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Wednesday, July 4, 1928

A LESSON FROM LOUVAIN

Not so very long ago the name of Louvain stood for architectural tragedy, as, more poignantly still, did those of Rheims and Ypres. To some architectural commentators the latest news from Louvain seems to appear in the light of comedy. That news is of a really valiant enactment by its city fathers to the effect that henceforth concrete shall be concrete and nothing else. No more shall it be permitted to assume fancy dress and masquerade as stone, or to choose between being penny plain or twopence coloured. Above all is it illegal for concrete to simulate honest-to-God stone by having its skin marked out in such lines as might seem to counterfeit the joints of masonry.

The embargo as reported in *La Cité* may be thus translated: *Article i*: "The employment of artificial stone is absolutely forbidden for the façades of houses in the streets and squares, in the undermentioned area, either in the existing streets and squares, or which may be erected in future within this perimeter." (Here follows list of streets and squares.) *Article ii*: "Within and on the said area artificial stone will only be authorized as a covering for the skeletal structure of loggias and balconies made of reinforced concrete, it being understood, however, that the artificial stone will never play any part except that of a covering skin, and to the absolute exclusion of all trace of joints or of bed-joints, which might give the illusion of stone construction." *Article iii*: "This tolerance of the employment of artificial stone will never be extended to any other elements of architectural façades."

It is a little difficult to determine one's real attitude to this startling edict—especially difficult to those of us who, in decoration, at any rate, delight to practise amiable deceptions. The great obstacle to a just appreciation of the measure is, as so often, one's weakness for consistency, and a foolish desire to see all things at all times and in all places obeying a short list of clearly defined rules. Whatever the final implications of the Louvain rule, one's first reaction is to hooray for the councillors, not necessarily because they have been wise, but because they are alive. That is a very rare quality indeed (especially amongst town councillors), and to be alive to a purely æsthetic side issue, to come to a definite conclusion about it, and to have the vigour to promulgate a clear-cut bylaw embodying that conclusion is rarer still. If the like has ever happened in England, it would be comforting to hear of it; such news would do something to rehabilitate one's self-respect. If there be just one such town in this country, let us hear its name, that its corporation may be praised and that its mayor may be held worshipful indeed.

But imagine Bournemouth adopting a self-denying ordinance that oak-framed, half-timbered construction should no longer be represented, however perfunctorily, in gummed-on, creosoted deal or painted cement; or Southend resolving that its asbestos roofs may no longer insult honest tiles by blushing pink in futile imitation! Happy Louvain, one imagines, knows nothing of these humiliating indecencies that are becoming typical of our English landscape, and need only concern itself with such relatively academic questions as: "Shall artificial stone be used in a manner likely (*a*) to prejudice the traditions of true masonry; (*b*) to trammel the future of a new material?" Can one imagine the Manchester Corporation holding an emergency sitting to determine its attitude towards sham windows or marble substitutes, or the City of Peterborough forbidding the use of cast iron in shapes essentially ductile? Emphatically one cannot. One cannot, for that matter, imagine any English city, borough, county or district, making any regulation whatever calculated to promote good architecture or amenity—notwithstanding the fact that here and there one or two isolated gestures towards a more civilized governance have actually been made. The Hampstead Garden City and Welwyn both have wise sumptuary laws for their buildings, and in Bath you may no longer build exactly as you please. But for all the acts and bylaws of the public authorities, you may build a romantic gabled villa in Belgrave Square, if that is your pleasure, or a Corbusier family filing-cabinet in Lincoln's Inn—were it not that the Grosvenor estate and the benchers respectively are a good deal wiser and more far-sighted than our civic rulers. The real significance is not in the Louvain bylaw, but in the fact of its making. The bylaw itself may be wise and necessary, or the reverse; it is the spectacle of a corporation that can think otherwise than in terms of mere rates and statistics that arouses wonder—and envy. As to the rule, it may no doubt (like rules in general) be helpful and comforting to the weaker brethren, keeping them to some extent out of silly mischief; but to the fully adult architect it will be neither here nor there—he will note it with mild general approval or dissension, and continue to do what seems best to him regardless of all such precepts. That is, unless he is building in Louvain, where any compulsory architectural continence must surely have its compensations. For the rest of us the Louvain rule is a good rule, to be broken with discretion.

NEWS AND TOPICS

A CYNIC who has been studying some of the speeches made by Professor Abercrombie and the other supporters of the Council for the Preservation of Rural England, has come to the conclusion that they badly need a Philistine with a brutal tongue and a common-sense mind upon the council. In his view C.P.R.E. do not allow sufficiently for changes of taste and ideas on fine art and architecture. A hundred years ago, he points out, the very cottages that are now extolled as being so picturesque and worthy of preservation were condemned by the architects of the day as being blots upon the landscape. My cynical friend also commented on Mr. Dawber's recent references to petrol pumps, and suggested that when flowers or a sunset are equally vivid there is an abundance of praise for Nature's display of colour. He suggests that J. M. W. Turner, if alive today, might find as much beauty in a row of petrol pumps on a roadside as he did in the scarlets and oranges of a Grecian sky. No doubt his views are extreme, but there is a danger. I fear that C.P.R.E. may outrun discretion. However, nothing is achieved without enthusiasm, and undoubtedly England is being spoilt, and public opinion can only be aroused by violent protests.

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We have heard so much of the Bath clause that was to empower the local authority to exercise their authentic judgment, that it comes as rather a shock to learn that the Advisory Committee that was set up under the by-law, known as the "Bath clause," has not yet been completely constituted. The chairman, who is a local justice of the peace, is Mr. Benjamin John. The Surveyor is Mr. W. E. Underwood, but neither Mr. Guy Dawber, who has been such a strong advocate of control of buildings while he was president, nor Mr. Walter Tapper, has yet appointed an architect who will be the third member of this committee. No doubt the reason why the R.I.B.A. has not moved in the matter is because the committee have not yet been called upon to act in any way. No plans have been submitted to it. Apparently it only functions if the Corporation rejects, or, at any rate, has some doubts about the elevations of any new buildings or alterations to old buildings. The Bath Committee is, therefore, only a pious aspiration, and it remains to be seen whether in any case it will be able successfully to make decisions on matters of taste and fine art.

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Metal engraving is so rare nowadays that the nine plates in this medium provided by William E. C. Morgan at the Beaux Arts Gallery, Bruton Place, are especially welcome. They are welcome, too, on their own intrinsic merits. Morgan was a Prix de Rome engraving man, and his final studies have developed an excellent engraving and etching technique. His drawings indicate the soundness of his faculty and, moreover, they are largely devoted to architectural subjects, mostly Italian. The engravings on copper are almost wholly burin work, and are likewise of Italian buildings. Sometimes a little drypoint is added to the burin line, and a "Hill Farm" and a "Cottage" are pure drypoints. The selection of prints includes seven wood engravings, and the whole provide an example of the sound lines on which the craft of engraving is now being pursued by the younger men who are capable of making simple, honest, and straightforward statements of building structures. Quite a different method of the exposition of architecture is shown at Walker's Gallery, where Mrs. Forrester Wood has a series of twenty-five small pictures in silk needlework. The technique is highly developed, and highly surprising, for the results are not only soft in texture, they are beautiful in their naturalism, and it must be confessed, in some ways achieve effects impossible to either water-colour or oil painting. These silk pictures are based on good draughtsmanship, which after all is the most important factor in a work of graphic art.

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Last Thursday Mr. Alfred C. Bossom spoke at the American Chamber of Commerce in London on "The History of the Skyscraper." He called attention to the fact that one of the great causes of skyscraper development was the American effort to solve the housing problem. ¶He gave

Italian Hill Farm. From a drypoint. By Wm. E. C. Morgan.

some interesting information as to the way during the war English designs for houses were sent to the United States in order to help them in the building up of their munition towns. He suggested, however, that it was essential to inquire why buildings could be erected in America at no higher cost than in Great Britain, but in half the time, and why the operatives in the U.S.A. obtained wages three and a-half times as much per week as in this country? Mr. Bossom insisted that we had much to learn from the methods of speedy building costing, and labour-saving in the United States, and that it would be a gesture of friendliness between the two countries if the accumulative knowledge of both on the housing question could be exchanged.

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Mr. J. M. Easton, Mr. Howard Robertson, and their architectural wives were decidedly the most cheerful of all on the platform last week at the opening ceremony of the New Hall of the Royal Horticultural Society. Princess Mary looked extremely grave, and Lord Lambourne, the president of the council, was hampered by official papers and an umbrella, but the architects smiled happily throughout at their many friends who had come to do them honour, and also to admire their new building. The hall is the latest architectural novelty in London. Even the old Brigade who had come up from country manor houses exclaimed in admiration at the lighting that entered through the four stepped tiers of windows carried on elliptical arches. They little realized that they were praising an outstanding example of modernism, and that Mr. Easton and Mr. Robertson are blazing the trail to a new form of architectural tradition.

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Among the many articles which have appeared in connection with the centenary of Albrecht Dürer one has more than once come across the question: "Is Dürer a first-class artist?" Whereupon such writers have, with strangely rash presumption, decided that he is not. One might venture to suggest that if the argument were presented in an at all scientific manner more serious consideration might be given it. As it is, it seems ever to appear as the result of a peculiar lack of intuition on one and the same point—the argument being that even Dürer's maturest work lacks the harmony and rhythmic flow of Italian design. Why this comparison? What of northern and Gothic art? Such writers' knowledge of the history of art or the scope of their "æsthetic reaction" seems unhappily confined. The symmetry and harmony that characterize Italianart are the outcome of a serene contentment in the thing that is, and a sensuous appreciation of the beauty of form—the direct heritage from the Greek ideal. A spirit altogether remote from the tortured subjectivity of the north! Because Dürer strove with an indomitable will to curb the passionate violence and overwrought imaginative force of the Gothic vision, and because his style is consequently, in comparison to that of Grünewald or Baldung Grien, markedly austere, one is caused, and rightly, to regard Dürer relatively as a "Klassiker." But how utterly northern is this classicism, how far removed from that of the south! It is in relation to Germanic and not Italian tradition that Dürer's work must be judged.

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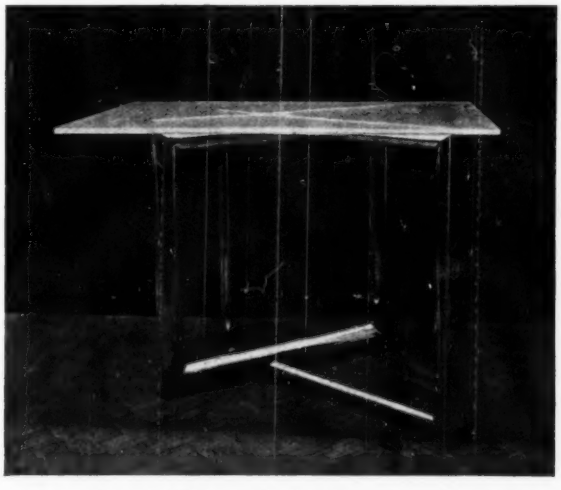
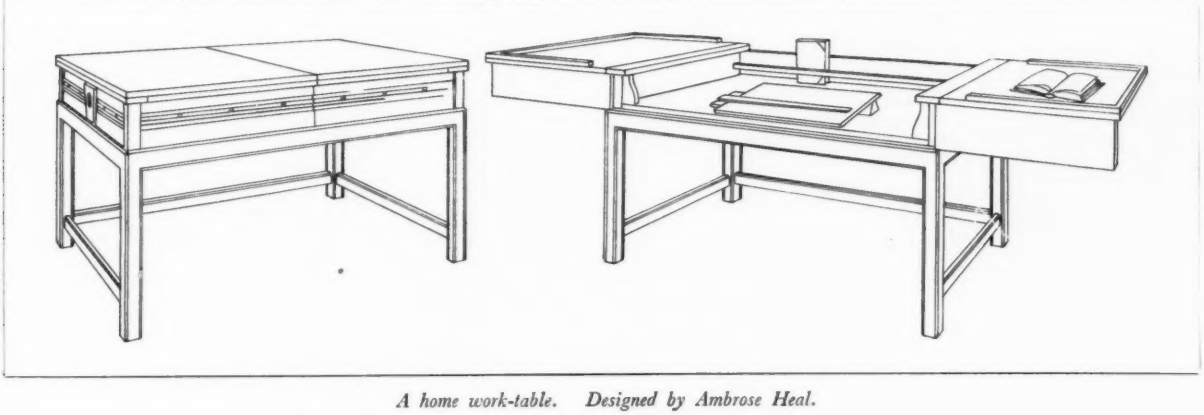
Last week I went to an exhibition of "mechanistic" decoration and furniture, and saw some remarkable things. I saw the little table of which an illustration is given on this page. The legs are of aluminium, to make it nice and light, and the top is a slab of sheet glass, to make it nice and heavy again. I had a cocktail at this table. I was entertained not only *at* it, but *by* it. Talking to Mr. Ambrose Heal later, he showed me a table *he* has designed



A table of aluminium and glass. From an exhibition of mechanistic furniture by Arundell Display.



A home work-table. Designed by Ambrose Heal.

—a table where one's work can be covered up for the night as simply as in a roll-top desk. We have all had drawings spoiled on the drawing-board overnight. A coal-heaver once rested a sack of coals on my drawing-board on his way to the office coal-box. As to its general use, the hinged flat top is supported on "lopers" which pull out from each end, and you sit to it at ordinary chair height and not on a high stool. The raised portions at the two ends come at the right height for standing to if desired.

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Colin Gill has definitely established himself as a decorative painter by his work at the Northampton Town Hall, the Fishmongers' Hall, and Saint Andrew's Church at Ilford. This is one of the good signs of the times, for mural decoration requires specialization. That he can adequately fill a large space has already been demonstrated; that he can produce detail work which is irreproachable may be seen at Colnaghi's Gallery in Bond Street, in his figure studies for "The Defeat of the Danes," one of the historical panels for Saint Stephen's Hall at Westminster. They are admirably drawn, interesting in their poses and avocations, and should fill the panel with interest. At the Goupil Gallery another young artist originating at the Slade, Robin Guthrie, son of that fine craftsman in book illustration and printing, James Guthrie, shows signs of a similar talent. He has many excellent drawings of the figure to vouch for his competence, and three compositions for mural work which should certainly be carried out. The "Christ Baptizing" is original, and the lunette a very pleasing filling. At the same gallery Walter Bayes, most modern of mural experimenters, shows fifty joyous pictures, half a dozen of which are good decorations for wall spaces, although none is ostensibly destined for the purpose. Gay in colour, these works are evidence that their painter thoroughly enjoyed himself on the Riviera, but I don't think any writer could enjoy the distraction of the triptych, architectural in its subject and admirably done, fixed to a table dedicated to his use.

ASTRAGAL

NEW LAMPS FOR OLD

[BY GREGORY BROWN]

At a recent exhibition of "modern" decoration and "mechanistic" furniture, I was brought face to face, rather abruptly, with the very great difficulty of seeing anything in the way of industrial design which was at once new and an improvement, from the utilitarian standpoint, on existing forms.

I was vastly intrigued the other day to be told by an English manufacturer of "modern" furniture and decoration, that there were no architects who were any good in this country, that we had nobody who could design "modern" textiles, in fact, we had not even got any good materials. Further, I was regaled with the encouraging information that it was impossible to find an English designer who could arrange a shop window display, and that the only thing to be done was to import designs and designers from abroad. As to "modern" furniture, we did not even know what it was, much less were we able to design it.

After this cheering recitation I went away full of hope for the future of British industrial design. You see I had already been privileged to "view" the work produced by this manufacturer. It was almost entirely shipped from abroad; but the few examples of his own productions were weak imitations of his masters. The result of seeing and hearing all this was to bring to my mind again certain fallacies that are for ever hampering the progress of design in this country.

Before going farther let me hasten to say, quite unnecessarily, that we have in England quite as good designers of our own nationality in all branches of industrial design as can be found anywhere. They are not given the encouragement that the designer receives abroad. Foolish as it may sound, as a people, we are still dominated by the belief that "Art" is to be found only in the picture gallery in a gold frame. In consequence, the designer has very little encouragement and no status. However, I do not want to be led into a dissertation on the relative positions of designers and painters. I rather want to deal with some of the fallacies held by the devotees of "modern" design. First let me make my position quite clear. I am fully alive to the fact that the average of good design in England is a very low one. We want things designed which are suited to the requirements of today, and we want them badly. On the one hand, we have discriminating people who buy period furniture and build in period styles quite unsuited to the requirements of the times. On the other hand, we have those who affect the "frightfully modern" school, which usually means spineless imitations of the worst "modern" movements from other countries.

Between the two the serious designers, of which we have no dearth, are mostly neglected or forced to produce "hack work" to make a living. As to this word, "modern." We so often hear that such and such a piece of work is quite "modern," using the term in such a way as to imply perfection. Inasmuch as the word is used in its proper sense (i.e. pertaining to the present time) it is all right, but spoken with bated breath when referring to some piece of work, suggesting that it is perfect because "modern," merely displays stupidity. Let us be quite clear, then, on this point. The terms "old-fashioned" and "modern" have no reference to quality, but merely to time. This may seem pretty obvious, but the obvious often has a habit of becoming obscure.

The main factor which should govern the production of any article is suitability to purpose. If an article is designed to serve its purpose adequately, no more and no less, it will be automatically right as a piece of design, and therefore satisfying to look at. I purposely refrain from using the word "beautiful" because there is a tendency to regard beauty as something added to, instead of an intrinsic part of, an object.

May I humbly throw out a hint to designers of "mechanistic" furniture? First of all, I do not for one single instant suggest that there is nothing to be said for metal furniture, but the designers of operating-theatre furniture, who are usually surgeons, will have them skinned to death every time. The reason for this is obvious and is, incidentally, the crux of my argument. These surgeons are concerned only with utility. There are far more things in this world good to look upon designed by people not even remotely connected with "Art" than are designed by accredited designers, however "modern." It is the attempt to make things pretty or novel or modern, all one, that has been the stumbling-block to progress and to the encouragement of good design.

Of course, the fetish of believing that anything from Paris or Stuttgart or anywhere else except England must be good is laughable. Admittedly it is only a peculiar type of dupe that can be gulled in this way; all the same, he does exist, as I have recently had cause to know, and it is one of the purposes of this article to lay naked his gullibility.

There is no purpose, of course, in disguising the fact that we, like most other countries, are surrounded with the most lamentable examples of the designer's art. When we see some remarkably fine example of foreign design we are apt to forget that this is not the milk, but only the cream.

Let manufacturers realize that we have the designers and can produce the best of designs provided we are given the chance. One great difference, I think, between ourselves and nations like France and Germany is that the designer abroad is looked upon as an expert and given a much freer hand as such. Here the designer is dictated to and hampered by all sorts of people who have no knowledge whatever of his craft.

The recent work of some of our architects and other designers points to a future wherein we shall have much to hope and little to fear. Long before they become important enough to be a hindrance to serious designers, people like my "mechanistic" friend will have become Robots.

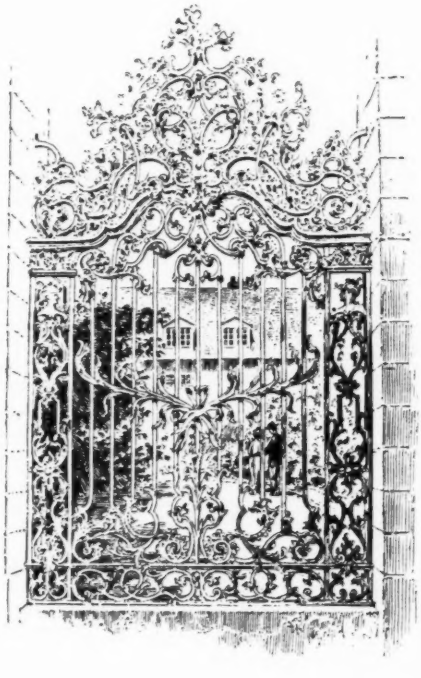
And then, when we become completely disillusioned, we may find, like Aladdin, that new lamps are not necessarily better than old.

