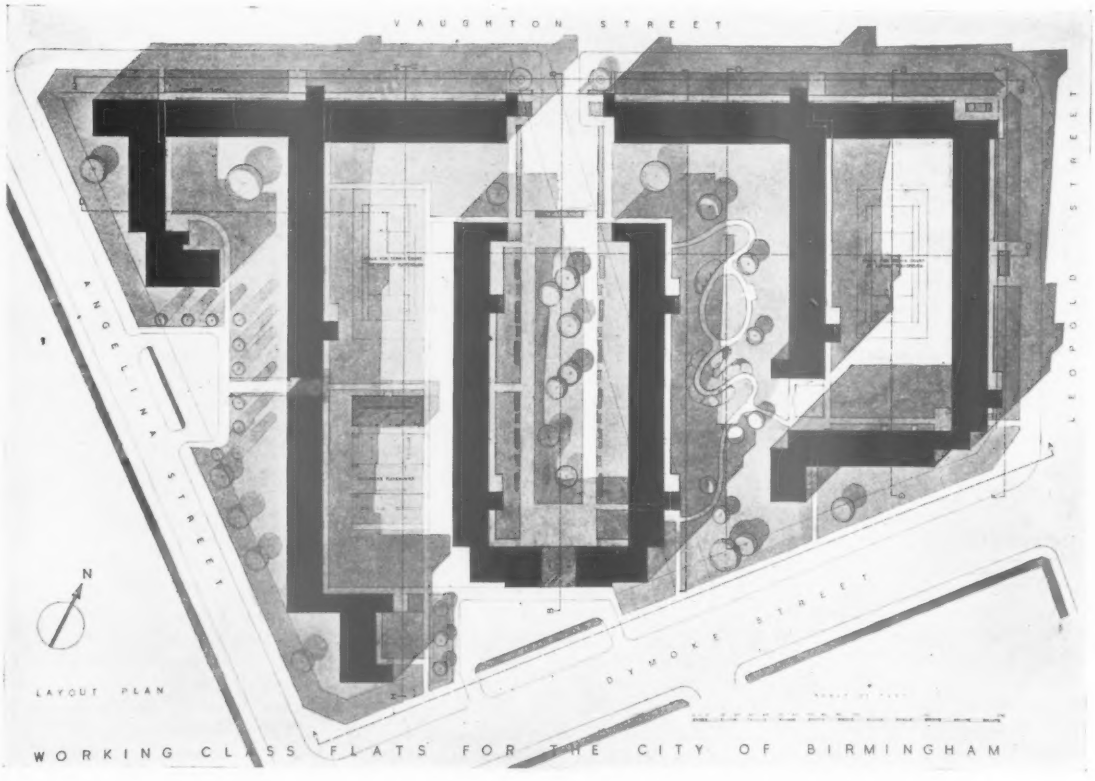
It is hardly a book for the architect, as it deals with so much that is outside his scope; nor for the beginner or student, as the preliminary ground is purposely left out. It can, however, confidently be recommended to the practising engineer and advanced designer as one of the most helpful and up-to-date books of reference that have appeared for a long time.

THE BIRMINGHAM FLATS COMPETITION:

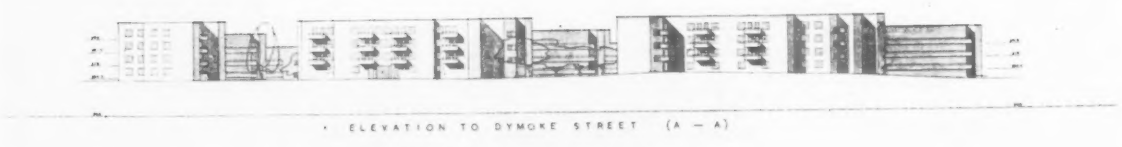
BY G. GREY WORNUM AND



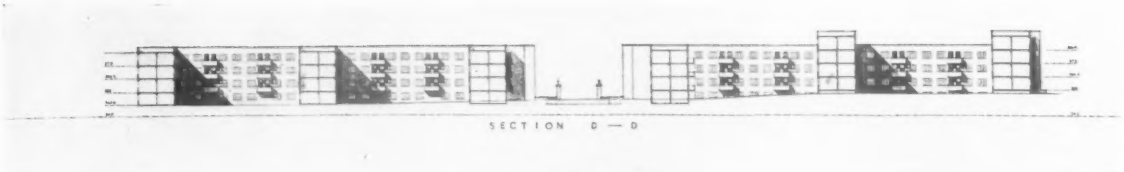
Principal Elevation



Layout Plan



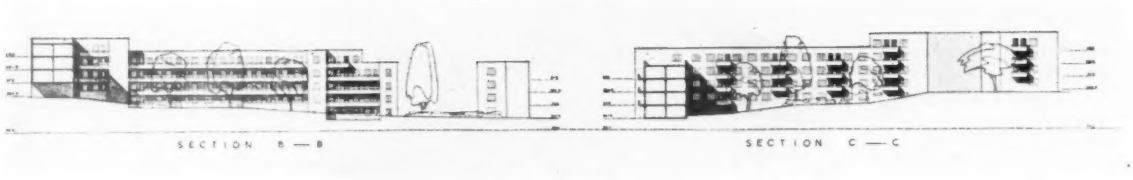
Elevation to Dymoke Street



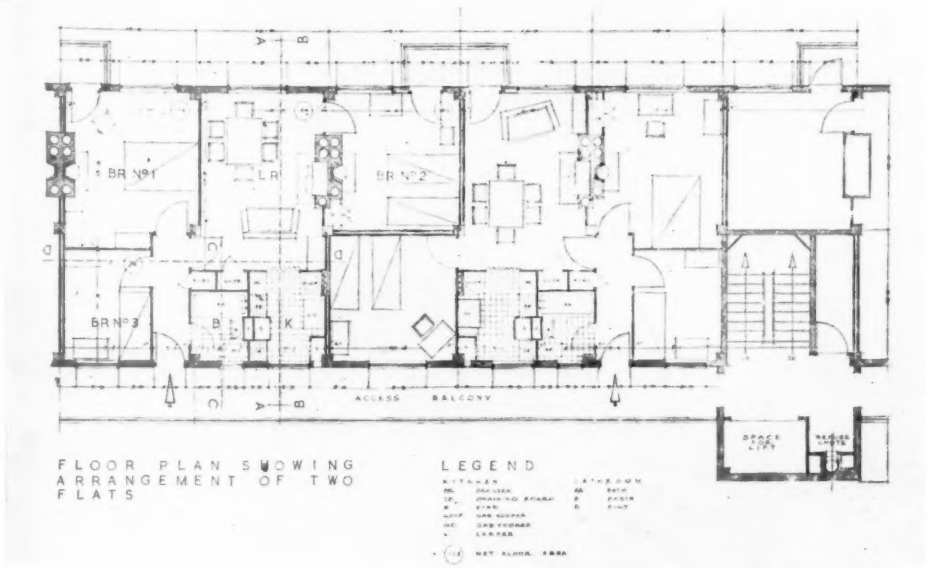
Typical Sections

THE WINNING DESIGN

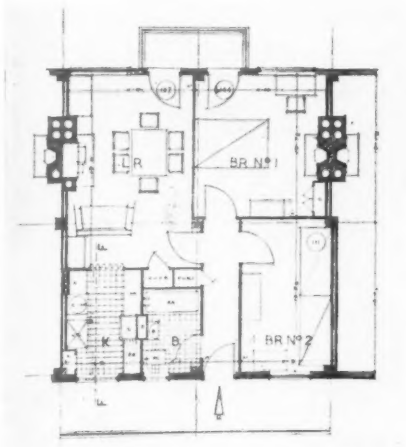
ANTHONY C. TRIPE



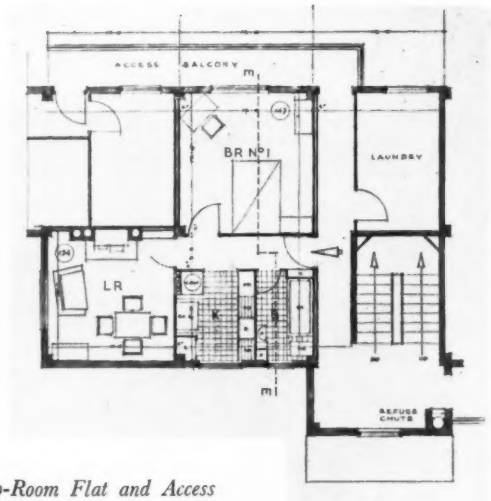
Sections and Elevations



Typical Flat Plans: Two Four-Room Flats and Access



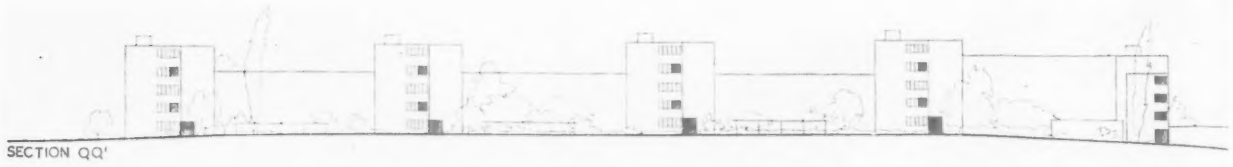
Three-Room Flat



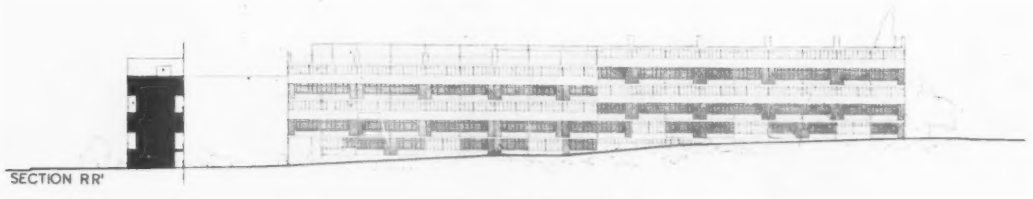
Two-Room Flat and Access

THE BIRMINGHAM FLATS COMPETITION

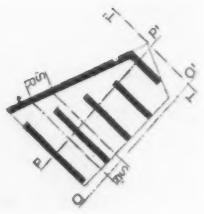
THE SECOND PREMIATED DESIGN



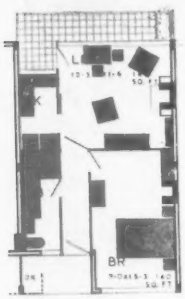
Elevation to Dymoke Street



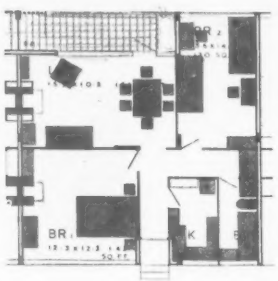
Section and Elevation



TYPE C
13 2-ROOMED FLATS: 5% OF TOTAL



TYPE B
55 3-ROOMED FLATS: 20 % OF TOTAL

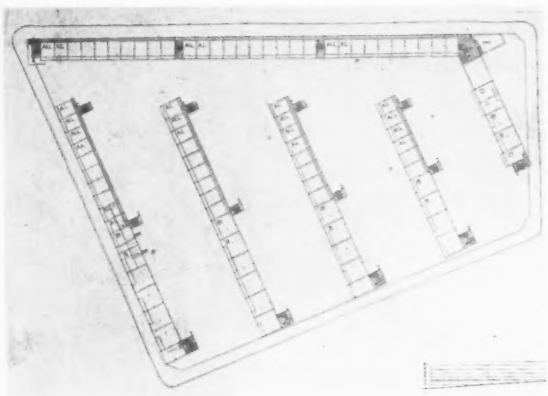


PLANS
FRONTAGE 25 6

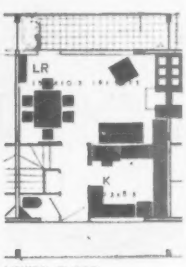
BY PRAXIS AND DAVID GODDARD,
in collaboration with
MISS M. J. BLANCO WHITE
and The British Steelwork Association

Typical Flat Plans

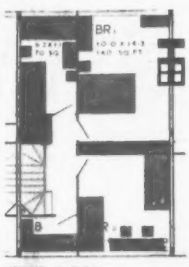
General Lay-out



TYPE A
206 4-ROOMED MAISONETTES: 75% OF TOTAL



LOWER FLOOR

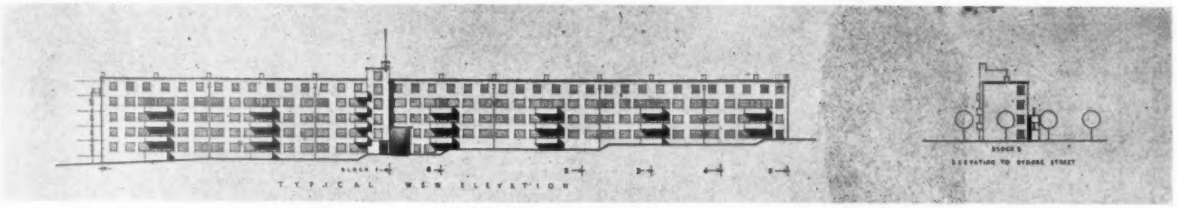


UPPER FLOOR

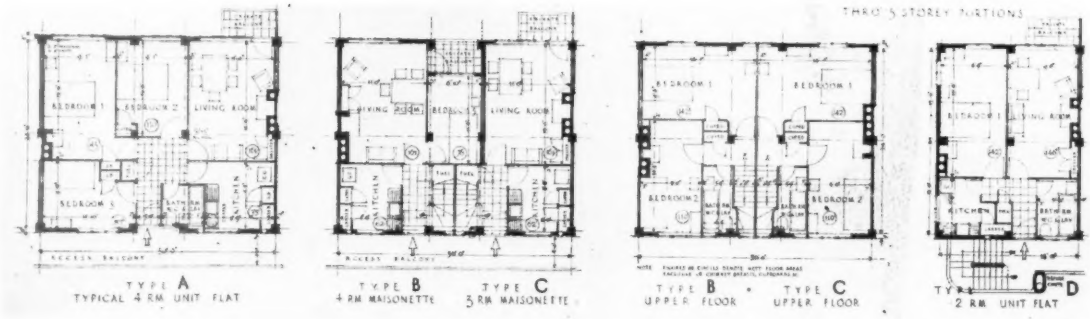
PLANS
FRONTAGE 17 0 SPAN 28 0 ACCESS BALCONY 4 1

THE BIRMINGHAM FLATS COMPETITION

THE THIRD AND FOURTH DESIGNS



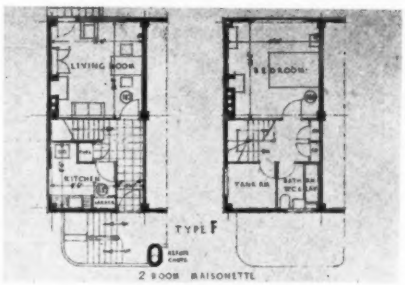
Typical Elevations

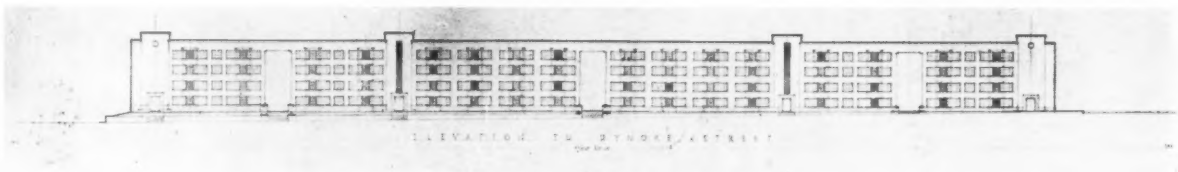


Typical Flat Plans

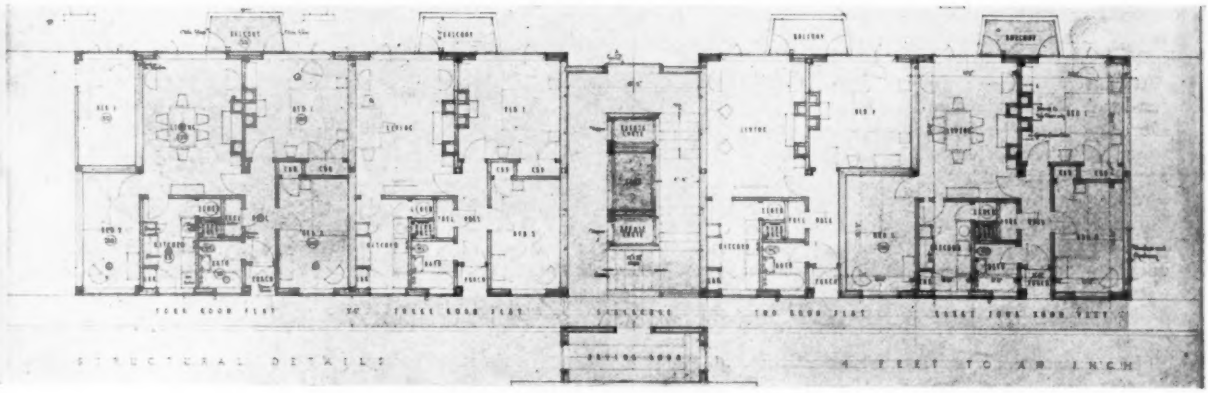
ABOVE: THE THIRD PREMIATED DESIGN BY HOWES AND JACKMAN

