



Wednesday, August 1, 1928

WHERE ARCHITECTURE IS SINFUL

HERE is a kind of person whose views are sometimes associated with the reigns of Oliver Cromwell and Queen Victoria, and about whom no quality is more conspicuous than his hatred and distrust of all that is pleasant in the lives of his fellow men. Such a person is most commonly described as a puritan, an epithet which is about as fair as most of the epithets taken from history. Of recent years he has been referred to as a *pussyfoot*. He is not popular in this country today and, generally speaking, little applause is gained by publicly denouncing him. In most things to flog the intolerance of the puritan is to flog a dead horse, while to support his arguments is to make oneself ridiculous. In most things, we say; not in all. Few people would listen very long to a solemn refutation of the late Lord Leverhulme's views on cigarette smoking; and would anyone thank you for exploding Councillor Clarke's now happily forgotten doctrines of female modesty? But there is one matter on which the puritan still has a great deal to say, and to the architect's taste a great deal too much, and that is the matter of fermented liquor.

How shall we otherwise explain the action of an administrative body which makes it a crime to improve a building whether for beauty, convenience, or mere cleanliness? For that, we are assured, is the attitude of the licensing authorities of this country in too many, alas, of the cases which come before them. No public-house may be made brighter or more sanitary without their express permission, says the law. The shop for the sale of liquor to be consumed off the premises does not come within this rule, but their power to revoke licences without right of appeal makes the magistrates all-powerful arbiters just the same. There are doubtless many among them who would like the frequenters of an inn to meet in more decent surroundings, and who are pleased at the thought that its host should have a dark bedroom made light or disport himself in a bathroom of a morning. But there are just as many who view with the utmost alarm even such trifling improvements as these. They resent the mention of them as though it were a personal insult, and will use every means in their power to exclude architect and builder from a squalor jealously maintained. They are, indeed, to be numbered among those revolutionaries who strive to aggravate the worst defects of the existing order in order that they may bring it into discredit and so hasten its downfall.

Now every man, and most of all the revolutionary, is entitled to his private convictions. We are not here

concerned with convictions, and least of all with those that answer the question whether or not alcohol is good for man. For all we know there may be that in a glass of ale which, when imbibed, places man on a level with the brutes and makes him an easy prey to corruption and disease. Quite possibly the industrial salvation of England may be inconceivable without England going dry. At the moment, however, we simply observe that England has not gone dry. On the contrary, England recognizes by law a great business which provides its people with alcoholic liquor and simultaneously collects from them a more than substantial tax. This business is deemed important enough to be the subject of the closest regulation, and care is taken that those engaged in it are not unduly overworked. Unfortunately, its regulation is entrusted to a body of men once very powerful, but lately robbed of all administrative authority save only this authority over the sale of alcohol. Forty years ago the justices of the peace governed the English countryside; today they only govern the English pub.

Who shall say that rural England is better governed by its county councils and by its urban and rural district councils than it had been before 1888? But even if the old order was less efficient than the new, it was not nourished upon subversive theories about the countryside being an evil place and holding that life in the country was sinful and to be discouraged. The justices of the peace in the days when they were the patriarchs of the rural world did not try to drive their subjects into the towns by degrading their surroundings, by causing pain or discomfort to the people, or inducing among them a state of general depression. Had they done any of these things surely the whole nation would have welcomed Lord Salisbury's county councils as saviours from an unbearable, and most mischievous, tyranny. We do not argue that the supervision of the liquor trade by our justices of the peace must necessarily stop. On every side, however, we see evidence that it is being conducted in a hostile spirit by revolutionaries who would like nothing better than to close down the whole business. We do say, therefore, that it is not for revolutionaries to be put to govern the thing they abhor, and that, since one consequence of this hostility is to close the door to the architect, and to deprive him of a hundred opportunities to work for the general good, the architect is as much entitled as any man to make his protest heard.

NEWS AND TOPICS

THE Building Research Station at Watford that is administered by the Department of Scientific and Industrial Research has performed so useful a purpose in helping the British building industry that there is already a demand for similar work to be carried out on behalf of India. At the present time we hear much of strikes and discontent. The Simon Commissioners, during their autumn tour, will run grave risks because of the intensity of native feeling; and part of the present discontent is due to bad housing conditions. When it is remembered that over 600 out of every 1,000 babies born in India die before they are one year old—a figure nearly tenfold that of our country—it is clear that something is seriously wrong. Those who have studied the subject tell me that, up to date, no solution has been found of India's housing problem, and that it would be a real service if a Building Research Board could be appointed to consider the most suitable material and the best form of construction of native dwellings. Men with experience of Indian conditions and the necessities of family life and at the same time an appreciation of the effect of a tropical climate upon building would, of course, have to be chosen. The tenement system that has been imported to India from Europe is proving to be a veritable death-trap.

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The *Daily Telegraph* exhibition of antiques and works of art was a revelation of the riches which abound in this old country. These did not all originate here, for some of the most sumptuous things in the show came from afar—from China and Japan. But the bulk of the antiques were home-grown, and no bad testimonial to native industry. I felt that English furniture and furnishings of the period were as good and better than any to be found elsewhere. The greatest specimens were not there, of course, for they are in the museums and in their original places, fortunately—for the time. It was the bulk of good stuff that was so striking: the three-tier court cupboard of the James I room; the oak panelling and overmantel of another of the same period, shown by Messrs. Keeble; the oak credence of the early sixteenth century lent by Messrs. Acton Surgey; and the carved oak staircase and pulpit, dated 1661, given by Mr. J. Rochelle Thomas to be presented to some English cathedral or church. There were many fine pieces of furniture to which the china, glass, pewter, ironwork, and silver gave lustre. There were some English pictures too, in addition to the foreign masterpieces lent for the occasion. The occasion was a great one; and the owners who lent their treasures, the dealers who set out their wares for sale, and the promoters are to be warmly congratulated on providing so generous an object-lesson in the quality of English arts and crafts of the past. I often heard the American accent as I went from room to room of this extensive show, and wondered how much of the treasure displayed would find its way to the United States. A good deal, I expect.

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There are many other questions besides that of "ribbon development" to which the Council for the Preservation of Rural England might well draw public notice. For example, in Cumberland, amid some of the most beautiful

hills, the refuse from the mines offends the eye. Pit iron ore banks and slag tips are allowed to accumulate within a few miles of some of the fairest prospects in the Lake District. This is one of the questions to which the newly-formed Regional Committee for Cumberland will no doubt devote its attention. In industrial regions on the Continent efforts have been made to put such ugly accumulations of waste out of sight. For example, in the Ruhr, tips are cleared away and shot down the shafts of disused pits.

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Garden ornament has become a cult in the United States, and it is considered the right thing to have vases, bird baths, fountains, and sun-dials, which is all to the good for the sculptors. Many of the younger men and especially women sculptors exploit this practical form of livelihood, devoting their easier hours to forms of their art not so much in demand. Sculpture scores both ways. Among these artists is Gleb Derujinsky, who at the moment is in London exhibiting at Knoedler's Gallery in Old Bond Street a number of bronzes and carvings. The best of the latter is "The Angel of Sorrow," an expressive head hewn in the marble matrix. The group of St. George in wood is also good, compact, and well designed, but the head in wood of Miss Lilian Gish is not so good. Derujinsky's carving technique does not reach the high standard to which we are now accustomed in London, which may be seen in the superb *Pastor est tui Dominus* of Eric Gill at the Goupil Gallery. A small relief in grey marble, this is one of the finest pieces, from the technical standpoint, the artist has provided. There is an interesting small bronze of a "Standing Nude" by Frank Dobson in the same show. The two pieces, exhibited side by side, are very interesting as providing an object-lesson in the difference between Gill's glyptic and Dobson's plastic sense, both splendidly typical in English sculpture of the present time.

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At this time of the year travellers in France find many reasons to envy our French neighbours for the resources provided by the State to protect their architectural treasures. The Palace of the Popes, for example, at Avignon, would be in ruins if it were not for national action, and in this matter the French set an example to us, who may have to suffer the collapse of Durham Castle for lack of funds. But all French municipal authorities are not equally praiseworthy. At Caen, in Lower Normandy, for example, unique buildings are being shamefully used. One magnificent church is used as a corn market, and another as a store place for road-carts. An ugly municipal building is erected close to one of the finest examples of Renaissance architecture—the church of St. Pierre. Even the magnificent Abbaye Aux-Hommes, established by William the Conqueror, is completely concealed by a row of bourgeois houses. Caen, in spite of being the seat of the university, and its self-styled name of "the Norman Athens," is neglecting her artistic possessions. The prosperity of her commerce seems to blind her to the treasures that are falling to ruin.

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The Royal Insurance Building in William Street, New York, has been awarded the first prize by the Down Town League for the best building erected in 1927. This League was organized to promote the interests of, and improve

business conditions in, greater New York. The prize-winning building was designed by Messrs. Starrett and Van Vleck in the style of the English Renaissance. The architects claim that it follows the lines of those severe and dignified public buildings erected in London in the latter part of the eighteenth century. It is, however, nineteen stories above ground and two below, and covers a site of 21,000 ft.

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The new India House to be erected on a vacant site between Bush House and Marconi House in Aldwych will contain within two typical Indian bazaars. Externally, the design will be in keeping with that of neighbouring buildings, but a special attempt is being made to give an Indian character to the interior. The woodwork of all the principal rooms will be composed solely of timber grown in India. The carving will be expressive of Indian art. At each end of the great Exhibition Hall will be two typical Indian bazaars. The architect is, of course, Sir Herbert Baker, who has carried out, with Sir Edwin Lutyens, so much work at Delhi.

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Some weeks ago we referred to the threat of large-scale development at Lulworth Cove. We have now before us a plan and estate restrictions relating to the approach to the cove. The restrictions are admirable as they require each house to be detached; to have a minimum cubic capacity of 16,000 ft.; to be roofed in tiles or thatch; not to exceed 40 ft. in height above ground level; to be set back at least 25 ft. from the road; and to have a minimum plot frontage of 60 ft. Also, plans and elevations must be approved by the estate authorities. The plan provides for pleasure gardens (a somewhat sophisticated furnishing for Lulworth) alongside the old road to the cove, and for a park by the path to Durdle Door. If this plan, with these restrictions, covered all the development that was proposed one would have little but praise to offer. One cannot, however, ignore the Press reports of a proposed development of 15,000 acres, with the railway brought to the cove and an esplanade around it, and necessarily involving immense practical difficulties in such matters as, for example, sewage disposal. Happily the plan of the piece to be immediately offered for sale or lease ignores the possibility of a station and makes no provision for such an incongruity as an esplanade. Therefore, it is to be hoped that one can assume that the reports are unfounded and that no serious effort is intended to commit the outrage of attempting to impose on this beautiful and restful haven the population and paraphernalia of a fashionable seaside resort.

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The Mint has just struck for us some new shining pieces of silver which are to take the places of our old half-crowns, florins, shillings, and sixpenny bits. One can hardly look on them as coins with pride, for they have none of the characteristic beauties of a coin about them. They are round and they shine and the heraldry is good, but they are bulky, the lines are all rounded, and the fact that Mr. Kruger Grey is essentially an heraldic artist and not a designer or engraver of dies for coins is quite obvious. In fact, these four new pieces look like badly-moulded medals in memory of some national event when they might have been beautiful coins with a clear and sharp-cut design on one side and a finely sculptured head on the other.

