THE ARCHITECTS' JOURNAL

THE ARCHITECTS' JOURNAL
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In view of the unusual interest created by the special number of THE ARCHITECTS' JOURNAL on "Concrete," published on November 24th, the Editor is happy to be able to follow it up in the present issue with an article on the work of Auguste Perret and Brothers, the French firm of architects, who have probably done more than any men now living to extend the use of concrete and to bring out its architectural possibilities.

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PRINCIPAL CONTENTS

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CHRISTIAN BARMAN, *Editor*

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

RENDERINGS OF ARCHITECTURE

Selected and annotated by Dr. Tancred Borenius.

xlvii : Carel Fabritius (1620/4-1654).
A View in Delft.

The painter of the present picture is one of the rarest and most interesting masters of the Dutch seventeenth-century school. A pupil of Rembrandt at Amsterdam, he was settled at Delft in 1647, and was killed at the great powder explosion which took place in the latter city in 1654. The picture here reproduced is dated two years before the catastrophe ; in the foreground is seen a musical-instrument seller in his shop ; in the centre distance, on the far side of a canal, is the picturesque Nieuwe Kerk, a Gothic edifice built in 1384-56 ; and on the right are the houses of the quai known as the Vrouwenrecht. The picture illustrates very appropriately the gift of original and unexpected composition which is a peculiar characteristic of the art of Carel Fabritius, among whose few surviving works this picture, as a topographical subject, occupies a place entirely apart.—[National Gallery, No. 3714.]

THE ARCHITECTS' JOURNAL

Wednesday, December 8th, 1926

REGISTRATION

On Monday next members of the R.I.B.A. will have an opportunity of giving their unanimous approval to the draft Bill for the Registration of Architects, and thus another important stage will be reached in the long journey towards professional registration. Many months, nay, years, of intermittent hard work, of tactful negotiation, of tedious deliberation, have been spent in committee to bring the proceedings to this advanced stage; difficulties and opposition have been encountered, both from within and without the ranks of the profession, to overcome which unceasing tact and patience have been exercised.

And now comes Monday's meeting when the fruit of these labours will be submitted to the body of the Institute, but the fruit, if we may labour the simile a little, is not yet ripe for picking, and is never likely to ripen unless these proceedings are unanimous and free from criticism. With many there is always a temptation to criticize on such occasions; such criticism is sometimes captious, and sometimes of value, nevertheless, it should not be indulged in on Monday for fear lest subsequent reports of the proceedings give the impression, misleading maybe, that the profession itself lacks unanimity. Any dissent, nay, any apparent dissent, may wreck the whole enterprise which is at last so near to completion.

The drafters of the Bill have surely been wise in keeping the measure short and devoid of troublesome detail. Everything essential for the protection of the profession is there, and there is, too, unequivocal reassurance for those who, despite repeated statements to the contrary from competent sources, feared that architects who were not members of the R.I.B.A. would find themselves in a less favourable position than members. The fact is made quite clear that every bona-fide architect and every bona-fide architectural assistant is qualified for registration.

The question which the public will ask is how will the registration of architects affect it? We think that it will ultimately benefit in a two-fold direction. Every person calling himself an architect will have certain recognized qualifications which justifies his doing so, and in this respect he will be on a level with the lawyer and the doctor. There can never be a uniformity of knowledge or skill among the men of any profession, but it is surely in the interests of the public to know that a man calling himself an architect is competent to perform certain duties and functions. The other, and less direct, benefit to the public lies in the fact that little by little we expect to see a general improvement in the architectural standards of, what we might term, lesser buildings. As for the benefits to architects themselves they surely need no stressing to-day; too long have architects suffered heaped-up insult for buildings in which they had no hand. But the benefits which the proposed Bill will confer cannot operate at once, indeed, many years must elapse before the registered architect is all that he should be, and before any improvement in the appearance of our suburbs, small towns, and villages can be looked for.

The fact that architects constitute the last important professional body to obtain legal protection may, perhaps, prove to their advantage, for it enables them to learn from the experience of others. There is a tendency for professional bodies to consider their own interests first, and their responsibilities to the community second, and they are apt to hamper and restrict the activities of their members in addition to protecting their interests. There is, however, nothing in the draft Bill to give rise to any fear in this direction, although, of course, the ultimate control of the profession will be in the Council of the R.I.B.A.

During the last few years the R.I.B.A. has very considerably increased its prestige. In addition to being one of the "learned bodies," it has become an important political body; we use the word, let us hasten to explain, not in any parliamentary sense, but in its broader significance, intending to indicate thereby that the Institute is concerned with the affairs of citizens, as, indeed, is inevitable if it is properly to discharge its function. For, after all, there can be few more important bodies of men in the State than those responsible for the design of a nation's towns and buildings. Thus it comes about that the moment is an exceedingly opportune one for the presenting of a Registration Bill.

Before the war things moved leisurely and pleasantly, and each year saw the erection of a few important buildings in our towns and some delightful houses in the country, but no sooner were the guns silenced than a whole heap of new issues assaulted the architectural consciousness. Housing and town-planning schemes; arterial roads and traffic problems; St. Paul's Cathedral, Waterloo Bridge, rural amenities; these and similar matters filled the headlines of the daily papers; no wonder then that the architect became suddenly a person of some importance, and the R.I.B.A. a body whose opinion was sought on countless matters. And now with the passing of a Registration Bill, an event which is likely to happen in the near future, the Institute will enter upon a new phase in its career. On January 11 it will be exactly ninety years since it was granted its first Charter by William IV. Perhaps its ninety-first year is destined to be one of supreme importance in its history.

NEWS AND TOPICS

TANGLEWOOD TALES—THE FIRST BLOWS FOR BLOOMSBURY—RAGNAR ÖSTBERG IN IRELAND—A BRITISH HOSTEL IN PARIS—RULES OF WORK IN WUSIH

"ON the one hand you have the remains of the buildings themselves, with their perfection of design and careful workmanship. On the other, you have literary generalities such as Plutarch's account of the materials used, and the co-operation of craftsmen in all crafts, and those engaged in transport by land and sea. But it is the inscriptions that give definition, and prove to us that the works of the fifth century were not unexplained miracles, but the products of infinite skill and minutest care and attention to detail."—It was these inscriptions that held our attention at the R.I.B.A. on Monday night when Mr. Arthur H. Smith lectured upon those that related to the buildings on the Acropolis. Many of the inscriptions were detailed accounts of work done, and payments made, as this in connection with the Erechtheum :

	Drachmas.
.....the man with the spear	60
Phyromachos, the youth beside the cuirass ..	60
Phyromachos, the man leading the horse ..	60
Phyromachos, the man who stands leaning on his staff, beside the altar	60
Praxias, the horse, and the man with his back turned, striking it	120
Antiphanes, the chariot, the youth, and the two yoked horses	240
Mynnion, the horse, and the man slapping it, "and afterwards" he added the state .	127
Sokles, the man holding the bridle	60
Hiasos, the woman against whom the child has fallen	80
	[867]

Items such as these take one back in time, if anything does! As I listened to Mr. Smith there returned to my mind memories of Hawthorne's "Tanglewood Tales," and an intervening thousand years or so became but a watch in the night.

* * *

It was from a spot just on the confines of Bloomsbury—in the Kingsway Hall on Monday night, to be precise—that the first big guns in the battle for the Foundling Hospital Estate opened fire. I have never seen a more brilliant offensive. There was Sir Johnston Forbes-Robertson, with voice full of the low, menacing thunder of distant artillery; Lord Riddell, giving speech to words that rattled like Maxims; Professor Adshead, into whose rolling periods "a few figures" were thrown like grape-shot. Then there was Mrs. Cecil Chesterton, lighting up the situation with the intensity of a Véry flame; Mr. John Drinkwater, up in the air, but flying low like a heavy bomber; Sir James Remnant, M.P., ponderously cannonading; Professor Beresford Pite with sniper-like precision of speech; Miss Violet Markham sweeping across the ground with the devastating fury of high explosive; and, lastly, Dr. Saleeby, firing breathlessly in all directions like an angry tank. I doubt if the Beecham Estate and Pills, Limited, who bought the Foundling for £1,650,000, can repel such an attack. The resolution put to the meeting was: "This meeting emphatically condemns the proposal to be submitted to Parliament, by way of a private Bill, for the destruction of the Foundling Hospital, and of Brunswick and Mecklenburgh Squares; and being of opinion, etc. . . ." This resolution, of course, was carried unanimously.

* * *

The "speech limit" fashion is growing in popularity, and I ought not perhaps to have been surprised to find that at the annual dinner of Messrs. Higgs & Hill on Saturday night the orators were restricted to a mere two minutes each. What was remarkable, however, was that the notice on the toast list was loyally obeyed even by that eloquent Parliamentarian Sir William Bull, P.C., who, responding to the toast of "the visitors" heroically limited himself to the telling of one story—a very good one it need hardly be said. It was extraordinarily refreshing to listen to the peptonized speeches of the Partners and the Staff—they reflected the real spirit of good fellowship and mutual confidence which has reigned for many years at the Crown Works, and mixing afterwards with the hundreds of contented members of the staff who after a short and spirited musical programme spent the rest of the evening in dancing, I could not help feeling that here at least was a firm which had successfully established the happiest relations with its workers.

* * *

The news that Waterloo Bridge is not to be demolished, in accordance with the London County Council's scheme, comes as a relief even to those who felt sure that the establishment of a Royal Commission would automatically guarantee its safety. Without going into full details it is impossible to say just what particular line of argument impressed the Commission with the advisability of coming to what one must in all conscience call the right decision. The campaign against Waterloo Bridge had a head and it had a compact body, the defenders of Waterloo Bridge neglected to appoint a technically competent head to act as their leader and adviser and trusted to the effect of an impalpable sentiment. The old bridge must have had a good case! An impartial jury have returned a verdict of "Not guilty" despite the fact that it was not rightly represented before the Court.

* * *

Professor Ragnar Östberg's visit to the Free State has, it is safe to say, created more sensation than the visit of any individual concerned with the arts within living memory. Many eminent Irishmen, including the Archbishop of Dublin, Senator W. B. Yeats, Professor Walter Starkie, and Dr. McLaughlin, the young engineer of the Shannon Scheme, have recently paid visits to Stockholm and brought back accounts of the Town Hall sufficiently enthusiastic to awaken a lively interest in public and Press. Mr. and Mrs. Manning Robertson had arranged to take the visitors on Sunday down the Wicklow mountains to their home, Huntington Castle, in County Carlow, but a wet day, coupled with a cold, kept the Professor in bed. He told me that he attributed his indisposition to a London fog and a cold L.M.S. train. By Monday evening the Professor had recovered sufficiently to dine with Lady Parsons and meet the Archbishop and Mrs. Gregg, the Minister of Finance, and Mrs. Blythe, and Mr. George Russell—better known as "A. E." At the after-dinner reception he met the Minister of Education and a large gathering of Dublin celebrities. The Professor was delighted with President Cosgrave, who showed him some of the more striking rooms in the Government buildings.

He told me that he was chiefly struck by the size of the Dublin streets and the fine use made, during the Georgian and Early Victorian periods, of red brick with granite details. The Irish gold ornaments, dating from the eighth and ninth centuries, were shown by the curator of the Museum; he saw the beautiful senate room in Leinster House, and was entertained to lunch by Mr. J. H. Webb, the President, and the Council of the Royal Institute of the Architects of Ireland. With characteristic Swedish generosity Professor Östberg presented, as a gift from the Swedish architects, some books of measured drawings of old Swedish work. The Professor's other engagements included a visit to the Governor-General at the Viceregal Lodge. On Tuesday night he was entertained at a dinner and reception given by Senator and Mrs. W. B. Yeats, and on Wednesday at a private luncheon given by Professor and Mrs. Walter Starkie at Trinity College, where he met the Vice-Provost, the Minister of Justice, Mr. Kevin O'Higgins, and Sir John O'Connell. After lecturing at University College he inspected the architectural school under the guidance of Professor R. M. Butler, and his tour concluded with a lecture to an enormous audience at the Royal Dublin Society. It is hardly necessary to add that he and Madame Östberg won all hearts, and through the force of his personality he has given a powerful impetus and inspiration to the various art movements that are being initiated in the Free State. His visit succeeded in exciting the popular imagination to an astonishing extent.

* * *

I lately expressed the hope that the architecture of the proposed British hostel at the Cité Universitaire in Paris would be in sympathy with its surroundings. I am now told that the question of selecting an architect for this residential college is already being carefully considered, but until an option has been obtained on the site, and a public appeal has been launched by the Ambassador, Lord Crewe, Lord Derby, and others interested in the project, it would naturally be premature to attempt to decide on any particular architect. Undoubtedly there will be a suggestion that a French architect should be employed; but as this will be a definitely British hostel, and a centre of British educational influence, it is to be hoped that a British architect will eventually be chosen. At the same time it must be remembered that building in France presents peculiar difficulties. The customs and traditions of the industry are far different from those prevailing in this country, and mistakes can easily be made. There are, however, several men of the younger school, like M. de Soissons, Mr. Howard Robertson, Mr. E. P. Mawson, who have received their architectural education in Paris, and have never lost their affection for, and knowledge of, that city. Whoever is selected I trust that he will design a building that will provide comfort and convenience for British students, and at the same time be an example on the Continent of the best modern work of this country.

* * *

The other day Carlo Norway showed some exquisite things at the Chester Gallery. There were tiles and teapots, candlesticks and cruet sets, plaques and discs, carved heads, and ash trays. It was quite evident that every piece was a labour of love, and they were all beautiful in their way. There were decorative panels of painted glass which seemed to be the most immediately practicable, and these also were very good. The whole effect, however, was marred by its miscellaneous character; it did not strike me as to the point. The designs and the modellings were good, the glazes were exquisite, the colour was satisfying, the lustres were lustrous. I liked everything n detail but wished to see what the artist would make of a really big job. Something quite worth while I'm sure if he has a chance of getting away from the precious and entering upon the practical.

* * *

It is always interesting to study building and contracting arrangements of other countries; our own are not so perfect but that we may learn something from quite unexpected sources. The building contractors in the district of Wusih in China seem to be pretty well organized. These are some of their regulations: " Working hours for carpenters and masons will be from Arbor Day to the 9th Day of the 9th Moon, from 8 a.m. to 6 p.m. From the 9th Moon to Arbor Day, from 9 a.m. to 5.30 p.m.

Supper will be supplied by the contractors. But after 8 p.m. carpenters and masons must provide their own evening meal.

Costs for constructing buildings and for interior decoration work, etc., must be estimated on a fair basis. No contractor is allowed to contract for excessively low costs in order to obtain the work. Too keen competition should be avoided, because it is useless to obtain business which the contractor cannot complete.

Any contract supplied by the contractors must be guaranteed by the chop of the Contractors' Guild. If the contractor fails to complete the work, the Guild will be responsible for making good the contract without extra payment from the owner.

Sick carpenters and masons will be looked after by the Guild, provided the fund is sufficient for the purpose.

The above regulations are to be strictly obeyed by the trade. Fines will be decided by the majority of the members if any member disobeys any rule."

Surely we may learn something from the district of Wusih.

ASTRAGAL

ARRANGEMENTS

THURSDAY, DECEMBER 9

At the Architectural Association. 8.0 p.m. The Conversazione.

FRIDAY, DECEMBER 10

At the Royal Technical College Architectural Craftsmen's Society, Glasgow. 7.45 p.m. James Gillespie on Scottish Domestic Architecture (illustrated).

The Town Planning Institute. (At the Caxton Hall.) 6.0 p.m. G. L. Pepler on " Land " in Many Countries; Information Extracted from the Papers presented to the International Federation for Housing and Town Planning.

MONDAY, DECEMBER 13

At the Royal Institute of British Architects. 8.0 p.m. George Drysdale on the Work of Leonard Stokes.

At the Architectural Association (until Friday, December 17). 8.0 p.m. Students' Annual Pantomime, entitled " Cylinderella; or the Story of Flo and Return."

TUESDAY, DECEMBER 14

At the Royal Institute of British Architects. 7.30 p.m. W. G. Newton on the Wealth of England.

THE GARDEN SCULPTURE OF MARIA PETRIE

[BY A. T. E.]

JUST as no house is really complete without a garden, no garden has fulfilled its being and attained the highest degree of interest of which it is capable unless it is adorned by sculpture. It is noteworthy that the important renascence in garden design which has taken place in this country during the last thirty years has been followed by a renascence in the art of garden sculpture. One of the most distinguished practitioners of this art is Maria Petrie, some of whose work is here illustrated. In order to appraise the quality of her achievement it is necessary to consider what should be the distinguishing qualities of garden sculpture. In the first place, we should recognize that the large and the small garden require slightly different treatments of sculpture both in form and in subject. It has generally been assumed that only very spacious parks, such as that at Versailles and the gardens of the Tuileries, provide a proper setting for great figure groups, and, of course, it would be absurd to see one of these latter in a very small garden, and associated with architecture utterly unworthy of it. In the moderate size garden, however, there may appropriately be placed smaller pieces, and it is the appreciation of this fact which has created a demand for the refined and delicate sculpture pieces such as Mrs. Petrie produces. Just as the convention is being established that architects are required by their clients to provide designs, not only for houses, but for the surrounding gardens, there is a tendency for a further responsibility being imposed upon them, namely, that of providing appropriate settings for garden sculpture. The sculptural pieces are either intended to be seen with a background of wallage or verdure, or else they are put in such a position that they can be looked at from all sides. For the first category of statue the niche has been specially designed. This time-honoured treatment of sculpture, whereby the wallage is emphatically inflected to receive it, is so entirely satisfactory that one can scarcely imagine a time when it would be considered out of date. If the wall preparation does not assume this precise form it must, nevertheless, provide some kind of frame either by arch or canopy if the sculpture is to be set in close association with it, otherwise the wall appears to race past the sculpture without taking any account of it whatsoever. A very pleasant treatment is to set back the wall in a concave curve immediately behind the sculpture piece in a form resembling, as it were,

Little girl with hat and basket (plaster cast, half life size). By Maria Petrie.

a large niche uncovered; and a similar formation may be adapted in the case of cut hedges. Where sculpture stands free, a charming traditional arrangement is to place it in a little island surrounded by water or grass where people can survey it from all sides.

Mrs. Petrie's sculpture is for the most part designed to stand free. A large statue of the draped Pomona, here illustrated, is a good example of her delicate workmanship. This is situated in a garden of a Renaissance château where it has been provided with an admirable setting. The pedestal designed by herself harmonizes with the surrounding architecture. The material is cast artificial stone, and the texture of the surface is carved imitation of Muschelkalk. In the same château Mrs. Petrie has modelled a delightful room fountain. In one of the apartments a stove has been taken out and the niche filled with this small fountain executed in stucco, showing a boy figure riding a seahorse, the whole being framed in a delicately conceived shell surround.

Another illustration shows a concrete cast sundial in the form of a pedestal 3 ft. 6 in. high. On the four vertical sides of the structure are carved symbolical figures in relief illustrating the four seasons. Mrs. Petrie has made some highly interesting experiments in coloured sculpture. Some of her painted plaster statues, such as that representing a girl carrying a basket of fruit, here illustrated, would provide a singularly attractive decoration for a garden, and are, perhaps, especially adapted to settings where the figures are seen in association with stone flags or asphalt pathways. The sculptor has devoted a great

Above, sundial with four reliefs in cast concrete, 3 ft. 6 in. high. By Maria Petrie. Below, putto with wreath. By Maria Petrie.

deal of thought to this question of colour treatment, and holds the opinion that it is essential to avoid too naturalistic tints. This is, indeed, the secret of the distinction of her coloured statues which have nothing in common with the realistic "waxworks" quality which characterizes the appearance of such figures when these have been executed by unskilful hands. The pigments she uses are of gold, occasionally bright, and always very well defined, with the result that the composition of her figures has that vigour and simplicity which the intelligent use of convention always gives to a work of art.

Mrs. Petrie has taken a particular interest in the crafts connected with her work, and is able to execute her models in a wide range of materials. It is in this respect that she has especially well equipped herself for working in collaboration with architects, for she can design her decorative sculpture in such a manner that it will harmonize with the materials used elsewhere in the formation of a garden. Not only does she carve in stone, but she is equally at home in manipulating materials such as cement concrete, with the necessary reinforcements; artificial stone; fireclay, glazed or unglazed; lead and bronze.

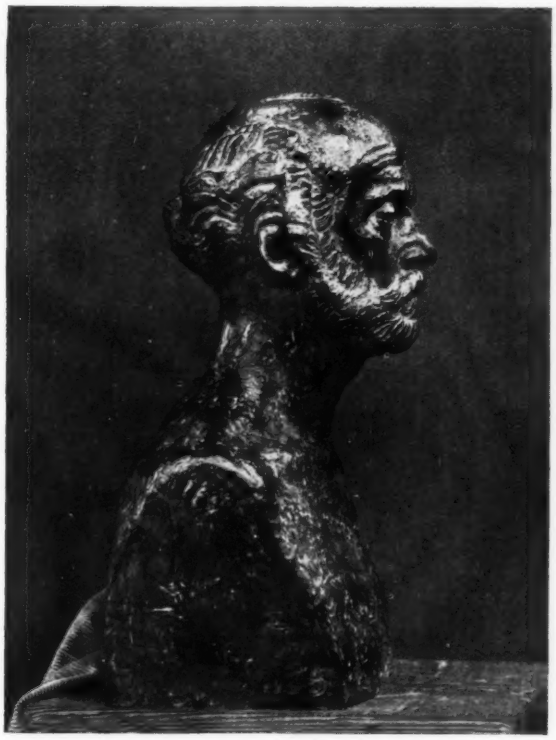
Draped Pomona in cast artificial stone (life size). By Maria Petrie.

CURRENT
ARCHITECTURE
SECTION

AUGUSTE PERRET AND BROTHERS

[BY H. BARTLE COX]

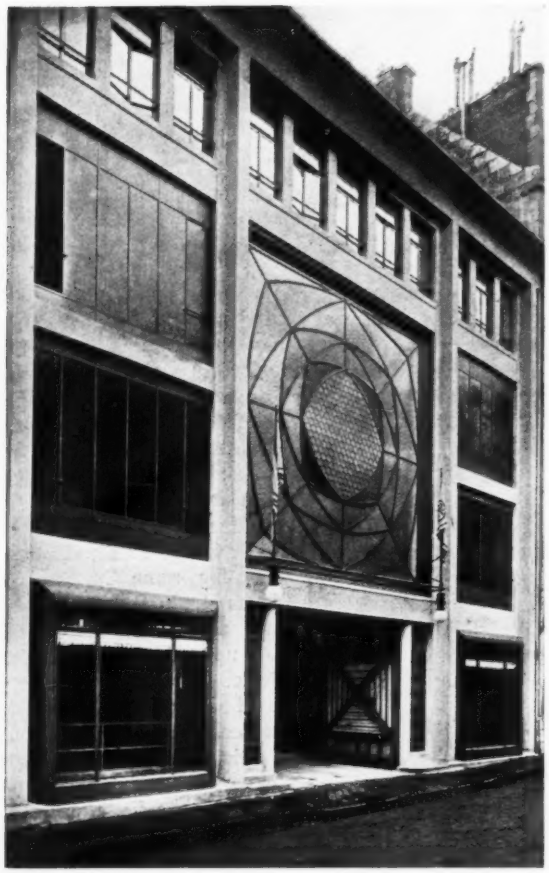
NEITHER mere-architects nor mere-builders, but constructors and designers combined, the international reputation of this firm of engineers and contractors is the outcome of their artistic and scientific handling of economic reinforced concrete building. Whatever opinion one may hold concerning the æsthetic qualities of their works, Messieurs Perret frères are real architects in the original sense of the word. In a lecture at the Université des Annales in December 1925, Monsieur Auguste Perret said: "Architects speak a dead language, hence public indifference. If architects continue to speak this dead language, there is another—that of engineers—which will replace it, for the living language will be understood." With reference to architecture, however (for want of a more deprecatory word), Monsieur Perret is as strongly opposed to designs by mere-engineers as he is to those by mere-architects. He preaches the necessity for the artistic handling of modern building materials, but he says so long as engineers express themselves clearly, and architects obscurely, we are likely to see so-called architecture replaced by mere engineering, to the ultimate benefit of architecture properly speaking. He adds: "The works thus realized will not attain beauty straightaway, but they will surely attain to a 'style,' which is the necessary step on the road leading to beauty."



Auguste Perret. A bronze bust. By Antoine Bourdelle.

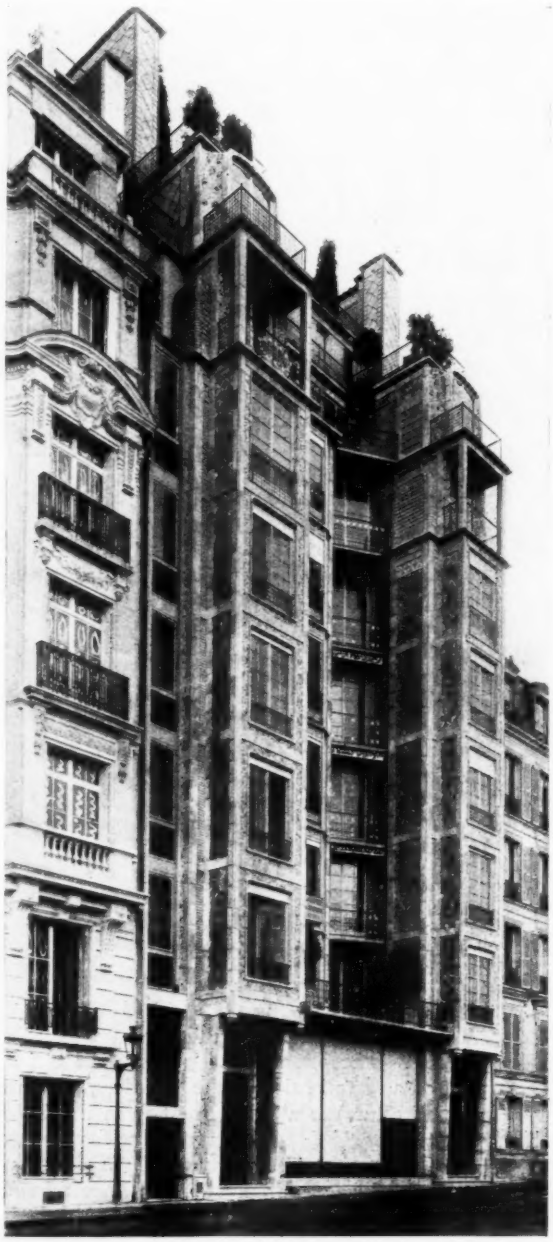
Some people fail to understand this argument, for there is a prevalent conception that "decoration" (often associated with an application of the "Orders," and mistaken for architecture) is a thing apart from the *building in itself as a decorative object*, a state of mind neither common to the Greek nor to the Gothic architect. This state of affairs is undoubtedly an outcome of Renaissance influence, but modern work demands an economical and logical expression of the material used. The "Orders" (ridiculous appellation for columns with their entablatures, etc.) often excellently employed by the Greeks, and as often abused by the Romans, but tyrannically adapted as decoration by Renaissance architects, have become foolish for most modern requirements, yet a vast theory of superstition (not quite dead) had been cleverly woven round these mere constructional elements as though they mysteriously embodied the whole grammar of design for every kind of building, of no matter what material. Till quite recent years, buildings, such as factories, that did not titivate their construction with these arbitrary details were not considered architectural, for the average architect's training for some hundreds of years has been largely based, not upon classic principles, but upon Renaissance dogma, hence the terrible state of confusion caused by speaking a dead language. A democratic use of money, however, plays such a formidable part in the formation of taste that a healthy reversion to elementary principles is becoming more and more apparent. The great French architect and writer, Viollet-le-Duc, made this clear to the initiated nearly a century ago, and now there is a general tendency to admire openly the æsthetics of certain purely engineering works. For this reason the architectural works of Messieurs Perret frères are of unprecedented modern importance. Were the Brothers Perret mere-builders their work would not be so widely commented upon; and were they mere-architects, they would never have had the opportunity of drawing up so many final designs for so much work that is appreciated for its sobriety and economy. This firm of three brothers, Auguste, Gustave, Claude, started their career with their father, who was an "Entrepreneur de Travaux publics," in other words, a builder pure and simple. They commenced business, or set up in practice (as best suits the prejudice of the reader), in about 1897.

Monsieur Auguste Perret and brothers carried out their first work of note in the nature of the Casino at Saint Malo in 1899, for which they were the architects, but not the contractors. In this building they used reinforced concrete floors, but otherwise the building is an ordinary masonry



construction. In 1903 they designed and carried out for themselves at 25 bis rue Franklin, Paris—the ground floor of which is now used for their own offices—an interesting block of flats, all built in reinforced concrete, but covered with coloured tiles. The time was not yet ripe, especially in the neighbourhood of the Trocadero, to erect a building wholly designed on the economic principle of unfaced concrete. However, their desire was there even over twenty years ago, and in 1905 they put up in Paris, rue Ponthieu, with an unfaced reinforced concrete façade, a most daring design for a garage. This was the starting-point of their artistic career, and illustrates a striking departure from (or development of) tradition. It marks the clearly-cut tendency of the new school, of which Messieurs Perret frères are among the most notable of adepts. For the next five or six years they were engaged mainly upon contractors' work, and carried out, under the direction of Monsieur Albert Ballu, the Cathedral of Oran. It might here be mentioned that Perret frères continue to carry out a vast quantity of contractors' work under other architects' direction, in which case they repudiate all responsibility for the design.

The two senior partners of the firm Perret frères had the best traditional architectural training that France can give, namely, that of the "Ecole des Beaux-Arts, Paris." They studied under the revered and conservative professor, Julien Guadet, and both carried off many medals and prizes. One of their most staunch admirers at the present moment, and one who has contributed to the technical papers appreciative articles on their works, is their deceased professor's son, Monsieur Paul Guadet, Architecte en Chef du Gouvernement, himself professor at the Ecole des Beaux-Arts. Perret frères have travelled extensively, and are well read. To them, as to most thinkers on art, constructional function implies æsthetic function, and the talk about the latter transcending the former is a myth created by writers. The solution does not precede the problem. With the courage of their conviction they, therefore, openly express their feeling of contempt for Renaissance trappings, which to them is the product of a materialistic make-believe civilization of pedants. They cannot feel actively enthusiastic unless engaged on modern work of a technical nature,



Above, garage, rue Ponthieu, Paris. By Auguste Perret and Brothers. Below, block of flats, 25 bis rue Franklin, Paris. By Auguste Perret and Brothers.

The small "Salle de Comédie" in the same building as the large auditorium of the "Théâtre des Champs-Elysées," Paris. By Auguste Perret and Brothers.

Théâtre de l'Exposition des Arts Décoratifs, Paris, 1925. By Auguste Perret and Brothers.

for they have embraced the medieval principle of an architect being a chief workman, or in modern terminology a "builder," instead of a mere office official. However much this new idea (which is very old) may offend certain susceptibilities it must be admitted that it is very practical, in the best interests of the development of the art, and not open to more financial abuse than the state of affairs now current. The Adam brothers in England, and Mansard in France, etc. etc., together with our glorious cathedral constructors, were builders in the complete sense of the word. Besides, Perret frères would never have arrived by the old (or rather new) method. Knowing how to construct and how to buy, they can estimate to a nicety and design accordingly, enabling them to cut prices, essential to most modern enterprise—a very justifiable position which is highly beneficial to the client, as it permits the architect to make a financial sacrifice should he deem it profitable. Many may fight against this attitude, but the battle cannot be won in the long run: for money rules the world and, by dictating propaganda, even forms our taste, sometimes for the worse, as during the reign of vulgar wealth; and sometimes for the better, as at the present moment, during a period of enforced retrenchments. Furthermore, though economy of "cost" is not always desirable in the question of design, yet paradoxical as it may seem, "economy" in the abstract is one of the fundamental laws of all the plastic arts. Slenderness is the economy of material in the same way that speed is the economy of time. Independent of passing whims, economy is the chief factor underlying our conception of what passes by the name of "*Good Taste.*" Perret's business attitude has, therefore, had a happy influence on his compositions, and his buildings, as will be seen from the illustrations, are noted for an elimination of unnecessary details. His architecture is only nude to those who, by custom, prefer over-dress. Some people misunderstand Perret's work, but he has now won a big name in the world and found some clients willing to pay for the luxury of simplicity.

In 1923 at the request of Monsieur Gault, Monsieur Perret designed and built, with a free hand, at the client's wishes, a residential house that has attracted much attention. It is entirely in reinforced concrete, and is situated near the Parc de Montsouris, Paris, on a corner site. The client did not request reinforced concrete in order to save money, because, as Monsieur Perret himself says, though cheap for large buildings it is costly for small ones. This is a point demonstrating the fact that while it is possible for mere-architects to dishonour the fraternity without being unmasked, it is also possible for a builder-architect to have the reputation for professional scruples, and to produce a building which is ordered for the sake of good, sound construction as well as for the "Cachet" which his work bears.

In 1911 came the great opportunity which has placed

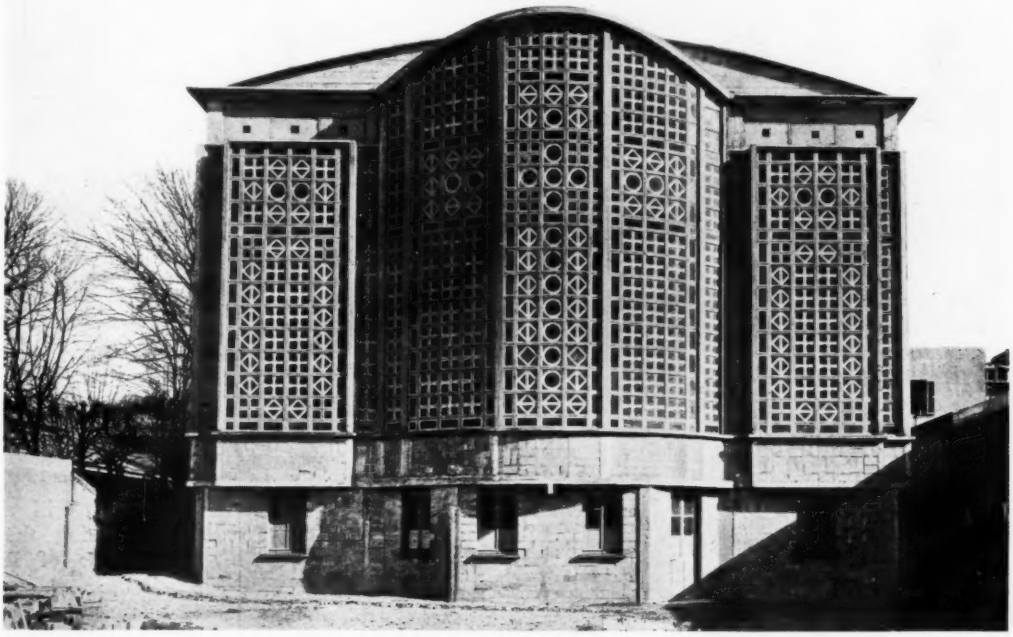
Hall of house in reinforced concrete, Parc de Montsouris, Paris. By Auguste Perret and Brothers.

Above, docks at Casablanca, Morocco. By Auguste Perret and Brothers. Below, dressmaking workshops, Avenue Philippe Auguste, Paris. By Auguste Perret and Brothers.

Above, le Palais de Bois, Paris (temporary exhibition building). By Auguste Perret and Brothers.
Below, la Banque de la Société Marseillaise de Crédit, 4 rue Auber, Paris. By Auguste Perret and Brothers.

Perret frères in the front rank of modern architects, namely, the necessity of building an artistic and scientific theatre on economical lines. The promoters of the "Théâtre des Champs-Elysées," after approaching several mere-architects, were forced to the conclusion that only Perret frères could make a financial success of the scheme. Opinions naturally differ, but this theatre is now thought by many well-known authorities on art as the most æsthetic one in Paris. For a full description and copious illustrations of this most-talked-of French theatre after the Opéra, see THE ARCHITECTS' JOURNAL for December 13 and December 20, 1922. Suffice it to say here that this theatre, representative of the age, was brought about in a natural way, and is what it is by virtue of modern circumstances. In 1914 Monsieur Auguste Perret erected, in collaboration with the painter, Monsieur Maurice Denis, an impressive funereal monument to the Jamot family, two of whom are buried in the "Cimetière Montparnasse." This tomb in Pentelicus marble, surrounded by yew trees in the calm setting of the cemetery, has been greatly written about. Architecturally, it is a personal treatment of the classic orders, and shows a decorative training on the part of the constructor uncommon to mere-builders. The authors, freed from the dead letter of archaic formulæ, have embodied a living Christian sentiment. After this came the period of the war during which Perret frères effected no work of importance except the docks at Casablanca in Morocco, finished in 1915. Four years later they designed and built in Paris the large workshops for the dressmaking establishment of Messieurs Henry Esders, in the "Avenue Philippe Auguste."

Reinforced concrete is the speciality of this firm, but they can handle other materials when required. The tomb just mentioned is an example, but a building which Monsieur Perret himself regards as one of his most successful is the "Palais de Bois," a large temporary exhibition building in Paris, near the "Porte Maillot." This is entirely in wood, and constructed on the good, sound principles of architecture, a decided masterpiece of its sort meriting close attention. It covers an area of over 60,000 sq. ft., and was entirely nailed together, not by carpenters, but by ordinary cement workers in the incredible space of six weeks. Another building by the same firm, and mainly built in wood, was the theatre at the recent decorative arts exhibition, a description of which can be seen in THE ARCHITECTS' JOURNAL for September 23, 1925. It will be remembered that this temporary theatre's main characteristic was a plain silvery-toned interior with a triple stage. Mention should now be made of two very notable banks by Perret frères, one "Le Crédit National Hôtelier," 3 rue de la Ville l'Evêque, and the other "La Banque de la Société Marseillaise de Crédit," 4 rue Auber, both in Paris, and both reconstructions on old premises. A glance at the illustrations of these two banks show that they bear the stamp of Perret's sobriety, and are interesting as throwing a light on modern tendency, for banks, as a rule, are over-sumptuous.



Notre-Dame du Raincy. By Auguste Perret and Brothers.

We now come to a very important work, and one that has been fully dealt with in THE ARCHITECTS' JOURNAL for February 25, 1925, namely, the remarkable church of "Notre-Dame du Raincy," consecrated in 1923, popularly baptized by the profession as "la Sainte-Chapelle," of reinforced concrete. It is unique in its way, and will undoubtedly contribute to the formation of a "New

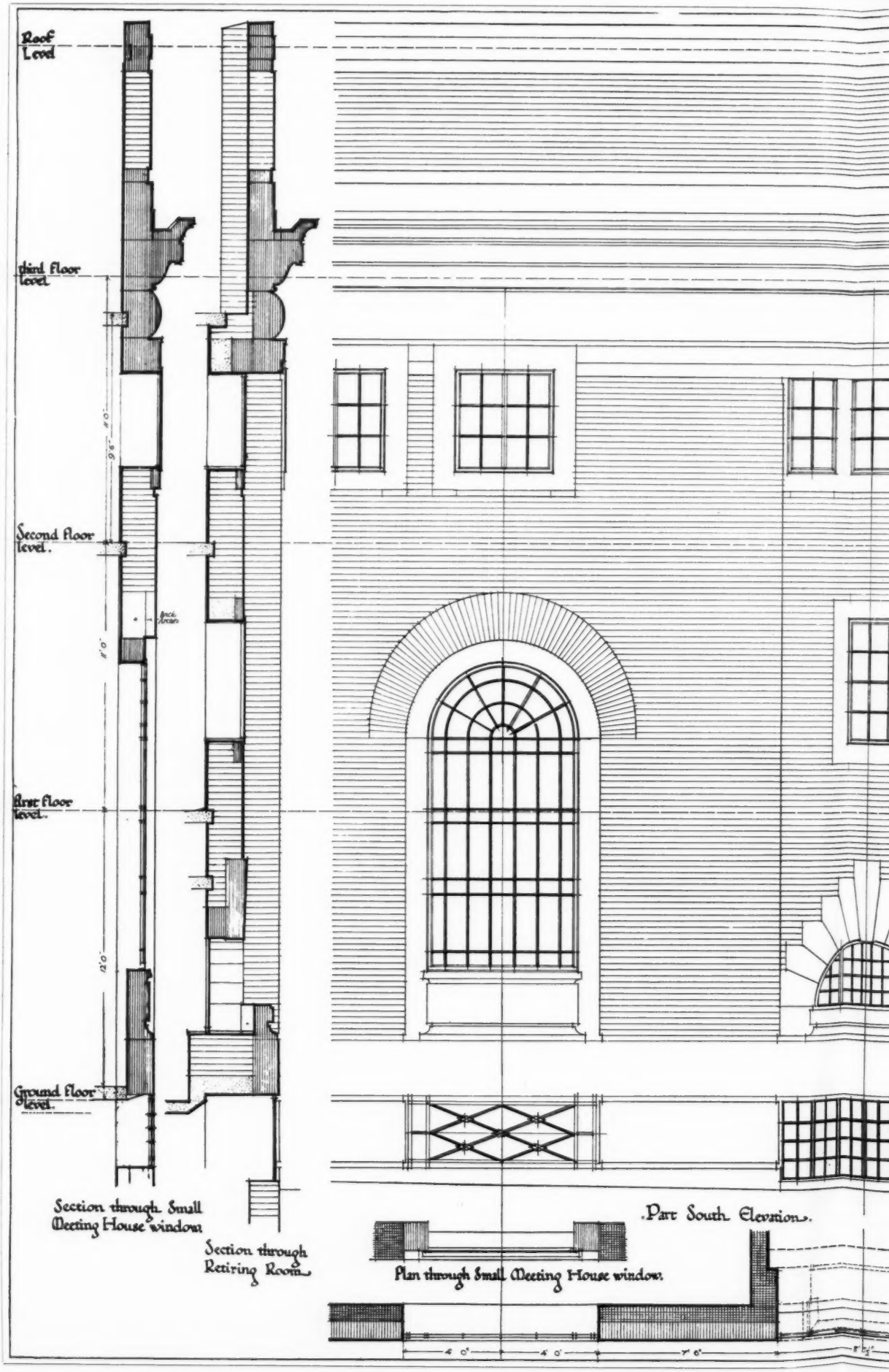
Style." It is an economical enterprise carried out by an artist-engineer. Another church by Perret frères, much on the same lines, for a congregation of about 600 persons, is now nearing completion at Montmagny, near Saint-Denis. A refined erection of most excellent proportion, another grand architectural contribuiton to engineering, is Perret's unfaced reinforced concrete tower built in 1925 as a dominating element and centre of the interesting Grenoble Exhibition, so sympathetically laid out by that master of urbanism, Monsieur Jaussely. The tower, designed and built by Monsieur Auguste Perret, is not only a decorative motif to the exhibition of "la Houille blanche" (water power), but is an orientated belvedere in the heart of magnificent Alpine panorama. It is about 260 ft. high, with a lift and spiral emergency staircase. Fortunately this fine edifice is destined to remain as a permanent benefit for tourists.

After so many notable works of such indisputable modern architectural merit, it is not surprising that, despite opposition, these pioneers' efforts should meet with widespread recognition both at home and abroad. A few years ago some of the older members of the profession scathingly anathematized Perret's daring designs as mere-builders' construction, but now the tide is turning, and it is many of these critics' works which are not infrequently being stigmatized as mere-architects' designs. The battle, though less fierce, still continues; its mere existence proving Perret's numerous supporters. We now learn that one of the principal and oldest of architectural societies in France is proposing Monsieur Auguste Perret as the recipient of a medal for "*architecture privée*," notwithstanding the strange fact that, owing to the unfortunate "Code Guadet," Perret, as a builder, is debarred from membership of the society in question. The governing powers of this institution are, therefore, to be congratulated upon their broadminded foresight. Their attitude speaks well for the future of architecture as understood in the original sense of the word.

Tomb to the Jamot family, Cimetière de Montparnasse, Paris. By Auguste Perret and Brothers.

Monsieur Perret is an energetic man honestly interested in the art of which he is now so eminent an authority. He has an outside "atelier" for students at the "Ecole des Beaux-Arts," Paris, to whom he gives advice and criticism gratis. Several students working under his guidance, and many more under his influence, have gained notable success at the "Ecole." This, again, indicates both Monsieur Perret's conscientiousness and the trend of the times. On Sunday, April 18, about half-past six in the evening (new hour), Monsieur Perret gave an authoritative talk on roofs that was broadcast from the Eiffel Tower. His "causerie" must have been heard by a countless number of people, including English listeners, interested in the French language and in architectural matters. He traced the development from flat to steep-pitched roofs, and referred to the false treatment of many Renaissance coverings which, though often steeply pitched, were by some artifice given the appearance of being flat. This, he said, was a tricky method which was too costly for modern work. He spoke in favour of a frank treatment in some sound material, and mentioned how the town of Autun, in Burgundy, whose roofs, covered with tiles and slates, were all completely destroyed by hailstones in 1923. Had they been in some more durable material considerable expense, for not always harmonious reparations, would have been saved. The appearance, however, would have been good or bad according to the talent of the architect.

The secret of Monsieur Perret's architectural success is wrapped up in his favourite quotation from Fénélon which, though it has already been so often repeated in previous articles, cannot be too much insisted upon. A periphrase of the precept is as follows: "No part, however small, of a building should be admitted for the *mere sake of ornament*, but always subjected to good proportions, the parts of a building necessary for its proper support should themselves *become the ornament* of the building." This is how Monsieur Perret interprets and puts into practice the famous archbishop's academic address delivered over 200 years ago. If students will analyse on this reasoning the so-called masterpieces of Renaissance architecture they will find that nine-tenths of them, despite their imposing pretentiousness, fail to give æsthetic satisfaction. One can the better understand this grievous influence of Renaissance insincerity, viz., that of assuming architectural quality as a predestination, adapted to, instead of emanating from, construction, the more one is familiar with the spirit that produced it. It is now recognized that that theatrical spirit, despised by the Greeks, and contrary to the true principles of really classic culture, is fast fading out of fashion. A logical modern construction turned into ornament is the order of the day. The age becoming more and more democratic as well as more scientific, modern architects can no longer affect to ignore the æsthetics of engineering. Monsieur Perret says: It is not now a question of "*the* orders," but of *Order*, nor need we ever trouble ourselves about "*the* styles," but rather *Style*. Monsieur Perret's place in the history of architecture is not more important as a pioneer than as a reformer.


Roof Level
third floor level
Second floor level.
first floor level.
Ground floor level.
9' 10"
12' 0"
Section through Small Meeting House window
Section through Retiring Room
Part South Elevation.
Plan through Small Meeting House window.
4' 0"
4' 0"
7' 6"

HEADQUARTERS, SOCIETY OF FRIENDS, ENDSLEIGH GARDENS, EUSTON ROAD. BY HUBERT LIDBETTER.

TRIBULATIONS OF EARLY PRACTICE: ii

[BY KARSHISH]

vii: SUPERVISION

IT has been shown how our architect should address himself to the duty of directing the works, and we have now to consider the practical issues with which he will be confronted when he sets about performing that duty. I shall give no information if I say that his judgment will be chiefly exercised with questions of materials and of workmanship, but I nevertheless say it, because the first matter presents much greater difficulties than the latter, and it will be convenient to consider it separately and to give it first importance. It may be pointed out that familiar as are the words "materials and workmanship" to our architect, he has no effective knowledge of what they mean. He supposes, for instance, that he knows what "brick" means, and what "deal floorboards," but when he goes on to the work he finds that he knows no more about those things than a man who has never played cricket knows of a cricket bat or a cricket ball. Our architect may, however, console himself with the reflection that in such matters as the nature and qualities of materials the most experienced architect is imperfectly informed, and that he has not only been learning all his life, but, by conscious effort has all his life been trying to learn.

Our architect is not, be it observed, here concerned with what materials should be used and how they should be worked and jointed, but with the duty of recognizing the thing and estimating its merits and defects, its suitability or unsuitability, when he sees it. As the simplest illustration readily to be imagined, let us suppose that bricks, for some purpose, are to be "sand-faced, hand-made, square, well-burnt, free from lime, and from warp." Our architect may have learnt from books the meanings of those descriptions, but how is he to recognize the qualities described or estimate their degree when he sees the bricks? How is he to know a Seconds Bangor slate from a Portmadoc New Vein; English oak from Japanese, or Baltimore White; Swedish Yellow deal from Archangel? The answer to these questions is, that he cannot do so, and that he will never, perfectly or completely, be able to do so. Even when these recognized tests are available, of which our architect may inform himself from books, only actual experience in making those tests will enable him to inform himself by them. A well-known test for a Welsh slate, for instance, is to set it up on end half-way in water, and observe the extent and rapidity with which the water is drawn up into the slate; yet nothing but a comparison with the behaviour under similar conditions of a slate of known good quality will enable our architect, in the first instance, to form any opinion of the character of the slate tested. I have, I think, said enough to show the nature of the difficulties our architect will have to face, and our concern now is with the means by which he is to meet and overcome those difficulties.

This matter is of great importance, for the choice of one brand of goods rather than another—of one grade, bed, quarry, manufacture—may deeply concern the builder's pocket, and so long as the architect is willing to accept a particular material, the builder is justified in putting it forward and is relieved of responsibility for using it. Thus, our architect must use great caution, and he must be firm; but at the same time he must not be capricious or pig-headed. It does not follow that because a builder is anxious to put in a certain make or brand or kind of goods that the thing he proposes is inferior to or cheaper than what is specified. A builder is often glad to do better than the contract demands: he has, perhaps, just the right quantity of jarrah flooring in stock left over from another job, and it suits him to offer this instead of ordering a special small quantity of the American oak flooring specified. He may wish to make up a truckload—an important consideration—by ordering from a firm at Leeds instead of from one at Blackburn; or he may hope to complete some reciprocal bargain or relieve another builder of an option. How then is our architect to be cautious when he has no knowledge to arm him, and to avoid being pig-headed when he has no experience to inform his discretion?

His first care, then, is to avoid making use of indefinite descriptions in the specification (this matter is dealt with in this place because only here am I able to do justice to its importance). He must, especially in his early commissions, use meticulous exactness. What, for instance, is the use of his specifying "sharp, clean, river, or pit sand, free from loam and screeded for mortar if necessary," when he is incapable of judging whether any sand is, *qua* building sand, sharp, or clean or free from loam; nor able to decide to what extent, if at all, screening may be considered necessary, nor even competed to distinguish pit from river sand, or either from estuary or road scraping? Our architect, therefore, must specify materials in such a way as to inform his own ignorance. Thus he ought to find out what in the locality of the building is recognized as a good sand, and name the pit, adding "or of equal quality," so that the enterprise of the builder will not be restricted. By this means a definite guide determining whether the sand offered does or does not satisfy the specification is set up; it is only necessary to compare one sand with the other, and in so doing our architect will acquire a knowledge of a building material. It will be seen that although he has no wide judgment our architect is yet on firm ground in deciding the issue before him, which clear issue was set up by his own forethought in the specification. For the same purpose he should avoid specifying goods as to be "strong," "heavy," "of good quality," but give the actual weights, manufacture, and source of supply, qualified when appropriate with the condition "or of equal quality." He should name the brickfield, the manufacturer of the tiles, the bed and quarry of stone, the grade and origin of slates, and so forth. Further illustration of the application of the principle is unnecessary.

Our architect having thus set up a test or measure of quality in the materials, has now to enforce proof of the fact that the kinds and qualities contracted for are, in fact, being supplied. As regards sand, we have seen that this is a simple matter of comparison; but many other decisions do not yield to such ready proof and are awkward to handle. The builder is bound to satisfy the architect on all such points, and although documentary evidence is what an experienced architect would hesitate to ask for, except to settle an obstinate conflict of opinion, there is often no other way of deciding facts but by reference to the manufacturer's invoice, or, failing that, a written guarantee of the supplier may be asked for. In many parts of the world, for instance, timber drawn from the same forests is shipped from different ports. Teak, as an example, is mainly shipped from Moulmein and Rangoon, and for one reason and another the shipments from Moulmein have had in the past a higher reputation, and fetched a better price, than shipments from elsewhere; but no one, except those in the hardwood trade, could say whether a parcel of teak logs, apart from markings, was "Moulmein" or "Rangoon," nor would any joiner be able to identify the port of shipment of the wood he was working. An architect who had specified Moulmein could only know that his client was getting what he paid for by viewing the merchant's invoice or holding his guarantee. Our architect need not hesitate, therefore, to expect that the proof forthcoming to his seniors will be due to him, for he is in the position to excuse, on the ground of ignorance, an attitude that in another might savour of distrust, and if our architect shows inability to make up his mind as to the fact of a material being what it is represented to be, the builder will usually respond by offering documentary evidence. If, however, he does not do so, our architect will be the better justified in pressing for the evidence of authenticity which are not manifest to his eye.

In this matter our architect should remember that the point is whether the builder actually does, in fact, know the materials to be what he represents them to be; may he not be mistaken?

May he not have been misled by his merchant, or is he not, perhaps, repeating what he has been told? Our architect is bound to satisfy himself that the facts are as they should be, and it is his duty to so satisfy himself, for he is responsible at law for so doing. If he accepts the statement of some person who makes it with no such responsibility as involves our architect in the acceptance of it, that person would be equally entitled to derive the fact from the statement of someone else who had no responsibility at all in making it, and so in the general slackness the "proof" is no more than an idle opinion. Our architect has got to know of his own knowledge that all is right. If he cannot distinguish heart wood from sap, English oak from American, and seasoned from unseasoned, he must prove the point by some other means than his eyes provide. No excuse will be made for him if, in a court of law, he is sued for rotted sills of sappy, unseasoned American oak when heart wood of seasoned English was specified and paid for. No honest builder will object to offering guarantees which establish his integrity, although until he knows the man he is dealing with he may be surprised, and, perhaps, also annoyed at being put to trouble; but our architect must not allow any sensitiveness in the builder to interfere with his own tenacity of purpose. After all, we do not imply distrust of the bank clerk who hands us our change, by counting it.

For the rest, our architect must take every opportunity of forcing his way into places where men work; into stone quarries, brickyards, joinery works, foundries, forges; seeing, feeling, handling, smelling, and inquiring. He must watch iron being welded, bent cold, broken like sugar, or torn asunder like putty. He must take every opportunity of viewing wood and observing it being worked; learn to recognize the sap and heart wood of each kind. He will find access accorded him everywhere, and men ready to talk upon the technical details of their craft out of sheer delight in their mastery of the refractoriness of the material they deal in, and their exploitation of its amenities.

When our architect approves samples as an authority to the builder to order in bulk, he must be careful to identify and securely set apart those samples; for what otherwise is his position if the bulk when delivered proves defective, and, perhaps, after it has in part been incorporated in the work? There is the case of an architect who approved a sample brick. The bulk, however, was not properly burnt and not up to sample, with the result that the facings decayed away with the first frosts, and the house had to be pulled down and rebuilt before it was ever roofed. Where was the sample brick? Where, indeed! The reason that made it important for the architect to identify and retain it was the measure of the convenience to someone else that it should be lost or replaced by a substitute. What happened as a result of the lost brick is not to my point. Anything might have happened. It may be mentioned, however, that neither the builder nor the merchant paid, nor could they be made to pay. The architect had formally approved the sample brick. The bricks had been supplied under his direction.

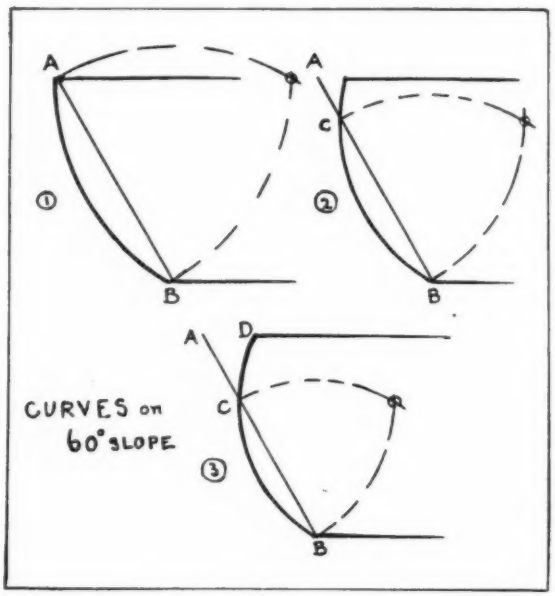
Our architect may now be supposed to have a clear notion of his address to, and relationship with, the builder and his people; to have prepared himself so that he may carry matters forward with the foreman without any embarrassing display of ignorance on practical points, and he has so arranged matters that nearly all questions touching the kind or quality of materials put forward can be proved or tested by direct comparison. I will, therefore, try to depict the sort of experiences which our architect so armed and prepared may expect to meet with, and represent the actuality of the scene when one morning he walks on to the site to overlook the work.

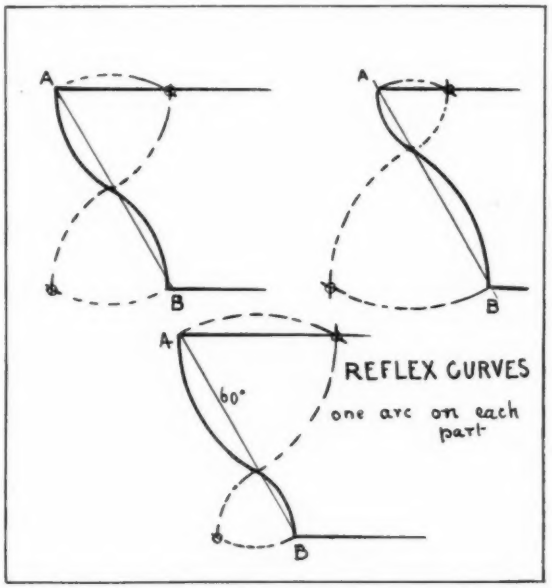
[*To be continued*]

SIMPLE CURVES

[BY R, AUTHOR OF "R's" METHODS]

If I draw a series of lines of the same length following each other with the same inclination of angle between them and the angle chosen is 60°, a series of three will give me an equilateral triangle; a series of four with 90° between them will give a square; a series of six with 120° between them will give a hexagon; a series of eight with 135° between them will give an octagon, and a series of twelve with an angle of 150° between them will give a duodecagon. A curve passing through the extremities of these lines will be a circle, a form useful in plan and elevation; and in such cases beautiful, because it is mostly seen as an ellipse.





Left, figure one (1) *one arc from* A *to* B. A B *radius from* A *and* B *gives centre.*
(2) *and* (3) *From* A *to* B. B C *radius from* B *and* C. *Right, figure two.*

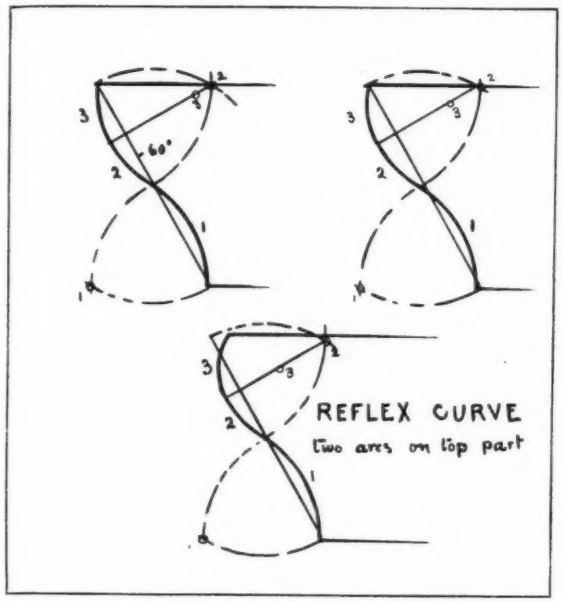


Figure three.

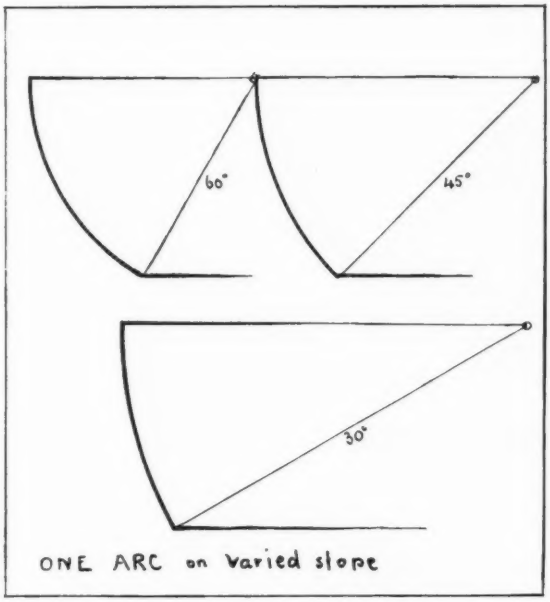


Figure four.

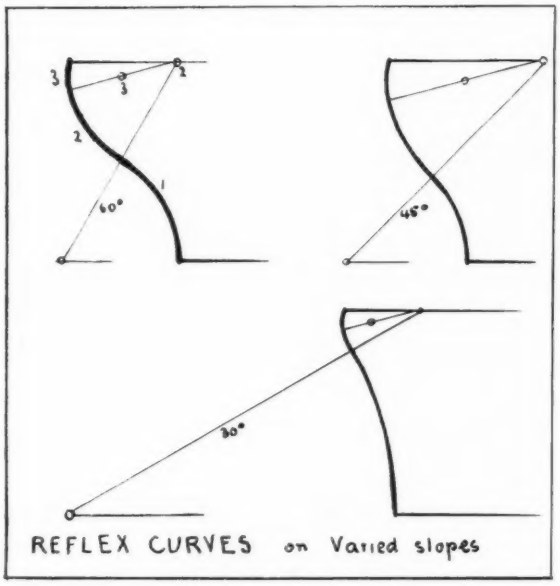


Figure five.

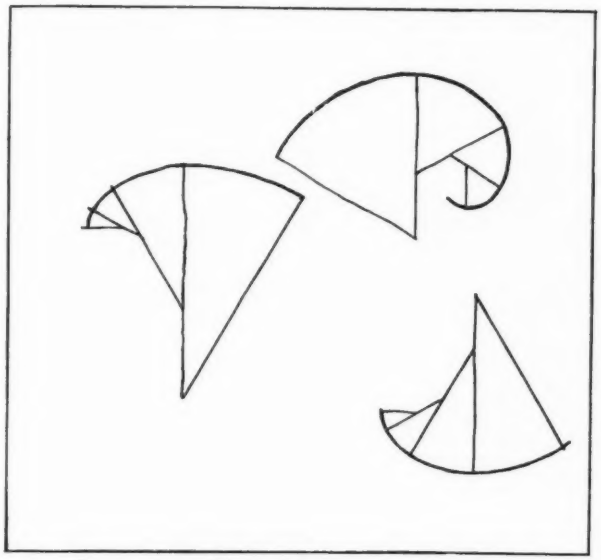


Figure six, rapidly hand-drawn studies of this nature are very useful, starting at either end with an equilateral triangle or any other angle between the lines.

The circle compared with other more subtle curves is commonplace, but it is used in the mouldings of the Roman and Renaissance periods. A series of lines following each other at the same inclination, but of unequal lengths, will always be beautiful; it is found outlining the human figure, and all other beautiful objects. The curve is the more beautiful as the ratio of difference is greater. These are the curves we find in the mouldings of Greek and other refined periods of art. A whole series of beautiful curves of infinite variety can be drawn by this method, simply altering the ratio of adjoining parts.

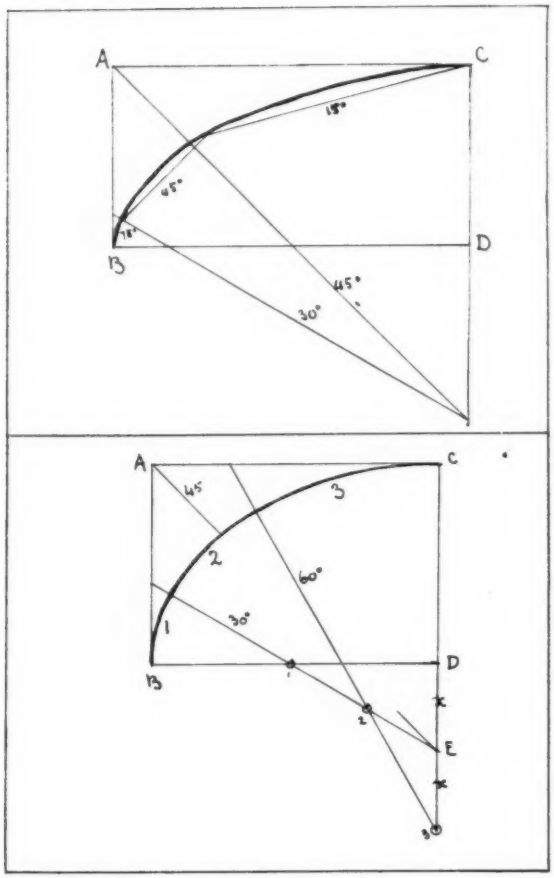
I will now show several apt and rapid methods of drawing beautiful curves suitable for mouldings, first taking one arc; then two arcs; three arcs, and then a continued series of arcs. (Figures one to six.)

Three-arc curve, by hand: Take any oblong from A B C D (figure seven), draw 45° slope from A to vertical, then draw 30° slope. Draw the ellipse curve through points by hand.

By centres: The 45° slope from A (figure eight) gives the point E. Set out distance D E again from E downwards, and draw 60° slope and 30° slope from E. The crossing of lines gives points for centres for ellipse.

Parabola by hand: Divide P V (figure nine) into four equal parts, then 45° slopes from 1, 2, 3, then 30° from V (31½° nearer), then line parallel to V P from crossing of 30° and 45°. Draw curve through P A B C V.

Another way: A B (figure ten) is a line of 75° or any other slope. Draw horizontal through A and line at 45° through B. Divide O A and O B into similar parts, number as shown, and join same numbers. Taking A B about 65° this curve is similar to Greek echinus caps.



Figures seven and eight.

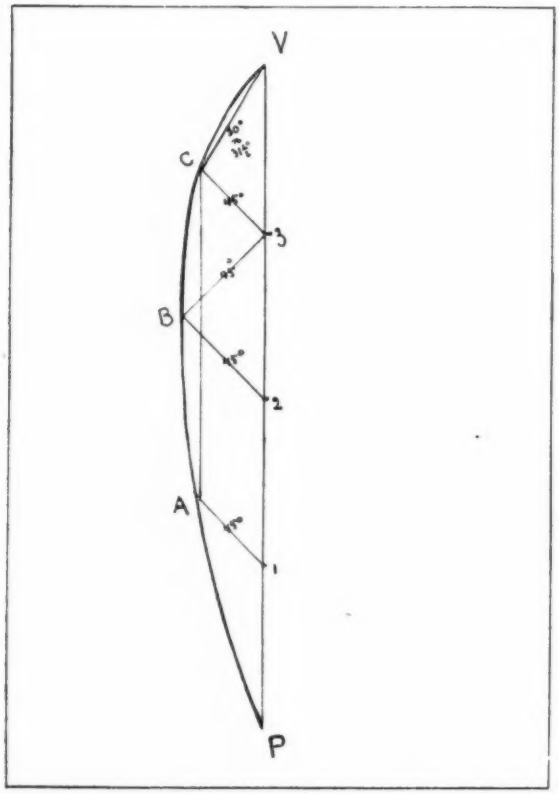


Figure nine.

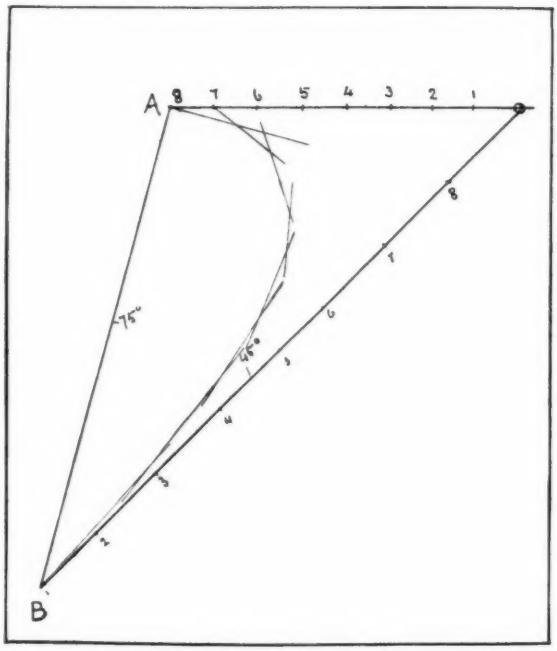


Figure ten.

Spiral curves: A very useful series of curves can be got on the framework of the 45° slopes. First draw a vertical and a horizontal line (figure eleven), and through the crossing draw two diagonals at 45°, from B draw horizontal, and slope all 45°, from C draw vertical, from D draw 45°, and in like manner and by hand draw curve.

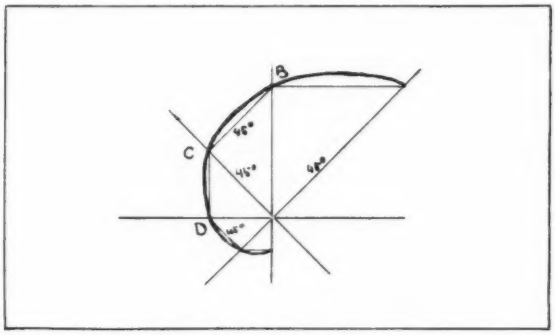


Figure eleven.

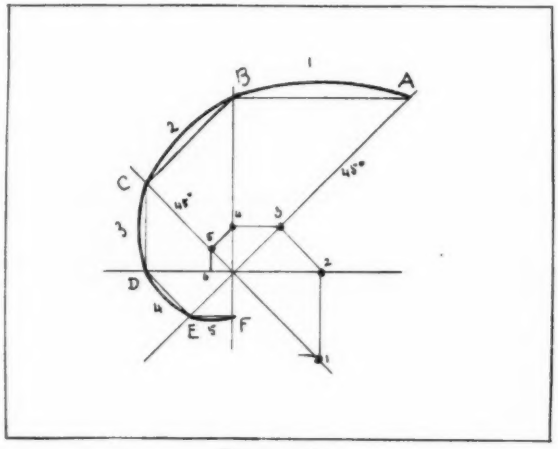


Figure twelve.

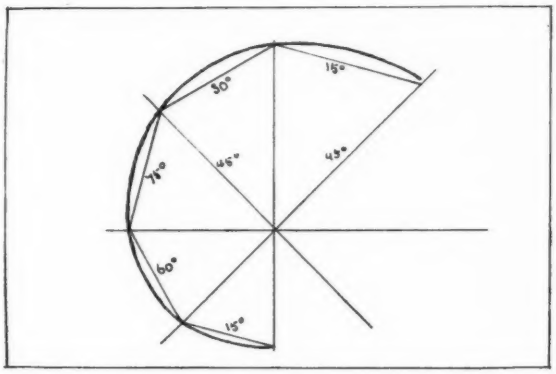


Figure thirteen.

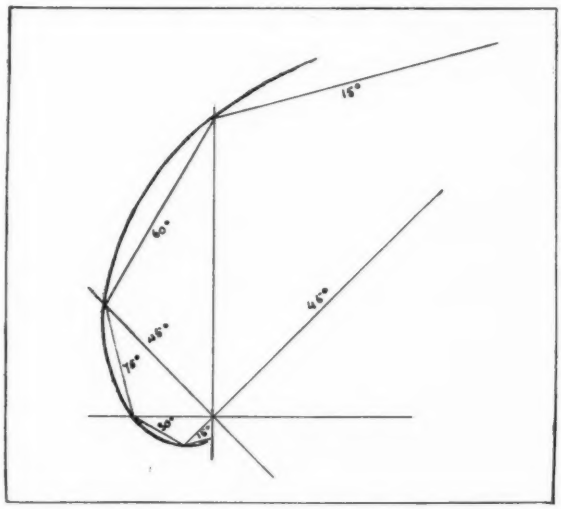


Figure fourteen.

The centres are got by taking A C (figure twelve), and with that radius from each end of A B find point 1, continue this method round, and get 1, 2, 3, 4, 5, 6 centres.

Spiral curves: In these diagrams the 30°, 75°, 60°, 30° slopes are used to get the curve using the 45° slopes with perpendicular and horizontal for framework (see figure thirteen).

The curves depend on which slope starts from the vertical; in this case (see figure fourteen) the 60° starts from vertical of framework.

[*To be continued*]

LITERATURE

SMOKELESS HOUSES

THE coal strike will prove the finest piece of propaganda towards smoke abatement that there has ever been. The difficulty of getting coal has led to the adoption of coalless methods of house warming, cooking, and water heating, but the result is more far-reaching, for householders, and especially the builders of new houses, will take precautions, as far as is within their power, against finding themselves in such a predicament in the future. "Needs must when the devil drives" is the most potent of all inducements to reform.

Architects are by now fairly familiar with smokeless methods and apparatus for house equipment, although they have failed in the past to use their full influence towards obtaining a clear atmosphere and all that is thereby implied: health, happiness, economy, beauty, and so on. However, this little book is not addressed to architects, but to the layman householder. But frankly, when he has read it through it is extremely doubtful if he will close the covers with anything but a feeling of intense perplexity, and at once order another ton of coal, for the book seems too vague to serve any practical purpose. And this is the more to be regretted since both Marion Fitzgerald, one of the editors, and Dr. Margaret Fishenden can write most convincingly. It is difficult to discover what indeed is Marion Fitzgerald's contribution to the book, since there is but one editor's preface, and that is not hers.

An opportunity has certainly been missed of producing a little book that might really help the willing and perplexed householder to equip his house economically and smokelessly according to his needs. Typical households should have been discussed in various environments which have different facilities, and, assuming certain basic prices for the different fuels, comparative totals of cost might have been worked out. In fact, what the householder needs to-day is a really practical guide, and this volume hardly falls within that category.

Home Fires without Smoke. Edited by Cyril Elliott, B.SC., and Marion Fitzgerald. Foreword by Sir Napier Shaw, SC.D., F.R.S. Ernest Benn, Ltd. 3s. 6d. net.

CIVIL ENGINEERING SPECIFICATIONS

It is a commonplace, often bitterly expressed by purchasers, that nearly every manufacture to-day is ruled, in greater or less degree, by its cartel. To the general public and to the purchaser in particular, many of these associations of manufacturers appear in the light of rapacious cabals, whose chief objects are to inflate prices and to eliminate competition. It will be found, however, that in almost every case these associations were originally founded, and still exist, with the object of protecting the manufacturer against unfair specifications, impracticable designs, and harassing inspection. It will not be denied that all too frequently some manufacturers, by negligence, or sharp practice, have brought upon themselves the restrictions against which they now protest; but it is none the less the case that time and money are often lost and bad feeling engendered by unnecessary severity in the drafting of specifications and conditions of contract. This tendency towards harshness is due very largely to the ignorance which exists amongst purchasers as to the technicalities of the various trades. It is impossible for an architect or consultant to be conversant with the manufacturing processes of every article which he specifies; and so, in self-defence, he falls back upon some stereotyped form of contract which is possibly more rigid than the nature of his work demands. For that specification, the client pays in time and in money. The remedy lies in the provision of accessible data on the legal and practical aspects of contracts, but such data have lain hid in a complex bibliography of legal handbooks, standard specifications, and technical textbooks.

In *Civil Engineering Specifications and Quantities* an attempt has been made to collect within some 300 pages the essential bases for a well-drafted civil engineering contract. Nine chapters are devoted to the law of contracts, arbitration, certification of work, and payment for extra work. These chapters set forth the letter of the law briefly and clearly, giving the fullest references to important test cases. Every engineer who is called upon to carry out inspection of work, or to act as resident engineer upon a contract, would be well advised to study these chapters, for they interpret the letter of the law in a spirit of fairness both to contractor and to client. Five chapters deal with specifications for materials of construction and cover the usual requirements for reinforced concrete, timber, and steel construction. Paving and drainage have a chapter to themselves. It is not too much to say that any engineer could, with these chapters in his mind, either draft a sound and intelligible specification, or inspect the quality of materials in a fair and instructed manner.

Six chapters describe the best practice in working up the above-mentioned materials. These chapters are designed to read as specifications; but, except in the case of structural steelwork, the

authors go farther and contrive to convey in some degree the reasons underlying the terms of the specifications. The engineer is thus enabled to reject such clauses as may be unsuited to the conditions of a particular work. It is to be regretted that the chapter on steelwork was not similarly extended, for the standard specifications and conditions of contract in this branch of engineering are designed to govern the best class of bridgework, and could frequently be modified in lighter classes of work to the advantage of the purchaser.

The chapters on the preparation of bills of quantities will be of interest to many who are studying this subject in connection with institution examinations. A valuable list of English and American legal authorities and a list of the British Standard Specifications which cover civil engineering work are appended to the volume. A well-prepared index renders the book a valuable work of reference. The book is one which should find a place in the office of every engineer and architect who is responsible for the drafting and inspection of contracts. N. L. A.

Civil Engineering Specifications and Quantities. By G. S. Coleman, D.SC. (Eng.), A.M.INST.C.E., and G. M. Flood, B.SC. (Eng.), A.M.INST.M., and CY.E. Longmans, Green & Co. Price 10s. 6d.

A DAWDLE IN FRANCE

One of the most entertaining of the many books of travel gossip published this autumn is Mr. Sheldon-Williams's light-hearted account of his dawdle through France on a bicycle. The main object was sketching, for Mr. Sheldon-Williams is an artist, but in the course of his solitary wanderings he seems to have thought of a good many things that he would have liked to have said, if there had been anyone to listen to them. In the absence of a companion, therefore, he confided them to his notebook, and the result is before us.

Now it is impossible to dawdle anywhere in this old Europe of ours without encountering noble buildings, the legacies of our ancestors, in which the discerning traveller may read for himself and interpret in his own way all the longer processes of thought and emotion that have made us what we are. Nothing is more provocative of good talk than a building; nothing more effectually silences the kind of talker who never has anything to say. When it is stated that Mr. Sheldon-Williams's route took him through Rouen, Louviers, Chartres, Orleans, Blois, Moulins, Lyon, Chambéry—to mention only a few—it will be readily understood that a large proportion of his gossip turns on architecture. He is anxious that we should not take him too seriously. He really knows next to nothing about this great subject, he says. Architectural terms are altogether too difficult to remember. For instance, at Bourges:

> I was running my eye up a long, long, line; the strain was growing acute; I thought: "If something doesn't happen soon, I shall scream"—and out sprang a bold accent, in the nick of time, thrilling that long line with life. Surprising, but inevitable. A monstrous gargoyle! It would have done me just as much good if I hadn't known that was its right name, and had called it a carved stone water-spout.

Probably; but the point is that it would not have done his readers so much good. "Gargoyle" is one of the best words in our language. It springs out from that long, straight line in a way that "water-spout" never could.

But the passage is highly characteristic of Mr. Sheldon-Williams. It illustrated his half-humorous air of ignorance—it soon becomes clear that he knows at least as much about the subject as any amateur has a right to know—and his keen, sensitive feeling for the *psychology* of the builder's art. It is in the latter quality that this little book seems to me to stand out above its contemporaries. A passage like the following, for instance, is all the more delightful when you come across it suddenly in the course of conversation:

> But what must one think of the craftsman who lavished all his knowledge and skill on the lobe of the gargoyle's ear, or on the scroll-work of a crocket destined for soaring solitudes where, once fitted into its appointed place, no living thing would come near it again except the birds wheeling about the weathercock?
>
> That must have been a great moment when, after the very last look round, the topmost scaffolding came down, leaving those summits alone with the sun and stars.

There you have the artist's instinctive understanding of the feelings of a brother artist, dead these five hundred years. Or take this description—squeezed in between flippant accounts of midday meals in restaurants—of the exterior of a Gothic cathedral:

> That great upward rush is like a fountain; sun and shadow play with the intricate symmetries like a musician's fingers over the keys; wildness

Rouen Cathedral. [*From* A Dawdle in France.]

> is restrained by poise, and heaviness is relieved by delicate detail; the flying buttresses join hands and tread a stately, but lively, measure, and round the apse they almost seem to run.

It is a very exceptional dawdler who can offer comments like these. He is full of whimsical opinions, with which he does not ask you to agree. He prefers the outsides to the insides of cathedrals—the latter seem "always on duty, always in uniform"—and carries the preference so far as not even to step inside at Chartres to see the glass! He reacts to buildings as though they were human beings. "Standing before Rouen Cathedral is like being in the presence of Royalty." Chartres is the same, if you get too close to it—but that is what you should be careful not to do. Louviers, on the other hand, "met me half way." And, as for the lovable little church of Caudebec. "I've patted Caudebec Church—cuddled it—but you couldn't cuddle Her Majesty of Rouen; it's unthinkable."

He loves the "structural impertinences," as he calls them, the accidents, the apparent irrelevancies of Gothic art. "It's like the little mole on my lady's cheek." Speaking of the mellow colouring of the walls of Chartres, which we so easily assume to be a mere accidental embellishment, conferred by time and weather, Mr. Sheldon-Williams asks: "Who can say it was not reckoned with by a forethought as unerring as that which first gauged the cornice of a Greek portico to cast the precise depth of shadow called for by the design?"

In short, a delightful dawdler, an almost ideal companion on the road, with opinions of his own about everything, and a witty, easy way of stating them that wins a laugh without demanding an assent. His quality can only be indicated by quotation, and I have done enough of that. But the best test of all is that he inspires even the laziest of his readers with a wild desire to hasten out and buy a bicycle and follow in his tracks.

CLENNELL WILKINSON

A Dawdle in France. By Inglis Sheldon-Williams. Black. Price 7s. 6d.

THE PERAMBULATOR IN EDINBURGH

It is just a year since Mr. James Bone gave us his wholly delightful *London Perambulator* and set us "asking for more." Now he has refuted the saying that the second helping is never as good as the first, because *The Perambulator in Edinburgh* is as good as its forerunner, and proves that its author is a good

Scot who knows well how to make his porridge palatable at the second tasting. *Edinburgh Revisited* was published in 1911 with illustrations by Mr. Hanslip Fletcher, and the present work is a much altered and enlarged edition, the illustrations being by E. S. Lumsden, while Mr. Jonathan Cape has come up to his usual standard in tasteful production of the book, which is on the same lines as the London one and is consequently admirable.

Mr. James Bone knows exactly what he has to show us, and will not have us shirk one moment or one detail of the fun; he sips his wine as a connoisseur, and will have everyone enjoy it with him; he insists on those little details whose full recognition alone will make possible the absolute appreciation of his own loves. Just as in *The London Perambulator* he condemns those people who "walk down Fleet Street on the south side like the beasts that perish" because they do not see St. Paul's, so again he deplores the fact that "the buildings on Princes Street are less seen than those in any big Edinburgh street, for everyone walks on the south side." You must not hurry through Edinburgh, although, indeed, why should he want to hurry who has Mr. Bone as his companion? In his preface the author remarks that his former book (*Edinburgh Revisited*) was received "with some acceptance by the critics, but without delight in the two great Scottish cities: in Glasgow because it was about Edinburgh; in Edinburgh because it was by a Glasgow man." Anyone who has knowledge of these two cities will be able to draw aside the veil of quiet humour and see how nearly true it must all be; and yet I am afraid Mr. Bone must have made another enemy. How shall London (proud city!) look on unmoved and see her champion indulge thus in open expression of his love for Edinburgh, and he a Glasgow man? For James Bone's London is a jealous London, a city to hold her own against interlopers, and cling to those who know her; yet even the author himself is not without his jealousies, and all through the book we see his envy of Edinburgh leering through his love for her, so that this time, perhaps, the dwellers in neither city will look at him askance.

Mr. Lumsden's work is so well known that it is hardly necessary to say that his illustrations to this book are very good indeed, and the style which he has adopted admirably suited to his subject. Edinburgh is a city of gales, and in every picture (perhaps by his tricks of smoke and sky) he seems to have captured a gust of wind: he imparts a sense of noble harshness such as, perhaps, only Edinburgh can boast, and his renderings of architecture are excellent. If these illustrations should leave a feeling of something lacking, it is probably because Edinburgh is made up of

Saint John Street, off the Canongate. From a drawing by E. S. Lumsden. [*From* The Perambulator in Edinburgh.]

personalities, while London gets her character from the faces of her buildings, and one cannot reasonably compare the one book with the other from the pictorial standpoint.

There is something furtive about the book which expresses this city of narrow closes and stern, forbidding fronts built to house the gentry, but now fallen to the tenantry of the very poor; it is a city come upon evil times, and yet there is still an elegance and harmony about it which seem to carry a remembrance of dignity which is of other days. Even amongst the squalor of narrow alleys you catch a breath of plum-coloured coats, lace ruffles, swords, and silver snuff-boxes for whose harbouring this same Edinburgh was built. Then there is the New Town of the brothers Adam and Hamilton and Playfair, which is a school for the younger architects of to-day, and draws the students even from the south country. And through it all you see some of the names which are indelibly stamped on the face of the city: Lord Braxfield (the " Hanging Judge "), with his wry face and biting cynicisms; and Deacon Brodie, the respectable town councillor by day, stealing out at dusk to pursue his trade as sharper and burglar. But I think Mr. Bone looks idly for the "stationer's shop of Stevenson's boyhood "—the one with the theatre in working order in the window; because this shop, alas ! is not to be found in Edinburgh but in Hoxton; indeed, the man who kept it still lives and remembers Mr. Stevenson well, with his passion for the " penny plain and twopence coloured."

In *The Perambulator* we have Edinburgh laid open before us: we are told, in confidence, some of her secrets which are unknown, perhaps, to many of her intimate acquaintances, but all with the utmost nicety and reserve. The book may serve as a guide, to be read before introduction to the city itself, or as a friendly charm to bring back some of the memories after we have left it; or it may be read purely and simply as a pleasant work and for the joy of craftsmanship. To anyone who has any knowledge of the city, *The Perambulator in Edinburgh* brings the fullness of appreciation, but to those who do not it can only be urged that they get hold of the book and bask in the brilliance of Mr. Bone's prose.

M. L. ANDERSON

The Perambulator in Edinburgh. By James Bone, with illustrations by E. S. Lumsden. Jonathan Cape. 12s. 6d. net.

CORRESPONDENCE

AUTHORITY AND LIBERTY IN ARCHITECTURE

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—I have read with interest Mr. Arthur J. Penty's series of articles entitled " Authority and Liberty in Architecture," and while I feel in no way desirous of joining issue with him in his general conclusions, there are one or two points made by him which appear to me to be open to debate.

In his first article (" The Gothic Revival ") Mr. Penty alludes to the almost universal demand for plate-glass which was, perhaps, largely brought about by the influence on architecture of the Great Exhibition of 1851. Through this insistence on plate-glass he states that " the bottom fell out of any rational treatment of architecture so far as domestic and city work was concerned, for when the architect is forbidden to use small panes his design will lack scale." I submit in this connection that the use of plate-glass (if it can be afforded) is perfectly rational, and that if loss of scale results it is because the designer is either unwilling or unable to harmonize his design with the change of character which the use of large panes entails. I agree that it is impossible to take a house designed for small panes and substitute large panes without detriment, but I maintain that in new work there is no reason why the architect should not attempt to cope with the perfectly legitimate demand for large, uninterrupted glass surfaces, and imbue his general mass and detail with a character harmonious to the introduction of such an important element in design. While there may be, perhaps, much to criticize in the designs of such men as Lloyd Wright, it must be conceded that he has handled this problem not unsuccessfully. The same may be said of a number of designers in the modern spirit, and a good number of German and Dutch architects. I should have imagined that Mr. Penty, with his outlook, would have been the first to deplore the suggestion that a window with small panes spelt finality on account of the difficulties of scale attendant on its suppression. (I hasten to add that I have no financial interest in any glassworks.)

In Article iv (" The Classical Revival ") Mr. Penty states " while because the study of vernacular architecture is ignored in the schools, students are left in ignorance as to how to design in brickwork, or to do the humbler work which makes up the bulk of architectural practice." It is always easy to tilt at the schools, and to make the sensitive teacher " rise "; but such sweeping statements are dangerous, and I submit that this one is not a generally correct statement of fact. In most of the schools with which I am familiar the study of vernacular work (particularly through measuring) is encouraged, design in brickwork receives plentiful attention, and the fact that humbler work is not ignored can be proved by a study of school programmes, and by the fact that the students of the schools are mostly called upon to do humble work in their first jobs of practice, and do it very successfully.

This leads me on to Article v, where the statement is made that " in most of our schools where the idea obtains that the right method of architectural education is to teach the student the elaborate forms of monumental architecture before he is made familiar with the design of simple buildings . . . students who can make a show of designing palaces . . . have no notion of how to build a cottage." I believe that in most of the schools, on the contrary, domestic design of the simpler sort is being well taught. Mr. Penty may not agree, but I have the impression that the standard of architect-designed small house work going up at present is a very good one, and a great deal of it is the work of school-trained men. I can see the school influence very clearly in the study of good proportions, massing, detail, and character, and also in the very rational use of materials. After all, architectural school teachers are mostly architects, and they must be credited with some common sense; most of them are aware of their own deficiencies in training, and they are having themselves experience of just those difficulties in building which lie in store for their students. It seems more than likely that they will pass on their knowledge, and that the defects of the school training will gradually be eliminated with the help of a kindly (and knowledgeable) attitude on the part of the teachers' professional colleagues.

One further point: In this same article Mr. Penty states, after allusion to Adelaide House, that " this new school does not regard structural necessity as the basis of architecture, but follows the Renaissance idea of looking upon architecture and construction as largely separate propositions. . . ." After all, where are the boundaries between architecture and construction to be drawn? Just at present there seems to be a feeling that a steel or concrete frame, including floor beams, is construction, but that the wall infilling, if expressed as an infilling, is a dishonest concealment of structural expression. A wall, whether supported on a girder or the ground, is construction. Modern architects are reproached with covering a steel frame with a veneer of stone or brick, but until somebody finds a better substitute who can blame them? Terra-cotta, for instance, may seem more logical, but a number of skyscraper specialists in the United States are reverting to limestone or brick.

The best form of construction at present for certain types of large building seems to be a frame covered by a skin or veneer; in other words, that is the construction. Most architects are expressing the veneer, because that is outside, and cannot show the frame, because that is inside. They are showing what the human form shows, a skin over bones, and the contour of the veneer like that of the skin generally follows the mould of the framework within. Are they not in this expressing construction? Where materials permit the desirability of such a proceeding, both framework and infilling are homogeneous and visible.

This does not make for good building in steel (upkeep and danger from fire risks), but it is feasible in concrete, e.g. A. & G. Perret's two new concrete churches near Paris. The difficulty is that there is no basis of agreement in the meaning of the phrase "express construction"; but it seems to me that the difference is largely one of degree, that all building to an extent expresses construction, and that porous bricks rendered, for practical reasons, in cement are just as honest an expression of construction as face-bricks without rendering. The fashion condemning stucco as dishonest in its concealment of brickwork seems to me absurd. Perhaps behind the stucco is stone, or wood, or concrete? What matter, provided the building is well built and meets æsthetic and practical requirements?

HOWARD ROBERTSON

THE OVERCROWDING OF THE PROFESSION

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—A week or so ago you published a paragraph in "News and Topics," by "Astragal," on the overcrowding of the profession. A disproportionate and much greater increase in the number of architects as compared with the population was admitted. The writer was satisfied that the Board of Architectural Education and the Association of Architects, Surveyors, and Technical Assistants had thoroughly investigated the matter. Granted this condition of affairs, it is clear that the question of supply and demand should be the governing factor. The number of "recruits" in excess of requirements may ultimately find employment in one or other of the many closely allied trades or occupations. It is also well known that there are men of experience who find it expedient and profitable to adopt this course.

The matter does not end here; this cannot be considered a satisfactory state of affairs; it has been authoritatively stated that it is the duty of every architect having the interests of his profession at heart to be a Member of the Institute or Allied Society, and to insist that every young man entering his office for training as an architect shall serve a period of probation, and if satisfactory, sign articles supplied by the Institute, and endeavour to become a registered Student as early as possible. The management of "recognized" schools of architecture should also be above criticism; may it be taken for granted that they only accept as students those who satisfy them as to general education and aptitude for the work?

MEMBER OF A.A.S.T.A.

IN PARLIAMENT

[BY OUR PARLIAMENTARY CORRESPONDENT]

MR. CHAMBERLAIN, the Minister of Health, on Thursday, in the House of Commons, moved a resolution approving the order made by the Ministry of Health and the Scottish Board of Health, for the reduction of the housing subsidy. He said that the estimated cost of the subsidy for this year was £8,500,000. At the present rate of building it was estimated that this amount would rise about £900,000 in each year. By 1929-30, therefore, the cost would be something like £11,000,000. In view of the burdens of national and local taxation it was incumbent on the Government to see that they did not pay out subsidies a moment longer than necessary, and that they got full value for their money. At the time of the first housing subsidy the building trade was moribund, and one of the purposes of the subsidy was to rouse that industry back to life. That object had been, to a large extent, achieved. When, however, the subsidy was increased under the Wheatley Act of 1924, the expectations of the Labour Party that rents would be lower had not been fulfilled. To that extent the 1924 Act had been a failure. It failed because the cost of houses went up, and he was forced to the conclusion that the greater the subsidy the dearer the house. He could not without serious dislocation suddenly cut off the subsidy; it was necessary to go cautiously. He proposed a £2 reduction on the £6 per year per house subsidy given under the 1923 Act, and £1 10s. in the £9 subsidy and the £12 10s. for agricultural areas, given under the 1924 Act.

The Labour Party strongly criticized the proposal, Mr. Wheatley affirming that prices would be sure to fall because no houses would be built. Nevertheless, Mr. Chamberlain had no difficulty in carrying his resolution.

Replying to a number of questions as to the suggested repairs to the stonework of the House of Commons, Captain Hacking said that the First Commissioner of Works was awaiting the advice of the Fine Arts Commission before reaching any decision regarding the repairs to the stonework, and it was not yet possible to state when an estimate would be submitted. The estimate contained in the report on the condition of the fabric provided for repairs being carried out in accordance with the original design, but the Fine Arts Commission were at present considering whether and to what extent it was possible to simplify various decorative features and eliminate detail without detracting from the original design of the buildings.

Sir W. Davison asked whether immediate steps could be taken to make good the stonework which has been removed from the central tower, which in its present state was a serious disfigurement to the building as a whole, without waiting for complete estimates for the necessary reparations to the rest of the building?

Captain Hacking said although the First Commissioner could not agree to deal with any portion of the repairs until he had received the recommendations of the Fine Arts Commission in regard to the building as a whole, he would certainly consider the possibility of dealing with this portion of the building in the early stages of the repairs.

Captain Hacking informed Mr. Rye that the total cost of the work in Trafalgar Square was approximately £18,160. The cost of the stone, and of laying it, amounted to approximately £14,400, but it was found necessary during the course of the work to replace nearly the whole of the concrete bed, lay a new drainage system, and to provide new cast-iron pipes for the fountains, involving the additional expenditure of £3,760.

Asked by Miss Wilkinson whether he has received applications for the removal of the Covent Garden Market to the site of the Foundling Hospital, and whether, in view of the fact that there was no adequate open space in this crowded neighbourhood, and that this land had been dedicated to the use of children for over 200 years, he would withhold his consent, Sir K. Wood said that the Minister of Health had not received any application in this matter, but he observed that notice had now been given for a private Bill and the matter would, therefore, come before Parliament.

Sir K. Wood informed Lady Astor that the Exchequer subsidy payable in respect of schemes under the Housing Act of 1919 depended on the rate of interest payable in future by local authorities in respect of their loans, and on other variable factors, and it was not, therefore, possible to state the capitalized value of the subsidies which would be payable. The amount paid by way of lump-sum grants to private builders under the Housing (Additional Powers) Act, 1919, was £9,493,155. The capitalized value of the Exchequer subsidies which would be payable on houses completed, under construction, or authorized under the Housing Act of 1923 is £25,052,250, and under the Housing Act of 1924 was £25,773,750 for England and Wales.

Sir R. Barnett asked whether, before any tender was finally accepted for the erection of flats on the Abbey Lodge site, Hanover Gate, plans and drawings would be placed in the Tea Room, so that members of the House might be able to judge for themselves the effect which the proposed buildings were likely to have upon the amenities of the Regent's Park and its immediate neighbourhood?

Mr. Guinness, the Minister of Agriculture, said that under the printed terms and conditions for letting the site in question tenders must be made not later than December 7, and the Commissioners of Crown lands must decide within a reasonable time after that date whether or not to accept any of the tenders. If a tender was accepted a contract would be thereby created, under which the tenderer undertook to submit for approval before February 28,

1927, all necessary plans of the building proposed to be erected, and if such plans complied with the printed conditions which formed part of the contract, the Commissioners would be bound to approve them. He had, however, carefully considered the proposal, and after a personal inspection of the site he was satisfied that the amenities of Regent's Park and the neighbourhood would not suffer.

Sir R. Barnett: "Does the right hon. gentleman realize that to put ugly buildings round Regent's Park on Crown land would interfere with the amenities of the park itself?"

Mr. Guinness: "There is no proposal to put ugly buildings there."

A Standing Committee of the House of Commons, which has been considering the Housing (Rural Workers) Bill, has agreed to an amendment enabling a local authority to refuse assistance towards the repair of a rural house where it appears to them "that the proposed works would destroy or diminish any historic, architectural or artistic interest attached to the house or building."

During the committee stage of the Electricity Bill in the House of Lords, Lord Montagu of Beaulieu moved an amendment to safeguard the antiquarian or artistic value of buildings, forests, woods, trees, and lakes, and to enforce the laying of the main transmission cables underground.

Lord Peel, replying for the Government, said he did not think it was possible, for technical reasons, to lay these cables underground, but the Ministry of Transport were anxious to preserve ancient rights, and he promised to bring the matter before them.

On this assurance the amendment was withdrawn.

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.]

LATEST PATENT APPLICATIONS

29257. Arnesen, G., and Bech, P. A. Composite building and insulating materials. November 19.

28923. Budd Manufacturing Co., E. G. Roof construction. November 16.

28705. McNeal, G. Roofings for buildings. November 15.

28957. Saunders, S. E. Joining parts of wooden, &c., structures. November 16.

SPECIFICATIONS PUBLISHED

261072. Waller, J. W., and Walker, C. Apparatus for moulding concrete blocks and the like.

261171. Simpson, J., and Glen, J. Apparatus for measuring linear dimensions.

261174. Wilkinson, S., and Wilkinson, J. Method of and means for mixing and soaking grog and marl for use in the manufacture of saggers, blocks, or slabs, and other articles.

261179. Ainley, E., and Ainley, H. Apparatus for cutting stone and like materials.

247952. Klinke, W. Reinforced-concrete floors.

ABSTRACT PUBLISHED

259061. Klingelhofer, J. Hollow walls.

ACKNOWLEDGMENT

We are sorry to find that a record of our indebtedness to the Lafarge Aluminous Cement Company for a photograph used in our "Concrete" number was omitted from our list of acknowledgments in that issue. The photograph in question is that appearing on page 625, and illustrating a reinforced concrete gantry at the works of the South Metropolitan Gas Company at Greenwich.

SOCIETIES AND SCHOOLS

Another Pantomime at the A.A.

"Cylinderella: or the Story of Flo and Return," is the title of the pantomime which students of the Architectural Association are to present this year. The performances will begin at 8.0 p.m. on Monday, Tuesday, Wednesday, Thursday, and Friday, December 13 to 17, and there is to be a matinée on Wednesday, 15th, at 2.30 p.m. Tickets are obtainable only through members of the A.A., who should apply by letter, or personally, to Miss Hodson, 34 Bedford Square, W.C.1. We have it "from the horse's mouth" that the show will justify its reputation and will come up to the high standard set by those of previous years. The performances are to be given in the A.A. buildings.

Licentiates and the Fellowship

An examination of Licentiates desirous of qualifying for candidature as Fellows will take place on April 4, 5, 6, 7, and 8, 1927. Application forms, to be obtained at the secretary's office, R.I.B.A., must be sent in on or before Saturday, March 5, accompanied by the necessary drawings and photographs.

Southport School of Art

The exhibition of the students' work of the Southport School of Art at the Atkinson Art Gallery, maintains the standard of excellency of previous years. The architectural part of the contribution forms a very attractive portion of the exhibition. Mr. Henry P. Huggill, the headmaster of the school, and Mr. Gordon Hemm, master of the architectural section, have by their enthusiasm and industry contributed to the success of the students' accomplishments. The architectural exhibits differ considerably from the character of last year's work. There is a general absence of large drawings, and although the major part of these consist of imperial-sized sheets, there is a higher standard of design and draughtsmanship discernible in nearly every work. This year contributions are less numerous, but the quality of both senior and junior students' studies exceeds anything that has been previously done in this department. The fact that the majority of the students are preparing for the intermediate examination of the R.I.B.A. accounts for the limitations of the size and character of the different problems tackled.

TRADE NOTES

Messrs. Nox, Ltd., general contractors for the Goldsmiths' and Silversmiths' Company, Limited's new premises in Regent Street point out that their name was incorrectly printed as Messrs. Knox, Ltd., in the advertisement of Caxton Floors, Ltd., which appeared in THE ARCHITECTS' JOURNAL of November 24.

We are informed that the water paint, oil paint, and stainers, used throughout the King George V School, Southport (illustrated in our issue for November 10) were manufactured by the Walpamur Company, Ltd., of Darwin, Lancs. The architects were Messrs. W. F. Granger and J. R. Leathart.

The first of a series of folders of *Famous Doors of the World* has been issued by the Woco Door Company. It illustrates Ghiberti's bronze doors to the Baptistry of Florence. The story runs that during the Black Plague in 1329 the consuls of the Arte di Calimala decided to erect three doors in the Baptistry, and ordained that these doors should be made of metal, and as beautiful as possible, as an offering to God in the midst of calamity. The first door was executed by Andrea Pisano, and the other two by Ghiberti, who was commissioned to undertake the task after winning a competition with his bronze bas-relief of the sacrifice of Isaac. Though the first two doors are certainly beautiful, the third, in the east, is regarded as the glory of the Baptistry. Pisano's style, as shown in the first door, was followed by Ghiberti, with more freedom in imagination, in the second door, where he excels as a craftsman. The folder containing the illustrations of Ghiberti's two doors is produced in a very attractive manner. The series, if the remainder maintain the high architectural standard achieved by the first, should form a unique and invaluable addition to the library of every architect. A copy of the folder can be obtained from the company at Dashwood House, London, E.C.2.

THE COMPETITORS' CLUB

THE NINETEENTH CENTURY: I

IT is worth while for those interested in competitive designs to study the more recent work in this direction, and to trace the earlier developments of plan and composition as evoked by the emulation of the men of those days in designs for buildings of a general character. Special types of building, such as hospitals and schools, have less to tell us, the ideals in regard to these having changed so radically during the last half century; but the degrees of change in municipal offices, law courts, and the like have been far less drastic, and many of the older plans have still a definite validity.

Sir Christopher Wren, with his strong sense of geometric form and his resourcefulness in dealing with difficult sites, would, if he had been required to compete, have easily wiped out all his contemporaries. We have lost nothing by his immunity, except through the abandonment of his plan for the reconstruction of the City, which was immeasurably superior to the others submitted at the time. During the eighteenth century the standard of planning in no case transcended that of Wren, and only in a few cases did the best men of that period add much to his conception of structural design or of detail. At the beginning of that century we had Vanbrugh and Gibbs; towards the end, Chambers and Taylor; but the work of these does not, from the point of view of planning and structure, afford much guidance in respect to the problems of our own day. The same may be said of the buildings for which competitive designs were obtained, such as the New Exchange, Dublin, and the East India Company's building in the City.

Thus we may reasonably pass on to the nineteenth century, and to the competition for the Houses of Parliament, which produced several very able schemes. The selected design by Charles Barry was unquestionably the best, and is well worthy of study as a masterly solution of a complicated problem. The two competitions for St. George's Hall and the Assize Courts, Liverpool, won by H. L. Elmes, resulted in the combination of the two in the present St. George's Hall—designed by Elmes, but completed by Cockerell. The work of Elmes is distinguished by a strong sense of architectonic form, both in plan and in the resulting composition. It is both rational and imaginative, and while conforming to a programme that we are unlikely to be fortunate enough to see repeated, it has much to tell us as to how the grouping of a series of halls and rooms may be effectively expressed.

The Royal Exchange was also the subject of a competition, which produced some striking designs. None of them were carried out, and the special character of the programme makes their study of less value as a guide to the technique of planning. The competition for the Government offices, held in 1856, was badly muddled, being divided into three sections: the first a general site plan, and the other two for buildings to be placed on portions of this site. The conditions were overloaded with detail, and few of the designs displayed such distinction as would justify their examination in detail. Shortly after this date a competition for the Assize Courts at Manchester gave a young architect, Alfred Waterhouse, his first step towards the distinguished position he subsequently reached as a skilful planner of important buildings. The plan for this building is of a very original type. It is in the main a one-story block, practically without internal courts, the large hall and courts being lighted at a higher level, above the roofs of the surrounding corridors. This architect followed up his success here by securing the Manchester Town Hall with a very able plan for a building on an irregular triangular site.

At this stage it may be noted that the Gothic revival had introduced an increased flexibility into planning methods. Hitherto, planning had been almost entirely rectangular, supplemented by geometric curves, and only departing from these combinations when adaptation to site made it imperative, as in the case of some of Wren's churches. Now, the Gothic tradition renders it possible to deal with spaces of nearly every shape. Thus, during the period this was acceptable, plans exhibit much more freedom in adaptation to lines of site. This freedom has left a permanent mark on planning, although without the adaptable Gothic treatment the adjustments demand increased study to make them architecturally satisfying. As an example of this, reference may be made to the West Riding County Offices, Wakefield, designed by Messrs. Gibson and Russell about 1890. The site in this case was a rhombus, and the very able plan had its main axis, on which the Council Hall was placed, joining the two obtuse angles of the rhombus, thus aligning the buildings round two triangular courts and offering very convenient lines of communication.

To return to the time of the Manchester Town Hall: almost contemporary with this was the competition for the High Courts in London, which it had been decided should be brought from Westminster to the vicinity of the Inns of Court. Considerable discussion took place over the site, which was at first to be on the Embankment, and the adjudication added further complications, owing to the fact that of the seven judges two were eminent lawyers, three were laymen, and only the other two (added subsequently) architects, who, not being leading members of the profession, were overweighted by their colleagues. This jury proceeded to award marks to the designs on points of detail, basing these on the reports of numerous heads of departments; every one of the ten competitors scored somewhere. Edward Barry came out at the top, and G. E. Street near the bottom of the list, but the result looked so obviously absurd that, after the high quality of Street's architectural treatment had been pointed out, it was agreed to award the work to him, though his plan was not felt to be satisfactory. As we see it now it is more an example to be avoided than to be followed in the planning of a building of this type.

SENESCHAL

COMPETITION CALENDAR

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

January 3. Academy, Perth. Open to Architects practising in Scotland. Assessor, Mr. James D. Cairns. Premiums: £100 and £50. Particulars from Mr. R. Martin Bates, Education Offices, Perth. Deposit £1 1s.

January 8. Town Hall Extensions and Public Library Building, Manchester. Assessors, Messrs. T. R. Milburn, Robert Atkinson, and Ralph Knott. Particulars from Mr. P. M. Heath, Town Clerk. Deposit £1 1s.

January 15. Designs for complete modern furniture for *a*, a double bedroom, *b*, a drawing-room, *c*, sitting hall, *d*, dining-room. Assessors, the Countess of Oxford and Asquith, the Lady Islington, Sir Frank Baines, C.V.O., C.B.E., F.R.I.B.A. (Director of H.M. Office of Works), Messrs. H. Clifford Smith, F.S.A. (Department of Woodwork, Victoria and Albert Museum), F. V. Burridge, O.B.E., R.E., A.R.C.A. (Principal of the Central School of Arts and Crafts), P. Morley Horder, F.S.A., Philip Tilden, Percy A. Wells (Principal of the Cabinet Department, Shoreditch Technical College), Holbrook Jackson (Editorial Director, The National Trade Press, Ltd.), and Captain Edward W. Gregory (Editor, *The Furnishing Trades' Organizer*). For the preliminary adjudication there are 200 guineas in prizes, and for the final, 300 guineas. Particulars from the Editor, *The Furnishing Trades' Organizer*, Regent House, Kingsway, London, W.C.2.

January 25. Conference Hall, for League of Nations, Geneva. 100,000 Swiss francs to be divided among architects submitting best plans. Sir John Burnet, R.A., British representative on jury of assessors.

No date. Incorporated Architects in Scotland: 1: Rowand Anderson Medal and £100; City Art Gallery and Museum; 2: Rutland Prize (£50) for Study of Materials and Construction; 3: Prize (£10 to £15) for 3rd year Students in Scotland; 4: Maintenance Scholarship, £50 per annum for 3 years. Particulars from Secretary of the Incorporation, 15 Rutland Square, Edinburgh.

The conditions of the following competitions have not as yet been brought to the notice of the R.I.B.A.

June 30. Designs for the planning of the Civic Centre, Birmingham. Assessor, Mr. H. V. Lanchester F.R.I.B.A. Premium of £1,000 to the design placed first, and a further sum not exceeding £1,000 divided between the authors of other approved designs. Particulars from Mr. Herbert H. Humphries, M.Inst.C.E., City Engineer and Surveyor. Deposit £1 1s.

No date. Town Hall and Library, Leith. Assessor, Sir George Washington Browne, R.S.A. Particulars from the City Chambers, Edinburgh.

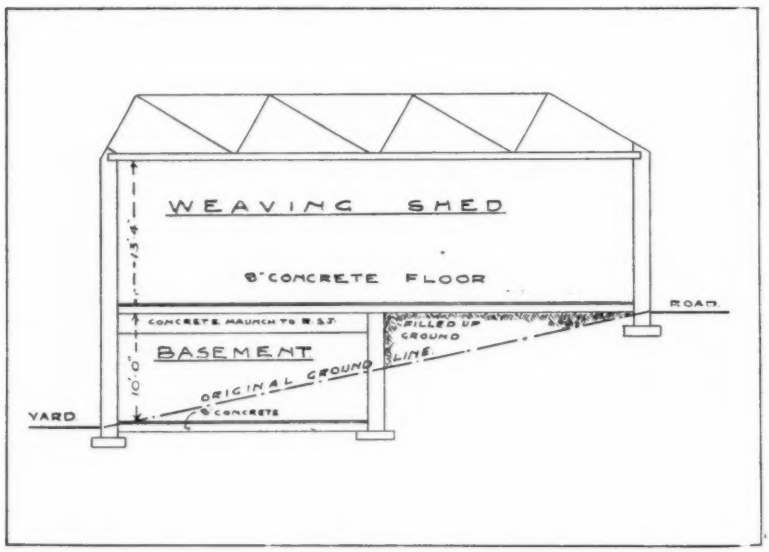
READERS' QUERIES

DEFECTIVE CONCRETE FLOORS

A. C. writes: "I have designed a silk-weaving shed, 80 ft. long by 48 ft. wide inside. The floor of the basement is of 6 in. concrete, mixed in the proportion of 1 part of Portland cement, 4 parts of broken stone, and 2 parts of clean, sharp sand; the ballast to be broken to pass through a 1½ in. ring and mixed with a waterproofing material. Over the basement the floor of the weaving-shed is of reinforced concrete, 8 in. thick, mixed as before, the ballast being not more than ¾ in. to ¼ in., free from dust, and reinforced with bars and lattice, designed and specified by a firm of reinforced concrete engineers. Over the filled-up portion the floor is of 8 in. concrete, reinforced with lattice only, mixed similar to the basement floor, and treated with waterproofing material in the same manner. The bars from the suspended floor extend about 2 ft. 6 in. over the retaining wall, and are interlaced with the lattice reinforcement in the concrete over the filled-up area. The suspended floor in the weaving-shed was laid when the weather was mild. Immediately afterwards there was a spell of frost, but the floor was well covered with planks and bags, and apparently suffered no harm. The concrete over the filled-up half was laid three months later, after the roof had been covered in. The basement concrete was laid immediately afterwards. While the concrete to the basement floor was green, the cement rendering was laid, and was followed by laying the rendering to the shed floor. To ensure binding on the shed floor the surface of the concrete was well cleaned and washed over with cement grout. The rendering was laid in alternate panels, in the approved manner, and screeded. After six weeks signs were noticed of the rendering lifting from the concrete. As time went on it began to spread all over the floor, until the rendering could be lifted off in large sheets. I immediately condemned the floor as unsatisfactory. A firm was given the order, and the mass concrete was cleared, wire-brushed, and scored for keying to their instructions. This rendering has been completed two months, and once again it is lifting from the floor concrete, exactly as before: that is, it commences at the junction of the panels and spreads along the joints and then towards the centre of each panel. The cement rendering to the basement also lifted. This was relaid, and that is lifting again. There again the first rendering was laid when the floor concrete was green, but it lifted like the shed floor. 1: Can the contractors be held liable to relay it all again after they have done all that can possibly be done to ensure a good job? 2: Can the firm who have laid the second rendering be held liable for the relaying? 3: Can you give me any reason why it should lift, considering none of the various materials are at fault? 4: Can they hold the architect responsible for damages after all that has been done? 5: Are the clients entitled to hold back the retention amount from the contractors on the expiry of their maintenance period?"

The whole question appears to depend upon the exact cause of the defect in the rendering; this can only be determined by an exhaustive investigation on the spot. Causes which might possibly have contributed to the trouble are, *a*: The use of cement grout between the concrete and the surface layer of rendering. This has been advocated again and again as a proper device for making new concrete adhere to old, and no blame can attach to those who have adopted so widely-recommended a practice. Some experienced concrete workers have found, however, that they do not obtain good results by this measure. If a fairly large panel of the work is coated with grout at one time, it is liable to set independently of the new surface rendering laid above it, and presents two possible planes of weakness and cleavage instead of one; one plane being above the film of grout and one below. Another possible cause is, *b*: Movement in the several floors due to settlement and deflection under the added weight of the rendering and under the adjustment of the building as a whole to its loads of all kinds. If the floors moved at or about the time of the laying of the rendering, the action would be calculated to prevent proper adhesion between the two bodies of material. *c*: Another cause of movement in concrete work which would prevent the rendering adhering is expansion of the concrete through the use of hot cement or any rusting, and therefore expanding, reinforcement. *d*: Organic matter in the mixing water might interpose a greasy film between the concrete and the rendering.

Under most ordinary building contracts the contractor has to make good all defects before the retention amount is paid. If he is so unfortunate as to have to return to the work and make good twice over, the architect cannot allow his sympathy for the contractor's loss to stand in the way of getting a sound job. This would appear to answer points 1 and 5. Whether the firm who laid the second rendering can be held responsible depends upon the conditions of its employment by the contractor. The architect deals with the contractor and holds him responsible; if the contractor has protected his own interests and can make the subcontracting firm make good the defects, so much the better for the contractor (point 2). Point 3 is a matter of investigation on the site, bearing in mind the several possible causes of the defect mentioned above and any others that may suggest themselves. Point 4: The architect can only be held responsible for defects which arise from his negligence or lack of skill. If he can show that he has used all reasonable precautions usually employed it is unlikely that a case brought against him would be successful. W. H.



Defective concrete floors in a weaving shed. [See answer to A. C.]

PAVING A YARD

O. K. writes: "I should like to have a specification for surfacing the backyard of a small country house. The garage opens out of the yard, and the dimensions are about 25 ft. by 25 ft. Cheapness is essential."

1: Using concrete with cement face but bedding down untrimmed slate in the cement as a species of very coarse mosaic; that is, the slates are in random shapes, and no attempt is made to produce a close fit between them, the cement showing quite irregularly. This is very applicable in any district where slate stone exists, such as all the south-western counties and Wales, even though roofing slates are not made. 2: Alternatively, having laid the concrete bed thereon so as to divide the area into panels, single rows of quarry tiles, using these as guides or "screeds" for surfacing the intervening spaces with cement and sand floated. Do not trowel this cement face, but finish it to a textured surface with a wood straight edge shaken as it is drawn over the plastic material. The panel should not be over 8 ft. by 6 ft., and may be in any proportion. E. G.

THE WEEK'S BUILDING NEWS

Deptford Swimming Baths

New swimming baths are to be built at the Laurie Grove Baths, Deptford.

All-electric Houses for Epsom

The Epsom Council is to build 120 all-electric houses.

More Houses for Wood Green

The Wood Green Council has resolved to build a further eighty-five houses.

A New Epsom Station

The station to be built at Epsom will cost £90,000.

A New School for Hanwell

A new secondary school is to be built at Hanwell for the Middlesex County Council.

A Westminster Rebuilding Scheme

It is desired to raise the sum of £20,000 with which to carry out a rebuilding scheme at St. Matthew's, Westminster.

Housing Progress at Billingham

The Billingham Urban District Council is to erect 222 houses in various parts of their district.

Improvement to a Kent Road

The Kent County Council is to improve a further section of the Maidstone-Folkestone road at a cost of £50,000.

Houses Proposed at Dover

The Housing Committee of the Dover Town Council has recommended the erection of a further 200 houses.

Plans Passed at Middlesbrough

The Middlesbrough Corporation Plans Committee has passed plans for forty-five houses to be erected on various sites.

Housing at Carshalton

The Carshalton Urban Council has passed plans for forty-two houses to be built in various parts of the district.

More Houses for Carlisle

The Housing Committee of the Carlisle Corporation has decided to erect a further hundred municipal houses.

Proposed Houses for Tredworth

Subject to the approval of the Minister of Health, the Tredworth Council is to erect forty-two houses.

Housing at Bampton

The Bampton Urban Council proposes to erect twenty-eight houses at Bampton and six at Shillingford. The total cost of the scheme is stated to be £15,981 18s.

Housing at Liverpool

The Housing Committee of the Liverpool Corporation has received sanction from the Ministry of Health to borrow £261,470 for the construction of roads.

Proposed New Liverpool College

A start is to be made shortly with the erection of the first wing of the proposed new Liverpool College at Mossley Hill. The building is estimated to cost £100,000.

Proposed School for Llanelly

The Llanelly Corporation Education Committee has received notice from the County Council of its intention to provide a new Central School at Llanelly.

Skinburness Sewerage Scheme

The Skinburness sewerage scheme has commenced, and the Home Cultram Urban District Council has arranged to borrow £8,000 from the Public Works Loan Board.

Solihull Housing

The Solihull District Council has decided to purchase eight acres of land in Cornix Lane, Solihull, at a total cost of £1,000, on which to erect thirty additional Council houses.

Housing on the Downham Estate

The estimated cost of the 491 houses and flats, including the necessary roads and sewers, to be erected on the Downham estate for the London County Council is £305,000.

Kingsbury Housing Loan

The Kingsbury Urban District Council has received sanction from the Ministry of Health to borrow money in order to grant subsidies for the erection of fifty more houses by private enterprise.

Beddington Housing Plans

At a meeting of the Beddington Urban Council the surveyor was instructed to prepare sketch plans for the erection of 114 houses on the undeveloped portion of the Bute Road housing estate.

Houses Proposed at Horsforth

The Horsforth Council has decided to make application to the Ministry of Health for sanction to erect forty-six additional houses on various housing sites in their district.

Housing at Manchester

It is probable that the trustees of the Sutton estate, Manchester, will complete the scheme of its architect, Mr. Harry S. Fairhurst, by adding another 180 houses to the forty-two that are already to be erected.

Two More Northumberland Schools

The Northumberland Education Committee has decided that effect be given as soon as practicable to the proposal in the development programme for the erection on the site already secured at Monkseaton Village Council School of a new Council school for 300 senior pupils. Negotiations are also being entered into for the acquisition of a site between East Denton and Lemington for a new Council school.

Huge Ayr Water Scheme

The water supply of Ayr is to be augmented by the acquisition of Loch Recawr, one of a chain of lochs in the hill area of South Ayrshire. The cost of the scheme is stated to be £219,000. Two schemes were originally before the Council, one which provided for the raising of Loch Finlas (from which the present supply is derived) at a cost of £193,000, and the other the Loch Recawr scheme, as yet untapped for water.

Southampton Dock Extension

The Southampton Docks extension scheme, by which it is proposed to increase very largely the accommodation available, has now, so far as can be seen, taken final shape, and work is to be started immediately. Parliamentary powers for the first part of the scheme were obtained in 1924, and Parliament will be asked next year to sanction further work which will be necessary before the full plans can be carried through. The scheme as it now stands differs from that first put forward. It will cost some £13,000,000, and involves the reclamation of over 400 acres lying between the Royal Pier and Millbrook Point. The seaward boundary of the reclaimed area will consist of an embankment at its eastern and western ends and the central portion of a deep-water quay wall 7,400 ft. long. Work on the scheme is to commence with the construction of 3,500 ft. of the new quay wall at the eastern end. It is estimated that it will take several years to complete the full scheme.

Liverpool Cathedral Acoustics

In a letter to the *Times* recently, Mr. Vernon Crompton, F.R.I.B.A., writing on the subject of the new Liverpool Cathedral organ, points out that the statement of a musical critic that " there is no means of studying the acoustic properties of a building which does not exist, or exists only on paper," might have been correct five or six years ago but no longer holds true. " For buildings of ordinary size," he goes on to say, " and not too complex, I think we can say that a building with reasonably good acoustic qualities can be designed on paper which, when built, will be found to fulfil the expectations of the designer. It is probable that research has not advanced sufficiently for anyone to be quite sure that a complex problem like Liverpool Cathedral could be tackled with certainty as to results, but after the recent work done by the Building Research Board and others no one nowadays need lay his plans in the dark."

RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 8	1 3½
A₁	Abergavenny	S. Wales & M.	1 7½	1 2½
B	Abingdon ..	S. Counties	1 6	1 1½
A	Accrington	N.W. Counties	1 8	1 3½
A₃	Addlestone	S. Counties	1 6½	1 2
A	Adlington	N.W. Counties	1 8	1 3½
A	Airdrie ..	Scotland	*1 8	1 3½
C₁	Aldeburgh	E. Counties	1 4	1 0½
A	Altrincham	N.W. Counties	1 8	1 3½
B₃	Appleby ..	N.W. Counties	1 4½	1 0½
A	Ashton-under-Lyne	N.W. Counties	1 8	1 3½
A₃	Atherstone	Mid. Counties	1 6½	1 2
B₃	Aylesbury ..	S. Counties	1 4½	1 0½
B₃	BANBURY	S. Counties	1 4½	1 0½
B₂	Bangor ..	N.W. Counties	1 5	1 1
A	BarnardCastle	N.E. Coast	1 8	1 3½
A	Barnsley ..	Yorkshire	1 8	1 3½
B₁	Barnstaple	S.W. Counties	1 5½	1 1½
A	Barrow ..	N.W. Counties	1 8	1 3½
A	Barry ..	S. Wales & M.	1 8	1 3½
B₁	Basingstoke	S.W. Counties	1 4½	1 0½
B	Bath ..	S.W. Counties	1 6	1 1½
A	Batley ..	Yorkshire	1 8	1 3½
B	Bedford ..	E. Counties	1 6	1 1½
A₂	Berwick-on-Tweed	N.E. Coast	1 7	1 2½
A₁	Bewdley ..	Mid. Counties	1 6½	1 2
B₃	Bicester ..	Mid. Counties	1 4½	1 0½
A	Birkenhead	N.W. Counties	†1 9	1 3½
A	Birmingham	Mid. Counties	1 8	1 3½
A	Bishop Auckland	N.E. Coast	1 8	1 3½
A	Blackburn	N.W. Counties	1 8	1 3½
A	Blackpool	N.W. Counties	1 8	1 3½
A	Blyth ..	N.E. Coast	1 8	1 3½
B₃	Bognor ..	S. Counties	1 4½	1 0½
A	Bolton ..	N.W. Counties	1 8	1 3½
A₃	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1½
A	Bradford ..	Yorkshire	1 8	1 3½
A₃	Brentwood	E. Counties	1 6½	1 2
A	Bridgend ..	S. Wales & M.	1 8	1 3½
B₂	Bridgwater	S.W. Counties	1 5	1 1
A₁	Bridlington	Yorkshire	1 7½	1 2½
A	Brighouse	Yorkshire	1 8	1 3½
B₁	Brighton ..	S. Counties	1 6	1 1½
A	Bristol ..	S.W. Counties	1 8	1 3½
B₃	Brixham ..	S.W. Counties	1 4½	1 0½
A₃	Bromsgrove	Mid. Counties	1 6½	1 2
C	Bromyard ..	Mid. Counties	1 4	1 0½
A	Burnley ..	N.W. Counties	1 8	1 3½
A	Burslem ..	Mid. Counties	1 8	1 3½
A₃	Burton-on-Trent	Mid. Counties	1 7	1 2½
A	Bury ..	N.W. Counties	1 8	1 3½
A₃	Buxton ..	N.W. Counties	1 6½	1 2
B	CAMBRIDGE	E. Counties	1 6	1 1½
B₃	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 8	1 3½
A	Carlisle ..	N.W. Counties	1 8	1 3½
B	Carmarthen	S. Wales & M.	1 6	1 1½
B₃	Carnarvon	N.W. Counties	1 5	1 1
A₁	Carnforth ..	N.W. Counties	1 7½	1 2½
A	Castleford	Yorkshire	1 8	1 3½
B₁	Chatham ..	S. Counties	1 5½	1 1½
B₁	Chelmsford	E. Counties	1 5½	1 1½
B	Cheltenham	S.W. Counties	1 6	1 1½
A	Chester ..	N.W. Counties	1 8	1 3½
A	Chesterfield	Mid. Counties	‡1 8	1 3½
B₃	Chichester	S. Counties	1 4½	1 0½
A	Chorley ..	N.W. Counties	1 8	1 3½
B₃	Cirencester	S. Counties	1 5	1 1
A	Clitheroe ..	N.W. Counties	1 8	1 3½
A	Clydebank	Scotland	1 8	1 3½
A	Coalville ..	Mid. Counties	1 8	1 3½
B₁	Colchester ..	E. Counties	1 5½	1 1½
A	Colne ..	N.W. Counties	1 8	1 3½
B₁	Colwyn Bay	N.W. Counties	1 5½	1 1½
A	Consett ..	N.E. Coast	1 8	1 3½
B₁	Conway ..	N.W. Counties	1 5½	1 1½
A	Coventry ..	Mid. Counties	1 8	1 3½
A₃	Crewe ..	N.W. Counties	1 6½	1 2
A₃	Cumberland	.....	1 6½	1 2
A	DARLINGTON	N.E. Coast	1 8	1 3½
A	Darwen ..	N.W. Counties	1 8	1 3½
B₃	Deal ..	S. Counties	1 4½	1 0½
B₁	Denbigh ..	N.W. Counties	1 5½	1 1½
A	Derby ..	Mid. Counties	1 8	1 3½
A	Dewsbury	Yorkshire	1 8	1 3½
B	Didcot ..	S. Counties	1 6	1 1½
A	Doncaster	Yorkshire	1 8	1 3½
C₁	Dorchester	S.W. Counties	1 4	1 0½
A₃	Driffield ..	Yorks	1 6½	1 2
A₃	Droitwich	Mid. Counties	1 6½	1 2
A₂	Dudley ..	Mid. Counties	1 7	1 2½
A	Dundee ..	Scotland	1 8	1 3½
A	Durham ..	N.E. Coast	1 8	1 3½
B₁	EASTBOURNE	S. Counties	1 6	1 1½
A	Ebbw Vale	S. Wales & M.	1 8	1 3½
A	Edinburgh	Scotland	1 8	1 3½
A	E. Glamorganshire & Monmouthshire	S. Wales & M.	1 8	1 3½
B	Exeter ..	S.W. Counties	§1 7	1 2½
B₂	Exmouth ..	S.W. Counties	1 5	1 1
B	FELIXSTOWE	E. Counties	1 6	1 1½
A₃	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W. Counties	1 8	1 3½
B₃	Folkestone	S. Counties	1 4½	1 0½
A	Frodsham	N.W. Counties	1 8	1 3½
B₃	Frome ..	S.W. Counties	1 4½	1 0½
A	GATESHEAD	N.E. Coast	1 8	1 3½
B	Gillingham	S. Counties	1 5½	1 1½
B	Gloucester	S.W. Counties	1 6	1 1½
A₂	Goole ..	Yorkshire	1 7	1 2½
B₁	Gosport ..	S. Counties	1 5½	1 1½
A₃	Grantham	Mid. Counties	1 6½	1 2
A₃	Gravesend	S. Counties	1 7	1 2½
A	Greenock ..	Scotland	*1 8	1 3½
A	Grimsby ..	Yorkshire	1 8	1 3½
B₁	Guildford ..	S. Counties	1 5½	1 1½
A	HALIFAX ..	Yorkshire	1 8	1 3½
A₁	Hanley ..	Mid. Counties	1 7½	1 2½
A	Harrogate	Yorkshire	1 8	1 3½
A	Hartlepools	N.E. Coast	1 8	1 3½
B₂	Harwich ..	E. Counties	1 5	1 1
B₃	Hastings ..	S. Counties	1 4½	1 0½
B₁	Hatfield ..	S. Counties	1 5½	1 1½
B	Hereford ..	S. W. Counties	1 6	1 1½
B	Hertford ..	E. Counties	1 5½	1 1½
A₁	Heysham	N.W. Counties	1 7½	1 2½
A	Howden ..	N.E. Coast	1 8	1 3½
A	Huddersfield	Yorkshire	1 8	1 3½
A	Hull ..	Yorkshire	1 8	1 3½
A	ILKLEY ..	Yorkshire	1 8	1 3½
A	Immingham	Mid. Counties	1 8	1 3½
B	Ipswich ..	E. Counties	1 6	1 1½
C₁	Isle of Wight	S. Counties	1 4	1 0½
A	JARROW ..	N.E. Coast	1 8	1 3½
A	KEIGHLEY	Yorkshire	1 8	1 3½
B₂	Kendal ..	N.W. Counties	1 5	1 1
B₂	Keswick ..	N.W. Counties	1 5	1 1
B	Kettering ..	Mid. Counties	1 6	1 1½
A₃	Kidderminster	Mid. Counties	1 6½	1 2
B₂	King's Lynn	E. Counties	1 5	1 1
A₁	LANCASTER	N.W. Counties	1 7½	1 2
A₃	Leamington	Mid. Counties	1 6½	1 2½
A	Leeds ..	Yorkshire	1 8	1 3½
A	Leek ..	Mid. Counties	1 8	1 3½
A	Leicester ..	Mid. Counties	1 8	1 3½
A	Leigh ..	N.W. Counties	1 8	1 3½
B₃	Lewes ..	S. Counties	1 4½	1 0½
A₃	Lichfield ..	Mid. Counties	1 6½	1 2
A	Lincoln ..	Mid. Counties	1 8	1 3½
A	Liverpool ..	N.W. Counties	‖1 10	1 4½
B	Llandudno	N.W. Counties	1 6	1 1½
A	Llanelly ..	S. Wales & M.	1 8	1 3½
	London (12 miles radius)		1 9½	1 4½
	Do. (12-15 miles radius)		1 9	1 4
A	Long Eaton	Mid. Counties	1 8	1 3½
A	Loughborough	Mid. Counties	1 8	1 3½
B	Luton ..	E. Counties	1 6	1 1½
A	Lytham ..	N.W. Counties	1 8	1 3½
A₁	MACCLESFIELD	N.W. Counties	1 7½	1 2½
B	Maidstone	S. Counties	1 5½	1 1½
A₃	Malvern ..	Mid. Counties	1 6½	1 2
A	Manchester	N.W. Counties	1 8	1 3½
A	Mansfield ..	Mid. Counties	1 8	1 3½
B₃	Margate ..	S. Counties	1 4½	1 0½
A₃	Matlock ..	Mid. Counties	1 6½	1 2
A	Merthyr ..	S. Wales & M.	1 8	1 3½
A	Middlesbrough	N.E. Coast	1 8	1 3½
A₃	Middlewich	N.W. Counties	1 6½	1 2
A	Monmouth	S. Wales & M.	1 8	1 3½
	S. and E. Glamorganshire			
A₁	Morecambe	N.W. Counties	1 7½	1 2½
A₃	NANTWICH	N.W. Counties	1 6½	1 2
A	Neath ..	S. Wales & M.	1 8	1 3½
A	Nelson ..	N.W. Counties	1 8	1 3½
A	Newcastle	N.E. Coast	1 8	1 3½
A	Newport ..	S. Wales & M.	1 8	1 3½
A	Normanton	Yorkshire	1 8	1 3½
A₂	Northampton	Mid. Counties	1 7	1 2½
A	North Staffs.	Mid. Counties	1 8	1 3½
A	North Shields	N.E. Coast	1 8	1 3½
B	Norwich ..	E. Counties	1 6	1 1½
A	Nottingham	Mid. Counties	1 8	1 3½
A	Nuneaton ..	Mid. Counties	1 8	1 3½
B	OAKHAM ..	Mid. Counties	1 5½	1 1½
A	Oldham ..	N.W. Counties	1 8	1 3½
A₃	Oswestry ..	Mid. Counties	1 6½	1 2
B	Oxford ..	S. Counties	1 6	1 1½
A	PAISLEY ..	Scotland	*1 8	1 3½
C	Pembroke	S. Wales & M.	1 4½	1 0½
A	Perth ..	Scotland	*1 8	1 3
A₃	Peterborough	Mid. Counties	1 6½	1 2
A	Plymouth	S.W. Counties	¶1 8	1 3½
A	Pontefract	Yorkshire	1 8	1 3½
A	Pontypridd	S. Wales & M.	1 8	1 3½
B	Portsmouth	S. Counties	1 6	1 1½
A	Preston ..	N.W. Counties	1 8	1 3½
A	QUEENSFERRY	N.W. Counties	1 8	1 3½
B	READING ..	S. Counties	1 6	1 1½
B	Reigate ..	S. Counties	1 5½	1 1½
A₃	Retford ..	Mid. Counties	1 6½	1 2
A	Rhondda Valley	S. Wales & M.	1 8	1 3½
A₃	Ripon ..	Yorkshire	1 6½	1 2
A	Rochdale ..	N.W. Counties	1 8	1 3½
B	Rochester	S. Counties	1 5½	1 1½
A₁	Ruabon ..	N.W. Counties	1 7½	1 2½
A₂	Rugby ..	Mid. Counties	1 8	1 3½
A₃	Rugeley ..	Mid. Counties	1 6½	1 2
A	Runcorn ..	N.W. Counties	1 8	1 3½
A₃	ST. ALBANS	E. Counties	1 6½	1 2
A	St. Helens	N.W. Counties	1 8	1 3½
A₁	Scarborough	Yorkshire	1 7½	1 2½
A	Scunthorpe	Mid. Counties	1 8	1 3½
A	Sheffield ..	Yorkshire	1 8	1 3½
A	Shipley ..	Yorkshire	1 8	1 3½
A₃	Shrewsbury	Mid. Counties	1 6½	1 2
A₂	Skipton ..	Yorkshire	1 7	1 2½
B	Slough ..	S. Counties	1 5½	1 1½
A₃	Solihull ..	Mid. Counties	1 7	1 2½
B	South'pton	S. Counties	1 6	1 1½
B₁	Southend-on-Sea	E. Counties	1 5½	1 1½
A	Southport	N.W. Counties	1 8	1 3½
A	S. Shields ..	N.E. Coast	1 8	1 3½
A₂	Stafford ..	Mid. Counties	1 7	1 2½
A	Stockport ..	N.W. Counties	1 8	1 3½
A	Stockton-on-Tees	N.E. Coast	1 8	1 3½
A	Stoke-on-Trent	Mid. Counties	1 8	1 3½
B	Stroud ..	S.W. Counties	1 5½	1 1½
A	Sunderland	N.E. Coast	1 8	1 3½
A	Swansea ..	S. Wales & M.	1 8	1 3½
B	Swindon ..	S.W. Counties	1 6	1 1½
A₁	TAMWORTH	N.W. Counties	1 7½	1 2½
B₁	Taunton ..	S.W. Counties	1 5½	1 1½
A	Teeside Dist.	N.E. Counties	1 8	1 3½
A	Todmorden	Yorkshire	1 8	1 3½
A₂	Torquay ..	S.W. Counties	1 7	1 2½
B₁	Tunbridge Wells	S. Counties	1 5½	1 1½
A	Tunstall ..	Mid. Counties	1 8	1 3½
A	Tyne District	N.E. Coast	1 8	1 3½
A	WAKEFIELD	Yorkshire	1 8	1 3½
A₂	Walsall ..	Mid. Counties	1 7	1 2½
A	Warrington	N.W. Counties	1 8	1 3½
A₃	Warwick ..	Mid. Counties	1 6½	1 2
B	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 8	1 3½
B	Weston-s-Mare	S.W. Counties	1 6	1 1½
A₂	Whitby ..	Yorkshire	1 6½	1 2
A	Widnes ..	N.W. Counties	1 8	1 3½
A	Wigan ..	N.W. Counties	1 8	1 3½
B₂	Winchester	S. Counties	1 5	1 1
B	Windsor ..	S. Counties	1 6	1 1½
A	Wolverhampton	Mid. Counties	1 8	1 3½
A₃	Worcester	Mid. Counties	1 6½	1 2
A	Worksop ..	Yorkshire	1 8	1 3½
A₁	Wrexham ..	N.W. Counties	1 7½	1 2½
B	Wycombe	S. Counties	1 6	1 1½
B₁	YARMOUTH	E. Counties	1 5½	1 1½
B₂	Yeovil ..	S W. Counties	1 5	1 1
A	York ..	Yorkshire	1 8	1 3½

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.

* Plasterers, 1s. 9d.

† Carpenters and Painters, 1s. 8½d.

‡ Plumbers, 1s. 9d.

§ Painters, 1s. 6d.

‖ Carpenters and Plasterers, 1s. 8½d.

¶ Painters, 1s. 7d.

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	13	0
Pit gravel, per yd.	0	18	0
Pit sand, per yd.	0	14	6
Washed sand	0	15	6

Screened ballast or gravel, add 10 per cent. per yd.
Clinker, breeze, etc., prices according to locality.

Portland cement, per ton	£2	19	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	2	4
SPREAD and level, including wheeling, per yd.	0	2	4
PLANKING, per ft. sup.	0	0	5

DO. over 10 ft. deep, add for each 5 ft. depth 30 per cent.

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

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 yd.	£0	1	3
DO. 6 in., *per yd.*	0	2	8
DO. 9 in., *per yd.*	0	3	6
Cast-iron pipes, coated, 9 ft. lengths, 4 in., per yd.	0	6	9
DO. 6 in., *per yd.*	0	9	2
Portland cement and sand, see "Excavator" above.			
Lead for caulking, per cwt.	£2	5	6
Gaskin, per lb.	0	0	5½

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	9	0
DO. 6 in., per ft.	0	11	0

Note.—These prices include digging 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.	2	18	0
Staffordshire blue, per M.	9	10	0
Firebricks, 2½ in., per M.	11	3	0
Glazed salt, white, and ivory stretchers, per M.	23	0	0
DO. *headers, per M.*	23	10	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.

FACINGS, FAIR, per ft. sup. extra	£0	0	2
DO. Red Rubbers, gauged and set in putty, per ft. extra	0	4	6
DO. salt, white or ivory glazed, per ft. sup. extra	0	5	6
TUCK POINTING, per ft. sup. extra	0	0	10
WEATHER POINTING, per ft. sup. extra	0	0	3
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
BITUMINOUS DAMP COURSE, ex rolls, per ft. sup.	0	0	7
ASPHALT (MASTIC) DAMP COURSE, ½in., 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, ¾ 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

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. sup.	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

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 M:			
Portmadoc Ladies	£14	0	0
Countess	27	0	0
Duchess	32	0	0
Clips, lead, per lb.	0	0	4
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. gauge, 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
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.	£20	0	0
11×4, per std.	30	0	0

Memel or Equal. Slightly less than foregoing.

Flooring, P.E., 1 in., per sq.	£1	5	0
DO. *T. and G., 1 in., per sq.*	1	5	0
Planed Boards, 1 in. × 11 in., per std.	30	0	0
Wainscot oak, per ft. sup. of 1 in.	0	2	0
Mahogany, per ft. sup. of 1 in.	0	2	0
DO. *Cuba, per ft. sup. of 1 in.*	0	3	0
Teak, per ft. sup. of 1 in.	0	3	0
DO., *ft. cube*	0	15	0
FIR fixed in wall plates, lintels, sleepers, etc., per ft. cube	0	5	9
DO. framed in floors, roofs, etc., per ft. cube	0	6	3
DO., framed in trusses, etc., including ironwork, per ft. cube	0	7	3
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.	3	10	0
SLATE BATTENING, per sq.	0	18	6

PRICES CURRENT; *continued.*

CARPENTER AND JOINER: *continued.*

DEAL GUTTER BOARD, 1 in., on firring, per sq.	£3	5	0
MOULDED CASEMENTS, 1¼ in., in 4 sqs., glazing beads and hung, per ft. sup.	0	3	0
DO., DO. 2 in., per ft. sup.	0	3	3
DEAL cased frames, oak sills, 2 in. d.h. sashes, brass-faced pulleys, etc., per ft. sup.	0	4	0
DOORS, 4 pan. sq. b.s., 2 in., per ft. sup.	0	3	6
DO., DO., DO. 1½ in., per ft. sup.	0	3	0
DO., DO. moulded b.s., 2 in., per ft. sup.	0	3	9
DO., DO., DO. 1¼ in., per ft. sup.	0	3	3
If in oak multiply 3 times.			
If in mahogany multiply 3 times.			
If in teak multiply 3 times.			
WOOD BLOCK FLOORING, standard blocks, laid in mastic herringbone:			
Deal, 1 in., per yd. sup., average	0	10	0
DO. 1¼ in., per yd. sup., average	0	12	0
DO., DO. 1¼ in. maple blocks	0	15	0
STAIRCASE WORK, DEAL:			
1 in. riser, 1¼ in. tread, fixed, per ft. sup.	0	3	6
2 in. deal strings, fixed, per ft. sup.	0	3	9

PLUMBER

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

Lead, milled sheet, per cwt.	£2	4	6
DO. *drawn pipes, per cwt.*	2	6	0
DO. *soil pipe, per cwt.*	2	8	0
DO. *scrap, per cwt.*	1	9	6
Copper, sheet, per lb.	0	1	0
Solder, plumber's, per lb.	0	1	2
DO. *fine, per lb.*	0	1	5
Cast-iron pipes, etc.:			
L.C.C. soil, 3 in., per yd.	0	4	1
DO. *4 in. per yd.*	0	5	0
R.W.P., 2½ in., per yd.	0	2	0
DO. *3 in., per yd.*	0	2	5
DO. *4 in., per yd.*	0	3	3
Gutter, 4 in. H.R., per yd.	0	1	5
DO. *4 in. O.G., per yd.*	0	1	9
MILLED LEAD and labour in gutters, flashings, etc.	3	12	6
LEAD PIPE, fixed, including running joints, bends, and tacks, ½ in., per ft.	0	2	1
DO. ¾ in., per ft.	0	2	5
DO. 1 in., per ft.	0	3	3
DO. 1¼ in., per ft.	0	4	6
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
CAST-IRON R.W. PIPE, at 24 lb. per length, jointed in red lead, 2½ in., per ft.	0	2	5
DO. 3 in., per ft.	0	2	10
DO. 4 in., per ft.	0	3	3
CAST-IRON H.R. GUTTER, fixed, with all clips, etc., 4 in., per ft.	0	2	7
DO. O.G., 4 in., per ft.	0	2	10
CAST-IRON SOIL PIPE, fixed with caulked joints and all ears, etc., 4 in., per ft.	0	7	0
DO. 3 in., per ft.	0	6	0
Fixing only:			
W.C. PANS and all joints, P. or S., and including joints to water waste preventers, each	2	5	0
BATHS only, with all joints	1	18	0
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.	0	18	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	9
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. fin.	0	0	5
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	6
DO. *26 oz.*	0	0	7½
Cathedral white, per ft.	0	0	6½
Polished plate, British ¼ in., up to 2 ft. sup.	0	2	0
DO. *3 ft. sup.*	0	2	6
DO. *7 ft. sup.*	0	3	6
DO. *25 ft. sup.*	0	4	0
DO. *100 ft. sup.*	0	4	6
Rough plate, 5/32 in.	0	0	6
DO. *¼ in., per ft.*	0	0	6½
Linseed oil putty, per cwt.	0	16	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	6
Glazing only, polished plate, 6½*d.* to 8*d.* per ft. according to size.			

DECORATOR

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.	£3	11	0
Linseed oil, raw, per gall.	0	3	7
DO., *boiled, per gall.*	0	3	10
Turpentine, per gall.	0	6	2
Liquid driers, per gall.	0	9	6
Knotting, per gall.	1	4	0
Distemper, washable, in ordinary colours, per cwt., and up	2	0	0
Double size, per firkin	0	3	6
Pumice stone, per lb.	0	0	4
Single gold leaf (transferable), per book	0	1	11
Varnish, copal, per gall. and up	0	18	0
DO., *flat, per gall.*	1	2	0
DO., *paper, per gall.*	1	0	0
French polish, per gall.	0	19	0
Ready mixed paints, per gall. and up	0	10	6
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
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, per yd. sup.	0	1	2
DO., each subsequent coat, per yd. sup.	0	0	11

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	19	0	0
Do., galvd., per ton	23	0	0
Corrugated sheets, galvd., per ton	23	0	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

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, 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, 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	6
DO. *in metal frames, per ft. sup.*	0	1	9
HANGING only metal casement in, but not including wood frames, each	0	2	10
BUILDING in metal casement frames, per ft. sup.	0	0	7
Waterproofing compounds for cement. Add about 75 per cent. to 100 per cent. to the cost of cement used.			
Plywood:			
3 m/m alder, per ft. sup.	0	0	2
4½ m/m amer. white, per ft. sup.	0	0	3¾
¾ m/m figured ash, per ft. sup.	0	0	5
4½ m/m 3rd quality, composite birch, per ft. sup.	0	0	1½