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THE BEGINNER

How is the young architect setting out on his career to gain the practical experience necessary to the practice of his profession? This is a vital question which exercises the minds of those whose business it is to train him; but one which brings itself painfully and pressingly home to his own mind as he faces the practical business of architecture. He steps out from the school—fortified with visions (and visions are essential)—into the world of actual building. He may have the principles of architectural design clear in his mind; he may be a consummate draughtsman in the studio manner; he may have an array of theoretical knowledge of construction and of working drawings; but the practical application of these to the facts of building is something which can only be learnt in actual experience. Too often he is in the position of one who, intending to visit another country, learns its language as best he can before he starts, only to find himself, on landing, bewildered and speechless, and it is only after real effort that he is able to make himself at home. The practical application of knowledge is stimulating, but never entirely gratifying at first. It is a kind of test examination of a severe kind. Each case has its own application, and experience has to fill in many gaps which theory cannot deal with in detail.

It has been said, perhaps cynically, that the practice of architecture is nine-tenths business and one-tenth art; but the wider definition of art as "the doing well of that which needs doing" may cover the whole of it. The architect is not like the painter, who is often a lonely artist, working out beauty by himself—the architect finds himself, even in the smallest jobs, the controller of a wide-reaching organization. He works through the minds and hands of others. He finds himself confronted with a new world, of extremely complicated government. Here is theory tempered by age-long experience and rule-of-thumb methods, an accumulation of knowledge based on the facts of construction, deep-rooted tradition which goes back to the ancient history of the crafts. Here everything is reduced to measurement, of material and time and labour, and relentless pounds, shillings, and pence. He has to deal with the powers which control him—councils and surveyors, and so on, as well as those under his own control. It has been said that schools of architecture should include psychology in the subjects of their lecture lists. There is a story of an architect who visited a job in a tall hat, hoping to make a better impression. We need a sense of humour and a good deal of the human touch, which are in themselves qualities essential to good business and good leadership. Contractors and workmen know their job, and they will soon discover flaws of construction, or omissions—though they may loyally provide a remedy. Architects owe much to the loyal spirit of co-operation which is so often happily found between them and contractors and "all trades."

The young architect enters this new and varied world equipped with a knowledge of design, of construction, of the rules of professional practice and procedure. He knows the rules of the game, but there is much to learn in the playing of it. He looks round for guidance and advice. It is the experience of most architects that advice and guidance have been generously forthcoming—an experience gratefully remembered. Perhaps every architect should keep a diary, frankly and fully, from which, after a certain number of years, he should compile a pamphlet on not only "how to do it," but "how not to do it." A library of such pamphlets would be of inestimable value. Such a book as *The Supervision of Building Work and the Duties of a Clerk of Works*, by Mr. H. J. Leaning, a new edition of which has just appeared, is of the greatest practical help. It outlines and crystallizes into a convenient form the matters essential to a job, as it is actually carried out from the point of view of the man who supervises. It contains much practical wisdom, based on experience of building as it is in fact, and of human nature as it manifests itself in building. It shows the machinery in motion, and in doing so indicates how method and organization may save time and money, and what is more—disputes. It shows how responsibility is allotted, how time and materials may be best arranged, and, above all, the necessity for accuracy in every detail, and for a written record of every item, even the smallest, dated and signed. Perhaps the most valuable parts of the book, however, from the architect's point of view, are the chapters dealing with "all trades," under separate headings and incorporating innumerable practical "tips." In the smaller job, where there is no clerk of works, and the architect does his own supervision, such advice is invaluable.

More books of this kind would be welcome. One of the architect's main difficulties is that he cannot be on the work the whole time, and watch the carrying out of his drawings in detail, however conscientious his supervision may be. It is not easy for him to put himself in the other man's place. It is, however, only by visualizing the conditions of work that he can attain that serenity and certainty, that absolute welding together of design and construction, in a word, that mastery, which is the hall-mark of good architecture.

A photograph of this detail is given on the preceding page.

NEWS AND TOPICS

SIR ROBERT LORIMER, who was amongst those who received honorary degrees at the Edinburgh University, gave expression to the principles upon which he sets out to design when he replied to the toast of "The University Graduates," at a dinner given by the University to men distinguished in science and art. A university, in Sir Robert's opinion, tends to become less of an academic institution and more of a workshop, and its buildings must have more of the workshop character. "In fact, in these practical days they must not be tied by any preconceived ideas regarding the Orders of Architecture, but must every time try and make buildings as perfect as possible for the special purpose for which they were to be used." I am glad to see that this is not all of the distinguished architect's creed, for fitness is only a foundation for beautiful design. "Fitness for purpose was a splendid slogan, but it did not, of course, carry them all the way. However, if an architect tried to make his building perfectly fit for its purpose, and could add a feeling for proportion, for light and shade, and here and there a touch of playfulness, it seemed to him he would produce a more live building than if he went on ringing the changes with the dead features of the Orders of Classic Architecture." This seems to me a sound enough theory, provided that the architect has acquired a profound knowledge of beauty of proportion and of light and shade. Just how he is to acquire this important knowledge is a subject somewhat too extensive to be dealt with adequately in an after-dinner speech, and intelligent study of the Orders with a view to education and not to copyism has before now been advocated by Sir Robert Lorimer himself.

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Standard specifications for steel building construction have recently been adopted in 130 cities in the United States and Canada. The actual regulations were drafted by the American Institute of Steel Construction, and one of the most important governs the working stress in steel construction. It is now possible to insist on 18,000 lbs. stress per square inch, with an adequate factor of safety. It is officially estimated that there will be an annual saving of over a million pounds effected in the New York metropolitan district alone by using these standard specifications. Special attention, too, has been given to the development of artistic design in steel bridges, which has been overlooked in many hideous American structures.

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So many have lamented the increase of bungalows in England that it is something of a shock to find that bungalows in themselves are not necessarily objectionable. The one-story cottages of Ireland take their place without offence in the landscape, and it would seem that the properly designed bungalow should have advantages over the two-story building in that it is easier to bring it into harmony with its surroundings, or to hide it in a screen of foliage. Not that one would advocate a policy of lighting candles and then promptly hiding them under bushels, though we probably all know some bungalow that would be better extinguished. The bungalow has such great advantages in respect to labour-saving, in that it obviates the need of climbing stairs, that it would be a pity to condemn it hastily on account of the great many unpleasant, ill-designed, and flimsily constructed specimens that have been recently erected; further study of the artistic possibilities of the bungalow will probably lead to appreciation.

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The artistic virtues of the one-story Irish cottage are made to appear to great advantage by contrast with the unsightliness of many of the new two-story houses which are now being erected in Ireland to designs and of materials akin to those adopted by jerry-builders in England. Beside a gaunt, tall, thin-walled modern house, which appears to have been made as part of a terrace and to have strayed into detachment, the granite-built, thick-walled, and humble cottage shows up as obviously the more attractive type of building, as far as appearance is concerned. Its material harmonizes with the stone-built fences which surround the adjoining fields, and the low level of its eaves affords a sense of continuity, the house being but little higher than the outbuildings, which are often only one course higher than the wall of the yard. In colour, the granite-built walls match the granite boulders scattered upon the hillside, or if whitewashed, the surfaces show up in strong contrast to the small windows and the shadow in the open doorway. A practice of pointing the joints of the roof-slates introduces a light tone among the greys of the roof, and this practical device gives additional interest and character to what would otherwise be a plain expanse of sombre tone. The smallness of the Irish cottage taken together with its extreme simplicity probably has something to do with its charm. Our modern thin-walled buildings, erected to greater heights in accordance with by-laws directed towards hygiene rather than art, look all the more flimsy on account of their greater size and the much larger windows demanded by our ideas of practical convenience.

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I was reading the other day Charles Mackay's *Through the Long Day*, a pleasant although rather verbose (as was the custom in Victorian times), account of that industrious writer's life and experiences, and I was suddenly pulled up by a phrase which told me that the writer, on first coming to London in 1832, was introduced to a Mr. Benjamin Lumley, "a young solicitor residing in Quality Court." Mr. Benjamin Lumley, no doubt a most estimable gentleman, did not particularly intrigue me, but Quality Court certainly did, for, as it happened, I had only recently heard that the Georgian houses in that little by-way out of the roar of Chancery Lane, were doomed to destruction; and I wondered if I could find anything else about the place which, even in its present partially rebuilt state, looks as if it must once have been the abode of fashion, if not of romance. But I could find little until old Strype informed me that when he wrote in 1720, it had then been but recently constructed, being, indeed, known as New Court, until the importance of its residents and the excellence of its houses caused it to be "commonly called Quality Court," a name that has stuck to it, although fashion has long since migrated westward. Of course, too, Dickens mentions it, but quite by the way, in *Bleak House*, but very few people seem to know it. Let me recommend the reader to go and have a look at the old houses there before it is too late.

From the "property page" of "The Times." The point is, of course, that the house in Georgian.

The appointment of Mr. John W. Mawson as director of town planning for New Zealand by the New Zealand Government will come as no surprise to his friends, who have known for some time that he was prepared to accept a position of official responsibility giving scope for initiative. His experience, when he was attached to the staff of the late Lord Leverhulme, gave impetus to a mind that was already active and ingenious. At Blackpool and at Weston-super-Mare, where he and his brother, Mr. E. Prentice Mawson, have carried through development schemes of wide scope, he discovered the limitations of British town-planning legislation. In New Zealand the Town Planning Act passed last year has a far more extensive range, and the New Zealand Government hope that Mr. Mawson will assist them in carrying the Act into effect during the five years of his appointment.

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The drawings of the sculptor are different from all others. If they are not, they ought to be, because graphic representation of sculptural form is a different thing from graphic representation of natural form or of architectural form. It has to be not merely three-dimensional, but three-dimensional in a special plastical or glyptical way. And graphic representation of sculptural form must be either plastical or glyptical. So that a sculptor's drawings are a very specialized form of representation. No one wants them to look like drawings from the nude any more than one wants a statue to look like a cast from the nude. Rodin's "John the Baptist" was declared angrily to be that; which is to say that it was not a work of art. It is one of the greatest realistic works of art because it is of the essence of plastic.

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At the Warren Gallery one of Germany's foremost sculptors, Georg Kolbe, is showing drawings as well as statues. Both are of the essence of plastic, for they are realistic without being naked. Kolbe attempts no more than this. His scheme is very limited, but very perfected. At the Beaux-Arts Gallery two young British sculptors attempt a dual scheme. John Skeaping and his wife, Barbara Hepworth, both carve and model. They do both well, but they will do both better if they concentrate either on glyptic or plastic form representation, but not the two. John Skeaping's drawings are very fine plastic representation and have no flavour of cutting whatsoever. He exhibits carvings in several interesting materials, but the results show a plastic preoccupation. Barbara Hepworth also works in interesting materials and shows drawings. Fortunately there is a gulf fixed between these two artists, even if it be neither wide nor deep; but it divides them. Barbara Hepworth's drawings do not exhibit good plastic quality, nor have they a particularly good glypticism; but they are good all the same. It is in her sculpture that she proves her tendency towards true glyptic. "Seated Woman," quite apart from the beauty of its Pavonazza marble, is by way of being a fine piece of carved sculpture. It would seem that these two artists have their respective rather than their identical form-functions. Both simplify; both are at the initial stage of mature production; but, interestingly enough, they simplify differently.

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Lord Waring has given the Liverpool University School of Architecture an annual Travelling Scholarship in Decoration of £50. Professor Reilly, telling the news in the *Liverpool Post*, says: "This is not only a very valuable but a very timely gift. The only real basis for decoration is architecture. A scheme of decoration which does not enhance the architecture of an apartment stands condemned from the first. The great decorators of the past, like Robert Adam and William Kent, have been great architects too. The architect who wishes to be complete master of his art must be able to imitate and control the decoration of his buildings. The eccentricities into which decoration and furniture design have fallen in the last fifty years has been due in the main to the unnatural separation of the architect and the decorator. Without relation to structure, decoration becomes the slave of fashion as much as women's dress. Who knows how far the influence of this gift may extend?"

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One gets to know far more people, I always find, by saying the wrong thing, far more slaps on the back, than by saying just what is right, and at the right moment. Last week I mentioned that only two members of the Bath Advisory Committee had been appointed—the magistrate and the surveyor, and not the member of the R.I.B.A. Reader, with hand on my heart I can now assure you that an architect *has* been appointed. He was appointed twelve months ago, and the name of the gentleman is Mr. Alfred J. Taylor. Six letters have I received, setting me right, and two invitations out to dinner. Of course, a fellow like myself who can make such fine jokes is in great demand.

ASTRAGAL

ENGLISH WALL-PAINTING

[BY RAYMOND McGRATH]

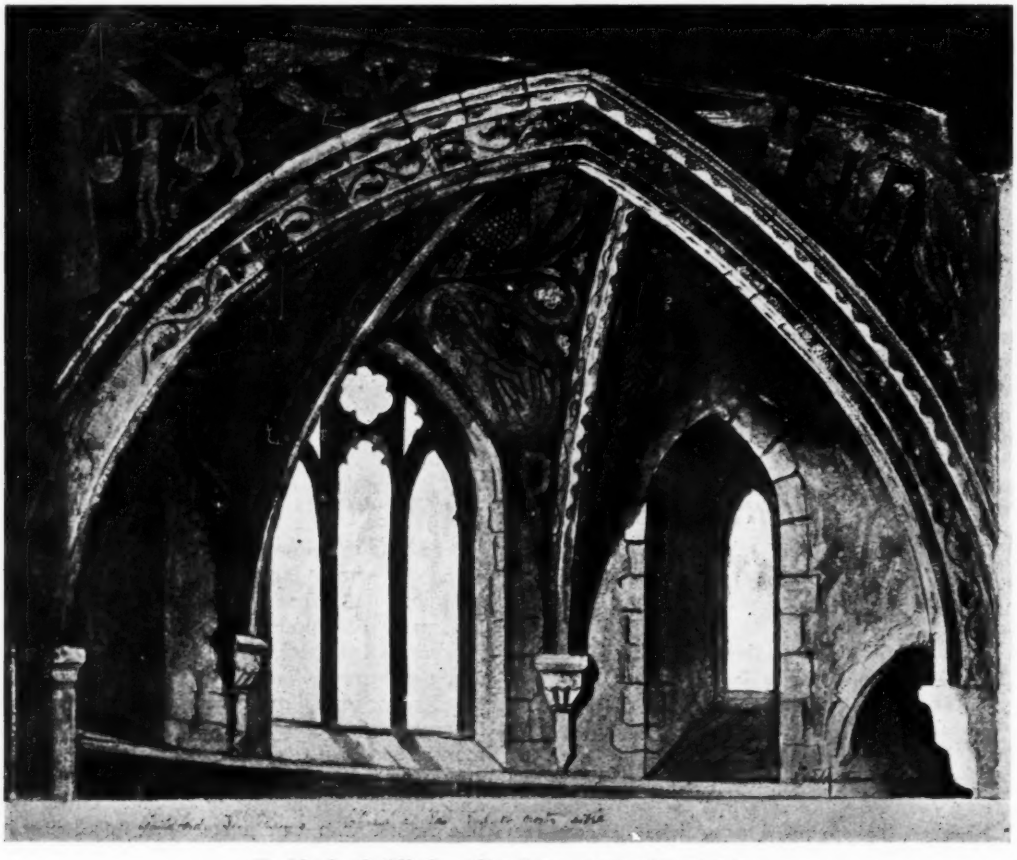
That I might once more reach that plaine
Where first I left my glorious traine,

is the wistful hope that must inevitably spring to the imagination of any artist or architect who reads the fine volume on *English Medieval Painting* recently printed at Cambridge and published by the Pantheon, Casa Editrice of Florence and the Pegasus Press of Paris. This book is the work of Professors Tancred Borenius and E. W. Tristram. It is a labour of many years, for fifty-six of the 101 plates have been drawn, and with very great insight and skill, by Professor Tristram himself.* The period covered by this volume is that of the twelfth, thirteenth, fourteenth, fifteenth and early sixteenth centuries. One hopes now to see a completion of the survey of English wall-painting with the inclusion of such examples as the painted ceiling of Muchelney, Somerset, which, as a decorative architectural ensemble, can have few equals in England.

I will endeavour to indicate the scope of the volume under consideration. We are shown that prior to the twelfth century, English painting is chiefly concerned with MS. illumination. Of the twelfth century itself not very much has been preserved to us, with the exception of the very remarkable painting of "St. Paul and the Viper," in St. Anselm's Chapel at Canterbury Cathedral, which, only discovered thirty years ago, had been walled up for seven hundred years. It is very doubtful whether this work has yet been fully appreciated. I quote the estimation of the authors: "It will be seen that this is a design of extraordinary monumental character, at the same time showing a dramatic power, an ease and flow in the rendering of movement which are quite surprising. A work like this must undoubtedly take rank in quality if not in extent amongst the most important examples of its period surviving, not only in England, but in the whole of Europe." Another and distant example of the painting of this century, at St. Mary's Church at Kempley in Gloucestershire, is evidence of the high standard which must then have been attained throughout the country.

The thirteenth century witnessed a very extensive activity in wall-painting, a great deal of which has survived. London, Winchester, and St. Albans were the chief centres of this activity, and of these Westminster, under the patronage of Henry III, was undoubtedly the greatest. Henry III, it should be thankfully remembered, was ruined in magnificent

* Reproductions and printing are of the very best. It is an admirable book in every way.



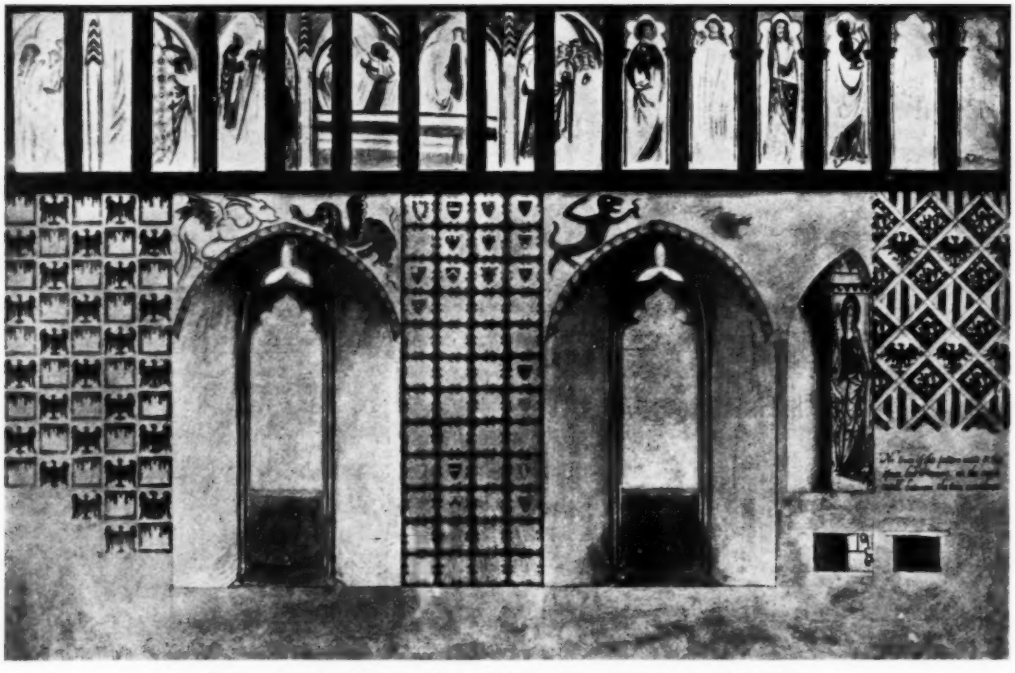
St. Mary's, Guildford. Chapel at east end of north aisle. Early thirteenth century. [*From* English Medieval Painting.]

