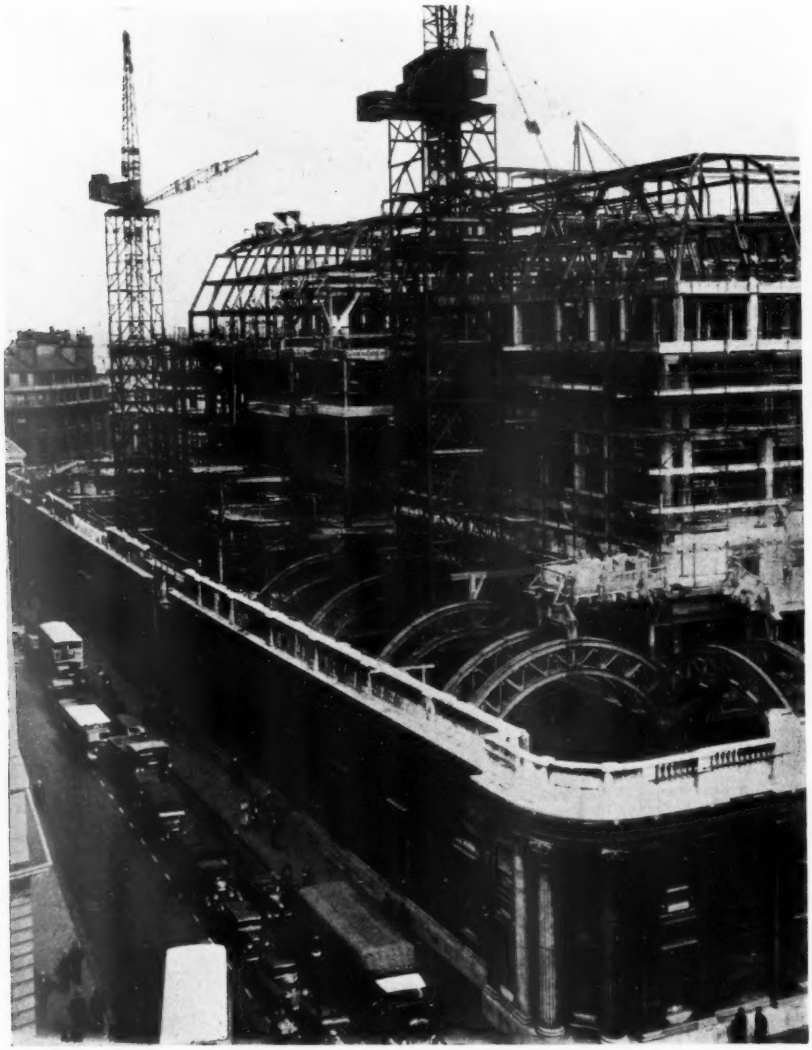
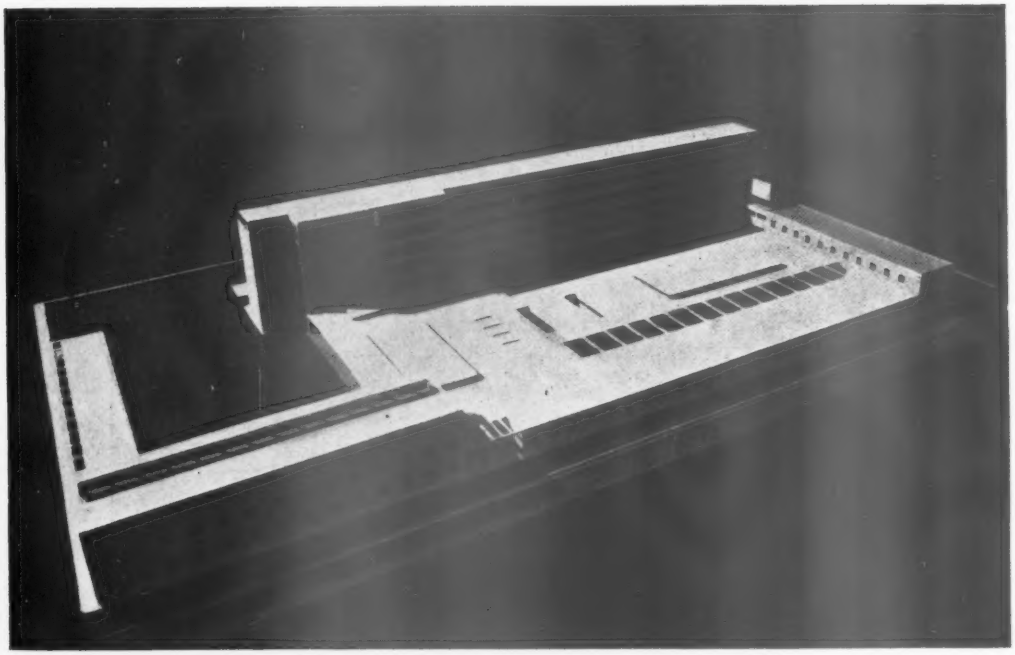
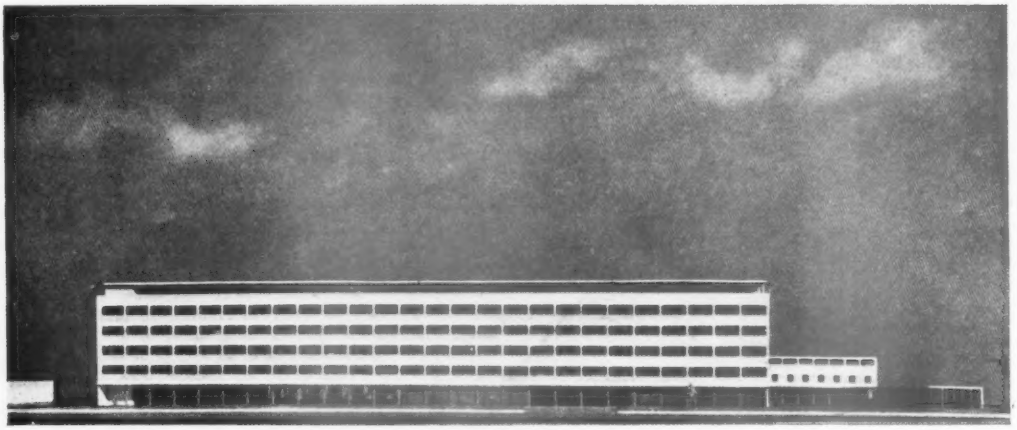
THE BANK OF ENGLAND

NEW WING NEARING COMPLETION



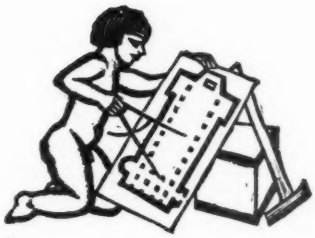
THE new wing of the Bank of England, work on which was started some four years ago, is now nearing completion. Above is a view looking along the Prince's Street front. The architect is Sir Herbert Baker, R.A., in collaboration with F. W. Troup, F.R.I.B.A.





SEASIDE COLONY

Two views of a model of a proposed Seaside Colony at Ostia, Italy, for the Italian Federation of Town Planning. The accommodation includes recreation grounds, chapel, gymnasium, cinema, restaurant and hospital. The architects for the scheme are Francesco Fariello, Enrico Lenti, Saverio Muratori and Franco Petrucci.



DIFFERENTIAL RENTS

THE economic rents of houses of similar type constructed by individual local authorities since the war have varied considerably, for a number of reasons. Land and construction costs have shown wide differences, resulting from the location of the houses and the time at which they were built, and loan charges wide differences arising from the variations in monetary conditions which have taken place.

Generally speaking, State and local authority subsidies provided under the early post-war Housing Acts have been used to reduce the rents of each dwelling built under a particular Act or within a particular scheme by an equal amount. The differing bases of contribution under the various Acts have not tended to even out inequalities in the rents charged for similar houses erected by the same authority.

The principle of applying subsidies in this way was taken almost for granted until about 1930. The 1930 Act provided that the State subsidy for operations under that Act should be calculated by reference to the number of *persons* displaced from unfit houses and rehoused, though the local authority subsidy was fixed by reference to the number of *houses* provided. It expressly empowered the charging of different rents to different tenants for similar accommodation. It was emphasized by the then Minister of Health that while the grant was based on the number of persons displaced (and rehoused) it was in no sense tied either to persons or to houses. Rent relief was to be given only to those who needed it and only for so long as they needed it. The State grant and the prescribed rate charge were to be regarded as a pool out of which abatements were to be financed.

It has been suggested that the necessity for adopting a scheme of differential renting had not been apparent until about 1930 because the houses provided under previous Acts had been occupied mainly by the better-paid manual workers and the lower middle classes. This, of course, is begging the question. The point is that if the policy of applying the subsidy to the relief of poor persons while they remained poor had been adopted it would have been practicable for a much greater number of large poor families to have occupied, and retained the occupation of, post-war municipal houses. Evictions of unemployed municipal tenants, and the return of those tenants to the conditions from which they had escaped, could have been avoided. The 1930 Act enabled a local authority to let a proportion of the houses built under it at a much lower rent than that normally charged for other houses owned by them. Since the Act was intended to provide for persons of lower income-grade than those who had been housed under previous legislation, and since these persons were to be compelled to move from the houses they formerly occupied, it was felt that a special responsibility to provide alternative accommodation within their means was thrown upon the authorities.

Local authorities have, in general, shown reluctance at applying the policy of differential rents. Considerable importance therefore attaches to the scheme now in force at Leeds, which applies to *all* municipal houses. Subsidies are separated entirely from dwellings and every tenant who can afford to pay the full municipal economic rent has to pay it. The full municipal economic rent is, however, not determined by the conditions that happen to be prevailing when the dwelling was erected ; it is the averaged cost of the dwelling to the city council. The value of the housing subsidies is pooled, and relief granted from the pool, according to scales laid down, to those who need it. 7,000 of the 11,500 tenants of municipal houses are receiving rent relief ranging from a few pence per week up to full relief in extreme cases.

The Housing Bill, 1935, provides for a general pooling of income and expenditure on State-aided housing schemes and makes it possible for every local authority to apply for a differential renting system. The Bill lays down that " in fixing rents the authority shall take into consideration the rents ordinarily payable by persons of the working classes in the locality, but may grant to any tenant such rebates from rent, subject to such terms and conditions, as they may think fit."

It will be noticed that the meaning of the first part of the sub-clause is not very clear and that the second part is merely permissive. It will be necessary for the Ministry to define more closely what is meant here by " taking into consideration." And the experience of the last sixteen years makes clear the necessity, while poverty and unemployment continue, for local authorities to embark on a complete system of differential renting, on lines similar to those adopted in Leeds, if the proper housing of the poorer wage-earners, and of the unemployed and those retired from industry, is to be assured.

The Architects' Journal
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NOTES & TOPICS

HOUSING

ON the day that Parliament rose for the summer recess the Royal Assent was given, by Commission, to two Acts which, in their respective spheres, will have a profound influence on the housing development of this country for many years to come. I refer, of course, to the Housing Act and the Restriction of Ribbon Development Act.

*

The Housing Act, much of the credit for which must be given to Lord Kennet (formerly Sir Hilton Young), is the heavy artillery of the Government's frontal attack on the slum evil. It lays down a standard of overcrowding, and has been everywhere welcomed as a great advance on previous legislation. True, many ardent reformers say that it does not go far enough, and that may well be.

*

It is always advisable to face facts, however, and the difficulty which the late Minister had with the right wing of the Conservative Party on the vexed question of compensation for slum owner-occupiers shows that it would have been well-nigh impossible to go much further at this stage. In a few years' time public opinion may have advanced to such an extent that some far more drastic measure may be possible.

RIBBON DEVELOPMENT

The Ribbon Building Act, as it is commonly called, was not produced, unfortunately, till the tail-end of a heavy session. It is an open secret that the question of compensation proved the stumbling-block, both before and after the measure was introduced. It took some weeks for the Cabinet itself to agree on this matter and, both in the Lords and Commons, much time and energy was spent in an endeavour to arrive at a compromise satisfactory to all concerned.

*

Though there were some members of both Houses who would, no doubt, have been glad to wreck the Act, the majority of all parties did their best to make it workable, and much credit must go to Mr. Hore-Belisha for fighting so hard and so often in Committee, and for being, at the same time, so accommodating to all shades of opinion.

*

But, while all this talk has been going on, the speculators have been busy, and ribbon development has indeed grown apace. It is a calamity that the Act could not have been made retrospective. Once again compromise has prevailed, and we have to rest content with the best that a rather too benevolent Government condescends to dole out to us.

PHILOSOPHY . . .

There is something about wandering around an exhibition of competition drawings which tends to give rise to deep philosophical reflection. Perhaps it is the visible symbols of so much human labour, all of which, save a minute part, are certain before their beginning to be unsoiled by any financial reward that brings the spectator to this state of mind. The forty pages of some unread report rustle gently in a draught, and around the long room a whisper seems to travel, murmuring: "Vanity, all is vanity. . . ." It is all very profound.

*

And when from the general these reflections pass to the architectural, they still hold something of human pathos. Fifty or a hundred designs hang upon the walls, all striving to catch the assessor's eye by their simplicity, economy, drama or mere effrontery; and from all these one only will be chosen.

. . . AND KENDAL

The exhibition of designs submitted in the recent Kendal competition is no exception to this general atmosphere; indeed, as a provincial competition it possesses it to an even greater extent. For a competition held in their immediate neighbourhood seems to tempt into the submission of designs a large number of firms who would never otherwise dream of entering the hazardous world of competitions. And by moving only a few steps—from the *naïveté* of some schemes so submitted to the compact three-dimensional organization of the specialists' solutions—the realization is sharply brought home of how long and large a study is covered by the word planning.

*

Only four of the Big Twenty of competitions submitted designs for Kendal, and of these two gained premiums; a result paradoxical in being both disheartening and very encouraging to all those who have been, so far, thereabouts, but never quite, there.

TROPHY TRADITION

In the window of Messrs. Thomas Cook and Son's headquarters you may now inspect the latest addition to our international trophies—the Blue Riband of the Atlantic.

*

From some distance away it is easy to mistake this valuable trophy for an antique kedge-anchor, heavily barnacled, richly gilt and bespattered with enamel. But

The trophy to be presented to the owners of the liner holding the Blue Riband of the Atlantic. See note on this page.

on closer inspection you will be able to rectify this mistake and appreciate its evolutionary symbolism.

*

Commence with the base-figures of Neptune and Amphitrite themselves and then study in turn the Winged Victories, a Speed, a Forces-of-the-Atlantic, a World, the Four Winds, a blue enamel Atlantic splashed by a red liner-route, steamships from the *Great Western* to the *Normandie*, finally picking out, between the Victories and the Winds, the Blue Riband itself.

*

The whole stands some 4 ft. high, weighs about 500 oz. and rests on a heavy onyx plinth, modelled.

ON HOLIDAYS

With August suddenly upon us, most architects will begin to think seriously of escape. A few, with partners or deputies at their command, will already have planned ahead and may be at this moment on the high seas, *en route* to Athens, or descending from the air upon some remoter Templehof, or even merely swinging a length of stainless steel over a homely moor-edge course.

*

But for most of us the time and space limitations of everyday planning preclude, ironically enough, an exact pre-timing of our personal travels. We are left to make last-minute decisions.

*

Shall we take an easy course and penetrate Spain with A.A. enterprise and jollity, or rush excitedly between Prague and Budapest with the International Reunion, or promenade with relative decorum among the exposed ruins of Rome with the International Congress—or shall we combine two of these social-architectonic rambles? (No, I refuse to say which two, you may like to read the pamphlets personally.)

*

Or, on the other hand, shall we have none of this bus-man's holiday business and seek the shelter of an English cottage, or walk in the Ardennes forest, or even hire a yacht and organize a crew and sail out of sight of concrete and steel—or away from bricks and mortar if you will have it so.

YACHTS

Which reminds me of the large number of professional men who own yachts, or have owned or are about to own yachts—and, of course, of the large proportion of architects among these amateur yachtsmen.

*

And if you know the difference between a jib and a fores'l (or between a line and a sheet) you will understand why. You will understand the eager reaction in wind-curved sail from rigid form and restricted building line—you will appreciate the immense freedom born of Admiralty charts well studied.

*

And if you understand these things, you may observe that the better architects have very independent minds; or have I been fortunate in never meeting a dull architect who is also a sailor?

CRIME AND PUNISHMENT

Speaking of yachts leads me to foreign parts and by obvious deduction (grant you) to thoughts on motor-cars and Zagreb, where motorists who commit offences against the highways code are to undergo the ordeal of having their tyres deflated and made to re-inflate them publicly under police supervision.

*

This is a grand idea. I perceive great possibilities in the extension of the principle to cope with offences against a standard-of-building code.

*

The eminent literateur who paints his house pink, when the other Nash houses in the terrace are cream, may be made personally to paint one square yard per morning until the error is rectified; the shopkeeper whose façade hides behind *moderne* lettering might be commanded to climb a ladder and explain in a loud voice why exactly those shapes were used; and what better than that the distinguished classicist who so successfully caricatures the French renaissance should mount a scaffold and carve his bearded caricature on each corbel and swag?

*

But first we shall have to write that standard-of-building code—and I can foresee difficulties.

PISA

Mr. George Bernard Shaw (the eminent dramatist), appealing last week in aid of the Tewkesbury Abbey Tower Appeal Fund, mentioned the leaning tower at Pisa and said:

*

"If modern scientific architects were let loose on Pisa they would look at it and say 'It is out of the straight,' and would ask for half a million pounds to stop it leaning."

All *I* can say is . . . .

Pshaw!

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

FUTURE OF PARLIAMENT SQUARE

Mr. Ormsby-Gore, First Commissioner of Works, is to place before the Government the representations of the Amenities Group in Parliament that the site adjoining the Canning Enclosure in Parliament Square shall be acquired as a perpetual open space. A deputation to him last week urged that the Government should help the L.C.C. and the Middlesex County Council to pay for the site.

HOUSING

The Minister of Health, Sir Kingsley Wood, visited Manchester last week to inspect housing progress and open a large block of flats named after his predecessor, Lord Kennet, formerly Sir Hilton Young.

WORTHING'S NEW PAVILION

The new southern pavilion built at Worthing to replace the one destroyed by fire was opened by the Mayor last week. It has cost £17,000. One floor is for dancing; the other is a café. Sun parlours also are provided.

BRIGHTON'S £400,000 WALK

The Rottingdean extension of Brighton's undercliff walk, which has cost £400,000, was opened by the Mayor last week. At the ceremony Sir Herbert Carden, chairman of the Improvements Committee, said it was the corporation's aim to convert the outlying districts of Brighton into beautiful garden cities surrounded by wide open spaces.

BOURNEMOUTH'S WINTER GARDEN SCHEME

Bournemouth Corporation has decided to replace with modern premises the Winter Garden and Pavilion, which for over 30 years housed the municipal orchestra and which have been practically closed for six years. The new building will be for exhibitions, indoor bowls, squash and badminton.

THE ARCHITECTS' DIARY

Thursday, August 8

ROYAL ACADEMY, *Burlington House, Piccadilly, W.1. Summer Exhibition. Open until August 10.* 9 *a.m. to 7 p.m.*

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

CIVIC CENTRE, NEWPORT

The Newport Parliamentary Committee decided last week to recommend the town council to acquire the Clytha Park site for development as a civic centre.

TOWN HALL, HAMPSTEAD

Mr. Sydney Tatchell, F.R.I.B.A., is preparing a report on the Town Hall at Hampstead. He is to decide whether the present town hall can be modernized and extended, or whether it will be less expensive in the long run to build a new one, possibly on another site.

The Royal Institute of British Architects were asked to suggest names of experts to advise on the matter and put forward those of Mr. Sydney Tatchell, F.R.I.B.A., Mr. Stanley C. Ramsey, F.R.I.B.A., and Mr. J. Alan Slater, F.R.I.B.A.

WEST YORKSHIRE SOCIETY OF ARCHITECTS

The Council of the West Yorkshire Society of Architects has awarded the Sir William Nicholson Travelling Scholarship to Mr. Harold B. Morris, of Brighouse, and the Bedford Scholarship to Mr. Norman S. Lunn, B.ARCH., A.R.I.B.A., of Lindley.

The inaugural meeting of the Harrogate branch of the West Yorkshire Society of Architects was held on July 24.

LIGHTING

The question whether improvement in lighting leads to increased efficiency in industry has so far been considered purely in relation to processes which demand careful attention and make a definite demand upon eyesight. Such, for instance, were the investigations carried out a few years ago to discover the lighting required for the setting of printer's type by hand. These showed clearly enough that improvement in output, accuracy and health resulted from improved lighting; but it was not thought worth anyone's while to consider seriously what, if any, amount of lighting was really best for occupations which did not actually call for good lighting as a help to discrimination; and there appeared to be no reason in such cases for running up bills for supplying light in excess of the absolute minimum required to see by. Now, however, an investigation has been carried out, as a joint research of the Illumination Research Committee and the Industrial Health Research Board, to see if it is really true that any light will do for the roughest kind of manufacturing processes, and a report has just been issued entitled *The Effect of Lighting on Efficiency in Rough Work* (*Tile Pressing*) (H.M. Stationery Office, price 4d.)

So far from confirming the prevalent idea that lighting can be neglected as a factor in out-turn where the simplest processes only are concerned, the experiments have clearly proved that output, even in these cases, shows a progressive increase with increased illumination (apart altogether from providing more congenial conditions of work). Not only is production improved, but the improvement may be expected easily to outweigh any additional money spent on lighting. Putting it at its lowest, as the Report says, "the results of these investigations show that the employment of very low values of illumination such as are frequently used for 'rough' work give the belief that good lighting is unnecessary for a job which 'can almost be done in the dark,' and may result in a loss of output the value of which may be substantially greater than the cost of providing reasonably good illumination."

EXHIBITION AT WINCHESTER SCHOOL OF ART

An exhibition of architectural drawings was held recently at the Winchester School of Art, and contained the R.I.B.A. prize drawings, the prize drawings in the Hampshire and Isle of Wight Architectural Association's competitions, as well as work exhibited by members of the Association. Mr. A. H. Moberly, who performed the opening ceremony, said he knew it was customary, when there was an exhibition, that it should have a formal opening, but his difficulty was to determine what subject might specially interest them. He had considered speaking on the difference between the architect practising in London and the architect practising in a provincial city, but there really was no difference, and he had decided against that. The next thing he thought of was the subject of Registration, and those who practised in London had made up their minds that the demand for Registration came from the provincial towns to ensure that they got trained architects, but it was much too soon to say how far Registration would be effective. The third possible subject was architectural education, with which he had been connected a good deal lately, but that was a subject upon which he would rather like to hear the views of architects who practised in that part of the world.

IN PARLIAMENT

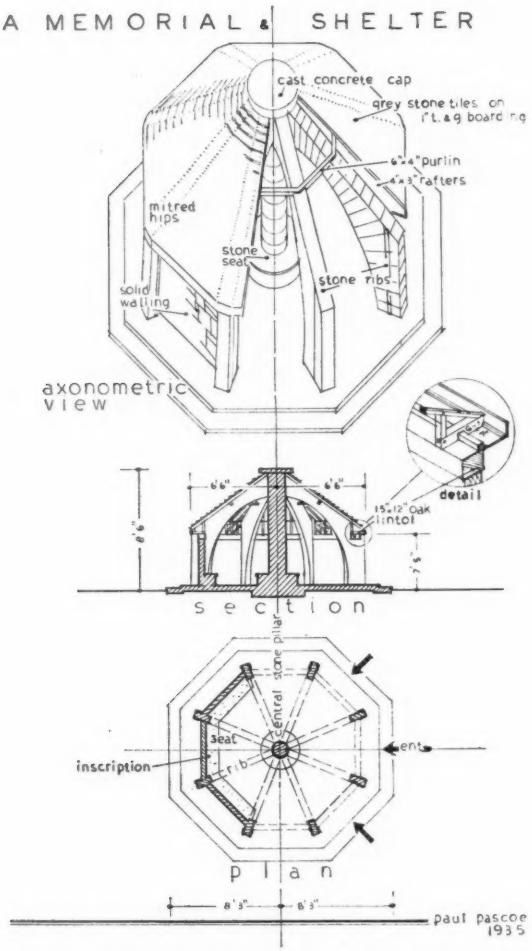
Ribbon Development Bill

The Restriction of Ribbon Development Bill received the Royal Assent on Friday, the day on which Parliament rose for the summer recess.

Proposed Housing Scheme, Hackney

Mr. Cadogan asked the Minister of Health whether his assent had been given to the London County Council's scheme to appropriate 30 acres of playing fields on Hackney marshes for the purposes of a new housing scheme.

Sir K. Wood said he understood that the L.C.C. resolved on Tuesday, July 30, to



Lord and Lady Carlisle (1928) Memorial, Brampton, Cumberland. Designer: Christopher Nicholson.

appropriate this land for housing purposes, subject to his consent, but he had not yet received any formal application in the matter.

Mr. Cadogan asked whether the right hon. gentleman would withhold his consent to this scheme until every alternative had been carefully examined, in view of the importance of Hackney Marshes as the best open space for health and recreation in East London.

Sir K. Wood said that he would gladly look into it, and if there were any substantial objection to this scheme he would take the usual course of ordering an inquiry.