The designs on the over-sides of the new pieces are all that is new about them, for the head of His Majesty is the same as before. The designs seem to be perfect in all their heraldic details, but the lettering and all the lines are so squat and rounded and so awkward in arrangement that they are rendered devoid of beauty. In some cases it is rather difficult to understand the meaning. For instance, in the half-crown there are two interlaced Gs surmounted by a crown on either side of the shield, and on the florin there is one G in the centre of the pattern formed by the four small shields. I cannot quite see what these Gs stand for when thus arranged. If there had been two Gs interlaced on the florin as the two Cs were interlaced on the two-shilling bit of the time of Charles II or the three Cs on the threepenny bit of his time, and the four Is or Js on the fourpenny bit of James II, it would be easier to understand. At present the two Gs on the half-crown incline one to think that it stands for 2s., and the one G on the florin makes one think that it is meant to be a one-shilling piece; but then, of course, these Gs may only have been put there to look pretty and not be meant to signify anything.



Reproduced here is the 1679 silver threepenny bit of Charles II, and the 1562 shilling of Queen Elizabeth. In these the relief of the heads is even less than one-third of that in the modern coins, yet they contain all the subtlety of the features required to render them beautiful portraits, and the designs on the over-side have a beauty in composition that far surpasses anything that we can show today.

Mr. G. F. Hill, Keeper of Coins and Medals in the British Museum, who is England's greatest authority on the subject is, I believe, also adviser to the Mint, and it would be a real joy if he could one day be asked to point out to them the beauty of some of the coins of the past, drawing their attention to the clearness and simplicity of the design and the beautiful sharpness obtained even in the lowest relief. Of course, in times past dies were engraved by hand, which gave them this sharpness, whereas now they are often moulded ten to twenty times larger than the intended coin and mechanically reduced and engraved, and in many countries the artist who has designed or moulded the original is not allowed to work on the die with his engraving tools after it has been reduced from the original. England in the past has had some of the most beautiful coins that are known; let us hope that though this is not the case in the present it may be so again in the future.



Sculpture on a Bali Temple showing a motorist held up by a bandit.

A curious example of what the movies may accomplish is seen on temple walls in the distant Dutch East Indies. The figures, the decorations, are of the remotest past, but the action is of today. The bicycle, the motor-car, and the bandit are straight out of an American film, but when it comes to man only the demigods of the past serve as models. Bali, an island where these strange decorations are found, lies east of Java. The accompanying illustrations are taken from photographs made by André Roosevelt, and published in *Asia* (New York). The explanatory note reads:

"Astonishingly modern are these two bas-reliefs carved on temples at Djagaraja and Kubutambahan, in northern Bali. But, except for three buildings discovered only a few years ago, Balinese temples—and there are thousands on the island—all date from comparatively recent times. So soft is the brick or the 'parras,' a sort of tufa, or sandstone, of which the temples are built, that it crumbles away with the assaults of time. Again and again, therefore, the Balinese villagers leave their work in the fields and build temples to their gods. Since in Bali a temple is not a covered structure, but a series of three walled-in courts containing several small buildings or open sheds, its construction offers no problems. In the carving of the stone, which, being soft and porous, lends itself readily to decorative purposes, the Balinese village craftsmen display their real art."

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Another writer, who signs himself "Nomad" in the *Boston Transcript*, evidently has not heard of these figures, yet he gives testimony to their modernity, and makes sardonic game of our sculptors for not seeing that the horse is outmoded as a sculptural base for a great man:

"Sculptors have almost ceased to make equestrian statues, but the Nomad has not yet heard of an automobile public statue to take their place. Logically they are called for, in the case of the memorials of great men who have lived since 1900, rather than equestrian statues. The trouble with an equestrian statue, as a memorial to a man, is that the horse is always more important than the man. General Hooker at the State House, for example, distinctly plays second fiddle to the horse, just as Colleoni does at Venice. It might be the same way with a statue

of a man in an automobile. The difficulty as to the selection of the kind of car that would be represented in the motor statue would, of course, be obviated by the selection in all cases of the kind of car actually driven by the hero."

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"As a member of the rank and file"—write the victims to publicity mania. I borrow the phrase to inquire whether architects care if London's new buildings leave odd impressions on passers-by. The great block of offices in Bloomsbury Square, Southampton Row is, with its walls capped with stereotyped frieze and cornice, dully Greco-European. Queen Victoria at the age of five in plain pelisse and an enormous hat of ostrich feathers. The new County Hall, seen from the bridge, is a houseboat belonging to a peer. The gaunt building rising in Gower Street to house the College of Hygiene and Tropical Medicine is a symbol of mechanized man, barren of artistry, hands bearing the evidence of "constant hot water." In Bruges lately after wine-bibbing—my poor, tired eyes!—I sat in a simple, canal threaded street and looked at an iron lock wrought exquisitely into a pattern of leaflets, under the arched hood of a door. The balm of beauty stole over me. In the Grande Place by night the old Cloth Hall with its belfry bulked black; silver-grey rose the Gothic lines of the Town Hall, and the horizon on another side of the square was incised by stepped gables of shops that had been hostelries when Charles V entered in glory. From signboard to dormer they were stamped with their character. So was the ancient Hôpital St. Jean. The iron cages before its windows, which pierced, blackened, evil-looking walls, shrieked of bodies of children crushed by soldiery in popular broil. I do not advocate the Arabian beauty of *Venetian Gothic* for the new India House. But why should Palladio, than whom a suaver stylist never lived, be copied in London in the way a buxom domestic copies the fashions of Deauville? Palladio had a style for shops, a style for theatres, a style for residences, one for banks, and one even for a basilica. Mr. Ruskin wiped his eyes before the Doges' Palace and Pisa's Duomo because the builders had placed the windows and arches irregularly. That, he said, was art.

ASTRAGAL

ALLIED ARCHITECTS' ASSOCIATIONS IN THE UNITED STATES: I

[BY HOWARD DWIGHT SMITH]

DURING the past seven years, at widely separated points in the United States, groups of architects have organized for the purpose of performing professional services on projected public buildings in their own communities. The individual members of these groups have, except for their participation in these new group activities, maintained their professional identity in the competitive field. In most instances those composing these groups are members of the local chapters of the American Institute of Architects, and, as such, have been accepted as men of high professional standing. In fact, the organized professional standing of the men of these new organizations seems to account largely for the groups being called into existence. The several organizations in the various parts of the country have had much in common both by way of objective and of experience, but no attempt has been made to affiliate or to form a super-organization which might give the movement any national scope or aspect.

The story of the several organizations may well be illustrated by recounting the history of the movement at Columbus, Ohio, which has been observed to be typical of the various groups, since it includes all the phases which are pertinent to the development of the so-called "Allied Architects'" movement.

The real story of the Allied Architects' Association of Columbus, Ltd., goes back to the cold wintry night in January 1921, when a more or less disastrous fire almost completely destroyed the then existing Columbus City Hall. The old City Hall was a fair example of that type of civil architecture all too prevalent in the near and middle-west, having neither style nor grace in appearance and little or no convenience in practical use. It had been built in 1870, at the beginning of that period of national tastelessness in all the arts which followed for a generation in the wake of the Civil War of the early sixties. Those who do not visualize the frontier style developed at the time when public regard for the arts was at a very low ebb, and particularly those who have never seen the elephantine Gothic edifice of local sandstone on State Street, with its great title "CITY HALL" carved in block letters standing out in bold relief across the front, cannot appreciate the full significance of the act of Providence which made it desirable to raze the remaining portion of the structure.

It can probably be said in all truthfulness that the embers of the fire had not fully died out before some or all of the seven members of the City's Council, the vested legislative authority, had been approached by architects, contractors, engineers and builders, seeking the commission, offering their services to assist in rebuilding or replacing, phoenix-like, the seat of city government.

That some immediate action was not taken by the authorities may have been due to several things. At any rate no "go-getter" raised a sign on the site appraising the world that his firm would begin operations at once and be ready for occupancy by New Year's Day. No, the

all too easy course of treating every problem of government as an independent phenomenon and not related to other civic problems, was not pursued in this instance. It is quite probable that the extended, but apparently futile, efforts a decade earlier on the part of a group of private citizens to interest city as well as State officials (Columbus is also the seat of government of the Commonwealth of Ohio) in a comprehensive plan of development for the central portion of the city may have had some effect upon the situation. Uncontrolled growth, expansion, construction, and increased land values during the decade had made the earlier proposed scheme impossible of accomplishment. An enlightened public opinion, however, seemed to insist upon consideration being given to the new aspect of the problem presented by the necessity of building so important a public structure as a new City Hall, for which the old site was considered inappropriate if not inadequate.

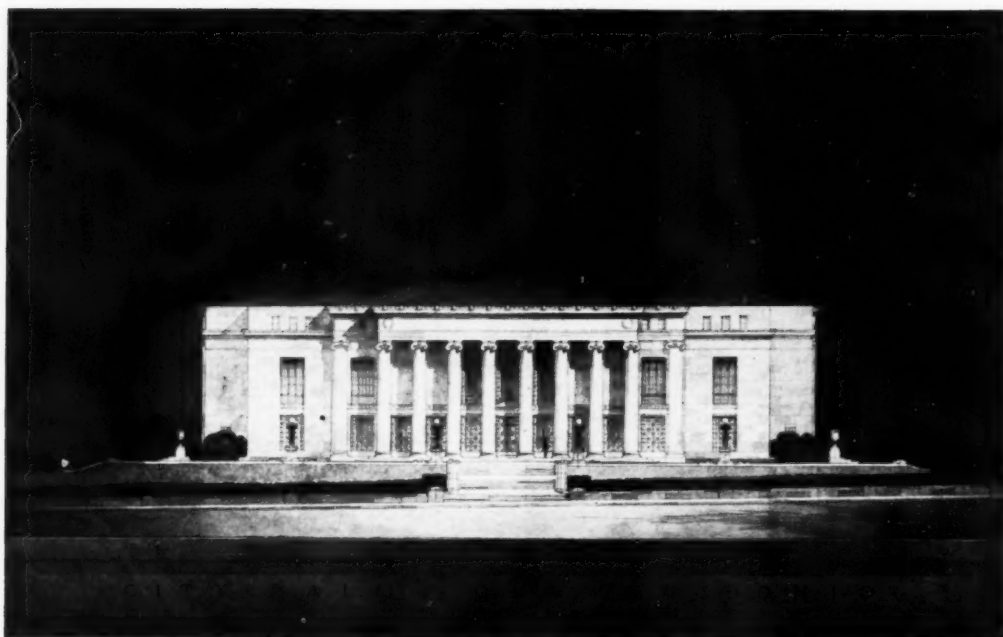
Since the immediate task before the Council was the location of, and not the design of, a building it seemed to be a problem of maps and real estate rather than of visualization of results. There being no established branch of the city government at that time entrusted with the study of this sort of thing, ideas came from all quarters. Newspapers conducted informal polls of public sentiment, owners of available sites solicited consideration, and the local Chamber of Commerce sought suggestions by means of questionnaires sent to real estate dealers, civic and philanthropic organizations, the lawyers, the doctors, the clubs, the professional societies.

One of these questionnaires, directed to the Columbus Chapter of the Columbus Institute of Architects, elicited a reply in the form of a proposed plan for a civic centre development which represented the combined thought of some twenty architects, and the composition of the most acceptable ideas of thirteen separate schemes proposed by the members of the Chapter. The natural advantages gained by an effective visual presentation of the architects' scheme, showing a location for the proposed new building in a definite relationship to other current and proposed improvements, led to its sponsoring by the Chamber of Commerce and its acceptance by the city authority followed by the general approval of the community.

A significant step had thus been taken. With no expenditure of funds a moderate-sized typical mid-western city, and with no organized Planning Board or Art Commission, had established a policy or plan of development of its central area, under the rather loose and informal guidance or suggestion of a society of architects.

