THE ARCHITECTS' JOURNAL

Wednesday, February 16, 1927

BOLD SCIENCE AND COY ART

I HAVE a wholesome regard for Science, so long as it keeps within its own proper domain; and it may be freely conceded that the legibility of print is certainly a very proper subject for medical inquiry; precious eyesight may depend on the conclusions reached. But it does not appear in the Report issued by the Privy Council Medical Research Council on *The Legibility of Print* (by R. L. Pyke, M.A., and published by His Majesty's Stationery Office) that quite sufficient weight has been given to the many other considerations involved. It is not sufficient that print should present a high degree of visibility. That is undeniably a quality of first-class importance, but, besides ease, the eye demands a certain degree of beauty, and it is a little unfortunate that, while it is quite evident that beauty can assist legibility, it is less clearly observable that the compliment is returned. This point of how beauty can assist legibility receives scant attention in the Report.

It may be fairly inferred that the legibility of print involves many considerations besides those tangible and measurable factors that are amenable to investigation in a laboratory. Concrete factors are, for example, texture and tone of paper, quality and colour of ink, size of type, space between words and between lines, length of lines (or, as a printer would say "width of measure"), indentation, margin, and so forth. Such material factors of legibility can be handled in the laboratory. But as regards, for instance, the design of type-faces, there are what may be called for the nonce certain art factors that defy analysis by laboratory methods, and among those intangible factors should be included a sense of proportion. Architects will recall with a grim smile the desperate efforts of Mr. Hambidge and others to reduce the Art of the Parthenon to an exact Science: and remembering it, they will hardly be surprised at the failure of any further attempt to standardize any type of beauty, or any beauty of type, or otherwise to calculate the incalculable or to weigh the imponderable.

Similar attempts to standardize type design, and incidentally to sterilize art, have been fairly numerous, and of course never successful. A single instance may be adduced. In the seventeenth century the *Académie* appointed Jaugeon to draw up a series of diagrams showing how type should be cut. He introduced them with the stultifying statement that "the eye is the sovereign ruler of taste." Grandjean, after attempting to work in accordance with the diagrams, said that he would accept this simple rule and throw all the others overboard. He had discovered that scientifically fettered Art moves ungracefully and pines for freedom.

Mr. G. B. Updike, in his admirable volumes on *Printing Types*, strongly supports Grandjean's conclusion. Speaking with unquestionable authority on typography, Mr. Updike observes that "a design for a type alphabet that may be entirely successful for the size for which it was drawn, cannot be successfully applied to all other sizes of the same series. Each size is a law unto itself, and is often bettered by modifications in the original design made by the feeling and taste of the designer." It may be remembered that Mr. Updike assisted Mr. Bertram Goodhue the architect in developing the famous "Cheltenham" series. Mr. Updike further bears witness that a trained eye "looking over impressions of a series of modern machine-cut types, can often tell which was the size originally designed, because it stands out as the most harmonious and successful. In this particular size the designer's eye had most modified the rules." In effect, the trained eye could see which type was the outcome of Art, and which was "base mechanical."

With the candour of the authentic man of Science looking for truth with a lantern, Mr. Pyke virtually concedes, although he does not admit it in so many words, that Art, or at all events as much or as little of it as may happen to be implied in the legibility of print, is an elusive subject in the laboratory. Witness a significant paragraph taken from the "Conclusions" in Mr. Pyke's excellent, though inconclusive, Report: "The hypothesis is here put forward that extremely large typographical differences must be present before it is possible to say that there is any difference in the objective legibility of types. Of types more slightly differentiated it is impossible to say that one is objectively more legible than another. Such types will be more legible according as they suit the psychological make-up of the reader. Hence the most legible type, in this subjective sense, is unlikely to be the same for all readers." Need anything more be said about the futility of dragging Art into the laboratory? If that truth needed demonstration, the Report is perhaps valuable in supplying it. Moreover, it is valuable as assembling a very useful collection and digest of many expert opinions on type-faces. It is perhaps ungracious to remark that so slender a pamphlet as the Report is too dear at 4s. net, and that the feeble "modern face" in which it is printed illustrates the subject of legibility by its rather negative example. At least, so it appears to our "psychological make-up."

NEWS AND TOPICS

LONDON'S OPEN SPACES—THE SLUMP IN STEEL HOUSES—THE LEGISLATIVE CHAMBER AT DELHI: A JOB FOR THE DRAUGHTSMEN—THE SHOP HOURS' ACT AND ART SHOWS.

THE Council for the Preservation of Rural England has wisely modified the original proposal made by Mr. Guy Dawber to appoint panels of architects to advise on the protection of rural scenery. According to the Council's most recent announcement, it "will place its services at the disposal of landowners and local authorities who may desire to have the advantage of the views and experience of its members." But we must recognize that the example of Oxford, where the late Mayor, Alderman J. Carter, invited three architects—Mr. Edward Warren, Mr. F. M. Elgood, and Mr. Rogers—to serve as architectural advisers, has not been encouraging. The new Mayor has failed to reappoint this advisory committee, who, indeed, were never officially consulted by the Council during the whole period of their appointment. A more practical procedure is that adopted by Bath, where an architect, together with a surveyor, and a magistrate, who acts as chairman, are available to advise on the protection of local features of antiquarian or architectural interest. If C.P.R.E. follow this model, they will win much sympathy.

* * *

Realizing how important it is that concerted action should be organized to secure the protection of rural scenery, we must all hope that the recent appeal made by Lord Crawford, Mr. Dawber, and others for subscriptions will be widely supported. It is, however, unfortunate that another fund should have been started almost at the same time for the preservation of old cottages, for the two must inevitably compete. This Old Cottage Fund is making remarkably good progress. I am told that Lord Iveagh has given £250, Sir Alfred Mond £200, Sir Charles Wakefield £100, and the late Lord Bearsted, just before his death, sent a donation of £25. C.P.R.E. will be well advised to try and secure co-ordination and possibly co-operate with this go-ahead and youthful organization for protecting old folk architecture.

* * *

To-morrow (Thursday, 17th) an exceptional opportunity is to be presented to Londoners of protecting their few remaining open spaces. Mr. Harold Swann and his town-planning committee of the L.C.C. have prepared an admirable town-planning scheme for the south-east district. Mr. C. H. Eyles, of the Ministry of Health, is to hold an inquiry to-morrow into this preliminary statement at Catford. My first impression on studying the map of the scheme is that quite a lot of it is coloured green, denoting land that is proposed to be kept out of the hands of the speculative builder. For, indeed, the chief feature of the scheme is the provision for reserving considerable areas of land—a much needed provision, in view of the fact that of 74,850 acres now in the L.C.C. area, less than 7,000 are made permanently secure for the public. But even if all the open spaces suggested in the south-east are reserved, it will leave only 883 as public ground, and if the area is developed at twelve houses to the acre, in time there will be a population of 395,000. On the basis of 4 acres to the 1,000, it will be necessary to reserve 1,580 acres for outdoor recreation. I am glad to hear that Eltham Court, a mansion of distinct architectural merit, and the remains of Eltham Palace—are to be included in a public park of 47 acres.

* * *

There was not much left of poor old Cambridge after Mr. Clough Williams-Ellis had pulled her to pieces at the debate of the Cambridge Union Society last week. The action of the president in inviting two distinguished architects—the other was Professor Patrick Abercrombie, Professor of Civic Design in Liverpool University—to speak on the amenities of rural and urban England was an unqualified success, the lively speech of Mr. Williams-Ellis in particular being enjoyed by the undergraduates present. No one could have expected that he would burst forth with such fury against the "devastated surroundings," as he called them, of the Cambridge colleges, and it is probable that the speaker felt in his heart of hearts that the motion he was supporting—that the amenities abovementioned had already been ruined past redemption—was doomed to defeat before the debate began, and therefore abandoned himself to language which Professor Abercrombie ascribed as due to the extravagances of a Welsh imagination! The majority of the audience did not believe Mr. Williams-Ellis's sad tale of serried ranks of ragged villas and blasphemous bungalows which drove him from Trinity College a quarter of a century ago; and when he described the Cambridge undergraduates as the flower of England—fine, comely cauliflowers who would not care a hoot for what he was saying—that clinched matters, and he lost his motion by ninety-three votes.

* * *

We have always declared in THE ARCHITECTS' JOURNAL that steel houses have no real future in this country. The latest official figures of the Ministry of Health seem to indicate that our expectations are being fully realized. We have heard too much of steel and wooden houses in the past seven years. Dr. Addison appointed, as long ago as 1920 a committee to inquire into new methods, while Mr. Wheatley in 1924 appointed the short-lived and emasculated Moir Committee. Politicians talked for many hours on the possibilities of steel and timber, while our daily Press from time to time have "stunted," with all the arts of popular journalism, some particular method. The total outcome of all this publicity is 3,114 houses built of special methods of construction, excepting concrete, in England and Wales. This total is infinitesimal as compared with the grand total of brick and concrete houses, completed in the same period, of over 750,000. In reply it is said by certain members of the House of Lords, who have been particularly active in "boosting" their own brand of steel house, that the coal dispute has delayed completion. But even of houses under construction by some special method, excluding concrete, there are only about 2,000 now being built.

* * *

As an architectural problem, the Legislative Chamber in Imperial Delhi presented a host of difficulties, I am told. The ingenious lay-out of roads at angles of 60 degrees implied lines of façade inclined either to the axes of the roads or to the outer faces of the secretariats, where the horizontals had already been given the utmost possible emphasis by long continuous mouldings, cornices of great projection, and by the use of different coloured stone for

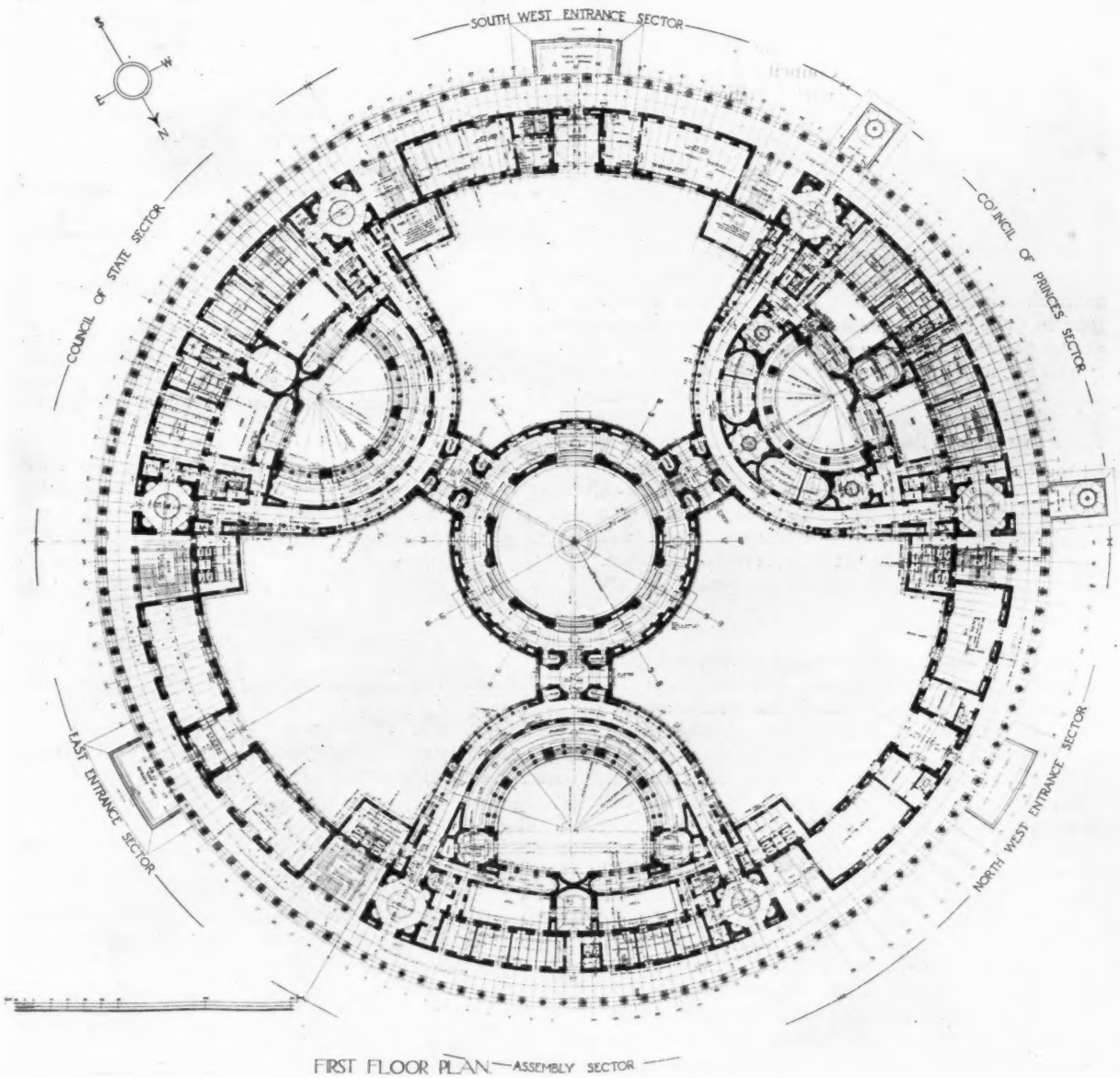
different stages of the work. To establish new straight horizontals out of parallel with these would have created a composition in perspective and skyline that might well have proved inharmonious, and the difficulty was avoided by cutting out all straight façades and enclosing the new building within an unbroken circular colonnade.

* * *

This masterly idea has proved admirably successful in execution, but the extraordinary form of the building brought about minor difficulties by the legion for the architect and his staff in drawing every feature to fit between concentric circles and diverging radii. In the golden age of Grecian architecture, when buildings were erected with rough faces, and were trimmed to shape after being constructed, such matters could be adjusted by a sort of masonic or sculpturesque freehand, but with every detail to be drawn out geometrically in advance, a system of equal numbered sectors had to be resorted to in agreement with the gross of columns and of intercolumniations of the external circuit. To draw the great circles demanded the use of extra large drawing tables and extra long laths for the beam-compasses.

* * *

I am not conversant with the provisions of the Shop Act, but I have personal reason for fearing that it will, in at least one direction, have an unfortunate effect on modern art in this country; and for this reason:—On a certain Saturday afternoon I went to Suffolk Street to see the Coats' pictures which are on exhibition and also on sale there. When I arrived I was told that the show was closed because of the Shop Act. At first I could not understand how an art exhibition could be affected by a measure which I



The first floor plan of the Legislative Building, Imperial Delhi.

supposed dealt, as its title indicates, with commerce. But it was pointed out to me that as the Coats' pictures are for sale, they properly came under the heading of commerce and within the meaning of the Act. I am nothing if not impartial, and I saw the point and recognized its logicality, although it did strike me that it was accentuating perhaps a little too strongly the fact that we are a nation of shopkeepers. But a further point arises. In practically all art exhibitions the pictures are for sale, from those in the Royal Academy downwards. Are we then to be confronted with the possibility that such places are to be systematically closed on the one afternoon on which alone many people have the opportunity of studying modern art in a pictorial form? And if so, are concert-rooms (the few of them we possess) to come under the same ban? For after all we pay for what we carry away in our minds if not in our hands.

* * *

And there is a further point which one would like cleared up. A shop is a place where things are sold, but for which no charge is made for entry. A picture gallery or a concert-room cannot be visited (except, of course, the national collections where nothing is sold and no charge of admittance made, except on certain days) without payment. The mere man would therefore like to know how such places can logically be placed on the same footing as shops. Surely the fact of payment, with a luxury tax superimposed, should be sufficient to differentiate between the two classes. Modern art in this country requires fostering as much as possible. Artists, as a rule, have but a thin time in these days when the majority of wealthy people appear to buy Old Masters, when they do so at all, as a speculative investment as much as anything, and leave the contemporary painter severely alone. Is not, therefore, this new law as applied to art exhibitions likely to prove a further set back to those who, although they are not necessarily commercial, are yet as much working men as our friends who unload ships or pick up roads? Since Haydon's time the arts have ever been looked at askance by a legislature which cannot apparently see anything beyond the cloud of votes to which it owes its existence.