BELOW: THE FOURTH PREMIATED DESIGN BY T. CECIL HOWITT





Elevation to Dymoke Street



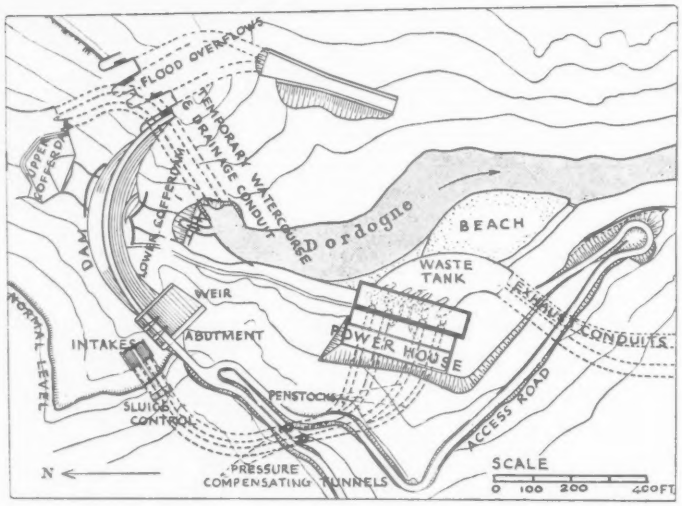
Typical Flat Plans

HYDRO-ELECTRIC POWER STATION AT MARÈGES

THE Marèges Power Station of the P.O.-Midi Railway of France was built in view of the electrification of the lines from Orléans via Tours and Châteauroux to Brive. Shortly the line from Tours to Bordeaux is also to draw from it. The station serves in addition as an auxiliary for the Paris region and it supplies the system in parallel with several stations of the Massif Central. The transformer station of La Môle-Marèges, on the plateau above Marèges, is the essential link between a series of stations in the Haute-Dordogne and the railway system.

At Marèges, some 1,500 feet above sea-level, the valley of the River Dordogne widens enough to give space for a power-house just below a neck suitable for closure by a dam. The installation comprises a dam, claimed to be the boldest in Europe, of specially interesting construction. It is 90 m. high, 247 m. in developed length, and raises the water level by 75 m.

The hydro-electric power station of 150,000 k.v.a. includes four groups of principal turbo-alternators of 37,500 k.v.a., capable of producing together 128,000 kw.; a transformer unit raising the current to 90,000 or 220,000 volts before its journey to La Môle-Marèges. Exhaust conduits carry the used water farther down the valley.



Special precautions had to be taken to protect the workings from the force of the flood of the Dordogne, and during construction the river was taken through temporary galleries which would now serve, if necessary, to drain the retained water.

The illustrations show (above) a general view of the undertaking from the valley below and the complete lay-out.

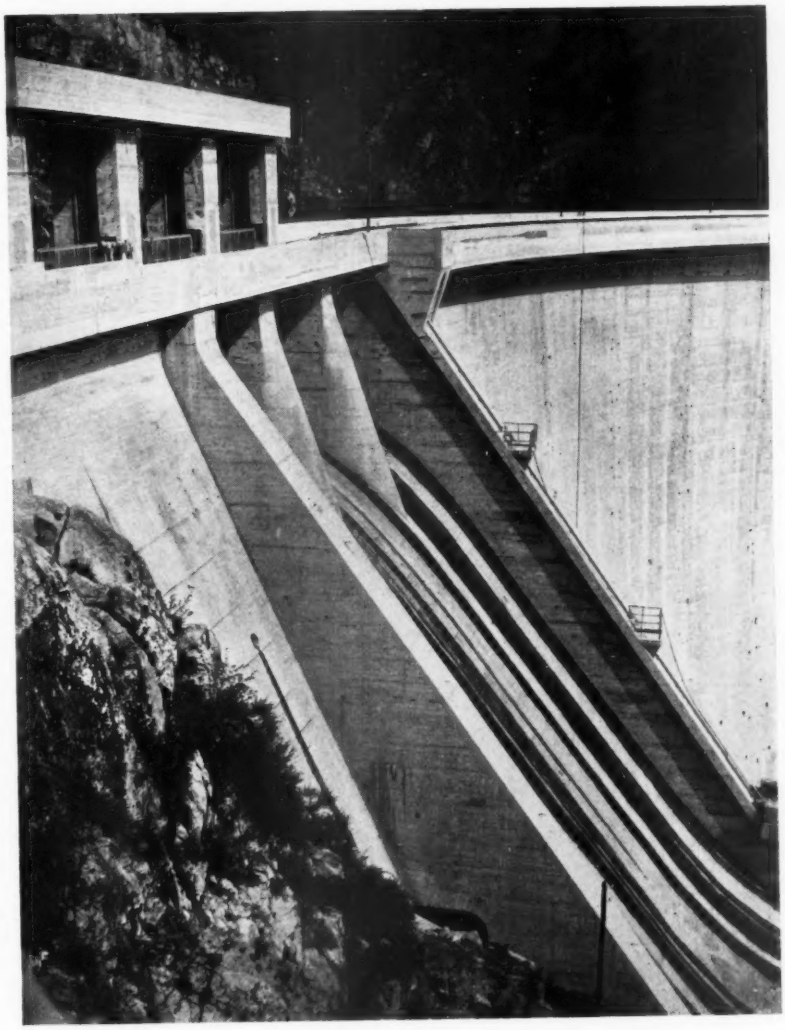
M. BRACHET, ARCHITECT; LÉON BALLOT, ENGINEERS

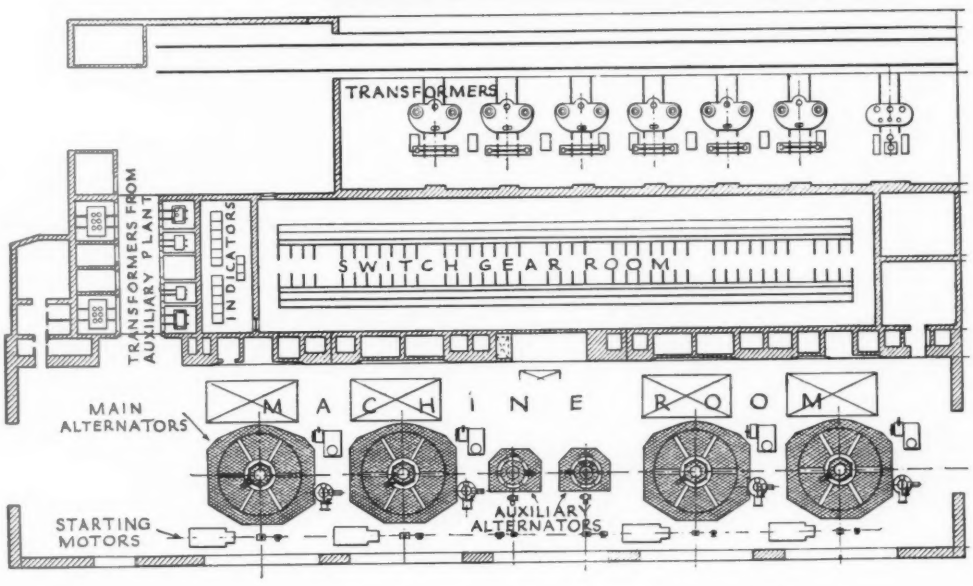
M. Brachet, architect, collaborated in the design of the power house. It comprises three buildings run together; a machine-room of length 92m., breadth 24m., and height 42m.; the switch-gear room, which runs parallel to the whole length of the machine-room, and has the control room above it; and the accommodation for the transformers.

The design of the power house arose naturally from the need for disposing the turbines, which work on vertical axes. There are four principal machines and two auxiliaries. Water is brought to them under pressure in conduits through the hillside. The whole of the rotating parts of the machine are supported upon the higher cross-pieces of the alternator, which are each designed to carry loads of 320 tons.

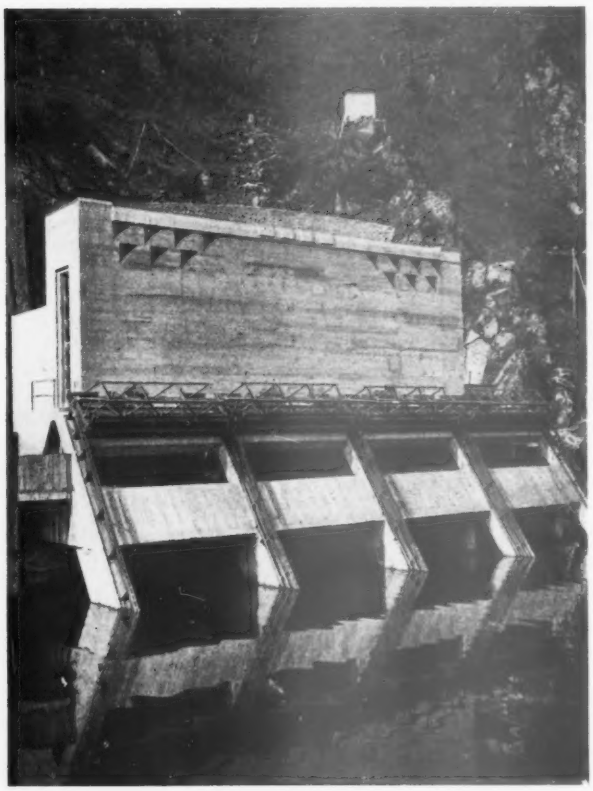
Some 110,000 cubic metres of excavation were necessary before the power house could be built, and some 28,000 cubic metres of concrete were used. The structure of the machine room was such that not only could its floor support a very large proportion of the total weight of the turbo-alternators, but also its walls should carry a travelling crane to be used for the building and dismantling, when necessary, of those machines, and, moreover, to dismantle, should occasion arise, the sluice-gates immediately in front of the turbines. The necessary trap-doors were made in the floor of the machine room.

On the right is a view of the spillway, while below is a plan of the power house.