Shortage of Bricklayers and Plasterers

Mr. Rankin asked the Minister of Labour what steps he had taken to encourage the provision of an adequate number of skilled bricklayers and plasterers to overcome the present shorage of such workers; and whether, in view of the fact that a shortage of workers in these two key trades was liable to prevent the employment of large numbers of persons in other sections of the building industry, he could arrange for instruction in such work to be given under the various training schemes supervized by his department.

Mr. Ernest Brown said that it had from the outset been the practice to give instruction in bricklaying and plastering at the Government training centres. The number of places provided was related to the prospects of placing the men in employment at the conclusion of their course.

R. I. B. A.

THE EXAMINATIONS

The questions set at the Intermediate, Final and Special Final Examinations held in May and July, 1935, have been published, and are on sale at the R.I.B.A., price 1s. (exclusive of postage).

The Final Examination.—The Final Examination qualifying for candidature as Associate R.I.B.A. was held in London and Edinburgh from July 3 to 11, 1935. Of the 173 candidates examined 66 passed (16 in Part I only) and 107 were relegated. The successful candidates were as follows:

H. Armitage; E. T. Ashley-Smith; F. O. Baddiley; J. C. Ball; G. W. Banfield; C. G. Bath; G. H. Beech; C. C. Brown (Part I only); H. K. Brown; L. A. Brown (Part I only); G. E. Cardew; T. Cartlidge (Distinction in Thesis); H. H. Clark; A. C. Couch; R. C. Davis; N. Dickenson); R. C. Edleston; R. A. Eggleston; C. Elgey; S. F. Everson; J. E. Flatman; M. Foreman; N. H. Fowler; (Part I only); A. F. Fry; A. W. Gaunt; J. G. Grace; G. C. Gravell (Part I only); J. W. Greenwood; J. M. Harrison; H. J. Harvey; H. H. Hayns (Part I only); J. L. Hope; J. Howe; W. J. Jobson; J. W. Keeling; (Part I only); T. W. Knight; J. M. Knowles; A. L. Luke; H. C. Macaree; J. S. McFadyen; A. C. Manual; A. S. Morris; T. S. Morris; L. D. Morrison; H. T. Murrell; G. H. Oliver (Part I only); L. N. Orchard; G. R. Penrose (Part I only); W. J. Pierre-Hunt; C. G. Pinfold (Part I only); F. T. Pritchard (Part I only); A. Proskauer (Part I only; not a British subject); A. F. Russell (Part I only); F. M. Rutter (Part I only); L. G. Scott (Part I only); B. S. Smyth; V. Smyth; E. F. Stacy; R. A. Stewart (Part I only); H. G. Tuffley; J. W. Turner; H. Walters; A. Wilkinson; A. C. Williams; L. H. Wilson; A. F. Yarrow (Part I only).

The Special Final Examination.—The Special Final Examination qualifying for candidature as Associate R.I.B.A. was held in London from July 3 to 9, 1935. and in Edinburgh from July 3 to 11. 1935. Of the 38 candidates examined 9 passed (1 in Part I only) and 29 were relegated. The successful candidates were as follows:

W. B. Attenbrow; R. H. Clay; A. D. McGill (Part I only); R. Procter; H. J. Reid; W. G. Sinning; H. T. Townsend; F. Tsun; S. L. Williams.

The Examination in Professional Practice for Students of Schools of Architecture recognised for exemption from the R.I.B.A. Final Examination.—The Examination was held in London and Edinburgh on July 9 and 11, 1935. Of the 21 candidates examined 17 passed and 4 were relegated. The successful candidates were as follows:

G. Arthur; F. J. Connell; W. G. Dey; M. Drysdale; C. D. Edwards; A. E. Gordon; H. A. Govan; A. S. Hood; A. B. Kerr; G. H. Lawrence; W. Mills; E. W. Parker; V. N. Prasad; P. H. Ronaldson; A. Sturrock; R. Woodcock (Junior); F. S. Wright.

THIS ARSHETECTURE

In spite of the indiscipline and anarchy which show themselves in the practice of architecture today there are, we believe, certain principles which ought always to be observed. Departure from them produces the incongruous and the insincere.

Among these principles, we consider, is that a building should possess evident strength, that there should be from the sustaining foundation to the upper levels a series of recognizable columns or stanchions. All students of architecture consider, therefore, that when a store building allows its outer columns to be encased in windows and shows an uninterrupted stretch of plate-glass round the whole it becomes incongruous. There is no evidence of a strong base which allows the upper part to be carried and it seems suspended in mid air.

Window space is valuable and we should gain many more square feet of it if we abandoned the great pillars with their stone fronts. But we hold that to do so would be inconsistent with good architecture and we prefer to do without the extra window space. We believe this is our duty to the public almost as imperative as is our duty to give them good value in merchandise.—"Callisthenes" in *The Times*.

Y O U T H H O S T E L A T

THE SITE

The hostel is situated almost upon the crest of a hill between Peaslake and Holmbury St. Mary in Surrey, with an extensive view to the west, and is surrounded by several hundred acres of common and preserved land.

The contours of the surrounding country suggested a long and low building.

GENERAL PURPOSE

The building is the first to be erected of permanent materials for the Youth Hostel Association in this country, and is intended to provide cheap sleeping accommodation and cooking facilities—and board if desired—for walkers and cyclists.

Members of the Association visiting the hostel are charged 1s. *for sleeping accommodation, one penny for the use of the members' kitchen, and* 1s. *per meal cooked by the wardens (man and wife) in their own kitchen.*

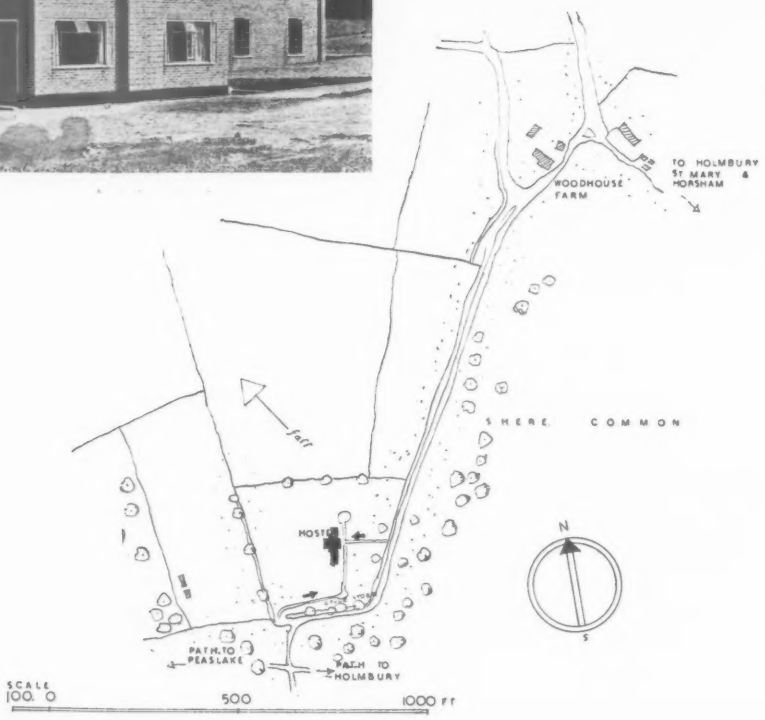
The photographs show: above, a general view of the main front from A*; below, the rear elevation from* C.

D E S I G N E D

B Y H.

V I C A R S

L O B B



SITE PLAN

HOLMBURY ST. MARY, SURREY

THE PLAN

The disposition of the plan follows the natural movements of members entering the building in the following order :—

entrance—registering with warden—drying room, if necessary—dormitories—lavatories—kitchen—common room. The minimum of wall space faces north, dormitories face east and west, and the terrace outside the common room overlooks a wide view. A bedroom, spare room, and sitting-room are provided for the wardens upon the first floor.

ELEVATIONAL TREATMENT

The architect was given full discretion by the clients, save for general approval by the C.P.R.E. The facing bricks are local and sand-faced, and the coping and string course are in local limestone. The lettering over the entrance doorway is cut direct in the brickwork. Windows are in metal throughout.

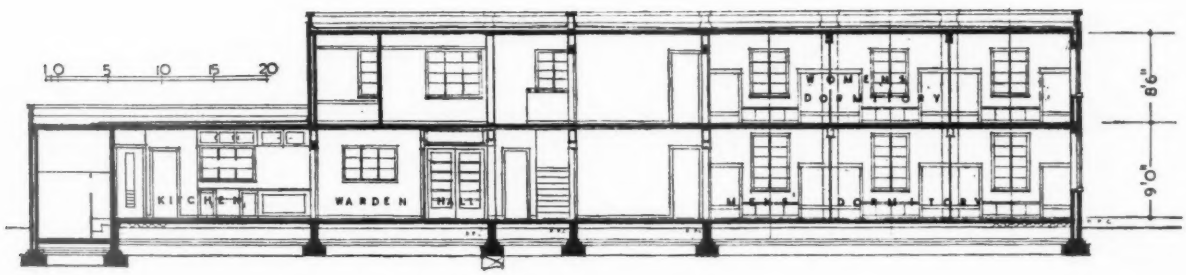
CONTRACT

Single contract for all work. Price per cubic foot, 1s. 0¼d. Contract price, £2,850.

CONSTRUCTION

Brick built with 12 in. cavity walls. R.C. hollow block floors and roofs. Internal walls brick, with breeze partitions to lavatories and showers only. Largest span 24 ft. 6 in.

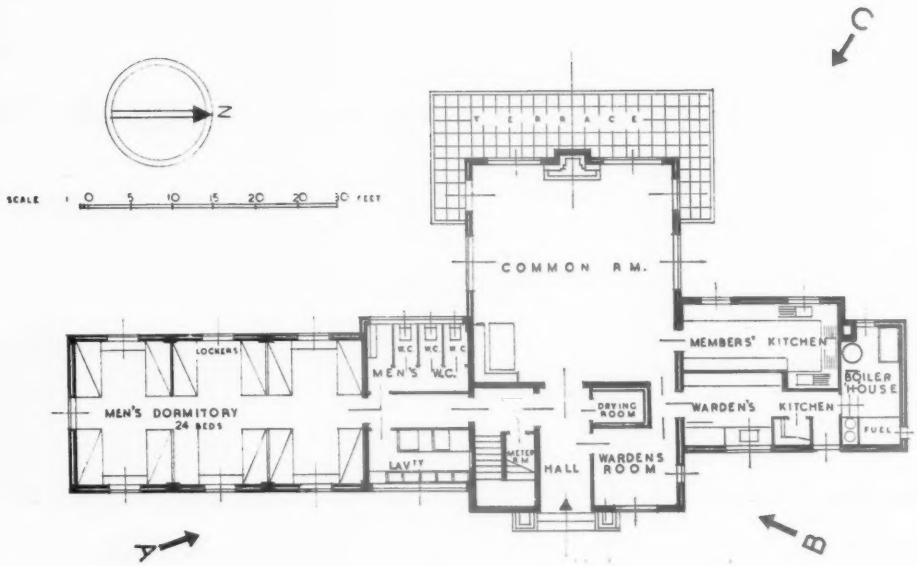
On the right is a detail of the main entrance from B.



LONGITUDINAL SECTION

YOUTH HOSTEL AT

The common room.



GROUND FLOOR PLAN

HOLMBURY ST. MARY, SURREY

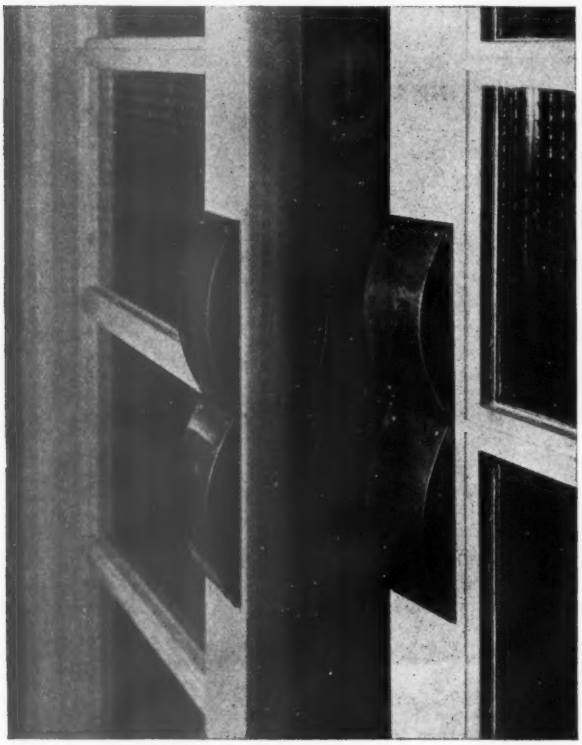
INTERNAL FINISH

The common room is the only room possessing a decorative finish. This is panelled in Australian walnut plywood with V joints painted sealing-wax red. The freize is oil-painted on plaster board. The floor is of linoleum on screed. The hall is floored with two shades of buff tile with a pale dove grey border. Doors are flush, painted elephant grey, with edges and lining rebates in sealing-wax red. Members' lavatory-showers have painted brick walls and grano floors. Walls of dormitories are of plaster, finished with a felt float and thus left. For details of kitchens and members' bunks see pages 197-200.

SERVICES

Hot water supply and heating, by flush ceiling panels, are from a coke-fired boiler thermostatically controlled. A single coal fire is provided in the common room for social reasons.

For list of general and sub-contractors see page 212.

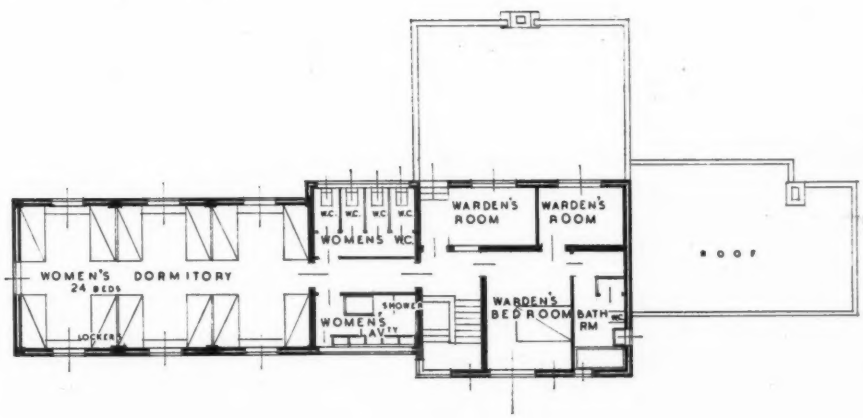


Above, the main entrance corridor with the common room beyond.

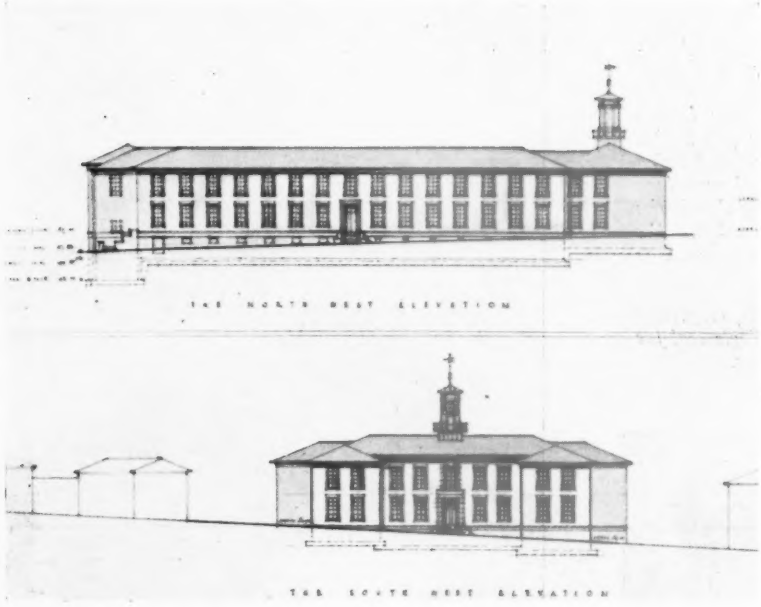
Left, a detail of the doors to the common room, in deal and wired plate with combined grip handles and push plates in copper.

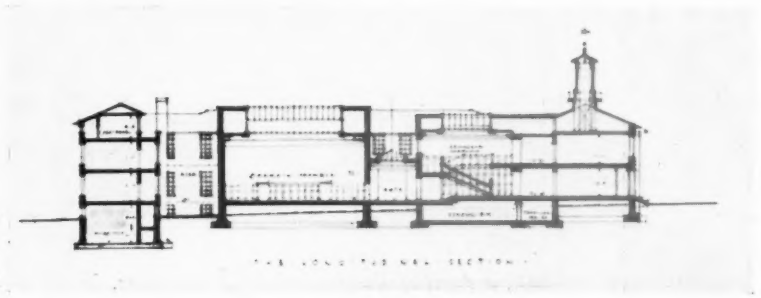
DESIGNED BY H. VICARS LOBB

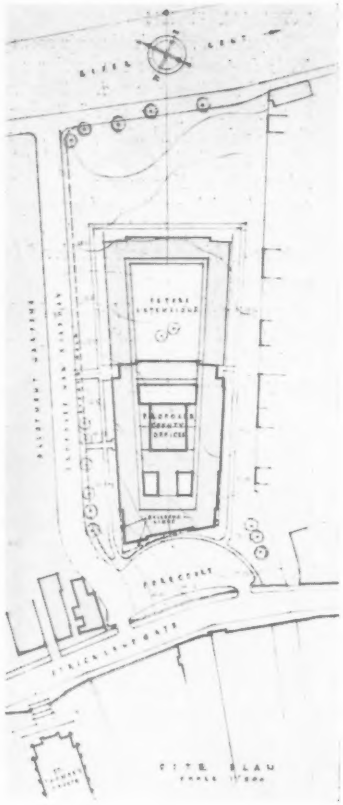
FIRST FLOOR PLAN



COMPETITION FOR COUNTY OFFICES, KENDAL:







On this and the following four pages we illustrate the designs placed first and second in the competition for the proposed county offices, Kendal, together with a review of the designs submitted and the assessor's (Mr. G. H. Foggitt, F.R.I.B.A.) report. The result of the competition (as announced in a previous issue) was as follows :

Design placed first (£200) : Mr. Verner O. Rees, F.R.I.B.A., of 33 Bedford Place, London, W.C.1.

Design placed second (£125) : Messrs. H. C. Hughes and P. Bicknell, F. & A.R.I.B.A., of 1 Tunwells Court, Trumpington Street, Cambridge.

Design placed third (£75) : Messrs. Bradshaw Gass and Hope, FF.R.I.B.A., of 19, Silverwell Street, Bolton.

Commended designs : Messrs. J. S. and G. R. Stout, L.R.I.B.A., of 36 Lowther Street, Whitehaven ; and Messrs. Silcock and Thearle, FF.R.I.B.A., of 58, Rodney Street, Liverpool, W.

THE DESIGNS REVIEWED

THE recent competition for new offices for the Westmorland County Council at Kendal was one of the greatest interest. It showed that an authority wishing to erect a building even of quite moderate size can obtain the consideration of the particular problems of their building by a large number of architects for a very small additional expenditure. But the 88 designs submitted in the Kendal Competition, of which the public exhibition opened yesterday, show more than this. They make plain to an extraordinary degree the very large number of plan solutions that may be forthcoming in response to conditions of a somewhat emphatic rigidity.

The conditions that were explicit were adhered to by all competitors, and those merely implicit were perceived and acted upon by the large majority.

Certain factors concerning the Kendal Competition must have been obvious to all competitors. The promoters, rightly valuing their proximity to a district of natural and architectural distinction, desired that the building should be in keeping with local treatment ; the walls were to be of local stone, the roofs of green slate. This requirement, taken in conjunction with an assessor of wide experience in north country traditional work, might have led to a deduction that in this competition anything in the way of what has been called "lurid modernism" would be at a discount—that a sound, traditional plan, pleasingly and simply elevated, would be the kind of scheme likely to be fortunate. The competitors thought so too.

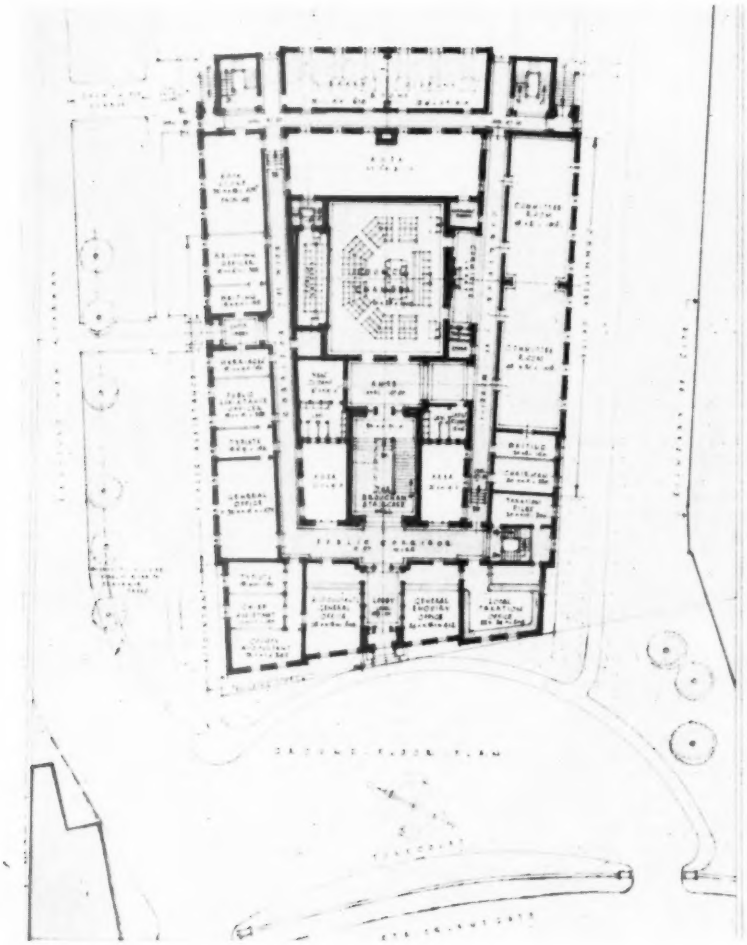
But even with such a ticklish question more or less disposed of, problems sufficient for the most experienced competitor still remained.

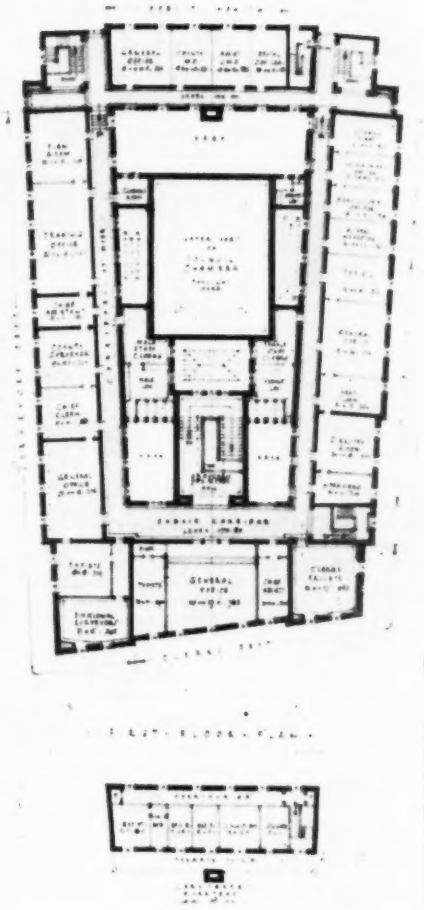
There was first the site—a long thin oblong with slightly splayed sides, the shortest side of all being the principal elevation to Stricklandgate. But the controlling factor of all plans was the placing of the council suite (requested upon the ground floor), and in particular of the two committee rooms—1,000 ft. super each and desired communicating. On so thin a site, 125 feet average, this question was decisive.

The council suite was desired to be self-contained, and two alternative lay-outs might possibly achieve this ; either to make the council suite an entirely separate block on the ground floor, or to put as much of the council suite as possible in the central area and to "clothe" it with the remaining accommodation—the two committee rooms being in a side wing adjoining.

There were a few examples of the first method (Fig. 2, see page 194) and many of the second, more reasonable, and winning solution. The sole important remaining problem was that of the number of lighting areas—weighed against the necessity for as self-contained a council suite as possible. The alternatives

WINNING DESIGN: BY VERNER O. REES





were four, three and two areas. All had advantages and disadvantages and, save for the success of the three-area winning plan, were in half a dozen cases very difficult to choose between.

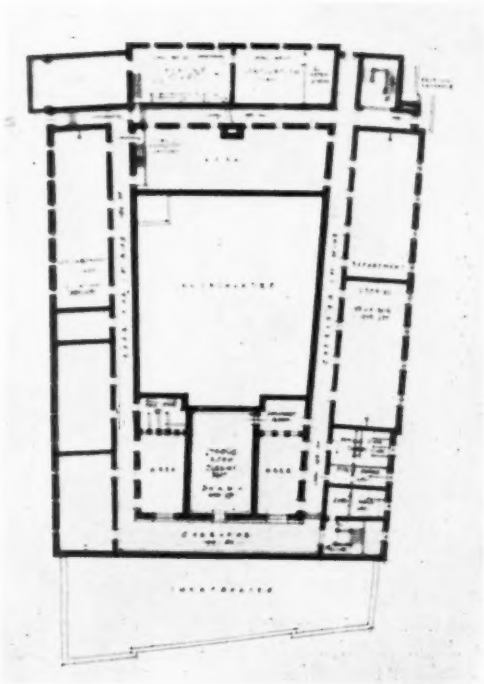
The four-area plan form gave the best clean plan appearance, with a processional corridor straight from the main entrance to the council chamber, and having a public gallery upon the opposite side of the chamber with an excellent and separate access. Its disadvantages were small areas, somewhat over-reduplicated circulation, and a council suite not completely self-contained. [Design placed third, Fig. 1, and Fig. 3, see p. 194.] The three-area plan gave the best results, save that it was open to some of the same objections as the four-area as to circulation. The two-area plan form was naturally very well lighted, but suffered in its turn from awkward circulation and some cramped plan shapes.

