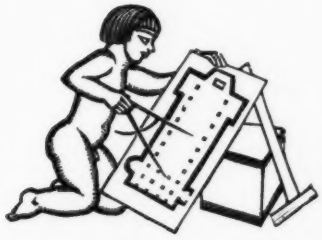
THE ARCHITECTS' JOURNAL



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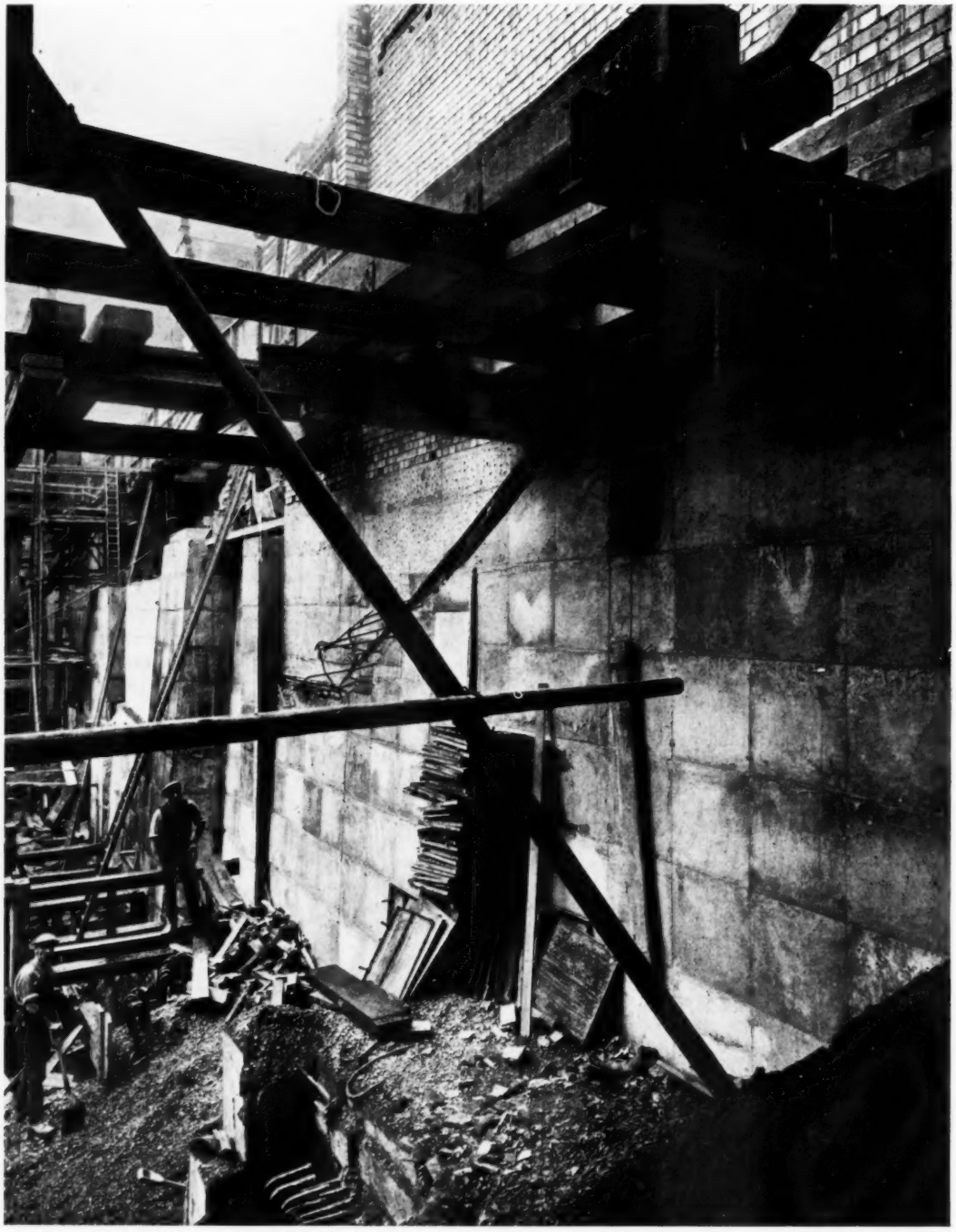
CHRISTIAN BARMAN, *Editor*

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.

WEDNESDAY, October 5, 1927. NUMBER 1707: VOLUME 66

PRINCIPAL CONTENTS



A huge retaining wall of concrete made impervious to the penetration of water by the integral addition of "Colemanoid" is a hall-mark of sound construction. The time saved on large-scale constructional work as the "Colemanoid" walls rise, means no little economy. The section of wall shown in the illustration on this page is from a progress photograph of the work on the New Empire Theatre in Leicester Square, now in course of construction. The site of the work is well worth a visit. Write for my "Mass Concrete Specifications."

Regent House,
Regent Street,
London, W.1.

Frederic Coleman

Associated Architects { Thomas W. Lamb.
Frank Matcham & Company.

Contractors: F. D. Huntington, Ltd.

[A working detail of this gallery appears on the following page]

THE GALLERY AT THE WHITE ROCK PAVILION, HASTINGS

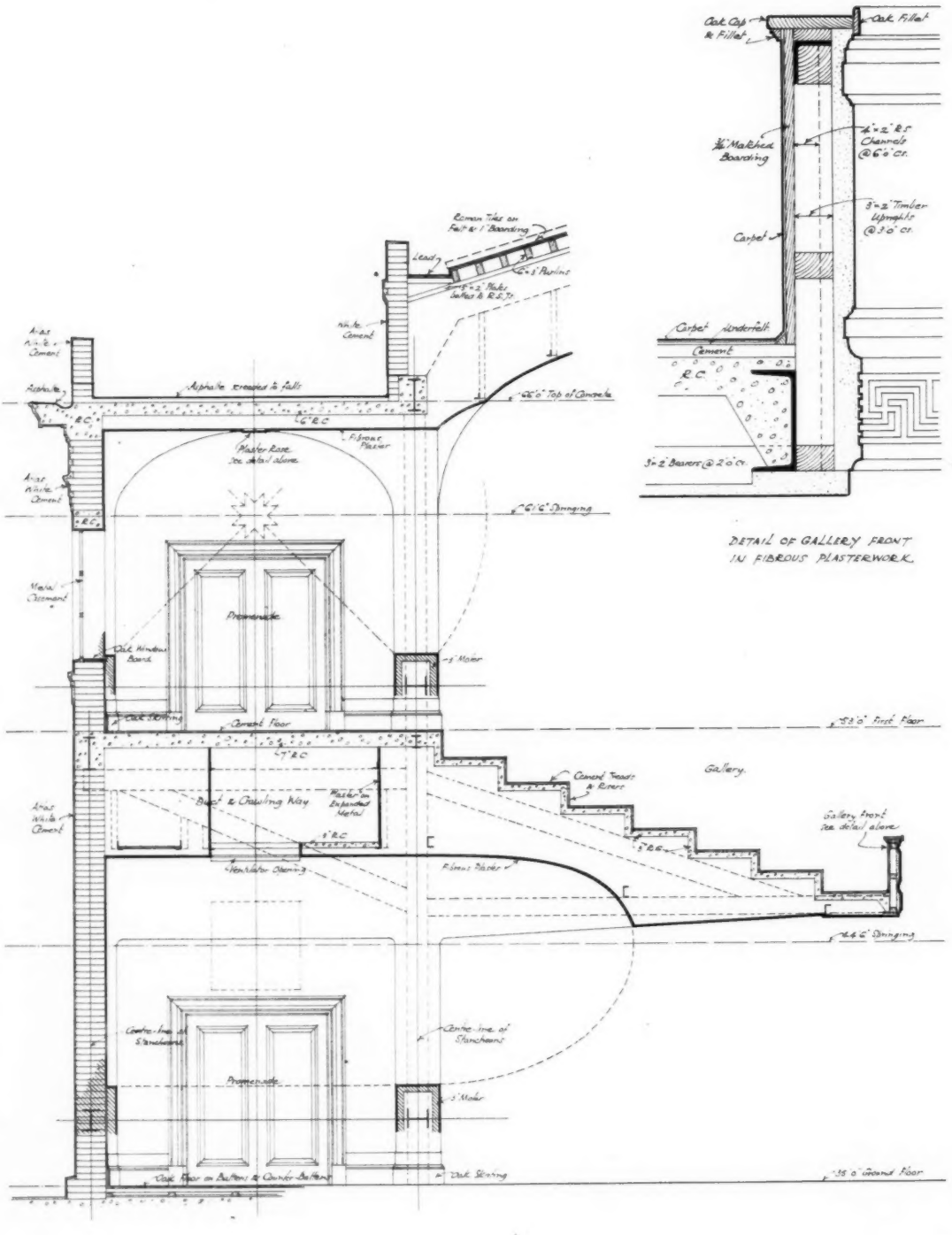
[BY C. COWLES-VOYSEY AND THE LATE HUGH T. MORGAN]

THE WEEK'S DETAIL

[BY C. COWLES-VOYSEY AND THE LATE HUGH T. MORGAN]

The drawing on the next page shows the section of the gallery in the main auditorium at the White Rock Pavilion, Hastings. This gallery is constructed with steel cantilevers and stanchions, and has a reinforced concrete floor. Tip-up seats are fixed to hard wood plugs in the concrete through a pile carpet and underfelt which is carried up the gallery front and finished with a wood capping. The space between the upper and lower promenades is occupied by the main plenum duct and a crawling-way for access to pipes. The vaulting is made in fibrous plaster, and this and the wall plaster is finished in stuc. The whole of the walls and ceilings are painted with aluminium undercoating and glaze finish to an old gold colour. The joinery is oak, treated with lime and wax polished ; bright colour is introduced in the curtains and hangings and silk light-fittings.

WHITE ROCK PAVILION, HASTINGS.
SECTION THROUGH PROMENADES & GALLERY TO MAIN HALL.



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

THE ARCHITECTS' JOURNAL

Wednesday, October 5, 1927

"BADGERING"

In future all users of public telephone boxes are to be solicited. They are to be badgered by means of moving advertisements fixed in a glass-fronted box immediately above the meter. Each advertisement will be displayed for seven seconds, "so that in the course of a three-minute call twenty-four signs will badger the attention of the speaker." So much, at any rate, our Government can do for us. If it cannot lead it can at least follow; follow the advertising man down all his most sordid and undignified little byways. Think of it; you go to telephone on some urgent business, on some delicate affair, and in future your attention is to be solicited from the matter in hand by drivelling vapidities, by nauseating vulgarities. And this the poor deluded Government department responsible for our telephones doubtless regards as an astute stroke of business!

Probably there is worse to follow. From an assault on the eyes there is some escape. One can close them. Our sense of hearing, however, is less easily protected. So we throw out this suggestion to the Post Office for what it is worth, that the brains of their inventions department be concentrated in contriving an apparatus that would automatically shout at the user during the time that he was waiting for the operator to ask for his number and during the time that she was getting it for him. A few personalities, for instance, would be effective: "Why don't you improve your complexion by using Solly's soothing soap?" "You'd have had a better hat if you'd bought it at Head's." "You wouldn't have had that indigestion if you had dined at Dilly's." And so on. Moreover, this suggestion has the advantage that it need not be limited to public telephones—every telephone in the country could be fitted with such a contrivance. In this way the public could be "plugged," as the Americans call it—and after all, they should know—plugged until it had lost all restraint, all dignity, and all sense of values.

This decision of the Post Office shows that no protection can be looked for from Government departments against the continual outrage to which our sensibilities are subjected by private enterprise bent on stimulating the public to buy commodities for which it has little, or no, use. Much valuable advertising space is being wasted on income-tax demand notes. This should surely be put out to tender. But we understand that the Government is contemplating the formation of a Ministry of Publicity, having as its chief a Minister with portfolio. Further criticism must be reserved until this new department is thoroughly established.

Joking apart, however, if municipalities are to follow the trail which is being blazoned by the Post Office, the accommodation for the mentally deficient will need to be augmented. Thus municipalities might start with the street furniture; with the lamp-posts or the tramway standards. Gothenburg, for example, garnishes its tramway standards in the summer-time with baskets of flowers, but that, of course, is foolish—it depletes the municipal coffers instead of filling them. Our more enlightened municipalities might hang them about with effigies of Keinz's pickled cucumbers or Fittall's paperene boots. Then there are the municipal vehicles, such as dust carts, and, finally, there are the road and pavement surfaces themselves. We said that the eye can be protected from assault by lowering the lid; not the eye of a motor driver, and, moreover, his eye must be focussed on the road. Here, then, is a vast, unexploited field for solicitation. An enterprising municipality would turn all its highway surface into one great glorious hoarding—aye, and floodlight it, too, at night from beneath the kerb.

It must not be thought from what we have said that our complaint is against all advertising and publicity as such; while deploring drunkenness and overeating, we nevertheless realize the necessity for drink and for food, and advertising and publicity are valuable and, it might almost be said, necessary adjuncts of modern daily life. Scarcely a day passes without our making use of one of these services; to ascertain the hour at which our theatre begins, the name of an hotel for our summer holiday and the like. As for the architect, however much as he may affect to despise advertisement, he is dependent upon it in his work. How else, indeed, would he ever know of the new materials, methods of construction, and devices which make their appearance with such bewildering rapidity?

The fact of the matter is that it is always easier to abuse a novelty than to use it. Gunpowder was used to blow men to pieces before it was used to quarry stone. The cinema is still being misused today. And so it is with advertising. Properly treated, it falls into its rightful place in the present-day scheme of affairs; but in the hands of the stupid and the unscrupulous it threatens the serenity of life, it outrages the susceptibilities of the sensitive, it is prodigal in its wastefulness, and it scorns the decencies of frugality and thrift.

We had hoped that a Government department would use discrimination in any advertising matters that it might undertake, but it is quite clear that by soliciting the attention twenty-four times per call in telephone boxes it does not intend to place itself on the side of the angels.

NEWS AND TOPICS

THE HOLLAND CONGRESSES—LANDSLIDE AND SUBSIDENCE —SIX TESTING STONES—THE PANDEMONIACS.

ELEVEN International Architectural Congresses have now been held. The attendance in London in 1906 and Vienna in 1908 was over a thousand. At The Hague there were about 200, which is a very convenient and manageable number. There were two architects from Japan, Roumania, and U.S.A., three from Great Britain, one from Finland and France. Germans and Dutchmen predominated, but there were a good few from Belgium, Italy, and Spain; in all twenty nations were represented. The papers and discussions appeared to the unofficial mind to lead nowhere. They were all based on Utopian ideas that could cut no ice for many years to come. The members of the Congress could be divided into two classes—those who paid their own expenses and those who were financed by their associations. The latter felt in duty bound to attend the meetings and take part in the various discussions, and, speaking generally, they all worked off at least two speeches. The weather was exactly right, and all the arrangements went like clockwork. A string of chars-a-bancs conveyed the Congress through miles and miles of The Hague, Rotterdam, Amsterdam, and Hilversum. The shipping of Rotterdam and Amsterdam was viewed from launches. The architect from Budapest who presented the invitation for the twelfth Congress, to be held in his city in 1930, was very busy picking up tips and considering how Budapest could surpass the wonderfully successful Dutch organization.

* * *

Two points impressed all the Congress. Holland has completely in its post-war architecture broken with tradition. Absolutely gone is all the characteristic Dutch detail. Italian and French influence is non-existent. Not a column or entablature has been erected for ten years; all is *l'art moderne*. The revolution has been very fortunate in two directions. There are only two materials available—concrete and the delightful little bricks. I never saw a piece of external inferior brickwork; the materials and the craftsmanship were uniformly excellent, and yet a special was not to be found. Secondly, recent legislation has insisted on huge units in the large towns. I was shown dozens of façades over 600 ft. long; one block of flats was about 1,200 ft. I saw many buildings designed by official architects, and they were quite as *moderne* and as interesting as the rest. The quality of official architecture is approximating to that of private architects in England, but still has a long way to go. The best building visited was the G.P.O. at Rotterdam. It was *l'art moderne*, but it struck just the right official note, and there was a freshness in the materials and in the way they were handled that was most impressive.

* * *

The Dutch are most successful in gardening, and incorporate flower-beds in the lay-out of all buildings wherever possible. Some of the groups of begonias and dwarf red dahlias in the Council School gardens would have done credit to a palace in England. The Dutch appreciation of bright colours cropped up in such unexpected details as the enamel paint of classroom joinery. Brilliant tomato-red and delightful Mediterranean blue, combined with solid black, where dirt or finger marks might show, gave an air of refined gaiety that is unusual in council schools in England. The week in Holland was extraordinarily interesting, and my advice to brother architects is to make an effort to go to the twelfth Congress at Budapest in 1930.

* * *

For several months now the effect of heavy rain following upon a period of drought has been shown in landslides and other movements of the subsoil both in town and country. Railway lines collapse, leaving the line in the air, as recently happened at Carleton, near Carlisle, or retaining walls fail with unexpected suddenness and overwhelm cottages beneath, as at Guernsey, where two lives were lost in the wreckage. Another curious form of accident which has taken place frequently is the caving-in of the street surface to reveal a subterranean hollow from which the earth has been washed out by the action of water. To what extent these disasters may be anticipated and provided against it would be difficult to say, but it is at least clear that present-day precautions are lacking in efficiency. While the behaviour of a rivet or of a girder may be forecasted with some degree of accuracy by reference to printed lists which are to be found in every architect's office, information upon the probable nature of earth movements is much more difficult to obtain. Lists of the angles of repose published in several of the recognized textbooks are likely to convey misinformation of a peculiarly dangerous order, because they do not give prominence to the two important factors of time and water. A stroll in the country will reveal the fact that the angles assumed by old banks are not the same as those of new ones, and that the angle of the material at the foot of the bank differs enormously from the angle at its crest. More personal familiarity with the actual behaviour of material is needed to correct the assumptions of mathematicians and to give reliability to works designed to resist the continuous reapplication of lateral thrusts. Periodic inspection of structures subjected to lateral thrusts is really necessary in the interests of public safety.

* * *

In Scotland there will be no reduction of the housing subsidy at present, but last Saturday in England and Wales the subsidies payable under the 1923 and 1924 Acts were reduced by £1 10s. to £2 a year. Only some 60,000 houses have been completed since the Armistice north of the Tweed, but in England and Wales it is understood that the millionth house has now been erected. Despite the backwardness of Scotland in new construction, there is a good deal of quiet, unobtrusive work being carried out in the reconditioning of Scottish houses in a bad state of repair. While wandering recently in the older parts of Edinburgh, I noticed several houses with most attractive architectural elevations at least 200 years old, and was told that the interiors had been completely renovated, while the utmost care was taken not to spoil or damage in any way the beauty of the exterior.

* * *

The selection of six stones only to be exposed on the top of a building in Whitehall, and examined at intervals by the Stone Preservation Committee working under the Department of Scientific and Industrial Research, has aroused a certain amount of surprise among persons interested in other varieties of stone. It will be remembered

that the actual stones chosen consisted of three limestones, two sandstones, and one magnesium limestone. These were chosen by the committee—on which there are people who have been using building stones all their lives—after very full discussion. The committee wishes to try out representative stones under practical conditions, but as the money at their disposal for this purpose is strictly limited a selection had to be made. It will, of course, be a considerable time before any complete results will be obtained from the tests that are now being imposed.

* * *

"Penny plain and tuppence coloured" struck me as an appropriate vulgarism after visiting the shows of the Pandemonium group at the Beaux Arts Gallery and the Emotionists group at the Hurricane Lamp Gallery at Chelsea. The plain are the Pandemoniacs and the coloured are the Emotionists. The former cut more ice, the latter use more paint. In fact, the paint is so thick at Chelsea that the canvases to which it precariously clings positively bulge with it. At the Beaux Arts Gallery the half-dozen young men and women rely on line; and Nicholas Bentley, the youngest of them, achieves a maximum effect with a minimum of strokes, as in his portrait of Sir Gerald du Maurier. There is other good line work, and the show as a whole gains by being frankly commercial. The Emotionists are frankly uncommercial. They paint for paint's sake, and do it mostly with a palette knife. The technique does not suit architectural subjects so well as agonized portraits of Chelsea artists and flowers. But it does express a certain emotion and justifies itself. I was almost at a loss in getting at some of the subjects of those heavily-weighted canvases, but my sense of colour was certainly pleased, my emotions were stirred, and as this does not happen often now I felt that the Emotionists had justified themselves.

* * *

To hang a big bell on ball bearings is doubtless no great innovation. A noteworthy instance, however, is that of "Big Peter of York," the largest bell in the minster peal. After recasting, the bell now weighs a little more than 11 tons, as against its former weight of 12 tons 10 cwt. It is being hung on ball bearings, so that it may give tongue by the pulling of ropes in the usual way, instead of suffering the indignity of assault with a hammer as heretofore, when the united efforts of forty stalwart men could not move it. I doubt not that due precautions have been taken to prevent damage to the beautiful fabric in which it is to swing. Yet I cannot help recalling that in the effete old pre-ball-bearing days it was sometimes found advisable to erect a special bell-tower detached from the church whose services the bell announced. A more modern safeguard is the provision of steel frames to bear the weight of the bells, the frames being erected within towers that were deemed unable to bear the strain. Is it not rather odd that the "College Youths" and other enthusiastic bell-ringers always refer to a church bell as "she," notwithstanding the masculine name by which it may have been christened, such as "Big Peter," "Great Paul," or "Great Tom"? "Great Peter of Exeter," said to be the oldest of existing big bells, having been cast by Thomas Purdue in 1676, is of the comparatively light weight of 6 tons 6 cwt. "Big Ben" of Westminster weighs more than 13 tons, but for a bell of size Moscow holds the heavyweight record of more than 192 tons. It should be smitten with Thor's hammer; or possibly a Nasmyth steam hammer would suffice to produce a satisfactory result.

* * *

Oakwell Hall, Birstall, is in a fair way to graduate as public property. Two generous gentlemen have jointly offered to buy it for Birstall Urban Council as trustees for the public. I very sincerely hope that the Council will have the pluck to assume the responsibility involved in the trust—if not because they are offered the gift of a well-preserved Elizabethan manor, then because of its Brontë associations. Charlotte the incomparable was familiar with Okewell Hall (I adopt the earlier spelling current in her day). In chapter xi of *Shirley* she describes the house in some detail, naming it "Fieldhead." Her comments on the oak panelling proclaim in a breath her womanish bias and her confessedly Hunnish taste, or want of taste. Her heroine was "ushered" (bless us!) into a parlour. "Of course," the novelist writes, "as was to be expected in such a gothic old barrack, this parlour was lined with oak: fine dark, glossy panels compassed the walls gloomily and grandly. Very handsome, reader, these shining brown panels are: very mellow in colouring and tasteful in effect, but—if you know what a 'Spring-clean' is—very execrable and inhuman." Charlotte therefore applauds the person who had painted the drawing-room a delicate pinky-white, thereby acquiring the character of a Hun, but "mightily enhancing the cheerfulness of the room, and saving future housemaids a world of trouble," besides effecting economies in beeswax and elbow-grease. Well now, sirs, is not that a charmingly frank exposition of the labour-saving mind of the eternal feminine? Here a commonplace from *Coningsby* may perhaps serve to restore equanimity. "Woman alone," quoth Beaconsfield, "can organize a drawing-room; man succeeds sometimes in a library." Aha! I like not that sinister "sometimes." It rather prejudices my claim for a fifty-fifty award in a case of sex rivalry.

* * *

The publication in recent issues of the JOURNAL of working drawings by Mr. George P. Bankart of a plaster ceiling reminds me of a talk which I had with the artist when I met him a few weeks ago. He was very much occupied with putting the finishing touches to his latest and most important publication on plasterwork, and was full of hopes that this work would do much to help architects in re-establishing decorative plasterwork as a genuine accessory to the art of good building. Mr. Bankart's complaint is the same as that of hundreds of architects: the client nowadays insists on period-work decoration without knowing that modern processes will not (and cannot) produce what he asks for. Moreover, he asks for period work largely because he has no idea that he can get good modern work at all. It is partly with the object of combating this attitude of the client, via the architect, that Mr. Bankart is producing his new book. This, he told me, will consist of a series of large plates of working drawings similar to those which have appeared in the JOURNAL. They will illustrate modern design and detail in plasterwork as produced by modern processes and methods of construction. I confess that I am looking forward with some excitement to the book. Like most architects, I realize that my knowledge of plasterwork is not very extensive, and no helpful and suggestive work of this kind has yet been produced. I shall know now what is really being done, and what can be done, in the way of genuine modern design. ASTRAGAL

THE MANCHESTER TOWN HALL COMPETITION

[BY JOHN SWARBRICK]

THE drawings submitted in the first competition for the proposed town hall extension and public reference library at Manchester were received in accordance with the conditions on January 8, 1927. Although the competition was open to all architects of British nationality, only sixty-four sets of designs were submitted. This may have been due to the irregularity of the site and other difficulties which made the problem more difficult to deal with. From the competitors six firms were selected to take part in a second and final competition. The finalists were: Messrs. Bradshaw, Gass and Hope (Bolton); Messrs. Collcutt and Hamp (London); Mr. J. B. F. Cowper (London); Mr. H. S. Fairhurst (Manchester); Mr. E. Vincent Harris (London); Mr. E. Berry Webber (London).

The assessors who were nominated by the President of the R.I.B.A. were Mr. T. R. Milburn, F.R.I.B.A., of Sunderland; Mr. Robert Atkinson, F.R.I.B.A.; and Mr. Ralph Knott, F.R.I.B.A. Each of the architects taking part in the final competition will receive an honorarium of £500, and the author of the selected design will be paid in accordance with the scale of professional charges prepared by the R.I.B.A. If within two years of the award the Corporation do not proceed with the first section of the work, the architect should be paid a sum equal to 1½ per cent. on his estimate of cost up to £50,000, and ½ per cent. on any sum in excess of that amount. This payment will, however, merge in the architect's commission if the work should be executed in accordance with his designs.

The accommodation to be provided in the new building was divided into three main heads: *a*: town hall extension; *b*: municipal offices; *c*: reference library. Naturally, the first two sections were more or less fused together in practice, and the library building alone became a distinct and separate adjunct. It was expressly stated that there must be no communication between the first two sections and section *c*, the library building. Nevertheless, the two structures were to occupy the same site, and it was stated that the library must stand on the southern portion of the site, leaving the northern part, which is adjacent to the present Manchester Town Hall, for the town hall extension and municipal offices. The offices were to contain the accommodation for the gas, electricity, water, parks, baths, markets, rivers, cleansing and public health committees, with a large apartment for accounts and inquiries, and showrooms for the gas and electricity departments.

The town hall extension was to be designed to contain the new council chamber, providing accommodation for about 190 aldermen, councillors, and council officials, in addition to space for the public, Press, and a few distinguished visitors. Separate access to the council chamber had to be provided for the public in addition to an anteroom and the usual retiring rooms. It was pointed out that a bridge across Lloyd Street was to be contrived so as to interconnect the Lord Mayor's apartments and the State apartments in the existing town hall with the council chamber and its precincts.

It was stated at the outset that the library building was to be independent and self-contained in all respects. In the basement or lower ground floor were to be the packing-room, binding-room, print-room, newspaper file room, library records room, and strong-room, in addition to the usual staff apartments. The ground floor had to contain the lending library and also the foreign library. The first floor was reserved for the main reading hall, to be 13,000 sq. ft. or more in area. In conjunction with this great reading-room, the technical and science library, the commercial library, the music library, the map-room, exhibition room, and certain other smaller apartments were to be grouped. The second floor was intended to be used partly for the accommodation of two special collections, rare books and manuscripts, and partly as a committee room, with contiguous accommodation for the chief librarian. Other departments of the library, such as the order and cataloguing room, the accounts and supplies, the clerical room, the library school, and the apartments for the deputy librarian and branch superintendent were to be placed on the third floor.

When the conditions for the second competition were issued, it was stated that the conditions and instructions in the first competition were to be accepted for the final competition also, except where inconsistent with certain further requirements. It was further stated that the designs were to be submitted not later than July 16, 1927, and that the aim of the Corporation was to develop the site to its fullest reasonable capacity, which was to include the provision of ample additional floor space on one or more floors over and above the schedule accommodation for the municipal offices and any scheme for the future possible extension of the departments. The extent of this additional floor space was left entirely to the discretion of the competitor. It was added that the Corporation had in mind that such additional space might temporarily be used for commercial purposes, but that it was intended that all such space should ultimately revert to municipal use. The assessors added that it was anticipated that the reference library would be the first portion of the scheme to be built, and should therefore be independent, whilst forming part of the general scheme. The showrooms, it was stated, should be on the ground floor if possible, but this suggestion was to be regarded as secondary to the general planning of the departments, having in view cost and other considerations. Show windows to Mount Street and St. Peter's Square were particularly desired.

Regarding the library building, notes by the chief librarian were transmitted for the consideration of the competitors. For the first time, it was stated that the capacity of the book store was estimated at approximately 500,000 volumes. Why this information was withheld in the first competition, although expressly asked for, is not clear. The reading-room, it was stated, should be as free as possible of pillars or obstructions. Galleries, moreover, were considered inconvenient places for book storage. Although the centre of the reading-room was to be occupied by an inquiry desk and the cabinets containing catalogues, it was pointed out that a staff enclosure should be near to the entrance so that all readers must pass it when both entering and leaving the hall.

The drawings submitted in the competition are so dissimilar that one may naturally wonder on what basis the assessors proceeded to decide who the six final competitors should be. Naturally some points of similarity in planning may be observed, but these points seem so obvious that one naturally cannot be surprised at the coincidence.

The most convincing design submitted is unquestionably that of Mr. E. Vincent Harris, and to him the thanks of the citizens of Manchester certainly are due. The majority of the competitors have either allowed themselves to be influenced by the Gothic design of the present town hall by Mr. Alfred Waterhouse, or they have parted from it and adopted a Palladian or other treatment. The treatment of Mr. Harris is simple, dignified, and monumental. He does not break away from the old traditions and seek to create a new type of expression, but he has adopted externally an entirely different type of treatment for his municipal building and town hall extension from that which we find in his library building, which is a Late Renaissance rotunda. The municipal building stands apart with a curved façade adjacent to the library, but otherwise closely following the building line of the site. Architecturally, the town hall extension has been treated by Mr. Harris in an Early Renaissance manner with round arches, mullioned windows, and leaded lights, but with Gothic mouldings and a certain amount of medieval detail. Nevertheless, the scheme, as a whole, has been well conceived, and there can be no doubt that both buildings would be an ornament to the city of Manchester.

He fortunately realized the advantage of introducing steeply-pitched roofs on the portion of the site adjacent to the similar roofs of the existing town hall building. Mr. Harris has also carefully considered the site from the point of view of town planning, and he has realized the importance of placing his main entrance to the library where it will be seen by those approaching the site from Oxford Road, the main southern approach in this part of the city. Some of the other competitors have preferred to make their main library entrance in Peter Street, and in this way they would unquestionably produce a less interesting effect than when the building is viewed from the position of one approaching the city on the southern side. The main entrance in this way faces the War Memorial in St. Peter's Square, which is obviously the centre of interest on that part of the site.

The plan of Mr. Harris has been very carefully considered, and he is well advised in placing his council chamber axial with the bridge linable with the present main corridor of the existing town hall building. In this way he ensures a dignified and stately approach into the council chamber, and one that will bring it into the closest possible relation with the existing building, of which it should preferably have formed part. Good central positions have also been found for the gas department showroom and accounts office. The electricity department showroom has been placed on the West Mosley Street side of the site. In this design respect has been paid to the Lloyd Street front of the existing building by making the opposite frontage of the new municipal block exactly axial with it and placing there the main entrance to that part of the building. Lloyd Street is a quiet thoroughfare away from the main rush of the traffic, and obviously eminently suitable for such a purpose. Mr. Harris has undoubtedly been influenced in his design by the main reading hall of the library by the large reading-room of the printed books department of the British Museum and by the library of Congress at Washington. Thus, he has adopted the type of plan that is obviously the most desirable one for such a purpose and the one that other competitors have found it desirable to employ. In this design alone the whole of the library apartment has been arranged within the rotunda containing the main reading hall. How far this would be convenient will remain to be seen, as a curved apartment naturally cannot be supervised quite so easily and economically as a rectangular one. There is, however, one feature about this design that cannot well be overlooked; and that is that this fine rotunda stands at so short a distance as 17 ft. away from the municipal building. Fortunately, the difficulties of lighting the adjacent rooms of the municipal building have been in a large measure overcome by placing the corridors on the side adjacent to the rotunda and by allowing the apartments to be lighted from the internal area. Even though this may overcome the difficulty from a practical point of view, there can be no doubt that this is much too close for two independent and totally dissociated buildings to stand together, without some very special reason. The very special reason seems to be that the Manchester Corporation have insisted that both the town hall extension and the library building must be upon that particular site. It was pointed out long ago, and very wisely, that the whole of this site will some day be required for municipal extensions alone, and now that one sees this design, which is obviously the best, one sees that very belief confirmed in a most remarkable and indisputable fashion. There can be no doubt whatever in the mind of anyone that the library rotunda would look infinitely better on an isolated site somewhere else, where its main entrance might be seen at the end of a long street or avenue. To crowd the two buildings on to one site in such close juxtaposition would be almost unthinkable in the metropolis.

The design of Messrs. Collcutt and Hamp has been treated in a medieval manner, with a desire to produce an effect in consonance with that of Mr. Alfred Waterhouse. The free Gothic treatment of Messrs. Bradshaw, Gass and Hope has also been prepared with a similar intention; but, in the case of the latter firm, a free treatment has been adopted which breaks away from all ancient tradition and which, nevertheless, reveals both breadth of effect and good proportion. The council chamber has, however, not been so satisfactorily placed as in the design of Mr. Harris, and the round form for the main reading hall has not been adopted. It is quite clear that some points have been gained by abandoning the circular form; but, on the other hand, so much has been lost that the recompense seems insufficient.

The design of Mr. H. S. Fairhurst fortunately contains a circular reading-room, but in this case the space has been reduced by a circular colonnade, behind which alcoves have been formed, regardless of the recommendations of the chief librarian. This design is, however, a very excellent one in many ways. Like Mr. Harris, Mr. Fairhurst has placed the council chamber axial with a bridge which is a continuation of the corridor of the present town hall building. Architecturally, this design has been treated in a dignified, classic manner, and, in his design alone, the summit of the dome over the reading-room has been left so that it might be seen externally. Mr. Fairhurst has also, like Mr. Harris, truncated the north-eastern corner of his site so as to produce a small quadrangular open space at the east end of the existing town hall. This arrangement obviously is a most desirable one, but it is, nevertheless, one that is not to be seen in the whole of the designs submitted in the final competition. Mr. J. B. F. Cowper is the only competitor who has taken the trouble to indicate upon his drawings what the acoustic properties of the council chamber would be, by means of the usual diagrams. Mr. E. Berry Webber, the architect for the proposed art gallery building at Piccadilly, Manchester, has evidently favoured a radial type of main reading hall,

but in his case he has ventured to introduce an elliptical chamber, which has assisted him in producing the curved front at the south side, opposite to the Midland Hotel.

In conclusion, one is bound to consider that these designs indicate the best way in which the site could be utilized in the manner upon which the Manchester Corporation have insisted, but they naturally serve to suggest very strongly that the requirements of the Corporation need to be considered very carefully if the best interests of the city are to be safeguarded. Buildings of this kind should be erected to stand for all time, and one cannot conceive how a municipal body of a city like Manchester could be advised to place two buildings like these in such close juxtaposition. The solution of the problem from the point of view of the Manchester Corporation is unquestionably that the library building should be placed on some other site specially adapted for it, and that the whole of this site should be used for the purpose that it will eventually be required for, and that is for the use of the present municipal departments, which are at present scattered over various parts of the city. If the Corporation should act in this way they will be following the excellent example to be found in the building of the London County Hall, of which one of the assessors, Mr. Ralph Knott, was the architect.

PATINA

[BY T. S. ATTLEE]

PATINA is Time's contribution to the completion of a work of art. In furniture it is a quality highly prized by connoisseurs, and it is said (though one can hardly credit this) that it is impossible to counterfeit it; that Time alone can produce that shine on the salient parts, that shade in the recesses, which is the distinctive characteristic of patina. The shade is dirt, long accumulated and firmly ensconced. In buildings, too, as far as the outside is concerned, this quality is recognized and valued—the crust of dirt and lichen, for instance, on some old farmhouse, or the wind-scoured whiteness contrasted with black deposits of soot on Portland stone buildings in London, where smoke produces an artificial and exaggerated shadow in hollows and soffits (which is not without its value in the diffused light of a northern land, where the sun puts in shadows with a 2H pencil instead of a B). On the outsides of buildings, then, this mellowing touch of time is appreciated; more, it is sought for, and has a value in cash.

But inside houses patina is not valued; it is not even ignored; it is destroyed daily, and architects are partly to blame. Women usually have a superstitious devotion to cleaning, or, at any rate, to making other people do cleaning. Fifty years ago, when maids were plentiful and mistresses were able to achieve their ideal, houses were harried and scrubbed and polished within till every scrap of patina was removed (for dirt in the hollows is an essential ingredient in patina). It was a curious state of things, when there were thousands of maidservants throughout the land removing patina, and hundreds of workmen, I suppose, in Tottenham Court Road trying to put it on again! Even today, when domestic servants are so rare and expensive a luxury, there are houses which you can only handle with gloves, for fear of leaving a thumb-mark on the white enamel; where your hostess talks to you abstractedly with one eye on your boots to see what sort of a trail you have left on the mouse-coloured carpet; where cleanliness is an idol, worshipped with fanatical devotion, and guests are sacrificed to it every day.

But the dearth of maidservants in the last decade brought a promise of better times. No one creates patina better than your amateur housemaid. His (or her) feverish polishing of the parts that show; his hasty ignoring of the parts that don't; his tendency to rub in dirt when it won't rub out—all this is on the right lines, and a welcome contrast to the practice of those terrible people who declare that they always look in the corners first in judging the cleanliness of a room. Under his regime the interior of the house acquires character. We see the mark on the fireplace where the head of the household props up his slippered feet; the deep groove in the door-jamb where you wedge the tea-tray against yourself while you grope for the door-handle; the dogs' heads scrawled on the wall by the boys at their "Rest." These are sentences of history written in the rooms; and with a bit of slovenliness they can be preserved. There is nothing more fascinating in old houses than the nurseries, where worried parents have at last accepted the inevitable, and allowed the traces of their children's occupation to remain, like hares' forms in the grass: railway trains pencilled on the distemper, plaster burrowed out into caverns, floors grooved and splintered by the rocking-horse.

To clean a smoking-room that has been browned by the tobacco smoke of years is as bad as to scrape a well-coloured pipe; to clear the dust from plaster cornices is to rob the birds'-mouths and cavettos of half their value. Dirt is an essential ingredient in patina; the prejudice against dirt has been responsible for inestimable damage, from the seventeenth-century servant-maid who nearly broke Dr. Cornelius's heart by scouring his Roman buckler as bright as her andirons, to the mistress and maid of yesterday who made the Babbitt house in Zenith City a spick-and-span abomination as comfortless as a waiting-room.

Desirable as it is, however, there is a limit to the kinds and quantity of dirt that can be retained with advantage. Dirt on cups and plates is rarely tolerable, despite the precedent of the "God-forgive-me" at Weatherbury, which was "rather furred with extraneous matter about the outside . . . formed of ashes accidentally wetted with cider and baked hard . . . but the cup was no worse for that, being incontestably clean on the inside and about the rim." Again, grease, unless rubbed well in, is offensive—you remember how Fanny was disgusted, on visiting her home from Mansfield Park, to find the walls marked with her father's head. But ashes from a wood fire, fluff from blankets, and dust on old books and papers never did anyone any harm. It is well known that lawyers' rooms are never cleaned, and their occupants thrive on that immunity.

How is the architect to blame in all this? In this respect: that, when patina is beginning to accumulate through the dearth of servants, he checks it by deliberately designing against dirt; by abolishing ledges, by rounding angles, by omitting the angle-bead in whose nick dirt nestled so securely; by simplifying cornices; by using hard materials, non-absorbent and impenetrable; in short, by introducing into domestic interiors the complete and chilly cleanliness proper to the operating theatre. Let us clear our minds about cleanliness before it is too late. Next to Godliness, no doubt, but we must read the aphorism as emphasizing its secondary position. Let there be a good interval between them—indeed, we may almost be content if cleanliness *also ran.*

M. ROBERT MALLET-STEVENS

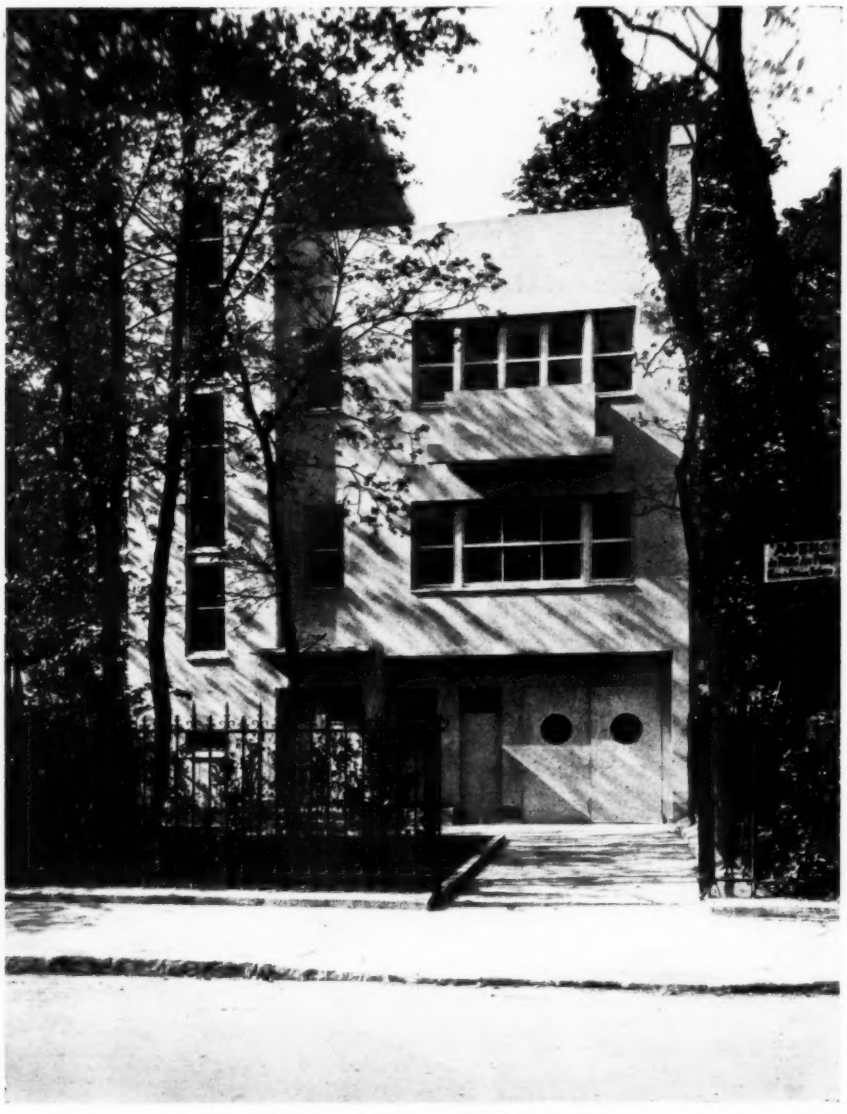
[BY P. MORTON SHAND]

IN this country we have not yet had much opportunity to grow accustomed to the monolith reinforced concrete building, though we have overlong been familiar with those steel girder skeletons that are no sooner riveted in place than encased in ligaments of this utilitarian material, after which the whole is clothed in a skin of ordinary masonry in order that established architectural conventions may be observed and an hotel or block of offices made to resemble most other hotels or blocks of offices. To find current examples of the monolith we have to seek them in the more predominantly engineering province of construction, where stress, strain, thrust, and span are the governing factors rather than this or that style or order. Plenty of monolith road bridges, culverts, jetties, transit-sheds, water-towers, silos, coal-bunkers, tipping or hump sidings, engine-sheds, station platforms and canopies, and, more rarely, warehouses, power stations, and factories exist, some of which are decidedly imposing, but the Wembley Stadium and the Lea Valley Viaduct, neither of them buildings in a habitable sense, are almost the only conspicuous monoliths in the London area. True, the new Science Museum at South Kensington stood for many years in all its stark grey concrete nakedness, but economy being a less popular political cry today than in the lean Geddes years of national auditing in sackcloth, it is now being long-coated in brick and stone to invest the "urban unsightliness" of raw materials and first processes with the official patina expected of "a public building."

The modern tendency in most countries is to employ concrete not as an auxiliary material to be veneered and artfully concealed by the non-functional lineaments of another, but as a sovereign and highly original and expressive medium in itself, in the same spirit as stone was used by the medieval cathedral-builders. Reinforced concrete as a separate and exclusive medium demands, like stone and brick, a style of its own, because a homogeneous material which is poured, as molten metal is poured, in a state of fusion, to set round a core of steel rods or mesh in the prison of a confining and informing mould, offers possibilities, just as it presents problems, utterly different from those for which brick and stone have hitherto been adopted. Brick is, after all, only a substitute for stone; concrete is not only a substitute for brick, stone, terra-cotta, steel, wood, and all roofing and flooring materials, but something above and beyond the whole gamut of them. Shapes, spans, curves, and dimensions impossible or unthinkable in any of them readily become feasible once the liquid moulding of lava replaces the painful building up of a solid piecework fabric from many hewn or pressed components, in which only genius can make the whole equal to the sum of the parts, or the parts truly significant of the purpose and yet worthy of the conception of the whole.

It may as well be admitted at once that the style—the style that is the material and not the craft, to parody Sainte-Beuve—has not yet been found, in spite of buildings as balanced as the Radio Tower at Kootwyk in Holland, or

Villa at Ville-d'Avray. By Robert Mallet-Stevens.



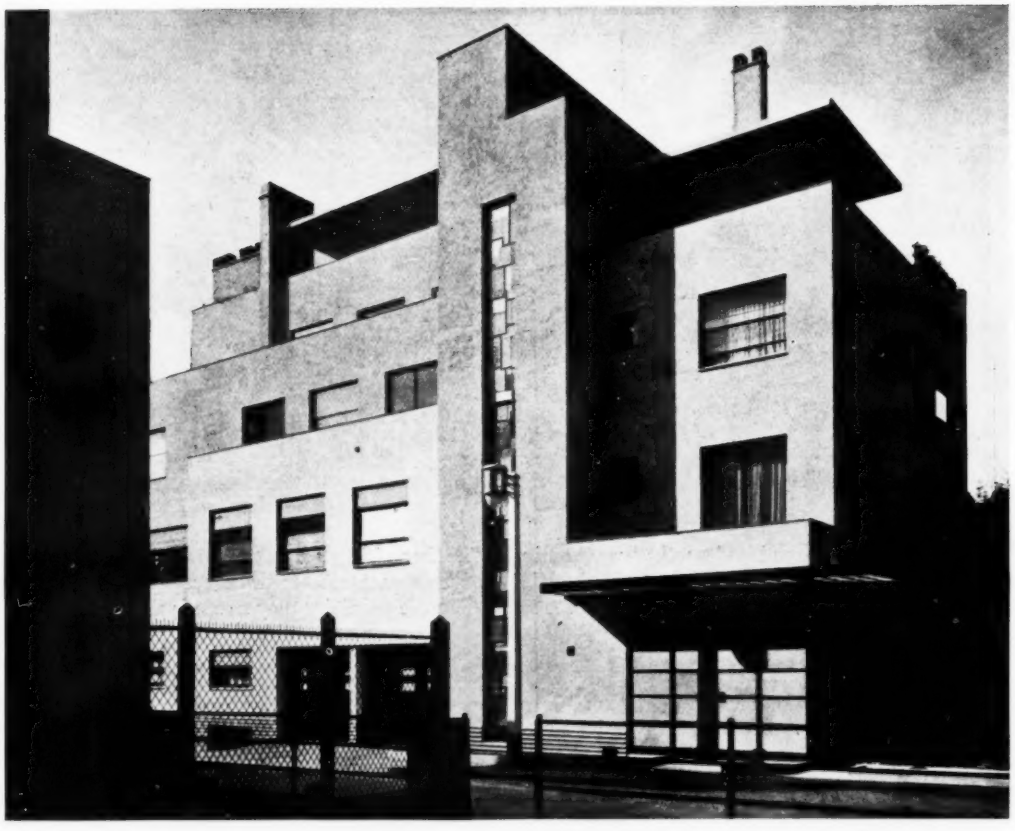
Villa at Boulogne-sur-Seine. By Robert Mallet-Stevens.

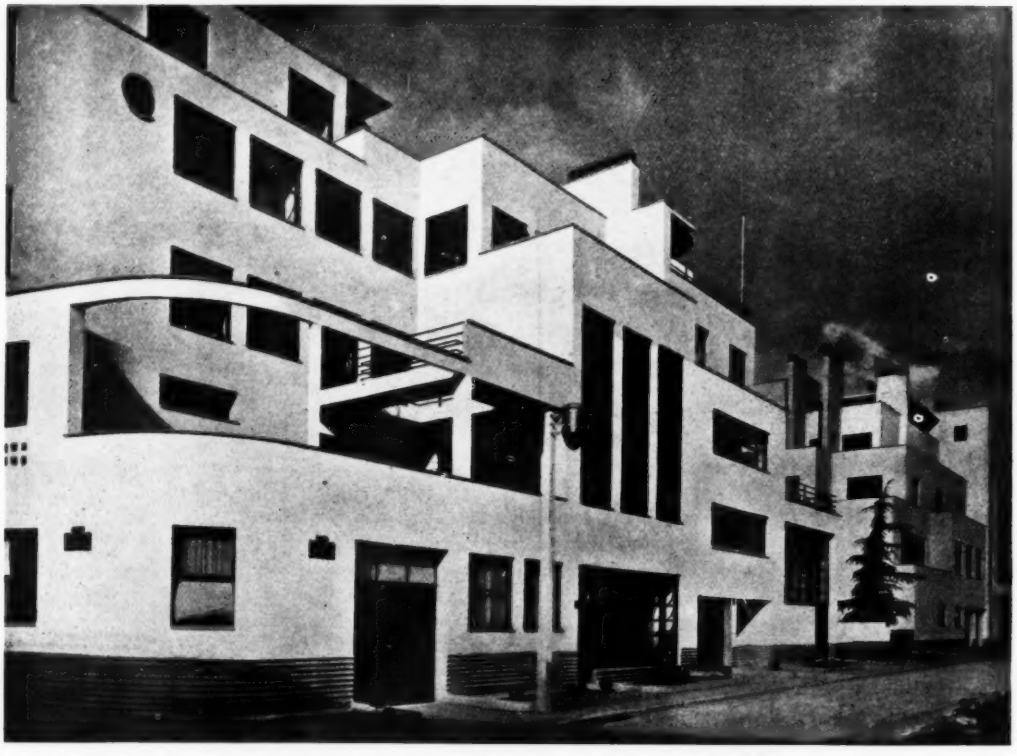
as startling as the Centennial Hall at Breslau; perhaps because the limitations of concrete design are not in themselves æsthetic ones. But if the style, and even the first hesitant gropings towards some restrained yet easy confidence of treatment, has not begun to crystallize, and may conceivably not evolve itself for another twenty years, discipline, interpretation, and adaptation of this so dangerously simple and Cyclopean material has made substantial progress concurrently with the gradual mastery of its most propitious aggregates, surface treatments, and colourings. Its growing popularity has been aided by the modern cult for flaunting technique and laying bare the nudities of function that in mortar-bound media are either decently hidden or hypocritically disguised. These plastic accommodations are rank heresy to the new iconoclastic school, which in its monotheistic adoration of pure monolithic mass refuses to bow down before the human frailty of brick and stone idols with their graceful adumbrations of architectural detail and the delicate sculptural tracery of conventionalized acanthus leaves. For the enthusiastic architect in concrete, in his exultant reversal of established values, no function, however humble, is ignominious; the attic and the basement are as important as the dining-room and the drawing-room, the lavatory and scullery as the hall and library. The Einstein Tower at Potsdam is more than a challenge and a *tour-de-force*; it is a monolithic Rabelaisian jest winking in wicked glee from its battleship gun-casements at the orthodox beholder's scandalized contemplation of its unearthly form and inscrutable function.

Robert Mallet-Stevens, in the words of Francis Jourdain, was " one of the first to believe that a new civilization, a new science, and new materials demand new architectural forms." In a lecture given recently he said: " In a short time humanity will cease copying. In A.D. 2000 houses in what Americans call ' the Louis style ' will, no doubt, still be built. By then, however, it is probable that the tables will be turned and that the ' copies ' will be compassionately

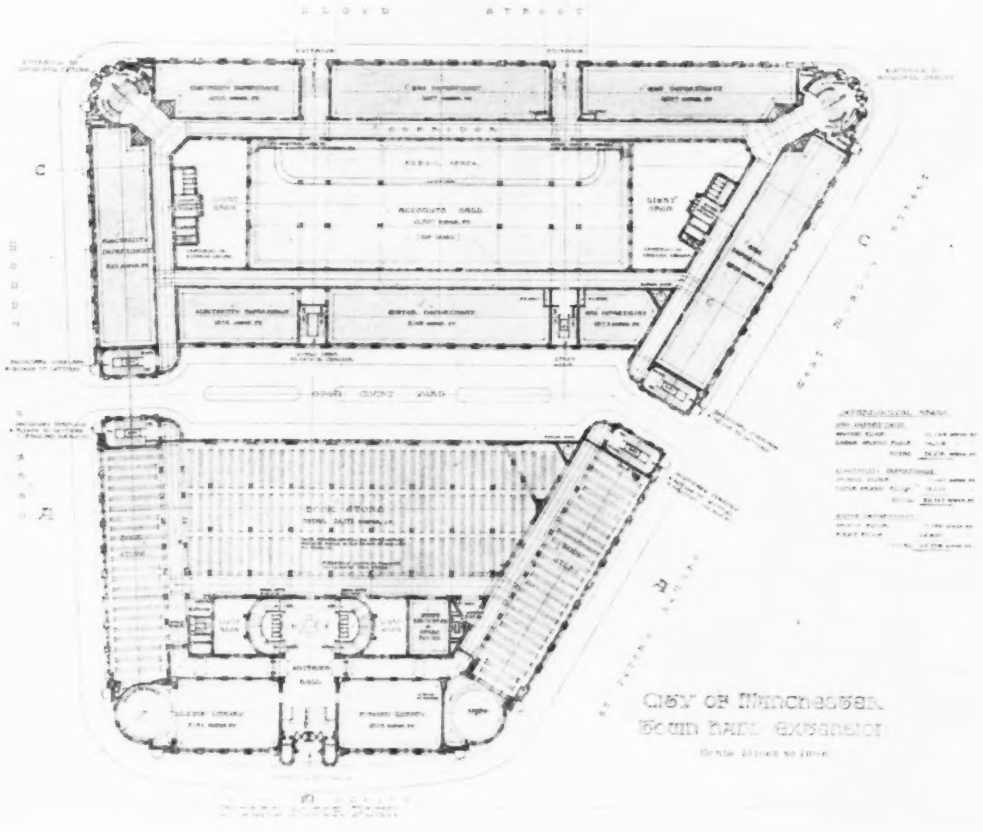
ridiculed even as the early 'modern' works were malignantly abused in their own day. Grimm has said that the most serious human follies are those perpetrated in stone. The Exposition des Arts Décoratifs of 1925 was a sort of advertisement poster for the work of modern artists. It gave them the publicity they needed; for, in our era, publicity is

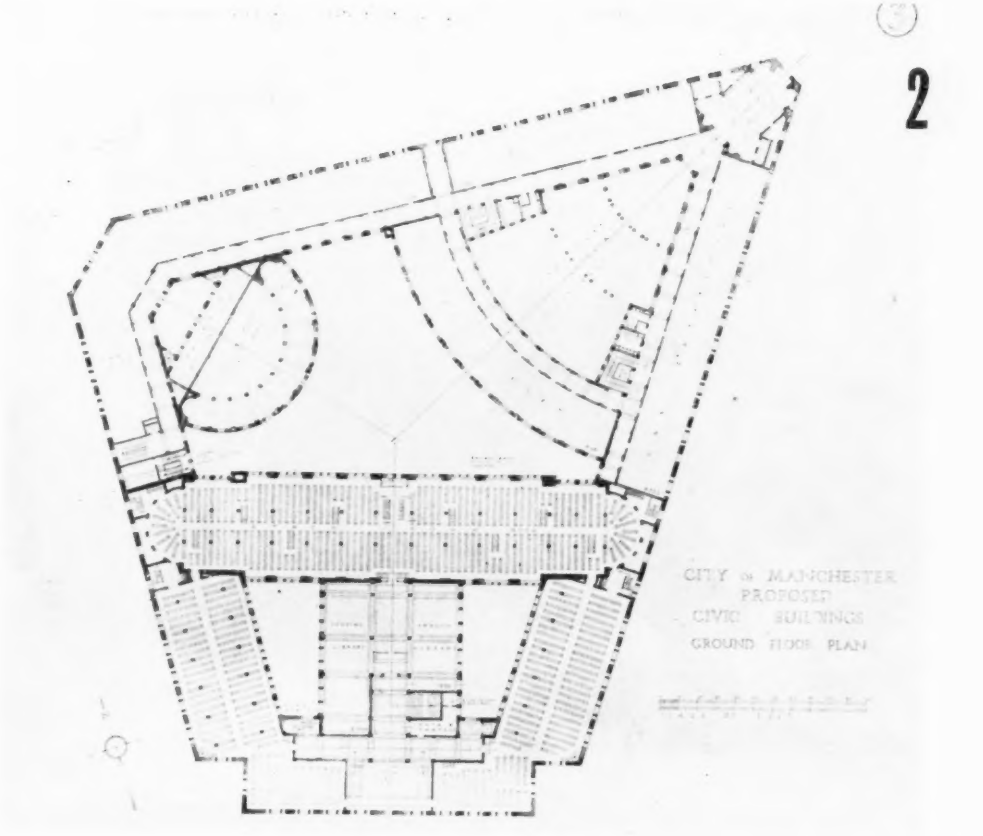
Alfa-Romeo motor show-rooms, Rue Marbœuf, Paris. By Robert Mallet-Stevens.





The Rue Mallet-Stevens, Passy, Paris. By Robert Mallet-Stevens.
Above, the first of the three semi-detached blocks. Below, the second.





The Manchester Town Hall Extension Competition. Assessors: T. R. Milburn, Robert Atkinson, and Ralph Knott. Above, the plan by Bradshaw, Gass, and Hope. Below, the plan by J. B. F. Cowper.

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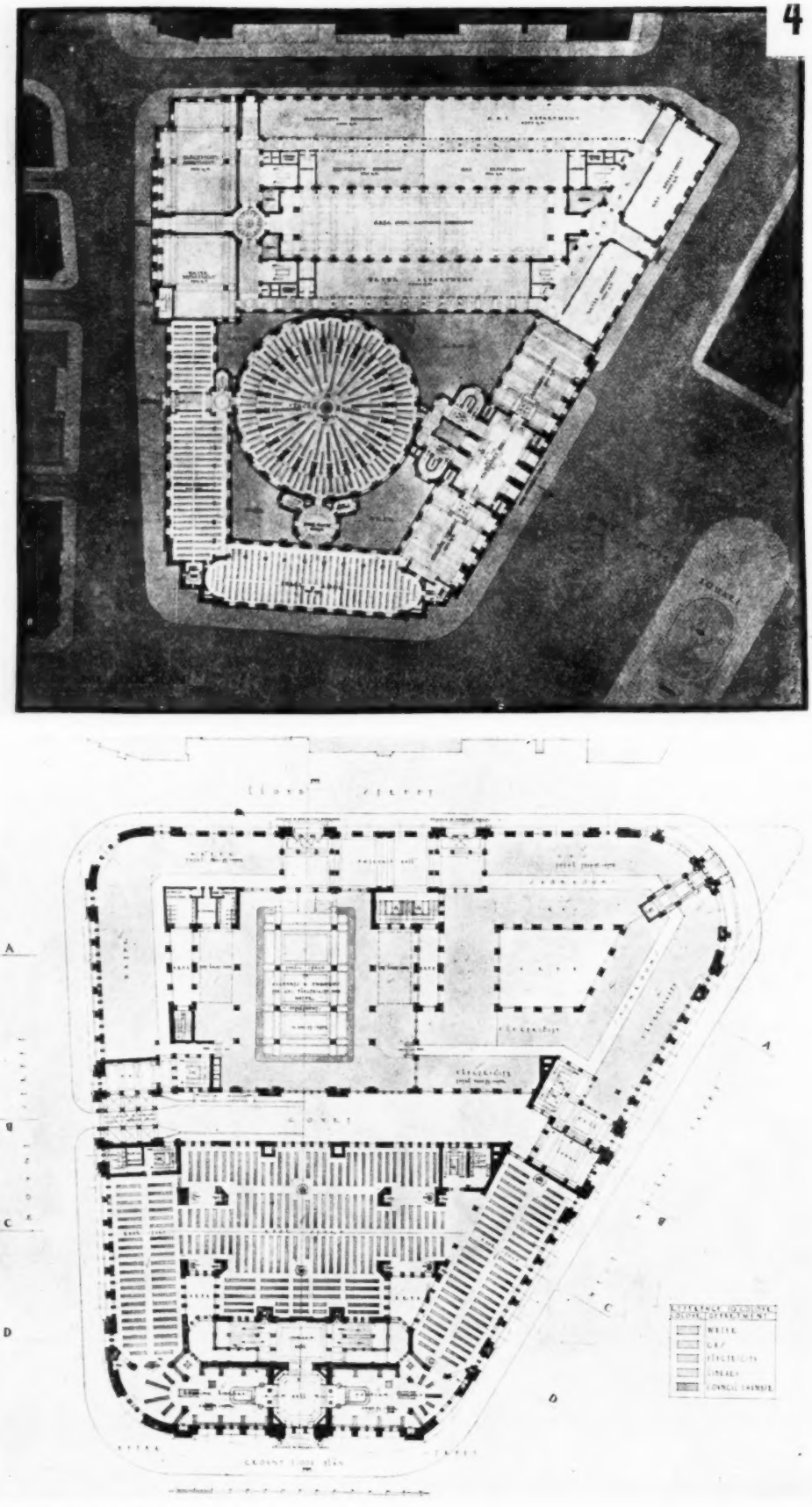
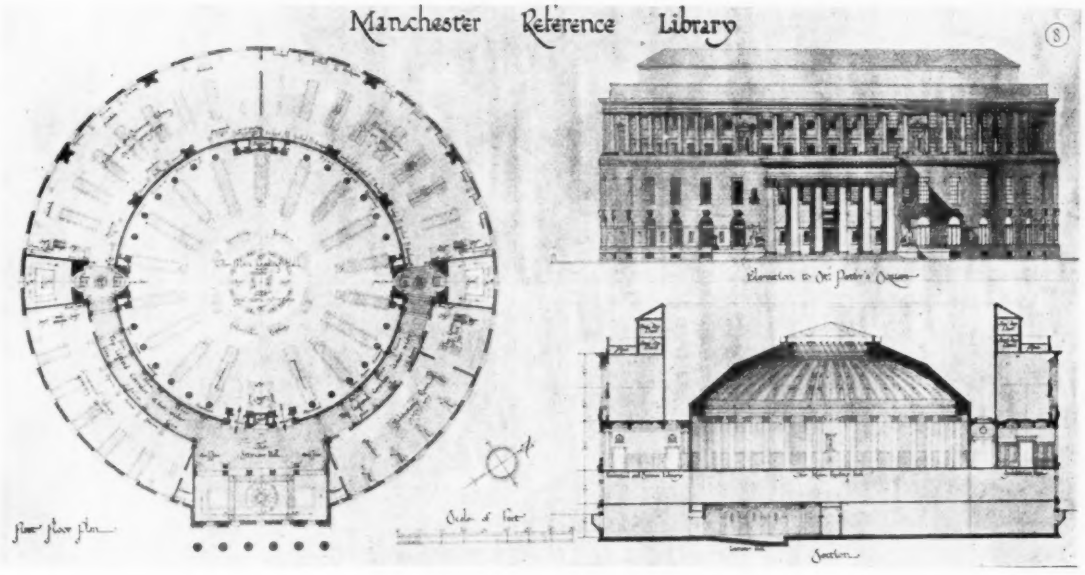
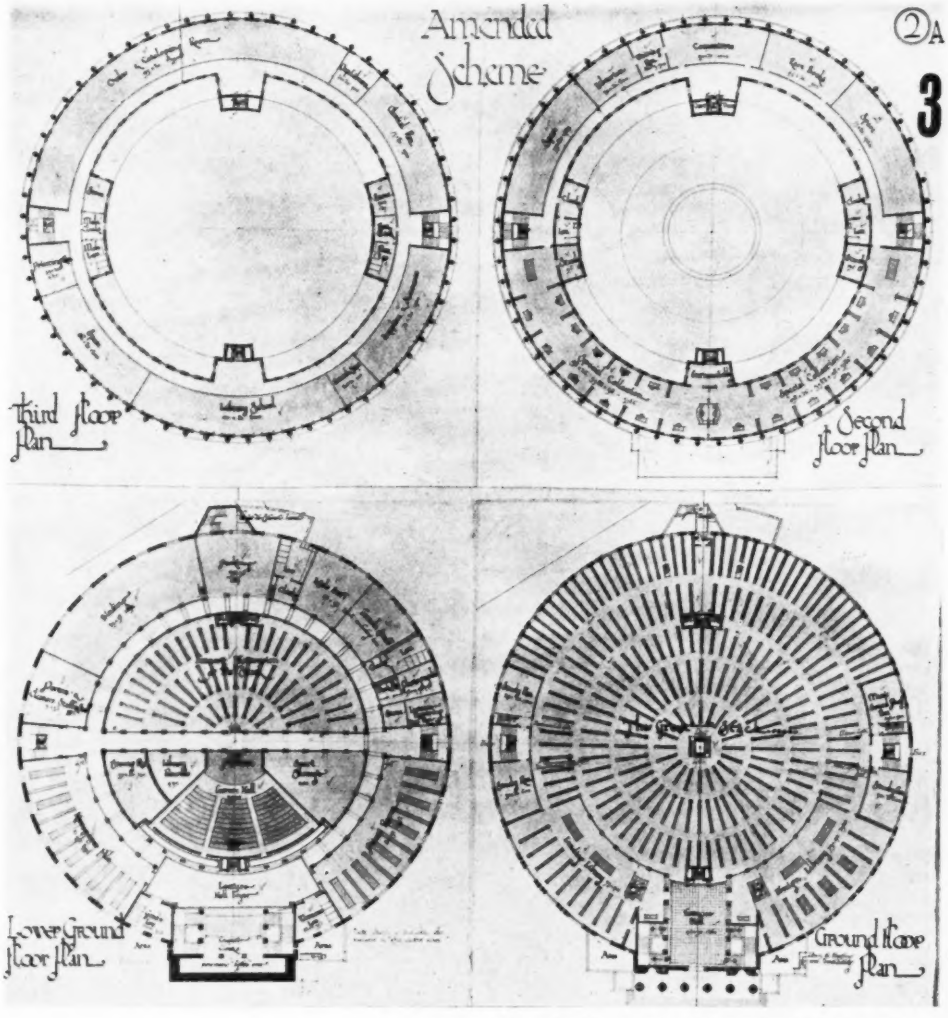
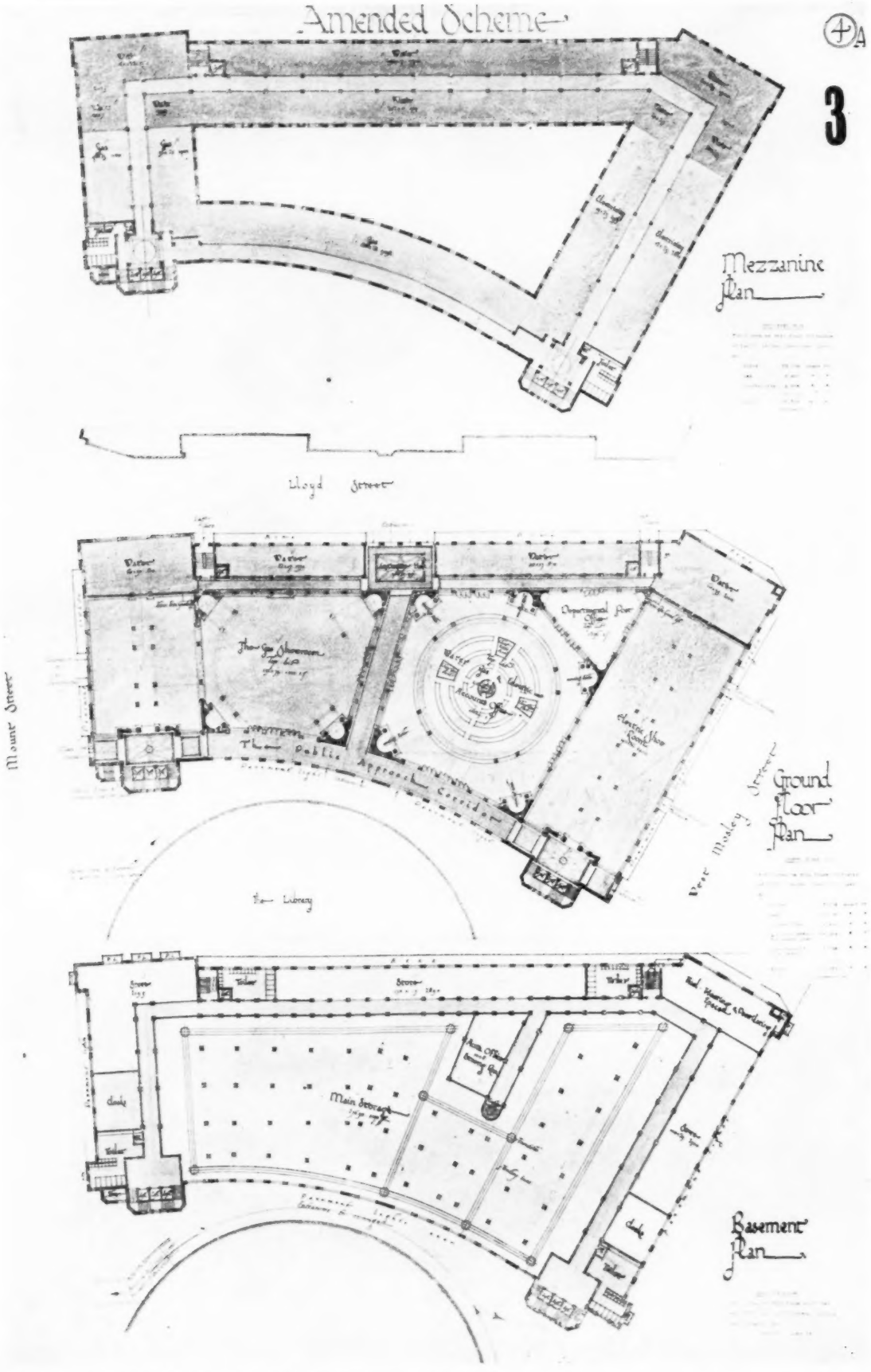


The Manchester Town Hall Extension Competition. Assessors: T. R. Milburn, Robert Atkinson, and Ralph Knott. Above, the plan by H. S. Fairhurst. Below, the plan by Collcutt and Hamp.

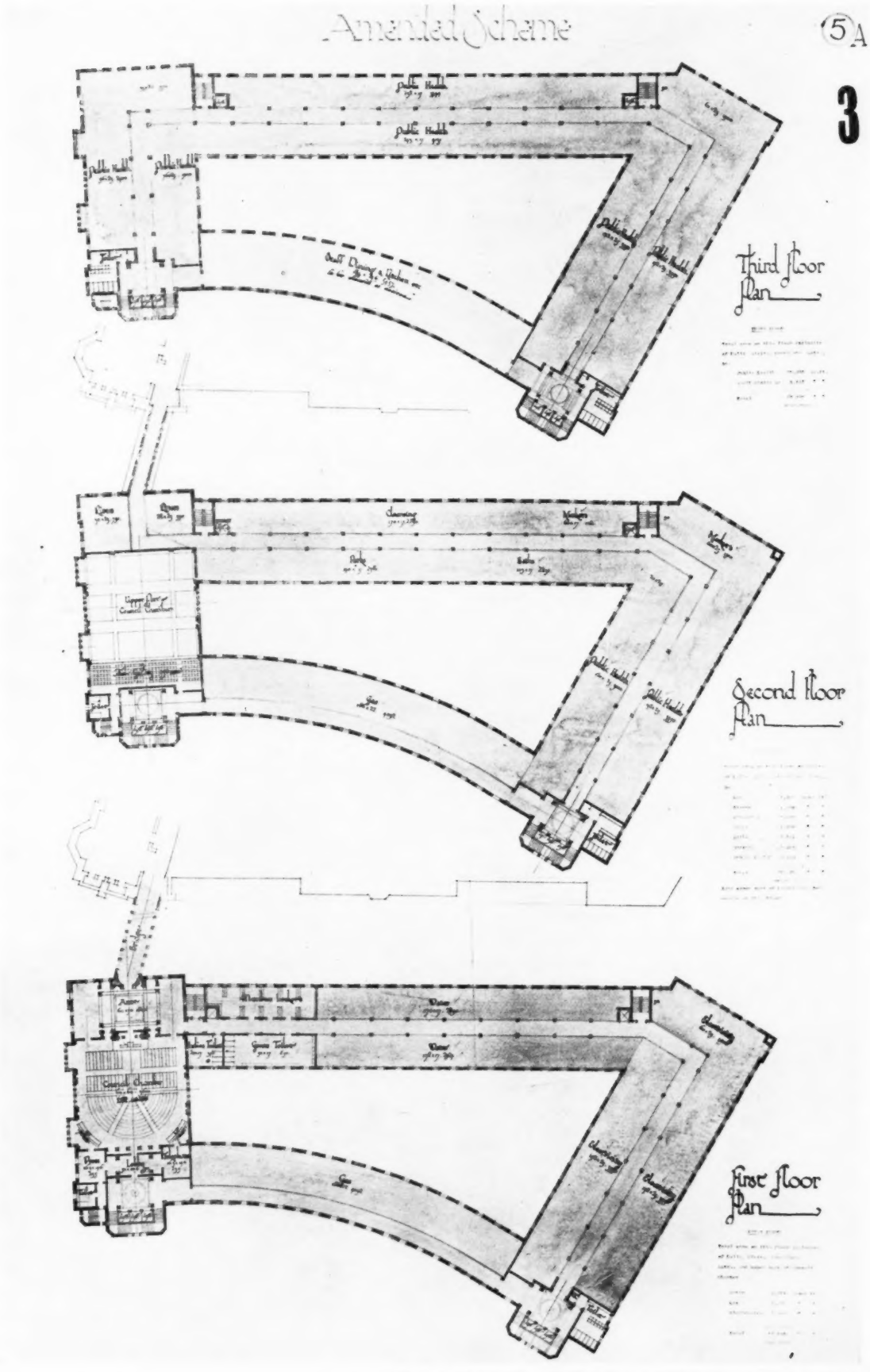




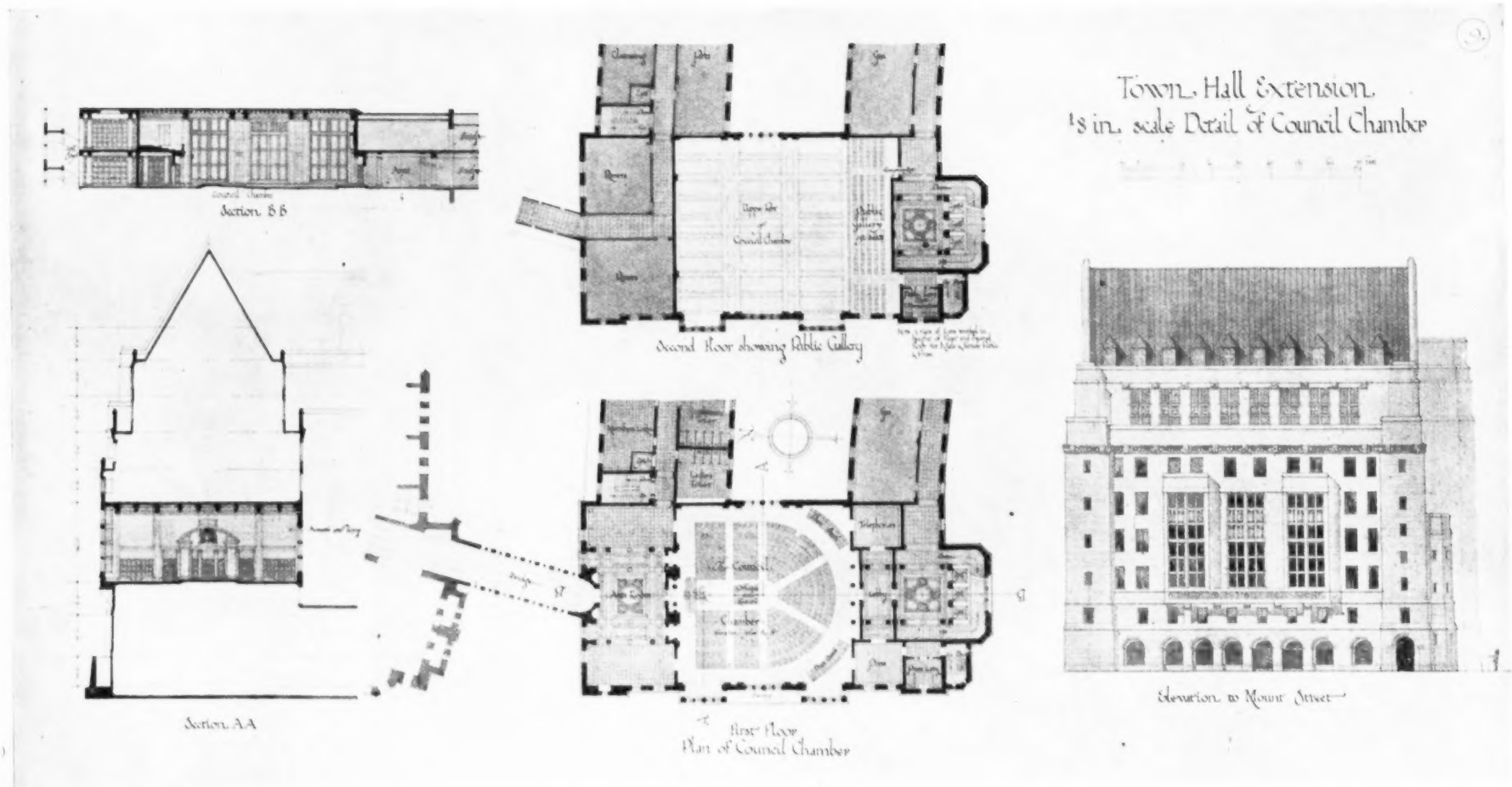
The Manchester Town Hall Extension Competition. Assessors: T. R. Milburn, Robert Atkinson, and Ralph Knott. The winning design. By E. Vincent Harris. The reference library.



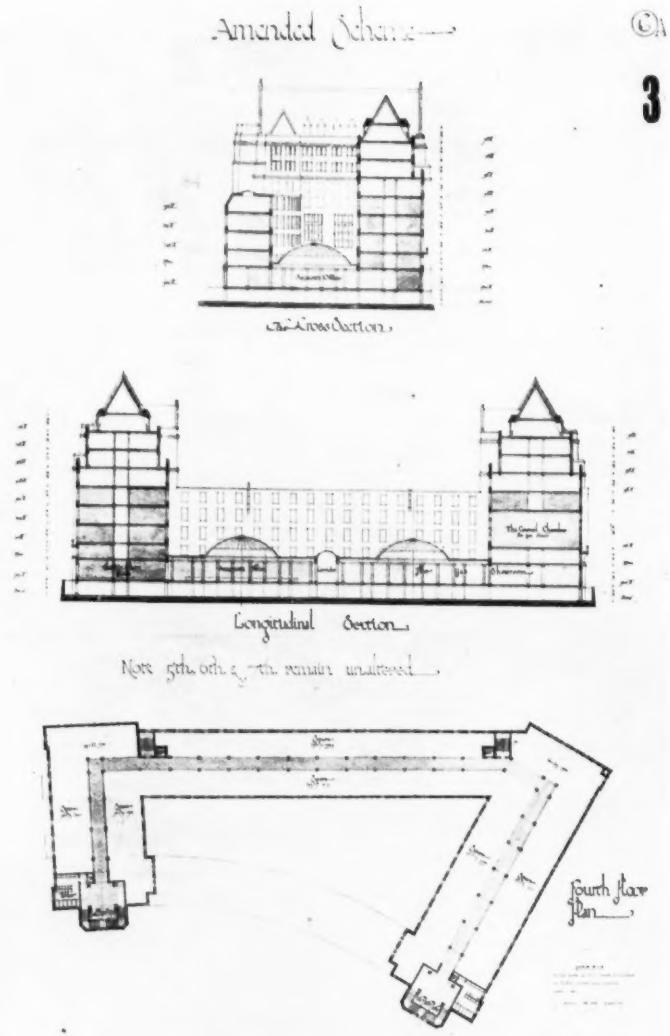
The Manchester Town Hall Extension Competition. Assessors: T. R. Milburn, Robert Atkinson, and Ralph Knott. The winning design. By E. Vincent Harris. The basement, ground floor, and mezzanine plans.

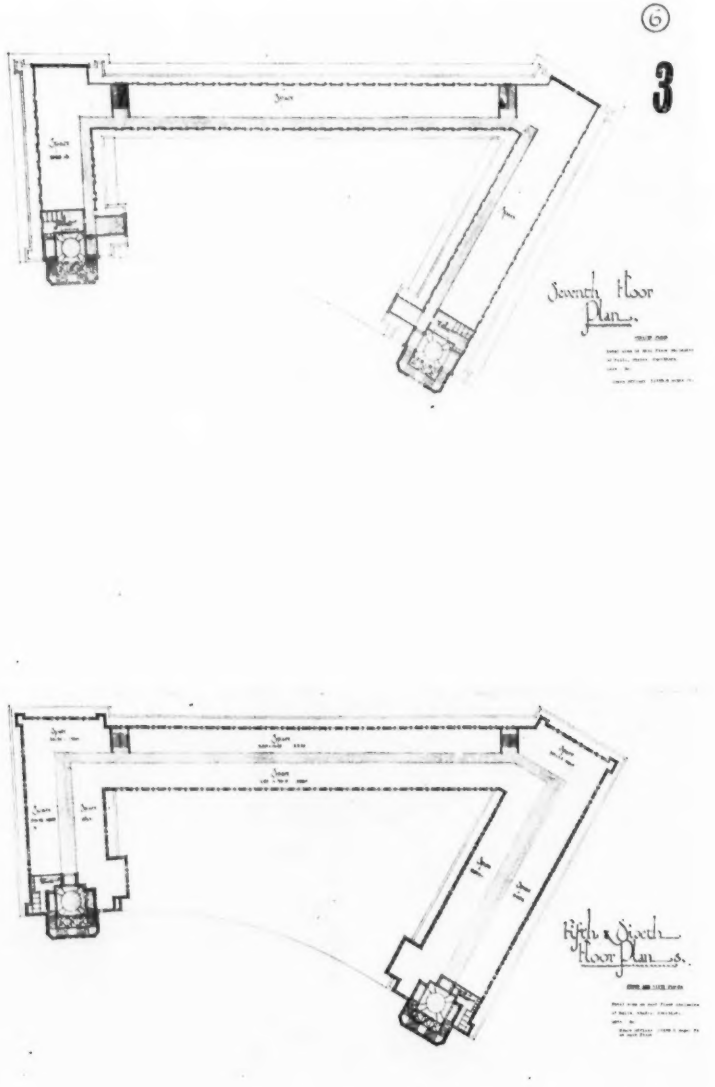


The Manchester Town Hall Extension Competition. Assessors: T. R. Milburn, Robert Atkinson, and Ralph Knott. The winning design. By E. Vincent Harris. The first-, second-, and third-floor plans.

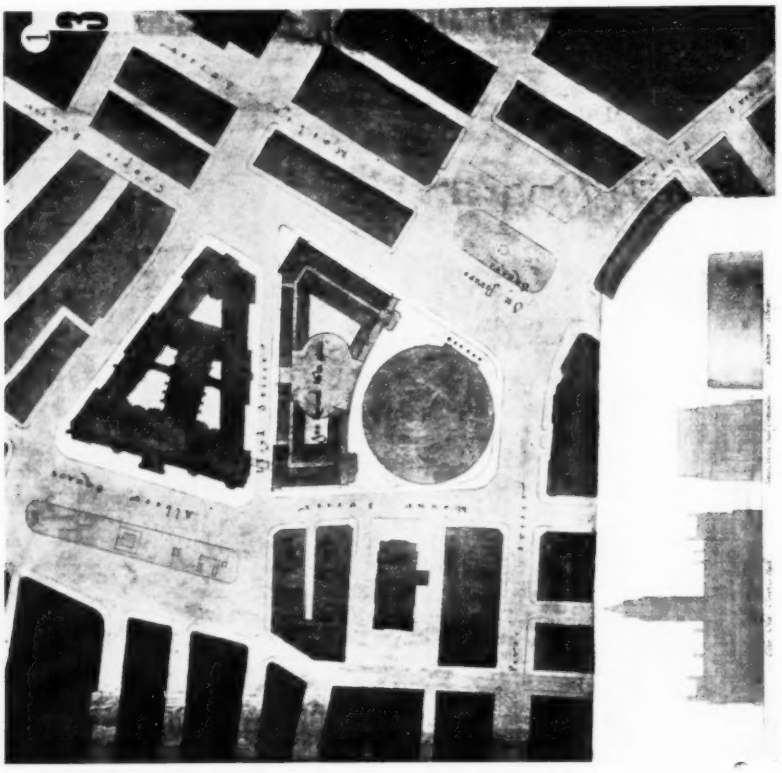


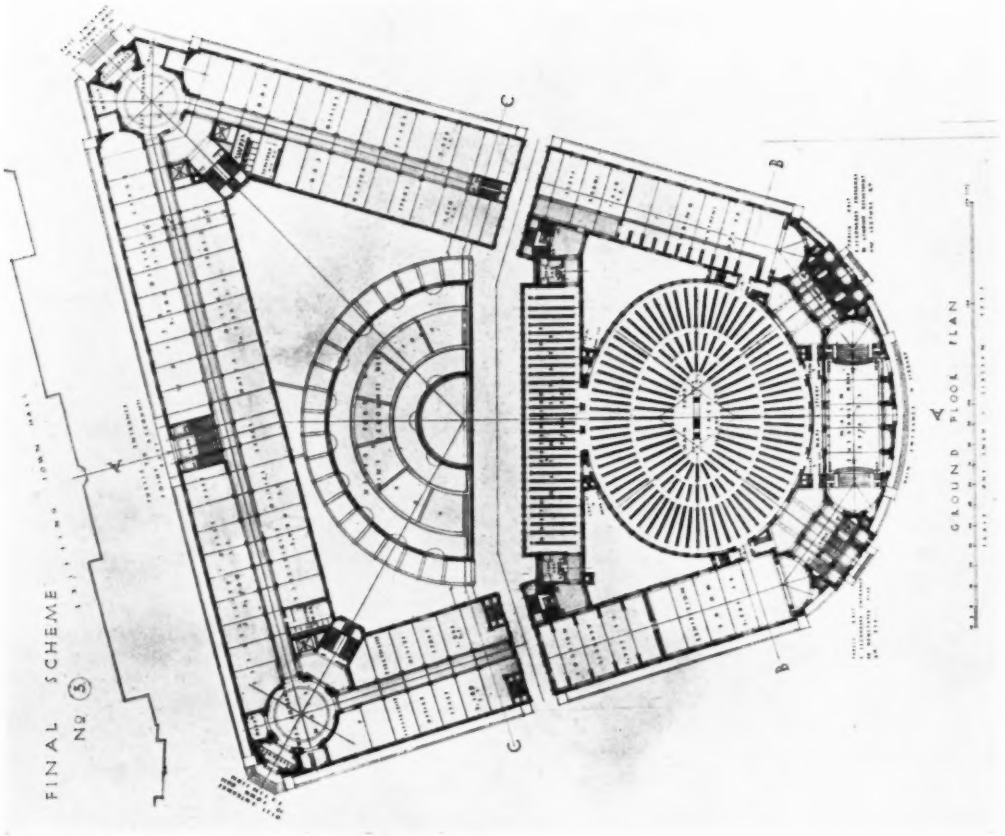
The Manchester Town Hall Extension Competition. Assessors : T. R. Milburn, Robert Atkinson, and Ralph Knott. The winning design. By E. Vincent Harris. The council chamber.



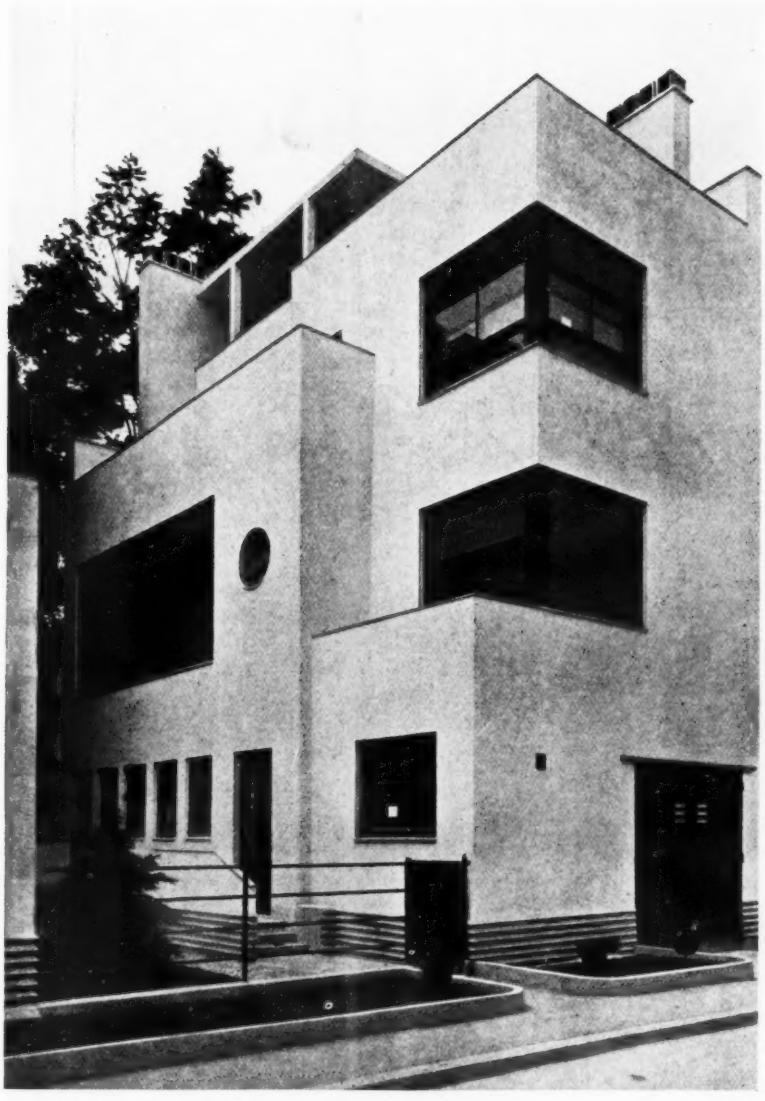


The Manchester Town Hall Extension Competition. Assessors: T. R. Milburn, Robert Atkinson, and Ralph Knott. The winning design. By E. Vincent Harris. Left, the sections and fourth-floor plan. Right, the fifth-, sixth-, and seventh-floor plans.





The Manchester Town Hall Extension Competition. Assessors: T. R. Milburn, Robert Atkinson, and Ralph Knott. Left, the plan by E. Berry Webber. Right, the winning design. By E. Vincent Harris. The site and lay-out plan.



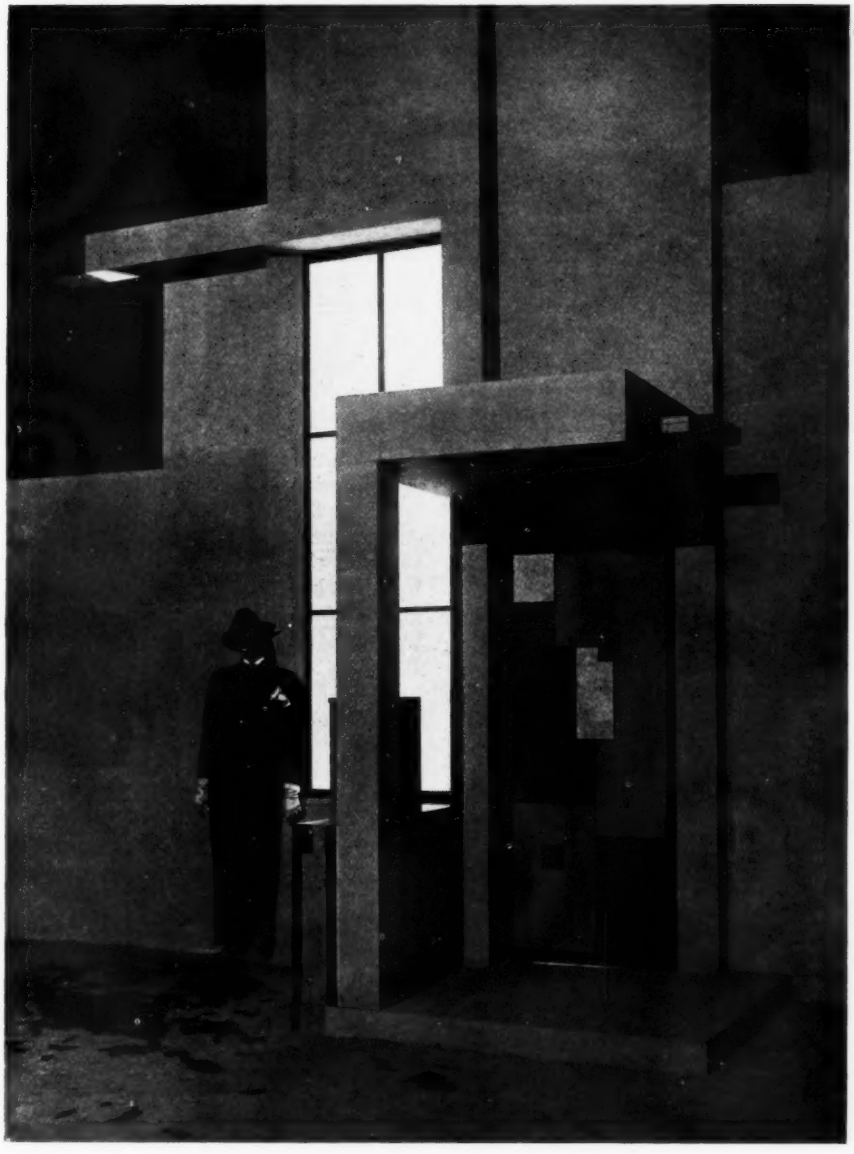
The Rue Mallet-Stevens, Passy, Paris. By Robert Mallet-Stevens. Part of the third house.

indispensable. By more or less successful plastic means public attention was drawn to the development of modern art, and, in particular, of modern architecture. 'Sample our wares,' the exhibition announced, 'compare them with those offered you yesterday, or those bought by your neighbours, and you will adopt ours.'

"If we are sincere with ourselves we must realize that we have no longer any tangible links with the past. The chain of tradition is broken every time a step forward is taken. Electric lighting, lifts, central heating, w.c.'s, running hot and cold water, vacuum cleaning, the telephone, and the motor-car are instances of our break with traditions based on the customs of the past; and every one of these advances in material civilization has had its repercussions on architectural design. Tradition is a scarecrow pompously draped in the classic togs. When we come to close quarters with it we find its purple robe is so threadbare that it hardly holds together, and that the word 'Routine' is embroidered on its border in very large letters."

The obelisk Bureau de Tourisme, designed by M. Mallet-Stevens, for the Paris Exposition des Arts Décoratifs of 1925, attracted international attention to his work as that of a daring pioneer in the school of which the Brothers Perret are the avowed masters. This concrete tower, ingeniously symbolic of its purpose, which, whether attacked or admired, left no spectator merely indifferent, was 36 metres high, and rested on a cross-framed concrete foundation only 22 centimetres thick. Even more startling were three concrete trees which were foliated and planted by him in collaboration with the sculptors, Jean-Joë Martel, in a vacant piece of ground in another part of the exhibition grounds. Prominent among his other works, which include many villas in the region of Paris, are the Château de Meulan and the Alfa-Romeo garage. M. Mallet-Stevens was also responsible for the design of the architectural settings of some recent French films, such as "Le Miracle des Loups," "Le Vertige," "L'Inhumaine," and "La Ronde de Nuit."

The Rue Mallet-Stevens, Passy, Paris. By Robert Mallet-Stevens. Above, left, the third house, and right, part of the second house. Below, the first house.



Setting from the film drama, L'Inhumaine, *produced by Marcel L'Herbier. By Robert Mallet-Stevens.*

It would probably be hard to find a row of buildings anywhere more nicely calculated to shock the conventional lover of architecture than that depicted in our illustrations of the Rue Mallet-Stevens at Passy. At first sight this eminently un-French-looking street, with its entire absence of wrought-iron balconies and sculptural excrescences, might be mistaken for part of some lath-and-plaster Moorish exhibition designed to reproduce a characteristic flat-roofed, mud-walled Saharan city. Actually, this is a street in the rather fashionable XVIth Arrondissement of Paris that has been planned by M. Mallet-Stevens, whose name it bears, which was recently officially inaugurated by M. Bokanowski, the present Minister of Commerce.

The form of construction adopted in this particular case was a monolith concrete frame, including staircases and set-backs, with concrete beam and hollow brick walls and floors, erected on a concrete raft foundation. The exterior surfaces are finished in dead white, rough-grained cement-stucco. The only note of decoration is a uniform series of seemingly meaningless corrugations athwart the ground line. Small grass beds, like rimmed trays, are interposed between the pavement and the façades, each of which contains two doll's-house shrubs, clipped like plum puddings poised on skewers, while gaunt and rather rakish fir trees are planted in the recesses between every house. The railings are as plain as those defining the paths in Kensington Gardens. The flat-topped umbrella turret surmounting M. Martels' studio is vaguely reminiscent of the fighting-tops of old-fashioned French ironclads, or the conning-tower of a modern cruiser. The inside of this curious boss, which is lacquered a brilliant pillar-box scarlet like a vivid toadstool, strikes a note that was perhaps intended to *épater le bourgeois* quite as much as to serve its more obvious purpose as a belvedere. In any case, the bourgeois

of Paris have eagerly bitten at this strange bait, for it is now all the rage to possess a villa similar to that recently built by M. Mallet-Stevens for M. Auger-Prouvost at Ville-d'Avray. The only other touches of colour in this carefully " zoned " street are provided by the dazzlingly polychrome sun-blinds and the light streaming through the cubist stained-glass windows.

Each building has its own roof-garden flagged with " Callendrite," and most are provided with sliding awnings, which, in summer, transform what would be the wasted " leads " of many London houses into an additional room or loggia. The lowness of the parapets, however, makes these sun-baths dangerous playgrounds for children. The windows, with few exceptions, are mostly wider than they are high, and are often placed at the corner of a room so as to give right-angled lighting. All these windows, which have practically no sills, are of the sash-pattern; an innovation that may be called revolutionary in France. There are no visible rain-gutters. The only chimneys are those which serve the flues for the furnaces of the central-heating and hot-water boilers.

The interiors are no less interesting and unusual than their exteriors. The principal aims of the architect have been to provide an abundance of light, air, and space, and nothing has been spared to achieve these objects. It is claimed that the rooms are dirt-proof, dust-proof, damp-proof, draught-proof, and sound-proof, and that there is no part of them which cannot be easily washed or cleaned. Door-handles, finger-plates, curtain-rods, and other metal fittings are of aluminium or rustless steel. The banister ramps are of the same materials, or of " Silithe," and in some places encase the heating-tubes. All interior iron-work is of plain bar section. Sliding-panel doors and roller-shutters have been installed throughout. Marble and granite slabs and coloured mosaics and tiling have been freely used. The parquet work, at once the pride and bane of most French housewives, is jointless, and has been laid in compositions of cork dust and magnesium cement called " Liégelithe " and " Légérite." All bathroom, sanitary, heating, and kitchen fittings have been built into the structure, while the piping and wiring is enclosed in the walls and flooring. The rooms are distempered in pale tones, often arranged in dadoes grouping triangular combinations of tints. There is no plaster work at all. Painting was carried out in " Calvisan," sprayed on by pistol aerographs. There is a decidedly interesting concrete ceiling in MM. Martels' studio in which the reverse treads of the staircase have been ingeniously used as a decorative motive. Special types of St. Gobain glass, such as " Soleil " and " Cathédrale," have been used to produce different lighting effects by day and night. Particular attention has been devoted to the problem of securing the utmost economy and diffusion of the heating generated.

Other features include constant hot-water supply, service and passenger lifts, electric ranges and clocks, vacuum cleaning, and intercommunication telephones. Each flat has its own garage and spacious cellars. Interior decorations and furniture were designed by MM. Mallet-Stevens, Guevrekian, Pierre Chareau, Bijveet, Francis Jourdain, and Mlle. Noémi Hess; the stained glass was made by Barillet, and the wrought-iron entrance doorways are the work of M. Preuvé. The street lamps are plain, square-section concrete posts at the top of which a projectile-shaped electric lamp is socketed into a sort of brazier-bucket spliced to the head of the standard by a plain aluminium hoop.

Setting from the film drama, Le Secret de Rosette Lambert, *produced by Raymond Bernard. By Robert Mallet-Stevens.*

MEASURING, ESTIMATING, AND COSTING

[BY T. SUMNER SMITH]

IV: COSTING COMES FIRST

THE method described in these articles considerably reduces the work entailed in pricing. It becomes merely a question of determining the rate per unit, and this presents little difficulty, labour being separated from materials, and each item relating only to one thing no analysis becomes necessary. The unit price of most items would not be the same in every case—at least it ought not to be. Locality and quantity, among other things, would influence it. The effect of these on the price of materials is easily ascertained, but they may have a great bearing upon labour costs. A large, straightforward job in which there is an abundance of room for the storage of materials and ample working space, with but little "cuttings" in proportion to the area of slating, would be simple and cheap. On the other hand another job may be more difficult. There may be little working space, and the "cuttings" may be proportionately great compared with the area of the slating, so that, everything else being equal, the unit prices would be increased.

In the first case the same organization and supervision would not be necessary as in the latter. Provided, of course, the requisite organization and supervision were given in each case they would have no disturbing influence on the cost of the executed work. The maxim of good organization is, that labour should not wait upon materials, but that materials should wait upon labour. Organization, therefore, means planning ahead, and ensuring that the materials are on the site at the proper time. The organizer should plan and arrange the work so that it may be executed at reasonable labour cost, and should order the materials in ample time so that they will arrive on the site as and when required. The ordering of materials is linked up with that of obtaining quotations for the right class of goods upon the most favourable terms. This is a question of management. So also is the method of checking the materials on arrival at the site; the quality and quantity, and breakages, and the like; keeping a check on time; ensuring that no excessive amount of waste takes place; and that all is correctly "booked-up" and accounted for. Good organization and good management should give us good production costs. Good production costs are not obtained from an estimate, they should be compared with the cost of similar executed work. It should then be a simple matter to see whether the estimate is incorrect or whether the management and organization are at fault.

The method of quantities we have propounded serves chiefly in three ways in securing good production costs. First, it relieves the estimator of the task of analysis with its uncertain results; secondly, it gives the quantities in terms by which the materials may be ordered, thus saving the organizer's time computing them; and, thirdly, these quantities, being quantities of materials, facilitate the obtaining of quotations for the amounts required at the proper time. The time of the estimator and organizer thus saved should lead to a corresponding reduction in costs. The time saved may be usefully employed in other directions to obtain good production costs. The manner in which the system facilitates the obtaining of quotations is also of valuable assistance to the management. This system also facilitates smooth working, efficiency, and the speeding up of production.

The quantities, the orders, and the materials received on the job should all agree. Thus, if during the execution of the work more materials are required, there has either been a shortage in the quantities or an undue amount of waste. If, on the other hand, less materials are used, then either there is an excess in the quantities or there has been but little waste.

We have co-ordinated the quantities with the quotation, the orders, the materials received on the site, and the materials used, and interlocked them with the financial accounts, thus producing a sound system of costing. As with materials so with plant and wages. Plant used on the job should be charged for hire to the job. The interest on the use of money—floating capital or loan money—should also be charged to the job. In all cost accounting this must be so to be a true cost. Cost accounts—works accounts—should be kept on the double entry system; analytical cost books would give all the information required for sectional work, the cost of materials in each trade, and the wages and the like; and these may be further subdivided to give details of any particular class of work.

Works accounts is merely another term for prime costs accounts. The job is debited with the materials, whether supplied by merchants or manufacturers to order or from the yard; wages, hire of plant, interest on the use of money, and proportionate amount of on-costs, and is credited with money received, surplus materials, and the like. These accounts do not, however, give details of the process costs; these are obtained by costing. What they can give are comparative costs. For example, the ratio of labour for slater's work for housing is approximately 1½d. in the £ of the total cost of cottages, and the ratio in relation to the value of labour is approximately 3d. in the £ of the total cost of labour for cottages. Similarly, these ratios may be obtained for other classes of work—factories and general works, which may be compared with that of cottages—and their differences should be noted as they are extremely valuable as a check in estimating, particularly by the method of quantities we give. As with labour, so with different kinds of material.

Useful as these comparative costs may be from the management point of view, they are of little service in estimating. To estimate effectively we need the detailed costs of processes; in our example we need the cost of each of our items—separately, not in groups or as a whole. The system of quantity surveying we give facilitates this being done effectively. It is not ratios that we are out to establish, but records of detailed costs, and whether these remain constant in all instances. We may easily ascertain the unit price of materials from the prime costs, but not the proportionate amount of waste; we can from the prime costs ascertain the total cost of labour, but not the respective cost of each labour item. We see no difficulty to prevent these records being obtained. When ascertained would they remain constant in all cases, or should periodical costings be taken to test the records? These are matters for each individual to determine for himself.

We can, however, foresee the possibilities arising from detailed costs of a number of jobs. The waste allowed, 5 per cent., might be found to be inadequate for one kind of slates, and too great for another. Again, by using slates of a different size at the eaves and at the top edges no "cuttings" might be necessary. In addition to saving labour there might also be a reduction in the number of slates used, which may more than counterbalance the extra cost for the different size of slates at eaves and top edges. Similarly, by using "slate and half" slates in alternate courses at verges, and "slate and half" slates at hips and valleys we could confine the "cuttings" to hips and valleys only. The large slates would permit of the necessary amount of cutting to waste and, possibly, give a sounder job. The extra cost of these slates over the sizes on general slating may be less than the cost of the items given in the bill, so we may anticipate a saving here. The method of quantities we have given makes costing worth while. It provides records to check the unit prices in the estimate, and for use in estimating. Labour and materials can also be studied separately, and independently of each other.

Whether, with the aid of these records, we shall be able to say that the waste and cost of "cuttings" bear some definite proportion to the area of slating, and that labour on slating bears a definite ratio thereto, remains doubtful. It would appear by the American method for the pricing of slating that they do, but the American may not be so advanced in the methods of costing as we are led to suppose. But that is not a sufficient reason why we should not begin our own investigations.

[*Concluded.*]

LOADS ON WALLS AND PIERS

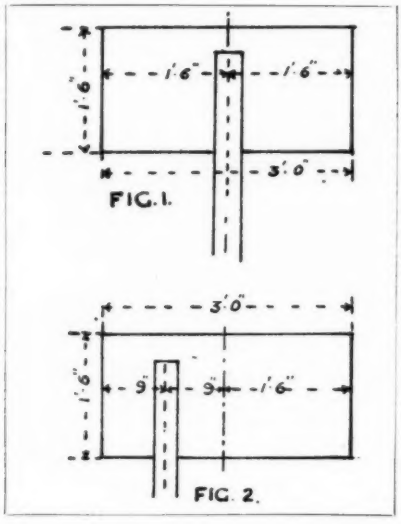
[BY PROFESSOR HENRY ADAMS]

THE two ordinary bonds for brickwork are English bond, where the bricks are laid in alternate courses to show as all headers or all stretchers; and Flemish bond, where they are laid in each course to show as alternate headers and stretchers all treating bond vertically. The former method is considered to be the stronger and the latter the better looking. The maximum safe pressure on a wall built of "London stocks" is considered to be 3 tons per sq. ft., and the base of the foundation to be doubled in width so as to reduce the pressure to 1½ tons per sq. ft. Also a wall should not exceed sixteen times its thickness in height without being tied in some form to prevent movement, as, for instance, by joists being built in. Fir wall plates have a tendency to rot, but they are generally used as the support to fir joists. If the floor is composed of beams and joists the ends of the beams will generally be bedded on stone templates, because any rotting of the support would be more serious in the case of the beams. The thicknesses of various walls are fixed by the Building Acts and local by-laws, and it is seldom that any question of the load upon them arises except in the case of the floor being carried by rolled steel joists. The wall support may then be a stone template or a short piece of rolled joist. Suppose the load to be brought on it is 6 tons; at 3 tons per sq. ft. this will require 2 sq. ft., and as the width of the supporting piece of rolled steel joist may be taken as 3 in., two would be used to spread the load better, and they will be $\frac{144\times 2}{6}=48$ in.$=4$ ft. long.

The size of the rolled joists should be calculated the same as in a grillage foundation. In the present case we have an upward pressure of 3 tons per sq. ft. on a cantilever 2 ft. long (measuring to centre line of beam). With a width of joist of 3 in. we have a bending moment of $3\times\frac{3\times 24}{144}\times\frac{24}{2}=18$ ton ins. Allowing 7 tons sq. in. stress on the steel we have $\frac{18}{7}=2{\cdot}6$ left as the section modulus, therefore, say two 3 in. by 3 in. by 8½ lb. rolled steel joists.

A concentrated load on a brick wall may be considered to spread by widening outwards in the courses below at an angle of 30 deg. from the vertical each side of the bearing surface, and in the same way a needle shore may be considered to carry the triangle of brickwork above it contained within this angle.

A brick pier should always be loaded symmetrically. A striking example of the result of unsymmetrical loading will help to impress this fact upon the memory.



Let a pier 3 ft. by 18 in. carry a load of 5 tons in the centre as in figure one. Then, assuming that a stone cap distributes the load, the maximum pressure will be $\frac{5}{3\times 1{\cdot}5}=1{\cdot}11$ tons per sq. ft. Now imagine the load shifted to 9 in. from the edge of the pier as in figure two. Then the maximum stress will be $\frac{W}{A}\pm\frac{M}{Z}=\frac{5}{3\times 1{\cdot}5}\pm\frac{5\times 0{\cdot}75}{\frac{1}{6}(1{\cdot}5\times 3^2)}=1{\cdot}11+1{\cdot}66=2{\cdot}77$ tons sq. ft., or more than twice as much.

If we now cut half the pier away, leaving the cross-section 18 in. sq. with the load in the centre, the maximum stress will be $\frac{5}{1{\cdot}5\times 1{\cdot}5}=2{\cdot}22$ tons sq. ft., or less than when the pier had twice the area.

As the height of a pier increases the safe load upon it should be reduced.

A simple rule for the safe load on rectangular piers when the height is over six times the least width is: $S=W\left(\frac{24-r}{18}\right)$ where S=safe load in tons per sq. ft. on the pier; W=maximum load in tons per sq. ft. the material will bear safely; and r=ratio of height to least thickness. Suppose the pier to be 3 ft. by 1 ft. 6 in., the height 12 ft., and the safe load on the material 3 tons per sq. ft. Then $S=W\left(\frac{24-r}{18}\right)=3\left(\frac{24-8}{18}\right)=\frac{8}{3}=2{\cdot}66$ tons per sq. ft. Rankine's formula gives

$$S=\frac{W}{1+\frac{1}{800}r^2}=\frac{3}{1+\frac{1}{800}\times 8^2}=\frac{3}{1{\cdot}08}=2{\cdot}78 \text{ tons per sq. ft.}$$

The safe loads on materials supporting ends of girders may be taken as follows:

	Ordinary load. Tons ft. super.	Max. safe load. Tons ft. super.
Granite	20	30
Portland and compact limestone ..	15	20
Hard York stone	12	15
Limestone (ordinary)	6	6
And with stone template interposed:		
Blue brick in cement	9	12
Stock brick in cement	6	8
Stock brick in lias mortar	5	6
Stock grey lime mortar	3	4
And below the brickwork:		
Portland cement concrete (1:3:6) ..	5	10
Lias lime concrete (1:2:4)	3	5
Gravel and natural compact earth ..	2	—
Made ground rammed in layers ..	1	—

The safe load on the cementing materials may be taken as follows:

Stone lime mortar:
50 lb. per sq. in. or 3 tons per sq. ft. compression.
25 " " 1½ " " tension.

Lias lime mortar:
150 lb. per sq. in. or 9 tons per sq. ft. compression.
50 " " 3 " " tension.

Portland cement mortar:
200 lb. per sq. in. or 12 tons per sq. ft. compression.
75 " " 5 " " tension.

Pressed gault, Fletton and Leicester red bricks are intermediate in strength between London stocks and Staffordshire blue bricks. In architectural work, with dead loads only, these figures are often increased.

A brick pier bonded into a wall may have its strength increased, but there is the possibility that it will be reduced for the same reason that the pier bonded eccentrically was under greater stress than the smaller pier loaded centrally. There is also the risk that the pier loaded more than the wall to which it is bonded will settle more and will cause a crack between the pier and the wall. Increase of strength from the bonding should, therefore, not be reckoned upon.

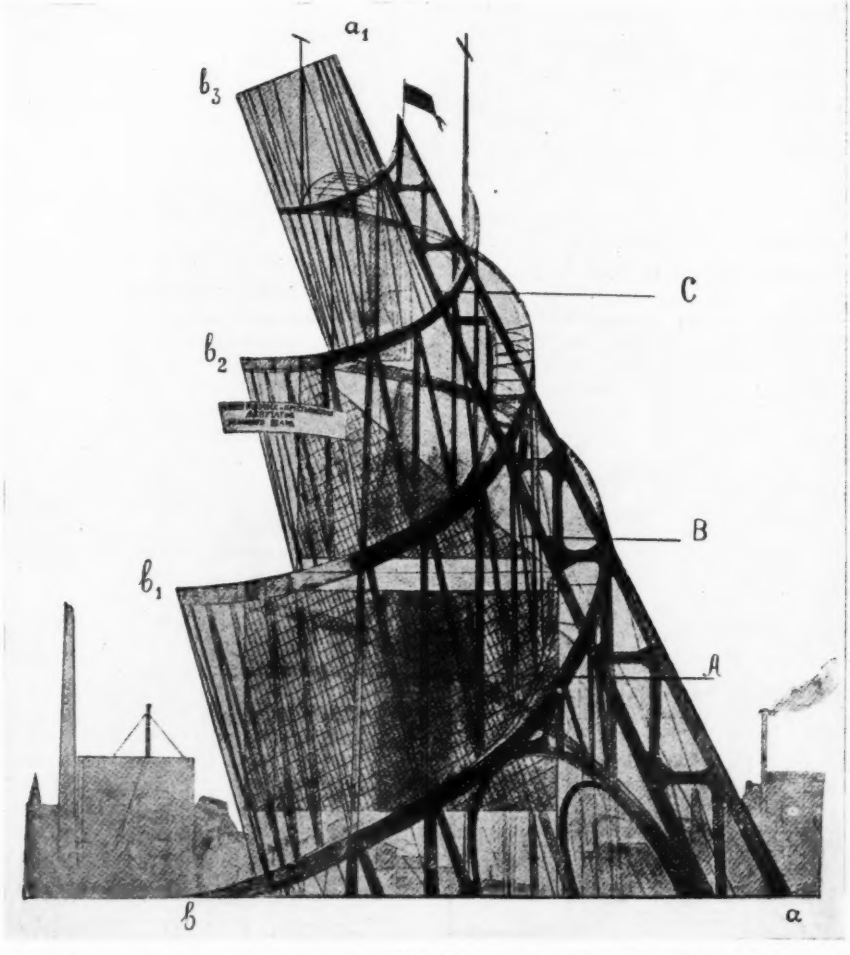
LITERATURE

THE ARCHITECTURE OF BOLSHEVIK RUSSIA

In a country like Russia the lack of material means and qualified technicians is so great that the finest conceptions of the Bolshevik artists and the most grandiose schemes of the Bolshevik architects must of necessity remain on paper, and to judge of the importance of architecture in Russia today one must perforce examine the plans of the memorials and buildings of the future rather than the makeshifts of the present day. Trotski, the most able of the Bolshevik art critics and panegyrists, realizes that the marvellous dreams of his forerunner, Lenin, cannot be carried out in ten or even a hundred years. In his work he states again and again that the present dictatorship of the proletariat is not the final goal, but only a state of transition to an epoch of perfect communism in which there will be no classes. Bolshevism is not a self-contained historical period, and Bolshevik art and architecture can only be regarded as an indication of the art and architecture of ages to come.

From the early days of 1917 onward attempts were made to create an heroic and monumental style of revolutionary architecture, and "ism" followed "ism" with bewildering rapidity, only to be cast aside as retaining tendencies of bourgeois art and therefore unsuitable to the proletariat. Futurism, cubism, abstract deformation, simultanism, objectless dynamism, and many others came—and went. Finally, all attempts at deriving artistic inspiration from the European styles of art was abandoned and an architecture built up from "mechanico-technical" material, based on the ideal of America and Henry Ford, which was regarded as typical of the "collective man." In order to emphasize the mechanical aspect of the age, orthodox churches were turned into workshops and the lofty pinnacles of their cupolas used as wireless aerials.

Of the "mechanico-technical" school, which (April 1926) holds sway in Russia today, Herr Fulop-Miller quotes several examples, and from his descriptions emerges the figure of at least one architect with talent amounting almost to genius—Tatlin—and of two daring and unconventional architectural achievements, both, unfortunately, still on paper—the Monument to the Third International in Petrograd and the Palace of Labour at Moscow. The former, designed by Tatlin, is fully described in Herr

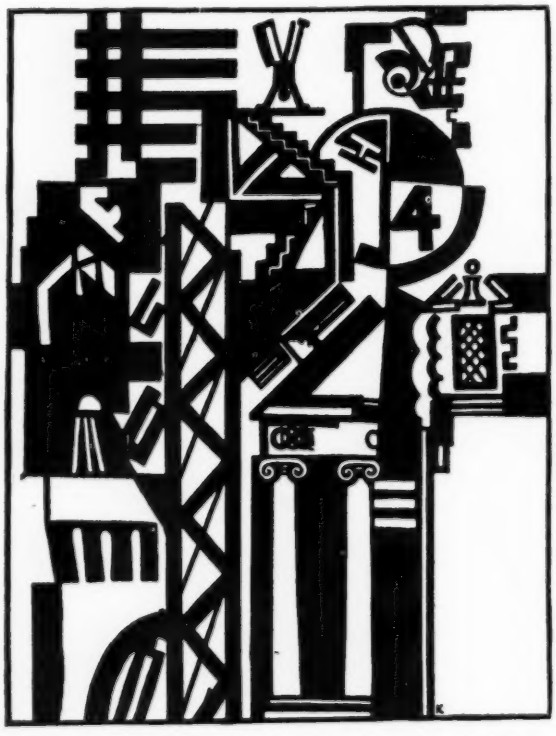


Tatlin's proposals for a Monument to the Third International. [*From* The Mind and Face of Bolshevism.] *The rooms A, B, and C, arranged vertically above one another, are of glass, and are intended to be kept in perpetual motion at varying rates of speed by a peculiar mechanical device.*

Fulop-Miller's book, and consists of a union of three glass chambers, connected by a system of vertical axes and spirals. "These chambers are arranged vertically above one another and surrounded by various harmonious structures. By means of special machinery they must be kept in perpetual motion, but at different rates of speed. The lowest chamber is cubiform and turns on its axis once a year; it is to be used for legislative purposes; in future the conferences of the International and the meetings of congresses and other bodies will be held in it. The chamber above this is pyramidal in shape and makes one revolution a month; administrative and other executive bodies will hold their meetings there. Finally, the third and highest part of the building is in the shape of a cylinder and turns on its axis once a day. . . ."

"Not content with the technical marvel of revolving rooms, Tatlin also conceived a system of double walls with airtight chambers between them, on the plan of a thermos flask, so as to maintain a constant temperature in the building. The individual parts of the building and also the side rooms were to be connected by a complicated series of lifts, which were to be adapted to the various rates of revolution."

The design of the Palace of Labour at Moscow is equally revolutionary—the pun has crept in by accident, not design. In order to house the growing adherents of the world revolution the plan of this enormous building of glass and steel was so arranged as to allow of the indefinite extension of the main rooms in which the delegates were to speak, their words being transmitted to the waiting multitudes by wireless amplifiers. The description of the project ends with the stirring call: "Nothing in all this is technically impossible; three-quarters of it has already been realized in the West; to translate the remaining quarter into fact shall be our task. Architects and builders, rise to the social demands of the coming day, adapt yourselves to the course and meaning of history, build movement!" There is, of course, nothing particularly new in the basic ideas of subordinating the architect to the engineer, for both these conceptions are mechanical rather than architectural. It is an idea which was current in Germany about fifteen years ago, but was never, I think, carried to this excess.



The New Revolutionary Style: the amalgamation of all the "isms" with old architectural "motives." From a drawing by Krinski. [*From* The Mind and Face of Bolshevism.]

As well as these grandiose designs a Department for Modern Architecture has been founded at the Moscow Academy under the professorship of Ladovski, whose work is of a purely "mechanico-technical" character, and whose opinion of architecture as an art is best summed up in his own dictum: "The future belongs to those who have remarkably little talent for the fine arts." Nevertheless, his architectural designs are of the greatest interest, and it is much to be regretted that only a few have as yet been erected.

The Bolsheviks, however, regard architectural and artistic endeavour generally very seriously as a necessary part of the development of a nation, and support all artistic ventures that pass the criterion of revolutionary taste to the best of their ability. Trotski writes: "However lofty the social achievements represented by the solution of the elementary problems of feeding, clothing, heating, and educating the people may be in themselves, they alone do not signify a complete victory of the new historical principle; that can only be accomplished by building up a changed scientific mode of thought on a national scale, and by the development of a new art." We may therefore expect a ripening and flowering of this exotic bloom of Bolshevik architecture, and it is perhaps permissible to hope that Tatlin will some day have the opportunity of putting his extraordinary designs into practice.

Naturally, to review a book of this nature in an architectural paper has meant a stressing of the architectural interest. Herr Fulop-Miller, however, treats Bolshevism from many aspects, and his work may well remain an authority. It is remarkably well illustrated and has an excellent bibliography of Communist literature. In fact, although it has been attacked by Russians of the anti-Bolshevik persuasion as giving too intellectual a picture of present-day Russian life, it may well remain an excellent and unbiased picture of Bolshevik intention if not of Bolshevik practice.

L. F. E.

The Mind and Face of Bolshevism. From the German of Herr Fulop-Miller. G. P. Putnam's Sons, Ltd. 21s.

A SPANISH DEMONSTRATION

The art of Spain is known more and known less than that of any other European country. To those who have little knowledge of it this volume will be a revelation; to those who know a good deal it will be an indication that there are vast riches still for the finding. There are great artistic tracts of Spain still unexplored, and this is being taken advantage of by collectors, lay and professional, who for some years now have been exploiting the Spanish treasure-house. Apparently this exploitation can be continued with not only commercial and cultural advantage, but with immunity. The great museums of England and America are already well supplied with great examples of Spanish painting, sculpture, metalwork, pottery, and glass and textiles. Many are to be found in the museums and art galleries of the Continent, while the museums of Spain itself are crowded with magnificent examples of past artistic greatness. Spain is second to none in the world in her architectural monuments, preserved wonderfully to our day as in few other lands.

So much is known of the Spanish art treasury. What is there left still to be revealed? Yet there is no homogeneous Spanish art. The evolutionary theory in art counts but little in Spain. Spanish art is a magnificent vindication of the theory of influence and environment. The Spanish nationality is so pure in its complex equation as to provide a compound as little likely to yield to analysis as the stablest of elements. Where in many cases it is simple to point to a derivation of style, in Spain the thing derived is the thing produced. Spanish art comprises the elements of European art with those of the Near East and the African coasts. The result is of great splendour—a riot of happy production; an abundance that verges on superabundance; in some cases so overpowering as to become a redundancy. Spanish art in its lushness, its pregnancy, its lavishness is the very tropics of art.

This book presents itself modestly as an "Introductory Review"; it does not pretend to be a history, but it indicates the histories upon which it has relied and, moreover, it provides various items of original research in certain particular directions which give it a greater value than is claimed for it by its editor and contributors, all of whom are specialists in their subjects. Its great value, however, consists in its power of conveying the enthusiasm for its subject and the authoritative tone of its chapters. It begets confidence and proves its own sincerity and single-mindedness. Its format is good, its illustrations plentiful and excellent, and the nine in colour are particularly fine.

Spanish art is Spanish nationality; the Spaniard when he is sleepy lies down in the street and sleeps. The Spanish woman secretes herself behind a shuttered window and speaks to her lover in enchanting tones, and he replies with soft song to pulled strings. Spanish art is a public art which for centuries tabooed the nude, of which it has never made a pronounced study nor feature. Spanish art is not domestic. Only its great palaces and law courts and universities are civic; the rest of its noble monuments are ecclesiastical or of the Court. Domestic architecture and furniture do not assert themselves as in more northern countries; even textiles are mainly for priestly or princely purposes; pottery rises to great heights, but is not distinguished in its depths. Nowhere in Europe is metalwork more extraordinarily exploited, but not for domestic purposes. All Spanish art is overpoweringly rich in its excess on account of the riches of the kings, nobles, and prelates who provided the funds. It is not distinguished by the personal display made in art by the merchant class, to whom more than one great European province owes its fame. Riches were so poorly thought of in Spain once that thrones were made of pure silver. Much Spanish art is outrageously grand, from the pottery picture of "The Visitation," by Niculoso Italiano, to the Escurial of Juan de Toledo and Juan Herrera. Such things are not the products of other parts of Europe, which may produce a Rembrandt, but Spain has a Velazquez; England may show a Blake, but Spain has her adopted Greco. Of all the wonderful cathedrals with their sculpture and paintings, and the great bridges and the castles this book speaks eloquently and invitingly. A fine preface to the artistic glory that is Spain. KINETON PARKES

Spanish Art: An Introductory Review. Burlington Magazine Monograph II. London: B. T. Batsford, Ltd. R. 4to, pp. 125 and map. Illus. 280. Cloth bound, £2 2s.

SPECIFICATIONS AND SPECIFICATION WRITING

The author of this book, who, we regret to learn, died almost immediately after its completion, was a quantity surveyor, and his excuse for writing on a subject which is, strictly speaking, the province of the architect was that "lookers-on see most of the game." "After all," he points out in the preface, "it is the quantity surveyor and the builder who use the specification which the architect has written, so surely they are as capable as anyone of pointing out what are its most essential points"? This may be, but in my opinion too much attention has been devoted in the book to specification writing (part one) and too little space has been given to the specification clauses (part two). It is, of course, useful to be able to devise specification clauses for any emergency, but there are clauses in existence that have stood the test of time for almost every constructional detail. Where these clauses exist it is far better to modify or amplify them to describe the particular details which it is desired to specify than to attempt to devise new clauses. It seems, therefore, that the book could have been much more useful had the author included a complete list of *all* the accepted clauses in existence for every trade in the industry. Then the book could have been used as a model while the specification was being written. The use of such a model and ticking in pencil all the details on the drawings as they are specified would considerably reduce the risk of omissions, disputes, and "extras." The most popular and most valuable book on specifications will be that containing the most clauses. Most of the methods recommended by the author "are culled from experience, and have been gleaned largely from actual specifications with the idea of taking the best points of many systems and fusing them into one workable whole." No mention of electric lighting seems to be made in the book. E. R.

Specifications and Specification Writing. By R. W. J. Davis, P.A.S.I. Chapman and Hall. Price 6s. net.

CORRESPONDENCE

DECIMUS BURTON AND ST. LEONARDS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—I have read with great interest your reference to the architectural work of James Burton and Decimus Burton at St. Leonards, and I note that you mention the plaque which rightly remarks that St. Leonards was founded by James Burton in 1825; but you wonder whether Decimus Burton did not play a prominent rôle in the architectural scheme of the houses in the Warrior Square district. The Hastings and St. Leonards Borough Guide, which has been compiled after very careful investigation, remarks: "The main part of the present Borough of Hastings lies just west of the hills overlooking the old town. It gradually merges into St. Leonards, a handsome and fashionable expansion which was planned and built by the famous architect, Decimus Burton, of Constitution Hill Arch renown. St. Leonards is the most select residential part of the town." It is true that there is no mention of Decimus Burton's work on any public memorial, but what he did is certainly enshrined in the memory of the town, which always calls attention to the invaluable assistance he gave in the erection of what are admittedly a very fine type of dwelling.

CHARLES WATNEY

DESECRATING THE LANDSCAPE

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—A British architect complains in one of your contemporaries of the erection of transmission towers and networks of overhead transmission lines. These electrical engineers, he says, are about to desecrate the countryside; their wires, poles, and cables will be everywhere. He asks why there is no Board of National Æsthetics to control the erection of these and other structures liable to constitute an eyesore when their design is left to vulgarians and engineers?

With the idea of a board to approve and control the æsthetic worthiness of public buildings and structures I am in accord, but not with the suggestion that engineers are vulgarians incapable of artistic design. Many engineers would have designed more worthy buildings than have some professed architects. To the engineer "fitness for purpose" is axiomatic; it is a fundamental æsthetic in the design of buildings as in the design of anything. There are some fine steel lattice poles running from Treforest to Bute Docks, in South Wales, and those which carry the lines down from Dolgarrog to the seaside towns of North Wales are good workmanship. At Aylesbury, one of several towns surrounded by a belt of live wire, the engineer conciliated local opposition by a completely new type of pole.

Before we begin complaining about the eyesore of transmission lines, what about the petrol pumps, the "half-timbered" bungalows, the telephone boxes, and the advertisement hoardings which obtrude upon us every day their unfitting shape and colour? The change now being wrought is comparable only with the making of railways and the laying of telegraph lines. Like both these transformations, it has its opponents and, like both, has raised new problems.

G. ALAN FORTESCUE

COMPETITION CALENDAR

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

October 10. Designs are invited by the Herne Bay Urban District Council for the erection of municipal buildings and business premises on a prominent site at Herne Bay. The President of the R.I.B.A. has nominated Professor A. E. Richardson, F.S.A., F.R.I.B.A., to act as assessor. Premiums: £150, £100, £50. Printed conditions

can be obtained from the Clerk to the Council, Westminster Bank House, Herne Bay. A deposit of one guinea is required for a set of the printed conditions, which will be returned upon the submission of a bona fide design.

October 15. The *Nottingham Journal* offers £100 for the best scheme for the laying out of the Market Place. The plans will first be submitted to a committee consisting of the President of the Nottingham and Derby Architectural Society (Mr. J. Woollatt) and the immediate past president (Mr. H. A. Dickman), Mr. W. W. Gregory, F.R.I.B.A., Mr. J. Else, R.B.S., principal of the School of Art, and the editor of the *Nottingham Journal*. Theirs will be the responsibility of sorting out those which are technically impracticable, and the remainder will be submitted to Sir Edwin Lutyens, R.A. Particulars of the competition were published in the *Nottingham Journal* for September 15.

November 30. New town hall and municipal buildings, proposed to be erected on a site in the Broadway, Wimbledon, for the Wimbledon Corporation. Assessor: Mr. H. V. Ashley, F.R.I.B.A. Premiums: £200, £150, and £75. Particulars from Mr. Herbert Emerson Smith, LL.B., Town Clerk. Deposit £2 2s.

COMPETITION NEWS

The Duresco Competition

Of the panels decorated in Duresco received in response to the competition organized by The Silicate Paint Company the five winning panels are as follow: First: C. B. Core, London. Second: G. Skinner, Whitehaven. Third: J. W. Vere, Barnsbury, London. Fourth: M. C. Corbett, Birmingham. Fifth: Ronald Franks, Dalston. And to these five competitors the prizes offered have been dispatched. The total number of panels received was about fifty. Many of them showed the highest skill, and the adjudicators expressed themselves at the high merit and had great difficulty in allocating the winners. The merit was of such high class that in addition to the five they have very honourably mentioned the panels of the following entrants: R. Artis, Sevenoaks; A. E. Jones, Paddington Green; A. Foster, Nelson, Lancs.; Ken. J. Adams, Coleford, Gloucestershire; J. P. Joslin, London.

UNIVERSITY COLLEGE SCHOOL OF ARCHITECTURE

Nine courses of study are provided at the University College School of Architecture, the first term of which opened on Monday, October 3, under the direction of Professor A. E. Richardson, F.S.A., F.R.I.B.A. These courses are as follows: i: The B.A. (Architecture) Degree Course of the University; ii: The Certificate Course in Architecture; iii: The Diploma Course in Architecture; iv: Advanced Design Class; v: Evening Courses in Design and Construction of Modern Buildings; vi: The Atelier; vii: Certificate Course in Town Planning; viii: Diploma Course in Town Planning and Civic Architecture; ix: Diploma Course in Town Planning and Civic Engineering. The Degree, Diploma, and Certificate Courses are arranged to provide students with that systematic, practical training which is approved and recommended by the Board of Architectural Education of the R.I.B.A. Exemption from its Intermediate Examination is granted by the R.I.B.A. to students who receive a First Class College Certificate, and from its Final Examination (qualifying as Associate R.I.B.A.) in all subjects except Professional Practice, to students who obtain the Degree or Diploma. The courses of the school of architecture are not intended to supersede pupilage, although the terms of pupilage are generally modified considerably to students who have passed successfully through them. The Degree Course possesses the additional advantage of enabling students to continue their general studies up to the level of the Intermediate Examination of the University concurrently with commencing their professional training. The Advanced Design Course affords students the opportunity of exercising their imagination on problems of considerable size, and of planning and designing on a large and dignified scale. An atelier in connection with the School of Architecture for the study of advanced architectural design has been instituted in Malet Street. The atelier is open to those who have obtained the degree of Bachelor of Arts (Architecture) in the University of London, to those who have obtained the Diploma or Certificate of Architecture of the school, and to others who have reached a standard of efficiency approved by the director. Evening courses in the design and construction of modern buildings have been specially arranged to encourage the study of constructional design among students engaged in offices during the day, and will be adapted to suit the requirements of assistants and draughtsmen of architects, surveyors, and builders. Students can, with the approval of Professor Richardson, prepare testimonies of study for the Intermediate Examination of the Royal Institute of British Architects. A course of five lectures on the London Building Acts as affecting the practising architect will be given by Professor R. Elsey Smith, F.R.I.B.A., on Mondays at 6 p.m., beginning October 24.

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

23879. Causer, D. S. Cabinets for drawings, &c. September 10.
23225. Colman, T. B. Revolving doors. September 5.
23516. Emerson, H. V. M. Metal sheets for constructional work. September 7.
23613. McDougall, C. S. Device for raising and lowering window frames. September 8.
23679. Tondeur, P. Means for fastening roof-covering elements. September 8.

SPECIFICATIONS PUBLISHED

276707. Godenir, A. In situ concrete construction.
276760. Tarring, R. F. Method of and means for casting stairways or steps in concrete and like cement compositions.
276795. Fourcade, H. G. Photographic surveying.
276801. King, W. Building blocks and the method of making the same.
276815. Cuckow, A. E. E. Asbestos cement and like building sheets.

ABSTRACT PUBLISHED

274452. Junkers, H., Anhalt, Germany. Roofs, floors, walls.

THE HISTORY OF DECORATIVE PLASTERING

Proof that our readers study the advertisement pages is provided by the many requests that have been received for a complete set of the advertisements dealing with the *History of Decorative Plastering*. The final advertisement of this series appears on page xxiii of this issue. The advertisers have reprinted the illustrations on art paper, and they ask us to state that so long as the supply lasts they will be pleased to send a complete collection to each applicant. Apart from the artistic merit of the announcements they form a valuable addition to the literature of plasterwork. The collaboration of Mr. George Bankart, the eminent lecturer and authority on plasterwork, with gifted artists such as Mr. Walter M. Keesey, A.R.C.A., A.R.I.B.A., and Miss Cafferata, is an assurance of the correctness of the historical data and that the illustrations interpret as faithfully as possible the records of the various incidents. Requests for the reprints should be made to Messrs. Kerner-Greenwood & Co., Ltd., King's Lynn.

READERS' QUERIES

VENTILATING AIR SPACES

T. E. S. writes: "Is it necessary to ventilate the air spaces between the joists or bearers of asphalt roofs, where the spaces are hermetically sealed with asphalt (laid on boards) on the top of the bearers and have a plaster ceiling on the underside?"

In these days, when sound, well-seasoned timber is rarely procurable, and dry-rot infection is a very real menace, it is certainly only prudent to ventilate the spaces between timbers that would otherwise be sealed up between other materials. Any means by which a current of air may be made to play upon the timbers should be adopted. Air bricks may be introduced into the walls at the ends of the spaces between the joists, with the precaution that the ducts through the thickness of the walls should slope upwards to the interior to cast out any rain that may be driven in through the openings in the air bricks by the force of the wind.

If it is impracticable to use a pair of air-bricks to every space it may be possible to arrange for a current of air to traverse the spaces by boring holes in the joists about the middle of their depth between one ventilated space and another, or a horizontal duct may be formed beside the wall-plate and beyond the ends of the joists to allow of fresh air from a limited number of air bricks finding its way into every space between the joists. If solid strutting is used, it should not completely fill the spaces between joists, but should be kept up from the ceiling and down from the roof. Herring-bone strutting is preferable in respect to through ventilation. Treating the timbers and the undersides of the roof-boarding with a wood preservative is advisable in addition to the provision of ample through ventilation.

Leakage of water through the roof or walls greatly facilitates the growth of the dry-rot fungus, and the exclusion of wet is therefore an important matter. W.

SPECIFYING A SEPTIC TANK

T. writes: "What points have to be considered specially in specifying a septic tank, and which is the best way to ascertain its size? The tank is to receive waste from a bath, a w.c., and a sink for a period of about three years, after which the house will be extended, and an addition of two baths, two w.c.'s, one sink, one H.M.C., will be made. The number of persons is seven. Should the septic tank be designed to accommodate the future requirements?"

The first point to clear up is whether a septic tank is really necessary. The real advantage of a septic tank over a leaching cesspool is that its filtered and aerated effluent is practically non-poisonous, and this standard of purity is demanded by sanitary authorities and water supply authorities in certain districts. Only well-designed, well-constructed, and well-managed septic tanks achieve this perfect purification, and means for testing the effluent should be provided. In large plots where the sewage disposal is remote from water supply, the leaching cesspool is suitable and is often permitted by the sanitary authority.

If the septic tank is to be constructed by the builder it is necessary for the architect to supervise every detail with full knowledge of the operation of the septic tank. No stock specification can cover every case, but hints in *Specification* of this year might be followed in the light of experience with existing installations. Even where a specialist is to be employed it is necessary for the architect to acquaint himself with the actual working of the apparatus and not trust to testimonials written when it is new and in apple-pie order. A delightfully efficient plant in my neighbourhood is gradually becoming offensive in the course of a few years, and before specifying any particular make an example of it not less than three years old should be visited.

The nature of the proposed site affects the design of the septic tank; a fall of 3 ft. 6 in. or more is generally needed to provide for automatic distribution of tank liquid into the filter-bed and into the humus-tank.

A further slight fall may be needed to distribute the effluent by means of agricultural drainpipes in the upper layers of the cultivated soil among the roots of thirsty plants such as black-currant bushes or raspberries. In a site with porous subsoil it may be possible to get rid of the effluent by absorption through the bottom and sides of a sump pit filled with lumps of hard clinker.

The tank should be placed to the north-east of the house in places where the prevailing wind is from the south-west, and it is well to increase the minimum distance of fifty (or sixty) feet required by the by-laws of different districts. The tank is frequently made far too small under pressure of an economy campaign, and cases have been known of solid scum being churned up by the flow of bathwater and deposited on the filter-bed, creating an intolerable nuisance. Covering the filter-bed is sometimes resorted to, but adequate means of ventilation must be provided if its purifying action is to be maintained at its highest efficiency. Further experiment is needed in this direction; and in the interest of sightliness, and to prevent fly and midge nuisance, the filter-bed might be enclosed in a suitable glasshouse.

A rough rule for the contents of the tank is to allow ten cubic feet per person below water-level. The filter-bed may be made to contain one cubic yard of clinker per person, but its size must vary according to the efficiency of the method of distribution and its width and depth proportions.

Providing a large apparatus from the first would permit of the smaller quantity of sewage being diluted with ample quantities of water without disturbing the scum, and an efficient form of distributing apparatus might be installed in the first instance.

The covering of the filter-bed would not need to be altered after three years. Septic tanks demand attention periodically, and the first removal of scum and renewal of clinker may be specified to bring this fact home to the householder's mind. H.

CLEANING POLISHED YORK PAVING

G. W. writes: "Which is the best method of cleaning polished York paving which has become dark and dirty-looking? The paving is inside a building. Acid has been suggested, but I think this might ruin the polished surface. I suggest that the surface should be rubbed with a block of fine sandstone, attached to a pole, with a liberal application of water, after the manner in which Italian workmen polish mosaic paving."

To rub over the surface of the paving with a block of fine sandstone attached to a pole would remove the polish just as effectively as an acid, and the choice of reagents for getting rid of the discoloration must depend upon the nature of the dirt. A recent writer on the subject of stone preservation has condemned as harmful almost all the usual cleansing agents except clean water and the steam-brush, but in ordinary practice little harm is found to follow the judicious employment of the usual domestic reagents provided that their traces are immediately washed off with clean water.

If greasy substances have been used to polish the floor it may be necessary to employ caustic potash or turpentine or benzine to remove them; fruit or ink stains need treatment with salts of lemon; cement splashes yield to treatment with dilute hydrochloric acid. Needless to say, these dangerous substances must be used with caution and in small quantities. If the discoloration cannot be removed by such means and by washing, it may be necessary to employ the drastic remedy of grinding down the surface as suggested in the question, with sandstone or carborundum block, and when all is clean and level, to build up the polish again with successive rubbings with finer and finer grained material.

A natural polish may be given to York stone by finishing the process with a block of marble and fine putty-powder used with plenty of water and unlimited elbow grease. Possibly the discoloration has been brought about by attempts to polish by other methods instead of by this laborious process. Even when polished, York stone is still somewhat porous, and is inclined to pick up dirt and to stain easily unless kept with scrupulous care.

W. H.

THE WEEK'S BUILDING NEWS

The POPLAR B.C. Housing Committee has approved the plans of the borough engineer for the erection of eighty flats, and are still in negotiation for sites for the erection of further housing accommodation.

*

The POPLAR B.C. Baths Committee is to prepare detailed plans for the erection of baths and washhouses in Weston Street, Bromley, at a cost of £12,000.

*

Plans passed by the POPLAR B.C.: Additions, 112 Chrisp Street, for Mr. G. A. Knightbridge; additions, "Kingsbridge Arms," West Ferry Road, for Mr. A. R. Mayston; additions, Leamouth Wharf, Orchard Place, for Messrs. W. J. Marston and Son; building Dock House Tavern, East India Dock Road, for Messrs. R. A. Roome & Co., Ltd.; additions, 220-222 Roman Road, for Mr. R. M. Godfrey.

*

Tenders will shortly be invited by the Worcestershire Education Committee for remodelling the elementary school at Stourbridge Road, BROMSGROVE.

*

Plans have been prepared by the Worcestershire Education Committee for remodelling the elementary school in Brook Street, STOURBRIDGE.

*

A site is to be obtained at PERSHORE by the Worcestershire Education Committee for the erection of a practical subjects centre.

*

The Worcestershire Education Committee is obtaining a site at BROUGHTON HACKETT for the erection of a practical subjects centre.

*

The Worcestershire Education Committee is to secure a site at STOURBRIDGE for the erection of an elementary school and a practical subjects centre.

*

The Worcestershire Education Committee is securing a site at EVESHAM for the erection of an elementary school.

*

The Board of Education has approved the plans for the extension of Prince Henry's Grammar School, EVESHAM, and tenders will shortly be invited by the Worcestershire Education Committee.

*

The Upper Stour Valley Sewerage Board has obtained land at HAY GREEN for the erection of a pumping station.

*

The GRIMSBY Corporation is seeking sanction to borrow £10,000 for further housing subsidies.

Plans passed by the GUILDFORD Corporation: Reconstruction of property, High Street and Chapel Street, for Messrs. Hepworth, Ltd.; eleven houses, Grange Road, for Messrs. Hall and Belcher; ten houses, Beckingham Road, for Mr. W. R. Stirling; shop, Market Street, for Empire Meat Co.; alterations, Lion Hotel, High Street, for Messrs. Best & Co.

*

The GUILDFORD Corporation has decided to make every effort to retain the Assizes in the town and are to confer with the Surrey Standing Joint Committee with a view to the erection of new courts on a site in Stoke Park, without reference to municipal buildings.

*

The LLANDUDNO U.D.C. has under consideration the construction of a bathing pool on the west shore.

*

The borough engineer of GUILDFORD has prepared plans for the erection of a further twenty-four non-parlour houses and eighty flats on the Aldershot Road estate.

*

In connection with the development of the Cullercoats housing estate the TYNEMOUTH Corporation Housing Committee has decided in favour of the erection of six blocks of eight houses, leaving the rest of the land available for builders for the erection of working-class houses.

*

Plans passed by the TYNEMOUTH Corporation: Two houses, Mast Lane, for Messrs. H. D. Burton, Ltd.; eight houses, Houghton Avenue, for Messrs. F. R. N. Haswell and Son; two houses, Kenner Dene estate, for Mr. A. K. Tasker.

*

The COVENTRY Corporation Housing Committee has authorized the erection of a further twenty-six houses on the Radford estate at an estimated cost of £11,000.

*

The COVENTRY Corporation has retained Mr. Godfrey M. C. Taylor as consulting engineer in connection with a scheme for new sewage disposal works.

*

The BRIGHTON Corporation has agreed upon the lay-out of the sports ground at Moulsecoomb Park, provision being made for the construction of a drive, football, and cricket pitches, and a pavilion at a total cost of £15,450.

*

The BRIGHTON Corporation Lighting Committee has authorized Mr. W. H. Overton to prepare detailed plans and invite tenders for altering and adapting existing buildings at North Road electricity works, the cost being estimated at £30,000.

The BRIGHTON Corporation is recommended to proceed with the construction of a bathing pool on a site opposite the Chain Pier steps, and the Works Committee suggests that the borough engineer should forthwith prepare plans and estimates.

*

Plans passed by the CROYDON Corporation: Four houses, Malden Avenue, for London and Suburban Land Co., 3 Lincoln's Inn Fields; garage, workshops and offices, Morland Road, for Mr. S. H. Palmer; additional floor, for Kennards, drapers, at Hedges Yard, for Messrs. T. Jay Evans, Ltd.; bank, Wharfedale Parade, Norbury, for Lloyds Bank, Ltd.; factory, Factory Lane, for Messrs. Risick, Fraser & Co.; shops and billiard hall, High Street, for Messrs. North, Robins and Wilsdon; forty-four houses, Biggin Wood Road, for Messrs. Thomas and Son, of Bromley Avenue, Coulsdon; seventeen houses, Ross Road, for Mr. S. Jeffries; hall and club-room, "Pump Pail," for Mr. W. S. Evans, 22 Bramley Hill; four houses, Norbury Cross, for Mr. J. Midmer; ten houses, Epson and Duppas Roads, for Mr. C. Lewin; sixty-four houses, Nursery Close and Nursery Avenue, Shirley, for Mr. P. Richardson.

*

Plans passed by the BRIGHTON Corporation: Alterations, 23 St. James Street, for Messrs. J. Sainsbury, Ltd.; alterations, 60 West Street, for British Legion Club; four houses, Roedale Road, for Mr. Edward Weir; alterations, 52-55 Western Road, for Messrs. Dawkins, Ltd.; alterations, 58-59 Western Road, for Messrs. Swears and Wells, Ltd.; four houses, Windlesham Gardens, for Mr. R. Mitchell; alterations, 12 York Place, for City Tailors, Ltd.; alterations, 29 Upper St. James Street, for Messrs. Tamplins and Sons, Brighton Brewery, Ltd.; five houses, Upper Roedale Road, for Mr. J. Morley; flats, Whippingham Road, for Mr. W. Trott; alterations, 28 St. James Street, for Messrs. F. W. Woolworth & Co., Ltd.; five houses, Princes Terrace, for Mr. J. W. Holloway; alterations, 9 North St. Quadrant, and 5 Air Street, for Phœnix Assurance Co., Ltd.; six houses, Stanmer Villas, for Mr. W. J. Head; four houses, Bavant Road, for Mr. G. White; rebuilding, 15-16 Old Steine and St. James Street, for Messrs. J. Lyons & Co., Ltd.; extensions, Abbots Hotel, Regency Square, for Mr. C. E. Martin; five houses, Osborne Road, for Mr. A. G. Lower; five houses, Hartington Road, for Messrs. G. and W. Denyer; rebuilding, "White Horse," Camelford Street, for Kemp Town Brewery; six houses, Stanmer Villas, for Messrs. C. Newman and Son; alterations, 3 Buckingham Street, for Governors of Sussex Maternity and Woman's Hospital; additions, 5 Steine Street, for Southdown Motor Services, Ltd.

The HACKNEY Borough Council has considered amended plans submitted by Mr. M. K. Matthews for the erection of a cinema and shops on the site of Lion House, Stamford Hill. The view is expressed that it is inexpedient that buildings should be erected within 50 ft. of the south side of Amhurst Park.

*

Plans passed by the SWANSEA Corporation: Additions to chapel and hall, Foundry Road, Morriston, for Rev. T. B. Harrington; four houses, Baglan Street, for Mr. A. E. Wright; alterations, Sea Beach Hotel, Oystermouth Road, for Messrs. Truman, Hanbury, Buxton & Co.; four houses, Beattie Street, for Messrs. Rogers and Davies; twelve houses, Graig Lwyd Road, Townhill, for Messrs. T. and G. Spragg; factory, Station Road, Cockett, for Mr. C. Strutton; four houses, Station Road, Cockett, for Mr. Rees Jones; nineteen houses, Grenfell Park estate, for Messrs. J. R. Banfield and Son; alterations, Welsh Baptish Chapel, Dinas Street, for trustees; warehouse, Carmarthen Street, for Mr. J. O. Watkins; four roads, Tregernydd Farm estate, Fforestfach, for Mr. William Bevan; new roads, Grenfell Park estate, for Grenfell Park Estate Co.

*

Plans passed by NORTHFLEET U.D.C.: Two shops and houses, High Street, for Mr. H. Hotter; offices, Crete Hall Road, for Gravesend Welding and Electrical Engineering Works, Ltd.

*

Plans passed by ST. PANCRAS B.C.: Block of flats, Drummond Crescent and Little Drummond Street; building, site of 40-42 Osnaburg Street; blocks of dwellings, in Johnson Street, Clarendon Street, and Aldenham Street; rebuilding, 32 and 33 Chalk Farm Road.

*

The borough engineer of SWANSEA has prepared a sewerage and drainage scheme for the relief of flooding in the King Edward Road district, the cost being estimated at £19,000.

*

The NOTTINGHAM Corporation is shortly to proceed with the erection of a branch library at Sneiton Boulevard.

*

Plans passed by SEDGLEY U.D.C.: Bungalow, Gibbons Hill, for Mr. E. Hayward; bungalow, Wolverhampton Road, for Mr. Marchant; alterations, 33 Straits, for Mr. T. Hickman.

*

The SHREWSBURY Corporation is arranging with various local organizations to provide a floor and adapt the baths' hall for use during the winter for recreative purposes.

*

The PENZANCE Corporation has instructed the borough engineer to prepare detailed plans of the scheme for the conversion of the fish market and part of the butter market into a carcass market.

The PORTLAND U.D.C. has asked the surveyor to prepare plans for the proposed parking place at Chesil Beach.

*

Plans passed by PORTLAND U.D.C.: Liberal Club, Park Road, for Club Committee; premises at Easton, for Mr. Marshall.

*

The PORTLAND U.D.C. has asked the surveyor to prepare plans for the erection of parlour-type houses on the St. Martin's estate.

*

The SEDGLEY U.D.C. is to meet Mr. T. A. Lloyd with reference to the preparation of a town-planning scheme.

*

The CHIPPENHAM Corporation is to erect a further sixty-eight houses of the non-parlour type.

*

The ST. ALBANS R.D.C. is seeking sanction to borrow £10,000 for the purchase of land and the erection of new council offices.

*

The STOKE-ON-TRENT Corporation Housing Committee is negotiating for 20 acres at Greasley Lane, Bucknall, for a housing scheme.

*

The city engineer of STOKE-ON-TRENT has prepared a scheme for the development of the sewage works at Longton at an estimated cost of £10,000.

*

The CAPE TOWN Corporation is considering a proposal for a new working-class housing scheme at a cost of £500,000.

*

The GLASGOW Corporation Libraries Committee has agreed to the plans of the city engineer for alterations at Possilpark Library for the introduction of the open-access system.

*

The St. Andrews Ambulance Association is now to proceed with their scheme for the erection of new headquarters at GLASGOW.

*

Having had a report from the medical officer of health as to the extent of overcrowding, the STOKE-ON-TRENT Corporation Housing Committee has empowered the Housing Sub-committee to inspect and report upon sites in or adjacent to the borough with a view to the erection of a further 2,000 houses, and to take steps for the preparation of a scheme or schemes therefor.

*

The PENRITH U.D.C. has obtained sanction to a loan for improvements at the markets and authorized the surveyor to prepare plans and invite tenders.

*

Plans passed by the WOODFORD U.D.C.: Ten houses, Elmhurst Drive; four houses, Grosvenor Gardens.

The Bishop of Worcester and Mr. M. B. Davie, treasurer of Christ's Hospital, are asking the City of LONDON Corporation for a contribution to a fund providing additional accommodation for the teaching of natural science to boys and domestic science to girls at Christ's Hospital. It is estimated that £50,000 is required for the purpose.

*

Mr. W. Inglis, architect, 216 Bath Street, is negotiating with the GLASGOW Corporation for a site at the corner of the Boulevard and Knightscliffe Avenue, Knightswood, for the purpose of erecting a picture palace.

*

The GLASGOW Corporation Housing Committee is acquiring land at McNair Street, Shettleston, for a housing scheme.

*

The medical officer of health of GLASGOW has scheduled an area involving about 1,600 houses in the Calton ward for clearance, and the Corporation has asked the city engineer and the housing director to report on the use to be made of the area cleared under such scheme.

*

The STOKE-ON-TRENT Board of Guardians has purchased a site in London Road for the erection of a new hospital.

*

Plans have been prepared by the Office of Works for the erection of an employment exchange in Locketts Lane, LONGTON, Staffs.

*

The Rev. G. Hamlet is to erect a church institute at Milton Road, NORTON, Staffs.

*

Mr. C. Whalley is to build forty-eight subsidy houses on an estate off Greenbank Road, TUNSTALL.

*

The Devon Education Committee is inquiring for a site at the Preston housing estate, PAIGNTON, for the erection of an elementary school.

*

The BOURNEMOUTH Corporation is to lay out 3 acres on the Iford estate as tennis courts, bowling-green, etc.

*

Plans passed by the PAIGNTON U.D.C.: Three houses, Marine Drive, for Mr. G. F. Lancaster; layout of estate near Helens Barn, Stoke Road, for Mr. G. E. Tozer; four houses, Marine Drive, for Mr. S. Hawkins; layout of estate, St. Michael's Road, for Messrs. T. and A. B. Battershall; four houses, Osney Crescent, for Messrs. Melhuish and Berry; three shops and flats, Torquay Road, for Mr. R. M. Ely; new roads, Waterside estate, for Messrs. Couldrey, Easterbrook and Waycott; thirty-one building sites, Oldway Grounds, for Paignton and District Land Co., Ltd.; layout of estate, Blatchcombe Lane and Marldon Road, for executors of Rev. J. Lyde Hunt.

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
A₂	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
B₂	Appleby ..	N.W. Counties	1 4½	1 0½
A	Ashton-under-Lyne	N.W. Counties	1 8	1 3½
A₂	Atherstone	Mid. Counties	1 6½	1 2
B₂	Aylesbury ..	S. Counties	1 4½	1 0½
B₂	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
B₂	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
B₂	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
A₂	Bewdley ..	Mid. Counties	1 7	1 2½
B₂	Bicester ..	Mid. Counties	1 4½	1 0½
A	Birkenhead	N.W. Counties	*1 10	1 4½
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
B₂	Bognor ..	S. Counties	1 4½	1 0½
A	Bolton ..	N.W. Counties	1 8	1 3½
A₂	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1½
B₂	Bovey Tracey	S.W. Counties	1 5	1 1
A	Bradford ..	Yorkshire	1 8	1 3½
A₂	Brentwood	E. Counties	1 7	1 2½
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
B₂	Brixham ..	S.W. Counties	1 4½	1 0½
A₂	Bromsgrove	Mid. Counties	1 7	1 2½
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
A	Burton-on-Trent	Mid. Counties	1 7	1 2½
A	Bury ..	N.W. Counties	1 8	1 3½
A₁	Buxton ..	N.W. Counties	1 7½	1 2½
B	CAMBRIDGE	E. Counties	1 6	1 1½
B₂	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
B₂	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
A₂	Cheltenham	S.W. Counties	1 6½	1 2
A	Chester ..	N.W. Counties	1 8	1 3½
A	Chesterfield	Mid. Counties	*1 8	1 3½
B₂	Chichester	S. Counties	1 4½	1 0½
A	Chorley ..	N.W. Counties	1 8	1 3½
B₂	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
A₂	Crewe ..	N.W. Counties	1 6½	1 2
A₂	Cumberland	.....	1 6½	1 2
A	DARLINGTON	N.E. Coast	1 8	1 3½
A	Darwen ..	N.W. Counties	1 8	1 3½
B₂	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
A₂	Driffield ..	Yorks	1 6½	1 2
A₂	Droitwich ..	Mid. Counties	1 6½	1 2
A₁	Dudley ..	Mid. Counties	1 7½	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
A₂	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W. Counties	1 8	1 3½
B₂	Folkestone	S. Counties	1 5	1 1
A	Frodsham ..	N.W. Counties	1 8	1 3½
B₂	Frome ..	S.W. Counties	1 4½	1 0½
A	GATESHEAD	N.E. Coast	1 8	1 3½
B₁	Gillingham	S. Counties	1 5½	1 1½
A₂	Gloucester	S.W. Counties	1 6½	1 2
A₂	Goole ..	Yorkshire	1 7	1 2½
B	Gosport ..	S. Counties	1 6	1 1½
A₂	Grantham	Mid. Counties	1 6½	1 2
A₁	Gravesend	S. Counties	1 7½	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
A	Hanley ..	Mid. Counties	1 8	1 3½
A	Harrogate	Yorkshire	1 8	1 3½
A	Hartlepools	N.E. Coast	1 8	1 3½
B₂	Harwich ..	E. Counties	1 5	1 1
B₂	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
B₁	Kendal ..	N.W. Counties	1 5½	1 1½
B₁	Keswick ..	N.W. Counties	1 5½	1 1½
B	Kettering ..	Mid. Counties	1 6	1 1½
A₂	Kidderminster	Mid. Counties	1 7	1 2½
B₂	King's Lynn	E. Counties	1 5	1 1
A	LANCASTER	N.W. Counties	1 8	1 3½
A₂	Leamington	Mid. Counties	1 7	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
B₂	Lewes ..	S. Counties	1 4½	1 0½
A₂	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 5½	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
A₂	Malvern ..	Mid. Counties	1 6½	1 2
A	Manchester	N.W. Counties	1 8	1 3½
A	Mansfield ..	Mid. Counties	1 8	1 3½
B₂	Margate ..	S. Counties	1 4½	1 0½
A₂	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
A₂	Middlewich	N.W. Counties	1 6½	1 2
B₂	Minehead ..	S.W. Counties	1 5	1 1
A	Monmouth S. and E. Glamorganshire	S. Wales & M.	1 8	1 3½
A₁	Morecambe	N.W. Counties	1 7½	1 2½
A₂	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
A₂	Norwich ..	E. Counties	1 6½	1 2
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
A₂	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
A₂	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
A₂	Retford ..	Mid. Counties	1 6½	1 2
A	Rhondda Valley	S. Wales & M.	1 8	1 3½
A₂	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
A₂	Rugeley ..	Mid. Counties	1 6½	1 2
A	Runcorn ..	N.W. Counties	1 8	1 3½
A₂	ST. ALBANS	E. Counties	1 6½	1 2
A	St. Helens	N.W. Counties	1 8	1 3½
B₂	Salisbury	S.W. Counties	1 4½	1 0½
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
A₂	Shrewsbury	Mid. Counties	1 6½	1 2
A₂	Skipton ..	Yorkshire	1 7	1 2½
B	Slough ..	S. Counties	1 5½	1 1½
A₂	Solihull ..	Mid. Counties	1 7	1 2½
A₂	South'pton	S. Counties	1 6½	1 2
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	Swadlincote	Mid. Counties	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
B	Teignmouth	S.W. Coast	1 6	1 1½
A	Todmorden	Yorkshire	1 8	1 3½
A₂	Torquay ..	S.W. Counties	1 7	1 2½
C	Truro ..	S.W. Counties	1 4	1 0½
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
A₁	Walsall ..	Mid. Counties	1 7½	1 2½
A	Warrington	N.W. Counties	1 8	1 3½
A₂	Warwick ..	Mid. Counties	1 7	1 2½
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 7	1 2½
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
A₂	Worcester ..	Mid. Counties	1 6½	1 2
A₂	Worksop ..	Yorkshire	1 6½	1 2
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 3

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

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

PRICES CURRENT

EXCAVATOR AND CONCRETOR

EXCAVATOR, *1s. 4½d. per hour*; LABOURER, *1s. 4½d. per hour*; NAVVY, *1s. 4½d. per hour*; TIMBERMAN, *1s. 6d. per hour*; SCAFFOLDER, *1s. 5½d. per hour*; WATCHMAN, *7s. 6d. per shift.*

*

Broken brick or stone, 2 in., per yd.	£0	11	6
Thames ballast, per yd.	0	11	0
Pit gravel, per yd.	0	18	0
Pit sand, per yd.	0	14	6
Washed sand	0	15	0
Screened ballast or gravel, add 10 per cent. per yd.			
Clinker, breeze, etc., prices according to locality.			
Portland cement, per ton	£2	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	1	6
SPREAD and level, including wheeling, per yd.	0	1	6
FILLING into carts and carting away to a shoot or deposit, per yd. cube	0	10	6
TRIMMING earth to slopes, per yd. sup.	0	0	6
HACKING up old grano. or similar paving, per yd. sup.	0	1	3
PLANKING to excavations, per ft. sup.	0	0	5
DO. over 10 ft. deep, add for each 5 ft. in depth, 30 per cent.			
IF left in, add to above prices, per ft. cube	0	2	0
HARDCORE, 2 in. ring, filled and rammed, 4 in. thick, per yd. sup.	0	2	1
DO. 6 in. thick, per yd. sup.	0	2	10
PUDDLING, per yd. cube	1	10	0
CEMENT CONCRETE, 4-2-1, per yd. cube	2	3	0
DO. 6-2-1, per yd. cube	1	18	0
DO. in upper floors, add 15 per cent.			
DO. in reinforced-concrete work, add 20 per cent.			
DO. in underpinning, add 60 per cent.			
LIAS-LIME CONCRETE, per yd. cube	£1	16	0
BREEZE CONCRETE, per yd. cube	1	7	0
DO. in lintels, etc., per ft. cube	0	1	6
CEMENT concrete 4–2–1 in lintels packed around reinforcement, per ft. cube	0	3	9
FINE concrete benching to bottom of manholes, per ft. cube	0	2	6
FINISHING surface of concrete spade face, per yd. sup.	0	0	9

DRAINER

LABOURER, *1s. 4½d. per hour*; TIMBERMAN, *1s. 6d. per hour*; BRICKLAYER, *1s. 9½d. per hour*; PLUMBER, *1s. 9½d. per hour*; WATCHMAN, *7s. 6d. per shift.*

*

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

*

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

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

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

BRICKLAYER

BRICKLAYER, *1s. 9½d. per hour*; LABOURER, *1s. 4½d. per hour*; SCAFFOLDER, *1s. 5½d. per hour.*

*

London stocks, per M.	£4	15	0
Flettons, per M.	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.	24	10	0
DO. *headers, per M.*	24	0	0
Colours, extra, per M.	5	10	0
Seconds, less, per M.	1	0	0
Cement and sand, see "Excavator" above.			
Lime, grey stone, per ton	2	17	0
Mixed lime mortar, per yd.	1	6	0
Damp course, in rolls of 4½ in., per roll	0	2	6
DO. *9 in. per roll*	0	4	9
DO. *14 in. per roll*	0	7	6
DO. *18 in. per roll*	0	9	6

BRICKWORK in stone lime mortar, Flettons or equal, per rod	£33	0	0
DO. in cement do., per rod	36	0	0
DO. in stocks, add 25 per cent. per rod.			
DO. in blues, add 100 per cent. per rod.			
DO. circular on plan, add 12½ per cent. per rod.			
DO. in backing to masonry, add 12½ per cent. per rod.			
DO. in raising on old walls, etc., add 12½ per cent. per rod.			
DO. in underpinning, add 20 per cent. per rod.			
HALF-BRICK walls in stocks in cement mortar (1–3), per ft. sup.	£0	1	0
BEDDING plates in cement mortar, per ft. run	0	0	3
BEDDING window or door frames, per ft. run	0	0	3
LEAVING chases 2½ in. deep for edges of concrete floors not exceeding 6 in. thick, per ft. run	0	0	2
CUTTING do. in old walls in cement, per ft. run	0	0	4
CUTTING, toothing and bonding new work to old (labour and materials), per ft. sup.	0	0	7
TERRA-COTTA flue pipes 9 in. diameter, jointed in fireclay, including all cuttings, per ft. run	0	3	6
DO. 14 ft. by 9 in. do., per ft. run	0	6	0
FLAUNCHING chimney pots, each	0	2	0
CUTTING and pinning ends of timbers, etc., in cement	0	1	0
FACINGS fair, per ft. sup. extra	0	0	3
DO. picked stocks, per ft. sup. extra	0	0	7
DO. red rubbers gauged and set in putty, per ft. sup. extra	0	4	9
DO. in salt white or ivory glazed, per ft. sup. extra	0	5	6
TUCK pointing, per ft. sup. extra	0	0	10
WEATHER pointing, do. do.	0	0	3
TILE creasing with cement fillet each side per ft. run	0	0	6
GRANOLITHIC PAVING, 1 in., per yd. sup.	0	5	0
DO. 1½ in., per yd. sup	0	6	0
DO. 2 in., per yd. sup.	0	7	0
If coloured with red oxide, per yd. sup.	0	1	0
If finished with carborundum, per yd. sup.	0	0	6
If in small quantities in finishing to steps, etc., per ft. sup.	0	1	4
Jointing new grano, paving to old, per ft. run	0	0	4
Extra for dishing grano, or cement paving around gullies, each	0	1	6
BITUMINOUS DAMP COURSE, ex rolls, per ft. sup.	0	0	7
ASPHALT (MASTIC) DAMP COURSE, ½ in., per yd. sup.	0	8	0
DO. vertical, per yd. sup.	0	11	0
SLATE DAMP COURSE, per ft. sup.	0	0	10
ASPHALT ROOFING (MASTIC) in two thicknesses, ⅞ in., per yd.	0	8	6
DO. SKIRTING, 6 in.	0	0	11
BREEZE PARTITION BLOCKS, set in cement, 1½ in. per yd. sup.	0	5	3
DO. DO. 3 in.	0	6	6
BREEZE fixing bricks, extra for each	0	0	3

THE wages are the Union rates current in London at the time of publication. The prices are for good quality material, and are intended to cover delivery at works, wharf, station, or yard as customary, but will vary according to quality and quantity. The measured prices are based upon the foregoing, and include usual builders' profits. Though every care has been taken in its compilation it is impossible to guarantee the accuracy of the list, and readers are advised to have the figures confirmed by trade inquiry.

MASON

MASON, *1s. 9½d. per hour*; DO. *fixer*, *1s. 10½d. per hour*; LABOURER, *1s. 4½d. per hour*; SCAFFOLDER, *1s. 5½d. per hour.*

*

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

*

HOISTING and setting stone, per ft. cube	£0	2	2
DO. for every 10 ft. above 30 ft. add 15 per cent.			
PLAIN face Portland basis, per ft. sup.	£0	2	8
DO. circular, per ft. sup.	0	4	0
SUNK FACE, per ft. sup.	0	3	9
DO. circular, per ft. sup.	0	4	10
JOINTS, arch, per ft. sup.	0	2	6
DO. sunk, per ft. sup.	0	2	7
DO. DO. circular, per ft. sup.	0	4	6
CIRCULAR-CIRCULAR work, per ft. sup.	1	2	0
PLAIN MOULDING, straight, per inch of girth, per ft. run	0	1	1
DO. circular, do., per ft. run	0	1	4
HALF SAWING, per ft. sup.	£0	1	0
Add to the foregoing prices, if in York stone, 35 per cent.			
DO. Mansfield, 12½ per cent.			
Deduct for Bath, 33⅓ per cent.			
DO. for Chilmark, 5 per cent.			
SETTING 1 in. slate shelving in cement, per ft. sup.	£0	0	6
RUBBED round nosing to do., per ft. lin.	0	0	6
YORK STEPS, rubbed T. & R., ft. cub. fixed	1	9	0
YORK SILLS, W. & T., ft. cub. fixed	1	13	0
ARTIFICIAL stone paving, 2 in. thick, per ft. sup.	0	1	6
DO. 2½ in. thick, per ft. sup.	0	1	9

SLATER AND TILER

SLATER, *1s. 9½d. per hour*; TILER, *1s. 9½d. per hour*; SCAFFOLDER, *1s. 5½d. per hour*; LABOURER, *1s. 4½d. per hour.*

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

*

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

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

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

*

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

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

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

	Med. Grey	*Med. Green*
24 in. × 12 in.	£5 0 0	£5 2 0
20 in. × 10 in.	5 5 0	5 10 0
16 in. × 10 in.	4 15 0	5 1 0
14 in. × 8 in.	4 10 0	4 15 0
Green randoms	6	7 0
Grey-green do.	5	9 0
Green peggies, 12 in. to 8 in. long	4	17 0

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

See "Sundries for Asbestos Tiling."

CARPENTER AND JOINER

CARPENTER, *1s. 9½d. per hour*; JOINER, *1s. 9½d. per hour*; LABOURER, *1s. 4½d. per hour.*

*

Timber, average prices at Docks, London Standard Scandinavian, etc. (equal to 2nds):			
7 × 3, per std.	£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	1	6
Mahogany, Honduras, per ft. sup. of 1 in.	0	1	4
DO. *Cuba, per ft. sup. of 1 in.*	0	2	6
DO., *African, per ft. sup.*	0	1	3
Teak, per ft. sup. of 1 in.	0	1	6
DO., *ft. cube*	0	15	0

*

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

continued overleaf

CARPENTER AND JOINER: *continued.*

SHUTTERING to face of concrete, per square	£1	10	0
DO. in narrow widths to beams, etc., per ft. sup.	0	0	6
USE and waste of timbers, allow 25 per cent. of above prices.			
SLATE BATTENING, per sq.	£0	12	6
DEAL boarding to flats, 1 in. thick and firrings to falls, per square	2	10	0
STOUT feather-edged tilting fillet to eaves, per ft. run	0	0	6
FEATHER-edged springer to trimmer arches, per ft. run	0	0	4
STOUT herringbone strutting (joists measured in), per ft. run	0	0	6
SOUND boarding, ¾ in. thick and fillets nailed to sides of joists (joists measured over), per square	2	0	0
RUBEROID or similar quality roofing, one-ply. per yd. sup.	0	2	3
DO., two-ply, per yd. sup.	0	2	6
DO., three-ply, per yd. sup.	0	3	0
TONGUED and grooved flooring, 1¼ in. thick, laid complete with splayed headings, per square	2	5	0
DEAL skirting torus, moulded 1¼ in. thick, including grounds and backings, per ft. sup.	0	1	0
TONGUED and mitred angles to do.	0	0	6
WOOD block flooring standard blocks laid herringbone in mastic :			
Deal 1 in. thick, per yd. sup.	0	10	0
DO. 1¼ in. thick, per yd. sup.	0	12	0
Maple 1¼ in. thick, per yd. sup.	0	15	0
DEAL moulded sashes, 1¾ in. with moulded bars in small squares, per ft. sup.	0	2	6
DO. 2 in. do., per ft. sup.	0	2	9
DEAL cased frames, oak sills and 2 in. moulded sashes, brass-faced pulleys and iron weights, per ft. sup.	0	4	6
MOULDED horns, extra each	0	0	3
DOORS, 4-panel square both sides, 1½ in. thick, per ft. sup.	0	2	6
DO. moulded both sides, per ft. sup.	0	2	9
DO. 2 in. thick, square both sides, per ft. sup.	0	2	9
DO. moulded both sides, per ft. sup.	0	3	0
DO. in 3 panels, moulded both sides, upper panel with diminished stiles with moulded bars for glass, per ft. sup.	0	3	6
If in oak, mahogany or teak, multiply 3 times.			
DEAL frames, 4 in. × 3 in., rebated and beaded, per ft. cube	£0	15	0
Add for extra labours, per ft. run	0	0	1
STAIRCASE work :			
DEAL treads 1¼ in. and risers 1 in., tongued and grooved including fir carriages, per ft. sup.	0	2	6
DEAL wall strings, 1¼ in. thick, moulded, per ft. run	0	2	6
If ramped, per ft. run	0	5	0
SHORT ramps, extra each	0	7	6
ENDS of treads and risers housed to strings, each	0	1	0
2 in. deal mopstick handrail fixed to brackets, per ft. run	0	1	6
4½ in. × 3 in. oak fully moulded handrail, per ft. run	0	5	6
1½ in. square deal bar balusters, framed in, per ft. run	0	0	6
FITTINGS :			
SHELVES and bearers, 1 in., cross-tongued, per ft. sup.	0	1	6
1¼ in. beaded cupboard fronts, moulded and square, per ft. sup.	0	2	9
TEAK grooved draining boards, 1¼ in. thick and bedding, per ft. sup.	0	4	6
IRONMONGERY :			
Fixing only (including providing screws) :			
TO DEAL—			
Hinges to sashes, per pair	0	1	2
Do. to doors, per pair	0	1	7
Barrel bolts, 9 in., iron, each	0	1	0
Sash fasteners, each	0	1	0
Rim locks, each	0	1	9
Mortice locks, each	0	4	0

SMITH

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

*

Mild Steel in British standard sections, per ton	£12	10	0
Sheet Steel :			
Flat sheets, black, per ton	19	0	0
DO., *galvd., per ton*	20	0	0
Corrugated sheets, galvd., per ton	20	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

PLUMBER

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

*

Lead, milled sheet, per cwt.	£1	13	6
DO. *drawn pipes, per cwt.*	1	14	0
DO. *soil pipe, per cwt.*	1	17	0
DO. *scrap, per cwt.*	1	5	6
Copper, sheet, per lb.	0	1	9
Solder, plumber's, per lb.	0	1	3
DO. *fine, per lb.*	0	1	9
Cast-iron pipes, etc. :			
L.C.C. soil, 3 in., per yd.	0	4	0
DO. *4 in. per yd.*	0	4	9½
R.W.P., 2½ in., per yd.	0	2	2
DO. *3 in., per yd.*	0	2	7
DO. *4 in., per yd.*	0	3	6½
Gutter, 4 in. H.R., per yd.	0	1	6½
DO. *4 in. O.G., per yd.*	0	1	10½

*

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

PLASTERER

PLASTERER, 1*s.* 9½*d. per hour (plus allowances in London only) ;* LABOURER. 1*s.* 4½*d. per hour.*

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Chalk lime, per ton	£2	17	6
Hair, per cwt.	1	15	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

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LATHING with sawn laths, per yd.	0	1	7
METAL LATHING, per yd.	0	2	3
FLOATING in Cement and Sand, 1 to 3, for tiling or woodblock, ¾ in., per yd.	0	2	4
DO. vertical, per yd.	0	2	7
RENDER, on brickwork, 1 to 3, per yd.	0	2	7
RENDER in Portland and set in fine stuff, per yd.	0	3	3
RENDER, float, and set, trowelled, per yd.	0	2	9
RENDER and set in Sirapite, per yd.	0	2	5
DO. in Thistle plaster, per yd.	0	2	5
EXTRA, if on but not including lathing, any of foregoing, per yd.	0	0	5
EXTRA, if on ceilings, per yd.	0	0	5
ANGLES, rounded Keene's on Portland, per ft. lin.	0	0	6
PLAIN CORNICES, in plaster, per inch girth, including dubbing out, etc., per ft. lin.	0	0	3
WHITE glazed tiling set in Portland and jointed in Parian, per yd., from	1	1½	6
FIBROUS PLASTER SLABS, per yd.	0	1	10

GLAZIER

GLAZIER, 1*s.* 8½*d. per hour.*

*

Glass : 4ths in crates :			
Clear, 21 oz.	£0	0	4½
DO. 26 oz.	0	0	5
Cathedral white, per ft.	0	0	7
Polished plate, British ¼ in., up to 2 ft. sup. per ft.	0	1	6
DO. *4 ft. sup.* "	0	2	9
DO. *6 ft. sup.* "	0	3	0
DO. *20 ft. sup.* "	0	3	7
DO. *45 ft. sup.* "	0	3	9
DO. *65 ft. sup.* "	0	3	11
DO. *100 ft. sup.* "	0	4	4
Rough plate, ¼ in., per ft.	0	0	6½
DO. *½ in., per ft.*	0	0	6½
Linseed oil putty, per cwt.	0	15	0

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GLAZING in putty, clear sheet, 21 oz.	£0	0	11
DO. 26 oz.	0	1	0
GLAZING in beads, 21 oz., per ft.	£0	1	1
DO. 26 oz., per ft.	0	1	4

Small sizes slightly less (under 3 ft. sup.).

Patent glazing in rough plate, normal span, 1*s.* 6*d.* to 2*s.* per ft.

LEAD LIGHTS, plain, med. sqs. 21 oz., usual domestic sizes, fixed, per ft. sup. and up	£0	3	0

Glazing only, polished plate, 6½*d.* to 8*d.* per ft. according to size.

PAINTER AND PAPERHANGER

PAINTER, 1*s.* 8½*d. per hour ;* LABOURER. 1*s.* 4½*d. per hour ;* FRENCH POLISHER, 1*s.* 9*d. per hour ;* PAPERHANGER, 1*s.* 8½*d. per hour.*

*

Genuine white lead, per cwt.	£2	7	6
Linseed oil, raw, per gall.	0	3	6
DO., *boiled, per gall.*	0	3	8
Turpentine, per gall.	0	4	0
Liquid driers, per gall.	0	8	6
Knotting, per gall.	0	18	0
Distemper, washable, in ordinary colours, per cwt., and up	2	5	0
Double size, per firkin	0	3	6
Fumice stone, per lb.	0	0	4½
Single gold leaf (transferable), per book	0	2	0
Varnish, copal, per gall. and up	0	14	0
DO., *flat, per gall.*	1	2	0
DO., *paper, per gall.*	0	16	0
French polish, per gall.	0	17	6
Ready mixed paints, per gall. and up	0	15	0

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

SUNDRIES

Fibre or wood pulp boardings, according to quality and quantity.

The measured work price is on the same basis . . . per ft. sup. £0 0 2½

FIBRE BOARDINGS, including cutting and waste, fixed on, but not including studs or grounds, per ft. sup. from 3d. to	0	0	6
Plaster board, per yd. sup. from	0	1	7
PLASTER BOARD, fixed as last, per yd. sup. from	0	2	8
Asbestos sheeting, $\frac{5}{32}$ in.. grey flat, per yd. sup.	0	2	3
DO., *corrugated, per yd. sup.*	0	3	3
ASBESTOS SHEETING, fixed as last, flat, per yd. sup.	0	4	0
DO., corrugated, per yd. sup.	0	5	0
ASBESTOS slating or tiling on, but not including battens, or boards, plain "diamond" per square, grey	2	15	0
DO., red	3	0	0
Asbestos cement slates or tiles, $\frac{5}{32}$ in. punched per M. grey	16	0	0
DO., *red*	18	0	0
ASBESTOS COMPOSITION FLOORING : Laid in two coats, average ¾ in. thick, in plain colour, per yd. sup.	0	7	0
DO., ½ in. thick, suitable for domestic work, unpolished, per yd.	0	6	6
Metal casements for wood frames, domestic sizes, per ft. sup.	0	1	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, per ft. sup.

Thickness	$\frac{3}{16}$ in.			¼ in.			$\frac{3}{8}$ in.			½ in.		
Qualities	AA.	A.	B.	AA.	A.	B.	AA.	A.	B.	AA.	A.	B.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Birch	4	3	2	5	4	3	7½	6	4½	8½	7	6
Alder	3½	3	2	5	4	3	6½	5½	4½	8	7	6
Gaboon												
Mahogany	4	3	3	6½	5½	4	9½	7½	—	1 0½	10	—
Figured Oak 1 side	8½	7	—	10	8	—	11½	—	—	1 6	—	—
Plain Oak 1 side	6½	6	—	7½	7	—	9½	—	—	1 0	—	—
Oregon Pine	5	4	—	5½	5	—	6	—	—	—	—	—