Winchester Cathedral. The Chapel of the Guardian Angels. Paintings on vaults, circa 1250-1260. [*From* English Medieval Painting.]

fashion by his zeal for fine architecture—a truly noble form of bankruptcy. To this century belongs the " Virgin and Child " of the Bishop's Palace at Chichester, of which it is said that: " This work must undoubtedly be accounted the purest gem of English medieval painting now in existence, so exquisite is it in the tender lyrical feeling which governs the whole conception." One is surprised at the almost Oriental linear gentility of this painting and at its economy and ingenuity of composition. A fine thirteenth-century example of genuine architectural decoration, a pattern of medallions on a flowered ground, is the vault of the Chapel of the Guardian Angels at Winchester Cathedral. This is Gothic decoration at its greatest refinement, naïve without loss of subtlety, energetic without any clumsiness. In London the great decorative schemes of the century were those in the Abbey and Palace of Westminster. In the Palace the Great Chamber of the King contained the *tour de force* of the thirteenth century, which, discovered in 1800, was entirely destroyed in the fire of the Houses of Parliament in 1834. In the Abbey the most interesting survival is the lovely but mutilated retable with Christ in Glory. The thirteenth century may fairly be regarded as the golden age of medieval art in England. It is notable not only for its wall-paintings, but for its embroideries, MS. illuminations, stained glass, painted tiles, and enamels.

The fourteenth century did not witness any falling off in artistic vigour, and the flourishing state of trade between England and the Continent sent a great many works of art across the Channel. English influence abroad is considered to have been very great at this time. The Wilton House diptych, depicting the three Saints, kneeling before the Virgin and Child with angels, is one of the most beautiful productions of the century. It is early Florentine in its delicacy, and hardly what one would expect of an English late-Gothic painter. A particularly interesting section of the chapter on the fourteenth century deals with the influence of " The Vision of Piers Plowman " on the subject-matter of English wall-painting, about fourteen examples of this subject having survived. It is pointed out that the thirty extant MSS. of Piers Plowman are all of poor type, and the wall-paintings influenced by it are likewise of an unskilled character, representing a popular phase of fourteenth-century art. The principal figure of these conceptions is a Christ of the Trades, with a halo of common tools, such as knives and hammers. " A present-day observer will be struck by the continuity of symbolism in ' revolutionary ' art; for what is the ' halo ' of Christ as Piers Plowman but an anticipation of the official emblems adopted by the Soviet Republic of Russia ? "

In the fifteenth century Gothic painting attained to a degree of almost academic decorative excellence. Some of the most delightful drawings of the period are in the sketch-book of Magdalene College, Cambridge, published by Dr. M. R. James in the *Walpole Society Annual*, vol. xiii, 1925. The Eton Chapel wall-paintings are quite the most notable works of this century. " Whitewashed barely a century after their production, these paintings again saw the light of day for a brief period in 1847," and were finally uncovered in 1923. " A real grasp of the exigencies of mural design is evident in the grand and simple quality of line. . . . Enough has here been said to indicate the importance of the Eton wall-paintings; but it is perhaps worth while emphasizing how even in Flanders itself—the fountain-head of the art here exemplified—or in France, there are no fifteenth-century wall-paintings which can be placed alongside of these for importance. And in every textbook and primer of art history the Eton wall-paintings



Hailes Church, Gloucestershire. North wall of chancel, with heraldic patterns slightly restored. [*From* English Medieval Painting.]

should in future be noted and reproduced as proof of the degree of excellence which the art of mural decoration had reached in the England of the Wars of the Roses."

With these great Eton paintings the present survey of English painting comes abruptly to an end, for in 1534 Henry VIII's break with Rome instituted the sickening period of iconoclasm from which the Church does not seem likely to recover. The tradition of church-painting has been entirely lost, and we must seek elsewhere the long-hoped-for revivals. Mrs. Merrifield, in 1846, thought that the time of revival had come in the decoration of the Houses of Parliament. She wrote: " There appear to me to be certain analogies between Italy during the period the fine arts flourished in that country and England at the present time. The same wealth and splendour of our nobles and merchants, the same commercial prosperity, and, above all, the same spirit of inquiry which characterized Italy at the period I have mentioned, is applicable to England at the present moment. The advantage is on the side of England." Her hopes were quite vain.

At the R.I.B.A. Galleries, three years ago, Mr. J. D. Batten, of the Society of Mural Decorators and Painters in Tempera, could not disguise a little mortification and disillusionment. " I have studied mural painting and tried to make myself competent in case any job should ever come along, and now—as far as I am concerned—it is too late, and the best that I can do is to urge those who are young to a more resolute and sustained effort, and to urge municipal and educational bodies to try to be more helpful and, above all, to give their help more promptly and earlier. If this experience of mine were an individual or exceptional case it would be nothing to make a song about; but I am convinced that, so far from being exceptional, it is a common and general experience; and it is quite possible that among you who are listening to me may be artists who have always wished for an opportunity of mural painting, who have felt themselves not unqualified for such a task, who have believed that it would enable them to express better than by any other means the best things that are in them, but who not only have never had a chance but who, straining their eyes to the horizon, cannot see the least glimpse of any chance of approaching."

What is the cause of all this ? " Our education has been so much reading and so little handling." That is one reason. Undoubtedly a greater secret of the whole matter is the new economic outlook. Temporary scales of values have forced us to abandon some of our ideals of permanence, and thus we have our temporary architecture and our cities in constant and fierce flux. It is significant that Stanley Spencer goes off to a remote private chapel to cover walls with magnificent decorations that few people will ever see, and that Rex Whistler decorates a Tate Gallery basement with temporary canvases. For the rest there are tentative wall-paintings scattered over the country, in bathrooms and drawing-rooms. But what of public buildings ? These are of one accord dismally empty, and the man in the street is condemned to seek for satisfaction in the picture galleries, or, if he has less time, which is more likely, in the railway posters.

Architects are certainly to blame for a good deal of this changed attitude. They have not done very much to enlighten those for whom they build. Perhaps they have not the leisure. The selection of an artist to execute a decoration would be a puzzling task to many of them, and not because there is any lack of good painters for such work. A casual recollection of the present exhibitions brings to mind a host of artists with sufficient talent to transform our surroundings on a large scale.

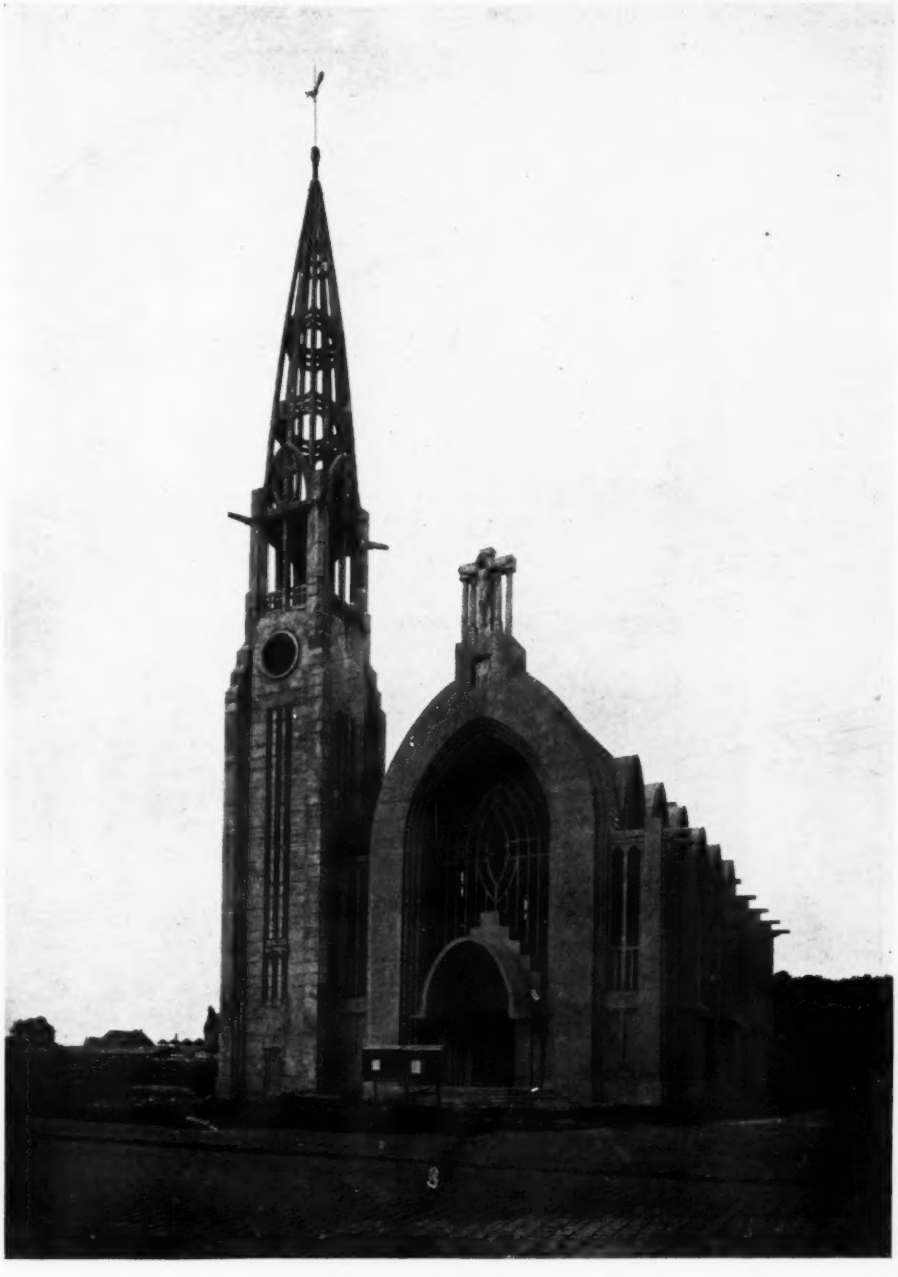
English Medieval Painting, by Tancred Borenius, B.LITT., PH.D., and E. W. Tristram, A.R.C.A., F.S.A. Published by Pantheon, Casa Editrice, Firenze and The Pegasus Press, Paris. Printed at the Cambridge University Press.

A MODERNIST CHURCH

[BY C. CAMPBELL CROWTHER]

THE cubist technique inherent in modern constructional methods is somewhat of an obsession. Whether it issue in neo-Pharaonic monoliths or paulo-post-futurist specimen-cases, the parallelepiped is axiomatic as the basis of construction and style alike (we are not considering painstaking shams). Not a little of this prejudice is due to the dogmatism of the left wing of Continental practice, especially of the Gallic doctrinaires who centre upon Le Corbusier. This group has enjoyed a good Press ever since the exhibition of 1925 gave it a really cosmopolitan publicity; its achievements at Passy have set the seal of the cube indelibly on domestic architecture; but a little, and Le Corbusier had received an international benediction at Geneva instead of Flegenheimer.

It is therefore time to correct the impression that French modernism has but one wing. Paris is not France, and even a locale so nearly metropolitan as Vincennes can boast a remarkable tribute to the adaptation of traditional idioms in the church of St. Louis. Its Byzantinism has, indeed, provoked the extremists to hysteria, and not without

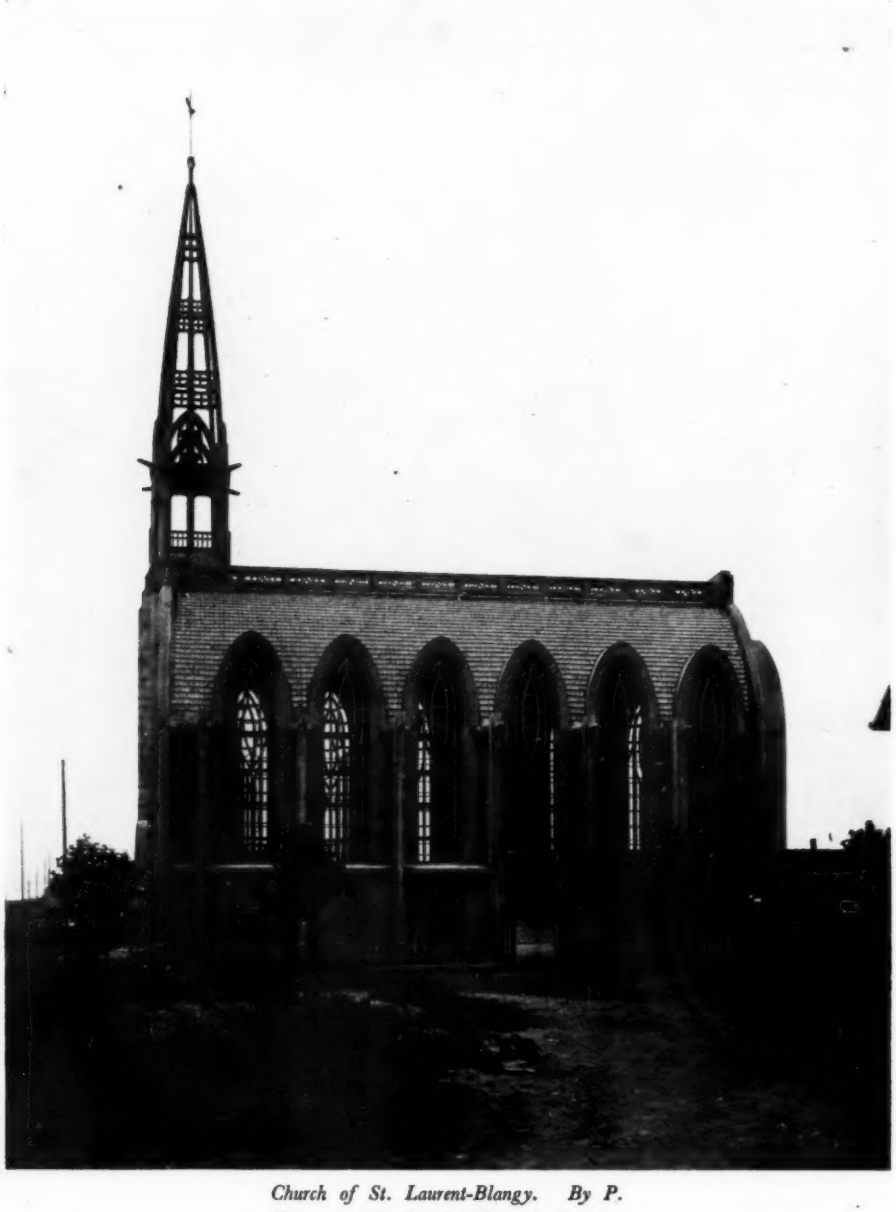


Church of St. Laurent-Blangy. By P. Decaux and E. Crevel. A general view.

reason; the arch is not the most logical of motives in reinforced concrete. Nevertheless, if only because it has not entirely sacrificed tradition to logic, it remains a more satisfying interpretation of its function than its more daring contemporary at Le Raincy.

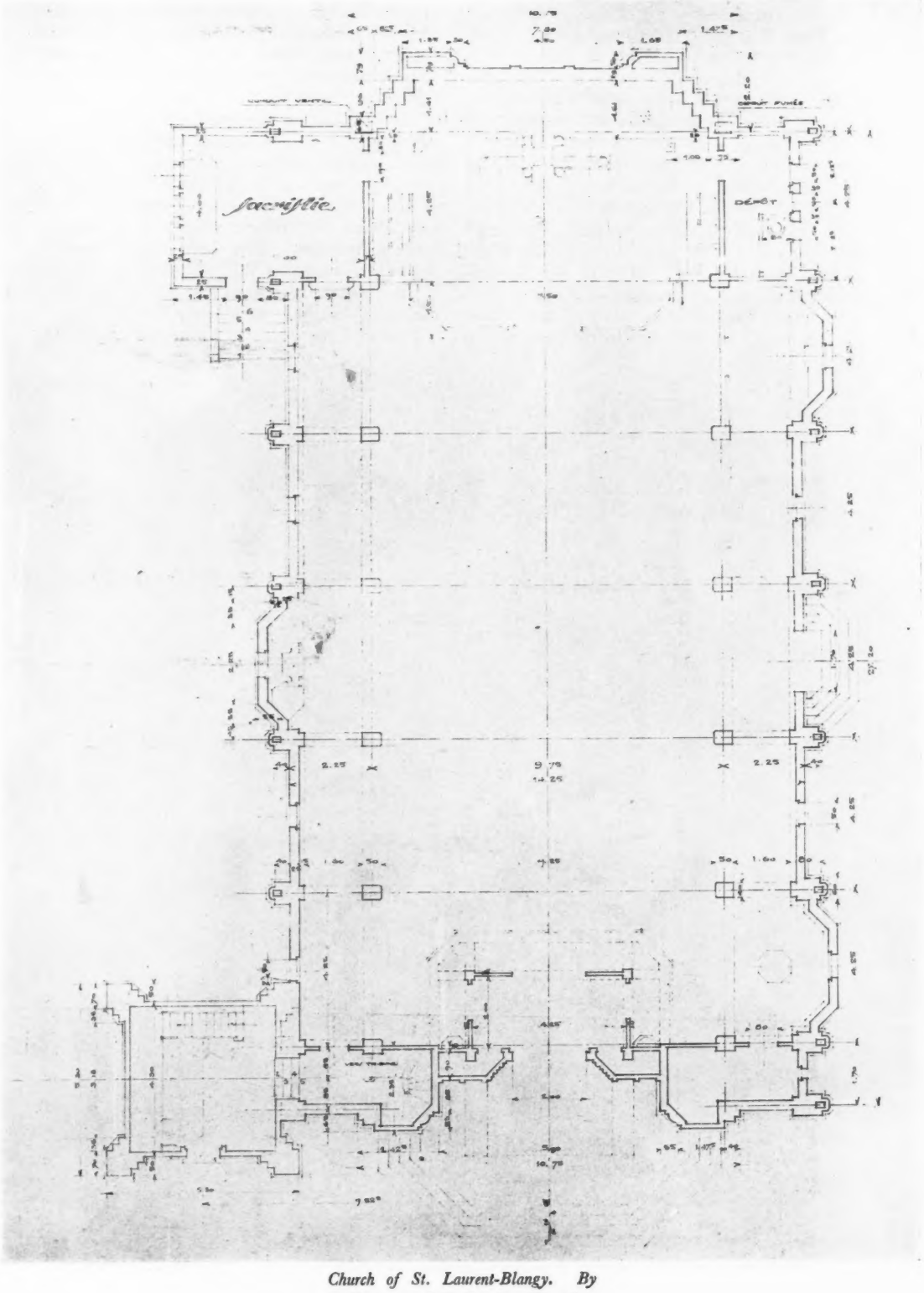
The truth is that house- and church-building are almost the only fields of architectural development in which a natural evolution seems possible as opposed to the revolution dictated by the demand for vast blocks and open floors. Unfortunately, house and church alike vacillate between two extremes of radicalism and conservatism. There is no question but a ruthless cubism offends by its lack of neighbourliness, and consequently the average practitioner, for want of the divine afflatus, seeks refuge in the past. The house and the church remain the most traditional in function of all architectural forms, and to educate tradition is a far more difficult task than to formulate new principles. The departmental store cannot help itself; it will remain a monolith in essence, whatever its trappings. But because it is a monolith—something never contemplated in the styles of the past—it is ill-adapted for demonstrating the lines of a transition. And only by transition can the conservatism of public taste be satisfactorily educated.