The next step was not so easy. Obviously the deliberate choice of some directing hand was necessary for the design and supervision of the construction of the proposed building. Here were all the elements from which so many pitiful results have been obtained. Here were seven average laymen holding political offices of slight emolument (but of exacting duties when properly discharged), conscientious and well-intentioned, having in their power the awarding of an architect's commission, influencing the execution of

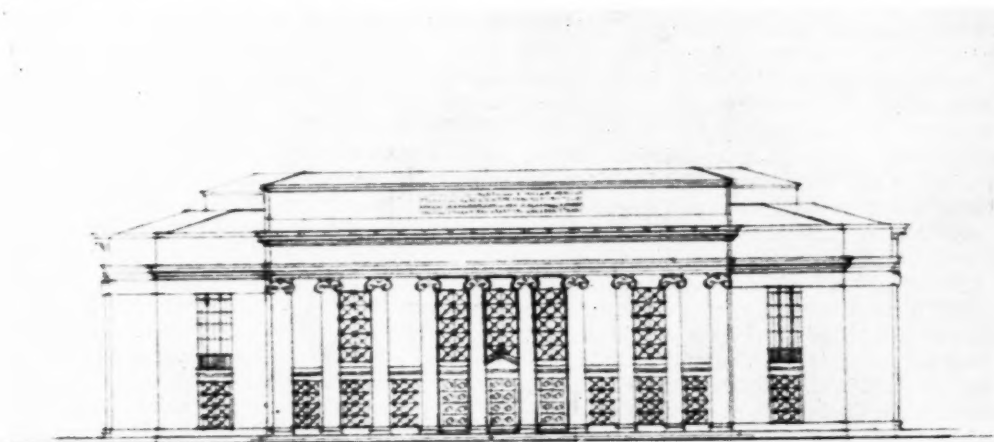
Mr. Howard Dwight Smith is vice-president of the Allied Architects' Association of Columbus, Ltd., and president of the Columbus Chapter American Institute of Architects.



construction contracts and the expenditure of rather large sums of public funds.

Similar circumstances have given to all parts of the country civil architecture which is mediocre, if not, indeed, decidedly poor in character. But under these circumstances these men asked of the group which had been of some service in the solution of their first problem this significant question: "How shall an architect be chosen?"

The consideration of this question opens up the entire subject of the nature of the services rendered by architects and how they have rendered them. On one hand it recalls the early custom of making the master builder a sort of chief slave-of-the-works, or the old patron system where architects and other artists accepted relatively important and intimate positions in the households of their patrons (clients) during the period of execution of commissions.

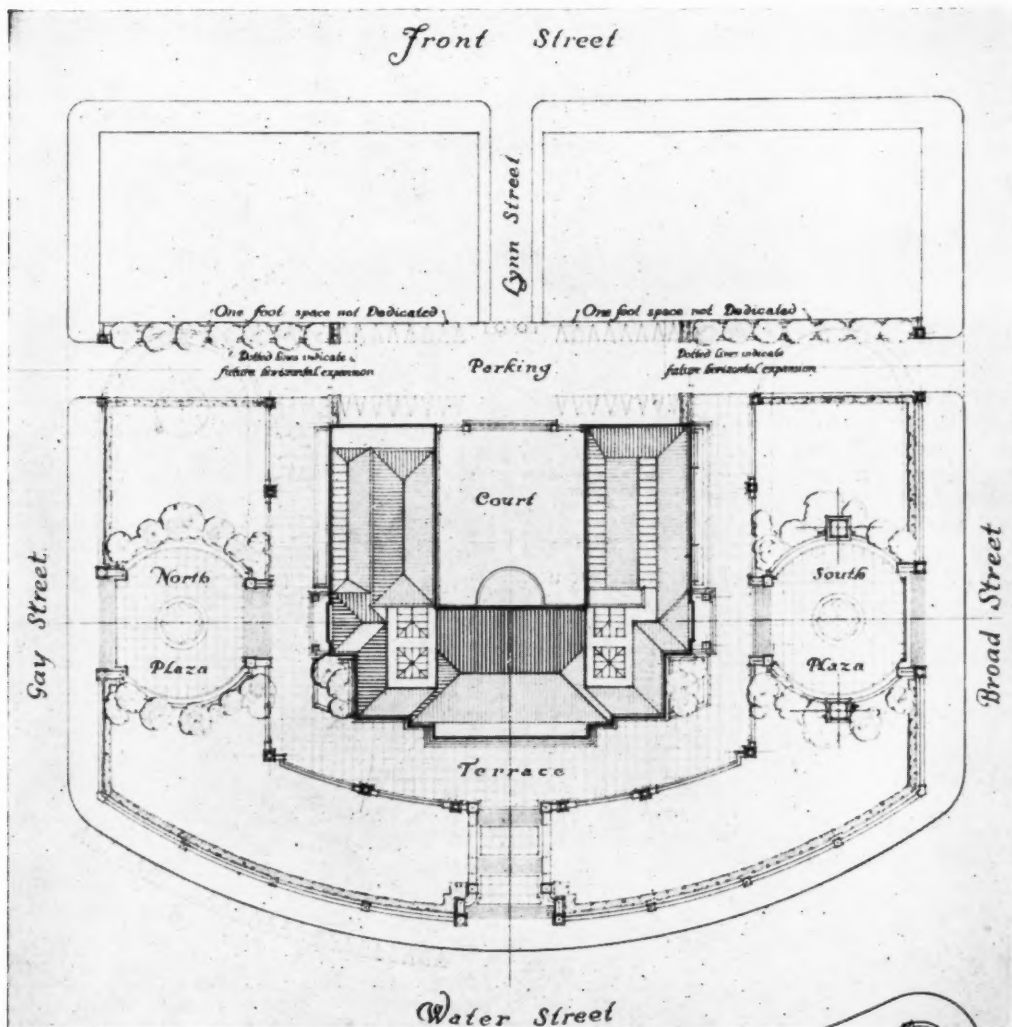
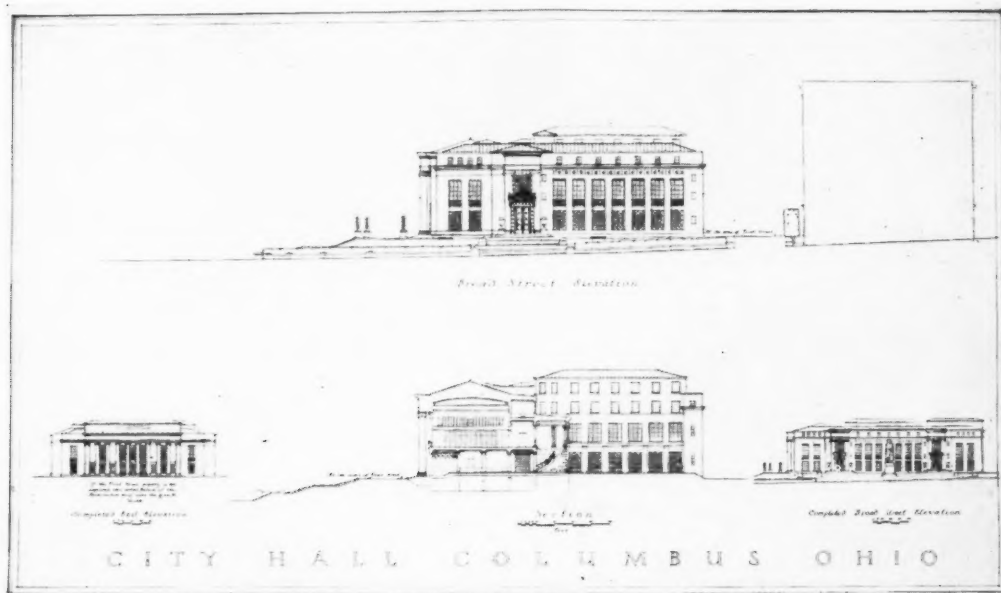


*If the front Street property is not
acquired, this central feature of the
Architecture will close the Lynn St.
Vista*

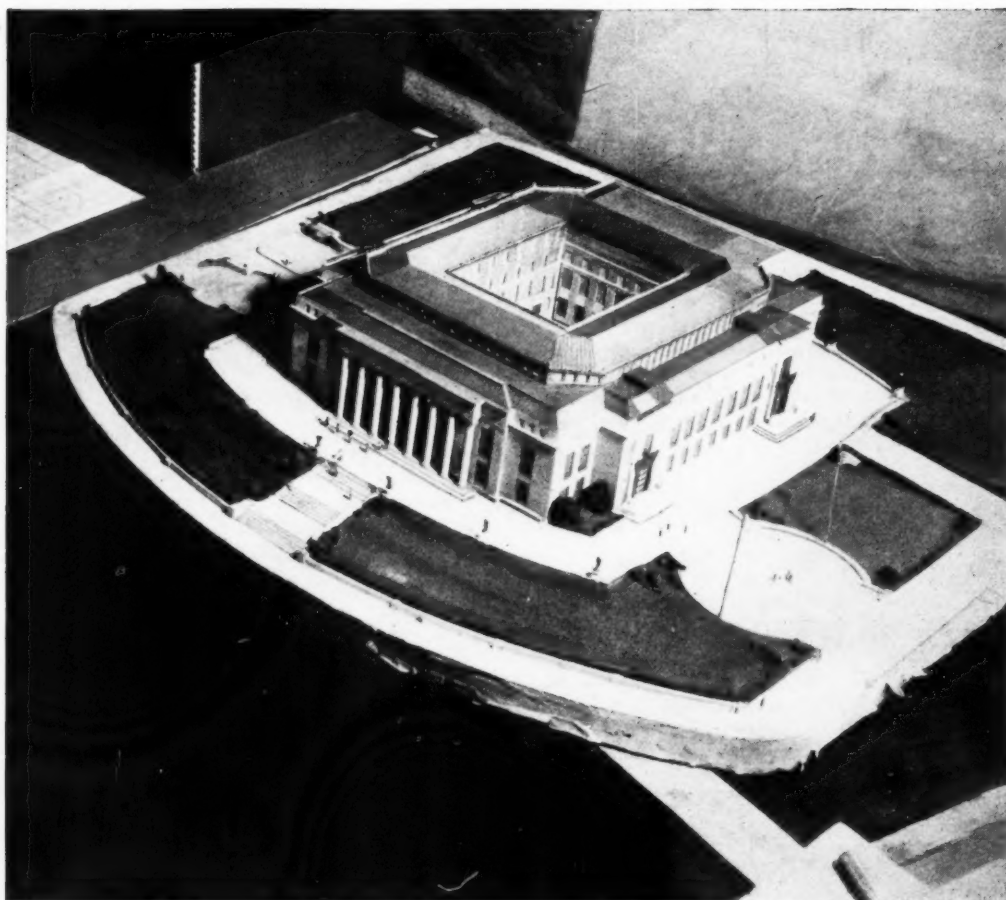
Completed East Elevation

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Columbus City Hall. By the Allied Architects' Association of
Columbus, Ltd. Above, Water Street elevation. Below, east elevation.



Columbus City Hall. By the Allied Architects' Association of Columbus, Ltd. Above, elevations and section. Below, plan of lay-out.



On the other hand, we consider the rendering of service by "extra-mural" study and delineation, now made so easy by the great facility with which drawings and specifications may be duplicated and dispensed. Increasingly rapid methods of construction, and the growth and specialization of large architectural and engineering practices, influenced, perhaps, to some extent by that current American obsession known as "big business," have had a tendency to decrease the personal influence and responsibility of the individual, perhaps to the structural or mechanical, but not always to the æsthetic, advantage of any given structure.

At any rate, in reply to this question, a committee of the Columbus Chapter of the American Institute of Architects, in conference with a committee of Council, outlined the possible methods of procedure somewhat as follows:

1. Direct selection of an individual or a firm, by invitation, to execute the commission.
2. Selection on some competitive basis.
3. Creation of a department within the city administration for the execution of this and similar commissions which might require the services of an architect's organization.

