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The Editor will be glad to receive MS. articles and also illustrations of current architecture in this country and abroad with a view to publication. Though every care will be taken, the Editor cannot hold himself responsible for material sent him.

THURSDAY, JUNE 17, 1937. NUMBER 2213 : VOLUME 85

PRINCIPAL CONTENTS

THE MOPIN SYSTEM

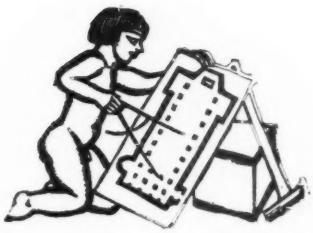
FLATS UNDER CONSTRUCTION AT LEEDS

TWO progress photographs of the scheme for 938 flats now approaching completion at Quarry Hill, Leeds. Above: completing the wall slabbing of a four-floored block, showing recessed balconies and large living room windows. Right: the light steel framing for a portion of a seven-storey block. A short descriptive article on the Mopin System appears on pages 1050-1051 of this issue.

The Quarry Hill scheme is under the direction of Mr. R. A. H. Livett, Director of Housing.

CHURCH IN SWITZERLAND

A detail of the tower of the church of Madonna del Sasso, Morcote, Lake Lugano. Photograph by Mr. B. G. White.



LOOKING AT LEEDS

EARLY next week, in cars and compartments, architects who practise below the Severn to Wash line will be moving towards Leeds, and moving it is possible they may think of their destination ; peacefully, sympathetically, and with just a suspicion of enjoyable horror and moral indignation, they may summon what they know of Leeds to judgment. As a comfortable and kindly man watches the movements of tigers, his sympathy blossoming behind strong steel bars, so these southerners may think of Leeds. From a more gracious when it is not a more tawdry world, they will move north in a missionary, a sympathetic spirit. Who has not heard of the industrialism of the woollen towns, the hard-headed uncultured businessmen, the frightful slums, the smoke, the clogs and mills ? They will go, the southerners (if they are not on their guard) to be kind, to be a little shocked and to praise the great attempts being made to alter present Leeds.

Architects from the north, from Glasgow, Liverpool, and Tyneside, know just a little more about Leeds. They know about unemployment and the landscapes of industrialism, they know a little about Yorkshiremen and what civic feeling means in the north ; and on the whole they will be glad that Bradford, Wakefield and Halifax, Huddersfield and Leeds still stick close to cloth.

The danger for those from too far south who go to look at tigers at Leeds is that the bars might quite suddenly vanish ; there is a lot of difference between what you think of a tiger and what a tiger thinks of you. At Leeds there will be great hospitality, and if in the intervals architects, well coached by the C.P.R.E. and *Britain and the Beast*, cannot subdue a few grimaces, they must set their jaws and murmur : " This is the real historic Britain. This is what made us great. These are the buildings and these are the streets that ought to be preserved." They may not like saying this, so long is it since architecture retreated from Leeds that they may even find it difficult to believe. But architects are men of knowledge and conscience and may be trusted to do what is right.

Windsor Castle and woodland lanes, Worcestershire, the Downs and Northumberland, the Lakes, East Anglia and the Highlands—from Leeds as much as anywhere came the nation which likes to think its background is of such places. While reform was in the air, while the Great Exhibition dazzled the world, while the Indian Army marched to and fro in front of the Russian bogy and Egypt slid gracefully into Cromer's lap, Leeds went on paying for most of it. The mills on Yorkshire streams gave place to steam-driven looms, sheep vanished from the hills and the landowners, the established church, the Government, the universities and civilization left Leeds, and places like it, to look after themselves. And with their patrons architects also washed their hands of Leeds.

The cultured and the powerful lent money to Leeds, drew money from it and extended its markets ; apart from these and a few State compliments, a few upraised hands of horror, Britain knew not Leeds. And Leeds got on with the business of making history fairly well by itself. It was a city of masters and men, of money, wool and cloth—and West Riding. In seventy-five years they did a lot.

Today, after pushing a little island into a position of eminence in a quarter of the world, Leeds may legitimately wonder whether it was worth it. Britain is finding the drawbacks of prominence, wool is not what it was. From all over the land people of fine principles are pointing out to Leeds and its neighbours that a century of Herculæan concentration on industry has left its mark roundabout. It has been noticed that the atmosphere of Leeds is not pure, its mills not all palaces, that its cultural life not that of Oxford, nor 75,000 of its houses all that they might be. Yorkshiremen have not replied collectively. They have never cared very much what people think about them ; and this new doctrine that historic Britain is the Royal Mile, Bath and the red roofs of Whitby, that the slums of Leeds are the sins of Leeds rather than of Belgravia and Bournemouth will not cut much ice in West Riding. People in Leeds are not easily fooled, though they may not talk much about art.

So when architects go back to a place they left a century ago, they will be offered many trips to the historic buildings they have heard about from their youth up. Leeds will probably encourage them to go, it bears no malice against a profession which, save for a town hall and a few mansions, has not done much for it. West Riding has its own architecture, now imitated from Detroit to Yokohama, of which pale shadows in Ukraine are gloated over in art theatres. It has its industrial buildings set in an industrial setting. It has the real thing.

Leeds has grown doubtful of its methods in the past, feels now that too much can be sacrificed to wool ; and while other cities, southern cities, talk about their slums, it has set out to cure its own—still, habitually, in a big way. Before the new Leeds appears, architects should remember that it is their duty to try to preserve historic buildings ; and let them choose a judicious piece of Leeds. There, complete with frame, whether they like it or not, is the British Nineteenth Century.

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NOTES & TOPICS

DOWNSIDE

TO speak of architecture giving outward expression to religion is a truism of the lecture theatre. I have now discovered it in a new form. Brought up in an atmosphere which was dominated more by Bradlaugh than by Manning, an evening spent at Downside was perhaps a special novelty. It was curious how a disciplined yet tranquil calm reigned so successfully over this hotch-potch conglomeration of Victorian gothic. The summer evening, the monks' robes and the emerald lawns all, of course, played their seductive part and contributed not a little, I suspect, to the sum of my emotions

*

The kernel of this stylistic nut is a little villa in the Early English manner of the 'sixties, but since then Mr. Hansom, Mr. Leonard Stokes and, I think, the entire Scott family, have made their contributions. It will be interesting to see who comes next.

*

Far be it from me to assess the part which each has played, but one thing, at least, emerged—the overwhelming individualism of that last generation; courageous and aggressive, it almost commands our admiration. A straight joint, a chopped-off string course—thus did the gothic of the 'nineties join up with the gothic of the 'eighties, without so much as a nod of recognition. One could not help but feel that Mr. Stokes was even a little hurt that his floor levels had to line through with those of Mr. Scott.

*

It is odd that this individualism should be a direct result of a fanatical admiration for the mediæval guild and for the co-operation inherent in the monastic system. Not that there is anything fanatical about Downside—it is "public-school" first and foremost.

I attended Compline just a little conscious of my heresies, but the setting put me at my ease—not a wax flower, not a candle, not a statue. Had it not been for the age-old glories of the music I should have looked around for the verger, the coconut matting and the spinsters from the houses in the close. This was the setting for a ritual which rivals Westminster in its complexity and its correctitude.

*

It was old Leonard Stokes himself, I believe, who once referred to the Benedictines as being "too ——— Anglican," and it is a strange phase of Romanism that holds itself aloof from the lace and fripperies of the Irish priest and clings rather to the skirts of English Society. I suppose it was Lord Acton—whom Lytton Strachey described as "wearing his Catholicism with a difference"—who began it all, and then the Marshals of England, the gatherings at Blenheim and the author of "The Viaduct Murder" all played their part. The result has been a curious and often genuine intellectual superiority—a superiority, however, which, if Buckfastleigh and Downside are fair samples, does not extend to the greatest of the arts.

HARVARD

Mr. Bogner, distinguished lieutenant of Prof. Gropius in the latter's new post as head of the Harvard University School of Architecture, has been paying us a visit. American and British schools are, I gather, faced with much the same problems and solving them in much the same way. Our functionalism is bending, of course, before the new romantic movement (vide *News-Chronicle* Schools, if you don't believe me); America's functionalism may be too deep seated in their commercial system to follow us in that respect.

*

That the modern city must be designed round and for the car, as the eighteenth century city was designed round the horse, is one of Mr. Bogner's theses. Only in one or two quarters here have I heard the obvious so ruthlessly crystallized. To exploit commercially by means of shops, restaurants, etc., that point on the city's outer edge where business men change daily from automobiles to "rapid transit" is the type of problem on which Harvard is working. This is realism and is also a little disarming in its frank acceptance of those commercial values which we still affect to despise.

*

When my friend asked me to show him some of the best of our modern work I had to think hard for a bit until he reminded me that England was, after all, such a good place to see the best modern German.

SIDETRACKED

"The Minister of Health is of opinion that the existence of some regional planning body is of very great importance in the Greater London area, and he has come to the conclusion that a consultative body would best meet the present need—a body representative of all the local authorities in the London traffic area, but whose functions would be to consider and make recommendations on such matters as might be referred to it, rather than to initiate proposals."—L.C.C. Agenda for Tuesday, June 15, 1937.

PRESIDENT'S PARTY

Last Monday one of the few "provincial" Presidents of the R.I.B.A. had a farewell party. London, as

Smeaton's Eddystone Lighthouse on Plymouth Hoe, mentioned by Astragal on this page.

the Provinces continually emphasize, has a self conceit that puts any rural community to shame. The R.I.B.A., a national society, struggles to counter the "Where *is* Southport?" attitude of mind. But in my belief it needs a provincial President more often if it is to be completely successful.

*

Cardiff is a long way from London, Mr. Percy Thomas has a large practice; and the physical exertions of the outgoing President must have been prodigious. I picture him as a human shuttlecock, eternally moving between Cardiff and London. I, and I hope the rest of the Institute, am grateful.

*

In the Henry Jarvis Hall last Monday the staff of the R.I.B.A. said goodbye to Mr. Thomas, the youngest typist gave him a silver cigarette box, and after ping-pong and refreshments the President took a party fifty strong to the Palladium. I am told it was a splendid evening.

*

Mr. Thomas has earned a holiday. We will hope that, very soon, his practice will allow him time to take a good one.

GLASS

On Wednesday the 9th quite a crowd of architects went to Messrs. James Clarke & Son's new showrooms to talk about glass. The rooms in which refreshments were liberally extended have been equipped to show examples of almost every obtainable use of glass; by means of a cunning arrangement of pull-out frames on tracks and "tailor's mirrors" the architect can get a very accurate idea of the effect of a particular treatment when repeated several times, and end mirrors to the rooms showed what glass can do to magnify space.

The works were kept going for those guests who like to know how it is done; and I saw 20-foot sheets being gripped and swung about by a few rubber suction pads, polishing, bevelling, brilliant cutting and all the rest. An extremely interesting show.

200 MILES FROM DAWLISH

I also saw there Mr. Alliston and Miss Drew, the winners of the "almost open" Dawlish Competition. (Miss Drew's success is the first feminine victory since Miss Scott's at Stratford.) Even the fortunate were unable to explain the 200-mile limitation in the competition. They had a close call themselves with an office 187 miles from the scene of victory.

PLYMOUTH RINGS ROUND LIGHTHOUSES

Would you believe what they have just done to Smeaton's Eddystone Lighthouse?

*

This particular lighthouse now stands at the end of Plymouth Hoe, having been re-erected there to serve as a memorial to its great designer, when it was replaced on the Eddystone rock by the present lighthouse towards the end of last century.

*

It has always been the gayest of monuments, worthy of its noble situation; painted, as lighthouses should be, gleaming white with bands of deep Indian red and the lantern a matt black. Hence my horror at finding last week that it has just been repainted: bands and all a sickly yellow with the base and lantern a pastel emerald green.

*

Asked for an explanation, the custodian said them was the Plymouth municipal colours.

MR. HOLDEN AND STEEL

Last week I asked Mr. Holden if he could explain the steelwork in London University's tower, for I had always been led to believe that a steel *frame* was not to be used, on the ground that nobody knew what a steel frame did after the five hundred years or so of life which Mr. Holden's clients are demanding from their new structure.

*

Mr. Holden replies:

You ask for an explanation of the steelwork in the Tower of the University Buildings—here it is.

There is no steel frame incorporated in the structure. The steel you see is, in effect, an independent steel cage to contain the great weight of books which occupy a portion of the Tower and to carry that weight direct to the foundations.

This cage was an afterthought, not at all due to any misgivings as to the strength of the Tower, but to a desire to make the fullest use of the continuous foundations by the even distribution of the loads.

I have no wish to discredit the value of steel in the construction of buildings—(we have indeed used about 3,000 tons of it in the University buildings)—but, considered solely in relation to the centuries of useful life for which the building was designed, the life of steel must be regarded as an unknown factor. As designed it may last as long as the building, but I have taken the precaution to provide for the possibility of replacing it without having to pull down the building.

ASTRAGAL

Next week the JOURNAL *will publish a Special Issue on "HOSPITALS." Altogether about 25 hospitals of various types will be illustrated and the issue will contain a medical and an architectural review of present hospital organization and planning and of probable future developments.*

NEWS

POINTS FROM THIS ISSUE

SAVED FROM BUILDING

As a result of negotiations between the Guildford, Surrey, R.D.C., and the purchasers of Tenningshook Wood, which adjoins Hurtwood Common, it is hoped that the valley, the most beautiful part of the estate, will be kept as an open space. The estate had been bought for building, which is now likely to be restricted to a small part of the land.

NORTH WALES ARCHITECTURAL SOCIETY

The annual general meeting of the North Wales Architectural Society was held at Bangor last week and the following officers were elected for the ensuing year: President, Mr. Richard Hall; vice-president, Mr. S. Colwyn Foulkes; hon. secretary, Captain R. Parker; excursions hon. secretary, Mr. L. Moseley; hon. treasurer, Mr. Richard Hall.

COMPETITION RESULTS

The awards of the assessors in the competitions—promoted by the Kelvin Hall Committee of the Glasgow Corporation—for (*a*) a five-apartment cottage, and (*b*) a flatted block of four-apartment houses have been made as follows:

Five-apartment cottage: Design placed first (£70): Mr. M. Comrie, of Edinburgh. Design placed second (£40): Messrs. David Hutton and William L. Milfield, of Cleland. Design placed third (£25): Miss Helen L. Jackson, of Lenzie.

THE ARCHITECTS' DIARY

Thursday, June 17

ROYAL ACADEMY EXHIBITION, *Burlington House, W.1. Until August 7.*

BUILDING CENTRE, 158 *New Bond Street, W.1. Exhibition of Working-Class Furniture and Household Equipment. Organized by the Council for Art and Industry. Until June 26. Also Exhibition of the premiated designs in the competitions for the new mental hospital and new mental deficiency institution, Lathom Park. Until June 19.*

Friday, June 18

TOWN PLANNING INSTITUTE. *At Caxton Hall, Caxton Street, S.W.1. "Recent Developments in City Planning and Housing in the U.S.A." By Captain R. L. Reiss. 6 p.m.*

Saturday, June 19

LONDON SOCIETY. *Visit to the new buildings of the Battersea Grammar School, Abbotswood Road, Streatham. 3 p.m.*

Monday, June 21

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C.1. Exhibition of Czechoslovakian Sketches and Posters. Until June 25.*

R.I.B.A., 66 *Portland Place, W.1. Announcement of results of Annual Elections of Council and Standing Committees. Informal discussion on matters of professional interest. 8 p.m.*

Tuesday, June 22

ARCHITECTURAL ASSOCIATION, 36 *Bedford Square, W.C.1. "Czechoslovakia and its Architecture." By V. Kostka. 8.30 p.m.*

NATIONAL PHYSICAL LABORATORY, TEDDINGTON. *Visit to the laboratory to inspect the work in progress. 3 p.m.*

Wednesday, June 23

R.I.B.A. CONFERENCE. *At Leeds. Until June 26. Full details of the Conference are given on page 1040.*

Four-apartment house: Design placed first (£80): Messrs. John C. Tedcastle and Leonard J. Pond, of Edinburgh. Design placed second (£50): Mr. R. E. Whiteford, of Greenock. Design placed third (£30): Mr. J. J. Shannon, of Biggar.

The first prize design in the five-apartment cottage section and the first and second prize designs of the four-apartment house are to be erected in the exhibition at Kelvin Hall to be held next October. In addition, there will be erected a five-apartment house designed by the Housing Department of the Glasgow Cor-poration.

CENTRAL BATHS, HACKNEY

The award of the assessor in the competition for new central baths, Hackney, will be announced at a meeting of the Hackney Borough Council on June 23. The designs will be exhibited at the Town Hall from June 24 to 30, inclusive, between the hours of 10 a.m. and 5 p.m.

ON THE AIR

Thursday, June 17. National Programme. "Your Home and Mine: Work of all Sorts." By Geoffrey Boumphrey, 2.5 p.m. *Scottish Programme.* "The Empire Exhibition, Scotland, 1938." By S. J. Graham. 6 p.m.

Friday, June 18. Northern Ireland. "Houses of Ulster: Drumilly House, Loughgall, County Armagh." By Ralph Cope. 9.30 p.m.

IN PARLIAMENT

An important debate on housing took place in the House of Commons last week on the Ministry of Health Vote.

Introducing the vote, Sir Kingsley Wood said that there had been another successful house building year, and if there was a house building boom it died hard. The latest figures suggested much life and vigour, and apart from house building there were continued demands for all kinds of buildings factories and work-shops. The taxpayer had contributed nearly £180,000,000 to housing They had long since passed the 3,000,000 mark of new houses since the war, and since that time some 12,000,000 persons, equal to 30 per cent. of the population, had moved to new homes. This had been a great exodus, and removals on such a large scale, involving such a big proportion of the population, had never taken place before in our history. But they could not rest content, notwithstanding our record, until we had seen the last of the miserable and bad housing conditions that still, unhappily, existed in our country and remained today.

Mr. Day asked the Minister of Transport whether he would give particulars of any decision which the Government had now arrived at following the receipt of the Committee's Report on the question of Charing Cross Bridge.

Dr. Burgin said that the London County Council had been informed that if it decided to proceed with this scheme, it would rank for the most favourable treatment accorded to other major works of improvement in urban areas.

Captain Plugge asked the Secretary of State for War if he was now in a position to state when the memorial to the late Earl Haig is to be erected; and if he could state what period had now elapsed since the decision was first reached to erect this statue.

Sir P. Sassoon, First Commissioner of Works, who replied, said that the casting of the statue in bronze was approaching completion, and he hoped that it would be ready for erection at the latter end of this year. The Resolution of the House authorizing the statue was passed on February 8, 1928.

L.C.C.

At last Tuesday's meeting of the London County Council, the following report was submitted by the Highways Committee, the Finance Committee and the Town Planning and Building Regulation Committee:

"The Council, on February 23, 1937, resolved—

"That inquiry be made of His Majesty's Government as to how an approved scheme for constructing a new bridge at Charing Cross and ancillary improvement works is to be financed and as to the priority attached by His Majesty's Government to such a proposal in relation to other major improvement schemes in London.

"We now report the receipt from the Minister of a letter dated May 13, 1937, as follows:—

"I am directed by the Minister of Transport to thank you for your letter (E. 20122) dated February 25, on the subject of the Charing Cross Bridge scheme.

"The Minister notes that it does not appear to the Council that a scheme such as that envisaged by the London Traffic Advisory Committee could be realized for less

than £32,500,000. He is unaware of the details upon which this estimate is based and finds it difficult to accept it as established that so large an expenditure would be necessary to safeguard the possibility of the important metropolitan improvement which a new bridge would represent. The Minister takes the view that in any case the scheme as a whole is one which for the present would have to be suspended for the same reasons as have led the Government to suspend any decision in the cases of the proposed bridges over the Forth, Severn and the Humber.

"Apart from this consideration, the degree of priority to be accorded to the project in relation to other major improvement schemes in London is a matter on which Mr. Hore-Belisha would expect to receive some expression of opinion from the Council itself.

"As regards finance, Mr. Hore-Belisha cannot at present say more than that the scheme, if it were decided to proceed, would rank for the most favourable treatment accorded to other major works of improvement in urban areas.

"I am to add that the Minister proposes to circulate copies of your letter and this reply to the London Traffic Advisory Committee for their information, and he would appreciate it if you could conveniently see your way to supply him with 45 copies of the joint report submitted to the Council.

"It will be observed that in the second paragraph of the letter the Minister states that he finds it difficult to accept it as established that so large an expenditure (£32,500,000) would be necessary to safeguard the possibility of a new bridge. We desire to emphasize the fact that the figure in question was the estimated cost of construction of a new bridge and of the street improvements which were considered to be an essential adjunct, and that it had no relation to the cost of safeguarding the possibility of the scheme."

ROYAL SOCIETY OF ULSTER ARCHITECTS

At the annual meeting of the Royal Society of Ulster Architects, the following office-bearers were elected: President, Mr. T. R. Eagar, F.R.I.B.A.; vice-president, Mr. J. H. Stevenson, F.R.I.B.A.; hon. treasurer, Mr. J. S. Munce, B.E., M.INST.C.E.; hon. secretary, Mr. Val. Smyth, A.R.I.B.A.; Council: Messrs. R. H. Gibson, F.R.I.B.A, M.I.STRUCT.E., Thos. Houston, F.R.I.B.A., G. Hobart, J. C. Stevenson, L.R.I.B.A., and R. S. Wilshere. Associate Members of Council appointed were: Messrs. H. V. M'Caughan and T. D. Purdy.

A CORRECTION

The photograph on page 1021 of our last issue showed the Earls Court Exhibition Building, and not, as stated, the Empress Stadium.

CHANGE OF ADDRESS

Mr. S. James Ainsley, Quantity Surveyor, has transferred his offices to No. 44, Catherine Street, Westminster, S.W.1. Telephone Victoria 6967.

NATIONAL SMOKE ABATEMENT SOCIETY

The offices of the above Society are being transferred from London to Manchester; on and after Thursday, June 24, the address to which all communications should be sent will be: Chandos House, 64 Buckingham Gate, Westminster, S.W.1. Telephone: Victoria 7359. The Society's present London address at 71 Eccleston Square will no longer be used, except where the personal attention of Sir Lawrence Chubb is desired.

ADVENTURE

[By F. R. Jelley]

I tell this tale, which is strictly true,
Just by way of convincing you
How very little since things were made
Things have altered in the building trade.
The Bricklayer's Song.
KIPLING.

AT the moment, this old country of ours contains an abnormal number of excellent citizens who pride themselves on their ability to do other people's jobs.

Some assert that they write their own wills. Others claim that they always tune their own pianos. A few are even said to be able to cut their own hair and extract their own teeth.

The air itself is full of hints on anything and everything and advice drips nightly into the firmament, by kind permission of the B.B.C., from the lips of brilliant young men with refined accents and silken side whiskers.

In these queer times, if you feel unwell, it is apparently unnecessary to consult a doctor. You can write to some paper or other (enclosing a three-halfpenny stamp), and Poloney, the brilliant young poet, will diagnose your complaint with unerring accuracy from your handwriting.

Should you desire to furnish your home with taste, all you have to do is to buy the magazine in which Cecilia Chitling, the brilliant young Transatlantic film star, disseminates expert advice on sun-parlours, built-in bedsteads and the correct height of the kitchen sink.

When the old grandfather clock suddenly decides to strike seventeen at midnight, you need no longer send for the local horologer and expend the usual five shillings and a glass of beer. You write to Jack Pudding, the brilliant young pugilist, who has joined the staff of the Weekly Whiffler in an advisory capacity as expert chronologist since his sensational two-round contest with Bloko, the Carpathian coalheaver.

Yet, in spite of this preponderance of experts on every conceivable subject, it is an astonishing fact that when anybody contemplates building anything in London, he (or she) usually decides, sooner or later, that the services of an architect are indispensable.

For, in the Metropolitan area, although minor works can be and are, no doubt, executed surreptitiously by little jobbing men, uncontrolled building is practically non-existent.

When anybody thinks of building in London and has satisfied the requirements of freeholders (if he is a lessee) or the estate restrictions (if he is a freeholder), he will discover that an extraordinary collection of other people—of whose very existence he may, previously, have been unaware—are ready and waiting to take an enthusiastic interest in his proposals.