The winning design, by Mr. Verner O. Rees, has a plan which utilizes the whole site up to its boundaries, and is easily the best in the exhibition.

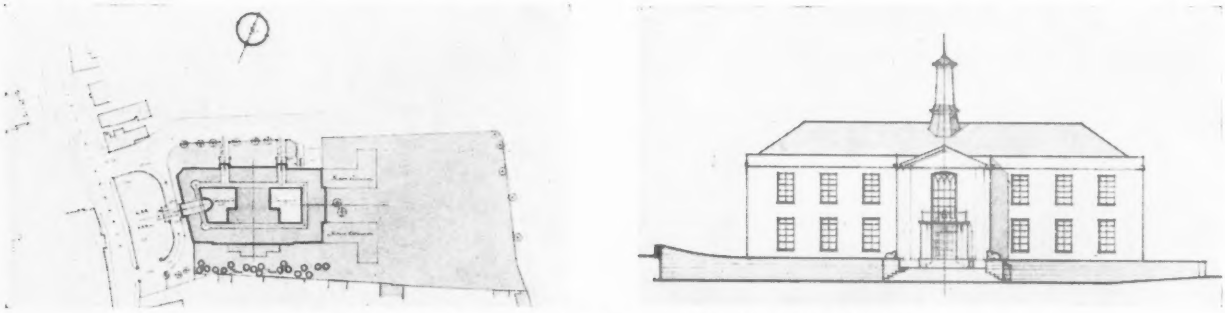
At the slight expense of traditional "clean" planning, Mr. Rees obtains a council suite entirely self-contained whilst the Brougham Hall stair, that Victorian bugbear surmounted with heraldic lions and antelopes, is almost royally situated. The library is excellently planned to the north-east, overlooking the river on the courts of the future extension.

The winner was one of the few competitors who swung the Stricklandgate elevation to lie parallel with that street, and in this case the many would seem to have been in the right. The awkward plan shapes resulting hardly justify avoiding a divergence so trivial and

Basement (right), ground and first floor plans. The illustrations on the facing page show: the north-west elevation; the south-west elevation; longitudinal section and site plan.



COMPETITION FOR COUNTY OFFICES, KENDAL:



The design placed second: site plan; and elevation to Stricklandgate.

one which would, in execution, be barely noticeable. A remaining criticism is that the minute breaks in the principal front make this elevation somewhat two-dimensional. The report accompanying the winning scheme is of a brevity which can rarely have been equalled in the history of open competitions. On two pages of foolscap Mr. Rees states that the building is intended to be simply and soundly constructed; for the rest, the plans are allowed to speak for themselves.

The second and third designs resemble the winner in general plan disposition, but with less success; and both avoid the "unresolved duality" of the committee rooms by placing between them a small room; thus proving once more the flexible nature of competition conditions. The decision as to which of these two schemes should have the higher place must have been a difficult one.

Messrs. Hughes and Bicknell achieve a self-contained council suite with some awkwardness of circulation and, like Mr. Rees, swing the Stricklandgate elevation. Messrs. Bradshaw Gass and Hope have not so compact a council suite, but a cleaner plan. In both schemes the library is placed, again as in the winning scheme, at the rear of the building.

As to cost, that delicate adjustment between the desirable and the truthful, estimates vary in the normal competition way. A widespread optimism amongst the also-rans as to the building costs of the immediate future, gives place amongst the premiated designs to an attitude more approaching realism. The winning scheme, at an average rate of 1s. 9½d. per cube foot, is estimated at £68,000; the second, at 1s. 10d., amounts to £64,000. Other estimates vary from £45,000 to £70,000.

In conclusion, it may be said of Kendal, as of four competitions out of five, that the winning scheme represents the most practical compromise between the many conditions—important and unimportant—which formed the framework upon which all competitors had to build up their several solutions. A. B.

THE ASSESSOR'S REPORT

I have carefully examined the eighty-eight sets of drawings submitted in this competition and I am of the opinion that the design numbered 66 meets more fully than any of the others the requirements as set forth in the conditions and instructions and in the answers to competitors' questions which were issued to all competitors. I award, therefore, the first premium of £200 to the author of this design and recommend that he be appointed architect for the proposed buildings. I award the second premium of £125 to the author of the design numbered 12, and the third premium of £75 to the author of the design numbered 63.

There has been a good response to the invitation to compete, and a number of the designs submitted show very good solutions of the problem set. After selecting the best of the designs submitted I have carefully compared their merits and defects and have no hesitation in making the award as stated above.

In the winning design the author (Mr. Verner O. Rees) has produced a well-balanced scheme which, in execution, will give all the accommodation required, will be well fitted for its purpose, and will be convenient and economical in working. The plan is well adapted for future extension in the event of further accommodation being necessary.

The council suite is well arranged, easy of access from the main entrance facing Stricklandgate, and yet can be easily shut off from the rest of the building during council or committee meetings. The council chamber is well lighted and has a level floor. The seating is arranged in two rows so that all members would have a good view of the chairman and officials. It is separated from the committee rooms by a well-lighted committee lobby. There is also a well-lighted ante-room between the council chamber and the staircase hall which would be very useful on occasions when the council chamber might be used for functions other than council meetings. The public gallery, which is raised above the floor of the council chamber, is approached by means of a separate staircase from the basement entrance. This is a rather involved means of access which might with advantage be modified by giving direct access

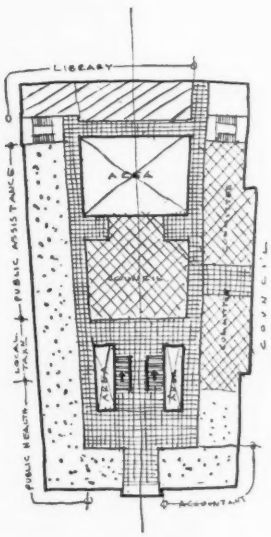


Figure 1.—*Ground floor plan of the design placed third. By Bradshaw Gass and Hope.*

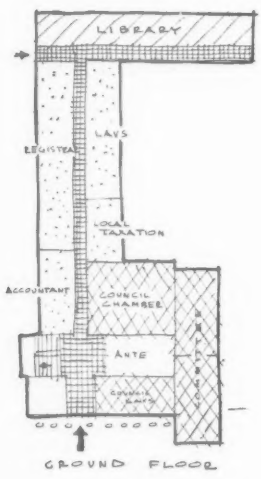


Figure 2. *Ground floor plan submitted by G. Grenfell Baines and Thomas Hargreaves.*

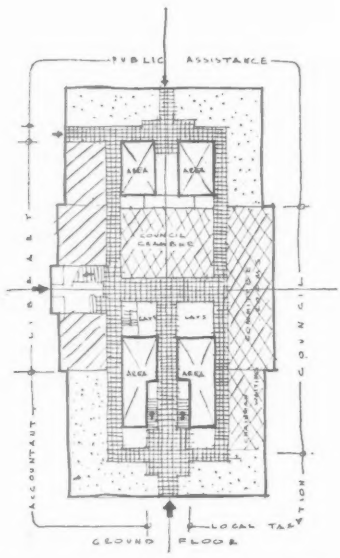
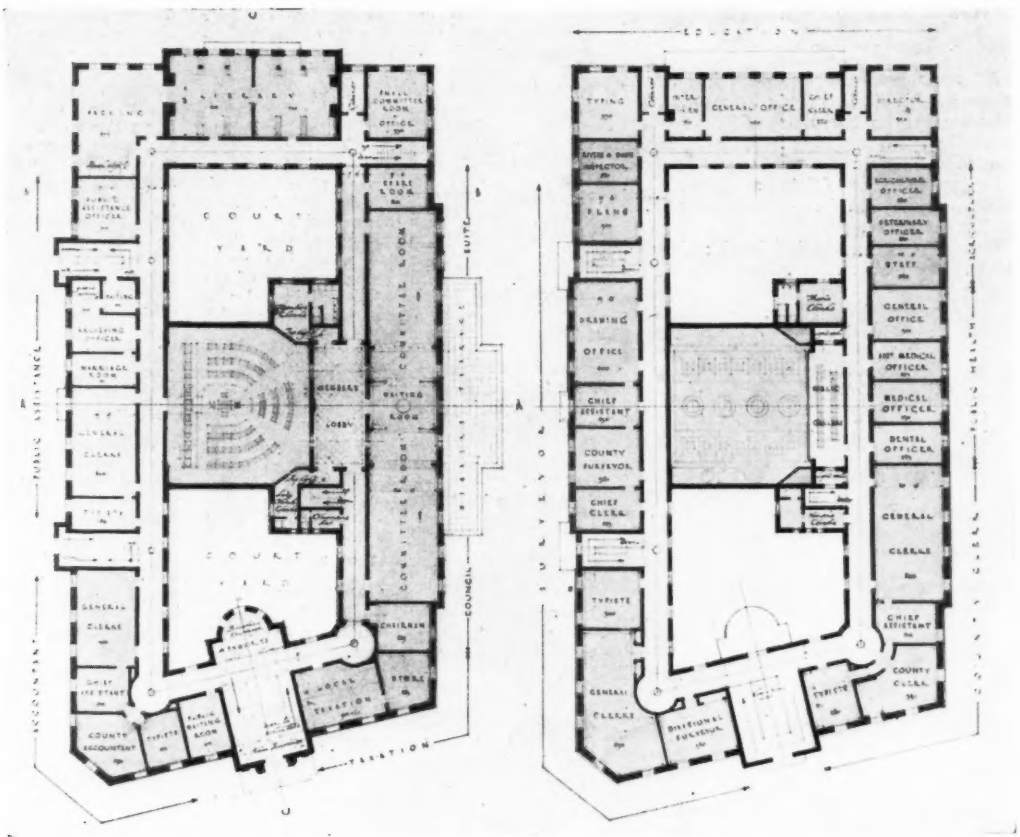


Figure 3.—*Ground floor plan of the design submitted by R. Myles Wright and H. Alex. Snow.*

DESIGN PLACED SECOND: BY HUGHES AND BICKNELL

Ground and first floor plans of the design placed second.



from the ground-floor corridor, an alteration which could easily be made. The provision of two short flights of steps in the ground-floor corridors in well-lighted positions permits of additional height being given to the committee rooms, which are 21 ft. wide.

The administrative offices are well grouped and arranged, and with one or two slight modifications will meet all the conditions laid down. Corridors are well lighted throughout, for the most part by direct light. The Broughton Hall staircase becomes the main staircase of the building and is placed opposite the main entrance to the building in a top-lighted staircase hall. Other secondary staircases are also provided, one of which gives direct communication from the clerk's department on the first floor to the chairman's room and council suite on the ground floor and also to the strong room in the basement. A portion of the strong room is shown as being only 6 ft. in height. It might be suggested that one door only to the strong room should be provided (two are indicated) and that the only access to it should be through the document room, the floor of which is 1 ft. 6 in. lower than the floor of the strong room as shown on the section. The floor of the strong room would be lowered accordingly, giving a height of 7 ft. 6 in. to the lower portion instead of the 6 ft. referred to.

The caretaker's quarters are placed on the second floor and have a sunny aspect. The areas of the rooms are rather smaller than given in the schedule of accommodation, but this could be remedied by reducing the width of the corridor and giving extra depth to the rooms.

The elevations, carried out in local stone, are dignified and well proportioned and of an architectural character which will harmonize admirably with the locality. The fenestration is well arranged and would allow of internal rearrangement, should this be considered desirable at a future date. The elimination of some of the shallow projections in the external walls indicated on the plan might be considered, as the hipped roof treatment shown would not be satisfactory round breaks of such slight projection. Some modification of the south-east elevation will also be required as, with the projections shown on plan, the elevational treatment shown on the drawings, with eaves at different levels, could not be carried out. The building would gain in dignity if the higher eaves level were adopted for the whole of the front block.

The amendments suggested above are such as will not interfere in any material way with the scheme as submitted, which is an excellent one in all respects.

The cubic contents of the building are given in the report as 736,795 cubic ft. and are priced out at rates varying from 1s. 4½d. to 2s. 3d. per foot cube. I find on checking that the cubic contents given are substantially correct and that the average flat rate per foot cube is approximately 1s. 9¾d. I am of the opinion that this price is adequate to cover the cost of the scheme as presented.

	£
The cost as stated by the author for the structure is	67,072
Additional cost of fore-court, fore-court walls, gates and paths ..	1,300
	£68,372

NOTE.—The conditions issued stated that estimates were not to include for movable furniture and fittings.

The design placed second, No. 12 (Messrs. H. C. Hughes and P. Bicknell), shows an excellent scheme, with a very suitable, dignified and well-proportioned elevational treatment. The main staircase is not so well placed as in the winner's scheme, and the stairs leading to the basement out of the main entrance hall (which serve principally to give access to public lavatories) occupy too prominent a position. The council suite is well arranged, but the members' lobby depends almost entirely on borrowed light, the two small top-lights indicated at the end of the lobby being inadequate for the purpose. Three rows of members' seating are shown in the council chamber, which would not give as good vision on a level floor as the two rows indicated in the winning scheme. The offices generally are well arranged and comply more nearly than any of the premiated schemes with the floor areas given in the schedule. The caretaker's quarters face north-east and would receive very little sunlight.

The design placed third, No. 63 (Messrs. Bradshaw Gass and Hope), runs the other premiated designs very closely. The general arrangement of the plan is good. Undue prominence is given in the main staircase hall to the stairs leading to the basement. The elevational treatment is more suggestive of municipal buildings than county offices. The caretaker's quarters on the first floor are well placed, but almost devoid of sunlight.

Of the remaining designs, No. 65 (Messrs. J. S. and G. R. Stout) is to be commended for the refined and dignified elevational treatment, beautifully drawn, the elevations being among the best submitted. The plans, however, are not quite so successful; one weakness which might be mentioned is the south aspect of the surveyor's drawing office.

No. 21 (Messrs. Silcock and Thearle) presents one of the most economical schemes submitted, supported by charming elevations, but the author has let his zeal for economy place his public health and agricultural departments in what is virtually a basement, though it is described as the lower ground floor in the author's report. The corridors in this scheme would be inadequately lit. The price of 1s. 4d. per foot cube given by the author seems inadequate for a building of this character.

In conclusion, I think that the Westmorland County Council is to be congratulated on the response to the competition which has enabled them to obtain such a satisfactory, adequate and suitable scheme for their new headquarters.

Other Competition News

MUNICIPAL BUILDINGS, ROMFORD

As announced in our last issue, Mr. Kenneth M. B. Cross, M.A., F.R.I.B.A., the assessor in the competition for proposed municipal offices at Romford, has made his award as follows :

Design placed first (£250) : Messrs. H. R. Collins and A. E. O. Geens, F. & A.R.I.B.A., of Bournemouth.

Design placed second (£100) : Messrs. H. R. Collins and A. E. O. Geens (alternative design).

Design placed third (£50) : Mr. J. Wallace, L.R.I.B.A., of Cardiff.

The designs placed first and second are illustrated on pages 204-206 of this issue. Following are some extracts from the report of the assessor ; and that presented by the authors of the winning design.

THE ASSESSOR'S REPORT

The competition for the new municipal offices and assembly hall initiated by the Romford U.D.C. has met with an excellent response from the architectural profession. Sixty-six sets of competitive drawings were submitted and a variety of solutions of a problem which was by no means a simple one was put forward. Not only was there considerable divergence in the schemes, but there was also a marked difference in the estimated cost of the various proposals.

It is stated in the conditions of the competition that economy is of the greatest importance and that the question of cost would be one of the fundamental considerations in making the award. There is a difference of over £25,000 between the estimated cost of the design placed first and the estimated cost of several of the unsuccessful designs.

The problem involved the planning of municipal offices and assembly hall in such a way that, if necessary, the offices only could be built in the first instance without the design suffering unduly through the postponement to a later date of the construction of the assembly hall. This condition called for the placing of the municipal offices in a prominent position in relation to Main Road and those competitors who were able to scheme the assembly hall also partially within sight of Main Road received favourable consideration. Various angle treatments were proposed by competitors but, after again carefully inspecting the site, I decided against this solution.

Several competitors placed the assembly hall in the most prominent position; others relegated this building to the back portion of the site and, though many of these schemes were excellent in plan and design, the question of lay-out outweighed other considerations.

The winner, No. 63 (Messrs. H. R. Collins and A. E. O. Geens), has so disposed the various blocks of buildings on the site as to take full advantage of the levels shown on the site plan. The placing of the assembly hall at the higher level of the ground has enabled the connecting link between the council chamber on the first floor of the municipal buildings and the refreshment room and assembly hall on the ground floor to be conveniently made.

The municipal offices could be built immediately without the design seriously suffering through the postponement of the erection of the assembly hall. The lay-out comprises the principal public approach from Main Road with a large forecourt and a secondary entrance from Park End Road has also been provided for the use of staff, service, public, etc.

The plans are simple, direct and workmanlike and in my opinion a very serviceable and efficient block of offices will result, whilst the amenities are sufficiently provided for to supply the requirements of the Council.

The assembly hall is so planned that it can be used either in conjunction with the municipal buildings or entirely independently.

The elevations are marked by simplicity of treatment and the avoidance of costly ornamentation : reliance is placed upon good proportions, the selection of good materials and general suitability of purpose to achieve the quiet dignity and restraint desirable in an important civic building. The total estimated cost of No. 63 is £54,502, of which the estimated cost of the municipal offices, etc., is £25,772.

The author of the design placed second, No. 64 (Messrs. H. R. Collins and A. E. O. Geens), has evolved a scheme which in many respects is superior to that placed first. The buildings are set back further than in the case of the winning design. The contours of the site have been carefully followed in order to take full advantage of the existing levels and a direct connection between the council suite, and the assembly hall is formed by the refreshment room and the utilization of the difference in floor level of the two buildings, as in the case of the winning design. The planning is straightforward and direct and the resultant simplicity would be evidenced in the practical working of the various departments of the building. The elevations are rather more formal than in the case of the winning design and the whole scheme is more costly, the total estimated cost of No. 64 being £61,634, of which the estimated cost of the municipal offices, etc., is £31,559.

The design placed third, No. 22 (Mr. James Wallace), has much to recommend it, including a good lay-out, the front entrance staircase and rates office being excellent. The planning appears to be somewhat cramped as a result of placing strong rooms and record rooms with the respective departments rather than in the basement.

The total estimated cost of No. 22 is £73,607, of which the estimated cost of the municipal offices is £33,401.

Designs Nos. 27, 45 and 54 are commended.

Design No. 27 is illustrated by an excellent set of drawings, the planning is of a high standard, but is somewhat extravagant in a building where first cost is of paramount importance. The elevations are restrained and beautifully presented. The total estimated cost of this scheme is £84,000, of which the estimated cost of the municipal offices is £34,400.

Design No. 45 comprises a good lay-out, good elevations and an excellent plan, which is, in my opinion, marred by the position of the main staircase. This is not of sufficient importance in a building in which lifts are not required nor is it conveniently placed. The total estimated cost of the scheme is £58,700, of which the estimated cost of the municipal offices is £29,947.

Design No. 54 illustrates an excellent lay-out and a good workable plan.

The total cost of this scheme is estimated at £64,499, of which £28,899 is the estimated cost of the municipal buildings.

To summarize, the Romford U.D.C. is to be congratulated on the response this competition has evoked from members of the architectural profession. Many of the designs submitted have achieved a very high level, and there is abundant evidence of the considerable time and thought that have been expended by a large number of architects in offering their solutions. The winning design is remarkable at once for its excellence and low cost, and it is to be hoped that this latter feature will enable the building of the assembly hall as well as of the municipal offices to proceed at an early date.

THE WINNERS' REPORT

General.—The need for economy is so stressed in the conditions of this competition as to leave no doubt whatsoever that considerations of cost will be of paramount importance with the assessor in his deliberations. At the outset, therefore, the cubic contents of the design accompanying this report are 332,133 ft. in the municipal offices and 440,487 ft. in the assembly hall and refreshment room. These extremely low contents, taken at 1s. 6d. and 1s. 3d. per cubic foot, respectively, give costs of £24,909 for the municipal offices and £27,530 for the assembly hall and refreshment room.

It is not proposed to make any drastic alteration to the existing site levels. The buildings have been expressly designed to fit the existing contours, and the assembly hall placed at the higher level of the ground ; advantage thus being taken of the difference in natural levels to make the connecting link between the council suite (on first floor) and the refreshment room and assembly hall (on ground floor) sympathetically and conveniently relative to each unit by the simple expedient of introducing two flights of five steps between the two units at the end of the council suite corridor. The municipal offices and assembly hall, whilst being entirely separate units, form one general group which could be built either as a whole or separately without detriment to the æsthetic qualities of either.

Approaches.—The municipal offices have their principal public approach facing the main road, with a spacious forecourt in front thereof. The main entrance is intended for use by both members of council and the public, but a secondary entrance has been arranged in the rear of the municipal office block for the use of public and staff.

Council Suite.—The whole of the council suite is placed in the front block facing the main road. It is approached by a handsome staircase, and the clerk's department is in the closest proximity to it, but in a separate wing. The staircase hall and main approach to the council suite are designed with a full appreciation of the purposes for which it will be used. The link between the council suite and assembly hall is very direct and by way of the refreshment room.

The Refreshment Room.—This room is designed to serve a dual purpose—that is to say, upon occasions it may be used as a reception hall and at other times as a refreshment room or buffet. It has been designed and located so as to fulfil adequately all these requirements.

Assembly Hall.—The assembly hall has been planned so that it may be suitable for banquets, concerts, etc. It can be used in conjunction with the municipal buildings or entirely independent of them. It has a seating capacity of 1,288 on the main floor and 224 in the gallery —giving a total accommodation of 1,512 seats.

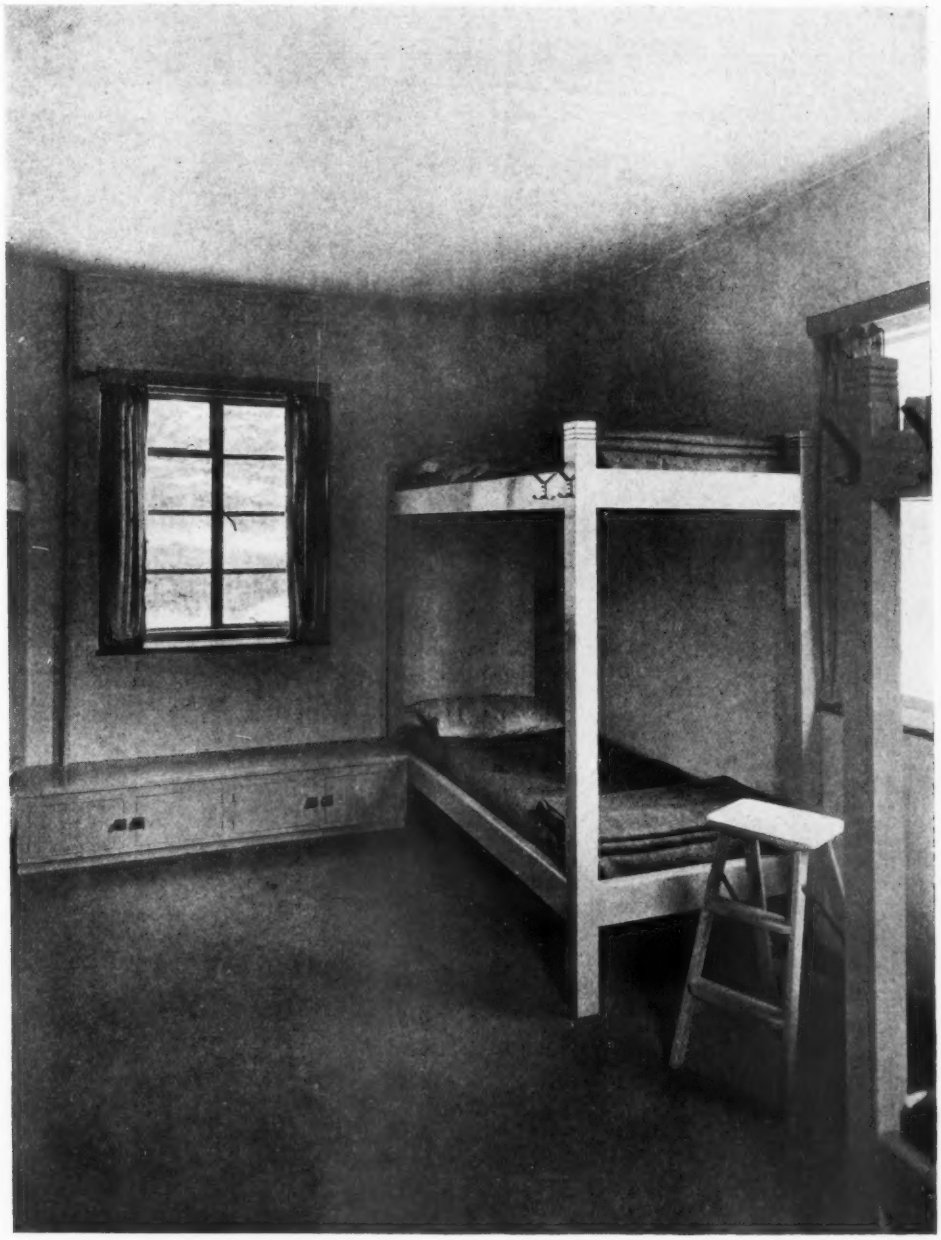
Construction.—Externally the whole of the buildings would be constructed of 2 in. light silver-grey bricks with dark silver-grey brick rustications where shown, and the sparsely-used stone dressings would be in Purbeck Burr stone ; all steps, pavings and curbs would be in Thornback stone. All floors and staircases would be of fireproof construction. The floors of entrances and staircase halls would be of dressed Thornback stone. Corridors finished with cork tiles and all office floors in British Columbian rift sawn pine blocks. The floors of council chamber, anteroom and refreshment room in teak blocks. The floor of assembly hall would be in narrow oak boards supported on spiral springs which could be locked rigid when not required for dancing.

The walls of main entrance hall and entrance to assembly hall would be lined with Purbeck Burr stone to dado height in shallow rusticated courses, and with flat Monks Park stone linings above. The main staircase would be in Purbeck Burr stone and subsidiary staircases finished in granolithic. The dadoes of council chamber and anteroom would be panelled in Western red cedar untreated. Flat roofs covered with standard rock asphalt and whitewashed. All internal joinery of red cedar throughout.

Future Extensions.—The possibility of the municipal offices being extended in the future has been given careful consideration, and the position and extent of such future extensions are clearly indicated on the block plan. The whole of the partition walls are designed on the equal unit basis and are independent. They would be of hollow pumice block construction so that departmental rearrangement could be carried out if and when necessary with a minimum of disturbance to the main structure.

WORKING DETAILS : 303

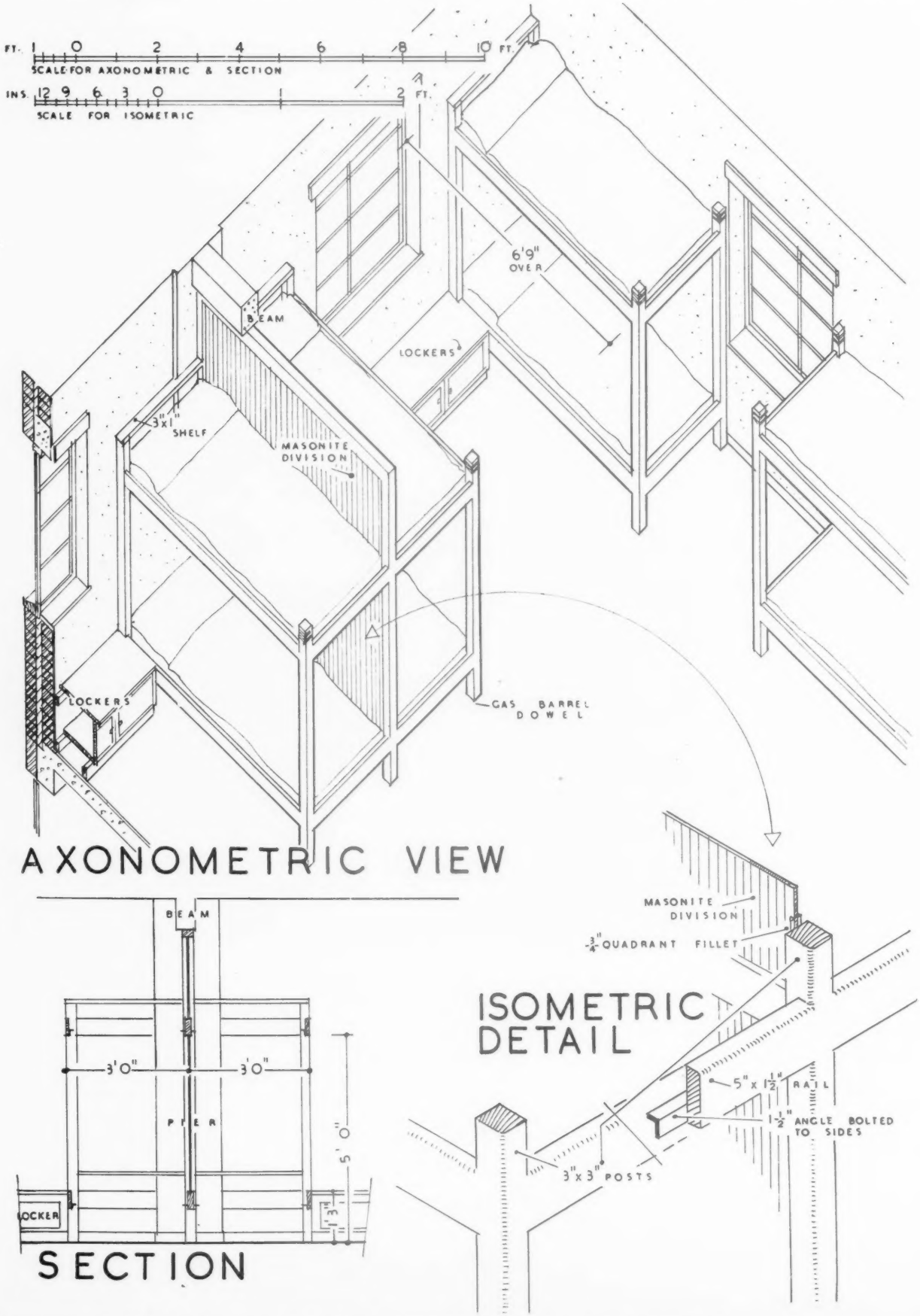
TWO-TIER BUNKS • YOUTH HOSTEL, HOLMBURY ST. MARY • H. VICARS LOBB



A photograph of a two-tier bunk in one of the members' dormitories. The plaster walls of the dormitories are finished with a felt float and thus left, and the floors are dustless granolithic. The bunks and boot cupboards are in deal, painted elephant grey with a slight relief in coral. An axonometric view and constructional details are shown overleaf.

WORKING DETAILS : 304

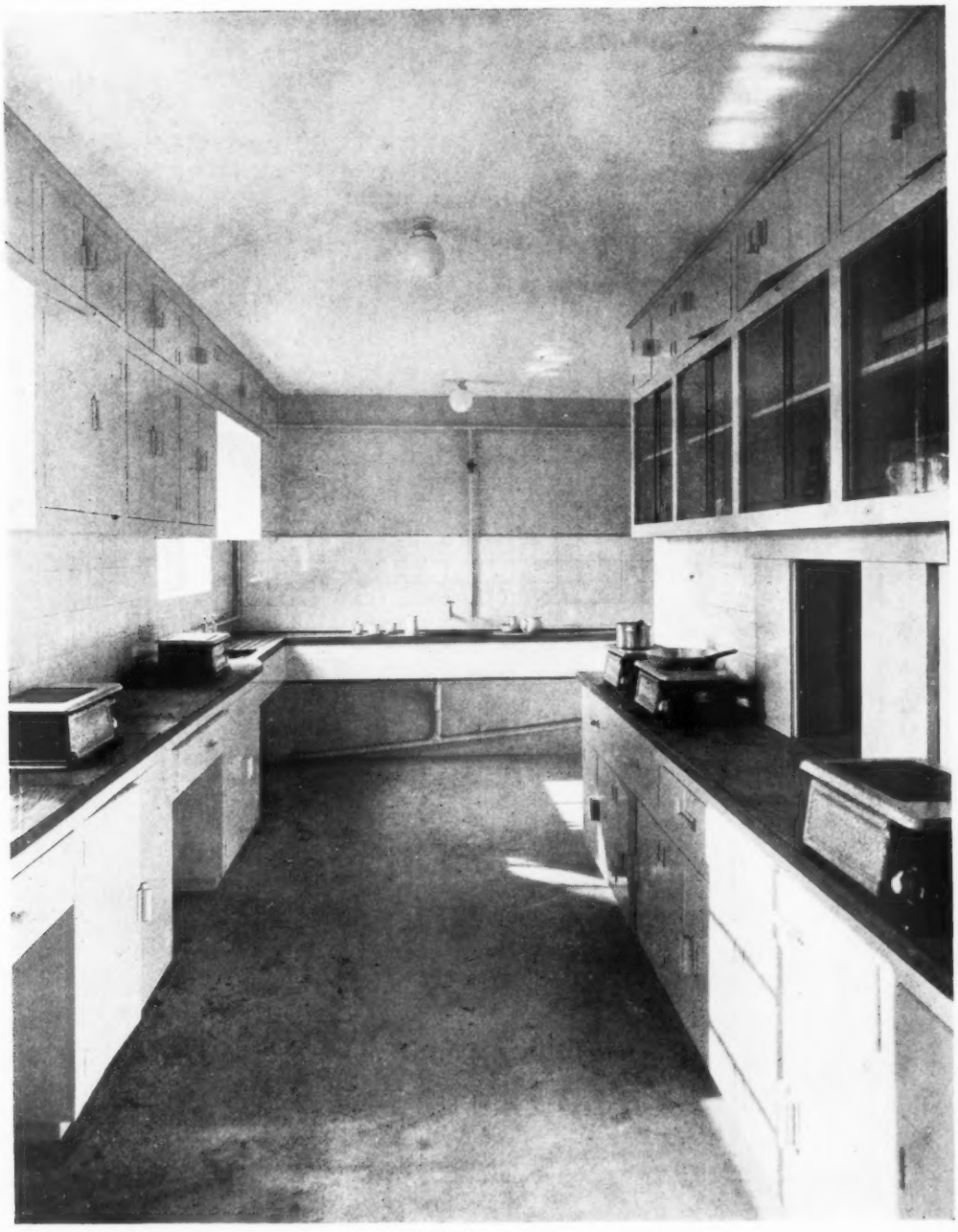
TWO-TIER BUNKS • YOUTH HOSTEL, HOLMBURY ST. MARY • H. VICARS LOBB



Axonometric and details of the bunks in the dormitories, of which a photograph is given overleaf.

WORKING DETAILS : 305

KITCHEN • YOUTH HOSTEL, HOLMBURY ST. MARY • H. VICARS LOBB

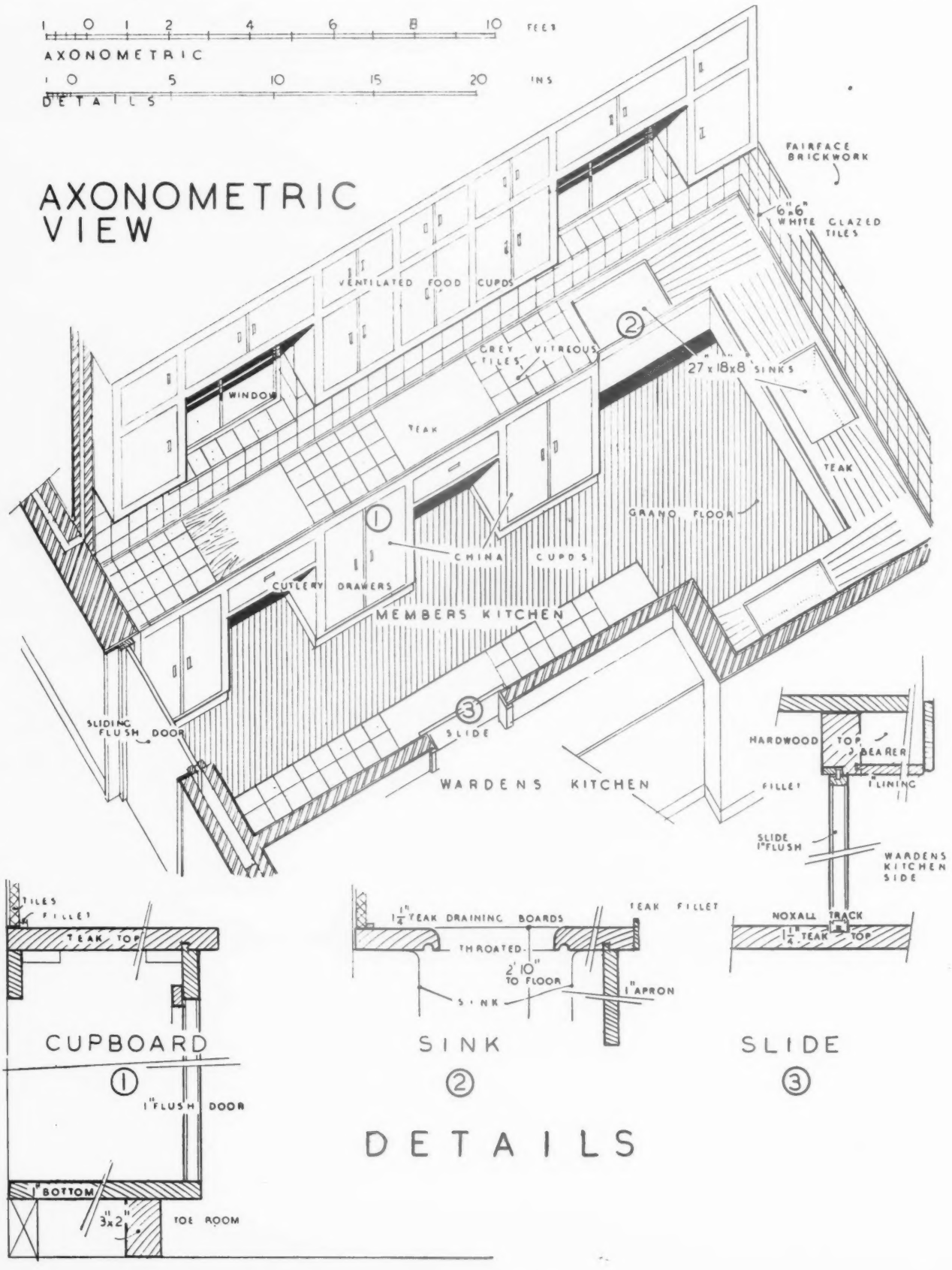


A detail of the members' kitchen. The draining-boards are in teak, with grey vitreous tiles under electric cookers ; the wall tiles are glazed white, and the cupboards are in deal and plywood and painted grey. A small continuous teak mould set in mastic covers the joint between wall tiling and draining boards.

An axonometric detail of the kitchen fittings is shown overleaf.

WORKING DETAILS : 306

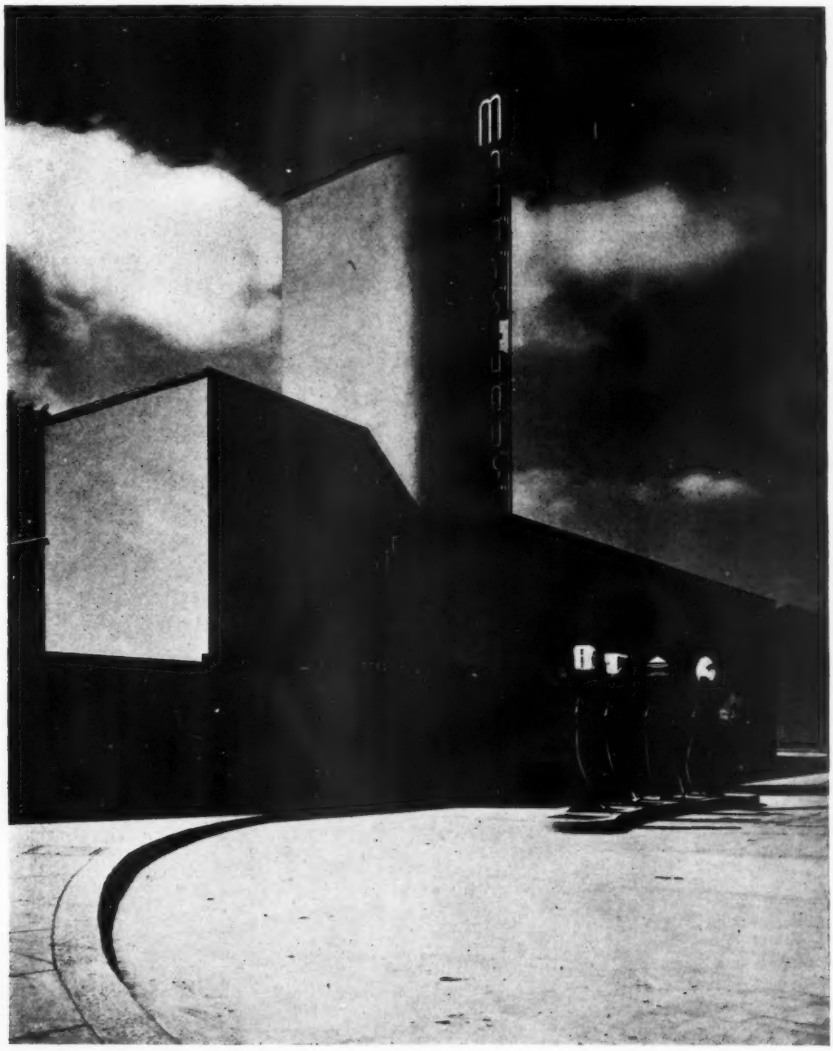
KITCHEN • YOUTH HOSTEL, HOLMBURY ST. MARY • H. VICARS LOBB



An axonometric of the kitchen construction and fittings.

CAR SERVICE STATION AT CATFORD

DESIGNED BY CAMERON KIRBY



Right, a general view of the principal elevation; below, a detail of the open glass screens from within the showroom.

SITE

This service station is on the main Bromley Road in the Borough of Lewisham.

CONSTRUCTION AND ELEVATIONAL TREATMENT

The building is steel-framed with a brick infilling. Two pitched and glazed roofs run the full length of the building. The principal elevational feature is formed by the glass screens to the showroom; the remainder of the elevation is finished with a special stone paint and the plinth is of reconstructed granite. Decorative detail is restricted to raised lettering, combined with neon tubing. The tower contains the water tanks.

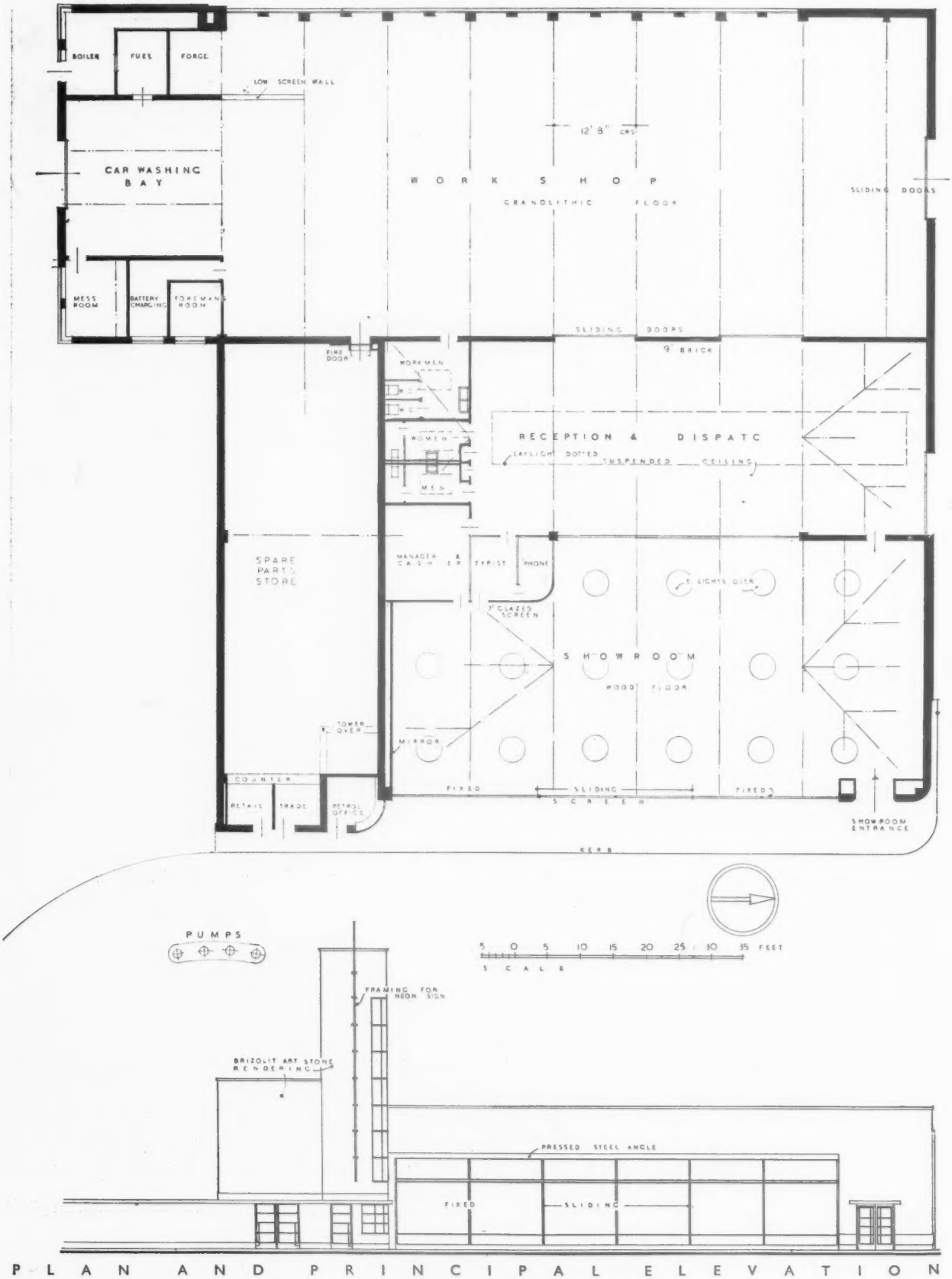
INTERNAL FINISH

Steel trusses and other constructional features are painted a pale blue in contrast to the bright red of heating pipes and air-trunks. A black dado of bitumastic paint surrounds the workshop, which has maroon-coloured sliding doors.

The showroom has a maple strip floor, in contrast to the granolithic floors elsewhere, is fitted with steel furniture, and walls are largely mirrored to increase sense of space. A band of black rubber protects the walls at bumper level, and the sliding screens enable cars easily to be run out for demonstration purposes. Extract ventilation is incorporated in the ceiling lights.

Lavatories are in primrose terrazzo with black ebonized flush doors and chromium-plated fittings.

CAR SERVICE STATION



PLAN AND PRINCIPAL ELEVATION

AT CATFORD: BY CAMERON KIRBY

PLAN

The building is designed for two purposes : as a full service station, and as a car showroom and sales depot. The simple plan units have been arranged to keep these two functions separate.

The showroom is placed overlooking the draw-in space for cars requiring petrol, and a continuous glass screen along its whole front gives a large variety of views of cars exhibited. A small office for petrol sales is also upon the entrance front.

The reception and dispatch department first receives cars for repair and particulars are taken ; the cars are then removed to the workshop and, after washing, are returned to the reception and dispatch department for checking and to await collection.

CAR SERVICE

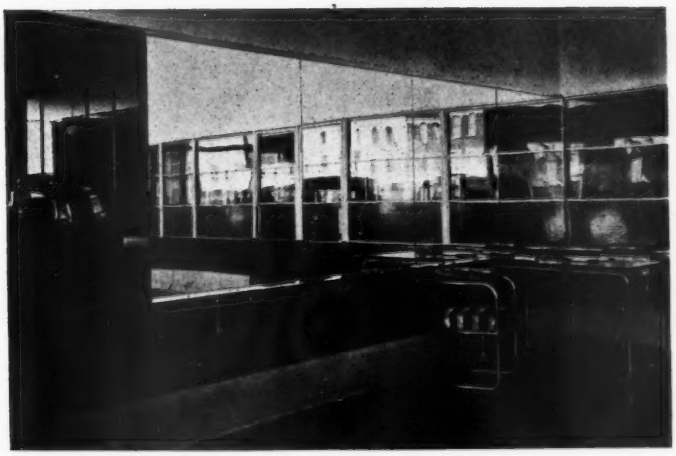
The spare parts store is equipped with a counter for off-sales adjoining the petrol sales office.

Right, a detail photograph in the reception and dispatch department ; the sliding screen on the right separates this department from the showroom. Natural lighting is supplied by the metal and glass laylight shown.

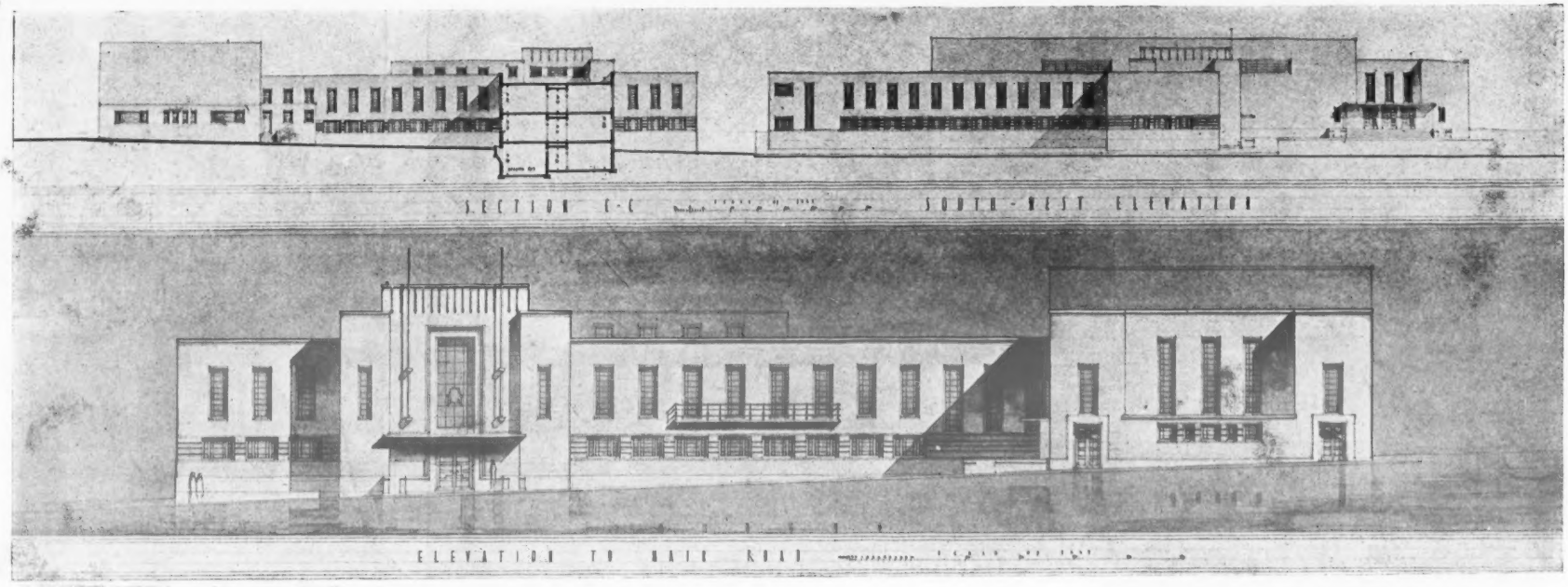
Below, a view of the showroom looking towards the circular ended offices.

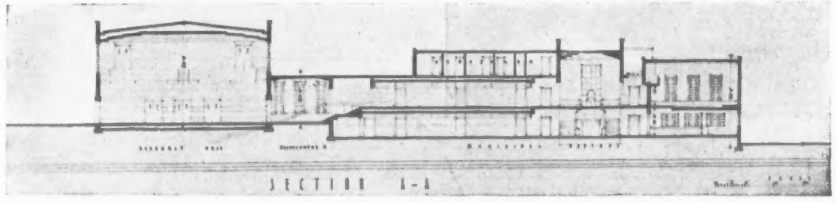
Below right, a photograph of the angle of the showroom adjoining the manager's office, showing the reflection of the office screens in the mirrored wall.

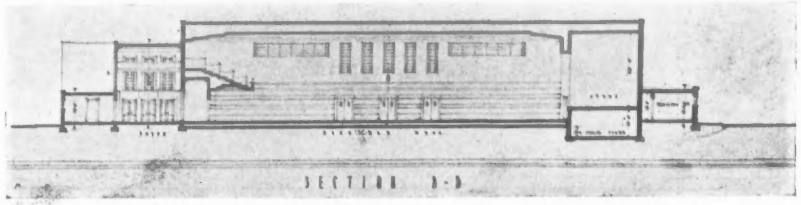
For list of general and sub-contractors see page 212.

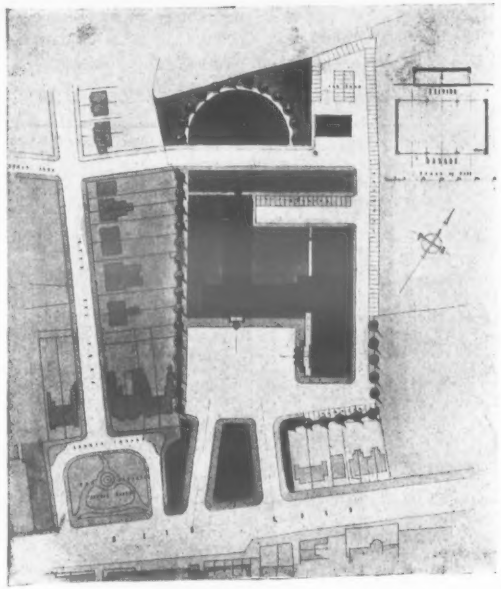


COMPETITION FOR MUNICIPAL BUILDINGS, ROMFORD



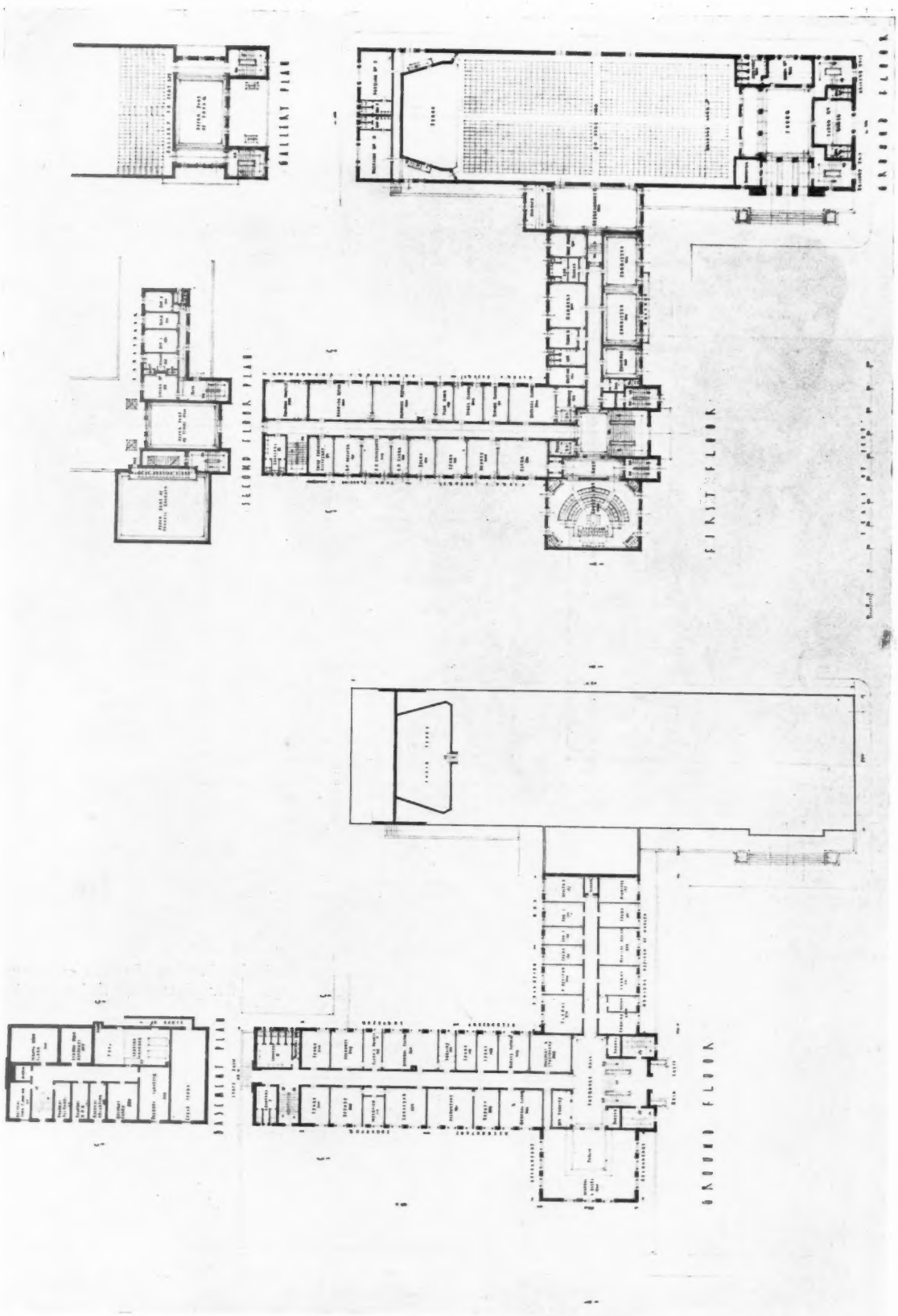






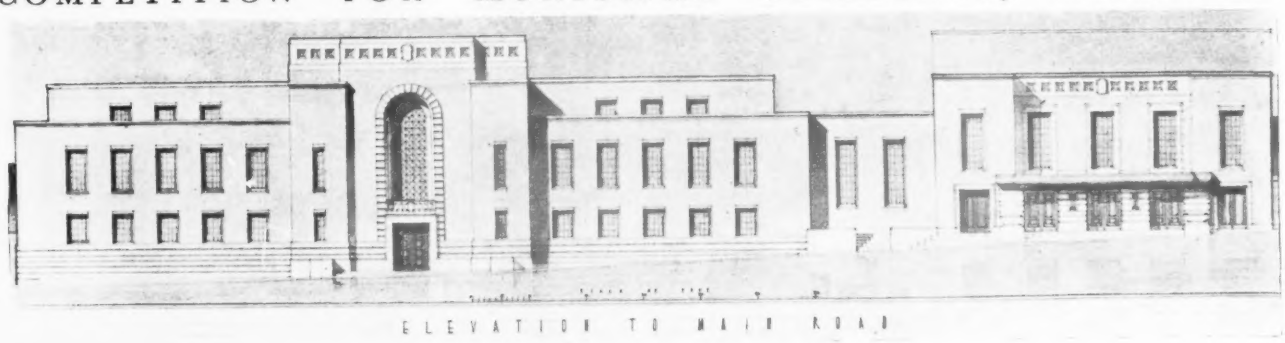
On this and the two pages following we reproduce the first and second premiated designs in the competition for proposed municipal buildings at Romford. Extracts from the assessor's report and the report presented by the authors of the winning scheme are given on page 196.

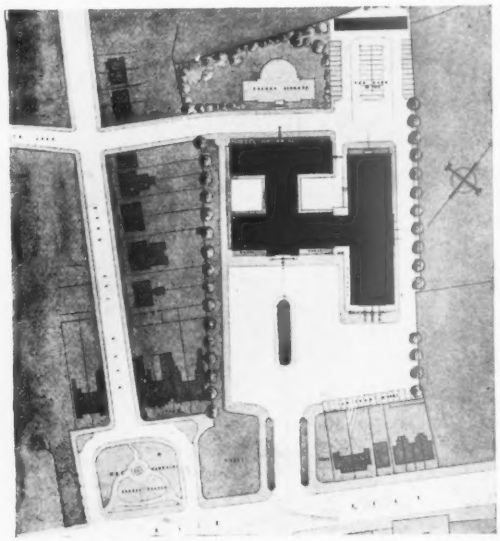
WINNING DESIGN: BY H. R. COLLINS AND A. E. O. GEENS

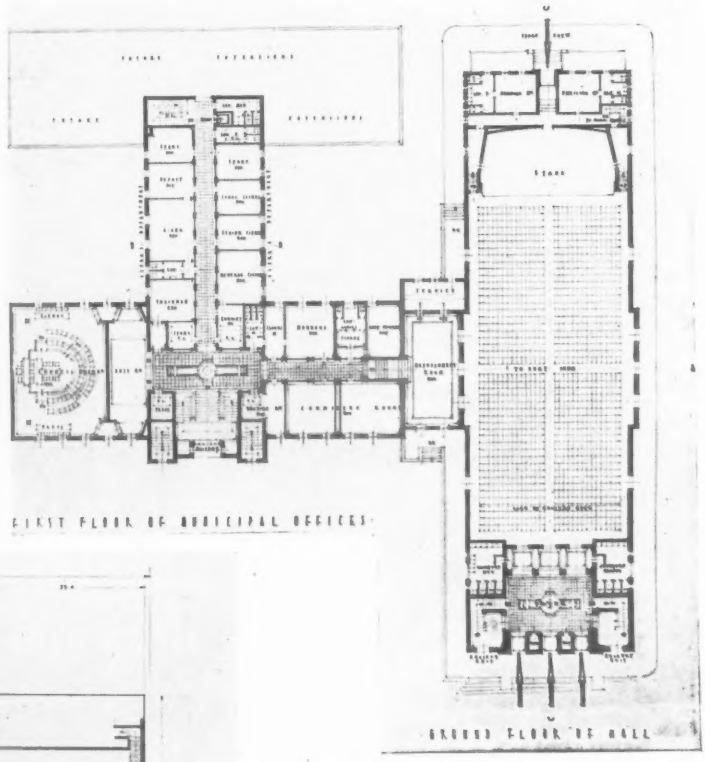


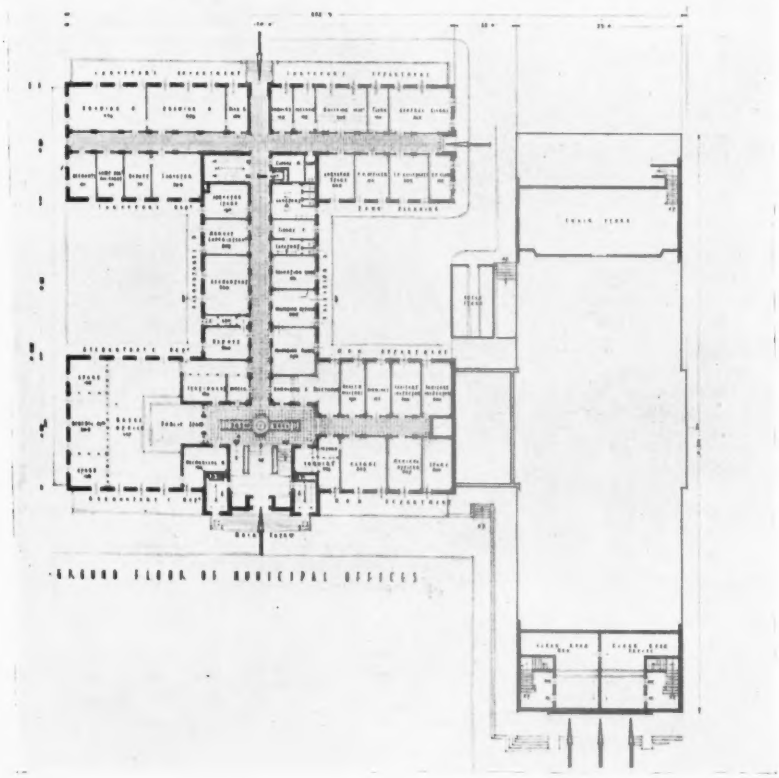
Ground and first floor plan.

COMPETITION FOR MUNICIPAL BUILDINGS, ROMFORD









Main elevation, site plan and ground and first floor plans of the design placed second.

DESIGN PLACED SECOND: BY H. R. COLLINS AND A. E. O. GEENS

TECHNICAL SECTION: 25

HEATING, AIR CONDITIONING AND MECHANICAL EQUIPMENT

BY OSCAR FABER

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

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

HOT WATER SUPPLY

Local v. Central Systems

HOT water supply systems may be local or central exactly as in the case of heating systems.

Local systems are those in which the water is heated immediately adjacent to the bath, basin or sink where it is to be used. A central system is one in which the water for a whole building or group of buildings is heated at one central point and is conducted to the various fittings through a system of pipes.

Advantages of the *Central System* are :—

(*a*) Absence of a multiplicity of small heaters, each requiring periodical maintenance and occupying valuable space.

(*b*) Greater reserve available at any one draw-off point, since the whole storage system may be drawn off at one tap if need be. The local system is confined to its own small storage at each point.

(*c*) Cheap fuel may be used in the boiler, whereas local heaters require an expensive fuel such as electricity or gas.

Advantages of *Local Systems* are :—

(*a*) Radiation from long runs of mains is eliminated.

(*b*) One system of piping only is required, the cold service pipes feeding each heater in turn. Against this it must be remembered that additional gas piping or electric wiring is required.

(*c*) The overall working efficiency, i.e. the ratio

$$\frac{\text{heat in water delivered at fittings}}{\text{heat delivered to water at heater}}$$

may be higher with local systems than with central ones. Grierson and Betts show that the former may range from 87 per cent. to 93 per cent. efficient, whereas the latter may be of the order of 52 per cent., 79 per cent. and 81 per cent. in the case of a suburban residence, a block of flats, and a city office block respectively.* This difference of efficiency must be borne in mind when considering annual running costs.

There are a great many cases where local hot water supply systems are applicable and where they may give greater economy of running, but in the main the central system generally has the balance of advantages and will for this reason be discussed in detail below.

Central Systems

Separate System.—In the case of simple systems, such as would be suitable for domestic purposes without the use of calorifiers, the hot water supply should, in general, on no account be run from the same boiler as the heating. When no calorifier is used, the use of one boiler on a combined system has the following disadvantages:—

(*a*) The temperature of the heating is greatly affected by the draw-off from the hot water system, whereas the two should each have their appropriate temperatures independently of each other, and this cannot be obtained by the mere shutting off of the heating system in the summer time.

(*b*) Where a water is hard the furring of the boiler and the mains associated with a constantly changing supply of hot water in the H.W.S. boilers gradually causes the choking of the heating system, which is as unnecessary as it is undesirable.

On the other hand, when the water is very soft corrosion of the pipes by constantly renewed water results.

This does not happen with a central heating system uncombined with a domestic because the same water is retained and recirculated, losing its corrosive properties in the first few hours.

For these reasons a simple system should always have separate boilers for the heating and for the hot water supply, on completely separated systems, and the only exceptions to this rule are :—

(*a*) where a calorifier is used for the H.W.S., and

(*b*) where first cost is such an overriding consideration that efficiency has to be sacrificed for it.

The diagrams on Figs. 145 to 150 illustrate various typical arrangements of hot water supply systems.

Fig. 145 shows a simple direct hot water system in which there is a continuous circulation from the boiler to the cylinder and back to the boiler whereby the water in the cylinder is gradually raised to the desired temperature. In this it is desirable

(*a*) That the cylinder shall be as near the boiler as possible so as to offer the least resistance to this circulation.

(*b*) That the flow pipe from the boiler shall be high up on the cylinder and the return pipe from the bottom of the cylinder so as to avoid mixing the hot

* I.E.E. Proceedings, May, 1935.

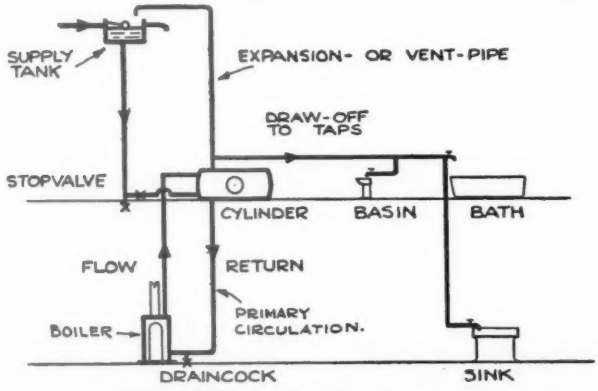


Figure 145. *Simple direct hot water system.*

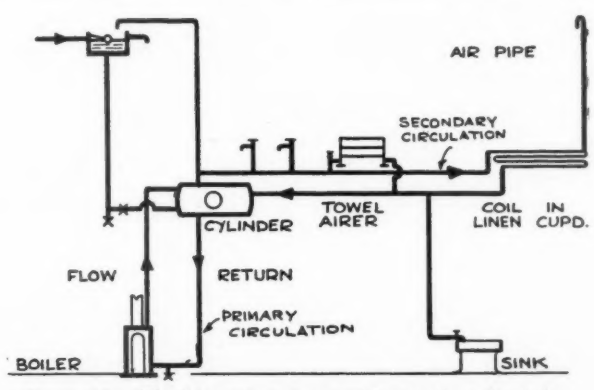


Figure 146. *Direct hot water system with secondary circulation.*

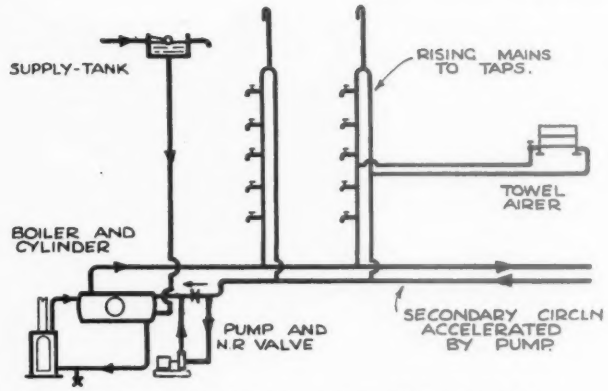


Figure 147. *Direct hot water system with pump circulation.*

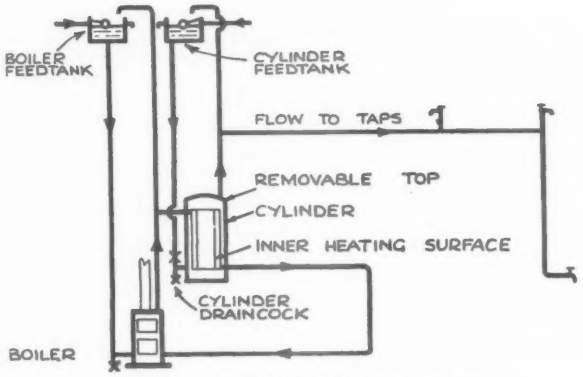


Figure 148. *Simple indirect hot water system.*

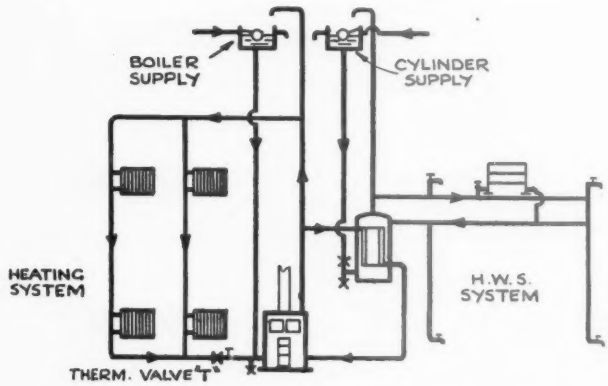


Figure 149. *Combined indirect hot water and radiator system.*

and the cold water and give as quickly as possible a layer of hot water at the top of the cylinder available for drawing off before the whole cylinder has necessarily been heated.

(*c*) That the cold water supply should be introduced either to the bottom of the cylinder or into the return pipe from the cylinder to the boiler so that it does not mix with the hot water at the top of the cylinder.

(*d*) That there should not be a hot water storage tank at the top of the system additional to the cylinder, as this takes much longer to become hot, and the draw-off will then be partly from the hot cylinder and partly from the tank at the top, which may not be hot, with less satisfactory results.

In the case of the system shown, the pipes from the cylinder to the baths, sinks, etc., give a direct draw-off, though not constituting circulating mains. This is suitable for cases where these pipes are short, as in some private houses, but would be quite unsuitable where a long travel is necessary, since in that case a large quantity of cold water has to be drawn off before the hot water is obtained.

Fig. 146 shows the same system applied to circulating mains with gravity circulation.

The system contains all the features of the simple system in diagram No. 1, except that a continuous gravity circulation of hot water will operate in the circulating mains in the direction of the arrows.

This has the advantage that at any draw-off point, hot water will be obtained immediately. It also enables heated towel rails, circulating coils for linen cupboards, and any other fitment which requires to be kept hot summer and winter, to be connected and to work satisfactorily independent of the draw-off of hot water.

For this system to work satisfactorily the circulating mains must be correctly pipe sized having regard to the vertical gravity head between the cylinder and the cooling surface of the mains and their attachments, taking into account the frictional resistance of the pipes as so sized, exactly as for a heating system. This is discussed in greater detail later.

The return mains should connect into the cylinder not too low down, so as to prevent a flow of cold water being drawn into the return pipe when a tap is opened. As a rule, two-thirds up the cylinder is about the best position for this connection.

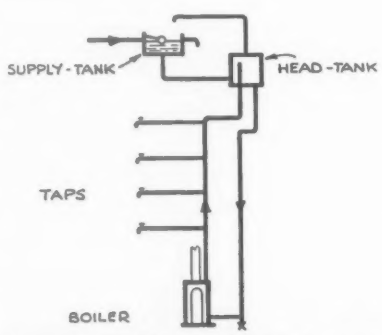


Figure 150. *Old type head-tank system (not recommended).*

It must be remembered that in a cylinder arranged in this manner there is generally a very clear line of demarcation between the hot and the cold water, the upper portion of the cylinder normally being filled with hot water and the lower portion with cold, and in a well-designed system these do not mix and do not transfer heat from one to the other except by conduction, which is a very slow process. The effect of the primary circulation from boiler to cylinder is to draw the cold water through the boiler and discharge it into the hot water layer at the top of the cylinder so that the line of demarcation is gradually lowered. As soon as there is a draw-off of hot water, on the other hand, this takes place from the upper portion of the cylinder only, and the dividing line between the two waters rises.

Where a manhole cover in a cylinder is uninsulated, it is frequently possible to tell by touch where the line of demarcation exists at any instant, within $\frac{1}{2}$ in. or so.

This system is suitable for a large house or a small hotel, and even in very large buildings where the height is great in comparison with the horizontal runs, and consequently the gravity head is sufficient to promote healthy circulation.

Fig. 147 shows the system with pump circulation. With this system it is still desirable that the circulating main should deliver about two-thirds up the height of this cylinder, since, although there is no chance of cold water being sucked back in the case of a draw-off, owing to the action of the pump, it still remains undesirable to mix the cold water at the bottom of the cylinder with the hot water at the top. The cold water should still be introduced as near the bottom as possible, or in the return pipe between cylinder and boiler.

This system is suitable for the largest buildings.

Fig. 148 shows a simple hot water system with direct draw-off, but embodying a calorifier.

The boiler circulates hot water to the coils or inner heating surface of the calorifier, which returns it to the boiler in what is known as the primary circulation. This is a closed circuit, and water in this circuit does not communicate in any way with the water which is delivered to the various taps, baths, basins, etc. Cold water envelops the coils or inner heating surface of the calorifier, and is warmed thereby, and the top of this calorifier is then connected to the draw-off mains, this constituting the secondary system.

The advantages of this system as compared with that shown in Fig. 145 are principally that furring of the boiler and the mains immediately connected to it are avoided, when very hard waters have to be used, with the result that several more efficient boilers become suitable, which would be unsuitable where much furring occurs, and the efficiency is at all times higher.

It also allows the use of iron boilers and mains for the primary system with corrosive waters, which, if used in the boiler without a calorifier, would cause discoloration and excessive corrosion.

In the latter case, the use of special metals not likely to be corroded is still a necessity in the secondary system, but is avoided in the primary system. With very hard water, furring may still occur to a limited extent, but will chiefly take place on the outside of the coils in the calorifier, which can be so arranged that it can be cleaned much more easily than can most types of boilers.

As the calorifier often serves all the purposes of the cylinder, these advantages are often obtainable without much additional cost.

Both the primary and secondary systems require a feed tank, though that fitted to the primary need only be very small and serve more as an expansion tank, as the amount of water required is limited to the evaporation in the tank, which is always cold, and to replacing the water in the primary circulation when some repair has to be effected.

Fig. 149 illustrates an indirect hot water supply combined with a radiator system.

In this case, the hot water supply is shown with circulating mains, though it could, of course, as well be with a simple draw-off system, and the system in Fig. 145 lends itself equally well to application to a combined heating system.

It will be noticed that this system extends the primary circuit to the radiators, and still remains a closed system where the same water is constantly re-circulated, and therefore operates without the disadvantage of furring or corrosion (with very hard or very soft water respectively) associated with combining a radiator system directly with the hot water supply.

The only disadvantage as compared with running the two entirely separately from two boilers or two calorifiers is that in medium weather it may be more difficult to reduce the temperature in the radiators quite so effectively without detrimentally affecting the temperature of the hot water supply. This can, however, be overcome to a large extent by throttling the circulation in the heating system at the point marked " T," which can, if desired, be done under thermostatic control, so as to be self-operating, according to the temperature in any selected room.

This system is quite suitable for small residences where the cost of a completely separated system of heating and hot water supply is to be avoided.

It is particularly unsuitable where a large boiler has to be provided for an extensive heating system since, in summer, the load of the hot water service will be much too small for the boiler, which will consequently be difficult to control and keep at a low enough temperature.

Fig. 150 introduces the old type of hot water supply system, which is mentioned only with the object of drawing attention to its many defects, because it is still favoured by some plumbers.

In this system, the boiler is at the bottom and the hot water tank at the top, and when no draw-off occurs, the water gradually rises from the boiler to the head tank, which then acts in the same way as a cylinder, the level between the hot and the cold water gradually falling in the normal manner.

The circulating pipes between the two are, however, extremely long, so that the circulation is sluggish, and it is frequently necessary for the boiler to get up to boiling point before much circulation occurs.

When a draw-off occurs, it is largely a matter of chance whether the water will be taken from the boiler or from the top tank, with the consequence that even though the boiler has been alight for a considerable time, it may happen that a mixture of hot and cold water is delivered to any individual tap, since the cold water runs down the return pipe and passes the boiler so quickly as to benefit very little by such passage before reaching the draw-off point.

As there is no reason why this system should be more economical than the one shown in Fig. 145, there is no excuse for its continued use.

Steam Calorifiers.—Where steam is available, either direct from steam boilers or exhaust from engines, it may be used for the heating of hot water supply exactly as in the case of a heating system. In such case, a storage calorifier is used, as shown in Fig. 151.

Capacity of Boilers and Cylinders.—The decision as to the size of cylinder and boiler necessary depends on considerations quite different from those which apply in a heating system where, as a rule, a fairly constant quantity of heat has to be supplied, and where this quantity is susceptible of fairly accurate calculation, the radiation surface and similar quantities are capable of close estimation.

A hot water supply system, on the other hand, as a rule functions very intermittently. For example, in a normal installation, there is very little

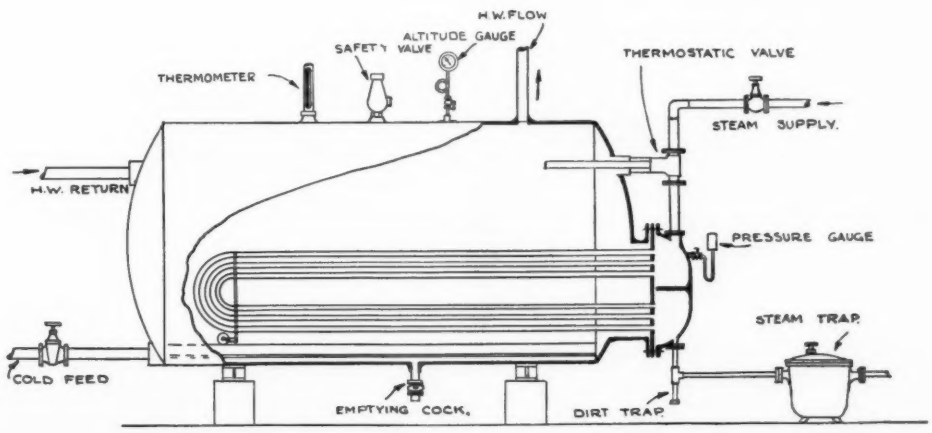


Figure 151. *Steam calorifier for hot water supply.*

hot water required except when hot baths are drawn off in the morning and in the evening, with a certain amount of water taken intermittently by basins, kitchen wash-up, etc.

A calculation of the total quantity of heat required in twenty-four hours will therefore give no criterion of the capacity of cylinder and boiler required, unless the cylinder were designed to give a twenty-four-hour storage, which would generally be grossly uneconomical.

In general, the more generous the cylinder capacity, the smaller the boiler power that may be used, as it has a long time in which to catch up the draw-off at peak load. On the other hand, the more sluggish will be the raising of the temperature when starting from cold, or when the cylinder temperature has for any reason been allowed to fall below normal. Between these two extremes a compromise is to be effected.

In many installations it will be found a reasonable compromise to give the cylinder a capacity equal to the maximum draw-off of hot water in any one hour at peak-load conditions, and the boiler may generally then be sized on a basis of heating this quantity of water up to the desired temperature in some longer time, depending on the installation. In many cases it will be reasonable if it heats this up in 1½ to 2 hours, but where there is little draw-off between the peak load conditions, this may be even further extended, and on the contrary, where the supply approximates more to a continuous one, it may *per contra* need to be shortened.

There are special cases where a cheap supply of waste heat is available at a slow and almost continuous rate, as, for example, when the system is combined with a private generating station. In such a case a much larger cylinder capacity may be desirable, so as to get the maximum benefit from the source of heat.

It may be useful here to mention that the average temperature for hot baths is about 100 deg. F. A normal bath contains about 30 gall. of water, so that if the hot water supply is at 150 deg. and the cold water supply at 50 deg., approximately half of each will be required, i.e., 15 gall. of hot water for each hot bath.

In most installations the hot baths constitute the peak load for the hot water supply system, and in each case it is necessary to consider whether during such peak loads a supply is also required for kitchen, basins and other possible sources.

Table XLIII gives the capacities of various standard fittings as a guide to the estimation of the cylinder capacity. Thus, in a hotel with 100 bathrooms (where each bedroom has its own bathroom) each bathroom may perhaps be used twice in one hour, so that it would be desirable to allow in such a case 100 × 2 × 30 (see Table XLIII) = 6,000 gall. at 100 deg. F. = 3,000 gall. of hot water at 150 deg. F. and 3,000 gall. of cold at 50 deg. F. for this purpose per hour. To this storage of 3,000 gall. something should be added for the kitchen (probably in use at the same time), making the total cylinder capacity required perhaps 4,000 gall.

Public bathrooms not attached to a particular bedroom may, of course, be used much more frequently in one hour, particularly when the number of bathrooms is small compared with the number of bedrooms.

TABLE XLIII.

CAPACITY OF VARIOUS STANDARD FITTINGS.

	Capacity in gallons (water at 100° F.)	Hot water at 150° F. required (in gallons).
Lavatory basin ..	2	1
Sink, normal ..	—	5
„ large ..	—	10
Bath, average ..	30	15
Shower bath ..	2-3 galls. min.	1-1½ galls. min.

Right : Table XLV. Cost of hot water system apparatus. All boiler costs based on catalogue ratings. Add 25 per cent. for recommended ratings. See text.

COST OF H.W.S. APPARATUS

BOILERS	APPROX. COSTS, INCLUDING FIXING, INSULATION & MOUNTINGS, 1934.		
RATING† B.Th.U°/HOUR	CAST IRON DIRECT	WROT IRON DIRECT	C.I SECTION‡ INDIRECT
100,000	£ 20	£ 70	£ 30
200,000	£ 40	£ 90	£ 40
300,000	£ 60	£ 110	£ 60
400,000	£ 75	£ 140	£ 75
500,000	–	£ 170	£ 90
750,000	–	£ 220	£ 130
1,000,000	–	£ 270	£ 170

CYLINDERS & CALORIFIERS	APPROX. COSTS, INCLUDING FIXING, INSULATION & MOUNTINGS, 1934				
CAPACITY GALLONS	SIZE L. × DIAM.	GALV^{d} IRON CYLINDERS	GALV^{d} IRON CALORIFIERS	COPPER CALORIFIERS	WORKING HEAD · FT.
50	42"x 21"	£ 10	£ 20	£ 25	40
100	64"x 24"	£ 15	£ 30	£ 50	40
200	60"x 36"	£ 25	£ 40	£ 90	60
300	84"x 36"	£ 50	£ 70	£ 125	100
400	88"x 42"	£ 70	£ 100	£ 175	100
500	84"x 48"	£ 85	£ 120	£ 200	100
750	120"x 48"	£ 100	£ 140	£ 250	100
1000	99"x 60"	£ 120	£ 180	£ 350	100

PIPING	COST PER FOOT RUN, FIXED, WITH AVERAGE NUMBER OF FITTINGS, UNLAGGED	
INSIDE DIAMETER	GALVANIZED IRON	LIGHT GAUGE COPPER & COMPRESSION JOINTS
½"	1/-	1/1
¾"	1/1	1/4
1"	1/3	2/-
1¼"	1/8	2/9
1½"	2/-	3/3
2"	2/6	5/-
2½"	3/4	6/-
3"	4/-	8/6
4"	5/6	12/6

TABLE XLIV.

No.	TYPE OF BUILDING	COST OF H.W.S. INSTALLATION	BUILDING CUBE	No. OF OCCUPANTS	COST PER CUB. FT.	COST PER OCCUPANT	REMARKS
1	TAVERN	£ 187 · 15 · 0	165,000	30	·273 d.	£ 6·26	GALVANIZED PIPE ETC
2	HOTEL	£ 610 · 16 · 0	286 000	80	·510 d	£ 7·63	" " "
3	FLATS · (CHEAP TYPE)	£ 589 · 0 · 0	330,000	80	·400 d	£ 6·84	" " "
4	TOWN HALL	£ 310 · 3 · 0	331 000	100	·218 d	£ 3·01	" " "
5	SECONDARY SCHOOL	£ 329 · 0 · 0	523 300	400	·152 d	£ 0·82	COPPER " "
6	" "	£ 232 · 10 · 0	"	"	·107 d	£ 0·58	GALVANIZED " "
7	COLLEGE, (PART RESIDENTIAL)	£ 353 · 15 · 0	688 000	150	·332 d	£ 6·35	" " "
8	FLATS · (GOOD CLASS)	£ 1798 · 0 · 0	750 000	220	·575 d	£ 8·18	" " "
9	BANK HEAD OFFICE	£ 978 · 0 · 0	915 000	200	·257 d	£ 4·89	COPPER " "
10	PRIVATE OFFICE BUILDING	£ 1176 · 0 · 0	962 000	350	·294 d	£ 3·36	" " "
11	GOVERNMENT " "	£ 656 · 1 · 0	1 127 000	300	·140 d	£ 2·19	" " "
12	BANK	£ 1892 · 10 · 0	2 000 000	350	·227 d	£ 5·40	" " "
13	BANK HEAD OFFICE	£ 2573 · 0 · 0	3,129 000	1100	·197 d	£ 2·34	" " "

It is, of course, impossible to lay down even tentatively any general rule without considering most carefully the particular circumstances of each individual application, and the special circumstances and use for which each installation is intended needs to be made a special study before a proper estimate can be made.

As regards the boiler, it goes without saying that in addition to the heat required for raising the hot water to the required temperature, the losses due to radiation in boiler, mains, cylinder and fittings must be properly allowed for, and in some systems this bears a very high ratio to the total heat required.

In very large installations it sometimes happens, also, that the capacity of the circulating mains adds materially to the hot water storage and may be considered as part of the cylinder capacity. This is particularly true when the pipes have been generously sized so as to give an ample circulation without the use of the pump. In the same way, the water contents of the boiler may be considered as part of the cylinder contents. This makes little difference in small installations, but may be an important factor in large ones, particularly if boilers of the Lancashire, Cornish, or other type of large water capacity are used. Indeed, in a large mental institution, recently completed, the capacity of boilers, plus mains, is utilized without a cylinder at all.

Cost of Installations.—Table XLIV sets out the approximate cost of the hot water supply system to various completed buildings, and expressed in terms of the cubic capacity of the building and the number of occupants. The cubic capacity is measured gross cube, the number of occupants is on the basis of the daytime occupation and the cost of the supply includes boiler, calorifier, or cylinder and mains taken as far as the taps, but not including taps, basins, baths, or similar fittings.

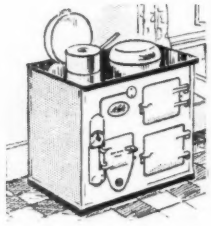
The examples are all English, erected between the years 1924 to 1934.

Table XLV gives the cost of boilers and cylinders of various ratings, capacities and descriptions, and of piping suitable for hot water services.

•

Model of Britannia

At the R.I.B.A. there will shortly be on exhibition a model of a statue of Britannia, which is now being erected among the outer jetties of the Port of Boulogne. This statue commemorates the landing of the first British troops in Boulogne on August 12, 1914. The statue itself has been designed by a local Boulogne resident, Monsieur Stenne, and the base and its surroundings designed by the architect, M. Dufetel.



TRADE NOTES

[*BY F. R. S. YORKE, A.R.I.B.A.*]

Concrete Decking

I HAVE received a copy of a Building Research Station report of investigation on the effect of Solcheck concrete decking on the temperatures attained by an asphalt roof.

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In order to confirm the results of an earlier laboratory test, direct measurements during warm, sunny weather have now been made of the maximum temperatures attained by an asphalt roof with and without a special form of concrete decking laid on the asphalt.

•

The decking, which was supplied by The Trussed Concrete Steel Co., consists of reinforced concrete slabs measuring 2 ft. square and pierced with numerous holes of such diameter that in these latitudes the sun's rays can never pass directly through the slabs. Each slab is supported clear of the roof surface on five short legs, the overall thickness of the decking being about 2 in. The roof on which the tests were carried out consists of a 7-in. reinforced concrete slab, covered with asphalt, $\frac{3}{4}$ in. thick.

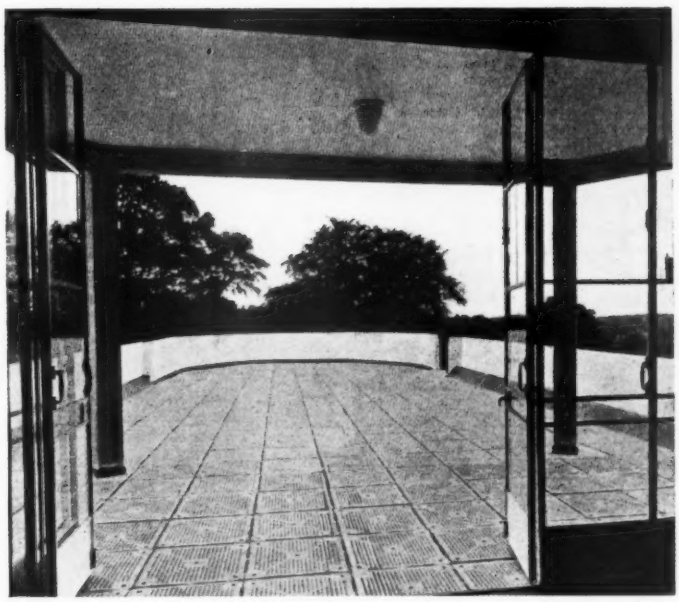
•

The temperature measurements were made with the aid of thermocouples embedded in the asphalt and connected to recording apparatus. The results obtained on five almost cloudless days are shown in the following table :

MAXIMUM TEMPERATURES (°F.)

	Air.	Unprotected Asphalt.	Asphalt below decking.	Reduction of temperature caused by decking.
June 1	72	99½	73	26½
June 5	84½	113	83½	29½
June 6	84½	117	85½	31½
June 7	81	113	84	31
June 8	80	112½	83½	29

It will be seen that, whereas the unprotected asphalt was heated to a considerably



A photograph showing Solcheck concrete decking. The headpiece to these notes shows the new standard Aga cooker, described on page 212.

higher temperature than the air, in no case did the temperature of the protected asphalt rise more than 3½ deg. F. above the maximum air temperature. The decking should, therefore, be of value in reducing the likelihood of structural injury to a building caused by excessive temperature rise and expansion of a concrete roof slab covered with mastic asphalt.

Cooking

Aga Heat announce a new 3 ft. 3 in. wide standard Aga cooker, similar to the normal Aga cooking stove, with a guaranteed annual fuel cost not exceeding £4, but costing only £47 10s. plus from £5 for delivery and erection.

•

This is how the makers show how long it will take, in relation to present fuel bill, to pay for an Aga out of savings in fuel. The figures are based on prices as above.

Present Annual Fuel Bill	Amount Saved per annum	Initial Cost recovered Years	Months	Considered as an Investment the Annual Dividend will be
£8	£4	13	4	7·6%
10	6	8	10	11·4%
12	8	6	8	15·2%
14	10	5	4	19·0%
16	12	4	5	22·9%
18	14	3	9	26·7%
20	16	3	4	30·5%
22	18	2	11	34·3%
24	20	2	8	38·1%
26	22	2	5	41·9%
28	24	2	3	45·7%
30	26	2	—	49·5%
35	31	1	8	59·0%
40	36	1	6	68·5%

Pressed Steel Tanks

I have received from Horsley Bridge and Thomas Piggott, Ltd., an informative and well-produced brochure describing pressed steel tanks. Piggott's pressed steel tanks consist of standard plates (type A, B and C), see diagrams, stays, bolts and jointing material.

•

Standard sizes of plates are 4 ft. or 5 ft. square, in any thickness from ⅛ in. to ⅜ in. All flanges 3 in. wide, bolts ⅝ in. diameter except for ⅛ in. thick plates when bolts are ½ in. diameter. All holes jig drilled ready for assembly.

•

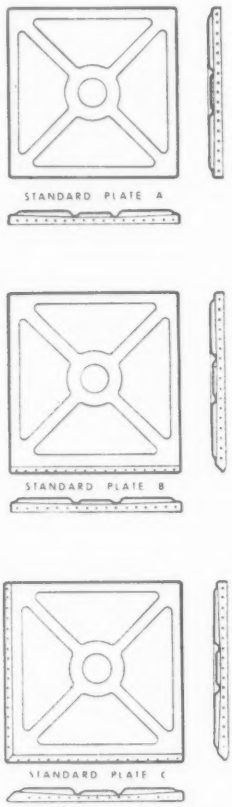
"Atlas" compound is normally supplied for jointing. It is insoluble in water or oil and said to be satisfactory for the storage of such liquids where the temperature does not exceed 150 deg. F. For higher temperature strip lead or chemically treated wood strip can be supplied at a small extra charge.

•

Each tank is supplied complete with all necessary patent pressed steel stays, ready drilled for fixing.

•

Tanks are despatched oiled or painted at buyer's option. Where tanks are required for storing drinking water a special bituminous composition is used. Purpose should be advised when ordering. Special coatings such as bitumastic enamel, lead, rubber or galvanizing can be supplied.



Pressed steel tanks: elevations and sections of standard plates.

•

PACKING.—As the standard plates nest compactly for transport and are unbreakable, no special packing is necessary. Stays are bundled and gusset plates, bolts, and jointing material are packed in cases for shipment.

•

The company fabricate and supply any steelwork necessary to support elevated tanks.

•

All parts are drilled and marked for erection; and erection drawings and instructions are supplied with each order. Erection tools are supplied for export orders and where desired for home orders.

THE BUILDINGS ILLUSTRATED

The following is a list of the general contractors and some of the sub-contractors for the buildings illustrated in this issue:—

Youth Hostel, Holmbury St. Mary, Surrey (pages 188-191). General contractor, W. G. Sheppard, who was also responsible for the joinery. Craftsmen: Prunella C. Pott, artist for mural decoration; Percy Smith, lettering. Sub-contractors: Diespeker & Co., Ltd., concrete floors; Rosser and Russell, Ltd., heating and domestic hot water supplies; W. James & Co., Ltd., windows; Adamsez, Ltd., sanitary fittings; Cellulin Flooring Co., floors—common room and dormitory; B. G. Smithers, Ltd., electricians; Yannedis & Co., Ltd., ironmongery; Falk, Stadelmann & Co., electric light fittings; Lion Foundry Co., Ltd., rain water heads, coal shute, etc.; Light Steelwork, Ltd., railings and ladders; Carters (London), Ltd., tiling; Venesta, Ltd., panelling, laminated board and doors; Griffiths Bros. paint; Maple & Co., curtains; Wood Bros., china.

Car Service Station, Catford (pages 201-203). General contractors, Allen Fairhead and Sons, Ltd. Sub-contractors: Engert and Rolfe, Ltd. asphalt; London Brick Co. and Forders, Ltd., bricks; Braithwaite & Co. (Engineers), Ltd., structural steel; F. Bowman Glassworks, Ltd., glass; Mellowes & Co., Ltd., patent glazing; Richard Whittington & Co., Ltd., central heating; Troughton and Young, Ltd., electrical wiring and electric light fixtures; Leeds Fireclay Co., Ltd., sanitary fittings; Nettlefold and Son, Ltd., door furniture; John Thompson Beacon Windows, Ltd., casements and window furniture; W. S. Tyler, Ltd., glazed sliding doors; Shutter Contractors, Ltd., fireproof doors; Modern Surfaces, Ltd., external rendering; Diespeker & Co., Ltd., terrazzo; S. F. Bowser & Co. (London), Ltd., petrol and oil pumps; Neon Manufacturers, Ltd., signs; Vitrea Drawn Glass Co., Ltd., drawn sheet glass.

HOUSING STANDARDS

On July 29 Sir Kingsley Wood, Minister of Health, received a deputation from the National Federation of Building Trades Operatives. Mr. E. G. Hicks, M.P., introducing the deputation, said they desired to put forward suggestions for the supervision and maintenance of housing standards. Mr. Thomas Barron, President of the National Federation of Building Trades Operatives, said the Federation had had investigations made over a considerable period of time into the type and quality of buildings erected throughout the country. They believed as a result of these investigations that a large number of the houses which were being built at the present time were badly constructed and built with faulty materials. The Federation considered that standard specifications of materials, based on the British Standards Institution, should be laid down and that efforts should be made to protect the public from buying faulty material and badly constructed property. They hoped that the Minister would examine the position in order to see whether it was possible, either administratively or, if necessary, by the introduction of legislation, to safeguard house purchasers.

Mr. Coppock said that he believed the position was serious. He gave a number of examples of unsatisfactory and faulty methods of construction. If the Ministry of Health could lay down standards, he believed that they would prove to be generally acceptable.

Sir Kingsley Wood, in reply, said that he fully shared the opinions of the Federation on the desirability of good housing stand-

ards. We had certainly had to pay heavily for our lack of foresight in many of our building operations in the past. It was the duty of Local Authorities to exercise fully their right to make inspections and to secure reasonable compliance with their bye-laws. There was no intention of relaxing the standard of houses erected by local authorities but the provision of houses at low rentals was one of the urgent housing needs of the time, and cost was an important matter in securing decent houses within the means of the lower paid workers.

He would like to see more planned development, particularly in the new and rapidly growing districts. We should remember the lessons of the past and have regard to new methods and modern housing facilities. The present low cost of money and the substantial subsidy for slum clearance should make for higher standards.

He doubted whether new and effective legislation could be devised to protect people who purchased houses which were not of the standard and quality they were represented to be, but there were remedies available under the present law for offences which amounted to false pretences. It was particularly important that nothing should be done to slow up the supply of good houses.

With regard to suggestions made by the deputation for greater uniformity of bye-laws he reminded them that the Ministry had prepared model bye-laws, but they would recognize that local conditions varied. He was giving close attention to a scheme of the National Federation of Building Trades Employers to draw up suitable standard specifications. He understood that it was the intention of the Employers' Federation to keep a register which would include only builders whose work had been found satisfactory. Registered members would be able to obtain certificates for any house, subject to inspection by the Council, stating that it conformed to an appropriate specification, and would agree to put right, free of cost, any structural defects which appeared within six months. The Ministry had shown its interest in this scheme by appointing an Observer to the Committee, which, under the chairmanship of Sir Raymond Unwin, was working out the details of the scheme.

THE WEEK'S BUILDING NEWS

LONDON & DISTRICTS (15-MILES RADIUS)

BEXLEY. *Schools.* Kent Education Committee is to erect a junior school for 350 on the Upton site and acquire a site at Broadway, Bexley, for the erection of a central school.

BRENTWOOD. *Nurses' Home.* The L.C.C. is to erect a new nurses' home at St. Faith's Hospital, Brentwood, at a cost of £18,915.

CLAPHAM. *Dwellings.* The L.C.C. is to erect seven blocks of dwellings to the plans of Mr. Louis de Soissons, F.R.I.B.A., on the Stockwell Road site, Clapham, at a cost of £70,000.

COULSDON. *Libraries.* Coulsdon U.D.C. has approved plans by Mr. H. A. Gold for the erection of four branch libraries at a cost of £23,000.

DEPTFORD. *Housing Scheme.* The L.C.C. is to prepare a scheme for dealing with the Frankham Street area of Deptford at a cost of £100,000.

DEPTFORD. *Dwellings.* The L.C.C. is to erect another block of tenements on the Hughes Fields Estate, Deptford, at a cost of £15,000.

EWELL. *Mental Hospital.* The L.C.C. is to enlarge the Ewell mental hospital at a cost of £90,388.

HACKNEY. *Housing Scheme.* The L.C.C. is to clear and redevelop the Broadway area, Hackney, at a cost of £150,000.

HACKNEY. *Dwellings.* The L.C.C. is to erect tenements on the Duncan Square area, Hackney, at a cost of £44,850.

HACKNEY. *Housing Scheme.* The L.C.C. Housing Committee recommends the appropriation of 30 acres on the Hackney Marshes for a housing scheme.

HOLBORN. *City Literary Institute.* The L.C.C. is to rebuild the City Literary Institute, Goldsmith Street, Holborn, at a cost of £55,750.

HYDE. *Hospital.* Hyde Corporation has asked the borough engineer to prepare plans for extensions at the hospital.

ISLINGTON. *Dwellings.* The L.C.C. is to erect 321 tenements on the Loraine Place area, Islington, at a cost of £150,000.

ISLINGTON. *Cleansing Depot.* Islington B.C. has prepared a scheme for the provision of a cleansing depot with modern refuse destruction plant at a cost of £32,000.

KENNINGTON. *Dwellings.* The L.C.C. is to erect another block of 58 tenements on the Kennington Park estate at a cost of £25,600.

LAMBETH. *Housing Scheme.* The L.C.C. is to undertake the clearance and redevelopment of the Colwyn Street area of Lambeth at a cost of £95,000.

LEE. *Hospital extension.* The L.C.C. is to erect a new nurses' home at the Grove Park Hospital, Lee, at a cost of £35,200.

MILL HILL. *School.* Hendon Education Committee is to erect an elementary school for 400 in the vicinity of Frith Lane, Mill Hill.

MOTTINGHAM. *Schools.* Kent Education Committee is to erect junior, senior and infants schools at Mottingham.

PADDINGTON. *Hospital Extension.* The L.C.C. is to erect a new ward block at the Paddington Hospital at a cost of £47,760.

PADDINGTON HOSPITAL. *Balconies.* The L.C.C. is to erect sun balconies and sanitary annexes at Paddington Hospital at a cost of £7,806.

POPLAR. *Dwellings.* The L.C.C. is to erect blocks of tenements on the Perring Street area, Poplar, at a cost of £81,000.

PUTNEY. *Dwellings.* Wandsworth B.C. is to erect tenements on the Felsham Road area of Putney at a cost of £60,635.

WOOLWICH. *Dwellings.* Woolwich B.C. is to erect 264 tenements on the Middle Park estate at a cost of £96,392.

SOUTHERN COUNTIES

BROCKENHURST. *Schools.* Hampshire Education Committee is to purchase two sites at Brockenhurst for the erection of secondary schools for boys and girls.

FOLKESTONE. *Technical Institute.* Kent Education Committee has acquired seven acres at Folkestone for the erection of technical institutes.

PORCHESTER. *School.* Hampshire Education Committee is to purchase a site at Portchester for the erection of a senior school.

SOUTH-WESTERN COUNTIES

PAIGNTON. *School.* Devon Education Committee is to obtain a site in Paignton for the erection of a secondary school.

MIDLAND COUNTIES

ASHTON-UPON-MERSEY. *School.* Cheshire Education Committee is to erect an elementary school at Ashton-upon-Mersey.

EASTERN COUNTIES

NORWICH : *School.* Norwich Education Committee is to enlarge the Lakenham council school to accommodate an additional 140 children.

NORWICH. *School.* Norwich Education Committee has obtained a site on the North Earlham estate for the erection of an elementary school.

NORTHERN COUNTIES

BELLINGHAM. *Clinic.* Durham County Council is to prepare plans for the erection of a clinic and maternity centre at Billingham.

DEWSBURY. *Maternity Home.* Dewsbury Corporation has approved amended plans for extensions at Moorlands maternity home at a cost of £13,000.

DEWSBURY. *Houses.* Dewsbury Corporation has approved plans by the borough engineer for the erection of 26 houses at the Crost site, Earlsheaton.

HORDEN. *School.* Durham County Education Committee has approved plans for the erection of a new Roman Catholic school at Horden.

HULL. *Central Depot.* Hull Corporation has approved plans by the city architect for the erection of a central depot for the water department at Stoneferry at a cost of £13,000.

HULL. *School.* Hull Education Committee is to prepare plans for the erection of a junior department for 400 at East School, Endyke Lane.

HULL. *Swimming Pool.* The Corporation is considering plans by the city engineer for the construction of a swimming pool at the old harbour site.

LEEDS. *Houses. etc.* The 1933 Housing Society Ltd., is in communication with the Leeds Corporation with reference to its proposal to erect 1,000 houses on the Cottingley Hall estate.

LEEDS. *Churches.* The Corporation has sold two sites on the Moortown and Belle Isle housing estates to the Leeds Church Extension Society for the erection of churches.

LEEDS. *Bus Station.* The Corporation has approved a scheme for the provision of a central bus station at Eastgate.

NEWCASTLE. *School.* The Rev. J. St. George, of the Walker Roman Catholic School Managers, is to provide a new school for 400 on the Daisey Hill estate, Newcastle.

STRETFORD. Plans passed by the Corporation : Nine houses, King's Road, for Messrs. Smith and Allcock, Ltd. ; clinic and library, Sixth Street, for Corporation Health Committee ; store, Longford Road, for Forest City Electric Co., Ltd., works extensions, Chester Road, for Messrs. H. and J. Quick ; boiler house, Chester Road, for Messrs. Yapps, Ltd.

WALLSEND. *Houses.* Wallsend Corporation is to erect 95 houses on the Coast road site at a cost of £30,678.

YORK. *School.* The Education Committee has purchased a site in Osbaldwick Lane for the erection of an elementary school.

WALES

CARDIFF. *School.* The Education Committee is to purchase a site at Nantddu for the erection of an elementary school.

BUILDING CONTRACTS OPEN

Unless the contrary is expressly stated, all deposits required for bills of quantities, etc., are returned on receipt of bona-fide tenders. The words "Fair Wages Clause," inserted in certain paragraphs, signify that persons tendering must conform to a fair wages clause in the contract, which requires them to pay the rates of wages current in the district. Application for plans and particulars should be made to the address given at the end of each entry.*—ED., *A.J.

NORTHALLERTON : COURTHOUSE

August 9.—The North Riding Standing Joint Committee invites all trades tenders for erection of new courthouse at Northallerton. H. G. Thornley, clerk, County Hall, Northallerton.

(Continued on page xxiv.)

RATES OF WAGES

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

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

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

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

CURRENT PRICES

The wages are the standard Union rates of wages payable in London at the time of publication. The prices given below are for materials of good quality and include delivery to site in Central London area, unless otherwise stated. For delivery outside this area, adjustment should be made for the cost of transport. Though every care has been taken in its compilation, it is impossible to guarantee the accuracy of the list, and readers are advised to have the figures confirmed by trade inquiry. The whole of the information given is copyright.

WAGES

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

MATERIALS

EXCAVATOR AND CONCRETOR

		£	s.	d.
Grey Stone Lime	per ton	2	2	0
Blue Lias Lime	,,	1	16	6
Hydrated Lime	,,	3	0	9
Portland Cement, in 4 ton lots (d/d site, including Paper Bags)	,,	2	0	0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags)	,,	2	6	0
White Portland Cement, in 1-ton lots	,,	8	15	0
Thames Ballast	per Y.C.		6	3
¾" Crushed Ballast	,,		6	9
Building Sand	,,		7	3
Washed Sand	,,		8	3
2" Broken Brick	,,		8	0
¾" ,, ,,	,,		10	3
Pan Breeze	,,		6	6
Coke Breeze	,,		8	9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

		4" s.	4" d.	6" s.	6" d.
Straight Pipes	per F.R.	0	9	1	1
Bends	each	1	9	2	6
Taper Bends	,,	3	6	5	3
Rest Bends	,,	4	3	6	3
Single Junctions	,,	3	6	5	3
Double ,,	,,	4	9	6	6
Straight channels	per F.R.	1	6	2	6
¾" Channel bends	each	2	9	4	0
Channel junctions	,,	4	6	6	6
Channel tapers	,,	2	9	4	0
Yard gullies	,,	6	9	8	9
Interceptors	,,	16	0	19	6
IRON DRAINS:					
Iron drain pipe	per F.R.	1	6	2	6
Bends	each	5	0	10	6
Inspection bends	,,	9	0	15	0
Single junctions	,,	8	9	18	0
Double junctions	,,	13	6	30	0
Lead Wool	lb.		6		—
Gaskin	,,		5		—

BRICKLAYER

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

MASON

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

SLATER AND TILER

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

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

CARPENTER AND JOINER

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

Plywood, per ft. sup. Thickness	¼"	½"	¾"	¼"
Qualities	AA. A. B.	AA. A. B.	AA. A. B.	AA. A. B.
	d. d. d.	d. d. d.	d. d. d.	d. d. d.
Birch	4 3 2	5 4 3	7½ 6 4½	8½ 7 6
Alder	3½ 3 2	5 4 3	6½ 5½ 4½	8 7 6
Gaboon Mahogany	4 3 3	6½ 5½ 4½	9½ 7½ –	1/0½ 10 –
Figured Oak 1 side	8½ 7 –	10 8 –	11½ – –	1/6 – –
Plain Oak 1 side	6½ 6 –	7½ 7 –	9½ – –	1/– – –
Oregon Pine	5 4 –	5½ 5 –	6 – –	– – –

		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"	1½"	2"
Tubes, 2'-14' long, per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"-23" long each	10	1/1	1/11	2/8	4/9
,, 3"-11½" long ,,	7	9	1/3	1/8	3/–
Long screws, 12"-23½" long ,,	11	1/3	2/2	2/10	5/3
,, ,, 3"M-½" long ,,	8	10	1/5	1/11	3/6
Bends ,,	8	11	1/7½	2/7½	5/2
Springs not socketed ,,	5	7	1/1½	1/11½	3/11
Socket unions ,,	2/–	3/–	5/6	6/9	10/–
Elbows, square ,,	10	1/1	1/6	2/2	4/3
Tees ,,	1/–	1/3	1/10	2/6	5/1
Crosses ,,	2/2	2/9	4/1	5/6	10/6
Plain sockets and nipples ,,	3	4	6	8	1/3
Diminished sockets ,,	4	6	9	1/–	2/–
Flanges ,,	9	1/–	1/4	1/9	2/9
Caps ,,	3½	5	8	1/–	2/–
Backnuts ,,	2	3	5	6	1/1
Iron main cocks ,,	1/6	2/3	4/2	5/4	11/6
,, with brass plugs ,,	—	4/–	7/6	10/–	21/–

Discounts: TUBES.	Per cent.		Per cent.
Gas	65	Galvanized gas	52½
Water	61½	,, water	47½
Steam	57½	,, steam	42½
FITTINGS.			
Gas	57½	Galvanized gas	47½
Water	52½	,, water	42½
Steam	47½	,, steam	37½

SMITH AND FOUNDER—*continued.*

		s.	d.
Rolled steel joists cut to length	cwt.	12	9
Mild steel reinforcing rods, ½"	,,	10	6
,, ,, ⅝"	,,	10	3
,, ,, ¾"	,,	10	0
,, ,, ⅞"	,,	9	6
,, ,, 1"	,,	9	6
,, ,, 1¼"	,,	9	6
,, ,, 1½"	,,	9	6
		4"	6"
Cast-iron rain-water pipes of ordinary thickness metal	F.R.	s. d. 8	s. d. 10
Shoes	each	2 0	3 0
Anti-splash shoes	,,	4 6	8 0
Boots	,,	3 0	4 0
Bends	,,	2 7	3 9
,, with access door	,,	—	6 3
Heads	,,	4 0	5 0
Swan-necks up to 9" offsets	,,	3 9	6 0
Plinth bends, 4½" to 6"	,,	3 9	5 3
Half-round rain-water gutters of ordinary thickness metal	F.R.	5	6
Stop ends	each	6	6
Angles	,,	1 7	1 11
Obtuse angles	,,	2 0	2 6
Outlets	,,	1 9	2 3

PLUMBER

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

L.C.C. soil and waste pipes:	3"	4"	6"
Plain cast F.R.	1 0	1 2	2 6
Coated ,,	1 1	1 3	2 8
Galvanized ,,	2 0	2 6	4 6
Holderbats each	3 10	4 0	4 9
Bends ,,	3 9	5 3	10 3
Shoes ,,	3 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	8	0
Keene's cement	,,	5	0	0
Gothite Plaster	,,	3	6	0
Pioneer Plaster	,,	3	6	0
Thistle plaster	,,	3	6	0
Sand, washed	Y.C.		11	6
Hair	lb.			6
Laths, sawn	bundle		2	4
,, rent	,,		3	9
Lath nails	lb.			3

GLAZIER

	s	d.	s.	d.
Sheet glass, 21 oz., squares n/e 2 ft.			s. F.S.	2½
,, ,, 26 oz. ,, ,,			,,	3
Flemish, Arctic, Figures (white)*			,,	7
Blazoned glasses			,,	2 6
Reeded; Cross Reeded			,,	11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite			,,	6
Crown sheet glass (n/e 12 in. x 10 in.)			,,	2 0
Flashed opals (white and coloured)	1 0 and 2		,,	
¼" rough cast; rolled plate			,,	5½
¼" wired cast; wired rolled			,,	9½
¼" Georgian wired cast			,,	11
‡" Polished plate, n/e 1 ft.			,, †10 to ‡1	1
,, ,, 2 ,,			,, †1 2 ,, ‡1	1
,, ,, 4 ,,			,, †2 3 ,, ‡2	6
,, ,, 8 ,,			,, †2 9 ,, ‡3	2
,, ,, 20 ,,			,, †3 7 ,, ‡4	2
,, ,, 45 ,,			,, †3 11 ,, ‡4	7
,, ,, 100 ,,			,, †5 0 ,, ‡5	7
Vita glass, sheet, n/e 1 ft.			,,	1 0
,, ,, ,, 2 ft.			,,	1 3
,, ,, ,, over 2 ft.			,,	1 9
,, ,, plate, n/e 1 ft.			,,	1 6
,, ,, ,, 2 ft.			,,	3 0
,, ,, ,, 7 ft.			,,	4 0
,, ,, ,, 15 ft.			,,	5 0
,, ,, ,, over 15 ft.			,,	6 0
"Calorex" sheet 21 oz., and 32 oz.			,, 2 6 and 3	7 6
,, rough cast ½" and ¼"			,, 8½ ,, 1	6
Putty, linseed oil			lb.	3

* *Colours, 1d. F.S. extra.*
† *Ordinary glazing quality.* ‡ *Selected glazing quality.*

PAINTER

		£	s.	d.
White lead in 1 cwt. casks	cwt.	2	8	6
Linseed oil	gall.		2	3
Boiled oil	,,		2	9
Turpentine	,,		4	1½
Patent knotting	,,		14	0
Distemper, washable	cwt.	2	6	0
,, ordinary	,,	2	0	0
Whitening	,,		4	0
Size, double	firkin		3	0
Copal varnish	gall.		13	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 8
If in stiff clay	add	" 5
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 8
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 8
" in cement	"	27 12 8
" Stocks in cement	"	34 0 0
" Blues in cement	"	50 0 8
Extra only for circular on plan	"	2 0 0
" backing to masonry	"	1 10 0
" raising on old walls	"	2 0 0
" underpinning	"	5 10 0½
Fair Face and pointing internally	F.S.	1½
Extra over fletton brickwork for picked stock facings and pointing	"	8
" " " red brick facings and pointing	"	11
" " " blue brick facings and pointing	"	1 4
" " " glazed brick facings and pointing	"	3 6
Tuck pointing	"	7½
Weather pointing in cement	"	3
Slate dampcourse	"	10
Vertical dampcourse	"	1 1

ASPHALTER

		s. d.
½" Horizontal dampcourse	Y.S.	4 6
½" Vertical dampcourse	"	6 9
½" paving or flat	"	4 0
1" paving or flat	"	5 6
1" × 6" skirting	F.R.	1 0
Angle fillet	"	2
Rounded angle	"	2
Cesspools	Each	5 0

MASON

		s. d.
Portland stone, including all labours, hoisting, fixing and cleaning down, complete	F.C.	17 9
Bath stone and do., all as last	"	13 6
Artificial stone and do	"	13 0
York stone templates, fixed complete	"	10 6
" thresholds	"	13 6
" sills	"	1 0 6

SLATER AND TILER

		£ s. d.
Slating, Bangor or equal, laid to a 3" lap, and fixing with compo nails, 20" × 10"	Sqr.	3 10 0
Do., 18" × 9"	"	3 7 0
Do., 24" × 12"	"	3 17 0
Westmorland slating, laid with diminished courses	"	6 0 0
Tiling, best hand-made sand-faced, laid to a 4" gauge, nailed every fourth course	"	3 0 0
Do., all as last, but of machine-made tiles	"	2 16 0
20" × 10" medium Old Delabole slating, laid to a 3" lap (grey)	"	2 16 0
" " " " " (green)	"	4 15 0

CARPENTER AND JOINER

		£ s. d.
Flat boarded centering to concrete floors, including all strutting	Sqr.	2 2 6
Shuttering to sides and soffits of beams	F.S.	7
" to stanchions	"	7
" to staircases	"	1 6
Fir and fixing in wall plates, lintols, etc.	F.C.	3 9
Fir framed in floors	"	4 6
" " roofs	"	6 6
" " trusses	"	7 6
" " partitions	"	8 6
½" deal sawn boarding and fixing to joists	Sqr.	1 14 6
1" " " " "	"	1 17 6
1½" " " " "	"	2 3 0
½" × 2" fir battening for Countess slating	"	9 6
Do. for 4" gauge tiling	"	12 0
Stout feather-edged tilting fillet	F.R.	4½
Patent inodorous felt, 1 ply	Y.S.	2 3
" " " 2 "	"	2 9
" " " 3 "	"	3 3
Stout herringbone strutting to 9" joists	F.R.	10½
1" deal gutter boards and bearers	F.S.	1 2
1½" " " "	"	1 6
2" deal wrought rounded roll	F.R.	8
1" deal grooved and tongued flooring, laid complete, including cleaning off	Sqr.	2 1 0
1¼" do.	"	2 10 0
1½" do.	"	2 17 0
1" deal moulded skirting, fixed on, and including grounds plugged to wall	F.S.	1 6
1½" do.	"	1 9

CARPENTER AND JOINER—*continued*

		s. d.
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, 1½" pulley stiles, 1½" heads, 1" inside and outside linings, ½" parting beads, and with brass faced axle pulleys, etc., fixed complete	"	3 7
2" " " "	"	3 10
Extra only for moulded horns	Each	6
1½" deal four-panel square, both sides, door	F.S.	2 0
2" " " "	"	2 8
1½" " but moulded both sides	"	2 4
2" " " "	"	3 0
4" × 3" deal, rebated and moulded frames	F.R.	1 0
4½" × 3½" " "	"	1 4
1½" deal tongued and moulded window board, on and including deal bearers	F.S.	1 9
1½" deal treads, 1" risers in staircases, and tongued and grooved together on and including strong fir carriages	"	2 6
1½" deal moulded wall strings	"	2 1
1½" " outer strings	"	2 4
Ends of treads and risers housed to string	Each	1 9
3" × 2" deal moulded handrail	F.R.	1 3
1" × 1" deal balusters and housing each end	Each	2 0
1½" × 1½" " " "	"	2 9
3" × 3" deal wrought framed newels	F.R.	1 3
Extra only for newel caps	Each	6 0
Do., pendants	"	6 0

SMITH AND FOUNDER

		£ s. d.
Rolled steel joists, cut to length, and hoisting and fixing in position	Per cwt.	16 6
Riveted plate or compound girders, and hoisting and fixing in position	"	1 0 6
Do., stanchions with riveted caps and bases and do.	"	19 0
Mild steel bar reinforcement, 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 15 6
Do. in flashings	"	1 19 0
Do. in covering to turrets	"	2 6 6
Do. in soakers	"	1 11 0
Labour to welted edge	F.R.	3½
Open copper nailing	"	3
Close " "	"	4

		½" s. d.	¾" s. d.	1" s. d.	1½" s. d.	2" s. d.	4" s. d.
Lead service pipe and fixing with pipe hooks	F.R.	10	1 0	1 3	2 0	2 10	—
Do. soil pipe and fixing with cast lead tacks	"	—	—	—	—	—	5 6
Extra, only to bends	Each	—	—	—	—	2 0	6 9
Do. to stop ends	"	6½	8	9	11	1 0	—
Boiler screws and unions	"	3 3	3 9	5 0	8 0	—	—
Lead traps	"	—	—	—	6 3	8 9	—
Screw down bib valves	"	6 9	9 5	11 0	—	—	—
Do. stop cocks	"	7 0	9 6	12 6	—	—	—

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

PLASTERER AND TILING

		s. d.
Expanded metal lathing, small mesh	Y.S.	2 0
Do. in n/w to beams, stanchions, etc.	"	2 9
Lathing with sawn laths to ceilings	"	1 3
½" screeding in Portland cement and sand or tiling, wood block floor, etc.	"	1 5
Do. vertical	"	1 7
Rough render on walls	"	1 2½
Render, float and set in lime and hair	"	1 9
Render and set in Sirapite	"	1 11
Render, backing in cement and sand, and set in Keene's cement	"	2 9
Extra, only if on lathing	"	4
Keene's cement, angle and arris	F.R.	6
Arris	"	
Rounded angle, small	"	3
Plain cornices in plaster, including dubbing out, per 1" girth	"	1½
1" granolithic pavings	Y.S.	3 6
1½" "	"	4 6
6" × 6" white glazed wall tiling and fixing on prepared screed	"	17 6
9" × 3" " " " "	"	1 2 6
Extra, only for small quadrant angle	F.R.	8

GLAZIER

		s. d.
21 oz. sheet glass and glazing with putty	F.S.	6½
26 oz. do. and do.	"	7½
Flemish, Arctic Figured (white) and glazing with putty	"	1 1
Cathedral glass and do.	"	1 2
Glazing only, British polished plate	"	7
Extra, only if in beads	"	2
Washleather	F.R.	4

PAINTER

		s. d
Clearcolle and whiten ceilings	Y.S.	6
Do. and distemper walls	"	9
Do. with washable distemper	"	1 1
Knot, stop, prime and paint four coats of oil colour on plain surfaces	"	3 3
Do. on woodwork	"	3 6
Do. on steelwork	"	3 0
Do. and brush grain and twice varnish	"	5 6
Stain and twice varnish woodwork	"	1 11
Stain and wax-polish woodwork	"	4 6
French polishing	F.S.	1 2
Stripping off old paper	Piece	2 0
Hanging ordinary paper	from "	2 9

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Radiation

E

Building News—(*Continued from page 213*).

THIRSK : POLICE STATION

August 9.—The North Riding Standing Joint Committee invites all trades tenders for new police station and alterations to inspector's house at Thirsk. The County Architect, County Hall, Northallerton.

BEXHILL : ELECTRICITY SUB-STATION

August 10.—Erection of an electricity sub-station at the Town Hall, for the Electricity Department. The Borough Surveyor, Town Hall, Bexhill. Deposit £1 1s.

EDMONTON : ELEMENTARY SCHOOL

August 10.—Building an elementary school, including caretaker's cottage, boundary walls and fencing, in the Weir Hall district, N.18 (near Lister Gardens), for the E.C. Talbot, Brown and Fisher, Burystead Place, Wellingborough, Northants. Deposit £2 2s.

STAMFORD : HOUSES

August 10.—Erection of 57 houses on the Cemetery Road housing site, for the T.C. F. R. Ryman, borough engineer, Town Hall, Stamford. Deposit £2 2s.

DEAL : REDECORATIONS AT SCHOOLS

August 12.—Sundry repairs and redecoration at 10 schools during the summer vacation, for the E.C. T. C. Golder, borough engineer, Deal.

FINCHLEY : SUB-STATION

August 12.—Erection of sub-station building in Holne Chase, Hampstead Garden Suburb, for the T.C. Borough Electrical Engineer and Manager, Electricity Works, Squires Lane, Finchley, N.3. Deposit £5.

TRURO : HOUSES

August 12.—Erection of 88 houses at Tregolls, for the T.C. City Surveyor, Municipal Buildings, Truro.