* * *

In the show of the Royal Society of Painter-Etchers and Engravers at the R.W.S. Gallery, Pall Mall, there are some very ambitious things, especially among the tone studies. The president, Sir Frank Short, that splendid fellow of the etching craft, makes a poem of "The Shadowed Valley," a sky-effect over the South Downs. Architecturally the most interesting work is Sydney Lee's "Home of Mystery," a large and intriguing plate in aquatint with a little mezzotinting; rich in its white-grey and black tones, as well as in its subject. The soft richness of tones achieved by B. Eyre Walker is seen in two prints, creamy, almost pink, in "The Palais des Doms," and silvery in "Pont St. Benizet, Avignon," both very warm and satisfying. There is some sound construction in Ian Strang's "San Gil, Burgos," and Henry Rushbury's Paris studies are admirable in this respect. Frederick Marriott has made a showy picture of houses sitting on the hillside and top in "Roc-Amadour." It is a charming exhibition, where almost every prospect pleases and not even the line portraits of men are vile.

Amongst the wealth of interesting work shown at the Leicester Galleries there stands forth some that has assuredly been inspired by an intense, though, perhaps, partly unconscious, sympathy with its subject. Eric Kennington, with his pastels—a medium that seems to suit the atmosphere of Western Arabia—has beautifully caught the Bedouin character. The pose of the body that scorns any protection save that of the wall and roof of a goat-hair tent, the steadfastness of the eye accustomed to the survey of great spaces, these, and even more subtle points, are sympathetically observed and portrayed. The portrait of Said el Sikeini (No. 3), and that of Nawaf ibn Nuri Shaalan (No. 20) well illustrate this. Cosmo Clark's compositions, while so different in construction, yet are equally truthful, in their lines and groupings, to the Bedouin tradition. All interested should read Lawrence's own comments, printed as a foreword to the catalogue. They are most illuminating. It is to his true understanding of the Arabs—"those rank individualists who cling to their barren country that they may owe nothing to any man, and be owed nothing in return"—that the militarily successful issue of the campaign against the Turks is due. And all interested in Lawrence the man should read Bernard Shaw's all too short preface to the catalogue. This, with Augustus John's chalk drawing of Lawrence (No. 8), give us the true reading of an interesting personality.

ASTRAGAL

ARRANGEMENTS

WEDNESDAY, FEBRUARY 16

At the Royal Society of Arts. 8.0 p.m. Professor Ernest George Coker, M.A., D.SC., F.R.S., M.INST.C.E., on Photo-elastic Measurements of Stress Distribution. (Lecture 1.)

SATURDAY, FEBRUARY 19

The Architectural Association. Visit to the Brewers' Hall, Addle Street, Cheapside. (Tickets are to be obtained from the Secretary, the A.A.)

MONDAY, FEBRUARY 21

At the Architectural Association. 7.30 p.m. Howard Robertson, F.R.I.B.A., on Architecture in America. Illustrated by lantern slides.

At the Royal Society of Arts. 8.0 p.m. Professor Ernest George Coker, M.A., D.SC., F.R.S., M.INST.C.E., on Photo-elastic Measurements of Stress Distribution. (Lecture 2.)

THURSDAY, FEBRUARY 24

At the Design and Industries Association. 5.0 p.m. Annual General Meeting.

MONDAY, FEBRUARY 28

At the Royal Society of Arts. 8.0 p.m. Professor Ernest George Coker, M.A., D.SC., F.R.S., M.INST.C.E., on Photo-elastic Measurements of Stress Distribution. (Lecture 3.)

At the Royal Institute of British Architects. 8.0 p.m. General Meeting. Harvey Corbett on Organization and Cost of the Building Industry in America.

WEDNESDAY, MARCH 2

At the Royal Society of Arts. 8.0 p.m. Ulick R. Evans on the Corrosion of Metals at Joints and Crevices.

BURTON'S TUNBRIDGE WELLS: ii

[BY J. F. McRAE]

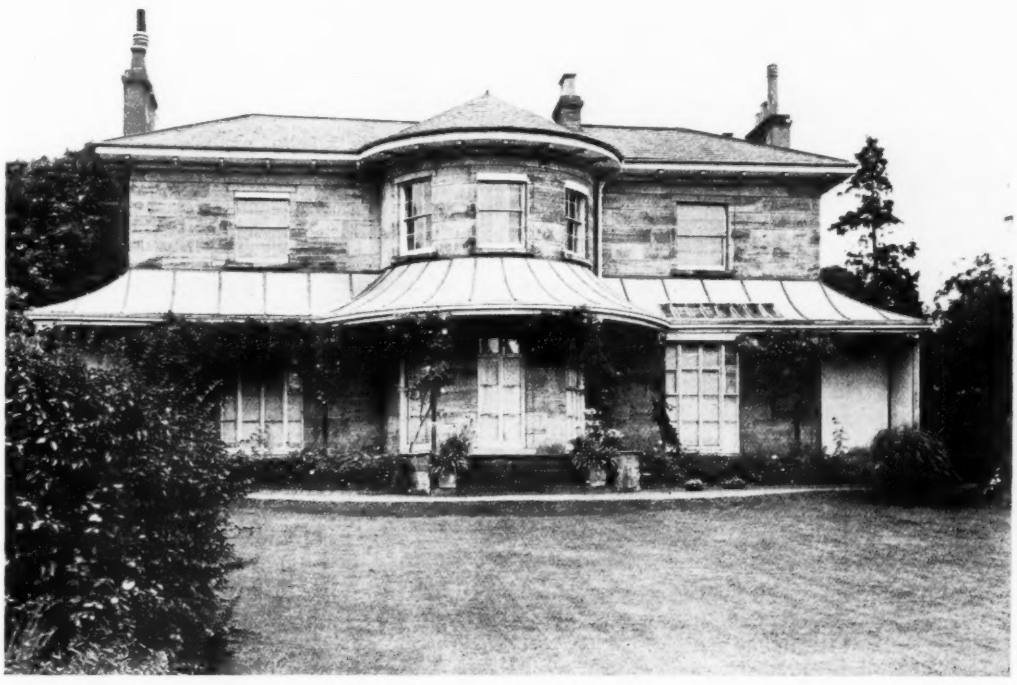
TUNBRIDGE WELLS was esteemed second only to Bath as a fashionable resort for seekers after health and pleasure. Its ozone-laden air, its chalybeate springs, its Pantiles Promenade where fashionables could flaunt and flirt while listening to more or less seductive music—all these allurements brought shoals of wealthy visitors, who, however, found the lodging accommodation wholly inadequate to their requirements. At the height of the season, the charming little town was always overcrowded. That had been pretty much its condition long before Burton's day. Queen Henrietta Maria had been at one time reduced to the extremity of camping out on the common. Much later, in the days of the wondrous Beau Nash, who every year rode in magnificent state to Tunbridge Wells, regarding it as "a sort of colony to his kingdom of Bath," there were brave doings, and the town was filled to overflowing. Intellectuals like Dr. Johnson, Goldsmith (whose entertaining *Life of Richard Nash* should not be forgotten), Garrick, Reynolds, Richardson, and others of the Johnson circle redeemed the dubious reputation "the Wells" had acquired as the resort of gallants, gamesters, and pleasure-hunters. In 1804, Mrs. Barbauld was there, following the then prevalent fashion of riding a donkey on the common, because, as she wrote to a friend, "the ass is much better adapted than the horse to show off a lady." Or, I assume, to throw off a lady; she would not have so monstrous far to fall, egad!

Four-and-twenty years after the date of Mrs. Barbauld's donkey-riding diversions, Decimus Burton began his extensive building and town-planning operations at Tunbridge Wells.

Bath must certainly have supplied him with a few general ideas. Burton was always keen on precedents, and those that Wood had established at Bath could not be safely ignored at Tunbridge Wells. Nevertheless, Tunbridge Wells is no mere replica of Bath, but is stamped with Burton's individuality.

Burton found Tunbridge Wells but little more than a village, and he made it a considerable town. He built in Calverley Park a number of villas "in the Italian and Grecian style of architecture," says a local historian contemporary with Burton, who perhaps prompted the description, but one would prefer to call that judicious mixture Burtonian Classic, deftly adapted to the tastes and proclivities of the newly rich middle-class "gentry" who, with the development of railways and the expansion of industry, had ousted "the Quality," but was struggling desperately to follow aristocratic manners and customs.

Loving park-like amenities, or perhaps merely regarding them from a strictly business point of view as enhancing the



13 Calverley Park. By Decimus Burton.

House at Great Culverden, near Tunbridge Wells. By Decimus Burton.

value of a health and pleasure resort, Burton laid out pleasure-grounds with the skill born of extensive practice in London parks and elsewhere. To the north of Calverley Park he set out the suavely curved crescent of "The Promenade," afterwards renamed Calverley Park Crescent. In Tunbridge Wells we get rather too much Calverley, for the name is remorselessly repeated in Park, Terrace, Hotel, and Place. At the hotel, which stands on Mount Pleasant, the Duchess of Kent used to lodge with the infant who in the fullness of time became Queen Victoria. It is Calverley This and Calverley That, and Calverley the Other, until it is with considerable relief that we come to Great Culverden, where through a pseudo-classical gateway we get a refreshing glimpse of a green lawn and see the finely proportioned dwelling built to the designs made by Decimus Burton. According to an old engraving shown by Messrs. Brackett and Sons of Tunbridge Wells, through whose hands the estate recently passed, and to whose intimate knowledge of the town I am also in other ways indebted, the façade of Great Culverden has been somewhat altered from its original state. The nicely proportioned pediment, windows, and urns, and the central position of the doorway, are decided improvements on the first design, which was probably made in 1830, at about which time Burton made the additions and alterations converting Mount Pleasant House, where the Duchess of Kent had lived, to what is now the Calverley Hotel.

In and around the charming little town, however, there are many Decimus Burton houses, large and small, that show no deviation from his original designs. But Great Culverden, as a single building, was Burton's most notable achievement in Tunbridge Wells, if we except his church of the Holy Trinity, which is chiefly interesting from its being built of stone quarried very near to its site; thereby fulfilling the purist ideal that a building should spring from the ground on which it stands. But the church gives the impression that Burton, being a Classicist confest and confirmed, worked rather uncomfortably in the so-called Gothic mode from a fourteenth-century model.

It is mere justice to attest that most of the domestic work in which the sign-manual of Decimus Burton is writ large and legible impresses the observer with a sense of purity and simplicity.

These houses, whether seen isolated or in groups, were quite obviously designed as dwellings for persons in whom reticence and refinement were an obligation of gentility. Burtonian Classic ministered so aptly to this cult of The Genteel that Burton was long regarded as its authentic high-priest. Too early in his career he acquired the dangerous reputation of a fashionable architect, and as a natural consequence his work became stereotyped and perfunctory. Excess of it stifled his art.

Still, the work of Decimus Burton is worth attention, if only for its value in marking a social phase and in pointing the moral that too much worldly prosperity is bad for art.

At the date of his painfully sudden death (on December 14, 1881), Decimus Burton had been on the R.I.B.A. retired list for twelve years, and a contemporary obituary notice spoke of him as "a straightforward, high-principled and cultured man. . . No architect was better known, and none was better respected, for he was amiable, considerate, and gentle to all." The date of his death coincided with that of George Edmund Street.

[*Concluded*]

SIR HERBERT BAKER

[BY A. B. KNAPP-FISHER]

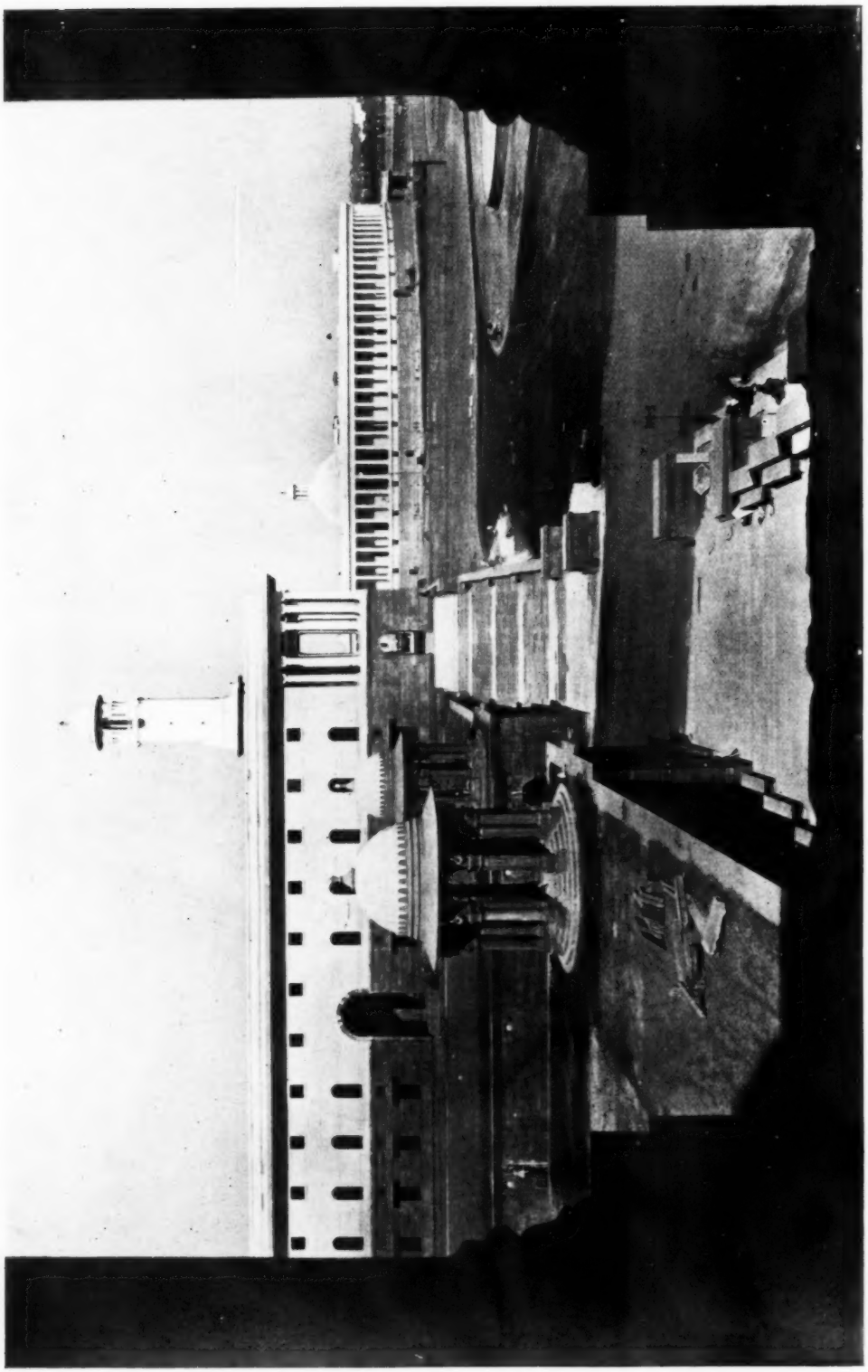
UNTIL recently the average layman was said to be able to mention the name of one great architect only: Sir Christopher Wren. Of recent years, however, another has been added to the list, that of the designer of the Cenotaph; although as often as not there is some difficulty over the pronunciation of the name. Now it is to be hoped that he will be able to mention Sir Herbert Baker, too, when tackled on the subject, although Baker himself would be the last person to wish it so.

Sir Herbert Baker was born in 1862, and educated at Tonbridge School, where he was captain of the cricket eleven. He received his architectural training at the Architectural Association schools when these were in their infancy, and then went into Ernest George and Peto's

The new capital at Delhi. Above, the legislative chamber building looking from the Grand Place. Below, the secretariat buildings; central portion of one block viewed from the opposite block. By Sir Herbert Baker.

The new capital at Delhi. The secretariat building. By Sir Herbert Baker. Above, the tower wing looking from the central processional way. Below, a view showing position of inclined processional way leading up to Government House.

The new capital at Delhi. The secretariat building.
By Sir Herbert Baker. View of the tower wing.



The new capital at Delhi. The secretariat building. By Sir Herbert Baker. The tower wing, with the circular legislative chamber building in the background.

The new capital at Delhi. The legislative chamber. By Sir Herbert Baker. Above, part of encircling colonnade and porch. Below, a detail of the porch, with the secretariat building in the distance.

