THE ARCHITECTS' JOURNAL

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ARCHITECTURAL PUBLICITY

THE full-page account of the history and functions of the Institute of Chartered Accountants that appeared in the London Number of the *Times* on November 8 constituted an interesting innovation. The code of conduct that forbids private advertising in the various professions has had the effect of leaving the public increasingly ignorant as to what a profession stands for and what precise services it has to offer to the community. This is unfortunate but undeniable, and in an attempt, no doubt, to counteract the evils of obscurity the chartered accountants have issued this manifesto *en masse*. There exists a strong feeling in architectural circles in favour of some such mass propaganda; this is evidenced by the formation of the Architecture Club, and is recognized by the Council of the R.I.B.A.[1] Rebellion against public apathy and misconception is, however, not limited to a desire for common action; but we find architects desirous to cajole or compel the public by every reasonable means to do its obvious duty and build truly and well. This became clear in the correspondence concerning Mr. Smarterly. Those who opposed his methods used the argument that a man who uses vulgar methods must build vulgar houses. This standpoint is not easily maintained, because we must many of us know of fine work the commission for which was obtained by dubious or back-door methods. At any rate, nobody who accepted the statement that Smarterly's houses were really good seems to have objected to his "stunt," although it does not follow that his supporters would have adopted his methods themselves even had they thought of them.

When, however, we leave the personal and come to the general we are on safer ground, and few are likely to dispute the benefit that is conferred on the public when it is given the opportunity really to understand something of the history and functions of our great professions. Emerging as we are from an age of unrestrained commercialism, one would have imagined that of all necessary professions that of the accountant would be the most in demand. Increasing business and complex taxation require ever greater skill in organization and book-keeping. A commercial outlook implies, on the other hand, a low value in art, apart from what we may call the snobbery of the collector of antiques or unique specimens, hence the artist-architect gives way to the engineer, the builder, and the valuer. At first sight one might suppose that the accountant and the architect—representing commerce and contemporary art—must always play the parts of the figures in the Swiss barometer, that when one is out the other must necessarily be eclipsed; but in a country that possesses any idealism whatsoever there must be room for both, for both are necessary.

When we consider how much building ought to be in the hands of architects and is not, and by consequence how much of our country is yearly being ruined, we can realize the temptation among aspiring architects to wrest practices by methods less defensible than those of Mr. Smarterly. This is a real danger, and can only be met by the knowledge among young architects that their attainments and their value to the community are kept in the public eye, and that a campaign is being carried on on their behalf, not as individuals, but as part of a great organization. It is difficult for us to realize how great a change has already been brought about. We may safely say that of every five houses built today one is of tolerable design, whereas in small house property thirty years ago the number that were even tolerable was not one in a hundred. The general Press devotes far more space to architecture and town-planning than it ever did before, and the buildings illustrated in advertisements of all kinds are no longer uniformly vapid. The only direction in which architecture flourished before the war was in the comparatively luxurious country house, a form of art that was peremptorily brought to an end and of which we can imagine no resurrection. It is, therefore, fortunate that we have our one in five of the smaller houses on the credit side today. We may feel some confidence that this democratizing of architecture is only a beginning, and that in thirty years' time the architect will have regained his place as an artist with a necessary function in everyday life; but meanwhile the spoliation continues, and no group of enthusiasts, reformers, or prophets can slow down the terrible momentum of ingrained bad habits all at once. If the chartered accountants, with their well-deserved public recognition, find it worth their while to keep the public abreast with their affairs, might it not be worth the attention of the architectural profession as represented by the R.I.B.A.?

It was a disaster that unrest and discontent over our blind building methods should have been dormant for so long and over so active a period of building, but mass psychology works strangely. The public mind was not ripe for reform during the reign of Queen Victoria. The war shattered many illusions and jolted the community to an extent sufficient to allow it to revise its acceptances, and who can doubt that architecture's contribution to the new order will be recognized if its message is delivered continually and emphatically so that all can hear it?

[1] This refers to the committee recently set up to keep the Press in touch with architectural concerns of public importance.

NEWS AND TOPICS

NOTHING could show the need of registration for architects more forcibly than the fact that the second reading of the Registration Bill was gently washed out by lack of interest on the part of the Members of Parliament who did not attend in sufficient numbers to give the matter a hearing. Something must be done to raise architecture in England to the position due to this august and venerable art and to combat the ignorance and prejudice that prevail even among people who are intelligent enough as far as other, minor, arts are concerned. A scheme of registration may be open to criticism on points of detail, and may fail in almost all the specific professional objects for which it is designed, and still do good by the mere fact that attention is called to an art that has been allowed to drift into obscurity behind the advancing tide of commercial progress and advertisement. Possibly that is the best that can be hoped for from a Registration Bill, and if rejection is only a stimulant to discussion, all is not lost by the ignominious fate of the Bill in its present form.

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So objectionable were the "Restorations" of ancient monuments executed in the Victorian period that the news that a new vestry is to be added to Westminster Abbey seems almost like the publication of the intention to commit a crime. There is, of course, no reason why additions to old buildings should not be both useful and beautiful, though painful experience makes us face the prospect of them with misgiving. Mr. Walter Tapper, who has prepared the design for the vestry, will have to face criticism that is not free from prejudice, and he is to be congratulated on having taken the wise course of producing a model to illustrate the appearance of his proposed building in its surroundings. Preliminary criticism is made valuable if it is constructive, and the embodiment of the design in the comprehensible medium of a model should make either intelligent criticism or intelligent appreciation possible.

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The reproach that there is no British sculpture need no longer be endured. At the Goupil Gallery Eric Gill throws down a challenge to any sculptor of any land. With his colossal female torso he defies the Greeks, the Egyptians, and despoils the moderns. There has been no such thing in England. It is called "Mankind," but that does not matter: what it really amounts to is a theory of form triumphantly vindicated in practice. In the beginning it is a superb flawless piece of Hoptonwood stone; in the end it is a revelation of pure plastic beauty. I do not think that structurally it is flawless, for the calves seem to dwarf the thighs of the kneeling figure. The lines of the back are very fine, the front view is monumental in a way hitherto unknown in English sculpture. It is finely set on its inconspicuous base, a model of plastic balance. Almost as important, and important in itself because of its material, is the pinewood caryatid. No better use has been made of material than in this large piece. The markings of the wood have been subdued entirely to the modelling; the cutting providing a satisfying surface. There are thirteen other pieces, grave and gay, all going to make up an exposition of glyptic art of the highest significance and such as has never been made before in this country.

The Architecture Club's meeting at the A.A. on Thursday evening was particularly interesting from several points of view. The proceedings were "semi-unofficial," and there were present no guests who were definitely expected to bare their souls; as a result of this, the talk was of the "family gathering" sort, and what a poor family it is! Mr. Yerbury's slides and accompanying banter were extremely stimulating and enlightening, and Mr. Robertson's remarks were all that should have been needed to invoke a very lively discussion; and yet what followed proved once again that while the journalist members have the ability to speak, they cannot do so about architecture, while those architects who have ideas and views on their subject are congenitally unable to articulate. Mr. J. C. Squire's retirement from the presidency of the club might be a worse blow than it is were not Sir Lawrence Weaver to take his place; but it is evident that, for the time being, at least, the propagandist work of the club must be done through the medium of the Press rather than by word of mouth, so that Mr. Squire's presence on the Press Committee is going to be, perhaps, more valuable than it could ever be in the presidential chair.

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"Ancient Bridges" was the subject of Mr. G. H. Jack's paper at the R.I.B.A. on Monday night. Mr. Jack is a Herefordshire man—county surveyor and bridgemaster to the Herefordshire County Council—and there some of the finest bridges are. Mr. Jack confessed that the literature on bridges was scanty, and his concluding words were a plea for a record of our English bridges on the lines of Professor Emerson's work on *The Old Bridges of France*, published by the American Institute of Architects in 1925. ("It is certain that the ever-increasing needs of road traffic will necessitate, and that very shortly, the disappearance of many more of the older bridges," said Mr. Jack.) His own collection of photographs, shown on the screen, would form a nucleus to such a record. Mr. H. M. Fletcher, who proposed the vote of thanks, said one of the finest bridges he had ever seen was that which the Gods built into Valhalla. It was made of rainbow. He had seen it several times at Covent Garden, and judging from the strains to which it was there subjected, he thought rainbow should be considered as the material for the future.

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What, in Heaven's name, has happened to Olympia? What, rather, has happened to those who promote the exhibitions there? Not so very long ago THE ARCHITECTS' JOURNAL published photographs of the stands and paraphernalia of the Advertising Exhibition, and commented favourably upon the dawn of architectural thinking in that Olympia which had formerly been as sulphurous fumes to plant life. The Ideal Home Exhibition, apart altogether from its actual interest from the industrial and domestic points of view, has also achieved a very definite architectural value; it has taken up the story where the Advertising Exhibition left off, and has produced an entity which is complete in itself; it has been planned (architecturally) at ground level, and then again from above; the whole vista is satisfying from the floor or from the gallery—and then the stands have been built with interest and a harmony of conception, as by a single mind. Not that there is nothing more to be learnt about the matter;

but the defects and possibilities for improvement are visible on the surface, so that they will certainly not be lost upon those responsible. In the meanwhile, before the "Ideal Home" comes round again, the Building Exhibition may have established an even higher standard.

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An aspect of Thomas Hardy's architectural interests is enlarged upon in an article on "Thomas Hardy and 'Anti-Scrape'" in the *Times Literary Supplement* for February 23. Perhaps it was because Hardy was an ardent lover of old buildings that he ceased to practise architecture, for in his early days their normal treatment at the hands of a trained "restorer" was little short of wholesale demolition and rebuilding. Intelligent critics were protesting against this atrocious destruction of historical evidences in the name of "restoration," but they were often exceptional men outside the professional ranks, and their vigorously-worded appeals too often passed unregarded. The principles of conservation were stated clearly by Ruskin long before they came to be generally understood, even if it can be said that they are generally understood now, and the early efforts of the "Anti-Scrape" (Society for the Protection of Ancient Buildings) were principally directed against the prevailing prejudice in favour of making things look neat and new at all costs.

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Thomas Hardy's part in these matters was not by any means confined to the creation of an "atmosphere" favourable to conservation of ancient buildings by sympathetic references to them in his novels. He contributed to the S.P.A.B. a paper entitled "Memories of Church Restoration," which was read at the society's general meeting on June 20, 1906, and recalled "in a contrite spirit" his own brief experience as a church-restorer. Adding example to precept, Hardy sometimes undertook to report upon the present state and proposed repair of ancient buildings and entered into the practical difficulties which intervene between the ideal of complete conservation and the present-day uses of the building. Whether an old roof should be thatched, in spite of the cost of insurance, or tiled with stone slabs as he suspects it to have been designed, or provided with new tiles in view of their greater efficiency, are questions raised by Hardy in one of his reports. Enthusiast as he was, Hardy was not the man to ignore the claims of living men in respecting the appeal of inanimate stone; but to him, as to Ruskin, and to William Morris and the "Anti-Scrape," stones which have become historical are not mere inert masses of material, but are vocal and eloquent of the best ideals of the past. If one of them is to be moved or destroyed, it must be only under pressure of urgent structural necessity, and it is the duty of the conservator to weigh carefully all factors of his problem before concluding that such necessity applies in any given instance.

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In Hardy's will he requested that there be erected in the Church of St. Juliet, near Boscastle, Cornwall, a tablet (the design for which would be found amongst his papers) recording his connection with the restoration of that church.

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One of the most interesting of the old Southwark inns, of which, with one exception, all traces have disappeared,

The "King's Head."

was the "King's Head," which stood rather nearer the foot of London Bridge than did the "White Hart" and the "George," its back portion, however, abutting on the yard of the latter tavern. The date of its establishment is not recorded, but that it was before the Reformation is proved by the fact that it was one of those hostelries which changed their names in conformity with the change in religious belief, and from being the "Pope's Head" became the "King's Head." Its original rental was £66, but after the fire of 1676 this was reduced to £38 on the condition that the then tenant, Mary Duffield, should rebuild the place. In its rehabilitated form it continued to flourish, and even as late as 1875 John Timbs, the antiquary, speaks of seeing the sign, a head of Henry VIII, and remembered it as being a well-executed one. In 1884 a considerable portion of the old galleries (quite Oriental in their design) was demolished, and five years later the whole of the picturesque structure was pulled down. The little photograph indicates how decorative it was.

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Whenever some more than usually objectionable work of alleged art threatens the amenities, some kindly enthusiast inquires "Can nothing be done to preserve us from these disharmonious manifestations of the creative impulse?" Birmingham seems to have hit upon a method of bringing effective and timely criticism to bear in such cases by means of its Advisory Art Committee, whose annual report for the year ending December 31, 1927, is before me. The report is not a long one, since a rule of the committee is that no matter referred to shall be divulged; but reports have been made upon many different subjects submitted for the purpose, and fifteen visits have been made to sites of proposed buildings in the course of the year. A committee of competent artists standing ready to be questioned on any subject of interest should mean a great deal to the artistic character of their city and to its modern developments. It would be interesting to learn more about the nature of the criticism and advice given, but in the meantime I heartily commend the idea of such disinterested endeavour to obtain sound design in the case of new works and efficient protection for ancient monuments.

ASTRAGAL

MR. SITWELL IN GERMANY

[BY R. FLEETWOOD HESKETH]

German Baroque Art gives an account of the architecture, sculpture, and painting produced in Central Europe between the years 1685 and 1780, under the influence of the Baroque and Rococo arts. It is therefore important at the outset to know precisely what are the provinces to which each of these closely associated styles belong. Mr. Sitwell gives us a clue on page 78: " Baroque and Rococo, those two excessive and interflowing shadows of the classical, merge themselves into an inseparable whole where there is hardly anything save a criterion of scale to distinguish between them. . . . The palaces of Vienna, belonging mostly to the first half of my range of a century, are from their date Baroque; Potsdam, Bruchsal, or Nymphenburg, coming well on into the eighteenth century, are of an indisputable Rococo taste." This passage enlightens us on three points: that Baroque and Rococo are both related to the classical school; that the two styles can be distinguished by a difference in scale; and that one comes after the other in point of time. At the risk of stating what is obvious, I should like to carry the argument a stage farther and give what I believe to be the meaning attached to these two words in Germany at the present day. This meaning does not appear to conflict with the designations which Mr. Sitwell has given to the buildings mentioned in his book.

German Baroque Art. By Sacheverel Sitwell. Duckworth.

Baroque, which came to Central Europe from Italy, is a style based in its origin upon constructional forms. It is a bastard classicism and as such is a direct offshoot of a traditional school. It gained its independence as a style by taking liberties with the classical forms which its parent would not have countenanced. From classicism too it inherited the purely ornamental features which belong to that style—the acanthus, the scroll, and the human figure. But in its hands the scroll became exaggerated and the human figure, though not usually distorted, was put in more uncomfortable positions.

Rococo has no such ancestry. Its origin has usually been traced to Paris, and it is in its essence non-constructional. Being in the first place a decorative art, it usually came to be grafted on to buildings of some established style. Pure Rococo buildings do exist. The " Haus zum Wolf " in the Rosgarten Strasse at Constance has a pure Rococo façade. But such things are rare. As an embellishment, however, its capabilities are almost unlimited. With equal grace it adorns the Corinthian façade on the north side of Sans Souci, the rooms of Chesterfield House in London, and the Baroque churches of Southern Bavaria. Rococo was more often grafted on to the Baroque than on to any other classical manner, and it is this fact which brought the two styles into confusion. The principal staircase of the palace at Brühl, near Cologne (plates 39 and 40) is an admirable example of a Baroque framework upon which Rococo ornament has been draped.

So long as its details alone were affected, Baroque could still claim to be called a living art. But at the beginning of the eighteenth century it was rapidly losing ground; and when, in surrender to the new style, the old constructional members—the column and the entablature—began to

The Belvedere, Vienna. [*From* German Baroque Art.]

Music-room in the New Palace, Potsdam. [*From* German Baroque Art.]

dissolve into pure unhistorical form, then Baroque may be said to have finally lost its identity. The "Haus zum Falken" at Würzburg (page 67) will serve as an illustration of this process in its ultimate stage; the walls of this building are encrusted with Rococo ornament, but round its windows may be seen classical dressings in the final process of dissolution. Mr. Sitwell's allusion to Art Nouveau in connection with this building has suggested a recent architectural development in this country which forms a close parallel to the history of Rococo and Baroque. In the nineteenth century a revolt in favour of free classicism took place in England, principally under the leadership of Norman Shaw. When Shaw's school had come to maturity and taken its place as a national style, Paris gave birth to a new form of decorative art, which has acquired the name of "Art Nouveau." The influence of Paris's offspring spread rapidly over Europe, and in England it attached itself principally to the prevailing style of the day—the free classic. A fusion took place, and one calls to mind many billiard-rooms, dating from the early years of the present century, in which it is difficult to know how much to assign to the classical tradition and how much to the new movement from Paris. The parallel is made doubly interesting by the fact that, both in the development of Rococo and of "Art Nouveau," France has shown her preference for formalism and Germany for naturalism. Where France built up her Rococo patterns from kidney-shaped scrolls placed back to back, trellis work, and other abstract forms, Germany made a free use of such natural objects as the vine, the oak leaf, and the bullrush. So, too, in the later period; where in Germany the artist crowned a slender stem with a sunflower or a bluebell, in France he would more often employ a strange bloom not unlike a flattened spade in cards and unknown to Nature.

In fulfilment of its title, Mr. Sitwell's book deals mainly with Baroque art, which, though subject to great local variation, had become the vernacular German style by the end of the seventeenth century. "The Baroque has become the true national expression of this part of the world, and many streets in Dresden and many small, isolated houses in towns like Bamberg show that these canons were applicable to buildings less proud than palace or convent." Mr. Sitwell has emphasized the importance of Vienna as an early centre of Baroque art. Vienna's close connection with Italy in the seventeenth century brought many Italians to work in that city. Under this foreign stimulus a native school sprang up of which Fischer von Erlach and Lucas von Hildebrandt were the leaders. The work of these two men is described in great detail, and nearly a third of the illustrations are given up to their buildings.

Rococo never assumed the proportions of a national style in Central Europe—it was most widely adopted in Southern Bavaria, largely owing to the activities of J. M. Fischer. This art was brought to its highest degree of perfection in the work of Cuvilliés at Munich and of Nahl at Potsdam. Cuvilliés' beautiful rooms at Nymphenburg and in the Residenz at Munich are fully described on pages 56 to 58; but by some mischance the founder of the great Potsdam School of decoration has escaped

mention, though his work is discussed and one of his rooms illustrated (plate 33).

J. A. Nahl (1710–86) entered the service of Frederick the Great in 1742. The Goldene Galerie in the palace of Charlottenburg at Berlin was his first work. He then went to Potsdam and was for some time employed at the Stadt Schloss and Sans Souci. Before either of these palaces were finished a dispute with the king compelled him to leave his service, and he retired to Strasbourg. From here he went to Berne, in Switzerland, where examples of his work are still to be found. In later life he returned to Germany and was employed by the Elector of Hesse to decorate the rooms of the palace of Wilhelmstal, near Cassel. This is believed to have been his last work, and was finished in 1768. Sans Souci and the Stadt Schloss had in the meantime been finished by his former pupils, the two Hoppenhaupts, father and son, who also decorated the Neues Palais, which Mr. Sitwell places highest of the three.

Just as Oppenard's work may be held as typical of French design, so the highly naturalistic Rococo of Nahl and his followers takes its place at the German end of the scale. Cuvilliés would appear to come somewhere between the two. Mr. Sitwell goes so far as to place the whole town of Potsdam, and with it presumably its Rococo, altogether outside the sphere of nationality. "This town is only German, then, because it is in Germany; but its character, though its details are so largely the work of Frenchmen, is not French any more than it is German. It possesses something outside and beyond either of these alternatives, and this mystery of its quality is to be ascribed entirely to Frederick." He places its individuality to the credit of Frederick the Great absolutely. This theory is hardly borne out by Nahl's work at Wilhelmstal; nor have I been able to find names to confirm the statement that "its details are so largely the work of Frenchmen." But assuming the fact to be that Nahl did receive assistance from French craftsmen, I do not think that this will dislodge him from his position as creator of Potsdam Rococo.

The Staircase at Brühl, Cologne. [*From* German Baroque Art.]

The book is divided into three chapters. The first, entitled "The Historical Scene," proves the importance of Vienna, the ancient capital of the Hapsburgs, who ruled Austria-Hungary and the Holy Roman Empire. It places Leopold I, Charles VI (the last Hapsburg of the male line), and the great soldier Prince Eugène as the principal figures of our period.

The second chapter, "The Architectural Tour," describes the principal Baroque and Rococo buildings of Central Europe; first, those of the old Austrian Empire—of Austria, Hungary, and Bohemia; then those of Bavaria, Saxony, and Prussia; and, finally, of the Rhine provinces and the lesser German States. From this elaborate catalogue of names and places five architects, J. B. Fischer von Erlach, Lucas Hildebrandt, K. I. Dientzenhofer, J. B. Neumann, and J. M. Fischer emerge into prominence.

The third chapter, "An Epitome of Painters and Craftsmen," falls under three heads: the first contains general remarks upon the nature and origin of the Baroque and Rococo arts in Central Europe; the second, a catalogue of painters and sculptors of the period—particularly Tiepolo and the two Zicks as ceiling and fresco painters, Raphael Donner, Ignaz Günther, and Balthazar Permoser as sculptors, and Egid Quirin and Cosmas Damian as designers of altars; the third contains a short account of contemporary architecture in Holland, Scandinavia, and Russia. A bibliography and forty-eight excellent plates complete this very interesting book.

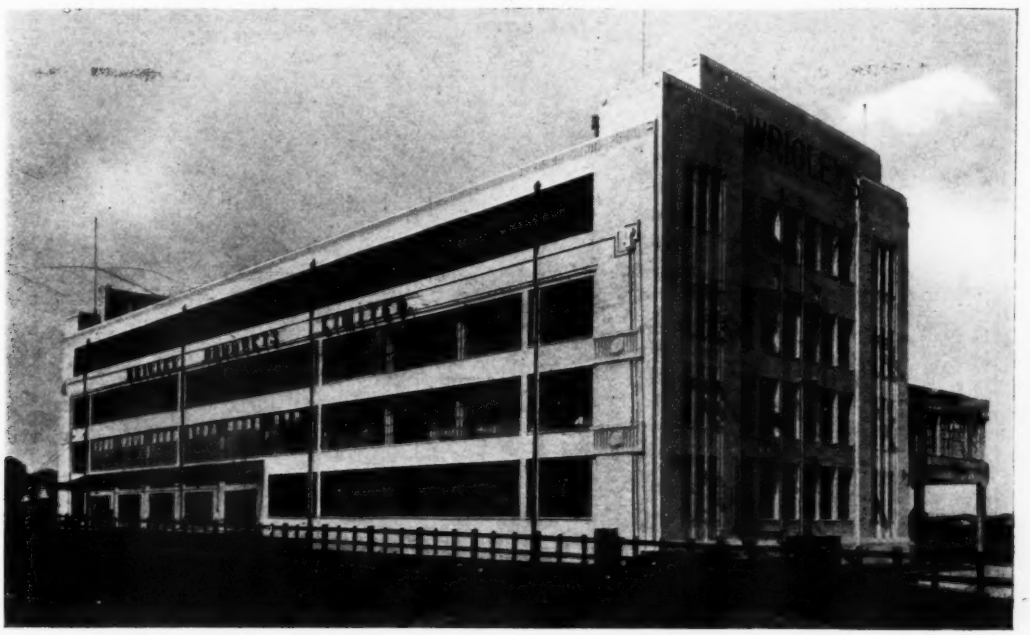
WRIGLEY'S NEW FACTORY

[BY ERIC L. BIRD]

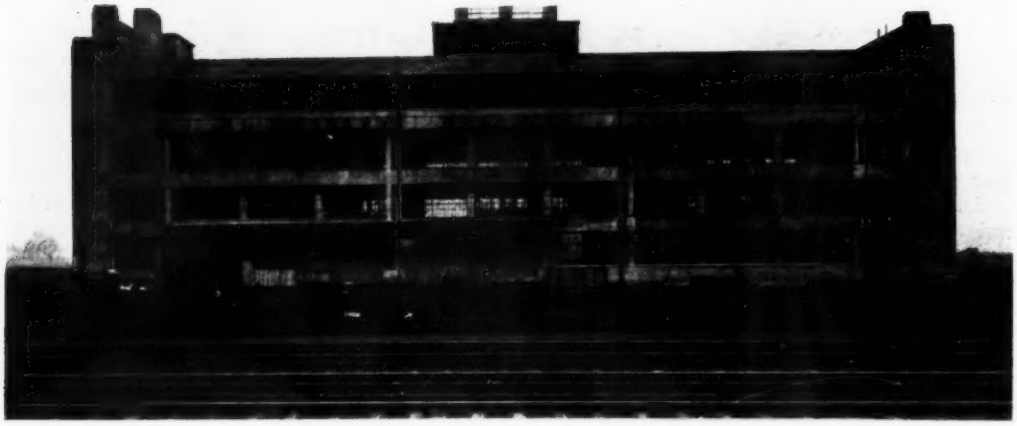
SOME of our more eminent architects and engineers have been telling their professions recently what a bad material is reinforced concrete. Yet the use of it grows; engineers use it for their most permanent structures, and with it the modernists of the Continent express their strange and various theories of abstract form. Research institutes all over the world vie with one another in issuing a vast aggregate of test results; the files of the Patent Office reveal the progress made by mechanical engineers in concrete machinery. Seeing the world-wide interest which it arouses, can one regard it as being such an unsatisfactory material? Its more enthusiastic supporters claim it as the coming material—the universal material, the material affording a solution to the hardest structural problem. "You can build anything with reinforced concrete" they say, with a sweeping disregard of its still uncorrected faults and in ignorance of its rational structural forms.

Two points emerge from the controversy. No single material in one form can be entirely suitable for the diverse requirements of wall, pier, floor, partition, roof, and foundation construction. All these constructive elements present their own problems; a material suited to one is not necessarily suited to another. Hence the universal material must be varied to fulfil the demands of each. It is along these lines that the most useful research is proceeding. Failure to realize this has in past reinforced concrete work afforded a basis for the attacks of the opponent school. The second point is that a clear and general understanding of the most useful and *economical* structural forms has not yet been arrived at. The stanchion, beam, and floor panel form is familiar from steel-frame construction, and is the one most commonly used. The truss form for wide spans is growing in favour, though whether parabolic forms of it will continue to be regarded as worth while on economic grounds remains to be seen. It is, however, the cantilever which arouses the greatest interest and affords the widest field in structural possibilities. Within recent years a new form has been evolved which is the direct outcome of, and only possible on, a large scale in reinforced concrete. This is the so-called "mushroom" construction, consisting in its simplest form of a pier supporting a flat slab or continuous all-round cantilever. A unit is thus formed capable of practically indefinite multiplication in a horizontal plane and vertically until the piers take up too much area on the ground floor to be worth while. This system of construction is practically new to England, and the accompanying photographs of the new factory at Wembley for Messrs. Wrigley show a successful application of it.

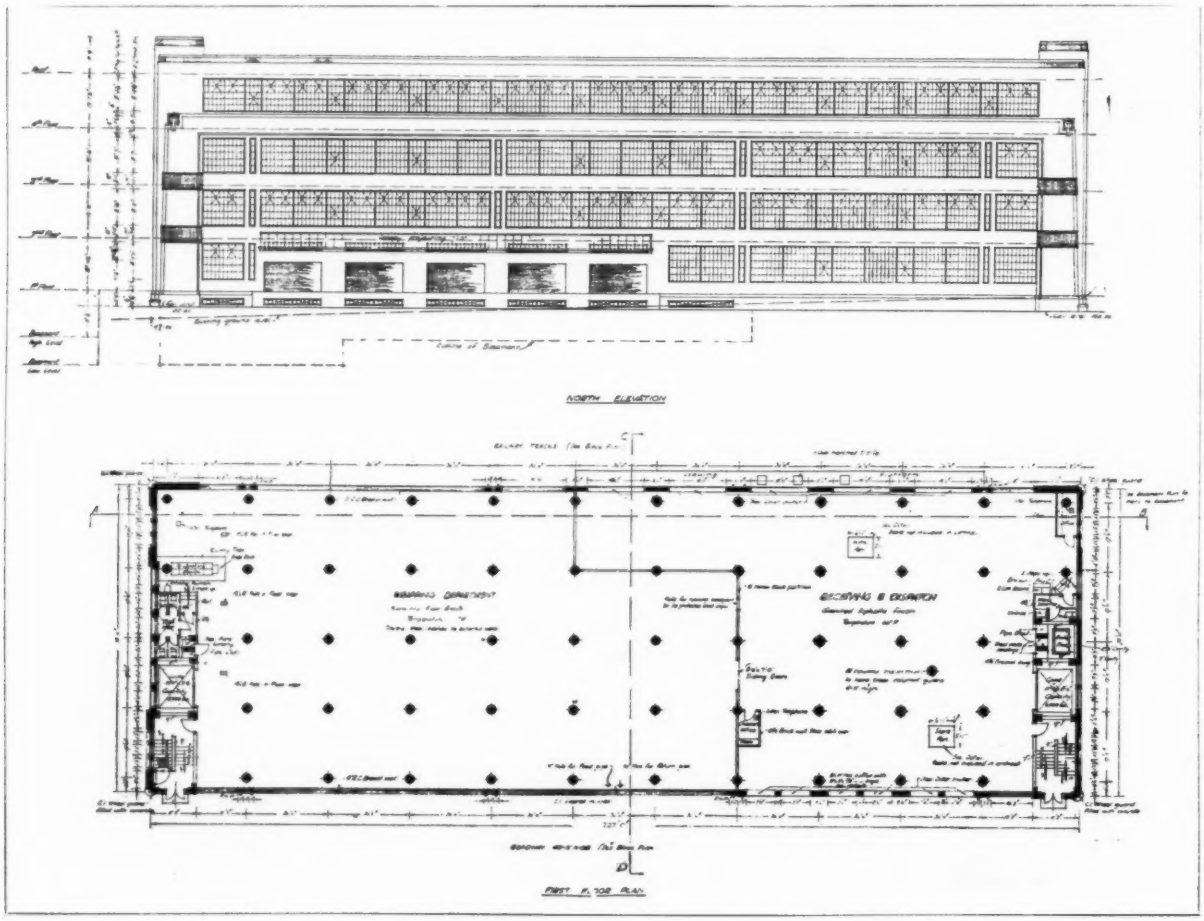
Several difficulties in design and construction are presented. The supporting elements of the building have receded from the external face, which becomes a mere weather-resisting skin supported on the edges of the cantilevers. There is, therefore, an entirely new problem in the treatment of elevations which is quite different from the other two well-known types of elevational form, namely, the wall pierced with holes and the frame filled with panels. It implies that the stories may be fenestrated in a horizontal direction to any extent up to a complete glass wall; even the corner window beloved of the wilder school of modernist



New factory at Wembley for Wrigley Products, Ltd. By Wallis, Gilbert and Partners. A general view.



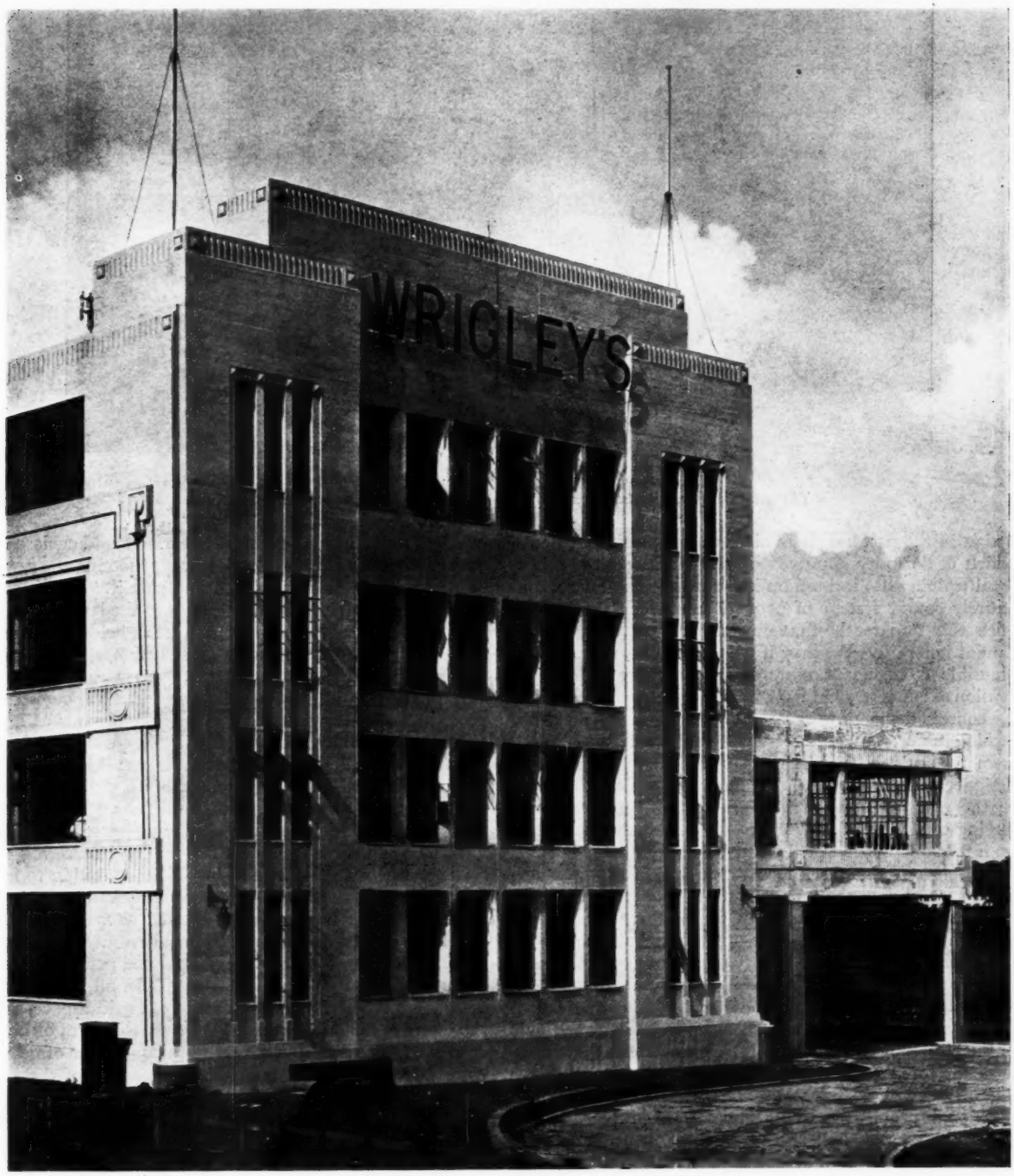
architects is quite justified in this form of construction. The logic of the provision of windows 200 ft. wide is therefore apparent in a building demanding the maximum of light for industrial purposes. Mushroom construction does not, however, lend itself to the piercing of floors for staircases and lift wells, stability or rather uniformity of design in the unit demanding that loads shall be more or less evenly balanced about the pier centres. In this case the architects, Messrs. Wallis, Gilbert and Partners, have grouped the stair and lift wells at opposite ends of the building



New factory at Wembley for Wrigley Products, Ltd. By Wallis, Gilbert and Partners. Above, the front elevation. Below, the north elevation and first-floor plan.

in structures of the post and beam type. Yet another point is that the breast walls present an eccentric load on one edge of the mushroom, and in the case of corner units, on two edges. This has been met by shortening the cantilever where these walls occur so as to obtain a balanced load on each pier. The whole builds up into an interesting form, the two end masses acting as a stop to the horizontality of the mushroom portion.

This gives us yet another structural form to consider æsthetically. We have been familiar with the pierced wall in all its forms since the days of the Romans. Many of our architects are still unable to think outside its terms. We know also the purely frame building in timber, steel, or reinforced concrete. There is precedent for all varieties of these. But mushroom construction, with its absence of external visible support, has none. Further, it takes away what has been regarded as an essential of architecture since the days of Sir Henry Wootton. All good architectural



New factory at Wembley for Wrigley Products, Ltd. By Wallis, Gilbert and Partners. A detail of the end elevation.

New factory at Wembley for Wrigley Products, Ltd. By Wallis, Gilbert and Partners. The general office, situated in a wing, is of ordinary beam and panel construction.

design in the past has emphasized the supporting elements, which of necessity appeared on the outside; all architectural training has insisted on it. Yet here is a logical and entirely sound system of construction which destroys at once this apparently fundamental rule of design. We cannot ignore it. We may if we like wrap a more or less plausible arrangement of architectural scenery round it, an evasion of issues of a kind with which we are not unfamiliar. A course demanding greater courage—a quality not lacking in our younger designers—will be to find a solution from its essential structural characteristics. Possibly the designer will have to appeal to the intelligence rather than to the eye. Our new structural methods generally are forcing this point of view upon us. Mr. Wallis has relied on a frank expression of elements; he shows that his floors are a series of planes supported internally, the whole buttressed by solids at the ends with the feeling of their leaning inwards emphasized. Actually the supports are visible through the glass, and a " close-up " of the building reveals the structural system quite clearly. It is not likely, however, that these conclusions expressed in a first attempt will necessarily be final—it would be a remarkable achievement for an architect if they were—but one cannot deny the logic of the reasoning or be blind to the courage of the attempt.

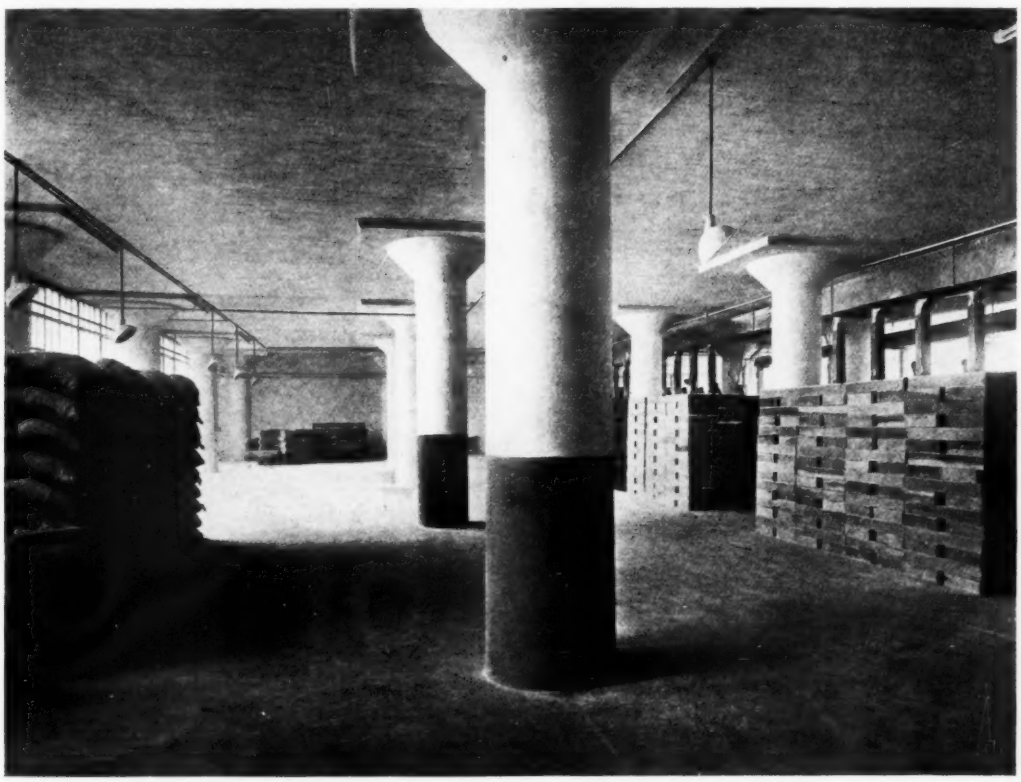
In the foregoing the æsthetic aspect of the building has been dealt with so fully, because Mr. Wallis's solution of functional problems can usually be taken for granted. Just as a concert hall should be acoustically a musical instrument in which other instruments are played, so should a factory be first a machine in which mechanical processes are performed. A factory is an operation in space, not necessarily an arrangement of well-lit floor space. The problem of the factory expert is to arrange and enclose this operation in the most economical way, choosing the system of construction most suited and applying it. In this case, Messrs. Wrigley had firm opinions as to the layout of their plant, which consists of numerous small electrically operated machines. For this, mushroom construction with its regular spacing of columns is very suitable.

Here one naturally asks what are the advantages of it over the better-known system of beam and panel? First, there is an economy in construction. Formwork is reduced to what must be an irreducible minimum; it is difficult to imagine that there can be any reinforced structure which needs less than two forms as does this one. The circular columns with their caps and abaci were cast in a metal form made in sections, and ordinary board centering was used for the cantilevered panels. It is interesting to note in passing that the columns were reinforced on the latest system of spiral reinforcement as well as vertically, and that some of the floor rods are laid continuous, so as to give lateral rigidity to the units. A second and perhaps greater advantage is the avoidance of beams. In all beam structures there is a certain definite waste of vertical space, since the effective height of all rooms for the purposes of headroom and light is from the floor to the underside of beams. Therefore, broadly speaking, that proportion of the total height of the building which is absorbed by the depth of the beams is so much waste and is definitely a deficiency of that system of construction. In mushroom construction the only loss is in the actual thickness of the floor slabs themselves. Any student of architectural history knows that mankind has always tried to reduce that amount of site area of a building which is taken up by the supports of

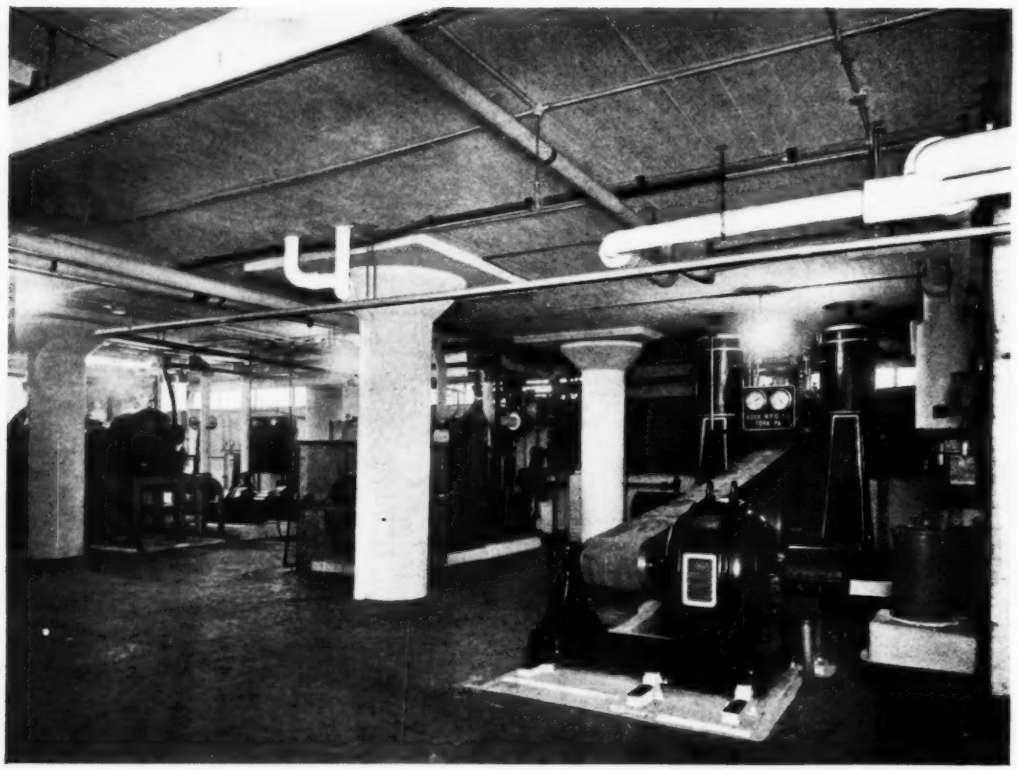
the superstructure; but it is not so generally realized that he has sought for economy in height as well, or rather he has tried to make a better use of height. The culmination of this effort is found in our modern many-storied framed structures; mushroom construction is but a further step in the same direction. The natural line for window heads in this system is the ceiling line, which gives the maximum possible light to the centre of the building. Although an entirely glass wall is feasible it would not be of much practical advantage, and the daylight lighting here is about the best obtainable. It enables the depth of the building to be as much as 75 ft., and one may judge from the photographs how adequately the middle bays are lit. Theoretically, the columns should cause some loss of light, but practically this is negligible, and the absence of shadow is marked. Yet another advantage is the ease with which light conduits, air trunks, and supply pipes generally can be fixed to a ceiling which is unencumbered with beams. The basement is an illustration of this. Here is fixed the heavy machinery, which consists chiefly of the air-conditioning apparatus. A vast number of pipes and conduits of all sizes are necessary, and it is easy to imagine the saving in cost due to the absence of beams, each one of which usually demands four elbows in a single pipe.

Naturally there are counterbalancing disadvantages. Mushroom construction is inelastic. The piers must be spaced on a square grid; it is not easy as with beam and panel construction to omit one bay or one pier in order to accommodate an awkwardly-shaped piece of machinery. Manufactures involving large machines and a continuous process linked by conveyers call for a building designed as a cover or body to the whole operation. Thinking in terms of floors is a wrong method of approaching the problem. The operation should be planned in space and access provided to certain spots for purposes of control. That type of factory is not a suitable subject for mushroom construction, with its definitely marked floor levels and necessarily regular spacing of supports. But there appears to be a future for it in factories composed of small machines and for processes requiring a good light.

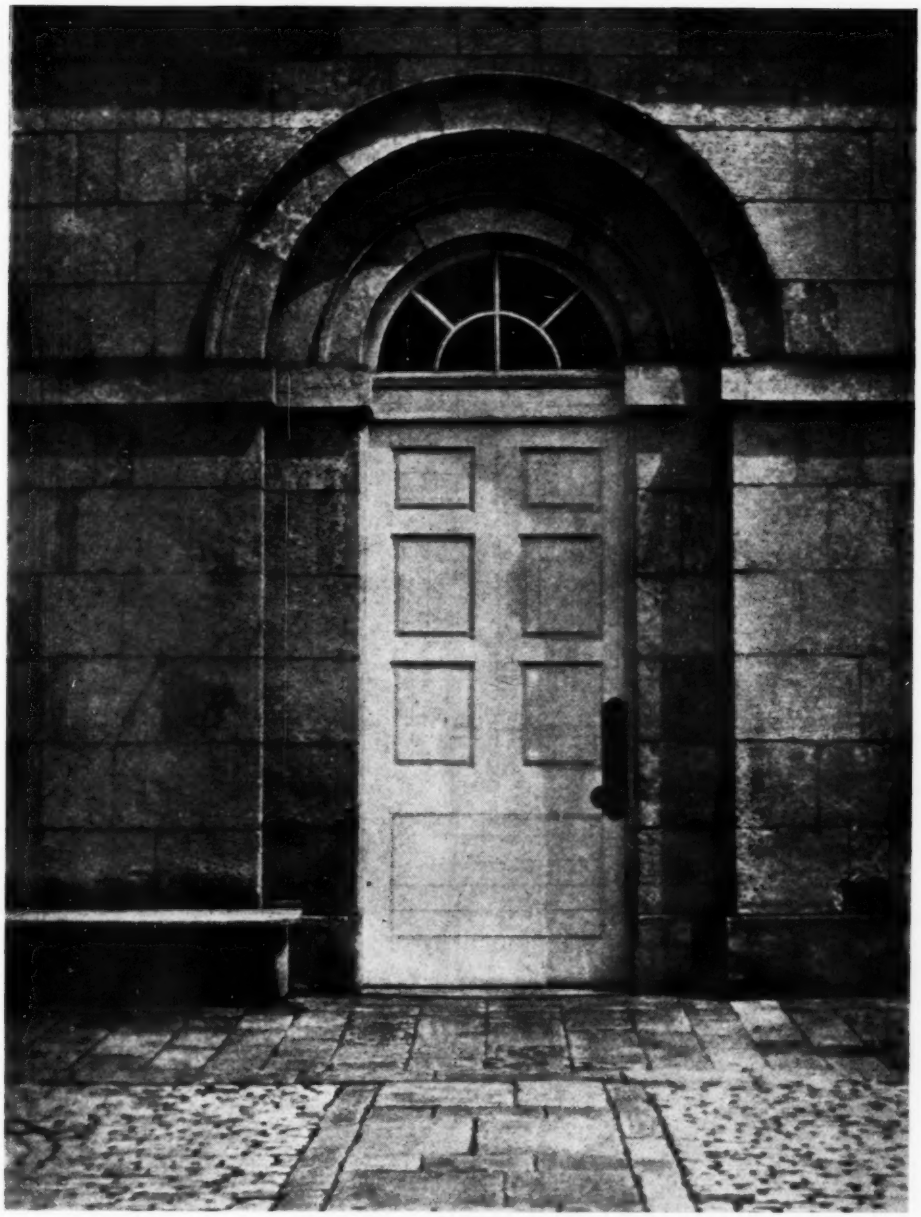
There are still to be found architects who do not regard factories as coming under the heading of architecture. They label them "utility buildings," as though any building could be without purpose, and as though any constructed form were not worthy of æsthetic consideration. That point of view is partly responsible for our hideously depressing industrial cities. Fortunately, there are many manufacturers as well as architects taking a saner view. Many are aware that these buildings often have a functional beauty of their own of which the skilled designer may make something of architectural beauty. Whatever the motives of the manufacturers, and they are various, the movement is of the greatest importance. Messrs. Wrigley are among the enlightened. Incidentally, the present building is only part of a large scheme, in which the projecting office block is intended to be a connecting link. When completed it will be one of the most interesting factories in the country. A clean, perfectly ventilated and admirably lit building of interesting form cannot fail to create a superiority complex in the minds of the owners and the employees which will not be without its influence on the public. The factory is a necessity to civilization; there seems to be no reason why our industrial towns should not in time become as pleasant to live in as a spa.



New factory at Wembley for Wrigley Products, Ltd. By Wallis, Gilbert and Partners. Part of the stores. This photograph, taken on a dull day, shows the amount of light obtainable in a deep building.



New factory at Wembley for Wrigley Products, Ltd. By Wallis, Gilbert and Partners. Above, a machinery room. The metal column-forms give a concrete surface capable of taking enamel without a rendering. Below, the air-conditioning plant in the basement. The absence of beams considerably reduces pipe difficulties.



ENGLISH PRECEDENT

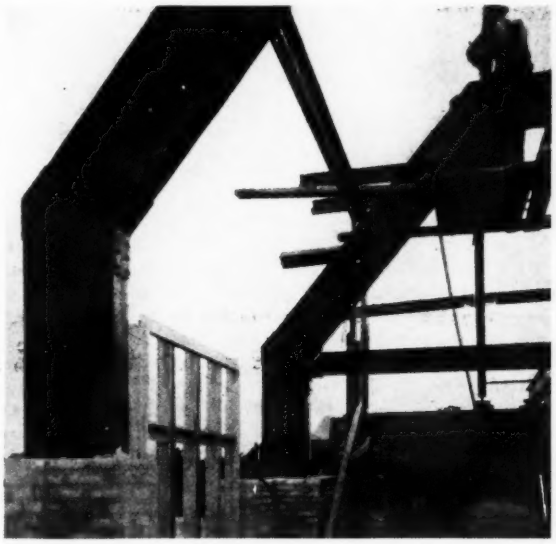
8 *Doorway in stable yard, Castle Howard. Such a combination of art with simplicity almost makes one despair if compared with some of the inane vulgarities of modern design. The broad treatment of the stonework produces an impression of austerity, softened by the shadows cast by the delicate mouldings of the semicircular doorhead. It is obvious that the extent of the projections and prominence of the mouldings have been carefully studied in relation to the widths of the rings. This is not the work of one of our great architects, but of a provincial practitioner, Carr, of York, who began life as a working mason and rose to large architectural practice. Amongst other great houses which he designed was Harewood House, Yorks. Sir Reginald Blomfield says of him: "He was by no means a brilliant designer, but he appears to have been a good practical architect, who was kept within reasonable limits of taste by a sound tradition and an abundance of excellent pattern-books." The last phrase seems severely cutting, for Carr was no copyist; but the "pattern-books" were scarcely more than equivalents of modern architectural publications, which no architect can afford to ignore, for they recall in short space of time the achievements of many great masters and bring to mind also those important buildings he has himself seen. By such records the mind, jaded with daily round of work, may be reinspired and stimulated to new creative effort. Such is the proper use of authorities, not for mere copying, which deadens and cramps the mental powers.*—[NATHANIEL LLOYD.]

AN UNUSUAL TYPE OF ROOF CONSTRUCTION

[BY LANCELOT SUKERT]

[In the following article, Mr. Lancelot Sukert, an American architect, describes an ingenious type of roof construction which he has used with considerable success for gymnasia, recreation, and other rooms situated on the top stories of buildings. The roof (which is described in The American Architect, *from which this article is reproduced) offers many æsthetic and practical advantages, and does away with more or less useless and costly attic space.]*

A FEW years ago we were asked to revamp a set of plans which had been drawn some time previous and never used. The original author had left for parts unknown, building prices had returned to normal, and the client had decided to erect the building. The designs depicted a parish building for an Episcopal church, and included, on the topmost floor, a dining hall about 50 ft. wide. The centre portion of the roof consisted of a flat deck, the sides being steeply pitched, the section appearing somewhat similar to the upper half of an octagon. The construction consisted of a series of wood trusses, about 10 ft. from top to bottom chords, carrying purlins and roof; the soffit of the flat or horizontal portion of the roof being 22 ft. above the floor, but 12 ft. of clear headroom was left beneath the trusses.



Christ Church Parish Building, Flint, Mich. By Lancelot Sukert. Detail of steel arch roof.

The dimensions of this room suggested its use for volley-ball, indoor baseball and basket-ball games, but the headroom was insufficient to permit the throwing of a basket-ball from one end of the room to the other. We attempted changing the trusses from wood to steel, but were still unable to accomplish the desired headroom without incurring an extremely high fabricating cost.

Fred. Liskow, structural engineer, suggested the substitution of a steel arch, using a deep plate after the manner of marine construction. Several attempts were made to design this type of arch, but this was finally discarded as too expensive. Mr. Liskow then suggested that standard rolled sections might be used, splicing the mitred connections with heavy plates and using stiffeners at intervals. The stress calculations were based upon *arch* rather than *beam* stresses. The thrust at the foot of the vertical legs was taken up by tying them together with rods buried in the concrete floor construction. The vertical members are 20 in. I-beams, the horizontal and sloping members are 24 in. I-beams.

Later we had occasion to use the same construction in the roofs of the Trinity Parish Building and the Boulevard Church and Gymnasium Building. In these roofs the sloped portions were not so steep, therefore the calculations were based on the principle of the *bent beam*. This proved far easier to design, but considerably more expensive to fabricate. We have since abandoned the bent beam design and returned to the arch system, which we have used in the roof of the Parish Building for Christ Church, Flint, Michigan.

It is interesting to note that further computations have led Mr. Liskow to reduce materially the depth of the sections used, thereby reducing the costs. This type of roof has several advantages. It does away with a more or less useless and costly attic space. The exposed steelwork, painted, presents a pleasing and interesting appearance. The structural members are frankly

St. Columba Parish Building, Detroit, Mich. By Lancelot Sukert. Steel arch roof over recreation room.

shown and a considerable saving is accomplished. They could, of course, be fireproofed if desired.

The roofs are constructed of gypsum roofing tile in fireproof construction and of plank on non-fireproof buildings. A wood deck saddle built on top of the horizontal portion drains the flat deck and the sloping portions are carried up 2 ft. or 3 ft. above the top of the deck, forming a false ridge to mask the roof ventilators. Electric conduits are concealed between the flat deck and the saddle.

This type of construction lends itself admirably to the Tudor-Gothic types which we have followed in the design of the exteriors. The steel arches are carried on masonry buttresses, which also carry the beams supporting the floors, offering a simple and frank expression of the structural system.

LITERATURE

THE TOWN PLANNING REVIEW

THERE are few technical magazines the back numbers of which are more worthy of preservation than the *Town Planning Review*, and none that manage to sustain, in a setting that is both dignified and graceful, such breathless interest in a subject that can be deadly dull in lesser hands. The December number upholds tradition with several extremely interesting articles, very well illustrated.

The leading article, by Mr. Thomas Ashby, the principal of the British School at Rome, gives an account of the life and works of Alessandro Specchi, who was an architect of the Baroque period, and interesting to town planners as the designer of the Spanish steps and the Porto di Ripetta, Rome, both typical examples of exuberant Baroque planning of civic features. Specchi was originally an engraver of architectural subjects in the manner of Piranesi, whom, however, he preceded by some years. He renounced engraving on winning a competition for the Porto di Ripetta, which work seems to have launched him on a considerable practice. We give productions of two engraved plates and a photograph of the Palazzo de' Carolis, which may be taken as a good example of his style. Mr. Ashby's comprehensive life of Specchi is accompanied by a more particular account of his earliest commission, the Porto di Ripetta, which is illustrated by a series of very able Restoration drawings by Mr. Stephen Welsh, a late Rome scholar.

Contradicting the classic spirit of Rome comes an essay by Mr. Elbert Peets on Camillo Sitte, the Viennese town planner of the nineties, who did for town planning what Morris and Ruskin did for architecture. "A lot of harm," most of us will say; but the author of this very racy little essay shows how much Sitte belonged to his age, and how ready were the architects of his generation to cast off the whole panoply of classicism to don the buskin and design one-eyed market-places. It lasted long enough to provide a short breathing space in which to reconsider the principles of classic design, and Sitte's medieval outlook finds few adherents today. Nevertheless, it is interesting to note that the magazine which he founded to propagate his ideas is the oldest periodical devoted to town planning, and that Stockholm Town Hall is the modern embodiment of the basic principles of Sitte's art.

The growth of Stockholm from earliest times is sketched in rapid outline by Mr. Ivan Lindgren, who, fortunately, supplements his remarks with excellent maps and photographs that trace the steady growth of the city over one of the loveliest sites in Europe. Though a very old city, it has been continuously rebuilding through the ages, and the great public buildings that figure so prominently in the picture of Stockholm as we know it today are mainly the work of this century. Stockholm seems to be one of the happy places of the earth.

The remaining portion of the volume is occupied by a long review of a book, with a still longer title, by Sydney Davey, M.A.,

The Palazzo de' Carolis. By Specchi.
[*From* The Town Planning Review.]

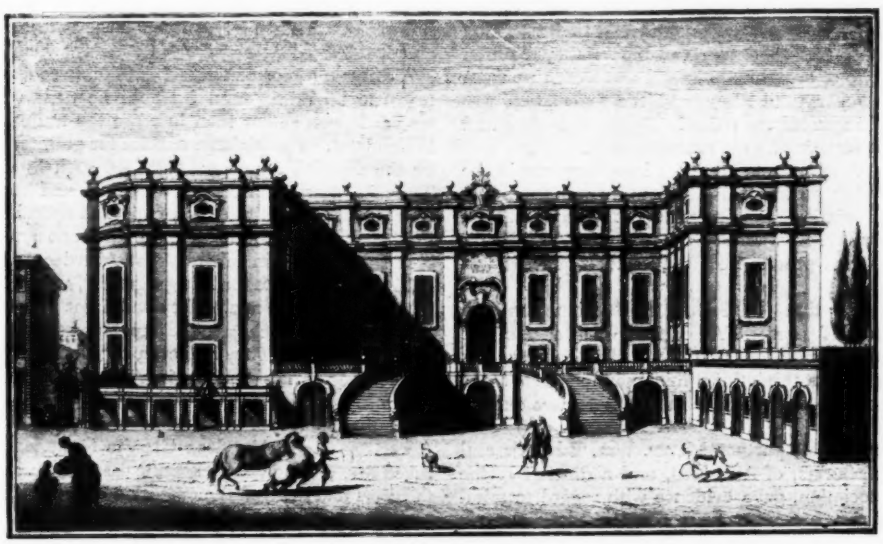
on the law relating to highways, streets, and bridges, and reviews of divers other works, including a very interesting book on the history of the building societies by Harold Bellman, M.B.E. I am sure that few journals cover more ground in one volume than this does, arousing in the reader an interest that is by no means exhausted in the three months that most unfortunately have to run their course before another number makes its appearance.

E. MAXWELL FRY

HOW TO BECOME A STRUCTURAL ENGINEER

There is a superior mine of information in the booklet, *Structural Engineering: Some Suggestions as to Training for and Entering the Profession*, which will relieve much anxiety from both parent and student. To the former it is invaluable in providing a ready means of deciding whether a boy exhibits a marked interest in, or aptitude for, matters relating to engineering, and to both parent and student it renders yeoman service in offering the expert opinion of the Board of Examiners of the Institution of Structural Engineers as to the best programme to be followed to crown a structural engineering career with the greatest success in the minimum of time and labour, and with the least expense. The booklet contains five chapters; i: Preliminary education desirable for an engineering career; ii: specialization in engineering; iii: universities and technical colleges which include structural engineering in their courses of training; iv: bibliography of text-books and reference works for students of structural engineering; and v: post-graduateship courses, and notes upon commencing practice in the profession.

Too much stress cannot be laid upon the importance of beginning an engineering career at an early age, and the Institution have wisely enumerated the subjects fundamental to training which should be included in the curriculum from the age of twelve to seventeen or eighteen years. Following the school career, there are, of course, three methods, as in the architectural profession, of entering upon the special study of engineering; *a*: full-time university or technical college training; *b*: articled pupilage; and *c*: attendance at evening classes. These methods are discussed at some length and recall to remembrance the bitter and obstinate controversy on the relative merits of university or technical college training and articled pupilage which agitated the architectural profession a few years ago. The Institute of Structural Engineers give judgment in favour of university or technical college training,



Above, the Piazza of the Lateran. From an engraving by Specchi, 1694. Below, the stables of the Papal palace on the Quirinal. From an engraving by Vasi. [*From* The Town Planning Review.]

which seems to be less costly than pupilage, and certainly offers better access to the higher salaried posts in the profession. Immediately after passing the Associate Membership examination of the Institution, or following upon a post-graduate course, the student is faced with the necessity of commencing to earn his living, and here again the Institute give excellent advice with regard to the main avenues along which he may proceed.

Most of those contemplating an engineering career will wonder whether the reward in success and prosperity will compensate them for the time and money spent in acquiring the necessary knowledge and skill. To these the Institution reply: " It must be appreciated that in engineering as in every other walk of life, practitioners may be roughly divided into two classes—the normal (or average) and the brilliant. The normal man who perseveres need never fear that he will be in want, and can command a fair remuneration by the time he has attained the age of thirty years. For the brilliant man the prospects may almost be said to be unlimited, and when he attains the position — as he undoubtedly will—of being his own master, he will have achieved the supreme satisfaction, so often denied in other walks of life—that of being a 'creator.' He will share with the artist and writer a reward accounted with the highest—that of seeing the creation of his own hand and brain rise in material form before his eyes." E. R.

Structural Engineering : Some Suggestions as to Training for and Entering the Profession. The Institution of Structural Engineers. Price 6d. net.

THE PROPOSED DUTY ON IMPORTED GRANITE: ii

MR. JAMES RUST (president of the Aberdeen Granite Manufacturers' Association, and managing director of Messrs. Charles MacDonald, Ltd., granite manufacturers and quarry masters, of Aberdeen) giving evidence at the inquiry into an application for the imposition of a duty on imported monumental and architectural granites (wholly or mainly manufacted) under the safeguarding of Industries Regulations held at the Board of Trade Offices, Westminster, corroborated Mr. Stewart's statements as to the efficiency of the industry, and gave details with regard to the business management, the application of capital, etc.

Mr. J. Stuart Sutherland, managing director of the Aberdeen Granite Supply Association, Ltd., explained the functions of the Supply Association and the services it rendered to the manufacturers. It dealt in everything connected with granite, he said, but the main business was the importation of rough granite from abroad—almost entirely from Norway, Sweden, and Finland. The business was of great convenience to manufacturers in Aberdeen and district; it held a large stock of granites, which enabled the manufacturers to obtain the blocks they required within an hour or two of ordering. Finland was frozen up from the middle of December until May, and the Association was necessary, in that it imported the stone in the summer time and stored it until it was required by the manufacturers.

The importation of foreign rough granite into Aberdeen in the year ending September 30 last amounted to 12,539 tons; the Granite Supply Association imported about 10,000 tons. (It was stated earlier by Mr. Rust that last year's tonnage of monumental and architectural granite from the Scottish quarries was 10,036 tons.)

Mr. Sutherland said that the Supply Association imported some fourteen colours of granite. Asked if the existence of the Association made the granite industry in Aberdeen more or less efficient, he said he did not think the granite manufacturers could carry on without such a company, because there was such a variety of sizes.

Mr. W. G. Edwards, sole partner Messrs. Wm. Edwards and Son, granite manufacturers, of Aberdeen, and a director of the Granite Supply Association, gave evidence with regard to salesmanship. He did not believe a great deal in advertisement, he said, in this industry, but believed rather in travelling salesmen. He advertised in trade papers a little in this country and in the U.S.A., and Canada, and had three travelling salesmen. His firm were constantly designing, and when they saw a competitor, either at home or abroad, taking up a design, they dropped it and started a fresh one.

When he visited America last—in 1924—he considered, as he had done previously, that the Aberdeen granite trade was as highly organized as the American; indeed, some American manufacturers were behind. The trouble with the Aberdeen trade, however, was not a matter of organization; if the manufacturers could anything like compete, Aberdeen would be on level terms with the world. Their plant was up to date, and he had practically replaced and doubled his own plant since the war.

Mr. H. C. Odling, chairman of Messrs. Anselm, Odling and Sons, Ltd., marble and granite merchants, of London, opposed the application. His evidence was interposed here (by agreement with the applicants) because he had to go abroad in a day or two. There is certainly more foreign granite being imported now, he said, than before the war, for the simple reason that the Aberdeen Granite Association had before the war prevented any shipments of foreign granites of importance by making an arrangement with the quarry owners to purchase a certain quantity of rough granite from them, on condition that they did not interfere with the worked-granite trade. For a free market, the quantities now imported were not abnormal, but they provided a useful check on the Aberdeen prices. There was a very strong feeling in the trade, and it was because of the methods of business of the Aberdeen Granite Association that the monumental masons welcomed the offer of competitive granites.

He believed his firm were responsible for the major portion of the Finnish granite importations, and the Finnish granites were not being sold at less than the Aberdeen prices. Their practice was to quote as near as possible Aberdeen prices, and frequently a trifle higher. They had not the slightest wish to enter into a price war, and they would follow whatever prices the Aberdeen manufacturers asked. A recent demand by the stonecutters in Finland for an increase in wages would further increase the price of Finnish granites. Quotations from Germany showed that if his firm bought German granites, and sold at Aberdeen prices, there would be no profit for them.

In his opinion not more than a trifling amount of the trade of his firm in Finnish granites had been done at the expense of Aberdeen. The demand for any kinds of granite (memorial), marble or other stones was equally bad, whether it came from this country or abroad.

The Aberdeen system of doing business, it seemed to him, was very far from efficient, and there was considerable delay in the execution of orders, which was usually attributed to the difficulty of getting raw material, either from the quarry or the store, of suitable size. When he wanted a large order executed he did not give it to Aberdeen because of the delay which occurred.

A duty on imported worked granite, in so far as it would cause prices to be raised—and it would be useless unless it did so—would depress rather than increase the trade in granite worked in Scotland. The higher the price for granite, the greater would be the demand for other materials, such as stone and marble. The cost of granite fronts for buildings had become so high that a great many architects had cancelled specifications for granite fronts, and had specified Portland stone and other materials.

It should be remembered that Aberdeen was responsible for cultivating the taste for foreign granite, which the manufacturers had imported for years. They had named them with well-known Scotch names, which gave the impression that they were supplying Scottish granite. They had even adopted the practice of marking worked memorials " made in Aberdeen," which he suggested was misleading.

In the course of cross-examination, Mr. W. D. Esslemont (secretary of the Aberdeen Granite Manufacturers' Association) asked Mr. Odling to give specific cases in which Aberdeen manufacturers had delayed the execution of orders. Witness, however, was unable to refer to specific cases off-hand, but said he would endeavour to find information which would enable him to do so.

The Committee adjourned.

THE BRITISH INDUSTRIES FAIR

SOME EXHIBITS DESCRIBED

ROUGHLY there is a 50 per cent. increase in the number of stalls at the British Industries Fair, now being held at Castle Bromwich, Birmingham. The Fair is the eighth to be held, and in the words of Colonel H. J. Walduck, the chairman of the Fair Management Committee, the stands constitute a shop window eight miles long. The building industry is well represented in materials, appliances, and fittings, and many new innovations are being shown for the first time.

On the stand of Messrs. Candy & Co., Ltd., of Heathfield, near Newton Abbot, Devon, are faience and tile fireplace fitments, glazed tiles, and "West-countree" ware. These are shown in great variety, and are notable for their charming and distinctive effects. The firm are well known to our readers as the manufacturers of the "Devon" hearth fires.

The exhibits of the Carron Company, Carron, Stirlingshire, range from a small electric heater to massive haulage gears, etc., and cover many articles of domestic and industrial requirements at home and overseas. Several varieties of kitchen ranges may be seen, such as "Carron Dover," "Imperial," and "Nairobi"—portable ranges. The "Beetonette" range, with a draw-out oven, is an adaptation of this popular portable, and the No. 429 range, with its plain oven door and useful pedal opener, are ranges extensively used in British homes. There is also on view the "Carron" range—embodying all the latest improvements, including a glass oven door.

Messrs. J. H. Tucker & Co., Ltd., of Tyseley, Birmingham, again show a complete range of their electrical products, comprising tumbler switches, electric lighting and power accessories, fuseboards, ironclad gear, and switchgear. Among the new lines shown is a Tucker lampholder, which possesses many outstanding features of merit without sacrificing simplicity. It possesses an improved "one-piece" cord grip having no loose parts, which does not involve the use of a set screw, and in which twisting or rubbing of the flex cannot take place during assembly of the holder. All the standard lampholder sizes of ordinary and workshop flexible are quickly, easily, and automatically gripped without modification or cutting away of any part. Frayed edges of the braid are permanently concealed. Solid "one-piece" plungers and terminals are fitted, acting independently of each other, thereby allowing for variations in the size of lamp-cap contacts. No rubbing contact and no riveting or screwing together of current-carrying parts is involved. The lampholder fully complies with B.E.S.A. specification No. 52.

Among the exhibits of Messrs. Nobel Chemical Finishes, Ltd., Slough, Bucks, are "Belco" cellulose finishes, wood finishes, and coloured furniture enamels for application on wood, and "Necol" cellulose lacquers and enamels for wood and metal.

The exhibits of Messrs. Ruston and Hornsby, Ltd., Lincoln, include cold-starting horizontal and vertical oil engines. The Ruston cold-starting horizontal oil engine, 20 b.h.p., it is claimed, has found great favour amongst manufacturers by reason of its simplicity and low running costs. The engine runs on a wide range of cheap fuel oils, including residual oil of ·03 spec. gravity, while low consumption is guaranteed and maintained year by year. Stand-by losses are eliminated as the engine starts from cold without any form of pre-heating. The absence of running adjustments makes skilled attention unnecessary, thus enabling small power users to effect savings in running costs. The makers offer these engines in a range of sizes from 16 to 340 b.h.p. A further step in the importance of the machinery section is marked by the exhibit by the firm of a mechanical excavator. This machine, which weighs about 14 tons, arrived at Castle Bromwich sidings, dismounted unaided from the truck, and proceeded under its own power to its position in the Fair buildings. The machine is a full circle, half-cubic yard Universal excavator. The machine is fitted with special equipment by which it can easily be converted for work as a shovel, dragline excavator, back-acting trencher, skimmer scoop, or a grabbing crane. It will be seen that the machine offers the purchaser five different excavators in one. The machine is fitted with a petrol-paraffin engine and starts up like a motor-car, and enables excavating to be undertaken within a few minutes of starting.

The Ruberoid Co., Ltd., of London, exhibit "Ruberoid," "Starex," and "Pluvex" roofings. These, it is claimed, have been in use under all climatic conditions for over thirty years.

The "Ure" back-to-back grate may be seen in operation. The grate is claimed to be an efficient, and economical combination which warms the living-room, also the kitchenette where the housewife spends the greater part of the day, through the medium of one fire. The facilities for cooking and washing are abundant. At one and the same time the oven can cook an 18 lb. joint, the hot plate boil or stew, while from the boiler there is a plentiful supply of hot water. For convenience in the summer the kitchenette installation can be made a gas cooker. Messrs. Allan Ure & Co., of Keppochhill, Glasgow, the manufacturers, state that 30,000 of these grates are now in daily use and giving expressed satisfaction. L.C.C., Manchester, Cardiff, Newcastle, Edinburgh, and Glasgow Corporations have tested and installed the "Ure."

What is claimed to be the only method of continuous refrigeration which is motorless is to be seen on the stand of Messrs. Electrolux, Ltd., 155 Regent Street, W.1, and 117 Dale End, Birmingham. "Electrolux" is claimed to be the only refrigerator which does not require maintenance service, and dispenses entirely with mechanical moving parts with their attendant wear and tear.

The possibilities of colour and design treatment are only part of the advantages offered by Macintosh tiling, which is exhibited at the Fair by Messrs. Chas. Macintosh & Co., Ltd. Claims are also made as to its durability, noiselessness, and cleanliness. Individually designed floors form an essential part of many architectural schemes. They need not tend to dominate the theme of decoration or even be of a striking nature, but designed in harmony with the surroundings they contribute to the final effect in a charming way. Among the many buildings in which Macintosh tiling has been laid is the Ilkley Town Hall, Yorkshire. This was designed in black and drab marble with white and black borders. Here the floor added considerably to the quality of the general scheme, the effect being made possible because it was designed and produced individually for the building in question.

"Glow-Worm" boilers for domestic use and of high efficiency and economy are shown in five sizes by Messrs. O. Bruster and Richardson, Lloyds Avenue, E.C.3. "Glow-Worm" open fires are also shown. They were invented by Dr. J. S. Owens, and are designed to burn coke or anthracite.

The François Cementation Co., Ltd., of Doncaster, exhibit the François method of cementation and ferro-concrete lining and patent concrete pile. Photographs are also shown of work carried out.

Electrical plant for industrial use figures prominently on the stand of the British Thomson-Houston Co., Ltd., Rugby. This company has always been closely identified with the development of electrical equipment for industrial service, whether for power or lighting, and visitors may note how in the most recently introduced range of electric motors the British Thomson-Houston Company is able to offer A.C. and D.C. machines of the same ratings which are identical in all essential dimensions. This feature is of importance to makers of machines to standardized dimensions, and it may be mentioned that the motors in this range are of both the horizontal and vertical type and can be supplied to run at any angle, a roller-bearing being fitted at the driving end, where the load is greatest, and a ball-bearing at the other end. In motors arranged for vertical operation, the skirt base casting is separate from the end-shield casting, so that machine makers can readily fit their own adapter rings or easily adapt the motors to pumps, etc.

Those interested in the manufacture and distribution of "Dependability Cement" should visit the stand of the Portland Cement Selling and Distributing Company. The unique location of the three big manufacturing centres of the "Red Triangle" organization, situated in the North, Midlands, and South, makes it possible to organize a network of distributive centres covering the whole country. "Right Across England" is the slogan of the "Red Triangle" organization, and the words have a very real significance for all large and small users of cement.

The "Parcedoor" is exhibited by Messrs. Parcedoors, Ltd., 5 Grand Parade, Brighton. Briefly, the "Parcedoor" is an outer door with an exterior hatch, having on the inside a three-tier cupboard for the reception of goods. The first tradesman delivering opens the outer hatch, without summoning the housewife, places his goods in the vacant bottom compartment and closes the hatch, the cupboard automatically and smoothly dropping one tier, thus securing the delivered goods from interference from the outside and leaving the second tier ready for a further delivery. Similarly a third delivery will be accommodated. Thus, the morning milk, the morning paper, and breakfast rolls may be delivered by separate tradesmen without troubling the household while getting up. Cleared and reset, the cupboard is then ready for the deliveries of the butcher, the grocer, and the greengrocer without interruption of the housework during the morning, and so on.

COMPETITION CALENDAR

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

March 10. Senior school at Birkdale, Southport. Assessor, Professor S. D. Adshead. Premiums, £100, £75, and £50. Particulars from Director of Education, Municipal Buildings, Southport. Deposit 10s. 6d.

March 30. Extension of the College of Technology proposed to be erected on a site adjoining the present College of Technology building in Sackville Street and Whitworth Street, Manchester. Assessors, Messrs. Alan E. Munby, M.A., F.R.I.B.A., Henry M. Fletcher, M.A., F.R.I.B.A., and Francis Jones, F.R.I.B.A. Premiums, £500, £400, and £300. Particulars from Town Clerk, Town Hall, Manchester. Deposit £1 1s.

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. In the preliminary, competitors will be required to deliver to the Secretary, R.I.B.A., by September 1, a written report of not more than 1,000 words, indicating the general line upon which he will base his design, e.g. his view on the development of aircraft, his conception of the requirements, and his suggestions on the general lay-out of such an aerodrome. The report must be accompanied by one-half imperial sheet of sketches in pencil, illustrating the report. 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.

No date. The Lewisham Borough Council invite architects of British birth and nationality to submit designs in competition for the town hall, shops, and offices on the site adjoining the existing Town Hall Buildings at the junction of Catford Road and Rushey Green, Catford. Assessor: Mr. Winton Newman, F.R.I.B.A. Premiums: £350, £250, and £150. Particulars, together with a plan of the site, can be obtained from the Town Clerk, Town Hall, Catford, S.E.6. Deposit two guineas.

No date. The Southampton Corporation invite architects of British birth and nationality to submit designs in competition for the proposed town hall and municipal buildings, art gallery, etc. Assessor: Mr. E. Austen Hall, F.R.I.B.A. Premiums: £500, £300, and £150. Particulars from Mr. R. R. Linthorne, Town Clerk, Municipal Offices, Southampton, on and after March 10. Deposit two guineas.

TRADE NOTES

In the article on "Recent Buildings in Manchester," by John Swarbrick, published in our issue for February 15, it was stated on page 256 that the consulting engineers for the Royal Mail Steam Packet Company's building were Messrs. Bloxham and Scuffles. This should read Messrs. Bloxam and Scuffells.

An important contract in connection with rural electrification has been received by Messrs. W. T. Henley's Telegraph Works Co., Ltd., who are to supply a high-tension feeder in the form of underground cables and overhead lines to supply the towns of Saxmundham, Wickham Market, Melton, Orford, and Hollesley from the Ipswich mains. The contract also covers the installation of the underground and overhead low-tension distribution cables in these five towns, which will now very soon be linked up electrically with Ipswich, as well as the house-service cables and sub-station switchgear.

The electrical dream has been translated into material form by the organizers of "The House of the Future" at the Ideal Home Exhibition. The architect, Mr. R. A. Duncan, A.R.I.B.A., assisted by the engineers of The British Thomson-Houston Co., who were generally responsible for the electrical work, has produced something which is bound to stimulate popular interest in the subject of house design and equipment. Everything is electrical in "The House of the Future"—lighting, heating, ventilation, cooking, cleaning, and services of every description—and from the time one enters the garden gate it is practically impossible to find anything which is not in some way associated with electricity. For the complete installation no less than two miles of C.T.S. cable, supplied through the Cable Manufacturers' Association, are employed, and over 1,000 Mazda lamps used for the various illuminations.

NEW INVENTIONS

[The following particulars of new inventions are specially compiled for THE ARCHITECTS' JOURNAL, by permission of the Controller of H.M. Stationery Office, by our own patent expert. All inquiries concerning inventions, patents, and specifications should be addressed to the Editor, 9 Queen Anne's Gate, Westminster, S.W.1. For copies of the full specifications here enumerated readers should apply to the Patent Office, 25 Southampton Buildings, W.C.2. The price is 1s. each.]

SPECIFICATIONS PUBLISHED

282859. Reynolds, W. A. Construction of walls or the like for building purposes.
273661. Mauterer, A. Arrangement for connecting iron pilings.
283027. Firkins, H. Clip for securing roofing, tiles, slates, and the like.
283064. Rose, E. W. Moulding of hollow walls of buildings.

ABSTRACT PUBLISHED

280823. Ranford, W. E., 25 Stonebridge Park, Willesden, London. Walls.

WRIGLEY'S NEW FACTORY

Following are the names of the contractors and sub-contractors for Wrigley's new factory illustrated on pages 351 to 356. A. Roberts & Co., Ltd., contractors; Henry Hope & Co., sashes; Trussed Concrete Steel Co., Ltd., reinforced concrete engineers; Haywards, Ltd., castings.

READERS' QUERIES

PAINTING ON MARBLE

H. R. writes : " What kind of pigment should be used for painting on marble ? "

Marble may be prepared for painting in a somewhat similar way to slate. The slab, or panel, is warmed and thoroughly dried and given a thin coat of oil-copal varnish diluted with toluol or turpentine, or with a mixture of both. When this undercoat is dry, it provides a hard film upon which the usual priming coat, composed of flake-white, boiled linseed oil, copal varnish, and turpentine, may be laid.

If it is not intended to do more than add isolated spots of colour to a marble surface, it will be possible to select appropriate enamel paints which will not spread or grease the surrounding marble. The paints should be tried on a sample piece of the material. The pigment must be well incorporated with the medium, and also well matured, as it is important that free oil should not be present in the mixture. A manufacturer of paints would probably make up a suitable composition for the purpose if the object is explained to him; or the inquirer may make the experiment for himself by stirring small quantities of enamel paint in an open palette or saucer until they are brought to the right consistency by the ordinary process of natural oxidation. Old mature copal varnish will also stay where it is placed on marble without soaking into the surrounding pores. Artists' oil colours will not be suitable, for the reason that the oil will immediately spread into the marble surface.

There is no need to resort to the use of oil as a medium, however, for pigments mixed with melted beeswax may be applied hot with a brush, or cold in the form of crayons, and the resultant painting fixed by gently warming its surface. A great deal has been written concerning this alleged " lost art," but for many decorative purposes the actual attempt will result in the acquirement of sufficient skill.

Wax mixed with pigment is frequently used to fill up the grooves of incised lettering in inscriptions. Wax painting is probably not suitable for the decoration of fireplaces, or electric light shades, or other places where dust will be attracted to the warmed wax.

Waterpaints may aiso be used on marble, and protected after they have become thoroughly dry by means of a coat of spirit varnish, which may be sprayed or brushed over them. If a spray is used, the bare portions of the marble can be protected with a paper shield cut out to fit the margin of the painted portion. An undercoat of gesso is often laid down between the surface of the marble and the pigment, particularly for metallic paints or gilding. The gesso is allowed to harden and is capped with a coat of gold size, to which the gold leaf is applied when the size is tacky.

The Secrets of Alexis of Piemont, printed in English in 1615, contains the following recipe: " To lay gold upon Marble, or upon any table of stone or other." " Take Bole Armonicke, and braie it well with oyle of line or Walnuts: and when you will lay the gold upon the said ground, let it not be too moyst nor too drie." Armenian bole is now better known as a dentifrice than as a pigment; it would give an earthy base with oil of lin(seed) or walnut. The instruction concerning the right consistency of paint used upon marble coincides with my own experience expressed above, though Alexis may have had the sticking on of the gold leaf in mind.