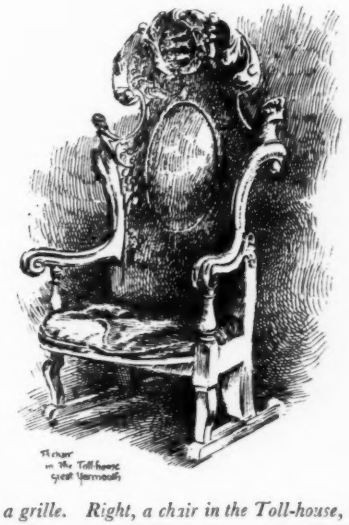
THE WORK OF RAFFLES DAVISON

[BY KINETON PARKES]

It is seldom that an artist has so much honour in his own country as that enjoyed by the subject of the handsome volume just issued by subscription by B. T. Batsford, of Holborn. Raffles Davison has many friends and more admirers, and not the least in both categories are those members of the architectural profession who have availed themselves of his invaluable aid in the preparation of drawings from plans. Eloquent testimony of this is furnished by Sir Aston Webb, P.P.R.A., and Sir Reginald Blomfield, R.A.; and the honorary editors of the book, Maurice E. Webb and Herbert Wigglesworth, also stress the point. But this is not the whole virtue of Raffles Davison's work. He is an independent artist with a passion for architecture, to which art he was apprenticed and to which he has always been true as an interpreter, not of his own work, but of that of antiquity and of his contemporaries. Architectural archæology and history are the richer for his records and interpretations. As such they are admirable, but they are more; they are the creations of an artist with a sound technique in pencil and pen work who has always respected his subject; paid it

Raffles Davison. Edited by Maurice E. Webb and Herbert Wigglesworth. With a selection of his drawings and sketches. London: B. T. Batsford, Ltd., 94 High Holborn. Quarto, pp. xxiv and 15, plates 74. 21s.





Left, a grille. Right, a chair in the Toll-house, Great Yarmouth. [*From* The Work of Raffles Davison]

homage; remained true—almost—to his first, and almost only, love. His mere divagations have been into landscape and some little figure-work, always clever and accomplished.

Raffles Davison has the advantage of having participated in the pen-and-ink movement and in the later half-tone reproductive system. The record extends from 1870 to 1926. The earlier date foreshadows the doom of wood-engraving as illustration, although it persisted for another twenty years or so, and the rise of that pen-and-ink period which, in England, rivalled the mastery displayed by the Continental and American practitioners. Raffles Davison has lived and worked throughout, and although it cannot be claimed for him that he is a Vierge or even a Joseph Pennell, yet his place—a high one—is secure. The seventy-four plates illustrating the fruits of a busy career include more than 100 subjects out of some thousands, but more than sufficient to establish their author's position as one of the master-architectural draughtsmen of his time. Of the value of his draughtsmanship Rudolf Dircks writes, but an even more valuable estimate is furnished by the artist himself, apart from his artistry, in the address on "The Art of Drawing," delivered some years ago to the Liverpool Architectural Society and now reintroduced by a note by W. T. Plume. We see from this the thorough way in which Raffles Davison set about his work; the honesty of purpose he always brought to it and the enthusiasm that always informed it. We see also a human being rejoicing in the treasure which is art.

The treasure of art has always been possessed by this keen interpreter of it. He expressly confesses himself a devotee. He gave up practising architecture for the pleasure of expressing it in line. It would seem that he might have created original buildings; it is certain that he created original drawings. He says that "the most accomplished architects have usually combined some distinction as draughtsmen and painters with their power of design"; that "drawing is the one rapid and ready medium by which architecture may be designed and understood"; that "it is only by a persistent thought of the work in the round that an architect can properly imagine beforehand the result of his work"; that "it is when we come to the work of an architect who thinks for himself, who is progressive, and makes deviation from types, that this study in the round is so essential." Here are opinions worthy of use as maxims in the drawing office.

Raffles Davison is all for types, although he admits variations and excursions, but hardly outside tradition. His love is an old love; he is a faithful admirer of the past, not only of the buildings, but of the furniture; the carriages in which men and women rode; the arms they used when they fought; the utensils they worked with in the days of peace; the clocks that told them the time; the memorials that marked their sense of greatness; and the stones which stood at the heads of their graves. All these things have to be beautiful, however, if they are to attract our artist, and in these plates he has found and recorded in sketch or finished drawing numerous examples.

Fine as are most of the complete studies of buildings to be found here—interesting and valuable as they are, not only as records, but as works of art in themselves—the greater fascination is evoked by the evident delight taken by the artist in making a true transcript of the decoration which earlier craftsmen lavished on their pieces. Detail after detail is drawn with evident gusto: a bench-end, a capital, a moulding, a doorway, a turret, a pulpit, a font or a fountain. He enthuses over the smallest fragment of decent wrought iron, and makes the beholder share his enthusiasm. This is the great value of this book; you feel warmer towards the person it celebrates as you warm to the charm of his work.

Technically the drawings are admirable. Their author has a complete command of the pen-point, and he uses it with a sure sense of its legitimate extent and as sure of its limitation. Yet there is one drawing which might give the ignoramus an excuse for the misapplication of the term etching: "Somerset House through Waterloo Bridge." This is an intriguing plate which looks like a print; it might be mistaken for a really good wood-engraving, but in point of fact it is a really good drawing. One of the most careful and detailed is that of "Westminster Hall"; one of the most imposing is "Liverpool Cathedral"; one of the simplest is "An Old Canterbury Church"; and "St. Michael Royal" is one of the most interesting. There is very little variation from the sound, orderly line work which the artist employs; no efforts for effects of tone or atmosphere; no fluffy nigglings or unmeaning cross-hatchings. It is thoroughly straightforward, honest, and true throughout.

It has been the privilege of Raffles Davison's friends to bring out this handsome volume in his honour; it has been the artist's privilege to provide the material for it, and ours to appreciate it at its value. There are some 200 subscribers to the volume, mostly members of the R.I.B.A., but the book is still on sale.

Alms box, Pinhoe, Devon. [*From* The Work of Raffles Davison]

Lawn Road, Hampstead. A road in old Hampstead, where there is no town planning.

A GARDEN SUBURB'S COMING OF AGE

[BY HARRY JOHNSON]

"THE era of the long, drab street is past," said a speaker at the celebration of the Hampstead Garden Suburb's twenty-first birthday. "Twelve cottages to the acre is a commonplace today. You were the originators!"

It is queer that the absence from the Hampstead Garden Suburb of "the long, drab street" is what visitors deplore. I have known some—even architects—lift their hands in despair at the thought of its roads leading them back to where they started, its culs-de-sac, its "ways," and its "walks," and its "closes" that seem to have been designed to confuse, bewilder, and make lost all but the denizens themselves. And even then, was there ever one of these last at any time able to direct the foundered stranger aright?

It was, of course, by these very crescents and quadrangles and forms of byway that Hampstead made town-planning history, and there are now so many meandering roads with grassy margins on the outskirts of the towns that it is hard to realize that only twenty-one years have passed since Lord Crewe, Lord Leverhulme, Mr. Alfred Lyttelton, and Mr. Charles Booth asked Parliament to free the development of the "northern heights" from by-laws which enforced straight and parallel roads.

This revolution in road design really followed from the self-imposed obligation of the pioneers to limit the number of houses built per acre—an obligation now common, but then novel—and the cul-de-sac method is now recommended by the Ministry of Health so frequently, on economic as well as æsthetic grounds, that the tradition of the straight road has gone.

Visitors may declare with some anger that they have no use for such roads as the garden suburb can place before them; the most angry must admit that they were intrigued and charmed by the roads' names. "Childs' Way" is called a little byway leading up to the school. There is no thoroughfare here for fast-moving traffic, and so there is no danger to life or limb. It is, in fact, a child's way. Turn the pages of the London directory, read the names from the enamelled plates as you ride on top of a bus, and what depression seizes one! Coin Street, Tysoe Street, Rosoman Street, Liverpool Street—sordid streets with sordid, meaningless names! Meaningless, or with a meaning that will never be remembered. What a relief to find a place with roads bearing the names of saints and a few sinners rather than that of the ground landlord or jerry-builder who probably departed this life without leaving any reason why even a tombstone should bear his name.

Attention has often been drawn to the distinction in the garden suburb between the pre-war and post-war work. There is a difference, of course. The pre-war houses were built to let, and the post-war houses are built to sell. (Many of the pre-war houses are still in tenants' hands, and a rental of perhaps twelve or fifteen shillings a week for a pleasant four-roomed cottage covers maintenance and painting—even the re-washering of a tap! One can imagine why the Garden Suburb Trust and the different sub-leaseholders had to change their plans!) And with the change over from tenantry to ownership various clauses in the leases have had to be relaxed, and the architectural censorship rendered less precise. Post-war Northway has suffered accordingly, and where one has proceeded evenly along Erskine Hill or Williefield Way, one comes along Northway with a series of changes and shocks. The estate's architect should have kept a tighter hand; the individual architect allowed less of his own way. The post-war work, too, relies overmuch on material and texture. The pre-war work relied more

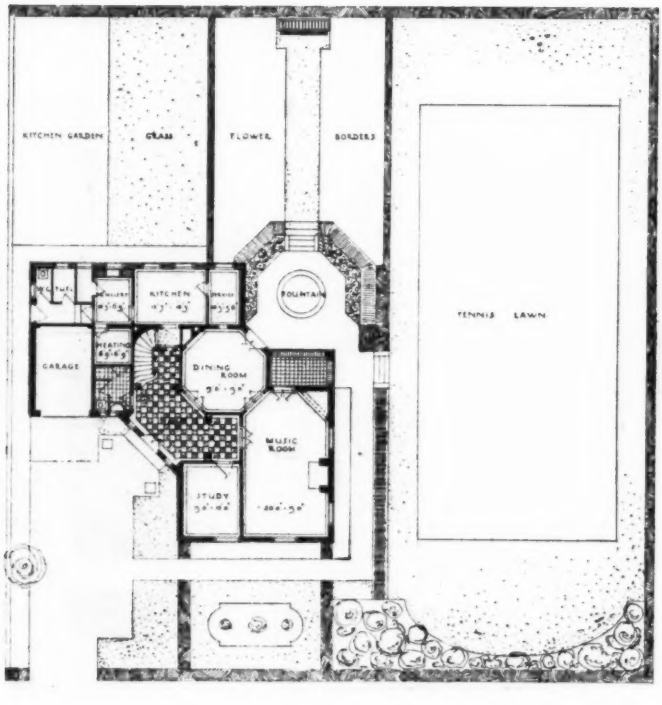
wisely (and more cheaply !) upon proportion and form. The younger men in the suburb have been over-impressed with the quality of brick and waxed oak, and bricks and tiles set diagonally or in diamonds, corbelled or in frets, are used over entrances and at angles, round verandas and in fireplaces, with something of a flourish born of the self-consciousness of their use.

The garden suburb may be said to have suffered in

Houses in Cotman Close, Hampstead Garden Suburb. With the exception of the house in the top illustration with dormers, by F. W. Knight, the houses shown are by J. C. S. Soutar.

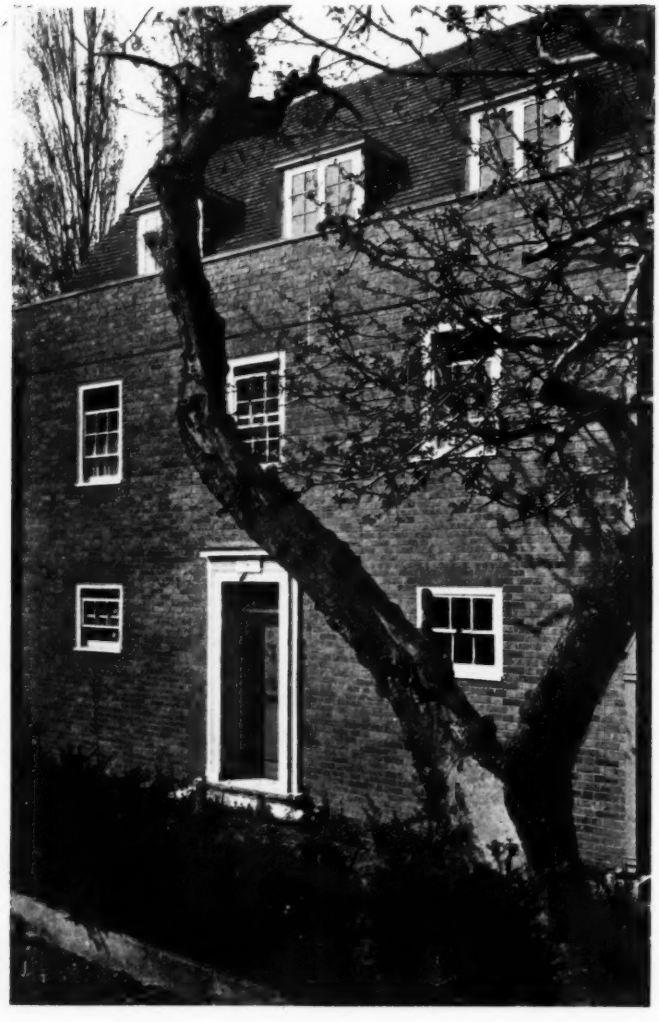
post-war days from having too many architects. In the early days the houses were designed in groups, with one man for a group. Latterly, every house has had its architect. In variety, the garden suburb may be the richer, but the uniformity has gone. Even so, the garden suburb is the garden suburb, and nowhere else in England shall one find so much good domestic work to the square mile.

Above, two houses in Turner's Close, Hampstead Garden Suburb. By Herbert A. Welch. Below, houses in Turner's Drive, Hampstead Garden Suburb. By John C. S. Soutar.



The Court House, Wildwood Road, Hampstead Garden Suburb. By Evelyn Simmons.

Above, houses in the Meadway, Hampstead Garden Suburb. By Matthew J. Dawson. Below, house in Hampstead Garden Suburb. By Cecil G. Butler.



GROUND FLOOR

FIRST FLOOR

House in Hampstead Garden Suburb. By C. H. James.
Above. a detail of the front. Below, the plans.

The Harmsworth Memorial Chapel, St. Jude's Church, Hampstead Garden Suburb. By Sir Edwin L. Lutyens.

LAW REPORTS

HOUSING ACT SUBSIDY

The King v. *The Mayor, etc., of Tenterden (ex parte Smith). King's Bench Divisional Court. Before the Lord Chief Justice and Justices Avory and Shearman*

This matter came before the Court on the rule obtained by Mr. J. J. Smith, of Tenterden, calling on the Mayor, etc., of Tenterden to show cause why they should not hear and determine, according to law, an application by him for subsidy in connection with the building of two houses under the provisions of the Housing Acts.

Mr. Mickelthwait, K.C., for the Tenterden Corporation, said Mr. Smith erected two cottages and his case was that he was given to understand that if he built he would be granted a subsidy by the Corporation with the approval of the Minister of Health. He had made the application for the subsidy, and his complaint was that that application had not been properly determined when it was refused. Counsel said the Corporation had three times given the matter consideration, and had decided that this was not a case in which public money should be expended in subsidy because it could not be held, to use the words of the Act, that the need for such houses could not be met without assistance under the Act. Mr. Smith was extremely angry when he was told that he could not get the subsidy, and alleged that he received the positive assurance from the borough surveyor that he would receive the subsidy. That assurance was given by the son of the surveyor, who had acted as his architect. The houses were completed and paid for, and the Corporation were willing to pay, if satisfied that public money should be spent to assist in the building of the houses. Mr. Smith started to build before he applied for the subsidy, so that he did not go through the proper formality before the building commenced.

Mr. Montgomery, K.C., for Mr. Smith, stated that the application for subsidy had been granted in all other cases in that area because houses were badly wanted, and Mr. Smith would never have built the houses had he not thought he would receive assistance from the Housing Act. His contention was that the Corporation improperly directed their minds to the fact that Mr. Smith was a wealthy man. Mr. Smith trapped himself by delaying his application until after the building commenced. Mr. Smith had erected the houses for a chauffeur and another employee of his, but had now let the cottages to men who were badly in need of houses. The subsidy was £75 per cottage.

The Court discharged the rule with costs.

The Lord Chief Justice said the application was quite unfounded. It could not be contended with success that the local council had considered anything extraneous. It would be a waste of public money if, under the guise of building houses, subsidy was given in connection with houses that would have been built in any event.

OBSTRUCTION TO LIGHT IN FACTORY CENTRES: JUDGE'S VIEWS

Pilchers, Ltd., v. *The Proprietors of Hays Wharf, Ltd. Chancery Division. Before Mr. Justice Clauson*

The decision of the judge in this case is somewhat important to professional men in dealing with cases of alleged nuisance or illegal obstruction of the access of light to factory premises in centres of building devoted to such purposes. Pilchers, Ltd., are drysalters and manufacturers of paints, etc., of Morgans Lane, Tooley Street, Borough, S.E., and they sought, as against Hays Wharf, Ltd., a mandatory order to pull down a building they had erected on the opposite side of Morgans Lane, on the ground that it caused a nuisance or illegal obstruction of the access of light to plaintiffs' ancient windows.

The defendants denied that there was such a deprivation of light as to interfere with the reasonable enjoyment by the plaintiffs of their premises in the carrying on of their customary business. In the alternative they said that assuming they were wrong in this it was a case in which the Court should exercise its discretion and award damages instead of the order asked for.

Mr. C. A. Bennett, K.C., and Mr. Uthwatt appeared for the plaintiffs; and Sir Thomas Hughes, K.C., and Mr. B. Hall for the defendants.

A number of the plaintiffs' workmen gave evidence as to their experience before and after the erection of defendants' building and said that the changed conditions necessitated a substantially larger user of artificial light. They were prevented from carrying on their customary duties as beneficially as before.

Mr. Digby Lewis Solomon and Mr. Arthur Norman Garrard, surveyors, gave evidence as to the obstruction of the light to plaintiffs' premises and in the event of damages being awarded assessed the diminution in value of the property at £1,400.

Mr. A. S. Ackermann, the expert on light, Mr. Donald Dinwiddy, and Mr. Thomas Henry Smith, surveyors, supported defendants' view, and assessed the damage, if any, at £250 to £300.

It was stated that the defendants had paid £10,000 for their site, had spent £40,000 to £50,000 on the erection of the building and a similar amount on equipping it.

His lordship held that the injury was one that could be compensated by a small money payment, and he thought a fair figure would be £400, and he gave judgment for plaintiffs for that amount, with costs.

In the course of his judgment, his lordship said that, so far as the professional evidence was concerned, the witnesses for the defendants carried more conviction to his mind. But on the evidence of the plaintiffs' employees he was driven to the conclusion that under the new conditions they were prevented from carrying on their business as beneficially as before. The deprivation of light was not merely trivial, but a real inconvenience amounting to an injury. The Court had a discretion as to whether or not a mandatory injunction should be granted and to award the plaintiffs damages instead, although they demanded an injunction and said that they did not want damages. There were two guides. Mr. Justice A. L. Smith had stated that a good working rule in exercising this discretion was that if the injury was small and one capable of being estimated in money or if it would be oppressive to grant an injunction damages might be given, and Lord Macnaghten had laid down the standard (accepted by the Court of Appeal) that if the defendants had acted fairly and in a neighbourly spirit damages should be awarded. Having regard to the difficulty he had himself in seeing on which side of the line of partial inconvenience or injury the case fell and to the doubt the defendants had as to whether there was an illegal obstruction of light or not and to the fact that the defendants had fairly approached the plaintiffs and made various proposals, he came to the conclusion that compensation would meet the case.

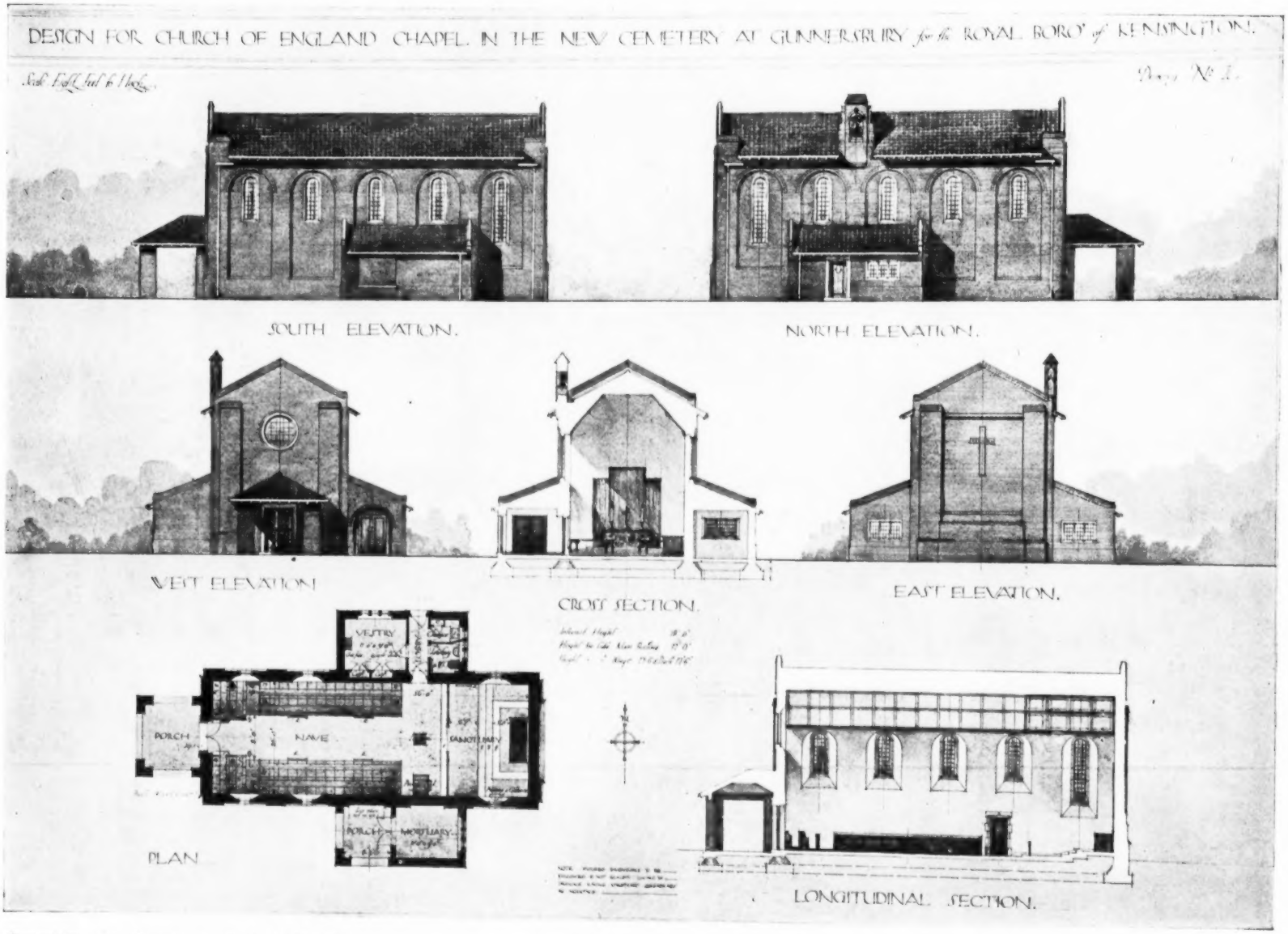
ERECTION OF FLATS

It is understood that the action taken by Messrs. E. B. Holmes & Co., Ltd., builders and contractors, of Mare Street, Hackney, in the High Court, against Messrs. A. Bluston and Sons, of Hackney, has been brought to a conclusion.

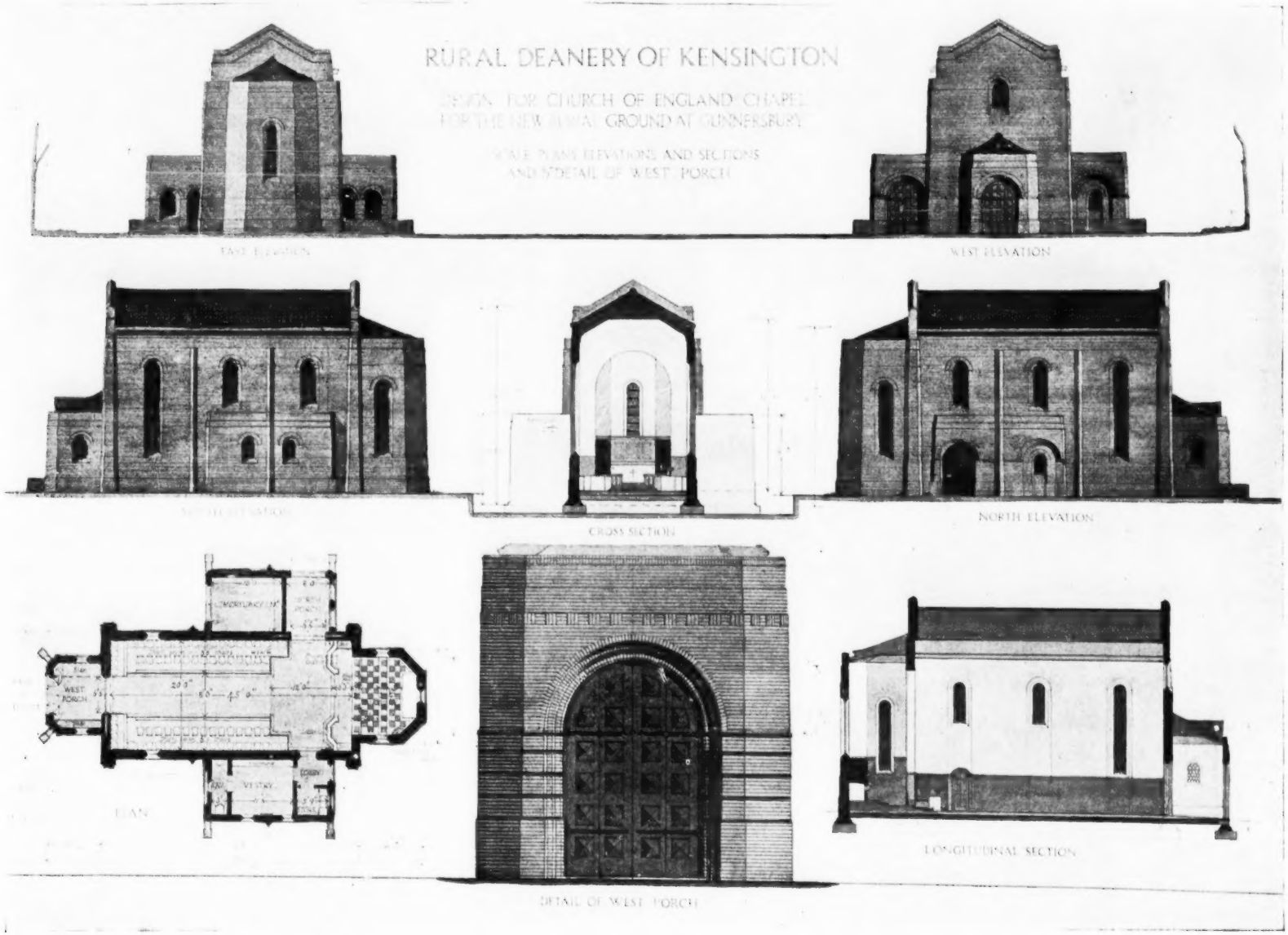
The action was in respect of moneys claimed by Messrs. E. B. Holmes & Co., Ltd., in connection with their contract for the erection of a block of shops and flats on the island site at the corner of Mare Street and Well Street, Hackney, for the defendants, and for damages for the repudiation of the contract on February 19, 1927, up to which date the sum of £3,550 only had been paid on account of the contract work.

Messrs. A. Bluston and Sons have consented to judgment against them for the sum of four thousand pounds. The costs of the action and also the costs of the counterclaim (which was withdrawn) are also to be met by Messrs. A. Bluston and Sons. Messrs. E. B. Holmes & Co., Ltd., agreed to stay of execution on certain terms.

Mr. A. A. Hudson, K.C., and Mr. C. S. Rewcastle were instructed by Messrs. Bulcraig and Davis for the plaintiffs; Mr. T. Eastham, K.C., and Mr. C. L. Henderson were instructed by Mr. Herbert Smith for the defendants.



Competition for Church of England Chapel, Gunnersbury. Design submitted by E. Guy Dawber.



Competition for Church of England Chapel, Gunnersbury. The winning design. By A. B. Knapp-Fisher

ENGLISH PRECEDENT

21 *The oak staircase of Lady Milner's house, Great Wigsell, Sussex (c. 1641), is particularly interesting because it has not that wealth of elaborate carving, with which current and later staircases abound. It is a simple, dignified development of the sixteenth-century staircase, with a handrail having (as Mr. Rudyard Kipling once remarked) "a section calculated to fit the grip of a hard-drinking squire dragging himself up to bed." The doors and doorways on the landing are contemporary.*—[NATHANIEL LLOYD.]

CONSTRUCTIONAL STEELWORK A SHORT HISTORY: i

[BY W. BASIL SCOTT]

My subject is so wide in scope that some limits are necessary. In this article, therefore, I shall limit myself to dealing more with British than with other developments, for the very good reason that metal construction originated with us; and I shall have more to say about buildings than bridges. The important distinctions between bridge engineering and steel contruction for buildings apply to their different lines of development and their present position. Bridge engineering was initiated and developed by the leading engineers and scientists, and from an early period it has been controlled by the Board of Trade, with fairly definite and uniform regulations. Bridge design has attracted the skill of the most eminent engineers ever since its inception, and the usual custom of bridge contractors is not to design bridges themselves, but to work to the designs which are supplied to them.

The history of the applications of iron and steel to building construction is not quite so auspicious. In contrast with the Board of Trade rules for bridges, there are no uniform regulations controlling building construction throughout the country. The only British Act of Parliament, namely, The London County Council Building Acts Amendment of 1909, is restricted in its application to buildings of steel skeleton construction in the London area. The obvious result of the absence of uniform regulations is that, outside London, every steel designer is more or less a law unto himself, only subject to the varied opinions of the different local authorities.

Cast-iron columns and beams were introduced to building construction by millwrights. That is to say, the industry commenced as a side line to another business, and it still appears to be the case that the design of steelwork for buildings is anybody's business and yet nobody's particular business. Only recently it was stated in the press that it is no part of an architect's duties to design steel or reinforced concrete. I do not intend discussing the merits of this question, but the fact remains, in contrast with bridge engineering, that the task of designing the bulk of steelwork for buildings has been forced upon the contractors; the modern developments are largely due to the efforts of these contracting firms, and steel-frame buildings had become common before consulting engineers, with a few exceptions, found it worth their while to specialize in this line.

The cast-iron arch bridge built over the Severn at Coalbrookdale in 1776 is generally stated to be the first example of iron engineering in England and probably in the world.

Considerably before the above date it is known that cast-iron columns were used by millwrights to support the timber beams of beam engines, and naturally the idea of using cast-iron columns to support the timber floor beams of factories would soon occur to them, it being understood that the millwrights supplied not only the machinery, but also the building that contained it. Cast-iron was first applied to building construction in the Lancashire cotton mills, and it is quite likely that cast-iron columns were used in this way a number of years before the Coalbrookdale Bridge was built, although there is no authentic record of it.

The late eighteenth- and early nineteenth-century type of English cotton mill, with solid brick walls and small windows, is illustrated by figure one. This may be contrasted with figure two, which shows the large windows of a modern steel-framed factory building.

It is not until 1801 that we find the first authentic record of the use of cast-iron as floor beams. This record is of particular

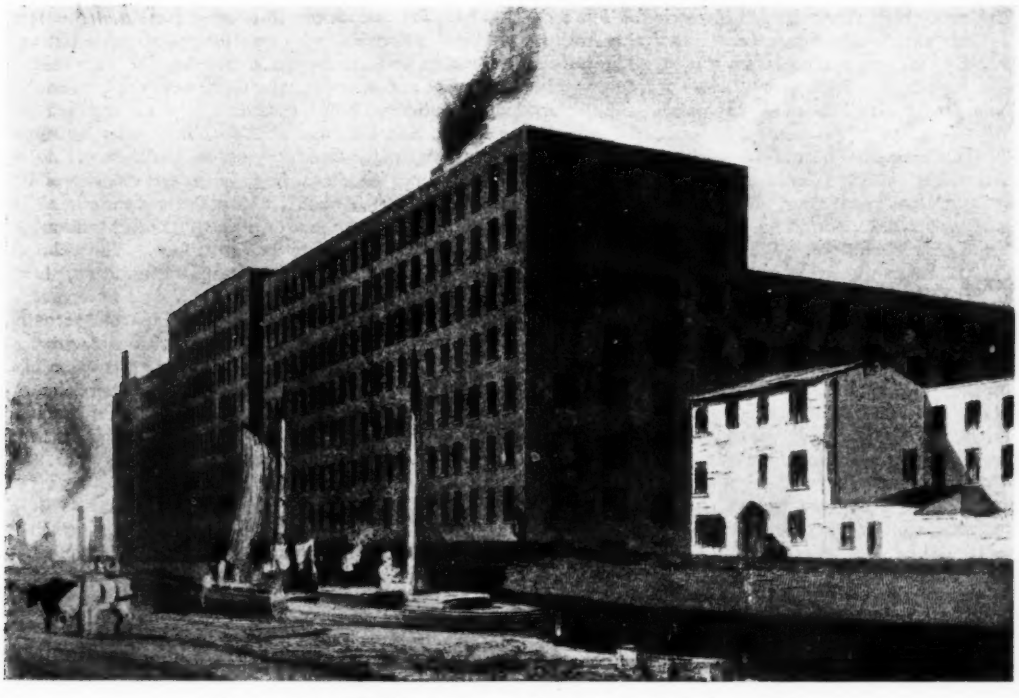


Figure one. English cotton mill, early nineteenth century.
[Cast-iron columns and beams were first used in this type of mill.]

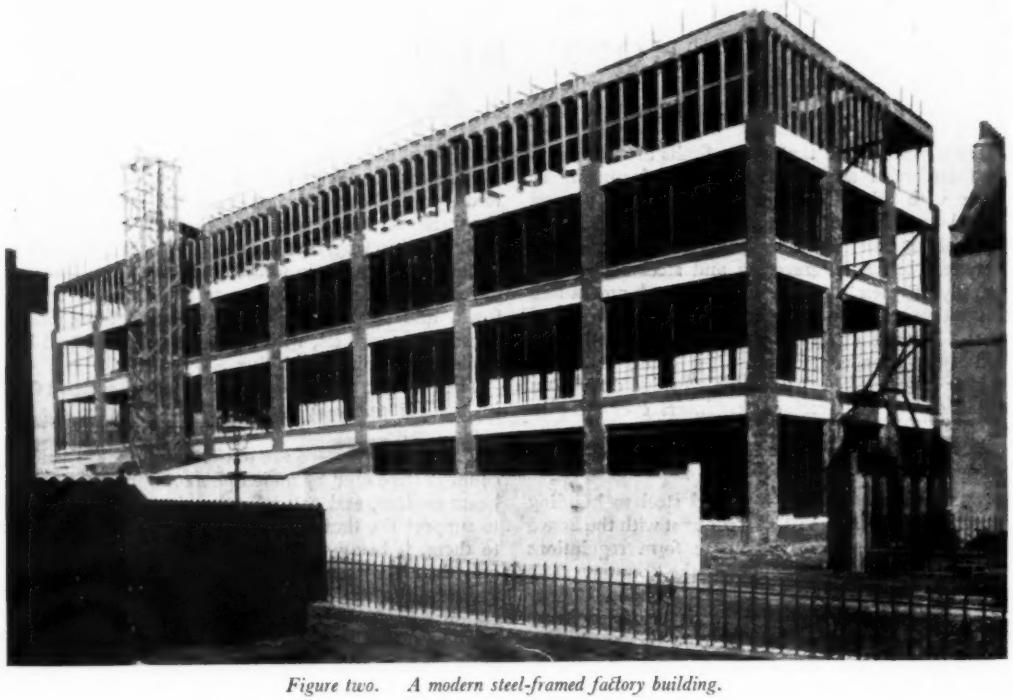


Figure two. A modern steel-framed factory building.
[Compare the window area with that of figure one.]

interest because the designer of the beams was no less a person than James Watt, of steam-engine fame. Considering the personality of the inventor, if it is supposed that Watt knew all that could be known at that time about cast-iron, both theoretically and practically, then his knowledge may be taken as the measure either of the wisdom or of the ignorance of his period. The section of Watt's beam, as shown by figure three, was of 1¼ in. metal, 13½ in. deep, and 3¼ in. across the bottom flange. The beams were designed to support the brick arched floors of a seven-story Manchester cotton mill with the usual machinery. The spans were 14 ft., and the centres 9 ft. Calculated by modern methods, the safe load of Watt's cast-iron beam is rather less than the dead load of the floor, which leaves less than nothing for the machinery.

This may be understood more clearly by comparing it with the equivalent 7 × 3½ steel I-beam which no one today would think of using under similar conditions. Theoretically, therefore, it appears that Watt's beam was quite inadequate, but, perversely enough, it did not fail. On the contrary, Watt's first fireproof mill construction was such a complete success that it remained the standard of excellence, and was copied in every detail, with equal success, by other millwrights for the next twenty years and more. The discrepancy between the theoretical and practical strength of Watt's beam may be accounted for in this way. The feet of the weaving looms rested near the columns supporting the floors, and the looms themselves almost spanned the 14 ft., so that the cast-iron beams had little more to do than carry the dead load. Apart from this, it may be wondered how the original cast-iron beam remained for twenty-three years without alteration or improvement.

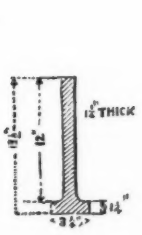
How is it that a man of Watt's outstanding genius did not improve and extend the use of cast-iron construction himself beyond the solitary example of a house with cast-iron walls, floors, stairs, and roof which he built in London? Watt was a partner in Boulton and Watt, the Birmingham firm of engineers and millwrights, but we are told that he retired from active partnership in 1798, at the age of sixty-two, after which he studied Anglo-Saxon as a light recreation. So Watt, apparently, took no further interest in the beam which was not used until after his retirement, and no one else announced any improvement until 1824.

The year 1824 was one of great activity; the locomotive engine was in being, the Stockton and Darlington Railway was in course of construction, and a building boom was on. It is in this year that we are introduced to another famous engineer, namely, Sir William Fairbairn, who was thirty-five years old at that time. Fairbairn was the exception proving the rule that professional engineers and scientists, as a class, were not interested in architectural buildings. But Fairbairn was an architect as well as a scientist, and his position is so unique that his name crops up constantly in the developments of his lifetime. As architect for several large buildings, he doubted the security of Watt's beam, and because of his doubts made a series of experiments from which he concluded that the area of the bottom or tension flange should be increased, as shown by figure four. The values C – 14 and C – 19·6 are values from later experiments, indicating the relative strengths of the two models.

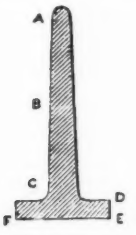
In the same year, that is 1824, Tredgold recommended the form shown by figure five as the section of greatest strength. It is evident that his section shows no appreciation of the relative strengths of cast iron in tension and in compression. Weight for weight, his section was stronger than Watt's, but it was weaker than Fairbairn's. Fairbairn's model, therefore, is to be regarded as the first improvement on Watt's section of 1801.

The next well-known name we come across is that of Hodgkinson, who commenced his famous experiments in 1827. The experiments were to determine the most economical shape into which a given quantity of cast iron could be poured. The result, as shown by figure six, is the section claimed by Hodgkinson as the real one of greatest strength. In addition to improving the section, Hodgkinson was the first scientist to provide a working formula for the strength of cast-iron beams, as shown on next page.

Hodgkinson's section is nearly twice as strong as Watt's for the same sectional area. The formula is very simple in appearance, but it should be remembered that the experimental constants were derived from actual tests on many shapes, which extended

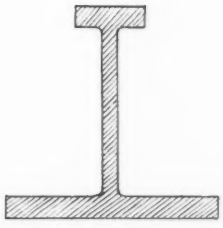


Watt.
C = 14.
Figure three.



Fairbairn.
C = 19·6.
Figure four.

Tredgold.
C = 16·0.
Figure five.



Hodgkinson.
C = 26·0.
Figure six.

W = central breaking weight in tons ; c = a constant derived from experiment ;
a = area of tension flange in square inches ; d = depth in inches ; e = span in inches.

$$W = \frac{c\ a\ d}{e}$$

Hodgkinson's formula for the strength of cast-iron beams.

over a period of years. These tests and this formula really mark the inauguration of the whole system of theory and practice in modern steel-building construction. It is, unfortunately, the case that the very simplicity of Hodgkinson's formula gave rise to the wrong idea, that a given quantity of metal would now carry nearly twice as much as it did before, without proper regard to the conditions of loading. So it appears that the first cast-iron failures resulted from the misuse of Hodgkinson's improved model and formula, and not from the direct plagiarism of Watt's original design.

The peaceful days when everybody just copied Watt's beam and was perfectly happy became a thing of the past, for as Fairbairn said, "The attainment of the strongest section gave a renewed impulse to the application of cast-iron beams in every direction, and spans were increased from 14 ft. to 25 ft." The increases of span introduced the new element of danger that led eventually to the undoing of the ignorant copyists, and on top of this the "Railway Mania" developed, reached its height in 1845, and crashed not long afterwards.

In considering this period, which may be called "The Dark Age of Iron Construction," there are some generalities which should be kept in mind.

Perhaps the most important consideration is the relation of architecture and art to science and mathematics. Art and mathematics never seem to have mixed well together. We find the scientist spreading his acquired knowledge of the possibilities, first of cast and later of wrought iron as new materials of construction. We also find him blaming the architect for retarding progress, by ignoring his teachings and, at the same time, accusing the practitioner of the ignorant misuse of them. On the other hand, the architect displays his antipathy to iron from the artistic point of view, and even when recognizing it as a necessary evil, he inveighs against the scientist for not presenting information in an intelligible form. It must also be remembered that bridge engineering made rapid progress, because after the inauguration of the railways, this industry was of sufficient importance to attract the best engineering brains in the country. Professional engineers, however, found nothing interesting in the simple columns and beams supporting the floors of buildings of solid construction and limited height; while the architect, with his multifarious duties, could not find the time, even were he so disposed, to master the intricacies of the new materials.

The general result of the abstruse teaching of the scientists and the apathy of the architects was the development of the so-called "practitioners" and the dark age for which they were responsible.

"Accidents" occurred which became the subject of strict Government inquiry. I quote from the report on the Oldham mill floor collapse in 1844. See figure seven.

"The beams which failed are marked with the letter *a*. It will be evident that they had to support a much greater weight than the beams marked *b*. They were made stronger, but from want of knowledge they were strengthened in the wrong place. There is a wide difference between loading a beam in the middle and loading it along its whole length. In the latter case it would carry just twice the weight."

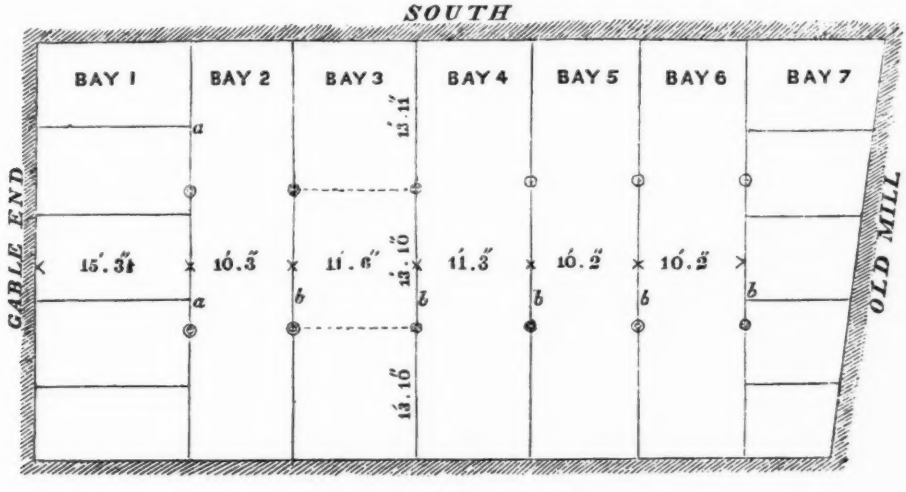


Figure seven. Oldham mill, 1844.

The language of this report is a striking commentary on the state of knowledge of statics at that time.

Some controversy followed these inquiries, in which architects and scientists gave expression to their opinions.

In 1854 Fairbairn published a book in which he said: "I have endeavoured to collect the sum of our knowledge of the use of iron in building construction. Notwithstanding the increased security which has been gained by the improvements in the form of cast-iron beams, their use is, nevertheless, attended with danger, when either the design or construction are confided to the hands of ignorant persons. The numerous and fatal accidents which have occurred at various times have almost invariably been traced to this cause. It is to be lamented that so much ignorance of those undeviating laws which govern the strength of materials should still prevail. Experimentalists and mathematicians have provided the knowledge, but practitioners, I fear, have in a great degree, failed to avail themselves of it." Now, although Fairbairn was an architect, that is really his opinion as a scientist, and the practitioner is censured. Personally, I have a great deal of sympathy with the practitioner, because in those days technical books were abstruse and it was necessary to study the whole mass of experimental data and mathematics before the essential crumbs of information could be picked out.

But we will now have an architectural opinion of the use of iron in buildings, and of scientists, in general. For this purpose I make two quotations from *Practical Architecture*, by Mr. Rogers, architect, 1873. The first quotation reads as follows: "The only legitimate and scientific use of iron in buildings is the subjection of it to compression. Nearly all the instances of its use in modern architecture where it is subjected to cross strain, savour strongly of a decline of art and skill." It is evident that Mr. Rogers would gladly have subjected iron to obliteration, neither is he flattering to scientists.

This is the second quotation: "Architects are not scientific men, and scientific men are not architects. Mathematics forming, in general, no part of architectural study, none of these sciences are usually infused into architecture; while the mathematician having no knowledge of the construction and embellishments of architecture, writes without profit to the architect. He cannot apply knowledge to the construction of buildings, when he has none and his algebraical theorems, which might be of some use, are in an unknown language and form, as it were, a sealed book." These impartial quotations indicate the use and misuse of iron in buildings many years after 1849, when the great Britannia and Conway wrought-iron tubular bridges, spanning up to 400 ft., had been opened for the railway to Holyhead.

But, in the language of the time, the great success of these bridges led to a general demand, and numbers were made without any regard to first principles or to the laws of proportion. The defects and breakdowns led to doubts and fears, so that in 1859 the Government granted a sum of money for investigations and tests. These tests were concerned with bridges, but I give details of one to show the extraordinary care taken by the investigators to prove that failures might be due to ignorance of design, but not to any weakness inherent in the material. The general idea of a test on a girder was to reproduce the vibration and impact of a train crossing a bridge, by means of a special apparatus. By lifting and dropping a weighted lever arm, eight impacts were produced per minute. The machinery was started on March 21, 1860, and the test was continued, night and day, almost without cessation, for nearly two years. In January 1862, after sustaining 3,463,000 impacts of a load varying from a quarter to a third of the central static breaking load, the beam did break, which is not surprising. The conclusion was reached, that if one-fourth of the breaking load had not been exceeded, it could have sustained 12,000,000 impacts without injury; therefore, at the rate of 100 per day, represented by passing trains, 328 years would elapse before its security was affected. No doubt this was highly satisfactory to the travelling public of 1862, and we know that the Britannia and Conway bridges are still carrying the much heavier and quicker traffic than they were designed for.

It was in France, in 1849, that the first wrought-iron I-beams

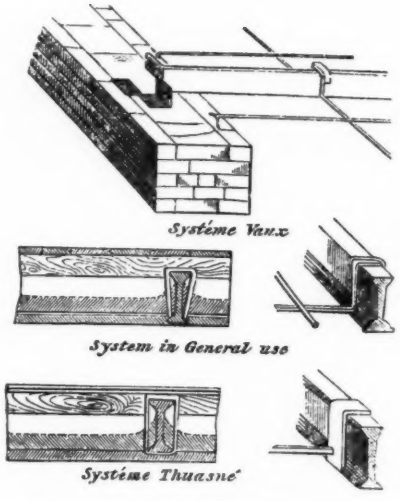
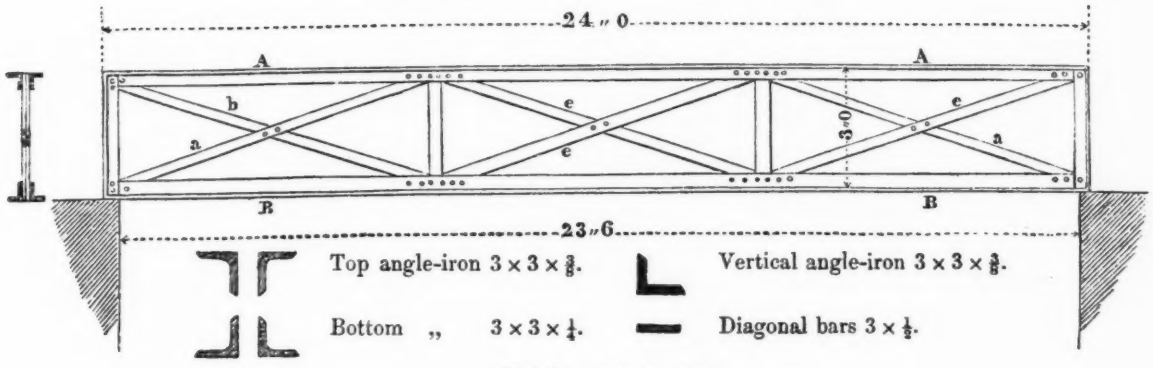


Figure eight. The first filler-joist floors.

were rolled successfully. The rolling of double-tee irons, as joists were first called, had been attempted in France as early as 1845, but without complete success. In 1847, Ferdinand Zorés, the famous French engineer, allied himself with the principal builders and contractors of Paris, as well as with iron-rollers, and studied with them the problems of the most suitable forms for beams and the production of the rolls for making them. Zorés, convinced of the importance of this form of beam, carried out a series of experiments at his own expense, and the successful introduction of the rolled joist is certainly due to his perseverance and foresight. These first beams were only $5\frac{1}{2}$ in. deep, with thick webs and undeveloped flanges, so that they are only to be regarded as the forerunners of the more economical shape of rolled joist which is now so familiar. French architects were quick to appreciate the merits of the new section, and before long it became the basis of several systems of fire-resisting floors (figure eight). It is obvious also that these early systems contained the germ of the reinforced concrete idea; but the first reinforced concrete floor patents—those of Wilkinson, in England and of Coignet, in France—were not registered until five years later, that is in 1854. The rolled joist was invented as a safe and cheap section for floor construction, a purpose for which it is still of the greatest value.

The exhibition craze, commencing with the Great Exhibition in Hyde Park in 1851, had much to do with the development of lattice girders; but down to this time very little was known about the nature and direction of the stresses in the lattice bars. The Grand Hall at Hyde Park, afterwards rebuilt as the Crystal Palace, had cast-iron, open-webbed beams supporting the high galleries. I have a boyish recollection of some old volume of the *Graphic* containing illustrations of the testing of these gallery beams in position by the extraordinary method of marching soldiers over them before the paying public was admitted.

The first attempt at a wrought-iron lattice girder was for an important building, namely, the Dublin Exhibition of 1853. Neither the designer nor the maker of these girders are known; but it is surprising to learn that no doubts of their safety were expressed until they were unloaded at Dublin quay, and then the doubts were expressed by the ordinary public. It is evident to us, of course, that the flat bars used for the central verticals and the diagonal struts marked "*a*" (figure nine) were unsuitable for compression, but this was not known at the time. To satisfy the Dublin people, a test was ordered, and Fairbairn was sent for. In this case, soldiers were not available, and stones were used as a substitute. Two girders were placed side by side and a timber platform, on the middle third of the span, was loaded. As may be imagined, the flat bar struts became badly bent, and so by means of this crude test the discovery was



Weight of girder, 819.

Figure nine. The first wrought-iron lattice girder.

made that diagonals sloping downwards towards the abutment are in compression. The improvements suggested by Fairbairn, after the test was completed, consisted in making the diagonal struts of angle instead of flat iron, omitting the centre diagonals and substituting a central vertical tee. Fairbairn's suggestions indicate that, at that time, he knew no more about lattice girders than the test taught him.

Fairbairn was also instructed to test the lattice girders made for the Fine Arts Exhibition held in Manchester in 1857. The poor opinion he had already formed of lattice girders was not altered by what he terms "another remarkable instance of their weakness and insufficiency." In this case, however, I think Fairbairn did less than justice to the improvements that had been made in this girder, in advance of his own suggestions. The various members are right, both as regards shape and arrangement; but, unfortunately, the rivets were of much too small diameter and were placed so close to the edges that, under test, the bars tore apart. Lattice girders, in general, received further condemnation from the bridge builders, for the strange reason that the open webs offered no protection in the event of the engine and carriages running off the line; whereas, in the case of a solid web girder, the chance of a serious accident from this cause was small, as the whole bulk of the bridge was opposed to the shock of the engine.

Having made this astonishing revelation of the perils of railway travel about seventy years ago, I propose to dismiss the whole question of perils and failures with a few general remarks. The first point I wish to make is this: In architecture, failures of iron construction ceased when wrought was substituted for cast iron. In bridge construction, the failures of wrought iron occurred during the abnormal times of the railway mania. The second point is that, almost without exception, failure was due to the ignorance of the designer and not to any fault in the material. The third point is that all failures were rigidly inquired into at the instance of the Government. I have shown that iron construction came through a long trial and error period when both theory

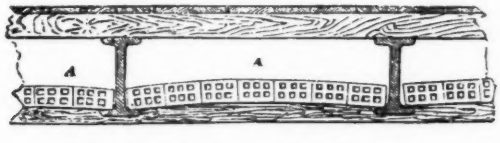


Figure ten. An improved floor, French, 1851.

and practice were in the experimental stages, but this period came to an end nearly three-quarters of a century ago. Another point I wish to make is that since that time—call it 1860—with the outstanding exception of the Tay Bridge disaster in 1879, which was in a class by itself, British iron and, later, steel constructional engineering have led entirely blameless and innocent careers.

Returning to the 1850's and the development of the rolled iron joist, we find a French floor, about 1851, indicating a considerable improvement in the shape of the rolled joist, but the sections were still small and unsuitable for long spans and heavy loads. For long spans and heavy loads, wrought-iron angle and plate girders were the only available substitutes for cast-iron beams; but their use in buildings was very limited, owing to their high cost per ton in comparison with cast iron. Facts and figures were given to show that taking the difference of weight into account, the difference in cost was slight and well worth the extra security provided. Rules and formulæ for their use were also supplied by the scientists. These formulæ were only variations of Hodgkinson's rule for cast iron, with modified values of the constant C. In this way the box-girder was said to be 10 per cent. stronger than the single web girder, which at that time was called a flat beam. The difference in strength was not because of any difference in cross-sectional area, but because of the box-girder's better shape to resist lateral bending. On the other hand, the simplicity of construction and accessibility of the flat beam for painting were points in its favour.

Owing to the lower value of wrought iron in compression than in tension, the lateral bending which I have mentioned was one of the bugbears of its advocates. Fortunately, this handicap does not apply to mild steel. One of the illustrations in this issue (figure eleven) shows two of the freak devices that were resorted to to overcome the trouble; but, as may be imagined, these shapes attained no popularity. It seemed, therefore, that before the greater safety offered by wrought over cast iron could be taken full advantage of in buildings it would require to be introduced in some new and cheap form.

[*To be concluded*]

[Extracts from a lecture delivered by Mr. Basil Scott at Queen's University, Belfast.]

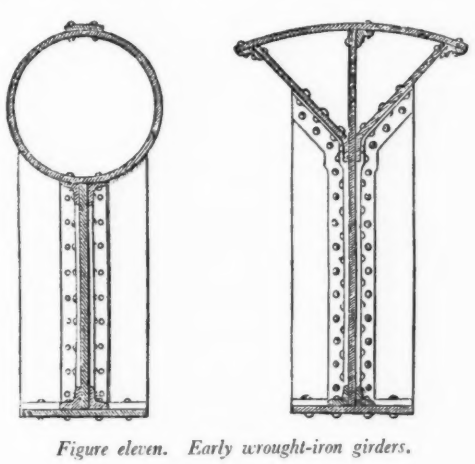


Figure eleven. Early wrought-iron girders.

WHITE SPIRIT AS AN ALTERNATIVE TO TURPENTINE

AT the present moment, when the price of turpentine is three times that of white spirit, a cutting of costs by the use of this latter commodity, in the capacity of a thinner for paint and varnish, is a matter which has hitherto received but little attention from the architect. To some extent this may be due to the fact that the introduction of white spirit was received with a certain amount of prejudice, more especially at a time when the smell of turpentine was regarded as the hallmark of a good paint or varnish. Its wider use during the past two or three years, however, has proved this prejudice to be unjustified, and if white spirit is now regarded as an alternative to turpentine rather than as a substitute, its universal adoption should only be a matter of time.

This white spirit, it will be recalled, is obtained as a distillation product of petroleum, and is a liquid somewhat heavier than petrol, but lighter than kerosene or paraffin. As a thinner, whether used in the actual manufacture of paint and varnish, or in the hands of the decorator, it has all the good qualities generally associated with turpentine, and some commendable features of its own, irrespective of low cost. It is, for instance, a good solvent for the resins and mixes freely with all vegetable and mineral oils which enter into the composition of paint and varnish, and when properly prepared it has very little tendency, if any, to cause "bloom." It is free from grease, free from water and other impurities, and leaves no residue on evaporation. Its odour, moreover, is pleasant—being less pungent than that of turpentine; its colour is unaffected, even when kept in stock for a considerable time; and its rate of drying is practically the same as that of a good quality turpentine.

A special feature in its favour is also the fact that white spirit is remarkably consistent in quality and composition, due to the control which is exercised in present-day distillation practice for petroleum products. In this respect it differs from turpentine, which cannot be distilled to specification so readily. Being a comparatively cheap product, and at the same time one which is produced in large quantities without any appreciable variation in quality or composition, it cannot be overlooked that it is not likely to be adulterated to the same extent as turpentine, for the gain could never be as tempting. But in addition to this, the source of supply, in the case of white spirit, is a regular and steady one, and consequently prices are not subject to any violent fluctuations. Turpentine, on the other hand, is very uncertain in this respect, for, being obtained from the resinous exudation of certain trees, it is more or less affected by weather conditions so far as the supply of raw material is concerned.

Although it has been frequently suggested that white spirit, compared with turpentine, has a bad effect upon the health of those who work with it, there is no foundation for this statement. The odour of white spirit is, indeed, one of its most useful features, for when properly prepared it is far less unpleasant to work with over prolonged periods than any of the other so-called turpentine substitutes, which are often evil-smelling, and for this reason alone quite unsuitable for interior use.

Here, then, is the case for consideration. White spirit has been tried and proved satisfactory as an alternative to turpentine; it has some commendable features in its favour; and its cost is roughly one-third of that of a good quality turpentine.

The selection of a white spirit, let it be added, should be made in the first case with due consideration to its odour and colour. The odour should be a pleasant and sweet one, with no resemblance whatever to either paraffin or petrol; whilst the colour should be "water-white," and quite free from the slightest yellowish cast or any sign of "bloom." Specification No. 245 (1926) of the British Engineering Standards Association, however, has been drawn up to cover the requirements of a white spirit for use in paint and varnish, and products which conform to this specification may be relied upon to give satisfactory results. C. H. B.

CORRESPONDENCE

HOUSING COSTS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Your necessarily abbreviated report of Mr. B. S. Townroe's address at Mrs. Douglas Vickers' house suggests that Mr. Townroe's criticisms of the Pulford Street Site Committee's project to raise money to buy the Pulford Street site in Westminster for housing purposes were allowed to pass both unchallenged and uncorrected. Will you allow me to say that when I pointed out that some of the facts upon which he based his arguments were not entirely accurate, Mr. Townroe was subsequently generous enough to admit that the facts I presented to him put the case in a totally different aspect.

Mr. Townroe agreed that, although it was difficult to find any land in Westminster at less than £30,000 an acre, it was doubtful whether such a sum as £16,000 an acre (the approximate price at which the Pulford Street site can be acquired, owing to the Duke of Westminster's gift of half an acre) should be spent in providing accommodation that could not possibly be let without serious loss at rates within the reach of poor tenants.

On this point I was able to satisfy Mr. Townroe that the costs would be carefully gone into, and that we believe it to be possible to erect working-class dwellings at cheap and economic rents, provided the money with which to buy the land were given as a free gift.

Mr. Townroe made the further point that the whole position in regard to housing in Westminster was rapidly changing, and that in ten years' time the district would be mainly composed of offices.

My answer was that accommodation will always be required in Westminster by the large army of night workers employed in the hotels, restaurants, etc., such as waiters, bandsmen and others; that there are now no fewer than 8,000 charwomen for the Government offices alone, and that these, of necessity, must live close at hand. If the number of offices in Westminster continues to increase, as Mr. Townroe suggests, so, too, will the number of charwomen and other workers.

FLORENCE WATSON
Chairman of the Pulford Street Site Committee.

THE COST OF ANNUAL DINNERS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—There have been various comments, both editorial and by way of correspondence, in the technical and lay Press recently upon the alleged "exorbitantly high prices" charged by professional societies for their important functions—principally their annual dinners. The R.I.B.A., the Surveyors' Institution, the Institution of Structural Engineers, are amongst those named. The prices charged by the societies for annual dinner tickets vary from 25s. to 2 guineas.

As one who has had considerable experience in the organization of these affairs (by which I do not mean the particular functions named above) perhaps a word from the other point of view may not be amiss from my pen. It is presumed that members of these societies do not expect the expense of these dinners to fall upon the societies themselves—i.e. upon the subscriptions of members who do not attend the function. Possibly payment for guests is a fair charge upon society funds, but no more. Consider then the expenses which the society has to meet out of the price which it charges for tickets.

First there is the dinner itself: and few good hotels or restaurants will supply this, complete with coffee, for less than 10s. 6d. a head—some charge 12s. 6d. It must be remembered that the hotel has to engage a large number of extra waiters, etc., and therefore is forced above its normal charge.

Then the society usually will have to pay the following costs on top of the charge for dinner:—

Printing and postage on thousands of circulars to members notifying them of the dinner. Usually a follow-up notice has to be printed and

posted as well; printing of, say, 500 table plans of seating—a very expensive item; printing of, say, 500 menu cards—the expense varying with the card. If the latter is intended to be a "souvenir" this may also prove very expensive; printing of, say, 500 tickets and 250 cards of invitation; floral decorations; an orchestra; musical entertainment; gratuities; hire of microphone and loud-speakers—an expensive item, but one that is usually expected nowadays; a fairly large petty cash account embracing stamps on the postage of tickets, receipt stamps, letters, etc.

The total bill on the above, where 500 are present at the dinner, may very easily indeed run into £200. This takes no account of dinners, wines, cigars, and so on for the society's guests.

ORGANIZER

THE EASTGATE, CHESTER

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—In your issue for May 30 you alluded to a proposed building next the Eastgate, Chester, for a multiple shop company. In your note you stated that the façade combined three scales and a somewhat confused medley of motifs. Your criticism was reproduced in one of the Chester weekly newspapers. The firm in question reply by publishing the elevation, which I trust you

MONTAGUE BURTON LTD. NEW BUILDINGS.
NOTABLE ADDITION TO CHESTER'S SHOPS

will reproduce. Chester is peculiarly noted for the very small scale of all its buildings. There are small shop fronts at the street level, equally small shop fronts on the Rows. Large advertisement panels are almost non-existent. Part of the Eastgate arch over the sidewalk is shown on the extreme left of the sketch; it is just wide enough for two people to pass. I understand that the proposed building will form the three-hundredth branch of the company and that the shop front, the fascia over, and the stepped pediment are practically standard throughout all their branches. A great deal can be said in favour of standard features in the premises of multiple shops, and we are all familiar with successful efforts. But obviously, unless standard features are designed in the first instance with extreme care, then repetition on all sorts of sites in hundreds of different towns is a serious menace. The City Council have paid to Messrs. Burton £500 for setting the shop fronts about 2 ft. 6 in. back from the building line. The glass panels and the rest of the building will be on the building line. The fascia is glass, black on opal, about 44 ft. long and of a greater depth than any other in the Eastgate. The panel in the pediment is mosaic. The stone, brick, and half timber are fairly clearly indicated.

HASTWELL GRAYSON

[The illustration referred to by Mr. Hastwell Grayson is reproduced on this page, together with the following description of the building, which appeared in the Chester newspaper.—ED. A.J.]

> Our picture shows the Montague Burton Ltd. new buildings at the Eastgate, Chester. The sale of the block of property formerly occupied by Messrs. Evans and Sons, wine merchants, and Huke's Library aroused great interest among the public of Chester, for, in the heart of the city, it is a valuable business site, and, furthermore, its proximity to the Eastgate and the City Walls made it important that any reconstruction scheme should harmonize with the surroundings. The above sketch shows better than any verbal description could do what the new buildings will be like. Originally, it was the intention of Messrs. Montague Burton Ltd., who acquired the site in 1927, to erect a classical type of building, with the column treatment emphasized; but at the suggestion of the city authorities they decided to erect a building which, though modern in arrangement and composition, has been planned to respect the ancient and historic character of the architecture of Chester. It is designed to harmonize with the half-timber treatment on the right and the stone Tudor building immediately joining Eastgate to the left. A picturesque skyline was sought for, yet sufficiently formal to be in keeping with the Eastgate Bridge, and a colour scheme has been obtained by a happy blending of all the materials associated with the Tudor period of architecture by means of a framework of stone features surrounding a timber-framed centre, the panels of which will be filled in with multi-coloured brickwork in plain and diaper patterns.

HARD CASH

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—It is quite obvious that the problem of the relationship of amenity to industrial prosperity in this country is becoming acute, and crying out for solution. A step in the right direction might have been taken had the Architects' Registration Bill become law. The easiest way to ensure that buildings shall be æsthetically sound, as well as structurally, is to see that only those competent to deal with both sides of the problem are employed. Whatever the merits or demerits of the Bill may have been, it would at least have established the principle that some measure of competence on the æsthetic side is in the public interest, and that our case is thus not so far removed from that of lawyers, doctors and dentists.

As a race, we are always hopeful of muddling through somehow, and pin our faith to public spirit and private enterprise, having no great belief in the efficacy of legal restrictions and dogmas in such matters, but we cannot reasonably contend that a complex civilization requires no more laws than a primitive one. Nevertheless, it should obviate the necessity of many irritating restrictions if the designing and superintendence of the erection of buildings could only be carried out by properly qualified practitioners. As a body, architects could then proceed with the improvement of the standard of qualification.

Some future government will be compelled, by popular outcry, to legislate for the preservation of both rural and civic amenities. Will they pass this one elementary law, so that none but the trained and competent can be employed.

R. A. DUNCAN

SNOWDONIA

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—In News and Topics of June 27 you refer to "cocksure little concrete 'residences,' . . . monstrously roofed with pale pink tiles," which are built in the stone district of Snowdonia and "in the midst of quarries producing the best slates in the world." I agree that this state of affairs is a very serious perversion of amenities—and worse.

In order to apply a remedy one must look for causes: the manifestation is the symptom, the disease must be diagnosed. Reflection shows the disease to be called money, and yet a little earlier in your paragraph I read that the subject of money "is of little general interest." That is true enough if one says that people take little interest in the workings of finance, as though a motorist were to say, "I take little interest in the subject of oil." However, money consists of credit—except about ·7 of 1 per cent. of it

which is coin—and is costless to produce and/or to destroy. Lack of it forces the use of pink tiles.

Whence comes credit? Not from banks, for these close down as soon as more than a small proportion of the credit which they handle is demanded of them. Pink tiles are a symptom of "money," in this case inadequate purchasing power, an endemic disease. The cure for the disease lies in repeated doses of costless credit—or book figures—which lies in the stones, slates, men, and requirements of men themselves in "the foothills of Snowdonia."

ARTHUR WELFORD

IN PARLIAMENT

[BY OUR SPECIAL REPRESENTATIVE]

In the House of Commons, Mr. Duckworth asked the Under-Secretary of State for the Home Department, as representing the First Commissioner of Works, if he would state when the appointments to established and unestablished posts in the new grades of technical assistants, and to established posts in the new grades of architectural assistants in the architects' and maintenance surveyors' divisions would be announced?

Sir V. Henderson said that a Selection Board, on which the Civil Service Commissioners would be represented, was now being constituted, and it was hoped that the Board would be able to begin to interview applicants within the next three weeks.

Sir Walter de Frece asked the Under-Secretary of State for the Home Department, as representing the First Commissioner of Works, whether, seeing that the grading of the architectural assistants in the architects' and maintenance surveyors' divisions was decided by a committee of the National Whitley Council more than four years ago, and that the salary scales were determined by the industrial court in February 1926, he could give the reasons for the protracted delay that had occurred in carrying through the reorganization?

Sir V. Henderson said that the delay prior to February 1926 was entirely due to the protracted negotiations on salary scales with the representatives of the staff. After the issue of the award of the Industrial Court in February 1926 the department was engaged, in conjunction with the staff side of the Departmental Whitley Council, in fixing the number of officers to be appointed to each of the grades concerned, and in determining the terms of assimilation to the new scales of salary. That was completed in June of last year, and retrospective effect was then given to the scheme as from January 1, 1926, as provided in the Court's award.

Sir V. Henderson informed Mr. Haslam that during the three years ended March 31 last the Office of Works took into its charge thirty-three ancient monuments of different kinds. The expenditure incurred during that period was approximately £33,000.

Mr. Chamberlain, the Minister of Health, stated that he hoped to be able to make an announcement as to the future of the Rent Restrictions Acts before the end of the session.

Sir Robert Thomas asked the Home Secretary whether, in view of the increasing disfigurement caused by outdoor advertisements, which were continually becoming larger and more conspicuous, he would set up a committee to consider measures for the control of such advertisements in urban as well as in rural areas?

Sir W. Joynson-Hicks said that the problem of rural scenery was fully considered by Parliament in 1925, when the Advertisements Regulation Act of that year was passed. So far as concerned matters within the scope of that Act, it was much too early to review the position. If Sir Robert Thomas had in mind the protection of residential areas, that was a very difficult and controversial question, which, so far as he was aware, had as yet been dealt with only in connection with town-planning schemes. He was not prepared to set up a committee as suggested, but he would be willing to consider calling a conference later in the year if, in the meantime, he received evidence of any general demand for action.

Sir Alfred Hopkinson asked the Minister of Transport whether he could yet give any information as to the road proposed to be made near the historic meeting-house known as Jordans; and whether he proposed to take any steps to prevent injury to the meeting-house and disturbance by the construction of such a road?

Colonel Ashley said that the local authority had town-planning proposals under consideration for this area. No scheme of road improvement had yet been submitted to his Department, but should such proposals come before him he would see that all practical alternatives were considered.

Sir K. Wood informed Mr. Hurd that to the end of March last, the latest date for which information was available, applications had been received by County Councils for assistance under the Housing (Rural Workers) Act, 1926, in respect of 960 dwellings. At the same date assistance had been promised in respect of 272 dwellings, and work had been finished on 38 dwellings, and was in progress on 139 dwellings.

SOCIETIES AND INSTITUTIONS

Norfolk and Norwich Association of Architects

A complimentary luncheon was given at Norwich to Mr. E. T. Boardman, who, to the general regret of the members, has retired from the presidency of the Norfolk and Norwich Association of Architects, a position he has held since the foundation of the Association eight years ago. Most of the members attended, and there were also present the Lord Mayor, Mr. Walter Tapper, P.R.I.B.A., and Mr. Ian MacAlister, the secretary of the R.I.B.A. In the course of the speeches, which were couched in terms of the utmost cordiality, Mr. Boardman was presented with a presidential medal to be worn by him till the expiry of his year of office a month hence and then passed on to his successors. This trophy had been made, to Mr. Stanley Wearing's design, by Miss M. G. Drury, in collaboration with Mr. C. W. Hobbis, of the School of Art. The chair at the luncheon was occupied by Mr. Stanley Wearing, the vice-president of the Association, who is about to succeed to the presidency.

Mr. Stanley Wearing, in explaining the purpose of the meeting and proposing the health of "Our Guest," recalled what happened on June 1, 1920, when a number of practising Norwich architects met under the presidency of Mr. Boardman, who had presided over their deliberations from that day to this. Again and again Mr. Boardman had told them it was time that someone should take his place, but he had been prevailed upon to carry on till now at last he had insisted on a change being made in the interest of the Association and all concerned with it; and so reluctantly the members had had to fall in with that intention. They had been very fortunate in their first presidency. Mr. Boardman was a head to whom they could all go in time of trouble and difficulty. As a citizen he had proved his worth by holding high civic offices. As an architect he had manifested an outstanding capability, for he was essentially a man to take over control. In the dealings of the Association he had led his fellow-members through a multitude of difficulties. From the start they had had to consider such matters as affiliation with the Royal Institute, the city's by-laws, communications from the Master Builders' Association, and other matters; and at every point the members had been conscious of a strong guiding hand piloting them in the right direction. Mr. Boardman had never taken his duties lightly. He had been their representative in London, where he was recognized as a man of distinguished presence, with a brain capable of helping when there were problems to be solved. He had set an example that would take a lot of living up to by those who had to follow him.

Mr. Walter Tapper, having invested "Our Guest" with the medal of office, said that for a busy practising architect to devote eight years of his time to the presidency of his Association was a sacrifice which few men cared about making today. He had set an example of what we all should be prepared to do. We were often apt to forget what we owed to our fellow-men in return for what they gave us. To Mr. Boardman it must be a real delight and a great source of gratification to see so many of his friends

gathered round him. "I would not forget," the speaker added, "that delightful and unselfish lady, Mrs. Boardman. I am sure she has had much to do with Mr. Boardman's advancement in life."

The Building Surveyors' Association

The seventh annual general meeting of the Association was held at Southport, where the party were guests of the Corporation. The party were conveyed by motor coaches to the new isolation hospital, which they inspected, and afterwards to the new sea bathing lake, where tea was provided. After tea the borough engineer of Southport, Mr. A. E. Jackson, M.I.C.E., explained the hidden workings of the sea bathing lake.

TRADE NOTES

On July 6 the motor travelling caravan of the National Radiator Co., Ltd., which demonstrates the Ideal Cookanheat installation will be in the Market Place, Wisbech, and on July 10 and 11 at Market Hill, Cambridge.

Rumour has been busy in associating the name of Messrs. J. H. Sankey and Son, Ltd., with that of another concern. We are informed by the directors of Messrs. J. H. Sankey and Son, Ltd., that there is no truth in these rumours and that they have not sold any part of their interests to another company, neither have they entered into any "working arrangements." Messrs. J. H. Sankey and Son, Ltd., of Canning Town, are still a private limited company owned and managed by members of the Sankey family.

Messrs. Lumbys Limited, of Halifax, have sent us two cards illustrating and describing their new 16 in. and 24 in. "Solar Doric" wall radiators. These radiators, as the name implies, are for fixing to the wall. They have plain smooth surfaces which are easy to clean and have a neat and dignified appearance. The radiators are assembled by means of 1¼ in. right- and left-hand screwed nipples. Each section measures 12 in. long and 2½ in. wide. The 16 in. radiator has a heating power of 4½ sq. ft. per section, and the 24 in. radiator has a heating power of 6½ sq. ft. per section.

INDIA HOUSE

In the summer number of *The Crown Journal*, the house journal of Messrs. Higgs and Hill, Ltd., it is stated that on a vacant site between Bush House and Marconi House in Aldwych, the firm are preparing to erect a large building for the Government of India to be known as India House. The appointment, eight years ago, of a High Commissioner for India was regarded as a definite step in that country's progress, and it is now sought to go a step farther by bringing together under one roof, in a convenient part of the Metropolis, the various departments functioning under the High Commissioner. Hence the decision to build India House. The journal states that India House will occupy a site of over 12,000 square ft. Externally its architecture will be in keeping with that of its neighbours, but full expression will be given to the Indian character of the building in the work of its interior. The main entrance will be from Aldwych, and there will be a large open central court with an approach from Montreal Place for vehicles. Record and storage rooms will account for the sub-basement. On the basement floor will be a large hall for the display of articles of commerce, with a portion of the ground floor forming a gallery; a sale room for literature published by the Indian Government; and, one at each end of the exhibition hall, two typical Indian bazaars. The gallery to the exhibition hall will be reached from the main entrance in Aldwych via the entrance vestibule and the octagonal entrance hall. From the octagonal hall a handsome public stairway will lead to the first floor, part of which latter will form the gallery to the octagonal hall. Also on the first floor will be the library and the committee rooms, the upper floors will be devoted to offices, and the attic floor to quarters for the resident staff. The woodwork of all the principal rooms will be solely from timber grown in India, and the carving will be expressive of Indian art. Sir Herbert Baker, A.R.A., F.R.I.B.A., is the architect, Dr. Oscar Faber, O.B.E., the consulting engineer, Mr. Wollerton the assistant engineer, Messrs. Horder and Wells the surveyors, and Mr. C. W. Stevens, the clerk of works. In the journal are photographs and descriptions of some of the important London buildings which are either in course of erection or have just been completed by Messrs. Higgs and Hill, and there is an imposing list of new contracts, including India House, referred to above, which have been recently secured by the firm.

COMPETITION CALENDAR

The conditions of the following competitions have been received by the R.I.B.A.:

July 14. The Lewisham Borough Council invite architects of British birth and nationality to submit designs in competition for the Town Hall, shops, and offices, proposed to be erected on the site of the east side of, and adjoining the present, Town Hall buildings. Assessor: Mr. Winton Newman, F.R.I.B.A. Premiums: £350, £250, £150. Particulars from the Town Clerk, Town Hall, Lewisham, S.E.6.

July 30. New Town Hall in West Marlands, for the County Borough Council of Southampton. Assessor: Mr. H. Austen Hall, F.R.I.B.A. Premiums: £500, £300, £150. Total cost not to exceed £385,000. Particulars from the Town Clerk, Municipal Offices, Southampton.

September 1. The Council of the R.I.B.A. have accepted an offer from the directors of the Gloster Aircraft Co., Ltd., and Messrs. H. H. Martyn & Co., Ltd., to give a prize for the best imaginative scheme for a London aircraft terminus suitable to the supposed requirements of air traffic fifteen years hence. The competition is open to Associates, elected Students, or registered Probationers of the R.I.B.A. below the age of thirty years on September 1. The competition will be in two stages. From the preliminary competition ten competitors will be selected for the final, and each will be paid £5 for his expenses. The closing date for the final is January 10. There will be two prizes in the final, a first prize of £125 and a second prize of £25. The following have consented to form the jury to award the prizes: Sir Sefton Brancker, K.C.B., Mr. C. Cowles-Voysey, Mr. E. Vincent Harris, Sir Edwin Lutyens, R.A., Major R. Mayo (consulting engineer, Imperial Airways, Ltd.), Mr. T. S. Tait, Mr. Maurice E. Webb, Mr. G. E. Woods-Humphery (general manager, Imperial Airways, Ltd.). Particulars may be obtained free on application at the R.I.B.A.

September 5. School at Rickmansworth to accommodate 400 senior girls, for the governors of Royal Masonic Institution for Girls. Assessor: Mr. H. V. Ashley, F.R.I.B.A. Premiums: £750, £500, £400, £300 and £200. Particulars from Mr. M. Beachcroft, 31 Great Queen Street, W.C.2. Deposit £2 2s.

September 29. The British Portland Cement Association, Ltd., is offering awards for the best concrete houses erected during the current year. These awards are offered for work that has been actually designed and constructed. The prize awards will be as follows: To architects, 1st prize, £100; 2nd prize, £50; to builders, to the builder of the house awarded the 1st prize, £50; 2nd prize, £25. Assessor: Mr. E. Guy Dawber, A.R.A. Any concrete house or bungalow, the contract price of which is from £500 to £2,000, designed and erected in Great Britain under the supervision of an architect, is eligible. Houses must conform to the following requirements: 1: Only cement of British manufacture shall have been specified and used, with the exception of white cement which only may be used for obtaining special effects; 2: Concrete must be used for the roof of houses where a flat roof is called for. The covering for other types of roof must be pre-cast concrete tiles except where extra expense is entailed by the employment of this latter form of covering. The actual construction must be completed by the end of 1928 in order that the prizes may be awarded early in 1929. Further particulars from The British Portland Cement Association, Ltd., 20 Dartmouth Street, London, S.W.1

No date. The Corporation invite from architects, surveyors, and others plans, layout of Harbour Station site fronting the sea, in swimming bath, shops, ornamental sub-tropical garden, roads, and bathing establishment for the Borough of Ramsgate. First prize, £250; second prize, £150; third prize, £100. A plan of the land can be obtained at the office of the borough engineer situate at 16 Albion Place, Ramsgate, on payment of the sum of £1 1s. For further information and for conditions under which plans, drawings, and schemes are to be submitted, application must be made to Mr. A. Blasdale Clarke, Town Clerk, Albion House, Ramsgate.

No date.—Entertainments pavilion to seat 1,000 persons and café on a site adjoining the Esplanade for the Exmouth Urban District Council. Premiums: £100, £50, and £25. Assessor: Mr. C. Cowles-Voysey, F.R.I.B.A. Particulars from Mr. B. Benoy, Clerk, Council Office, Exmouth. Deposit £1 1s.

THE WEEK'S BUILDING NEWS

The BOLTON Corporation has passed plans of the Bolton Moor Kinema, Ltd., for extension to the Picture House, Regent Cinema, Deane Road.

*

The HULL Education Committee has acquired a site in Bricknell Avenue for the erection of an elementary school.

*

The BERMONDSEY B.C. is seeking sanction to borrow £75,553 for the erection of new municipal offices.

*

The BOLTON Corporation has approved plans of the borough engineer showing the proposed wholesale fruit and vegetable market, fish market, and open retail market on land lying between the proposed extension of Ashburner Street on the north, New Street on the south, Blackhorse Street on the east, and Moor Lane on the west.

*

The BOLTON Education Committee is acquiring a site in Whitecroft Road for the erection of an elementary school.

*

The MERIONETH County Council has appointed a sub-committee to consider the question of the provision of an isolation hospital and the provision of smallpox accommodation.

*

The AUDENSHAW U.D.C. is to proceed with the scheme of development of Ryecroft Hall estate as soon as possible.

*

Plans passed by the PAIGNTON U.D.C.: Layout of field, Totnes Road, for Mr. Venner; house and shop, Torquay Road, for Mr. T. R. T. Dunning; store, 37 Maidenway Lane, for Mr. H. C. Crump; layout new road, Colley End Road, for Messrs. Willkins Bros.; extensions, Elmbank Road, for the Paignton Co-operative Society, Ltd.; layout of Laura Grove, for the Paignton and District Land and Development Co., Ltd.; two shops and flats, Torquay Road, for Mr. R. M. Ely; additions, Palace Hotel, Steartfield Road, for the Palace Hotel (Paignton), Ltd.; two houses, Laura Grove, for Mr. J. T. Bendall; five garages and store, York Road, for Mr. W. C. Tancock.

*

The West Riding Education Committee is proceeding with the erection of new grammar school buildings at THORNE at a cost of £28,500.

*

The West Riding Education Committee has approved a revised scheme of extensions at HECKMONDWIKE Secondary School involving a total estimated cost of £13,300. The scheme provides for a gymnasium, woodwork-room, metalwork-room, cookery-room, and dining-room and kitchen.

The Parliamentary Committee of the West Riding County Council has reconsidered alternative schemes for the erection of new offices for registration of deeds, WAKEFIELD, and now recommends a scheme estimated to cost £70,467, and will provide adequate and satisfactory accommodation for present needs and those of the near future. The scheme is so laid out as to readily lend itself to additions to meet any future developments.

*

The West Riding Education Committee is proceeding with the erection of a middle school at BENTLEY WITH ARKSEY at a cost of £18,000.

*

The West Riding Education Committee has purchased a site at SADDLEWORTH, Delph, for the erection of an elementary school.

*

The governors of the BARNSLEY Grammar School are to proceed with an extension scheme at a cost of £15,500.

*

Plans passed by the SHOREDITCH B.C.: Rebuilding 149 Hoxton Street; bank, 227, 227a, 227b, and 227c City Road, and 4 Windsor Terrace.

*

Plans passed by the BEDFORD Corporation: Extension of casual wards, Kimbolton Road, for Mr. E. H. C. Inskip, on behalf of the Bedford Board of Guardians; alterations, Simplex Works, Elstow Road, for Motor Rail and Tram Car Co., Ltd.; four houses, London Road, for Mr. E. H. C. Inskip; alterations, 38 St. Peter's Street, for Messrs. Davey and Son.

*

The SWANSEA Corporation is seeking sanction to borrow £44,305 for the erection of 100 houses at Mayhill.

*

Plans passed by the SWANSEA Corporation: Store and showroom, Nelson Street and Nelson Terrace, for Messrs. James Bros.; additions, 7 Wind Street, for Messrs. The Liverpool Victoria Friendly Society; warehouse, Northampton Lane, for Messrs. G. F. Lovell & Co.; four houses, Grenfell Park estate, for Messrs. J. R. Banfield and Son; two houses, Middle Road, for Mr. W. F. Wall; two houses, Walters Street, for Messrs. Weaver Bros.; six houses, Zouch Street, for Mr. I. J. Aubrey; presbytery, Penygraig Road, Townhill, for the Archbishop of Cardiff; eleven houses, Delbeche Road, Sketty, for Mr. J. O. Watkins; four houses, Townhill, for Messrs. Rogers and Davies; eighteen houses, Goitre Fawr Road, for Mr. C. M. Gustavus.

*

The SWANSEA Education Committee has obtained a site at Baptist Well for the erection of an elementary school.

On behalf of the PAIGNTON U.D.C., Mr. G. W. Colborne has prepared a layout of thirteen houses proposed to be built on the destructor site, York Road, at a cost of £480 each.

*

Plans passed by the ESTON U.D.C.: Additions, The Avenue, Tessville, for Messrs. J. Eadie, Ltd.; additions, Victoria Hotel, South Bank, for the North-Eastern Brewery Co., Ltd.

*

The borough engineer of BLYTH has prepared plans and layout in connection with the erection of houses on land belonging to the Council at Princess Louise Road, the estimated cost thereof including cost of land, road-making, drainage, paths, and fences, being £300 each. It is proposed to erect fifty houses by direct labour.

*

Plans passed by the NORTHFLEET U.D.C.: Two houses, Coulton Avenue, for Mr. T. Bennett; storage tank, Park Avenue, for Redline Motor Spirit Co., Ltd.

*

Plans passed by the EASTBOURNE Corporation: Eight houses, Percival Road, Hampden Park, for Mr. B. Stevens (architect); alterations, 44 Seaside Road, for Mr. L. Voisey (architect); two houses and garages, Southfield Road, for Mr. A. Ford (architect); alterations, "Norfolk Lodge," Trinity Place, for Mr. A. Ford (architect); shop, Green Street, for Mr. F. C. Benz (architect); four houses, Seaside, St. Anthony's Avenue, for Mr. S. G. Scales (architect); alterations and additions, Embassy Hotel, Grand Parade, for Messrs. P. D. Stonham and Son (architects); two houses and garages, King's Drive, for Mr. C. Ford (architect); alterations and additions, "Alexandra Arms," Seaside, for Mr. A. Ford: extension and alterations, Burlington Hotel, Grand Parade, for Messrs. P. D. Stonham and Son (architects); additions, Elliott's Stores, South Street, for Messrs. P. D. Stonham and Son (architects); alterations, Ear, Nose, and Throat Hospital, Pevensey Road, for Mr. F. G. Cooke (architect), for the committee; alterations and additions, 58 Seaside Road, for Mr. A. Ford (architect), for Rego Clothiers, Ltd.

*

The EAST HAM Corporation Housing Committee has considered the purchase of land outside the borough, and directed the borough treasurer to prepare a financial statement showing the estimated cost of developing and utilizing the land for housing purposes.

*

The Board of Education has approved the site selected at Barton, TORQUAY, for the new school. The architect is to prepare preliminary pencil sketch plans of the junior school for 300 children.

Plans passed by the TORQUAY Corporation: Hotel and shops, Victoria Parade, for Messrs. Haarer and Son; store room, Carlton Road, for Torquay Co-operative Society; five houses, Daison estate, for Mr. Sweetland; garage and showrooms, Torwood Street, for Mr. J. Martin; four houses, Leys Road, Chelston, for the Chelston Building Co.; roads sections, Barnfield Road extension, Livermead, for Cockington Manor estate; thirty-nine houses, Matlock Road, Chelston, for the Devon Rosary Co.

*

The WEST HAM education authority is to enlarge the South Hallsville School, Agate Street, by about 400 places.

*

The managers of the St. Mary and St. Joseph's R.C. School, POPLAR, are to erect a two-story building providing places for 360 boys.

*

The WATFORD Corporation has received an application from Messrs. Kempster and Williams for subsidy in respect of fifty-one houses on Leggatts Rise estate, and decided to require the applicants to enter into an agreement with respect to the construction of roads and sewers beforehand.

*

The L.C.C. Education Committee has approved preliminary plans for the erection of a three-story building to accommodate 888 children at North East ELTHAM.

*

The Rural Dean of STEPNEY is to utilize the premises of St. Peter's as a non-provided C.E. school for about 500 children. Plans for adapting the premises are in preparation.

*

The BARNSLEY Education Committee has purchased a site in Littleworth Lane for the erection of an elementary school.

*

The BARNSLEY Corporation has received a letter from the Royston U.D.C. stating that it would be prepared to join the Corporation in the proposed extensions to the Kendray Hospital.

*

The Essex and Colchester Mental Hospitals Committee are to erect semi-permanent buildings at BRENTWOOD Mental Hospital to accommodate 200 female patients.

*

Plans passed by EAST HAM Corporation: Alterations, 28-30 High Street, for Mr. C. Living; steel-framed store, Pulleyns Avenue, for Mr. J. N. Wade; alterations, 333 Green Street, for Messrs. A. and A. Williams; two houses, Welstead Road, for Mr. A. Tyler; alterations, Picture Coliseum, High Street, for Messrs. Scriven and Huxtable; alterations, 102 Wanstead Park Avenue, for Mr. F. G. Saunders.

*

The BARNSLEY Corporation has sold a site at Ludwood to the Barnsley Wesleyan Circuit for the erection of a church.

On behalf of the churchwardens, Mr. F. C. Benz, architect, has prepared plans for additions to Holy Trinity Church, Trinity Place, EASTBOURNE.

*

The British Petroleum Co., Ltd., is to erect depot, offices, and pump-house at Ford Road, EASTBOURNE.

*

The EASTBOURNE Corporation is seeking sanction to borrow £12,642 for the extension of the municipal boys' secondary school.

*

The CARLISLE Corporation has asked the borough engineer to prepare sketch plans and estimates of the cost of the provision at and adjoining Tullie House of: *a*: a new technical school; *b*: extensions to or alternative accommodation for the art school; *c*: extensions to the library; and *d*: extensions to the museum, and also to submit an estimate of the cost of erecting on a new site two new central schools, with technical school adjoining, and as an alternative two new central schools only.

*

Plans passed by the CARLISLE Corporation: Weaving-shed, Harraby, for Messrs. T. Brown & Co., Ltd.; four houses, Botcherby, for Mr. S. W. B. Jack, architect; four houses, Upperby Road, for Messrs. Benwell and Slack, architects; additions, Brampton Road, for Mr. H. Foxall, architect; four houses, Dalston Road, for Mr. G. Armstrong, architect; house, Brampton Road, for Mr. Irving Graham, architect; new street and estate, London Road, Harraby, for Mr. Johnston, architect; transformer station, Tyne Street, for Mr. C. W. Salt, on behalf of the Electricity Committee.

*

Plans passed by the MARKET HARBOROUGH U.D.C.: Two houses, Gardiner Street, for Mr. H. Billing; house, Connaught Road, for Mr. L. A. Capell; extensions to warehouse, St. Mary's Road, for Messrs. Willey & Co., Ltd.; sanitary accommodation, Little Bowden Institute, for the committee; alterations, Old Crown Inn, for Messrs. Eady and Dulley, Ltd.; extension, Caxton Type Foundry, for Mr. W. Haddon.

*

Plans passed by the CAMBERWELL B.C.: Addition, 37-41 Rye Lane, for Messrs. H. Payne Wyatt, Son and Partners; additions, "The Norfolk Arms" beer-house, in Sandison Street, for Mr. W. Stewart.

*

The LEEDS Corporation has obtained sanction to borrow £140,000 for the erection of houses.

*

Plans passed by the SWANSCOMBE U.D.C.: Cement works (Whites), for the Associated Portland Cement Manufacturers, Ltd.; rifle range, Knockhall Road, for Messrs. The Empire Paper Mills (1922), Ltd.; bungalow, Swanscombe Street, for Mr. W. G. Dear.

Plans passed by the EAST HAM Corporation: Alterations, 807 Romford Road, for Mr. A. C. S. Wheeler; addition to factory, Trebor Works, Shaftesbury Road, for Messrs. J. S. Mellis & Co.; two houses, 14-16 Arthur Road, for Messrs. J. Stokes and Sons; thirteen garages, Lonsdale Avenue, for Mr. J. W. Lohden.

*

The BIRMINGHAM Corporation is to acquire the following housing sites: Kingsvale Farm and Warren Farm, Perry Bar—these two sites contain a total area of about 450 acres and will accommodate a total of approximately 5,400 houses; Gospel House Farm, Hall Green—this site contains 92 acres and will provide for approximately 1,046 houses; Court Farm, etc., Short Heath—these sites contain a total area of about 45 acres and should accommodate about 550 houses.

*

Sketch plans of the proposed extensions of the school have been prepared by the governors of the ROTHERHAM Grammar School.

*

The CARLISLE Corporation Housing Committee has asked the city engineer to submit a scheme for the erection of 128 houses or more, with particulars of the cost based upon definite tenders.

*

The SWANSCOMBE U.D.C. has obtained land at Greenhithe for the erection of thirty-four houses.

*

A swimming bath is to be erected at the corner of Ingress Park, GREENHITHE, for the Thames Nautical Training College.

*

The EASTBOURNE Corporation Housing Committee is to proceed with the erection of further houses on the Victoria Drive site, and has asked the borough surveyor to submit plans of types of houses.

*

Mr. W. T. Aitkenhead is to erect twenty terrace houses, each of five apartments, at Carswell Street and Titwood Road, Moray Park, GLASGOW.

*

The FINCHLEY U.D.C. has asked the surveyor to prepare plans for the erection of sixty-four houses on various sites.

*

Land at the corner of Chandos Avenue and the Great North Road, FINCHLEY, is to be developed by Messrs. F. C. Day, Ltd.

*

The GLASGOW Corporation has obtained sanction to borrow £160,290 for slum clearance schemes.

*

Messrs. W. H. Read & Co., of 3 The Avenue, West Ealing, are purchasing building land situated near the junction of Western Avenue and Horsenden Lane, PERIVALE.

RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 7½	1 2¼
A	Abergavenny	S. Wales & M.	1 7	1 2½
B	Abingdon ..	S. Counties	1 5½	1 1½
A	Accrington	N.W. Counties	1 7½	1 2¼
A	Addlestone	S. Counties	1 6	1 1½
A	Adlington ..	N.W. Counties	1 7	1 2½
A	Airdrie ..	Scotland	*1 7½	1 2¼
C_1	Aldeburgh	E. Counties	1 3	1 1¼
A	Altrincham	N.W. Counties	1 7½	1 2¼
B_3	Appleby ..	N.W. Counties	1 4	1 0
A	Ashton-under-Lyne	N.W. Counties	1 7½	1 2¼
A_3	Atherstone	Mid. Counties	1 6	1 1½
B_3	Aylesbury ..	S. Counties	1 4	1 0
B_3	BANBURY ..	S. Counties	1 4	1 0
B_2	Bangor ..	N.W. Counties	1 4½	1 0½
A	BarnardCastle	N.E. Coast	1 7	1 2½
A	Barnsley ..	Yorkshire	1 7	1 2½
B_1	Barnstaple	S.W. Counties	1 5	1 0½
A	Barrow ..	N.W. Counties	1 7½	1 2½
A	Barry ..	S. Wales & M.	1 7½	1 2½
B_3	Basingstoke	S.W. Counties	1 4	1 0
B	Bath ..	S.W. Counties	1 5½	1 1½
A	Batley ..	Yorkshire	1 7	1 2½
B	Bedford ..	E. Counties	1 5	1 1½
A_2	Berwick-on-Tweed	N.E. Coast	1 6	1 2
A_2	Bewdley ..	Mid. Counties	1 6½	1 2
B_3	Bicester ..	Mid. Counties	1 4	1 0
A	Birkenhead	N.W. Counties	*1 7½	1 2½
A	Birmingham	Mid. Counties	1 7½	1 2½
A	Bishop Auckland	N.E. Coast	1 7½	1 2½
A	Blackburn	N.W. Counties	1 7½	1 2½
A	Blackpool	N.W. Counties	1 7	1 2½
A	Blyth ..	N.E. Coast	1 7½	1 2½
B_3	Bognor ..	S. Counties	1 4	1 0
A	Bolton ..	N.W. Counties	1 7½	1 2½
A_2	Boston ..	Mid. Counties	1 6	1 1½
B_1	Bournemouth	S. Counties	1 5	1 0½
B_2	Bovey Tracey	S.W. Counties	1 4½	1 0½
A	Bradford ..	Yorkshire	1 7½	1 2½
A_2	Brentwood	E. Counties	1 6	1 2
A	Bridgend ..	S. Wales & M.	1 7	1 2½
B_2	Bridgwater	S.W. Counties	1 4	1 0½
A_1	Bridlington	Yorkshire	1 7	1 2½
A	Brighouse ..	Yorkshire	1 7½	1 2½
B_1	Brighton ..	S. Counties	1 5	1 0½
A	Bristol ..	S.W. Counties	1 7½	1 2½
B_3	Brixham ..	S.W. Counties	1 4	1 0
A_2	Bromsgrove	Mid. Counties	1 6½	1 2
C	Bromyard ..	Mid. Counties	1 3½	11½
A	Burnley ..	N.W. Counties	1 7	1 2½
A	Burslem ..	Mid. Counties	1 7	1 2½
A_2	Burton-on-Trent	Mid. Counties	1 6½	1 2
A	Bury ..	N.W. Counties	1 7½	1 2½
A_1	Buxton ..	N.W. Counties	1 7	1 2½
B	CAMBRIDGE	E. Counties	1 5½	1 1½
B_3	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 7½	1 2½
A	Carlisle ..	N.W. Counties	1 7	1 2½
B	Carmarthen	S. Wales & M.	1 5½	1 1½
B_2	Carnarvon	N.W. Counties	1 4½	1 0½
A_1	Carnforth ..	N.W. Counties	1 7	1 2½
A	Castleford	Yorkshire	1 7½	1 2½
B_1	Chatham ..	S. Counties	1 5	1 0½
B_1	Chelmsford	E. Counties	1 5	1 0½
A_3	Cheltenham	S.W. Counties	1 6	1 1½
A	Chester ..	N.W. Counties	1 7½	1 2½
A	Chesterfield	Mid. Counties	*1 7½	1 2½
B_3	Chichester	S. Counties	1 4	1 0
A	Chorley ..	N.W. Counties	1 7½	1 2½
B_2	Cirencester	S. Counties	1 4½	1 0½
A	Clitheroe ..	N.W. Counties	1 7½	1 2½
A	Clydebank	Scotland	1 7½	1 2½
A	Coalville ..	Mid. Counties	1 7½	1 2½
B	Colchester ..	E. Counties	1 5½	1 1½
A	Colne ..	N.W. Counties	1 7½	1 2½
A_3	Colwyn Bay	N.W. Counties	1 6	1 1½
A	Consett ..	N.E. Coast	1 7½	1 2½
A_3	Conway ..	N.W. Counties	1 6	1 1½
A	Coventry ..	Mid. Counties	1 7½	1 2½
A_3	Crewe ..	N.W. Counties	1 6	1 1½
A_3	Cumberland	.....	1 6	1 1½
A	DARLINGTON	N.E. Coast	1 7½	1 2½
A	Darwen ..	N.W. Counties	1 7	1 2½
B_2	Deal ..	S. Counties	1 4½	1 0½
A_3	Denbigh ..	N.W. Counties	1 6	1 1½
A	Derby ..	Mid. Counties	1 7½	1 2½
A	Dewsbury	Yorkshire	1 7	1 2½
B	Didcot ..	S. Counties	1 5½	1 1½
A	Doncaster	Yorkshire	1 7	1 2½
C_1	Dorchester	S.W. Counties	1 3	11½
A_3	Driffield ..	Yorks	1 6	1 1½
A_3	Droitwich	Mid. Counties	1 6	1 1½
A_1	Dudley ..	Mid. Counties	1 7	1 2½
A	Dundee ..	Scotland	1 7½	1 2½
A	Durham ..	N.E. Coast	1 7½	1 2½
B_1	EASTBOURNE	S. Counties	1 5	1 0½
A	Ebbw Vale	S. Wales & M.	1 7½	1 2½
A	Edinburgh	Scotland	1 7½	1 2½
A	E. Glamorganshire & Monmouthshire	S. Wales & M.	1 7½	1 2½
B	Exeter ..	S.W. Counties	*1 5½	1 1½
P_2	Exmouth ..	S.W. Counties	1 4½	1 0½
B	FELIXSTOWE	E. Counties	1 5½	1 1½
A_3	Filey ..	Yorks	1 6	1 1½
A	Fleetwood ..	N.W. Counties	1 7½	1 2½
B_2	Folkestone	S. Counties	1 4½	1 0½
A	Frodsham ..	N.W. Counties	1 7½	1 2½
B_3	Frome ..	S.W. Counties	1 4	1 0
A	GATESHEAD	N.E. Coast	1 7½	1 2½
B_1	Gillingham	S. Counties	1 5	1 0½
A_3	Gloucester	S.W. Counties	1 6	1 1½
A_2	Goole ..	Yorkshire	1 6½	1 2
B	Gosport ..	S. Counties	1 5½	1 1½
A_3	Grantham	Mid. Counties	1 6	1 1½
A_1	Gravesend	S. Counties	1 7	1 2½
A	Greenock ..	Scotland	*1 7½	1 2½
A	Grimsby ..	Yorkshire	1 7½	1 2½
B_1	Guildford ..	S. Counties	1 5	1 0½
A	HALIFAX ..	Yorkshire	1 7½	1 2½
A	Hanley ..	Mid. Counties	1 7½	1 2½
A	Harrogate	Yorkshire	1 7½	1 2½
A	Hartlepools	N.E. Coast	1 7½	1 2½
B_2	Harwich ..	E. Counties	1 4½	1 0½
B_2	Hastings ..	S. Counties	1 4½	1 0½
B_1	Hatfield ..	S. Counties	1 5	1 0½
B	Hereford ..	S. W. Counties	1 5½	1 1½
B	Hertford ..	E. Counties	1 5½	1 1½
A_1	Heysham ..	N.W. Counties	1 7	1 2½
A	Howden ..	N.E. Coast	1 7½	1 2½
A	Huddersfield	Yorkshire	1 7½	1 2½
A	Hull ..	Yorkshire	1 7½	1 2½

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

			I	II
			s. d.	s. d.
A	ILKLEY ..	Yorkshire	1 7½	1 2½
A	Immingham	Mid. Counties	1 7½	1 2½
B	Ipswich ..	E. Counties	1 5½	1 1½
C_1	Isle of Wight	S. Counties	1 3	11½
A	JARROW ..	N.E. Coast	1 7½	1 2½
A	KEIGHLEY	Yorkshire	1 7½	1 2½
B_1	Kendal ..	N.W. Counties	1 5	1 0½
B_1	Keswick ..	N.W. Counties	1 5	1 0½
A_3	Kettering ..	Mid. Counties	1 6	1 1½
A_2	Kidderminster	Mid. Counties	1 6½	1 2
B_2	King's Lynn	E. Counties	1 4½	1 0½
A	LANCASTER	N.W. Counties	1 7½	1 2½
A_2	Leamington	Mid. Counties	1 6½	1 2
A	Leeds ..	Yorkshire	1 7½	1 2½
A	Leek ..	Mid. Counties	1 7½	1 2½
A	Leicester ..	Mid. Counties	1 7½	1 2½
A	Leigh ..	N.W. Counties	1 7½	1 2½
B_3	Lewes ..	S. Counties	1 4	1 0
A_3	Lichfield ..	Mid. Counties	1 6	1 1½
A	Lincoln ..	Mid. Counties	1 7½	1 2½
A	Liverpool ..	N.W. Counties	*1 10	1 4½
A_3	Llandudno	N.W. Counties	1 6	1 1½
A	Llanelly ..	S. Wales & M.	1 7½	1 2½
	London (12 miles radius)		1 9	1 4
	Do. (12-15 miles radius)		1 8½	1 3½
A	Long Eaton	Mid. Counties	1 7½	1 2½
A	Loughborough	Mid. Counties	1 7½	1 2½
A_3	Luton ..	E. Counties	1 6	1 1½
A	Lytham ..	N.W. Counties	1 7½	1 2½
A_1	MACCLESFIELD	N.W. Counties	1 7	1 2½
B	Maidstone	S. Counties	1 5½	1 1½
A_3	Malvern ..	Mid. Counties	1 6	1 1½
A	Manchester	N.W. Counties	1 7½	1 2½
A	Mansfield	Mid. Counties	1 7½	1 2½
B_2	Margate ..	S. Counties	1 4½	1 0½
A_3	Matlock ..	Mid. Counties	1 6	1 1½
A	Merthyr ..	S. Wales & M.	1 7½	1 2½
A	Middlesbrough	N.E. Coast	1 7½	1 2½
A_3	Middlewich	N.W. Counties	1 6	1 1½
B_2	Minehead ..	S.W. Counties	1 4½	1 0½
A	Monmouth	S. Wales & M.	1 7½	1 2½
	S. and E. Glamorganshire			
A_1	Morecambe	N.W. Counties	1 7	1 2½
A_3	NANTWICH	N.W. Counties	1 6	1 1½
A	Neath ..	S. Wales & M.	1 7½	1 2½
A	Nelson ..	N.W. Counties	1 7	1 2½
A	Newcastle ..	N.E. Coast	1 7½	1 2½
A	Newport ..	S. Wales & M.	1 7½	1 2½
A	Normanton	Yorkshire	1 7	1 2½
A_1	Northampton	Mid. Counties	1 7	1 2½
A	North Staffs.	Mid. Counties	1 7½	1 2½
A	North Shields	N.E. Coast	1 7½	1 2½
A_3	Norwich ..	E. Counties	1 6	1 1½
A	Nottingham	Mid. Counties	1 7½	1 2½
A	Nuneaton ..	Mid. Counties	1 7½	1 2½
B	OAKHAM ..	Mid. Counties	1 5½	1 1½
A	Oldham ..	N.W. Counties	1 7½	1 2½
A_3	Oswestry ..	Mid. Counties	1 6	1 1½
B	Oxford ..	S. Counties	1 6	1 1½
A	PAISLEY ..	Scotland	*1 7½	1 2½
C	Pembroke	S. Wales & M.	1 3½	11½
A	Perth ..	Scotland	*1 7½	1 2½
A_3	Peterborough	Mid. Counties	1 6	1 1½
A	Plymouth	S.W. Counties	*1 7½	1 2½
A	Pontefract	Yorkshire	1 7½	1 2½
A	Pontypridd	S. Wales & M.	1 7½	1 2½
B	Portsmouth	S. Counties	1 5½	1 1½
A	Preston ..	N.W. Counties	1 7½	1 2½
A	QUEENSFERRY	N.W. Counties	1 7½	1 2
A_3	READING	S. Counties	1 6	1 1½
B	Reigate ..	S. Counties	1 5½	1 1½
A_3	Retford ..	Mid. Counties	1 6	1 1½
A	Rhondda Valley	S. Wales & M.	1 7½	1 2½
A_3	Ripon ..	Yorkshire	1 6	1 1½
A	Rochdale ..	N.W. Counties	1 7½	1 2½
B	Rochester ..	S. Counties	1 5½	1 1½
A_1	Ruabon ..	N.W. Counties	1 7	1 2½
A_2	Rugby ..	Mid. Counties	1 6½	1 2
A_3	Rugeley ..	Mid. Counties	1 6	1 1½
A	Runcorn ..	N.W. Counties	1 7½	1 2½
A_3	ST. ALBANS	E. Counties	1 6	1 1½
A	St. Helens ..	N.W. Counties	1 7½	1 2½
B_3	Salisbury ..	S.W. Counties	1 4	1 0
A_1	Scarborough	Yorkshire	1 7	1 2½
A	Scunthorpe	Mid. Counties	1 7½	1 2½
A	Sheffield ..	Yorkshire	1 7½	1 2½
A	Shipley ..	Yorkshire	1 7½	1 2½
A_3	Shrewsbury	Mid. Counties	1 6	1 1½
A_2	Skipton ..	Yorkshire	1 6½	1 2
A_3	Slough ..	S. Counties	1 6	1 1½
A_2	Solihull ..	Mid. Counties	1 6½	1 2
A_3	South'pton	S. Counties	1 6	1 1½
A_2	Southend-on-Sea	E. Counties	1 6½	1 2
A	Southport ..	N.W. Counties	1 7½	1 2½
A	S. Shields ..	N.E. Coast	1 7½	1 2½
A_2	Stafford ..	Mid. Counties	1 6½	1 2
A	Stockport ..	N.W. Counties	1 7½	1 2½
A	Stockton-on-Tees	N.E. Coast	1 7½	1 2½
A	Stoke-on-Trent	Mid. Counties	1 7½	1 2½
B	Stroud ..	S.W. Counties	1 5½	1 1½
A	Sunderland	N.E. Coast	1 7½	1 2½
A	Swadlincote	Mid. Counties	1 7½	1 2½
A	Swansea ..	S. Wales & M.	1 7½	1 2½
B	Swindon ..	S.W. Counties	1 5½	1 1½
A_1	TAMWORTH	N.W. Counties	1 7	1 2½
B_1	Taunton ..	S.W. Counties	1 5	1 0½
A	Teeside Dist.	N.E. Counties	1 7½	1 2½
B	Teignmouth	S.W. Coast	1 5½	1 1½
A	Todmorden	Yorkshire	1 7½	1 2½
A_2	Torquay ..	S.W. Counties	1 6½	1 2
C	Truro ..	S.W. Counties	1 3½	11½
B_1	Tunbridge Wells	S. Counties	1 5	1 0½
A	Tunstall ..	Mid. Counties	1 7½	1 2½
A	Tyne District	N.E. Coast	1 7½	1 2½
A	WAKEFIELD	Yorkshire	1 7½	1 2½
A_1	Walsall ..	Mid. Counties	1 7	1 2½
A	Warrington	N.W. Counties	1 7½	1 2½
A_2	Warwick ..	Mid. Counties	1 6½	1 2
A	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 7½	1 2½
B	Weston-s-Mare	S.W. Counties	1 5½	1 1½
A_2	Whitby ..	Yorkshire	1 6½	1 2
A	Widnes ..	N.W. Counties	1 7½	1 2½
A	Wigan ..	N.W. Counties	1 7½	1 2½
B_2	Winchester	S. Counties	1 4½	1 0½
A_2	Windsor ..	S. Counties	1 6	1 1½
A	Wolverhampton	Mid. Counties	1 7½	1 2½
A_3	Worcester	Mid. Counties	1 6	1 1½
A_3	Worksop ..	Yorkshire	1 6	1 1½
A_1	Wrexham ..	N.W. Counties	1 7	1 2½
B	Wycombe	S. Counties	1 5½	1 1½
B_1	YARMOUTH	E. Counties	1 5	1 0½
B_2	Yeovil ..	S.W. Counties	1 4½	1 0½
A	York ..	Yorkshire	1 7½	1 2

* In these areas the rates of wages for certain trades (usually Painters and Plasterers) vary slightly from those given. The rates for each trade in any given area will be sent on request.

PRICES CURRENT

EXCAVATOR AND CONCRETOR

EXCAVATOR, 1s. 4d. *per hour*; LABOURER, 1s. 4d. *per hour*; NAVVY, 1s. 4d. *per hour*; TIMBERMAN, 1s. 5½d. *per hour*; SCAFFOLDER, 1s. 5d. *per hour*; WATCHMAN, 7s. 6d. *per shift.*

Broken brick or stone, 2 in., per yd.	£0 11 6
Thames ballast, per yd.	0 11 0
Pit gravel, per yd.	0 18 0
Pit sand, per yd.	0 14 6
Washed sand	0 15 0
Screened ballast or gravel, add 10 per cent. per yd.	
Clinker, breeze, etc., prices according to locality.	
Portland cement, per ton	£2 15 0
Lias lime, per ton	2 10 0
Sacks charged extra at 1s. 9d. each and credited when returned at 1s. 6d.	
Transport hire per day:	
Cart and horse £1 3 0 *Trailer*	£0 15 0
3-ton motor lorry 3 15 0 *Steam roller*	4 5 0
Steam lorry, 5-ton 4 0 0 *Water cart*	1 5 0

EXCAVATING and throwing out in ordinary earth not exceeding 6 ft. deep, basis price, per yd. cube . . 0 3 0

Exceeding 6 ft., but under 12 ft., add 30 per cent.

In stiff clay, add 30 per cent.

In underpinning, add 100 per cent.

In rock, including blasting, add 225 per cent.

If basketed out, add 80 per cent. to 150 per cent.

Headings, including timbering, add 400 per cent.

RETURN, fill, and ram, ordinary earth, per yd.	£0 1 6
SPREAD and level, including wheeling, per yd.	0 1 6
FILLING into carts and carting away to a shoot or deposit, per yd. cube	0 10 6
TRIMMING earth to slopes, per yd. sup.	0 0 6
HACKING up old grano. or similar paving, per yd. sup.	0 1 3
PLANKING to excavations, per ft. sup..	0 0 5
DO. over 10 ft. deep, add for each 5 ft. in depth, 30 per cent.	
IF left in, add to above prices, per ft. cube	0 2 0
HARDCORE, 2 in. ring, filled and rammed. 4 in. thick, per yd. sup.	0 2 1
DO. 6 in. thick, per yd. sup.	0 2 10
PUDDLING, per yd. cube	1 10 0
CEMENT CONCRETE, 4-2-1, per yd. cube	2 3 0
DO. 6-2-1, per yd. cube	1 18 0
DO. in upper floors, add 15 per cent.	
DO. in reinforced-concrete work. add 20 per cent.	
DO. in underpinning, add 60 per cent.	
LIAS-LIME CONCRETE, per yd. cube	£1 16 0
BREEZE CONCRETE, per yd. cube	1 7 0
DO. in lintels, etc., per ft. cube	0 1 6
CEMENT concrete 4 2-1 in lintels packed around reinforcement, per ft. cube	0 3 9
FINE concrete benching to bottom of manholes, per ft. cube	0 2 6
FINISHING surface of concrete spade face, per yd. sup.	0 0 9

DRAINER

LABOURER, 1s. 4d. *per hour*; TIMBERMAN, 1s. 5½d. *per hour*; BRICKLAYER, 1s. 9d. *per hour*; PLUMBER, 1s. 9d. *per hour*; WATCHMAN, 7s. 6d. *per shift.*

Stoneware pipes, tested quality, 4 in., per ft.	£0 0 10
DO. 6 in., *per ft.*	0 1 3
DO. 9 in., *per ft.*	0 2 3
Cast-iron pipes, coated, 9 ft. lengths, 4 in., per yd.	0 5 6
DO. 6 in., *per yd.*	0 8 6
Portland cement and sand, see "Excavator" above.	
Leadwool per cwt.	£2 0 0
Gaskin, per lb.	0 0 4½

STONEWARE DRAINS, jointed in cement, tested pipes, 4 in., per ft.	0 4 3
DO. 6 in., per ft.	0 5 0
DO. 9 in., per ft.	0 7 9
CAST-IRON DRAINS, jointed in lead, 4 in., per ft.	0 8 0
DO. 6 in., per ft.	0 10 0

Note.—These prices include digging concrete bed and filling for normal depths, and are average prices.

Fittings in Stoneware and Iron according to type. *See* Trade Lists.

BRICKLAYER

BRICKLAYER, 1s. 9d. *per hour*; LABOURER, 1s. 4d. *per hour*; SCAFFOLDER, 1s. 5d. *per hour.*

Midhurst white facing bricks, per M	£5 0 0
London stocks, per M.	4 15 0
Flettons, per M.	3 0 0
Staffordshire blue, per M.	9 10 0
Firebricks, 2½ in., per M.	11 3 0
Glazed salt, white, and ivory stretchers, per M.	24 10 0
DO. *headers, per M.*	24 0 0
Colours, extra, per M.	5 10 0
Seconds, less, per M.	1 0 0
Cement and sand, see "Excavator" above.	
Lime, grey stone, per ton	2 17 0
Mixed lime mortar, per yd.	1 6 0
Damp course, in rolls of 4½ in., per roll	0 2 6
DO. 9 *in. per roll*	0 4 9
DO. 14 *in. per roll*	0 7 6
DO. 18 *in. per roll*	0 9 6

BRICKWORK in stone lime mortar, Flettons or equal, per rod	£33 0 0
DO. in cement do., per rod	36 0 0
DO. in stocks, add 25 per cent. per rod.	
DO. in blues, add 100 per cent. per rod.	
DO. circular on plan, add 12½ per cent. per rod.	
DO. in backing to masonry, add 12½ per cent. per rod.	
DO. in raising on old walls, etc., add 12½ per cent. per rod.	
DO. in underpinning, add 20 per cent. per rod.	
HALF-BRICK walls in stocks in cement mortar (1–3), per ft. sup.	£0 1 0
BEDDING plates in cement mortar, per ft. run	0 0 3
BEDDING window or door frames, per ft. run	0 0 3
LEAVING chases 2½ in. deep for edges of concrete floors not exceeding 6 in. thick, per ft. run	0 0 2
CUTTING do. in old walls in cement, per ft. run	0 0 4
CUTTING, toothing and bonding new work to old (labour and materials), per ft. sup.	0 0 7
TERRA-COTTA flue pipes 9 in. diameter, jointed in fireclay, including all cuttings, per ft. run	0 3 6
DO. 14 ft. by 9 in. do., per ft. run	0 6 0
FLAUNCHING chimney pots, each	0 2 0
CUTTING and pinning ends of timbers, etc., in cement	0 1 0
FACINGS fair, per ft. sup. extra	0 0 3
DO. picked stocks, per ft. sup. extra	0 0 7
DO. red rubbers gauged and set in putty, per ft. sup. extra	0 4 9
DO. in salt white or ivory glazed, per ft. sup. extra	0 5 6
TUCK pointing, per ft. sup. extra	0 0 10
WEATHER pointing, do. do.	0 0 3
TILE creasing with cement fillet each side per ft. run	0 0 6
GRANOLITHIC PAVING, 1 in., per yd. sup.	0 5 0
DO. 1½ in., per yd. sup.	0 6 0
DO. 2 in., per yd. sup.	0 7 0
If coloured with red oxide, per yd. sup.	0 1 0
If finished with carborundum, per yd. sup.	0 0 6
If in small quantities in finishing to steps, etc., per ft. sup.	0 1 4
Jointing new grano, paving to old, per ft. run	0 0 4
Extra for dishing grano, or cement paving around gullies, each	0 1 6
BITUMINOUS DAMP COURSE, ex rolls, per ft. sup.	0 0 7
ASPHALT (MASTIC) DAMP COURSE, ½ in., per yd. sup.	0 8 0
DO. vertical, per yd. sup.	0 11 0
SLATE DAMP COURSE, per ft. sup.	0 0 10
ASPHALT ROOFING (MASTIC) in two thicknesses, ½ in., per yd.	0 8 6
DO. SKIRTING, 6 in.	0 0 11
BREEZE PARTITION BLOCKS, set in cement, 1½ in. per yd. sup.	0 5 3
DO. DO. 3 in.	0 6 6
BREEZE fixing bricks, extra for each	0 0 3

THE wages are the Union rates current in London at the time of publication. The prices are for good quality material and are intended to cover delivery at works, wharf, station, or yard as customary, but will vary according to quality and quantity. The measured prices are based upon the foregoing, and include usual builders' profits. 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.

MASON

MASON, 1s. 9d. *per hour*; DO. *fixer*, 1s. 10d. *per hour*; LABOURER, 1s. 4d. *per hour*; SCAFFOLDER, 1s. 5d. *per hour.*

Portland Stone:	
Whitbed, per ft. cube	£0 4 6
Basebed, per ft. cube	0 4 7
Bath stone, per ft. cube	0 3 0
Usual trade extras for large blocks.	
York paving, av. 2½ in., per yd. super	0 6 6
York templates sawn, per ft. cube	0 6 9
Slate shelves, rubbed, 1 in., per ft. sup.	0 2 6
Cement and sand, see "Excavator," etc., above.	

HOISTING and setting stone, per ft. cube	£0 2 2
DO. for every 10 ft. above 30 ft. add 15 per cent.	
PLAIN face Portland basis, per ft. sup.	£0 2 8
DO. circular, per ft. sup.	0 4 0
SUNK FACE, per ft. sup.	0 3 9
DO. circular, per ft. sup.	0 4 10
JOINTS, arch, per ft. sup.	0 2 6
DO. sunk, per ft. sup.	0 2 7
DO. DO. circular, per ft. sup.	0 4 6
CIRCULAR-CIRCULAR work, per ft. sup.	1 2 0
PLAIN MOULDING, straight, per inch of girth, per ft. run	0 1 1
DO. circular, do., per ft. run	0 1 4

HALF SAWING, per ft. sup.	£0 1 0
Add to the foregoing prices, if in York stone, 35 per cent.	
DO. Mansfield, 12½ per cent.	
Deduct for Bath, 33⅓ per cent.	
DO. for Chilmark, 5 per cent.	
SETTING 1 in. slate shelving in cement, per ft. sup.	£0 0 6
RUBBED round nosing to do., per ft. lin.	0 0 6
YORK STEPS, rubbed T. & R., ft. cub. fixed	1 9 0
YORK SILLS, W. & T., ft. cub. fixed	1 13 0
ARTIFICIAL stone paving, 2 in. thick, per ft. sup..	0 1 6
DO. 2½ in. thick, per ft. sup.	0 1 9

SLATER AND TILER

SLATER, 1s. 9d. *per hour*; TILER, 1s. 9d. *per hour*; SCAFFOLDER, 1s. 5d. *per hour*; LABOURER, 1s. 4d. *per hour.*

N.B.—Tiling is often executed as piecework.

Slates, 1st quality, per 1,200:			
Portmadoc Ladies			£14 0 0
Countess			27 0 0
Duchess			32 0 0
Old Delabole	*Med.*	*Grey*	*Med. Green*
24 in. × 12 in.	£42 11 3		£45 1 0
20 in. × 10 in.	31 4 3		33 0 6
16 in. × 10 in.	20 18 0		22 4 9
14 in. × 8 in.	12 1 0		12 16 3
Green Randoms per ton			8 3 9
Grey-green do., per ton			7 3 9
Green peggies, 12 in. to 8 in. long, per ton			6 3 9
In 4-ton truck loads, delivered Nine Elms station.			
Clips, lead, per lb.			£0 0 6
Clips, copper, per lb.			0 2 0
Nails, compo, per cwt.			1 6 0
Nails, copper, per lb.			0 1 10
Cement and sand, see "Excavator," etc., above.			
Hand-made tiles, per M.			£5 18 0
Machine-made tiles, per M.			5 8 0
Westmorland slates, large, per ton			9 0 0
DO. *Peggies, per ton*			7 5 0

SLATING, 3 in. ap, compo nails, Portmadoc or equal:

Ladies, per square	£4 0 0
Countess, per square	4 5 0
Duchess, per square	4 10 0
WESTMORLAND, in diminishing courses, per square	6 5 0
CORNISH DO., per square	6 3 0
Add, if vertical, per square approx.	0 13 0
Add, if with copper nails, per square approx.	0 2 6
Double course at eaves, per ft. approx.	0 1 0

SLATING with Old Delabole slates to a 3 in. lap with copper nails, at per square.

	Med. Grey	*Med. Green*
24 in. × 12 in.	£5 0 0	£5 2 0
20 in. × 10 in.	5 5 0	5 10 0
16 in. × 10 in.	4 15 0	5 1 0
14 in. × 8 in.	4 10 0	4 15 0
Green randoms		4 7 0
Grey-green do.		5 9 0
Green peggies, 12 in. to 8 in. long		4 17 3

TILING, 4 in. gauge, every 4th course nailed, in hand-made tiles, average per square	5 6 0
DO., machine-made do., per square	4 17 0
Vertical Tiling, including pointing, add 18s. 0d. per square.	
FIXING lead soakers, per dozen	£0 0 10
STRIPPING old slates and stacking for re-use, and clearing away surplus and rubbish, per square	0 10 0
LABOUR only in laying slates, but including nails, per square	1 0 0

See "Sundries for Asbestos Tiling."

CARPENTER AND JOINER

CARPENTER, 1s. 9d. *per hour*; JOINER, 1s. 9d. *per hour*; LABOURER, 1s. 4d. *per hour.*

Timber, average prices at Docks, London Standard	
Scandinavian, etc. (equal to 2nds):	
7 × 3, per std.	£21 0 0
11 × 4, per std.	33 0 0
Memel or Equal. Slightly less than foregoing.	
Flooring, P.E., 1 in., per sq.	£1 2 6
DO. *T. and G., 1 in., per sq.*	1 2 6
Planed boards, 1 in. × 11 in., per std.	30 0 0
Wainscot oak, per ft. sup. of 1 in.	0 1 4
Mahogany, Honduras, per ft. sup. of 1 in.	0 1 3
DO. *Cuba, per ft. sup. of 1 in.*	0 2 3
DO., *African, per ft. sup.*	0 1 0
Teak, per ft. sup. of 1 in.	0 1 3
DO., *ft. cube*	0 12 6

FIR fixed in wall plates, lintels, sleepers, etc., per ft. cube	0 5 6
DO. framed in floors, roofs, etc., per ft. cube	0 6 6
DO. framed in trusses, etc., including ironwork, per ft. cube	0 7 6
PITCH PINE, add 33⅓ per cent.	
FIXING only boarding in floors, roofs, etc., per sq.	0 13 6
SARKING FELT laid, 1-ply, per yd.	0 1 6
DO. 3-ply, per yd.	0 1 9
CENTERING for concrete, etc., including horsing and striking, per sq.	2 10 0
TURNING pieces to flat or segmental soffits, 4½ in. wide, per ft. run	0 0 4½
DO. 9 in. wide and over per ft. sup.	0 1 2

continued overleaf.

CARPENTER AND JOINER: *continued.*

SHUTTERING to face of concrete, per square	£1	10	0
DO. in narrow widths to beams, etc., per ft. sup.	0	0	6
USE and waste of timbers, allow 25 per cent. of above prices.			
SLATE BATTENING, per sq.	£0	12	6
DEAL boarding to flats, 1 in. thick and firrings to falls, per square	2	10	0
STOUT feather-edged tilting fillet to eaves, per ft. run	0	0	6
FEATHER-edged springer to trimmer arches, per ft. run	0	0	4
STOUT herringbone strutting (joists measured in), per ft. run	0	0	6
SOUND boarding, ⅞ in. thick and fillets nailed to sides of joists (joists measured over), per square	2	0	0
RUBEROID or similar quality roofing, one ply, per yd. sup.	0	2	3
DO., two-ply, per yd. sup.	0	2	6
DO., three-ply, per yd. sup.	0	3	0
TONGUED and grooved flooring, 1½ in. thick, laid complete with splayed headings, per square	2	5	0
DEAL skirting torus, moulded 1½ in. thick, including grounds and backings, per ft. sup.	0	1	0
TONGUED and mitred angles to do.	0	0	6
WOOD block flooring standard blocks laid herringbone in mastic :			
Deal 1 in. thick, per yd. sup.	0	10	0
DO. 1¼ in. thick, per yd. sup.	0	12	0
Maple 1¼ in. thick, per yd. sup.	0	15	0
DEAL moulded sashes, 1¾ in. with moulded bars in small squares, per ft. sup.	0	2	6
DO. 2 in. do., per ft. sup.	0	2	9
DEAL cased frames, oak sills and 2 in. moulded sashes, brass-faced pulleys and iron weights, per ft. sup.	0	4	6
MOULDED horns, extra each	0	0	3
DOORS, 4-panel square both sides, 1⅛ in. thick, per ft. sup.	0	2	6
DO. moulded both sides per ft. sup.	0	2	9
DO. 2 in. thick, square both sides, per ft. sup.	0	2	9
DO. moulded both sides, per ft. sup.	0	3	0
DO. in 3 panels, moulded both sides, upper panel with diminished stiles with moulded bars for glass, per ft. sup.	0	3	6
If in oak, mahogany or teak, multiply 3 times.			
DEAL frames, 4 in. × 3 in., rebated and beaded, per ft. cube	£0	15	0
Add for extra labours, per ft. run	0	0	1
STAIRCASE work :			
DEAL treads 1⅛ in. and risers 1 in., tongued and grooved including fir carriages, per ft. sup.	0	2	6
DEAL wall strings, 1⅛ in. thick, moulded, per ft. run	0	2	6
If ramped, per ft. run	0	5	0
SHORT ramps, extra each	0	7	6
ENDS of treads and risers housed to strings, each	0	1	0
2 in. deal mopstick handrail fixed to brackets, per ft. run	0	1	6
4½ in. × 3 in. oak fully moulded handrail, per ft. run	0	5	6
1¼ in. square deal bar balusters, framed in, per ft. run	0	0	6
FITTINGS :			
SHELVES and bearers, 1 in., cross-tongued, per ft. sup.	0	1	6
1¼ in. beaded cupboard fronts, moulded and square, per ft. sup.	0	2	9
TEAK grooved draining boards, 1¼ in. thick and bedding, per ft. sup.	0	4	6
IRONMONGERY :			
Fixing only (including providing screws) :			
To DEAL—			
Hinges to sashes, per pair	0	1	2
Do. to doors, per pair	0	1	7
Barrel bolts, 9 in., iron, each	0	1	0
Sash fasteners, each	0	1	0
Rim locks, each	0	1	9
Mortice locks, each	0	4	0

SMITH

SMITH, *weekly rate equals* 1*s.* 9½*d. per hour ;* MATE, *do.* 1*s.* 4*d. per hour ;* ERECTOR, 1*s.* 9½*d. per hour ;* FITTER, 1*s.* 9½*d. per hour ;* LABOURER, 1*s.* 4*d. per hour.*

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Mild Steel in British standard sections, per ton	£12	10	0
Sheet Steel :			
Flat sheets, black, per ton	17	0	0
DO., *galvd., per ton*	19	0	0
Corrugated sheets, galvd., per ton	18	10	0
Driving screws, galvd., per grs.	0	1	10
Washers, galvd., per grs.	0	1	1
Bolts and nuts per cwt. and up	1	18	0

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MILD STEEL in trusses, etc., erected, per ton	25	10	0
DO., in small sections as reinforcement, per ton	16	10	0
DO., in compounds, per ton	17	0	0
DO., in bar or rod reinforcement, per ton	20	0	0
WROT-IRON in chimney bars, etc., including building in, per cwt.	2	0	0
DO., in light railings and balusters, per cwt.	2	5	0
FIXING only corrugated sheeting, including washers and driving screws, per yd.	0	2	0

PLUMBER

PLUMBER, 1*s.* 9½*d. per hour ;* MATE OR LABOURER, 1*s.* 4½*d. per hour.*

*

Lead, milled sheet, per cwt.	£1	9	0
DO. *drawn pipes, per cwt.*	1	10	0
DO. *soil pipe, per cwt.*	1	12	0
DO. *scrap, per cwt.*	1	0	0
Copper, sheet, per lb.	0	1	3
Solder, plumber's, per lb.	0	1	3
DO. *fine, per lb.*	0	1	9
Cast-iron pipes, etc. :			
L.C.C. soil, 3 in., per yd.	0	4	0
DO. *4 in. per yd.*	0	4	9½
R.W.P., 2½ in., per yd.	0	2	2
DO. *3 in., per yd.*	0	2	7
DO. *4 in., per yd.*	0	3	6½
Gutter, 4 in. H.R., per yd.	0	1	6½
DO. *4 in. O.G., per yd.*	0	1	10½

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MILLED LEAD and labour in gutters, flashings, etc. per cwt.	3	2	6
LEAD PIPE, fixed, including running joints, bends, and tacks, ½ in., per ft.	0	2	0
DO. ⅝ in., per ft.	0	2	3
DO. 1 in., per ft.	0	3	0
DO. 1¼ in., per ft.	0	4	0
LEAD WASTE or soil, fixed as above, complete, 2½ in., per ft.	0	6	0
DO. 3 in., per ft.	0	7	0
DO. 4 in., per ft.	0	9	9
WIPED soldered joint, ½ in., each	0	2	6
DO. ⅝ in., each	0	3	2
DO. ¾ in., each	0	3	8
BRASS screw-down stop cock and two soldered joints, ½ in., each	0	11	0
DO. ⅝ in., each	0	13	6
CAST-IRON rainwater pipe, jointed in red lead, 2½ in., per ft. run	0	1	7
DO. 3 in., per ft. run	0	2	0
DO. 4 in., per ft. run	0	2	10
CAST-IRON H.R. GUTTER, fixed, with all clips, etc., 4 in., per ft.	0	2	0
DO. O.G., 4 in., per ft.	0	2	3
CAST-IRON SOIL PIPE, fixed with caulked joints and all ears, etc., 4 in., per ft.	0	4	6
DO. 3 in., per ft.	0	3	6
Fixing only :			
W.C. PANS and all joints, P. or S., and including joints to water waste preventers, each	2	5	0
BATHS, with all joints	1	3	6
LAVATORY BASINS only, with all joints, on brackets, each	1	10	0

PLASTERER

PLASTERER, 1*s.* 9½*d. per hour (plus allowances in London only) ;* LABOURER, 1*s.* 4*d. per hour.*

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Chalk lime, per ton	£2	17	0
Hair, per cwt.	2	0	0
Sand and cement see "Excavator," etc., above.			
Lime putty, per cwt.	£0	2	9
Hair mortar, per yd.	1	7	0
Fine stuff, per yd.	1	14	0
Sawn laths, per bdl.	0	2	5
Keene's cement, per ton	5	15	0
Sirapite, per ton	3	10	0
DO. *fine, per ton*	3	18	0
Plaster, per ton	3	0	0
DO. *per ton*	3	12	6
DO. *fine, per ton*	5	12	0
Thistle plaster, per ton	3	9	0
Lath nails, per lb.	0	0	4

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LATHING with sawn laths, per yd.	0	1	7
METAL LATHING, per yd.	0	2	3
FLOATING in Cement and Sand, 1 to 3, for tiling or woodblock. ¾ in., per yd.	0	2	4
DO. vertical, per yd.	0	2	7
RENDER, on brickwork, 1 to 3, per yd.	0	2	7
RENDER in Portland and set in fine stuff, per yd.	0	3	3
RENDER, float, and set, trowelled, per yd.	0	2	9
RENDER and set in Sirapite, per yd.	0	2	5
DO. in Thistle plaster, per yd.	0	2	5
EXTRA, if on but not including lathing, any of foregoing, per yd.	0	0	5
EXTRA, if on ceilings, per yd.	0	0	5
ANGLES, rounded Keene's on Portland, per ft. lin.	0	0	6
PLAIN CORNICES, in plaster, per inch girth, including dubbing out, etc., per ft. lin.	0	0	3
WHITE glazed tiling set in Portland and jointed in Parian, per yd., from	1	11	6
FIBROUS PLASTER SLABS, per yd.	0	1	10

GLAZIER

GLAZIER, 1*s.* 8*d. per hour.*

*

Glass : 4ths in crates :			
Clear, 21 oz.	£0	0	4½
DO. 26 oz.	0	0	5
Cathedral white, per ft.	0	0	7½
Polished plate, British ¼ in., up to 2 ft. sup. per ft.	0	1	2
DO. *4 ft. sup.* "	0	2	3
DO. *6 ft. sup.* "	0	2	6
DO. *20 ft. sup.* "	0	3	1
DO. *45 ft. sup.* "	0	3	3
DO. *65 ft. sup.* "	0	3	5
DO. *100 ft. sup.* "	0	3	10
Rough plate, ¼ in., per ft.	0	0	6½
DO. *½ in. per ft.*	0	0	6½
Linseed oil putty, per cwt.	0	15	0

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GLAZING in putty, clear sheet, 21 oz.	0	0	11
DO. 26 oz.	0	1	0
GLAZING in beads, 21 oz., per ft.	£0	1	1
DO. 26 oz., per ft.	0	1	4
Small sizes slightly less (under 3 ft. sup.).			
Patent glazing in rough plate, normal span, 1*s.* 6*d.* to 2*s.* per ft.			
LEAD LIGHTS, plain, med. sqs. 21 oz., usual domestic sizes, fixed, per ft. sup. and up	£0	3	0
Glazing only, polished plate 6½*d.* to 8*d.* per ft. according to size.			

PAINTER AND PAPERHANGER

PAINTER, 1*s.* 8*d. per hour ;* LABOURER, 1*s.* 4*d. per hour ;* FRENCH POLISHER, 1*s.* 9*d. per hour ;* PAPERHANGER, 1*s.* 8*d. per hour.*

*

Genuine white lead, per cwt.	£2	7	6
Linseed oil, raw, per gall.	0	3	6
DO., *boiled, per gall.*	0	3	8
Turpentine, per gall.	0	4	0
Liquid driers, per gall.	0	8	6
Knotting, per gall.	0	18	0
Distemper, washable, in ordinary colours, per cwt., and up	2	5	0
Double size, per firkin	0	3	6
Pumice stone, per lb.	0	0	4½
Single gold leaf (transferable), per book	0	2	0
Varnish, copal, per gall. and up	0	12	6
DO., *flat, per gall.*	1	2	0
DO., *paper, per gall.*	0	16	0
French polish, per gall.	0	17	6
Ready mixed paints, per gall. and up	0	15	0

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LIME WHITING, per yd. sup.	0	0	3
WASH, stop, and whiten, per yd. sup.	0	0	6
DO., and 2 coats distemper with proprietary distemper, per yd. sup.	0	0	9
KNOT, stop, and prime, per yd. sup.	0	0	7
PLAIN PAINTING, including mouldings, and on plaster or joinery, 1st coat, per yd. sup.	0	0	10
DO., subsequent coats, per yd. sup.	0	0	9
DO., enamel coat, per yd. sup.	0	1	2½
BRUSH-GRAIN, and 2 coats varnish, per yd. sup.	0	3	8
FIGURED DO., DO., per yd. sup.	0	5	6
FRENCH POLISHING, per ft. sup.	0	1	2
WAX POLISHING, per ft. sup.	0	0	6
STRIPPING old paper and preparing, per piece	0	1	7
HANGING PAPER, ordinary, per piece	0	1	10
DO., fine, per piece, and upwards	0	2	4
VARNISHING PAPER, 1 coat, per piece	0	9	0
CANVAS, strained and fixed, per yd. sup.	0	3	0
VARNISHING, hard oak, 1st coat, yd. sup.	0	1	2
DO., each subsequent coat, per yd. sup.	0	0	11

SUNDRIES

Fibre or wood pulp boardings, according to quality and quantity.
The measured work price is on the same basis . . . per ft. sup. £0 0 2½

FIBRE BOARDINGS, including cutting and waste, fixed on, but not including studs or grounds per ft. sup. . . . from 3d. to	0	0	6

S

Plaster board, per yd. sup. . from	0	1	7
PLASTER BOARD, fixed as last, per yd. sup. . . . . from	0	2	8

S

Asbestos sheeting, ⅜ in., grey flat, per yd. sup.	0	2	3
DO., *corrugated, per yd. sup.*	0	3	3
ASBESTOS SHEETING, fixed as last, flat, per yd. sup.	0	4	0
DO., corrugated, per yd. sup.	0	5	0
ASBESTOS slating or tiling on, but not including battens, or boards, plain "diamond" per square, grey	2	15	0
DO., red	3	0	0
Asbestos cement slates or tiles, ⅜ in. punched per M. grey	16	0	0
DO., *red*	18	0	0
ASBESTOS COMPOSITION FLOORING : Laid in two coats, average ¾ in. thick, in plain colour, per yd. sup.	0	7	0
DO., ½ in. thick, suitable for domestic work, unpolished, per yd.	0	6	6

S

Metal casements for wood frames, domestic sizes, per ft. sup.	0	1	6
DO., *in metal frames, per ft. sup.*	0	1	9
HANGING only metal casement in, but not including wood frames, each	0	2	10
BUILDING in metal casement frames, per ft. sup.	0	0	7

S

Waterproofing compounds for cement.
Add about 75 per cent. to 100 per cent. to the cost of cement used.

S

PLYWOOD, per ft. sup.

Thickness	⅛ in.			¼ in.			⅜ in.			½ in.		
Qualities ..	AA.	A.	B.	AA.	A.	B.	AA.	A.	B.	AA.	A.	B.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch	4	3	2	5	4	3	7½	6	4½	9½	7	6
Alder	3½	3	2	5	4	3	6½	5½	4½	8	7	6
Gaboon Mahogany	4	3	3	6½	5½	4	9½	7½	—	1 0½	10	—
Figured Oak 1 side	5½	7	—	10	8	—	11½	—	—	1 6	—	—
Plain Oak 1 side	5½	6	—	7½	7	—	9½	—	—	1 0	—	—
Oregon Pine	5	4	—	5½	5	—	6	—	—	—	—	—