BOOTLE : GOVERNMENT CONTRACTS

August 13.—The Commissioners of Works, etc., invite tenders for the execution, for three years, of ordinary works and repairs to the public buildings, etc., in their charge in Bootle and district. The Commissioners are not prepared to consider tenders for separate trades. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Deposit 5s.

DONCASTER : HOUSES

August 13.—Erection of 48 houses at Wheatley Park on the lump-sum basis (contract No. 15), for the T.C. Borough Engineer, 2, Priory Place, Doncaster. Deposit £5 5s.

WORTHING : GOVERNMENT CONTRACTS

August 13.—The Commissioners of Works, etc., invite tenders for the execution for three years of ordinary works and repairs to the public buildings, etc., in their charge in the Worthing district. The Commissioners are not prepared to consider tenders for separate trades. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Deposit 5s.

SALFORD : FLATS

August 14.—Erection of 294 flats in Eccles New Road, for the T.C. City Engineer, Town Hall, Salford, 3. Deposit £5 5s.

BENFIELDSIDE : HOUSES

August 15.—14 houses at Shotley Bridge with roads and sewers, for the Benfieldside U.D.C. Surveyor, T. P. Leath, Council Chambers, Blackhill. Deposit £2 2s.

BIRMINGHAM : GOVERNMENT CONTRACTS

August 15.—The Commissioners of Works, etc., invite tenders for the execution, for three years, of ordinary works and repairs to the public buildings, etc., in their charge in the Birmingham district. The Commissioners are not prepared to consider tenders for separate trades. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Deposit 7s. 6d.

CARDIFF : GOVERNMENT CONTRACTS

August 15.—The Commissioners of Works, etc., invite tenders for the execution, for three years, of ordinary works and repairs to the public buildings, etc., in their charge in the Cardiff district. The Commissioners are not prepared to consider tenders for separate trades. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Deposit 7s. 6d.

CREWE : GARAGE AND WORKSHOPS

August 15.—Erection of a garage and workshops for the sanitary department on a site off Pym's Lane, with fencing, drainage, paths and other works, for the T.C. L. Reeves, borough engineer, Municipal Buildings. Deposit £2 2s.

LEEDS : GOVERNMENT CONTRACTS

August 15.—The Commissioners of H.M. Works, etc., invite tenders for the execution, for three years, of ordinary works and repairs to the public buildings, etc., in their charge in the Leeds district. The Commissioners are not prepared to consider tenders for separate trades. Room 65D, Third Floor, H.M. Office of Works, London, S.W.1. Deposit 7s. 6d.

KEARSLEY : HOUSES

August 17.—Erection of 30 houses on the Prestolee site, for the U.D.C. J. F. Moyse, surveyor, Council Offices, Kearsley. Deposit £2.

LAUNCESTON : DEMOLITION, ETC.

August 17.—Demolition and re-erection of entire premises at Exeter Street, Launceston. C. W. Parkes Lees, registered architect, 4, Broad Street, Launceston.

HIGHAM FERRERS : PUBLIC CONVENIENCES

August 20.—Erection of public conveniences at Higham Ferrers. F. J. Simpson, town clerk, Higham Ferrers.

HILLINGDON : HOUSES, ETC.

August 21.—Erection of 70 houses and construction of roads and sewers on the Avenue Housing Estate, Hillingdon, for the Uxbridge U.D.C. W. L. Eves, 54, High Street, Uxbridge. Deposit £2 2s.

CHIPPING SODBURY : HOUSES

August 22.—Erection of 28 houses on the Gaunt's Field housing site, Green Lane, Chipping Sodbury, for the Sodbury R.D.C. H. C. James, housing supervisor, Council Offices, Chipping Sodbury. Deposit £1.

MABLETHORPE : HOUSES

August 26.—Erection of 12 houses (eight at Mablethorpe and four at Sutton-on-Sea), for the U.D.C. A. E. Baker, engineer and surveyor, Council Offices, Mablethorpe. Deposit £2 2s.

WILLESDEN : HOSPITAL

August 26.—Erection of a new observation ward block and incidental works at the Municipal Hospital, Brentfield Road, N.W.10, for the T.C. F. Wilkinson, Town Hall, Dyne Road, N.W.6. Deposit £10 10s.

NEWTON ABBOT : HOUSES

August 27.—Erecting 26 houses at Chudleigh and 6 houses at Hennock, for the R.D.C. A. E. Smith, housing surveyor, Midland Bank Chambers, Union Street, Newton Abbot.

CHAGFORD : SCHOOL

August 28.—Erection of a new senior council school at Chagford, for the Devon County E.C. H. V. de Courcy Hague, county architect, 97, Heavitree Road, Exeter. Deposit £2 2s.

TENDERS ACCEPTED

Bishop Auckland : Cottages.—Erection of 54 cottages on the Bishop Auckland Estate for the Durham County Council. Messrs. A. Elcoat and Son.

Bristol : Clinic.—Erection of a central clinic. Messrs. Spackman and Sons.

Bristol : Guildhall.—Reinstatement, after fire, of Guildhall premises. Messrs. Wm. Cowlin and Son, Ltd. (Plans by A. J. Knott.)

Hull : Landing Stage, etc.—Construction of a pontoon landing stage and approach bridge at Victoria Pier. Messrs. Tarran Industries, Ltd.

Ipswich : School.—Erection of the South Eastern senior boys' school. Mr. W. C. Reade.

Islington : Dwellings.—Erection of 123 dwellings in Waltersville Road. Messrs. J. Gerrard and Sons, Ltd.

Keighley : Houses.—Erection of 52 houses on the Woodhouse estate. Messrs. Ernest Turner, Ltd.

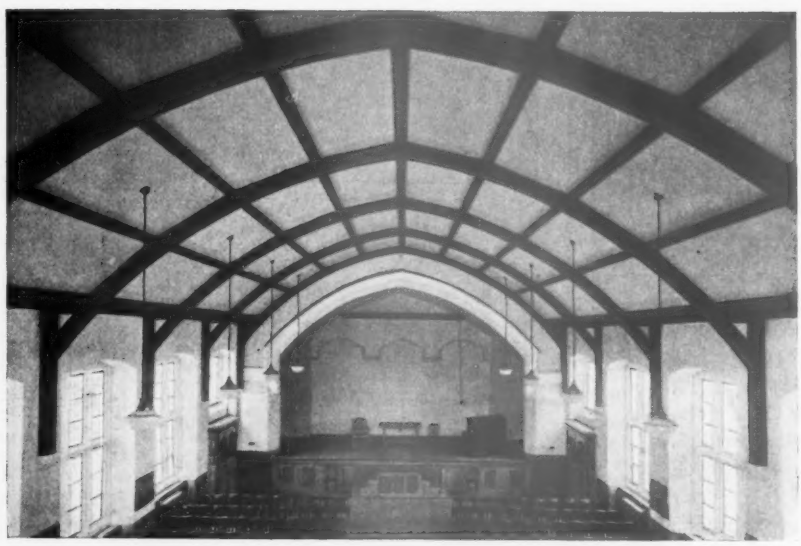
Leeds : Abattoir.—Extensions at the abattoir. Messrs. J. T. Wright and Sons.

Stoke-on-Trent : Gas Showrooms.—Erection of gas showrooms in Tontine Square, Hanley. Messrs. Naylor and Nutt.

Walsall : Houses.—Erection of 104 houses on the Horden estate. Mr. Henry Lloyd.

York : Houses.—Erection of 200 houses and 44 flats at Water Lane estate. Messrs. Tarran Industries, Ltd.

INSULITE



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The illustration shows Clifton College Preparatory School Assembly Hall, Bristol. INSULITE was applied to ceilings between oak ribs. Architect: A. E. Munby.

* SPECIAL NOTE.—THE INSULITE ½" Insulating Board and ⅜" Building Board are now manufactured with a **smooth linen finish** on one side and the characteristic canvas texture on the reverse. Samples of the new boards will be sent free on request.

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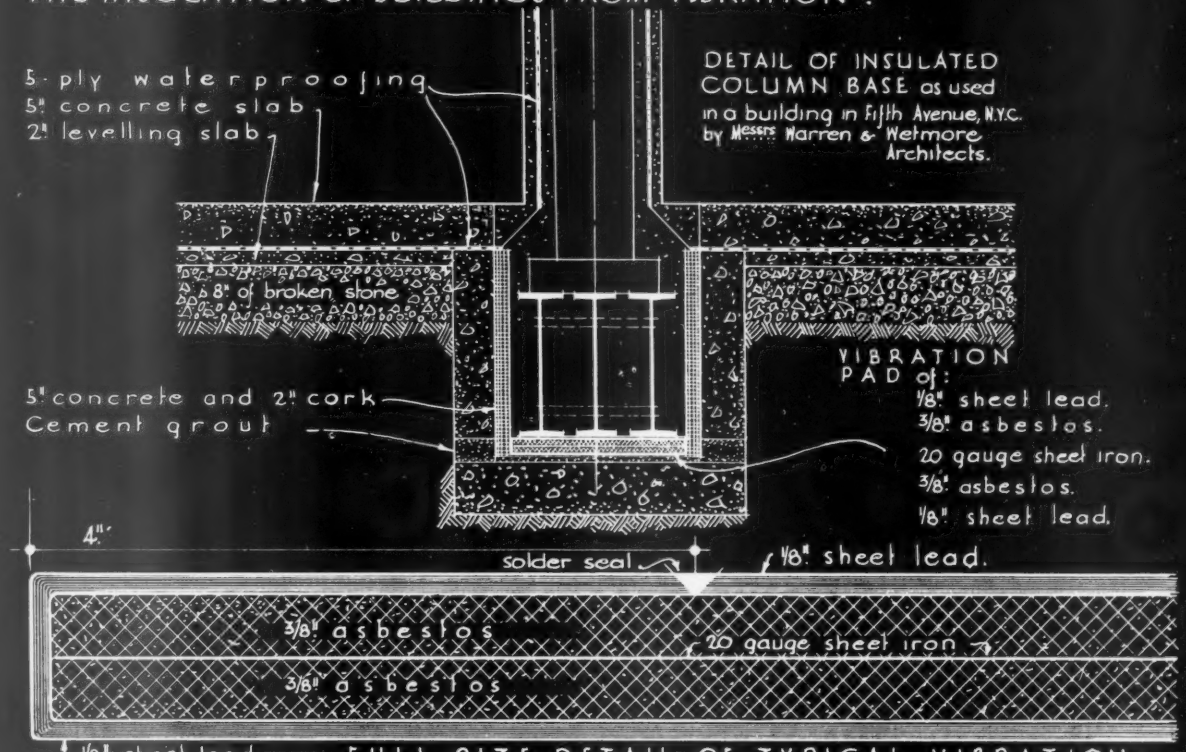
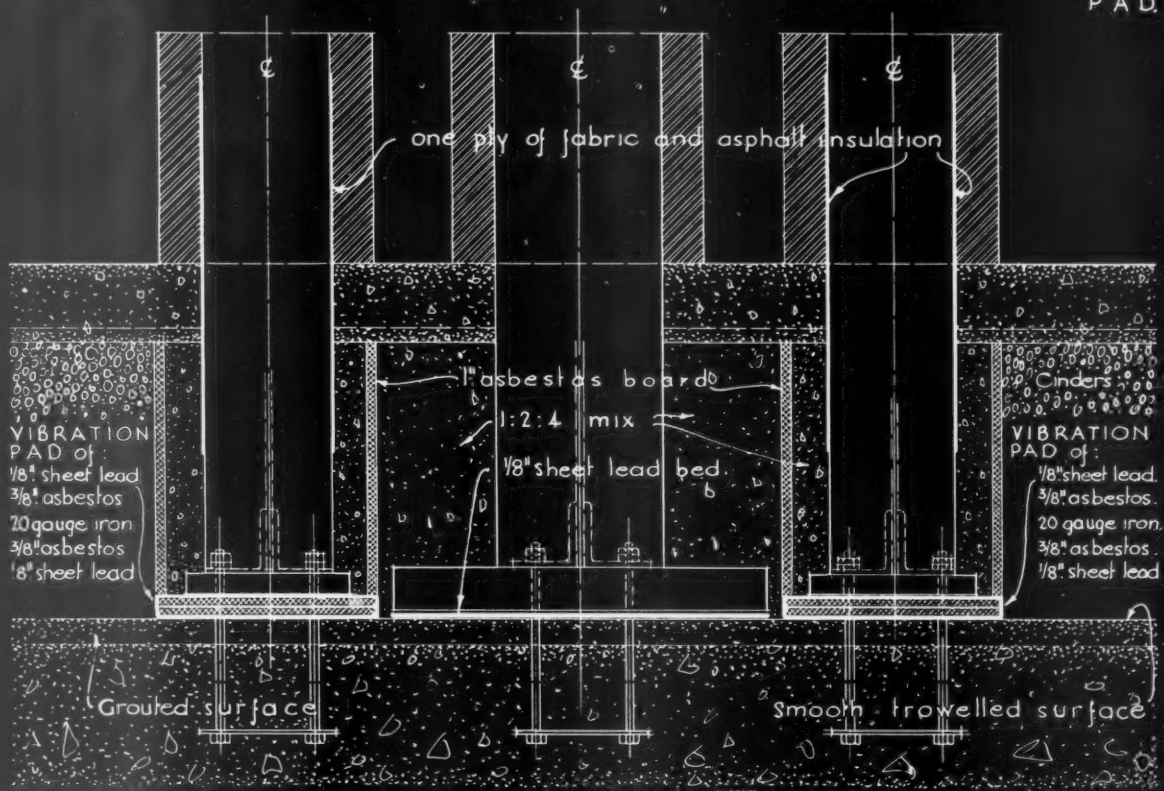
THE INSULATION OF BUILDINGS FROM VIBRATION :



DETAIL OF INSULATED COLUMN BASE as used in a building in Fifth Avenue, N.Y.C. by Messrs Warren & Wetmore Architects.

FULL SIZE DETAIL OF TYPICAL VIBRATION-PAD.



DETAIL OF INSULATED COLUMN BASES as used by Messrs Alfred Fellheimer & Steward Wagner, Architects for the Cincinnati Union Terminal Co. Cincinnati, U.S.A.

Information from the Lead Sheet & Pipe Development Council.

INFORMATION SHEET • THE USES OF LEAD IN BUILDING CONSTRUCTION • 10.

SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON · W.C.1. Oscar A. Bayne.

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INFORMATION SHEET

• 245 •

LEAD IN BUILDING CONSTRUCTION

The Insulation of Buildings from Vibration :

The upper detail given in this Information Sheet shows the method of insulating isolated columns used in a private house at the corner of Fifth Avenue and 71st Street, New York City, by Messrs. Warren and Wetmore, architects, of New York.

The small size of the column foundation is, no doubt, due to the good rock foundation obtainable on Manhattan Island.

A full-size detail is given of the type of insulating pad used, and it will be seen from this that the lower sheet of lead is cut considerably larger than the size of the pad required, and the edges are turned up the sides and down on to the top of the pad, and there sealed up to the upper lead sheet with a soldered joint. This method gives a solid pad and ensures that it is watertight.

The insulation of column bases in this building was carried out to guard against the vibrations set up by the constant traffic, from being carried up throughout the building by the steel frame construction. The case is, therefore, a simple one of insulation against vibration from external sources.

The lower detail is of a more complicated foundation in which the same type of pad is used. This example is taken from the Cincinnati Union Terminal Company's building, Alfred Fellheimer and Steward Wagner, architects.

In this case owing to the nature of the job, a railway terminal, the problem was to insulate against transmission of vibration from one system of steel framing to another standing on the same foundation.

The vibrations set up in a railway terminal are of a very severe kind, and they have been carefully studied in America where railway terminals are commonly built with an office building or hotel above.

In practically all the modern buildings over or near the New York Central lines into the Grand Central Terminus insulation of columns has been carried out by means of pads of the type shown on this Information Sheet.

It is understood that approximately 55 tons of lead were used for such insulation in the Graybar Building which adjoins the Grand Central Terminus, N.Y.C.

The Damping Effect of Lead-Asbestos Pads :

Under test it has been found that there is no clearly defined elastic limit for such pads—i.e., no loading-point at which a maximum damping effect is usually to be obtained.

Loading of Pads :

Owing to the absence of a clearly defined elastic limit it is difficult to give precisely figures for the loading of lead-asbestos pads ; however, a report by C. W. Glover (C. W. Glover and Partners) states :

"The Pennsylvania Railroad use a maximum unit load of 860 lb. per square inch, whereas the New York Central Railroad have only loaded similar pads to 500 lb. per square inch. In each case the lateral spreading of the lead of asbestos could not be detected. It would seem, therefore, desirable to recommend the loading of such pads to be limited, say, to 700 lb. per square inch."

Previous Sheets of this Series :

Sheets already published in this series, "Lead in Building Construction," are :

No. 148. Parapet gutters, cesspools, etc. (1).

No. 149. Leadwork to flat roofs (2).

No. 157. Types of joint for lead pipes (3).

No. 161. Methods of supporting lead pipes (4).

No. 167. Junctions of lead pipe with other materials (5).

No. 182. Insulation to X-ray departments (6).

No. 195. Leadwork to wood-framed dormer windows (7).

No. 207. Insulation against sound and structural vibration (8).

No. 235. Insulation against sound transmission (9).

Source of Information : The Lead Sheet and Pipe Development Council

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

Telephone : Whitehall 7265

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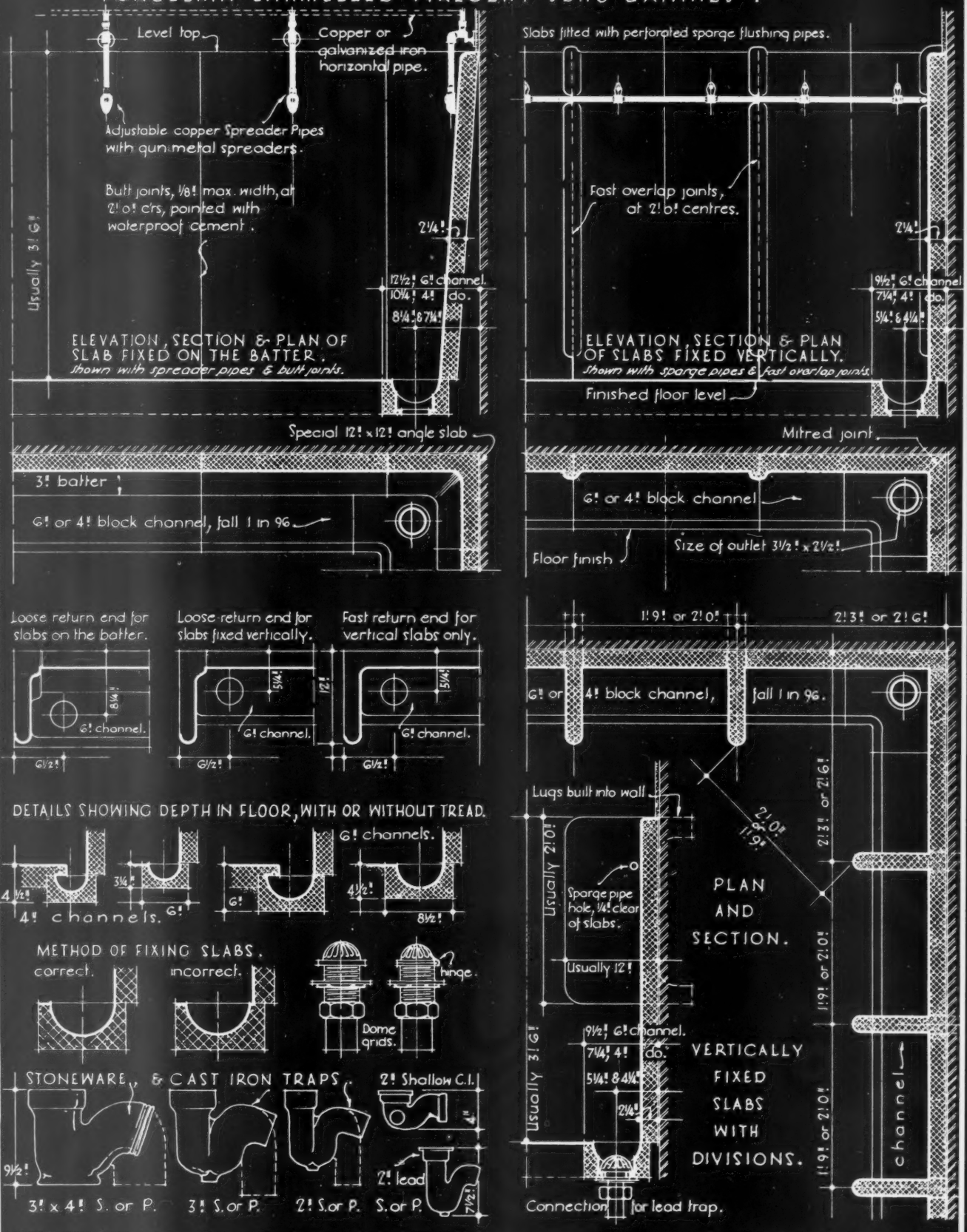
PORCELAIN ENAMELLED FIRECLAY SLAB URINALS :



Information from Associated Clay Industries Ltd.

(W. R. Pickup Ltd, Branch.)

INFORMATION SHEET: SANITARY FITTINGS · 1 · SLAB URINALS.

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

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INFORMATION SHEET

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SANITARY FITTINGS

Product : Fireclay Slab Urinals

Types of Slab Urinal :

Slab urinals are made (as shown on this Sheet) for fixing either vertically or on the batter ; both types are made with the following variations :

a. Slabs butt jointed.
b. Slabs with fast overlap joints cut out for sparge pipes.
c. Slabs with projecting divisions.

Utility :

Slab urinals are less expensive than stalls, occupy less space and are more easily fitted to special positions.

Sizes :

Slab urinals are made to a standard size of 3 ft. 6 in. high and 2 ft. wide and 2¼ in. thick, masoned to fit any space or line several walls.

Return Ends :

12 in. loose or integral return slabs are provided for the ends of ranges.

Channels :

Channels are made in two sizes, 6 in. and 4 in. (see details on this Sheet) with all necessary stop ends, centre pieces, angle pieces, etc., and can be cut to lengths to match slabs.

Outlets :

The standard position for the outlets in the channel lengths are :—

In the centre of 2 ft. lengths.
Near the end in stop end lengths.
In the centre of angle pieces.

By paying attention to these details it is possible for the joints of the channels to match up with the joints of the slabs.

Angles :

Special 12 in. by 12 in. by 3 ft. 6 in. high angle slabs in one piece are provided for the angles where the urinals are on two walls and are fixed on the batter.

Treads :

Fireclay treads 6 in. and 12 in. wide are produced for use with fireclay urinals, but if preferred the tread may be formed of marble, granite, slate, composition or other impervious material.

Fixing :

It is recommended that slabs should be fixed on a 3 in. batter wherever possible, as this prevents undue splashing in the channel and also prevents the flushing water falling directly into the channel without flushing the slab.

Channels should be fixed first, commencing at the outlets, and the slabs fixed afterwards. It is important that, in setting the slabs, a flush face should be formed by the side of the channel and the face of the slab.

Fall :

Channe's should be set with a fall of 1 in 96 to the outlets, the base of the slabs are always cut to the fall and the tops of slabs are level.

Cisterns :

Cisterns should be of fireclay or cast iron. They are usually automatic and fed from a pet cock with drop by drop feed. Pull cisterns are insisted upon by certain water authorities.

Height of Cisterns :

Recommended height 7 ft., floor to underside of cistern.

Capacity of Cistern :

One gallon per 2 ft. 3 in. run of slab.

Flushing :

Flushing pipes are of two types :—

(*a*) Copper or galvanised iron horizontal perforated sparge pipes.
(*b*) Copper or galvanised iron horizontal pipes, and copper distributing pipes with adjustable gunmetal face spreaders.

When correctly fixed, horizontal perforated sparge pipes direct the water on to slabs at a downward angle which prevents the pipes remaining water-logged after the flush has finished.

Dome Outlet Grating :

Gunmetal, with a 2 in. screwed body.

Traps :

Traps may be of various types of S or P trap :

3 in. or 4 in. cane glazed fireclay trap.
3 in. cast iron trap.
2 in. cast iron or brass shallow or deep pattern.
2 in. lead trap.

Bedding :

The final bedding mixture for channel and slabs should consist of a good waterproof cement and the joints should be pointed with Snowcrete, Parian, Keene's or Adamant cement.

Joints should never exceed ⅛ in. width ; any wider than this renders the range unsightly. Screw holes are provided for fixing to wall.

Fluid concrete or cement should not be poured in behind and between slabs after they are set in position.

General Data :

When divisions are required, the centres between divisions should be 1 ft. 9 in. or 2 ft. and when lining more than one wall the distance from the division to the corner of walls forming the angle should be 2 ft. 3 in. to 2 ft. 6 in. respectively and this will ensure uniform spacing of divisions at the front.

E.g.—Two walls each 10 ft. 6 in. long will accommodate eight divisions, four on each wall, with the front of the divisions at 2 ft. centres. This gives adequate room for each person.

Sufficient depth should always be allowed in the floor for the channel as it is easier to fill in than to dig out concrete. Slabs and channel should be set in position before grouting. The fixing marks on the slabs should be followed to obtain the correct fitting.

Where the floors are of insufficient thickness to house the channel of urinals, the channel can be laid on the existing floor and housed in cement. This will form a step up, or raised tread which should be of sufficient projection to enable the users to stand in comfort.

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