For instance, he may find that the elevation of his new house or shop or offices must be approved by the Royal Fine Arts Commission. The Ministry of Transport may demand details of his scheme in order to satisfy themselves that the new building will not obstruct the view of bus drivers. Emissaries from His Majesty's Postmaster-General may direct attention to the existence of important overhead cables, now dangling across the site and hitched to the chimneys in a very casual manner.

Sanitary inspectors, Water Board officers, fire brigadiers, gas men, and all kinds of wizards, clad in distinctive and picturesque uniforms and skilled in the funny little subterranean habits of pipes and power mains, will appear and warn the owner of dreadful penalties that may follow unauthorized interference with any one of the innumerable public utility services that concentrate on his property from every corner of the earth.

After protracted negotiations with these and other Olympians, the individual who wants to build something will emerge with his plans and nerves in a somewhat ragged condition only to be confronted with the requisitions of the London County Council operating the Town and Country Planning Act, 1932, the Restriction of Ribbon Development Act, 1935, the London Building Act, 1930, and the Housing Act, 1935, and many copies of his drawings may have to be submitted for scrutiny by innumerable benevolent officials, each charged with a bounden duty to see that some particular bit of law is not infringed.

Let it be assumed that all these obstacles have been successfully surmounted and that our hero (who still persists in wanting to build something) remains in possession of his sanity and a few tattered relics of his original proposals.

Dogged and determined, he decides to proceed and, with one accord, the whole of the other owners of property in the vicinity of his land will emit

loud cries of indignation and alarm. They will assert that the presence of a brand new building in the middle of their rookery will depreciate the value of the adjoining ruins, of which they are the happy and contented owners. They will engage lawyers to compose vague stuffy letters about unneighbourly behaviour and the enormous damage that can easily be caused by uncontrolled brickdust. They will employ surveyors, who will write lengthily (enclosing elaborate diagrams in multi-coloured inks) concerning angles of light, and hint darkly at the existence of mysterious easements of air and drainage and fantastic and long-forgotten rights of way.

Strange men with cameras, heavily disguised as ordinary passers-by, will be observed in the neighbourhood, apparently staring at nothing.

Newspapers will print foggy illustrations of the old buildings, diversified with snappy headlines, such as DISAPPEARING LONDON. — ROMANTIC CORNER DOOMED. — HOUSEBREAKER'S PICK PREPARES WAY FOR NEW ST. PAUL'S VISTA.

Elderly ladies will begin to write to the press from Leamington and Tunbridge Wells and Harrogate, recalling in great detail how, as very little girls, they had been taken by their fathers to a famous chop-house on the site (now, alas! displaced by a foul and evil-smelling cookshop), and how they passed the mustard to the great Charles Dickens who, as is well known, spent a good deal of his time in chop-house pews.

They will demand immediate intervention by the Society for the Preservation of Ancient Buildings, who will no doubt pass the correspondence, for information and necessary action, to the Dickens Fellowship, who will probably examine the evidence and decide that the old ladies have all mistaken the immortal Boz for William Makepeace Thackeray, an insignificant contemporary scribbler who wrote a scurrilous book about the Hanoverian monarchs and was so fond of mustard that he often used it instead of ink.

* * *

All these are preliminary moves in the great game of building in London and, as in the equally great game of chess, the replies to such advances can only be acquired after a good deal of practice.

If anybody who is not an architect really believes he can conduct building operations in the Metropolis without enlisting the services of an architect, there is no earthly reason why he should not have a shot at it, provided he possesses lots of time and money and a robust constitution.

In that eventuality, however, he would be well advised to take a preliminary canter through the pages of the London Building Act, 1930.

Part IX, in particular, should make interesting reading, and he will find elaborated there in great detail, exactly what formalities must be observed at least a month before his builder dares to start tapping on the party walls that separate his premises from those of his fellow-citizens.

In case of doubt he can, of course, always get in touch with Auntie Googoo, my favourite author, who dispenses wisdom weekly through the medium of the "WRITE TO AUNTIE ABOUT IT" column of Popular Piffle.

If Auntie Googoo can only be induced to interest herself in party-wall squabbles, I feel sure my old friend, Perce, the foreman housebreaker, would take a less depressing view of the future of that very ancient and arduous craft of building in London in which both he and I are actively engaged.

R. I. B. A.

GENERAL MEETING

On Monday, June 21, at 8.30 p.m., a general meeting will be held for the purpose of receiving the Scrutineers' Report on the annual elections of Council and Standing Committees. This will be followed by an informal and private discussion on matters of current professional interest or concern.

CONFERENCE

The R.I.B.A. Conference is to be held at Leeds from Wednesday, June 23, until Saturday, June 26. The headquarters of the Conference will be at the Leeds Civic Hall. Members should call there as soon as possible on arrival to obtain Conference badges, information, etc. Following is the programme of the Conference :

Wednesday, June 23—8 p.m. to 11 p.m. : An informal Reception will be held in the City of Leeds Art Gallery.

THURSDAY, JUNE 24—10 a.m. : The Conference will assemble in the new Chemistry Lecture Theatre at the University for the Inaugural Meeting, and will be welcomed by the Lord Mayor of Leeds. The Inaugural Address will be delivered by the President of the Institute, to be followed by short addresses by (*a*) Mr. H. S. Goodhart-Rendel [*F.*], on "The Architect Today," and (*b*) Professor Patrick Abercombie, M.A., M.T.P.I. [*F.*], on "The Development of a Great Industrial City and its Area." The new Buildings and Brotherton Library will be open for inspection. 12.30 p.m. : Assemble at the University, where the Conference photograph will be taken. Lunch : Members of the Conference and their guests will make their own arrangements for lunch. 2.15 p.m. to 6 p.m. : Alternative Visits :

Visit A. LEEDS AND ITS BUILDINGS. Headquarters—Queen's Hotel—Headrow—St. John's Church, New Briggate—Quarry Hill Flats, to examine Mopin System—Roundhay Park ; tea at the Mansion—Headquarters. (Cost per head, including tea, 4s. ; cost to members using own cars, 2s. per head.)

Visit B. HARROGATE. Headquarters—Harewood House Gardens—Harewood Avenue—Little Ribston—Knaresborough Castle—Harrogate, St. Wilfrid's Church ; tea at Hotel Majestic—Headquarters. (Cost per head, including tea, 6s. 6d. ; cost to members using own cars, 3s. per head.)

Visit C : GUISELEY AND BRADFORD. Headquarters — Kirkstall Abbey (brief halt) — Guiseley Church and Rectory—Ashfield Mills—Bradford ; tea at Midland Hotel — Headquarters. (Cost per head, including tea, 5s. 6d. ; cost to members using own cars, 3s. per head.)

Visit D. TEMPLENEWSAM. Headquarters — Montague Burton's Works—Templenewsam Mansion ; tea at Mansion House—Headquarters. (Cost per head, including tea, 4s. ; cost to members using own cars, 2s. per head.)

Visit E. RING ROADS AND YORKSHIRE COPPER WORKS. (Cost per head, including tea, 2s.).

8 p.m. to 1 a.m. Reception and Dance given by the Lord Mayor and Corporation of Leeds at the Leeds Town Hall.

FRIDAY, JUNE 25—9.30 a.m. to 6 p.m. : Alternative Whole-day Tours. Inclusive cost of each tour, as shown. (All coaches will start from the Civic Hall, the Conference Headquarters.)

Tour No. 1. WHARFEDALE. Headquarters—Harewood — Otley — Ilkley — Bolton Abbey —Bardon Towers—Burnsall ; lunch at the Red Lion Hotel—Stump Cross Caverns—by way of Dacre, Fewston, Lindley and Beckwithshaw to Harrogate ; tea at the Grand Hotel—Headquarters. (Cost per head, including lunch and tea, 12s. 6d. ; cost to members using own cars, 6s. 6d. per head.)

Tour No. 2. FOUNTAINS ABBEY. Headquarters — Wetherby — Boroughbridge — Ripon (Minster) ; lunch at the Spa Hotel—Fountains Abbey and Hall—Ripley—Knaresborough—Harrogate ; tea at Harrogate Golf Club—Headquarters. (Cost per head, including lunch and tea, 12s. 6d. ; cost to members using own cars, 6s. 6d. per head.)

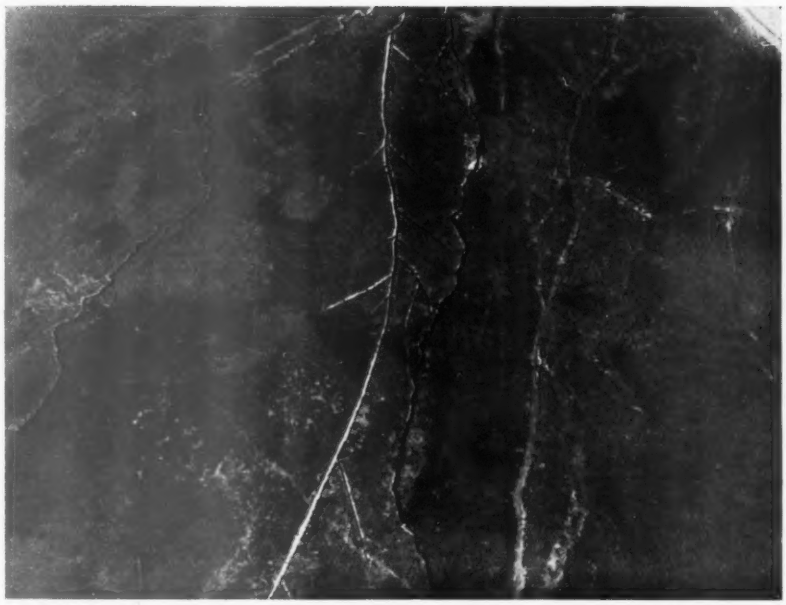
Tour No. 3. BRONTË COUNTRY AND PENNINE MOORS. Headquarters — Calverley — Shipley — Keighley — Haworth — Hebden Bridge ; lunch at the White Horse Hotel—Blackstonedge — Ripponden — Denshaw — Buckstones — Halifax ; tea at the Old Cock Hotel — Kirklees —Headquarters. (Cost per head, including lunch and tea, 12s. 6d. ; cost to members using own cars, 6s. 6d. per head.)

Tour No. 4. CRAVEN DISTRICT. Headquarters — Beamsley Almhouses — Blubberhouses Moor —Bolton Abbey ; lunch at the Devonshire Arms —Skipton—Settle—Ilkley ; tea at Wells House —Headquarters. (Cost per head, including lunch and tea, 12s. 6d. ; cost to members using own cars, 6s. 6d. per head.)

Tour No. 5. YORKSHIRE DALES AND CASTLES. Headquarters — Harrogate — Ripon — Tanfield — Bedale — Richmond Castle ; lunch at the King's Head—Leyburn—Bolton Castle—Middleham Castle—Jervaulx Abbey—Masham —Ripon ; tea at the Spa Hotel—Harrogate—Harewood—Headquarters. (Cost per head, including lunch and tea, 14s. 6d. ; cost to members using own cars, 6s. 6d. per head.)

7.30 p.m. for 8 p.m. Conference Banquet in the Victoria Hall, Leeds Town Hall. The guests will be received by the President of the Institute and the President of the West Yorkshire Society of Architects. (Cost of dinner (exclusive of wines and cigars), 15s.)

SATURDAY, JUNE 26—Informal Visits. Private parties to other places of interest. Members to make their own arrangements. Information will be available at the Conference Office.



Aerofilms]

The Raw Material—Earth, or, to be more explicit, moor. Ilkley Moor. Moor and dale are the bases of West Riding trade, psychology and industrial structure.

THE LARGEST COUNTY

WEST RIDING

[*By DUDLEY HARBRON*]

"How beautiful the earth is still,—"
Emily Brontë

IF you visit the Conference, in fact or imagination, at Leeds this year, it is important to remember that you are in the heart of the neighbourhood in which the making and dyeing of cloth has been practised for centuries.

This mere antiquity has important consequences; and causes. Consequences, for it implies that the cities, towns or villages within the area have been gradually developed, or remained unchanged, and that in and about them may be found the relics of the past. This blend of ancient and modern, this continuous adaptation of men, mill and mechanism to the needs of the moment, gives to the heavy woollen district its unique character.

It is on this account chiefly that it differs from the coalfields which lie between Leeds and Wakefield, or those in the valley of the Don. Here darkness and grime reign supreme. For you cannot choose where you shall find a pit and establish a colliery. Hence it is mere accident should the site happen to fall in a pleasant place. And furthermore, the whole character of the processes employed are those of destruction, creating mountainous slag heaps, causing subsidences, and polluting streams. Moreover, because the life of the community is dependent upon the output of the pit, difficult to estimate, there is about the development of the settlements which they provoke, a lack of confidence and durability that gives to them a less substantial atmosphere. As with most things there are exceptions. Barnsley is an old seat of the industry, and Doncaster a new where coal happens to have been found near an already established community.

The reason then, why the area about Leeds presents features which are unique, is that nature here provided the slopes on which the sheep could graze near the swift running streams and their multitudes of trilling tributaries necessary to the process of turning the wool from their backs into material for garments. The existence of plenty of coal at hand confirmed their location when the machine was substituted for the men.

Because of some prejudice of observation in writers, most guide-books dismiss this part of the West Riding as unattractive and containing little of interest. The very opposite is the fact, not because of the survival of some old buildings, or the preservation of a stretch of beautiful country, but for the prevalence of the work of God and man in such competitive confusion. It is the earlier indifference to the difficulties set up by nature for which the surrounding cities, with Leeds as centre, are unique in the whole world.

In achieving a work of art they destroyed not the works of their fathers—but of God. In order even to get to the place from all points of the compass, our forefathers hewed their way through the millstone hills and blasted a hole through its mountains and leaped the rivers and the valleys on great arched viaducts of the stone gained by their gargantuan tunnel burrowing. All this they performed to clothe the heathen with a garment.

These frenetic efforts would have

Where the moor comes down to water and railway, the mill.

A night scene in Halifax

Leeds, from Stony Rock. No photograph can give any idea of the dramatic quality of the scenery that arises as a result of the juxtaposition of mill and moor. Of all this drama Leeds probably provides the greatest, though Huddersfield runs it close.

astonished a Pharaoh, for they were accomplished in little time by men and machines unafraid of nature. It is the result, the evidence of this supreme confidence in the power of industry, its superior status, its boundless benefits, its promise of Paradise Regained—that stamps the southern part of the West Riding on the mind of the beholder.

Now that you are in the midst of the scenery of this thrilling drama, it is well, before it is too late, that you should absorb the air of those strenuous days. For everywhere you go you will see evidence of reforming zeal, that in comparison with the thing reformed, appears to be the handiwork of feminine hands. Strong buildings are being torn down so that a bend in the road may be made to vanish or a narrow road be made broad. The wounds so created are plastered with an adhesive patch of cement. Great warehouses which were once too small for one-man industries are now shared by three limited liability companies. Or they stand empty, too big to fill.

Pause then and wonder. For nowhere in the world can you see some of the sights that are now within your range. Anywhere other you may admire pretty shops, car parks, sylvan settings, ruined cathedrals, grand mansions, great parks. Here only and nowhere else—a hundred eighty-foot chimney stacks on a hill side.

The tunnel ends, the viaduct reaches the solid rock and the train draws into the New Station. Brave name. You alight on the platform in the murky gloom. It is indeed the most impressive welcome that this cathedral of three aisles gives to the pilgrim. There is no carpeted path down which to loiter—but there is a pavement of hard York stone. From this at intervals spring the brown octagon bases of the tall cast-iron, cream painted, Corinthiant capped columns, which support the vast mansard steel roofs—the ceiling, a vault of dimmed and broken glass—a spider's web of tie-rods and telegraph wires.

Without the station, everything in Leeds appears to be coming down. Wellington Station can be identified because it is being demolished.

But before it is too late, there may be seen the refreshment-room at the New Station with its brown paint, semi-circular-headed central door and windows. Its two fireplaces with mysterious flues. Mirrored piers, inserted ventilation, wooden shelves relieved by the fluted brass highly polished columns which support them; behind the Sicilian marble-topped counter.

"I thought they were pulling it down," remarks a commercial to the lady behind the bar. "I believe they are," she replies, filling a glass. A disused coffee mill. Two highly polished brass tubes in front of the back wall fittings; these are now the useless appendices of the bygone supply of spirits by gravity.

By twilight the station is at its best. Then can be seen the long chinks of light that run from end to end of the roof like some narrow clerestory; then the coloured neon adds a touch of contrast. Then through the opening in the transept formed by the silhouette of the two free-standing cast-iron columns a glimpse can be had of the night sky over the country. What other purpose this opening serves—unless for ventilation—it is hard to imagine. Its presence was an inspiration.

Doubtless you might be led to feel on issuing into the City Square that you had discovered some dark cathedral city, for the architects of the past have tried to give an odour of sanctity, the atmosphere of a quiet Close to this central plot of ground. The impression

changes when you reach the newer Headrow—and you decide that you have attained a coloured Bath or Cheltenham. It is not true. Still Leeds is making gigantic efforts to persuade you that this is the costume suited to her dignity. To achieve her central sanctity Leeds destroyed her rural amenity. To assume her elegant frontages she has pulled down her warrens. She is nothing if not ruthless.

Therefore, before it is too late, for one never knows what will be threatened next, do not omit to take time to look at the front elevation of the Britannic Assurance office in Park Row : if you are a devotee of expression of purpose. And at the back elevation of Becketts Bank, if you would esteem Sir Gilbert Scott as a man and a brother. Nor the sight of the Public Benefit boot warehouse, in St. Paul's Place—like some Palace of the Doges. These and much else should be scheduled for protection from the reforming zeal of our time.

Now from the City Square ; Wellington Street and the Kirkstall Road lead from Leeds to the neighbouring city of Bradford. At the end of the former may be seen the splendid mass of building now occupied by Joshua Wilson—with its central doorway and its fine turret and impressive rows of windows. Built to serve and last.

Then past the Alphabet Streets, that ingenious collection of back-to-back houses built on the slope at the foot of the hill. Twenty-one of the twenty-six letters begin the names of these narrow cobbled ways. Each illuminated by two lamp-posts. Flanked on either side by rows of ashbins. The steps well-worn and wonderfully cared for ; all stoned white or cream on the edges, each with its fragment of wrought iron railing ; its small scraper—where this last has escaped the misuse of time. The streets begin as Angel, Baker, Corporation, Dover, England, Florists, Gratton . . . and tail away to Townend, Upton and Ventnor—through the alphabet.

Across the roadway of each, as if for some continuous Coronation, swing the multi-coloured garments drying in the fitful sun and swaying in the breeze. Many of the doorways are crowned by hoods or flanked by pilasters—and most of the window cills are carefully stoned by the occupier. They are old and decrepit—but cared for. Once upon a time they were homes, snug, and easy to manage and turn the key in the lock. True the sanitary convenience was a long way away—usually down a crevice between the upper and lower end of the street. The one-time situation of these can now be seen as gaps between the houses.

Bordered as it was by so dense a population, Kirkstall Road has an extraordinary number of licensed houses or houses one-time licensed. They are most of them at the angle of the small street with the main road. Each proclaims the virtues of Magnet or Melbourne ale. The repute of these beverages is noised throughout the Riding.

Kirkstall Viaduct crosses Kirkstall Road at one end, and the canal and river at the other extreme of its graceful curve. From the canal—or Armley Road-end of the viaduct a distant view of Leeds can be had. The canal is deep and cool. On it float gaily-coloured barges casting their shadows or receiving their reflections from below. The banks of the nearby river Aire are in

The old order. Fragments of the industrial north

Huddersfield alone amongst the West Riding towns retains an atmosphere of the classical 19th century. Hard times overtook it before the Gothic revival architects really had time to do their damnedest. The station and the George Hotel, twin centres of the town, uphold a culture which the visitor feels at once to be indigenous—essentially English and still more North Country.

These will be places of æsthetic pilgrimage in the not far distant future. Among the great railway stations of the world must be counted New Station at Leeds (above) and the Midland at Bradford and, in another vein, the station at Huddersfield (top).

Drab, but picturesque.

some cases as they have been left by nature, in others they are lined by grey stone walls which direct the course of the stream or render the banks buildable. Wherever there is a little ledge of rock something green is growing—and where the outcrop of rock is not too untameable, trees and shrubs flourish amazingly and brilliantly green.

The Kirkstall Road streams on past later improved versions of the back-to-back solution of the housing problem. These have their sanitary arrangements more in accord with recent practice, and have in addition some garden in front filled with lupins and Canterbury bells.

On the left of the road the ground slopes in a long green-grown incline to the distant hills. On these the houses stretch. The old buildings stand out black and grey; the middle-aged a rich purple or mauve; the new a flushing red.

Then at the bend by the side of the water we learn where some of the good beer is brewed. Here one of the more recent achievements of man—the electricity grid—swings across the road. Pylon to pylon over hedge and stone wall, grass and turnip fields with complete indifference—and so to Whitecote.

Past Calverley, a pretty place, scarcely conscious of the surrounding upheavals. Stone built, still, with roofs of black and brilliant yellow stone. At each end of the settlement large announcements, "Bungalow Sites," threaten the landscape. As yet, no bungalows. Still by the wayside may be seen an establishment that has painted half-timber construction over its walls—in order to merit the respect of tasteful motorists.

Near the turning by the Guiseley and Harrogate Road can be got one of the finest views of Bradford. Through Undercliffe, with its windowless, disused Church on the high cliff beyond Lionel Street. And so to Bradford.

The hub of Bradford is in Forster

Square, round whose beckoning, bearded figure everything revolves. Four circles of geranium within a privet-protected grass ring give W. E. Forster an agricultural setting.

The Square is lined with Florentine palaces six storeys high, with great studded doors with cast-iron grilles. The Town Hall is modelled on the Palazzo Vecchio, Florence. And some of these buildings are being pulled down. Bradford chose this noble architecture with her eyes open. She had on the rocky crag which overlooks the Square her Cathedral Church with its fine tower. It can still dominate the scene, though it is only a mere hundred years since those same windows looked down upon green fields through which meandered Horton Beck to the ford.

The river is now all underground and, not like the Aire, usable for navigation. The Cathedral porch holds an amusing tombstone (if such things can be so regarded) which displays the effigies of two children: Timothy Dixon and little John Emmett—their incised feet inclining toward each other. Inside there is much of interest: a font cover; Queen Elizabeth's arms. The east window glass is the work of the artists, Rosetti, Morris and Burne-Jones.

The station of the L.M.S. is not so old or so dark as that at Leeds. It is covered in two spans of greater dimensions than in the neighbouring city, supported by square cast-iron Corinthian piers. Viewed from the hall, the bookstall, with its brilliant colours, the bright posters, and the little stone-built office for the station master under the high clean afternoon light is a thrilling experience. Seen from the Square, the hotel and station screen wall form a picturesque group of Renaissance character. Yet Bradford is not content with one square. She has two. The second to Peel, whose legal enactments helped to make her great.

The Leeds Road offers an alternative route. It is banked on either side by rows of houses the numbering of which reaches or over-reaches the thousand. This is the master work of the ribbon developer who contested for the palm—with the neat back-to-backer.

Halifax lies further south-west. Of all the industrial towns of the West Riding it is the most dramatically situated astride the valley of the Hebble. It is best seen in the winter-time by day or night. By day—when the hills are covered with snow and the black church lies below. By night, when the myriad factory windows twinkle across the valley as seen from Beacon Hill.

Still further to the south-west you reach the watershed of the Pennines—Marsden.

Marsden at the foot of the Pennines, is the outpost of the industrial West Riding. The railway runs by the side of the canal and enters into the side of the mountains through a great tunnel. A tunnel which is more than three miles long—the third longest in England.

Dotted about the surrounding hills are the original homes of the woollen weavers. These are usually three-storied stone house buildings, the weaving room being on the top floor. This was reached by stone steps running up to it on the outside of the house. The whole room was lighted by long stone-linteled windows with stone mullions, the whole designed to admit as much light as possible.