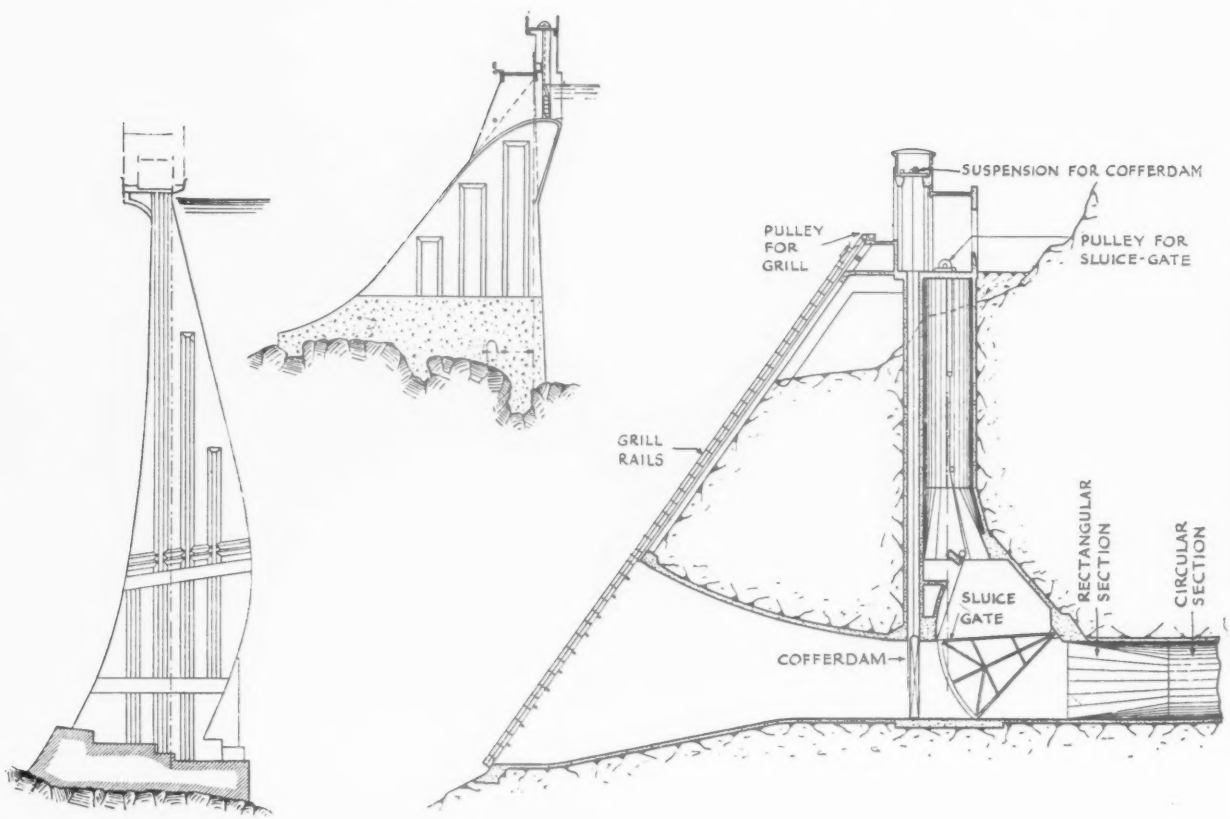


HYDRO-ELECTRIC POWER STATION AT MARÈGES

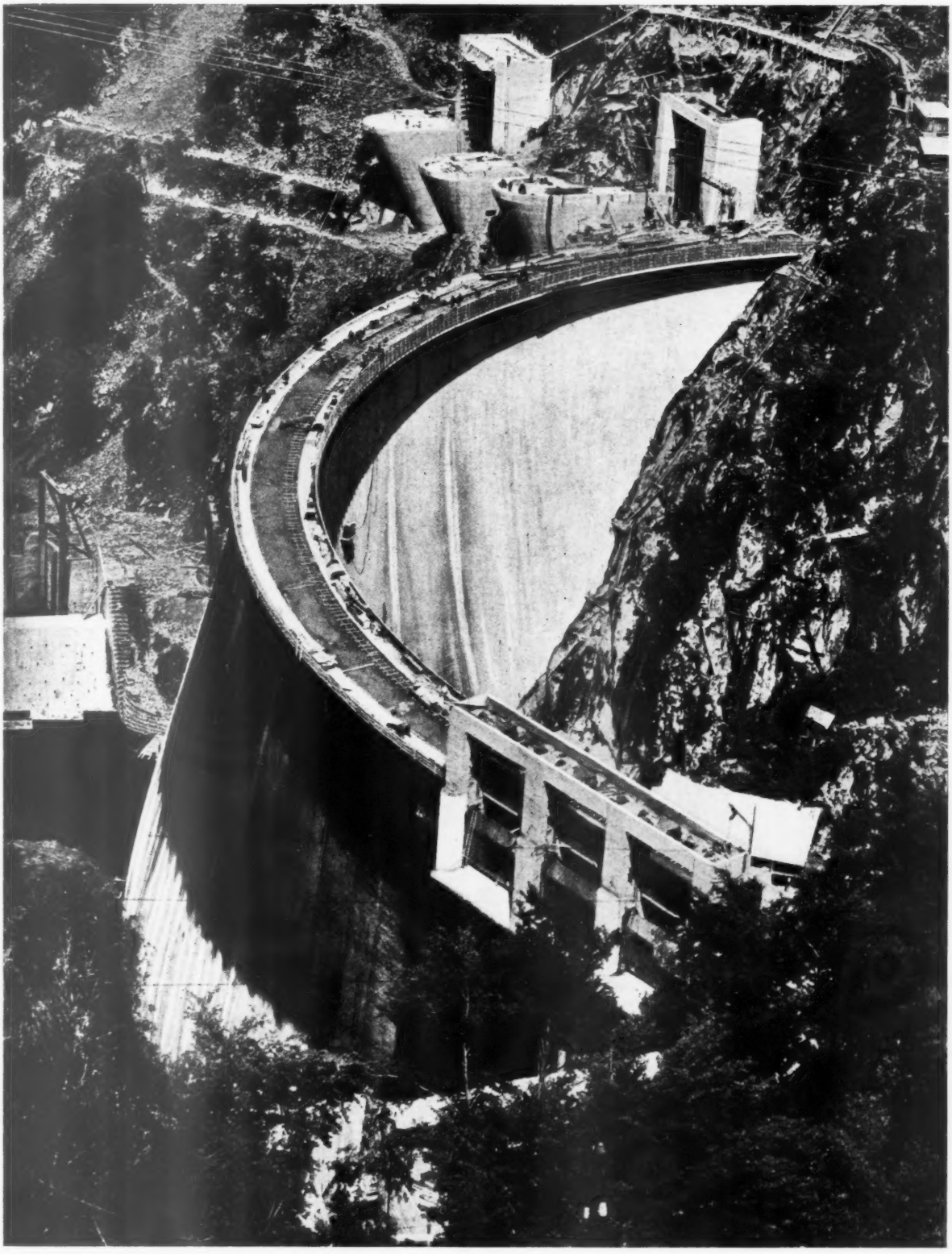


Dams of this nature are rare in France, where up to now the more conventional type has been considered to be more readily calculable and to offer the greatest coefficient of safety. The excellent quality of the foundations at Marèges and the convergence of the banks made attractive the idea of a single arch springing from the two sides of the valley. The left bank receives directly the thrust of the arch. On the right bank there is a shelf which breaks the slope. This bank supports the arch through a rectangular abutment which serves as a weir for flood waters. An original scheme, realized for the first time at Marèges, permitted the lessening of the likelihood of stresses being set up which would tend to produce horizontal fissures at the base of the upper face of the dam; the cross section has been reduced in thickness towards the base, and stresses created which should oppose those set up by the pressure of water. On the higher side, therefore, there is an overhang. While construction was going on the river was diverted through two subterranean passages, each of 37 m² section, by a smaller dam of 20 m. height. The capacity of the passages would reach 700 m³ per second—a notably strong flood—but in fact this was never attained during the three years in which work was going on. This smaller dam is of rock fortified on the higher side with a concrete watertight mask. A new technique permitted the vertical erection of the higher face of the main dam, thus giving the advantage of a marked economy of materials and allowing for a considerable shortening of the passages through which the stream was diverted.

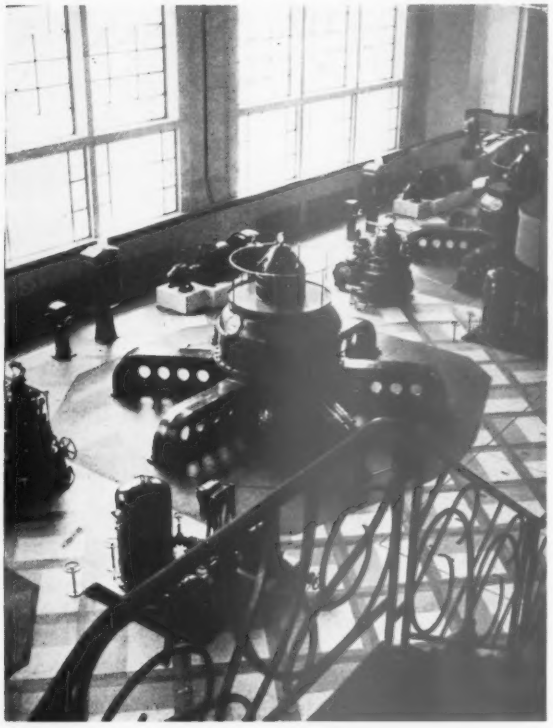
To the left is a view of the main intake, with a section of it below. An adjustable grille is provided to restrain débris. To the left are sections through the main dam and the spillway illustrated on page 313.



M. BRACHET, ARCHITECT; LÉON BALLOT, ENGINEERS



HYDRO-ELECTRIC POWER STATION AT MARÈGES

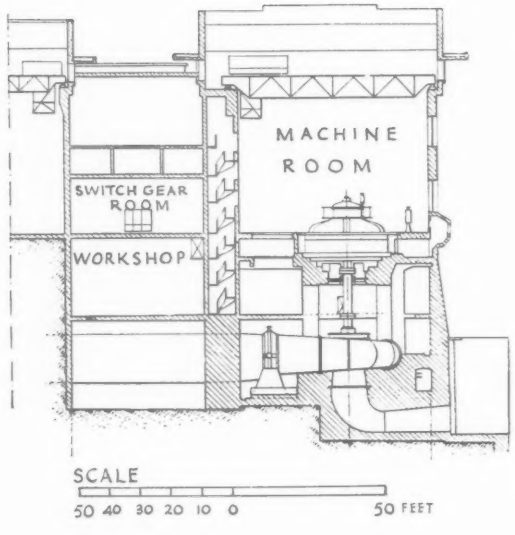


DESIGNED BY M. BRACHET AND LÉON BALLOT.

The general layout of the installation is based upon the subdivision of the power-house equipment into two independent units, symmetrically disposed and comprising each two principal and one auxiliary set of machines. All this is in the principal building. The switch-gear building contains all the principal control apparatus. In the annexe building, which runs the length of the power-house, are placed the principal transformers which link up with the station at La Môle, and which are so disposed that they can readily be taken away for overhaul by lorries. Cables fixed beneath the switchgear buildings permit direct connection of the station at La Môle with the high tension terminals of the station's transformers, and two other cables assure respectively the connection of the power-houses' auxiliary services with those of La Môle and with the power supply for the equipment of the dam.

Each principal alternator is sunk up to the level of the floor. Compressed air brakes serve both for stopping the machinery rapidly after the flow of water to the turbines has been stopped, and for jacks on which to raise the rotating parts for examination. Between the control and switchgear rooms there is a large room in which all the wiring arriving at the panels and desks can be given easy runs, and in the machine room itself each set of machines has its sets of tell-tale apparatus.

The illustrations on this page show (left) a view inside the power-house with one of the principal turbo-alternators and (right) the control room.



TRADE NOTES

[*EDITED BY PHILIP SCHOLBERG*]

Escape from Fire

DWELLERS in the newer blocks of flats are so well provided with the regulation "means of escape in case of fire," generally the service staircase, that little attention is nowadays paid to the problem of rapid departure from a burning house: yet when one considers the Victorian or Edwardian town house of four storeys and probably a semi-basement as well, it is worth remembering that it is often quite a long way from the top floor to the ground.

•

Various means of descent are available: a development of the ordinary rope is shown at the head of these notes—the "fluffy rope" by Minimax. Down this it is possible to slide without removing all the skin from one's hands, and as the whole thing is fire proofed, there is little danger of the rather inflammable-looking fluff burning away. This rope costs £3 for a 35 ft. length.

•

The same firm also makes a particularly sensible escape ladder, which is shown in the line drawing (right). The non-slip treads are in galvanized steel and have projecting lugs at each end which hold the ladder well away from the wall and give adequate toe-room. The sides are made up of canvas-covered chain and a sample ladder, independently tested by David Kirkaldy, withstood a load of 2,600 lb. before failure. These ladders are intended to be stored in a metal box which is bolted down to the floor joists immediately beneath the window, though the whole assembly can, if necessary, be fitted outside.

•

Price, with box and all fittings, is £10 10s. for a 30-ft. length. If a greater length than 30 ft. is necessary, it is recommended that there should also be a spring hook fitting at ground level.

•

The old-fashioned canvas chute escape now seems to have disappeared altogether. I have never seen one in use, and my memory of them is based on old Army and Navy catalogue drawings, but they seem to have been rather unnerving devices, merely a flat belt about 3 ft. or so wide, down which one slid at what appeared to be an angle of 60 degrees or so, the belt presumably becoming slightly concave in section so as to stop one rolling off sideways and descending vertically.

•

Various types of automatic escape are now also on the market, a fairly typical one being that sold by Pyrene, and illustrated at the foot of this page. This device consists of a single length of stranded steel wire cable with a safety belt at each end, the cable passing through a braking drum which is fixed to the window reveal. The cable itself is wound on a separate reel which is dropped out of the window, leaving one safety belt at window level with the other on the ground. All that is then necessary is to put on the belt and step bravely off into space. The braking drum pays out the rope at a constant speed independent of the weight of the passenger, and the second belt rises to window level as the first descends.

•

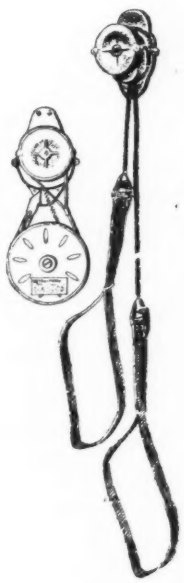
And so on. Incidentally, various sack-like attachments are also made for lowering small children and infants without their being in any danger of falling out. This fitting costs £7 7s. with 30 ft. of cable, extra cable costs 1s. per foot.

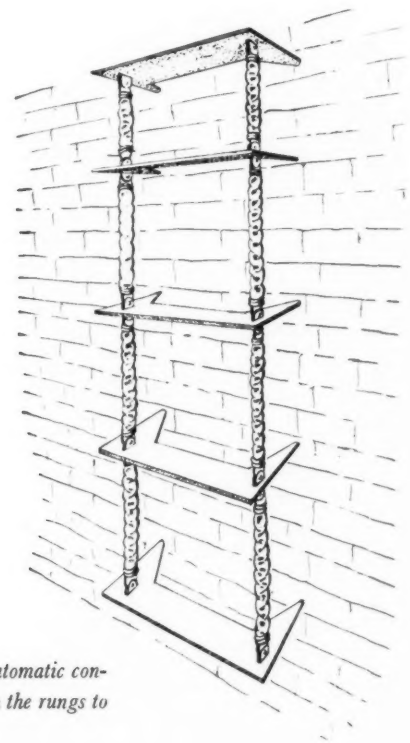
•

One further point. Nurseries, if high enough from the ground to need a fire escape, will probably have barred windows as well. Any fire escape installation, therefore, will be more likely to be successful if the window bars are easily detachable.

Calcium Silicate Bricks

I was taken last week to see the new Hunziker brickworks near Uxbridge, where they are now making calcium silicate bricks for sale in this country. Hunziker bricks, I gather, are the standard in Switzerland, where there is little clay, so that continued research has evolved a crushed flint brick of good mechanical properties, so good, in fact, that these bricks have been used for the lining of the Simplon No. 2 tunnel, where





Two means of escape from fire: left, an automatic constant-speed rope; right, a ladder with lugs on the rungs to give toe-room. (*See note on this page.*)

granite setts failed under load after four years.

•

The standard brick is a pleasant silver-grey which looks well in the mass, even in large masses, for the whole works is built of them, of bricks, incidentally, made in the works as soon as the steelwork was up and the roof was on.

•

Below are the various classes of brick which are made and their prices, at works loaded on to lorry :

Common bricks, plain and grooved	39/–
First quality facings (natural colour)	67/6
First quality facings (in any desired colour)	80/– upwards
Second quality facings (natural colour)	45/6
No. 1 & 2 engineering bricks	72/6 and 55/–

•

Representative test figures are as follows :

The common building brick gave a mean average crushing load of 161,600 lbs., equivalent to 464 tons net per square foot, and with an absorption of 7·5 per cent.

The No. 2 engineering brick gave a mean average crushing load of 312,300 lbs., equivalent to 531 tons per square foot. The absorption in this case was 7 per cent.

The No. 1 quality engineering brick gave a figure of 411,000 lbs. mean average crushing load, or 699 tons per square foot, with an absorption of 6·2 per cent.

Addresses

Pyrene, Ltd., Great West Road, Brentford, Middlesex.

Minimax, Ltd., Broadway Buildings, S.W.1.

Hunziker, Ltd., Cowley Bridge Works, Uxbridge, Middlesex.

LAW REPORTS

NOTICE AS TO REPAIRS—POINT UNDER THE LAW OF PROPERTY ACT, 1925

Blewett v. *Blewett.—Court of Appeal. Before Lord Wright (Master of the Rolls) and Lords Justices Slesser and Romer*

THIS appeal from the Redruth County Court raised points under the Law of Property Act, 1925 (section 146) in regard to notice to be served by a lessor on lessees for the execution of certain work to cottages at Lanner, near Redruth.

The County Court Judge decided that the notice served by the lessor was invalid on the ground that in addition to repairs necessary to comply with the lease, it sought to have repairs carried out which were not required by the lease and at a cost higher than was necessary to comply with the lease. He further held that the lessor could not add to the burden of the lessees' covenant, and, under a threat of re-entry, call for the execution of unnecessary repairs and new work to the property.

Mr. Wynn Parry, for the appellant, argued that the notice was a good notice under section 146 of the Act, and that the County Court Judge had put a wrong construction on the section. He contended that his client had complied with all that was necessary under the statute.

The appeal was dismissed, the Court holding that though the County Court Judge was incorrect in his application of the law, there was the insuperable difficulty that the notice was not a good one under section 146, as it was only served on one lessee (who was not a defendant), there being five lessees in all.

Lord Wright pointed out that there was no evidence before the Court that service on the one lessee was good notice on the remaining four lessees.

DISPUTED RIGHT OF WAY

Corporation of Weymouth v. *Bird.—Official Referee's Court. Before Mr. T. Eastham, K.C.*

This was an action by the Weymouth Corporation against Mr. J. W. Bird, claiming a right of way over a footpath running along the cliff at Weymouth, through a field owned by the defendant, who disputed the Corporation's claim.

The Official Referee, after a lengthy hearing (34 witnesses being called), said he came to the conclusion that the disputed path ran through the defendant's field and that during the whole time of living memory it was plainly visible and was frequently used by the public and that it was part of a path which ran through various fields along the cliff from Portland Road to the seashore and to Camp Road.

He found that the right of way was actually enjoyed by the public as a right and without interruption over the whole period of living memory up till 1930, when the defendant took exception to its user. In his opinion the user was good evidence of intention to dedicate the path to the public, and he found that there was such dedication. The right of way had been enjoyed by the public without interruption for 40 years before May, 1930. There was not sufficient evidence of intention not to dedicate the footpath, and therefore plaintiffs had established their claim to a right of way. He made a declaration accordingly and granted an injunction restraining defendant from obstructing the footpath.

FRONTAGERS CLAIM THAT ROAD IS HIGHWAY

Stockwell and another v. *Southgate Corporation.—King's Bench Division. Before Mr. Justice Porter*

This was an action by frontagers of Broad Walk, Southgate, Middlesex, against the Southgate Corporation, seeking declarations that Broad Walk, including a portion substituted for an old highway running from Bourne Hill to Winchmore Hill, was a highway repairable by the inhabitants at large.

Mr. R. M. Montgomery, K.C., for the plaintiffs, Mr. L. H. Stockwell and Mr. F. G. Voller, said his clients' case was that just prior to January, 1836, there existed between Bourne Hill and Winchmore Hill, a public highway. They contended that Broad Walk occupied the same area as that public highway or in the alternative the highway which was substituted for it in 1911 under an order of the Middlesex Quarter Sessions. The defendants' contention was that the frontagers were liable for the costs of making up the road and they sought a declaration to that effect.