W. H.

MAGGOTS IN A STRONG ROOM

V. writes : " In a strong room built three years ago and occupied about a year ago my client is troubled with very small book maggots in considerable numbers. I put the trouble down to the fact that each and every page in the books stored is pasted in with vegetable paste, and this process of pasting in goes on day by day. I have suggested that a different method eliminating the use of paste be adopted, as naturally the atmosphere in the strong room is close and therefore an ideal breeding ground for certain germs and insects. Would you consider these likely to develop from the next paste ? Is there anything you can suggest as a means of exterminating these insects ? The whole of the strong room is finished with waterproofed cement with steel shelving."

The treatment must depend to some extent upon the nature and value of the books affected. In the case of valuable books each page is examined and the worm-holes are brushed out carefully with a fine paint brush. The process is repeated periodically to account for maggots which may have been overlooked or which have developed from eggs in the interval. Spring is the proper time for these operations.

If the volumes can stand the process, fumigation may be resorted to, in order to free the whole chamber from the insects, as one would fumigate a greenhouse. In large libraries the hand-brushing method is principally employed, owing to the difficulty in making the fumes of the insecticide penetrate between the leaves of the book. Bookbinders have a more drastic remedy, which should not be undertaken by amateurs; it is to remove the cover from the book, pass the volume through a bath of boiling size, strip the boards, and then fumigate as above.

One old-fashioned recipe is to dust the books and the shelves with a liberal sprinkling of common snuff, but care must be exercised in choosing reagents and fumigants which will not damage the contents of the strong room. One method of trapping worms in libraries, suggested to me by Dr. Gahan of the Natural History Museum, is to provide unpolished pieces of beechwood as " bait " and to inspect them frequently and burn them when they become infected. Beechwood is particularly liable to the attacks of woodboring insects, but whether the maggots are the larvæ of such creatures cannot be determined without examination. Frequent handling of the books and frequent cleaning of the strong room would probably reduce the infestation to manageable proportions, as lending libraries with books in constant circulation are seldom troubled with these pests.

W. H.

THE COST OF CHURCH BUILDINGS

V. writes : " What is the present cost of church buildings (Nonconformist) per foot cube, in stone, say, snecked rubble, clean chiselled dressings ? What price per foot should be added to this for tracery windows ? May the work below the floor-level vestries, etc., and the tower be taken at a lower figure ? Will the price given by your expert include seating, lighting, and heating, and the organ ? The seating capacity of the church is 400."

The cost of building work varies considerably in accordance with locality and site conditions. In the absence of the fullest details it is only possible to give general information. As an approximate guide for the type of building named the price is 1s. 6d. per foot cube, and 1s. 3d. per foot cube for vestries and work below ground level. These prices include deal seating and all moderate style fittings and services. Tracery windows and tower would have to be assessed on their merits according to design, and the cost of the organ would not be included in the figures quoted above.

B. O. F.

DWELLINGS OUT OF REPAIR

P. writes : " I have become the owner of eight cottages which stand on an estate I have acquired for building purposes. Some of the tenants have lodged complaints with the sanitary inspector as to repair. The rent of each is only 8s. 6d. per week, and I cannot see my way to spend much on the property unless I can get a larger return to pay interest on my outlay. The cottages are fairly large : four bedrooms, two sitting-rooms, and back kitchen, and are situated by the sea on the South Coast, with an unrivalled sea view. Can I demand that the surveyors or inspector condemn the cottages as unfit for habitation, as if the tenants left I could do the property up thoroughly and get a larger rent. The tenants in every case do well by letting."

The position set out is no unusual one under the workings of the Rent Restriction Act, and many cases have occurred where cottages have been closed by magistrate's order, reconstructed by the landlord, and let again at an economic rent free of the Rent Restriction Act. The landlord has no power whatever to " demand " a closing order, though he may make it easy for the authorities if they are that way inclined. I fancy you will find that the sanitary inspector will want certain things done, but that he will be very reluctant to press matters to an extremity.

F. S. I.

THE WEEK'S BUILDING NEWS

The Warwickshire Education Committee is to erect an elementary school at BADDESLEY for 240 children.

*

The governors of the STRATFORD-ON-AVON Grammar School are to erect new classrooms at an estimated cost of £14,000.

*

The WARWICKSHIRE C.C. has asked the Mental Deficiency Committee to prepare a detailed scheme for the provision of accommodation for mental defectives.

*

The West Riding Education Committee has completed the purchase of a site for the erection of a secondary school at KEIGHLEY.

*

Messrs. A. Savill and Sons, of Lincoln's Inn Fields, are to erect new buildings at the corner of Loudoun Road and Langford Place, St. John's Wood, MARYLEBONE.

*

The BOURNEMOUTH Corporation is seeking sanction to borrow £10,000 for further housing advances.

*

Plans passed at PUTNEY: Alterations and additions, All Saints' School, Putney Lower Common, for Messrs. T. H. Adamson and Sons; shop, Upper Richmond Road, for Messrs. G. W. Beattie, Ltd.

*

The Rock Brewery is to erect new licensed premises in Western Road, BRIGHTON.

*

Messrs. Johnson Bros. and the Corporation have agreed on the appointment of Messrs. Thomas Garrett and Son as joint architects in connection with the reconstruction of premises at 177-178 Western Road and 33 Marlborough Street, BRIGHTON.

*

Messrs. Braybons, Ltd., are to develop the Bear Hill estate, BRIGHTON.

*

The BRIGHTON Corporation has obtained sanction to borrow £10,000 for further housing grants.

*

The BRIGHTON and HOVE Free Church Council is to erect a church and manse on the Knoll estate, Hove.

*

Plans passed by the FULHAM B.C.: Thirty-seven terrace houses in three blocks, Barons Court Road, for Messrs. Rowe and Binns; club hall and twenty flats, Rainville Road, for Mr. S. Clough.

*

Plans passed by the OSSETT Corporation: Workshop off Kingsway for Mr. J. H. Glover; petrol tank and pump, Dale Street Mills, for Messrs. Langley Bros.; garage, Queen's Drive, for Mr. F. W. Thorpe.

The BARKING U.D.C. has approved the elevations of new premises to be built by Messrs. Woolworth & Co., in East Street.

*

At a meeting of the BARNSLEY Corporation Housing Committee, the borough engineer submitted plans and estimates in connection with the erection of houses on the Burton Grange site by direct labour. The committee recommends that the following houses be erected: 132 houses in blocks of two, containing three bedrooms, at £382 per house; and sixty-six houses in blocks of two, containing two bedrooms, at £356 per house.

*

Mr. F. V. Hulme, architect, is developing the Basford Hall estate, TUNSTALL.

*

Plans passed by the HORNSEY Corporation: Alterations and additions, Tottenham Lane, for Messrs. J. Walters and Sons; alterations and additions, Smithfield Works, Cross Lane, for Mr. W. H. Partridge; extension of Wood Vale for Messrs. R. B. Grantham and Son; alterations and additions, 371 and 371a Archway Road, for Messrs. C. Gordon, Ltd.; alterations and additions, 191 and 193 Archway Road, for Messrs. F. Richardson and Sons; alterations and additions, 13, 14, and 15 The Pavement, Middle Lane, for Messrs. J. Farrer and Sons.

*

The Stoke-on-Trent City Surveyor has prepared a suggested lay-out plan for approximately 51 acres of land at the MEIR for housing purposes.

*

The STOKE-ON-TRENT Corporation has received sanction to borrow the following amounts in connection with the Strongford sewage disposal scheme: £37,766 for reinforced concrete work; £18,442 for machinery; £129,640 for other works; and £1,070 for purchase of land.

*

It was reported at the L.C.C. that the cost of the proposed new wing to complete the LONDON County Hall was estimated at £607,000.

*

At a meeting of the SWANSEA Corporation Housing Committee the Borough architect reported as to the erection of a further fifty houses on the Mayhill portion of the site by direct administration, and it was decided to apply for sanction to the erection of these houses.

*

The Essex County Council has approved plans for the erection of a home for nurses at BRENTWOOD Mental Hospital at a cost of £21,250.

*

The Hampshire Education Committee has voted £14,500 for the erection of a senior girls' school at EASTLEIGH.

Plans passed by the SWANSEA Corporation: Rebuilding "The Blue Bell" public-house, Carmarthen Road, for Mr. T. H. Thomas; additions, 10 Fisher Street, for Messrs. C. K. Andrews, Ltd.; rebuilding St. David's School, Edward Street, for the Rev. F. R. Aspinwall; mission hall, Gorse Road, for Mr. G. S. Knight; additions, Norwegian Church, Prince of Wales Dock Road, for the trustees; additions, general hospital, for the committee; institute, Landore, for the British Mannesmann Tube Co., Ltd.; institute, Mumbles Road, Blackpill, for Mr. Hurn; drill hall, Queen's Road, Mumbles, for Mr. A. Tucker; club room, Taplow Terrace, Pentrechwyth, for the British Copper Manufacturers, Ltd.

*

The Northants County Council has now approved the scheme for the provision of additional public and office accommodation at the County Buildings, NORTHAMPTON, involving the adaptation of the old county gaol buildings at a total estimated cost not exceeding £22,000.

*

Plans passed by HERNE BAY U.D.C.: Hall, south side of Broadway, for Mr. J. Wilson; two houses, Linden Avenue, for Mr. H. Pettman; new street, Dence Estate, for Mr. J. W. Moore; seven houses, Dence Estate, for Mr. H. C. Hollis; horticultural buildings, Carlton Hill, for Mr. W. Hancock; house and shop, Broadway, for Mr. W. Hancock; two houses, Beacon Hill, for Mr. R. Messenger.

*

Plans passed by the HACKNEY B.C.: Rebuilding, 92-100 Stoke Newington Road, for Messrs. Hobden and Potti; additions, 155 Culford Road, for Mr. C. K. Codrington; building, Paragon Road, for H.M. Office of Works.

*

The BRIGHTON Education Committee is to erect on the present Moulsecoomb site a senior boys' and a senior girls' department, each to accommodate about 300 scholars, and also another department for about 350 scholars, at a total cost of approximately £43,200.

*

The borough engineer of BRIGHTON has prepared plans and estimates for the construction of a tidal bathing pool on the foreshore, the cost being estimated at £170,000.

*

Plans passed by the DARTFORD U.D.C.: Laboratory, 137 Temple Hill, for Messrs. Burroughs Wellcome & Co.; rebuilding the "Rising Sun" public-house, Dartford Road, for Messrs. C. N. Kidd and Son, Ltd.; eight bungalows, Upper Ruxley Farm, for Mr. T. H. Wood; two houses, Summerhouse Drive, for Mr. W. G. Garton; two bungalows, Havelock Road, for Mr. G. H. Giles.

Plans passed by the BRIGHTON Corporation; Reconstruction after fire, 98-99 St. George's Road, for Mr. E. Tully; eight houses, Dudley Road, for Mr. A. T. Dockerill; memorial hall, 35 Ship Street, for the Holy Trinity Church Council; alterations, 33-34 East Street, for Tamplin and Sons' Brewery (Brighton), Ltd.; reconstruction, rear of 51 Elm Grove, for Mr. G. Simmons; two houses, Bavant Road, for Mr. F. J. Hargroves; shop fronts and alterations, 2-3 Meeting House Lane, for Messrs. H. Cooper and Sons; rebuilding, 1 and 2 Edward Street, for Mrs. R. Burt; eight houses, Dudley Road, for Mr. A. T. Dockerill; rebuilding, Old Steine and St. James's Street, for Messrs. J. Lyons & Co., Ltd.

*

The CHESTERFIELD Corporation is to construct roads and sewers to complete the development of the Highfield estate at a cost of £12,000. There will be space for the erection of another 200 houses.

*

Plans passed by the HASTINGS Corporation: Offices and flats, Verulam Place, for Mr. C. Cowles-Voysey, architect; chapel, Buchanan Hospital, Springfield Road, for Messrs. Callow and Callow, architects; alterations and additions, 52-55 George Street, for Messrs. T. Bates and Sons, architects; flats, Pevensey Road, for Mr. C. H. Tanton, architect; bungalow, Bexhill Road, for Mr. H. Gandy, architect; bungalow, St. Helen's Road, for Mr. H. M. Jeffery, architect; alterations and additions, Hevenhurst Mills, Bexhill Road, for Mr. H. M. Jeffery; alterations, 3 London Road, for Mr. F. Bowcock, architect.

*

Downlands, Ltd., are to proceed with the development of the Marplit Lane estate, COULSDON.

*

The MARYLEBONE B.C. is raising a loan for the purchase of property for the Town Hall extension scheme.

*

The L.C.C. Education Committee now proposes to proceed with the scheme for the erection of a technical institute at DEPTFORD at a cost of £120,500.

*

Plans passed by the STRETFORD U.D.C.: Four houses, Lime Road, for Messrs. Wheeler and Hazeland; fifteen houses, Milwain Road, for Messrs. Archer and McAlpin; covered way, off Park Road, for Messrs. D. Anderson and Son, Ltd.; strong-room, Elsinore Road, for Messrs. Switchgear and Cowan, Ltd.; eighty-eight houses, Waverley Road, for Messrs. Thorpe, Collier and McCulloch.

*

The BRISTOL Corporation is to construct roads and sewers on the Fishponds, the St. Annes, and the Shirehampton estates at a cost of £20,500, in order that arrangements may be made for the erection of 200 houses by direct labour.

The BRISTOL Corporation is to erect an additional fifty-six houses on the Sea Mills estate.

*

Plans passed by the BRISTOL Corporation: Six houses, Portway, for Mr. E. R. Dyke; twenty-seven houses, Fitzgerald Road, for Mr. E. A. W. Poole; eleven houses, Speedwell Road, for Messrs. Bissicks and Fletcher; ten houses, Talbot Road, for Mr. G. Sanders.

*

Bristol Housing, Ltd., is to erect 100 houses at Duckmoor Road, Bedminster, BRISTOL.

*

Messrs. Jennings are to erect twenty-four houses on the Longmead estate, BRISTOL.

*

The Surrey Education Committee has approved sketch plans prepared by the architects for the erection of a mixed secondary school at GODALMING, for 410 pupils, at an estimated cost of £50,000, and submitted sketch plans to the Board of Education for approval.

*

The COVENTRY Corporation has approved certain proposals as to the future of the barracks and the selection of a site for a town hall.

*

The COVENTRY Corporation is seeking sanction to borrow £15,000 for further housing advances.

*

Plans passed by the BOURNEMOUTH Corporation: Regent Picture Theatre, Westover Road, for The Provincial Cinematograph Co., Ltd.; four shops and flats, West Cliff Road and St. Michael's Road, for Dr. Bernard Scott; seven houses, Lystra Road, for Mr. S. G. Ward; boiler-house, Curzon Hall, Curzon Road, for Messrs. Primavesi and Mauleverer; stores, 90 Palmerston Road, for Messrs. W. Mabey and Sons; alterations and additions, Lower Charminster Road, for Mr. J. Arion; billiard saloon, Brassey Road, for Mr. T. J. Rowley; four houses and garages, Brightlands Avenue, for Messrs. S. J. and V. F. Sheppard; hotel and three garages, Castle Lane, for Messrs. Eldridge, Pope & Co., Ltd.

*

Plans passed by the HANLEY Corporation: Twelve houses, Caulton Road, for Mr. T. Horwill; two houses, Dividy Lane, for Mr. C. F. Brough; two houses, Milton Road, for Mr. B. S. Phillips; sixteen houses, off Hanley Road, for Messrs. Shenton Bros.

*

Plans passed by the BURSLEM Corporation: Garage, workshops, and offices, Leek New Road, for Messrs. Shenton Bros.; extensions, loading platform, Hamil Road, for Messrs. A. Thorley and Sons; church and school, High Lane, for Catholic trustees; additions, Waterloo Works, Waterloo Road, for Messrs. T. and R. Boote, Ltd.

The L.C.C. Education Committee is considering the provision of two schools for physically defective and mentally defective children on the Downham estate, LEWISHAM.

*

Plans passed by the MANCHESTER Corporation: Estate layout, Bowker Vale estate, Heaton Park; fourteen houses, Maureen Avenue, Crumpsall; five shops and houses, Middleton Road; beerhouse, Rink Street, and Green Street, Fallowfield; alterations, "Nottingham Arms," Warde Street, and White Street, Hulme; additions to works, Vickers Street, Miles Platting; warehouse and offices, Church Street and Birchin Lane; bus garage and car depot, Boyle Street, Cheetham; alterations, Albion Inn, City Road and Welcomb Street, Hulme; alterations, Victoria Hotel, Hardman Street and Austin Street; dance hall, Whitworth Street; additions to electricity sub-station, Palmerston Street, Ancoats; eight houses, Grange Drive, Blackley; workrooms, Victoria Mills, Monday Street, Ancoats; offices and works, Withy Grove and Mark Lane; fourteen houses, Maureen Avenue and Sedgley Road, Crumpsall; workrooms, Greek Street, Chorlton-upon-Medlock; alterations, "Beverley Arms," Clarendon Street, Hulme; alterations, Lord Nelson Inn, Russell Street, Chorlton-upon-Medlock; additions to tram depot, Bennett Street and Blucher Street, Ardwick; tower and indicator at racecourse, Kirkmanshulme Lane, Gorton; judge's box at racecourse, Kirkmanshulme Lane, Gorton; alterations, Wellington Inn, Walker Street and McCormick Street, Ancoats; four houses, Hill Top Avenue, Blackley; alterations and additions, 135-141 Oldham Street; rebuilding wall to church, Bradford Road and Stracey Street; alterations and additions, Friendship Inn, Buckley Street, Rochdale Road; alterations and additions, Locomotive Inn, Rochdale Road and Zinc Street.

*

The governors of the GRAVESEND and North Kent Hospital are to raise £60,000 to enlarge the hospital.

*

The Middlesex Education Committee is to erect a school for about 100 children in NORTHOLT Junction.

*

Plans passed by the MORECAMBE Corporation: Five houses, Kensington Road, for Messrs. Edmondson Bros., Ltd.; alterations, West View Terrace, for the National Provincial Bank, Ltd.; alterations, Bull Hotel, for Mr. J. Smith; alterations, Morecambe Street, for St. John Ambulance Association; two houses, West End Road, for Mr. T. Coupe; new street, Brantwood Avenue, off Ruskin Drive, for Messrs. F. Moore & Co.; six houses, Torrisholme, for Mr. G. Jackson; alterations to Café Roy, West View Terrace, for Mr. C. E. Wilson.

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
A₂	Addlestone	S. Counties	1 6	1 1½
A	Adlington ..	N.W. Counties	1 7½	1 2¼
A	Airdrie ..	Scotland	*1 7½	1 2¼
O₁	Aldeburgh	E. Counties	1 3	11½
A	Altrincham	N.W. Counties	1 7½	1 2¼
B₂	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
B₂	Aylesbury ..	S. Counties	1 4	1 0
B₂	BANBURY	S. Counties	1 4	1 0
B₂	Bangor ..	N.W. Counties	1 4½	1 0½
A	BarnardCastle	N.E. Coast	1 7½	1 2¼
A	Barnsley ..	Yorkshire	1 7½	1 2¼
B₁	Barnstaple	S.W. Counties	1 5	1 0½
A	Barrow ..	N.W. Counties	1 7½	1 2¼
A	Barry ..	S. Wales & M.	1 7½	1 2¼
B₂	Basingstoke	S.W. Counties	1 4	1 0
B	Bath ..	S.W. Counties	1 5½	1 1½
A	Batley ..	Yorkshire	1 7½	1 2¼
B	Bedford ..	E. Counties	1 5½	1 1½
A₂	Berwick-on-Tweed	N.E. Coast	1 6½	1 2
A₂	Bewdley ..	Mid. Counties	1 6½	1 2
B₂	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
B₂	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 0½
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 0½
A	Bristol ..	S.W. Counties	1 7½	1 2¼
B₂	Brixham ..	S.W. Counties	1 4	1 0
A₂	Bromsgrove	Mid. Counties	1 6½	1 2
C	Bromyard ..	Mid. Counties	1 3½	11½
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 1½
B₂	Canterbury	S. Counties	1 4	1 0
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 1½
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 0½
B₁	Chelmsford	E. Counties	1 5	1 0½
A₂	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
B₂	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
B₁	Colchester ..	E. Counties	1 5	1 0½
A	Colne ..	N.W. Counties	1 7½	1 2¼
A₂	Colwyn Bay	N.W. Counties	1 6	1 1½
A	Consett ..	N.E. Coast	1 7½	1 2¼
A₂	Conway ..	N.W. Counties	1 6	1 1½
A	Coventry ..	Mid. Counties	1 7½	1 2¼
A₂	Crewe ..	N.W. Counties	1 6	1 1½
A₂	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 4	1 0
A₂	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 1½
A	Doncaster	Yorkshire	1 7½	1 2¼
C₁	Dorchester	S.W. Counties	1 3	11½
A₂	Driffield ..	Yorks	1 6	1 1½
A₂	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	EASTBOURNE	S. Counties	1 5	1 0½
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 1½
B₂	Exmouth ..	S.W. Counties	1 4½	1 0½
B	FELIXSTOWE	E. Counties	1 5½	1 1½
A₂	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
B₂	Frome ..	S.W. Counties	1 4	1 0
A	GATESHEAD	N.E. Coast	1 7½	1 2¼
B₁	Gillingham	S. Counties	1 5	1 0½
A	Gloucester	S.W. Counties	1 6	1 1½
A₁	Goole ..	Yorkshire	1 6½	1 2
B	Gosport ..	S. Counties	1 5½	1 1½
A₂	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 0½
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 4	1 0
B₁	Hatfield ..	S. Counties	1 5	1 0½
B	Hereford ..	S. W. Counties	1 5½	1 1½
B	Hertford ..	E. Counties	1 5½	1 1½
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

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

			I	II
			s. d.	s. d.
A	ILKLEY ..	Yorkshire	1 7½	1 2¼
A	Immingham	Mid. Counties	1 7½	1 2¼
B	Ipswich ..	E. Counties	1 5½	1 1½
C₁	Isle of Wight	S. Counties	1 3	11½
A	JARROW ..	N.E. Coast	1 7½	1 2¼
A	KEIGHLEY	Yorkshire	1 7½	1 2¼
B₂	Kendal ..	N.W. Counties	1 5	1 0½
B₁	Keswick ..	N.W. Counties	1 5	1 0½
B	Kettering ..	Mid. Counties	1 5½	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
B₂	Lewes ..	S. Counties	1 4	1 0
A₂	Lichfield ..	Mid. Counties	1 6	1 1½
A	Lincoln ..	Mid. Counties	1 7½	1 2¼
A	Liverpool ..	N.W. Counties	*1 10	1 4½
A₂	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
B	Luton ..	E. Counties	1 5½	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 1½
A₂	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 4	1 0
A₂	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
A₂	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
A₂	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
A₂	Northampton	Mid. Counties	1 6½	1 2
A	North Staffs.	Mid. Counties	1 7½	1 2¼
A	North Shields	N.E. Coast	1 7½	1 2¼
A₂	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 1½
A	Oldham ..	N.W. Counties	1 7½	1 2¼
A₂	Oswestry ..	Mid. Counties	1 6	1 1½
B	Oxford ..	S. Counties	1 5½	1 1½
A	PAISLEY ..	Scotland	*1 7½	1 2¼
C	Pembroke	S. Wales & M.	1 3½	11½
A	Perth ..	Scotland	*1 7½	1 2¼
A₂	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 1½
A	Preston ..	N.W. Counties	1 7½	1 2¼
A	QUEENSFERRY	N.W. Counties	1 7½	1 2¼
B	READING ..	S. Counties	1 5½	1 1½
B	Reigate ..	S. Counties	1 5½	1 1½
A₂	Retford ..	Mid. Counties	1 6	1 1½
A	Rhondda Valley	S. Wales & M.	1 7½	1 2¼
A₂	Ripon ..	Yorkshire	1 6	1 1½
A	Rochdale ..	N.W. Counties	1 7½	1 2¼
B	Rochester	S. Counties	1 5½	1 1½
A₁	Ruabon ..	N.W. Counties	1 7	1 2¼
A₂	Rugby ..	Mid. Counties	1 6½	1 2
A₂	Rugeley ..	Mid. Counties	1 6	1 1½
A	Runcorn ..	N.W. Counties	1 7½	1 2¼
A₂	ST. ALBANS	E. Counties	1 6	1 1½
A	St. Helens	N.W. Counties	1 7½	1 2¼
B₂	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
A₂	Shrewsbury	Mid. Counties	1 6	1 1½
A₂	Skipton ..	Yorkshire	1 6½	1 2
B	Slough ..	S. Counties	1 5½	1 1½
A₂	Solihull ..	Mid. Counties	1 6½	1 2
A₂	South'pton	S. Counties	1 6	1 1½
B₁	Southend-on-Sea	E. Counties	1 5	1 0½
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 1½
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 1½
A₁	TAMWORTH	N.W. Counties	1 7	1 2¼
B₁	Taunton ..	S.W. Counties	1 5	1 0½
A	Teeside Dist.	N.E. Counties	1 7½	1 2¼
B	Teignmouth	S.W. Coast	1 5½	1 1½
A	Todmorden	Yorkshire	1 7½	1 2¼
A₂	Torquay ..	S.W. Counties	1 6½	1 2
C	Truro ..	S.W. Counties	1 3½	11½
B₁	Tunbridge Wells	S. Counties	1 5	1 0½
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
B	Wellingborough	Mid. Counties	1 5½	1 1½
A	West Bromwich	Mid. Counties	1 7½	1 2¼
B	Weston-s-Mare	S.W. Counties	1 5½	1 1½
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
B	Windsor ..	S. Counties	1 5½	1 1½
A	Wolverhampton	Mid. Counties	1 7½	1 2¼
A₂	Worcester ..	Mid. Counties	1 6	1 1½
A₂	Worksop ..	Yorkshire	1 6	1 1½
A₁	Wrexham ..	N.W. Counties	1 7	1 2¼
B	Wycombe ..	S. Counties	1 5½	1 1½
B₁	YARMOUTH	E. Counties	1 5	1 0½
B₂	Yeovil ..	S.W. Counties	1 4½	1 0½
A	York ..	Yorkshire	1 7½	1 2¼

* 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. 4½d. *per hour*; LABOURER, 1s. 4½d. *per hour*; NAVVY, 1s. 4½d. *per hour*; TIMBERMAN, 1s. 6d. *per hour*; SCAFFOLDER, 1s. 5½d. *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. 4½d. *per hour*; TIMBERMAN, 1s. 6d. *per hour*; BRICKLAYER, 1s. 9½d. *per hour*; PLUMBER, 1s. 9½d. *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. 9½d. *per hour*; LABOURER, 1s. 4½d. *per hour*; SCAFFOLDER, 1s. 5½d. *per hour.*

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. 9½d. *per hour*; DO. *fixer*, 1s. 10½d. *per hour*; LABOURER, 1s. 4½d. *per hour*; SCAFFOLDER, 1s. 5½d. *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. 9½d. *per hour*; TILER, 1s. 9½d. *per hour*; SCAFFOLDER, 1s. 5½d. *per hour*; LABOURER, 1s. 4½d. *per hour.*
N.B.—Tiling is often executed as piecework.

Slates, 1st quality, per 1,200:	
Portmadoc Ladies	£14 0 0
Countess	27 0 0
Duchess	32 0 0

Old Delabole	*Med. Grey*	*Med. Green*
24 in. × 12 in.	£42 11 3	£45 1 0
20 in. × 10 in.	31 4 3	33 0 6
16 in. × 10 in.	20 18 0	22 4 9
14 in. × 8 in.	12 1 0	12 16 3

Green Randoms per ton	8 3 9
Grey-green do., per ton	7 3 9
Green peggies, 12 in. to 8 in. long, per ton	6 3 9
In 4-ton truck loads, delivered Nine Elms station.	
Clips, lead, per lb.	£0 0 6
Clips, copper, per lb.	0 2 0
Nails, compo, per cwt.	1 6 0
Nails, copper, per lb.	0 1 10
Cement and sand, see "Excavator," etc., above.	
Hand-made tiles, per M.	£5 18 0
Machine-made tiles, per M.	5 8 0
Westmorland slates, large, per ton	9 0 0
DO. *Peggies, per ton*	7 5 0

SLATING, 3 in. 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. 9½d. *per hour*; JOINER, 1s. 9½d. *per hour*; LABOURER, 1s. 4½d. *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 6
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, 1¾ in. with moulded bars in small squares, per ft. sup.	0	2	6
DO. 2 in. do., per ft. sup.	0	2	9
DEAL cased frames, oak sills and 2 in. moulded sashes, brass-faced pulleys and iron weights, per ft. sup.	0	4	6
MOULDED horns, extra each	0	0	3
DOORS, 4-panel square both sides, 1¾ 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	9
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. 1½ 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.* 4½*d. per hour.*

*

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

GLAZIER

GLAZIER, 1*s.* 8½*d. per hour.*

*

Glass : 4ths in crates :			
Clear, 21 oz.	£0	0	4½
DO. 26 oz.	0	0	5
Cathedral white, per ft.	0	0	7½
Polished plate, British 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.* 8½*d. per hour ;* LABOURER, 1*s.* 4½*d. per hour ;* FRENCH POLISHER, 1*s.* 9*d. per hour ;* PAPERHANGER, 1*s.* 8½*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

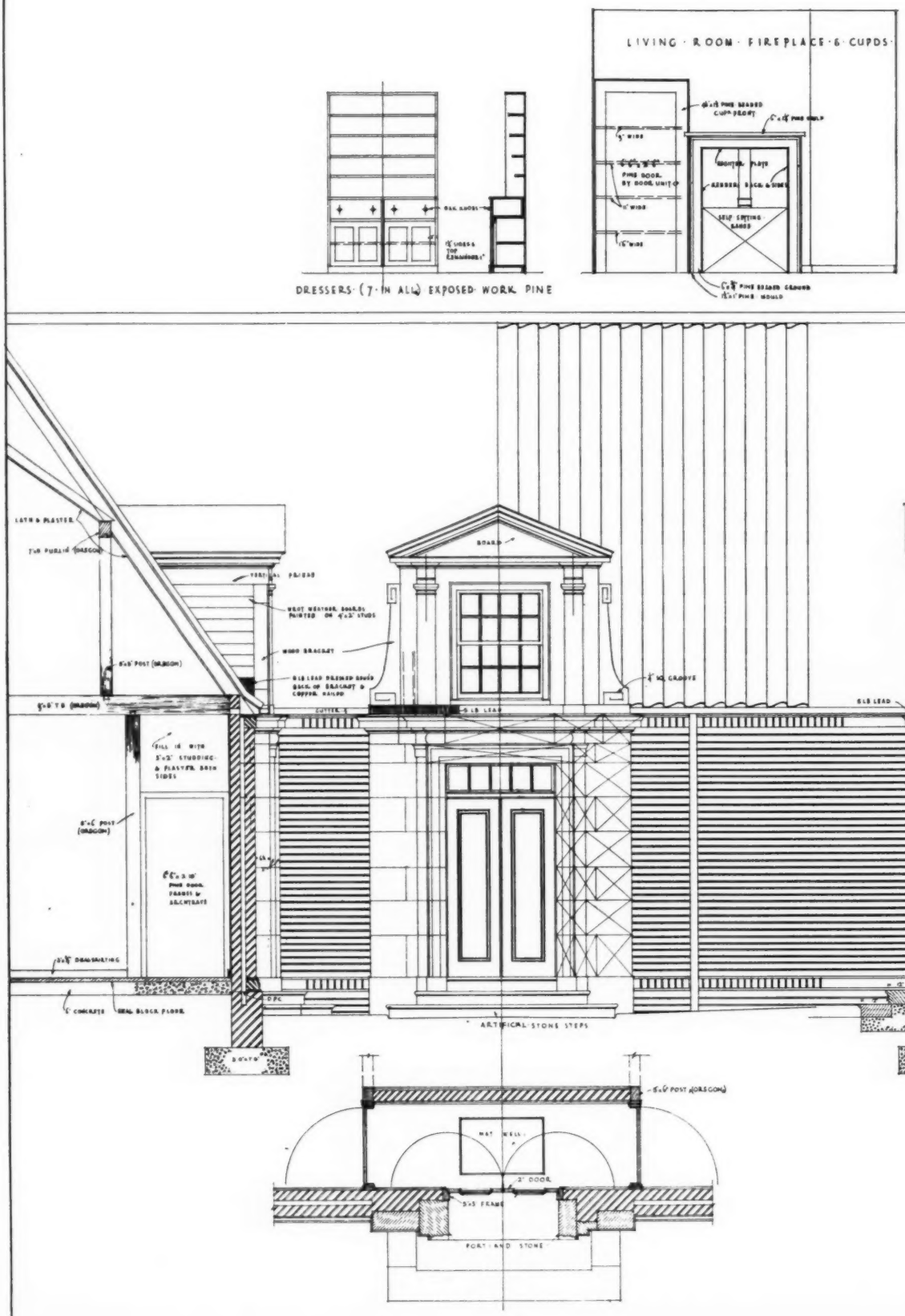
SUNDRIES

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
Plaster board, per yd. sup. . from	0	1	7
PLASTER BOARD, fixed as last, per yd. sup. . . . . from	0	2	8
Asbestos sheeting, $\frac{5}{32}$ 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, $\frac{5}{32}$ 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
Metal casements for wood frames, domestic sizes, per ft. sup.	0	1	6½
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
Waterproofing compounds for cement. Add about 75 per cent. to 100 per cent. to the cost of cement used.			

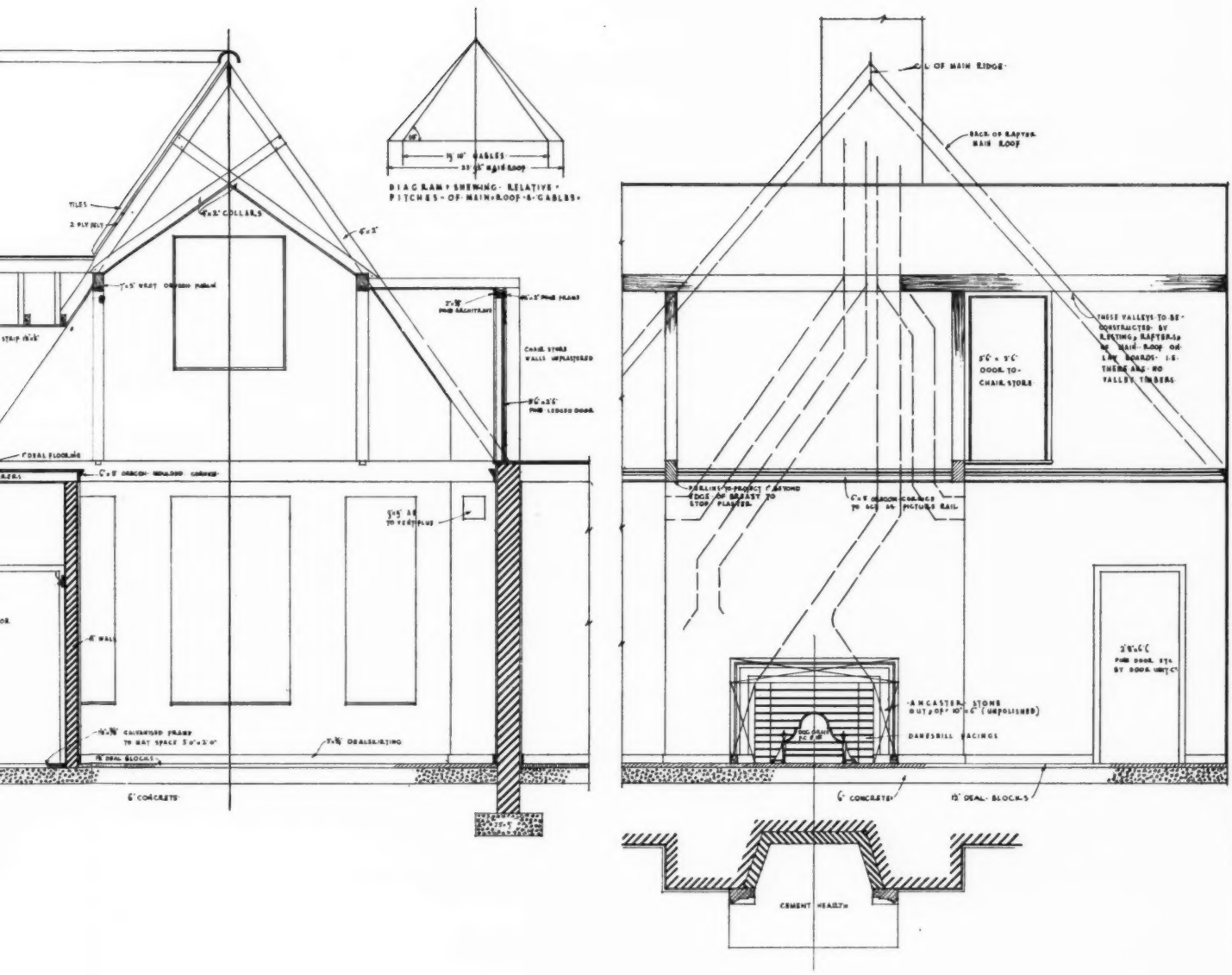
PLYWOOD, per ft. sup.

Thickness	$\frac{1}{16}$ 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	6	—	7½	7	—	9½	—	—	1 0	—	—
Oregon Pine	5	4	—	5½	5	—	8	—	—	—	—	—

THE FRANCIS · WILLMER · McAULAY · MEM
DETAIL · OF · EA



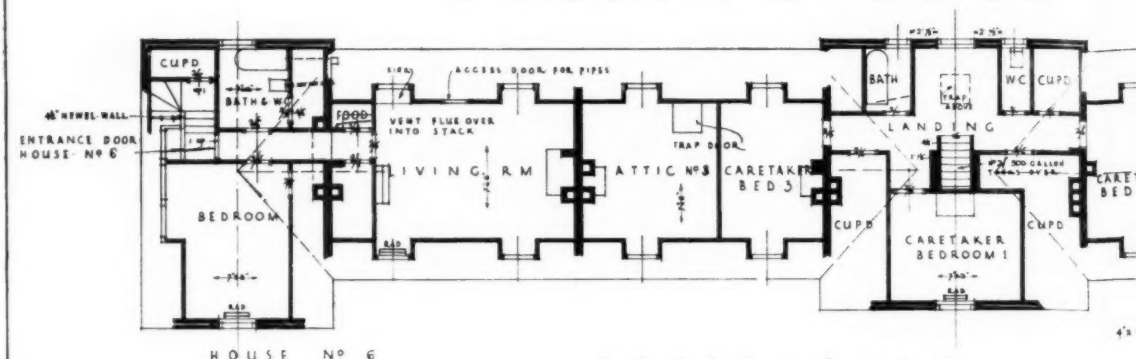
MEMORIAL · HOMES · AYLESBY · NEAR · GRIMSBY ·
EAST · ELEVATION



C·H·JAMES·A·R·I·B·A·
ARCHITECT·
15·GOWER·ST·W·C·1·
DRAWING·No.164/4·
JUNE·1926.

THE FRANCIS WILLMER McAULAY MEMORIAL HOMES, AYLESBY, NEAR GRIMSBY: DETAIL OF EAST ELEVATION. BY C. H. JAMES.

THE · FRANCIS · WILLMER · AYLESBY · NEAR ·



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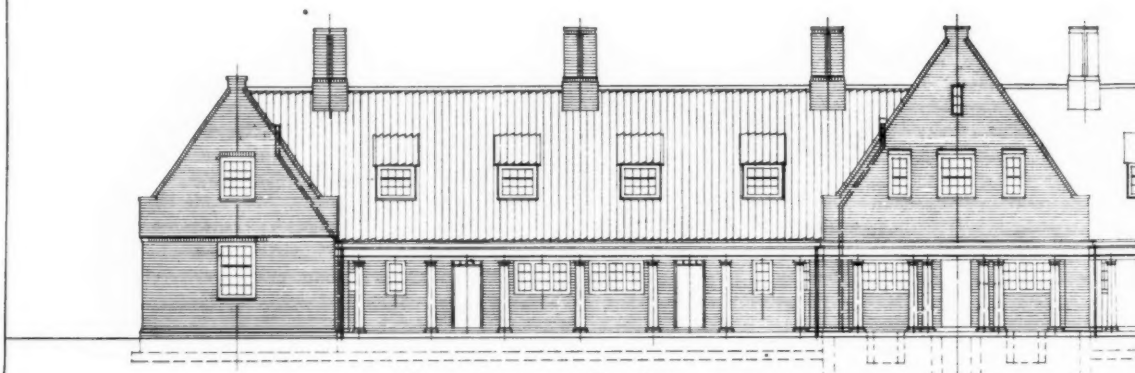

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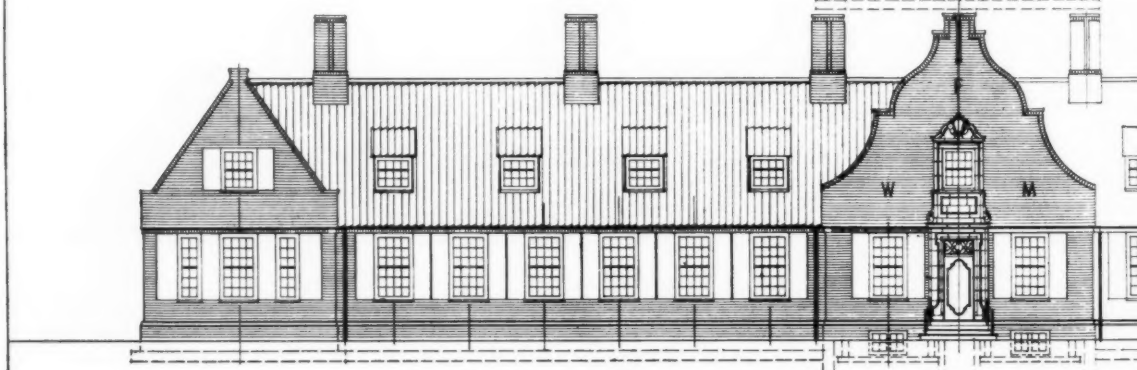
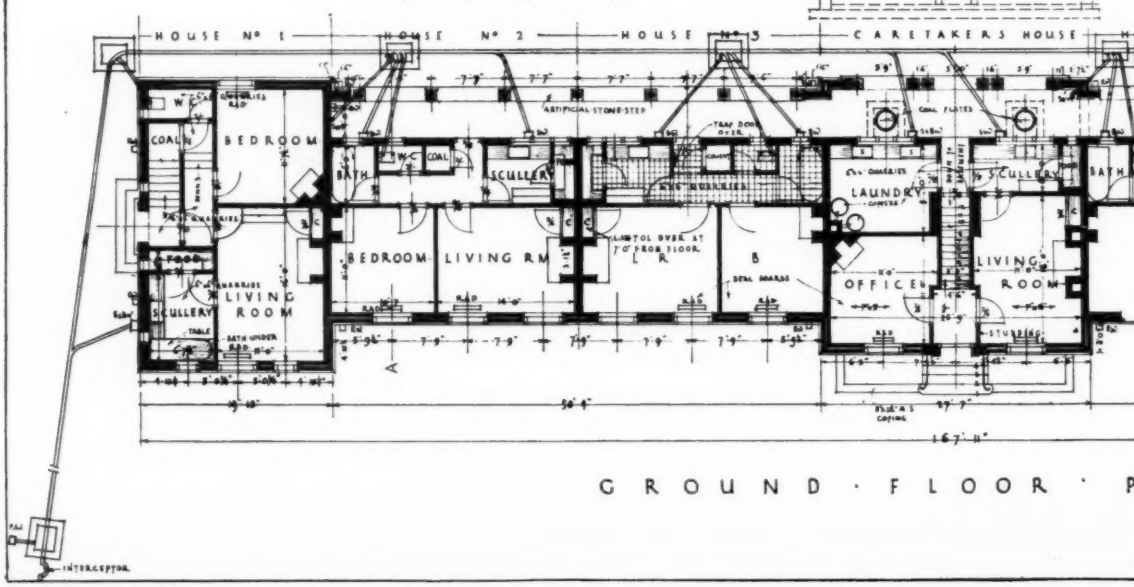
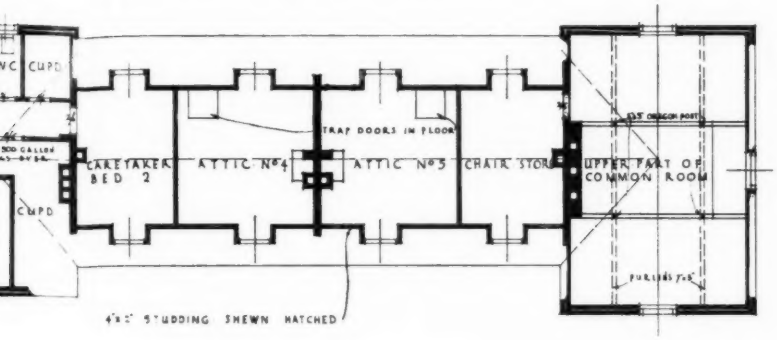


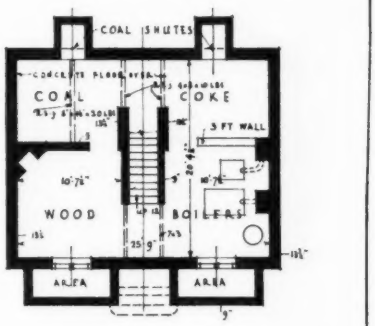
SOUTH



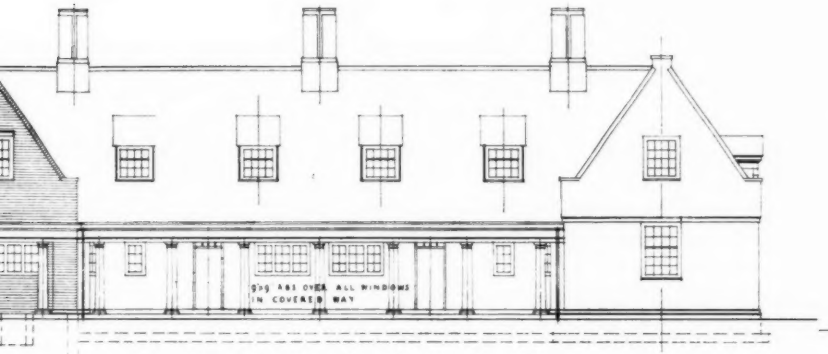
GROUND · FLOOR · P

E R · Mc AULAY · MEMORIAL · HOMES
R · GRIMSBY ·



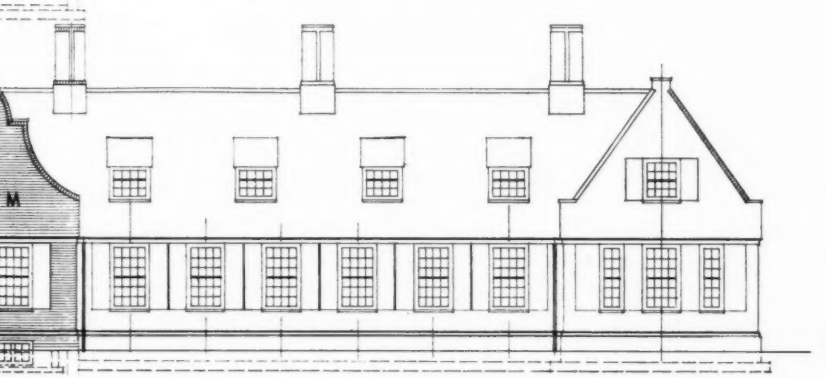


BASEMENT PLAN

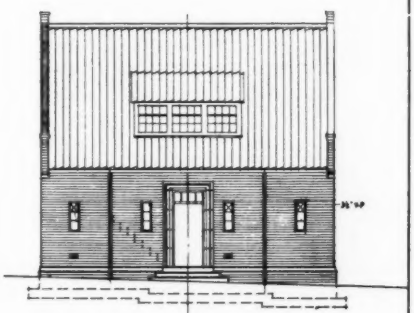


E L E V A T I O N

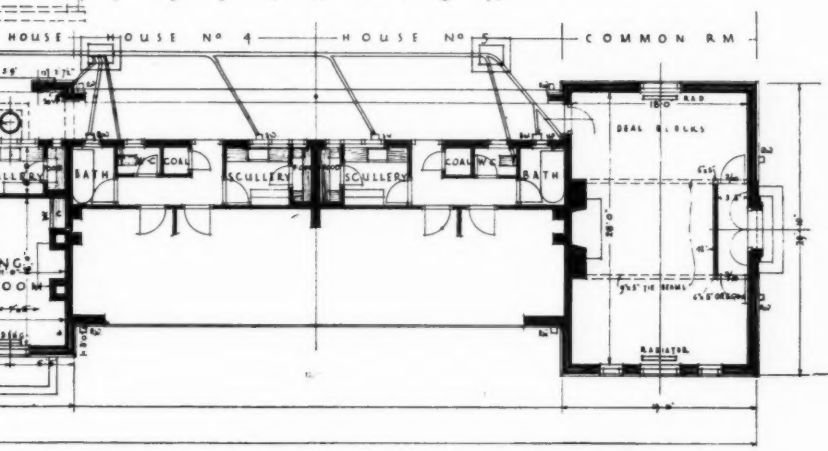
EAST END

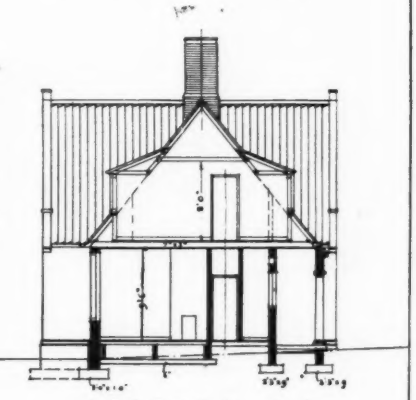


E L E V A T I O N



WEST · END ·





SECTION A·A

R · PLAN ·

C·H·JAMES·A·R·I·B·A
ARCHITECT
15 GOWER STREET
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DRAWING · Nº 164/1

THE FRANCIS WILLMER MCAULAY MEMORIAL HOMES, AYLESBY, NEAR GRIMSBY: GROUND-FLOOR PLAN. BY C. H. JAMES.

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