Nearby, the old pack-horse road commences its tortuous journey up and over the mountain chain to Rochdale. Slabs of stone mark the line of the track for the wayfarer, stone troughs are placed at intervals for the watering of the pack horses. The way is now only trodden by the venturesome on foot.

Southward through Brighouse lies Huddersfield, once all but entirely the property of Sir John Ramsden. It

Night scene.

used to be told that he had offered to cover the only land in the place which he did not own, but coveted, with sovereigns. The owner agreed to the terms. When, however, it came to a settlement, he said that he had meant that the money should be placed "on edge." Perhaps because of this single ownership the development of the town is more orderly and uniform than others. The station is set in a real square. It has a pleasing Corinthian columned portico of six columns. Unlike the other stations it is not a terminus. Opposite the station there was, and may be still, the figure of a lion over the central building. This lion is reputed to wag his tail when the station clock strikes—or so my grandfather told me; Huddersfield people have some wit. One of the finest buildings in the town, the Cloth Hall, has been recently pulled down. The turret has been preserved. The West Riding Cloth Halls were buildings three or more storeys in height, arranged round a large central courtyard. On each storey they were divided into a number of small rooms, each with a door and a window looking out into the courtyard. Those on the upper floors opened on to a balcony or gallery which ran round the square. The rooms were let to the merchants.

The streets are named John William, Ramsden, Corporation, and were in being before 1840, when my grandfather journeyed to that place: "On Wednesday afternoon, January 17th, 1840, I took my seat at Oldham inside the coach for Manchester to Leeds via Huddersfield. The weather was something frightful; the wind was blowing a little hurricane. The snow was falling in the heaviest and thickest flakes, so that some parts of the journey the horses had great difficulty in getting on. My only travelling companion was the Reverend Drought, a young curate from Salford, on his way to Huddersfield as a candidate for the vacant curacy of the Parish Church. He was to preach his trial sermon that night. The Rev. J. C. Franks was at that time the vicar. Mr. Drought became not only very communicative but very confiding, and he put into my hand the manuscript of the sermon he was going to preach, asking my opinion of it, and expressing a wish that I would go that night to the church to hear him, which I promised to do. In looking over the manuscript I saw that the text was the parable of the 'lost sheep,' and that on every page were marginal references for the preacher's guidance, such as 'raise the hand here,' 'be affected here,' and strange to say, in one place 'cry here.' I commended the sermon and for doing so Mr. Drought thought I was a sensible young man. Our journey ended, and in the evening I went to hear him preach in the Parish Church. It was an awful night for snow and wind: there were about twenty people, including the vicar, present. The church was cold and I tied my pocket-handkerchief on my head, put my coat-collar up, and tried to make myself as comfortable as I could. Mr. Drought preached the sermon and the marginal references kept coming in in due course. He got the appointment and stayed about twelve months. I used to visit him frequently at his lodgings, and he always showed me the sermon he was going to preach on the following Sunday."*

It was in August, 1842, that the Plug Rioters came to Huddersfield. Thanks, however, to the foresight of the magistrates in hiding some soldiers in the yard of the Old George Hotel, nothing serious transpired. For on the appearance of the first soldier "from the gates of the hotel a panic seized the whole, and they fled in all directions tumbling over each other."

Beyond Edgerton on the right of the New North Road is Fixby Hall, now a golf club house, one time the home of Richard Oastler. Mr. Oastler was an emphatic man, and wrote, spoke, and thought in capitals. His ideas like his letters were underlined. He wrote a pamphlet of thirty-four pages dedicated "to those sleek, pious, holy, and devout Dissenters, Messrs. Get-all, Keep-all, Grasp-all, Scrape-all, Whip-all, Gull-all, Cant-all, Work-all, Sneak-all, Lie-well, Swear-well, Scratch-em and Company."

There is a monument to this vigorous reformer in Bradford, who though an outstanding character among West Riding men, was yet but the sum total of the qualities of candour, vigour and honest thinking for which they are so deservedly famous.

It was the disturbances of 1842, mentioned above (they consisted in drawing the plug of the boiler and stopping the mill machinery), which provided Charlotte Brontë with a background for her novel "Shirley." One of her curates might well have been Mr. Drought.

Haworth, her home, is about twenty miles north of Huddersfield and a little south of Keighley. Today Haworth has a railway station: moreover, the Rev. Patrick Brontë's church has been rebuilt with the exception of the tower.

None the less, the village and the moors, and the Black Bull by the churchyard gates, the parsonage in which they lived and died, have an appeal for their many worshippers. They above all others have made the West Riding as it was real to us. The moors to the west, at the right season of the year, fall purple to the Calder Valley, during other months they seem black, bleak and barren.

Keighley is the last outpost of the industrial portion of the West Riding. I remember it especially, in that I was awakened from sleep very early in the morning, by the clatter, clatter of the clogs of the operatives on their way to work by the cobbled roads.

Northward beyond Keighley there is a gap in the mountain range which bounds the whole Riding on the west. In it nestle Baildon, Skipton, Ilkley—on the tributaries of the Ouse, the Aire and Wharfe. Past these—the mountainous friends of our youth—Ingleborough, Pen-y-ghent and Whernside, form a barrier the other side of which is Wensley Dale and the North Riding. Of these peaks, Ingleborough, though not the loftiest, is the most conspicuous from its shape and situation at the western edge of the mountain chain.

From these heights run the Aire, Wharfe and Nidd—through the dales which bear their names. These are quite unspoiled by the activities of last century. By the Wharfe, Bolton Priory still stands in a setting by some considered to be the most beautiful in the country. On the Nidd, Knaresborough with the remains of its castle is romantically placed. On any fine day in summer the coloured costumes of the boaters on the river about the high mock Gothic bridge is a pretty picture. Here on the bank of the river is Mother Shipton's Well, behind which is a cave where the dripping water on your hands, and wishing—it is believed, by those who should know—that you will gain your heart's desire.

Knaresborough waters were once much sought after by those in search of health. Now, however, Harrogate has superseded her in reputation and number of her springs. Here you do not wish for health; you gulp it down, or sip it slowly to music, according as you are inured to the several pungent tastes and smells mixed by Mother Earth. For the most part, Harrogate is entirely developed as a leisure place for tired people. It is well built, in part in the late regency and early Victorian manner. To some extent it is a playground for Leeds aristocracy, who, strange to relate, do their shopping in Harrogate—when the native of fashionable Harrogate does her shopping in Leeds.

There is, all the same, one commodity which the wise will travel miles to obtain and find their persistence sweetly rewarded: I mean Harrogate toffee. Indeed, one can scurry hither and thither over the county to sample the delicacies for which it is famous. Doncaster butterscotch: Pontefract, where the licorice flowers into Pontefract cakes.

And to make an end as we must—Huddersfield PARKIN.

* Privately printed.

Halifax.

Figure 1 (left) : Layout plan of the Gipton Housing Estate.
Figure 2 (above) : Layout plan of the Quarry Hill Estate.

LEEDS HOUSING

LEEDS, the scene of the R.I.B.A. Conference from June 23–26, is probably somewhat vaguely known to most architects as one of the oldest of the north country industrial sites ; and not the least famous of its qualities is the extent of the badness of its slums. Leeds, however, unlike many other cities with an acute slum problem, is making efforts to get rid of its slums on a scale commensurate with the problem. The following notes, based on information supplied by Mr. R. A. H. Livett, Director of Housing at Leeds, outlines the principal housing schemes which have been, or are now being, carried out in the city.

Since 1911, the city of Leeds has built 14,938 new dwellings of various kinds, the large majority with State aid under the various Housing Acts. At present the Housing Department is carrying out slum clearance under the Act of 1930, and is also doing preparatory work under the Act of 1935. The Department has reported 10,650 dwellings as being unfit for habitation, and the Ministry of Health has issued Confirmation Orders for 10,532.

Under the Act of 1930 contracts have been placed for 8,971 dwellings up to date, and of these 4,615 have been completed. General slum clearance is being carried out by condemning 30,000 of the oldest back-to-back houses and rehousing in 23,500 dwellings on cottage estates and 65,000 flats on central sites.

The First Estate

The first estate to be developed by the Housing Committee was the Gipton Estate (Fig. 1) of 359 acres, about two and a quarter miles from the centre of the city and eventually designed to contain 3,482 houses.

The Housing Department has paid attention to the fumigation of furniture and bedding before occupation of the new houses, and a furniture scheme has been put into operation by which tenants may secure on the hire-purchase terms such essentials as beds, bedding, chairs and tables. In two years 912 agreements have been completed under this scheme for goods to the value of £6,350.

In order to cater for those persons who normally live in lodging houses which will be demolished during clearance operations, the city has placed a contract for a hostel known as Shaftesbury House. Building operations are now under way, and accommodation is being provided for 398 men and 196 women.

Quarry Hill

Flats in the central area are being provided by a large scheme for 938 flats on the Quarry Hill site, and further blocks will be erected on sites to be cleared in the future. The Quarry Hill site is an area of 23 acres, and is within half a mile of the centre of the city. Although central and attractive, the site has proved difficult to develop because of the necessity of removing large numbers of cellared

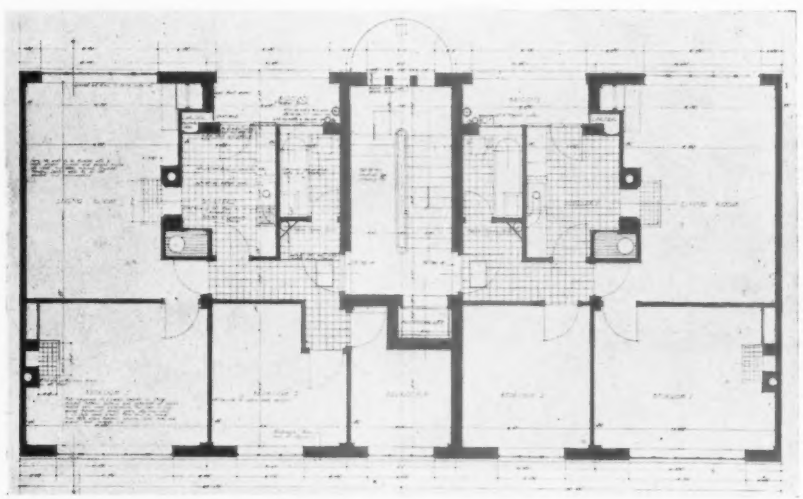


Figure 3 : Principal flat types on the Quarry Hill Estate.

Figure 4.

Figure 5.

dwellings, bodies from two cemeteries, a brewery, two gasometer foundations and several miles of disused sewers.

On the Quarry Hill site (Fig. 2), it has been possible by vertical development to build 938 flats, and to devote 82 per cent. of the area to open space. Two principal flat types are shown in Fig. 3.

The development allows for 20 shops, a community hall, nursery school, various services, seven playgrounds for children of various ages, and sports facilities for adults. This development, although large, still forms less than a half of a comprehensive development scheme for 2,500 flats.

Construction at Quarry Hill

The Quarry Hill estate is probably the best known to architects through the enterprise of the city of Leeds and its Housing Director, in deciding to build the flats by the famous constructional method that is called the Mopin system, originally designed by E. Mopin, a Paris civil engineer.

The Mopin system can best be described as that of clothing a very light steel frame with standard precast units of vibrated reinforced concrete. The concrete units are made in a factory on the site, this factory being itself a very large and fully-equipped organization which has been designed to manufacture approximately 524,000 units.

The Steel Frame

The stanchions are composed of compound channel sections built face to face with backing plates and joints welded on the site. The stanchions are set out on the ground and the frame built up by the introduction of continuous main beams site welded to the stanchion (Fig. 4). Each frame is clamped to special lifting tackle, hoisted into position and finally bedded to normal stanchion bases. The erection of a frame of approximately 300 ft. lineal of steel section can be executed in 15 minutes.

After erection the frame is plumbed and concrete is poured between two channels forming the stanchions and vibrated by means of a small electric vibrator. Erection of the vibrated concrete units follows immediately, the floor slabs being first placed in position (Fig. 5). These slabs rest on haunching pieces, and the four projecting ends of the reinforcement rods are turned over the top flanges of the intermediate joists. The joints and haunches are then grouted up and the necessary beam filling completed.

The next operation is the fixing of the wall posts, window heads, cills and the framing of the balconies. The wall posts are slotted to carry the outer wall slabs, and are bolted to the cross beams, the window heads being pinned to the wall posts. The hanging of the outer wall slabs is the next operation. These 2-in. thick slabs are made with a notch at each end, each notch taking a seating in the respective posts (see Fig. 6).

The slabs above and below the windows are faced with $\frac{5}{8}$-in. Derbyshire spar, and those between the windows with $\frac{3}{8}$-in. screened and washed brown gravel, the spar and the gravel being vibrated into the slabs during manufacture.

The balconies are formed along with the external slabs, and finally the parapet slabs are fixed.

The external walls are cavity type and, as already explained, the outer leaf is of vibrated concrete units, the inner leaf being formed with $2\frac{1}{2}$-in. Pioneer slabs of the dense mix (approximately 65 lb. per cube foot). The cavity varies in width; above and below the windows it is $5\frac{3}{4}$ ins., and between the windows $3\frac{3}{4}$ ins. The two leaves are tied together by means of specially-designed galvanized iron ties. The partition walls are Pioneer slabs, and the party walls are cavity walls with a 3 in. cavity and formed with two leaves of $2\frac{1}{2}$-in. Pioneer slabs of the extra dense mix (75 lb. per cube foot).

In the whole of this scheme, brickwork is eliminated except for chimney breasts and flues.

Wall Treatments

Two forms of wall treatment have been introduced, a skimming coat direct on to the Pioneer slabs and a plastic paint applied after dressing down the slabs and treating with two coats of size.

The ceilings are finished with $\frac{3}{8}$-in. fibre board with all joints, including those between wall and ceiling, sealed with a canvas strip.

The floors of the habitable rooms are finished with 1-in. G. & T. boards on fillets and breeze, and those of the scullery, bathroom and entrance with 6 in. by 6 in. red quarry tiles.

Steel casement windows have been introduced which include safety opening and curtain brackets.

The main staircases are formed with vibrated concrete strings and steps, the walls also in vibrated concrete units faced with pea gravel.

As already mentioned, each flat is equipped with the Garchey system of refuse disposal, which will enable the tenants to place their refuse in the sink and for it to be conveyed first by gravitation and then by suction, to the refuse disposal station.

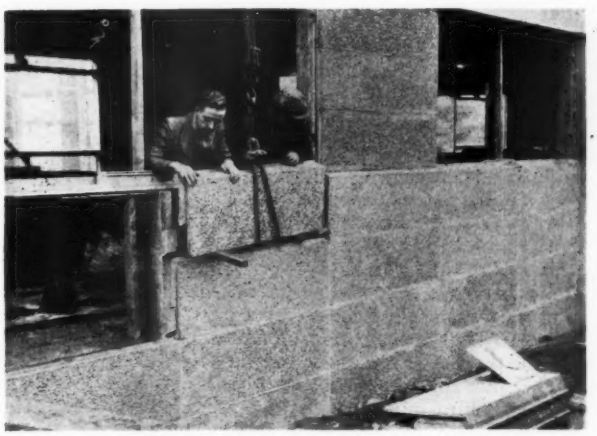


Figure 6.

LETTERS FROM READERS

A. W. BARR (Secretary of the Association of Architects, Surveyors and Technical Assistants)

J. McCARTHY

Salaried Architects

SIR,—The figure giving the proportion of salaried architects and assistants in the profession as about 60 to 70 per cent., quoted by you in your leader of June 3 from the remarks made by the Association's representative on the R.I.B.A. Council, Mr. R. C. Fisher, at a recent R.I.B.A. meeting, is one which has been quoted by this Association on previous occasions. It is based only on our rough estimation of the total numbers in the profession, qualified and unqualified, of the numbers in Government and local government offices and commercial offices, and of the proportion of assistants in private offices, and it has been used by the A.A.S.T.A. only to show the paramount importance today of safeguarding "salaries" as well as fees, and the need for establishing recognized minimum salaries for architects and architectural assistants to take their place alongside recognized fees for private practising architects.

We welcome your suggestion that an accurate census should be undertaken by the R.I.B.A. of its membership—but we feel that this would be of greater value still, if extended to include a survey of the whole profession (including non-members of the R.I.B.A.). Such a survey would reveal the total numbers of architects and architectural assistants employed by local authorities and by semi-public bodies, and by the various categories of commercial firms, multiple stores, estate development concerns and so on. It could be conducted by a direct approach to the local authorities and by an approach to commercial firms through the technical press, as well as by asking individuals to return the total numbers of their office staffs.

We agree that such a committee as you suggest would be of the utmost value in enabling the profession to adapt itself to the changing economic circumstances of today, and that a survey of this character is a first necessity to this end. We feel, however, that the committee should be representative of all the profession, not merely of the R.I.B.A. It is time that all the bodies in the profession began to pull more together for their common ends. If the Registration Council is so narrowly constituted that it can act only in relation to the maintenance of the register which it has been formed to set up, then the bodies represented on the Registration Council should get together to carry out this survey and to form the kind of committee you suggest. The A.A.S.T.A. would be glad to co-operate in this work.

A. W. BARR.
(*Secretary, A.A.S.T.A.*)

Acoustics

SIR,—May I be permitted to comment on an article by Mr. Hope Bagenal entitled "Acoustics and the Requirements of School Halls" which was reprinted in the *R.I.B.A. Journal* for April 10, from the Report of the Public Schools Bursars' Association? From a cursory review of Mr. Bagenal's article by one who, compared with Mr. Bagenal, is only a novice in acoustical research, it would appear that he has unaccountably overlooked the obvious solution for the sound treatments necessary for school halls.

I am, however, entirely in agreement with him when he states that the problems to be overcome in buildings of this nature are necessarily complex.

Owing to the fact that the school hall is required for a widely differing field of activities, and also that the audience present may range from a mere handful of students to several hundreds, it is obvious that any sound absorbing material introduced, if of a constant and permanent nature, will not be effective for every purpose.

Realizing this, I am at a loss to see how Mr. Bagenal's suggestion of fixed absorbent panels provides any solution to the varied problems, as if only sufficient area is introduced to provide good hearing conditions for the full capacity audience then it is obviously necessary to provide further compensation as the audience diminishes in numbers.

If, on the other hand, a sufficient quantity of absorbent is provided only for a minimum capacity audience, then, when a large attendance is present, the hall conditions will be too dead for the real enjoyment of music.

I had always understood that it was generally recognized by acoustical engineers that where variable acoustical conditions were to be met it was essential to arrange for varying amounts of absorption to be provided.

This can be quite easily done by fixing hinged reversible panels absorbent on the one side and reflecting on the other.

This principle is largely employed in scoring and review theatres in sound film studios where the audience varies from two people working on the scoring process to a full capacity audience witnessing the full review.

I cannot imagine that Mr. Bagenal is unaware of this method, and consequently I am all the more astonished that he has not made proposals on these lines.

Mr. Bagenal's suggestion for improving the hearing by employing amplifiers is, in my opinion, most unsatisfactory, particularly when the hall is to be used for music.

Even when the most up-to-date equipment is used a certain amount of distortion is bound to take place, and the musical quality suffers in consequence.

In my opinion, any hall which necessitates the use of such appliances—unless of very large dimensions—is poorly designed from an acoustical standpoint.

I do not understand the reason for Mr. Bagenal's suggestion for using a carpeted rear gallery.

At first sight, to me, this would appear a retrogressive step, for carpets generally are not fireproof or vermin proof. Besides the insanitary aspect of the suggestion, is not the first requirement of an efficient acoustical corrective material that it shall be fireproof?

I feel sure that Mr. Bagenal has reasons for the various methods he suggests, and should therefore be grateful of his observations in order to find out where my reasoning is wrong.

J. McCARTHY

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The Welsh School of Architecture

About 45 members of the Welsh School of Architecture paid a visit to Liverpool on Friday, May 7, the arrangements for which had been made by the Liverpool School of Architecture.

On arrival at Birkenhead the party was met by representatives of the Liverpool School and taken by char-a-banc through the Mersey Tunnel and thence to the Anglican Cathedral, over which they were shown by the Deputy Clerk of Works. At the Roman Catholic Cathedral Mr. F. X. Velarde, F.R.I.B.A., showed the party the present condition of the work.

By permission of Mr. L. H. Keay, O.B.E., F.R.I.B.A., Director of Housing, the visitors were also shown round two Housing Schemes, one off Brownlow Hill and one off Myrtle Street.

WORKING DETAILS : 555

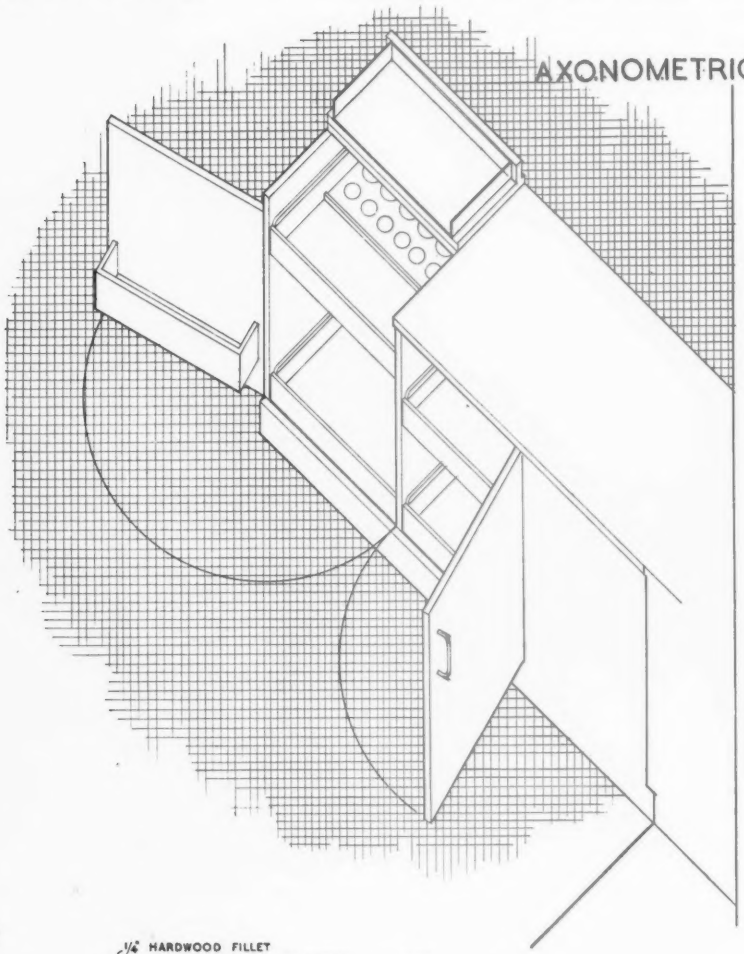
COCKTAIL CABINET • HOUSE IN FROGNAL WAY, HAMPSTEAD • E. MAXWELL FRY

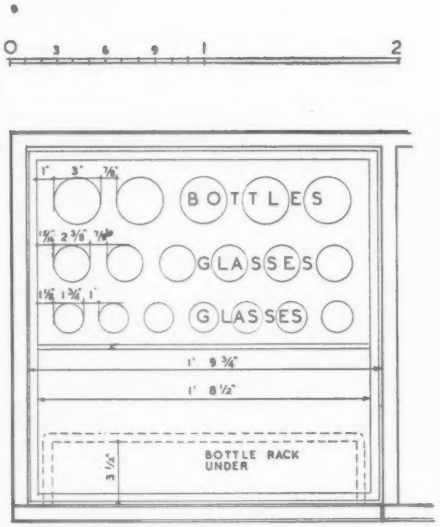
The cocktail cabinet forms part of a range of built-in furniture separating the living-room from the dining-room. It is finished externally in Rio rosewood veneer, and internally in mahogany. The pull handles have a silver-bronze finish.
Details are shown overleaf.