Mr. Roland Burrows, K.C., submitted that Broad Walk did not occupy an area previously occupied by a public highway, because no certificate by two justices of the peace was ever obtained to the effect that Broad Walk had been completed and put in good condition. That was the order of Quarter Sessions and it had never been complied with. Under these circumstances the frontagers were liable for the repair of the road.

Mr. Montgomery argued that the failure to secure the certificate did not affect liability in law. He also submitted that the defendants were estopped from raising that issue because they had passed plans for the erection of buildings on the portion of Broad Walk substituted for the old highway.

His lordship held that the justices could deal adequately with the matter after formal notice of making up had been given and apportionments made, and he therefore made no declarations as asked.

In his judgment his lordship said: In 1910 the Corporation purchased land through which the footpath in question passed, and they agreed with the owners that a portion of the path should be diverted and a road made. Quarter Sessions, in 1911, made an order for the diversion of the highway, and that order stipulated that before the old road was closed, the new one should be completed and put in good order and so certified by two justices. He had not had before him any evidence that such a certificate had been granted, but there was evidence that in fact the new road had not been put into a condition as would be required by the justices. Houses, with gardens, were erected over the site of the old footpath, and the dispute centred around that diversion. He upheld the contention of Mr. Burrows.

THE BUILDINGS ILLUSTRATED

INFECTIOUS DISEASES HOSPITAL, PAISLEY (pages 295-298). The principal sub-contractors and suppliers included John Crawford, bricks; Wm. Gibson & Co., joinery; James Wilson and Sons, plumbing; Gillespie (Slater), Ltd., slating; James Boyd and Son, Ltd., heating; Geo. G. Kirk, Ltd., glazing; Furniss & Co., patent glazing; The Crittall Manufacturing Co., Ltd., metal windows; Redpath, Brown & Co., Ltd., steel work; James Y. Keanie, Ltd., ferro-concrete; F. McNeill & Co., Ltd., bitumen roofing; Toffolo Jackson & Co., tile work and terrazzo; James Kilpatrick and Son, Ltd., electric; Holms and Jackson, Ltd., plastering; Thorborn and Dunlop, painting; James Cassels and Sons, fencing; Gray Ferro-concrete Co., Ltd., Brizolit; J. Nesbit-Evans & Co., bedsteads, cots, lockers, screens, etc.; Manlove, Alliott & Co., Ltd., sterilizers, operating theatre; Chas. F. Thackray, Ltd., operating theatre equipment; Wylie and Lochhead, Ltd., ward furniture; R. Cochran and Sons, Ltd., furniture; administrative block and Nurses' Home, Royal Asylum for the Blind, mattresses, pillows, etc.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 Miles Radius)

CHISWICK. *Showrooms.* The Vacation Committee of the Brentford and Chiswick T.C. has decided to make application to the Electricity Commissioners for sanction to borrow £7,800 for the conversion of the old Chiswick fire station in the High Road into electricity showrooms.

FELTHAM. *Extensions.* The British Aircraft Company, Ltd., Hanworth, are to carry out extensions to their factory premises at London Airpark, Feltham.

HAYES. *Estate Development.* The Belmore Farm Estate is to be developed by Messrs. Hallwood and Holdsworth, by the erection of 76 houses. Plans have been approved.

HAYES. *Houses.* The U.D.C. has approved plans submitted by the Great Western (London) Garden Village Society, Ltd., for the proposed erection of 50 houses at Birch Way and Cherry Grove.

HAYES. *Reconstruction.* Extensive reconstruction of the premises of " X " Chair Patents Co., Ltd., in Silverdale Road is to be made, to which a showroom and offices are to be added.

HILLINGDON. *Houses.* The Hillingdon Place Estate is to be developed by Silver Houses (Hillingdon), Ltd., Long Lane, Hillingdon, who propose to erect 174 houses at Gresham Road and Weald Road.

HOUNSLOW. *Cinema.* The T.C. has now approved plans for the erection of a cinema in the London Road by the Associated British Cinemas, Ltd., 30 Golden Square, W.1.

SOUTHALL. *Library.* Sanction is being sought by the U.D.C. to the borrowing of £10,000, for the proposed erection of a library in Jubilee Gardens.

TAPLOW. *Flats, etc.* Mr. J. Bond has presented plans to the R.D.C. of 30 flats and 15 garages proposed to be erected in the neighbourhood. The Council has also approved plans for the proposed erection of licensed premises for Messrs. Courage & Co.

THAMES DITTON. *Stalls, etc.* Detailed plans are now being prepared by Mr. A. Jessop Hardwick, F.R.I.B.A., Angel Road, Thames Ditton, for the proposed provision of new choir stalls and clergy desks in the Parish Church.

WELWYN. *Cinema.* The R.D.C. has, subject to the submission of details, approved the erection of a cinema in London Road for Mr. A. Sellars, 23 Walden Road, Welwyn.

WILLESDEN. *Housing.* The U.D.C. are to further develop the Church End Housing Estate, plans for which have been prepared by the Borough Engineer.

SOUTHERN COUNTIES

ALTON. *School.* A new school to accommodate 800, is to be erected at Alton by the Hants C.C.

BEXHILL. *Cinema.* The Council has now approved amended plans submitted by the Union Cinema Co., 15 Lower Regent Street, W.1, for the proposed erection of a cinema at Bexhill.

BROCKENHURST. *School.* The Hants C.C. are to erect a new school, to accommodate 460, at an estimated cost of £32,508.

CAVERSHAM. *Flats.* Mr. R. V. R. Smith, Bruton Street, London, W., is the architect in connection with the proposed erection of 30 flats in George Street.

HASTINGS. *Reconstruction.* The premises at 54 Robertson Street and 26 Havelock Road, are to be reconstructed by Messrs. W. H. Smith and Sons, to plans by the firm's own architect, Mr. F. C. Bayliss.

HAVANT. *Station.* Work has just commenced upon the construction of a new and up-to-date railway station for the Southern Railway Co. It is expected the work will take two years.

KENT. *New School.* Kent Education Committee has received a deputation from the Governors of Walthamstow Hall School, when it was agreed that new school premises ought to be provided for the school upon the committee's site in Knole Park, Sevenoaks, as speedily as circumstances permit. Alternative schemes for the management of the school and the provision of new buildings in Knole Park have been prepared in consultation with the Governors.

KENT. *Schools.* Kent Education Committee has made provision in the estimates for the purchase of sites for the Chartham Central school, Crayford Iron Mill Lane Council School, Hoo Central School, Orpington Downe Council School, additional lands and Orpington Pratts Bottom Council School, additional land.

SURREY. *Farnham Art School.* Surrey Education Committee is to purchase a site for the proposed new building for the Farnham Art School.

SURREY. *Infant Schools and Extensions.* Surrey Education Committee is to purchase land in Ray Road, West Molesey, for the construction of an infants' school and the extension of the central school playing fields.

SURREY. *Junior School.* Surrey Education Committee has acquired a site in Lightwater for the erection of a junior school.

SURREY. *Police Cottage.* Surrey C.C. has acquired a site on the Leigh Place Estate, Leigh, for the erection of a police cottage.

SURREY. *Secondary School.* Surrey Education Committee is to negotiate for a site for the erection of a secondary school at Banstead.

WORTHING. *Houses.* Plans have been prepared by Mr. H. M. Potter on behalf of Messrs. Boxall and Stracey for the erection of 30 houses in Stone Lane, Worthing.

EASTERN COUNTIES

CLACTON. *Extensions.* Mr. E. Robbins Nixey has prepared plans for extensions at the District Hospital, Clacton.

ISLE OF ELY. *Mental Institution.* Isle of Ely C.C. is to consider the question of securing a site in the neighbourhood of March for the erection thereon of a mental institution at a cost of £33,500.

MIDLAND COUNTIES

CHESHIRE. *Extensions.* Cheshire C.C. has obtained the approval of the Ministry of Health to the plans of the new building proposed to be erected at the Clatterbridge hospital.

CHESHIRE. *Extensions.* Messrs. Williamson Brewery, Ltd., are to enlarge the Ram's Head Hotel, Frith Road, Disley, Cheshire.

LEAMINGTON SPA. *Cinema.* Mr. J. Owen Bond has prepared plans on behalf of Mr. Louis Morris for the erection of a cinema on the site of the Crown Hotel, High Street, Leamington Spa.

RUGBY. *Assembly Hall.* Rugby Education Committee is to erect an assembly hall at the technical college.

STRATFORD-ON-AVON. *Cinema.* Stratford-on-Avon Picture House, Ltd., is to erect a cinema near Clopton Bridge, Stratford-on-Avon.

WARWICKSHIRE. *Casual Wards.* Warwickshire C.C. has instructed the county architect to prepare plans for the erection of semi-permanent casual wards in Temple Street, Rugby.

WARWICKSHIRE. *Cinema.* Mr. H. S. Scott is to erect a cinema at Studley, Warwickshire.

WARWICKSHIRE. *Cinema.* Warwickshire C.C. is to erect a cinema hall at the Weston Colony.

WARWICKSHIRE. *Junior School.* Warwickshire Education Committee has purchased a site on the Yew Tree estate, Solihull, for the erection of a junior school.

WARWICKSHIRE. *Library.* Warwickshire C.C. has obtained sanction to borrow £2,297 for the erection of a library in Damson Lane, Solihull.

WARWICKSHIRE. *Schools.* Warwickshire Education Committee is to erect senior and junior schools, each for 320, at Castle Bromwich.

WEST BROMWICH. *Housing Scheme.* West Bromwich Corporation is purchasing 40 acres in Hall Green Road, for a housing scheme.

WEST BROMWICH. *Plans.* Plans passed by West Bromwich Corporation: Alterations to shop, Moor Street, for Messrs. Mallins: Booster House, Great Bridge Street, for City of Birmingham Gas Dept.; offices and Sergeants' rooms, etc., Carters Green, for Staffs Territorial Army Association.

WEST BROMWICH. *Shops.* West Bromwich Corporation has sold land in Paradise Street to Mr. S. I. King, for the erection of shops.

NORTHERN COUNTIES

BACUP. *Houses.* Bacup Corporation is to erect 110 houses on the Thornes estate.

BIRKENHEAD. *Houses.* Messrs. Brown and Saunders have prepared a scheme for the erection of 52 houses on the Woodcote estate, Old Chester Road, Birkenhead.

DURHAM. *Catholic School.* Durham County Education Committee has approved plans by the trustees for the erection of a Catholic school at Penshaw.

DURHAM. *Houses.* Mr. G. Ritchie is to erect six houses adjoining the Eastington estate, Shotton, co. Durham.

DURHAM. *Offices.* Durham County Council is to erect offices for the weights and measures department at the bye-pass road, Chester le Street.

DURHAM. *Plant Buildings.* Imperial Chemical Industries, Ltd., are to erect plant buildings in Portrack Road, Haverton Hill, co. Durham.

DURHAM. *School.* Durham County Education Committee is to prepare plans for the erection of a school for 240 at Springwell.

LANCASHIRE. *Extensions.* Lancashire Education Committee is to enlarge the Prescot Grammar School at a cost of £3,40-

LANCASHIRE. *Extensions.* Lancashire Education Committee is to enlarge the Widnes Wade Deacon Grammar School at a cost of £2,243.

LANCASHIRE. *Junior School.* Lancashire Education Committee has purchased land at Sheepfoot Lane, Prestwich, for the erection of a junior school.

LANCASHIRE. *Library.* Lancashire C.C. has approved an estimate of £1,700 for the erection of a library at Bamber Bridge.

MANCHESTER. *Extensions.* Manchester Education Committee is to lend £12,000 to the Governors of the Manchester High School for Girls for extensions.

NANTWICH. *Extensions and Alterations.* Messrs. Greenall Whitley & Co., Ltd., Nantwich, are to alter and enlarge the Red Lion Hotel and Grubb Street, Nantwich.

PENRITH. *Houses.* Penrith U.D.C. is to consider types of houses suitable for erection for aged couples.

SEAHAM HARBOUR. *Open Air Swimming Pool.* Seaham Harbour U.D.C. has had a letter from the Indented Bar and Concrete Engineering Co., Ltd., regarding the provision of an open air swimming pool and asked the officials to obtain alternative schemes.

SEAHAM HARBOUR. *Plans.* Plans passed by Seaham Harbour U.D.C.: Rebuilding 3 South Terrace, for Mr. T. S. Wright; alterations, Back North Terrace, for Metcalfe's Stores; alterations, 15 Church Street, for Mr. H. B. Armstrong.

SHEFFIELD. *Concert Hall.* The Smithywood Working Men's Club and Institute have prepared a scheme for the erection of a concert hall in Smithywood Road, Sheffield.

SHEFFIELD. *Flats.* Mr. M. Bonner has prepared a scheme for the erection of 44 flats in Toftwood Road, Bolehill Lane and new road, Sheffield.

SHEFFIELD. *Houses.* Mr. E. Cooper has prepared a scheme for the erection of 142 houses off Seagrave Road, Gleadless, Sheffield.

STRETFORD. *Library and School Clinic.* Stretford Corporation has asked Mr. P. Howard, architect, to prepare plans for the erection of a library and school clinic at Lostock.

RATES OF WAGES

The initial letter opposite every entry indicates the grade under the Ministry of Labour schedule. The district is that to which the borough is assigned in the same schedule. Column I gives the rates for craftsmen; Column II for labourers. The rate for craftsmen working at trades in which a separate rate maintains is given in a footnote. The table is a selection only. Particulars for lesser localities not included may be obtained upon application in writing.

			I s. d.	II s. d.
A_1	ABERDARE ...	S. Wales & M.	1 5½	1 1½
A	Aberdeen ...	Scotland	1 6½	1 2
A_1	Abergavenny ...	S. Wales & M.	1 6	1 1½
A_3	Abingdon ...	S. Counties	1 5	1 0½
A	Accrington ...	N.W. Counties	1 6½	1 2
A_3	Addlestone ...	S. Counties	1 5	1 0½
A	Adlington ...	N.W. Counties	1 6½	1 2
A	Airdrie ...	Scotland	*1 6½	1 2
C	Aldeburgh ...	E. Counties	1 2½	11
A	Altrincham ...	N.W. Counties	1 6½	1 2
B_2	Appleby ...	N.W. Counties	1 3	11½
A	Ashton-under-Lyne	N.W. Counties	1 6½	1 2
B_1	Aylesbury ...	S. Counties	1 4	1 0
B_1	BANBURY ...	S. Counties	1 4	1 0
B_1	Bangor ...	N.W. Counties	1 4	1 0
A_3	Barnard Castle	N.E. Coast	1 5	1 0½
A	Barnsley ...	Yorkshire	1 6½	1 2
B	Barnstaple ...	S.W. Counties	1 4½	1 0½
A	Barrow ...	N.W. Counties	1 6½	1 2
A	Barry ...	S. Wales & M.	1 6½	1 2
B_1	Basingstoke ...	S.W. Counties	1 4	1 0
A_2	Bath ...	S.W. Counties	1 5½	1 1½
A	Batley ...	Yorkshire	1 6½	1 2
A_2	Bedford ...	E. Counties	1 5½	1 1½
A_2	Berwick-on-Tweed	N.E. Coast	1 5½	1 1½
A_2	Bewdley ...	Mid. Counties	1 5½	1 1½
B_3	Bicester ...	S. Counties	1 3	11½
	Birkenhead ...	N.W. Counties	*1 7½	1 2½
A	Birmingham ...	Mid. Counties	1 6½	1 2
A_1	Bishop Auckland	N.E. Coast	1 6	1 1½
A	Blackburn ...	N.W. Counties	1 6½	1 2
A	Blackpool ...	N.W. Counties	1 6½	1 2
A	Blyth	N.E. Coast	1 6½	1 2
B_1	Bognor ...	S. Counties	1 4	1 0
A	Bolton ...	N.W. Counties	1 6½	1 2
A_3	Boston ...	Mid. Counties	1 5	1 0½
A_3	Bournemouth...	S. Counties	1 5½	1 1½
B_3	Bovey Tracey	S.W. Counties	1 3½	11½
A	Bradford ...	Yorkshire	1 6½	1 2
A_1	Brentwood ...	E. Counties	1 6	1 1½
A	Bridgend ...	S. Wales & M.	1 6½	1 2
B	Bridgwater ...	S.W. Counties	1 4½	1 0½
A_1	Bridlington ...	Yorkshire	1 6	1 1½
A	Brighouse ...	Yorkshire	1 6½	1 2
A_2	Brighton ...	S. Counties	1 5½	1 1½
A	Bristol ...	S.W. Counties	1 6½	1 2
B	Brixham ...	S.W. Counties	1 3½	11½
A	Bromsgrove ...	Mid. Counties	1 5½	1 1½
B	Bromyard ...	Mid. Counties	1 3	11½
A	Burnley ...	N.W. Counties	1 6½	1 2
A	Burslem ...	Mid. Counties	1 6½	1 2
A	Burton-on-Trent	Mid. Counties	1 6½	1 2
A	Bury	N.W. Counties	1 6½	1 2
A	Buxton ...	N.W. Counties	1 6	1 1½
A_1	CAMBRIDGE	E. Counties	1 6	1 1½
B_1	Canterbury ...	S. Counties	1 4	1 0
A	Cardiff ...	S. Wales & M.	1 6½	1 2
A	Carlisle ...	N.W. Counties	1 6½	1 2
B	Carmarthen ...	S. Wales & M.	1 4½	1 0½
B	Carnarvon ...	N.W. Counties	1 4½	1 0½
A	Carnforth ...	N.W. Counties	1 6½	1 2
A	Castleford ...	Yorkshire	1 6½	1 2
A_3	Chatham ...	S. Counties	1 5	1 0½
A	Chelmsford ...	E. Counties	1 5	1 0½
A	Cheltenham ...	S.W. Counties	1 5	1 0½
A	Chester ...	N.W. Counties	1 6½	1 2
A	Chesterfield ...	Mid. Counties	1 6½	1 2
B_1	Chichester ...	S. Counties	1 4	1 0
A	Chorley ...	N.W. Counties	1 6½	1 2
B_1	Cirencester ...	S. Counties	1 4	1 0
A	Clitheroe ...	N.W. Counties	1 6½	1 2
A	Clydebank ...	Scotland	1 6½	1 2
A	Coalville ...	Mid. Counties	1 6½	1 2
A_3	Colchester ...	E. Counties	1 5½	1 1½
A	Colne	N.W. Counties	1 6	1 1½
A_2	Colwyn Bay ...	N.W. Counties	1 5½	1 1½
A_1	Consett ...	N.E. Coast	1 6	1 1½
A_2	Conway ...	N.W. Counties	1 5½	1 1½
A	Coventry ...	Mid. Counties	1 6½	1 2
A_2	Crewe	N.W. Counties	1 5½	1 1½
A	Cumberland ...	N.W. Counties	1 5	1 0½
A	DARLINGTON	N.E. Coast	1 6½	1 2
A	Darwen ...	N.W. Counties	1 6½	1 2
B	Deal	S. Counties	1 4	1 0
A_2	Denbigh ...	N.W. Counties	1 5	1 0½
A	Derby	Mid. Counties	1 6½	1 2
A	Dewsbury ...	Yorkshire	1 6½	1 2
B	Didcot ...	S. Counties	1 4½	1 0½
A	Doncaster ...	Yorkshire	1 6½	1 2
B_1	Dorchester ...	S.W. Counties	1 4	1 0
A	Driffield ...	Yorkshire	1 5	1 0½
A_2	Droitwich ...	Mid. Counties	1 5½	1 1½
A	Dudley ...	Mid. Counties	1 6½	1 2
A_3	Dumfries ...	Scotland	1 6	1 1½
A	Dundee ...	Scotland	1 6½	1 2
A	Durham ...	N.E. Coast	1 6½	1 2
A_2	EASTBOURNE	S. Counties	1 5½	1 1½
A_1	Ebbw Vale ...	S. Wales & M.	1 6	1 1½
A	Edinburgh ...	Scotland	1 6½	1 2
A_2	Exeter ...	S.W. Counties	*1 5½	1 1½
B	Exmouth ...	S.W. Counties	1 4½	1 0½
A_3	FELIXSTOWE	E. Counties	1 5	1 0½
A	Filey	Yorkshire	1 5	1 0½
A	Fleetwood ...	N.W. Counties	1 6½	1 2
B_1	Folkestone ...	S. Counties	1 4	1 0
A	Frodsham ...	N.W. Counties	1 6½	1 2
B_2	Frome ...	S.W. Counties	1 3½	11½
A	GATESHEAD	N.E. Coast	1 6½	1 2
B	Gillingham ...	S. Counties	1 4½	1 0½
A_1	Glamorganshire, Rhondda Valley District	S. Wales & M.	1 6	1 1½
A	Glasgow ...	Scotland	1 7	1 2½
A_2	Gloucester ...	S.W. Counties	1 5½	1 1½
A_2	Goole ...	Yorkshire	1 5½	1 1½
A_2	Gosport ...	S. Counties	1 5½	1 1½
A_3	Grantham ...	Mid. Counties	1 5	1 0½
A_1	Gravesend ...	S. Counties	1 6	1 1½
A	Greenock ...	Scotland	*1 6½	1 2
A	Grimsby ...	Mid. Counties	1 6½	1 2
B	Guildford ...	S. Counties	1 4½	1 0½
A	HALIFAX ...	Yorkshire	1 6½	1 2
A	Hanley ...	Mid. Counties	1 6½	1 2
A	Harrogate ...	Yorkshire	1 6½	1 2
A	Hartlepools ...	N.E. Coast	1 6½	1 2
B	Harwich ...	E. Counties	1 4½	1 0½
B_1	Hastings ...	S. Counties	1 4	1 0
A_2	Hatfield ...	S. Counties	1 5½	1 1½
B	Hereford ...	S.W. Counties	1 4½	1 0½
A	Hertford ...	E. Counties	1 5½	1 1½
A	Heysham ...	N.W. Counties	1 6½	1 2
A	Howden ...	N.E. Coast	1 6½	1 2
A	Huddersfield ...	Yorkshire	1 6½	1 2
A	Hull	Yorkshire	1 6½	1 2
A	ILKLEY ...	Yorkshire	1 6½	1 2
A	Immingham ...	Mid. Counties	1 6½	1 2
A_2	Ipswich ...	E. Counties	1 5½	1 1½
B_2	Isle of Wight ...	S. Counties	1 4½	1 0½
A	JARROW ...	N.E. Coast	1 6½	1 2
A	KEIGHLEY ...	Yorkshire	1 6½	1 2
A_2	Kendal ...	N.W. Counties	1 5	1 0½
A_2	Keswick ...	N.W. Counties	1 5	1 0½
A_1	Kettering ...	Mid. Counties	1 6	1 1½
A_2	Kidderminster	Mid. Counties	1 5½	1 1½
B_1	King's Lynn ...	E. Counties	1 4	1 0
A	LANCASTER ...	N.W. Counties	1 6½	1 2
A_1	Leamington ...	Mid. Counties	1 6	1 1½
A	Leeds	Yorkshire	1 6½	1 2
A	Leek	Mid. Counties	1 6½	1 2
A	Leicester ...	Mid. Counties	1 6½	1 2
A	Leigh	N.W. Counties	1 6½	1 2
B	Lewes	S. Counties	1 3	11½
A_2	Lichfield ...	Mid. Counties	1 5½	1 1½
A	Lincoln ...	Mid. Counties	1 6½	1 2
	Liverpool ...	N.W. Counties	*1 8	1 3
A_2	Llandudno ...	N.W. Counties	1 5½	1 1½
A	Llanelly ...	S. Wales & M.	1 6½	1 2
	London (12-miles radius)		1 8	1 3
	Do. (12-15 miles radius)		1 7½	1 2½
A	Long Eaton ...	Mid. Counties	1 6½	1 2
A	Loughborough ...	Mid. Counties	1 6½	1 2
A_1	Luton	E. Counties	1 6	1 1½
A	Lytham ...	N.W. Counties	1 6½	1 2
A_1	MACCLESFIELD	N.W. Counties	1 6	1 1½
A_3	Maidstone ...	S. Counties	1 5	1 0½
A_3	Malvern ...	Mid. Counties	1 5	1 0½
A	Manchester ...	N.W. Counties	1 6½	1 2
A	Mansfield ...	Mid. Counties	1 6½	1 2
B_1	Margate ...	S. Counties	1 4	1 0
A	Matlock ...	Mid. Counties	1 5	1 0½
A_1	Merthyr ...	S. Wales & M.	1 6	1 1½
A	Middlesbrough	N.E. Coast	1 6½	1 2
A	Middlewich ...	N.W. Counties	1 5½	1 1½
B_3	Minehead ...	S.W. Counties	1 3½	11½
B_3	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1 3½	11½
A	Morecambe ...	N.W. Counties	1 6½	1 2
A_2	NANTWICH ...	N.W. Counties	1 5½	1 1½
A	Neath	S. Wales & M.	1 6½	1 2
A	Nelson ...	N.W. Counties	1 6½	1 2
A	Newcastle ...	N.E. Coast	1 6½	1 2
A	Newport ...	S. Wales & M.	1 6½	1 2
A	Normanton ...	Yorkshire	1 6½	1 2
A	Northampton...	Mid. Counties	1 6½	1 2
A	North Shields...	N.E. Coast	1 6½	1 2
A	North Staffs ...	Mid. Counties	1 6½	1 2
A_1	Norwich ...	E. Counties	1 6	1 1½
A	Nottingham ...	Mid. Counties	1 6½	1 2
A	Nuneaton ...	Mid. Counties	1 6½	1 2
A	OAKHAM ...	Mid. Counties	1 5	1 0½
A	Oldham ...	N.W. Counties	1 6½	1 2
A_2	Oswestry ...	N.W. Counties	1 5	1 0½
A_1	Oxford ...	S. Counties	1 6	1 1½
A	PAISLEY ...	Scotland	*1 6½	1 2
B_3	Pembroke ...	S. Wales & M.	1 3	11½
A	Perth	Scotland	*1 6½	1 2
A_1	Peterborough	E. Counties	1 6	1 1½
A	Plymouth ...	S.W. Counties	*1 6½	1 2
A	Pontefract ...	Yorkshire	1 6½	1 2
A_1	Pontypridd ...	S. Wales & M.	1 6	1 1½
A_2	Portsmouth ...	S. Counties	1 5½	1 1½
A	Preston ...	N.W. Counties	1 6½	1 2
A	QUEENSFERRY	N.W. Counties	1 6½	1 2
A_2	READING ...	S. Counties	1 5½	1 1½
B	Reigate ...	S. Counties	1 4½	1 0½
A	Retford ...	Mid. Counties	1 5	1 0½
A_1	Rhondda Valley	S. Wales & M.	1 6	1 1½
A	Ripon	Yorkshire	1 5	1 0½
A	Rochdale ...	N.W. Counties	1 6½	1 2
B	Rochester ...	S. Counties	1 4½	1 0½
A_1	Ruabon ...	N.W. Counties	1 6	1 1½
A	Rugby ...	Mid. Counties	1 6½	1 2
A_2	Rugeley ...	Mid. Counties	1 5½	1 1½
A	Runcorn ...	N.W. Counties	1 6½	1 2
A_1	ST. ALBANS ...	E. Counties	1 6	1 1½
A	St. Helens ...	N.W. Counties	1 6½	1 2
B_3	Salisbury ...	S.W. Counties	1 3½	11½
A_1	Scarborough ...	Yorkshire	1 6	1 1½
A	Scunthorpe ...	Mid. Counties	1 6½	1 2
A	Sheffield ...	Yorkshire	1 6½	1 2
A	Shipley ...	Yorkshire	1 6½	1 2
A_2	Shrewsbury ...	Mid. Counties	1 5½	1 1½
A_2	Skipton ...	Yorkshire	1 5½	1 1½
A_2	Slough ...	S. Counties	1 5½	1 1½
A_1	Solihull ...	Mid. Counties	1 6	1 1½
A_2	Southampton	S. Counties	1 5½	1 1½
A_1	Southend-on-Sea	E. Counties	1 6	1 1½
A	Southport ...	N.W. Counties	1 6½	1 2
A	S. Shields ...	N.E. Coast	1 6½	1 2
A_1	Stafford ...	Mid. Counties	1 6	1 1½
A	Stirling ...	Scotland	1 7	1 2½
A	Stockport ...	N.W. Counties	1 6½	1 2
A	Stockton-on-Tees	N.E. Coast	1 6½	1 2
A	Stoke-on-Trent	Mid. Counties	1 6½	1 2
B	Stroud ...	S.W. Counties	1 4½	1 0½
A	Sunderland ...	N.E. Coast	1 6½	1 2
A	Swansea ...	S. Wales & M.	1 6½	1 2
A	Swindon ...	S.W. Counties	1 5	1 0½
A_1	TAMWORTH ...	N.W. Counties	1 6	1 1½
B	Taunton ...	S.W. Counties	1 4½	1 0½
A	Teesside Dist....	N.E. Counties	1 6½	1 2
A_2	Teignmouth ...	S.W. Coast	1 5½	1 1½
A	Todmorden ...	Yorkshire	1 6½	1 2
A_1	Torquay ...	S.W. Counties	1 6	1 1½
B_3	Truro	S.W. Counties	1 3½	11½
A_2	Tunbridge Wells	S. Counties	1 5	1 0½
A	Tunstall ...	Mid. Counties	1 6½	1 2
A	Tyne District	N.E. Coast	1 6½	1 2
A	WAKEFIELD	Yorkshire	1 6½	1 2
A	Walsall ...	Mid. Counties	1 6½	1 2
A	Warrington ...	N.W. Counties	1 6½	1 2
A_1	Warwick ...	Mid. Counties	1 6	1 1½
A_1	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 6½	1 2
A_2	Weston-s.-Mare	W. Counties	1 5½	1 1½
A_2	Whitby ...	Yorkshire	1 5½	1 1½
A	Widnes ...	N.W. Counties	1 6½	1 2
A	Wigan ...	N.W. Counties	1 6½	1 2
B	Winchester ...	S. Counties	1 4½	1 0½
A_2	Windsor ...	S. Counties	1 5½	1 0½
A	Wolverhampton	Mid. Counties	1 6½	1 2
A_2	Worcester ...	Mid. Counties	1 5½	1 1½
A	Worksop ...	Yorkshire	1 5	1 0½
A_1	Wrexham ...	N.W. Counties	1 6	1 1½
A	Wycombe ...	S. Counties	1 5	1 0½
B	YARMOUTH ...	E. Counties	1 4½	1 0½
B	Yeovil ...	S.W. Counties	1 4½	1 0½
A	York	Yorkshire	1 6½	1 2

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

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

CURRENT PRICES

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	8
Carpenter	"	1	8
Joiner	"	1	8
Machinist	"	1	8
Mason (Banker)	"	1	8
" (Fixer)	"	1	9
Plumber	"	1	8
Painter	"	1	7
Paperhanger	"	1	7
Glazier	"	1	7
Slater	"	1	8
Scaffolder	"	1	4
Timberman	"	1	4
Navvy	"	1	3
General Labourer	"	1	3
Lorryman	"	1	5½
Crane Driver	"	1	7
Watchman	per week	2	10

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	"	1	16	6
Hydrated Lime	"	3	0	9
Portland Cement, in 4-ton lots (d/d site, including Paper Bags)	"	1	19	0
Rapid Hardening Cement, in 1-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.	4" d.	6" s.	6" d.
Straight Pipes	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends	"	3	6	5	3
Rest Bends	"	4	3	6	3
Single Junctions	"	3	6	5	3
Double	"	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¾" Channel bends	each	2	9	4	0
Channel junctions	"	4	6	6	6
Channel tapers	"	2	9	4	0
Yard gullies	"	6	9	8	9
Interceptors	"	16	0	19	6
IRON DRAINS:					
Iron drain pipe	per F.R.	1	6	2	6
Bends	each	5	0	10	6
Inspection bends	"	9	0	15	0
Single junctions	"	8	9	18	0
Double junctions	"	13	6	30	0
Lead Wool	lb.		6		—
Gaskin	"		5		—