[To be continued.]



Columbus City Hall. By the Allied Architects' Association of Columbus Ltd. Above, an aerial view of the model. Below, photograph of model.

THE NEW HOME OF THE ADVENTURERS

[BY H. P. CART DE LAFONTAINE]

THE new offices of "the Governor and Company of Adventurers of England trading into Hudson's Bay," commonly known as "the Hudson's Bay Company," is noteworthy for three reasons: it is a fine example of modern commercial architecture; it expresses, even to the smallest detail, an enterprise which is intimately connected with England and the Empire; and, to the architect, it is that rare thing—a building which fulfils its purpose and yet takes its place in an important City street without offence to its neighbours.

Before we examine it critically it will be well to give—as briefly as may be—some account of the great business which it houses. In the limited space at my disposal no reference can be made to that fascinating page of adventure which marked the discovery of the New World—the voyages of such men as Cabot, Cartier, de Champlain, Radisson, and Groseiller must go unchronicled—though it must be mentioned that the meeting of the two last-named explorers with the commissioners sent to the New World by Charles II, and also their subsequent audience with the King and his cousin, Prince Rupert, mark the genesis of the great enterprise. The first stock-book of the Company records that in 1667 substantial sums had been provided for a

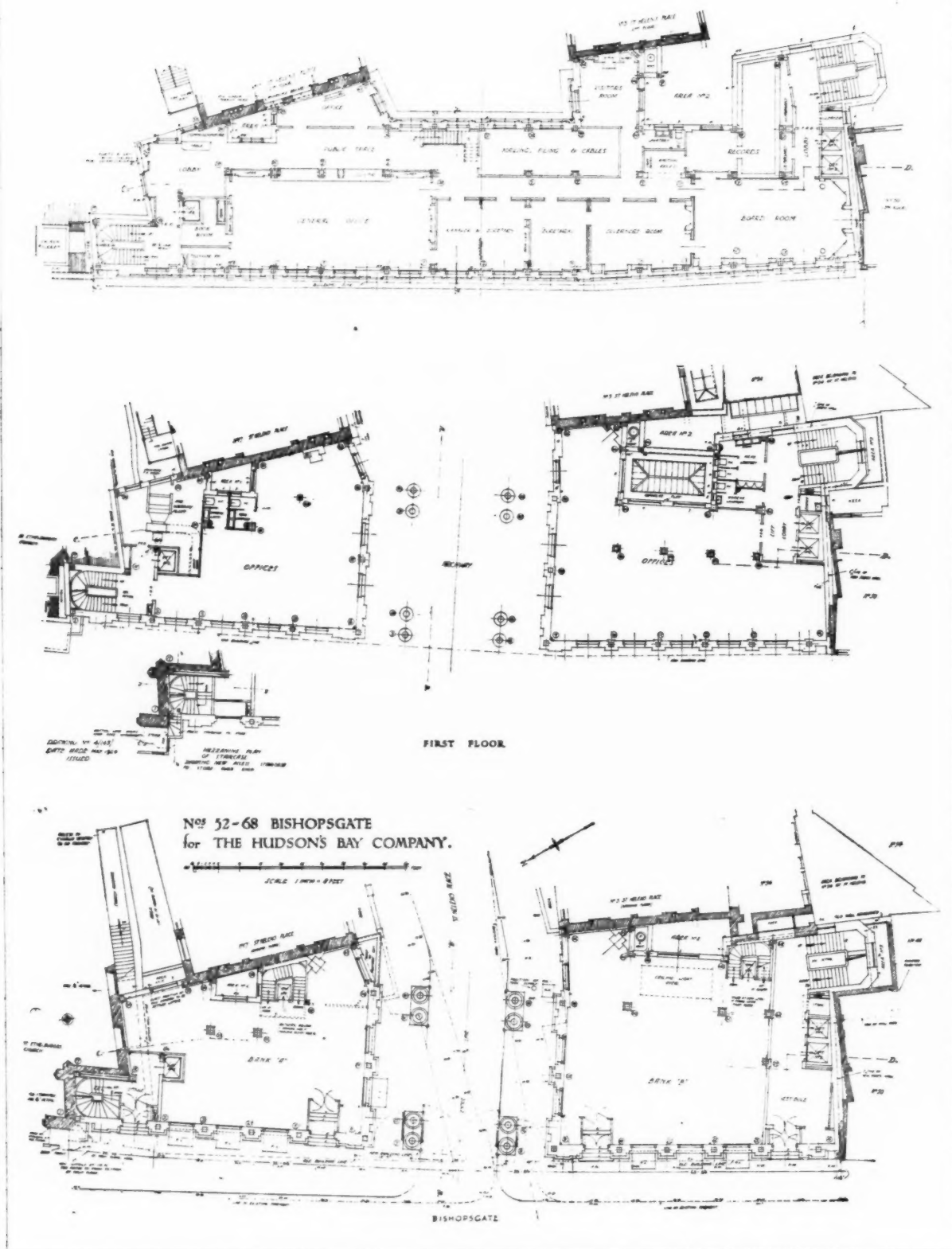
further voyage by the two explorers mentioned above in 1668. Radisson in the *Eaglet*, and Groseiller in the *Nonsuch* ketch, set out from Gravesend for Hudson's Bay.

The *Eaglet*, after crossing the Atlantic, returned without reaching land; but the *Nonsuch* passed through Hudson Bay, reached James' Bay on September 29, 1668, and returned to England in the summer of 1669 "loaded to the water-line with a cargo of furs."

The success of Groseiller's voyage encouraged those who had supported the enterprise to apply for a charter, which was granted by the King in 1670. It sets out that "Whereas our dear and entirely beloved Cousin, Prince Rupert," together with others mentioned by name, "have at their own great cost and charges, undertaken Expedition for Hudson's Bay . . . for the Discovery of a new Passage into the South Sea for the finding of some Trade for Furs, Minerals, and other considerable commodities, and by such their Undertaking, have already made such Discoveries as do encourage them to proceed further in pursuance of their said Design, by means whereof there may probably arise very great Advantage to Us and Our Kingdom. And, Whereas the said Underiakers, for their further Encouragement in the said Design, have humbly



Hudson's Bay House, Bishopsgate, E.C. By Mewes and Davis. The public entrance to St. Helen's Place.



Hudson's Bay House, Bishopsgate, E.C. By Mewes and Davis. Above, second-floor plan. Centre, first-floor plan. Below, plan of ground floor.

besought Us to incorporate them, and grant unto them, and their successors, the sole Trade and Commerce of all those Seas, Streights, Bays, Lakes, Rivers, Creeks and Sounds, together with all the Lands, Countries and Territories, upon the Coasts and Confines of the Seas, Streights, Bays, Lakes, Rivers, Creeks and Sounds aforesaid, which are not now actually possessed by any of our Subjects, or by the Subjects of any other Christian Prince or State—We give, grant, and confirm, unto the said Governor and Company, and their successors, the sole Trade and Commerce of all those Seas . . . with the

fishing of all Sorts of Fish, Whales, Sturgeons and all other Royal Fishes, in the Seas, Bays, Inlets and Rivers within the Premises, and the Fish therein taken, together with the Royalty of the Sea upon the Coasts within the Limits aforesaid, and all Mines Royal, as well discovered as not discovered, of Gold, Silver, Gems, and precious Stones, to be found or discovered within the Territories, Limits or Places aforesaid, and that the said Land be from henceforth reckoned and reputed as one of our Plantations or Colonies in America, called 'Rupert's Land.' And further, We create the said Governor and Company for



Hudson's Bay House. By Mewes and Davis. The Bishopgate front.

the Time being and their successors, the true and absolute Lords, Proprietors of the same Territory, Limits, and Places aforesaid." This charter also gave the Governor and Company power to make laws, impose punishments, and to judge all causes civil and criminal according to the laws of England. They also had the right to employ armed forces, erect forts, and finally, all admirals and other officers of His Majesty's forces are enjoined to aid and assist the Company in the execution of the charter.¹

¹*The Hudson Bay Company, 1670-1920.* Sir William Schooling, K.B.E. (Privately printed by the Company.)

Such, then, was the Company in the early days. With the subsequent history we are not here concerned, but it may be of interest to note that during the late war the Company rendered great services in transportation of foodstuffs, men and munitions for the Allies, more especially the French. Since the original charter was granted conditions have changed.

The Company are great traders not only in Canada but in other countries. They are also large landholders and carry on an extensive transport service. They still continue the fur trade which was the origin of their



Hudson's Bay House, Bishopsgate, E.C. By Mewes and Davis. Portico view from St. Helen's Place.



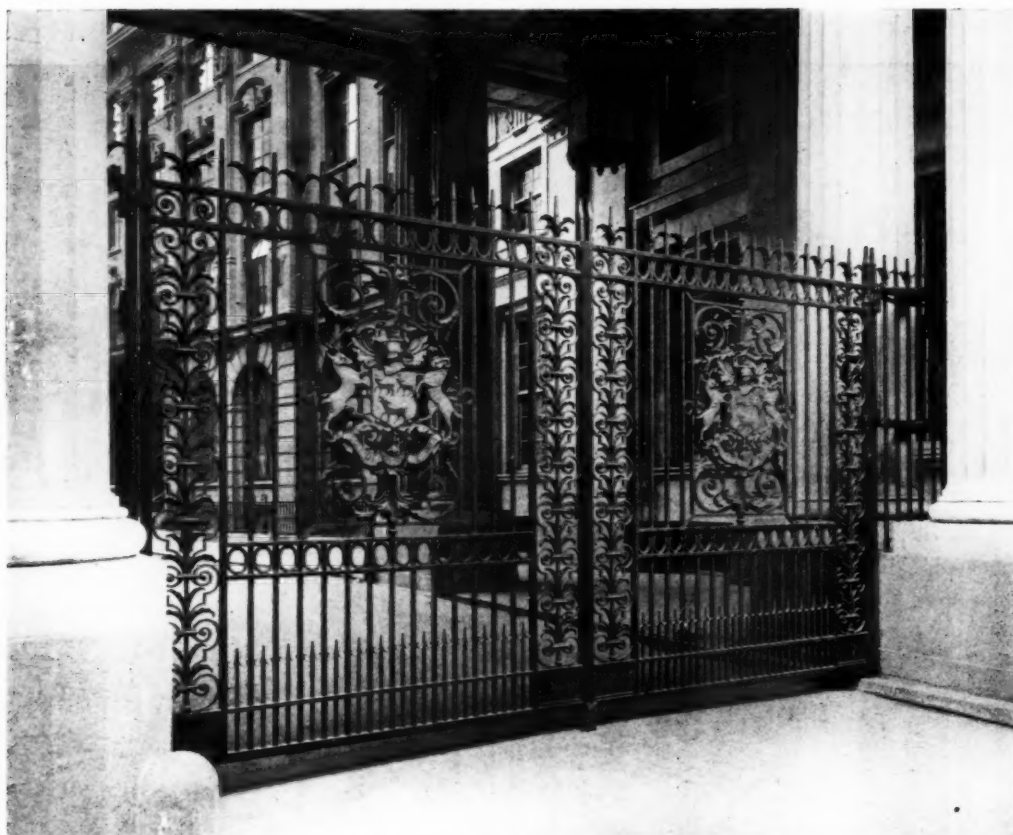
Hudson's Bay House, Bishopsgate, E.C. By Mewes and Davis. The St. Helen's Place front.



*Hudson's Bay House,
Bishopsgate, E.C. By
Mewes and Davis. Above,
the main office. Below,
the governor's room.*



*Hudson's Bay House, Bishopsgate, E.C.
By Mewes and Davis. The board room.*



Hudson's Bay House, Bishopsgate, E.C. By Mewes and Davis. Gates to St. Helens Place.

enterprise, as witness Beaver House just behind the Mansion House Station, where their furs are assembled for sale in London.

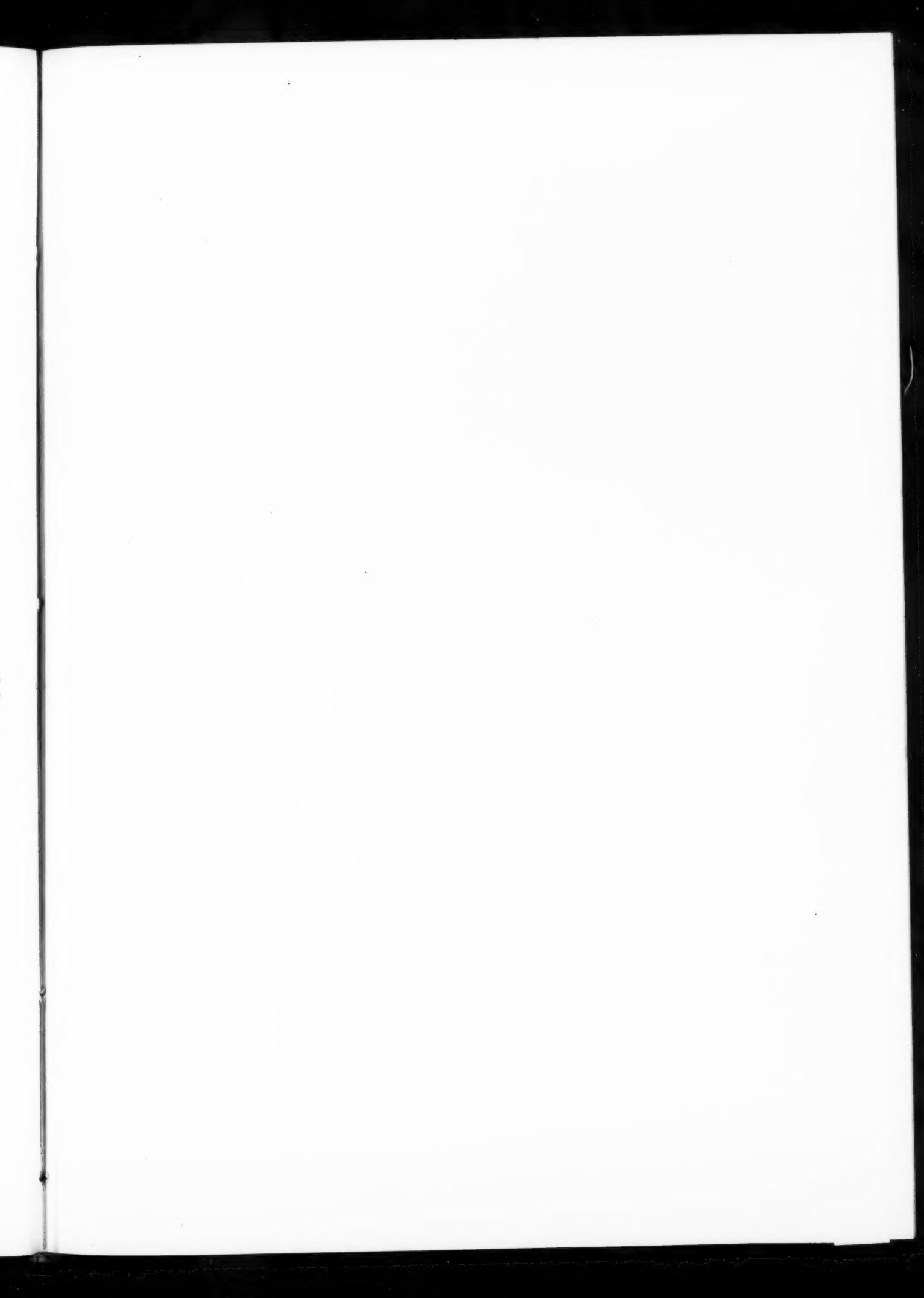
The building in Bishopsgate, which is the subject of our comment, is the administrative centre of the Company's affairs and we can now appreciate something of the problem which confronted the architects, Mewes and Davis, in planning the Company's headquarters in Bishopsgate; in a word, they had to express something of the spirit of adventure which is the keynote of the early history of the Company of Adventurers trading into Hudson's Bay, to illustrate a page of Empire history and to design a building which soberly and gracefully indicated the solid wealth of the Company. In addition to these intangible but essential factors the architects were faced with a difficult site divided at ground level into two unequal and irregularly shaped parts with a roadway in the middle.

The problem thus set has been solved with elegance and refinement; and the roadway, instead of being a hampering condition, has been developed into a fine and well-proportioned central feature, setting the scale for the whole building. The style is classic, with traces of Wren influence, which strikes one as appropriate because Christopher Wren was an important stock-holder and for some years a member of the committee and occasionally acted as deputy governor. The two lower floors are, as will be seen from the illustrations, let off, while the upper floors are occupied by the owners; this presents no inconvenience as the business is of a special kind, and it is not necessary to provide space for the general public. Hence the access staircases and lifts are divided. The major

portion of the second, or principal floor is taken up by the finely proportioned board-room and the offices of the governor, deputy governor, secretary, etc. Above are filing and typing rooms, the surveyor's office, and various administrative offices. A strong-room of special design should be mentioned; this is so planned that in the event of the building being destroyed by fire it could fall to the ground and remain intact and undamaged.

I will not deal with details in the design, it is sufficient to say that these are not at all of a humdrum or conventional type; in the carved enrichments of the board-room curious animals, beavers, otters, and the like are introduced, while in the moulded and enriched plasterwork of the ceiling similar appropriate elements are to be discovered. Here, too, are some fine portraits of governors, especially beautiful being Lely's presentation of the first governor, Prince Rupert, which hangs over the mantelpiece at one end of the room. I should mention here that Sir Charles Allom acted as consultant to the Company in all decorative matters. If we may judge by results the collaboration must have been a happy one.

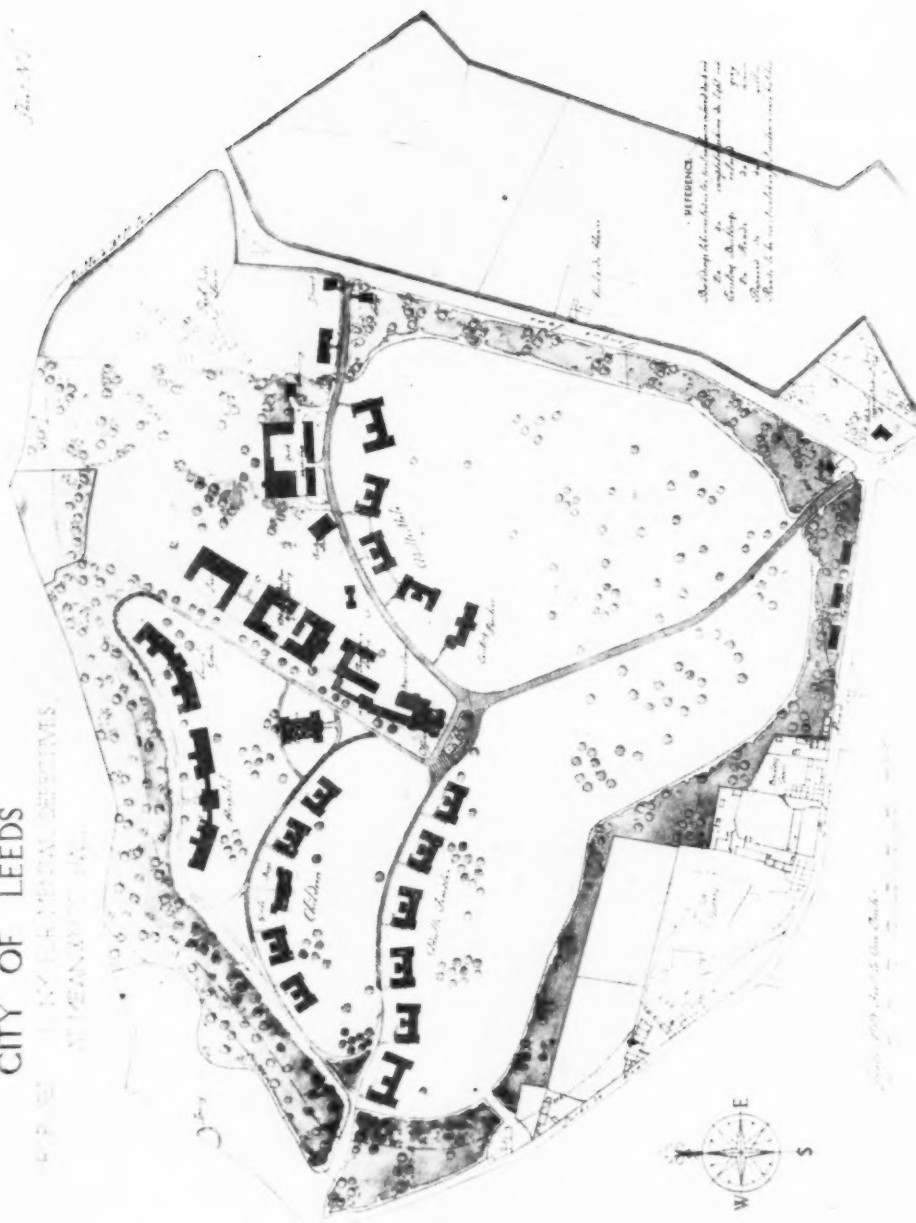
To me, the only part of the building which is not quite successful is the central turret of the exterior, which seems either too large or too small for its position. To sum up one's impressions, I feel that the Governor and Company of Adventurers have added one more successful enterprise to the long list of their adventures in this new building, which adequately provides for their needs and at the same time admirably expresses those traditions and ideals which have made this great Empire and which are the secret of its continued strength and vitality.



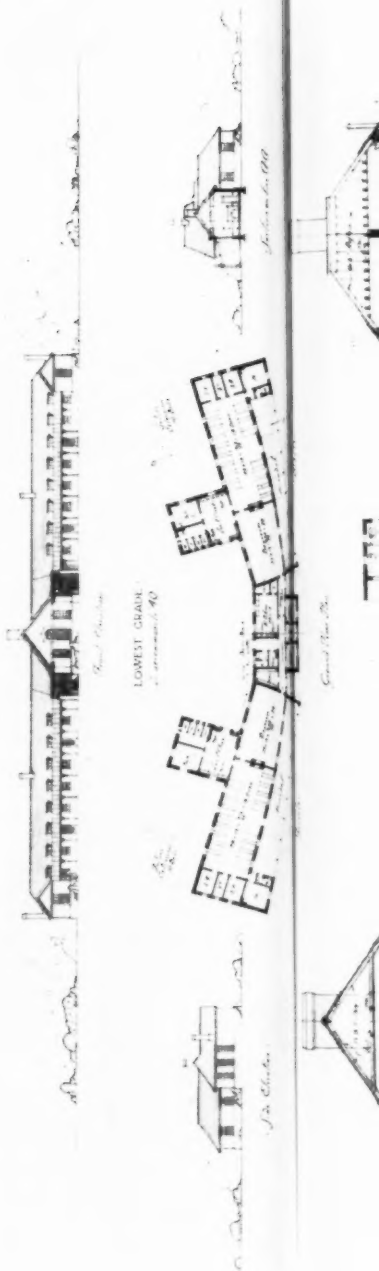
CITY OF LEEDS

BY MR. J. H. WATSON, ARCHT.

ST. LEONARD, N. H.

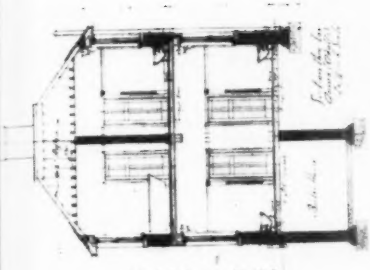


REFERENCE
The design of the building is based on the plan of the City of Leeds, and the design of the building is based on the plan of the City of Leeds.



See plan on p. 100

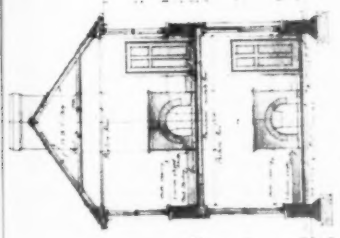
See plan on p. 100



See plan on p. 100

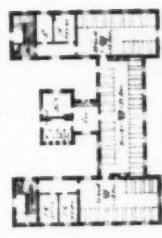
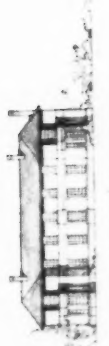


TIME-BOY
LAUNDRY



See plan on p. 100

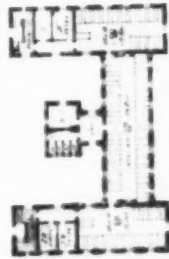
CHILDREN'S BLOCK



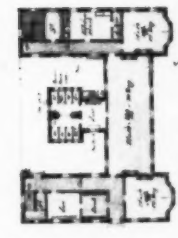
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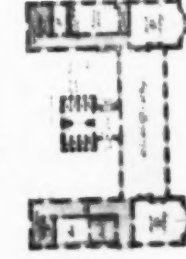
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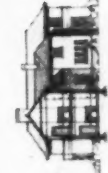
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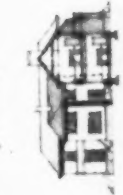
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See plan on p. 100



See plan on p. 100

Competition for Colony for Mental Defectives at Meaneand
Hall, Leeds. Winning design. By H. Carter-Pegg.

LITERATURE

LONDON'S OPEN-AIR STATUARY

IT was time that someone with a knowledge of the subject and a sense of perspective should undertake a defence of the out-of-doors statuary of London from the charge, as Lord Edward Gleichen puts it, of "being rankly bad and altogether despicable." Much of it, undeniably, is despicable and almost as bad as bad can be, but there are a number of noteworthy exceptions. Judged by its worst statues, London would take a very humble place among the great cities of the world. Judged by its best, our capital could hold up its head among most others. What we need is a thinning out of the unworthy specimens and a redistribution of the best. Is this a quite vain aspiration? No doubt it is. Only an enthusiast like Ellen Terry, endowed with Mussolini-like powers, would be equal to the task! I mention Miss Terry because she showed once that she was one of the few persons in England to whom, as to the author of this book, the sculptor's art meant something. When, some years ago, the fate of the Shaftesbury Memorial was being discussed, she made a memorable remark. If we Londoners were really worthy of Gilbert's master-

piece, she declared, we would rebuild Piccadilly Circus in such a way as to provide a worthy setting for it!

Lord Edward Gleichen devotes one of his most informative pages to Eros, now banished for a while to the Embankment Gardens. As both the statue and the monument are being forgotten, it may be worth while to transcribe here what Lord Edward has to say about them. Refraining from any comment upon the incongruity between the nature of the memorial—so exquisite and light-hearted—and the temperament of the dour Puritan whom it was to commemorate, "the philanthropic and most beneficent Anthony, seventh Earl of Shaftesbury," Lord Edward Gleichen thus describes it:

"It . . . consisted of an octagonal bronze fountain on a platform of four steps, with four basins, the whole surmounted by this wonderfully light and airy-winged figure (of aluminium), discharging an arrow from its bow in a downward direction. So (literally) light is it, indeed, that the sculptor actually carried it on his back across the studio (before the wings were attached); whilst a strong wind causes it to sway lightly in the breeze. It is the largest figure in aluminium in the world, and at the time of its creation the sculptor was the first to use this metal, combined



Charles I. [From London's Open-air Statuary]

with a very small percentage of copper, for statuary. The pose of the figure was determined not by the play on the words 'shaft-bury' (the idea of which came afterwards), but by the idea of Lord Shaftesbury's love for the people and his almost indiscriminate generosity."

One does not quite see how these undeniable characteristics of Lord Shaftesbury are symbolized by the attitude of Eros! But that does not matter. What does matter to readers of Lord Edward Gleichen's book is that he writes with expert knowledge of his subject generally and that his pages are full of very interesting information. The volume is excellently illustrated with photographs.

F. W.

London's Open-Air Statuary. By Lord Edward Gleichen (Major-General). Longmans. £1 1s.

ECONOMIC FARM BUILDINGS

Any textbook dealing with a subject which is technical from two points of view is apt to be more satisfying from one aspect, at some sacrifice of the other. This book seems more satisfactory from the farm-management standpoint than from that of actual planning and arrangement of the buildings. Mr. Lawrence sees the problems well and sets them out clearly and logically on the whole, but his plans and examples are less commendable. He pleads strongly for the treatment of any additions or alterations with a view to the formation of an improved whole in the future, and in his rather scrappy specimen plans commonly follows the wise course of making the cowhouse altogether new, and redistributing existing buildings; which is much preferable to the expenditure of an almost equal amount in tinkering with an existing poor cowhouse with indifferent final result. A clear gain in total accommodation is made by so devoting the bulk of the money to a proper cowhouse as an addition.

The statutory rules and orders under the Milk and Dairies Order, 1926, are reprinted at length, but in the text of the work and from various references it seems hardly appreciated that the principal effect as relates to building is to transfer emphasis from cubic feet per cow to cleanliness of approach and good ventilation—several of the tie-up sheds shown in the specimen plans would be open to objection from their congested placing and neighbouring dung-yards. Curiously, no mention is made of tubular or yoke cow-fittings, nor of space-boarding as a roofing for covered cattle yards, which are strongly advocated.

Mr. Lawrence's experience appears to have been mainly in the Lake District, which accounts for certain North Country leanings in his practice, and for the inclusion of Westmorland slating as a possible material, while Cornish slates are ignored. The structural chapters seem generally sound, though it is impossible to agree that galvanized nails are the right thing for slating—yellow composition nails are much to be preferred. It is found by experience that (particularly over stables) steam from the bodies of heated animals producing oxidation of iron nails is the common cause of slipping slates. Nor will most people agree that "barge-boards are of no practical use, but are very effective as a finish to a gable, and well worth the extra cost." A projecting verge supported on a barge-rafter ensures that heavy wind-driven rain, which may overrun a gable verge, shall drip clear of the wall and not stream down the wall face—as it may be seen to do in wet and exposed districts. This, of course, is the barge-board practical, and not the "ornamental" barge-board fixed close to the wall, as often favoured by the jerry-builder. The description of cavity walling (which is not illustrated) refers to the wall as preferably 14 in. up to the dampcourse. This is a faulty method, and very bad results have been seen from it. The cavity, of course, should extend at least 6 in. lower than the dampcourse, which should be separate for the inner and outer skins.

A few specimen plans of farm cottages and houses are given but these are slovenly both in planning and presentation, and neglect to take notice of the large amount of thought and skill which has been directed to compact and shapely planning since the vast increase of building costs made any form of waste so

serious. As the author observes: "Country cottages are of themselves unproductive as regards rent"; presumably most cottage builders now will, therefore, desire to collect the Government subsidy, and cognizance should also be had of that fact and of the simple requirements in connection. There is no real excuse in this year of grace for a pair of cottages planned as figures 80 and 81.

There is a great deal of sound sense and useful information in this book, but the author might make it much more useful if in some future edition he would collaborate with a keen and experienced architect so far as the detailed working-out and presentation of his ideas is concerned, and would delegate to his collaborator the section devoted to dwelling-houses, which is really not abreast of modern improvements in standards of living.

EDWIN GUNN

Economic Farm Buildings. By C. P. Lawrence, F.S.I. 9 + 5½ in. New edition, 1928. Library Press, Ltd. Price 8s. 6d. net.

A GREAT ITALIAN MASTER BUILDER

Da Vignola, Jacopo Barozzi, otherwise Giacomo Barocchio, is erroneously stated sometimes to have given his name to Baroque. In point of fact, he strenuously upheld the pure Classic style when it was, as is often said, being corrupted. His *Five Orders of Architecture* was his literary contribution to this conservation; his buildings are not surpassed as examples of Renaissance architecture of the authentic style. He published also *Practical Perspective*, and in these two titles lies the secret of his genius. Illustrated by a magnificent series of photographs of these buildings, their plans and elevations and sections, and their details, this book is a fine monument to the architect who succeeded Michelangelo at St. Peter's.

The attribution of the appellation Baroque is, curiously enough, excused by the fact that he built for the Jesuits their church in Rome, with its rich interior, from which they developed so ardently the Baroque style, outdoing their illustrious architect. Further, da Vignola is credited with the plans for the Escorial, which was built of the local granite known as *berroqueña*, an extraneous and irrelevant reference to Baroque which, after all, is simply derived, as is now recognized, from the large queer-shaped Spanish pearl barruoco. The word, then, is derived from the Spanish jewellers, and not from Giacomo Barocchio at all.

Da Vignola was born at the town of that name in 1507, and died at Rome in 1573, nine years after the Master. He cannot be placed with Michelangelo, but André Maurel puts him beside Palladio and Bramante. Like Michelangelo he loved not only to erect exquisitely proportioned structures, but loved equally to load them with great decoration. He called to the arts of painting and sculpture for their aid, and, while some of his buildings are pure to simplicity, like the Velletri Palace, others are gorgeous in their trappings, but always consistent in their adherence to style.

His work began at Bologna, where he built the Bocchi Palace; at Rome he created the magnificent Chancellery and the palaces of the Farnese, Mattei-Paganica, di Firenze, and the villa of Pope Julius III; at Caprarole the Farnese; at Bagnaia the Villa Lante; at Montepulciano the Avigonesi, and he built important works at Frascati, Viterbo, Piacenza, Assisi, Perugia, and other places.

The author enumerates twenty-four great palaces, thirteen villas, twenty-eight churches, chapels, and oratories, together with doorways, porticos, bridges, wells and fountains. Da Vignola was a great fountain maker and a designer of exquisite gardens, as at Caprarole. The fountains at Bagnaia are exceedingly rich in their sculpture and splendid in their placement. Da Vignola was a great constructor and engineer, as well as a man of perfect taste and judgment, and G. K. Loukomski has rendered his memory a great service in which the publishers of this excellent book have added by placing it in their series, "Les Grands Architectes."

KINETON PARKES

Vignole, by G. K. Loukomski. Preface by André Maurel. 8vo, pp. 92 + plates cxxii. Paris: Auguste Vincent et Cie. Francs 90.



ENGLISH PRECEDENT

25 Neither the name of the architect who designed these eighteenth-century bay windows at Hillside, Jackson's Lane, Highgate (the residence of Mr. Percy Hurd, M.P.), nor the exact date of their erection is known. For four reasons, however, are they of interest. Their plan is exactly semicircular; the first floor is well set back so as to avoid the monotony of a tubular effect; the grilles are of rare delicacy (the one over the right-hand door being sufficiently symmetrical to arouse suspicions as to the accidental nature of its incompleteness); and, lastly, there are eight gently curved wooden-panelled shutters that slide round in lead slots, to cover the windows from the inside. The whole is as much a miracle of grace from the interior as it is when viewed from the garden.

[PHILIP HURD.]

TAKING OFF QUANTITIES: i

[BY ARTHUR J. WILLIS]

ORGANIZATION AND PROCEDURE

DIVISION of Work. Where the size of the work allows it is best for one taker-off to measure the whole from beginning to end, when there will be no fear of overlapping and less danger of anything being overlooked through misunderstanding. As, however, the time allowed is not indefinite it is necessary, for a building of any size, to divide the work between two or more takers-off. If two are sufficient a suitable general division is carcass and finishings. A would do foundations, brickwork, facings, floors and roofs; B would do windows, doors, plastering, fittings, etc. Such sections as plumbing, drains, engineering, etc., which are of an independent nature, would be dealt with by whichever taker-off was first available. The sections into which the taking-off can be divided are set out in the appendix in a suggested order of binding up. Should the work in hand consist of two or three blocks which will have to be billed separately, a similar division into sections should be made, each taker-off dealing with the same sections in each block. If one entire block is allotted to each taker-off there are certain to be discrepancies in descriptions and methods of measurement which it is essential should not appear in the same contract, and much time may have to be spent in co-ordinating the descriptions and putting the bills for each block on the same basis.

Where to Start. Before a taker-off writes any dimensions a careful study of the drawings is essential, to grasp the characteristics of the building and to enable a plan of campaign to be mapped out. An obvious beginning is the foundations, following the general principle of measuring the work in the order in which it will be carried out, a system which has a logical justification.

It often happens, however, that when the surveyor starts measuring, all the data for measuring foundations are not available. The details of constructional steelwork may not have been settled, thus leaving the sizes of the stanchion bases in doubt; or there may be old buildings to pull down which necessitate a visit to the site before the level from which excavation will begin can be ascertained. In such cases it is best to leave the foundations alone and start with something else, e.g. brickwork from a definite level, such as ground floor or damp-course. The floors are often a convenient beginning, and have the advantage of giving the taker-off an early idea of the general plan and construction.

Drawings. Where there is a large number of drawings an index to the drawings should be made, if this is not provided with them. In the case of work for certain public bodies the whole of the building is fully detailed and the number of drawings is considerable. If each drawing is given a number and indexed, the taker-off can refer to any given drawing on his dimensions to make clear which has been followed in measurement. However, it is unusual for the building to be fully detailed, and a surveyor often has to deal with pencil sketch details given by the architect. In all cases where he considers it important the surveyor should have a print made of such pencil drawings as a record of what he measured from. These pencil drawings are often altered by the architect and then inked in, so that no record is left of what was measured. The surveyor should have, in addition to the full set of $\frac{1}{8}$ in. scale drawings, at least one $\frac{1}{2}$ in. section and a $\frac{1}{2}$ in. elevation of the main front, if not of other fronts. In the case of stone fronts $\frac{1}{2}$ in. elevations are essential, with the jointing of the stone shown. There will no doubt be other details required, which will be supplied in anything from



Factory in Cape Town for specialized automatic printing manufactures. By Wallis, Gilbert and Partners.

a rough freehand sketch on a piece of odd paper to a finished drawing.

Numbering Pages. The taker-off should number each page of his dimensions in such a way that he can refer to it without waiting for the complete numbering of dimensions followed by the worker-up. Supposing he starts with floors, he should number each page Floor one, Floor two, etc. He can thus make any cross-reference he requires and avoid, what is often seen in dimensions, such a thing as "For adjustment on this see col. . .," a blank the filling in of which is forgotten, so that the cross-reference becomes useless.

Cross-references. The use of cross-references is very important. The taker-off may never see the dimensions again after he has finished his measuring. They fall into other hands for the adjustment of variations. Well-arranged dimensions save a surveyor an immense amount of time and trouble. All adjustments made should be referenced. When a previous collection is re-used, or, in fact, in any case where a reference is likely to be helpful later, it should be made.

Method of Measurement. There are in many cases alternative methods of measurement, and the custom of the office must in such cases be followed. The "Standard Method of Measurement," which is published by authority of the leading institutions of surveyors and builders, is only laid down as a guide and must not be regarded as binding, unless definitely incorporated in the contract by reference. When not so referred to in the contract it may no doubt be cited as evidence of custom, and care is therefore needed in setting aside its recommendations. But a definite system of measurement stated in the bill of quantities, or other part of the contract, supersedes any custom. If, however, no special method of measurement is stated, measurement should be in accordance with the methods laid down in the book, or the way will be opened for claims by the contractor. Every surveyor will no doubt find in this book methods of measurement which do not accord with his practice, and which he may have a good reason for not adopting, but if so, he must make his method of measurement clear in his bills.

Specification Notes. When the specification is to be prepared by the surveyor a taker-off should always make on his dimensions notes of anything likely to be of use in its preparation which is not at once obvious (e.g. "floor joists taken 16 in centres," or "handrail brackets 4 ft. apart"). The principle on which reinforcement of concrete lintels has been measured should be quite clear, so that such reinforcement can be properly specified. The taker-off is the best person to write the specification in such cases, but he may not be available, and, unless such notes are made, a lot of additional work falls on the writer.

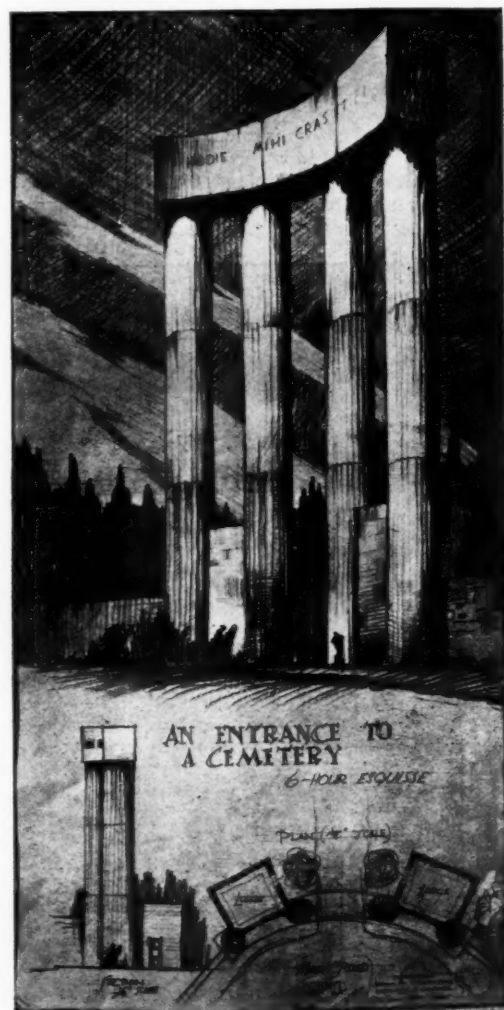
Notes of Progress. Notes should always be made of anything the measurement of which is for the time being left in abeyance. A taker-off may think "I will leave that and see Mr. X. about it tomorrow." The morrow may find him in hospital (if not in another world). His work must be continued by someone else who, on looking through the dimensions, may think that, say, the roof dimensions were finished, whereas, in fact, they were not. For the same reason, and because memory is very rarely absolutely reliable, if work is left in the middle of a definite train of thought, notes should be made to enable one to pick up easily the work left off. For example, in measuring the facings, when the work is left notes such as this should be made: "Facings to north elevation and inside areas to take." In this way an elevation will not be missed.

Headings. Headings and sub-headings should be used liberally in the dimensions; they all help to identify and explain what has been measured. Every effort, in fact, must be made to enable the dimensions to be followed by a different person perhaps years afterwards. Headings, moreover, save repetition in the dimensions, e.g. a heading of "Austrian Oak and Wax Polishing," when measuring oak doors, saves repeating these words in the description of doors, frame, architrave, etc. If anything in deal comes under this heading (e.g. grounds), the word deal should be mentioned and underlined. When the oakwork is finished a note should be put ("End of A. Oak and

w.p."). There is then no doubt where the oakwork begins and ends.

Instructions to Worker-up. It is sometimes useful to write on the dimensions instructions to the worker-up as to alterations or any special requirements. These should be written right across the dimension columns so that they cannot get overlooked, e.g. "Alter all mortise locks to rim locks." If a note of this nature is made the worker-up can simply alter the description on his abstract, and there is no necessity to go back over the dimensions, which may perhaps have been already checked on the abstract, and alter each item. In the same way if the taker-off wants any items billed together which might otherwise be distributed through the bill, he should make a note of his requirements.

Queries. Except where a full specification and drawings are supplied the taker-off will probably not have got very far before he comes across a query which must be referred to the architect. Sheets should be kept on which to enter all such queries, and should be ruled down the middle, the query being written on the left-hand side and the right-hand side being left for the reply. When a reasonable number of these queries has accumulated, or when the taker-off finds he is held up all round by his uncertainty, a settlement of these queries should be obtained. Apart from questions arising during the measuring there will no doubt be such points as conditions of contract in regard to payments,



*An Entrance to a Cemetery. By L. Wright.
[From Liverpool School of Architecture Exhibition.]*

maintenance period, etc., amount of contingency sum, and similar points to get settled.

Figured Dimensions and Scale. Figured dimensions should always be followed in preference to scale. Where a drawing is partly figured the taker-off should fill in such other dimensions as he can arrive at by calculation. It saves a lot of time in measuring if the dimensions of each room are figured in and do not have to be calculated or scaled again each time they are wanted. In this connection there is a tendency, where a drawing is not figured, for the taker-off to measure full for his own protection, as it is impossible to scale off an $\frac{1}{8}$ in. drawing to within 3 in. with any certainty. If only an over-all dimension is figured, the taker-off should subdivide this dimension himself as it appears to scale; he will then only be 2 in. or 3 in. full on the total length instead of in each room, as might otherwise be the case.

Schedule of Openings A schedule of openings should be made before they are measured, and this is most conveniently done at the beginning of that section of the dimensions which deals with them. That is, before starting to measure the windows a tabulated list should be made giving the size of opening, thickness of wall, and any note as to the kind of window. Again, if each window opening is marked as "fr." (frame), "la. fr.," or "extra la. fr." on the schedule, the numbers are easily collected up for the items of bedding and pointing and painting frames. The whole of

the windows can, by such a schedule, be kept in view by looking at the one sheet. In a building of any size every opening on the plans should be given a distinctive number, which would also appear on the schedule and could be used in referencing. This facilitates the tracing of the dimensions of any particular window, door, etc.

Estimates for Provisional Sums. A list should be made at an early stage of sub-contractors' work for which provisional sums will be inserted. Estimates for some of these may have been obtained by the architect, and some may have to be got. In other cases it may be sufficient to estimate a sum to cover the work. Where possible a definite estimate from a prospective sub-contractor should be obtained, and this must be done in good time to enable such builder's work as is dependent on the estimate to be measured.

Sketches. Sketches should be made for the bill where they will make a description more lucid than can be done in words. They may be drawn in their final form on the dimensions, to be afterwards traced and attached to the draft bill for reproduction. Or it may be better to draw and number each sketch on a separate piece of paper, when it can be referred to by its number in the dimensions or abstract. The biller can then find the proper sketch easily, and the labour of drawing it out twice is saved. Apart from sketches actually needed for reproduction in the bills, the taker-off should make liberal use of sketches to show how he



*The pottery section at the Nenijslo, Rotterdam.
The large pillars, etc., are in Essex board.*

has measured anything which the architect's drawings leave in doubt. These are best drawn on the dimension paper as less likely to be lost, but they occasionally develop into detail drawings when larger sheets are required, which should be carefully preserved with the dimensions.

[To be continued]

ANNOUNCEMENTS

Mr. L. F. Vanstone, L.R.I.B.A., is removing his office from 15 Old Town Street, Plymouth, to 118-119 Tavistock Road (Drake Circus), Plymouth.

Mr. H. G. B. Ridges, L.R.I.B.A., architect and surveyor, has removed from 85 Above Bar Street to No. 2 Gibbs Road, Above Bar, Southampton. 'Phone 2657.

The Leeds Architectural Travelling Scholarship for 1928, amounting to £60, which provides for a month's travel abroad for the best student for the year, has been awarded to W. L. Whitaker, a student of the School of Architecture, Leeds College of Art. Through the generosity of Mr. William Nicholson, a member of the West Yorkshire Society of Architects, a further £20 has been added to Mr. Whitaker's award, and three additional awards of £60 each for two months' travel have been made to F. Chippindale, F. Mudd, and J. G. Sidebotham, all students of the School of Architecture.

R.I.B.A. EXAMINATIONS

Following is a list of the dates of the R.I.B.A. examinations to be held in 1928 and 1929:

Intermediate Examination. November 9, 10, 12, 13, and 15, 1928 (last day for receiving applications, October 9, 1928).

June 14, 15, 17, 18, 19, and 20, 1929 (last day for receiving applications, May 14, 1929). November 8, 9, 11, 12, and 14, 1929 (last day for receiving applications, October 8, 1929).

Final Examination. December 5, 6, 7, 8, 10, 11, 12, and 13, 1928 (last day for receiving applications, November 5, 1928). July 3, 4, 5, 6, 8, 9, 10, and 11, 1929 (last day for receiving applications, June 3, 1929). December 4, 5, 6, 7, 9, 10, 11, and 12, 1929 (last day for receiving applications, November 4, 1929).

Special Examination. December 5, 6, 7, 8, 10, and 11, 1928 (last day for receiving applications, November 5, 1928). July 3, 4, 5, 6, 8, and 9, 1929 (last day for receiving applications, June 3, 1929). December 4, 5, 6, 7, 9, and 10, 1929 (last day for receiving applications, November 4, 1929).

Special Examination in Design for former Members of the Society of Architects. December 5, 6, 7, 8, and 10, 1928 (last day for receiving applications, November 5, 1928). July 3, 4, 5, 6, and 8, 1929 (last day for receiving applications, June 3, 1929). December 4, 5, 6, 7, and 9, 1929 (last day for receiving applications, November 4, 1929).

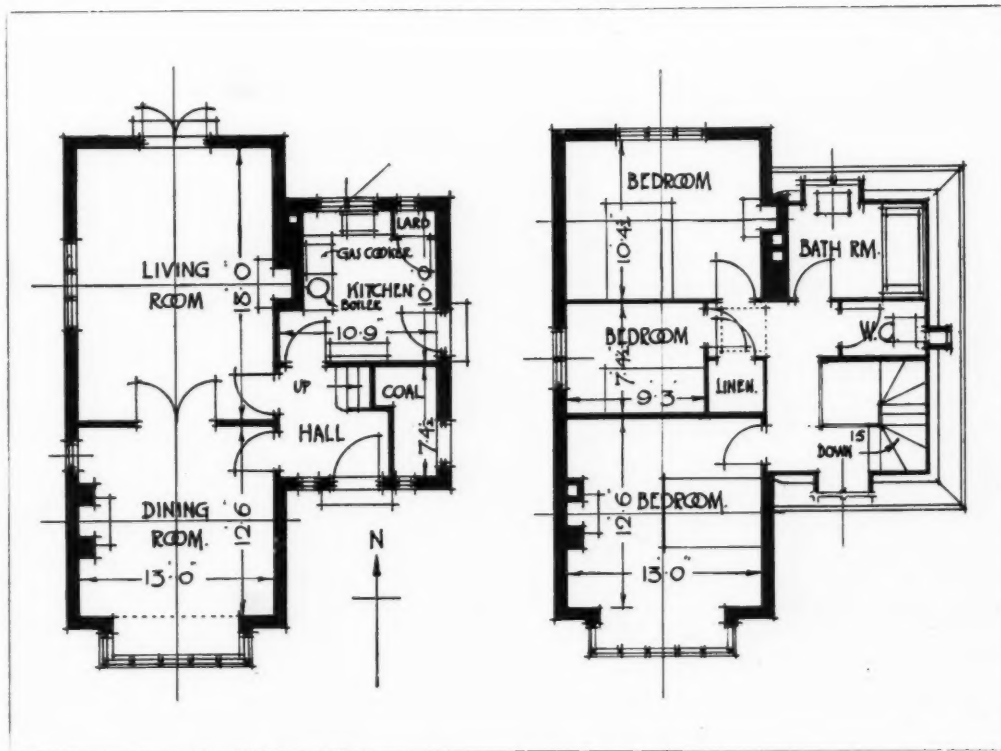
Special Examination of Licentiates to qualify as Fellows. November 19, 20, 21, 22, and 23, 1928 (last day for receiving applications, October 19, 1928). April 15, 16, 17, 18, and 19, 1929 (last day for receiving applications, March 15, 1929). November 18, 19, 20, 21, and 22, 1929 (last day for receiving applications, October 18, 1929).

Statutory Examination for the Office of District Surveyor in London and Building Surveyor under Local Authorities. October 17, 18, and 19, 1928 (last day for receiving applications, October 1, 1928). May 1, 2, and 3, 1929 (last day for receiving applications, April 10, 1929). October 16, 17, and 18, 1929 (last day for receiving applications, October 1, 1929).

Town-Planning Examination. June 26, 27, 28, and July 1, 1929 (last day for receiving applications, March 1, 1929).



House in Ashley Road, Thames Ditton, Surrey.
By G. Alan Fortescue. The main front.



House in Ashley Road, Thames Ditton, Surrey. By
G. Alan Fortescue. Above, the garden side. Below, the plans.

LAW REPORTS

FLAT DE LUXE. ALLEGED DEFECTS

Bell v. Lee. King's Bench Division. Before the Lord Chief Justice and a special jury

This action gave rise to many interesting points in regard to the erection and letting of a high-class flat at Portland Place, W.

The plaintiff was Mr. Henry Bell, of 82½ Portland Place, and he claimed from the defendant, Mr. Charles Edward Lee, of 83 Portland Place, damages for alleged misrepresentations and breaches of warranty regarding the letting of the flat. Plaintiff's complaint was that in 1895 Mr. Lee induced him to take his flat in Portland Place, W., by representing to him that it was a "flat de luxe" and was in every way the "last word in flats" and was perfect. In fact, Mr. Bell said, the building was jerry-built, the plastering of the walls and ceilings had cracked and broken loose, and the wood of the doors and floors had warped and split.

Mr. Lee denied the allegations made against him.

Sir Patrick Hastings, K.C., and Mr. Blanco White appeared for the plaintiff; Mr. Stuart Bevan, K.C., and Mr. H. J. Wallington for the defendant. Mr. W. B. Frampton held a watching brief for a party interested.

Sir Patrick Hastings, in opening the case, said that Mr. Bell was a director of Lloyds Bank, and was also engaged on Government business. In 1925 he was living in Berkeley Square, W., and he heard of some new flats which were being built in Portland Place, W. Mr. Bell and his wife went to see the flats, and they there interviewed Mr. Lee, who, counsel understood, was largely interested in speculating in the building of flats. Mr. Lee took Mr. and Mrs. Bell over a flat which they afterwards leased. Mr. Bell was told in the clearest possible terms that the flats were the very last word in London flats. Indeed, on the notice-board outside the flats were described as "flats de luxe." The rent of the flat which Mr. Bell took was £1,200 a year.

In 1925 Mr. and Mrs. Bell entered into possession of their flat on a twenty-one years' lease, which contained a most stringent repairing covenant. Mr. Bell's complaint was that the building was jerry-built. He (counsel) would ask his lordship to allow the jury to be driven to the flat to inspect it. He was instructed that they would find that there were cracks—some of them an inch in width—in every room, that the panels of the doors had shrunk, and that the partitions were such that occurrences in the flat next door could be heard as clearly as if they had happened in Mr. Bell's flat.

Those defects became apparent almost immediately. In September 1925, the rain came into the flat and lay in puddles on the floor. Then the taps began to drip. In April 1926, Mr. Bell wrote pointing out that the seams of several doors were opening, that the plaster was cracking and peeling and breaking off, that many of the ceilings were breaking into flakes and cracking, and that some of the floor boards had risen and become detached. Mr. Lee's agent replied that the liability for making good the various defects could be settled by reference to the covenants in Mr. Bell's lease—a roundabout way of saying that Mr. Bell could repair the flat himself. In October 1926, Mr. Lee wrote a letter in which he said that he had apparently failed to please Mr. Bell and asked him to give his secretary "instructions to find another tenant for the flat, as he has frequent applications for accommodation in the building."

Plaintiff gave evidence in support of his case, and said it would cost £500 to put the flat right.

Cross-examined: It was untrue that the condition of the flat to some extent was accounted for by overheating and want of ventilation.

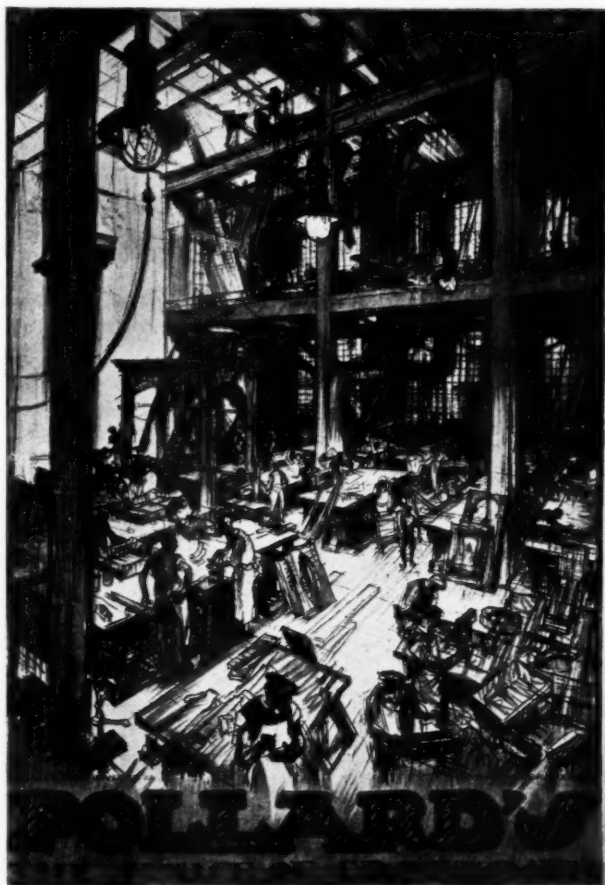
Mr. Wallace Elliott, managing director of Messrs. Trollope and Colls, Limited, contractors, said that if Mr. Bell's flat had been properly built he would not have expected to find it in a condition anything like that in which it was. Owing to the thin partitions occurrences in the adjoining flat could be heard in Mr. Bell's flat.

Mr. Craven Ellis, of Ellis and Sons, auctioneers, of London, Liverpool, and Manchester, said the flat was nothing approaching a first-class *de luxe* flat, and a fair rental for it in its present condition would be £500 a year.

Mr. Bevan, in opening the defence, said that it must occur to the jury that it was monstrous that the lessor of flats should be charged with fraud because he had described one of those flats as a "flat de luxe." It was mere "puffing." Mr. Lee had been in business in the West End of London for many years and had occupied public offices. With regard to the charge of breach of warranty, it was idle to suggest that for an owner of a flat to call it a "flat de luxe," or "as fine a flat as there is in London," or a "perfect flat," constituted a contractual relationship between him and the person to whom he so described it. That was particularly so in the present case, as Mr. Bell did not suggest that before he took the flat he was anxious to have the assurance that it was a flat *de luxe*, whatever that might mean, nor that he attached any importance to the statements which Mr. Lee made. