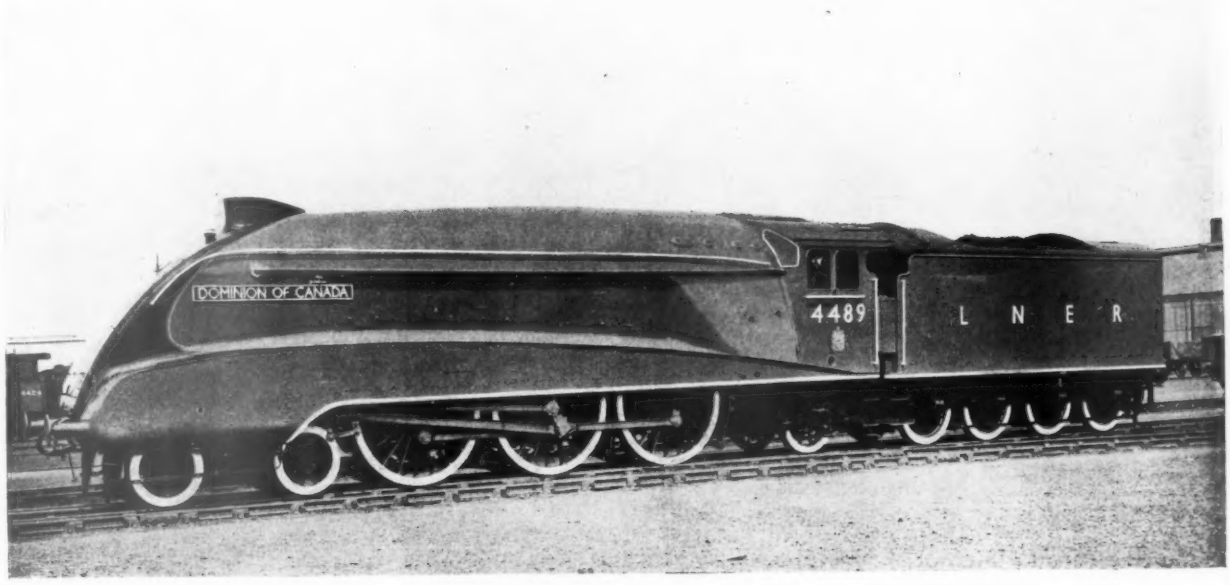
THE NEW FLYING SCOTSMAN

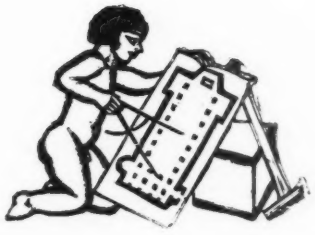
LONDON — EDINBURGH IN SIX HOURS



TWO views of the L.N.E.R. Coronation train, which runs from King's Cross to Edinburgh in six hours at an average speed of 65.5 m.p.h., including a 3-minute stop at York. Above is one of Sir Nigel Gresley's locomotives, on the left the interior of one of the first-class coaches. Externally, the train is finished in two shades of blue, with an aluminium painted roof, and for the sake of quietness the whole of the roof and body sides are insulated with asbestos acoustic blanket. Half an inch of sponge rubber sheet is used underneath the carpets and the underside of each coach has been insulated with sprayed asbestos on dovetailed steel sheeting. Windows are also double-glazed, with an insulating space, and the gangways between coaches are lined with felt. There is a system of air conditioning by which warmed and filtered air is introduced at floor level and extracted through grilles in the ceiling light fittings, giving a complete change of air in three minutes.

PROGRESS PHOTOGRAPHS AT PARIS

Two photographs of the Pavillon de Publicité under construction. The base of the façade is of reinforced concrete and the space between columns will be used for shops and displays. The superstructure, carried on a continuous beam, is a grid of welded sheet steel squares, glazed from behind. The whole façade can thus be used for various forms of lighting display and information.
On the left is a detail of the entrance. The shaft of the arrow pointing to the main entrance is sub-divided into cells to hold different coloured lights. The Pavilion is on the Champ de Mars, near the Eiffel Tower.



SALARIES

ON another page of this issue a correspondent gives a new twist to current discussions about salaried architects. This gentleman, a salaried architect himself, maintains that nothing can be done for the less fortunate of his fellows until they show some faint signs of being prepared to do something for themselves. In his view—either because of a snobbish dislike of anything like trades union combination or from sheer lethargy—salaried architects have not yet showed such evidence of being determined to better themselves. And, therefore, one is tempted to conclude, all that is now possible is to wait for a change of heart amongst a poor-spirited lot.

There may be a little truth in these charges ; but very few will be able to accept them as the whole explanation of why a salaried architects' union is not a power in the land. The centre of the matter is that all architects—private, salaried or assistants—are still individualists. That, in an age of increasing co-operation, is where we are all suffering.

The salaried architect whose salary is not very large and shows no likelihood of growing larger very quickly, may see very clearly the limitations of individual bargaining. And he may easily feel that while he and his fellows are unorganized there exists a loose but still effective conspiracy amongst employers to keep down wages.

There may be enough in this view to support an outcry. It is doubtful whether there is enough in it to carry it triumphantly through an enquiry possessing knowledge of the facts, supposing such an enquiry were now possible. Unless, that is, a very considerable change takes place in all architects concerning the kind of way in which they want to earn their living. Everyone knows (to use a phrase which causes so many actions at law) that there are perhaps a hundred firms in which the incomes earned by the partners are disproportionate beyond all reason to the salaries paid to their assistants. But it is doubtful whether there are many more. Everyone also knows that the salaries paid to architects by public and private corporations are generally too low and should be raised. But in thinking of these things the other side of the picture is apt to be forgotten.

The other side of the picture—the blackleg element that breaks the ring—is the architect as an individualist which makes the smaller private or semi-private office so attractive to the younger architect. The architect, old or young, prefers to work in conditions in which what he does is of consequence and in which he can hope within a reasonable time to exercise some control over the work carried out.

There can be no avoiding that it is the economic status of the offices which possess these conditions and contain from one to eight principals and assistants, which keeps down the incomes of salaried men. The principal of a private office with only three or four jobs in hand must think very seriously of the times when he may have nothing in the office ; to such a man the payment of £250 a year to an assistant has to be thought about very carefully. Logically, no doubt, this state of affairs should not allow the large offices, having a steadier or constant volume of work, to continue to pay salaries which are only defensible in the conditions pertaining to small offices. In practice it does allow them to do so. And the difficulty is to decide what can be done about it.

At the moment, when anybody can call himself an architect or an assistant architect, there are not many alternatives. If all salaried men were members of such an organization as the A.A.S.T.A. and were suddenly to rid themselves of the lethargy of which our correspondent complains, they could put enormous pressure on employers of all kinds. But before they did so they would have to think of solutions to two problems. The first is that of a " proper " scale of salaries for men who vary in ability from those who can design and execute the largest works to those who want a first job after three years at a school. The second, that between one- and two-thirds of the total number of private architects cannot, as things now are, pay their assistants much more than they are doing already.

THE JOURNAL holds that the suggestion that the R.I.B.A. is quietly keeping the ring for employers is more sensational than true. The R.I.B.A. is a democratic body and its membership comprises, as far as one can tell, a majority of salaried men. If salaried members feel that R.I.B.A. influence could be better applied they have perfect freedom to elect their representatives for the purpose of trying.

But it would seem probable that a general increase in income can only be gained for salaried men when it is gained for all architects ; and can only be brought about by less apathy and a less unruly individualism all round. Architects of all kinds are likely to remain inextricably intermingled as they have been in the past ; and the idea of two worlds of profit-snatching figureheads and sweated subordinates is likely to lose what little truth it has today.

Better conditions in the future depend, firstly, on the public being given a definite title by which to judge whether a man is a trained architect or not. Secondly, by pressure being applied to public and private firms to improve the conditions of salaried architects. Thirdly, by all architects modifying their rugged individualism sufficiently to allow them to form larger partnerships in which each man is a specialist in some part of architectural practice, whilst keeping the atmosphere of a good private office. To bring these things about it is not only salaried architects who will have to abandon lethargy.

The Architects' Journal
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London

NOTES & TOPICS

BATHS

ALTHOUGH I was not myself a competitor in the Hackney Baths Competition (the winning design for which was published in this JOURNAL last week) and cannot therefore claim familiarity with all its ramifications, I have studied the winning designs with considerable care and with mixed feelings. There are few of us at this time of day who would quibble over the merits of the competition system. It is doing good work, and if it has its occasional failures it merely serves to emphasize that the system must be constantly scrutinized.

*

All the same, others besides myself have also evidently had feelings about Hackney. I see that the *Architect and Building News* has given prominence to a letter over the signature Margaret A. Richards, a good deal of which deals with matters which might be considered to be questions of opinion and which should, therefore, have been left, for good or ill, to the judgment of the assessor.

*

On the other hand, some of Mrs. Richards' remarks are pertinent statements of fact ; and I, for one, have never considered that an assessor should be treated as an umpire or referee whose award it is unsportsmanlike to call in question. Large sums of public money are involved, facts are facts, and there is nothing to be gained by carrying even our most advertised national trait to absurd lengths.

*

The statement that the design does not fulfill the " desire of the Council to obtain a public bathing establishment in advance of the type usually built in this country " is hardly one that could be proved—but that not much over half the water area can be seen by a lot of the spectators is a fact that *can* be proved quite easily by the very elementary process of drawing on the sight lines—the winners can try it for themselves, it doesn't take long.

*

Mistakes will occur and perfect designs are difficult to come by. But Messrs. Cross and Richards' design (unpremiated but published), at any rate avoids the mistakes enumerated in Mrs. Richards' letter.

SEAVIEW PIER'S DESIGNER

My note last week about Seaview pier has produced a reply from Mr. T. R. Milburn, who tells me that the designer was the late Mr. Frank Caws, F.R.I.B.A., whose son, Mr. Douglas Caws, is still carrying on a practice in Sunderland. Cables and timber both came from Sunderland as well, so it seems to have been an entirely North Country job.

*

Apart from having been president of the Northern Architectural Association, Mr. Caws, seems to have taken a good deal of interest in the sea and all its works, for he had a small tank for buoyancy and other experiments on steamship models at a time when such things were far from being in common use.

AFTERMATH

To what extent great events leave their marks on London it would be difficult to say—of course, there were the Zeppelins, and there is that iron rod in the centre of the opening between Lansdowne Passage and Curzon Street, we all know why that is there. Coronations leave surprisingly few traces, some eyelet screws behind parapets, some chipped balusters, those little socket plates in the roadway (so easily confused with Belisha crossing markings) where tubular barricades can again be erected if occasion demands. That is almost all.

*

So, in the end, the Coronation's most permanent mark on London will be the little gateway at St. James's, Piccadilly. I had hoped that stone by stone and brick by brick the old gateway would be replaced, but square piers of crimson wire-cuts are peeping through the hoarding, and I can only cling to the slender hope that it is not a pretentious Academy design that is being built—that would be the last straw.

HIGH SPEED TO EDINBURGH

Photographs of the L.N.E.R.'s new high-speed train to Edinburgh show that the outside looks pretty good as a piece of design, and, as the time to Edinburgh is six hours, including a stop at York (65.5 m.p.h. average), one may assume that, mechanically, the train is all that it is designed to be.

*

But the interior ? Listen to what the L.N.E.R.'s official description has to say. " The decoration of the coaches reflects a marked advance on conventional practice, though the design belongs to no period or style in art. . . . . Ornament has been used with great care and moderation. It is small in scale so as not to obtrude too aggressively on the scheme as a whole. The originality of the schemes precluded the use of more or less standardized designs of fittings. These small fittings, such as racks and lights, have been specially manufactured and designed in materials to suit the character of the decoration."

*

So after that one ought to get something pretty good. Are you curious ? Turn to page 45 and see the result.

*

After the Silver Jubilee, too—which raised my spirits (and railway design) such a lot. The L.N.E.R. has let me down.

ANY OFFERS ?

For some years the Southwark Borough Council haven't known what to do with the clock tower in the middle of

The Southwark Borough Council are trying to get rid of this four-faced clock with Westminster chimes, for it is getting in the way of traffic in St. George's Circus.

St. George's Circus, the busy crossing on the way to the Elephant and Castle. The police and the original donors were consulted, and both agreed that it might as well go, but the Council didn't like paying to have it demolished, so they offered to give it to anybody who would take it away.

*

But even that would have cost about £800 and buyers remained shy, so the Council are now doing the demolition themselves. Still hopeful, however, that it won't be a dead loss, for "we are now prepared to receive offers for the clock—four illuminated dials and Westminster chimes."

*

But some public-spirited person might put it up in Bond Street and try to drown those ever so merry tunes that Messrs. Atkinsons' chimes play with such abominable regularity. Perhaps Mr. Yerbury . . . ?

A.A. SECRETARY

Mr. H. J. W. Alexander's appointment as secretary of the A.A. has been officially announced and, if not unexpected, it will be not less popular on that account. Mr. Alexander has always been an indefatigable member of the office staff, and in his new capacity he will, no doubt, watch the Association's interests with the same eagle eye. Mr. Yerbury will still be associated with the A.A. as consultant, and this, I hope, will enable him to continue his Dean and Dawsonian activities for many years to come.

BUILDING CENTRE'S OFFSPRING

And talking of Mr. Yerbury, I see it is more than possible that Glasgow is to have a building centre of its own, for the Scottish Development Council has been thinking about it, and Mr. Yerbury has been up to Glasgow to tell them exactly how it ought to be done.

AMENITY'S MARTYR

My apologies are due to the gentleman whose attack on a hoarding I chronicled last week. His name is not Harold Ronald Nash, but Richard Mansel Darwall, and if you want to know how the news agency concerned metamorphosed one name into the other think hard about journalism for several minutes.

*

But it's right this time, for Mr. Darwall has written to say so. Let me remind you what he did. Maddened at the sight of a hoarding advertising a new housing estate on the Sussex Downs, he got out of his car and, as observed by lime-burner W. Wellstead, proceeded to smash the hoarding "with a stick picked up from the ground." According to the owner he succeeded so well that "the only part any good now is the supports." (Quotations are from a local paper's report, more accurate, I hope, than my last source of inspiration.)

*

The net result is that in addition to his fine, Mr. Darwall has got to make the hoarding good, which, according to the same paper, will cost him something like £20.

*

Reason tells us that it is all wrong to go about smashing other people's property. So does the law. Instinct, on the other hand, tells me that there are at least eighty readers of this JOURNAL who will sympathize with Mr. Darwall's unfortunate passion for the countryside, even though they may deplore the ferocity of his methods.

*

If you are one of the eighty please help me to raise £20 to reimburse Mr. Darwall for his rather heavy expenses. Five shillings from each of you. Don't fumble—just put it in an envelope—money, p.o., or cheque (made out to The Editor, ARCHITECTS' JOURNAL) and post it to me at 9 Queen Anne's Gate, Westminster, S.W.1. My own contribution heads the subscription list.

*

This, I must add, is done on my own initiative. Mr. Darwall, whom I have never met, has not been consulted and will no doubt be justly annoyed. Come, friends, make your gesture.

PARIS EXHIBITION

There were two other gentlemen in the wine bar. The larger was reading to the smaller out of a prodigious typewritten report. At the words "British Pavilion," I put down Mr. Young on Ruskin and made the conventional signs of not listening. "Don't forget 'It's a disgrace to British architects'" said the smaller man. The larger said he wouldn't forget that. He made a note of it—and of several other *mots*.

*

It was when they got to the dining room that I got out of my depth. "The dining room," read the larger man, "is simple and dignified." He paused and added, "Of course I don't really think it's simple and dignified. I think it's heavy . . . *heavy*."

*

One day that report will go in. Whoever it goes in to will read that the dining room is simple and dignified. And none but I and the little man will know that "heavy" and not "simple and dignified" is what the author meant.

ASTRAGAL

NEWS

POINTS FROM THIS ISSUE

THE ROME SCHOLARSHIP

The Faculty of Architecture of the British School at Rome have awarded the Rome Scholarship in Architecture for 1937 to Mr. William T. C. Walker (student R.I.B.A.) of the School of Architecture, Edinburgh College of Art.

The Faculty have also commended the design submitted in the competition by Mr. Hubert Bennett, A.R.I.B.A., of the School of Architecture, University of Manchester.

Mr. Walker, who is 24 years of age, was educated at the Broughton Secondary School, Edinburgh. In 1930 he entered the Morning School of the School of Architecture, Edinburgh College of Art, and in 1935 he entered the Day School. In 1936 he won the Lorimer Memorial Prize offered by the Royal Incorporation of Architects in Scotland. This year, in addition to winning the Rowand Anderson Prize of the Royal Incorporation of Architects in Scotland, he was awarded a town planning bursary of £120 offered by the Edinburgh College of Art.

Mr. Bennett is 27 years of age and was born in Manchester, receiving his education at the Manchester College of Technology and the University School of Architecture. In 1933 he won the Arthur Cates Prize, in 1934 the Soane Medallion, and, in 1936, the Neale Bursary of the R.I.B.A.

In 1936 Mr. Bennett was awarded a certificate of hon. mention and a premium of £100 in the competition for the Rome Scholarship in Architecture. He gained admission to the competition through the open class, and is at present staff lecturer and instructor at the Polytechnic School of Architecture, Regent Street, London.

An exhibition of the competition designs will be held at the Royal Institute of British Architects, 66 Portland Place, London, W.1, from July 3 to 10, inclusive, between the hours of 10 a.m. and 8 p.m. (Saturdays 10 a.m. and 5 p.m.).

THE ARCHITECTS' DIARY

Thursday, July 8

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

R.I.B.A., 66 *Portland Place, W.1. Exhibition of Designs submitted in the final competition for the Rome Scholarship in Architecture. Until July 10, 10 a.m. to 7 p.m. (Saturday, July 10: 10 a.m. to 2 p.m.)*

INTERNATIONAL HOUSING AND TOWN PLANNING CONGRESS. *In Paris. Until July 11.*

SOCIETY OF CHEMICAL INDUSTRY. *Fifty-sixth Annual Meeting and Conference. At the Hotel Majestic, Harrogate. Until July 11.*

Monday, July 12

ROYAL SANITARY INSTITUTE. *At Birmingham. Health Congress. Until July 17.*

Thursday, July 15

LONDON SOCIETY. *Visit to Eton College. 3 p.m.*

A BUILDING CENTRE FOR GLASGOW?

It seems possible that an organization similar to the Bond Street Building Centre will be arranged in Glasgow before very long, for a meeting of the Scottish Development Council was held last week under the chairmanship of Lord Elgin, who said that he had been greatly impressed by the London Centre and its methods of working.

Mr. F. R. Yerbury explained at some length the arrangements made in Bond Street both from the point of view of displaying the exhibits themselves and of arranging for technical information and lectures for the public as well as for those connected with the building industry. At Bond Street there were at present over 1,000 manufacturers, who paid anything from £4 to £250 a year for the privilege of displaying their goods, and, for the twelve months ending May 31, the number of visitors was 68,776, nearly 18,000 more than for the corresponding period during the previous year; technical queries averaged from 1,500 to 2,000 a week.

The meeting decided that immediate steps should be taken to establish a building centre in Scotland, and it was stated that promises of support had already been obtained from the Royal Incorporation of Architects in Scotland, the Faculty of Surveyors, the Coal Utilization Council, the Electrical Development Association, and the National Federation of Building Trades Employers.

GENERAL POSITION IN THE BUILDING INDUSTRY

"The position of the building industry is very satisfactory," states the current issue of *The Building Industries Survey* "the seasonal advance being fully equal to that normally experienced at this time of year, so that the improvement is well maintained.

"Housing activity continues at a very high level, confounding many observers. As the Minister of Health remarked in the House of Commons, 'if there is a housing boom it dies hard . . . the latest figures suggest much life and vigour.' Loans sanctioned for housing during the year ended March 31, 1937, amounted to more than £33,000,000, compared with £25,600,000 in the year before.

"The position of public works contracting shows further improvement, employment being considerably above last year. The view put forward by the council that public authorities should press forward now with plans for new works to hold in readiness for release when other activity declines, is gaining further adherents every day. A group of Oxford economists, in a recent letter to *The Times* urged the need for setting up forthwith the necessary administrative machinery to operate the policy. Sir William Beveridge, Director of the London School of Economics, has made a similar plea in urging the setting up of an economic general staff to make preparation for the economic and social problems of peace in the same way that plans are made to prepare for the eventuality of a war. No official declaration of policy has, however, yet been made.

"The materials industries are very active, and there is a prospect of yet further increases in demand arising from the requirements of national defence and in the demand for materials used in large structures. Anxiety which was felt in some quarters as to the effect of the National Defence Contribution in its original form on building materials producing companies, especially those which suffered most in the depression, has been allayed by the new form taken by the proposed tax, the incidence and effects of which, however, will be the subject of close study, particularly from the point of view of long-term policy."

PROFESSIONAL ANNOUNCEMENT

Mr. A. T. W. Goldsmith has taken into partnership his chief assistant, Mr. Bernard F. Pennells, and the practice will be continued under the name of Goldsmith and Pennells at 13 Liverpool Gardens, Worthing.

CORRECTIONS

In last week's Architects' Diary the excursion in Paris should have read: "arranged by the International Reunion of Architects," and not as stated, the Architectural Association.

In the list of contractors for Sully Hospital on page 1162 of our issue for June 24 we omitted the name of Messrs. J. G. Proger and Sons, Ltd., who were responsible for the main engineering contract.

The name of Messrs. Lenscrete, Ltd., was omitted from the list of sub-contractors for St. Bartholomew's Hospital, illustrated in our issue of June 24 (Architects: Messrs. Lanchester and Lodge). They were responsible for the glass and ferro-concrete lights to the balconies.

In the issue of the JOURNAL for June 10, a building in Cathays Park, Cardiff, was described as the Headquarters of the Welsh National Memorial Association, by Mr. Percy Thomas. The building illustrated is, in fact, the offices of the Welsh Board of Health, designed by Mr. P. K. Hanton, of H.M. Office of Works.

1,010 BUILDING SOCIETIES

A complete directory and abstract of British building societies has just been published by the Chief Registrar of Friendly Societies. It is the first issued for five years.

Among counties, London was first with 213

societies, Lancashire second with 140, and Durham third with 60. Although Yorkshire, the largest county, occupies only fourth place in the list, with 38 societies, these include the Halifax, which is the largest in the country.

The directory gives detailed particulars of assets, liabilities, advances on mortgage, profits and reserves, and numbers of share investors, depositors and borrowers. The abstract is published at 2s. 6d.

ST. PANCRAS TOWN HALL

The new Town Hall and Assembly Hall of St. Pancras was opened last week by the Mayor of St. Pancras. The four-storey building is faced with Portland stone and the roof is of Westmorland green slates. The architect is Mr. Albert J. Thomas, and the cost of the building was approximately £250,000.

EXHIBITIONS

[*BY D. COSENS*]

THE exhibition of paintings and drawings by Bonington and his circle at the Burlington Fine Arts Club, large as it is, by no means covers the achievement of this gifted painter, for much of his best work is in galleries or museums. But it shows paintings, from private collections, of sufficiently wide range to give a very good idea of the powers of this astonishing young artist who died in 1828 at the age of twenty-six, and of his importance in the history of English art. One of the outstanding examples is his well-known "Man in a Tall Hat" (No. 32), of which Roger Fry said, "This picture seems to be an anticipation of Manet in the frankness and directness of its oppositions. It should have been the starting point for a great tradition of nineteenth-century art. But we look in vain for any successors."

Of Bonington's landscapes, "View over the Solent" (40), and particularly "La Dune" (36), are magnificent examples. In "La Dune" the evident traditions of the time combine with a broad, almost impressionist treatment of the scene. The just placing of the figures and the slight but very relevant colour accents are typical of all his compositions. His pencil drawings are also well worth looking at, not only for their fine draughtsmanship, but, particularly in the drawings of architectural subjects, for their selection of essentials, and lack of fuss or stress or irrelevant detail.

*

Under the title of "History in Glass," Messrs. Arthur Churchill are showing an extremely interesting collection dating from 1681 to 1911. And the exhibition is augmented by a catalogue which not only illustrates each specimen shown, but which is in itself an outline of English history. As there is a merciful gap between the early nineteenth century and the glass commemorating the coronation of George V we are spared the lowest ebb in design, and throughout the exhibition, with negligible exceptions, both design and craftsmanship are superb. While admitting a personal preference for the trumpet-shaped wine glasses (7, 59, or 118), which, plain, engraved, or with the intricate twisted pattern of spiral stem, recur throughout the exhibition (though less frequently at later dates), such glasses as 95 or 162, made two centuries ago, rival anything we can produce today. Perhaps this is really an exhibition for the collector, or at any rate the connoisseur, but it cannot fail to interest anyone who knows the smallest thing about the manufacture of glass, or anyone who values a quality of design and craftsmanship which, with all our improved methods of production, even in the best Swedish work, we cannot surpass.

Pictures and Drawings by Bonington and his Circle. Burlington Fine Arts Club, 17 Savile Row. Until the end of July.

History in Glass. 10 Dover Street. Until the end of July.

Progress photograph of the Library, University College of Swansea. The architect is Mr. Verner O. Rees.

COLLECTIVE MADNESS

[By William Loftus Hare]

NORMALLY the people of this country—I write first of them—appear to be endowed with common sense and to go about their business in response to some necessity and with the exercise of appropriate intelligence: in a word, as individuals, they are sane. Normally, too, in the unhappy cases, they become insane individually, each from some predisposing cause or causes which are studied and, to some extent, understood by psychologists. These people are cared for in what we now kindly call "mental hospitals" where they receive treatment each appropriate to his case. Whether their madness tends to become collective through segregation I do not know, nor here discuss.

Considering how heavily life presses upon most people in this present age, it is somewhat surprising, not that there are so many demented, but that there are so many quite sane. My personal testimony may be like that of others: in my daily perambulation of our streets, in London and elsewhere, during fifty years I have never seen a single mad person. An occasional "freak" may be seen walking in the Strand with long hair, peculiar dress and sandals, quite harmless and apparently beneficent. Public, individual madness seems to be as rare as public drunkenness—which I used to see in my younger days.

No. I am concerned with collective madness, which is seizing on people and the nations of the world like a veritable plague, for which there is no promise of cure.

Why do I say this? For several reasons.

In connection with my daily work concerned with town planning I have lately learned with surprise and alarm of the project made in France to construct what is called "Le Monde Souterrain."

A journal of that name has fallen into my hands and I had the pleasure of hearing a lecture last autumn delivered by M. Gaston Bardet, one of the leaders of the subterranean movement. I will endeavour to describe its features from the documents before me.

First, there is an archæological interest

displayed in several articles which unconsciously seems to find in the very ancient underground refuges some precedent for the latest phases of subterraneanism. There are, it appears, systems of refuges at Gapennes, Heudricourt, Langlard, Petosse and Le Quesnel which were used for tribal war and storage of provisions. Again there is a troglodyte settlement at the village of Troo en Vendomois which seems to supply the notion of " le grand dancing souterrain " which will be one of the amenities of the new underworld of which we are invited to become citizens.

Then, quite naturally, we pass on to the Paris Métropolitain, opened in 1900 after twenty years of civic strife, and based on the lessons of the London District-Metro circle. Again it is but a step to the underground road crossings that are so useful in giving security at hitherto danger points. Vehicles descend and ascend graded ramps and pass through well-lighted tunnels, faced with glazed bricks. Police and Belisha beacons are not needed here, and the traffic presumably goes faster, saves time and money. A passage at the Porte Dauphine and another at St. Antoine are examples of the reasonable triumphs : no madness here, my readers will say. Wait and see !

At Antwerp the Scheldt is crossed below ground by a fine tunnel with a raised sidewalk defended by railings, while under the Champs Elysées there is to be a vast underground system of " stationnement," a parking for 600 cars approached by seven ramps and connected with the Métro. Shops, hotels, restaurants and preservationists have resisted the plan to cut parking stations among the trees there : very sane. Wait and see !

It is a short step from sanity to madness—but an inevitable one ; the technical mastery has been achieved and it only needs the provision of a cataclysm to carry the movement to its logical, if infernal conclusion.

War will call for active defence with which we are familiar ; the new science tells of passive defence which is to be found below ground. We are to visit subterranean shelters which will receive as many as 8,000 persons during aerial attacks. The labyrinth of Knossos is a chaos to the orderly beehive of *béton armé* into which Monsieur, Madame and *bébé* will be pushed and perhaps locked up.

There are three stages, the first being in fact the basement of a large department store where before the attack ladies will be finding bargains. As the sirens blow they will descend without panic to the second and third stages. This is at Berne.

This underground world has, as said above, a dance hall, restaurant, even a cabaret ; it is brilliantly lighted, well ventilated, and in fact conforms to Satan's description of his happy realm in " Man and Superman." In war it has advantages that are obvious to flesh and blood, and in peace it earns its dividend—as do the catacombs of Rome and the Robbers' Caves at English seaside resorts.

In Paris the Société Cheops—he of the Pyramid—advertises reinforced concrete chambers with gas-proof doors to be installed in your cellars at so much apiece.

More wonderful still, the project is seriously discussed and the plans made for a series of parallel underground by-pass roads three abreast north to south, east to west—I have seen the plans. They will be as deep as our tubes and will carry swift and important transport which will ascend by lifts at a series of crossings to the upper air—the markets, depots and gun emplacements.

Six million people have to be catered for—women, children, vieillards and invalids will be evacuated by the great routes already marked on the maps for inspection by the enemy, who is told the zones of vulnerable points in certain areas of Paris.

A work known as *L'Activité au Sous-sol* lets us know the various auxiliary sciences and arts needed for this brave new world. The Town of Tomorrow is no Howardian garden city as M. Marcel Poète, the historian of Paris will tell. " La cité double souterraine et en surface est nécessaire," says M. Adrien Blanchet—of many decorations and honours, while M. Paul Gélis goes back, as said above, to the fascinating prehistoric world of the troglodytes. The history of the Métropolitain, the Nord-Sud and le Sous-sol, so far, is told by specialists.

Then comes the law of the subject, followed by four studies in circulation souterraine, geology, the technique of mines and quarries. Lighting is a thing by itself, and aeration ; noise has to be combated. The whole is wound up by subterranean architecture, by eight specialists.

We shall learn more about this world to which we are being driven at the Paris Exhibition of 1937.

I am not criticizing the engineers who respond to the calls made upon them. They are quite sane in the sense that they are ready to, and do surmount any obstacle that is set before them. They grapple intelligently with any problem without asking why they are confronted with it. It can all be done by technical skill, labour and money, directed and planned by men of intelligence and charm, proud of their achievements.

But is it not, collectively, madness ?

The French do their work in their usual competent way. Various groups and societies with their Présidents d'Honneur, their Comité d'Honneur, Directors and Secretaries, organize the movement downward with efficiency and even with charm; but they are not alone.

The Germans have long speculated on the reactions of war to building and the construction of towns, and I have before me the book entitled *Bautechinischer Luftschutz* which, as its title indicates, deals with the method of building necessitated by bombing from the air. The book opens with a description of the ancient forms of protecting cities against attack from the land, and passes on to the technical study of the question. The whole science of bombing is discussed with mathematical formulæ and we are told the depth of penetration and the area of explosion of which the projectiles are capable. Underground refuges are described, and illustrated and then comes the constructive study of the town of the future. The book goes into greater detail than the French proposals, but it need hardly be said that dug-outs, tunnels and indeed underground buildings on a large scale are provided for.

The chapter on Städtebau is perhaps the most interesting and the question of decentralization is proposed, for it is clear that satellite towns to which large portions of the population have migrated and even ribbon development or lineal cities will offer the less favourable mark from the air. It is all very scientific, rational, practical, but, is it not also mad ? I may add that there are ten pages of bibliography more or less concerned with the diabolical prophecy that collective madness has produced.

Englishmen will not flatter themselves that they are immune from this epidemic. Only a few weeks ago a gentleman spoke to millions of our listeners from such a new infernal refuge, entertaining the fans of " In Town Tonight."

I have no remedy to propose. Responsible Governments truly must take the measures called for to protect their nationals and if they did not do so, " the wild mobs' million feet would kick them from their seat."

Collective madness is a malady communicated by an intangible and invisible germ of collective fear against which there is no antidote other than the morality and good will proclaimed by the best men of the human race.

But, alas, today we have no prophets, no philosophers ! China has turned her back upon Confucius ; India has forgotten The Buddha ; almost the name of Zoroaster has been effaced in Persia ; Greece has no Socrates—Rome no Cicero. Germany, the garden of

Perspective by Mr. Winton Newman of Messrs. H. V. Ashley and Winton Newman's winning design for the Central Technical College at Birmingham. The scheme was illustrated in the JOURNAL *for June 24.*

philosophy, has no Kant, no Schopenhauer ; France no Descartes, not even a Rousseau. The Low Countries cannot produce a Spinoza nor the Northern Lands a Swedenborg. Italy has no Mazzini and Spain has no Don Quixote to laugh the collective madness to scorn. Even worse, Jewry has no Moses, Islam no Prophet and Christendom no Christ.

•

LONDON REGIONAL PLAN

" There is not at the present time sufficient scope for a regional body charged with the initiation of new proposals for the London area."

The Greater London Regional Planning Committee died eight months ago, after what are now described as differences of opinion among its members as to the best way of carrying on its work. With its dying breath it said that it would welcome initiative on the part of the Minister of Health in securing new and appropriate means of co-ordinating town-planning in the Greater London area.

Proposals by the Minister of Health now emerge. In a letter sent to local authorities in the London area, Mr. J. I. Wrigley, Director of Housing and Town Planning in the Ministry of Health, set out a scheme for forming a Greater London Standing Conference on Regional Planning. The constitution provides very carefully that the conference shall have no power to take initiative.

An inquest has been held, it appears, on the dead committee. " The principal reason why the Regional Committee after doing much valuable work was found to be no longer working well was, it appears, that the preparation of statutory planning schemes by individual local authorities and joint executive committees is now making good progress, several schemes from the area having been already submitted to the Minister for approval ; and it was felt in consequence that there is not at the present time sufficient scope for a regional body charged with the initiation of new proposals for the area. . . ."

The Minister has had the advantage, the letter adds, of discussing various possible alternatives with the members of the late Committee, and that are in agreement, it is said, on the scheme now propounded. The proposed conference would " consider and make suggestions or recommendations on any matter relating to planning or development within the London Traffic Area (as defined by the London Traffic Act, 1924) which may be referred to the Committee." The operative word seems to be " may."

To do this it would be provided with a little machinery—not, as before, with an independent technical adviser. " It was generally agreed that it would not be necessary for the Conference to employ an independent technical adviser. . . ." But an Inspector of the Ministry of Health would be seconded to the Conference, which would nominate a technical subcommittee comprising the surveyors of the constituent county councils, county boroughs, and the City Corporation, who would consider and make preliminary reports on any matters referred to the Conference.

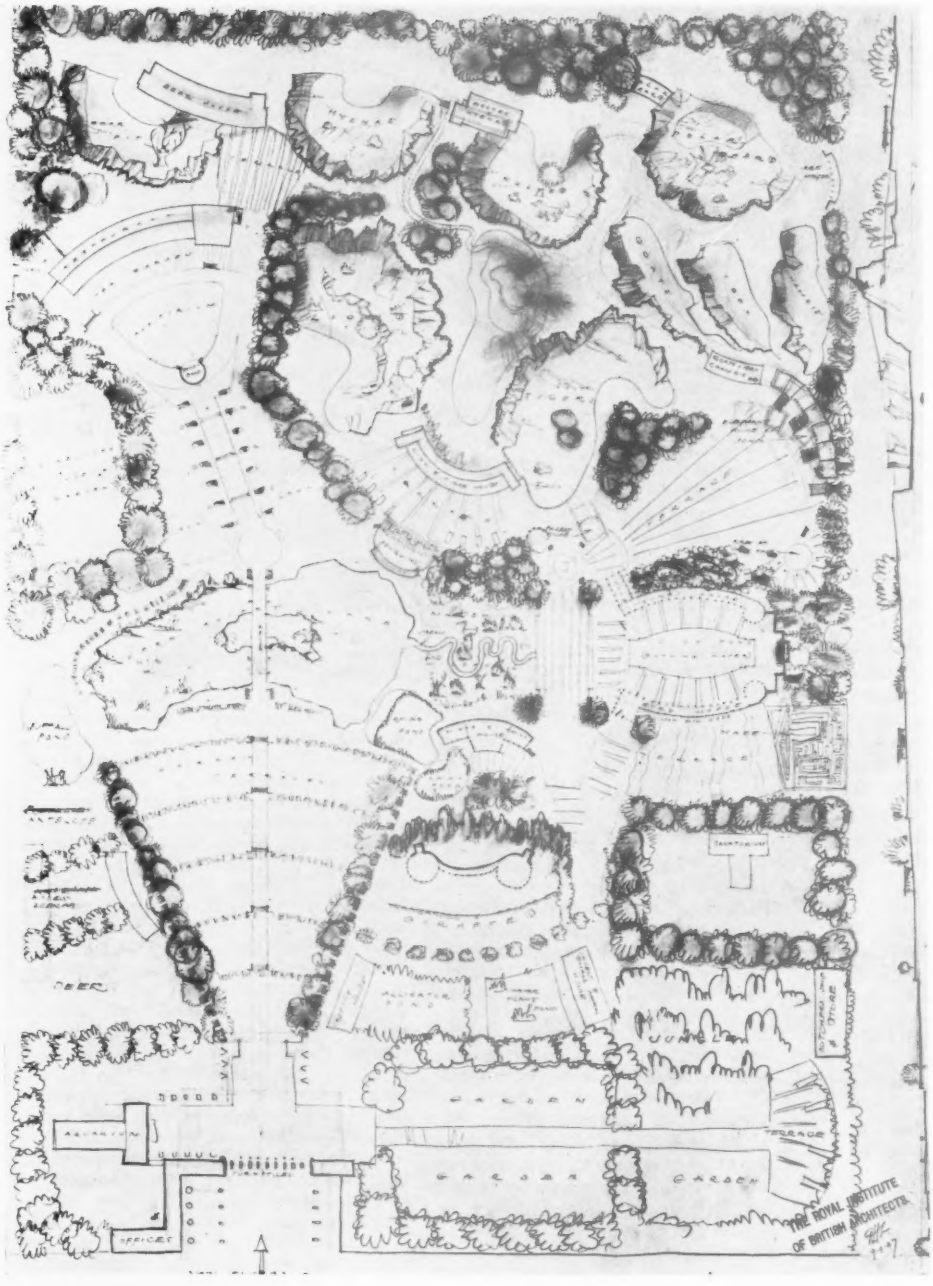
Twenty-four members would form the Conference—three from the L.C.C. and the remainder from surrounding County Councils, Borough Councils and the City.

The L.C.C. is in the last score of the 125 or so local authorities to reply to the invitation. It may be remarked, however, that the scheme now proposed closely resembles that outlined by the L.C.C. when the late committee's future was being discussed.

However, the London County Council, with its responsibility for some 15 per cent. of the Greater London region area, got in first with the news that it proposed to cease its subscription of £1,500 a year to the committee. Its blood stream having been cut off, the committee died. While it was still alive, the impression had very understandably got about that the Greater London Regional Planning Committee knew all the things that a committee with such a name ought to know. Inquiries were received from Government Departments, private individuals, statutory authorities and local authorities on all manner of subjects. But it was without sufficient equipment, and the fact was and remains that no central body exists with the necessary statistical information about the Greater London region's activities that a planner should have in order to plan with knowledge of requirements. It was found that, with the facilities given to the committee and without the power actually to demand wanted information, which had to be sought by persuasion over large areas, a great deal of time was taken up, and information was often out of date before inquiries were finished.

In the meantime, the population of London is growing and shifting ; Sir Charles Bressey is preparing a Road Plan, on the instruction of the Minister of Transport, which is fairly soon to be published, but which is apparently not accompanied by anything in the nature of a survey of factory sites, for instance ; the Green Belt is making its piecemeal way round London, not so much as a definite barrier to continuous development as a series of open spaces ; the lack of centralized information persists ; the Thames Barrage Scheme is to be the subject of an inquiry ; and the London Passenger Transport Board is pretty well pleasing itself where it shall go next.

THE ROME SCHOLARSHIP 1937

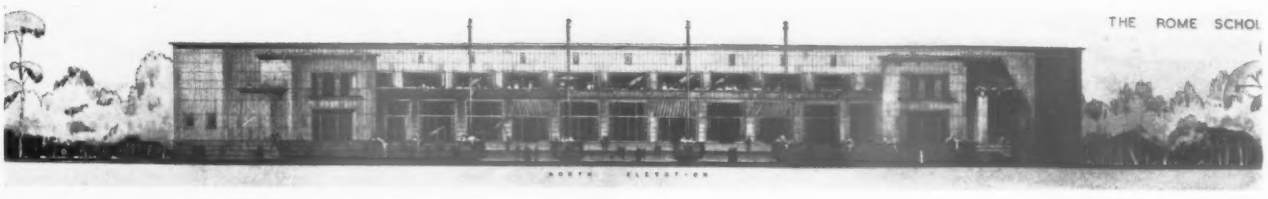


The Rome Scholarship, 1937, has been awarded to Mr. William T. C. Walker for his design for a zoological gardens, illustrated on this and the facing page.

On the left is the preliminary esquisse of the winning plan, the final drawing having proved difficult to reproduce so as to be easily readable.

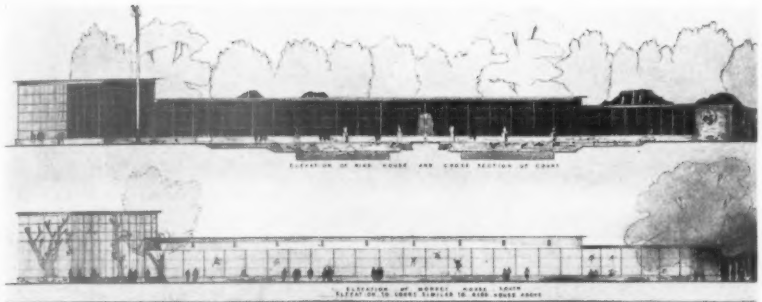
Below is the north elevation of the restaurant.

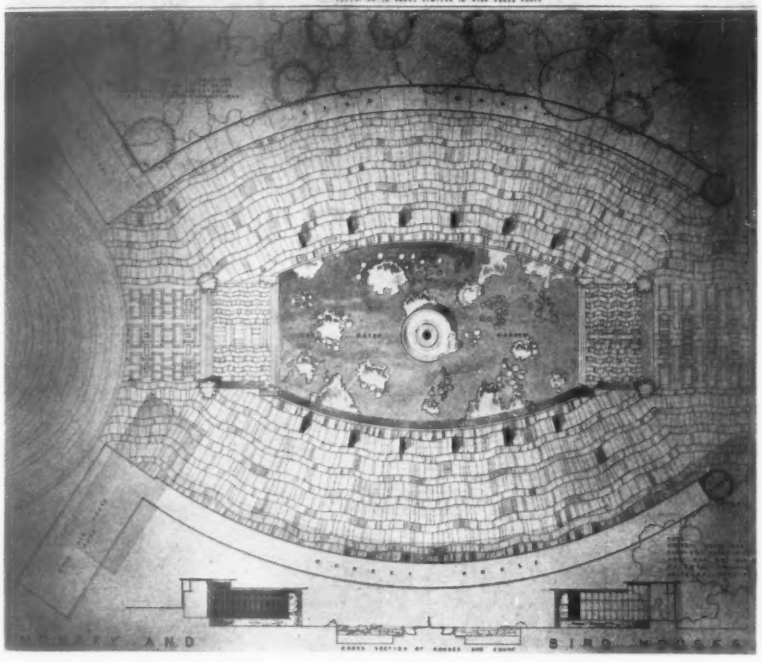
On the opposite page are : top, left, the plan and elevations of the Bird and Monkey Houses Group; centre, the ground floor plan of the Restaurant; right, part of the final drawing of the ground plan ; bottom, section through the site looking east.

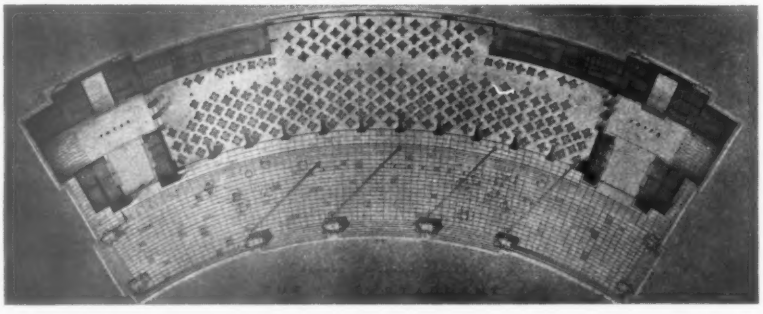


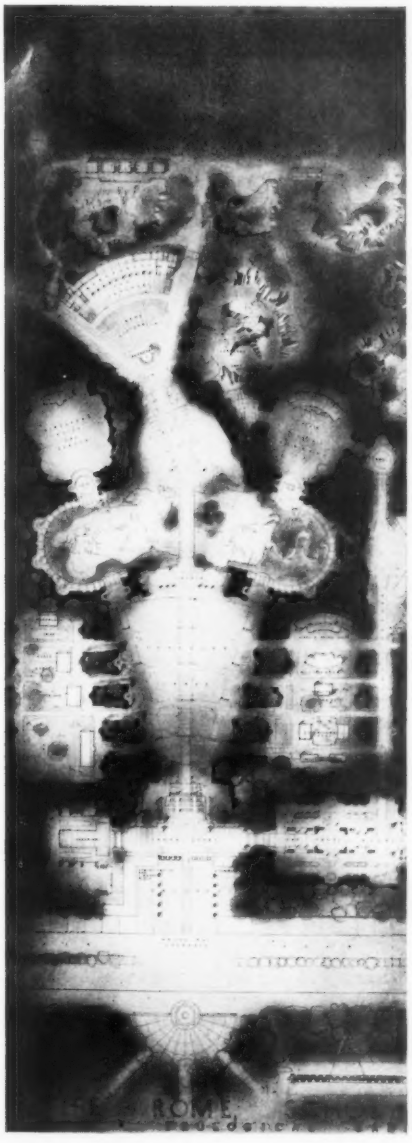
A ZOOLOGICAL GARDENS

BY WILLIAM T. C. WALKER

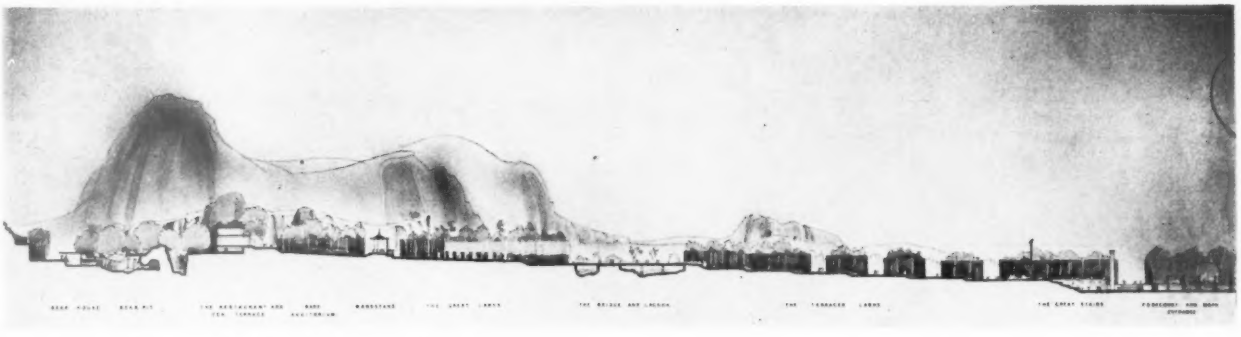




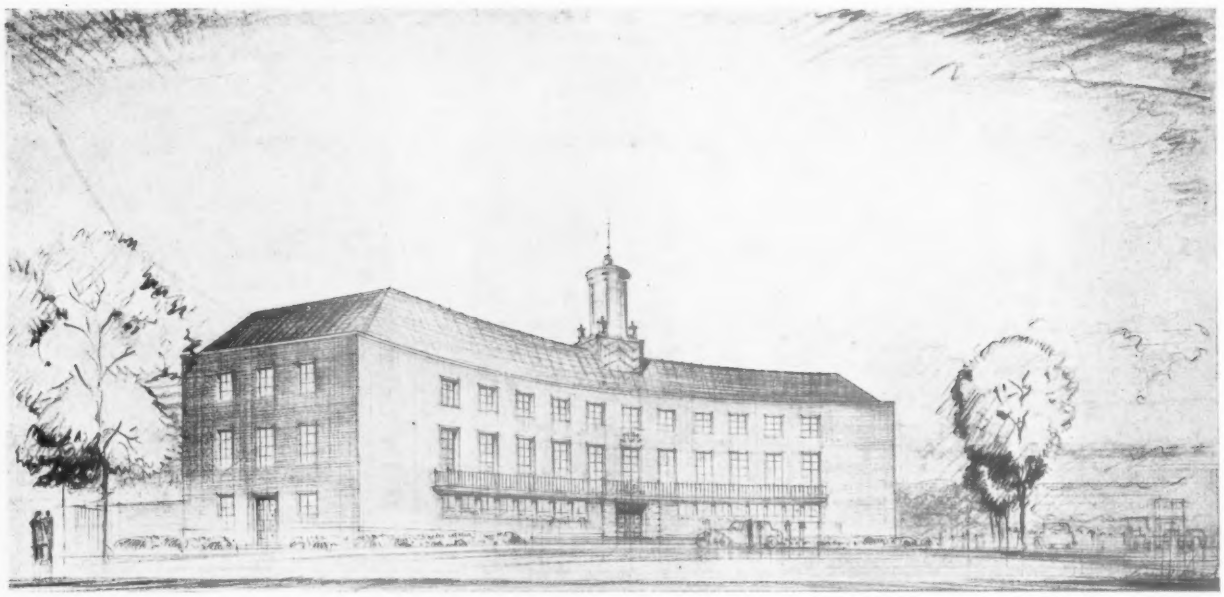




A ZOOLOGICAL GARDENS



THE FRIERN BARNET COMPETITION:



Perspective of the winning design by Mr. E. Waud

THE ASSESSOR'S AWARD

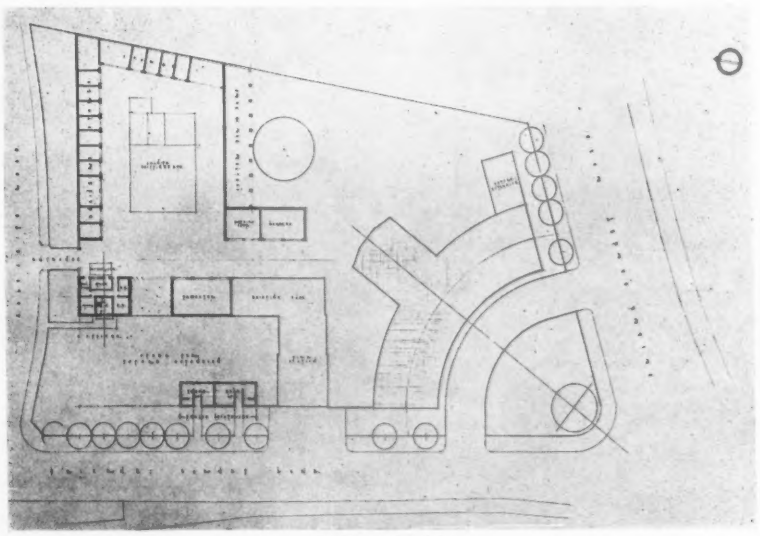
Mr. C. Cowles-Voysey, the Assessor of the Friern Barnet Municipal Offices Competition, has made his Award as follows :—

Design placed First (£150) : Sir John Brown and A. E. Henson, 117 Sloane Street, London, S.W.

Design placed Second (£100) : Frank S. Hodge, 422 Upper Richmond Road, Putney.

Design placed Third (£50) : Lyons, Israel and Elsom, 3 Paul's Bakehouse Court, London, E.C.

The first two designs are illustrated on this and following pages.



SITE PLAN

EXTRACTS FROM THE WINNER'S REPORT

GENERAL ARRANGEMENT

The main building has been planned on a central axis between Friern Barnet Road and Friern Barnet Lane, as this symmetrical arrangement would give dignity ; by setting the building back with a slightly curved front, an access road with parking for cars is provided, and an ample forecourt to be laid out with architectural features.

A main central entrance is provided with secondary entrances to each side elevation.

The building has been planned to maintain the present entrance to the yard at the south side of the fire station, as this would give access for private car park, caretaker's flat, staircase to public gallery, fuel, etc., and the existing paving could be retained.

The layout of the engineer's depot has been planned to allow ample room for extension as required, and it has been found possible to retain the large tree in the present park, as shown on site plan.

The council suite is planned on the first floor, with the council chamber block projecting to the rear, therefore isolated from the business portion of the building and all traffic noises ; and the committee rooms, chairman's and members' room with direct access from the main corridor.

The public gallery is served by a separate staircase with direct access from the car park at rear, and has alternate access from the central staircase.

The departments are planned as under :—

Basement : Heating chamber, fuel store.

Ground floor : Accountants' department, public health department, registrar.

First floor : Clerks' department.

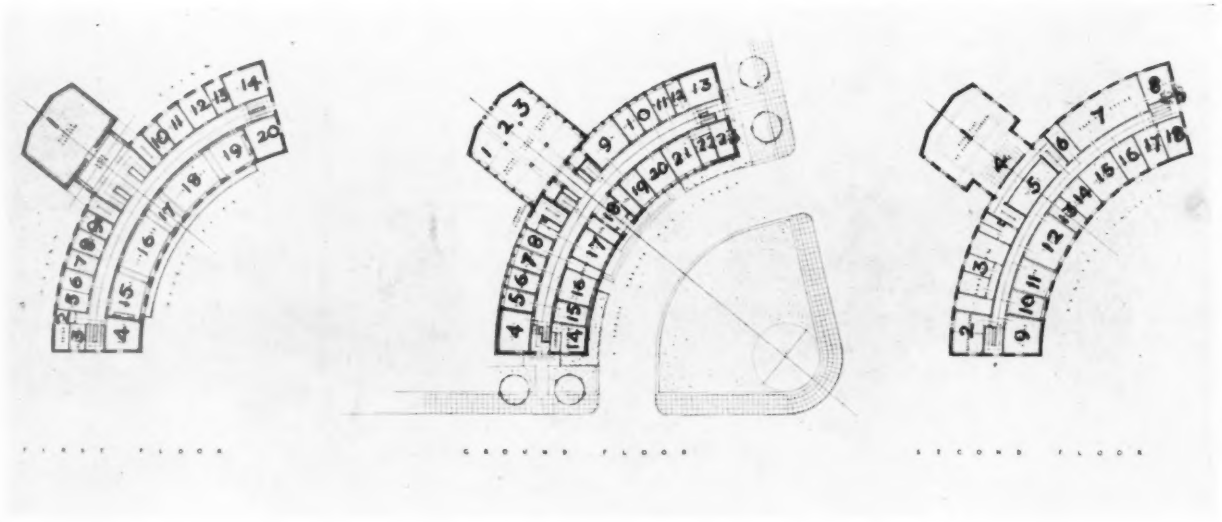
Third floor : Surveyor's department, caretaker's flat.

The staircase from yard to public gallery also gives direct access up to the caretaker's flat.

The rates and general office of the accountant's department are planned on a ground floor

DESIGNED BY SIR JOHN

THE WINNING DESIGN



mezzanine, to take full advantage of ground levels ; an exit from this office direct into yard at rear can be provided if required.

CONSTRUCTION

The buildings would be constructed with brick walls of requisite thickness (no steel framework) and the floors and flat roofs constructed of fireproof hollow concrete blocks.

The walls externally would be faced with 2 ins. plum-coloured sand-faced bricks with Ketton stone dressings.

The floor finishes generally would be wood blocks, with terrazzo tiling to lavatories, etc.

Flat roofs would be formed of approved patent flat roofing.

The pitched roofs to main building would be covered with 16 oz. copper sheets laid on boarding and felt.

Wall surfaces internally finished in patent plaster dados to corridors, stairs, lobbies, etc., and terrazzo tiling.

All staircases to be in reconstructed Hoptonwood stone with non-slip treads.

Ceilings generally to be plaster, moulded to design where necessary. Ceilings to all service corridors, etc., throughout to be supported from floors over to form a void ; to consist of "Insulite" plaster base skimmed with plaster to match other ceilings, to deaden sound.

The council chamber would be panelled in hardwood to lower portion, the upper portion of walls and ceiling treated with acoustic plaster to give a suitable reverberation.

ESTIMATE OF COST

The figures of cubic contents given below are based on actual experience of this type of work now in progress.

The estimate includes drainage, decorations, heating and electric lighting.

	£	£
Front block—		
Basement : Cubic contents at 1s. 2d. per foot cube ..	826	
Upper floors : Cubic contents at 1s. 8d. per foot cube ..	24,280	
		25,106
Rear block at 2s.		6,960
Engineer's depot at 9d.		4,518
Public lavatories at 1s. 9d. ..		966
Buildings		37,550
Forecourt layout and parking space		1,250
Yard, etc., to engineer's depot		450
Total estimate ..		£39,250

FIRST FLOOR

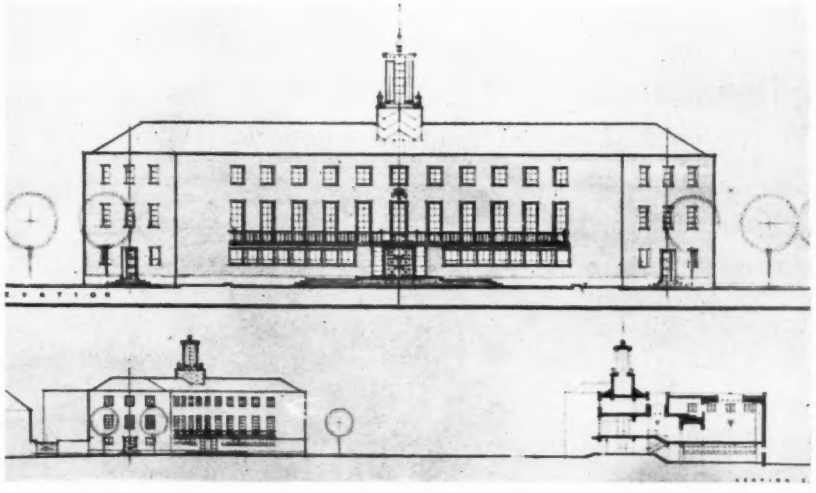
1 : Council chamber
2 : Books
3 : Ladies' cloaks
4 : Lady members
5, 6 : Spare offices
7 : Lavatory
8 : Members' cloaks
9 : Female staff
10 : Male staff
11 : Deputy clerk
12 : General office
13 : Waiting room
14 : Typists
15 : Members
16 : Committee room
17 : Ante
18 : Committee room
19 : Chairman
20 : Clerk

GROUND FLOOR

1 : Rates office
2 : Public space
3 : General office
4 : Store
5 : Records
6 : Registrar
7 : Female lavatory
8 : Male lavatory
9 : Cashier
10 : Spare offices
11 : Machine room
12 : Lavatory
13 : Records
14 : Engineers
15 : M.O.H.
16 : Sanitary inspector
17 : General offices
18 : Entrance hall
19 : Typists
20 : Accountant
21 : Housing officer
22 : Valuation assistant
23 : Valuation officer

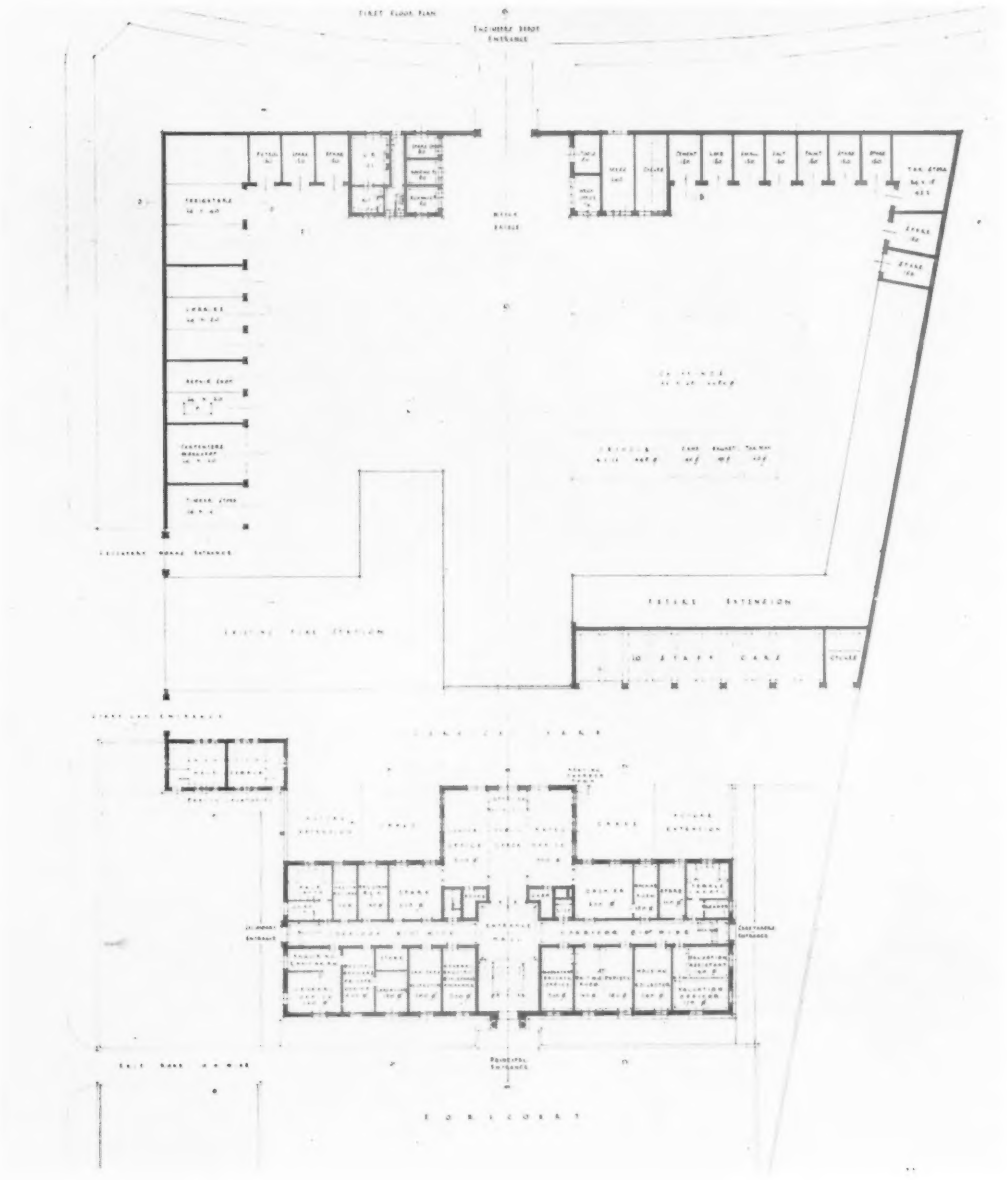
SECOND FLOOR

1 : Upper part of council chamber
2 : Records
3 : Caretaker
4 : Public gallery
5 : Top light
6 : Lavatory
7 : Drawing office
8 : Photo printing
9 : Plan filing
10 : Store
11 : Typists
12 : General office
13 : Enquiries
14 : Deputy surveyor
15 : Surveyor's office
16 : Building inspector
17 : Town planning
18 : Spare

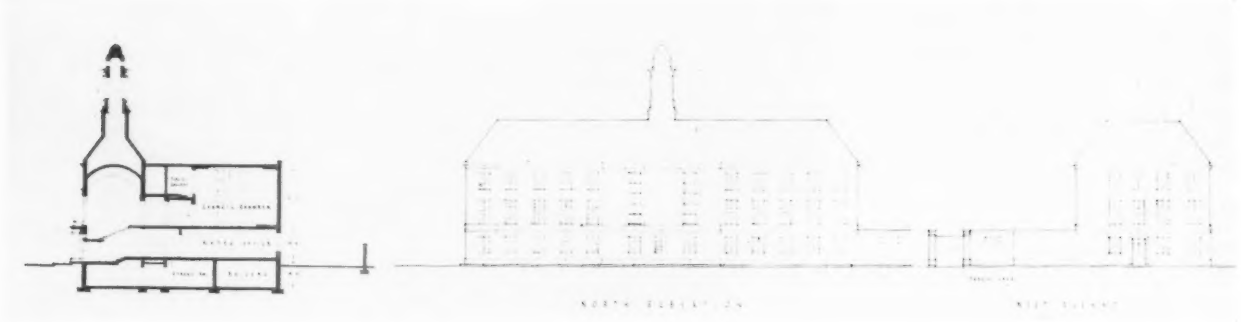


BROWN AND A. E. HENSON

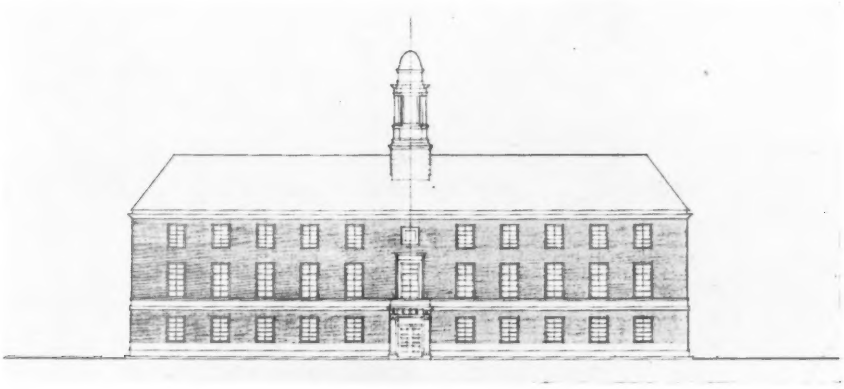
THE FRIERN BARNET COMPETITION:

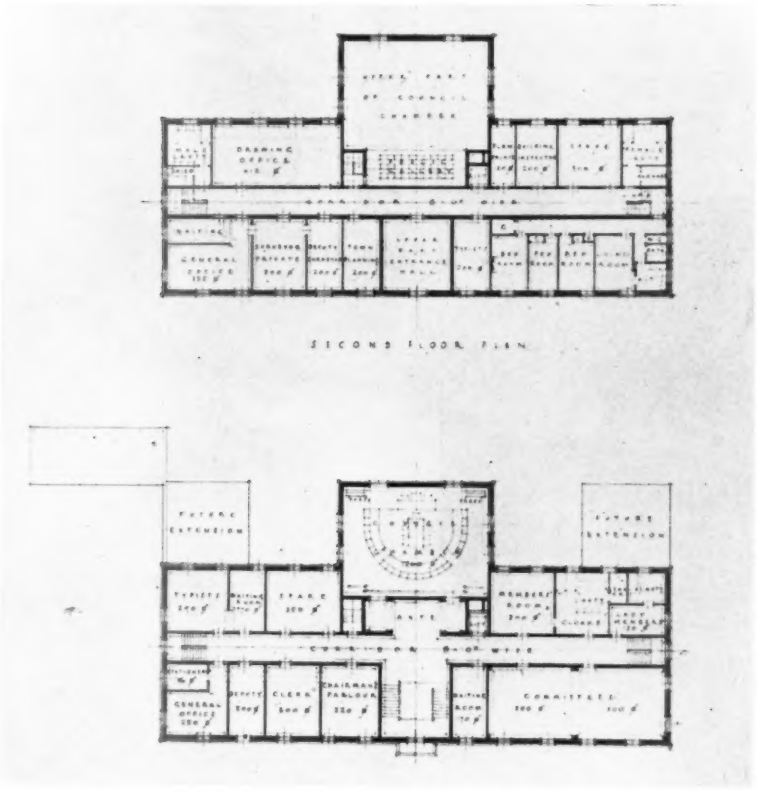


Above, the ground plan; below, the north elevation and section through main entrance.

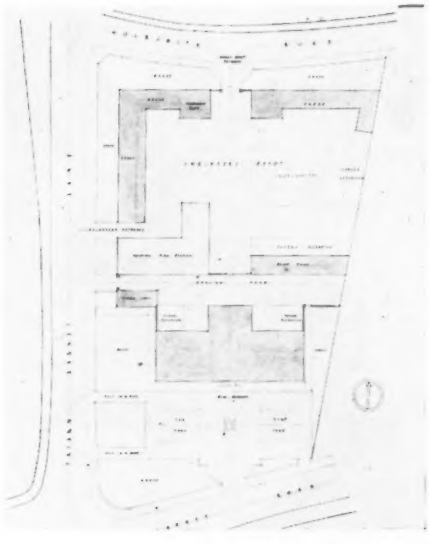


THE SECOND PREMIATED DESIGN



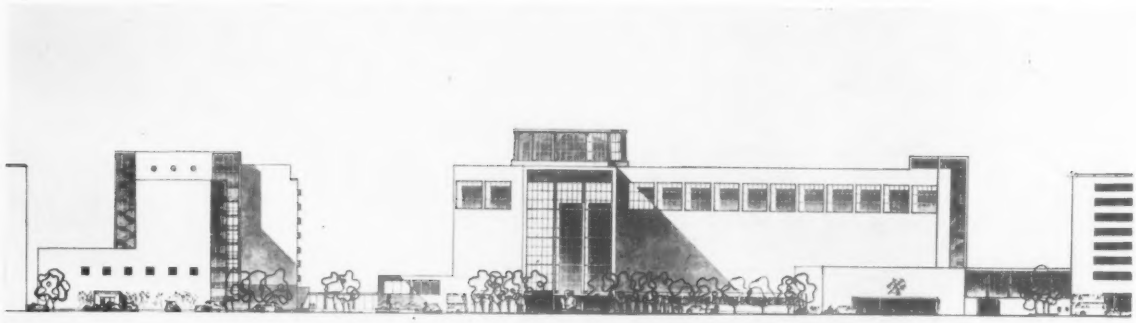


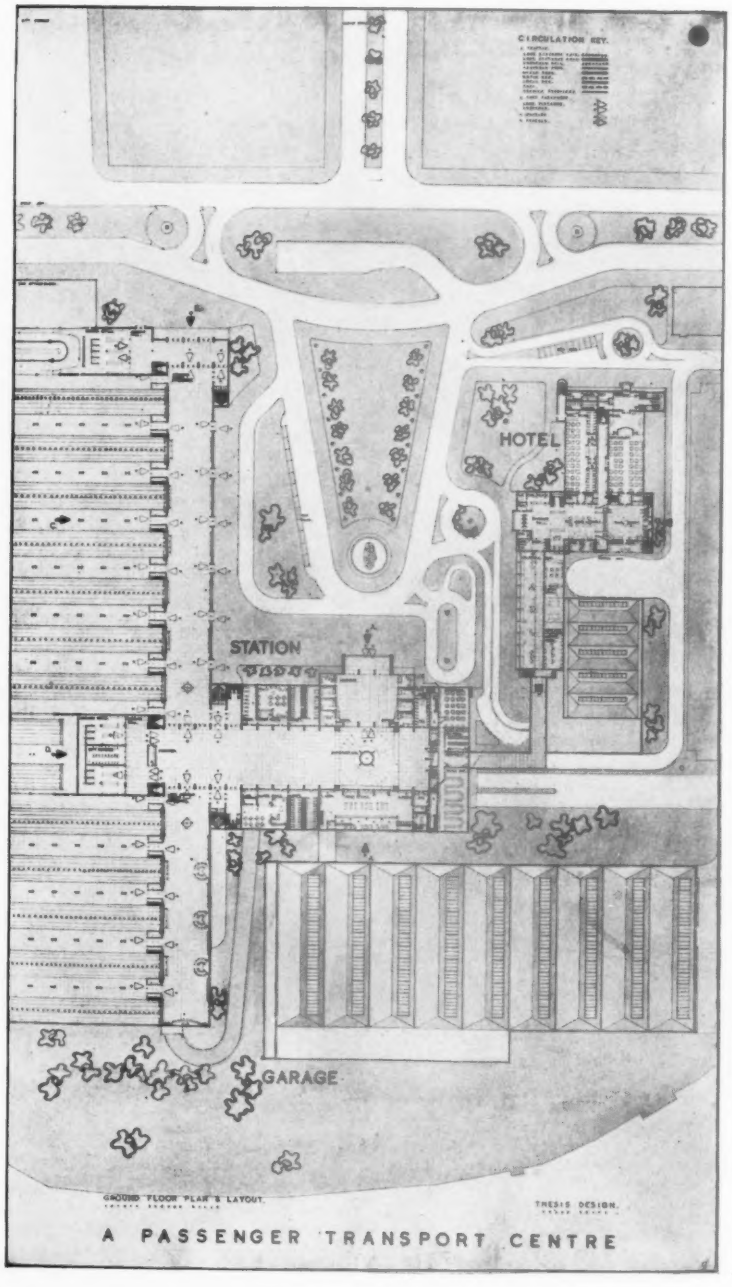
Top, the principal elevation. Left, the first and second floor plans. Below, the site plan.



BY FRANK S. HODGE

SCHOOL EXHIBITIONS: THE LEEDS



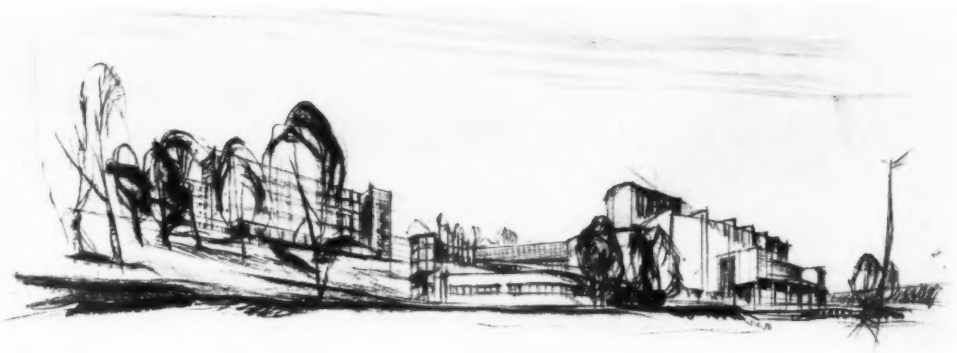


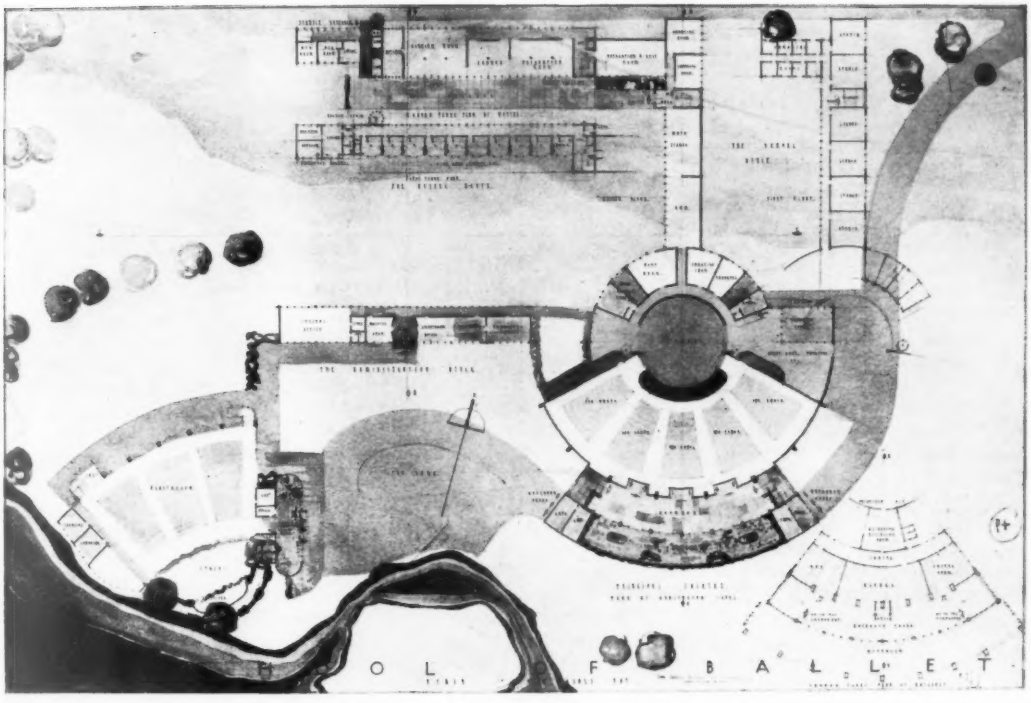
The annual exhibition of the Leeds School of Architecture is now being held at the Art Gallery, and was visited by members of the R.I.B.A. Conference held recently at Leeds. The exhibition is specially interesting both for the large number of "practical" buildings included in the design subjects (such as nursery schools, woollen mills and transport centres) and for the way in which senior students are encouraged to regard local experts in their particular study as clients with whom they carry on discussions and correspondence in as independent a way as possible. The co-operation which the school has managed to achieve with a large number of public and private bodies in West Riding has enabled this form of training to play a very large part in its work.

Above and left, n passenger transport centre for Leeds, by Mr. Frank White (5th year student).

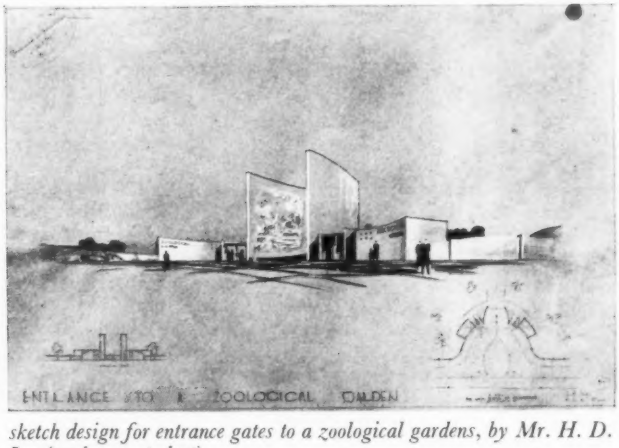
SCHOOL OF ARCHITECTURE

Right, perspective sketch and plan of a School of Ballet, by Mr. H. Wharfe (4th year student).





Left, a perspective drawing of the solarium gallery in a passenger transport centre at Leeds, by Mr. Frank White. Right, a six-hour sketch design for entrance gates to a zoological gardens, by Mr. H. D. Lee (2nd year student).



LETTERS FROM READERS

Salaried Architects

SIR,—I have been interested in reading your leader last week and the correspondence with reference to the R.I.B.A. elections, and the position of salaried architects.

Someone, somewhere, at some time, truly said, that "Every country will have the Government it deserves." I think one may apply the remark to institutions, and therefore to the R.I.B.A.

If only one-fifth of the members trouble to vote, the remaining four-fifths get at least as much, probably more, than they deserve.

Twenty-five per cent. of this one-fifth are content, knowing the majority on the council will represent and satisfy them; the remaining 75 per cent. are discouraged because they feel that it is hopeless to expect to change this atmosphere at the R.I.B.A. while four-fifths of its members are not prepared to make the necessary sacrifice of time in an attempt to make the Institute council really and truly representative of the whole profession.

A little courage, a good deal of energy and a great deal of self-sacrifice is necessary to organize a reformation (and a few crusaders are necessary as leaders) at any time, and particularly so at the present time, within an institution where the majority of members of council are probably quite satisfied that the R.I.B.A. fulfils its mission adequately as a learned society and justifies its title of Royal.

All my sympathy is with the salaried architect, and I have never understood the attitude of men who demand for themselves a minimum fee and deny to others a minimum salary. Lest it may be thought that this was pocket sympathy I will add this personal note. I have never been a "salaried man"; and to those I pay salaries I have acted in accordance with my belief by paying more than the minimum ever likely to be achieved in my time.

When the A.A.S.T.A. members are prepared to make individual sacrifices of time and pleasure to advance the interest of the corporate body of salaried architects, success will be assured although it will take time to achieve. The majority of the members of the profession are salaried men; therefore they can govern the R.I.B.A. as soon as they are prepared to make the necessary sacrifice.

You, sir, suggest that the younger men when not *too busy* should devote their spare time to the work of the Institute.

CHARTERED ARCHITECT AND SURVEYOR

E. B. CHAPMAN

CHARLES MATTINGLY

My experience is that if you want work done you should go to the busy men—if you want money to those who give it to other things; those men who are misers of time or money are no use to any crusade.

Spasmodic efforts by men looking for something to occupy their minds to escape boredom will never result in anything. The men who are wanted are those who will make time to do anything they conceive worth doing.

The work of the A.A.S.T.A. should be to convince their members that the work of the R.I.B.A. is worth doing. They have the majority of votes at the Institute. They should use them, not for individual benefit, but for the good of the profession as a whole.

If you examine the records you will find that the work of the Institute has been carried on mainly by the busiest men in the profession, not by those with the least to do in their own practice.

On the whole it is easier for the salaried man to "make time" than the man in private practice; the difficulty is to convince the young man hoping to make a practice for himself that it is good that he should give something of himself for the good of others.

When I ask a young man if he goes to the Institute meetings he looks at me as though he thought me mad. Perhaps I am; but this I say without hesitation—for fifty years I have given as much time to other things as to making a living (and during the whole of this time the latter has been an absolute necessity). I have made less money, but I do not regret the giving and have been happy in the experiences and friendships made.

I would rather have as epitaph "He fought a good fight" than "He left a million pounds sterling."

Yes, "It is better to give than take."

CHARTERED ARCHITECT AND SURVEYOR

•

SIR,—From time to time, we are told, a prophet arises. Sometimes he is heard, and his words, pointing to something better and finer, rock an established order. Sometimes, like Mr. Frank Bent, he is a voice crying in the wilderness.

I was disappointed at the response to Mr. Bent's provocative but perfectly fair letter of a week or so ago. His strictures had the ring of truth; his words breathed the spirit of a crusade. Yet not a word from the ranks of salaried architects whose cause he espoused so mightily.

There is not the slightest doubt that salaried architects (the legion of assistants who for economic reasons can never hope to become principals) have few rights and practically no privileges in an institution of which, numerically, they form the bulk. Their remuneration depends upon the whim of individual employers, and their employment is as casual as that of factory hands. They, too, have to "stand off" when things are slack! A pretty position for a man who may have spent hundreds of pounds qualifying in his profession.

At the same time their apathy alienates sympathy. They are getting as much, or as little, as they deserve. I suspect an insidious form of professional snobbery as a contributory cause. I see a re-hash of the old pre-war fetish of "keeping up appearances"—you felt very superior to your tradesmen although they could each probably buy you up two or three times over. I gather that it would not be etiquette to organize as would *hoi polloi* in order that common justice might be done.

Or, perhaps, I am wrong. I hope so. Perhaps they merely await some constructive proposal into which they can sink their teeth. Perhaps they must see before them the machinery which is to bring about these changes—and in working order. Then, possibly, we shall get action. A clean wind will sweep through the gilded portals of Portland Place, and the cobwebs (carefully preserved and transferred from Conduit Street) be swept away. There shall be a new heaven and a new earth, architecturally speaking.

At least, I hope so, for I always feel sympathetically inclined towards voices crying in the wilderness, especially when they are crying about something that touches me very closely.

E. B. CHAPMAN

Art and the Inn Sign

SIR,—During the last fifty years, the pictorial inn sign has fallen into desuetude. Although it is popular, artists have refrained from doing this lucrative type of work. Brewers and publicans demand it; and yet it still requires an enormous amount of study. Artists would do well to study Holbein, Hogarth, Morland, Constable and the paintings of the late Norman Shaw; also a course of armorial bearings, crests. Just recently a noted brewery had a marine sign executed, which can only bring down the satire of marine artists and ship workers, the essentials being so obviously lacking.

CHARLES MATTINGLY

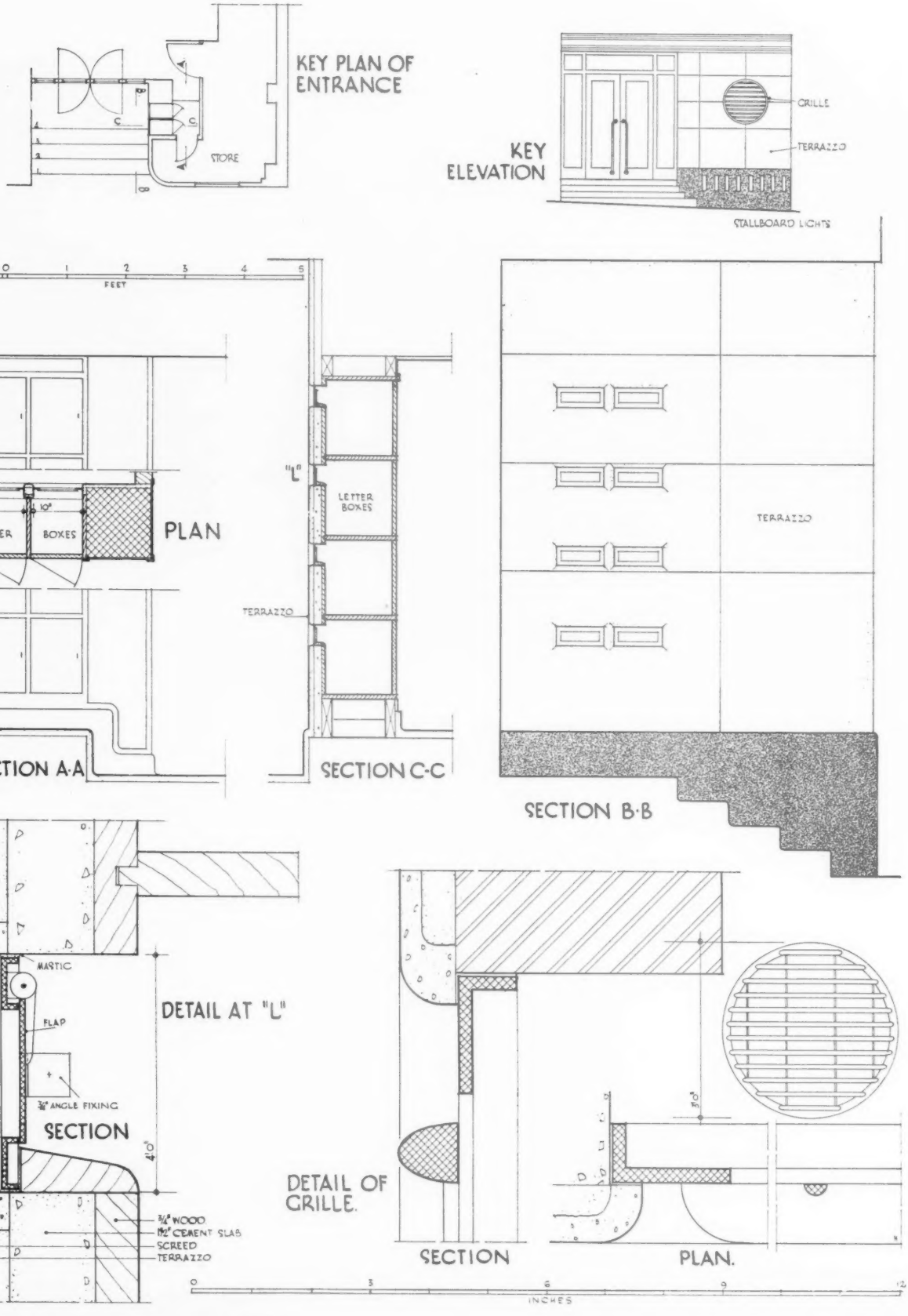
WORKING DETAILS : 563

ENTRANCE • PEARL ASSURANCE BUILDING, BOURNEMOUTH • McGRATH AND GOODESMITH

The enclosing wall, on the right of the entrance, is in buff-coloured terrazzo facing slabs, broken by a bronze ventilating grille and by letter-boxes.
The plinth is in black terrazzo laid *in situ* with glazed apertures in $\frac{1}{2}$-in. solid cast plate ; the terrazzo steps have non-slip tile nosing strips ; and the polished mahogany entrance doors are glazed with $\frac{1}{4}$-in. Georgian wired polished plate. The blind lath is in bronze sheet, and the lettering is out of half-round solid bronze. Details are shown overleaf.

WORKING DETAILS : 564

ENTRANCE • PEARL ASSURANCE BUILDING, BOURNEMOUTH • McGRATH AND GOODESMITH



Details of the entrance illustrated overleaf.

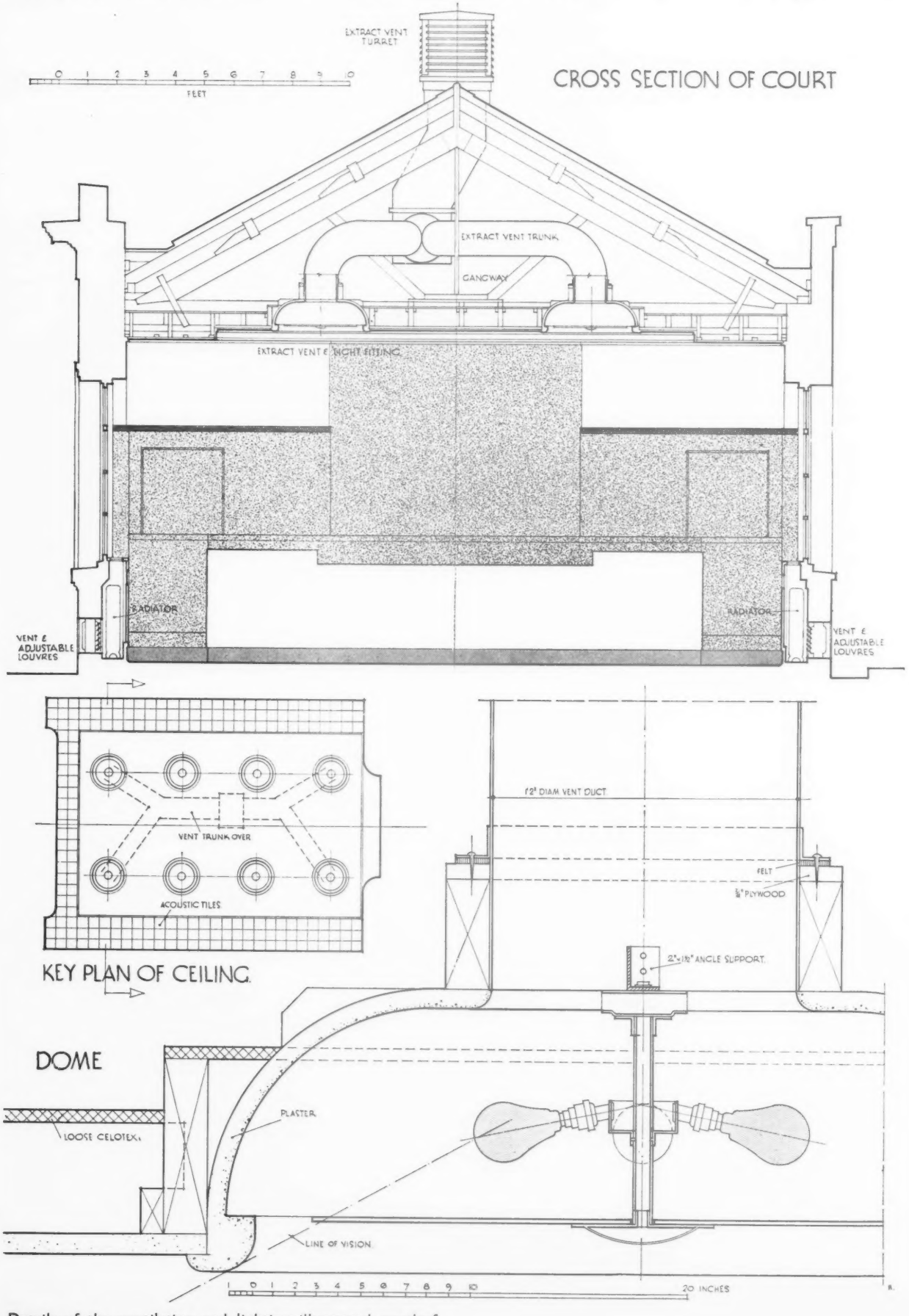
WORKING DETAILS : 565

VENTILATION AND LIGHTING • BOW STREET POLICE COURT • G. MACKENZIE TRENCH

Lighting is from eight obscured glass disc fittings fixed flush with the ceiling and set in fibrous plaster domes. Four of these also form air extracts and are connected by trunks in the roof space to an extract fan and an outlet turret on the roof.

WORKING DETAILS : 566

VENTILATION AND LIGHTING • BOW STREET POLICE COURT • G. MACKENZIE TRENCH



Details of the ventilation and lighting illustrated overleaf.

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

INFORMATION SHEET

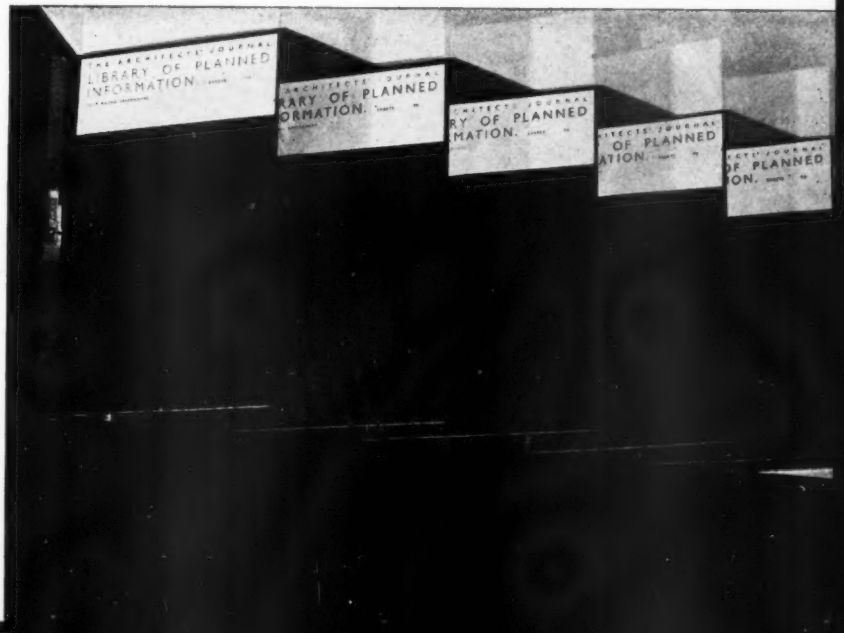
SUPPLEMENT

SHEETS IN THIS ISSUE

532 Roofing—Flashings

533 Asbestos-Cement Corrugated Sheets

534 Insulation of Buildings



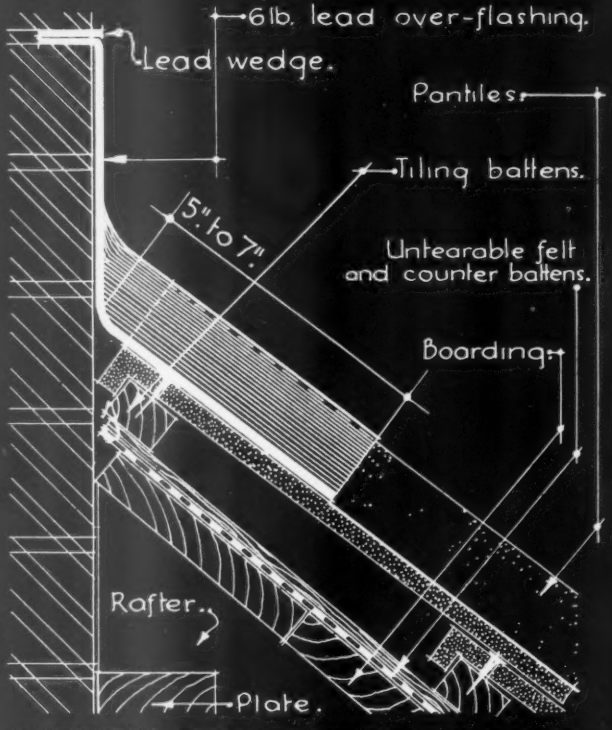
Sheets Issued since Index :

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

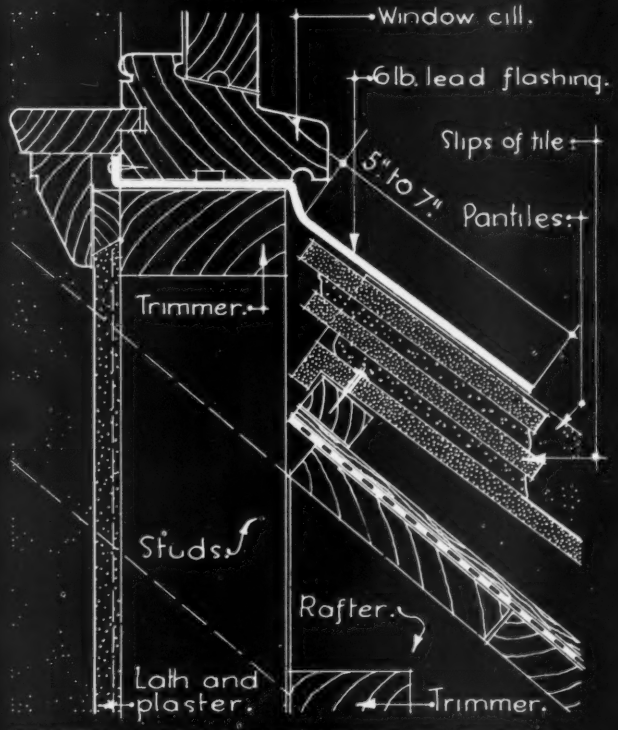
621.

621. THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION.

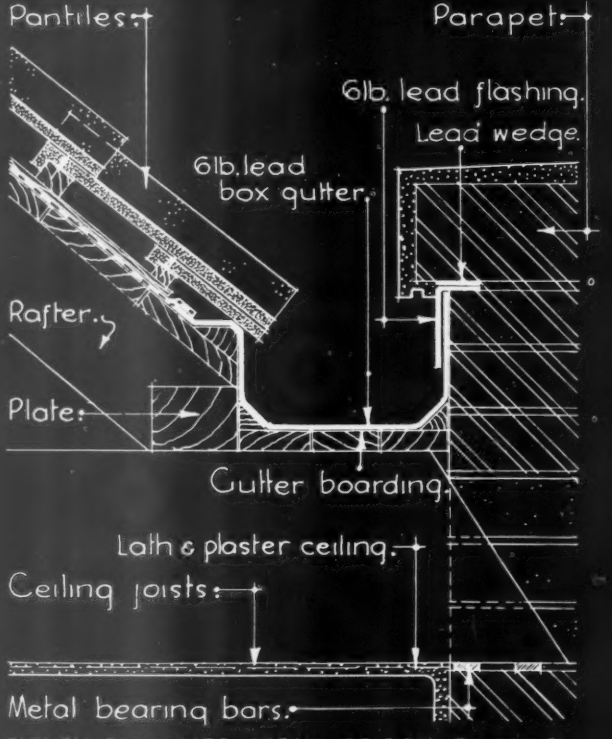
LEAD FLASHING TO ABUTMENTS & CONCEALED GUTTERS WHEN INTERLOCKING OR PANTILES ARE USED.



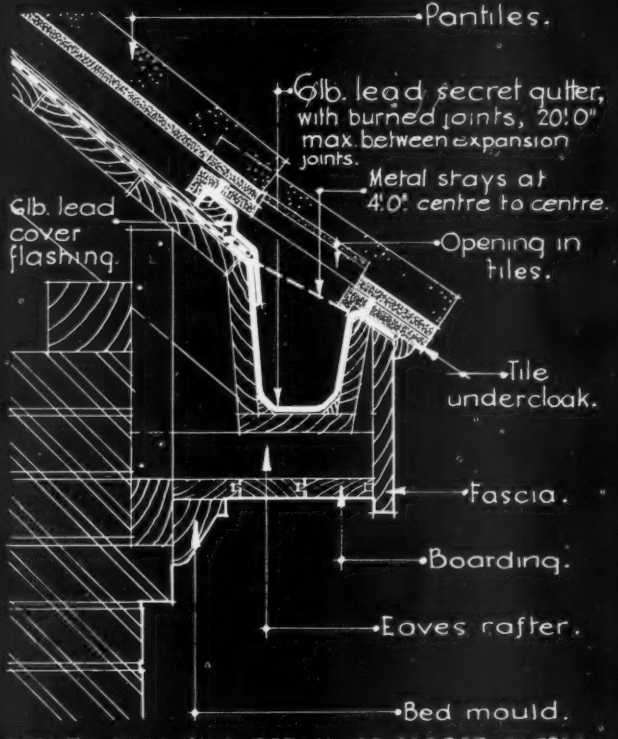
QUARTER F.S. DETAIL OF ABUTMENT FLASHING.



QUARTER F.S. DETAIL OF FLASHING OF DORMER.



EIGHTH FULL SIZE DETAIL OF BOX GUTTER.



EIGHTH FULL SIZE DETAIL OF SECRET GUTTER

Information from Lead Industries Development Council.

INFORMATION SHEET: LEAD FLASHING TO ABUTMENTS & CONCEALED GUTTERS. No 37.
SIR JOHN BURNET TAIT AND LORNE ARCHITECTS ONE MONTAGUE PLACE BEDFORD SQUARE LONDON WC1. Oscar A. Bayne.

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET

• 532 •

ROOFING—FLASHINGS

Subject : Lead flashing to abutments and concealed gutters when pantiles or interlocking tiles are used.

General :

This Sheet contains four details, viz. :—

1 : Detail showing a method of flashing an abutment of a pantile roof against a brick wall.

2 : Detail showing a method of flashing at the cill of a dormer window.

3 : Detail showing a method of constructing a lead-lined box gutter.

4 : Detail showing a method of constructing a lead-lined secret gutter at the eaves of a pitched roof.

Detail No. 1 :

In this detail the lead flashing is secured into the brick joint by means of a lead wedge, then dressed down over the face of the brickwork on to the tiles. The flashing over the tiles should extend down the roof 5 ins. to 7 ins. and be well dressed down into the pan of the tiles.

Length :

The length of one piece of flashing should not exceed 7 ft.

Fixing :

Each piece of lead should be secured by lead wedges into brick joints at not more than 12-in. centres.

Detail No. 2 :

This detail shows a method of flashing a dormer window cill, when pantile or interlocking tiles are used on the roof. In this case the lead is turned up the back of the cill and tacked, then carried through under the cill and well dressed down over the tiles 5 ins. to 7 ins. In the method shown here, the pans in the tiles are filled level with the top of the tile by setting slips of tile in mortar. This gives a straight line of flashing and avoids having the lead beaten down into the pan, which is an alternative method of carrying out flashing.

Fixing :

The lead should be secured to back of window cill by means of copper nails.

Detail No. 3 :

This detail shows a method of forming a lead-lined box gutter. The gutter boards are secured to the ceiling joists, which are built up where required, to give a fall to the gutter. The lead is run up under the untearable felt and dressed down over the tilting fillet into the gutter which has fillets in the angles, the lead is then turned up the parapet wall and over-flashed with a lead apron, secured into the brick joints with lead wedges. A tile undercloak is shown used in the detail, to form a base for the filling in the ends of the tiles.

For further information on box gutters see Information Sheet No. 148.

Fixing :

The lead should be fixed with copper nails to the boarding and with lead wedges in the joints of the brickwork.

Detail No. 4 :

This detail shows a method of forming a secret gutter, lined with lead, in the eaves. The gutter is formed in this case by cutting the rafters off shorter than normally and fixing boarding to the end of them, on top of the eaves rafters, and at the back of the fascia. The lead lining to the gutter is fixed to the boarding up under the untearable felt and dressed down into the gutter over fillets in the angles and turned up over the lower side of the gutter, and fixed to the fascia. A 6 lb. lead cover flashing is fixed over the lowest tiling batten, and is carried down to within 5 ins. of the bottom of the gutter. The joints in the lead lining are leadburned, and expansion joints should be formed not more than 20 ft. 0 in. apart. Metal ties should be fixed from fascia to roof boarding across the top of the gutter at not less than 3 ft. centres. The tiles immediately over the gutter have a hole formed in the pan, through which rainwater falls.

Fixing :

The lead is fixed to the boarding on one side of the gutter and to the fascia on the other by means of copper nails.

Length :

The length of one piece of lead for either flashing or gutter lining should not exceed 7 ft.

Lapping :

The lead should be lapped at least 4 ins. at joints in all cases, the higher piece always lapping over the piece below it.

Weight :

It is recommended that 6 lb. lead be used in all cases of flashing dealt with on this sheet.

Protection of Lead :

It is generally recommended that lead be protected by a bituminous coating where it comes in contact with mortar.

Issued by : The Lead Industries Development Council

Address : Rex House, 38 King William Street, E.C.4

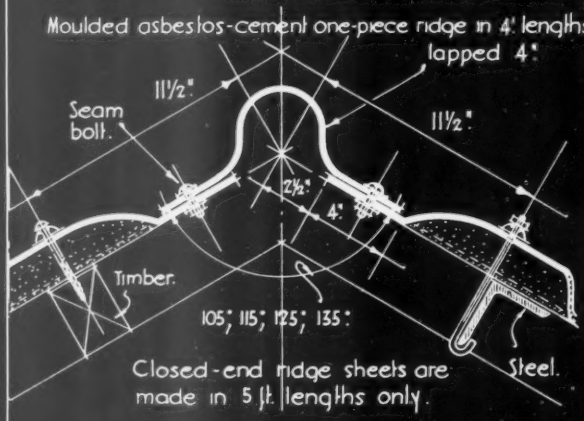
Telephone : Mansion House 2855

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

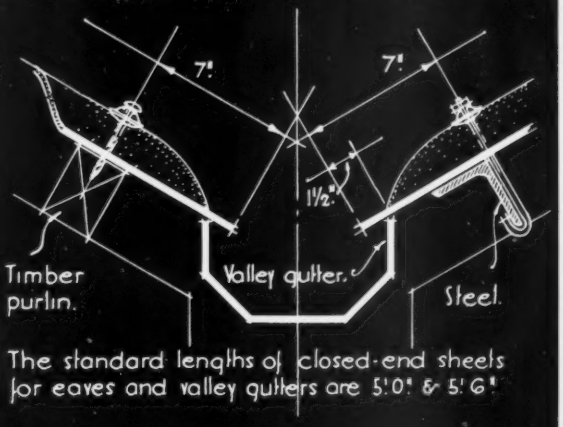
·EVERITE· BIGSIX · ASBESTOS-CEMENT CORRUGATED SHEETS: ROOF ACCESSORIES.

NOTE: For general data & notes on laying, ridges, hips, etc., see previous Information Sheet No. 2 of this series

DETAILS OF CLOSED-END SHEETS FOR EAVES, GLAZING & RIDGE, showing special position of purlins. SCALE, 1½" = 1'0"

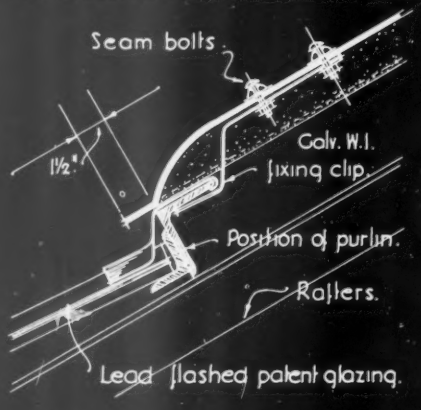


Closed-end ridge sheets are made in 5 ft. lengths only.

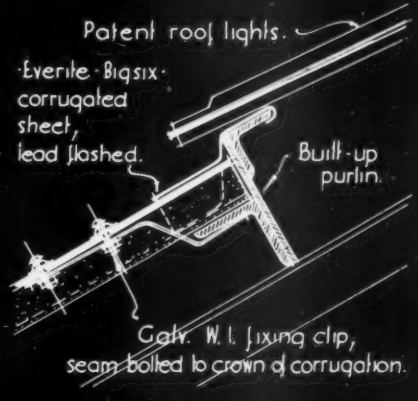


The standard lengths of closed-end sheets for eaves and valley gutters are 5'0" & 5'6"

ALTERNATIVE METHODS OF FIXING SHEETS ABOVE ROOF GLAZING.

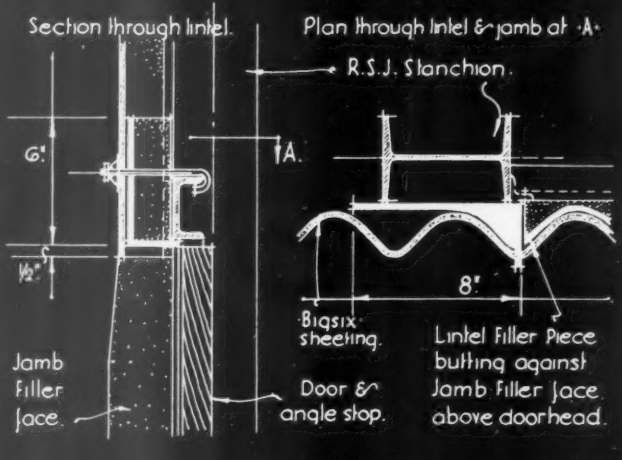


FIXING TO SHEETS BELOW GLAZING.

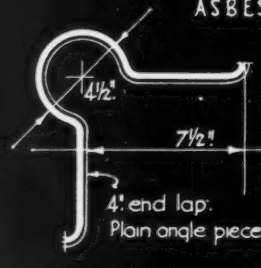


OTHER FITTINGS: For details showing typical application of Apron Flashing Pieces, Barge Boards, Eaves Filler Pieces, Louvre Blades, Roof Lights, Dormer Ventilators, etc., see previous Information Sheets Nos. 400, 426 & 427, and notes on reverse side hereof.

DETAILS OF JAMB FILLER PIECES AND LINTEL PIECES.



ASBESTOS-CEMENT CORNER PIECE.



Designed for finishing off external corners of buildings sheeted with ·Bigsix· corrugated sheets, these pieces are supplied in standard lengths of 8'. One end of each length is joggled for a flush-fitting

Plain angle pieces are available for internal corners.

SOAKER FLANGES.

For interlaying without flashings in any part of roof.

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

INFORMATION SHEET: ASBESTOS-CEMENT CORRUGATED SHEETS: No 3

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

THE ARCHITECTS' JOURNAL
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INFORMATION SHEET
• 533 •
ASBESTOS-CEMENT CORRUGATED SHEETS

General :

This is the second of two Information Sheets dealing with "Everite" "Bigsix" asbestos-cement corrugated sheets, and illustrates various asbestos-cement accessories for use in conjunction with this type of roof and wall covering. The previous Information Sheet gave general data and notes on laying, ridges and hips, etc.

Closed-end Sheets :

The closing of the ends of the corrugations provides a weathering, moulded in the sheet itself, at eaves, over glazing or at the ridge. The closed ends prevent the blowing back of driven rain or snow.

The sheets are designed for continuous bearing on the purlin, this being obtained at the 2-ins. (half corrugation) side lap by making the overlapping corrugation slightly larger and thereby ensuring a flush soffit. A joggle in the flattened end of the sheet permits an even bearing at this point also.

The gradual fade-out of the corrugations into the 1½ in. flat at the eaves and glazing allows a free discharge of water, while at the ridge the 4-ins. flat forms a close-fitting seat for the specially moulded one-piece ridge, this being simply stitched to the flat of the sheet by seam bolts as indicated. This ridge is made in 4-ft. lengths and laid with an end lap of 4 ins. The ridge in turn may be bedded in bituminous compound, when necessary.

Intermediate sheets on the roof slope are of the usual open-ended type.

The diagrams overleaf show the particular setting out of the ridge, glazing and eaves purlins required for closed-end sheets.

Jamb filler piece and lintel piece :

As shown by the details overleaf, these asbestos-cement pieces are designed to provide a serviceable finish to the jambs, and to fill in the corrugations at the heads of doors and windows. Their use also avoids the necessity for lead flashings.

The small projection on the face of the jamb filler, when fixed, should be trimmed back at the door or window head to retain the ½-in. drip on the lintel sheeting. It will be noticed on the section that this trimming has been done on the skew, and is accomplished on the site with a saw and dreadnought file.

The method of finishing at the junction of the jamb and lintel fillers above the head depends on the positions of the sheet corrugations. In some cases it will be necessary to allow the lintel filler to run beyond the jamb filler, this latter piece butting against the underside of the former. On the plan overleaf, where a corrugation in the wall sheeting is shown coinciding with the half corrugation formation of the jamb filler, the lintel filler is shown butting against the face of the jamb filler, this being carried up to the top edges of the lintel piece.

Jamb fillers are made in standard lengths of 10 ft., and lintel filler pieces in lengths of 3 ft. 3½ ins.

Corner Pieces :

These pieces are for use at the corner junction of vertical sheeting, and are fixed to steel or wood rails by means of hook bolts and drive screws respectively, or may be stitched to vertical sheeting by means of seam bolts.

Soaker Flanges :

As detailed overleaf, these are manufactured specially to overcome the difficulties usually attendant when it is required to penetrate a roof with a flue or other outlet. The flanges require no lead flashing and can be interlaid with the ordinary sheeting in any part of a roof.

Apron Flashing Pieces :

For typical application see previous Information Sheet No. 427 dealing with "Turnall" Trafford Tiles.

For use with "Everite" "Bigsix" corrugated sheets these pieces are designed with a 10¾ ins. corrugated wing, and are used instead of lead flashings in any position where it is desired to turn the ends of the sheets upwards, and for abutment work generally. The pieces have an overall length of 3 ft. 6⅜ ins., and each length is provided with one joggled end for a flush-fitting end lap.

Barge boards :

This fitting is made in 6 ft., 8 ft., and 10 ft. lengths with a roll and 8-ins. plain, right-angle wings, for use at the gable verges. The lengths are tapered to allow for a 6-ins. lap to correspond with roof sheeting. Barge boards are fixed to the sheets by means of hook bolts, drive screws or seam bolts, the vertical leg being properly fastened to the side sheets or to the gable end.

Eaves filler pieces :

For typical application see previous Information Sheet No. 400 dealing with "Turnall" Trafford Tiles. The filler pieces are for use with open-ended "Everite" "Bigsix" sheeting to fill in the underside of the corrugations at eaves and glazing. Length, 3 ft. 3½ ins.; overall depth, 12 ins. No lap is required, the pieces being butt jointed. Fixing is by means of hook bolts, drive screws, or, if necessary, seam bolts stitched to the sheets.

"Poilite" Louvre Blades :

For the typical assembly of asbestos-cement louvre ventilators see previous Information Sheet No. 427 dealing with "Turnall" Trafford Tiles.

Roof lights :

(a) *Asbestos-cement dead lights*

These consist of a sheet of similar section to the "Everite" "Bigsix" corrugated sheet, in the middle of which is formed a rebated asbestos-cement frame with lead lugs for the reception of the glass. The lights are supplied unglazed and the size of the glass required is 4 ft. 2½ ins. by 1 ft. 10½ ins. by ⅛ in. to fit the daylight opening of 3 ft. 6 ins. by 1 ft. 9 ins. The sheets are obtainable in lengths of 5 ft., 6 ft. 6 ins., 7 ft. 6 ins., 8 ft., 9 ft., and 10 ft., with a standard width of 3 ft. 8½ ins. The size of daylight opening in the 5 ft. length of sheet is 2 ft. by 1 ft. 9 ins.

Although these roof lights are 3 ins. wider than the "Everite" "Bigsix" sheets thereby allowing them to be laid, either from left to right or right to left, they will take the place of any sheet in any position on the roof providing the sheet to be replaced is not less than 5 ft. in length. It is only necessary to trim off half a corrugation from one side of the light, this being dependent on the direction in which the sheets are being laid.

The glass should be bedded in putty, the lead lugs turned in, and the glass front puttied.

See previous Information Sheet No. 427 for the general arrangement of the light as applied to "Turnall" Trafford Tile roofs.

(b) *Asbestos-Cement Opening Lights*

When ventilation is required in addition to light, the opening type roof light is used.

This roof light is of similar section to the "Everite" "Bigsix" corrugated sheets.

Further details will gladly be given on application.

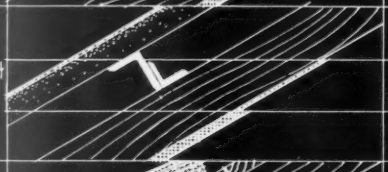
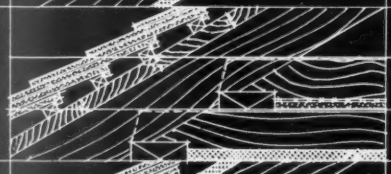
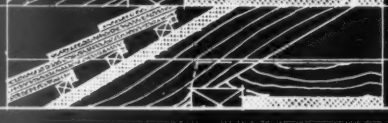
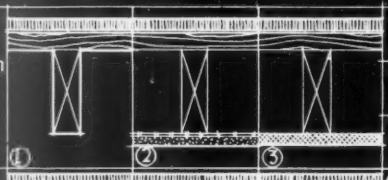
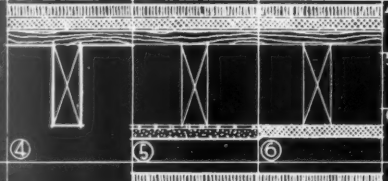
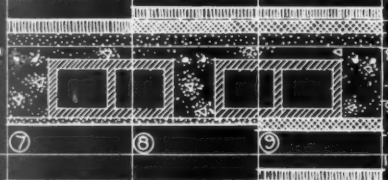
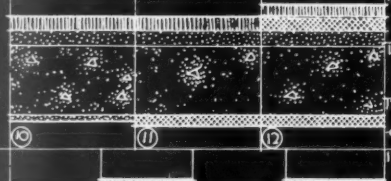
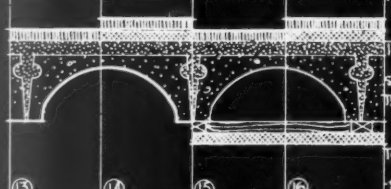
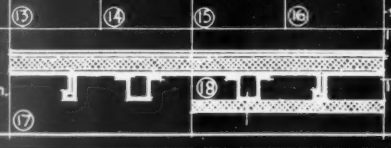
Dormer Ventilators :

These fittings are made to fit the corrugations of the "Everite" "Bigsix" sheets, and are otherwise similar to the type illustrated on previous Information Sheet No. 427, for "Turnall" Trafford Tile roofs. In this instance the sheet on which the asbestos-cement louvre frame and blades are superimposed, is made in a standard length of 5 ft. only, by 3 ft. 8½ ins. in width. Various pitches are manufactured and the ventilators are interlaid with the ordinary roof sheeting without flashings, and fixed with the standard attachments.

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

43.

THE ARCHITECTS' JOURNAL LIBRARY OF PLANNED INFORMATION

	BASIC CONSTRUCTION.	DETAIL OF CONSTRUCTION. SCALE: 1 INCH EQUALS 1 FOOT.	FINISH.	Thermal transmission. B.T.U's.	Heat loss per hr. per 1000 sq. ft. for 30°F temp. diff. B.T.U's.	Hot water radiation surface required SQ. FEET.	Cost of heating plant @ 5/- sq. ft. radiation surface. £. s. d.
PITCHED ROOFS.	Corrugated protected metal, steel purlins, wood rafters.		No lining.	0·75.	22,500.	141.	35. 5. 0.
			½" Tentest lining	0·26.	7,800.	49.	12. 5. 0.
	Corrugated asbestos-cement sheets, steel purlins, wood rafters.		No lining.	1·40.	42,000.	263.	65. 15. 0.
			1/16" Asbestos lining.	0·59.	17,700.	111.	27. 15. 0.
			⅝" Tentest lining.	0·31.	9,300.	58.	14. 10. 0.
	Tiles, T and G. boarding, wood rafters.		No ceiling.	0·56.	16,800.	105.	26. 5. 0.
			Lath & plaster flat ceiling.	0·32.	9,600.	60.	15. 0. 0.
			⅝" Tentest flat ceiling.	0·23.	6,900.	43.	10. 15. 0.
	Tiles, ½" Tentest, wood rafters.		No ceiling.	0·41.	12,300.	77.	19. 5. 0.
			½" Tentest ceiling. (flat).	0·20.	6,000.	38.	9. 10. 0.
FLAT ROOFS.	Asphalte on 1 inch boarding, wood joists.		1. No ceiling.	0·53.	15,900.	100.	25. 0. 0.
			2. Lath and plaster ceiling	0·31.	9,300.	58.	14. 10. 0.
			3. ½" Tentest ceiling.	0·23.	6,900.	43.	10. 15. 0.
	Asphalte on ⅜" Tentest on 1 inch boarding, wood joists.		4. No ceiling.	0·28.	8,400.	53.	13. 5. 0.
			5. Lath and plaster ceiling	0·21.	6,300.	40.	10. 0. 0.
			6. ½" Tentest ceiling.	0·16.	4,800.	30.	7. 10. 0.
	Asphalte on concrete and 4" hollow tile floor.		7. Plaster ceiling.	0·47.	14,100.	88.	22. 0. 0.
			8. ½" Tentest insulation plaster ceiling	0·26.	7,800.	49.	12. 5. 0.
			9. ½" Tentest insulation & ceiling.	0·19.	5,700.	36.	9. 0. 0.
	Asphalte on 6" total concrete floor.		10. Plaster ceiling.	0·62.	18,600.	117.	29. 5. 0.
			11. ½" Tentest ceiling.	0·33.	9,900.	62.	15. 10. 0.
			12. ½" Tentest insulation & ceiling.	0·21.	6,300.	40.	10. 0. 0.
	Asphalte on "Truscon" type roof.		13. No ceiling	0·80.	24,000.	150.	37. 10. 0.
			14. ⅜" Tentest insulation, no ceiling	0·35.	10,500.	66.	16. 10. 0.
			15. ⅜" Tentest ceiling.	0·26.	7,800.	49.	12. 5. 0.
			16. ⅜" Tentest insulation & ceiling.	0·19.	5,700.	36.	9. 0. 0.
	Ruberoid, steel roof deck with ½" Tentest insulation.		17. No ceiling	0·40.	12,000.	75.	18. 15. 0.
			18. ½" Tentest ceiling.	0·20.	6,000.	38.	9. 10. 0.

Issued by the Tentest Fibre Board Co Ltd. *Figures by Oscar Faber O.B.E., D.C.L., D.Sc., M.I.H.V.E..*

INFORMATION SHEET: HEATING COSTS 2.: ANALYSIS OF ROOF CONSTRUCTION & FINISHES.

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

THE ARCHITECTS' JOURNAL
LIBRARY OF PLANNED INFORMATION

INFORMATION SHEET

• 534 •

INSULATION OF BUILDINGS

Subject : Thermal transmission through roofs in relation to heating plant costs

General :

On this Sheet are set out various types of pitched and flat roofs, and the effect upon the heating costs when different finishes are applied. The thermal conductivity of each component part of the roof determines the total heat loss, and for the purpose of computing the cost of the heating plant necessary to maintain the desired internal temperature, a conservative figure of 5s. per sq. ft. of radiation surface has been taken.

The roofs are listed with and without insulation, and this is substituted for other materials in some cases.

Thermal transmission :

The figures given in the examples are based on official and independent tests under normal conditions (see table). They include surface resistances, and show the number of British thermal units which pass through 1 sq. ft. of roof (projected area) in one hour, for 1 deg F. difference between the inside and outside air temperatures.

In actual practice allowances should be made for the height of rooms, unusual exposure and aspect, also for the type of heating.

Heat loss :

The heat loss in B.T.U.'s per hour for 1,000 sq. ft. of the roof or ceiling has been used in the calculations, with an assumed temperature difference of 30 deg. F. Hence the total heat loss quoted represents the thermal transmission coefficient multiplied by 30,000.

Radiation surface :

The heat output per sq. ft. of surface of hot water pipes and radiators has been assumed as 160 B.T.U.'s per hour, so that the total heat loss in B.T.U.'s divided by 160, gives the radiation surface required for 1,000 sq. ft. of the roof or ceiling per hour for 30 deg. F. temperature difference.

TABLE OF CHIEF THERMAL COEFFICIENTS AND RESISTANCES USED

	C or K	R
Air space	1·10	0·91
Inner surface	1·65	0·606
Outer surface	6·00	0·166
6-in. concrete	12·00	0·50*
1-in. timber	1·00	1·00*
4-in. hollow clay tile ...	—	1·00*
Lath and plaster $\frac{3}{4}$ in. total	—	0·40*
$\frac{5}{8}$-in. Tentest	0·38	1·645*
Asphalte	6.5	0·15*
$\frac{3}{16}$-in. asbestos cement ...	2·70	0·07*

C or K = conductivity in B.T.U.'s per hour, per sq. ft., per degree Fahr., per 1 in. thickness.

R = Resistance = $\frac{1}{C}$ or $\frac{1}{K}$

* = Resistance for thickness used.

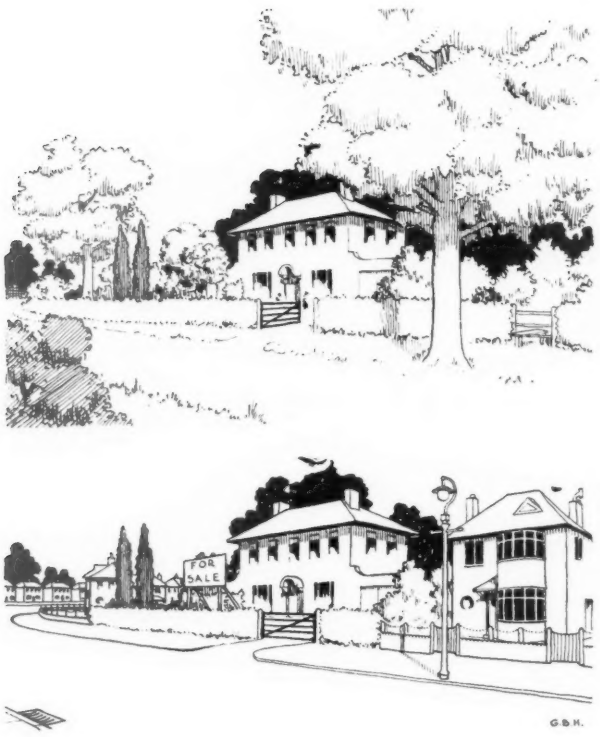
Previous Sheet :

This Sheet should be used in conjunction with No. 515, which gives similar information with regard to walls.

Information from : The Tentest Fibre Board Co., Ltd.

Address : Astor House, Aldwych, W.C.2

Telephones : Holborn 8018, 8019, 3365, 4430



". . . ripe for development?" From "Small Houses: £500–£2,500."

LITERATURE

THE RATIONAL HOUSE

[*By R. GARDNER-MEDWIN*]

Small Houses: £500–£2,500. Edited by H. Myles Wright, M.A., A.R.I.B.A. London: The Architectural Press. Price 7s. 6d.

RAMPANT propagandists in the profession will not altogether approve of this book. A number of the houses illustrated have pitched roofs. But it is to the layman that the book is addressed, and I believe that Mr. Myles Wright's brave selection of plans and photographs of some eighty competently though variously designed houses, if not the subtle wooing of his introduction, will do more towards the revival of a rational domestic architecture than any dogmatic though more agreeably consistent selection of "twentieth century" houses.

Needed first of all is a more discriminating attitude on the part of the house-owning public, and if it has the circulation it deserves a book of this kind will make a worth-while contribution towards that end. "The mildest of people have the most determined, and on occasions ferocious, ideas about the kind of house in which they would like to live," and this being so it is foolishness to bully them into accepting the kind of house which a few forward-looking architects believe to be the only one for them or for anyone else. We cannot be democrats as private citizens, fascists as professional servants.

And we have got to be honest about this "rational" house. Side by side in the book are two competently and attractively designed houses by P. D. Hepworth. One, sleek and elegant, has a flat roof. The other, white-boarded with something of American Colonial simplicity, has a pitched roof. Both are happy in their setting. Both are fit for their purpose. Of the two many of us would be prejudiced in favour of the flat-roofed house because in essence it seems more in harmony with the machine-tempered rhythm of our time. Yet the pitch-roofed house is equally "rational," if not more so, in the use of materials, most of which are cut or moulded by machine in the factory and rapidly assembled on the site. The more "modern" house, whose walls are not the thin reinforced concrete they seem to express, but cement-rendered bricks, depends much more for its ultimate finish on the craftsman's touch. Enemies of the new architecture could reasonably call it a fake. (Incidentally, it is the more expensive by 1d. per cubic foot.)

Our misfortune is that we are in the middle of the biggest bridge of transition which architecture has had to cross. In twenty years we may have achieved some unity and thought and a well-organised building industry; but at the moment there are a hundred schools of thought, a hundred ways of building, all just about as economical or uneconomical, so that any distinguishable expression of early twentieth-century architecture is too much to hope for. What we *can* hope for, and with an effort achieve by way of general education and enlightenment, is a higher standard of domestic design.

In this book are illustrated some eighty houses, all costing between £500 and £2,500 and ranging in character from the whimsical romanticism of Clough Williams-Ellis to the intellectual rationalism of Maxwell Fry. There are one or two I should have liked to have seen thrown out in favour of some well-known progressive examples, for all that the latter have been illustrated in the technical press. Most readers of this book will not have seen them. There are one or two houses which show feeble attempts at compromise: houses which in the disposition of their elements are traditional, but which try to assume a modern air by using horizontal window panes and flat roofs. Such decapitated hybrids give *modern* a bad name. There are, however, many excellent examples which have not been illustrated before, and most of the designs shown are competent if not always masterly. Altogether, the selection shows a struggle to find fresh examples of houses under £2,500 which are worth illustrating. To such miserable degeneracy have we slithered that among the millions of small houses built in the last ten years it is difficult to find, in all the British Isles, a hundred which have the degree of elegance achieved in the eighteenth century. There are no houses with fake trappings, very few which are consciously stylistic. Each one is illustrated by very clear plans and well-taken photographs, and the accompanying description is sensibly standardized under the headings site, plan, construction, finishes, services, cost.

I should have liked to have seen a short critical analysis of each house, but I suppose the remainder of Mr. Wright's life would not have been worth living had he attempted it. Why are we architects so childish about criticism? God knows we need it.

Since semi-detached individualism is a disease which takes time to cure, it is good to come across several photographs which demonstrate that the depraved method of two-by-two grouping in gap-toothed rows is capable of some semblance of urbanity when skilfully handled. There are houses at Hampstead, Welwyn, and Sale (Cheshire) which prove that even in modern suburbia the street as a unit can still be kept alive.

In the introduction Mr. Wright attempts the difficult but perfectly

genuine task of persuading the prospective house-owner that it pays to have an architect. He does it very much better than I have seen it done before, without impatience, without in any way "talking down." There is reasoned condemnation of ribbon development and "unique" houses, a warning against unscrupulous speculators, a convincing argument for a really rational house with reasons why traditional copies must depend on rare and expensive craftsmanship. What an architect's job really consists of is fully described and the truth is told about fees and the cost of rejected sketch plans.

Some excellent sketches by Brian Herbert bear out the thesis of the introduction. They have just the right sense of caricature which will make the most uninitiated layman realize the absurdity of ribbon development, the nauseating monotony of fake variety.

Every young architect who is not too haughty should have this book on his shelf ready to hand to the first potential client who comes his way.

BUILDING ORGANIZATION

[*BY O. A. DAVIS*]

Building Procedure: In the Office and on the Job. By Edgar Lucas. London: The Technical Press. Price 10s. 6d.

MR. EDGAR LUCAS has succeeded in producing a useful book, the keynote of which is the ease with which it can be read. Here, perhaps, lies a danger, as the ease with which the story of building is told is apt to lull one into feeling that one knows it all already. However, the book is worth a close study and should be a real help to many people and invaluable to those without a great deal of actual experience.

The book states briefly the functions of the various members of the building industry from client to foreman, shows how they work and what may be expected of them. Also, it points out some of the types of difficulties which may arise and the line of approach for dealing with them. Wisely, it avoids technicalities and links up rather than adds to the text-books and existing sources of information necessary for dealing with specific problems.

Referring to the architect's function, an example is given of the client who brings pressure to bear on the architect to withhold a certificate. What should the architect do? "After all, he is the client's agent, the client employs him, and, therefore, has a right to give him instructions—provided, of course, that he (the client) takes the responsibility. But this is not so. The architect's duty is clear. If the portion of work has been properly done, in accordance with the contract, he must issue the certificate, and it is illegal for him to withhold it."

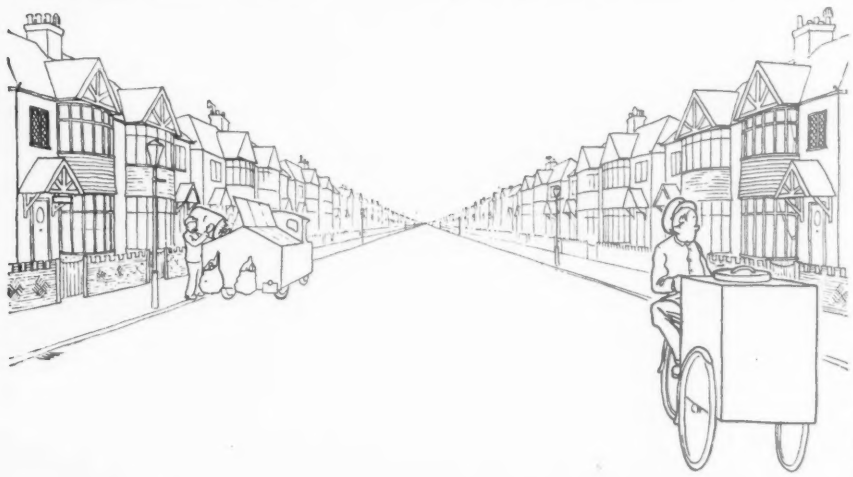
Recourse to legal tomes may still be necessary for the solution of more complicated problems but here, in simple language, the point has been made, without any doubt, that the architect is not merely a paid servant but is a party to the contract and is responsible to the contractor as well as to his client, for seeing that the contract is properly carried out.

And so, in this manner a fair impression is conveyed of what happens or what should happen, from the first conception of building to the completion of the job and the final settlement of accounts, including the selection of the site, the preparation of plans, the layout, equipment and personnel of architect's and builder's offices, the various methods of estimating and tendering, contracts, supervision and records, and the duties of the foreman, clerk of works and the various trades employed. There are chapters also on speculative building, alterations and jobbing work and estate management, and the book ends with a list of societies and institutions which, if they are only used, can be very helpful.

London quantity surveyors, who are nearly all in independent practice, would probably be surprised to learn that one firm of architects, such as is described, would have sufficient work to occupy the full time of a quantity surveyor and would deprecate the arrangement of his being a member of the firm. Few firms of architects have sufficient work to justify the employment of a staff of quantity surveyors, and one qualified man would have to waste his time in doing a tremendous amount of only semi-technical work, which is usually done by juniors. Further, the fact that he is employed by the architect destroys to some considerable extent his very necessary impartiality, at any rate in the eyes of the contractor. However, there is no doubt that this practice does exist in the provinces.

Again, the quantity surveyor would probably question the fact that it is not fair to the contractor to expect his profit to be revealed in daywork accounts. Profit on daywork accounts is regulated by an agreement between the Chartered Surveyors' Institution, the National Federation of Building Trades Employers and the London Master Builders' Association, which is of national application and any departure from this in special circumstances should be made clear in the contract.

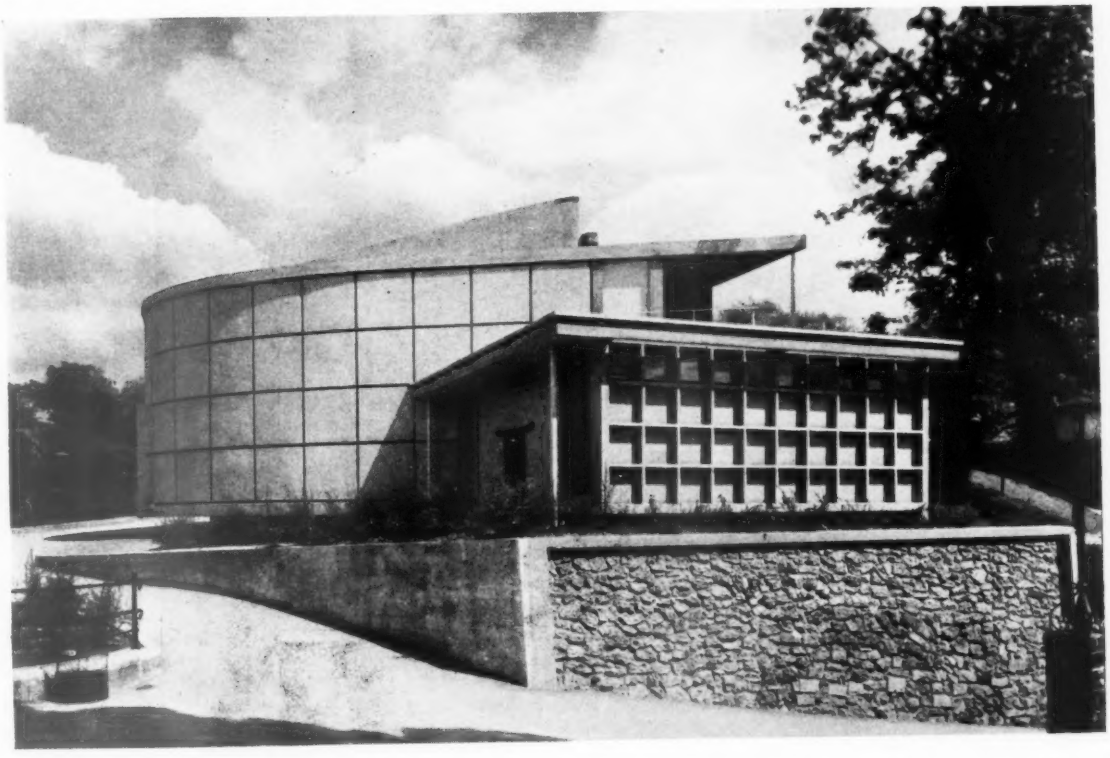
Any book, however, written by one man and covering so many activities, is bound to receive a certain amount of criticism from the specialists in any particular branch, and these and other small points which might be raised do not detract from the general usefulness of the book. It presents as complete and as accurate a picture of building generally as could be expected in any one book of this size.



". . . . and ribbon development came into its own." From "Small Houses: £500–£2,500."

G.B.M.

ART STUDIO, ZOOLOGICAL GARDENS



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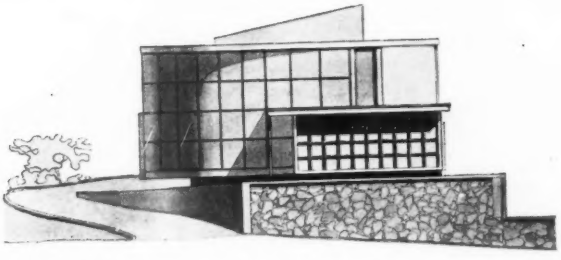
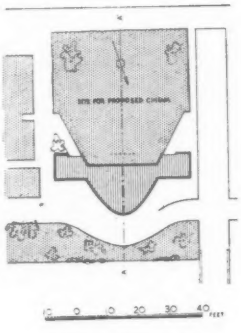
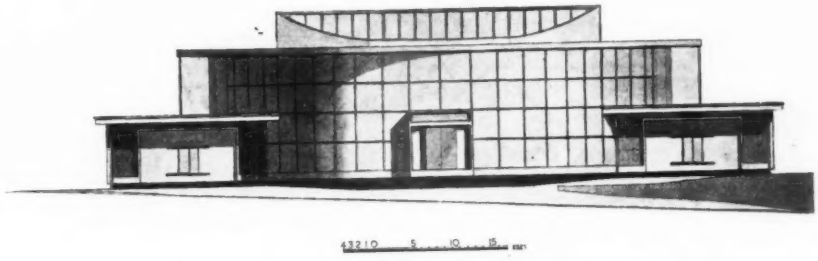


WEST ELEVATION



SITE PLAN



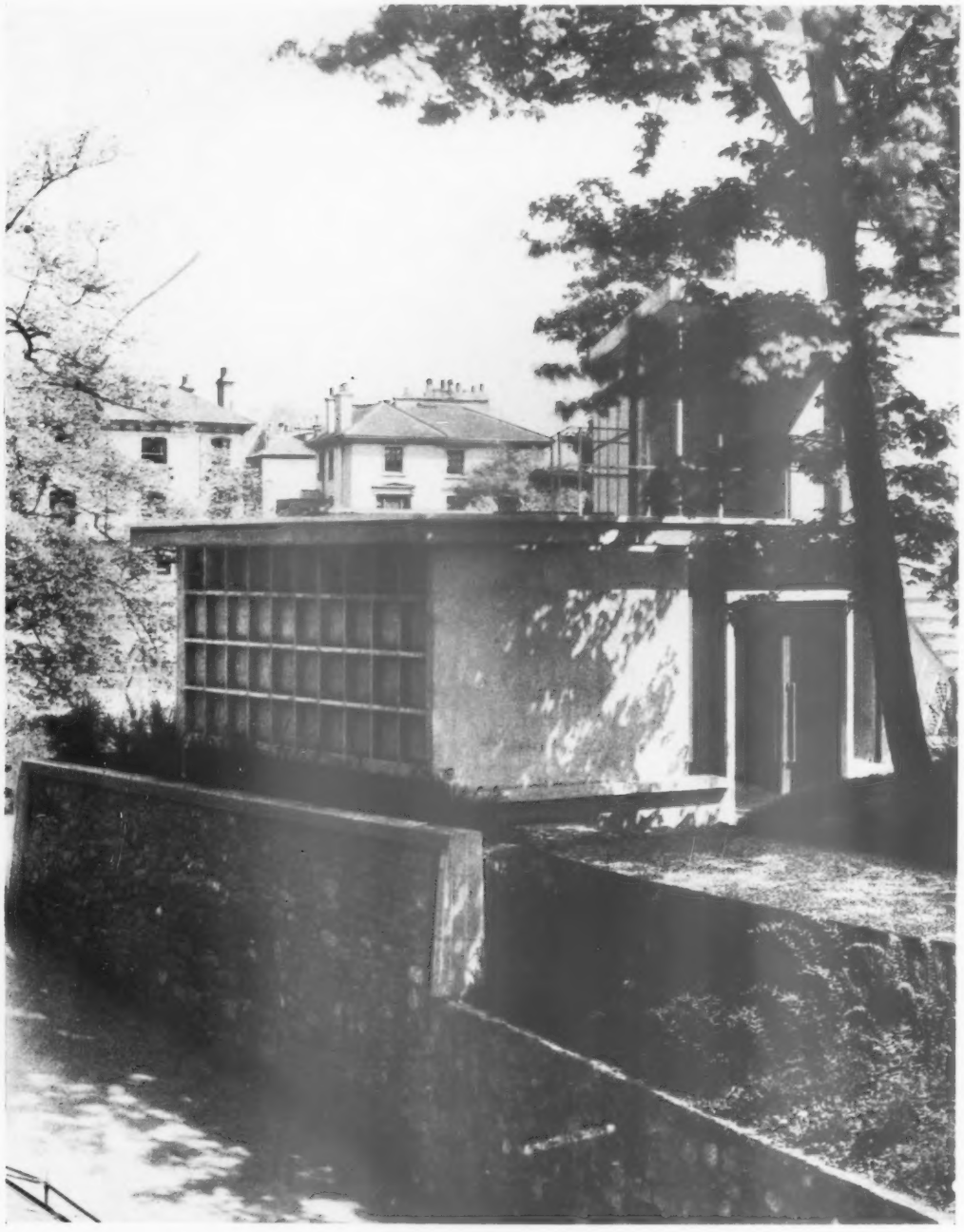
NORTH ELEVATION

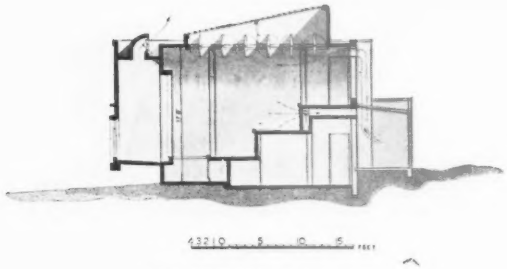
GENERAL PROBLEM—*Studio of animal art for art students from the London schools, built by the Zoological Society in conjunction with the London and Middlesex County Councils. There are a main studio, two small studios for private artists, an entrance hall with storage space for the students' drawing boards and portfolios, lavatories and a room containing the air conditioning plant. On the south of the studio provision is made for a cinema, in which scientific films will be shown.*

CONSTRUCTION—*Reinforced concrete, built on pile foundations. The wall on the south side of the entrance hall is of brick, and will eventually be enclosed by the cinema. Externally the parabolic part of the studio is faced with terrazzo divided into panels by recessed joint lines, painted reddish brown.*

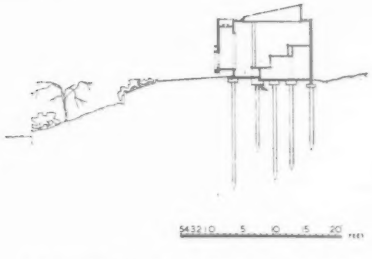
The photograph is taken from the north-west.

ART STUDIO, ZOOLOGICAL GARDENS: D





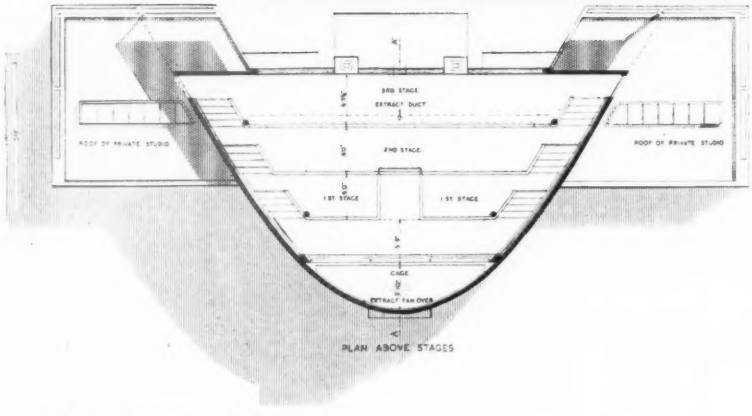
SECTION AA



SECTION THROUGH SITE

Above is a view from the south-west showing one of the entrances to the studio.

S: DESIGNED BY TECTON

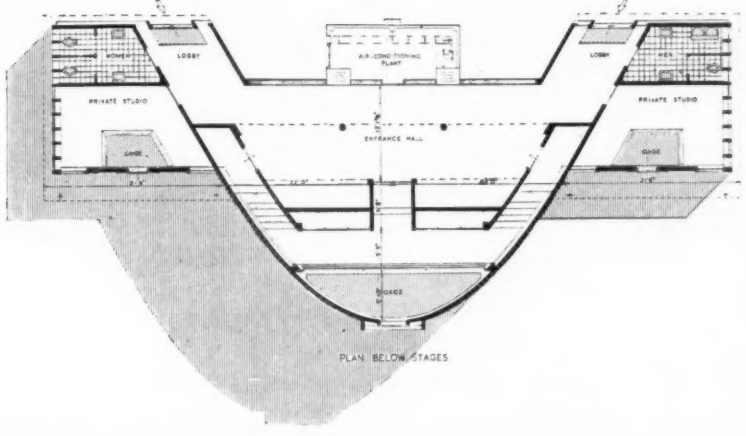


PLAN ABOVE STAGES

LIGHTING—*The students using the studio face north and a true north light would therefore have been inadvisable. A slightly raked top light was therefore used in conjunction with a light timber shutter system operated by hand winches, which can be used to prevent glare in summer. If necessary, the studio can be completely darkened.*

VENTILATION—*An air conditioning plant is used, situated where it will also be able to serve the future cinema. The air is humidified, this having been found more suitable for the animals.*

Above, the entrance hall.

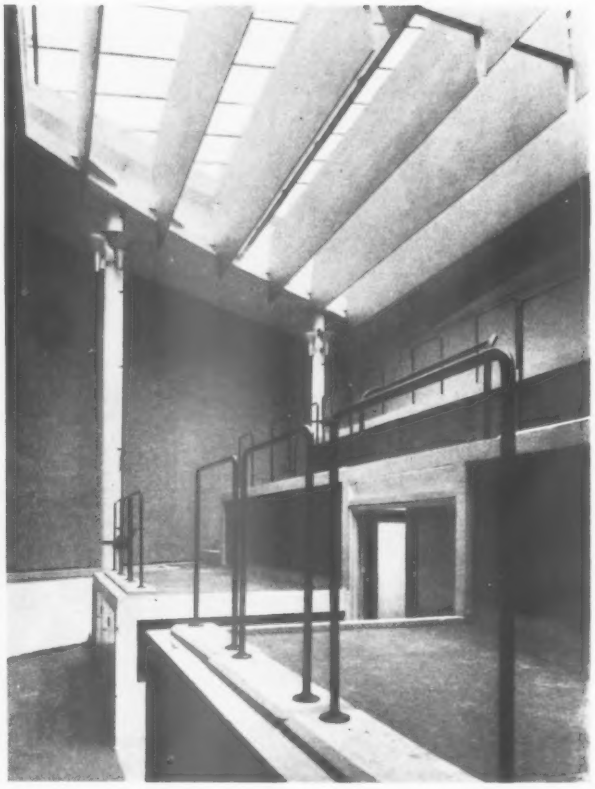


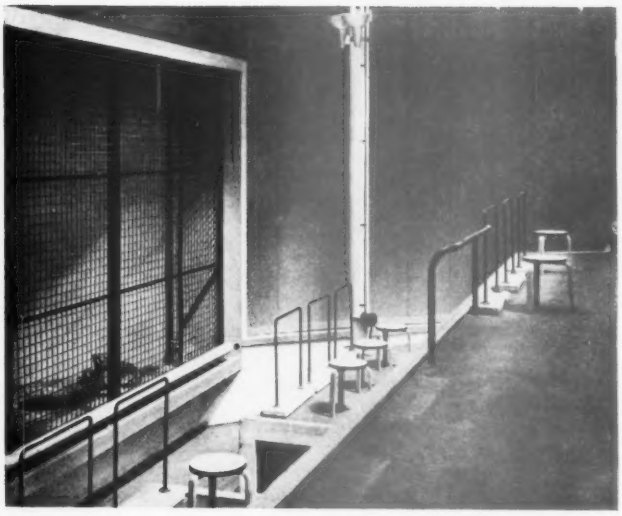
PLAN BELOW STAGES

ART STUDIO, ZOOLOGICAL GARDENS

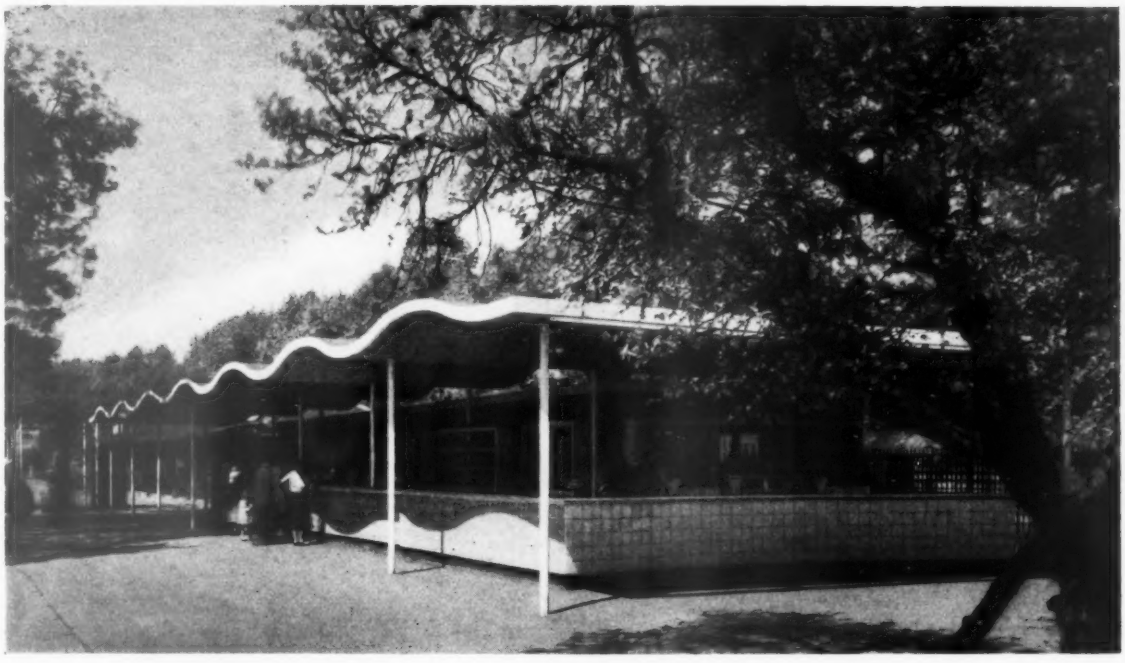
DESIGNED BY TECTON

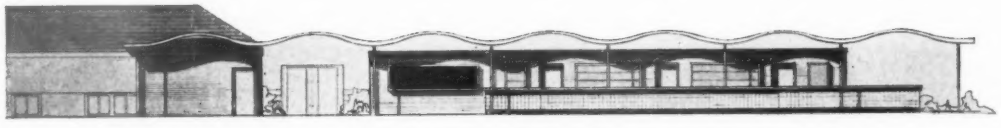
Above, one of the entrance lobbies. Right, a detail of the studio showing the shutters for light control operated by winches on the columns and the indirect lighting fittings. Below, another detail of the studio.





REFRESHMENT BAR, ZOOLOGICAL GARDENS



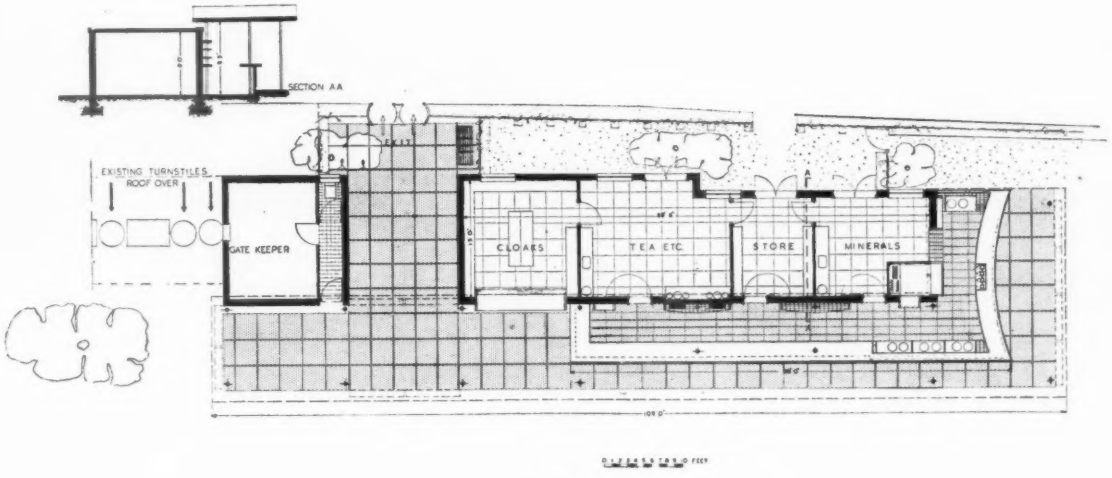


MAIN ELEVATION

D E S I G N E D B Y T E C T O N

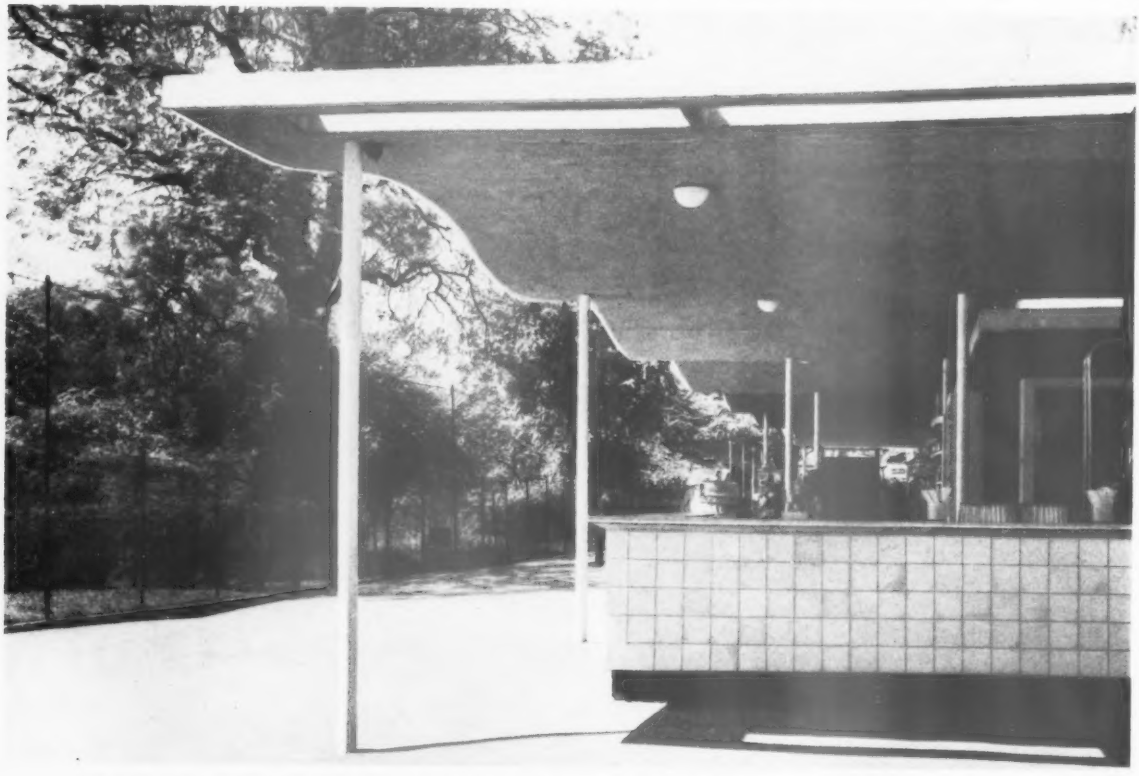
PROBLEM—*A refreshment bar near the North Gate entrance which is intended to be rebuilt in the future. The bar was desired to be informal and light in character and to provide easy service for a considerable number of visitors.*

Above, a general view of the bar.



PLAN

REFRESHMENT BAR, ZOOLOGICAL GARDENS



DESIGNED BY TECTON

CONSTRUCTION—*Main roof is of reinforced concrete on 4 ins. steel columns, finished with waterproofing and painted aluminium. Building is of red brick. Counter of reinforced concrete, finished externally with white and grey matt tiles, and on the top with buff linoleum with chromium edging. A cold chamber for perishable food has two special glazed display windows in which ices, etc., can be exhibited.*

Top, a detail of the bar showing one of the display windows to the cold store. Above, the R.C. canopy spanning the passage-way to the North Gate.

LAW REPORTS

LANDLORDS' LICENCE : IMPORTANT JUDGMENT

Lambert v. *F. W. Woolworth & Co., Ltd.—Chancery Division.—Before Mr. Justice Simonds.*

THIS was a second action arising out of the same matter. The former action was by Woolworth & Co., Ltd., against Messrs. G. E. and W. R. J. Lambert and was reported in March of last year, and later this year, when it went to the Court of Appeal.

In the present action Messrs. Lambert, freeholders of Nos. 18 and 20 Commercial Road, Bournemouth, as against F. W. Woolworth & Co., Ltd., sought a declaration that they had not acted unreasonably in withholding their licence and consent to the defendants' application for alterations to premises occupied by defendants as lessees, when the proposed alterations amounted to a reconstruction of premises so as to form a larger shop on the demised premises and adjoining land.

The defendants set up a counter-claim that the proposed alterations were "improvements" within the meaning of Section 19 (2) of the Landlord and Tenant Act, 1927.

Mr. Cyril Radcliffe, K.C., and Mr. Roger Turnbull represented the plaintiffs, and Mr. Fergus Morton, K.C., and Mr. S. P. J. Merlin, the defendants.

The facts are fully stated by his lordship in his judgment.

His lordship said the action formed the second chapter in the history of the litigation between the parties. The plantiffs owned the property, 18 and 20 Commercial Road, Bournemouth, in partnership. It had a valuable frontage and was demised to the defendants in 1931 for a term of 42 years, at a rent of £3,500 a year, to be increased to £3,750 in June, 1945. The lease contained a number of covenants by the lessees of which only two were material, viz. not without the previous consent of the lessors to erect or suffer to be created any other building on the demised premises, nor to make or suffer to be made any structural alterations or additions to the premises, and secondly to use, occupy and preserve the premises open as a first-class shop suited to the neighbourhood.

It appeared that in 1935 defendants acquired a leasehold interest in the premises at the rear of 18 Commercial Road from Commander Moore at £500 a year and under that lease they undertook to carry out certain alterations and improvements subject to the consent of the plaintiffs being obtained. The alterations the defendants were minded to make made the whole of the premises leased to them one large composite building containing one first-class shop and they applied for the plaintiffs' consent, relying on Section 19 (2) of the Landlord and Tenant Act, 1927, which provided that consent should not be unreasonably withheld, but that it did not provide the right to require on a condition of the licence or consent the payment of a reasonable sum in respect of any damage to or diminution in the value of the premises or neighbouring premises, nor in the case of any improvement, which does not add to the letting value, nor does it preclude the right to require as a condition of such licence, an undertaking to re-instate the premises in the condition in which they were before the improvement was executed.

Continuing, his lordship said there was a good deal of correspondence between the parties and the defendants in applying for consent to the alterations offered to give a covenant for re-instatement at the conclusion of the lease and to pay a reasonable sum for any damage to the value of the reversion. The plaintiffs, however, rejected these proposals, they having been advised to ask £11,000 for their consent. It was under these circumstances that Woolworths began the previous action, claiming that Messrs. Lambert had unreasonably withheld their consent, and that they, Woolworths, were entitled to make the alterations as improvements without further request for a licence or consent, but subject to their paying such sum as the court should deem to be reasonable.

Mr. Justice Clauson tried the action and he held that the alterations were not improvements at all, but if they were, Messrs. Woolworth had failed to prove that Messrs. Lambert had unreasonably withheld their consent to them. The case went to the Court of Appeal, but again Woolworths failed and the appeal was dismissed.

Correspondence followed. Messrs. Lambert rejected a proposal that the matter should go to arbitration. Then Woolworths again sought the licence of the plaintiffs and offered to undertake to re-instate the premises at the end of the term, but there was no suggestion that they were willing to pay any sum for damage to the reversion. But Lamberts would not give their consent and would not put forward any counter proposal. Then Lamberts commenced this action, claiming that the proposed works were not improvements within the Landlord and Tenant Act, that to carry them out would be a breach of the covenants of the lease and that if they withheld their licence to make the alterations, such licence would not be unreasonably withheld. To that Woolworths counter-claimed for a declaration that the works were improvements and that the plaintiffs were not entitled to withhold their consent for them.

His lordship said the first question he had to consider was whether he could treat the decisions of the majority of the Court of Appeal to the effect that the works were improvements as *obiter dicta* with which he was not bound to agree. He held with the Court of Appeal that they were improvements within the act and that Lamberts could not claim that Woolworths, if they carried them out, would commit a breach of covenant.

The only other question was whether, in the circumstances, the plaintiffs had unreasonably withheld their consent to those improvements. The plaintiffs were advised by an eminent surveyor that the damage to their interest in their reversion would be serious, but that at present it was difficult to estimate, so it was clear that they were not unreasonable in refusing a qualified consent to the alterations, subject to compensation to be ascertained by arbitration. The plaintiffs were not obliged to accept part of a composite shop in exchange for one self-contained building.

His lordship made a declaration that the plaintiffs had not acted unreasonably in withholding their licence and consent to the defendants' application. With regard to the counter-claim he dismissed it, except to the extent that there would be a declaration that the proposed alterations were improvements within the act. Plaintiffs would pay the costs of the action, and the counter-claim would be dismissed, but without costs.

RIGHTS OF FRONTAGERS

Medcalf and another v. *R. Strawbridge, Ltd.—King's Bench Division.—Before Mr. Justice Atkinson.*

THIS was an action by the owners of two houses in Cedar Avenue, East Barnet, Mr. Geo. Medcalf and Mrs. Florence Kemp, against R. Strawbridge, Ltd., bakers, of Palmers Green, for an injunction to restrain them from damaging part of the roadway of Cedar Avenue.

The plaintiffs are frontagers in the road, which is not repairable by the inhabitants at large. Their case was that the defendants by their servant had persisted in driving a horse van down Cedar Avenue with a skid pan attached to a wheel. The result was that the pan cut up the soft surface of the road and did considerable damage. Cedar Avenue has a rise of one foot in twelve.

The defence was that the plaintiffs' title did not include ownership of the road, but only a right of way over it, and that consequently they had no more rights over it than an ordinary member of the public. Defendants further pleaded that no action would lie in the suit of the plaintiffs.

His lordship, after hearing the evidence and the arguments of counsel (Mr. Robert Fortune appearing for the plaintiffs and Mr. Roland Burrows, K.C., for the defendants), gave judgment and said the plaintiffs had established their right to sue to his satisfaction, and he was satisfied that the road would sustain extensive damage if the van were allowed to continue to use the road. The damage done was sufficient to warrant the plaintiffs taking action and to impose on the Court an obligation to interfere and prevent it. He accordingly granted an injunction restraining the defendants, until the road was taken over, from locking the wheel of any horse-drawn van with a skid pan when descending the hill in such a manner as to injure the road, with the costs of the action.

DAMAGE FROM RAINWATER : LIABILITY

Stockley v. *Patchett.—Court of Appeal. Before Lord Justice Slesser and Mr. Justice Finlay*

THIS was an appeal by the defendant, Mr. Hubert Patchett, of Railway Terrace, Rugby, from a judgment of the County Court judge at Rugby, in favour of the plaintiff, Miss Gertrude May Stockley, and it raised a point as to the liability of a landlord for damages for injury to stock in a shop, through his alleged failure to keep the premises in proper and good repair.

It appeared that Miss Stockley kept a ladies' outfitters shop at Railway Terrace, Rugby, and her case was that her stock was damaged by rainwater through the failure of the defendant to keep the water drain-pipes and gutters in repair.

The defence was a denial of liability and a plea that Miss Stockley had failed to carry out her obligation to look after the rain-water pipes and gutters.

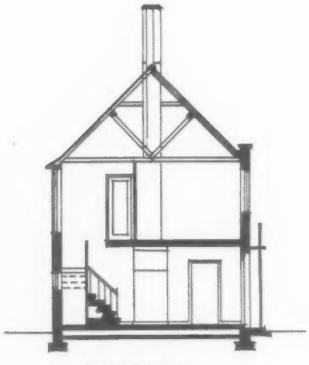
HOUSE AT SOUTH CROYDON

DESIGNED BY EDWARD BANKS

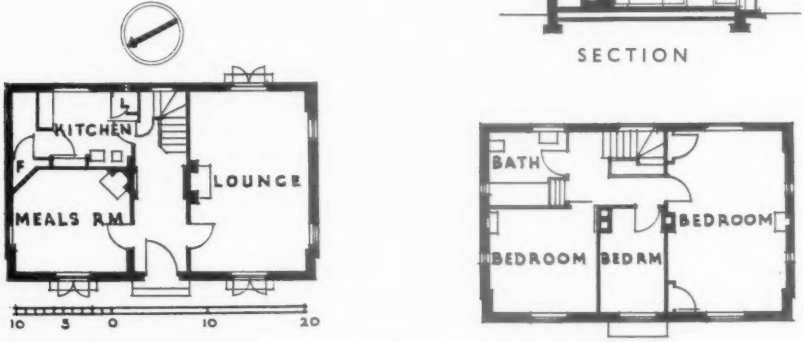
The site of the house is in a mid-Victorian development scheme in South Croydon.

The construction is of 11 in. cavity walls with buff Suffolk facing bricks. The roof is covered with blue-grey pantiles. Internally, walls and ceilings are plastered, and floors are pine strip.

Above is a view of the main front.



SECTION



GROUND AND FIRST FLOOR PLANS

The County Court judge found in favour of Miss Stockley and awarded her £50 damages, dismissing a counterclaim by defendant for rent.

The County Court judge held that the damage occurred after heavy storms and the rainwater system was defective, and that that was a breach of the landlord's covenant.

The defendant now appealed.

The appeal was dismissed.

Lord Justice Slesser, in giving judgment, said the court had had evidence before them which showed that on investigation by experts it was discovered that the trouble was due to the gutter and the discharge pipe added to a glass roof, which was in need of reconstruction. Miss Stockley held a lease of the premises, but it was apparent that the condition of affairs she complained of existed for some time before she took the lease. Miss Stockley contended that it was the duty of the landlord to keep the walls dry and in good repair, so that her stock should not suffer injury. His lordship came to the conclusion on the evidence before them that the County Court judge was entitled to find that the walls were not in good and tenantable repair and condition in accordance with the terms of the lease.

Mr. Justice Finlay agreed.

LAYING A SEWER : COMPENSATION QUESTION

Pierce v. *Mayor, etc., of Caernarvon and another. —Chancery Division. Before Mr. Justice Luxmoore*

THIS was an action by Mr. Thomas Wm. Pierce, of Quellyn, Caernarvon, against the Mayor, aldermen and burgesses of Caernarvon, and Mr. Robert Griffith Jones, an auctioneer, for a declaration that the compensation payable to him for the laying of a sewer through his land should be settled under the provisions of the Public Health Act, and not, as contended for by the defendants, under the Acquisition of Land Act.

The defendant Jones was joined as a party to the action because he was appointed an arbitrator by the Corporation, and plaintiff objected on the ground of his official position with the Corporation.

It was announced that the Corporation had since decided not to avail themselves of the services of Mr. Jones.

Mr. L. W. Byrne argued the case for the plaintiff and Mr. Marshall Freeman for the defendants.

His lordship said he had to decide which of the two Acts applied, and in his view it was quite plain from the wording that the Acquisition of Land Act applied only to cases where land was required compulsorily by a government department, or public or local authority. The facts, which were admitted, were that in 1934 the Corporation desired to construct a sewer through plaintiff's property. The line of the sewer was agreed between the parties. The plaintiff's solicitors then wrote the Corporation stating that they agreed to the laying of the sewer subject to compensation and the payment of surveyor's and solicitor's fees by the Corporation. In those circumstances the sewer was laid and now the question arose as to which Act applied in regard to compensation. In the present case there was an agreement between the parties, and therefore he came to the

conclusion that the Public Health Act applied, and under its provisions the compensation would be settled by arbitration. He made a declaration accordingly, and gave plaintiff costs against both defendants.

MINISTER OF HEALTH'S CONFIRMATION CHALLENGED

re The Housing Act, 1930.—Willey v. *Minister of Health.*

THIS was an appeal by Mrs. Doris Mabel Willey, under the Housing Act, 1930, against an order confirmed by the Minister of Health in regard to a compulsory purchase order on property at Prince of Orange Lane, Greenwich.

Mr. Hill appeared for the appellant and the Solicitor-General, Sir T. O'Connor, K.C., and Mr. Valentine Holmes for the Minister of Health.

Mr. Hill said the matter arose out of an order by the Greenwich Borough Council to proceed to procure compulsory powers to purchase the land on which certain houses stood in Prince of Orange Lane. The Council decided to deal with the matter in this way, their medical officer of Health having certified that the houses on the site were unfit for human habitation.

Proceeding, Mr. Hill said his client owned part of the area in question. A local inquiry was held by an inspector, and counsel appeared as an objector on behalf of his client. Counsel did not object to the demolition of the houses, but contended that this was a case in which there should be a Clearance Order, and that the inspector had a discretion in the matter.

His lordship pointed out that though counsel raised the point he called no evidence to support any suggestion as to what he would do with the land.

Mr. Hill said the Town Clerk intimated that the Council were pressing for compulsory purchase. No evidence was given why the Council should proceed for the compulsory purchase of the land.

The Solicitor-General pointed out that the matter of the clearance order was not raised at the inquiry.

Mr. Hill said it was a serious thing to take away a man's property in the way suggested. He contended that the inspector could use his discretion in the matter and should have recommended a clearance order. He offered to agree to a clearance order, as his client was anxious to retain the site and develop it for commercial purposes. He contended that under the circumstances the case was one in which the Minister should have refused to sanction the order sought by the Greenwich Council. The Council had shown no special reason why they required the land. It could not be used for rehousing and the Minister had no material before him to show why the order asked for should be made. There was no evidence that it was in the public interest that it should be made and counsel urged that his proposition that the appellant should have the land was a sound one, and she had given sound reasons in her affidavit. His final point was, that it was unreasonable to deprive anyone of their property without any justification.

His lordship, without calling upon the Solicitor-General, gave judgment, and said it was in December, 1935, that the Housing Committee of the Council decided to proceed with this matter. At the inquiry Mr. Hill put forward nothing which could be considered evidence as to what the advantages or disadvantages were of the order being confirmed or not being confirmed. The matter was left very much where the Town Clerk left it, though Mr. Hill did mention that there should be a clearance order. Under these circumstances the Minister confirmed the order. Mrs. Willey now appealed against that order. It seemed to his lordship that the Act gave the local authority the absolute right to secure the clearance of an area in either of the two ways they liked. This was a matter in which it was for the Minister finally to decide, having before him the inspector's report. He thought the Minister, in the circumstances, came to a right conclusion and he dismissed the appeal with costs.

TRADE NOTES

[*EDITED BY PHILIP SCHOLBERG*]

Fire Protection

A NEW booklet has recently been published by Newalls Insulation Company, and it deals with the question of protecting steelwork and cables from the effects of fire. While the booklet is addressed mainly to power station engineers who are occasionally faced with the problem of burning oil if a large transformer or a circuit breaker goes up, a good deal of the information given is equally applicable to the ordinary factory building or, for that matter, anywhere else where steelwork may be unprotected.

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The sections at the bottom of this page show two fairly typical applications of moulded asbestos. For beams, the method is to fix fillet pieces of moulded asbestos on the web of the girder, usually one each side per foot run : the sections and web pieces are then cemented together with a special heat-resisting cement and secured to the girder by ¼-in. bolts passing through holes drilled in the web near the fillet pieces, the heads and nuts of the bolts being, of course, sunk in the moulded cover and filled in with asbestos cement. For stanchions, much the same method is employed, except that the web fillet pieces are not used, the moulded asbestos being supplied in two half sections of a standard length of 3 ft., and fixed with nickel-chromium binding wires.

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Finally, the moulded asbestos is given a refractory wash which produces a non-porous surface and therefore prevents burning oil from soaking into the covering. The thickness of the covering varies, but 1 inch, giving a fire endurance period of one hour, is recommended as a minimum. Tests carried out in accordance with the appropriate British Standard Specification for such things show that this is a justifiable claim and that the degree of protection given is almost directly proportional to the thickness of material used.

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For cables and suchlike, there are various shapes of covering and the ducts themselves can easily be boxed in by the same basic method as the beams. A typical example of the latter method is shown in the right-hand section below. (*Newalls Insulation Company* (*Branch of Turner & Newall, Ltd.*), *Washington Station, Co. Durham.*)

Corrosion-Resisting Alloys

Hiduminium I have always looked upon as a high-tensile aluminium alloy for use in high-speed aircraft and high-efficiency engines. It was originally evolved, I believe, after research by Rolls Royces at Derby, when they turned their attention to Schneider Trophy engines and packed an incredible number of horses into a more than usually small space. The particular version of it known as R.R.66 has, however, remarkable corrosion-resisting properties, and it is now put forward as a useful architectural metal which can be drawn, cast or extruded without any particular trouble and used in any of the many places where the atmosphere does unkind things to the more common metals.

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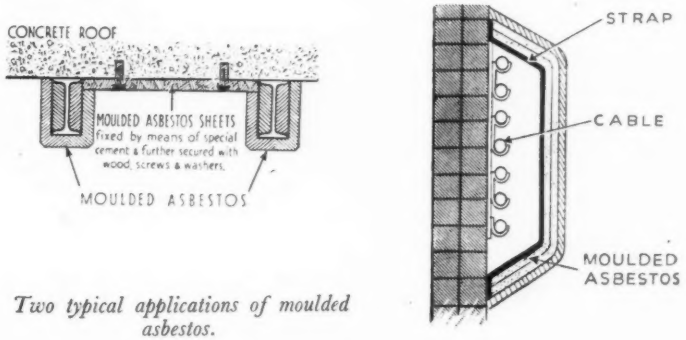
Anodising, plain or in colour, is perfectly simple, but one of the reasons which prejudice me in its favour is the fact that, having only a small amount of other metals for alloying purposes, its natural colour remains the pure white of aluminium, a



Two typical applications of moulded asbestos.

The steel frame for the new Municipal Baths at Thornaby-on-Tees.

finish which I find infinitely preferable to the blueness of chromium plating, which, to me, always seems so vulgarly brilliant unless used with discretion in small areas.

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In the transport world the London buses use a good deal of this material for seat frames and stanchions, so it is easy enough for anyone to see not only what it looks like, but how it stands up to pretty heavy wear. One other very interesting piece of information I have discovered from the booklet. All aluminium alloys are subject to electrolytic decomposition if they are placed in sea water in electrical contact with iron or any other metal having an electrical potential higher than their own, and the remedy is to use nothing but alloy rivets, bolts and all, or to use a good coat of bitumen or special dope between the two metals. But the best form of protection " takes advantage of the sacrificial action of zinc." With this method small zinc plates are placed on the light alloy component, and, as a result of the low electrical potential of zinc, the electrolytic action takes place between the zinc and the metal of higher potential, leaving the aluminium alloy unaffected. The method has proved quite successful with aluminium alloy launch hulls, where small zinc plates on the propeller shaft brackets and on the hull at the stern provide ample protection for the hull itself.

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What could be simpler or more ingenious ? Keep a little zinc ewe lamb handy and the electrolytic tiger has a good meal and leaves the innocent alloy alone. So far as I know the building industry has made no attempt to develop this idea, although we suffer quite badly from electrolytic corrosion on our roofs and gutters. Exactly what material should be offered up as a sacrifice I do not know, nor where it should be put, but the idea has obvious possibilities. I commend it to the Building Research Station as a not impossible line for future experiment. (*The Reynolds Tube Co., Ltd., Hay Hall Works, Tyseley, Birmingham.*)

Rigid Frame and Structures

I have just been sent a photograph of the steel frame for the new Municipal Baths at Thornaby-on-Tees, and I publish it because it is probably the first of its kind in the country to be welded up out of standard R.S.J.s to form a rigid arch. Span is 54 feet, and this seems to me to be a very good example of the sort of work for which welding is supremely well suited, particularly nowadays, when steel is not too easy to come by, and when the delivery of specially fabricated jobs is likely to involve a long wait. (*Head, Wrightson & Co., Ltd., Teesdale Ironworks, Thornaby-on-Tees.*)

Emergency Lighting

There are plenty of jobs, hospitals for example, where a failure of the mains supply of electricity may involve all sorts of disasters, and most large buildings have a stand-by plant arranged to give an auxiliary supply automatically through relays as soon as the mains supply fails. There are various methods of doing this, but, short of having an intolerably large battery, most of the existing methods adopt a system of emergency supply *only*, to a few selected points, and then only after a lapse of time (admittedly only 10 seconds or so) while the stand-by generator is started and run up to load.

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This system is, of course, perfectly satisfactory so long as its limitations are realized and allowed for, but there are uses, such as railway signalling or aerodrome floodlighting, where *absolute* continuity of the supply is essential. (An air liner landing, for example, may well cover between 150 and 200 yards during a 10-second blackout.) To overcome this difficulty the Austinlite people (whose proprietors, incidentally, are Chance Brothers, of glass and lighthouse fame) have evolved a plant which consists of an internal combustion engine coupled by a magnetic clutch to a very heavy flywheel in which is stored enough kinetic energy to start the engine (which, of course, is normally stationary) and to carry the whole of the electrical load while the engine runs up to speed and takes over. The flywheel must naturally be kept running continuously, but the power for this is small, and is taken from the mains supply. A sound system which is good and reliable enough to be used by the Post Office and, among others, the Great Western, who have a large plant at Paddington which is well worth seeing.

The same firm also make the auxiliary supply plants referred to at the beginning of these notes, so that they have no axe to grind for any particular type. (*Austinlite, Ltd., Lighthouse Works, Smethwick, Birmingham.*)

Manufacturers' Items

Messrs. Sharp Bros. and Knight, Ltd., timber importers and joinery manufacturers, of Burton-on-Trent, have issued an illustrated brochure devoted to their Columbian pine doors and Swedish Redwood doors and gates. Copies of the brochure are obtainable, free of charge, on application to the firm.

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In *Mural Rexine in Modern Architecture*, a booklet published by I.C.I. Rexine, Ltd., are designs by six architects demonstrating the use of mural " Rexine," a superior type of leather cloth specially prepared for interior decoration. The architects are : Messrs. Raymond McGrath, B.ARCH., A.R.I.B.A. ; E. Maxwell Fry, B.ARCH., A.R.I.B.A. ; H. St. John Harrison, F.R.I.B.A. ; F. R. S. Yorke, A.R.I.B.A. ; Julian Leathart, F.R.I.B.A. ; and G. Grey Wornum, F.R.I.B.A. These illustrations show the possibilities of mural " Rexine " for the decoration of hotel, school, cinema, milk bar and fashion showroom and are accompanied by a chart of patterns which makes for easy comparison of the designs with the actual material.

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The chairman of Messrs. Brilliant Signs, Ltd., speaking at the company's first statutory meeting, said : " We have sufficient work on hand to keep us busy for several months, while new business is increasing, and so far as your directors can see into the future the prospects appear to be highly satisfactory. It is the wish of your directors that the company should have its full share of the swiftly improving trade and in order to be in a position to handle the biggest business we are hopeful of securing, we are considering the advisability of extending our factory. Just when this may become necessary I cannot say definitely at the moment, but we have already made preliminary plans and shall keep a close watch on developments. The first preference dividend of the company is due on September 1, and your directors are of the opinion that your company will be in a position that will justify the payment of an interim dividend to the ordinary shareholders a little later on in this year."

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Messrs. J. H. Tucker & Co., Ltd., inform us that for some time it has been evident that the accommodation available at D'Arblay Street is inadequate for the efficient handling of their rapidly expanding London business and they have therefore acquired more commodious premises at 2 Newman Street, W.1.

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The British Oxygen Co., Ltd., of Thames House, Millbank, have issued an illustrated booklet devoted to aluminium welding. It explains the uses and methods of application of rods for welding aluminium and aluminium alloys.

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The directors of E. Pollard & Co., Ltd., have recommended the payment of an interim dividend for the half-year ending June 30, 1937, less income tax, on all 7 per cent. cumulative preference shares issued and registered in the company's books on or before June 21, 1937.

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Four and a-half per cent. first mortgage debenture stock.—The directors of E. Pollard & Co., Ltd., have recommended the payment

of interest for the half-year ending June 30, 1937, less income tax, on the 4½ per cent. first mortgage debenture stock issued and registered in the company's books on or before June 21, 1937.

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An illustrated booklet devoted to Crommoid moulded door furniture and household fittings has just been issued by Cromwells, Ltd., of Dudley Port, Tipton. The various prices of the furniture and fittings are also included. Copies are obtainable, free of charge, on application to the firm at the above address.

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Dr. P. Dunsheath, O.B.E., M.A., M.I.E.E., has been appointed a Director of W. T. Henley's Telegraph Works Co., Ltd. Dr. Dunsheath will retain his present position of Chief Engineer to the Company.

THE WEEK'S BUILDING NEWS

LONDON & DISTRICT (15 MILES RADIUS)

BATTERSEA. *Premises for Electricity Department.* The Battersea B.C. has approved plans for the erection of premises for the electricity department at the rear of Electric House at a cost of £16,800.

BATTERSEA. *Cinema and Flats.* Plans passed by the Battersea B.C. : Block of flats, Nightingale Lane, Mr. R. W. H. Jones ; cinema, Falcon Road and Kambala Road, Mr. Henry G. Kay.

BATTERSEA. *Block of Dwellings.* The Battersea B.C. has approved plans for the erection of a block of 90 dwellings at an estimated cost of £62,139, in Mendip Road.

BELLINGHAM. *Shops and Flats.* The L.C.C. is to erect six shops and flats on the Bellingham Housing Estate at a cost of £6,039.

BERMONDSEY. *Flats, etc.* The Bermondsey B.C. is to erect 96 flats, seven shops and a restaurant on the Sands Rents area at a cost of £67,654.

EDGWARE. *School.* The Hendon Education Committee is to erect an elementary school at Edgware at a cost of £19,330.

EDMONTON. *Flats.* A scheme has been prepared by the Property Finance and Land Corporation, Ltd., to erect 310 flats on land situate on the east side of Firs Lane, Edmonton.

GREENWICH. *Relief Station.* The L.C.C. is to erect a central relief station in Eastney Street, Greenwich, at a cost of £10,000.

HAMMERSMITH. *Flats, etc.* Plans passed by the Hammersmith B.C. : Shops, Old Oak Common Lane, Messrs. Marshall and Tweedy ; market and flats, Harrow Road, Mr. R. G. Cox ; town hall, between King Street and Cromwell Road, Mr. E. Berry Webber ; shops, 247–251 Goldhawk Road, W. Hearn and Chuter.

LEWISHAM. *Flats, etc.* Plans passed by the Lewisham B.C. : Flats, Southend Lane, Bellingham, and 48 houses, Moremead Road, T. Spencer Bright & Co. ; ten houses, Queenswood Road, Forest Hill, Bretts ; flats, St. Peter's College, Mr. E. W. Palmer ; shops and flats, Catford Road, Elgood and Hastie ; 56 cottages and 18 flats, Whitefoot Lane Estate, Mr. A. du T. Bottomley, for L.C.C. : factory, Thurston Road, Griggs and Son, Ltd.

LEWISHAM. *School.* The L.C.C. is to erect a nursery school for 120 children on Honor Oak Estate, Lewisham, at a cost of £7,870.

LONDON. *New Buildings, etc.* Plans passed by the City of London Corporation : New building, Worcester Place (site), Upper Thames Street ; new building, 136–138 Minories and 50–52 Vine Street ; rebuilding, 131–136 Houndsditch ; building, 33 King Street and 8 and 9 Lawrence Lane.

PADDINGTON. *Flats.* The Paddington B.C. is to erect a block of flats, five storeys in height, on the North Wharf Road and Dudley Street site, at an estimated cost of £30,350.

PADDINGTON. *Flats, etc.* Plans passed by the Paddington B.C. : Block of flats and underground garage, 75–89 Lancaster Gate, Mr. W. S. Grice.

SHOREDITCH. *Relief Station.* The L.C.C. is to erect a relief station and children's care office at Drysdale Street, Shoreditch, at a cost of £17,400.

SOUTHGATE. *Flats, etc.* Plans passed by the Southgate Corporation : 15 houses, Morton Way, Mr. C. Meaker ; three shops with three maisonettes over, Bramley Road, Bethell and Swannell ; 36 flats, Avenue House, Avenue Road, Mr. O. Law ; dairy and depot, Elgin House, Avenue Road, A. I. and Dollis Dairies, Ltd. ; 112 flats and porter's lodge, Eversley Park Road, Mr. A. E. Moffatt ; 32 flats, Bowes Road, Mr. J. R. Scarborough ; two shops with four flats over, Chase Side, Marshall and Tweedy ; eight houses, Sheringham Avenue, F. W. Bristow and Son.

SOUTHGATE. *Swimming Bath.* Southgate Corporation has instructed the borough surveyor to proceed with the preparation of plans for the erection of a covered-in bath on the Winchmore Hill Road site, at an estimated cost of £35,000.

STOKE NEWINGTON. *Flats.* The Stoke Newington B.C. has appointed Messrs. Howes and Jackman as architects in the erection of flats on the Hewling Street site.

STOKE NEWINGTON. *Flats, etc.* Plans passed by the Stoke Newington B.C. : Three blocks of tenement dwellings, Matthias and Howard Roads, Messrs. Howes and Jackman ; shops and flats, Green Lanes and Woodberry Down, Mr. Sydney Jaques ; block of flats, 88–90 Amherst Park, Mr. A. G. Moulton.

WALWORTH. *Enlargements.* The L.C.C. is to enlarge the Boyson Road relief station, Walworth, at a cost of £1,185.

WOOD GREEN. *Factory.* Plans passed by the Wood Green Corporation : Factory, Neville Place, Tynemouth House Management, Ltd.

WOOLWICH. *School.* The L.C.C. is to erect an elementary school on the Montbelle Road site, Woolwich, at a cost of £31,375.

SOUTHERN COUNTIES

BEXHILL. *Houses.* Plans passed by the Bexhill Corporation : Eight houses, Grange Court Drive, for Mr. F. D. Johns ; 12 houses, Bancroft Road, for Mr. Larkin.

OXFORD. *Police Headquarters.* The Oxford Corporation is to erect new police headquarters at a cost of £47,124.

WORTHING. *Flats, etc.* Messrs. Grace and Farmer, architects, are to develop the Grafton House site, and provide a block of 18 flats and a restaurant in Marine Parade, Worthing.

WORTHING. *Enlargement of Power Station.* The Worthing Corporation is to enlarge the power station at a cost of £3,500.

WORTHING. *Houses.* Mr. S. C. Phillips, architect, is to develop the Courtlands Estate, Worthing, by the erection of 371 houses.

WORTHING. *Houses, etc.* Plans passed by Worthing Corporation : Eight houses, Ardingly Drive, Chatsmore Estates, Ltd. ; 39 houses, Crowborough Drive and four flats, Ardingly Drive, West Sussex Coast Development Co., Ltd. ; 15 houses, Leeward Road, Mr. S. C. Phillips ; 12 houses, Bramber Road, Sompting Manor Estates, Ltd. ; 24 flats, George V. Avenue, Col. Rodocanachi ; 12 houses, adjoining Stone Lane, Mr. A. T. W. Goldsmith ; 28 houses, Field Place Estate, Field Place Estate Co., Ltd.

WORTHING. *Extension of Museum, etc.* The Worthing Corporation is to prepare plans for the extension of the museum and art gallery, at an estimated cost of £11,000.

WORTHING. *Shops.* Messrs. Healey and Mackenzie, architects, are to erect 10 shops in Goring Road, Worthing.

NORTHERN COUNTIES

KEIGHLEY. *Houses.* Plans passed by the Keighley Corporation : 40 houses, Westburn Avenue, Mr. David Fortune ; 25 houses, Garforth Road, Mr. Jack Rishworth ; 10 houses, Spring Mount, Mr. Daniel O'Connell.

KEIGHLEY. *Hospital extension.* The governors of Keighley and District Victoria Hospital, are to extend the hospital.

SHIPLEY. *School.* Shipley Education Committee reports that revised plans for the new R.C. school in Carr Lane, have been approved and forwarded to the Board of Education.

SMETHWICK. *Factory, etc.* Plans passed by the Smethwick Corporation : Factory, Rolfe Street, for Messrs. T. Foden, Flint and Sons ; laundry, Beakes Road, for Messrs. Rowley and Walters.

TYNEMOUTH. *Branch Libraries, etc.* The Tynemouth Corporation is to develop the library service and is considering sites for the erection of branch libraries.

TYNEMOUTH. *Layout of Park.* The Tynemouth Corporation has approved a scheme for the layout of the Knott Memorial Park at a cost of £14,000.

WAKEFIELD. *Houses.* The Wakefield Corporation has approved plans by the Housing Architect for the erection of 100 small type houses.

YORK. *Flats, etc.* York Corporation has approved plans for the development of the Cemetery Road area. The houses to be erected on the sites are to include blocks of three storeys, a flat on the ground floor and a two-storey house on the first floor.

YORK. *School.* York Education Committee has approved the preliminary plans for the proposed Higher Grade School for girls on the Water Lane site.

YORK. *Houses.* Plans passed by the York Corporation : 13 houses, Yearsley Crescent, Messrs. H. Williamson and Sons.

THE BUILDINGS ILLUSTRATED

STUDIO OF ANIMAL ART, REGENT'S PARK (pages 75-78)—The general contractors were J. L. Kier & Co., Ltd., and the principal sub-contractors and suppliers included : Jaconello, Ltd., terrazzo facing ; V. Naudeau & Co., Ltd., glass ; Modern Floorings Co., Ltd., patent flooring and compo flooring ; Jas. Combe and Son, Ltd., air conditioning and central heating ; Phœnix Electrical Co. (London), Ltd., electric wiring, electric light fixtures and ventilation ; Zoo Building Department, plumbing ; Cakebread, Robey & Co., Ltd., sanitary fittings ; Williams and Williams, Ltd., metal doors and metal windows ; S. W. Farmer and Son, Ltd., fire escape ; Lindsay & Co., special shutters and sunblinds ; G. A. Harvey, metalwork (B.R.C. weldmesh) and cage-work ; Martin Van Straaten, tiling ; C. F. Anderson and Son, Ltd., Canec wallboard.

REFRESHMENT BAR, ZOOLOGICAL GARDENS (pages 79-80).—The principal sub-contractors and suppliers included : Zoological Society's Works Department, structural work ; J. L. Kier & Co., Ltd., reinforced concrete ; Williams and Williams, Ltd., windows ; Oswald Hollmann, light fittings ; Inertol Co., Ltd., waterproofing ; Frigidaire, Ltd., refrigeration chamber ; J. Lyons & Co., Ltd., ice cream conservator, etc. ; W. M. Still and Sons, Ltd., tea and coffee machines ; Martin Van Straaten & Co., tiles ; Dale's Lettering, symbols ; T. G. Cullen, designer of symbols ; Eric Munday and William Pickford, Ltd., lettering ; Modern Floorings Co., linoleum counter top.

G

RATES OF WAGES

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

			I. s. d.	II. s. d.
A	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_3	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_3	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_3	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_3	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_2	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	Glamorgan-shire, Rhondda Valley District	S. Wales & M.	1 6½	1 2
A	Glasgow ...	Scotland	1 7	1 2½
A_2	Gloucester ...	S.W. Counties	1 6	1 1½
	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_3	Kendal ...	N.W. Counties	1 5½	1 1½
A_3	Keswick ...	N.W. Counties	1 5½	1 1½
A_1	Kettering ...	Mid. Counties	1 6½	1 2
A_3	Kidderminster	Mid. Counties	1 6	1 1½
B_1	King's Lynn ...	E. Counties	1 4½	1 0½
A	LANCASTER ...	N.W. Counties	1 7	1 2½
A_1	Leamington ...	Mid. Counties	1 6½	1 2
A	Leeds	Yorkshire	1 7	1 2½
A	Leek	Mid. Counties	1 7	1 2½
A	Leicester ...	Mid. Counties	1 7	1 2½
A	Leigh	N.W. Counties	1 7	1 2½
B	Lewes	S. Counties	1 5	1 0½
A_2	Lichfield ...	Mid. Counties	1 6	1 1½
A	Lincoln ...	Mid. Counties	1 7	1 2½
	Liverpool ...	N.W. Counties	*1 8½	1 3½
A_2	Llandudno ...	N.W. Counties	1 6	1 1½
A	Llanelly ...	S. Wales & M.	1 7	1 2½
	London (12-miles radius)		1 8½	1 3½
	Do. (12-15 miles radius)		1 8	1 3
A	Long Eaton ...	Mid. Counties	1 7	1 2½
A	Loughborough ...	Mid. Counties	1 7	1 2½
A_1	Luton	E. Counties	1 6½	1 2
A	Lytham ...	N.W. Counties	1 7	1 2½
A_1	MACCLESFIELD	N.W. Counties	1 6½	1 2
A_2	Maidstone ...	S. Counties	1 5½	1 1½
A_3	Malvern ...	Mid. Counties	1 5½	1 1½
A	Manchester ...	N.W. Counties	1 7	1 2½
A	Mansfield ...	Mid. Counties	1 7	1 2½
B_1	Margate ...	S. Counties	1 4½	1 0½
A_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
B_2	Monmouth & S. and E. Glamorganshire	S. Wales & M.	1 4	1 0
A	Morecambe ...	N.W. Counties	1 7	1 2½
A_2	NANTWICH ...	N.W. Counties	1 6	1 1½
A	Neath	S. Wales & M.	1 7	1 2½
A	Nelson ...	N.W. Counties	1 7	1 2½
A	Newcastle ...	N.E. Coast	1 7	1 2½
A	Newport ...	S. Wales & M.	1 7	1 2½
A	Normanton ...	Yorkshire	1 7	1 2½
A	Northampton	Mid. Counties	1 7	1 2½
A	North Shields...	N.E. Coast	1 7	1 2½
A	North Staffs ...	Mid. Counties	1 7	1 2½
A_1	Norwich ...	E. Counties	1 6½	1 2
A	Nottingham ...	Mid. Counties	1 7	1 2½
A	Nuneaton ...	Mid. Counties	1 7	1 2½
A_2	OAKHAM ...	Mid. Counties	1 5½	1 1½
A	Oldham ...	N.W. Counties	1 7	1 2½
A_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_2	Slough ...	S. Counties	1 6	1 1½
A_1	Solihull ...	Mid. Counties	1 6½	1 2
A_2	Southampton	S. Counties	1 6	1 1½
A_1	Southend-on-Sea	E. Counties	1 6½	1 2
A	Southport ...	N.W. Counties	1 7	1 2½
A	S. Shields ...	N.E. Coast	1 7	1 2½
A_1	Stafford ...	Mid. Counties	1 6½	1 2
A	Stirling ...	Scotland	1 7½	1 2½
A	Stockport ...	N.W. Counties	1 7	1 2½
A	Stockton-on-Tees	N.E. Coast	1 7	1 2½
A	Stoke-on-Trent	Mid. Counties	1 7	1 2½
B	Stroud ...	S.W. Counties	1 5	1 0½
A	Sunderland ...	N.E. Coast	1 7	1 2½
A	Swansea ...	S. Wales & M.	1 7	1 2½
A_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_2	Teignmouth ...	S.W. Coast	1 6	1 1½
A	Todmorden ...	Yorkshire	1 7	1 2½
A_1	Torquay ...	S.W. Counties	1 6½	1 2
B_2	Truro	S.W. Counties	1 4	1 0
A_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_2	Weston-s.-Mare	S.W. Counties	1 6	1 1½
A_2	Whitby ...	Yorkshire	1 6	1 1½
A	Widnes ...	N.W. Counties	1 7	1 2½
A	Wigan ...	N.W. Counties	1 7	1 2½
B	Winchester ...	S. Counties	1 5	1 0½
A_2	Windsor ...	S. Counties	1 6	1 1½
A	Wolverhampton	Mid. Counties	1 7	1 2½
A_2	Worcester ...	Mid. Counties	1 6	1 1½
A	Worksop ...	Yorkshire	1 5½	1 1½
A_1	Wrexham ...	N.W. Counties	1 6½	1 2
A_3	Wycombe ...	S. Counties	1 5½	1 1½
B	YARMOUTH ...	E. Counties	1 5	1 0½
B	Yeovil ...	S.W. Counties	1 5	1 0½
A	York	Yorkshire	1 7	1 2½

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

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

CURRENT PRICES

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

WAGES

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

MATERIALS

EXCAVATOR AND CONCRETOR

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

DRAINLAYER

BEST STONEWARE DRAIN PIPES AND FITTINGS

	4" s. d.	6" s. d.
Straight Pipes . . . per F.R.	0 9	1 1
Bends . . . . each	1 9	2 6
Taper Bends . . . ,,	3 6	5 3
Rest Bends . . . ,,	4 3	6 3
Single Junctions . . ,,	3 6	5 3
Double . . . . ,,	4 9	6 6
Straight channels . . per F.R.	1 6	2 6
¾" Channel bends . . each	2 9	4 0
Channel junctions . . ,,	4 6	6 6
Channel tapers . . ,,	2 9	4 0
Yard gullies . . . ,,	6 9	8 9
Interceptors . . . ,,	16 0	19 6
IRON DRAINS:		
Iron drain pipe . . per F.R.	2 3	3 8
Bends . . . . each	6 4	13 1
Inspection bends . . ,,	11 5	14 4
Single junctions . . ,,	11 2	22 10
Double junctions . . ,,	17 2	30 9
Lead Wool . . . . lb.	6	—
Gaskin . . . . ,,	5	—

BRICKLAYER

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

MASON

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

SLATER AND TILER

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

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

CARPENTER AND JOINER

	£ s. d.
Good carcassing timber . . F.C.	2 2
Birch . . . . . as 1" F.S.	9
Deal, Joiner's . . . . ,, ,,	5
,, ,, 2nds . . . ,, ,,	4
Mahogany, Honduras . . ,, ,,	1 3
,, African . . . ,, ,,	1 1
,, Cuban . . . ,, ,,	2 6
Oak, plain American . . ,, ,,	1 0
,, Figured ,, . . ,, ,,	1 3
,, plain Japanese . . ,, ,,	1 2
,, Figured ,, . . ,, ,,	1 5
,, Austrian wainscot . . ,, ,,	1 6
,, English . . . ,, ,,	1 11
Pine, Yellow . . . ,, ,,	1 0
,, Oregon . . . ,, ,,	4
,, British Columbian . . ,, ,,	4
Teak, Moulmein . . ,, ,,	1 3
,, Burma . . . ,, ,,	1 2
Walnut, American . . ,, ,,	2 3
,, French . . . ,, ,,	2 3
Whitewood, American . . ,, ,,	1 1
Deal floorings, ⅝" . . . Sq.	18 6
,, ¾" . . . ,,	1 1 6
,, 1" . . . ,,	1 2 0
,, 1¼" . . . ,,	1 5 0
,, 1½" . . . ,,	1 10 0
Deal matchings, ⅝" . . . ,,	14 0
,, ¾" . . . ,,	15 6
,, 1" . . . ,,	1 4 0
Rough boarding, ¾" . . . ,,	16 0
,, 1" . . . ,,	18 0
,, 1½" . . . ,,	1 6 0

Plywood, per ft. sup.:

Thickness	⅛"			¼"			⅜"			½"		
Qualities	A	B	BB	A	B	BB	A	B	BB	A	B	BB
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	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"	1"	1¼"	2"
	d.	d.	d.	d.	d.
Tubes 2'–14' long per ft. run	4	5½	9½	1/1	1/10
Pieces, 12"–23" long . each	10	1/1	1/11	2/8	4/9
,, 3"–11½" long . ,,	7	9	1/3	1/8	3/–
Long screws, 12"–23½" long ,,	11	1/3	2/2	2/10	5/3
,, ,, 3" M–½" long ,,	8	10	1/5	1/11	3/6
Bends . . . . ,,	8	11	1/7½	2/7½	5/2
Springs not socketed . ,,	5	7	1/1½	1/11½	3/11
Socket unions . . ,,	2/–	3/–	5/6	6/9	10/–
Elbows, square . . ,,	10	1/1	1/6	2/2	4/3
Tees . . . . ,,	1/–	1/3	1/10	2/6	5/1
Crosses . . . ,,	2/2	2/9	4/1	5/6	10/6
Plain sockets and nipples ,,	3	4	6	8	1/3
Diminished sockets . ,,	4	6	9	1/–	2/–
Flanges . . . ,,	9	1/–	1/4	1/9	2/9
Caps . . . . ,,	3½	5	8	1/–	2/–
Backnuts . . . ,,	2	3	5	6	1/1
Iron main cocks . ,,	1/6	2/3	4/2	5/4	11/6
,, with brass plugs ,,	—	4/–	7/6	10/–	21/–

Discounts	TUBES Per cent.		Per cent.
Gas . . .	70	Galvanized gas .	60
Water . . .	65	,, water .	55
Steam . . .	62½	,, steam .	50
	FITTINGS		
Gas . . .	60	Galvanized gas .	50
Water . . .	55	,, water .	47½
Steam . . .	50	,, steam .	42½

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

SMITH AND FOUNDER —*continued*

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

Cast-iron rain-water pipes of ordinary thickness metal . . F.R.	⅜" s. d.	4" s. d.
Shoes . . . . each	2 0	3 0
Anti-splash shoes . . ,,	4 6	8 0
Boots . . . . ,,	3 6	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.	30 0
,, drawn pipes . . . ,,	29 6
,, soil pipes . . . ,,	32 6
,, scrap . . . ,,	16 6
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 8	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 9
Sirapite . . . ,,	3 6 0
Keene's cement . . . ,,	5 0 0
Gothite plaster . . . ,,	3 6 0
Pioneer plaster . . . ,,	3 6 0
Thistle plaster . . . ,,	3 6 0
Sand, washed . . . Y.C.	11 6
Hair . . . . lb.	6
Laths, sawn . . . bundle	2 4
,, rent . . . ,,	3 9
Lath nails . . . . lb.	3

GLAZIER

	s. d.	s. d.
Sheet glass, 24 oz., squares n/e 2 ft.	s. F.S.	2½
,, ,, 26 oz. ,, ,, ,,	,,	3½
Flemish, Arctic, Figures (white)* .	,,	7½
Blazoned glasses	,,	2 6
Reeded: Cross Reeded . . .	,,	11
Cathedral glass, white, double-rolled, plain, hammered, rimpled, waterwite	,,	6
Crown sheet glass (n/e 12" × 10") .	,,	2 0
Flashed opals (white and coloured) .	,, 1 0 and	2 0
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 6
,, ,, 2 ft. . .	,,	3 0
,, ,, 5 ft. . .	,,	4 0
,, ,, 7 ft. . .	,,	5 0
,, ,, 15 ft. . .	,,	6 0
,, ,, over 15 ft. . .	,,	7 6
"Calorex" sheet 21 oz., and 32 oz.	,, 2 6 and	3 6
,, rough oast ⅛" and ¼" .	,,	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 17 9
Linseed oil . . . . . gall.	3 2
Boiled oil . . . . . ,,	3 5
Turpentine . . . . . ,,	3 9
Patent knotting . . . . . ,,	14 0
Distemper, washable . . . . cwt.	2 6 0
,, ordinary . . . . ,,	2 0 0
Whitening . . . . . ,,	4 0
Size, double . . . . . firkin	3 0
Copal varnish . . . . . gall.	13 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 (cast iron) . . . . . Each	12 3	18 4

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

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

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

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

CARPENTER AND JOINER	£ s. d.
Flat boarded centering to concrete floors, including all strutting . Sqr.	2 2 6
Shuttering to sides and soffits of beams . . . . . F.S.	7
" to stanchions . . . . . "	7
" to staircases . . . . . "	1 6
Fir and fixing in wall plates, lintols, etc. . . . . F.C.	3 9
Fir framed in floors . . . . . "	4 6
" " roofs . . . . . "	6 6
" " trusses . . . . . "	7 6
" " partitions . . . . . "	8 6
¾" deal sawn boarding and fixing to joists . . . . Sqr.	1 14 6
1" " " " " " . . . . . "	1 17 6
1½" " " " " " . . . . . "	2 3 0
3" × 2" fir battening for Countess slating . . . . "	9 6
Do., for 4" gauge tiling . . . . . "	12 0
Stout feather-edged tilting fillet . . . . . F.R.	4½
Patent inodorous felt, 1 ply . . . . . Y.S.	2 3
" " " 2 " . . . . . "	2 9
" " " 3 " . . . . . "	3 3
Stout herringbone strutting to 9" joists . . . . F.R.	10½
1" deal gutter boards and bearers . . . . . F.S.	1 2
1½" " " " " " . . . . . "	1 6
2" deal wrought rounded roll . . . . . F.R.	8
1" deal grooved and tongued flooring, laid complete, including cleaning off . . . . . Sqr.	2 1 0
1¼" do. . . . . "	2 10 0
1½" do. . . . . "	2 17 0
1" deal moulded skirting fixed on, and including grounds plugged to wall . . . . . F.S.	1 8
1¼" do. . . . . "	1 9

CARPENTER AND JOINER—*continued*	s. d.
1½" deal moulded sashes of average size . . . . F.S.	1 0½
2" " " " " " . . . . . "	1 11½
1½" deal cased frames double hung, of 6" × 3" oak sills, 1¼" pulley stiles, 1¼" heads, 1" inside and outside linings, ⅝" parting beads, and with brass faced axle pulleys, etc., fixed complete . . "	3 7
2" " " " " " . . . . . "	3 10
Extra only for moulded horns " " " " . . . Each	6
1½" deal four-panel square, both sides, door . . . . F.S.	2 0
2" " " " " " . . . . . "	2 8
1½" " but moulded both sides . . . . . "	2 4
2" " " " " " . . . . . "	3 0
4" × 3" deal, rebated and moulded frames . . . . F.R.	1 0
4½" × 3½" " " " " " . . . . "	1 4
12" 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.	18 6
Riveted plate or compound girders, and hoisting and fixing in position . . . . . "	1 3 0
Do., stanchions with riveted caps and bases and do. . . . "	1 2 0
Mild steel bar reinforcement, ½" and up, bent and fixed complete . "	1 2 0
Corrugated iron sheeting fixed to wood framing, including all bolts and nuts 20 g. . . . . F.S.	11
Wrot-iron caulked and cambered chimney bars . . . . Per cwt.	1 10 0

PLUMBER	£ s. d.					
Milled lead and labour in flats . . . . . cwt.	2 0 6					
Do. in flashings . . . . . "	2 4 0					
Do. in covering to turrets . . . . . "	2 9 6					
Do. in soakers . . . . . "	1 15 3					
Labour to welted edge . . . . . F.R.	3½					
Open copper nailing . . . . . "	3					
Close " " . . . . . "	4					
	½" s. d.	¾" s. d.	1" s. d.	1¼" s. d.	2" s. d.	4" s. d.
Lead service pipe and fixing with pipe hooks . . . F.R.	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 n	—	—
Lead traps . . .	—	—	—	8 n	11 6	—
Screw down bib valves. "	6 9	9 6	11 0	—	—	—
Do. stop cocks . . "	7 0	9 6	12 6	—	—	—
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 0
Do. and brush grain and twice varnish . . . . "	5 6
Stain and twice varnish woodwork . . . . . "	1 11
Stain and wax polish woodwork . . . . . "	4 6
French polishing . . . . . F.S.	1 2
Stripping off old paper . . . . . Piece	2 0
Hanging ordinary paper . . . . . from "	2 9