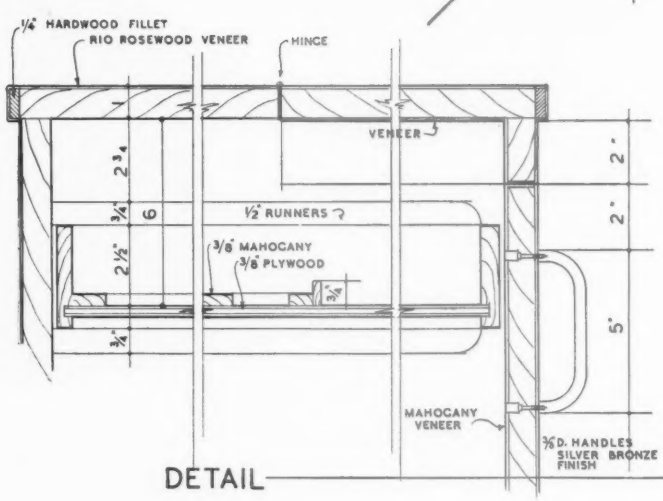
FILING REFERENCE:

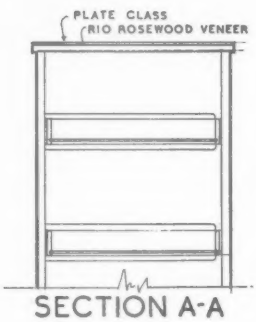
WORKING DETAILS : 556

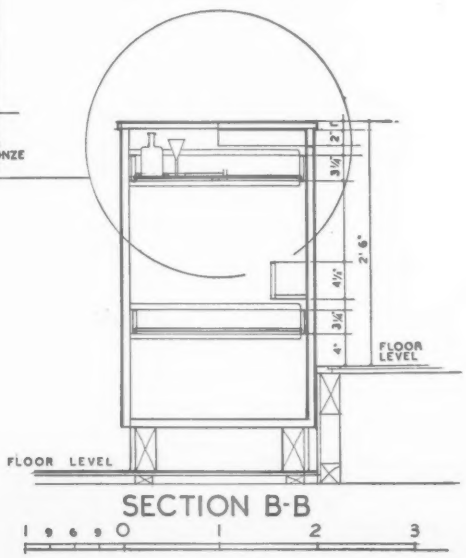
COCKTAIL CABINET • HOUSE IN FROGNAL WAY, HAMPSTEAD • E. MAXWELL FRY

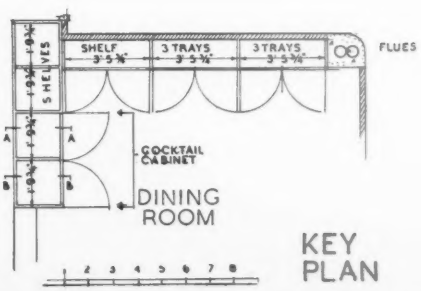












Axonometric and details of the cocktail cabinet illustrated overleaf.

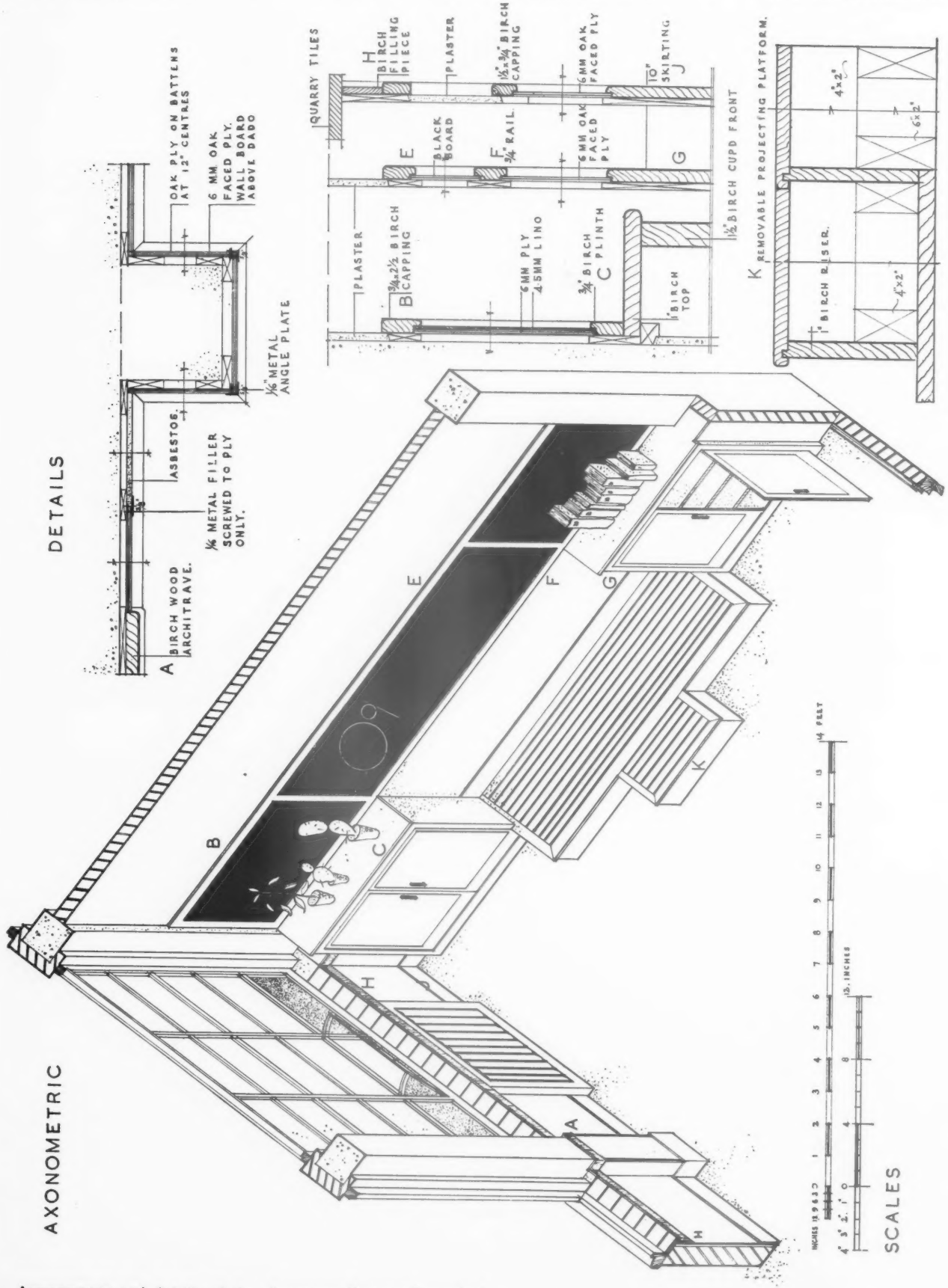
WORKING DETAILS : 557

CLASSROOM DETAIL • BATTERSEA GRAMMAR SCHOOL, S.W. • J. E. K. HARRISON

The blackboard and cupboards are designed as one unit and occupy the end wall of the classroom. In the centre is a projecting movable platform to take the teacher's desk. The cupboards and platform are of birch, and the wall beneath the blackboard is faced with birch ply. The floor finish is Canadian birch blocks.
Axonometric and details are shown overleaf.

WORKING DETAILS : 558

CLASSROOM DETAIL • BATTERSEA GRAMMAR SCHOOL, S.W. • J. E. K. HARRISON



Axonometric and details of the classroom illustrated overleaf.

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INFORMATION SHEET

SUPPLEMENT

SHEETS IN THIS ISSUE

523 Poison Gas Precautions

524 Kitchen Equipment

525 Metal Reinforced Asbestos Cement

Sheets Issued since Index :

501 : Aluminium
502 : Fixing Blocks
503 : Approximate Estimating—XII
504 : Aluminium
505 : Aluminium
506 : Approximate Estimating—XIII
507 : Plumbing : Jointing of Copper Pipe
508 : Roofing—Valley Flashings
509 : The Equipment of Buildings
510 : Aluminium
511 : Elementary Schools—II
512 : School Lighting
513 : Approximate Estimating—XIV
514 : Air Conditioning
515 : Insulation of Buildings
516 : Cycle Parks
517 : Cycle Parks
518 : Plumbing Systems—II
519 : Kitchen Equipment
520 : Roofing—Flashings
521 : Motor Cycle Parks
522 : Reinforced Asbestos-Cement Roofing Tiles

655.

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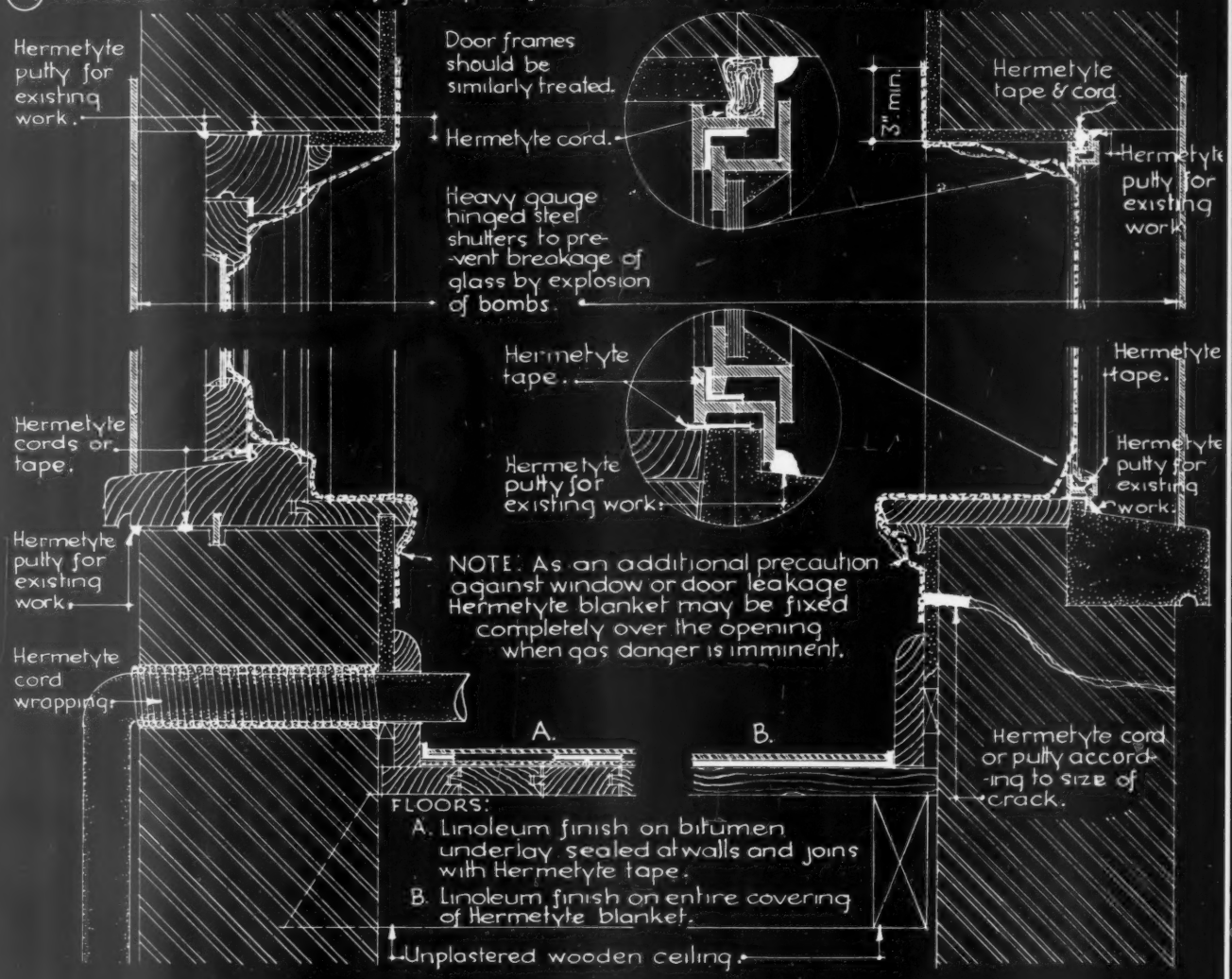
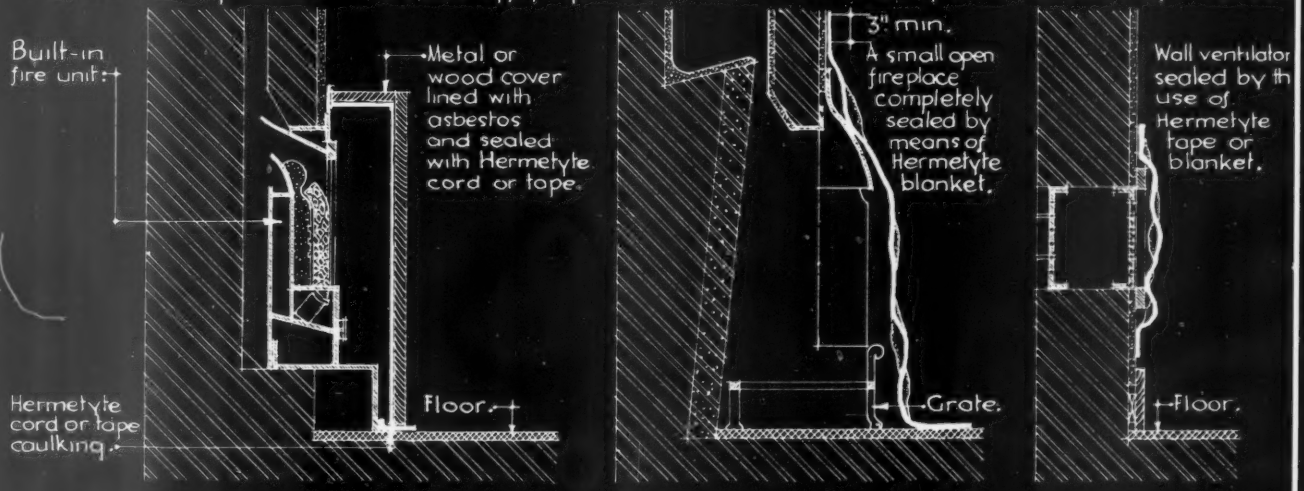
IMPREGNATED FABRIC GAS-PROOFING BY MEANS OF HERMETYTE CORD, TAPE, PUTTY & BLANKET.

(A.) Permanent maintenance of gas-proof shelters. (See precautions B below).



(B.) Temporary measures recomended for rooms likely to be occupied during an air raid.
NOTE: These precautions will also apply to permanent shelters immediately an air raid warning is sounded



Information from Winn & Cooles Ltd.

INFORMATION SHEET: POISON GAS-PROOFING OF ROOMS.

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

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INFORMATION SHEET

• 523 •

POISON GAS PRECAUTIONS

Product : Hermetyte Gas Proofing

General :

The details given on this Sheet illustrate the use of Hermetyte products for gas-proofing the joints between window frames and walls and between sashes and window frames, similar spaces around doors and door frames, pipes and cracks in walls. The material is stated to be non-drying, not liable to harden or crack and proof against chemical and electrolytic action and resistant to attack by acids or alkalis.

General Building Uses :

Hermetyte is recommended also for normal building uses as a bedding for door and window frames, etc., and a packing around pipes, and in such positions it provides a permanently non-hardening waterproof bedding which will take up all minor movements between one member of the construction and another.

This material not only prevents corrosion taking place upon pipes where they pass through walls, but also, by stopping the ingress of draughts, it considerably reduces heating costs, and, in the case of basements, it prevents gas, which may have escaped from external gas mains, from following the pipes through the wall into the basement rooms.

Hermetyte :

As will be seen on the drawings, Hermetyte is manufactured in four distinct forms for adaptation to various architectural features of the building. Thus the cord, available in $\frac{3}{16}$ in., $\frac{3}{8}$ in. and $\frac{3}{4}$ in. diameters, is most suitable for building in behind door and window frames, rebates, and spaces between different materials where a gap is likely to develop, as shrinkage and settlements occur. It is also useful as a binder around piping and cables where these enter and leave a room, to prevent the entry of draughts or gas, as mentioned in the last paragraph.

Hermetyte Tape :

Hermetyte tape is made in widths from $\frac{1}{2}$ in. up to 8 ins., and is particularly intended for strip-sealing purposes, pipe binding and covering open joints. Hermetyte in putty form is a plastic material able to be worked into fine cracks and apertures wherever they may have occurred. When applied as a pointing to the junctions between frames and masonry work, this substance effectively prevents the penetration of air.

Hermetyte Blankets :

Hermetyte blankets are obtainable in widths up to six feet by any lengths, and are mainly of use as temporary expedients in rooms likely to be occupied at the moment of gas attacks. In such instances the larger openings from the room can be rapidly sealed over by a blanket previously trimmed to size. The material will adhere to any surface and a minimum overlap of 3 ins. on all edges should be allowed for this purpose.

Permanent openings such as fireplaces, air bricks and ventilators should all be treated in this way, the blanket being attached above the openings by the upper edge for instant lowering when danger is imminent.

Glass Breakage :

Precautions must be taken against the possible shattering of glass windows, doors, skylights, etc., by concussion from the exploding bombs, and it is recommended that heavy gauge, hinged, steel shutters be fixed outside wherever possible. These should be made to fit tight against the surrounding masonry when closed, and meeting rails should be avoided if possible.

Prices :

Tape :

	Per roll
$\frac{1}{2}$ in. width, 10 yard rolls... ...	10d.
1 in. width, 10 yard rolls... ...	1s. 8d.
2 in. width, 10 yard rolls... ...	3s. 4d.
3 in. width, 10 yard rolls... ...	5s.
4 in. width, 10 yard rolls... ...	6s. 8d.

Cord :

	Per 100 yards
$\frac{3}{16}$ in. diameter	15s.
$\frac{3}{8}$ in. diameter	24s.
$\frac{3}{4}$ in. diameter	80s.

Putty :

Packed in tins according to requirements, 1s. 6d. per lb.

Blankets :

Supplied to requirements.

5 sq. ft.	3s. 4d.
10 sq. ft.	6s. 8d.
15 sq. ft.	10s.
20 sq. ft.	13s. 4d.

Other sizes strictly pro rata.

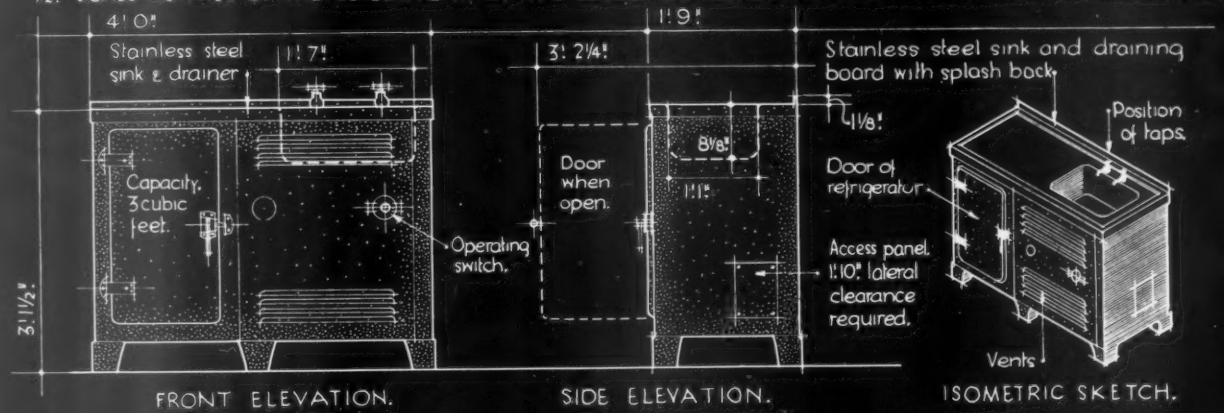
Manufacturers : Winn & Coales, Ltd.

Address : 40 Trinity Square, London. E.C.3

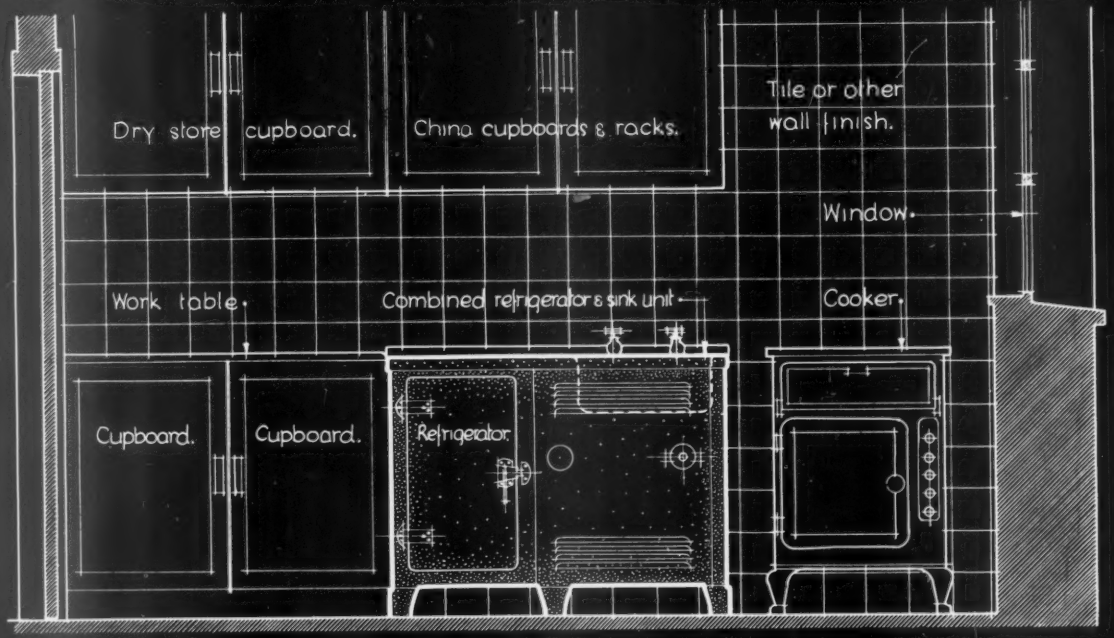
Telephone : Royal 5193/4

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

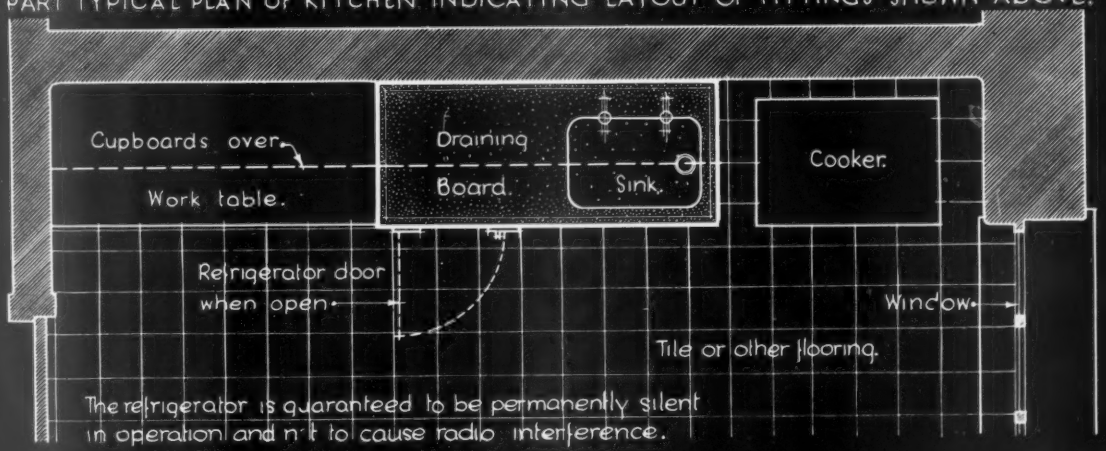
½" SCALE DETAILS OF THE BUILDING IN OF THE ZEROS COMBINED REFRIGERATOR & SINK UNIT, MODEL Z.R.5.



PART TYPICAL ELEVATION OF KITCHEN WALL SHOWING ARRANGEMENT OF REFRIGERATOR & SINK UNIT.



PART TYPICAL PLAN OF KITCHEN INDICATING LAYOUT OF FITTINGS SHOWN ABOVE.



The refrigerator is guaranteed to be permanently silent in operation and not to cause radio interference.

Information from the Ismay Refrigerating Co. Ltd.