BRICKLAYER

		£	s.	d.
Fletton	per M.	2	15	0
Grooved do.	"	2	17	0
Phorpres bricks	"	2	15	0
" Cellular bricks	"	2	15	0
Stocks, 1st quality	"	4	11	0
" 2nd "	"	4	2	6
Blue Bricks, Pressed	"	8	17	6
" Wirecuts	"	7	17	6
" Brindles	"	7	0	0
" Bullnose	"	9	0	0
Red Sand-faced Facings	"	6	18	6
Red Rubbers for Arches	"	12	0	0
Multicoloured Facings	"	7	10	0
Luton Facings	"	7	10	0
Phorpres White Facings	"	3	17	3
" Rustic Facings	"	3	12	3
Midhurst White Facings	"	5	0	0
Glazed Bricks, Ivory, White or Salt glazed, 1st quality:				
Stretchers	"	21	0	0
Headers	"	20	10	0
Bullnose	"	27	10	0
Double Stretchers	"	29	10	0
Double Headers	"	26	10	0
Glazed Second Quality, *Less*	"	1	0	0
" Buffs and Creams, *Add*	"	2	0	0
" Other Colours	"	5	10	0
2" Breeze Partition Blocks	per Y.S.	1	7	
2½" " " "	"	1	10	
3" " " "	"	2	1	
4" " " "	"	2	6	

MASON

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

SLATER AND TILER

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

		£	s.	d.
24" × 12" Duchesses	per M.	28	17	6
22" × 12" Marchionesses	"	24	10	0
20" × 10" Countesses	"	19	5	0
18" × 10" Viscountesses	"	15	10	0
18" × 9" Ladies	"	13	17	6
Westmorland green (random sizes)	per ton	8	10	0
Old Delabole slates d/d in full truck loads to Nine Elms Station:				
20" × 10" medium grey	per 1,000 (actual)	21	11	6
" " green	" "	24	7	4
Best machine roofing tiles	" "	4	5	0
Best hand-made do.	" "	4	17	6
Hips and valleys	each			9
" hand-made	"			9½
Nails, compo	lb.		1	4
" copper	"		1	6

CARPENTER AND JOINER

		£	s.	d.
Good carcassing timber	F.C.		2	2
Birch	as 1" F.S.			9
Deal, Joiner's	" "			5
" " 2nds	" "			4
Mahogany, Honduras	" "		1	3
" African	" "		1	1
" Cuban	" "		2	6
Oak, plain American	" "		1	0
" Figured "	" "		1	3
" plain Japanese	" "		1	2
" Figured "	" "		1	5
" Austrian wainscot	" "		1	6
" English	" "		1	11
Pine, Yellow	" "		1	0
" Oregon	" "			4
" British Columbian	" "			4
Teak, Moulmein	" "		1	3
" Burma	" "		1	2
Walnut, American	" "		2	3
" French	" "		2	3
Whitewood, American	" "		1	1
Deal floorings, ¾"	Sq.		18	6
" 1"	"	1	1	8
" 1¼"	"	1	2	0
" 1½"	"	1	5	0
" 1¾"	"	1	10	0
Deal matchings, ¾"	"		14	0
" 1"	"		15	6
" 1¼"	"	1	4	0
Rough boarding, ¾"	"		16	8
" 1"	"		18	0
" 1¼"	"	1	5	0
Plywood, per ft. sup.				

Thickness	¼" A	¼" B	¼" BB	⅜" A	⅜" B	⅜" BB	½" A	½" B	½" BB	⅝" A	⅝" B	⅝" BB
Qualities	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
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	2¾	–	4	3½	–	5	4½	–
Gaboon Mahogany	4	3½	–	5	4½	–	7	6½	–	8	7	–
Figured Oak	6½	5	–	7½	5½	–	10	8	–	1/–	9	–

		d.
Scotch glue	lb.	8

SMITH AND FOUNDER

Tubes and Fittings

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

		½"	¾"	1"	1¼"	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	65	Galvanized gas	52½
Water	61½	" water	47½
Steam	57½	" steam	42½

	Fittings. Per cent.		Per cent.
Gas	57½	Galvanized gas	47½
Water	52½	" water	42½
Steam	47½	" steam	37½

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ¾"	"	10	6
" " " ¾"	"	10	3
" " " ¾"	"	10	0

SMITH AND FOUNDER—*continued*

		s.	d.
Mild steel reinforcing rods, ¾"	cwt.	9	6
" " " ¾"	"	9	6
" " " 1"	"	9	6
" " " 1¼"	"	9	6
" " " 1½"	"	9	6
" " " 1¾"	"	9	6
" " " 2"	"	9	6

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

PLUMBER

		s.	d.
Lead, milled sheets	cwt.	24	6
" drawn pipes	"	24	6
" soil pipe	"	30	0
" scrap	"	16	0
Solder, plumbers'	lb.		9½
" fine do.	"	1	0
Copper, sheet	"		8½
" tubes	"		11

L.C.C. soil and waste pipes:		3" F.R.	3"	4"	4"	6"
Plain cast	F.R.	1 0	1 2	1 2	2 6	
Coated	"	1 1	1 3	2 8		
Galvanized	"	2 0	2 6	4 6		
Holderbats	each	3 10	4 0	4 9		
Bends	"	3 9	5 3	10 3		
Shoes	"	2 10	4 4	9 6		
Heads	"	4 8	8 5	12 9		

PLASTERER

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

GLAZIER

		s.	d.	s.	d.
Sheet glass, 21 oz., squares n/e 2 ft.	s. F.S.				2½
" " 26 oz. " "	"				3
Flemish, Arctic, Figures (white)*	"				7
Blazoned glasses	"			2	6
Reeded: Cross Reeded	"				11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	"				8
Crown sheet glass (n/e 12" × 10")	"			2	0
Flashed opals (white and coloured)	"	1	0 and	2	0
⅛" rough cast; rolled plate	"				5½
⅛" wired cast; wired rolled	"				9½
⅛" Georgian wired cast	"				11
¼" Polished plate, n/e 1 ft.	"	†10 to	‡1	1	
" " 2	"	†1 2	" ‡1	4	
" " 4	"	†2 3	" ‡2	6	
" " 8	"	†2 9	" ‡3	2	
" " 20	"	†3 1	" ‡3	9	
" " 45	"	†3 3	" ‡4	0	
" " 100	"	†4 0	" ‡4	10	
Vita glass, sheet, n/e 1 ft.	"			1	0
" " " 2 ft.	"			1	3
" " " over 2 ft.	"			1	9
" " plate, n/e 1 ft.	"			1	6
" " " 2 ft.	"			3	0
" " " 5 ft.	"			4	6
" " " 7 ft.	"			5	0
" " " 15 ft.	"			6	0
" " " over 15 ft.	"			7	6
"Calorex" sheet 21 oz., and 32 oz. rough cast ⅛" and ¼"	"	2	6 and	3	6
	"		8¼ "	1	0
Putty, linseed oil	lb.				3

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

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

PAINTER

		£	s.	d.
White lead in 1 cwt. casks	cwt.	2	8	6
Linseed oil	gall.		2	3
Boiled oil	"		2	9
Turpentine	"		4	1½
Patent knotting	"		14	0
Distemper washable	cwt.	2	0	0
" ordinary	"	2	0	0
Whitening	"		4	0
Size, double	firkin		3	0
Copal varnish	gall.		13	0
Flat varnish	"		14	0
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.	4 9	6 9
Extra, only for bends	Each	10 6	15 6

BRICKLAYER

		£ s. d.
Brickwork, Flettons in lime mortar	Per Rod	26 10 0
,, ,, in cement	,,	27 12 6
,, Stocks in cement	,,	34 0 0
,, Blues in cement	,,	50 0 0
Extra only for circular on plan	,,	2 0 0
,, backing to masonry	,,	1 10 0
,, raising on old walls	,,	2 0 0
,, underpinning	,,	5 10 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
⅝″ deal sawn boarding and fixing to joists	Sqr.	1 14 6
1″ ,, ,, ,, ,, ,,	,,	1 17 6
1¼″ ,, ,, ,, ,,	,,	2 3 0
4″ × 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
1¼″ ,, ,, ,,	,,	1 6
2″ deal wrought rounded roll	F.R.	8
1″ deal grooved and tongued flooring, laid complete, including cleaning off	Sqr.	2 1 0
1¼″ do.	,,	2 10 0
1½″ do.	,,	2 17 0
1″ deal moulded skirting fixed on, and including grounds plugged to wall	F.S.	1 6
1¼″ do.	,,	1 9

CARPENTER AND JOINER—*continued*

		s. d.
1½″ 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
1¼″ deal tongued and moulded window board, on and including deal bearers	F.S.	1 9
1¼″ deal treads, 1″ risers in staircases, and tongued and grooved together on and including strong fir carriages	,,	2 6
1⅛″ deal moulded wall strings	,,	2 1
1⅛″ ,, outer strings	,,	2 4
Ends of treads and risers housed to string	Each	1 9
3″ × 2″ deal moulded handrail	F.R.	1 3
1″ × 1″ deal balusters and housing each end	Each	2 0
1⅛″ × 1⅛″ ,, ,, ,,	,,	2 9
3″ × 3″ deal wrought framed newels	F.R.	1 3
Extra only for newel caps	Each	6 0
Do., pendants	,,	6 0

SMITH AND FOUNDER

		£ s. d.
Rolled steel joists, cut to length, and hoisting and fixing in position	Per cwt.	16 6
Riveted plate or compound girders, and hoisting and fixing in position	,,	1 0 6
Do., stanchions with riveted caps and bases and do.	,,	19 0
Mild steel bar reinforcement, ½″ and up, bent and fixed complete	,,	17 6
Corrugated iron sheeting fixed to wood framing, including all bolts and nuts 20 g.	F.S.	11
Wrot-iron caulked and cambered chimney bars	Per cwt.	1 10 0

PLUMBER

		£ s. d.
Milled lead and labour in flats	cwt.	1 18 6
Do. in flashings	,,	2 2 0
Do. in covering to turrets	,,	2 7 6
Do. in soakers	,,	1 13 3
Labour to welted edge	F.R.	3½
Open copper nailing	,,	3
Close ,, ,,	,,	4

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

		£ s. d.
4″ cast-iron ½-rd. gutter and fixing	F.R.	1 0
Extra, only stop ends	Each	1 0
Do. angles	,,	1 6
Do. outlets	,,	2 9
4″ dia. cast-iron rain-water pipe and fixing with ears cast on	F.R.	1 2
Extra, only for shoes	Each	1 3
Do. for plain heads	,,	5 6

PLASTERER AND TILING

		£ s. d.
Expanded metal lathing, small mesh	Y.S.	2 0
Do. in n/w to beams, stanchions, etc.	,,	2 9
Lathing with sawn laths to ceilings	,,	1 3
½″ screeding in Portland cement and sand or tiling, wood block floor, etc.	,,	1 5
Do. vertical	,,	1 7
Rough render on walls	,,	1 2½
Render, float and set in lime and hair	,,	1 9
Render and set in Sirapite	,,	1 11
Render, backing in cement and sand, and set in Keene's cement	,,	2 9
Extra, only if on lathing	,,	4
Keene's cement, angle and arris	F.R.	6
Arris	,,	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.	,, 7½
Flemish, Arctic Figured (white) and glazing with putty	,, 1 1
Cathedral glass and do.	,, 1 2
Glazing only, British polished plate	,, 7
Extra, only if in 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

TH

•

NO

HO

5/

Le

wo

SE

AI

NO

de

lo

Le

O

to

(E

DR

4

Le

m

Se

o

m

S

O

N

s

in

o

s

IN

SIR

IN

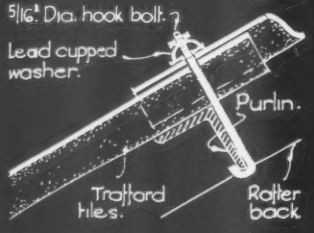
THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

• TURNALL • ASBESTOS-CEMENT TRAFFORD ROOF TILES : PURLIN SPACING & DETAILS :

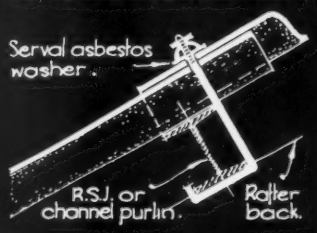
NOTE : For properties, uses, and laying of the tiles, see previous Information Sheets Nos. 1 & 2 of this series.

(A.) TYPICAL STEEL PURLIN ARRANGEMENTS : (All bolts are 5/16" diameter.)

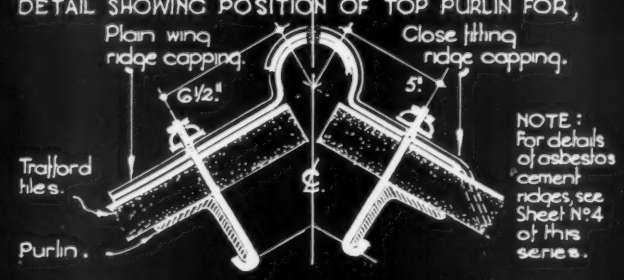
HOOK BOLT FIXING TO ANGLE PURLIN:



SQUARE BEND HOOK BOLT FIXING TO R.S.J. OR CHANNEL PURLIN:



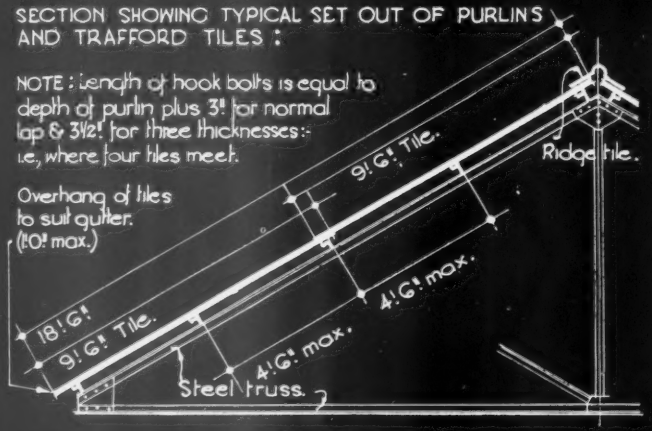
DETAIL SHOWING POSITION OF TOP PURLIN FOR,



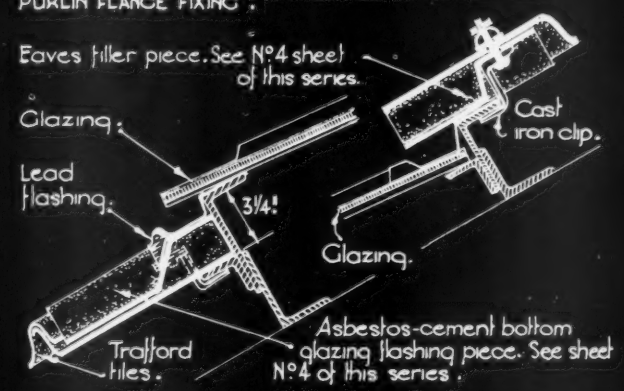
NOTE : For details of asbestos cement ridges, see Sheet No. 4 of this series.

SECTION SHOWING TYPICAL SET OUT OF PURLINS AND TRAFFORD TILES :

NOTE : Length of hook bolts is equal to depth of purlin plus 3" for normal lap & 3½" for three thicknesses :- i.e., where four tiles meet.