For this reason the church of St. Laurent-Blangy is something of a landmark in style. It is the more remarkable in that its situation is precisely one where complete revolution was to be expected. An utterly devastated suburb of Arras—a haunt of artillery and ammunition-dumps well known to our troops during the war, Blangy was virtually a *tabula rasa* in 1919. Here, indeed, was an opportunity for a drastically new idiom; the very soil is concrete *in posse*. There have been plenty of similar opportunities



Church of St. Laurent-Blangy. By P. Decaux and E. Crevel. The side elevation.

in the devastated area. Unfortunately, the tenacious conservatism of the French peasant has generally dictated a perpetuation of that rococo eclecticism which Ballu and his ilk made popular fifty years ago. This in itself is no great tragedy where traditional methods are followed; it simply points to a complete barrenness of invention. But

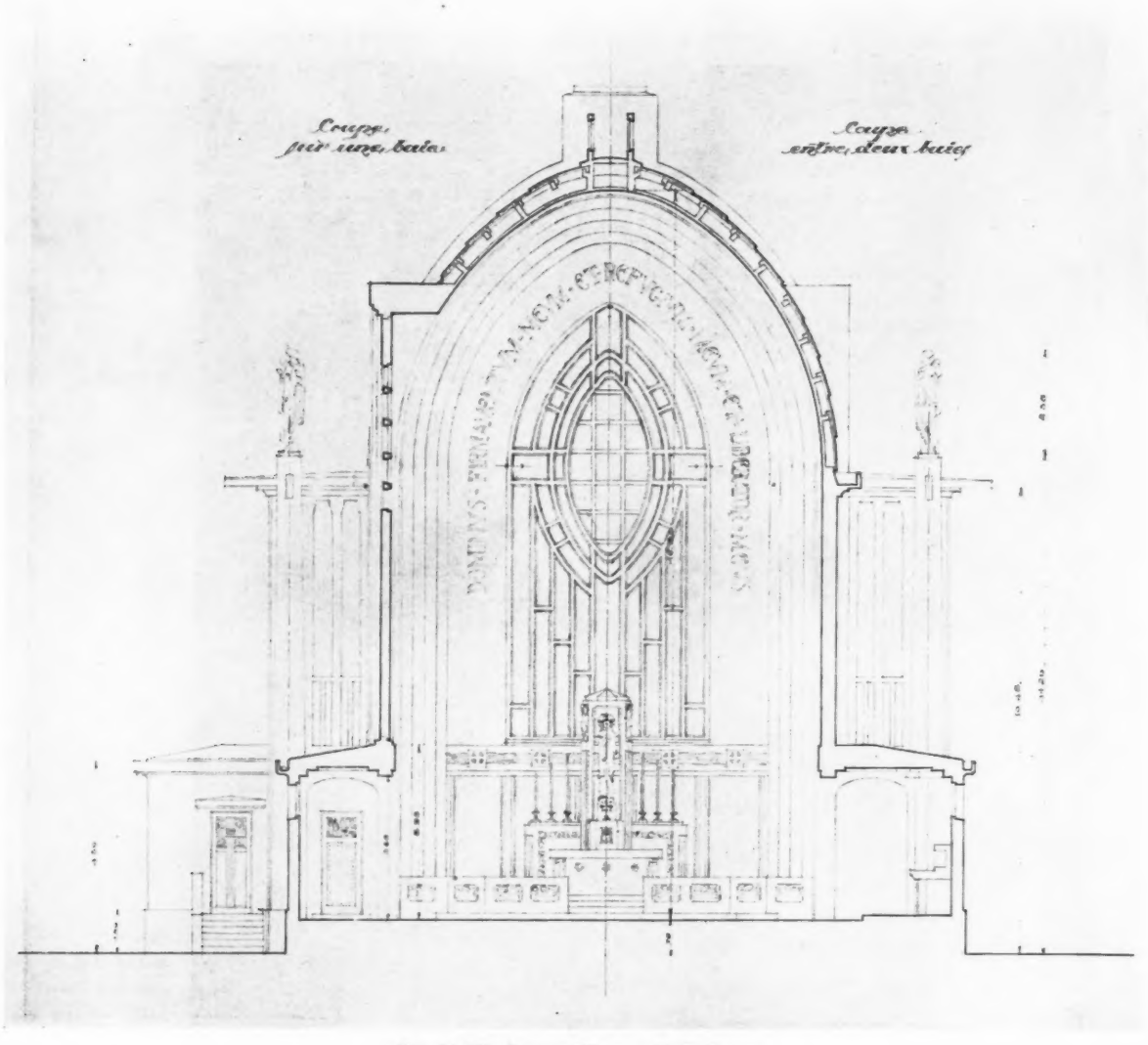


Church of St. Laurent-Blangy. By P. Decaux and E. Crevel. The plan.

where, as is often the case, a dilute Roman-Gothic anachronism is shamelessly committed in modern materials, one is inclined to wish for another war.

On the whole, it is surprising that MM. Decaux and Crevel have so far vanquished provincialism as to impose upon it anything that is at once modern and sincere. That they have produced a design which is both faithful to its medium and loyal to tradition is a notable triumph. For the Byzantinism of Vincennes is no more traditional in France than that of St. John's, Rochdale, is in England, let alone the endless trifling with Egyptian motives. The truth is that the present century has reacted a little too far against Gothic, and the search after an alternative to the trabeated manner has resulted in the imposition of a good many cultural anomalies upon both countries. Yet Gothic still is the most indigenous of art-forms on both sides of the Channel; nothing that the Renaissance or the classical revival produced is so strongly founded in Anglo-French tradition. Pity that Ruskin and Viollet-Leduc have made it more than one's reputation is worth to confess a twentieth-century faith in Gothic at all. Yet, in the example under notice, Gothic and modernism join forces to produce a style which smacks quite as much of the twentieth as of the fourteenth century. One has surely seen that open-work spire at least a dozen times on churches of the earlier flamboyant epoch. And yet it has not a trace of Gothic construction; if it equivocates at all, it is in the monolithic suggestion of the tower proper. Indeed, at a distance the casual observer might dismiss the whole composition as mere imitation; the main front and the windows only just stop short of the pointed arch; the interior is so nearly, yet so definitely not a groined vault. Obviously nothing but concrete could maintain itself in such conditions, yet nothing of the traditionally medieval associations of Catholic worship has been sacrificed to modern methods. The least defensible feature of the design is the use of a flying-buttress motive in the walls; it is structurally superfluous and contributes little to the end elevations—nothing at all to a lateral view.

Passing from detail to form, the exigencies of modern



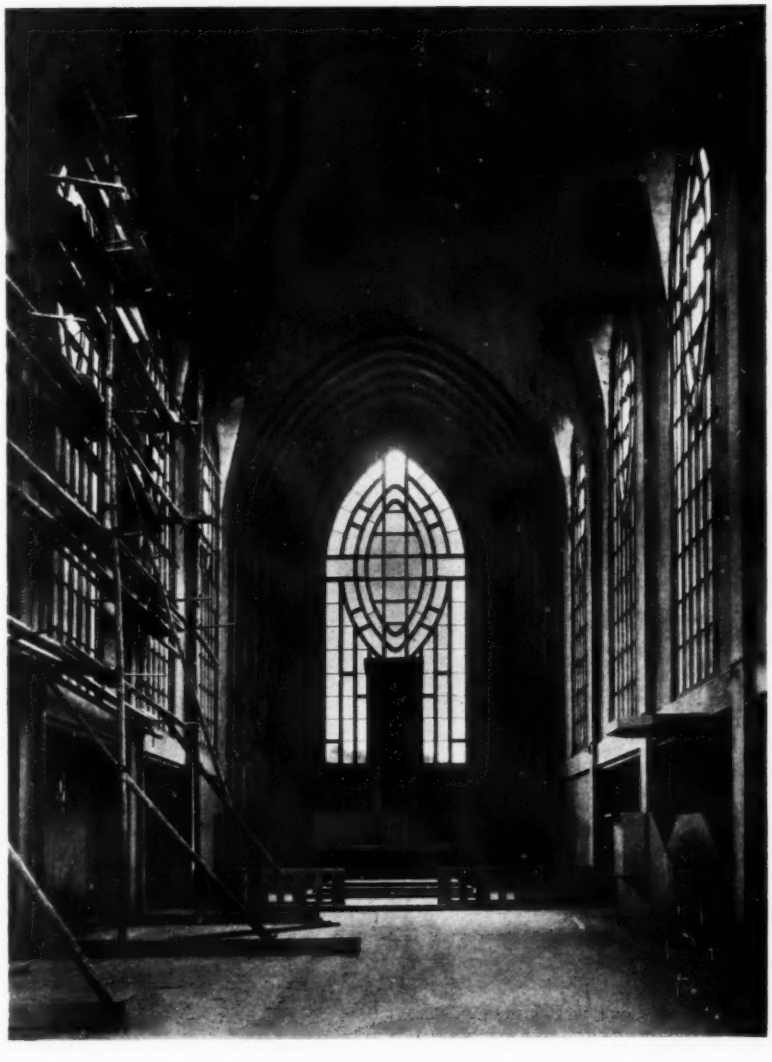
Church of St. Laurent-Blangy. By P. Decaux and E. Crevel. A detail of the east end.

conditions become more obvious. The lateral elevations bear the true stamp of mass-production on a modest scale. Stringent limitation of resources—the usual lot of the ecclesiastical architect—has dictated a simplicity of form which the standardization of detail in the bays does nothing to relieve from a suggestion of baldness; there is, moreover, a lack of emphasis in the east end which heightens a certain impression that but for the tower it would have made an excellent airship hangar. Something of this is undoubtedly due to the frankness with which the architects have made the roof conform to the elliptical vaulting of the interior.

In the matter of decoration the same dualism of motive is apparent as in the composition as a whole. The window-tracery is obviously intended to receive coloured glass, and we are informed that a comprehensive scheme of this kind has had to be shelved for want of funds. In passing, it is not a little curious to observe the close parallelism between Gothic and modern principles of construction; both lend themselves to the treatment of walls as mere protection against the weather, and by a logical consequence to the maximum development of windows. In the present instance they have been handled simply and effectively, though the reminiscence of bygone standards makes one regret the variety which craftsman-methods made possible.

Sculptural details have been treated with a sane realization of the logical limits imposed on the moulding of cement; the temptation of a synthetic Berninism in the Calvary has been successfully resisted. The high altar and pulpit, too, reveal a dignified severity which concedes nothing to the sentimental demand for pastiche adaptations of ideas alien to the spirit of a mechanized age.

Altogether, St. Laurent-Blangy is at the worst a brave attempt to make the best of both worlds; for this reason we cannot think that the hot gospellers of Paris will admit it to their canon. At its best it is an important link in the chain of evolution which, we beg leave of the radicals to suggest, is the only enduring method of educating the time spirit to meet that of the future. We cannot help feeling that the small agriculturists and tradesmen, for whom the church is primarily intended, will not, like a worthy restaurateur of Le Raincy, whose opinion we consulted on the local contribution to the new architecture, have to take the curé's word for its being a church at all. Such a divorce between a building and its function in popular estimation is like talking higher criticism to a child; he will not believe what he cannot understand, and will soon cease to believe that it is worth understanding. We hope that further and less circumscribed opportunities for developing this theme will fall to the lot of MM. Decaux and Crevel. They have at least set a distinguished example.



Church of St. Laurent-Blangy. By P. Decaux and E. Crevel. The altar and east window.

A NEW TOFFEE FACTORY

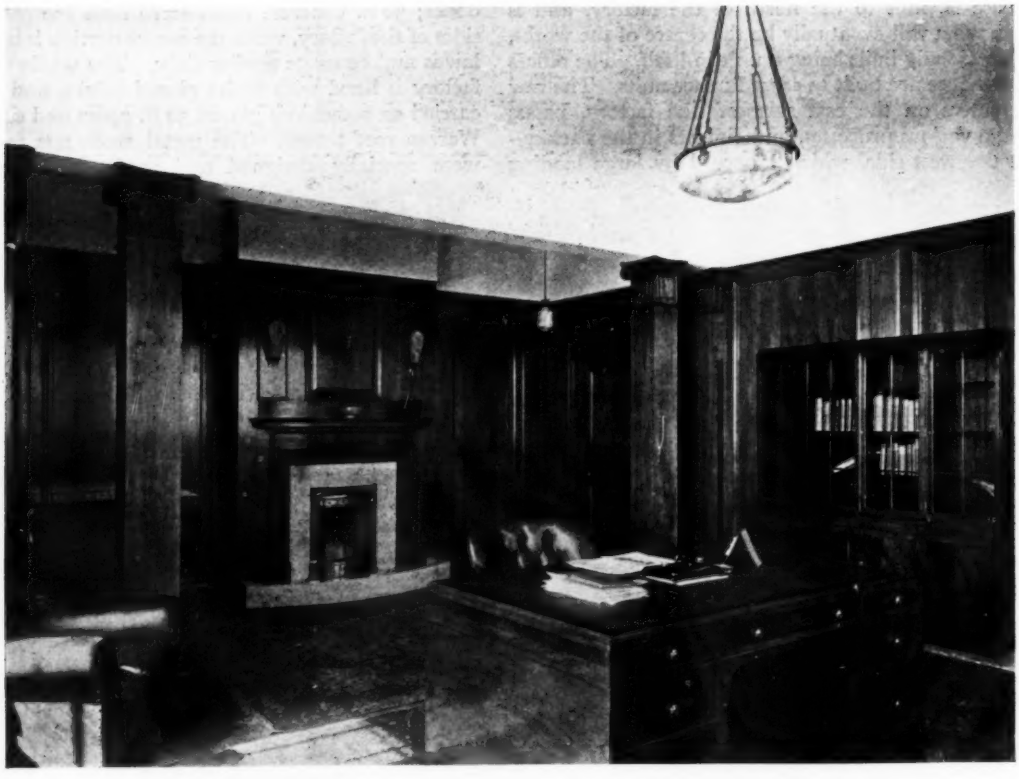
THE accompanying illustrations show a new factory which has been built from the designs of Mr. S. N. Cooke for Harry Vincent, Ltd., the manufacturers of the famous "Blue Bird" and "Harvino" toffees. Originally the works were situated in Wiggin Street, Birmingham, surrounded by tube factories, wire mills, castings shops, and other trades of a similar nature. It was felt that such surroundings were unsuitable to the manufacture of toffee and confectionery, and an estate comprising 154 acres in a charming countryside was acquired at the foot of the Clent Hills, seven miles from Birmingham.

The actual site for the factory is opposite the station, and it is planned on the north side of the main road, the offices facing south, the factory having north light roofs. The

Toffee factory at Clent Hills, near Birmingham, for Harry Vincent, Ltd. By S. N. Cooke. Above, the main façade. Below, detail of main entrance.

power-house is built to the north of the factory, and is situated in what will eventually be the centre of the works, the portion already built being a unit in itself. The offices and power-house are built to serve further units. The raw material enters on the east side of the factory, passes through the various processes, and finishes in the packing-room on the west side, which is served by large loading docks; 30 ft. concrete roads serve both the east and west sides of the factory, while the centre portion is laid out with lawns and concrete paving slabs. The whole of the main factory is lined with white glazed bricks, and the roof is carried on stanchions placed 50 ft. apart and supported by Warren roof trusses. The metal casements to the offices were specially designed and made, and preserve the

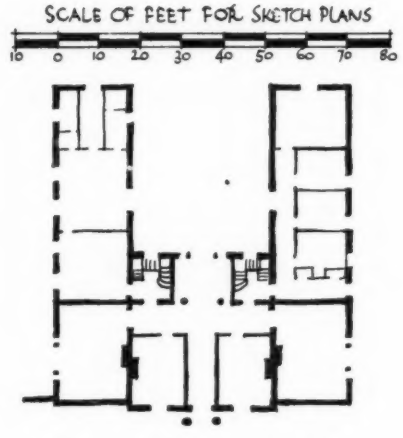
Toffee factory at Clent Hills, near Birmingham, for Harry Vincent, Ltd. By S. N. Cooke. Above, the canteen. Below, power station



Toffee factory at Clent Hills, near Birmingham, for Harry Vincent, Ltd. By S. N. Cooke. Above, the chairman's room. Below, the entrance hall.