INFORMATION SHEET: AUTOMATIC ELECTRIC REFRIGERATORS: No. 2:
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Osca. A. Bayne

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 524 •

KITCHEN EQUIPMENT

Product : Zeros Automatic Electric Refrigerators.

General :

This is the second Information Sheet dealing with Zeros automatic electric refrigerators, and illustrates the combined refrigerator and sink unit, model Z.R.5. On the first Sheet of the series were shown the four standard models of the free-standing type refrigerators, and a later Information Sheet will detail these models specially designed for use in conjunction with built-up kitchen cabinets.

Construction :

Zeros refrigerators are formed of a heavy gauge steel outer framing around the inner metal cabinet, the space between being adequately insulated to prevent penetration of heat from the kitchen. There is no motor, compressor, or moving machinery of any description incorporated in the structure.

Control :

The production of cold within the cabinet is obtained by use of an ordinary electric heating element. This is contained in a hollow cylinder positioned under the sink, the electric loading of which is controlled to suit varying weather conditions by means of a variable switch on the face of each model. The element itself is automatically switched on for 1½ hours in every eight, by means of a time clock also actuated by the electric supply.

Operation :

At the commencement of any one of the three eight-hourly cycles, the heat generated by the element acts upon the ammonia-saturated calcium chloride, contained in the hermetically sealed absorber generator, and releases the ammonia in the form of gas.

The heated ammonia gas is immediately led to a separate and air-cooled condenser, where cooling and liquefaction takes place. In the liquid form the ammonia flows down by gravity to the storage container cylinder and thence by coils to the cold storage box within the inner refrigerator cabinet. The liquid ammonia storage is sufficient to feed the evaporator coils for 6½ hours.

Cold Storage Box :

This box becomes a solid, permanent ice block during cold production, and provides a reserve of cold sufficient to cater for normal temperature variation inside the cabinet and at the same time to maintain a constant low temperature therein.

Vaporisation :

Upon the extraction of heat from the cabinet, the ammonia vaporizes, bubbles back through the liquid ammonia and is immediately re-absorbed by the calcium chloride in the absorber generator. A constant temperature is maintained inside the cabinet by means of a tank holding a liquid which surrounds the evaporator coils. This system of refrigeration therefore dispenses with all moving mechanical parts, and eliminates wear and tear.

Power :

This model, which is of 3 cub. ft. capacity with a shelf area of 5½ sq. ft., requires a 5-amp. A.C. supply power point. The mechanism may be adapted for D.C. current at a small extra charge. The max. loading, using 3-phase wiring, is 1150 watts.

Weight of Cabinet :

The weight of the total unit is 2½ cwt.

Inner Cabinet :

The inside dimensions of the cabinet are 25¼ ins. high by 14⅛ ins. wide and 15¾ ins. deep, and the ice capacity is 1⅓ lbs. cubes weight, with 21 cubes freezing capacity.

Sink and Drainer :

A stainless steel sink, 19 ins. by 13 ins. by 8⅛ ins. deep, complete with stainless steel draining board, is fitted to the top of the refrigerator unit as shown. Sink and drainer are of electrically welded seamless pressed steel, provided with an anti-splash rim and apron, 1⅛ ins. splash back. The sink is fitted with a 1½ ins. diameter screwed outlet with which any suitable standard type trap may be used.

Guarantee :

The Company gives a complete guarantee against repairs and replacements over a period of six years.

Prices :

The cash price of model Z.R.5 combined unit is 40 guineas, but purchase may be arranged by instalments if desired.

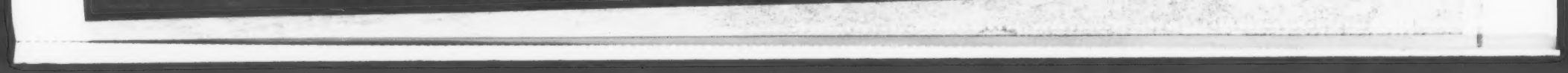
Previous Sheet :

The first Sheet in this series dealing with Zeros automatic electric refrigerators is No. 519.

Manufacturer : The Ismay Refrigerating Co., Ltd.

Address : Zeros Works, Dagenham, Essex

Telephone : Seven Kings 2801



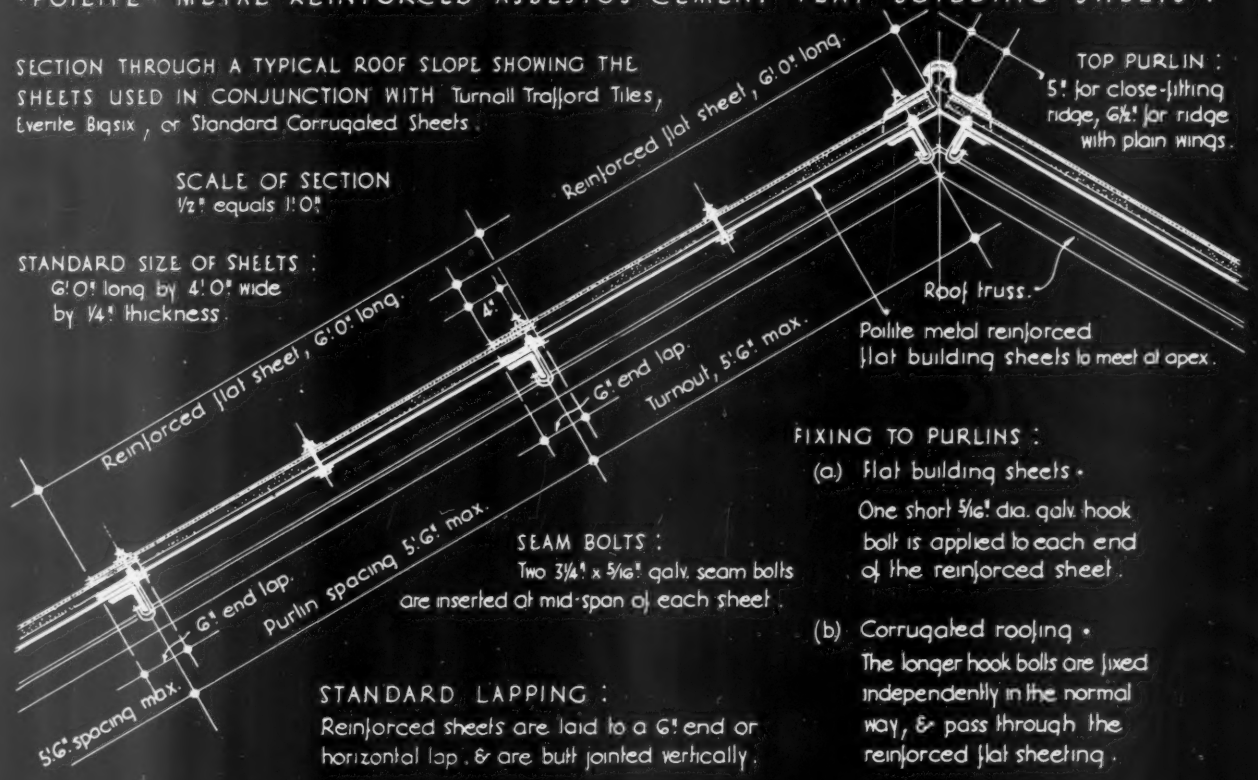
THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

•POILITE• METAL REINFORCED ASBESTOS-CEMENT FLAT BUILDING SHEETS :

SECTION THROUGH A TYPICAL ROOF SLOPE SHOWING THE SHEETS USED IN CONJUNCTION WITH Turnall Trafford Tiles, Everite Bigsix, or Standard Corrugated Sheets.

SCALE OF SECTION
½" equals 1'0"

STANDARD SIZE OF SHEETS :
6'0" long by 4'0" wide
by ¼" thickness.



SEAM BOLTS :
Two 3¼" x 5/16" galv. seam bolts are inserted at mid-span of each sheet.

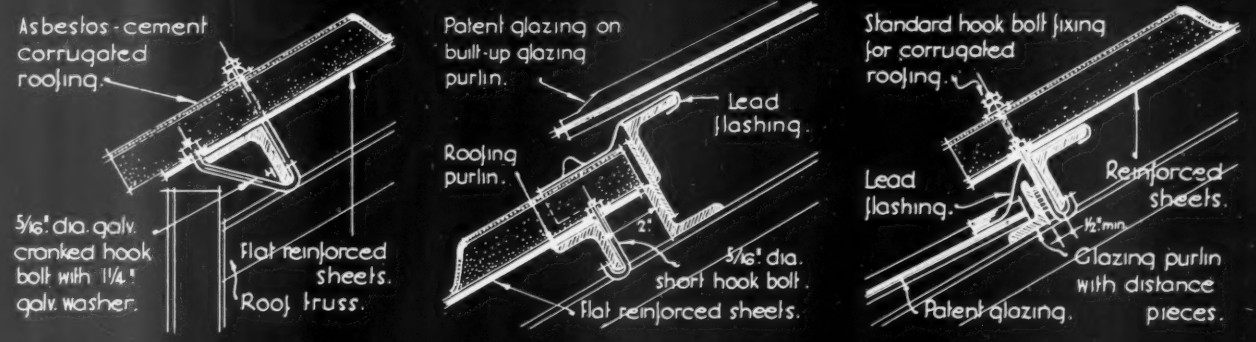
STANDARD LAPPING :
Reinforced sheets are laid to a 6" end or horizontal lap, & are butt jointed vertically.

FIXING TO PURLINS :

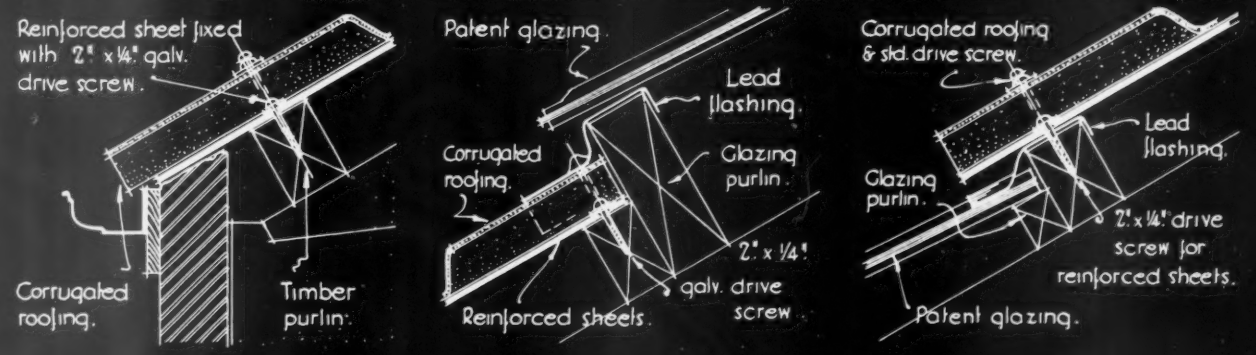
(a) Flat building sheets •
One short 5/16" dia. galv. hook bolt is applied to each end of the reinforced sheet.

(b) Corrugated roofing •
The longer hook bolts are fixed independently in the normal way, & pass through the reinforced flat sheeting.

TYPICAL FIXING & PURLIN ARRANGEMENTS AT EAVES & GLAZING IN STEEL FRAMED ROOFS :



TYPICAL FIXING & PURLIN ARRANGEMENTS AT EAVES & GLAZING IN WOOD FRAMED ROOFS:



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

INFORMATION SHEET : REINFORCED ASBESTOS-CEMENT FLAT BUILDING SHEETS.
SIR JOHN BURNET TAIT AND LORNE, ARCHITECTS, ONE MONTAGUE PLACE, BEDFORD SQUARE, LONDON, WC1 • Alan A. Bayne

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 525 •

METAL REINFORCED ASBESTOS CEMENT

Product : Flat Building Sheets

General :

" Poilite " metal reinforced asbestos-cement flat building sheets are composed of a main body of asbestos-cement, in which is embedded during the process of manufacture an ungalvanized hexagonal wire $\frac{1}{2}$ in. mesh, of No. 19 gauge. The metal and asbestos form a homogeneous structure in which the free lime of the cement is utilized to preserve the reinforcement. As with other forms of sheet products, the body of flat asbestos-cement is not moulded, but built-up in rolling-mills in the form of layers or films of asbestos and cement, regularly distributed and interlaced to constitute a kind of tough woven fabric.

Roof Work :

As shown on the typical roof detail overleaf, purlin spacing may be up to 5 ft. 6 ins. max., and this figure may also be used for the side or gable rail spacing on side-cladding work. When used with " Turnall " Trafford Tiles, the weight of 100 sq. ft. of laid roofing is 543 lbs., and with " Everite " " Bigsix " corrugated sheeting, 550 lbs. 11.67 sq. yds. of reinforced sheeting cover 100 sq. ft. of roof.

Advantages :

In addition to the structural economy effected by the greater purlin spacing, the sheeting provides increased insulation due to the air space obtained between the double layer of asbestos-cement. It is recommended for use in situations where more strength is required than that provided by the ordinary flat sheet.

The flat under-surface of the reinforced sheeting thus provides a false ceiling which may be decorated as desired.

Fixing :

Each sheet is fixed to the purlins with two short hook bolts, i.e., one at either end, and in order to avoid fouling, these should register with the corrugations of the particular type of roofing sheets being used. To facilitate this setting out, it is advisable to lay the roofing sheets as the work of laying the reinforced sheeting progresses. The roofing sheets are then fixed in the normal manner on top of the reinforced flat sheets, the usual hook bolts passing through both.

Finally, the reinforced sheets are seam-bolted to the roof sheets with $3\frac{1}{4}$ ins. long by $\frac{5}{16}$ in. galvanized seam bolts with $1\frac{1}{4}$ ins. diameter flat washers and nuts as shown on the roof section.

When fixing to steel, it should be noticed that at eaves and above roof glazing the hook bolts are fitted on the lower side of the purlins. This is to ensure that the hook bolts are not torn away from the purlin when the reinforced sheet comes into action in the event of a fracture of the roofing tile or sheet.

For timber purlins the reinforced sheets are fixed by means of two 2-in. by $\frac{1}{4}$-in. galvanized drive screws and washers. The corrugated roofing sheets are then superimposed and screwed through to the purlins by $4\frac{1}{2}$ ins. long by $\frac{5}{16}$ in. diameter drive screws and washers. The two units are then seam bolted in the manner already described.

Treatment at Ridge :

The ridge course of the reinforced sheeting is laid to meet along the centre line of the ridge as shown. The ridge capping, the type of which fixes the position of the top purlin, is laid over the corrugated sheeting and fixed in the usual manner.

Roofing Accessories :

Unreinforced asbestos-cement roofing accessories, such as Hip Cappings, Ridge Finials, Eaves and Apron Flashing Pieces, Barge Boards, Expansion Joints and Bottom Glazing Flashing Pieces, are fitted where required in the usual manner, see previous Information Sheets Nos. 397, 400, 426 and 427, dealing with " Turnall " Trafford Tiles.

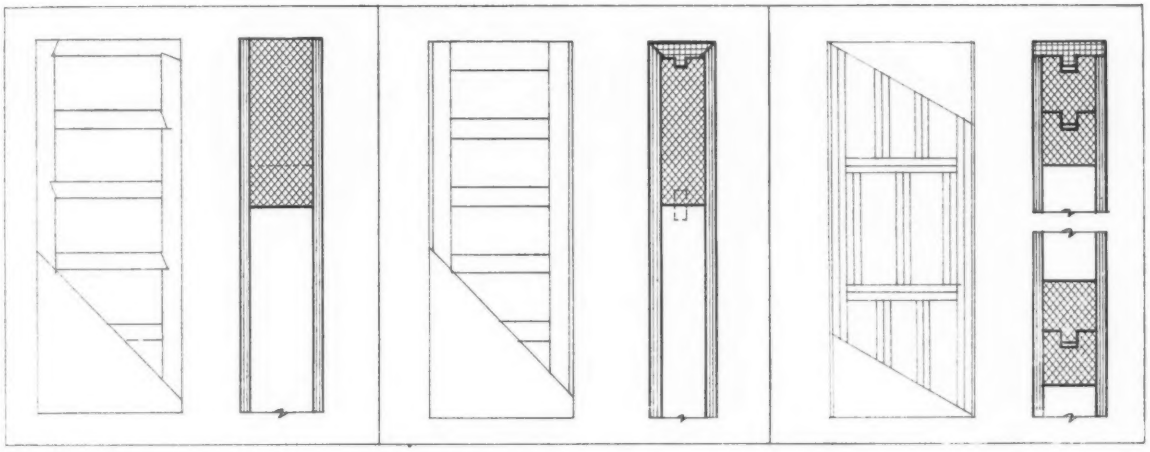
Information from : Turners Asbestos Cement Co. branch of Turner & Newall Ltd.

Address (Central Office) : Trafford Park, Manchester, 17

Telephone : Trafford Park 2181 (8 lines)

London Office : Asbestos House, Southwark Street, S.E.1

Telephone : Waterloo 4041



Three types of doors illustrated in the Carpenter and Joiner section of "Specification." Left, Evos; centre, Benex Brough; right, Cattle.

LITERATURE

SPECIFICATION 1937

[*By PHILIP SCHOLBERG*]

Specification 1937. Edited by F. R. S. Yorke, A.R.I.B.A. London: The Architectural Press. Price 10s. 6d.

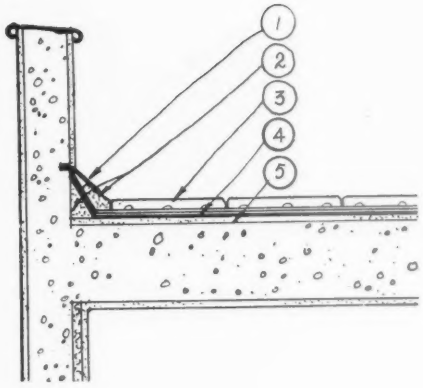
EVER since the days of wattle and daub the process of building, and with it the practice of architecture, has become steadily more and more complicated, so much so that a momentary pause to look into the future can give rise to quite a number of interesting speculations. Consider, for instance, the very real complexity of the present-day office or flat block, and consider, too, the number of specialist consultants whose services are not the extravagance that many clients seem to suspect, but essential aids without which the resultant building might well cost a good deal more or be quite a lot less efficient. There are, it is true, quite a number of specialist sub-contractors who are only too delighted to "prepare a suitable scheme," but their draughtsmen's salaries, even though they do not appear on the tender, none the less have to be paid by the client. Apart altogether from maintenance periods, no reputable firm will risk its good name by putting up an inferior scheme, but there is always a tendency to run on the reliable and established tram-line and the architect is seldom in a position to be *certain* that he could not have got a more efficient result by inviting somebody else to do the job—nor, for that matter, is he always capable of checking calculations independently and making certain that the job is not costing more than it should.

Will the successful architectural office of the future maintain a staff of experts in everything from structural steelwork to lighting? This state of affairs already exists in fact if not in name, for every large office nearly always employs the same consultants, even though they are independent units and remain at liberty to do the same work for anybody else; and it would seem to be quite a logical step if all these specialists were combined into a single firm, the head of which would presumably act mainly as a "job-catcher" and work mainly by having lunch and dinner with the right people. (Does not one of our more successful architects maintain even now that playing golf and travelling first-class is more important than designing ability?)

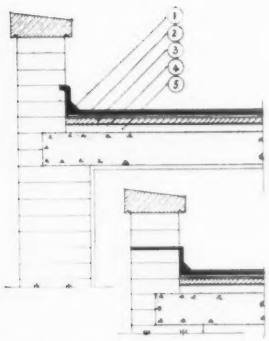
Lest the thought of maintaining a large and perhaps unwieldy organization should be a bogy to the rank and file of the profession, who exist mainly by local domestic work and a series of alteration jobs, it should be explained at once that this complexity will apply mainly to the "commercial" firms who are mostly interested in office blocks and semi-speculative schemes, the men who, as Mr. Goodhart-Rendel so aptly puts it, "gave up design at a comparatively early age."

However the actual technique of architectural practice may develop, the architect will become to an increasing extent a co-ordinator of other people's work rather than a designer pure and simple. This state of affairs has already arrived, yet, how is the architect to supervise the work of specialists whose language he does not understand? Is he to wilt under a barrage of technicalities or stand up to it and give back power factors for K.V.A., phons for decibels, and make certain that he is getting what he wants? In about a dozen large towns information on almost any subject is instantly forthcoming at the end of a pennyworth of telephone, but how, short of writing three dozen letters, can the small town man get a line on current practice in hollow tile floors?

Specification is an attempt to answer both these questions, for it moves from the general to the particular, explaining the merits and demerits of different ways of doing the same thing, and then going into more elaborate schedules of the equipment at present available. This 1937 issue is the third for which Mr. Yorke has been responsible, and comparing it with 1934, one can easily understand why the printing order should have been increased by 50 per cent. in two years. The introductory articles of the older editions were generally useful and thoroughly summarized current practice on any particular subject, whether it was public abattoirs or the design of sun blinds. Such articles, however, were bound to become out of date before very long, and even those of permanent value were difficult to keep, for it meant saving one large volume for the sake of a few pages. The practice of publishing these specialist articles has therefore been discontinued, and *Specification* starts straight in with Roads and Footways and ends up with Equipment and Furniture. In the manner of presentation, Mr. Yorke has realized that drawings are the natural language of the architect, and we find, therefore, an increasing use of diagrams and tabulated matter which makes any item of information easier to find and quicker to understand, apart from the space-saving virtues which make it possible to pack a great deal more



Two of eighteen examples of flat roof types in "Specification." Left: Thermotile roofing system (D. Anderson and Son). 1: lead cover flashing. 2: cement fillets. 3: insulating tiles, forming walking surface. 4: three layers waterproof sheeting and three layers bitumen. 5: screeding.



Asphalt finish on concrete roof. 1: natural asphalt mastic in ⅜ in. layers. 2: sheathing felt or kraft union paper. 3: ½ in. to 2 in. of cork or other insulating medium, if directed by the architect. 4: mopping of pure bitumen. 5: cement screed. Information supplied by the Natural Asphalte Mine-Owners and Manufacturers' Council.

information into the same amount of space.

Notes on proprietary materials are added at the end of the appropriate section, but such notes are of necessity brief, and the various manufacturers have therefore been encouraged to make their advertisements act as a useful supplement to the editorial pages instead of following the usual habit and "plugging" a name and an address. Not every manufacturer has had the intelligence to see the force of this argument, so one is justified in handing a bouquet to Williams and Williams, Turner's Asbestos Cement Co. and the Invisible Panel Warming people, who have produced supplements which are really useful to the architect. On the editorial side, floors, doors and boilers are extremely thoroughly dealt with, and in the remaining sections a few sighting shots have always produced the required data. Further checking up is only possible by using *Specification* regularly for some weeks, but it seems worth pointing out that the Editor specifically *asks* for suggestions or complaints, and would, I know, be genuinely glad to have them.

One cannot reasonably demand to have the earth for ten and sixpence, but most people expect it and, thanks to Mr. Yorke and his colleagues, they very nearly get it.

HOME TRUTHS FROM ABROAD

[*By THOMAS SHARP*]

London: The Unique City. By Steen Eiler Rasmussen. Jonathan Cape, Ltd. Price 15s.

"THE concise title of this book is 'The Lesson of London,'" says Mr. Rasmussen on one of his last pages. "It is a book with a tendency. A description of a town of ten millions is utter nonsense unless one considers the subject from a special angle, and can thus reduce to a chosen few the endless number of facts upon which light has been thrown in existing literature. My object has been to show my compatriots that we have a great deal to learn from that form of civilization in which London has taken the lead. . . . Now that I have written the book and followed the development I have come to the conclusion that it is of even greater importance to tell the English something about their own civilization, that civilization that we admire and imitate as best we can."

Mr. Rasmussen is a Dane who for years has been coming over to London to spend a month now and then studying the complexity of what he regards as the Unique City. He must have a rare knowledge of the place, for he has written a most interesting account of it.