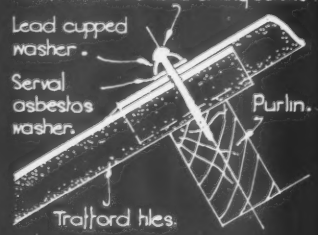


CAST-IRON CLIP & GALVANIZED BOLT & NUT FOR PURLIN FLANGE FIXING :

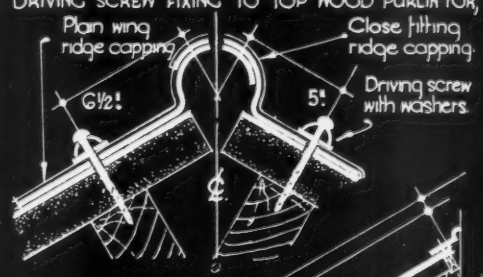


(B.) TYPICAL TIMBER PURLIN ARRANGEMENTS :

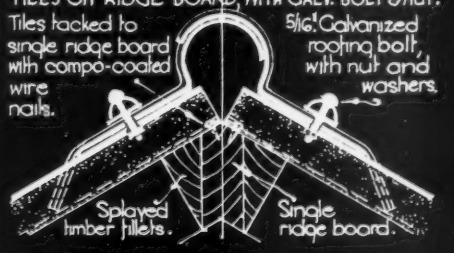
DRIVING SCREW FIXING TO WOOD PURLIN:



DRIVING SCREW FIXING TO TOP WOOD PURLIN FOR,

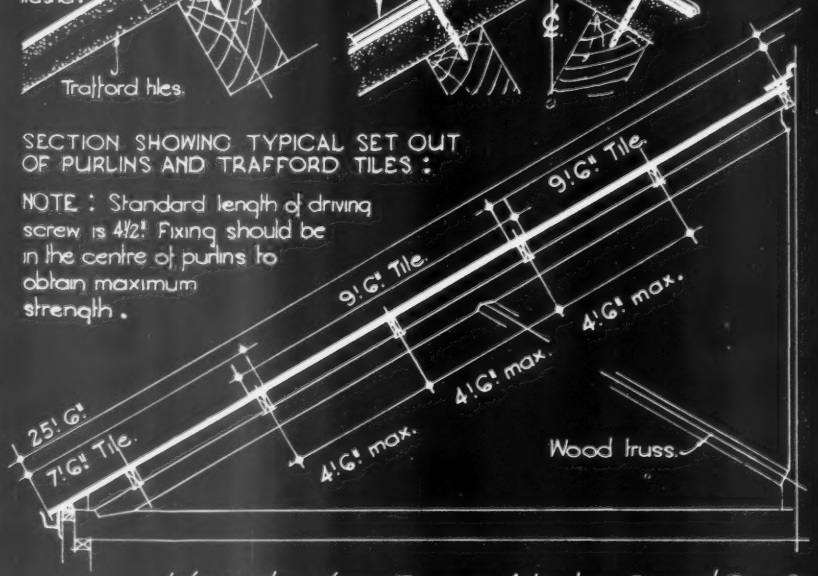


FIXING OF CLOSE FITTING RIDGE CAPPING, TO TILES ON RIDGE BOARD, WITH GALV. BOLT & NUT:

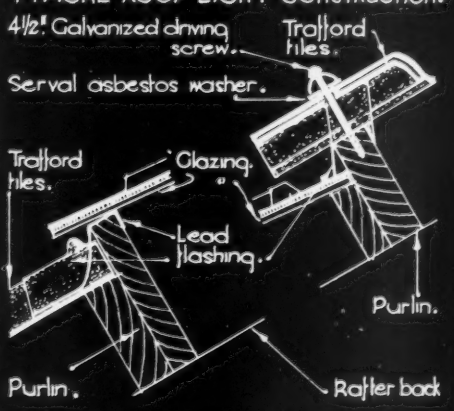


SECTION SHOWING TYPICAL SET OUT OF PURLINS AND TRAFFORD TILES :

NOTE : Standard length of driving screw is 4½". Fixing should be in the centre of purlins to obtain maximum strength.



TYPICAL ROOF LIGHT CONSTRUCTION:



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

INFORMATION SHEET : ASBESTOS-CEMENT ROOFING TILES : No. 3.

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

INFORMATION SHEET • 400 • ASBESTOS-CEMENT ROOFING TILES—III

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 400 •

ASBESTOS CEMENT ROOFING TILES—III

General

This is the third of the series of Sheets relating to the various uses of asbestos cement products in general building construction, and deals with standard purlin spacing details and fixings for Turnall Trafford Roofing Tiles. Previous sheets Nos. 1 and 2 of the series dealt with the general properties, uses and laying, and future sheets will set out the range of asbestos cement roof fittings for use in conjunction with the tiles.

Spacing of Purlins

Turnall Trafford tiles are designed for a maximum purlin spacing of 4′ 6″ on centre, whether wood or steel. Typical spacing diagrams are shown for both forms of construction.

Bottom Purlin

The bottom purlin should be as low as possible so as to reduce the unsupported overhang of the tiles, which should not exceed one foot.

Top Purlin

The position of the top purlin is of great importance, and depends on the pitch of the roof, as well as on the depth of purlin. The correct position is such that the hook-bolt or drive-screw will pass through the ridge cap wing at a distance of 5″ below the intersection on the plane of the ridge wing as shown for the close fitting ridge capping, and $6\frac{1}{2}$″ for the plain wing ridge capping. It should be noticed that these dimensions are to the backs or edges of steel purlins, and to the centres of wooden purlins.

Purlins at Roof Glazing

The purlins at the bottom of glazing which support the ends of the glazing bars and top of tiles should be carefully positioned, so that a clear $2\frac{3}{4}$″ space is obtained between the top of the tile purlin and the underside of the glazing purlin (steel) in order that a sufficient clearance is obtained to allow the vertical laps of the tiles to have a proper bearing.

In some cases it will be found necessary to have a short length tile below glazing, continuing at the ends of the lights with longer tiles, in which case purlins will have to be arranged accordingly.

At the end of the glazing a timber trimming piece may be cut between purlins, and the glazing frame screwed thereto, with the tiles butting up against the other side. The whole may then be lead covered, the lead being dressed over the glass and tiles and tacked to the trimmer.

Flashing and Filler Pieces

For details of these asbestos cement fittings see Sheet No. 4 of this series. In the sections of wood and steel construction shown overleaf, their use is interchangeable. It should be noticed that in the roof glazing detail for steel purlin construction, it is possible to fix with an ordinary hook-bolt instead of the cast-iron clip if the purlin carrying the tiling above the glazing is turned round in the opposite way to that shown, but care must be taken, if this is done, to obtain a definite fixing for the glazing. The clearance necessary between the top of the tile purlin and the underside of the glazing purlin is $3\frac{1}{4}$″ when bottom glazing flashing pieces are to be used.

Fixing Accessories

Application of the following standard fixing accessories is shown overleaf.

The fixing for most roofs can be accomplished with the range of fixings described below, but in a few isolated cases specially designed clips or bolts may be necessary.

(*a*) $\frac{5}{16}$″ diameter galvanized hook-bolt and nut with lead cupped and "Serval" asbestos washers, for fixing tiles to angle iron purlins or rails. The length of the hook-bolt is determined by the depth of the purlin flange, plus 3″ for all normal laps and $3\frac{1}{2}$″ for three thicknesses, i.e., where four tiles meet.

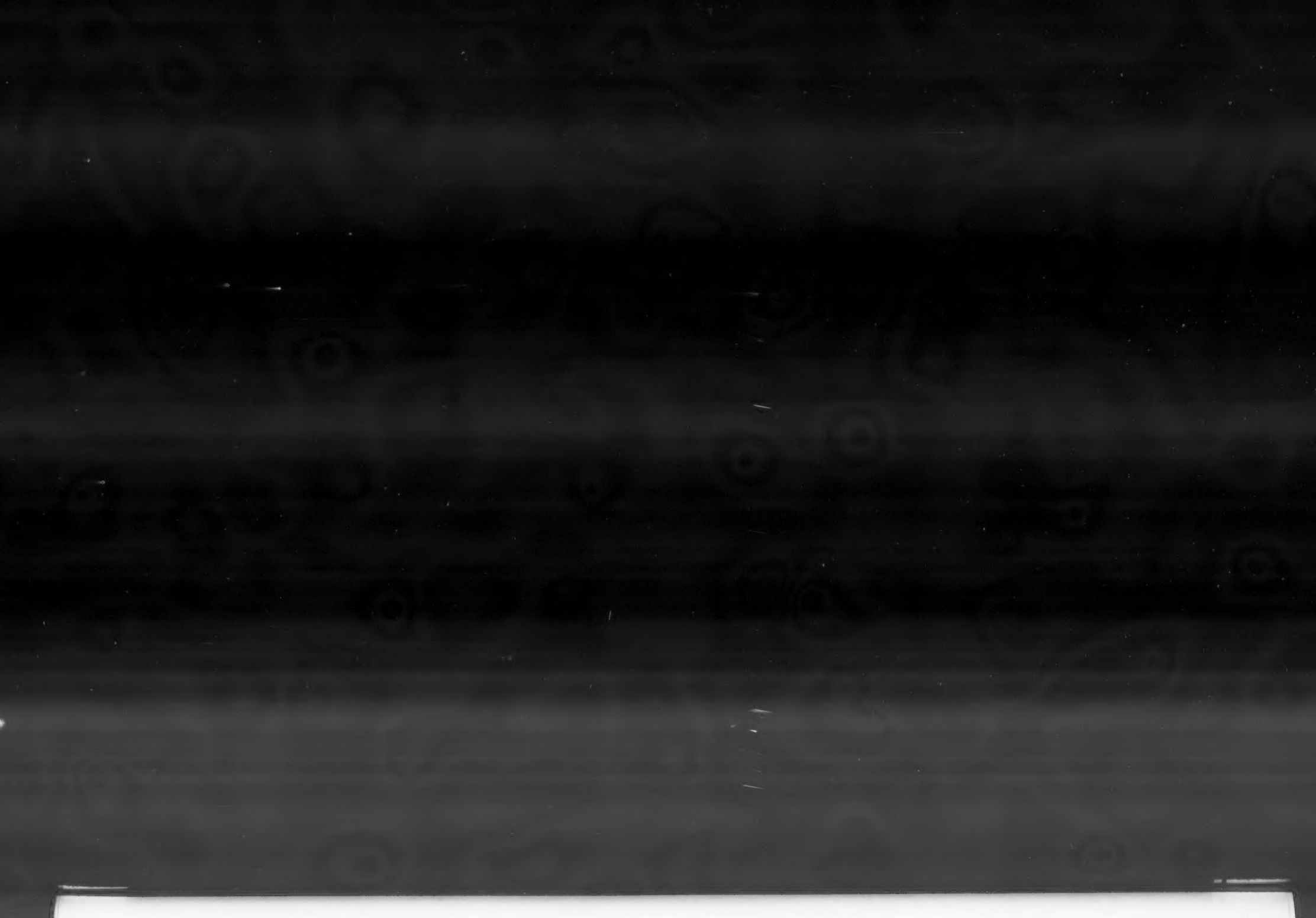
(*b*) $\frac{5}{16}$″ diameter galvanized driving screws, $4\frac{1}{2}$″ long, with lead cupped and "Serval" asbestos washers, for fixing tiles to timber purlins or rails.

(*c*) $\frac{5}{16}$″ diameter galvanized bolt and nut with lead cupped and "Serval" asbestos washers, for use with cast iron clips, also for "stitching" ridges, corner-pieces, finials, etc.

(*d*) Cast iron clips for fastening tiles to purlins or rails which have a flange and where a hook-bolt cannot be used.

(*e*) $\frac{5}{16}$″ diameter galvanized square bend hook-bolt and nut with lead cupped and "Serval" asbestos washers, for fixing tiles to R.S.J. or R.S. Channel purlins or rails.

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



Su

TH

A

O

If
p
a
n

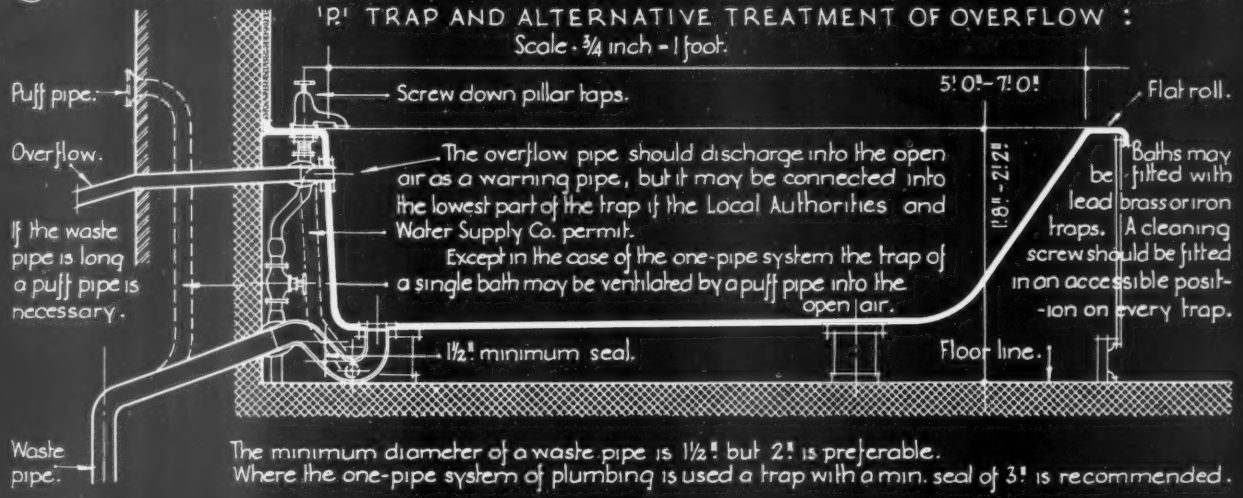
W
p

IN
SIR

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

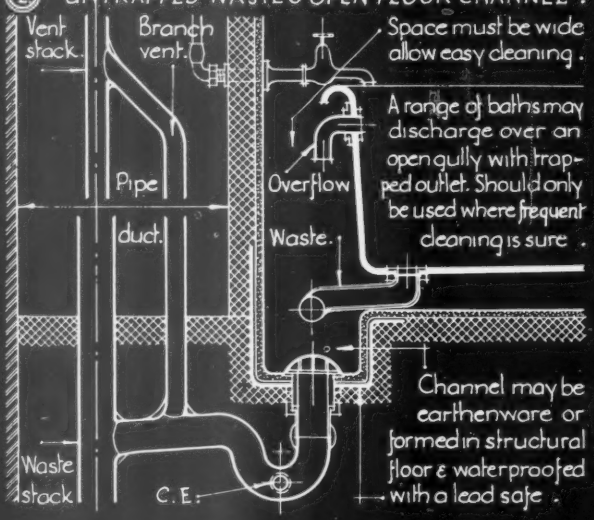
① TYPICAL ARRANGEMENT OF PLUMBING TO A SINGLE BATH SHOWING VENTILATED 'P' TRAP AND ALTERNATIVE TREATMENT OF OVERFLOW :

Scale - ¾ inch - 1 foot.

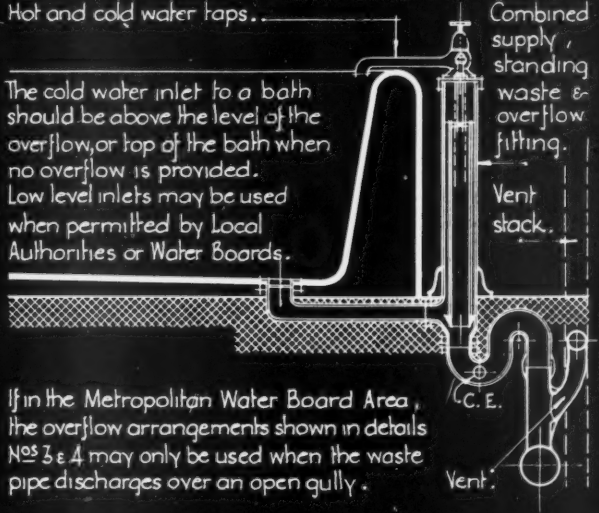


The minimum diameter of a waste pipe is 1½" but 2" is preferable.
Where the one-pipe system of plumbing is used a trap with a min. seal of 3" is recommended.

② UNTRAPPED WASTE & OPEN FLOOR CHANNEL :

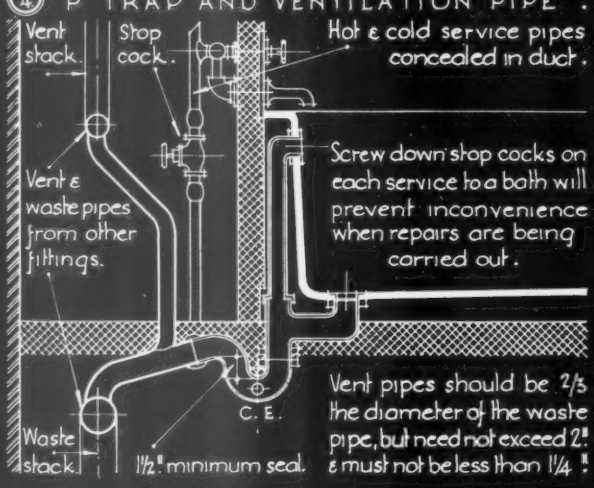


③ DEEP SEAL 'S' TRAP AND VENT PIPE :



If in the Metropolitan Water Board Area, the overflow arrangements shown in details Nos 3 & 4 may only be used when the waste pipe discharges over an open gully.

④ 'P' TRAP AND VENTILATION PIPE :



HEIGHT OF WASTE VENTILATING PIPE:

When a waste pipe serves more than one fitment on different stories it should be carried up vertically to such a height and position as to prevent nuisance or danger to health. Not less than 2' 0" above the top of any window within 20' 0" is desirable.

TRAP VENTILATING PIPES :

Traps should be ventilated when two or more baths are connected to the same waste pipe. The trap ventilating pipe should be carried up to the same height as the waste pipe, or be connected to it at a point above the level of the highest fitting.

DISCHARGE :

The waste pipe may, in some districts, discharge into a hopper or over a gully, but it is considered more sanitary to discharge into a gully under the grating obviating the fouling of the gully grating with soap suds.

Information from the Lead Sheet & Pipe Development Council.

INFORMATION SHEET : VARIOUS METHODS OF PLUMBING TO BATHS : No 25.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Olive A. Bayne.

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET
• 401 •
PLUMBING TO BATHS

This sheet shows a number of methods of arranging the supplies and waste plumbing to baths. Numerous minor variations may be made from the general methods shown, particularly in regard to the hot and cold water supplies in which the type of tap selected, the use of mixing valves or of combined fittings will affect the manner in which the pipes must be arranged.

Position of Water Supply Inlets

The hot and cold water supplies to a bath should be above the level of the overflow, or the top of the bath if no overflow is provided. Low level inlets are not permitted in London by the Metropolitan Water Board Regulations nor by the Ministry of Health Model Byelaws. Fittings for this type of inlet are, however, made by most manufacturers and are frequently used in districts where the local regulations permit.

The low level inlet reduces the noise caused in filling the bath, and tends to reduce the amount of condensation in the bathroom.

Trapping and Ventilation

The regulations covering the plumbing to baths are generally the same as for other waste water fittings, traps being compulsory in all cases.

Where a bath waste is short, is not connected to any other fitting and discharges over an open gulley, it need not be ventilated, but it is advisable and customary to ventilate such pipes by means of a puff-pipe as shown in detail No. 1. If more than one fitting is connected to the waste pipe, then a puff-pipe is not sufficient, a full ventilating pipe must be used and carried up to the top of the building as specified in detail in the regulations.

Over-Flow Pipes

The Regulations of the Metropolitan Water Board and the Ministry of Health Model Byelaws require that overflow pipes from baths should discharge into the open air.

Stop Cocks to Supply Pipes

In good work stop cocks should be provided on the branch supply pipes so that they can be turned off and repairs to taps, etc., carried out without interference with the general supply system.

Sizes of Traps and Taps

It is recommended that wastes to baths should never be less than $1\frac{1}{2}$ in. diameter, as this gives a more rapid discharge and greater freedom from blockage in the trap.

The sizes of the supply pipes should be governed by the head of water available. Three-quarters of an inch is sufficient where there is a good head of water, and 1 in. where the pressure is not so great.

Concealment of Plumbing

It is the practice in good modern work to conceal all plumbing work as far as possible by means of carefully designed casings with means of access, and pipe ducts. This practice is to be commended since it provides more sanitary and more easily cleaned surfaces, it protects the pipe lines and it tends to reduce noise.

Access to Pipes

If the casings to pipes are of heavy construction not capable of being readily dismantled, screwed access panels should be provided in case of need.

Detail No. 1

The arrangement shown in this detail is probably the most common arrangement in use at the present time with the bath flanged at the sides against walls and cased in on the open sides.

The overflow pipe is shown in accordance with the regulations as mentioned above, but may in certain cases be connected to the trap as shown in dotted line, in which case the foot of the waste pipe must discharge over an open gulley in a visible position.

The puff pipe shown must be replaced by a ventilating pipe (as mentioned above) if the waste pipe serves more than one fitting.

Detail No. 2. Open Channel

This method, with the bath outlet, and overflow discharging through very short branches into an open channel, is sometimes preferred for use in selected positions in institutions such as hospitals, etc., where a number of baths are provided together owing to the fact that no enclosed spaces are required, capable of harbouring vermin. All parts, pipes and fittings are accessible for cleaning and inspection.

The open channel may be formed in a number of materials such as glazed tile or terrazzo. It is, however, advisable to lay the channel upon a lead lining as shown to prevent leakage and consequent damage should the joints in the channel open, or should cracking occur. This lead lining should be protected from the action of cement or lime by a bituminous coating or other protective material.

Detail No. 3. Standing Waste and Overflow

This detail shows a type of outlet and overflow which is less common, but satisfactory provided the vertical overflow tube is occasionally cleaned by removing the cap and withdrawing the plunger.

Detail No. 4

This detail shows a combined waste and overflow with all pipes concealed in a pipe duct or casing.

Information from : Lead Sheet and Pipe Development Council
Address : Golden Cross House, Duncannon Street, London, W.C.2'
Telephone : Whitehall 3715

Suppl

TH

DE

SEC

SE
WI

S
S

L
C

A

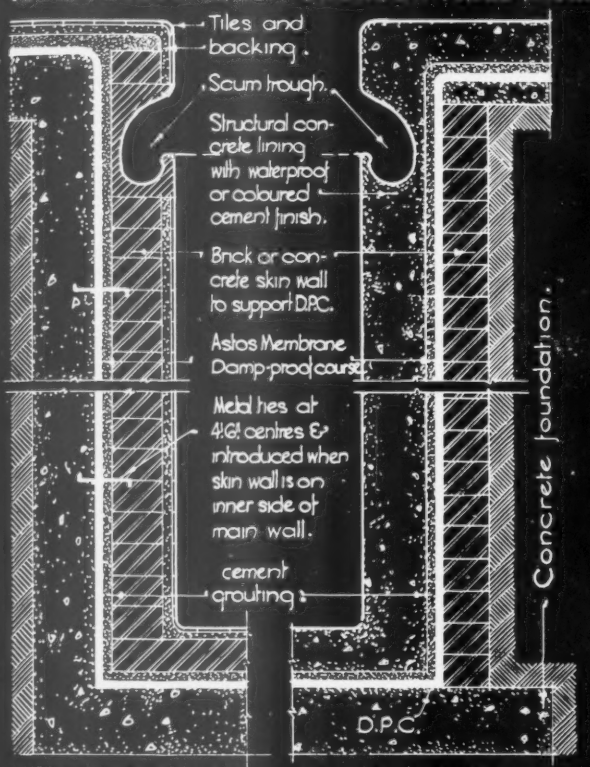
C
C

IN
SIR

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

DETAILS SHOWING THE WATERPROOFING OF SWIMMING POOLS, TUNNELS, TANKS, AQUEDUCTS, VAULTS, BASEMENT WALLS, ETC.:

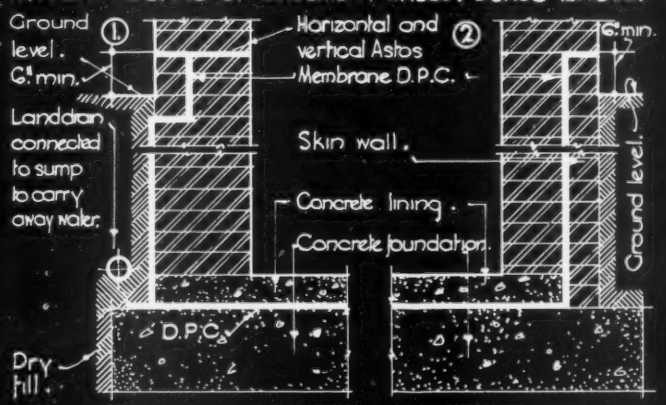
SECTION THROUGH SIDE OF A SWIMMING BATH: SCALE 3/4" to 1'0"



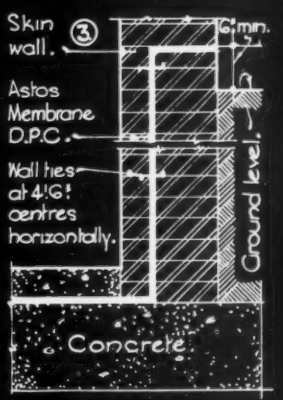
SECTION SHOWING BATH WITH INNER BRICK LINING.

ALTERNATIVE SECTION SHOWING BATH WITH OUTER BRICK LINING.

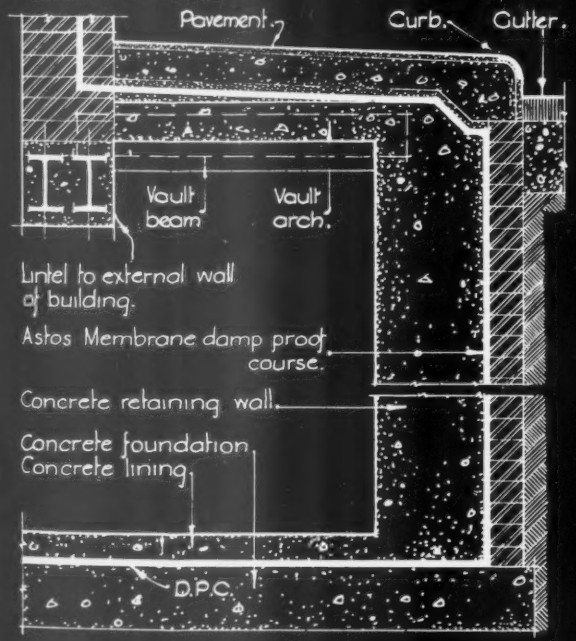
WATERPROOFING OF BASEMENT WALLS: SCALE 1/2" to 1'0"



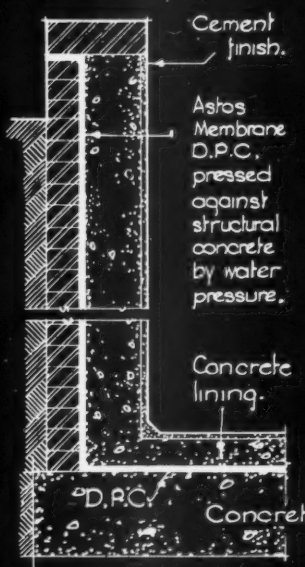
DETAIL OF TIE BETWEEN MAIN & INNER SKIN WALLS.



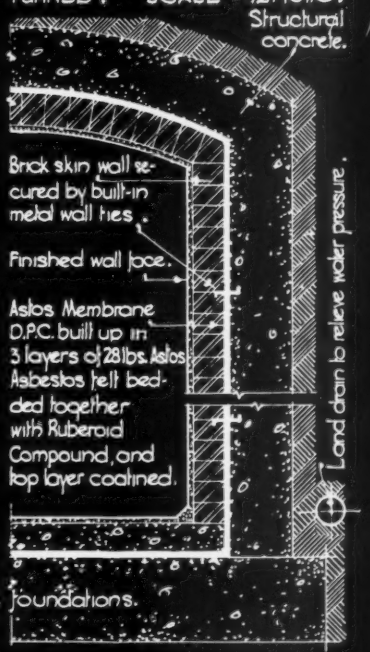
SECTION THROUGH VAULT UNDER A PAVEMENT: SCALE 1/2" to 1'0"



SECTION THROUGH SIDE OF WATER TANK, AQUEDUCT, ETC.: SCALE: 1/2" to 1'0"



SECTION THROUGH A SUBWAY TUNNEL: SCALE 1/2" to 1'0"



Information from The Ruberoid Co. Ltd.

INFORMATION SHEET: THE ASTOS MEMBRANE SYSTEM OF WATERPROOFING:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Drn: A. Bayne

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 402 •

WATERPROOFING

Product : The Astos Membrane System.

The Astos Membrane System of waterproofing consists of three or more layers of Astos asbestos felt bedded together with a special hot bitumen compound to form one continuous dampcoursing wherever required throughout the vertical and horizontal work.

Astos Asbestos Felt

The felt used in this system is composed entirely of asbestos impregnated with asphalt, and is, therefore, entirely free from all vegetable matter. Its all-mineral composition ensures permanence, and also ensures that, even under perpetual damp conditions, the dampcoursing is completely rot-proof. Vegetable compositions cannot be depended upon under such conditions.

It is recommended that in all work not less than three layers of Astos asbestos felt should be used, each layer being 28 lbs. or heavier per roll of 24 square yards.

The Bituminous Compound

The compound used to bed and bind the layers of Astos felt together is a special product called Ruberoid Compound ; it is applied hot, and on cooling sets to form a waterproof layer binding the sheetings firmly together.

Preparation of Surfaces

Concrete. Concrete surfaces need no especial preparation, but it is recommended that when the concrete surface is reasonably dry it should be primed with Ruberoid quick-drying mastic. The Astos membrane system may then be applied.

Brickwork. Good even brickwork needs no surfacing before the application of the Astos system, but joints should be all run flush.

Application

On walls all joints run vertically, the full height of the wall being run in one piece which is carried down on to the floor to provide at least 2″ lap with the floor dampcoursing, and also turned over the wall at the top by about 12″ to provide additional fixing until the basement walls are finished.

All joints between adjoining sheets of Astos felt are lapped 2″ and laid in Ruberoid compound. Joints in successive layers are always broken to ensure maximum strength. The first layer is bedded to the wall, and the second and third layers to it and to each other with Ruberoid compound, and the third layer is coatined over the whole surface before being built up by the covering wall.

Concrete Covering on Floors

Where the dampcoursing is laid on floors and is to be covered with a concrete slab, the first 2″ or 3″ of the concrete should consist only of fine aggregate, concrete with coarse aggregate may then be poured on top of this to the required thickness without danger of damaging the waterproofing membrane.

Wall Ties

Where for structural reasons the skin wall is built inside the structural wall, it is possible for excessive water pressure to push the skin wall inwards away from the structural wall, owing to the fact that water under pressure can penetrate the un-water-proofed structural wall, but cannot pass the waterproof layer.

It is, therefore, usual to tie the two walls together *through* the waterproofing layer by means of the special tie shown on this sheet.

One end of the tie is built into the structural wall ; the waterproofing laid over it, the threaded end projecting through the layers of felt. The Astos is carefully sealed around this threaded end with bitumen compound and the screw cap screwed home and bedded in the same compound, making a sound waterproof seal.

The other end of the tie may then be fitted and the skin wall built around it.

Spacing of Ties

The spacing of ties will depend on the pressure to be expected, but in normal work it is usual to space ties at approximately 4′ 6″ centre to centre in every fifth brick course.

Previous Sheets

Information Sheets previously issued by the Company are Nos. 267 and 304.

Manufacturers : The Ruberoid Co., Ltd.
Address : Lincoln House, 296/302, High Holborn, W.C.1.
Telephone : Holborn 9501.
Branch Offices :
Newcastle-on-Tyne
3 St. Nicholas Buildings
'Phone : 25958.
Birmingham
66½ Corporation Street
'Phone : Central 2079.
Manchester
33 Blackfriars Street, 3
'Phone : Blackfriars 3001
Edinburgh
Caroline Park, West Shore Road, Granton 'Phone : Granton 84041
Dublin
1 Aston Place Phone : 23107
Belfast
31 Corporation Street 'Phone : 26808