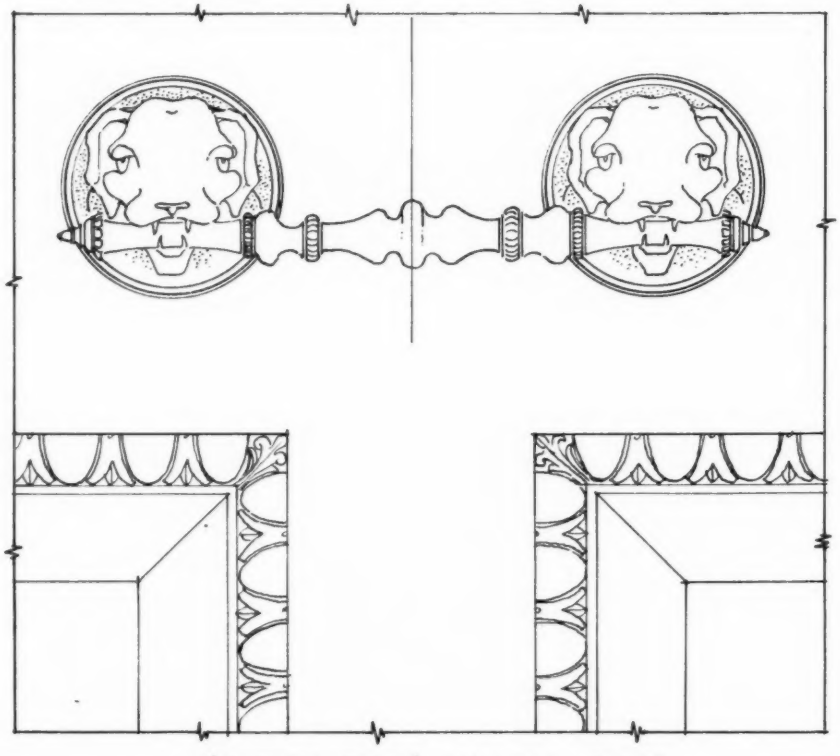
DEMOLISHED

OTTO LODGE

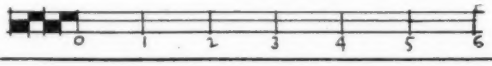


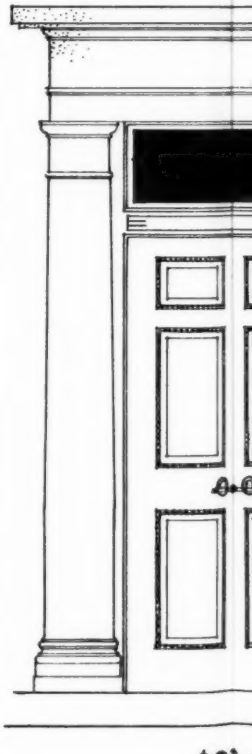
The GROUND FLOOR

The PRINCIPA



BRONZE DOOR HANDLE & DOOR





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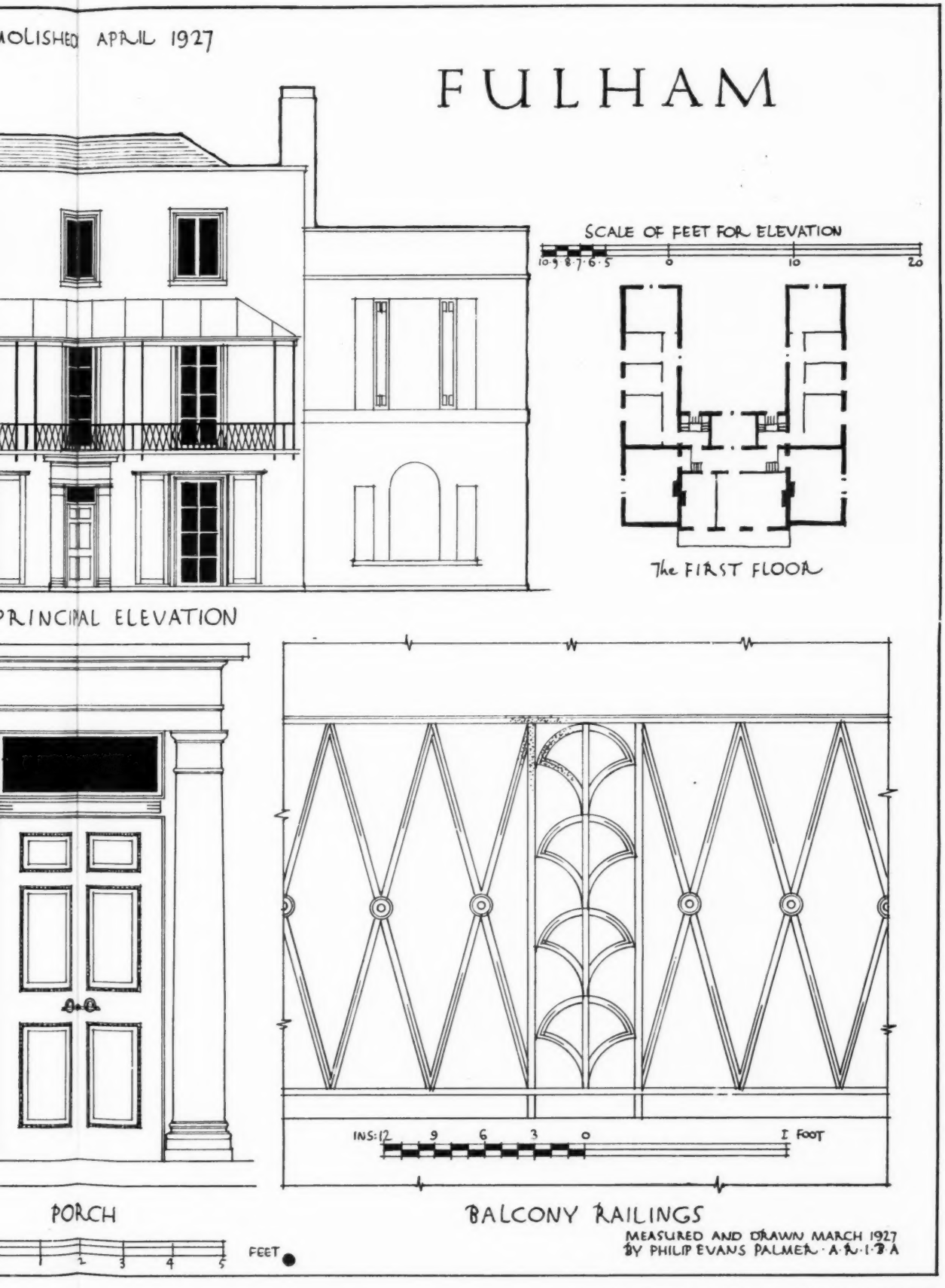


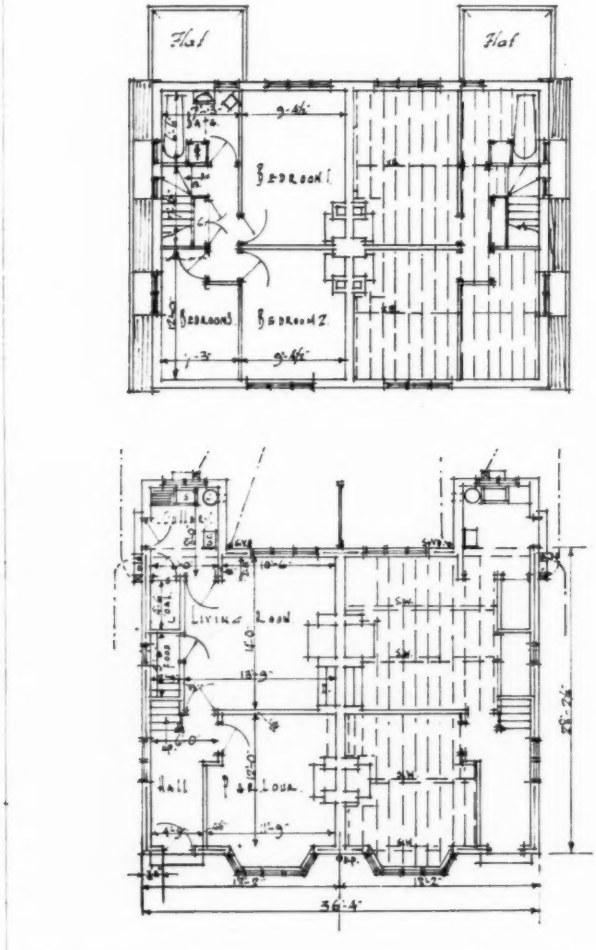
OTTO LODGE, FULHAM. FROM A MEASURED DRAWING BY PHILIP EVANS PALMER.

scale of the elevation, besides harmonizing admirably with the design. Complete supervision of the factory is obtained by windows from the long corridor at the back of the offices. The workpeople enter at the north side of the factory, adjoining which are large changing rooms and lavatories.

On the west of the factory is the canteen, comprising, besides the usual dining-rooms for girls and men, a staff dining-room, private dining-rooms, billiard rooms and recreation rooms, and on the south side are large verandas facing lawns and gardens which have been laid out in a formal manner.

To the west of the canteen is the garden village, of which the first twenty-four houses have so far been built.

Toffee factory at Clent Hills, near Birmingham, for Harry Vincent, Ltd. By S. N. Cooke. Above, the factory. Below, the women's canteen.



Toffee factory at Clent Hills, near Birmingham, for Harry Vincent, Ltd. By S. N. Cooke. Workers' houses.

LITERATURE

LONDON'S POST-WAR HOUSING

THIS book gives a very clear and explicit picture of the activities of the L.C.C. in improving housing conditions for the workers of London, which must make a vivid appeal both to those interested in our metropolis and to those who are concerned with housing developments in other populous centres. In 1898 the Council came to the conclusion that need had arisen for action on its part in the direction of providing new (i.e. additional) houses for the working classes independently of the obligation to provide rehousing accommodation arising from the clearance of insanitary areas. The two chief causes leading to this conclusion were the continued and accelerating rise in value of land, and the difficulties in building, which combined to make builders of working-class property fewer in number and less active in production. The Council proceeded forthwith to purchase several blocks of land on the outskirts of London, and to develop them by the erection of working-class houses. Between 1899 and 1903 nearly 300 acres were acquired for this purpose, and by April 1, 1912, additional housing accommodation had been provided by the Council for about 20,000 persons of the working classes at a cost of roughly £1,000,000. In this way Totterdown Fields estate, Tooting, with 1,261 houses and flats, was developed, and there were partially developed the White Hart Lane estate, Tottenham; the Norbury estate, near Croydon; and the Old Oak estate, Hammersmith. The housing programme was steadily followed on these lines until interrupted by the war, which checked these activities for a time; but before its termination the increased need for dwellings of this class became obvious, and the Government having inaugurated a system of partnership between the State and the local authorities, the L.C.C., in July 1918, formulated a new programme of housing work involving an expenditure of half a million a year for seven years. Owing to the subsequent scarcity of labour and high costs, this programme had to be abandoned; but shortly afterwards the building of houses was resumed and the rate of construction was accelerated in the succeeding years.

A factor in emphasizing the demand for houses was the recognition that under the protection of the Rent Restriction Acts profiteering, sub-letting, and overcrowding assumed proportions not contemplated when the Acts were passed, and that the sufferers were, in the main, those of the poorest classes. By reason of the Acts, property management has been hampered in such a manner that a good landlord is prevented from exercising the influence which can be of benefit to the tenants, and from making that selection of tenants which he should be assisted to make. Nevertheless, owing to the fact that the housing shortage has not yet

Above, the Ossulston estate, St. Pancras. Below, Old Oak estate, Hammersmith. [*From* London County Council Housing.]

been overcome the balance is in favour of continuing the Acts; it is a case of choosing the lesser of two evils.

The following table shows the numbers of new houses provided in the post-war period on the large housing estates and the numbers which can be provided when the estates have been fully developed:

Estate.	Approximate number of houses and flats proposed.	Houses and flats constructed to date.
Norbury	218	218
Old Oak	736	736
Roehampton	1,212	1,212
White Hart Lane	1,237	1,165
Becontree	26,000	12,130
Bellingham	2,124	2,096
Downham	5,932	3,225
Watling	3,980	1,373
Castlenau	643	101
Wormholt	771	353
St. Helier	10,000	—
Total	52,853	22,609

There is thus provision made whereby a further 30,000 houses and flats may be erected by the Council, and of these more than 6,000 were actually under construction on December 31, 1927.

During the same period other authorities in the Greater London area have erected about 30,000 houses, while private enterprise has been responsible for nearly 100,000 more, if we include houses of every class.

The no lesss important work of clearing unhealthy areas has received concurrent attention. Since 1919 the Council has been actively enagaged in clearing such areas throughout London, and in the selection of the areas to be first dealt with the Council has been guided by reports from its expert advisers as to the relative urgency of the areas thus brought to its notice.

Having thus briefly summarized the general scope of these post-war activities, we can now pass on to the character of the building they have brought into being. On the outlying estates only a few types of the cottages are given, presumably because these do not differ greatly from those of many other municipal schemes; but all the general layout plans of the various estates appear, and are interesting as showing careful study of the sites and the local conditions. The large estate at Becontree suffers from the employment of too many conflicting patterns not quite adequately reconciled by the basic lines of the layout; but the estates at Bellingham and Downham appear admirable in their combination of simple and logical alignments, with provision for variety in grouping and effects.

Of more special interest, by reason of the variety in the problems involved, are the schemes for slum clearance and re-housing. In many cases the clearances practicable left very irregular sites, demanding great ingenuity in replanning and in determining the instalments by which the work should proceed. The striking merits of some of these plans for reconstruction justify the most careful study in order to appreciate the skilful way in which good grouping of buildings and the maximum effect of space have been secured under difficult conditions. The Whitmore estate, Wapping estate, and Watergate Street area demand special notice from this point of view. The more open site of the East Hill estate, Wandsworth, has afforded a fine opportunity for a good and simple grouping of the dwellings, while the latest scheme in Ossulston Street, St. Pancras, suggests in its picturesque massing the influence of Vienna. Following the plans and descriptions are chapters on administration, travelling facilities, and the Town Planning Act, as affecting the character of the Council's schemes. H. V. LANCHESTER

London County Council Housing: with particular reference to Post-war Housing Schemes. By Montague H. Cox, Clerk of the Council. Published by the L.C.C. Price 2s. 6d.

CRITICAL HISTORY OF ARCHITECTURE

In the fifteen years that have elapsed since the publication of the late Mr. Statham's *Short Critical History of Architecture* much has happened in the world. New forces have been liberated, both in science and politics, and thought has become more free. This new spirit is seen even in the Church, and never was the saying "The old order changeth" truer than it is today. This change was largely brought about by the war, which "speeded up" development in many directions in the most remarkable way, and the chain of our civilization was strained almost to breaking point, but instead of snapping, as it might easily have done, it stretched, and we find ourselves today, in many fields of knowledge and in political development, at least a generation ahead of where we would have been had it not been for the war.

On its publication in 1912, Statham's history found at once an established place both by reason of its novel treatment of the subject, and because of its reasonable price. It was well produced, and profusely illustrated, and was written in an easy and readable style. All of these qualities went to make it suitable both for the student and for the general reader. The author's treatment of such a vast subject in so small a space was cleverly done, and it filled a distinct gap in architectural history. The author avoided one pitfall into which many of his predecessors had fallen; that was, he did not split up the architectural styles into watertight compartments; he realized that, as a matter of fact, they flow freely from one to the other. In science it can sometimes, though very rarely, be said that a discovery is completely new and original, but in architecture it is not possible to point to any one building and say, "This is the first of a new style of architecture."

The editor of the second edition, Mr. Maxwell Aylwin, has revised the work to bring it into line with the trend of modern thought, both in archæology and in taste. The preface has been completely rewritten, but the chapters dealing with the ancient periods have been left substantially as they were, except for slight revision of archæological points, such as the origin of the triglyphs. The perennial riddle of the original form of the Mausoleum at Halicarnassus has not been further discussed, and the editor has not noticed (or possibly it had not appeared until his proofs had gone to press) the article in a recent issue of THE ARCHITECTURAL REVIEW by Mr. E. J. Mager, who puts forward a scheme for reconstructing the mausoleum so that the dimensions of the monument are kept within those given in Pliny's description. He also suggests a reasonable use for the two sets of steps of different sizes that have been found. His idea is that the monument was set on a pyramidical stepped base, which gets over many of the difficulties of former reconstructions. In the same way, the chapters on Romanesque and medieval work have not been substantially altered, but several paragraphs have been added about Italian Baroque and Rococo which it is now "quite the thing" to admire, but which were an anathema in 1912! The portion dealing with the Renaissance in England has been amended in several particulars; the names of one or two architects, such as Thomas Archer, who designed St. Phillips', Birmingham, has been added, and Sir Roger Pratt, who had a considerable share in the rebuilding of London after the Great Fire, is now given the credit for designing Coleshill in Berkshire.

Mr. Gotch's researches into the authorship of some of the buildings, which we formerly attributed to Inigo Jones (including the large scheme for the palace at Whitehall), are now definitely ascribed to John Webb. The author's criticism of St. Paul's Cathedral has been considerably modified by the editor.

The final section, dealing with modern work, has been entirely rewritten, and modern tendencies have been looked at with a more sympathetic eye than was the case in the original edition. Fourteen new plates have been added, and the reproductions of modern work now include the Stockholm Town Hall, the Dutch Radio Station at Kwootwyk, the Chicago Tribune building, and Adelaide House. GRAHAME B. TUBBS

A Short Critical History of Architecture. By H. Heathcote Statham. Second edition, revised and enlarged by G. Maxwell Aylwin, F.R.I.B.A. Batsford. Price 16s.

ENGLISH PRECEDENT

22 *Boreham Street is a little village on the road from Battle to Hailsham. On the main road is Montagu House, with this fine venetian window. The house has a good doorway to its garden, over which is a sundial, dated 1727, which, probably, is also the year in which the window was built. The sashes are evidently original as also may be the dividing of the squares into four by use of lead cames, but to have filled the wood glazing bars with squares of their proper size would have increased greatly the breadth and dignity of the whole composition. This can only have been a country designer's and mason's work, but it is of remarkably high quality.*—[NATHANIEL LLOYD.]

STEELWORK. A SHORT HISTORY: ii

[BY W. BASIL SCOTT]

FAIRBAIRN had knowledge of the small French iron joists, and strongly advocated their use for the purpose for which they were suited. But these sections did not fulfil his requirements for the main beams of factories and warehouses. He drew out a scheme which was considerably in advance of his time, both as regards the large section of joist and the substitution of concrete, supported on sheet iron centering instead of the usual brick arches.

He made the suggestion to the iron rollers in terms most flattering to their genius for surmounting difficulties, that it was not beyond the bounds of possibility for joists of the shape of figure twelve to be rolled in one piece, even up to the weight of 12 cwt. At the same time, lest the makers did not rise to his flattery, he suggested the alternatives shown by figures thirteen and fourteen. It will be noticed that the sections 12, 13, and 14 all show additional material in the compression flange to attain lateral stiffness.

In 1855, some rolled beams, figures fifteen and sixteen, much superior to anything previously manufactured, were on view at the Paris Exhibition. One form of these was 11 in. in depth and 3½ in. broad. Although these specimens were probably rolled specially for the exhibition, their sizes proved that the difficulties foreseen by Fairbairn and others could be surmounted. Hopes were expressed that these rolled iron beams would be largely employed and ultimately supersede beams of cast iron. It cannot be said that the second of these hopes was ever realized. Wrought-iron beams came into use for buildings very slowly and sparingly. Even within my own recollection, when wrought iron had been superseded by mild steel, cast iron continued to hold its own to a surprising extent.

Writing in 1870—that is, fifteen years after Bessemer took out his first patent, and two years after the Siemens' open-hearth process had been developed commercially—Fairbairn made the mild statement that such steel might ultimately take the place of iron where security and strength were required. But he did not live to see how amply this prophecy of his would be fulfilled. It cannot be asserted, however, that mild steel, or ingot iron, as it was called, took the world by storm as a perfect material for building construction. Like other inventions of great importance, it was not perfect at first. Bessemer's early troubles, until Mushet's discovery came to his assistance, are well known, and the lack of uniformity of his material practically confined his output for years to railway rails. There was no remaining doubt, after trial had been made, about the superiority of the Bessemer steel over iron rails, but bridge builders and others had still to be convinced.

In 1859 Sir John Hawkshaw was prohibited by the Board of Trade from using steel for the Charing Cross Bridge. The Board of Trade regulations were not changed so as to permit the use of steel until 1877. Between 1870 and 1880, however, mild steel manufacturing had been improved to such an extent that when prohibition was removed wrought iron was practically discarded for bridges and mild steel plates, angles, and tees were substituted. The extent to which confidence in mild steel had been established in the minds of the most eminent engineers in 1880, can be indicated best by the statement that at that time Messrs. Fowler and Baker had decided to use it for the Forth Bridge. We all know that the unique qualities of mild steel made the Forth Bridge possible, and that it was successfully opened in 1890. But, after all I have said, perhaps it is not surprising to learn that what the Britannia Bridge failed to accomplish for wrought iron in the building world, the Forth Bridge failed to accomplish for mild steel. Once more the architectural profession was slow to respond, but again I can only sympathize with the profession and blame some of the technical authors who presumably wrote for its benefit.

To understand the subsequent developments it is necessary to repeat that bridge engineers were not interested in architectural buildings, and the steel-makers were not interested technically in the ultimate destination of their produce. Down to 1885, when steel joists were first rolled in England by Dorman, Long & Co., the sole distributors of rolled joists to the building trades were merchants who neither possessed not professed any technical knowledge. Compound girders and the majority of joists with workmanship were imported from the Continent, or at times such work as holing or cleating was performed locally by blacksmiths.

Sir John Cowan, chairman of Redpath, Brown & Co., was one of the first, if not the first, merchant to be dissatisfied with these methods, which involved delays of six weeks for the simplest orders, and it was not long after the Franco-Prussian war of 1871 that he journeyed to France and Belgium to study the continental methods of girder fabrication at first hand. As a result of this visit a stock of structural sections was laid down at Edinburgh, and arrangements were made for carrying out simple workmanship; but it was not until 1886 that the first joist compounded girders made in Scotland for a building were fabricated there by means of a hand-drilling machine and hand riveters. In England the position was much the same. The Butterley Iron Company and Dorman, Long & Co. share the credit of pioneering joist compounds there also in 1886.

It was from such simple beginnings that the true era of steel "joist manipulation" (as it has been termed) developed, quite independent of and unrecognized by bridge engineering, which was already astonishing the world with the Forth Bridge. For the supply of steelwork for buildings merchants and ironmongers became girder manufacturers, and their clerks, who wrote invoices in the forenoon, made little drawings in the afternoon and became structural draughtsmen. To these embryo structural engineers the acquisition of technical knowledge was a painful and bewildering

Figure twelve.

Figure thirteen.

Figure fourteen.

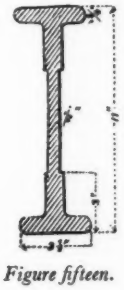


Figure fifteen.


Figure sixteen.

process, and I speak with feeling on this matter, from personal experience. They were learners without traditions, and, at first, the whole thing seemed to them like the commencement of an entirely new industry. There was rapid improvement, however, when they got in touch with the trained teachers of knowledge in colleges and evening technical classes, but before long, a new circumstance arose to plague the architect and all concerned. This was the multiplicity of sections of steel joists rolled by British, Belgian, French, and German makers. To cope with this endless variety of sections the makers supplied an endless variety of literature consisting of sheets, albums, pamphlets, and folders, often with little information on much space.

But there was a worse feature than mere paucity of information, a feature from which the British books were entirely free. Some of the continental literature was of a misleading character, as was the case when neither the ultimate strength of the steel, the factor of safety, nor the conditions of support were stated, and so-called safe loads were tabulated for beams with ends fixed and a factor of safety of three. Fortunately matters were put on an entirely different footing in 1904, when the British Engineering Standards Association, formed at the instance of the British professions and trades, standardized the structural sections and also the quality of the steel.

We all know that in building construction it is necessary to make certain assumptions in estimating our stresses and loads, the greatest of these being the equivalent uniformly distributed loads per square foot of floor area which we assume as representing the actual live loading which is more or less concentrated or variable. The necessity of making approximations of this nature is applicable to every kind of construction, so it is all the more important that accuracy should be observed where and when this can be done. The advantage of accuracy is all the greater if it can be observed at the starting-point, that is, with the actual material of construction. In this respect, as well as in many others, mild steel as a material of construction is unique.

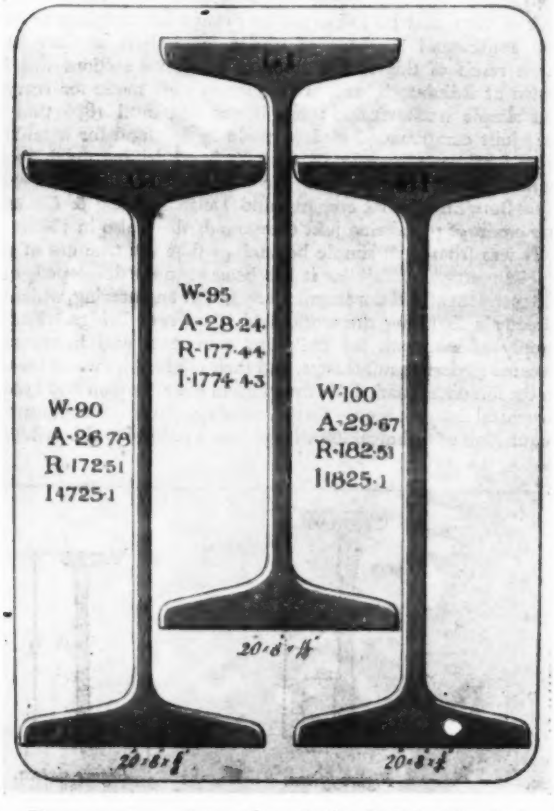


Figure seventeen. A page from the first British section book.

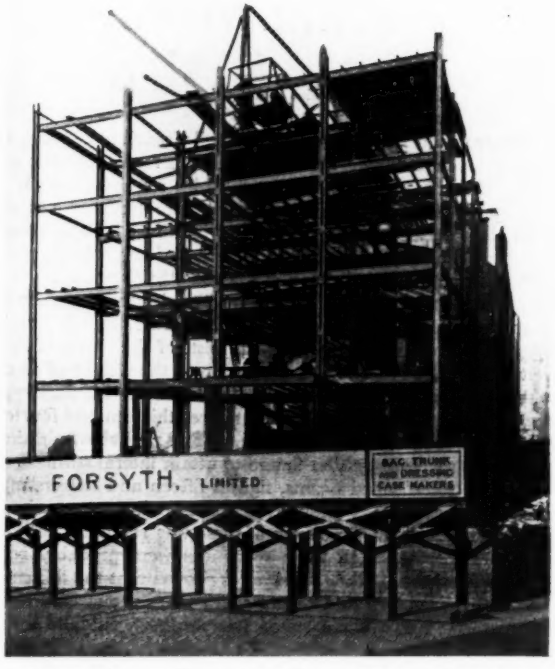


Figure eighteen. The first steel-framed building in Scotland.

A fine degree of accuracy is applied to the calculation of the properties of the British Standard Structural sections by the exact formulæ for the moments of inertia taking the fillets and slopes into account. Some may think such accuracy is not required, but if the fillets and slopes are neglected the error in some cases is as much as 10 per cent., which is a considerable item. You may take it, therefore, that when you see a property, such as the radius of gyration of a tee-bar in a maker's handbook, some eight or nine foolscap pages of calculations have been made before it got there. This accurate calculation of properties is not inconsistent in the case of mild steel; because its manufacture is a strictly accurate and consistent process. Its chemistry is known to the fraction of 1 per cent. of each of its constituents, and its ultimate strength in tension or compression, which is not affected afterwards either by time or weather, is predetermined within 2½ tons above or below the standard average of 30½ tons per square inch. In steel manufacture the exact effect of too much or too little carbon, phosphorous, sulphur, or manganese is known and provided for, but the experts have not yet determined what is the most important factor of the strength of concrete.

But to return to 1904 and the first British standardization. At this time, steel skeleton construction had barely got beyond the stage of rumours from America, and the majority of our buildings still consisted of self-supporting walls and partitions with internal steelwork only. It was gradually being realized, however, that a considerable amount of technical knowledge was necessary for the economical and efficient design of steelwork, even of this simple nature. The necessary knowledge had now been acquired by the joist manipulators' staffs, who were constantly in touch with the requirements of the architectural profession, and in this way the profession and the trade became of mutual assistance to each other. Steel contractors were asked to state what a girder or stanchion would carry, in the same way as a chainmaker was asked the strength of a chain, and it was from this custom that the practice of contractors designing steelwork grew until it became firmly established on quite a large scale. The great success of American steel-frame construction made its introduction into this country inevitable, but the idea was modified

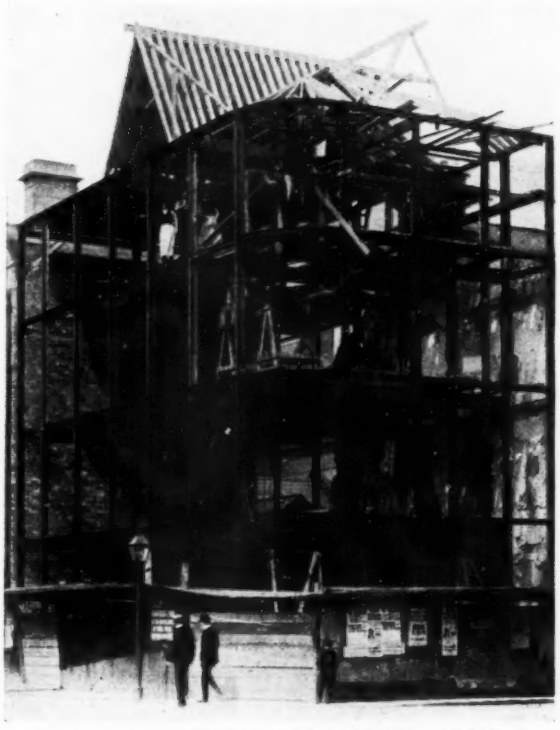


Figure nineteen. The first steel-framed building in Ireland.

to suit our restricted building heights, and its development here is British in several of its characteristics. For example, we started with the joist as the principal section, both for stanchions and beams, but the Americans started with cast-iron columns; then for steel stanchions they used Zed bars and patents, such as the Phœnix and Gray bar columns before they adopted the rolled joist.

It is definitely known that iron skeleton construction for buildings commenced in America in 1886 and that "The Rookery" office, built in Chicago in the following year, was the first of the large American steel-framed office buildings, but there is no official record of the first British building of this type.

So far as I can ascertain, the first English steel-framed building was a furniture warehouse in West Hartlepool, while figures eighteen and nineteen illustrate what I believe to be the first in Scotland and in Ireland, namely Forsyths, Edinburgh, and Payne's Belfast, the architects for the last two being Sir J. J. Burnet and Mr. Houston respectively.

With such developments as these the demand for data of the strength of sections became more pronounced. The makers and contractors accepted the responsibility of providing the information called for, and so section books of a more elaborate nature than formerly made their appearance. Section books have been praised by some and condemned by others, but to the steelwork designer they are as essential as a cwt. ready reckoner is to an invoice clerk. It should be understood, however, that a section book does not profess to teach steelwork design any more than a ready reckoner professes to teach mathematics. A steelwork designer must have a sound understanding of first principles, but to appreciate the value of a section book one must think of the impossibility of designing from first principles without even the aid of a table of the properties of the standard sections.

After the introduction of steel-framed construction, which was assisted materially by the London Building Acts Amendment of 1909, progress became very rapid, but the developments since that time have been more developments of degree than of kind. Since the standardization of 1904 there has been no alteration in the quality of the material, and mild steel is still unique for its great strength in small bulk and for its equality of strength, both in tension and in compression. A characteristic development has been a gradual reduction in the projections of supporting brackets and the sizes of bases. In design close attention is given to all such matters as eccentric loading, secondary stresses, and wind pressure, also the elimination of costly workmanship. Workshop methods have not only been speeded up, but they have been improved in accuracy in every way.

But although steel construction has reached a high stage of efficiency and economy, we have grievances about some matters beyond our control as contractors. Some grievances are due to legislation, and others are due to the absence of it.

One grievance I will refer to is the vexed question of pillar formulæ. Since Euler announced his formula 180 years ago, the production of column formulæ has been a favourite amusement of scientists, but notwithstanding their multiplicity the London County Council Act is the only British Act of Parliament relating to steel pillars. All that one can say of this Act is that it is good in parts, and by its pillar formulæ some most curious results are obtainable. I have embodied some of these results in the table, figure twenty, which seems the work of a madman, especially when I assure you that the last column of figures has not been printed upside down, with reference to the first one. The figures are correct as shown, so that, according to the Act, on a height of 30 ft. a 10×8 weighing 55 lb. will support 11·61 tons, but an 18×8 weighing 80 lb. will only support 0·54 of one ton. Similarly, on a height of 21 ft. an 8×6 weighing 35 lb. will support 13·97 tons, but an 18×6 weighing 55 lb. is only good for 1·27 tons.

In Devonshire House it has been estimated that there was a saving of seventeen weeks' time as compared with alternative methods of construction. Assuming the cost of such a building at £400,000, and the ground rent at £16,000 per annum, the saving of interest on capital is £7,000; on ground rent, £5,000; and when the enormous rents of such apartments are considered, the additional rental earnable in seventeen weeks is £20,000, making a total money saving of £32,000.

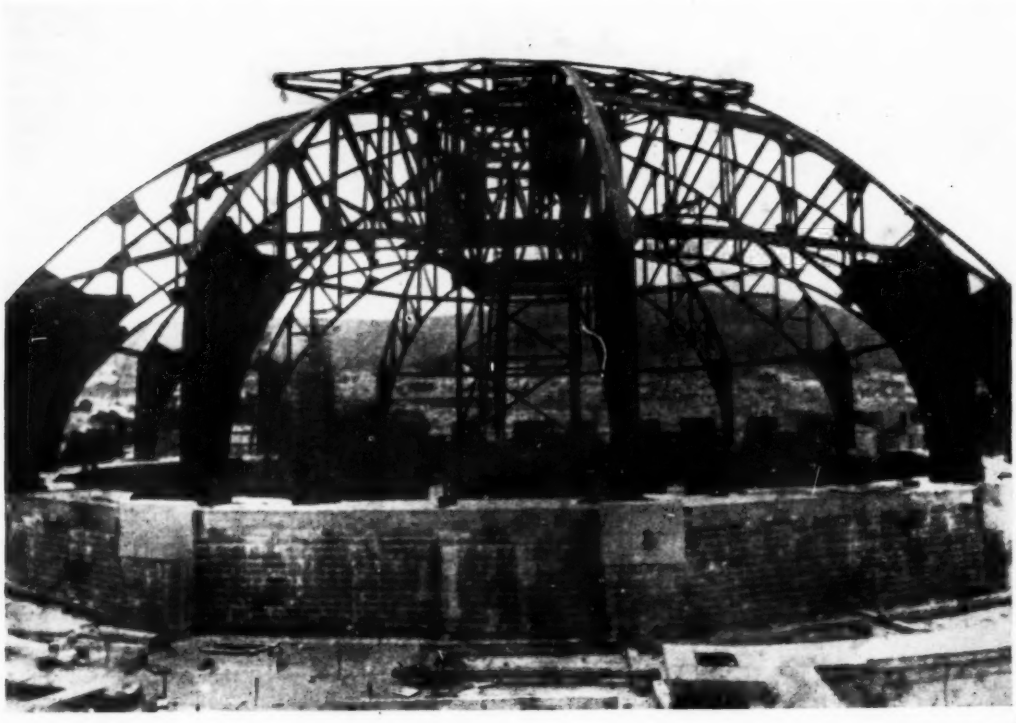
Professor Alvarez, of the University of California, in a report on the Santa Barbara earthquake, published by the Portland Cement Association, said: "The well-riveted and strong but flexibly-braced structural steel frame, fireproofed with good concrete properly held in place, is the safest frame of all. A frame of this character has never collapsed in an earthquake." I will conclude with the very brief opinion of Doctor Swain, Professor of Civil Engineering at Harvard, and an ex-president of the American Society of Civil Engineers. Dr. Swain said: "I entirely endorse the report of Professor Alvarez, and it did not need an earthquake to prove it."

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

STEEL JOISTS AS PILLARS.
L.C.C. FORMULA.
BOTH ENDS FIXED.

SECTION I	WEIGHT PER FOOT IN POUNDS	AREA IN SQUARE INCHES	LEAST RADIUS OF GYRATION	RATIO OF SLENDERNESS	WORKING STRESS TONS PER SQ. INCH	SAFE LOAD TOTAL TONS
HEIGHT = 30 FEET.						
18 × 8	80	23·5	1·718	209·5	0·023	0·54
16 × 8	75	22·1	1·759	204·7	0·267	5·89
14 × 8	70	20·6	1·800	200·0	0·500	10·29
12 × 8	65	19·1	1·846	195·0	0·749	14·33
10 × 8	55	16·2	1·840	195·7	0·717	11·61
HEIGHT = 21 FEET.						
18 × 6	55	16·2	1·209	208·4	0·078	1·27
16 × 6	50	14·7	1·236	203·9	0·306	4·50
15 × 6	45	13·2	1·225	205·7	0·214	2·84
10 × 6	40	11·8	1·360	185·3	1·235	14·54
8 × 6	35	10·3	1·378	182·9	1·356	13·97

Figure twenty. A curious table of safe loads.



Above, steel dome, Capetown University. Below, a pit-head frame.

Above, Devonshire House, Piccadilly, W. Below, a football stand.

LAW REPORTS

WARRANTY OF A TENNIS COURT ON AN ESTATE

Powell v. *Davey and Reeves. King's Bench Divisional Court. Before Justices Swift and Acton*

This case raised a curious point as to whether defendants were liable for a warranty "that there would be a tennis court on the estate," when selling a house to plaintiff, when that warranty was never, in fact, carried out.

The case came before the court on an appeal by the defendants, Messrs. Godfrey James Davey and George Reeves, estate agents, members of the firm of Messrs. George Reeves & Co., Streatham High Road, from a decision of Judge Dobb at Bromley County Court, awarding £25 damages and costs to Mr. Leslie Hughes Powell, of Claremont Valley Road, Shortlands, for alleged breach of warranty.

The allegation of the plaintiff was that the description of the property in question given to him by Messrs. Reeves & Co. was that "there will be a tennis court on the estate." Judge Dobb held that was a warranty and that no tennis court had been provided.

Mr. Russell Vick, for the appellants, said the statement that there would be a tennis court on the estate was sent out by a clerk in error, and contended that it was not a warranty. It was an innocent mistake inadvertently made, and the statement was not intended to be a warranty. It was an affirmation made in the particulars from the point of view of interesting possible purchasers and he even might have to admit for the purpose of inducing possible purchasers to take an interest in the property and eventually to buy it; but the mere fact that such a statement was made, even if made with intent to induce a contract ultimately to be entered into, did not make it a warranty. It was not a warranty unless it fulfilled one of two conditions. In the first place, it must be made at the time of the sale, and both parties must intend that it should be a warranty. If the statement was not made at the time of the sale it must be made either before or after, and in those circumstances it must be a special collateral contract. In this case he submitted it was not a special collateral contract. The county court judge did not deal with the words on appellants' form: "We do not hold ourselves responsible for any inaccuracy of the particulars." He contended no case of warranty had been made out.

Without calling upon Mr. Eric Sach for the respondent the court dismissed the appeal with costs.

Mr. Justice Swift said the only point in the case was whether there was evidence on which the county court judge could find an "animus comprehendi." He examined in a most careful judgment all the evidence and came to the conclusion there was an "animus comprehendi." There was ample evidence on which he could come to that conclusion.

Mr. Justice Acton: In my view there was no other conclusion at which he could come to.

DEVELOPMENT OF ESTATE. CLAIM FOR FEES

Sinclair v. *Temple. King's Bench Division. Before Mr. Justice Wright*

This was an action by Mr. William B. Sinclair, an architect, of Buckingham Street, Strand, London, against Mr. Wm. Temple, of Black Charles, Under River, between Sevenoaks and Tonbridge, to recover the sum of £361 fees earned as architect for the defendant in the matter of plans, etc., for houses on the defendant's estate at Under River. The defendant, whilst denying liability, paid into court the sum of £54 as sufficient to meet plaintiff's claim. He further alleged that the charges were excessive and unreasonable. This the plaintiff denied.

Mr. A. H. M. Wedderburn appeared for the plaintiff, and Mr. B. A. Powell for the defendant.

Mr. Wedderburn said the plaintiff had received the sum of £131 from the defendant on account of his charges. Plaintiff's case was that the defendant gave him instructions to get out plans, etc., for a certain type of house, and this the plaintiff did, and his charges were £296. Then the defendant desired a smaller type of house and plaintiff got out plans, etc., for that house, and his charges were £122. There were also some additional charges by the plaintiff amounting to some £75. He understood the defendant to say that the first set of plans were far too expensive for the type of house he required and that he asked the plaintiff to modify the plans. His client's reply was that that was not the case, but that he was instructed to get out two sets of plans. Defendant acquired an estate at Under River and desired to develop it, and for that purpose decided to erect a sort of "decoy house" in order to develop the estate on good lines. He desired to divide the estate into plots of about four acres each and to erect a house upon it, and put them on the market at about £6,000.

Plaintiff gave evidence in support of his case and stated that his charges were in accordance with the Institute scale. The idea of the defendant was to develop the estate as a high-class residential estate. He carried out the work in accordance with his instructions and his charges were fair and reasonable.

Defendant gave evidence and stated that there were never two schemes. His idea was a house of the value of about £4,000, and the second set of plans were merely a modification of the first, which were for a house costing some £6,000 or £7,000.

His lordship, in giving judgment, said the relations between the parties seemed unbusinesslike and there was never any definite agreement as to the remuneration which plaintiff was to have for his work. The house the defendant desired to put up was as an advertisement for his estate. He came to the conclusion that the plaintiff was entitled to receive from the defendant £154 5s. 6d., and he gave judgment for the plaintiff for that amount, with costs, the £54 paid into court by the defendant to be paid out to the plaintiff's solicitors.

Tower at Pressa Exhibition, for H. A. G. Coffee Company, Ltd. By Professor Bernhard Hoetgers.

CORRESPONDENCE

TRANSMISSION TOWERS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—May I be allowed to correct a somewhat wrong impression which has probably been caused by a paragraph written by Astragal in your issue for June 27?

Discussing the question of high-tension power transmission and the ugliness of the towers which carry the cables, he writes: "All we know for certain is that they are going to be very heavy, inordinately heavier than they need be or have any right to be. That we know from samples here and there all over the country, but particularly in North Wales."

In view of the transmission towers which have already been erected in various districts, Astragal's apprehension is by no means unfounded; but what he does not know, evidently, is the fact that recently there has been considerable experiment and research in this matter with a view to the improvement of the design of such structures from the point of view of appearance as well as from those of lightness, stability, and cost.

The firm of which I am a member has during the past twelve months employed a staff specially to investigate the economies and æsthetics of tower design.

Any rational person who embarks upon such an investigation must start with the idea that he has a definite purpose to fulfil. He knows that the tower which he will ultimately design would not be an ornament in his garden; it would add nothing to the beauty of Trafalgar Square; it would be an eyesore. But if a tower is so made that it will support with maximum economy the loads which it has in practice to support—if, in fact, it is fit for its purpose without redundancy—then, in the eyes of many architects it has, by hypothesis, achieved æsthetic beauty.

Now, for many years America has been the home of high-tension transmission, and consequently American engineers, in their quest for economy, have arrived by years of trial and error at a type of design which by its very efficiency is æsthetically pleasing to the eye.

A tower which is designed in strict accordance with any of the British specifications will be too strong for its purpose; some members will be redundant; all connections will be too heavy. And just because of this waste of metal the appearance of the tower will be such as has justifiably irritated the eye of Astragal.

Specifications are all very well to protect the purchaser of a structure which cannot be tested. A tower *can* be tested, and if it survives that test and no more it may then be called the perfect tower for those conditions of load.

As a result of investigation the engineers of the company have arrived at a design which is as efficient under test as anything which has in the past been achieved in America. It may be that future experiment will evolve something which is still more efficient, and so more beautiful than even today's design. But, for the time being, it is certainly less ponderous than its predecessors, besides being structurally more efficient. Whether this will be acknowledged by the Electricity Commissioners it is not possible to say, but since Astragal is the champion of light structures he is now in a stronger position to carry his timely "nagging" into the camp of his enemy!

STRUCTURAL ENGINEER

CONCRETE BRIDGES

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Mr. Eric L. Bird, writing in your issue of May 30, under the subject of concrete bridges, raises points of great interest. I am very grateful to him for stating, in connection with an example I ventured to submit, that the "bald engineering necessities" have produced a surprisingly beautiful bridge, even though he takes me to task for apologizing for the absence of architectural treatment.

He describes four ways of getting a bridge built, and ridicules the procedure of getting an engineer to design a bridge and "employing an architect to add trimmings." I think, however, that architectural treatment and getting an architect to add trimmings are by no means the same thing.

The point of this letter, however, is to say that I never intended to apologize for not having suggested any architectural treatment. I merely wished to indicate that that was, so to speak, a matter outside the scope of my inquiry. Some architects may agree with Mr. Bird that no architectural treatment is required and others may disagree, and all I wanted to indicate was that this discussion might, so far as I was concerned, take place in an adjoining room, and that I had no intention of taking part in it.

Mr. Bird goes on to say: "The third way is to let an architect design the bridge *ab initio* and tell the engineer to construct it as well as he can. This, given the right architect who realizes fully the engineering requirements, is the best way." It would be interesting to know whether an architect can "fully realize the engineering requirements" without being himself an engineer.

For small bridges, where the engineering requirements are not very drastic or difficult, this principle may possibly work, because an engineer may be able to overcome the additional difficulties imposed by the architect's design. But for long-span bridges, where they approach the limit of the safely attainable, any departure from the best engineering form, any material added where structurally unnecessary or omitted where desirable, any use of materials not contributing as fully as may be to the strength of the bridge in relation to the weight which they add to it, will make for disaster, and engineering requirements must control the design.

I am happy that Mr. Bird finds the result "surprisingly beautiful," though, in my view, there is no need for the surprise. There are, indeed, several kinds of beauty. One, surely, is the beauty of the aeroplane, yacht, etc., which consists primarily in its sense of fitness for its purpose. This is the kind of beauty which a long-span bridge built strictly to satisfy engineering requirements ought to have.

OSCAR FABER

FOUNDLING ESTATE PROTECTION ASSOCIATION

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—I think you have been the innocent fly in Sir Arthur du Cros' web. You printed on page 908 a picture of "the proposed new blocks of flats," with the Foundling Hospital nestling comfortably behind. Everybody knows that the hospital is doomed to destruction, and that if flats are built there will be six blocks covering the whole site. You published a plan of the six blocks in your issue of June 13. A further point of interest in your perspective view is that the architects evidently intend to remove entirely the two garden enclosures facing Lansdowne Place and Caroline Place, flanking the walls of the forecourt, notwithstanding the statutory committees of tenants, who have the absolute control by Acts of Parliament over these two small gardens.

WILLIAM LOFTUS HARE

TRADE NOTES

The metal windows supplied by Messrs. John Gibbs, Ltd., to Messrs. Harry Vincent's premises, illustrated on pages 46 to 50, are constructed of deep-channel section outer frame with 1×1 in. tee astragals. The frames are oxy-acetylene welded at the corners, and oxy-acetylene spot welded at each cross joint, all the joints being machine milled. This construction, it is claimed, leaves the metal in its fullest strength, as there is no pressing of the material to crystallize same. The windows are prepared for glazing inside, leaving the clean, flat face of the tee for the outer view. The metal casements are supplied fitted with gun-metal fittings, in some instances, and all cleaning casements are fitted with solid machined bronze metal pivot. Unbreakable, drop-forged steel handle plates are securely oxy-acetylene welded to the frames, to take an adjustable handle fitting, which is one of the special points of this firm's manufacture. The sections of the casements are all of the double rebated sections, which, it is claimed, give an absolutely weathertight job.

Every afternoon at four o'clock a train completely freighted with glass now leaves the St. Helens Works where Vitaglass is made.

Messrs. Croggon & Co., Ltd., established 1835, constructional engineers, metal merchants, manufacturers, etc., of 16 Upper Thames Street, London, E.C.4, 9 Redcross Street, Liverpool, and 7 John Street, Glasgow, in order to cope with the increased demands for their goods, have purchased the Government factory at Colnbrook, Middlesex, consisting of 10 acres of land and buildings.

Mr. Oliver J. S. Piper, chairman of the Ship Canal Portland Cement Manufacturers, Ltd., in moving the adoption of the report and accounts at the annual meeting of the company held at Winchester House, Old Broad Street, London, E.C., said that the balance sheet indicated sound and substantial progress in all directions. The net profit for the year amounted to £138,708 8s. 7d., as compared with £60,397 18s. for the previous year, and constituted a record in the company's history. The company had investments at a cost of £1,074,710 7s. 3d., including £150,000 of their own debenture stock. They now controlled two additional works, ideally situated, both from the manufacturing and distributing angles. The board had valued the holdings on the basis of actual cost, and were confident that those investments should bring in a satisfactory and increasing income. The board proposed to recommend a dividend at the rate of 10 per cent. per annum upon the 2,500,000 ordinary shares ranking. Since the date of the balance sheet, through the assistance of the Associated Anglo-Atlantic Corporation, Ltd., and the British Cement Products and Finance Co., Ltd., the company had been able to obtain the control of the Dunstable Portland Cement Co., Ltd., and Smeed, Dean & Co., Ltd. In connection with those further absorptions he would say that there was no idea of becoming monopolistic; quite the reverse. The benefits of such consolidations would be reaped in the way of larger profits being earned as a result of increased internal efficiency. The board aimed at having concentrated and centralized control for the large number of works now coming under what was known as the Red Triangle Group. The board would also now be able to work out a comprehensive bonus scheme for the group employees and generally to foster the team spirit in every possible way in connection with their schemes of solidification, and to create a structure of which all who were part of it could be justly proud. The report and accounts were adopted.

Between Ourselves, a new booklet issued by Messrs. Setchell and Sons, Ltd., sole distributors for Old Delabole Slate Quarries, 26-27 Finsbury Court, E.C.2, is an endeavour to secure closer co-operation with the architect. It is full of sound advice. While the firm are anxious at all times to supply the architect's requirements, there are occasions when they are not able to do this. In slate quarrying and slate-making the firm are dealing with natural material subject to natural conditions and peculiarities in the formation of the rock. The slate blocks must be split and dressed to the best advantage (otherwise there would be enormous wastage), with the result that a quantity of each of what are called "regular sizes" must be made; the firm cannot therefore concentrate on any particular sizes to the exclusion of others. It sometimes happens that the demand for a certain size in a given period is greater than the supply, and they have perforce to offer other sizes instead of the one asked for or specified. This causes difficulties and sometimes arguments, because the limitation and peculiarities of slate quarrying are not realized. The firm cannot have too long notice of requirements. This does not mean that, if the slates be booked six months before the roof be ready, they would be railed at once and stand on the job for that period; to do that would be no benefit to the slates. It simply means that the firm should know beforehand what they have to supply by a certain time and the slates would not be railed until the contractors so requested. The ideal and by no means impossible conditions are when the architect advises the firm that he is about to specify certain of their slates for a particular job, which will be ready in a mentioned period. If circumstances are such that the firm cannot supply by the required time, the architect is informed as to what they are able to offer, and after discussion a size is approved and specified; the firm are then able to arrange future commitments accordingly. An increasing number of architects have voiced their appreciation of the firm's efforts so to assist them and thus minimize their difficulties.

A NEW TOFFEE FACTORY

Following are the names of the general contractors and sub-contractors for the new factory and offices, with canteen and garages, erected at Hunnington, near Halesowen, for Messrs. Harry Vincent, Ltd., and illustrated on pages 46 to 50: General contractors, A. H. Guest, Ltd., Stourbridge. Sub-contractors: Val de Travers Asphalte Co., asphalt; B.R.C. Engineering Co., Ltd., reinforced concrete; Portland stone; Braithwaite & Co., Ltd., structural steel, main factory; E. C. and H. Keay, Ltd., structural steel, canteen; Kleine Patent Flooring Co., Ltd., fireproof construction; Bells', Decolite flooring; Docker Bros., Induroleum flooring; Best and Lloyd, Ltd., electric light fixtures; Walker and Worsey, Ltd., door furniture; John Gibbs, Ltd., casements; A. L. Gibson & Co., Ltd., rolling shutters; Haywards, Ltd., iron staircases; John P. White and Sons, Ltd., panelling; Fenning & Co., Ltd., marble; Bromsgrove Guild, Ltd., weather vane on the turret of the main buildings, and two sets of entrance gates in wrought iron.

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

IN PARLIAMENT

[BY OUR SPECIAL REPRESENTATIVE]

The Condition of Durham Castle

The Bishop of Durham, in the House of Lords last week, called attention to the state of Durham Castle, and asked whether the Government could give any assistance towards raising the very large amount requisite for preserving this very important historical monument. If the castle were lost, he said, the nation would lose one of its greatest historical and architectural treasures. It was literally true to say that this great building, which to the view of the traveller seemed built for eternity, was in imminent danger of falling down. It was not too late to save it, but prompt measures were indispensable. These measures briefly consisted of tying the building into the soil so that it should not shift while the operations were being carried on, and then underpinning it by foundations of a substantial character down to the rock below. After detailing the civil and ecclesiastical claims which the castle had on the nation, the Bishop said that in the last five years £24,000 had been raised for the castle and expended on the building. Notwithstanding the expenditure of every penny of that sum, the castle was in danger of being lost unless they acted now and saved it from slipping into the River Wear.

Lord Londonderry, the Archbishop of York, Lord Phillimore, and Lord Darling supported the appeal to the Government. In reply, Lord Peel, the First Commissioner of Works, agreed that if Durham Castle were to fall, it would be a national disaster. The Office of Works had received a letter from the Council of the Colleges of Durham University, in whom the responsibility of the care and maintenance of the castle had been vested by Act of Parliament, asking whether the department would take over the buildings under the Ancient Monuments Act. Unfortunately, there were legal and financial difficulties in the way of the Office of Works taking over the guardianship of the castle. The Ancient Monuments Act precluded them from taking over any buildings that were inhabited; and Durham Castle was used, in part, as students' living-rooms and, in part, as lecture rooms, and it was considered that this constituted the castle as a dwelling-house within the meaning of the Act. Moreover, it was not clear that the Council had power to offer the guardianship to the Office of Works and thus get rid of a duty imposed on them by Parliament. The money annually voted by Parliament for the preservation and upkeep of ancient monuments averaged about £45,000, and it would require about £150,000 to underpin the foundation of Durham Castle and carry out other works necessary for its preservation. In the circumstances he could only express sympathy with the efforts that were being made to raise the money required by private subscriptions.

Lord Gainford said that Lord Peel should consider whether it was possible to introduce some amendment of the law which would make it possible for the Government to assist in preserving a monument of national character.

Lord Peel said he had had a Bill in draft for two years at least.

Lord Gainford hoped that the introduction of that Bill would be expedited.

The matter then dropped.

Bridges and Houses

During the debate on the London County Council (Money) Bill in the House of Commons, Sir George Hume said that the Select Committee which had been examining the question of Lambeth Bridge had taken evidence from the L.C.C.'s chief engineer and architect, and had adjourned in order to bring the matter before the Fine Arts Commission for their opinion. With regard to the future of Waterloo Bridge, everything depended on what was going to happen to Charing Cross Bridge. The matter was closely under discussion, and if Charing Cross Bridge were decided on he had not the slightest doubt that Waterloo Bridge would be carried through on the lines suggested by the Royal Commission.

Sir K. Wood informed Sir J. Power that 76,751 houses were completed in England and Wales during the six months ended March 31, 1928. The corresponding figures for the half-years ended September 1927, March 1927, and September 1926, were 162,163, 111,066, and 106,563 respectively.

Company Meeting.

SHIP CANAL PORTLAND CEMENT MANUFACTURERS, LTD.
DEPENDABILITY

Ship Canal Portland Cement Manufacturers, Ltd.

ANTICIPATIONS FULFILLED: RECORD PROFITS.

RED SACKS "RIGHT ACROSS ENGLAND."

THE meeting of Ship Canal Portland Cement Manufacturers, Ltd., was held on Thursday last, at Winchester House, Old Broad St., London, E.C., Mr. Oliver J. S. Piper (chairman of the company) presiding.

The chairman, in moving the adoption of the report and accounts, said that anticipations made last year had become actualities, and the balance sheet indicated sound and substantial progress in all directions. The net profit for the year amounted to the substantial sum of £138,708 8s. 7d., as compared with £60,397 18s. for the previous year, and constituted a record in the company's history.

The year under review had been, as expected, most keen and bitter in regard to competition, especially in the areas served by the company. They had had to meet a very deliberately organized attack on certain markets. Their goodwill in the territories referred to, however, had never stood higher than it did today, and the attack had had material advantages for the company, not the least of which had been that it had spurred them on with their programme of improvements and efforts to save money without impairing the manufacturing or sales efficiency.

Despite price reductions to meet competition, the results obtained were eminently satisfactory. They could never have been produced without careful planning for the future. In the profit figure of this year they had not received any income from their holding in the Holborough Cement Co., or Greaves, Bull and Lakin.

THE INVESTMENTS.

The company had investments at a cost of £1,074,710 7s. 3d., including £150,000 of their own debenture stock. They now controlled two additional works, ideally situated, both from the manufacturing and distributing angles. The board had valued the holdings on the basis of actual cost, and were confident that those investments should bring in a satisfactory and increasing income.

Repeating that the year's satisfactory profit included nothing from Holborough Cement or Greaves, Bull and Lakin, he would emphasize the fact that they had every reason to congratulate themselves on possessing those holdings which from every angle had justified the investment.

The net profit, after providing for the Preference dividend, amounted to £138,662, and the board proposed to recommend a dividend at the rate of 10 per cent. per annum upon the 2,500,000 ordinary shares ranking. There might be disappointment that a higher rate of dividend was not recommended, but it was not yet clear what calls might be made upon their cash reserves.

Since the date of the balance sheet, through the assistance of the Associated Anglo-Atlantic Corporation, Ltd., and the British Cement Products and Finance Co., Ltd., the company had been able to obtain the control of the Dunstable Portland Cement Co., Ltd., and Smeed, Dean & Co., Ltd. In connection with those further absorptions he would say that there was no idea of becoming monopolistic; quite the reverse. The benefits of such consolidations would be reaped in the way of larger profits being earned as a result of increased internal efficiency. The board aimed at having concentrated and centralized control for the large number of works now coming under what was known as the Red Triangle Group. The board would also now be able to work out a comprehensive bonus scheme for the group employees and generally to foster the team spirit in every possible way in connection with their schemes of solidification, and to create a structure of which all who were part of it could be justly proud. One and all they wished to play a rôle in the Cement Industry that was constructive and justified their simple slogan "Dependability—Right Across England."

THE "DISTRIBUTING COMPANY."

The output of the two further plants would be handled by the Portland Cement Selling and Distributing Co., Ltd., as were the outputs of this company, Greaves, Bull and Lakin, and the Holborough Cement Co. The creation of that company to handle that side of their business had proved its efficacy and it had been responsible for all the propaganda of the Red Triangle Group, and thus for the amazing success that their Rapid Hardening Cement, i.e. Vitocrete, had met with. To denote in a clear and lucid way the sacks the Grouped Companies used to distribute their cement, it had been decided in future to pack their cement in red sacks which would act as signposts for "Dependability" in cement. The Ship Canal Co. was the nerve centre and driving and connecting force of a group of works ideally situated for the scientific and economic distribution of "Dependability" brands of cement, according to their slogan "Right Across England."

The report and accounts were adopted.

THE WEEK'S BUILDING NEWS

Plans passed by the BARNSLEY Corporation: Three houses, Locke Avenue, for Mr. F. Beaumont; lecture room, Huddersfield Road, for the trustees of Wesleyan Methodist Chapel; house and shop, Honeywell Street, for Mrs. Northcliffe; extensions to warehouse and corn mill, Perseverance Estate, for Barnsley British Co-operative Society; shop, stores and garage, Doncaster Road, for the United Yeast Co.

*

The BARNSLEY Corporation is to hold a special meeting to consider the utilization of the New Street (Western) Area improvement scheme site.

*

The SOUTH SHIELDS Corporation Housing Committee is considering the purchase of additional sites for housing.

*

Plans passed by the SOUTH SHIELDS Corporation: Rebuilding premises, Barrington Street, for Mr. G. R. Smith; shop, Harton Villas, Sunderland Road, Harton, for Mr. F. W. Newby; alterations, 4 King Street, for Messrs. Croftons, Ltd.; rebuilding of premises, Smithy Street, for Messrs. T. A. Page and Son.

*

Plans have been prepared for the layout of Harton Villa estate, SOUTH SHIELDS, by Messrs. Davidson, Son and Sherwood.

*

Plans passed by the DOUGLAS (I.O.M.) Corporation: Alterations to premises, Albany Lane, for Mr. J. Deans; workshop, Allan Street, for Mr. J. T. Clague; additions to premises, Belmont, for Mr. Hilditch; twelve garages, Upper Church Street, for Messrs. Collinson's, Ltd.; two iron sheds, South Quay, for Douglas Gas Light Co.; bakery, Grosvenor Road, for Mr. Elder; alterations, Colonnade Restaurant, Victoria Street, for Mrs. Bowling; shop, Strand Street, for Messrs. L. and S. Brown; alteration to shed, Parade Street, for Isle of Man Steam Packet Co., Ltd.

*

The DOUGLAS (I.O.M.) Corporation has asked Mr. J. E. Teare, architect, to submit a layout of St. George's football field at Pulrose, with a view to the erection of additional houses.

*

The BIRMINGHAM Education Committee is purchasing land for the extension of the Sherbourne Road Council School.

*

The BIRMINGHAM Education Committee has obtained sanction to borrow £33,000 for the erection of a school at Hartfield Crescent, Acock's Green.

*

The WATFORD Corporation is to grant a further sixty housing subsidies.

The BIRMINGHAM Education Committee has obtained sanction to borrow £16,530 for remodelling Ada Street Council School.

*

Plans submitted to EASTBOURNE Corporation: Alterations, etc., St. John's private hotel, Selwyn Road, for Mr. F. C. Benz, architect; covered tennis court, Tutts Barn Lane, for Messrs. P. D. Stonham and Son; architectural alterations, etc., 80 and 82 Terminus Road, for Messrs. J. Wright, Ltd.

*

The Herts Education Committee has decided to undertake alterations and improvements at the WATFORD Boys' and Girls' Grammar Schools at a cost of £27,730.

*

The BIRMINGHAM Education Committee has obtained sanction to borrow £19,000 for remodelling Tilton Road Council School.

*

The Middlesex County Mental Hospital Committee recommends the construction of a colony at Porters Park, SHENLEY, to accommodate 2,000 patients and the necessary staff in accordance with plans prepared by Mr. H. G. Crothall, the county architect.

*

Plans passed by the EASTBOURNE Corporation: Two houses, Dillingburgh Road, for Mr. A. J. Fellows, architect; two houses and garages, Milton Road, for Mr. A. Ford, architect; alterations and additions, Chatsworth Hotel, Grand Parade, for Mr. B. Stevens, architect; nine houses and garages, King's Drive, for Mr. P. D. Stonham, architect; additions to boiler-house, Beach Laundry, Royal Parade East, for Mr. S. G. Scales; alterations, Glastonbury Hotel, Royal Parade, for Mr. A. Ford; six houses, St. Anthony's Avenue, Seaside, for Mr. A. Ford, architect; two houses, Hampden Park, for Messrs. W. J. Cole and Sons; three houses, Ringwood Road, for Mr. C. Ford, architect; house and garage, Hartfield Road, for Mr. A. J. Fellows, architect; two houses, Dillingburgh Road and Broomfield Street, for Mr. A. Ford, architect; alterations, Arlington Road, for Messrs. Murray, Delves and Murray, architects; club for British Legion, for Mr. W. R. Hamblyn, architect; thirty-four houses, Cavalry Crescent, South Avenue, for the borough engineer; two houses with garages, Milton Crescent, for Mr. F. C. Benz, architect; six houses, Compton Place Road, for Mr. G. Lovell, architect.

*

The LEEDS Corporation has obtained land off Kirkstall Hill for the erection of houses for the rehousing of persons displaced by the carrying out of the widening of Burley Street and Burley Road.

The Middlesex Education Committee has purchased a site at the corner of Forty Lane and Carlton Avenue, WEMBLEY, for the erection of a secondary school.

*

The governors of the Acton Hospital propose to erect a hostel for nurses on the Heathfield Lodge estate, ACTON.

*

The LEEDS Corporation Housing Committee has approved the scheme for the erection of 153 houses on the Middleton housing estate for the rehousing of persons displaced by street improvements.

*

The LEEDS Corporation has selected land on the Cross Gates housing estate for the erection thereon of a building for branch library and baths purposes.

*

The LEEDS Education Committee has obtained a site for a school on the York Road and Selby Road housing estate.

*

Plans passed by the GLASGOW Corporation: Thirty cottages, Meikle Aikenhead, and forty-eight houses, Kelvinside, for Messrs. Breeze, Paterson and Chapman, on behalf of Messrs. Mactaggart and Mickel, Ltd.; nine houses, Forfar Avenue, Cardonald, for Messrs. Allan and Wm. Gilfillan, on behalf of Messrs. Wm. and Geo. Taylor.

*

The LEEDS Corporation is to obtain tenders for the erection of fifty houses on the portion of the Henconner Lane housing estate, Bramley, in connection with the scheme for the erection of 160 houses and fifty-six flats.

*

The HULL Education Committee has acquired a site for an elementary school and playing-fields at Sutton Ings.

*

The HULL Corporation has obtained sanction to borrow £10,800 for the erection of a new infectious diseases hospital.

*

The L.N.E.R. is to develop land at the extreme west end in Willerby, HULL.

*

At a meeting of the HULL Corporation Mental Hospital Committee, the city architect reported that amended plans showing the proposed site for the admission hospital and nurses' home, and also provisional sites for two further villas for female patients had been submitted to the Board of Control.

*

The BRADFORD Education Committee has decided that the necessary arrangements for the provision of a new elementary school on the Swain House estate be proceeded with without delay.

Plans passed by the REDDITCH U.D.C.: Two houses, Charles Street, for Mr. H. E. Quiney: house, Bromsgrove Road, for Mr. A. F. Payne; house, Plymouth Road, for Mr. G. T. Chatwin; house, Plymouth Road, for Mr. E. C. Surman; four houses, Bromsgrove Road, for Mr. E. L. Lewis; house, Plymouth Road, for Miss A. Barnard; additions to "Talbot," Worcester Road, for Messrs. Mitchells and Butlers, Ltd.

*

The BRADFORD Corporation Tramways Committee has instructed the city architect to prepare plans, without delay, for the proposed central bus garage in Ludlam Street.

*

Plans passed by the LEEDS Corporation: Two houses, Water Lane, Farnley, for Mr. Thomas Thompson; two houses, Newport View, Headingley, for Mrs. Charlotte Wheatley; four houses, Stainburn Crescent, Moortown, for Mr. E. Lolley; four houses, Gipton Wood Avenue, Harehills, for Mr. J. Craven; twelve houses, Kellett Lane and Road, Lower Wortley, for Mr. Arthur Kellett; four houses, Vesper Road, Kirkstall, for Mr. Arthur Stabler; eighteen houses, Wensley Drive, Chapel Allerton, for Mr. Mark Bristow; four houses, Rourdhay Mount, Harehills, for Messrs. R. Battersby and Sons; two houses, Grovehall Drive, for Mr. Kellet Hainsworth; six houses, Upland Crescent, Harehills, for Messrs. Bailey Bros.; two houses, Leeds and Bradford Road, Stanningley, for Mr. Frank Rawnsley; twenty-two houses, Parkside estate, Dewsbury Road, for Mr. Alfred Booth; four houses, Gipton Wood Road, Harehills, for Messrs. F. Reddyhoff and Son; eight houses, Armley Grange View, Armley Grange estate, for Mr. Arthur Smith; four houses, Mavis Lane, Cookridge Village estate, for Mr. George A. Smith; ten houses, Skelton Road and Ivy Avenue, York Road, for Mr. Albert Cryer; four houses, Gipton Wood Place, Harehills, for Mr. James Ambler; four houses, Stainburn Crescent, Moortown, for Mr. R. Umpleby; two houses, Gipton Wood Avenue, Harehills, for Messrs. H. H. Fryer and G. Wooster; two houses, Harrison Crescent, York Road, for Mr. Mark Haley.

*

The OSSETT Corporation has authorized the waterworks engineer to advertise for tenders for a winch-house, smithy workshop, storeroom, lavatory, manager's house, lime store, and boundary wall at the Pildacre waterworks.

*

The BIRMINGHAM Corporation has obtained sanction for loans totalling £660,000 in connection with waterworks extensions.

*

The BIRMINGHAM Corporation Housing Committee has acquired the following sites: Washwood Heath, for the erection of fifty houses; Mill Farm estate, for the erection of 316 houses; and Northfield, for the erection of 2,000 houses.

The TRURO Corporation is acquiring land at Hendra for the erection of seventeen houses.

*

Plans passed by the TRURO Corporation: Alterations, Globe Hotel, for the licensee; extensions, 28 River Street, for Messrs. Carveth.

*

The Watford Ideal Homes, Ltd., are about to prepare plans of a factory at GARSTON.

*

Plans passed by the FINCHLEY U.D.C.: Additions, "Joiner's Arms" public-house, for Messrs. Charrington & Co., Ltd.; nine garages and workshops, Lyndon Garage, 141 High Road, for Messrs. Kirkwood and Smith; two houses, Woodberry Grove, for Mr. C. Brown; two bungalows, adjoining Killybegs, Hutton Grove, for Mr. H. J. Sheldrake; four houses, Hill Top, for The Oakwood Tenants, Ltd.; five houses, Leopold Road, for Mr. W. A. Taylor; five shops, flats, and offices, High Road, Whetstone, corner of Chandos Avenue, for Messrs. C. F. Day, Ltd.; six flats, Grove Road, for Mr. H. Rawles; twelve houses, Nether Street, for Mr. W. T. Haward; two houses, Claremont Park, for Messrs. Aird and Baldwin; seven garages, Reliance Petrol Station, High Road, East Finchley, for Messrs. Cory Bros., Ltd.; eighteen flats and twenty-one garages, Woodhouse Road and Grove Road, for Dr. N. A. Duncan.

*

Plans passed by the OLDHAM Corporation: Lavatories, messroom, etc., Crofton Street, for the North Western Road Car Co.; alterations, "Victoria Inn," Hollins Road, for Messrs. W. T. Rothwell, Ltd.; alterations, "Jolly Carter," 146 Lees Road, "Hen and Chickens," Miles Street, and "Lamb and Lark," Henshaw Street, "Shepherd's Boy," Huddersfield Road, and "Bull's Head Hotel," George Street, for Wilson's Brewery Co., Ltd.; reconstruction of washhouse, 13 Tynwald Street, for Mr. F. Warburton; pump-house and engine-house, Goods Yard, Clegg Street, for Shell-Mex, Ltd.; repair shop, Woodstock Street, for Co-operative Wholesale Society, Ltd.

*

The GLASGOW Corporation is to obtain tenders for the construction of the proposed new access road and bridge from Southbrae Drive over the London and North-Eastern Railway, at an estimated cost of £10,000.

*

The GLASGOW Corporation Housing Committee is to purchase 18 acres at Westmuir Street and four acres at Celtic Park for rehousing purposes.

*

The STALYBRIDGE Corporation has asked the Town Hall Committee to report on the sufficiency of the present accommodation at the Town Hall and future requirements.

Plans passed by the HASTINGS Corporation: Bungalow, Red Lane, St. Leonards, for Mr. P. H. Oxley, architect; two houses, Elphinstone Avenue, for Mr. H. M. Jeffery, architect; two bungalows and two garages, Edmund and Berlin Roads, for Mr. C. Hallam, architect; house, Woodland Vale Road, St. Leonards, for Mr. H. W. Coussens, architect; rearranging lavatory conveniences, St. Leonards Palace Pier, St. Leonards, for Mr. G. Phillips, architect, on behalf of St. Leonards Pier Co., Ltd.; additions, 117 West Hill, St. Leonards, for Messrs. Callow and Callow, architects; alterations, Bourne Street, for Mr. J. H. Howard, architect, for Watney, Combe, Reid & Co., Ltd.; iron stores, Gas Works Yard, Queen's Road, for Messrs. H. Ward and Son, architects for Messrs. F. R. Bones and Sons; alterations, 2, 4, and 6 Sedlescombe Road North, St. Leonards, for Messrs. Callow and Callow, architects; alterations, etc., 5 Caroline Parade, for Mr. J. Hunt, architect.

*

Plans passed by the FARNHAM U.D.C.: House, Firgrove Hill, for Mr. A. J. Stedman; additions, Hale Road, for Farnham Board of Guardians; store and garage, West Street, for Messrs. Kingham and Kingham; alterations, "Six Bells" public-house, for Messrs. Watney, Combe, Reid & Co.

*

The BRISTOL Corporation Housing Committee has decided upon the erection of an additional block of eighteen flats on the Lawford's Gate site, as a further instalment of the rehousing scheme in connection with the clearance of the Eugene Street area. The estimated cost of the block is £11,000, and tenders are to be invited.

*

Plans passed by the HAMPTON U.D.C.: Three houses, Ormond Avenue, for Mr. John Curtis; revised block plan of corner site, Percy Road and Holly Bush Lane, for Mr. R. T. Grove, on behalf of Messrs. Snelling and Sharman; extension to ice rink, "Thames Riviera," Tagg's Island, Hampton Court, for Messrs. W. H. Gaze and Sons, Ltd.; additions, Oldfield Works, Oldfield Road, for Messrs. Hall and Hall; four houses, Barlow Road and Tudor Avenue, for Messrs. Bullen & Co.; house, High Street, for Mr. H. F. Meacock; house, High Street, for Mr. A. F. King-Stephens.

*

The OLDHAM Corporation has passed plans submitted by Messrs. Renouprez and McLeod for a cinema and two lock-up shops in Gregory Street.

*

The BIRMINGHAM Education Committee is to erect the third department of the new council school, Bierton Road, at a cost of £18,400.

*

The BIRMINGHAM Education Committee is to proceed with the erection of the second block of new council school at Yardley Wood at a cost of £14,900.

RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 7½	1 2¼
A1	Abergavenny	S. Wales & M.	1 7	1 2¼
B	Abingdon ..	S. Counties	1 5½	1 1½
A	Accrington	N.W. Counties	1 7½	1 2¼
A3	Addlestone	S. Counties	1 6	1 1½
A	Adlington ..	N.W. Counties	1 7	1 2¼
A	Airdrie ..	Scotland	*1 7	1 2¼
C1	Aldeburgh	E. Counties	1 3	1 1¼
A	Altrincham	N.W. Counties	1 7½	1 2¼
B3	Appleby ..	N.W. Counties	1 4	1 0
A	Ashton-under-Lyne	N.W. Counties	1 7½	1 2¼
A2	Atherstone	Mid. Counties	1 6	1 1½
B3	Aylesbury ..	S. Counties	1 4	1 0
B3	BANBURY ..	S. Counties	1 4	1 0
B2	Bangor ..	N.W. Counties	1 4½	1 0½
A	BarnardCastle	N.E. Coast	1 7	1 2¼
A	Barnsley ..	Yorkshire	1 7½	1 2¼
B1	Barnstaple	S.W. Counties	1 5	1 0¾
A	Barrow ..	N.W. Counties	1 7½	1 2¼
A	Barry ..	S. Wales & M.	1 7½	1 2¼
B3	Basingstoke	S.W. Counties	1 4	1 0
B	Bath ..	S.W. Counties	1 5½	1 1¼
A	Batley ..	Yorkshire	1 7½	1 2¼
B	Bedford ..	E. Counties	1 5½	1 1¼
A2	Berwick-on-Tweed	N.E. Coast	1 6½	1 2
A2	Bewdley ..	Mid. Counties	1 6½	1 2
B3	Bicester ..	Mid. Counties	1 4	1 0
A	Birkenhead	N.W. Counties	*1 7½	1 2¼
A	Birmingham	Mid. Counties	1 7½	1 2¼
A	Bishop Auckland	N.E. Coast	1 7½	1 2¼
A	Blackburn	N.W. Counties	1 7½	1 2¼
A	Blackpool	N.W. Counties	1 7½	1 2¼
A	Blyth ..	N.E. Coast	1 7½	1 2¼
B3	Bognor ..	S. Counties	1 4	1 0
A	Bolton ..	N.W. Counties	1 7½	1 2¼
A2	Boston ..	Mid. Counties	1 6	1 1½
B1	Bournemouth	S. Counties	1 5	1 0¾
B2	Bovey Tracey	S.W. Counties	1 4½	1 0½
A	Bradford ..	Yorkshire	1 7½	1 2¼
A2	Brentwood	E. Counties	1 6½	1 2
A	Bridgend ..	S. Wales & M.	1 7½	1 2¼
B2	Bridgwater	S.W. Counties	1 4½	1 0½
A1	Bridlington	Yorkshire	1 7	1 2¼
A	Brighouse ..	Yorkshire	1 7½	1 2¼
B1	Brighton ..	S. Counties	1 5	1 0¾
A	Bristol ..	S.W. Counties	1 7½	1 2¼
B3	Brixham ..	S.W. Counties	1 4	1 0
A2	Bromsgrove	Mid. Counties	1 6½	1 2
C	Bromyard ..	Mid. Counties	1 3½	11¾
A	Burnley ..	N.W. Counties	1 7½	1 2¼
A	Burslem ..	Mid. Counties	1 7½	1 2¼
A2	Burton-on-Trent	Mid. Counties	1 6½	1 2
A	Bury ..	N.W. Counties	1 7½	1 2¼
A1	Buxton ..	N.W. Counties	1 7	1 2¼
B	CAMBRIDGE	E. Counties	1 5½	1 1¼
B2	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 7½	1 2¼
A	Carlisle ..	N.W. Counties	1 7½	1 2¼
B	Carmarthen	S. Wales & M.	1 5½	1 1¼
B2	Carnarvon	N.W. Counties	1 4½	1 0½
A1	Carnforth ..	N.W. Counties	1 7	1 2¼
A	Castleford	Yorkshire	1 7½	1 2¼
B1	Chatham ..	S. Counties	1 5	1 0¾
B1	Chelmsford	E. Counties	1 5	1 0¾
A3	Cheltenham	S.W. Counties	1 6	1 1½
A	Chester ..	N.W. Counties	1 7½	1 2¼
A	Chesterfield	Mid. Counties	*1 7½	1 2¼
B3	Chichester	S. Counties	1 4	1 0
A	Chorley ..	N.W. Counties	1 7½	1 2¼
B2	Cirencester	S. Counties	1 4½	1 0½
A	Clitheroe ..	N.W. Counties	1 7½	1 2¼
A	Clydebank	Scotland	1 7½	1 2¼
A	Coalville ..	Mid. Counties	1 7½	1 2¼
B	Colchester ..	E. Counties	1 5½	1 1¼
A	Colne ..	N.W. Counties	1 7½	1 2¼
A3	Colwyn Bay	N.W. Counties	1 6½	1 1½
A	Consett ..	N.E. Coast	1 7½	1 2¼
A3	Conway ..	N.W. Counties	1 6½	1 1½
A	Coventry ..	Mid. Counties	1 7½	1 2¼
A3	Crewe ..	N.W. Counties	1 6½	1 1½
A3	Cumberland	.....	1 6	1 1½
A	DARLINGTON	N.E. Coast	1 7½	1 2¼
A	Darwen ..	N.W. Counties	1 7½	1 2¼
B2	Deal ..	S. Counties	1 4½	1 0½
A3	Denbigh ..	N.W. Counties	1 6	1 1½
A	Derby ..	Mid. Counties	1 7½	1 2¼
A	Dewsbury	Yorkshire	1 7½	1 2¼
B	Didcot ..	S. Counties	1 5½	1 1¼
A	Doncaster	Yorkshire	1 7½	1 2¼
C1	Dorchester	S.W. Counties	1 3	11¼
A3	Driffield ..	Yorks	1 6	1 1½
A3	Droitwich	Mid. Counties	1 6	1 1½
A1	Dudley ..	Mid. Counties	1 7	1 2¼
A	Dundee ..	Scotland	1 7½	1 2¼
A	Durham ..	N.E. Coast	1 7½	1 2¼
B1	EAST-BOURNE	S. Counties	1 5	1 0¾
A	Ebbw Vale	S. Wales & M.	1* 7½	1 2¼
A	Edinburgh	Scotland	1 7½	1 2¼
A	E. Glamorganshire & Monmouthshire	S. Wales & M.	1 7½	1 2¼
B	Exeter ..	S.W. Counties	*1 5½	1 1¼
B1	Exmouth ..	S.W. Counties	1 4½	1 0½
B	FELIXSTOWE	E. Counties	1 5½	1 1¼
A3	Filey ..	Yorks	1 6	1 1½
A	Fleetwood ..	N.W. Counties	1 7½	1 2¼
B2	Folkestone	S. Counties	1 4½	1 0½
A	Frodsham ..	N.W. Counties	1 7½	1 2¼
B3	Frome ..	S.W. Counties	1 4	1 0
A	GATESHEAD	N.E. Coast	1 7½	1 2¼
B1	Gillingham	S. Counties	1 5	1 0¾
A3	Gloucester	S.W. Counties	1 6	1 1½
A2	Goole ..	Yorkshire	1 6½	1 2
B	Gosport ..	S. Counties	1 5½	1 1¼
A3	Grantham	Mid. Counties	1 6	1 1½
A1	Gravesend	S. Counties	1 7	1 2¼
A	Greenock ..	Scotland	*1 7½	1 2¼
A	Grimsby ..	Yorkshire	1 7½	1 2¼
B1	Guildford ..	S. Counties	1 5	1 0¾
A	HALIFAX ..	Yorkshire	1 7½	1 2¼
A	Hanley ..	Mid. Counties	1 7½	1 2¼
A	Harrogate	Yorkshire	1 7½	1 2¼
A	Hartlepools	N.E. Coast	1 7½	1 2¼
B2	Harwich ..	E. Counties	1 4½	1 0½
B2	Hastings ..	S. Counties	1 4½	1 0½
B1	Hatfield ..	S. Counties	1 5	1 0¾
B	Hereford ..	S. W. Counties	1 5½	1 1¼
B	Hertford ..	E. Counties	1 5½	1 1¼
A1	Heysham ..	N.W. Counties	1 7	1 2¼
A	Howden ..	N.E. Coast	1 7½	1 2¼
A	Huddersfield	Yorkshire	1 7½	1 2¼
A	Hull ..	Yorkshire	1 7½	1 2¼
A	ILKLEY ..	Yorkshire	1 7½	1 2¼
A	Immingham	Mid. Counties	1 7½	1 2¼
B	Ipswich ..	E. Counties	1 5½	1 1¼
C1	Isle of Wight	S. Counties	1 3	11¼
A	JARROW ..	N.E. Coast	1 7½	1 2¼
A	KEIGHLEY	Yorkshire	1 7½	1 2¼
B1	Kendal ..	N.W. Counties	1 5	1 0¾
B1	Keswick ..	N.W. Counties	1 5	1 0¾
A3	Kettering ..	Mid. Counties	1 6	1 1½
A2	Kidderminster	Mid. Counties	1 6½	1 2
B2	King's Lynn	E. Counties	1 4½	1 0½
A	LANCASTER	N.W. Counties	1 7½	1 2¼
A2	Leamington	Mid. Counties	1 6½	1 2
A	Leeds ..	Yorkshire	1 7½	1 2¼
A	Leek ..	Mid. Counties	1 7½	1 2¼
A	Leicester ..	Mid. Counties	1 7½	1 2¼
A	Leigh ..	N.W. Counties	1 7½	1 2¼
B3	Lewes ..	S. Counties	1 4	1 0
A3	Lichfield ..	Mid. Counties	1 6	1 1½
A	Lincoln ..	Mid. Counties	1 7½	1 2¼
A	Liverpool ..	N.W. Counties	*1 10	1 4½
A3	Llandudno	N.W. Counties	1 6	1 1½
A	Llanelly ..	S. Wales & M.	1 7½	1 2¼
	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 2¼
A	Loughborough	Mid. Counties	1 7½	1 2¼
A3	Luton ..	E. Counties	1 6	1 1½
A	Lytham ..	N.W. Counties	1 7½	1 2¼
A1	MACCLESFIELD	N.W. Counties	1 7	1 2¼
B	Maidstone	S. Counties	1 5½	1 1¼
A3	Malvern ..	Mid. Counties	1 6	1 1½
A	Manchester	N.W. Counties	1 7½	1 2¼
A	Mansfield	Mid. Counties	1 7½	1 2¼
B2	Margate ..	S. Counties	1 4½	1 0½
A3	Matlock ..	Mid. Counties	1 6	1 1½
A	Merthyr ..	S. Wales & M.	1 7½	1 2¼
A	Middlesbrough	N.E. Coast	1 7½	1 2¼
A3	Middlewich	N.W. Counties	1 6	1 1½
B2	Minehead ..	S.W. Counties	1 4½	1 0½
A	Monmouth	S. Wales & M.	1 7½	1 2¼
	S. and E. Glamorganshire			
A1	Morecambe	N.W. Counties	1 7	1 2¼
A3	NANTWICH	N.W. Counties	1 6	1 1½
A	Neath ..	S. Wales & M.	1 7½	1 2¼
A	Nelson ..	N.W. Counties	1 7½	1 2¼
A	Newcastle ..	N.E. Coast	1 7½	1 2¼
A	Newport ..	S. Wales & M.	1 7½	1 2¼
A	Normanton	Yorkshire	1 7½	1 2¼
A1	Northampton	Mid. Counties	1 7	1 2¼
A	North Staffs.	Mid. Counties	1 7½	1 2¼
A	North Shields	N.E. Coast	1 7½	1 2¼
A3	Norwich ..	E. Counties	1 6	1 1½
A	Nottingham	Mid. Counties	1 7½	1 2¼
A	Nuneaton ..	Mid. Counties	1 7½	1 2¼
B	OAKHAM ..	Mid. Counties	1 5½	1 1¼
A	Oldham ..	N.W. Counties	1 7½	1 2¼
A3	Oswestry ..	Mid. Counties	1 6	1 1½
B	Oxford ..	S. Counties	1 6	1 1½
A	PAISLEY ..	Scotland	*1 7½	1 2¼
C	Pembroke	S. Wales & M.	1 3	11¼
A	Perth ..	Scotland	*1 7½	1 2¼
A3	Peterborough	Mid. Counties	1 6	1 1½
A	Plymouth	S.W. Counties	*1 7½	1 2¼
A	Pontefract	Yorkshire	1 7½	1 2¼
A	Pontypridd	S. Wales & M.	1 7½	1 2¼
B	Portsmouth	S. Counties	1 5½	1 1¼
A	Preston ..	N.W. Counties	1 7½	1 2¼
A	QUEENSFERRY	N.W. Counties	1 7½	1 2
A3	READING	S. Counties	1 6	1 1½
B	Reigate ..	S. Counties	1 5½	1 1¼
A3	Retford ..	Mid. Counties	1 6	1 1½
A	Rhondda Valley	S. Wales & M.	1 7½	1 2¼
A3	Ripon ..	Yorkshire	1 6	1 1½
A	Rochdale ..	N.W. Counties	1 7½	1 2¼
B	Rochester ..	S. Counties	1 5½	1 1¼
A1	Ruabon ..	N.W. Counties	1 7	1 2¼
A2	Rugby ..	Mid. Counties	1 6½	1 2
A3	Rugeley ..	Mid. Counties	1 6	1 1½
A	Runcorn ..	N.W. Counties	1 7½	1 2¼
A3	ST. ALBANS	E. Counties	1 6	1 1½
A	St. Helens ..	N.W. Counties	1 7½	1 2¼
B3	Salisbury ..	S.W. Counties	1 4	1 0
A1	Scarborough	Yorkshire	1 7	1 2¼
A	Scunthorpe	Mid. Counties	1 7½	1 2¼
A	Sheffield ..	Yorkshire	1 7½	1 2¼
A	Shipley ..	Yorkshire	1 7½	1 2¼
A3	Shrewsbury	Mid. Counties	1 6	1 1½
A2	Skipton ..	Yorkshire	1 6½	1 2
A3	Slough ..	S. Counties	1 6	1 1½
A2	Solihull ..	Mid. Counties	1 6½	1 2
A3	South'pton	S. Counties	1 6	1 1½
A2	Southend-on-Sea	E. Counties	1 6½	1 2
A	Southport ..	N.W. Counties	1 7½	1 2¼
A	S. Shields ..	N.E. Coast	1 7½	1 2¼
A2	Stafford ..	Mid. Counties	1 6½	1 2
A	Stockport ..	N.W. Counties	1 7½	1 2¼
A	Stockton-on-Tees	N.E. Coast	1 7½	1 2¼
A	Stoke-on-Trent	Mid. Counties	1 7½	1 2¼
B	Stroud ..	S.W. Counties	1 5½	1 1¼
A	Sunderland	N.E. Coast	1 7½	1 2¼
A	Swadlincote	Mid. Counties	1 7½	1 2¼
A	Swansea ..	S. Wales & M.	1 7½	1 2¼
B	Swindon ..	S.W. Counties	1 5½	1 1¼
A1	TAMWORTH	N.W. Counties	1 7	1 2¼
B1	Taunton ..	S.W. Counties	1 5	1 0¾
A	Teeside Dist.	N.E. Counties	1 7½	1 2¼
B	Teignmouth	S.W. Coast	1 5½	1 1¼
A	Todmorden	Yorkshire	1 7½	1 2¼
A2	Torquay ..	S.W. Counties	1 6½	1 2
C	Truro ..	S.W. Counties	1 3½	11¾
B1	Tunbridge Wells	S. Counties	1 5	1 0¾
A	Tunstall ..	Mid. Counties	1 7½	1 2¼
A	Tyne District	N.E. Coast	1 7½	1 2¼
A	WAKEFIELD	Yorkshire	1 7½	1 2¼
A1	Walsall ..	Mid. Counties	1 7	1 2¼
A	Warrington	N.W. Counties	1 7½	1 2¼
A2	Warwick ..	Mid. Counties	1 6½	1 2
A	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 7½	1 2¼
B	Weston-s-Mare	S.W. Counties	1 5½	1 1¼
A2	Whitby ..	Yorkshire	1 6½	1 2
A	Widnes ..	N.W. Counties	1 7½	1 2¼
A	Wigan ..	N.W. Counties	1 7½	1 2¼
B2	Winchester	S. Counties	1 4½	1 0½
A3	Windsor ..	S. Counties	1 6	1 1½
A	Wolverhampton	Mid. Counties	1 7½	1 2¼
A3	Worcester	Mid. Counties	1 6	1 1½
A3	Worksop ..	Yorkshire	1 6	1 1½
A1	Wrexham ..	N.W. Counties	1 7	1 2¼
B	Wycombe	S. Counties	1 5½	1 1¼
B1	YARMOUTH	E. Counties	1 5	1 0¾
B2	Yeovil ..	S.W. Counties	1 4½	1 0½
A	York ..	Yorkshire	1 7½	1 2¼

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.

* 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 9
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. lap, 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		6 7 0
Grey-green do.		5 9 0
Green peggies, 12 in. to 8 in. long		4 17 0

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, 1¼ in. thick, laid complete with splayed headings, per square	2	5	0
DEAL skirting torus, moulded 1¼ 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, 1¼ 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, 1¼ 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 1¼ in. and risers 1 in., tongued and grooved including fir carriages, per ft. sup.	0	2	6
DEAL wall strings, 1¼ 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
1½ 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.*

*

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

*

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

*

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. ¾ 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. ¾ in., each	0	3	2
DO. 1 in., each	0	3	8
BRASS screw-down stop cock and two soldered joints, ½ in., each	0	11	0
DO. ¾ 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

*

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, ½ 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 : 4lbs in crates :			
Clear, 21 oz.	£0	0	4½
DO. 26 oz.	0	0	5
Cathedral white, per ft.	0	0	7½
Polished plate, British ⅛ 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, ⅛ in., per ft.	0	0	6½
DO. *¼ in. per ft.*	0	0	6½
Linseed oil putty, per cwt.	0	15	0

*

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

*

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, ⅛ 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, ⅛ 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	8½	7	6
Alder	5½	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	8½	7	—	10	8	—	11½	—	—	1 6	—	—
Plain Oak 1 side	6½	4	—	7½	7	—	9½	—	—	1 0	—	—
Oregon Pine	5	4	—	5½	5	—	6	—	—	—	—	—