For Mr. Rasmussen, London's uniqueness lies in its being a "scattered" rather than a "concentrated" city, an organic growth and not a development consciously planned or determined by the strong governmental influences which have controlled the growth of most Continental cities. His aim is to trace the historical development of London's special characteristics, and to show that from the beginning that development has been consistent and steady. He begins with Roman London, carries the story down to the present day, making particular play with the separate and parallel development of the City and Westminster, and concludes, in "A Most Unhappy Ending," with the moral that "only the follies are international" and that the present development of London is a betrayal of one of England's best contributions to civilization, namely, the one-family house, the horizontal city. That is the "tendency" that Mr. Rasmussen speaks of. Flats are a great evil. Cottages are the only satisfactory housing for city dwellers. And if the building only of cottages means that London must sprawl and spread over half England, so be it.

I think that this, though Mr. Rasmussen regards it as the most important part of the book, is the least successful. Extensive as Mr. Rasmussen's research has been and big as his book is, both would have to be a great deal bigger to establish and maintain his thesis. There are too many assumptions, omissions, contradictions and inconsistencies in his story for the argument to be completely convincing. There are long hesitations during which Mr. Rasmussen seems to be looking round unsuccessfully for facts to support his argument, and then when he comes back again to his "tendency" one feels that something important has been left undiscovered. Interwoven with his main line of argument there are other interesting threads—how, for instance, through the lack of an Absolute Monarchy, domesticity became the characteristic of London

buildings instead of the empty monumentality that one often sees abroad—but these again are not always happily worked in. Everyone who has tried to write on the terrific complexity of modern cities knows the temptation to over-simplification, and Mr. Rasmussen is not to be blamed too much because he has not been able to avoid that temptation. All the same, one cannot help thinking that it is especially a pity here, for it does detract from what, though it is still outstanding, might have been a very important book.

Mr. Rasmussen has a striking passage apropos the attempted replanning of London after the Great Fire :—

> According to modern ideas it is impossible to give a town a definite and fixed form. A town plan is no longer a beautiful pattern of streets which a clever man can design in a day or two. Nowadays it is an outline for a sound development of the town based on thorough investigation concerning prevailing conditions. Nobody dreams of making designs for the moulding in detail of a whole town. A programme is given for its growth in words just as much as in drawing in order to gain the end that all functions of the town may develop in the best way, a programme which necessarily must keep pace with the growth and in process of time change together with the town. That Wren's ideas are *old fashioned* as seen by modern eyes is not surprising, and it might seem out of place to introduce the subject of modern views in connection with these old plans if the further history of the rebuilding of London had not shown that England in the days of Charles II actually possessed men who in many aspects were astonishingly *modern* in their conception of town planning. That the King had to give up the plan immediately is but one of the numerous expressions of the failure of Absolutism in England. . . . From our point of view the rejection of Wren's plans is not a fault but rather a new triumph for what might be called the idea of London. For there *was*, as we have seen, an idea in the apparently incidental growth of the town. Through the whole history of London we find a latent power, a desire to make the town healthy and it has been able to act because London in contrast to other capitals was self-governing and independent of the Crown, and no standards for her development could be forced on her. This local government was the vital nerve of the town—more important than any plans. It may sound a paradox to say that there is more true town-planning in the unrestricted growth of London than in contemporary Continental towns that developed according to plans.

That is a most interesting line of thought. But here is just the difficulty of Mr. Rasmussen's book. It seems to me to be something of a mental flying-trapeze-act to be able to leap from that position to such a fervent advocacy of the building of completely-planned, definitely restricted Garden Cities as Mr. Rasmussen prints on his final pages.

If, however, its thesis is somewhat confused and unconvincing, the book is nevertheless an interesting and valuable one. Mr. Rasmussen's knowledge of London buildings must be as unique as he believes the city itself to be : as his Introducer says, " he seems to feel London in his bones." His chapters on the Squares, the domestic architecture, " The True and Sad Story of the Regent's Street," are altogether admirable. He gives an excellent account of London transport, and contrasts London above-ground with London below—" A foreign architect may well feel disappointed on discovering that he can hardly find examples of architecture which is truly suited to the times, but finds everywhere the same shallow and conventional type of façade covered with details that have lost all interest hundreds of years ago, and are now merely repeated mechanically to suit the taste of some mercantile magnate. Later, however, he will find out that there is another and more modern world literally beneath all this stale architecture—that is the London Underground Railway."

Then there are chapters on London communications and parks, and on the origins of recreation grounds. But, as in his chapter on the English landscape garden, Mr. Rasmussen by no means limits himself to London. He considers, in so far as they affect his main subject, many varied aspects of English civilization, and passes some shrewd judgments on that civilization and the men who made it. (" In English culture idleness has been the root of all good.") He gives nearly 300 illustrations, mostly from photographs taken by himself; quiet unpretentious photographs of quiet unpretentious (and often little known) streets and squares, that are a perfect summary of his text. Altogether this is an excellent book. It is indispensable to anyone who really wishes to understand and appreciate London.

Nearing completion : Barrie House, Bayswater Road, London. By Howard Leicester and Partners.

PITCHED ROOFS

[*By G. E. CHARLEWOOD*]

Slating and Tiling. By J. Millar. London : The Camelot Press, Ltd. Price 5s.

IN view of the decidedly inferior roofing which is so prevalent today in all parts of the country, a sound treatise on the subject should be welcomed both by architects and by contractors ; and it can be stated with confidence that the concise little book under notice is well calculated to meet that need. The author deals with the work of the slater and tiler in a practical manner, revealing expert knowledge of his subject, which he is able to impart with clearness. The book is moreover, convenient in size, and contains in addition to a number of photographs over 80 isometric illustrations drawn in bold line, which illuminate points dealt with in the text.

Slating and tiling are treated in separate sections of the book, and in each section the same sequence is observed. Quantities, colours, sizes and thicknesses with sources of supply are first classified and tabulated, after which the work is described in detail, methods of laying, tools employed and then the processes of forming eaves, ridges, hips and valleys, all being carefully illustrated with a view to the attainment of satisfactory results.

There is in the tiling section a description of the process of the manufacture of tiles, with comparative estimates of the characteristics of different sorts of pantile and also of concrete and asbestos tiles now on the market.

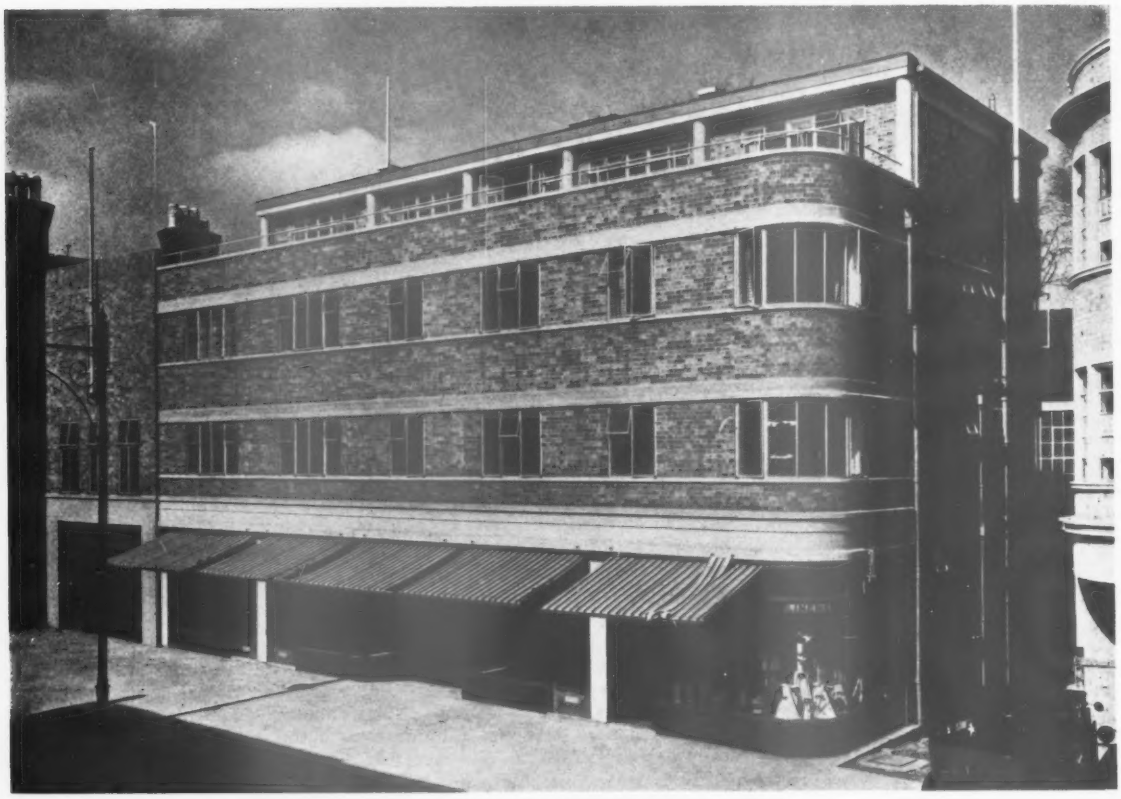
The text ends with an explanation of the method recommended for taking off quantities, and the book can be strongly recommended as a well-arranged and exceptionally useful effort.

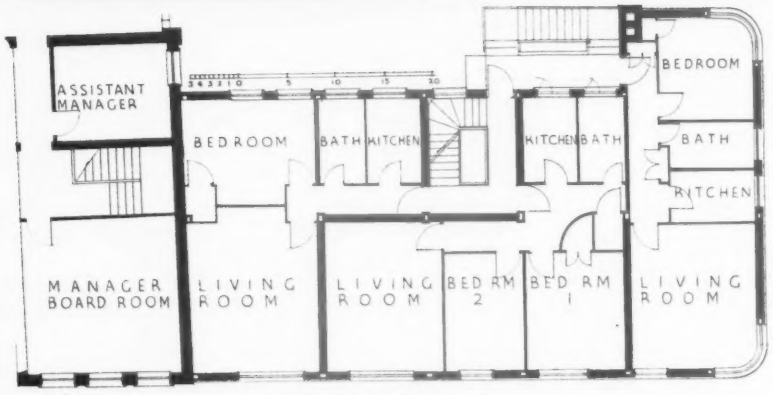
Publications Received

Amounderness. Report to the Fylde Regional Committee. By Thomas H. Mawson and Son, in collaboration with James Crossland. London : B. T. Batsford. Price 21s.

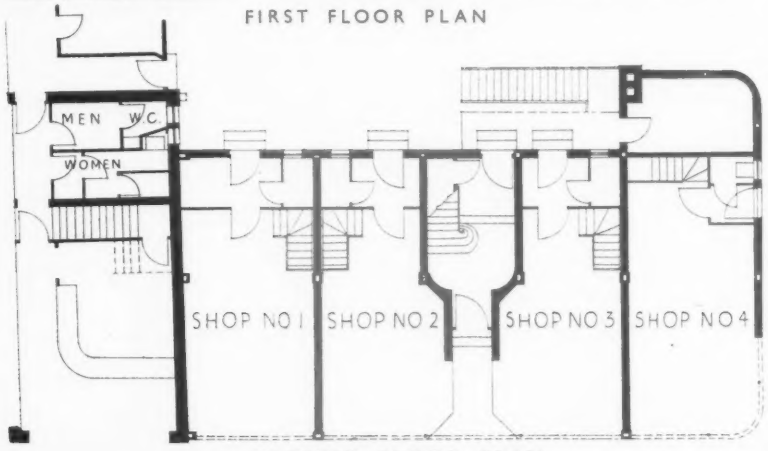
Shell Guides : *Northumberland and Durham.* By Thomas Sharp. *Bucks.* By John Nash. Batsford. Price 2s. 6d. each.

SHOPS AND FLATS, CAMBRIDGE:





FIRST FLOOR PLAN

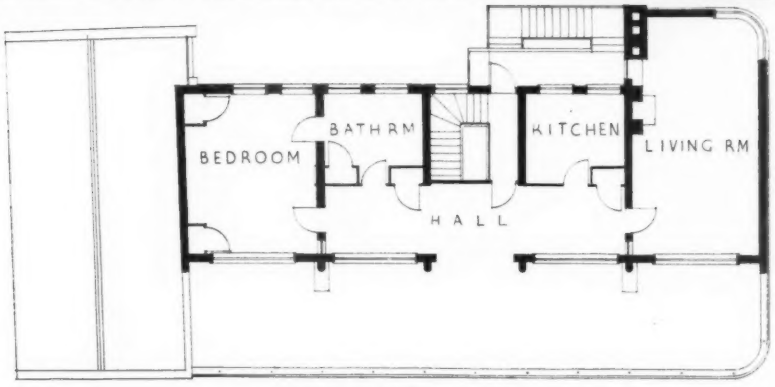


GROUND FLOOR PLAN

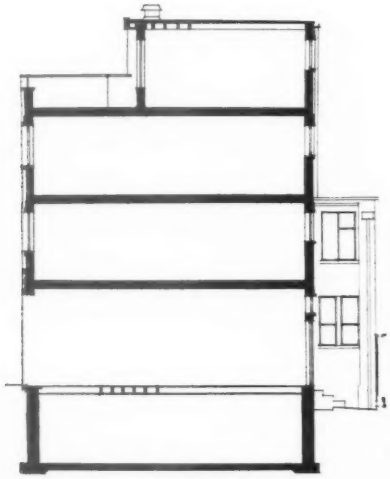
PROBLEM—*Firstly to provide a new building containing four shops with storage basements and seven flats over, all to be let; secondly, to convert an existing warehouse into receiving and general offices for a printing works behind the new building. Ample display space, a lavatory and rear entrance was desired for each shop and, for the flats, a living-room, one or two bedrooms, bathroom and kitchen big enough to work in. Two flats originally planned on the top floor were converted into one and leased by one of the architects.*

CONSTRUCTION — *Steel frame to third floor level, 9-in. brick between flats. Ground floor, wood joists; upper floors, inverted pre-cast* R.C. *beams and deal; roof terrace, pre-cast* R.C. *beams with patent bituminous and asbestos tile finish; upper roof, joists, aluminium foil and asphalt composition. Continuous steel lintols, concrete cased, over all windows; balconies,* R.C. *with quarry tile finish. Above, the principal elevation to Regent Street.*

DESIGNED BY HUGHES AND BICKNELL



THIRD FLOOR PLAN



SECTION

ELEVATIONAL FINISH—*Brown-buff Cambridge facings ; concrete bands brushed while green ; shopfronts of oiled teak with polished black artificial stone stall-risers ; windows, standard steel painted cream ; cills and copings, artificial stone.*

INTERNAL FINISHES—*Shops, lime plaster ; stairs, patent wall paper finished gold,* R.C. *stairs with gurjun treads and w.i. handrail ; flats, lime plaster with hard plaster, enamelled, in kitchens and bathrooms—kitchens with built-in equipment.*

Above, roof terrace at third floor level.

G

SHOPS AND OFFICES, CAMBRIDGE

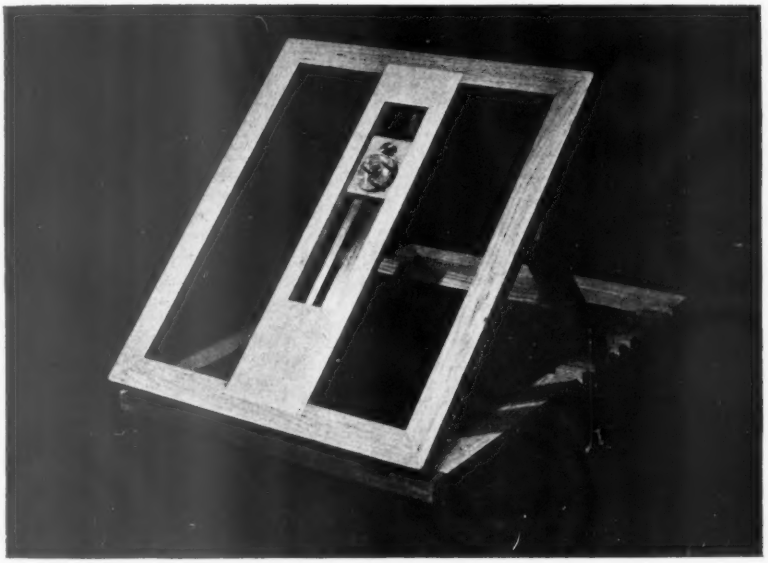
DESIGNED BY HUGHES AND BICKNELL

SERVICES—*Constant hot water from gas boiler in basement; gas fires and electric power points; electric and gas points in kitchens; community aerial system wired to all flats; electric heating to stairway.*

COST—*Contract price for shops and flats—£6,414. Cost per cube ft., 1s. 5d. Contract price for alteration of warehouse—£889.*

Top, left, gallery in third floor flat; above, a typical kitchen; left, living-room in third floor flat.

For list of general and sub-contractors see page 1073.



TRADE NOTES

[*EDITED BY PHILIP SCHOLBERG*]

Furniture for Draughtsmen

"FOR Sale, unique architect's desk." Glancing through the JOURNAL'S small advertisements last week, I stopped for a moment at this one and wondered, first of all, how many unique architects there were who would need a desk like that, and then, afterwards, whether manufacturers make any real attempt to give the architect the sort of thing he really needs. For most people seem to use a fairly shaky trestle, propping their boards at the necessary angle with a few sample bricks. There are, I know, quite a number of elaborate drawing desks on the market giving adjustments for height and angle, but the really efficient ones are quite expensive and the cheaper models tend to be weak and sway a little laterally, while the frictional grip on the adjustments is liable to be not too good.

●

My enquiries finally led me to Mr. E. J. Saunderson, who makes adjustable easel units to put on a table, and also combines them with various types of desk, when the easel unit is arranged to fold flat and give a flush surface. The movement is very nearly universal, for the angle of tilt is adjustable, the board can be rotated, and there is a further to and fro sliding movement to give an adjustment for height and make it possible to reach the top of the board easily. The detail photograph of the easel shows how it is all done, and the board is screwed to the central boss which gives the sliding and rotating movement. These desks and easels have been designed mainly for use in advertising studios, where they apparently use rather light unbattened boards, and the easel, as at present marketed, is therefore not really suitable for the architect's heavier battened board. Mr. Saunderson, however, thinks that, in principle, his easels are the sort of thing that architects ought to have, and is quite prepared to turn out a larger and heavier easel to do the job properly. At any rate, his ideas may well save a certain amount of floor space in offices where perspectives are done on easels. (*E. J. Saunderson, 29 Holders Hill Crescent, Hendon, N.W.4.*)

Electrical Heating for Concrete

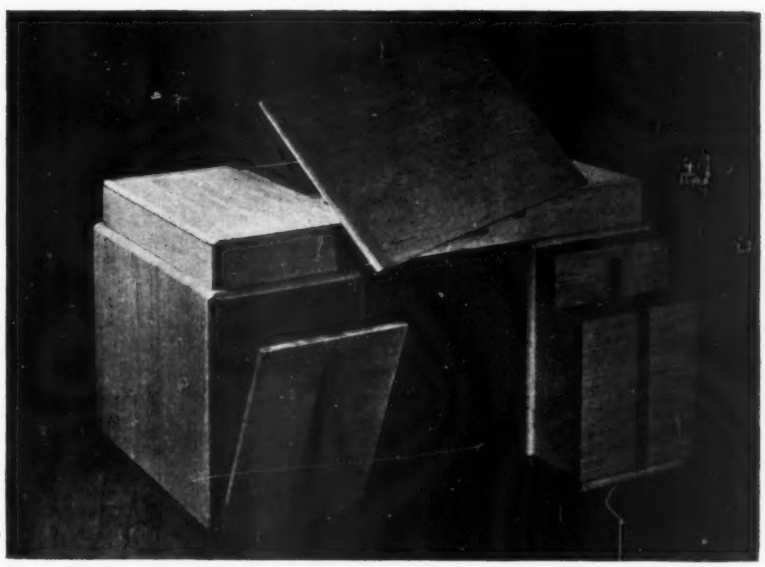
I do not know how many days' concreting are lost each year in this country because of frost, but in colder countries lost days can be quite a serious problem—serious enough, anyway, to make Swiss engineers experiment with the possibilities of electrical heating for preventing freezing after pouring. According to a recent issue of the *Electrical Review*, several methods have been tried: horizontal surfaces are covered with tarpaulins, to the underside of which are fixed 5-in. wide metal strips 2 ins. apart, alternate strips being connected to the opposite poles of an A.C. circuit. For beams these sheets are placed on opposite sides of the moulds, and the third method consisted of driving short lengths of scrap reinforcing rods into the concrete after pouring, these being connected to the current source and forming electrodes.

●

For safety's sake the current is stepped down to about 25 or 50 volts, this range allowing for variations in the speed of heating. The resultant concrete is claimed to be equal in strength to that poured under normal conditions, and a loading of 500 watts was used per cubic yard of concrete per degree F. rise in temperature, this with a total heating period of about 15 or 16 hours and an atmospheric temperature of about 15° F.—far lower than is likely to be met with in this country, where a few degrees of frost overnight mean double-column headings in the dailies. While it seems unlikely that these methods will be widely used in this country, it is useful to know, in these days of penalty clauses, that something of the kind can be done without a great deal of trouble and at no outrageous cost.

Dust from Concrete Floors

The Adamite Company have just marketed a new concrete hardener under the name of Colemanoid No. 3. Sold in liquid form, it is diluted with an equal quantity of water and then brushed over the surface to be treated, two or three coats being necessary, preferably at 24-hour intervals, although four hours is enough. The result is something approaching a case-hardened finish which, under test, shows that the abrasive resistance of ordinary concrete is increased by about 85 per cent.; this according to B.S.S. No. 368, "Rate of Wear Tests for Concrete Flags." From which it may be



The drawing table described in the notes on this page.

assumed that it *is* possible to do something about the ever-recurring problem of dusty floors in places like garages, workshops and factories, for the mixture penetrates to a depth of ¼ to ½ an inch, and incidentally is oil and grease-proof. One gallon of the liquid is enough for 10 to 14 super yards of flooring, depending on the density of the concrete. (*The Adamite Company, Ltd., Manfield House, Strand, London, W.C.2.*)

Concrete Vibrators

Vibrated concrete has been developed a good deal during the last few years, both in America and in France, though on building work, apart from Mr. Livett's Leeds flats built on the Mopin system, no particular effort seems to have been made to extend its use in this country. Several firms have been marketing vibrator units for clipping to shuttering, but I have recently come across a new one called the Altex. In this type the motor runs at constant speed, giving 6,000 vibrations a minute, and the amplitude of the vibrations can be quickly altered to any of four values from maximum to minimum, current consumption varying from 80 to 250 watts. Fixing is simple and is by means of a U-shaped holder and a tapered pin.

●

Since the amplitude of the vibrations is so easily adjusted, there should be some reduction in overhead charges, since there is no need for the contractor to buy a whole range of different sizes, and distribution on the job should also be simplified. The price of the vibrator is £22 10s., and for safety's sake the supply voltage is stepped down to 37 volts, the manufacturers supplying a totally enclosed transformer unit large enough to supply 4 vibrators at the price of £18. (*Vibrators, Ltd., Wellington House, 125/130 Strand, London, W.C.2.*)

Radiant Heating

Richard Crittall have recently published a booklet on "Warming for Health and Comfort." In a short foreword, Sir Leonard Hill stresses the advantages, from a health point of view, of low temperature radiant ceiling panels, and the rest of the booklet, which is very well illustrated in the Dell and Wainwright manner, goes into this method in further detail, describing not only the technique of applying radiant panels of different types, but also discussing such important subsidiary questions as plastering, thermostats, and the speed at which heat may be applied when the job is new. (*Richard Crittall & Co., Ltd., Bush House, Aldwych, London, W.C.2.*)

LAW REPORT

HOUSING ACT—CLEARANCE ORDER

Rex v. *Minister of Health.—ex parte Hack.—King's Bench Division. Before Lord Chief Justice and Justices Swift and Humphreys.*

A RULE *nisi* in which it was sought to prohibit the Minister of Health from holding a public inquiry at West Ham in connection with a proposal by the local Council compulsorily to purchase thirty-nine houses under a clearance scheme came up for argument by the Court.

The rule *nisi* was granted last September to Mr. Sydney John James Hack, the owner of the houses. It was directed to the Minister of Health and called upon him to show cause why he should not be prohibited from holding the inquiry.

After hearing arguments by counsel, the Court refused to prohibit the Minister from holding the inquiry and discharged the rule with costs against Mr. Hack.

The Solicitor-General (Sir Terence O'Connor, K.C.) appeared to oppose the rule on behalf of the Minister of Health. Mr. Trustram Eve, K.C., was leading counsel for the West Ham Council. Mr. Hack was represented by Mr. C. S. Rewcastle, K.C.

Sir Terence O'Connor explained that the West Ham Council had resolved to acquire compulsorily thirty-nine houses belonging to Mr. Hack as part of a clearance scheme. It was alleged that the houses were unfit for human habitation. Objection to the inquiry which the Minister proposed to hold into the matter was taken on the ground that the notice relating to the property, which had been served by the Council upon Mr. Hack, was not one such as was called for under section 63 of the Housing Act of 1935. It was contended that the notice did not give with sufficient particularity the facts which the Council alleged constituted their chief reasons for asserting that the properties mentioned were unfit for human habitation.

Three points appeared to be raised. The first was whether prohibition lay in view of the provisions of a certain section of the Housing Act of 1930; the second was whether it was sufficient to satisfy the provisions of section 63 of the 1935 Act if the Minister himself was satisfied with the notice served upon the owner of the property; and the third was whether the notice served by the Council was sufficient.

The case for Mr. Hack, continued the Solicitor-General, seemed to be that the notice should have the particularity of pleadings in a civil action and that it should be stated which walls were in a state of disrepair, which rooms were damp, and other similar data which would enable the owner of the house to test the case upon properly completed issues.

Replying to Mr. Justice Swift, the Solicitor-General said that all the Minister of Health had to be satisfied about was that the notice was a proper one. "At the public inquiry it might be that facts on which the West Ham Council rely may not be deemed to be supported," he added.

Mr. C. S. Rewcastle, K.C., declared that his client did not desire to burke or hold up the inquiry. Nor did he seek to question the order so long as it followed the provisions of the Act. But his submission was that the fact that section 63 of the 1935 Act required the owner of the property to be served with a notice meant that he should be told something more than that the property had been included in a scheme of clearance because it was deemed unfit for human habitation.

Mr. Rewcastle went on to contend that section 63 necessarily meant that the owner of the property must be told the particular reasons prompting the local council in their wish to acquire a house or houses. The owner was entitled to know exactly why he was penalised. The houses in this case were mostly on full repairing leases and Mr. Hack was entitled to take steps to get them put in proper order. But he could not do that unless he knew the details on which the Council relied. At the moment, added counsel, the notices appeared simply to indicate that the houses were unfit for human habitation on every possible ground.

The Lord Chief Justice, giving judgment, said it appeared to him that the application by Mr. Hack for a rule was misconceived. Section 63 of the 1935 Housing Act dealt with some of the steps which had to be taken in regard to a clearance order or compulsory purchase that was in contemplation. It was provided that where a person upon whom notice of such order was served had duly made an objection to the allegation that the property was unfit for human habitation there was a limit of time, with reservations, to the holding of a public inquiry. The material words in the section were to the effect that the Minister of Health should not cause a public inquiry to be held earlier than fourteen days after it had been shown to his satisfaction that the local authority had served a notice in writing upon the objector stating what facts it was alleged were the chief ground for being satisfied that the building in question was unfit for human habitation.

After pointing out that the object of the section was to offer the objector a reasonable interval before the public inquiry was held, Lord Hewart said that the moment from which the interval must operate was the moment when the Minister of Health was satisfied that the requirements of the section regarding the notice had been fulfilled.

It seemed, in view of the plain words of the section, that the result was clear. No doubt the Minister must not with unreasonable readiness or culpable complacency be satisfied. But if he was satisfied, the public inquiry could be held.

"When I look at the bundle of notices received by Mr. Hack I cannot conceive—except for controversial purposes—that it can be seriously argued that the Minister, as a reasonable man, ought not to be satisfied that sufficient notice of the description required was served on Mr. Hack," added the Lord Chief Justice. "This rule clearly ought to be discharged."

Justices Swift and Humphreys agreed that the rule should be discharged.

The Solicitor-General asked for costs on behalf of the Minister of Health and Lord Hewart said the Court thought the rule ought to be discharged with costs. "But not with two sets of costs," he added.

Mr. Trustram Eve, K.C., said that if there was only to be one set of costs then, according to the usual rule, his clients ought to get them.

The Lord Chief Justice said that Mr. Hack would, of course, have to pay his own costs and there would be one set of costs against him. "Perhaps the Minister and the West Ham Council could apportion them between them," he remarked.

Mr. Justice Swift commented that it did not seem to matter much whether the Minister or the Council had the costs, because whichever of them did not, it came out of the ratepayers' pocket.

The Solicitor-General remarked that he was a taxpayer and not a ratepayer of West Ham.

"The Crown has a wider back than the West Ham Council," observed Mr. Trustram Eve.

Lord Hewart said that the Court thought

that perhaps the better course would be to give one set of costs against Mr. Hack to the Minister of Health and commend the West Ham Council to the good offices of the Minister.

The Solicitor-General "I am sure that observation will bear fruit."

THE BUILDINGS ILLUSTRATED

SHOPS AND FLATS, CAMBRIDGE (pages 1068-1070). The general contractors were Kerridge, Ltd., who were also responsible for the demolition, excavation, foundations, dampcourses, reinforced concrete, plumbing, stairtreads, breeze block and brick partitions, glass, patent glazing, woodblock flooring, waterproofing material, shopfronts, kitchen fittings, plaster and joinery. The sub-contractors and suppliers included: Cambridge Artificial Stone Co., artificial stone; Watts and Son, Ltd., bricks; H. Young & Co., Ltd., structural steel; Trussed Concrete Steel Co., Truscon block floors; Bell Range and Foundry Co., grates; Bratt Colbran, gas fixtures and gas fires; Cambridge Town and University Gas Co., gasfitting; Robert Dent, gas fires, hot water boilers, metalwork and stair rail; Electric Wiring and Repair Co., electric wiring, electric heating and bells; Oswald Hollman, electric light fixtures; Dent and Hellyer, Ltd. baths; A. Macintosh and Sons, Ltd., sanitary fittings; James Gibbons, Ltd., door furniture; The Crittall Manufacturing Co., casements and window furniture; Post Office, telephones; Haywards, iron staircases and escape stair; Artistic Blind Co., sunblinds; I.C.I. Rexine, Ltd., staircase walls and wallpapers; Cambridge Water Co., water supply; Manu-Marble Co., marble, fire surrounds, and mantels; Kolster-Brandes, Ltd., Rejectostat community aerial system; D. Anderson and Son, thermotile and mac-asphalt roofings.

THE WEEK'S BUILDING NEWS

LONDON AND DISTRICT (15 miles radius)

EAST FINCHLEY. *Flats.* Messrs. Cole, Adams and Phillips, on behalf of the Board of Management of the National Hospital, are to erect a large block of flats approximately on the site of the present convalescent home buildings at East Finchley, with attractive amenities such as squash courts, badminton courts and ornamental gardens.

FINCHLEY. *Flats.* Plans passed by the Finchley Corporation: 14 flats, Abingdon Road, Mr. E. P. King; 22 houses, Hillcrest Gardens, Messrs. Golders, Ltd.

FINCHLEY. *Library.* Finchley Corporation has obtained sanction for a loan of £12,031 for the erection of a library at East End.

MARYLEBONE. *Flats, etc.* Plans passed by the Marylebone B.C.: Elevation of proposed news cinema, Baker Street, Messrs. J. Stanley Beard and Bennett; offices and workrooms, Clipstone Street, Mr. R. W. Barton; flats, Portland Place, Mr. E. A. Stone; flats, Wellington Road, Mr. J. E. Barton.

SOUTHWARK. *Factory, etc.* Plans passed by the Southwark B.C.: Factory, Meymott Street, Mr. C. T. Morris; warehouse, Clock Place, Mr. J. A. Pywell.

SUTTON. *Houses.* Plans passed by the Sutton Coldfield Corporation: 12 houses, Clarence Gardens, Mr. A. Robinson; eight houses, Eachelhurst Road, Derby Estates, Ltd.; six houses, George Frederick Road, Mrs. Cookham.

ST. PANCRAS. *Electricity Department.* The St. Pancras B.C. is to complete the scheme for new premises in Pratt Street for the electricity department, at a cost of £12,000.

SOUTHERN COUNTIES

CHISLEHURST. *School.* The Kent Education Committee has obtained sanction for a loan of £28,981 for the erection of an elementary school in Chislehurst.

HOVE. *Houses.* Plans submitted to the Hove Corporation: 10 houses, Poplar Avenue, Winchester Estate Development Co.; 16 houses, Nevill Avenue, Mr. F. Colman

OXFORD. *Aerodrome.* The Oxford Corporation has obtained sanction to borrow £10, 586 in connection with the provision of an aerodrome.

SURREY. *School.* The Surrey Education Committee has decided to build a new mixed central school for 320 children on the site which is being acquired in view of the fact that the additions necessary to convert the Ash Vale school into a central school would probably cost as much as a new school.

MIDLAND COUNTIES

OLDBURY. *Houses.* Plans passed by the Oldbury Corporation: 12 houses, Barston Road, Birch Farm Estate, C. Nokes and Son; six houses, Churchbridge, Smallwood, Parks and Edwards; 18 houses, Barnford Crescent, Mr. R. Perkins; 61 houses, Causeway Green Estate, Mr. T. Mucklow.

SHROPSHIRE. *Extensions.* The Shropshire C.C. is considering a revised scheme for extension of Boreatton Park Mental Colony, at a cost of £25,268.

SHROPSHIRE. *Police Station, etc.* The Shropshire C.C. has approved plans for the erection of a new police station at Market Drayton, together with a sergeant's house, superintendent's house, and four constables' houses at Salisbury Road.

SHROPSHIRE. *School.* The Shropshire Education Committee is to erect a senior council school for about 250 children in Ellesmere.

SHROPSHIRE. *Smallholdings.* The Shropshire C.C. is to purchase 282 acres at Lacon Hall Farm for the provision of smallholdings.

SHROPSHIRE. *School.* The Shropshire Education Committee is to erect a school at Much Wenlock for approximately 300 children.

SHROPSHIRE. *School.* The Shropshire Education Committee is to erect a senior school for about 360 children in Whitchurch.

TIPTON. *Factory, etc.* Plans passed by the Tipton U.D.C.: Factory, off Bloomfield Road, Tipton Tub and Tube Co., Ltd.; 92 houses and three shops, Willingsworth Road, Mr. H. Jenkins.

NORTHERN COUNTIES

LEEDS. *Ambulance Station.* The Leeds Corporation has acquired a site off Sexton Lane, for the erection of a central ambulance station.

LEEDS. *Laundry.* The Leeds Corporation has purchased land, off Clarence Road, for the erection of a central laundry.

LEEDS. *Cinemas.* The Leeds Corporation is to give notice under the Town Planning Act of the applications of Mr. H. Womersley and Mr. Albert Cansfield respectively, for consent to the erection of cinemas on land in Town Street, Bramley, and at the junction of Henconner Lane and Stanningley Road, Bramley.

LEEDS. *Public Baths.* The Leeds Corporation has purchased land in Beeston Road for the erection of baths.

LEEDS. *Houses.* Houses are to be erected by Mr. Ernest Haley on land in Bentley Mount, Monkbridge Mount and Back Bentley Grove Meanwood, Leeds.

LEEDS. *Fire Station.* At Leeds Corporation the City Engineer submitted schemes for reconstruction of the Central Fire Station on the present site in Park Street, and the erection of a new central fire station in Regent Street, and it was decided that detailed information be submitted by the City Engineer to the General Committee with respect to the estimated cost of the two schemes.

LEEDS. *Flats.* The Leeds Corporation has approved plans by the Housing Director for the development of the Marlborough Street and Little Queen Street unhealthy areas, by the erection of flats to accommodate 196 families, and also 10 shops.

LEEDS. *Flats.* The Leeds Corporation has approved plans by the Housing Director for the erection of 24 flats for aged persons on the Wyther Housing Estate.

MANCHESTER. *Extension.* The Manchester Education Committee is to enlarge the residential open-air school at Styal, at a cost of £6,727.

MANCHESTER. *High School.* The Manchester Education Committee is to erect a high school for girls in Whalley Range, at a cost of £53,618.

MANCHESTER. *Houses.* The Manchester Corporation has purchased land at Louisa Street, Openshaw, at £4,770, for rehousing purposes.

SALFORD. *Recreation Room.* The Salford Corporation is to erect a recreation room at Nab Top sanatorium, at a cost of £1,650.

SHEFFIELD. *Houses, etc.* Plans passed by the Sheffield Corporation: Eight houses, Wisewood Lane, Mr. F. Lamb; 10 houses, Rivelin Street, Bryon Fletcher & Co., Ltd.; 14 houses, Elm Lane, Mr. S. G. Bailey; 26 houses, Norton; Lees Crescent, F. B. Skinner and Sons, Ltd. 16 houses, Cobnar Avenue, Mr. D. Kay; 36 houses, Ridgehill Avenue, Hallewell Estates, Ltd.; furniture factory, Union Lane, Atkin Ansell & Co., Ltd.; eight houses, Skelwith Road, Mr. J. W. Broadhead; workshops and offices, Saxon Road, S. & J. Kitchin, Ltd.; eight houses, Hemper Lane, Mr. R. Jones; cinema and shops, Attercliffe Road, Mr. H. J. Shepherd; seven houses, Norton Park Road, Mr. J. T. Redmile; 12 houses, Hemsworth Road, Newhouses (Builders), Ltd.; 24 houses, Hemper Lane, Mr. R. Jones; workshops and store, Arundel Lane, Charles Kirkby and Sons, Ltd.; 22 houses, Sheffield Road, Fowler, Sandford and Potter; nine houses, Bramley Lane, E. & H. Oliver; 11 houses, Manor Lane, Mr. J. C. Mason; 25 houses, Wheatley Grove, Mr. M. Marcroft; factory, Nursery Lane, Mrs. L. Harrison; workshops and warehouse, Pitt Street, Mr. R. J. Pasley.

SHEFFIELD. *Cinema.* The Sheffield Corporation Estates Committee has leased land at Raisen Hall, Shirecliffe Estate, to Mr. M. J. Gleeson, as a site for a cinema.

SHEFFIELD. *Church.* The Sheffield Corporation has sold one acre on the Parson Cross Estate to the Church Authorities, as the site for a church.

TIPTON. *Houses.* The Tipton U.D.C. has asked the Housing Director to prepare plans for the erection of a further 132 houses on the Tibbington Estate.

WARRINGTON. *Houses.* The Warrington Corporation is to erect 200 houses at Long Lane to plans prepared by the borough engineer.

WARRINGTON. *Houses.* Plans passed by the Warrington Corporation: 14 houses, Eastford Road, Mr. W. Berry.

YORK. *Houses, etc.* Plans passed by the York Corporation: Ten houses, North Lane, Dringhouses, G. E. Hopkinson and Son; 330 houses and 36 flats, Gale Lane Estate, York Corporation; store, Haxby Road, Rowntree & Co., Ltd.

YORK. *School.* The York Education Committee has selected a site for a school on the Water Lane Estate.

RATES OF WAGES

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

			I. s.	I. d.	II. s.	II. d.
A	ABERDARE ...	S. Wales & M.	1	7	1	2½
A	Aberdeen ...	Scotland	1	7	1	2½
A_1	Abergavenny ...	S. Wales & M.	1	6½	1	2
A_3	Abingdon ...	S. Counties	1	5½	1	1½
A	Accrington ...	N.W. Counties	1	7	1	2½
A_3	Addlestone ...	S. Counties	1	6	1	1½
A	Adlington ...	N.W. Counties	1	7	1	2½
A	Airdrie ...	Scotland	*1	7	1	2½
C	Aldeburgh ...	E. Counties	1	3	0	11½
A	Altrincham ...	N.W. Counties	1	7	1	2½
B_3	Appleby ...	N.W. Counties	1	3½	0	11½
A	Ashton-under-Lyne	N.W. Counties	1	7	1	2½
B	Aylesbury ...	S. Counties	1	5	1	0½
B	BANBURY ...	S. Counties	1	5	1	0½
B_1	Bangor ...	N.W. Counties	1	4½	1	0½
A_3	Barnard Castle	N.E. Coast	1	5½	1	1½
A	Barnsley ...	Yorkshire	1	7	1	2½
B	Barnstaple ...	S.W. Counties	1	5	1	0½
A	Barrow ...	N.W. Counties	1	7	1	2½
A	Barry ...	S. Wales & M.	1	7	1	2½
B	Basingstoke ...	S.W. Counties	1	5	1	0½
A_3	Bath	S.W. Counties	1	6	1	1½
A	Batley ...	Yorkshire	1	7	1	2½
A_3	Bedford ...	E. Counties	1	6	1	1½
A_2	Berwick-on-Tweed	N.E. Coast	1	6	1	1½
A_3	Bewdley ...	Mid. Counties	1	6	1	1½
B	Bicester ...	S. Counties	1	5	1	0½
	Birkenhead ...	N.W. Counties	*1	8	1	3
A	Birmingham ...	Mid. Counties	1	7	1	2½
A_1	Bishop Auckland	N.E. Coast	1	6½	1	2
A	Blackburn ...	N.W. Counties	1	7	1	2½
A	Blackpool ...	N.W. Counties	1	7	1	2½
A	Blyth	N.E. Coast	1	7	1	2½
B	Bognor ...	S. Counties	1	5	1	0½
A	Bolton ...	N.W. Counties	1	7	1	2½
A_3	Boston ...	Mid. Counties	1	5½	1	1½
A_2	Bournemouth...	S. Counties	1	6	1	1½
B_2	Bovey Tracey	S.W. Counties	1	4	1	0
A	Bradford ...	Yorkshire	1	7	1	2½
A_1	Brentwood ...	E. Counties	1	6½	1	2
A	Bridgend ...	S. Wales & M.	1	7	1	2½
B	Bridgwater ...	S.W. Counties	1	5	1	0½
A_1	Bridlington ...	Yorkshire	1	6½	1	2
A	Brighouse ...	Yorkshire	1	7	1	2½
A	Brighton ...	S. Counties	1	6	1	1½
A	Bristol ...	S.W. Counties	1	7	1	2½
B	Brixham ...	S.W. Counties	1	5	1	0½
A	Bromsgrove ...	Mid. Counties	1	7	1	2½
B	Bromyard ...	Mid. Counties	1	5	1	0½
A	Burnley ...	N.W. Counties	1	7	1	2½
A	Burslem ...	Mid. Counties	1	7	1	2½
A	Burton-on-Trent	Mid. Counties	1	7	1	2½
A	Bury	N.W. Counties	1	7	1	2½
A_1	Buxton ...	N.W. Counties	1	6½	1	2
A_1	CAMBRIDGE	E. Counties	1	6½	1	2
B_1	Canterbury ...	S. Counties	1	4½	1	0½
A	Cardiff ...	S. Wales & M.	1	7	1	2½
A	Carlisle ...	N.W. Counties	1	7	1	2½
B	Carmarthen ...	S. Wales & M.	1	5	1	0½
B	Carnarvon ...	N.W. Counties	1	5	1	0½
A_1	Carnforth ...	N.W. Counties	1	7	1	2½
A	Castleford ...	Yorkshire	1	7	1	2½
A_3	Chatham ...	S. Counties	1	5½	1	1½
A_3	Chelmsford ...	E. Counties	1	5½	1	1½
A_3	Cheltenham ...	S.W. Counties	1	5½	1	1½
A	Chester ...	N.W. Counties	1	7	1	2½
A	Chesterfield ...	Mid. Counties	1	7	1	2½
B	Chichester ...	S. Counties	1	5	1	0½
A	Chorley ...	N.W. Counties	1	7	1	2½
B_1	Cirencester ...	S. Counties	1	4½	1	0½
A	Clitheroe ...	N.W. Counties	1	7	1	2½
A	Clydebank ...	Scotland	1	7	1	2½
A	Coalville ...	Mid. Counties	1	7	1	2½
A_3	Colchester ...	E. Counties	1	6	1	1½
A_1	Colne	N.W. Counties	1	6½	1	2
A_3	Colwyn Bay ...	N.W. Counties	1	6	1	1½
A_1	Consett ...	N.E. Coast	1	6½	1	2
A_3	Conway ...	N.W. Counties	1	6	1	1½
A	Coventry ...	Mid. Counties	1	7	1	2½
A_3	Crewe	N.W. Counties	1	6	1	1½
A_3	Cumberland ...	N.W. Counties	1	5½	1	1½
A	DARLINGTON	N.E. Coast	1	7	1	2½
A	Darwen ...	N.W. Counties	1	7	1	2½
B_1	Deal	S. Counties	1	4½	1	0½
A_3	Denbigh ...	N.W. Counties	1	5½	1	1½
A	Derby	Mid. Counties	1	7	1	2½
A	Dewsbury ...	Yorkshire	1	7	1	2½
B	Didcot ...	S. Counties	1	5	1	0½
A	Doncaster ...	Yorkshire	1	7	1	2½
B_1	Dorchester ...	S.W. Counties	1	4½	1	0½
A_2	Driffield ...	Yorkshire	1	5½	1	1½
A_3	Droitwich ...	Mid. Counties	1	6	1	1½
A	Dudley ...	Mid. Counties	1	7	1	2½
A_3	Dumfries ...	Scotland	1	6	1	1½
A	Dundee ...	Scotland	1	7	1	2½
A	Durham ...	N.E. Coast	1	7	1	2½
A_2	EASTBOURNE ...	S. Counties	1	6	1	1½
A_1	Ebbw Vale ...	S. Wales & M.	1	6½	1	2
A	Edinburgh ...	Scotland	1	7	1	2½
A_2	Exeter ...	S.W. Counties	*1	6	1	1½
B	Exmouth ...	S.W. Counties	1	5	1	0½
A_3	FELIXSTOWE	E. Counties	1	5½	1	1½
A_3	Filey	Yorkshire	1	5½	1	1½
A	Fleetwood ...	N.W. Counties	1	7	1	2½
B_1	Folkestone ...	S. Counties	1	4½	1	0½
A	Frodsham ...	N.W. Counties	1	7	1	2
B_2	Frome	S.W. Counties	1	4	1	0
A	GATESHEAD	N.E. Coast	1	7	1	2½
B	Gillingham ...	S. Counties	1	5	1	0½
A_1	Glamorganshire, Rhondda Valley District	S. Wales & M.	1	6½	1	2
A	Glasgow ...	Scotland	1	7	1	2½
A_2	Gloucester ...	S.W. Counties	1	6	1	1½
A_2	Goole	Yorkshire	1	6	1	1½
A_2	Gosport ...	S. Counties	1	6	1	1½
A_3	Grantham ...	Mid. Counties	1	5½	1	1
A_1	Gravesend ...	S. Counties	1	6½	1	2
A	Greenock ...	Scotland	*1	7	1	2
A	Grimsby ...	Mid. Counties	1	7	1	2
B	Guildford ...	S. Counties	1	5	1	0
A	HALIFAX ...	Yorkshire	1	7	1	2½
A	Hanley ...	Mid. Counties	1	7	1	2½
A	Harrogate ...	Yorkshire	1	7	1	2½
A	Hartlepools ...	N.E. Coast	1	7	1	2½
B	Harwich ...	E. Counties	1	5	1	0½
B	Hastings ...	S. Counties	1	5	1	0½
A_2	Hatfield ...	S. Counties	1	6	1	1½
B	Hereford ...	S.W. Counties	1	5	1	0½
A_2	Hertford ...	E. Counties	1	6	1	1½
A	Heysham ...	N.W. Counties	1	7	1	2½
A	Howden ...	N.E. Coast	1	7	1	2½
A	Huddersfield ...	Yorkshire	1	7	1	2½
A	Hull	Yorkshire	1	7	1	2½
A	ILKLEY ...	Yorkshire	1	7	1	2½
A	Immingham ...	Mid. Counties	1	7	1	2½
A_2	Ipswich ...	E. Counties	1	6	1	1½
B_2	Isle of Wight ...	S. Counties	1	4	1	0
A	JARROW ...	N.E. Coast	1	7	1	2½
A	KEIGHLEY ...	Yorkshire	1	7	1	2½
A_2	Kendal ...	N.W. Counties	1	5½	1	1½
A_2	Keswick ...	N.W. Counties	1	5½	1	1½
A_1	Kettering ...	Mid. Counties	1	6½	1	2
A_2	Kidderminster	Mid. Counties	1	6	1	1½
B_1	King's Lynn ...	E. Counties	1	4½	1	0½
A	LANCASTER ...	N.W. Counties	1	7	1	2½
A_1	Leamington ...	Mid. Counties	1	6½	1	2
A	Leeds	Yorkshire	1	7	1	2½
A	Leek	Mid. Counties	1	7	1	2½
A	Leicester ...	Mid. Counties	1	7	1	2½
A	Leigh	N.W. Counties	1	7	1	2½
B	Lewes	S. Counties	1	5	1	0½
A_3	Lichfield ...	Mid. Counties	1	6	1	1½
A	Lincoln ...	Mid. Counties	1	7	1	2½
	Liverpool ...	N.W. Counties	*1	8½	1	3½
A_2	Llandudno ...	N.W. Counties	1	6	1	1½
A	Llanelly ...	S. Wales & M.	1	7	1	2½
	London (12-miles radius)		1	8½	1	3½
	Do. (12-15 miles radius)		1	8	1	3
A	Long Eaton ...	Mid. Counties	1	7	1	2½
A	Loughborough ...	Mid. Counties	1	7	1	2½
A_1	Luton	E. Counties	1	6½	1	2
A	Lytham ...	N.W. Counties	1	7	1	2½
A_1	MACCLESFIELD	N.W. Counties	1	6½	1	2
A_2	Maidstone ...	S. Counties	1	5½	1	1½
A_2	Malvern ...	Mid. Counties	1	5½	1	1½
A	Manchester ...	N.W. Counties	1	7	1	2½
A	Mansfield ...	Mid. Counties	1	7	1	2½
B_1	Margate ...	S. Counties	1	4½	1	0½
A_2	Matlock ...	Mid. Counties	1	5½	1	1½
A_1	Merthyr ...	S. Wales & M.	1	6½	1	2
A	Middlesbrough	N.E. Coast	1	7	1	2½
A_2	Middlewich ...	N.W. Counties	1	6	1	1½
B_2	Minehead ...	S.W. Counties	1	4	1	0
	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1	4	1	0
A	Morecambe ...	N.W. Counties	1	7	1	2½
A_2	NANTWICH ...	N.W. Counties	1	6	1	1½
A	Neath	S. Wales & M.	1	7	1	2½
A	Nelson ...	N.W. Counties	1	7	1	2½
A	Newcastle ...	N.E. Coast	1	7	1	2½
A	Newport ...	S. Wales & M.	1	7	1	2½
A	Normanton ...	Yorkshire	1	7	1	2½
A	Northampton	Mid. Counties	1	7	1	2½
A	North Shields...	N.E. Coast	1	7	1	2½
A	North Staffs ...	Mid. Counties	1	7	1	2½
A_1	Norwich ...	E. Counties	1	6½	1	2
A	Nottingham ...	Mid. Counties	1	7	1	2½
A	Nuneaton ...	Mid. Counties	1	7	1	2½
A_2	OAKHAM ...	Mid. Counties	1	5½	1	1½
A	Oldham ...	N.W. Counties	1	7	1	2½
A_3	Oswestry ...	N.W. Counties	1	5½	1	1½
A_1	Oxford ...	S. Counties	1	6½	1	2
A	PAISLEY ...	Scotland	*1	7	1	2
B_3	Pembroke ...	S. Wales & M.	1	3½	0	11½
A	Perth	Scotland	*1	7	1	2½
A_1	Peterborough....	E. Counties	1	6½	1	2
A	Plymouth ...	S.W. Counties	*1	7	1	2½
A	Pontefract ...	Yorkshire	1	7	1	2½
A_1	Pontypridd ...	S. Wales & M.	1	6½	1	2
A_2	Portsmouth ...	S. Counties	1	6	1	1½
A	Preston ...	N.W. Counties	1	7	1	2½
A	QUEENSFERRY	N.W. Counties	1	7	1	2½
A_2	READING ...	S. Counties	1	6½	1	2
B	Reigate ...	S. Counties	1	5½	1	1½
A_3	Retford ...	Mid. Counties	1	5½	1	1½
A_1	Rhondda Valley	S. Wales & M.	1	6½	1	2
A_3	Ripon	Yorkshire	1	5½	1	1½
A	Rochdale ...	N.W. Counties	1	7	1	2½
B	Rochester ...	S. Counties	1	5	1	0½
A_1	Ruabon ...	N.W. Counties	1	6½	1	2
A	Rugby ...	Mid. Counties	1	7	1	2½
A_2	Rugeley ...	Mid. Counties	1	6	1	1½
A	Runcorn ...	N.W. Counties	1	7	1	2½
A_1	ST. ALBANS ...	E. Counties	1	6½	1	2
A	St. Helens ...	N.W. Counties	1	7	1	2½
B_3	Salisbury ...	S.W. Counties	1	3½	0	11½
A_1	Scarborough ...	Yorkshire	1	6½	1	2
A	Scunthorpe ...	Mid. Counties	1	7	1	2½
A	Sheffield ...	Yorkshire	1	7	1	2½
A	Shipley ...	Yorkshire	1	7	1	2½
A_2	Shrewsbury ...	Mid. Counties	1	6	1	1½
A_2	Skipton ...	Yorkshire	1	6	1	1½
A_3	Slough ...	S. Counties	1	6	1	1½
A_1	Solihull ...	Mid. Counties	1	6½	1	2
A_3	Southampton	S. Counties	1	6	1	1½
A_1	Southend-on-Sea	E. Counties	1	6½	1	2
A	Southport ...	N.W. Counties	1	7	1	2½
A	S. Shields ...	N.E. Coast	1	7	1	2½
A_1	Stafford ...	Mid. Counties	1	6½	1	2
A	Stirling ...	Scotland	1	7½	1	2½
A	Stockport ...	N.W. Counties	1	7	1	2½
A	Stockton-on-Tees	N.E. Coast	1	7	1	2½
A	Stoke-on-Trent	Mid. Counties	1	7	1	2½
B	Stroud ...	S.W. Counties	1	5	1	0½
A	Sunderland ...	N.E. Coast	1	7	1	2½
A	Swansea ...	S. Wales & M.	1	7	1	2½
A_3	Swindon ...	S.W. Counties	1	5½	1	1½
A_1	TAMWORTH ...	N.W. Counties	1	6½	1	2
B	Taunton ...	S.W. Counties	1	5	1	0½
A	Teesside Dist....	N.E. Counties	1	7	1	2½
A_3	Teignmouth ...	S.W. Coast	1	6	1	1½
A	Todmorden ...	Yorkshire	1	7	1	2½
A_1	Torquay ...	S.W. Counties	1	6½	1	2
B_2	Truro	S.W. Counties	1	4	1	0
A_3	Tunbridge Wells	S. Counties	1	5½	1	1½
A	Tunstall ...	Mid. Counties	1	7	1	2½
A	Tyne District....	N.E. Coast	1	7	1	2½
A	WAKEFIELD	Yorkshire	1	7	1	2½
A	Walsall ...	Mid. Counties	1	7	1	2½
A	Warrington ...	N.W. Counties	1	7	1	2½
A_1	Warwick ...	Mid. Counties	1	6½	1	2
A_1	Wellingborough	Mid. Counties	1	6½	1	2
A	West Bromwich	Mid. Counties	1	7	1	2½
A_3	Weston-s.-Mare	S.W. Counties	1	6	1	1½
A_3	Whitby ...	Yorkshire	1	6	1	1½
A	Widnes ...	N.W. Counties	1	7	1	2½
A	Wigan ...	N.W. Counties	1	7	1	2½
B	Winchester ...	S. Counties	1	5	1	0½
A_2	Windsor ...	S. Counties	1	6	1	1½
A	Wolverhampton	Mid. Counties	1	7	1	2½
A_2	Worcester ...	Mid. Counties	1	6	1	1½
A_2	Worksop ...	Yorkshire	1	5½	1	1½
A_1	Wrexham ...	N.W. Counties	1	6½	1	2
A_2	Wycombe ...	S. Counties	1	5½	1	1½
B	YARMOUTH ...	E. Counties	1	5	1	0½
B	Yeovil ...	S.W. Counties	1	5	1	0½
A	York	Yorkshire	1	7	1	2½

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

The rates for every trade in any given area will be sent on request. The rates of wages have been revised consequent upon the increase in wages which came into operation on February 1, together with all revisions following authorized annual gradings

CURRENT PRICES

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

WAGES

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

MATERIALS

EXCAVATOR AND CONCRETOR

	£ s. d.
Grey Stone Lime . . . . . per ton	2 2 0
Blue Lias Lime . . . . . ,,	1 18 6
Hydrated Lime . . . . . ,,	2 5 0
Portland Cement, in 4-ton lots (d/d site, including Paper Bags) . . ,,	1 19 0
Rapid Hardening Cement, in 4-ton lots (d/d site, including Paper Bags) . ,,	2 5 0
White Portland Cement, in 1-ton lots ,,	8 15 0
Thames Ballast . . . . . per Y.C.	6 6
¾" Crushed Ballast . . . . . ,,	7 0
Building Sand . . . . . ,,	7 6
Washed Sand . . . . . ,,	8 6
2" Broken Brick . . . . . ,,	8 0
¾" ,, ,, ... ,,	10 3
Pan Breeze . . . . . ,,	6 6
Coke Breeze . . . . . ,,	8 9

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

	4" s. d.	6" s. d.
Straight Pipes . . . per F.R.	0 9	1 1
Bends . . . . each	1 9	2 6
Taper Bends . . . ,,	3 6	5 3
Rest Bends . . . ,,	4 3	6 3
Single Junctions . . ,,	3 6	5 3
Double ,,	4 9	6 6
Straight channels . . per F.R.	1 6	2 6
¼" Channel bends . . each	2 9	4 0
Channel junctions . . ,,	4 6	6 6
Channel tapers . . ,,	2 9	4 0
Yard gullies . . . ,,	6 9	8 9
Interceptors . . . ,,	16 0	19 6
IRON DRAINS:		
Iron drain pipe . . per F.R.	2 3	3 8
Bends . . . . each	5 10½	12 1
Inspection bends . . ,,	10 7½	13 3½
Single junctions . . ,,	10 4	21 3
Double junctions . . ,,	16 0	28 8
Lead Wool . . . . lb.	6	—
Gaskin . . . . . ,,	5	—

BRICKLAYER

	£ s. d.
Flettons . . . . . per M.	2 12 0
Grooved do. . . . . ,,	2 14 0
Phorpres bricks . . . . ,,	2 15 0
,, Cellular bricks . . ,,	2 15 0
Stocks, 1st quality . . . ,,	4 11 0
,, 2nd ,, . . . ,,	4 2 6
Blue Bricks, Pressed . . ,,	8 14 0
,, Wirecuts . . ,,	7 12 6
,, Brindles . . ,,	7 0 0
,, Bullnose . . ,,	9 0 0
Red Sand-faced Facings . . ,,	6 18 6
Red Rubbers for Arches . ,,	12 0 0
Multicoloured Facings . . ,,	7 10 0
Luton Facings . . . ,,	7 10 0
Phorpres White Facings . ,,	3 17 3
,, Rustic Facings . ,,	3 12 3
Midhurst White Facings . ,,	5 0 0
Glazed Bricks, Ivory, White or Salt glazed, 1st quality:	
Stretchers . . . . . ,,	21 0 0
Headers . . . . . ,,	20 10 0
Bullnose . . . . . ,,	27 10 0
Double Stretchers . . . ,,	29 10 0
Double Headers . . . ,,	26 10 0
Glazed Second Quality, *Less* . ,,	1 0 0
,, Buffs and Creams, *Add* . ,,	2 0 0
,, Other Colours . . ,,	5 10 0
2" Breeze Partition Blocks . per Y.S.	1 7
2½" ,, ,, ,, . . ,,	1 10
3" ,, ,, ,, . . ,,	2 1
4" ,, ,, ,, . . ,,	2 6

MASON

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

SLATER AND TILER

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

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

CARPENTER AND JOINER

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

Thickness	⅜"			½"			⅝"			¾"		
Qualities	A d.	B d.	BB d.	A d.	B d.	BB d.	A d.	B d.	BB d.	A d.	B d.	BB d.
Birch 60 × 48	4	2½	2	5	3	2½	7	5	4	8	6	5
Cheap Alder .	–	2	1½	–	3½	2	–	–	–	–	–	–
Oregon Pine .	–	2½	–	3	2½	–	4	3½	–	5	4½	–
Gaboon Mahogany	4	3½	–	5	4½	–	7	6½	–	8	7	–
Figured Oak .	6½	5	–	7½	5½	–	10	8	–	1/–	9	–

	d.
Scotch glue . . . . . lb.	8

SMITH AND FOUNDER

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

	¼"	⅜"	½"	¾"	1"	1¼"	2"
Tubes 2'–14' long per ft. run	4	5½	9½	1/1	1/10		
Pieces, 12"–23" long . each	10	1/1	1/11	2/8	4/9		
,, 3"–11½" long . ,,	7	9	1/3	1/8	3/–		
Long screws, 12"–23½" long ,,	11	1/3	2/2	2/10	5/3		
,, ,, 3" M–½" long ,,	8	10	1/5	1/11	3/6		
Bends . . . . ,,	8	11	1/7½	2/7½	5/2		
Springs not socketed . ,,	5	7	1/1½	1/11½	3/11		
Socket unions . . ,,	2/–	3/–	5/6	6/9	10/–		
Elbows, square . . ,,	10	1/1	1/6	2/2	4/3		
Tees . . . . ,,	1/–	1/3	1/10	2/6	5/1		
Crosses . . . ,,	2/2	2/9	4/1	5/6	10/6		
Plain sockets and nipples ,,	3	4	6	8	1/3		
Diminished sockets . ,,	4	6	9	1/–	2/–		
Flanges . . . ,,	9	1/–	1/4	1/9	2/9		
Caps . . . . ,,	3½	5	8	1/–	2/–		
Backnuts . . . ,,	2	3	5	6	1/1		
Iron main cocks . ,,	1/6	2/3	4/2	5/4	11/6		
,, with brass plugs ,,	—	4/–	7/6	10/–	21/–		

Discounts	Per cent.		Per cent.
Gas . . .	68½	Galvanized gas .	61½
Water . . .	66½	,, water .	55
Steam . . .	63½	,, steam .	50

Fittings			
Gas . . .	61½	Galvanized gas .	55½
Water . . .	58½	,, water .	50
Steam . . .	53½	,, steam .	46½

	s. d.
Rolled steel joists cut to length . . cwt.	14 6
Mild steel reinforcing rods, ¼" . . . ,,	10 6
,, ,, ,, ⅜" . . . ,,	10 3
,, ,, ,, ½" . . . ,,	10 0

SMITH AND FOUNDER—*continued*

	s. d.
Mild steel reinforcing rods, ⅝" . . cwt.	9 6
,, ,, ,, ¾" . . ,,	9 6
,, ,, ,, 1" . . ,,	9 6
,, ,, ,, 1¼" . . ,,	9 6
,, ,, ,, 1½" . . ,,	9 6

Cast-iron rain-water pipes of ordinary thickness metal . F.R.	3" s. d. 8	4" 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.	32 6
,, drawn pipes . . . ,,	32 0
,, soil pipes . . . ,,	35 0
,, scrap . . . ,,	19 0
Solder, plumbers' . . . lb.	1 1½
,, fine do. . . . ,,	1 4
Copper, sheet . . . ,,	1 0½
,, tubes . . . ,,	1 2½

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

PLASTERER

	£ s. d.
Lime, chalk . . . . per ton	2 0 0
Plaster, coarse . . . ,,	2 15 0
,, fine . . . ,,	4 7 6
Hydrated lime . . . ,,	3 0 0
Sirapite . . . . ,,	3 6 0
Keene's cement . . . ,,	3 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, sawa . . . bundle	2 4
,, rent . . . ,,	3 9
Lath nails . . . . lb.	3

GLAZIER

	s. d.	s. d.
Sheet glass, 24 oz., squares n/e 2 ft. s. F.S.		2½
,, ,, 26 oz. ,, ,, ,,		3½
Flemish, Arctic, Figures (white)* . ,,		7½
Blazoned glasses . . . ,,		2 6
Reeded: Cross Reeded . . ,,		11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite ,,		6
Crown sheet glass (n/e 12" × 10") . ,,		2 0
Flashed opals (white and coloured) . ,,	1 0 and	2 0
¼" rough cast; rolled plate . . ,,		6
¼" wired cast; wired rolled . ,,		10½
¼" Georgian wired cast . . ,,		11½
¼" Polished plate, n/e 1 ft. . . ,,	†10 to	‡1 1
,, ,, 2 . . ,,	†1 2 ,,	‡1 4
,, ,, 4 . . ,,	†2 3 ,,	‡2 6
,, ,, 8 . . ,,	†2 9 ,,	‡3 2
,, ,, 20 . . ,,	†3 1 ,,	‡3 9
,, ,, 45 . . ,,	†3 3 ,,	‡4 0
,, ,, 100 . . ,,	†4 0 ,,	‡4 10
Vita glass, sheet, n/e 1 ft. . . ,,		1 0
,, ,, 2 ft. . . ,,		1 3
,, ,, over 2 ft. . . ,,		1 9
,, plate, n/e 1 ft. . . ,,		1 8
,, ,, 2 ft. . . ,,		3 0
,, ,, 5 ft. . . ,,		4 0
,, ,, 7 ft. . . ,,		5 0
,, ,, 15 ft. . . ,,		6 0
,, ,, over 15 ft. . . ,,		7 6
"Calorex" sheet 21 oz., and 32 oz. ,,	2 6 and	3 6
,, rough cast ¼" and ½" . ,,	8½ ,,	1 0
Putty, linseed oil . . . lb.		3

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

PAINTER

	£ s. d.
White lead in 1-cwt. casks . . cwt.	2 19 9
Linseed oil . . . . . gall.	3 2
Boiled oil . . . . . ,,	3 5
Turpentine . . . . . ,,	3 9
Patent knotting . . . . ,,	14 0
Distemper, washable . . . cwt.	2 6 0
,, ordinary . . . ,,	2 0 0
Whitening . . . . . ,,	4 0
Size, double . . . . . firkin	3 0
Copal varnish . . . . . gall.	13 0
Flat varnish . . . . . ,,	14 0
Outside varnish . . . . ,,	16 0
White enamel . . . . ,,	1 15 0
Ready mixed paint . . . ,,	13 6
Brunswick black . . . . ,,	7 6

CURRENT PRICES FOR MEASURED WORK

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

EXCAVATOR AND CONCRETOR

		s.	d.
Digging over surface n/e 12" deep and cart away	Y.S.	2	9
" to reduce levels n/e 5' 0" deep and cart away	Y.C.	8	6
" to form basement n/e 5' 0" and cart away	"	9	0
" " 10' 0" deep and cart away	"	9	6
" " 15' 0" deep and cart away	"	10	0
If in stiff clay	add		6
If in underpinning	"	4	0
Planking and strutting to sides of excavation	F.S.	1	0
" " to pier holes	"		5
" " to trenches	"		5
" " extra, only if left in	"		3
Hardcore, filled in and rammed	Y.C.	10	0
Portland cement concrete in foundations (6–1)	"	1 6	0
" " (4–2–1)	"	1 12	6
" " underpinning	"	1 16	0
Finishing surface of concrete, space face	Y.S.		7

DRAINLAYER

		4" s.	d.	6" s.	d.
Stoneware drains, laid complete (digging and concrete to be priced separately)	F.R.	1	6	2	3
Extra, only for bends	Each	2	8	3	9
" junctions	"	3	9	4	6
Gullies and gratings	"	16	6	18	0
Cast iron drains, and laying and jointing	F.R.	5	9	8	3
Extra, only for bends	Each	11	9	17	3

BRICKLAYER

		£	s.	d.
Brickwork, Flettons in lime mortar	Per Rod	26	10	0
" " in cement	"	27	12	6
" Stocks in cement	"	34	0	0
" Blues in cement	"	50	0	0
Extra only for circular on plan	"	2	0	0
" backing to masonry	"	1	10	0
" rising on old walls	"	2	0	0
" underpinning	"	5	10	0
Fair Face and pointing internally	F.S.			1½
Extra over fletton brickwork for picked stock facings and pointing	"			8
" " " red brick facings and pointing	"			11
" " " blue brick facings and pointing	"		1	4
" " " glazed brick facings and pointing	"		3	6
Tuck pointing	"			7½
Weather pointing in cement	"			3
Slate dampcourse	"			10
Vertical dampcourse	"		1	1

ASPHALTER

		s.	d.
½" Horizontal dampcourse	Y.S.	4	9
½" Vertical dampcourse	"	7	9
¾" paving or flat	"	6	3
1" paving or flat	"	7	6
1" × 6" skirting	F.R.	1	0
Angle fillet	"		2½
Rounded angle	"		2½
Cesspools	Each	5	6

MASON

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

SLATER AND TILER

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

CARPENTER AND JOINER

		£	s.	d.
Flat boarded centering to concrete floors, including all strutting	Sqr.	2	2	6
Shuttering to sides and soffits of beams	F.S.			7
" to stanchions	"			7
" to staircases	"		1	6
Fir and fixing in wall plates, lintols, etc.	F.C.		3	9
Fir framed in floors	"		4	6
" " roofs	"		6	6
" " trusses	"		7	6
" " partitions	"		8	6
⅞" deal sawn boarding and fixing to joists	Sqr.	1	14	5
1" " " " " "	"	1	17	6
1½" " " " " "	"	2	3	0
3" × 2" fir battening for Countess slating	"		9	6
Do., for 4" gauge tiling	"		12	9
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, 1¼" pulley stiles, 1¼" 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.	2	3	0
Do. in flashings	"	2	6	6
Do. in covering to turrets	"	2	12	0
Do. in soakers	"	1	17	9
Labour to welted edge	F.R.			3½
Open copper nailing	"			3
Close " "	"			4

		½" s.	d.	¾" s.	d.	1" s.	d.	1½" s.	d.	2" s.	d.	4" s.	d.
Lead service pipe and fixing with pipe hooks	F.R.	1	2	1	4	1	8½	2	7	3	6	—	
Do. soil pipe and fixing with cast lead tacks		—		—		—		—		—		7	3
Extra, only to bends	Each	—		—		—		—		2	3	7	6
Do. to stop ends	"	6½		8		9		11		1	0	—	
Boiler screws and unions		3	3	3	9	5	0	8	0	—		—	
Lead traps		—		—		—		8	0	11	6	—	
Screw down bib valves	"	6	9	9	6	11	0	—		—		—	
Do. stop cocks	"	7	0	9	6	12	6	—		—		—	

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

PLASTERER AND TILING

		s.	d.
Expanded metal lathing, small mesh	Y.S.	2	0
Do. in 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 under on walls	"	1	2½
Render, refloat and set in lime and hair	"	1	9
Render and set in Sirapite	"	1	11
Render backing in cement and sand, and set in Keene's cement	"	2	9
Extra, only if on lathing	"		4
Keene's cement angle and arris	F.R.		6
Arris	"		1½
Rounded angle, small	"		3
Plain cornices in plaster, including dubbing out, per 1" girth	"		1½
1" granolithic pavings	Y.S.	3	6
1½" " " "	"	4	6
6" × 6" white glazed wall tiling and fixing on prepared screed	"	17	6
9" × 3" " " " "	"	1	2	6
Extra, only for small quadrant angle	F.R.			8

GLAZIER

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

PAINTER

		s.	d.
Clearcolle and whiten ceilings	Y.S.		6
Do. and distemper walls	"		9
Do. with washable distemper	"	1	1
Knot, stop, prime and paint four coats of oil colour on plain surfaces	"	3	3
Do. on woodwork	"	3	6
Do. on steelwork	"	3	6
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