Union Buildings, Pretoria.
By Sir Herbert Baker.

SOANE'S BANK OF ENGLAND

iv: PRINCES STREET ENTRANCE HALL

a: Plan and Long Section

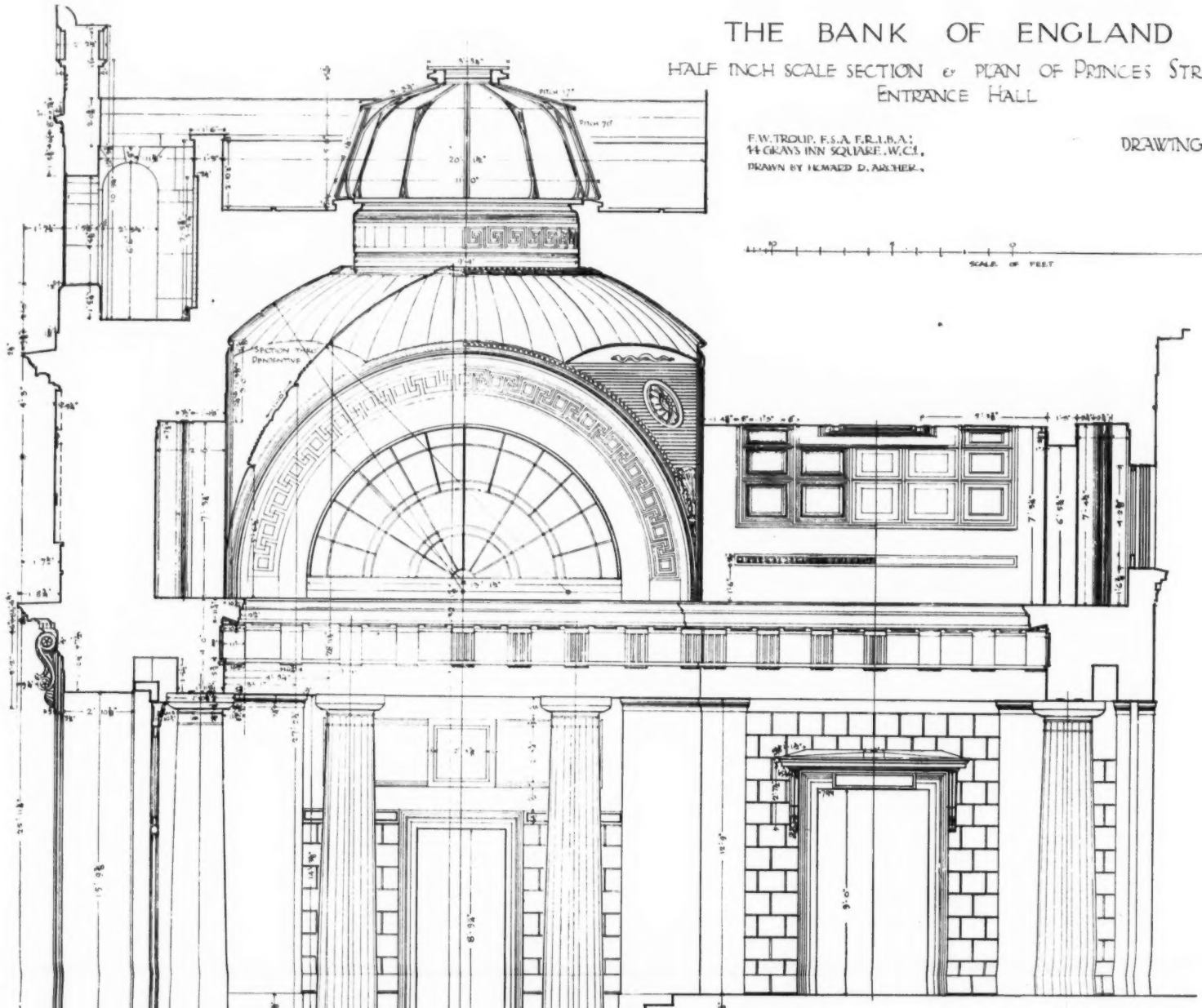
At the beginning of the nineteenth century the Bank acquired its final plan-form by the straightening-out of old Princes Street. The large triangular addition to the site was at once closed in by Soane with a continuation of his blank outer wall, leaving the interior to be developed as necessary. The Princes Street Entrance Hall followed quickly, in 1804-5, on the building of the wall and formed part of the scheme embracing the Governor's Court, with its famous loggia and the £5 Note Office alongside. The combination of Greek Doric columns and entablature with Roman vaulting is typical of Soane's unorthodox handling of the established styles. The varying heights of the columns give an unstable effect which could have been avoided by the use of plinths run out from the level of the top step.—[H. ROOKSBY STEELE.]

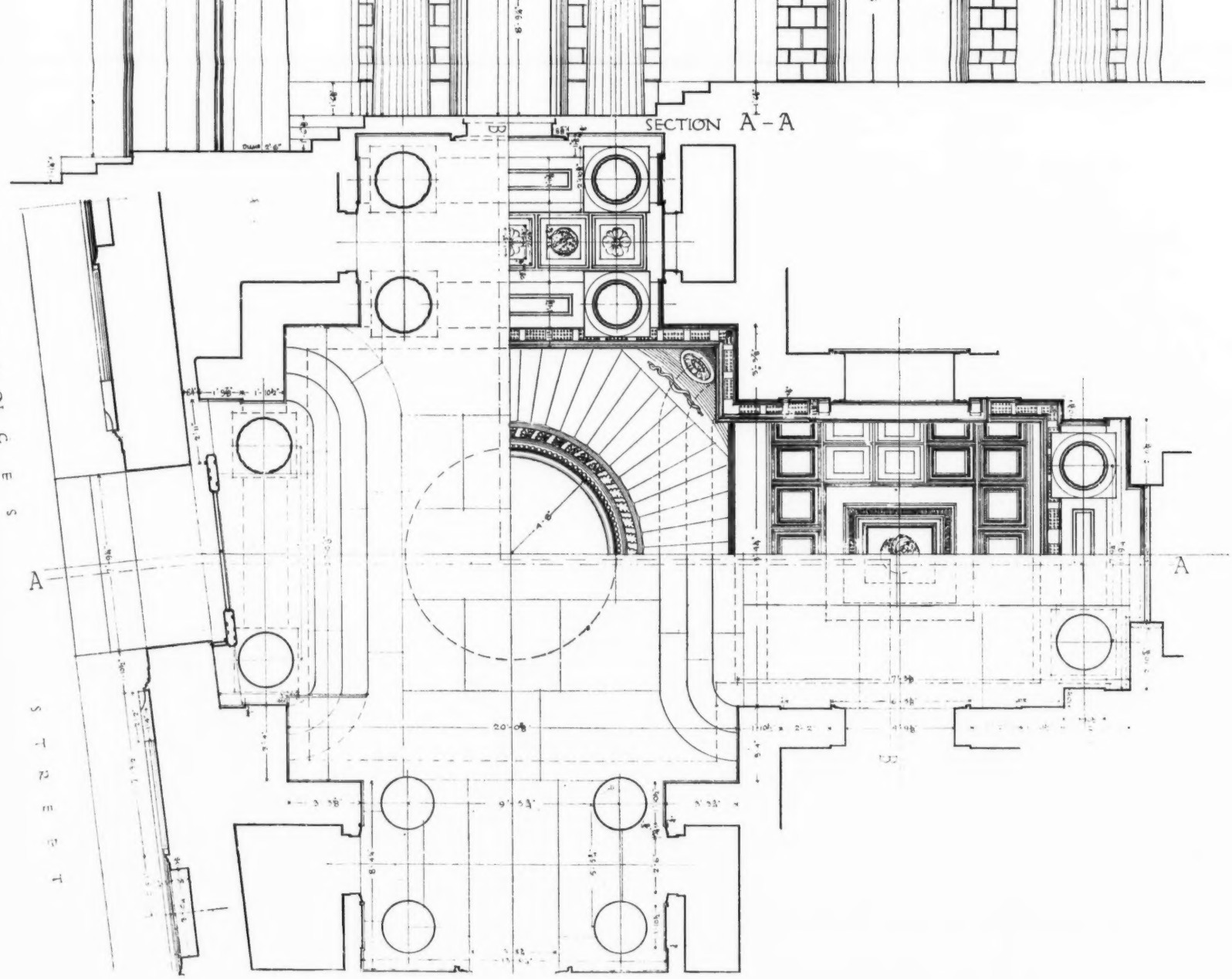
THE BANK OF ENGLAND

HALF INCH SCALE SECTION & PLAN OF PRINCES STREET ENTRANCE HALL

F.W. TROUP, F.S.A. F.R.I.B.A.;
14 GRAYS INN SQUARE, W.C.1.,
DRAWN BY HOWARD D. ARCHER.

DRAWING No 61





SOANE'S BANK OF ENGLAND. MEASURED DRAWINGS OF THE INTERIORS.
(*iv*) PRINCES STREET ENTRANCE HALL. (*a*) PLAN AND LONG SECTION

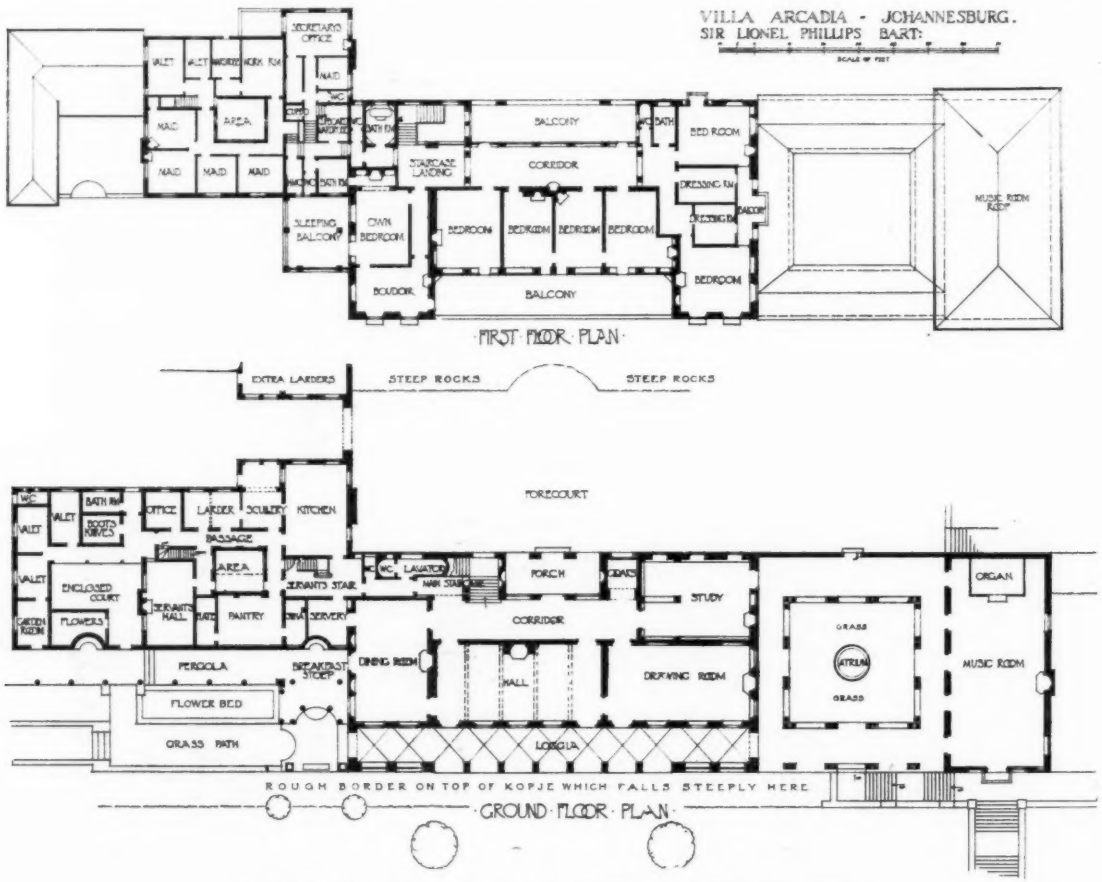
St. George's Church, Johannesburg. By Sir Herbert Baker.

office, where he was a contemporary of, among others, Mr. Guy Dawber, Sir Edwin Lutyens, Mr. Herbert Wigglesworth, and where it was said that whenever Baker was to be seen hurrying away from the office before the appointed hour it was known that cricket was the objective. Then, in 1892, the plunge was taken and Baker packed up his traps and left England for South Africa, where he opened up practice.

His first meeting with Cecil Rhodes was at a dinner party a few months after his arrival. The story goes that the conversation on South African and Imperial affairs had forced Baker into silent attention, and that afterwards

to go on with the work of repairing and rebuilding Groote Schuur. His remark to Baker that he liked teak and whitewash, and wanted the big and the simple, sums up the affinity that existed between his character and Baker's. They both abhorred anything small, mean, or smacking of the commercial.

It can truly be said that Baker gave form to Cecil Rhodes' ideals and aspirations, and as it happened he built his house at Groote Schuur, his tomb in the Matoppos, and his Memorial on Table Mountain; and now, at last, the Rhodes Hall in Oxford. Shortly after the Relief of Kimberley, Rhodes was the means of Baker's visiting Rome,



Sir Lionel Phillips' house, Arcadia, Johannesburg. By Sir Herbert Baker.

he was distressed to feel that perhaps he had not made the most of his opportunities. Rhodes, however, had noticed him, and (it is reported) turned to his neighbour and said: "I like the look of that young man; he doesn't talk too much. I should like to meet him again." Shortly afterwards they met, out on the mountain side. Rhodes stopped and spoke to Baker, and asked him to go to his house the next morning. Thus started a friendship between two men of such similar temperament and ideals; and so, too, started an architectural practice that for interest and variety in size has seldom been equalled. Baker's own description of Rhodes, as a man "who merely gave me in a very few words his ideas or his 'thoughts' as he used to call them, and trusted me for the rest," describes Baker himself with equal accuracy. Rhodes' approval of Baker's work for him could only be inferred by his enthusiasm

Paestum, Agrigentum, Thebes, and Athens. Apart from the work mentioned above, it is well known that Baker's chief buildings in South Africa are the Union Buildings, Railway Station, Government House, and Cathedral in Pretoria, and two more Cathedrals at Salisbury, Rhodesia, and Cape Town; and other churches in which he was associated with Mr. H. L. F. Fleming.

Just before the war Baker came back to England, calling at India on the way, where the new Delhi was to be built from his and Sir Edwin Lutyens' designs. All through the war, with a depleted staff and the difficulties of getting to and fro from India, the work began to take shape until last month the Council House, that immense circular building nearly half-a-mile in circumference, and accommodating the Council of Princes, the Council of State, and the Legislative Assembly, and a circular library in

Sir Lionel Phillips' house, Arcadia, Johannesburg. By Sir Herbert Baker.

the centre of the plan, was opened by the Viceroy, Lord Irwin. The following are interesting as extracts from a letter, dated January 20, 1927, sent home by Sir Herbert Baker: "They made a great push with the Council House, neglecting the secretariats—and it is finished all but some porches and odds and ends. The porches will look well. The opening ceremony was outside, and we, the architects and engineers, showed the Viceroy over, walking through the three chambers and the dome. The Court of Princes looked very well with seventy-two of the shields (temporarily) fixed. Water was in the fountains, and some rough gardening had been attempted. To-day I attended the election of the Speaker, and the general opinion is that the acoustics are good. The Press seem satisfied. I think the great dome is an effective room. It was certainly beautiful with masses of Indians in bright dresses crowding through it. The secretariats are almost wholly occupied. The great eastern front is done, and I am pleased with its general massing and grouping."

Farm at Balfour, Transvaal. An interior. By Sir Herbert Baker.

The area of the lay-out of the new Imperial city is about 3,400 acres in extent, and the ultimate cost will, it is understood, be in round figures somewhere about £10,000,000. After the war Baker was soon busy with housing and war memorials. He was associated with Sir Edwin Lutyens, Sir Reginald Blomfield, Mr. C. H. Holden, Sir John Burnet, and Sir Robert Lorimer on the War Graves Commission, planning, laying-out, and advising about the work in connection with the war cemeteries, and carrying out memorials at Neuve Chapelle, Delville Wood, and Tynecot. His office was at one time almost a forest of models of war crosses of various designs. He designed one of the first post-war villages for the employees of Messrs. Cammell Laird & Co., at Penistone, in Yorkshire, and War Memorials at Harrow School, Winchester College, the Kent County War Memorial at Canterbury, the Hampshire and Isle of Wight War Memorial, and many others. Later came the new grand stand at Lord's associated with Dr. Oscar Faber, and the new Bank of England.

Of the Winchester cloisters it is probably true to say that they will be handed down as a great work. Here, as so often in Baker's work, is found strength and power combined with a grace, refinement, and simplicity which must please even the most casual observer; and when such a combination exists there surely is good design. It is probably true to say that Baker is, like his buildings, strong, even rugged, but simple. There is no nonsense, no sham about him; his work must last because there is this true mixture which makes a man loveable and his work understandable. Baker's work always gives the expression of being fit for its purpose, well constructed, and decent to look at—probably the three main essentials of good building and good architecture.

Baker's association with the Round Table is well known, but he is not a mixer, and not every one's company: this is to his credit. He can be a conspicuous figure as he comes down Victoria Street in the morning, his Homburg hat the wrong way round, swinging a small basket full of vegetables picked from his country garden, one of the most beautiful in Kent (the work of Lady Baker), and striding along at six miles an hour. Once, it is said, the basket swung against a taxi-cab and vegetables were scattered all over Broad Sanctuary. With the simplicity of Brother Juniper, and so much of the force and character of St. Francis, there is no need to fear that his work will be forgotten. As he has so aptly quoted about Rhodes, so it can be said of him, who has wrought in stone and brick—

> —from these create he can
> Forms more real than living man,
> Nurslings of Immortality.

Farm at Balfour, Transvaal. By Sir Herbert Baker.

House in Pretoria for Sir W. Dalrymple. By Sir Herbert Baker.

CHEAP COTTAGE CONSTRUCTION: i

[BY EDWARD R. BILL]

To produce cheap houses there are two needs of vital import—first, the elimination of all unnecessary expenditure by reason of bad sites, careless or unpractical planning, and lack of business acumen; and secondly, the standardization of the integral parts. In rural districts where no sewage system is available a flat, low-lying site will generally entail exorbitant financial outlay in respect to drainage, due to deep trenches and difficulty of effluent disposal. In a recent scheme of four cottages with only sink and bath water to be dealt with the cost per house for drainage amounted to one hundred pounds through this cause alone. Difficulty in obtaining a satisfactory water supply is another cause of much expenditure, and in one instance, after spending over forty pounds per house on well-sinking, the water was eventually found to be polluted and condemned for drinking purposes. Sites having an undulating surface should generally be avoided, as unnecessary depths of foundations will be required in bringing up the walls to obtain a level floor. A site with a subsoil of hard rock necessitating blasting for the trenches will prove expensive and drainage disposal difficult in situations where there is no sewer.

A gravel subsoil is preferable to clay owing to less depth being necessary for foundations, and the comparative simplicity of surface drainage, but the level of the subsoil water should be ascertained, especially in the case of a site in the neighbourhood of a stream or river. Where the site embraces areas of filled-in pits, etc., unequal subsidence must be expected, with the consequent result of cracks in walls and solid floors, and this can only be prevented by reinforcement in the foundations and the subfloors. Trees upon the actual site of the houses may be expensive to uproot, especially if suitable material for filling in the root holes has to be carted from a distance. Sites with buildings standing on them should be viewed askance, for it frequently costs more to clear and prepare the sites and grub up the old foundations than the "builder's spoil" will realize, while, generally speaking, the labour spent in adapting old timbers, etc., to new requirements exceeds the cost of newly-wrought material.

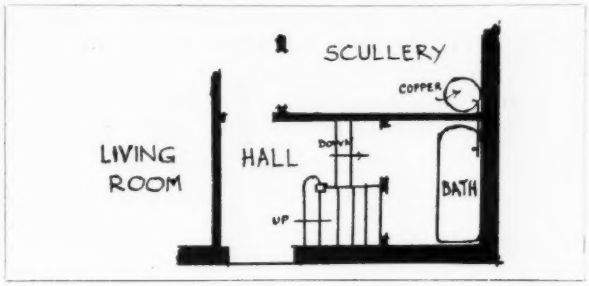
A site enclosed by good existing hedges will often save expenditure on boundary fences. If sand can be dug upon the site a considerable saving may thereby be effected, while a convenient stream or pond available for water required for building operations (which are frequently begun before the well is sunk) is an item it may not pay to overlook. Difficulties in the way of obtaining lodgings for the workmen, or in conveying them to and from the site will all add to the cost as may also the time of year during which the work is carried out. Another expensive mistake is the selection of sites long distance from any highway, railway station, or canal, and this is often done when the exigencies of the case do not demand it. Spots inaccessible by ordinary haulage methods, or approached by roads subject to inundation by floods, are better left alone.

Wherever possible road and sewage construction and the laying of gas, water, and electric mains should be avoided, for it is often cheaper in the long run to pay a higher price for land having a long frontage to an existing road, from which each house can be approached, than to purchase a cheap plot necessitating expensive road-making, etc. Where a number of houses are to be built in any district an effort should be made to minimize the number of the sites, as by this means considerable economy will be effected in the provision of drains and sewers, lighting and water services, road-making and boundary fencing, while the cost of such items as plant, machinery, tools, tackle, sheds, stores, latrines, foremen's office, supervision, walking time, etc., will be proportionately reduced with the number of the sites. Other causes affecting cost are rival schemes proceeding simultaneously in the same district and competing for the labour by higher rates of wages, wet-time allowances, and perhaps the prospect of a longer job or the opportunity of working overtime. Sites bordering on a district paying lower rates of wages may often get the benefit of joinery, etc., made in the cheaper area if the contractor happens to have workshops there. Costs will also be influenced by the nearness to a brickyard or a stone quarry, and frequently a site offering suitable aggregate for concrete construction may be discovered with a little trouble, and with a sufficient number of cottages to build may prove a fine investment.

One of the principal causes of high cost is bad and careless planning. Haphazard scattering of the sanitary fittings frequently results in long lengths of unnecessary drains, extra manholes, ventilating shafts, etc., while gullies may often be arranged to take the wastes from several fittings with possibly the down-spout water also, and in this way save much in branch drains and excavation. A common drain may often be arranged to serve a number of houses and thus, besides saving the cost of separate connections to the sewer in the street, the number of disconnecting chambers, traps, fresh-air inlets, and road and pavement reinstatements will be reduced considerably. Where a building line exists, to build some distance in the rear of it will result in longer drains and pipes and pathways.

Where cottages are built in terraces a great saving is effected in foundations, drains, and pipe runs, as well as brickwork, roofing, guttering, and down-pipes, but the ridge of a row of terraced houses with a falling frontage line should be stepped to follow the ground gradient as far as possible, or otherwise, the lower end will be unnecessarily high. Roof trusses are hardly ever necessary where careful planning has been exercised, while a low wall-plate is often possible over a staircase on an outside wall. Functionless gables will mean more down-pipes, swan necks, shoes, and stop-ends, while a cylinder, cistern, or lavatory basin promiscuously placed without reference to the boiler entails useless lengths of piping in supplies and wastes. Multiplication of chimney-stacks with their consequent trimming and leadwork, and the raising of the ground-floor level above the height required for dampcourses all adds to the cost, while a wide spanned roof not partly utilized for bedrooms is but so much wasted money. One large window may be frequently substituted for two small ones without the least disadvantage to planning or appearance, and thus save part of the cost of forming dual openings, with arches, centres, keys, and jamb-stools, not to consider the reduction in respect of frames and linings, architraves, and window-boards.

The hot-water supply to the bath is frequently a costly item; but where the planning will permit an excellent method is to place the bath close to the copper, when, by fitting the latter with a tap and length of hose-pipe, the bath may be supplied by gravitation directly from the copper. To be a success the copper must be raised sufficiently high above the bath to ensure the necessary depth of water, and this is sometimes arranged by keeping the boiler a little above, and the bath a little below, the floor level; but a better plan is to arrange the copper in the scullery, with the bathroom adjoining in which the floor level is down a couple of steps, and this arrangement may well be managed where the bathroom partly comes beneath the stairs. (See sketch.)



Rainwater can often be collected in tubs, which, besides affording a valuable supplementary water supply, improves the appearance of the cottages and saves the cost of sump-pits, drains, etc. The plaster cornice in the parlour might also prove an extravagance, while the floor boards, so often masquerading as half-timber framing in the gables, might certainly be spared without disaster. All embellishment will be rigorously suppressed and its cost eliminated when once it is appreciated that architecture is an affair of disposition and proportion rather than a fanfaronade of ornaments and mouldings.

In the provinces where it is exceptional for bills of quantities to be provided when inviting tenders for small houses, the builder usually prepares his tender from the $\frac{1}{8}$-in. scale plans and specification. It is therefore imperative that there should be no doubt as to the quality of materials and the nature and scope of the labour required, for experience proves that items which are clearly shown and specified will be reasonably priced, while items ambiguously described will be exorbitantly high to provide against unknown contingencies. Timber is often specified to be of certain brands which are most expensive to obtain and hardly ever used in practice, and certainly in 99 per cent. of cases, could never be identified by the man who specifies them !

Long paragraphs on how the concrete must be mixed, describing the full process to the smallest detail, will generally result in adding something extra to the cost as the contractor is never sure he may not be required to fulfil it to the letter. Only yesterday I saw a specification describing facing bricks which, if interpreted literally, would mean the picking over of a million bricks in order to obtain a few hundred satisfactory ones.

If stock moulded picture rail, architrave, or skirting may be used, the specification should clearly state it, or otherwise the cost of running special moulds may be included in the tender. Mention of " seconds " in respect to the quality of tiles or pipes or glass might save one from paying for first quality and getting " seconds " in the actual work. The thickness of rainwate goods, etc., should be stated, or " light " goods may be supplied at " heavy " prices. A short, clear specification, couched in terse and unequivocal language will usually secure a keen competitive tender, whereas one resembling Tennyson's brook may lose the architect his client.

A point to be considered carefully when comparing relative costs is the possibility of a saving on some particular item resulting in increased expenditure on the building as a whole. Occasionally heavy slates of certain sizes may be purchased at prices below those of lesser weight, but the additional cost of the stronger roofing timbers necessary may easily outweigh the small initial gain, and although the cost per yard of stone wall is occasionally less than that of brick, it is possible that when the labour to the openings, together with the greater width required for footings, dampcourse, window boards, etc., and the increased area of the roof are all considered, the brick will be found the less expensive material; so, to arrive at any true comparison of costs, it is necessary to take a comprehensive survey of all the relevant relationships affecting it.

[*To be concluded*]

CORRESPONDENCE

UNITY IN THE PROFESSION

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—I was interested to read in your New Year issue the Rt. Hon. J. Ramsay MacDonald's plea for friendly relations between those actively engaged in the building trades. I remember hearing him deal with almost the same subject when speaking at the dinner of the Association of Architects, Surveyors, and Technical Assistants, held last year at the Olympia. He pointed out, in regard to housing, that a detail thoughtlessly designed or a brick carelessly laid might become a source of continued annoyance to the occupier, and appealed to all engaged in this work to approach it with a friendly feeling towards the future owner, remembering that to him the house would be the centre of his life; not merely a " job," but a " home."

May I appeal for a little more of this essential spirit in the architectural profession ? I know of three excellent societies: the R.I.B.A., representing the profession as a whole; the A.A.S.T.A. the association for the assistant; and the A.A., the centre of the " schoolman." Why should not these bodies meet in social functions, in debates and lectures, and thus foster a better understanding between them of their several points of view, the result of which would be the whole profession working in harmony for its mutual benefit ?

N. D.

UP-TO-DATE CINEMAS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Astragal's knowledge of cinema developments is not nearly up-to-date. " Rear projection " is archaic by comparison with the improvements we achieved in Shropshire years ago ! The glories of the palace of Alcinous are not comparable with our picture palaces, which even Dædalus himself could never have designed, notwithstanding his success with the wooden cow for Pasiphaë !

FOR SALE, cheap, 160 Tip-Up Cinema, to ride and drive, 7 years old.

E. R. BILL

REFORM OF SPECIFICATION WRITING

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Mr. A. Seymour Reeves's article opens up an interesting subject. My own impression is that to write the specification by items in all trades, instead of the usual way of writing it by trades is a less sure method of getting everything into a specificationto avoid extras. My habitual way is the latter, but in the alteration of an old house, for instance, it becomes almost necessary to write a full specification of all trades for each item to be altered. The danger, then, is that you may forget certain trades connected with that item.

I have made it a practice to write all my own specifications, except where quantities have been taken out—and then to write a specification for the use of the surveyor, he afterwards re-writing or adding to it. And for years I have had a file, at first with slips of foolscap each about 3 in. or so in depth, on which a clause is written; later I have used a 300 loose-leaf book file.

This allows me to keep the clauses in proper order. Then in writing a specification I take the file and transfer such clauses as it contains useful to my purpose to the specification in hand. I write any new ones required, and there are always such, and add copies to my file, which thus grows, indeed, in length, but which need never be wholly copied in any one specification. It forms so comprehensive a repository of clauses that if gone through as one writes one cannot easily miss out anything that ought to be included. Possibly the same result might be brought about by making a list of headings of clauses only. But the writing out of the full clause, of course, ensures everything that in your most lucid moments has seemed to need specifying to be brought to mind again.

The file method allows of indefinite additions, always in their most appropriate order; it also allows of elimination of obsolete clauses. I agree that every specification should be indexed. But time does not always allow of this. The clauses should be numbered rather than the pages, as typing does not march with MS., so page numbering is apt to create confusion. The index is specially useful where some item occurs in more trades than one. This, of course, is a defect in the specification written by trades that Mr. Reeves's suggestion seeks to remedy.

It would be of interest to hear other experiences on the subject, and I hope other readers of the JOURNAL will add theirs for our benefit.

W. B. HOPKINS

LITERATURE

NORWEGIAN PEASANT ART

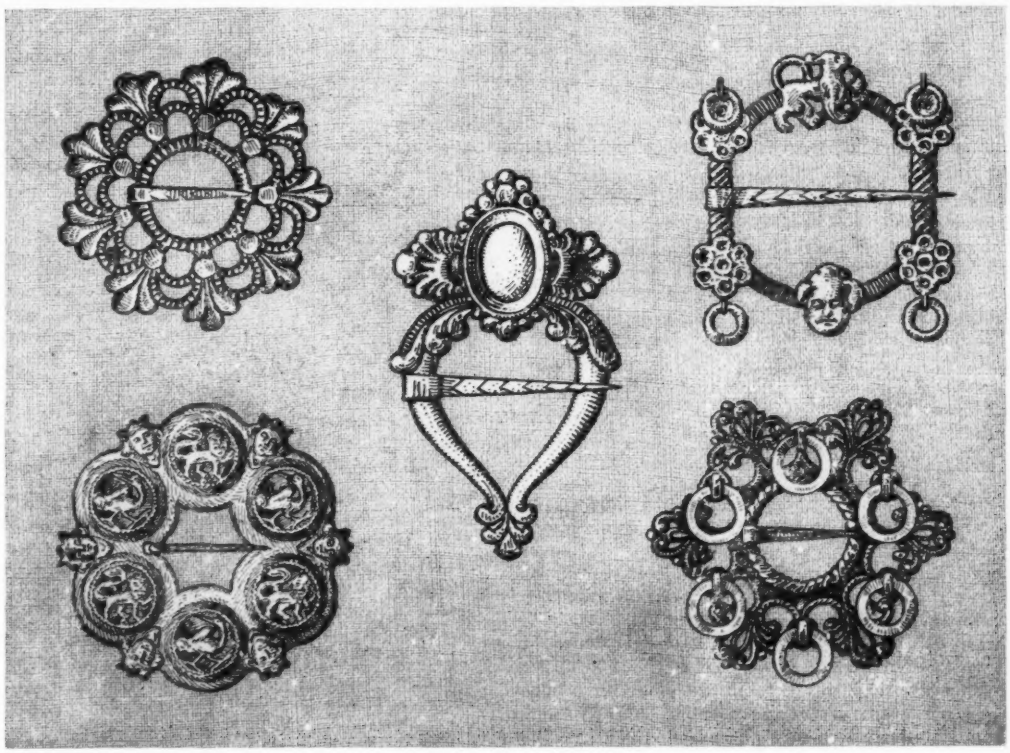
This folio contains eighty plates, fourteen in full colour, with letterpress, index, and introduction. It is an intimate record of the art of the people, and admirably illustrates the craftwork produced ; making labour beautiful in the common objects of their everyday life. In Scandinavia, situated on the fringe of Europe, the traditions of two races appear united in their art sympathies.

Here we have an art largely influenced by climate. With a long period of four to five dark, winter months—*pour passer le temps*—by this, work is provided, the antidote to ennui—and almost every peasant devotes his or her enforced leisure to sloyd (*slöjd*), creating and making embroidery, tapestry, leatherwork, wood-carving, furniture, wrought metalwork, jewellery, and pottery, in fact, every handicraft which individual or collective effort can devise. It is an object lesson to observe the effect of inspired sources of design, chiefly Norse, Celtic, and later eighteenth-century Renaissance ; in particular it should be noted how the materials used and the tools employed are turned to the best advantage.

In the section of wood-carving there is a suggestive panel for a box-lid with a centre not unlike our Tudor rose, and winged cherubs to the angles. Further, an admirable set of five brooches in metal are shown of diversified patterns, with rich effect gained in a simple manner. Needlework is displayed gay in colouring as applied to dress, personal in design, and marked with the individuality of a community to be found in all local art, in which an expert can detect the province or place of origin. Embroidery and tapestry show evidence of the strong love of colour. The motifs are mostly Renaissance, and the patterns dated have a true perception of the period style. (We note the scarcity of examples in the art of weaving.)

By far the largest output is that devoted to wood-carving, which comprises multitudinous objects for domestic use from furniture to cases for knitting needles. Many are extremely well drawn; the wooden beer-stoops or tankards illustrated are fascinating examples of flowing ornament, well spaced to fit the lid and borders surrounding the circular cup, elaborate but not too crowded, with the pattern well carried down into the handles; the ornament is drawn fully developed to show the complete design. Numbers of these old examples were originally coloured in addition to being carved. Spoons, ladles, chests, hand-mangles, hanging shelves, clock cases, cupboards, sleighs, all receive appropriate enrichment in carving and painting. The chair from Mandalskanten can be assigned to the Queen Anne period, with its bow-shaped legs, vigorous in execution without being coarse. This is a remarkable example of the widespread influence of a contemporary art.

Metalwork is represented chiefly by hammered iron, and notably in shop signs with refined detail. Door hinges are a common necessity, but these are made things to possess. A two-branch candlestick from Hallingdal fulfils its purpose for utility and charm of simplicity, combined with ornament. It was no doubt a labour of love for one beloved, as the emblems indicate. All this work goes to prove the peasant-craftsmen are good workmen measured by their own limited outlook on life. The spontaneous manner and much of the charm is due to the effort being untrammelled, and owes its freedom and vitality to the absence of too much learning, which ofttimes vitiates art before it has time to bear fruit.



Some Norwegian Metalwork. [*From* Norsk Prydkunst : Norwegian Peasant Art.]

For the student and those interested in the revival of village crafts this work has much to commend it, and the author achieves success by much time and patience given to provide this record. The printing and production are all that can be desired.

JAMES A. SWAN

Norsk Prydkunst: Norwegian Peasant Art. By M. Halfdan Arneberg. Edited by Henrik Bull, architect, Director Crafts School, Christiania (Oslo). H. Aschehoug & Co. (W. Nygaard), Christiania.

OVER FRAYS

Over Frays must be a very wonderful house, because anyone may see over it for "a time not exceeding a quarter of an hour" on payment of a fee of a guinea. When it is remembered that many of the great houses in England are open to the public at certain times without payment, or for a comparatively small sum, such as sixpence or a shilling, and that the length of the visit is not quite so restricted, it will be realized what a very wonderful house Over Frays must be; must be, that is, in the opinion of the owner, Mrs. Clarice H. M. Naylor-Davidson, who is the author of this very ecstatic book. However, interested as I am in houses, after reading the book I do not feel disposed to spend a guinea. Frankly I was a little disappointed. Over Frays would appear to be a pleasant, straightforward sort of house. Too straightforward in some respects, in that the front door is to be reached from the kitchen only by passing through the dining-room. But this is a defect that does not seem to trouble the owner. It is also fairly riddled with gadgets and devices, some of these, such as the gas fires in two halves which swing back into recesses and reveal a grate behind them, thus giving alternative means of heating, are of value, but I am doubtful if it is a good practice to cut down old brass stair-rods into toilet-roll holders.

However, in these days when there are so many captious and querulous clients, the architect must feel really blest whose client gives vent to a pæan of praise. I found Mr. Clough Williams-Ellis's name tucked away at the end of the book, although there is no reference to him elsewhere. It would thus appear that he is to be congratulated upon a very happy collaboration.

Over Frays, an Original House for Practical People. By Clarice H. M. Naylor-Davidson. Privately printed. Copies obtainable from Messrs. John and Edward Bumpus, Ltd., London. Price 21s.

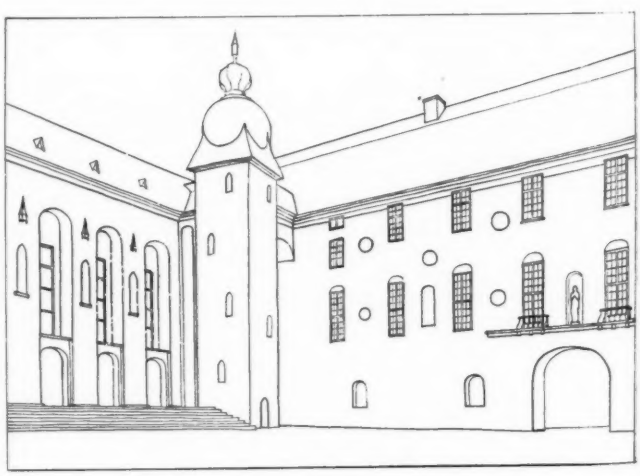
ARCHITECTURAL STYLE

In some of the earliest written ordinances of the guilds of Freemasons, workers in freestone, appears a list of the great ancestors of the craft, from Tubal Cain, who first taught crafts to man, down to Charles Martel, who wielded his hammer so lustily against the infidel. A proud place between Melchizedek and Solomon is occupied by the name of Euclid, who, according to the old historians, having learnt the craft from Abraham, passed it on to the Egyptians because the sons of their nobles had grown restive from having nothing to do, and so were put to school by Pharaoh to the young geometer. We picture Euclid as a little man, sure in thought, but nervous in speech. Coming of a seafaring nation, we can imagine that he spent some years of his life in the Mediterranean fleet, chasing pirates and patrolling the waters of the Levant. Here he must have learnt that love of accuracy and absolute obedience to a principle which can only be obtained from a naval education. We can reconstruct these lessons in architecture, the young Egyptian princes sitting round the feet of some colossal sphinx, hearing how the columns of their temples had developed from the earliest slender rods expanding into flower that held up the mud ceilings of the huts of their ancestors.

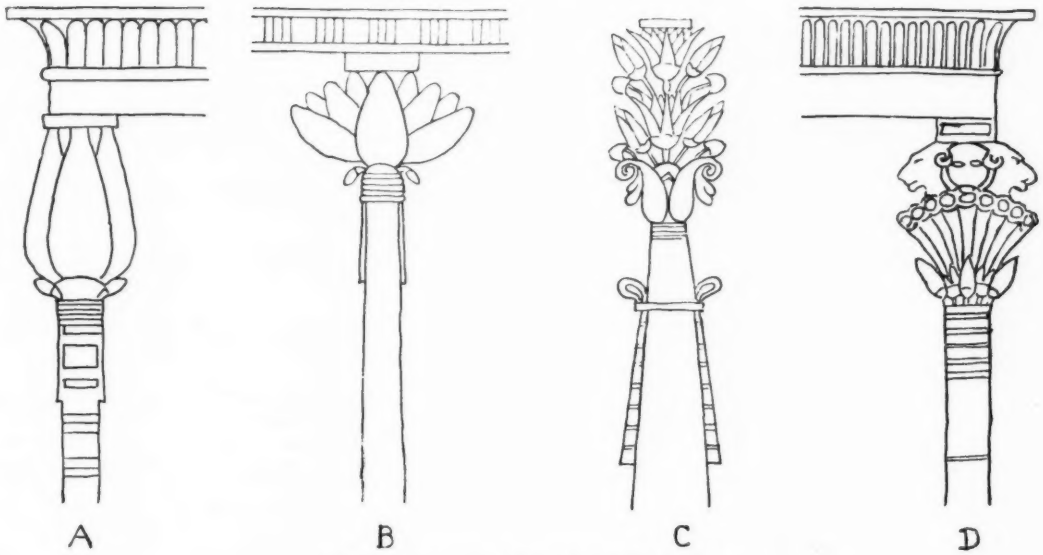
"Who taught the Egyptians how to punctuate their columns?" asks Mr. Trystan Edwards, in the book before us; and he answers that "the plants gave them this useful instruction in the elements of design." Mr. Edwards is wrong. The Egyptian learnt this science of number, punctuation, and inflection from a teacher after his own heart. Architecture before was a thing of cavernous openings and veiled darkness; afterwards, a science, clear and incisive. Cannot one imagine the young geometer dismissing, in a few brief sentences, the mysticism of the philosophers in almost the same words as those in which Mr. Trystan Edwards dismisses the experiences of the psychologists? "The beauty of a building is held to depend upon the establishment of a certain relationship between the parts of the building itself. Thus it can never be a question of taste, nor in any manner whatsoever a gift from the spectator to the object. . . . This metaphysic banishes psychology, it warns psychology off the field of art. . . . In so far as a building expresses these principles (number, punctuation, and inflection) it seems to be imbued with vitality, but in so far as it violates them it appears dull and lifeless."

The rules of geometry are fixed for ever, whatever fanciful variations of curve and cusp may derive from them. There can be no exception to them. When Euclid solves a problem, even the schoolboy knows there is no other way of solving it, and that whatever ingenious alternative he substitutes for the solution will be shattered infallibly by the blue pencil of his examiner.

This system has its virtues. Writers on art since Ruskin have been too timid of definition, too ready to take account of possible exceptions. To Mr. Edwards exceptions do not exist. It is a pity, perhaps, that he calls his work a "grammar of design," for the same schoolboy who knows the infallibility of Euclid knows also that grammar is learnt wholly through lists of exceptions, and that in the long growth of style rules are as much honoured in the breach as in the observance. A pillar may be punctuated on principle at the top and at the bottom. If the punctuation is omitted from one or other the rule is all the more emphatic. We must ask, Why was it done? Sometimes it was to lift the eye from the ground, to produce an atmosphere of floating, not of standing. Still, when one takes exception to Mr. Edwards's condemnations, one is arguing usually in terms of his own rules. I like the pillars of the Town Hall at Stockholm because of their punctuation. It is the rule that is important because, in this instance, it is not observed. I think of a bridge which a town surveyor has recently built. My criticism of it is that the divisions are too much marked—it sins against the canon of punctuation; that the curve is broken—it sins against the law of number. Whether the keeping of these laws really is the substance of beauty, or, as another writer suggests, merely its machinery, they are the foundation for most sound criticism. The very names chosen for them are sober and unemotional to the last degree. So are the axioms of Euclid. We are away from the clouds here, and can look at our beliefs in a cold, clear light. Given the premise, the logic of the rules is irresistible. It is based on an analysis of all developed architecture, seen perhaps in the light of that culmination of the Renaissance periods which, in England, was marked by the Regency of George IV. The rebels, the futurists, in architecture do not acknowledge the premise. Mr. Edwards



An illustration of lack of homogeneity between two façades. [*From* Architectural Style.]



A diagram illustrating the development of the capital from the flower. [*From* Architectural Style.]

has a short way with them, and in dealing with them alone does he permit himself to trespass on the pulpit of Ruskin. "If some of the 'modernist' architects would take a lesson from the horse's hoof, or meditate upon the bulrush, they would cease to shock our senses by confronting us with forms of building entirely devoid of sensibility."

If the Euclidean parallel may be continued, Mr. Trystan Edwards's hieroglyphic drawings illustrate and drive home every point with admirable clarity and briefness, they are far more attractive than diagrams, more relevant than photographs. The book is an admirably reasoned analysis of his faith, and his faith is, as he insistently points out, the faith of all true believers—a safe and wise book to place in the hands of the young student as well as in those of the disgruntled old practitioners.

H. C. HUGHES

Architectural Style. By A. Trystan Edwards. Faber and Gwyer. London. 10s. 6d.

THE PERMEABILITY OF PORTLAND CEMENT CONCRETE

This technical paper is of considerable interest to architects, civil engineers, and all large users of concrete. The question of the permeability of cement concrete is of the greatest importance, since a damp and porous wall or a leaky concrete water tank are obvious cases of failure on someone's part; but how often do we find permeable floors, partitions, and skirtings with their unhygienic consequences? Mr. Glanville's paper sets out to show how permeability is affected by—1: The influence of the constituent materials; 2: the effect of the method of preparing concrete; 3: the influence of the subsequent treatment of concrete. The series of curves, figure 3, shows very definitely that the condition of minimum "mortar voids" coincides with the minimum permeability and maximum crushing strength. This is well known, and is what one might expect from first principles; but in the case of "lean mixtures," i.e. of low cement content, the permeability increases at a surprising rate on either side of the minimum void position.

The important and difficult question of the quantity of the mixing water is discussed at some length. The method of arriving at the correct quantity is rather a vexed question. In this paper Mr. Glanville details a method for arriving at the "mortar voids," and these experiments show that the condition for minimum permeability is that these voids should be at a minimum or, in other words, the resultant concrete should have minimum volume. For field work a simple "slump and flow test" is recommended—a test that depends roughly on the angle of repose of a cone, the flow being the "spread" of the mix on a definite amount of bumping. With this test the condition for minimum permeability is a "slump" of from $\frac{1}{2}$ to 1 in. and a "flow" of about 8 in. This "mortar void" method has an obvious scientific basis, and its more extended use would often be an advantage, and might easily lead to a saving in cement without increase of permeability. Unfortunately many engineers consider the "slump and flow" method unreliable, and prefer to use percentage tables, a method that does not seem to allow for variations in the nature of the aggregate and its condition. Table 3 is interesting in showing the variation of permeability with varying cement content, first for a mix with the normal amount of mixing water, and then with a 20 per cent. excess of water. This table shows that as regards permeability very little is to be gained by using a mixture richer than 1 : 2 : 4 so long as the condition of minimum mortar voids is satisfied.

Mr. Glanville's remarks on "inert fillers" are interesting, and the tests as to permeability on the partial replacement of cement by fine sand, slate waste, etc., are shown in table 7. The very marked effect on permeability of "curing" conditions or conditions of setting deserve notice; the importance of this stage, more especially during the first couple of days, on the ultimate life of the structure is often overlooked.

At the end of the pamphlet a very clear and exhaustive summary is given of the results deduced from these experiments, which should be of considerable value to all users of concrete.

E. RICHARDS-ORPEN

Department of Scientific and Industrial Research: The Permeability of Portland Cement Concrete (Building Research Technical Paper No. 3). By W. H. Glanville. Price 1s. 6d. net.

BUILDING STONES

Mr. Warnes' book on building stones cannot fail to interest the architect, and none the less because some parts of it deal with controverted matters. Indeed, the whole question of stone decay and its prevention is still more or less in the experimental stage, despite the concentrated attention that has been bestowed upon it in recent years. Stone is rapidly replacing brick as a material for the fronts of London buildings, and its suitability and

permanence under the conditions of modern usage assume very great importance. The author commences with a short description of the natural geological production of stones, and has compiled a tabulated list to show the era, the geological system, and the series in which many of the building stones used in England are nominally classed. He advises his readers, however, to add field work to reading as part of their study of building stone, and this is a most useful suggestion now that chemical and microscopic investigation have almost ousted ordinary observation from the field of inquiry. After all, nothing succeeds like success, and the choice of a suitable stone may well be guided by the recognition that certain existing stones have endured well in similar circumstances.

The second chapter contains a detailed description of many building stones arranged in alphabetical order each stone has its chemical composition and chief physical properties set forth, and the way the stone decays is also explained. This is a valuable addition, and is calculated to direct the architect's attention to the selection of enduring types of material. The difficulties of conveying shades of difference in the behaviour of different stones in their processes of decay is made the more pronounced by the fact that the same stone may not decay uniformly. Of St. Aldhelm box-ground stone, which Mr. Warnes considers to be one of the best, if not the best, of the Bath stones, he writes: "Sills and weatherings will become eroded to a depth between $\frac{1}{32}$ and $\frac{1}{16}$ in. in certain positions, and in other positions the erosion will have extended to a depth of $\frac{1}{4}$ in., all in the same period of time." The chief marbles in use in England are described in chapter iii.

Chapter iv deals with granites, and with chapter v begins the second portion of the book, which contains a detailed description of the decay of building stone. Here the fact is mentioned that smokeless fuel, though it does not produce soot, may still hasten the decay of stone. Many smokeless fuels still give off sulphur dioxide which may be converted to sulphuric acid in the atmosphere, and carbon dioxide is always formed in the processes of combustion.

The parts played by bad design and by bad material and construction in the cracking and decay of stonework are very clearly set out. Frost and the swelling roots of plants are admitted as serious causes of decay by Mr. Warnes, though they have been treated as negligible by other writers. The relative speed of decay on hand-worked and machine-worked surfaces also receives attention. In respect to cleaning, the author issues a warning against the use of alkaline soaps and of caustic soda, although the employment of these cleansing agents is by no means uncommon, and some writers have gone so far as to advise the use of caustic materials in the mortar and in pockets specially made in the beds of the stone to preserve it from decay! The use of the steam brush is advocated, however, and to show how harmless this method may be, a series of experiments was made upon various stones, of which photographs are given in illustration of the appearance of their surfaces before and after treatment.

Preservative chemicals and processes are discussed in the last chapter, where the opinion is advanced that it is better to resort to the admittedly imperfect preservatives now known than to allow the stone to decay at a still greater rate. In the piecing up of fractured and disintegrated portions of stonework with mastic compounds or with sound new stone, a good key for the new work is essential, and all decayed stone must be cut out and non-corrosive dowels used where necessary. A point on which Mr. Warnes is quite emphatic is the futility of the lime-washing treatment lately advocated by the R.I.B.A. and the Society for the Preservation of Ancient Buildings. He fears the production of calcium sulphate crystals beneath an outer hard surface scale, which will be pushed off by them and which will carry particles of stone with it in its fall.

WILLIAM HARVEY

Building Stones: Their Properties, Decay, and Preservation. By Arthur R. Warnes, A.INST.P., F.I.C., M.I.CHEM.E., A.I.STRUCT.E., member of the Faraday Society, the Society of Chemical Industry, and the Chemical Engineering Group, and of the Ancient Monuments Society. London: Ernest Benn, Limited. Price 16s. net.

COMPETITION CALENDAR

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

April 30. Town Hall and Library, Leith. Assessor, Sir George Washington Browne, R.S.A. Four premiums are offered. Particulars and a plan of the site will be supplied to competitors after January 22, on payment of a fee of Two Guineas, which will be returned on receipt of a design in accordance with the conditions. Should architects on receipt of the particulars not desire to compete, the deposit will be refunded provided the papers are returned within four weeks. Inquiries to be addressed to Mr. A. Grierson, Town Clerk, City Chambers, Edinburgh.

June 15. Shakespeare National Memorial Theatre, Stratford-upon-Avon. The competition is open to architects of the British Isles and America. It will be in two sections—a preliminary competition for sketch design only, from which six designs will be selected by the assessors; each of the selected competitors will be paid £100 premium towards the cost of preparing a further more detailed design, which will form the second half of the competition. The selected architect will be paid in accordance with the Schedule of Charges sanctioned by the R.I.B.A. Assessors, Mr. E. Guy Dawber, P.R.I.B.A., and Mr. Cass Gilbert (who will both act in an honorary capacity), and Mr. Robert Atkinson, F.R.I.B.A. Particulars, with site plan, etc., from the Secretary, Shakespeare Memorial Theatre, Stratford-upon-Avon. Deposit £1 1s. (which will be refunded should the conditions be returned within one month).

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

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

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

No date. New offices at Trowbridge for the Wiltshire Working Men's Conservative Benefit Society. Assessors, Cyril A. Farey, A.R.I.B.A., and Robert Lowry, F.R.I.B.A. Premiums amounting to £250. Particulars from the Chief Secretary, Mr. Henry H. Dyer, Stallard Street, Trowbridge, Wilts, and depositing one guinea, which will be returned on receipt of a bona fide design or if the conditions are returned two weeks before the closing date of the competition.

THE PARK LANE HOTEL

Every one who saw the vast skeleton of steelwork in Piccadilly wondered how the Park Lane Hotel could possible survive in face of its proximity to so many established rivals, but at the opening dinner all doubts were completely resolved. All the speeches bore witness to the enthusiasm and skill which marked the development of the building from its inception, and high tributes were paid to Messrs. Higgs and Hill, who were the general contractors for the work. Mr. Matthew Hill made some enlightening remarks about the difficulties which had attended the erection of the building, and congratulated everybody concerned upon the admirable way in which the work had been carried out. More particularly he drew attention to the remarkable speed with which the Leeds Fireclay Co., Ltd., had produced the terra-cotta for the façade, and had kept permanently in advance of scheduled time. The figures of quantities of materials which Mr. Hill gave us were some indication of the magnitude of the work, and left us wondering by what marvel of organization the completion of the building had been effected with such amazing rapidity. It was typical of Messrs. Higgs and Hill that in describing the progress of their work every acknowledgment was made to the prowess of each individual workman.

READERS' QUERIES

DRAINING A PLOT OF LAND

R. H. writes : " A plot of land, divided into building sites, has been drained previously by agricultural drain pipes. The main line of the system cuts across the various building lots to a brook forming the outer boundary of the corner site. X buys and builds on this corner site ; Y buys and builds on the site adjoining. Y connects the effluent from his septic tank into the main line of agricultural drain, the result being that the outflow from his septic tank crosses X's land. Has Y any legal right to do this ? There is a ditch at the bottom of Y's plot into which he could take this effluent, but this would entail a considerable length of drain and increased expense. The local authority has no objection to the method Y has adopted. X is afraid that unless he can take steps to prevent it, in course of time, as other lots are built on, the effluents from their septic tanks will be connected with this drain which crosses his land."

In our opinion the use of a surface water drain as a sewer, for the collection and carrying away of the effluent from a septic tank, is a trespass, for which the owner of the septic tank, or other person who has permitted the sewage to flow, by the means described befouling the land of another, is liable in damages and to an injunction. A solicitor should be immediately consulted, and inquiry made of medical as well as legal advisers as to what evidence can be given of the probability of injury to health if the practice of using the drain as a sewer be largely extended.

LEX

A FLAT CONCRETE ROOF

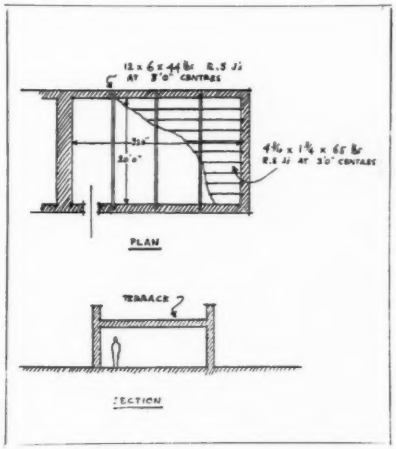
A. M. writes : " Which is the most satisfactory way of adding a flat concrete roof to an existing barn, 20 ft. × 32 ft., inside measurements, built of Cotswold stone ? The roof is to be used as a terrace. The plan and section are shown on the accompanying drawing (the stairway will be an outside one, to be added later). The work is to be done by the local builder. I cannot say whether he would have any difficulty in obtaining concrete slabs, should you advise me to use them ? I had thought of dividing the roof into four 8-ft. bays, with three R.S.J.'s running parallel to the short axis. If this is right, what section do you advise, and how would you treat the spaces between the beams ? "

The plan of dividing the length of the barn into four equal 8-ft. spans seems a good one. Taking the floor load at 150 lb. per square foot this gives a load on each girder of 150×8×20, or 24,000 lb., equally distributed over a span of rather more than 20 ft. R.S.J.'s equivalent to 12″×6″×44 lb. will be required. If special floor loads in the form of large boxes filled with earth are to be placed on the terrace they should be calculated on their merits.

A reinforced concrete flat roof may be constructed with small R.S.J.'s cleated to the webs of the main beams and packed around with concrete. Spaced 2 ft. apart these R.S.J.'s would have to carry 150×2×8 lb., or 2,400 lb., over a span of approximately 8 ft., and would have to be equivalent to $4\frac{3}{4}'' \times 1\frac{3}{4}'' \times 6{\cdot}5$ lb. The concrete should be thoroughly well made in the proportions of 1 part of Portland cement to 2 parts of clean, sharp sand, and 4 parts of screened ballast, or sound, broken stone to pass a ¾-in. mesh. It is important that the steelwork should be thoroughly covered to prevent cracks forming along the lines of the joists. The flat roof should be benched up to fall to outlets at its edges in the same sound concrete, not in an added filling of coke breeze, and allowance must be made for deflection in the steelwork. This may be managed by suspending all shuttering from the steel with bolts and allowing no props from the ground under the shuttering. The waterproofing of the upper surface may be completed with asphalt, or a layer of asphalt may be used with an upper cover of stone slabs, tiles, or concrete slabs to protect it from wear. Another way of making a flat roof watertight is to form a series of parallel raised ridges on the lower supporting deck of reinforced concrete and to support a floor composed of accurately fitting slabs on the raised ridges. The surfaces of the supporting deck between its ribs are laid to fall to outlets on each side of the building, which also serve as ventilators to the hollow spaces between the upper and lower decks. The surfaces of the lower deck and its ribs will probably be sufficiently impervious if rendered with cement and sand and a waterproofing material in accordance with the manufacturer's instructions. The upper deck of slabs should also be laid in such a manner that it is self-draining and watertight. Alternately, the whole roof may be formed in reinforced concrete covered with asphalt or other waterproofing material.

W. H.

The Editor welcomes readers' inquiries on all matters connected, directly or indirectly, with architectural practice. These inquiries are dealt with by a board of experts, to which additions are constantly being made as, and when, need arises. No charge is made to readers for this expert service. Diagrams must be clearly and legibly drawn out and lettered in black ink. Querists must enclose name and address. — Ed. A.J.



A flat concrete roof.
[See answer to A. M.]

WHITE POINTING OF BRICKWORK

P. C. writes : " Please give me the specification for pointing brickwork with a white joint. Economy in cost is a consideration."

The cheapest pointing or, rather, "jointing," for new work is to let the original mortar show on the surface and merely press it back into the joint with a piece of wood. A light colour is given to the mortar by choosing suitable ingredients, such as lime and white sand, or white cement and white sand. The several batches must be uniform. If the work is already erected, it may be pointed by raking out the joints and filling them with pointing mortar of the desired colour. The lime or cement mortar may be left flush with the surface of the work, or slightly recessed back behind this surface. New pointing may be made to look like old pointing that has stood the test of years by spraying its surface with clean water just as it sets, to bring out the grains of sand. It is not advisable to attempt to dispense with sand altogether in obtaining a white joint. A sample of pointing should be executed and its effect examined before a decision is finally made. Texture as well as colour counts in the final effect of the wall, and a "weatherstruck" joint is made slightly darker in tone by the shadow under the edge of the bricks in the course above the joint. "Tuck" and "bastard tuck" pointing are usually finished white on an artificially-coloured or blackened ground, but they are principally used in places where they are required to match existing work, and they do not fulfil the condition that the pointing shall be economical.

W. H.

DRY ROT IN FLOORS

J. B. writes : " A friend of mine purchased a new semi-detached house from a builder about three years ago. Some two years ago the kitchen floor gave way owing to dry rot and the builder put in a new floor at his own expense. Dry rot is now evident in the two remaining downstairs rooms—Is the builder under any obligation to take out these defective floors and make good at his own expense ? "

Under the circumstances that you mention the builder is under no obligation to take out the defective floors and make good.

LEX

THE WEEK'S BUILDING NEWS

The Notts. County Council is arranging for the construction of a by-pass road at RADCLIFFE.

*

Mr. S. F. Prior is to erect fifty garages at Burnt Ash Hill, adjoining LEE railway station.

*

The LEEDS Corporation is budgeting for an expenditure for the year of £1,000,000 for street improvements and £625,000 for housing.

*

Messrs. G. F. Bowman and Sons, architects, have been asked to prepare plans for new offices for the weights and measures department of the LEEDS Corporation in George Street.

*

The LEEDS Corporation has asked Messrs. Braithwaite and Jackman, architects, to prepare plans for alterations at the wholesale meat market to provide a sheep slaughterhouse and lairage.

*

Messrs. W. E. Battye & Co. are to erect shops at the junction of Stainbeck Road and Scott Hall Road, LEEDS.

*

The LEEDS Corporation Tramways Committee is acquiring a site in Goodman Street and Donisthorpe Street for the erection of a motor-bus garage.

*

The BIRKENHEAD Corporation is inquiring for sites for branch clinics in the north and south wards, the borough engineer having already prepared plans indicating the type of building to be erected.

*

The MANCHESTER Corporation is to proceed with works in the Audenshaw district in connection with the construction of the Haweswater aqueduct.

*

The BIRKENHEAD Corporation Estates Committee has approved the plans of the borough engineer for the erection of 553 houses on land north of Hoylake Road.

*

The BIRKENHEAD Corporation has passed plans for the erection of a picture palace in Borough Road.

*

The WINCHESTER Corporation is to erect forty-two cottages on the St. Giles' estate.

*

The RAWMARSH U.D.C. and Messrs. Stewarts and Lloyd, Ltd., are arranging for a joint housing scheme on the Clay Pit estate, it being proposed to erect over one hundred houses.

*

The BERKHAMPSTED U.D.C. is to erect fifty-five houses on the Swing Gate Lane estate.

The governors of the BECKENHAM Cottage Hospital are acquiring land in Shaftesbury Road for the extension of the hospital.

*

The BECKENHAM Education Committee is asking Mr. H. Storr Best, the U.D.C. surveyor, to prepare plans for the erection of the new Alexandra infants' school.

*

The NOTTINGHAMSHIRE County Council has instructed the county architect to report on proposals for the provision of more accommodation at the Shire Hall.

*

The rural councils of SHARDLOW and STAPLEFORD propose to embark on waterworks in the parishes of Sandiacre and Stapleford at a cost of £24,000.

*

The managers of the St. Anne's Church of England Schools, WORKSOP, have prepared plans for modernizing the school premises.

*

Plans are to be prepared by the Notts. Education Committee for the erection of an elementary school for 300 or 400 children at SKEGBY.

*

A new school for about 300 children is to be erected by the Notts. Education Committee at NEWSTEAD.

*

The Notts. Education Committee has prepared plans for the erection of an infants' school at HODSOCK LANGOLD. The cost is estimated at £9,000.

*

The Notts. Education Committee is to provide a technical institute at NEWARK at an estimated cost of £10,000.

*

A bridge is to be erected at BARNBY MOOR by the Notts. County Council.

*

The NOTTINGHAM Education Committee is to erect an elementary school for 1,200 children in the Wollaton Park district.

*

Messrs. Ormerod, Pomeroy and Foy, architects, have prepared plans for the provision of additional showroom accommodation for the gas department of the BOLTON Corporation.

*

The BOLTON Baths Committee suggest that public washhouses should be provided in the Bradford ward.

*

The Crown Cinema, High Street, PECKHAM, is to be reconstructed by Biocolor, Ltd., for whom plans are in preparation by Mr. E. A. Stone, the architect.

The BOLTON Education Committee is to proceed with the erection of an elementary school for 1,000 children at Tonge Moor. Architects practising in Bolton and the neighbourhood are to be invited to submit competitive designs.

*

At BECONTREE the London County Council is to proceed without delay with the erection of another 2,000 houses.

*

The NOTTINGHAM Corporation is to build a further 300 houses in accordance with plans prepared by Mr. T. C. Hewitt.

*

The DARLINGTON Corporation is shortly to proceed with the reconstruction of Cocker Beck bridge.

*

The Herts Education Committee is considering the provision of school accommodation at CHIPPERFIELD.

*

The WOKING U.D.C. is negotiating for a site of seven acres in Loop Road for another housing scheme.

*

In St. James Avenue, HAMPTON, Mr. J. Curtis is to erect eighteen houses.

*

The BARNSLEY Watch Committee urges the provision of a new fire station.

*

The LONDON County Council is to construct a new street and to erect dwellings for 1,106 persons on the Well Street site, Hackney.

*

The SALFORD Corporation is to lay out children's playgrounds at Ordsall and Liverpool Street at a cost of £8,000.

*

The NEWCASTLE Corporation is to close part of Halls Court in connection with a scheme for the extension of the vegetable market in Newgate Street.

*

The Postmaster-General is securing a site in HOUNDSDITCH for the erection of a post office.

*

The MANSFIELD Corporation is acquiring properties in order to carry out improvements which were sanctioned last year at a total cost of £250,000.

*

The HEMEL HEMPSTEAD Corporation proposes to reconstruct the canal bridge in Fushery Road.

*

The WATFORD Corporation has decided to erect a new public library.

At PORTSMOUTH plans have been passed by the Corporation for the following: shops in Commercial Road for Messrs. Burton, Ltd.; ten houses, Lichfield Road, for Mr. S. H. Wigmore; twelve houses, Lichfield Road, for Mr. A. Le Santo; eleven houses, Langstone Road, for Mr. S. Foley; sixteen houses, Dunbar Road, for Mr. M. Berney; fourteen houses, Baffins Road, for Mr. Le Santo; thirteen houses, Battenburg Avenue, for Mr. J. L. Winnicott; seventeen houses, Winton Road, for Mr. H. Williams; fourteen houses, St. Swithuns Road, for Mr. E. Wright.

*

The HAMPTON Urban District Council has approved the proposals of the Middlesex Education Committee to erect a school at Hampton Hill.

*

The CARLISLE Corporation has obtained sanction to borrow £17,000 for the purchase of part of the prison site.

*

The BRADFORD Corporation has obtained sanction to grant further housing subsidies to the extent of £75,000.

*

The Board of Education has agreed to the proposals of the BRADFORD Education Committee for the extension of Lidget Green elementary school.

*

The HAMPTON Urban District Council has approved the plans of the surveyor for the provision of accommodation for the rating department at the public offices.

*

The HAMPTON Urban District Council is seeking consent for the erection of thirty-eight houses on the Hanworth Road site.

*

The BARNSLEY Corporation has passed plans lodged by the Barnsley Brewery Company for a hotel at the junction of Rowland Road and Walton Street, and another at Doncaster Road, Stairfoot.

*

The BARNSLEY Corporation has obtained land from the Aire and Calder Navigation Company for the widening of Cliffe Lane bridge.

*

The BARNSLEY Corporation has decided to erect twenty-four houses at Huddersfield Road.

*

Mr. C. W. Turner has lodged plans with the EAST HAM Corporation for the erection of a Spiritualist Church at the corner of Shrewsbury Road and Strone Road.

*

At EAST HAM Messrs. Whinney, Son and Austen Hall are erecting new premises for the Midland Bank. The site is in Green Street.

At OCKENDON the West Ham Corporation is to erect an institution for mental defectives. It will accommodate 650 cases in the first instance.

*

The CHESTERFIELD Housing Committee, after consultation with architects, has arranged the following scale of fees for architects engaged by the Corporation on housing schemes: The architects to be paid £6 per house as follows: £2 when the tender is accepted, £3 when the houses are completed, and £1 when the accounts are finally settled, provided that as far as possible the houses shall be let to the architects in lots of fifty, and on the basis of not less than twenty-five houses in each contract.

*

The Borough Engineer and the Parks Superintendent of TORQUAY are to prepare a scheme for laying out the Babbacombe Downs estate, making provision for a bandstand.

*

The Devon Rosery Co., Ltd., has prepared plans for the erection at TORQUAY of fifty-two houses.

*

The TORQUAY Corporation is to proceed with the erection of another eighty-two houses on the Windmill Hill estate.

*

In connection with the proposal to erect the new wing to the new LONDON County Hall, it is officially stated that detailed consideration is being given by the committee to the plans with a view of a report being submitted to the Council as soon as possible.

*

In Chapel Row, WARWICK, Messrs. J. Parks & Co. are to erect a workshop.

*

The PORTSMOUTH Corporation is obtaining possession of farms at Portsdown Hill so that the scheme for the erection of 200 houses may be commenced.

*

The Herts Education Committee is preparing plans for the enlargement of the Camp School, ST. ALBANS, to accommodate 140 more scholars.

*

Plans are to be prepared by the Herts Education Committee for the enlargement of the elementary school at HEXTON.

*

The Herts Education Committee has completed the purchase of a site at Underhill, BARNET, for the erection of an elementary school.

*

A site in Potters Road, EAST BARNET, has been selected by the Herts Education Committee for the erection of an elementary school.

The Herts County Council is to convert premises at LETCHWORTH into a maternity and child welfare centre.

*

The Herts Education Committee is inviting the LETCHWORTH Education Authority to suggest an architect to design plans for the erection of a secondary school on a site in Spring Road.

*

The Herts Education Committee has authorized the county surveyor to enlarge the Northgate School at BISHOP'S STORTFORD.

*

In Queens Road, BARNET, the Herts Education Committee is obtaining a site for the erection of a new secondary school for boys to replace the Barnet Grammar School.

*

At WATFORD Girls' Grammar School extra accommodation is to be provided by the Herts Education Committee.

*

The BARNSLEY Corporation is to submit plans for the new abattoir to the local butchers' association for its views.

*

The BURTON-ON-TRENT Corporation is to raise a loan of £10,000 for sanitary improvements.

*

The year's estimates of the LONDON County Council Education Committee make allowance for an expenditure of £1,367,000 for new schools.

*

The London County Council is arranging for road widenings in the vicinity of the County Hall, NORTH LAMBETH, at a cost of £220,000.

*

The HITCHIN Rural District Council has acquired land at Holwell for the erection of houses.

*

The Herts Education Committee has purchased a site of eight acres in Heath Lane, HEMEL HEMPSTED, for the erection of a secondary school.

*

The Herts Education Committee has prepared plans for the erection of an elementary school in Burford Street, HODDESDON, at an estimated cost of £14,000.

*

The Herts County Council has promised to contribute towards the total cost of £30,000 for the widening by the HERTFORD Corporation of Mill Bridge.

*

The RICKMANSWORTH Urban District Council has under consideration the provision of a public library.

*

The WELWYN Rural District Council has a scheme for the erection of another hundred houses in the Garden City.

RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 8	1 3½
A₁	Abergavenny	S. Wales & M.	1 7½	1 2½
B	Abingdon ..	S. Counties	1 6	1 1½
A	Accrington	N.W. Counties	1 8	1 3½
A₃	Addlestone	S. Counties	1 6½	1 2
A	Adlington	N.W. Counties	1 8	1 3½
A	Airdrie ..	Scotland	*1 8	1 3½
C₁	Aldeburgh	E. Counties	1 4	1 0½
A	Altrincham	N.W. Counties	1 8	1 3½
B₃	Appleby ..	N.W. Counties	1 4½	1 0½
A	Ashton-under-Lyne	N.W. Counties	1 8	1 3½
A₃	Atherstone	Mid. Counties	1 6½	1 2
B₃	Aylesbury ..	S. Counties	1 4½	1 0½
B₃	BANBURY	S. Counties	1 4½	1 0½
B₃	Bangor ..	N.W. Counties	1 5	1 1
A	Barnard Castle	N.E. Coast	1 8	1 3½
A	Barnsley ..	Yorkshire	1 8	1 3½
B₁	Barnstaple	S.W. Counties	1 5½	1 1½
A	Barrow ..	N.W. Counties	1 8	1 3½
A	Barry ..	S. Wales & M.	1 8	1 3½
B₃	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
B₃	Bicester ..	Mid. Counties	1 4½	1 0½
A	Birkenhead	N.W. Counties	†1 9	1 3½
A	Birmingham	Mid. Counties	1 8	1 3½
A	Bishop Auckland	N.E. Coast	1 8	1 3½
A	Blackburn	N.W. Counties	1 8	1 3½
A	Blackpool	N.W. Counties	1 8	1 3½
A	Blyth ..	N.E. Coast	1 8	1 3½
B₃	Bognor ..	S. Counties	1 4½	1 0½
A	Bolton ..	N.W. Counties	1 8	1 3½
A₃	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1½
B₂	Bovey Tracey	S.W. Counties	1 5	1 1
A	Bradford ..	Yorkshire	1 8	1 3½
A₃	Brentwood	E. Counties	1 6½	1 2
A	Bridgend ..	S. Wales & M.	1 8	1 3½
B₃	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
B	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
A₃	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
B₃	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 8	1 3½
A	Carlisle ..	N.W. Counties	1 8	1 3½
B	Carmarthen	S. Wales & M.	1 6	1 1½
B₃	Carnarvon	N.W. Counties	1 5	1 1
A₁	Carnforth ..	N.W. Counties	1 7½	1 2½
A	Castleford	Yorkshire	1 8	1 3½
B₁	Chatham ..	S. Counties	1 5½	1 1½
B₁	Chelmsford	E. Counties	1 5½	1 1½
B	Cheltenham	S.W. Counties	1 6	1 1½
A	Chester ..	N.W. Counties	1 8	1 3½
A	Chesterfield	Mid. Counties	‡1 8	1 3½
B₃	Chichester	S. Counties	1 4½	1 0½
A	Chorley ..	N.W. Counties	1 8	1 3½
B₃	Cirencester	S. Counties	1 5	1 1
A	Clitheroe ..	N.W. Counties	1 8	1 3½
A	Clydebank	Scotland	1 8	1 3½
A	Coalville ..	Mid. Counties	1 8	1 3½
B₁	Colchester ..	E. Counties	1 5½	1 1½
A	Colne ..	N.W. Counties	1 8	1 3½
B₁	Colwyn Bay	N.W. Counties	1 5½	1 1½
A	Consett ..	N.E. Coast	1 8	1 3½
B₁	Conway ..	N.W. Counties	1 5½	1 1½
A	Coventry ..	Mid. Counties	1 8	1 3½
A₃	Crewe ..	N.W. Counties	1 6½	1 2
A₃	Cumberland		1 6½	1 2
A	DARLINGTON	N.E. Coast	1 8	1 3½
A	Darwen ..	N.W. Counties	1 8	1 3½
B₃	Deal ..	S. Counties	1 4½	1 0½
B₁	Denbigh ..	N.W. Counties	1 5½	1 1½
A	Derby ..	Mid. Counties	1 8	1 3½
A	Dewsbury	Yorkshire	1 8	1 3½
B	Didcot ..	S. Counties	1 6	1 1½
A	Doncaster	Yorkshire	1 8	1 3½
C₁	Dorchester	S.W. Counties	1 4	1 0½
A₃	Driffield ..	Yorks	1 6½	1 2
A₃	Droitwich	Mid. Counties	1 6½	1 2
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
A₃	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W. Counties	1 8	1 3½
B₃	Folkestone	S. Counties	1 4½	1 0½
A	Frodsham	N.W. Counties	1 8	1 3½
B₃	Frome ..	S.W. Counties	1 4½	1 0½
A	GATESHEAD	N.E. Coast	1 8	1 3½
B₁	Gillingham	S. Counties	1 5½	1 1½
B	Gloucester	S.W. Counties	1 6	1 1½
A₂	Goole ..	Yorkshire	1 7	1 2½
B	Gosport ..	S. Counties	1 6	1 1½
A₃	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
B₃	Harwich ..	E. Counties	1 5	1 1
B₃	Hastings ..	S. Counties	1 4½	1 0½
B₁	Hatfield ..	S. Counties	1 5½	1 1½
B	Hereford ..	S. W. Counties	1 6	1 1½
B	Hertford ..	E. Counties	1 5½	1 1½
A₁	Heysham	N.W. Counties	1 7½	1 2½
A	Howden ..	N.E. Coast	1 8	1 3½
A	Huddersfield	Yorkshire	1 8	1 3½
A	Hull ..	Yorkshire	1 8	1 3½

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

			I	II
			s. d.	s. d.
A	ILKLEY ..	Yorkshire	1 8	1 3½
A	Immingham	Mid. Counties	1 8	1 3½
B	Ipswich ..	E. Counties	1 6	1 1½
C₁	Isle of Wight	S. Counties	1 4	1 0½
A	JARROW ..	N.E. Coast	1 8	1 3½
A	KEIGHLEY	Yorkshire	1 8	1 3½
B₂	Kendal ..	N.W. Counties	1 5	1 1
B₃	Keswick ..	N.W. Counties	1 5	1 1
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
B₃	Lewes ..	S. Counties	1 4½	1 0½
A₃	Lichfield ..	Mid. Counties	1 6½	1 2
A	Lincoln ..	Mid. Counties	1 8	1 3½
A	Liverpool ..	N.W. Counties	‖1 10	1 4½
B	Llandudno	N.W. Counties	1 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
A₃	Malvern ..	Mid. Counties	1 6½	1 2
A	Manchester	N.W. Counties	1 8	1 3½
A	Mansfield ..	Mid. Counties	1 8	1 3½
B₃	Margate ..	S. Counties	1 4½	1 0½
A₃	Matlock ..	Mid. Counties	1 6½	1 2
A	Merthyr ..	S. Wales & M.	1 8	1 3½
A	Middlesbrough	N.E. Coast	1 8	1 3½
A₃	Middlewich	N.W. Counties	1 6½	1 2
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
A₃	NANTWICH	N.W. Counties	1 6½	1 2
A	Neath ..	S. Wales & M.	1 8	1 3½
A	Nelson ..	N.W. Counties	1 8	1 3½
A	Newcastle	N.E. Coast	1 8	1 3½
A	Newport ..	S. Wales & M.	1 8	1 3½
A	Normanton	Yorkshire	1 8	1 3½
A₂	Northampton	Mid. Counties	1 7	1 2½
A	North Staffs.	Mid. Counties	1 8	1 3½
A	North Shields	N.E. Coast	1 8	1 3½
B	Norwich ..	E. Counties	1 6	1 1½
A	Nottingham	Mid. Counties	1 8	1 3½
A	Nuneaton ..	Mid. Counties	1 8	1 3½
B	OAKHAM ..	Mid. Counties	1 5½	1 1½
A	Oldham ..	N.W. Counties	1 8	1 3½
A₃	Oswestry ..	Mid. Counties	1 6½	1 2
B	Oxford ..	S. Counties	1 6	1 1½
A	PAISLEY ..	Scotland	*1 8	1 3½
C	Pembroke	S. Wales & M.	1 4½	1 0½
A	Perth ..	Scotland	*1 8	1 3
A₃	Peterborough	Mid. Counties	1 6½	1 2
A	Plymouth	S.W. Counties	¶1 8	1 3½
A	Pontefract	Yorkshire	1 8	1 3½
A	Pontypridd	S. Wales & M.	1 8	1 3½
B	Portsmouth	S. Counties	1 6	1 1½
A	Preston ..	N.W. Counties	1 8	1 3½
A	QUEENSFERRY	N.W. Counties	1 8	1 3½
B	READING ..	S. Counties	1 6	1 1½
B	Reigate ..	S. Counties	1 5½	1 1½
A₃	Retford ..	Mid. Counties	1 6½	1 2
A	Rhondda Valley	S. Wales & M.	1 8	1 3½
A₃	Ripon ..	Yorkshire	1 6½	1 2
A	Rochdale ..	N.W. Counties	1 8	1 3½
B	Rochester ..	S. Counties	1 5½	1 1½
A₁	Ruabon ..	N.W. Counties	1 7½	1 2½
A₂	Rugby ..	Mid. Counties	1 8	1 3½
A₃	Rugeley ..	Mid. Counties	1 6½	1 2
A	Runcorn ..	N.W. Counties	1 8	1 3½
A₃	ST. ALBANS	E. Counties	1 6½	1 2
A	St. Helens	N.W. Counties	1 8	1 3½
B₃	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
A₃	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
B	South'pton	S. Counties	1 6	1 1½
B₁	Southend-on-Sea	E. Counties	1 5½	1 1½
A	Southport	N.W. Counties	1 8	1 3½
A	S. Shields ..	N.E. Coast	1 8	1 3½
A₂	Stafford ..	Mid. Counties	1 7	1 2½
A	Stockport ..	N.W. Counties	1 8	1 3½
A	Stockton-on-Tees	N.E. Coast	1 8	1 3½
A	Stoke-on-Trent	Mid. Counties	1 8	1 3½
B	Stroud ..	S.W. Counties	1 5½	1 1½
A	Sunderland	N.E. Coast	1 8	1 3½
A	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
A₃	Worcester	Mid. Counties	1 6½	1 2
A₃	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 3½

* Plasterers, 1*s.* 9*d.*

† Carpenters and Painters, 1*s.* 8½*d.*

‡ Plumbers, 1*s.* 9*d.*

§ Painters. 1*s.* 6*d.*

‖ Carpenters and Plasterers, 1*s.* 8½*d.*

¶ Painters, 1*s.* 7*d.*

PRICES CURRENT

EXCAVATOR AND CONCRETOR

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

Broken brick or stone, 2 in., per yd.	£0 11 6
Thames ballast, per yd.	0 13 0
Pit gravel, per yd.	0 18 0
Pit sand, per yd.	0 14 6
Washed sand	0 15 6

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

Portland cement, per ton	£2 19 0
Lias lime, per ton	2 10 0

Sacks charged extra at 1s. 9d. each and credited when returned at 1s. 6d.

Transport hire per day:

Cart and horse	£1 3 0	*Trailer*	£0 15 0
3-ton motor lorry	3 15 0	*Steam roller*	4 5 0
Steam lorry, 5-ton	4 0 0	*Water cart*	1 5 0

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

Exceeding 6 ft., but under 12 ft., add 30 per cent.
In stiff clay, add 30 per cent.
In underpinning, add 100 per cent.
In rock, including blasting, add 225 per cent.
If basketed out, add 80 per cent. to 150 per cent.
Headings, including timbering, add 400 per cent.

RETURN, fill, and ram, ordinary earth, per yd.	£0 1 6
SPREAD and level, including wheeling, per yd.	0 1 6
PLANKING, per ft. sup.	0 0 5

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

HARDCORE, 2 in. ring, filled and rammed, 4 in. thick, per yd. sup.	£0 2 1
DO. 6 in. thick, per yd. sup.	0 2 10
PUDDLING, per yd. cube	1 10 0
CEMENT CONCRETE, 4-2-1, per yd. cube	2 3 0
DO. 6-2-1, per yd. cube	1 18 0

DO. in upper floors, add 15 per cent.
DO. in reinforced-concrete work, add 20 per cent.
DO. in underpinning, add 60 per cent.

LIAS LIME CONCRETE, per yd. cube	£1 16 0
BREEZE CONCRETE, per yd. cube	1 7 0
DO. in lintels, etc., per ft. cube	0 1 6

DRAINER

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

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

STONEWARE DRAINS, jointed in cement, tested pipes, 4 in., per ft. 0 4 3

DO. 6 in., per ft.	0 5 0
DO. 9 in., per ft.	0 7 9
CAST-IRON DRAINS, jointed in lead, 4 in., per ft.	0 9 0
DO. 6 in., per ft.	0 11 0

Note.—These prices include digging concrete 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.

FACINGS, FAIR, per ft. sup. extra	£0 0 2
DO. Red Rubbers, gauged and set in putty, per ft. extra	0 4 6
DO. salt, white or ivory glazed, per ft. sup. extra	0 5 6
TUCK POINTING, per ft. sup. extra	0 0 10
WEATHER POINTING, per ft. sup. extra	0 0 3
GRANOLITHIC PAVING, 1 in., per yd. sup.	0 5 0
DO. 1½ in., per yd. sup.	0 6 0
DO. 2 in., per yd. sup.	0 7 0
BITUMINOUS DAMP COURSE, ex rolls, per ft. sup.	0 0 7
ASPHALT (MASTIC) DAMP COURSE, ½in., per yd. sup.	0 8 0
DO. vertical, per yd. sup.	0 11 0
SLATE DAMP COURSE, per ft. sup.	0 0 10
ASPHALT ROOFING (MASTIC) in two thicknesses, ¾ in., per yd.	0 8 6
DO. SKIRTING, 6 in.	0 0 11
BREEZE PARTITION BLOCKS, set in Cement, 1½ in. per yd. sup.	0 5 3
DO. DO. 3 in..	0 6 6

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

MASON

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

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

HOISTING and setting stone, per ft. cube	£0 2 2

DO. for every 10 ft. above 30 ft., add 15 per cent.

PLAIN face Portland basis, per ft. sup.	£0 2 8
DO. circular, per ft. sup.	0 4 0
SUNK FACE, per ft. sup.	0 3 9
DO. circular, per ft. sup.	0 4 10
JOINTS, arch, per ft. sup.	0 2 6
DO. sunk, per ft. sup.	0 2 7
DO. DO. circular, per ft. sup.	0 4 6
CIRCULAR-CIRCULAR work, per ft. sup.	1 2 0
PLAIN MOULDING, straight, per inch of girth, per ft. run	0 1 1
DO. circular, do. per ft. run	0 1 4
HALF SAWING, per ft. sup.	£0 1 0

Add to the foregoing prices if in York stone 35 per cent.

DO. Mansfield, 12½ per cent.	
Deduct for Bath, 33⅓ per cent.	
DO. for Chilmark, 5 per cent.	
SETTING 1 in. slate shelving in cement, per ft. sup.	£0 0 6
RUBBED round nosing to do., per ft. lin.	0 0 6
YORK STEPS, rubbed T. & R., ft. cub. fixed	1 9 0
YORK SILLS, W. & T., ft. cub. fixed	1 13 0

SLATER AND TILER

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

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

Slates, 1st quality, per 1200	
Portmadoc Ladies	£14 0 0
Countess	27 0 0
Duchess	32 0 0
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
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 18*s.* 0*d.* per square.

FIXING lead soakers, per dozen	£0 0 10
STRIPPING old slates and stacking for re-use, and clearing away surplus and rubbish, per square	0 10 0
LABOUR only in laying slates, but including nails, per square	1 0 0

See "Sundries for Asbestos Tiling."

CARPENTER AND JOINER

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

Timber, average prices at Docks, London Standard Scandinavian, etc. (equal to 2nds):

7×3, per std.	£20 0 0
11×4, per std.	30 0 0
Memel or Equal. Slightly less than foregoing.	
Flooring, P.E., 1 in., per sq.	£1 5 0
DO. *T. and G., 1 in., per sq.*	1 5 0
Planed Boards, 1 in. × 11 in., per std.	30 0 0
Wainscot oak, per ft. sup. of 1 in.	0 2 0
Mahogany, per ft. sup. of 1 in.	0 2 0
DO. *Cuba, per ft. sup. of 1 in.*	0 3 0
Teak, per ft. sup. of 1 in.	0 3 0
DO., *ft. cube*	0 15 0
FIR fixed in wall plates, lintels, sleepers, etc., per ft. cube	0 5 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, roof, 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
SLATE BATTENING, per sq.	0 12 6

PRICES CURRENT; *continued.*

CARPENTER AND JOINER: *continued.*

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

PLUMBER

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

Lead, milled sheet, per cwt.	£2	4	6
DO. *drawn pipes, per cwt.*	2	6	0
DO. *soil pipe, per cwt.*	2	8	0
DO. *scrap, per cwt.*	1	9	6
Copper, sheet, per lb.	0	1	0
Solder, plumber's, per lb.	0	1	2
DO. *fine, per lb.*	0	1	5
Cast-iron pipes, etc.:			
L.C.C. soil, 3 in., per yd.	0	4	1
DO. *4 in. per yd.*	0	5	0
R.W.P., 2½ in., per yd.	0	2	0
DO. *3 in., per yd.*	0	2	5
DO. *4 in., per yd.*	0	3	3
Gutter, 4 in. H.R., per yd.	0	1	5
DO. *4 in. O.G., per yd.*	0	1	9
MILLED LEAD and labour in gutters, flashings, etc.	3	12	6
LEAD PIPE, fixed, including running joints, bends, and tacks, ½ in., per ft.	0	2	1
DO. ¾ in., per ft.	0	2	5
DO. 1 in., per ft.	0	3	3
DO. 1½ in., per ft.	0	4	6
LEAD WASTE or soil, fixed as above, complete, 2½ in., per ft.	0	6	0
DO. 3 in., per ft.	0	7	0
DO. 4 in., per ft.	0	9	9
CAST-IRON R.W. PIPE, at 24 lb. per length, jointed in red lead, 2½ in., per ft.	0	2	5
DO. 3 in., per ft.	0	2	10
DO. 4 in., per ft.	0	3	3
CAST-IRON H.R. GUTTER, fixed, with all clips, etc., 4 in., per ft.	0	2	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	7	0
DO. 3 in., per ft.	0	6	0
Fixing only:			
W.C. PANS and all joints, P. or S., and including joints to water waste preventers, each	2	5	0
BATHS, with all joints	1	18	0
LAVATORY BASINS only, with all joints, on brackets, each	1	10	0

PLASTERER

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

Chalk lime, per ton	£2	17	0
Hair, per cwt.	0	18	0
Sand and cement see "Excavator," etc., above.			
Lime putty, per cwt.	£0	2	9
Hair mortar, per yd.	1	7	0
Fine stuff, per yd.	1	14	0
Sawn laths, per bdl.	0	2	9
Keene's cement, per ton	5	15	0
Sirapite, per ton	3	10	0
DO. *fine, per ton*	3	18	0
Plaster, per ton	3	0	0
DO. *per ton*	3	12	6
DO. *fine per ton*	5	12	0
Thistle plaster, per ton	£3	9	0
Lath nails, per lb.	0	0	4
LATHING with sawn laths, per yd.	0	1	7
METAL LATHING, per yd.	0	2	3
FLOATING in Cement and Sand, 1 to 3, for tiling or woodblock, ¾ in., per yd.	0	2	4
DO. vertical, per yd.	0	2	7
RENDER, on brickwork, 1 to 3, per yd.	0	2	7
RENDER in Portland and set in fine stuff, per yd.	0	3	3
RENDER, float, and set, trowelled, per yd.	0	2	9
RENDER and set in Sirapite, per yd.	0	2	5
DO. in Thistle plaster, per yd.	0	2	5
EXTRA, if on but not including lathing, any of foregoing, per yd.	0	0	5
EXTRA, if on ceilings, per yd.	0	0	5
ANGLES, rounded Keene's on Portland, per ft. lin.	0	0	6
PLAIN CORNICES, in plaster, per inch girth, including dubbing out, etc., per ft. lin.	0	0	3
WHITE glazed tiling set in Portland and jointed in Parian, per yd., from	1	11	6
FIBROUS PLASTER SLABS, per yd.	0	1	10

GLAZIER

GLAZIER, 1*s.* 8½*d. per hour.*

Glass: 4lbs in crates:			
Clear, 21 oz.	£0	0	5
DO. 26 oz.	0	0	5½
Cathedral white, per ft.	0	0	7½
Polished plate, British ¼ in., up to 2 ft. sup.	0	1	8
DO. *4 ft. sup.*	0	3	2
DO. *6 ft. sup.*	0	3	4
DO. *20 ft. sup.*	0	3	11
DO. *100 ft. sup.*	0	4	8
Rough plate, ⅛ in.	0	0	6⅞
DO. *¼ in., per ft.*	0	0	7
Linseed oil putty, per cwt.	0	17	6
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.

DECORATOR

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

Genuine white lead, per cwt.	£3	11	0
Linseed oil, raw, per gall.	0	3	7
DO., *boiled, per gall.*	0	3	10
Turpentine, per gall.	0	6	2
Liquid driers, per gall.	0	9	6
Knotting, per gall.	1	4	0
Distemper, washable, in ordinary colours, per cwt., and up	2	0	0
Double size, per firkin	0	3	6
Pumice stone, per lb.	0	0	4
Single gold leaf (transferable), per book	0	1	11
Varnish, copal, per gall. and up	0	18	0
DO., *flat, per gall.*	1	2	0
DO., *paper, per gall.*	1	0	0
French polish, per gall.	0	19	0
Ready mixed paints, per gall. and up	0	10	6
LIME WHITING, per yd. sup.	0	0	3
WASH, stop, and whiten, per yd. sup.	0	0	6
DO., and 2 coats distemper with proprietary distemper, per yd. sup.	0	0	9
KNOT, stop, and prime, per yd. sup.	0	0	7
PLAIN PAINTING, including mouldings, and on plaster or joinery, 1st coat, per yd. sup.	0	0	10
DO., subsequent coats, per yd. sup.	0	0	9
DO., enamel coat, per yd. sup.	0	1	2½
BRUSH-GRAIN, and 2 coats varnish, per yd. sup.	0	3	8
FIGURED DO., DO., per yd. sup.	£0	5	6
FRENCH POLISHING, per ft. sup.	0	1	2
STRIPPING old paper and preparing, per piece	0	1	7
HANGING PAPER, ordinary, per piece	0	1	10
DO., fine, per piece, and upwards	0	2	4
VARNISHING PAPER, 1 coat, per piece	0	9	0
CANVAS, strained and fixed, per yd. sup.	0	3	0
VARNISHING, hard oak, 1st coat, per yd. sup.	0	1	2
DO., each subsequent coat, per yd. sup.	0	0	11

SMITH

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

Mild steel in British standard sections, per ton	£12	10	0
Sheet steel:			
Flat sheets, black, per ton	19	0	0
Do., galvd., per ton	23	0	0
Corrugated sheets, galvd., per ton	23	0	0
Driving screws, galvd., per grs.	0	1	10
Washers, galvd., per grs.	0	1	1
Bolts and nuts, per cwt. and up	1	18	0
MILD STEEL in trusses, etc., erected, per ton	25	10	0
DO. in small sections as reinforcement, per ton	16	10	0
DO. in compounds, per ton	17	0	0
DO. in bar or rod reinforcement, per ton	20	0	0
WROT IRON in chimney bars, etc., including building in, per cwt.	2	0	0
DO. in light railings and balusters, per cwt.	2	5	0
FIXING only corrugated sheeting, including washers and driving screws, per yd.	0	2	0

SUNDRIES

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

The measured work price is on the same basis per ft. sup.	£0	0	2½
FIBRE BOARDINGS, including cutting and waste, fixed on, but not including studs or grounds, per ft. sup. from 3d. to	0	0	6
Plaster board, per yd. sup. from	0	1	7
PLASTER BOARD, fixed as last, per yd. sup. from	0	2	8
Asbestos sheeting, 5/32 in., grey flat, per yd. sup.	0	2	3
DO. *corrugated, per yd. sup.*	0	3	3
ASBESTOS SHEETING, fixed as last, flat, per yd. sup.	0	4	0
DO. corrugated, per yd. sup.	0	5	0
ASBESTOS slating or tiling on, but not including battens, or boards, plain "diamond" per square, grey	2	15	0
DO., red	3	0	0
Asbestos cement slates or tiles, 5/32 in. punched per M., grey	16	0	0
DO. *red*	18	0	0
ASBESTOS COMPOSITION FLOORING: Laid in two coats, average ¾ in. thick, in plain colour, per yd. sup.	0	7	0
DO. ½ in. thick, suitable for domestic work, unpolished, per yd.	0	6	6
Metal casements for wood frames, domestic sizes, per ft. sup.	0	1	6
DO. *in metal frames, per ft. sup.*	0	1	9
HANGING only metal casement in, but not including wood frames, each	0	2	10
BUILDING in metal casement frames, per ft. sup.	0	0	7

Waterproofing compounds for cement.

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

Plywood:			
3 m/m alder, per ft. sup.	0	0	2
4½ m/m amer. white, per ft. sup.	0	0	3¾
⅜ m/m figured ash, per ft. sup.	0	0	5
4½ m/m 3rd quality, composite birch, per ft. sup.	0	0	1½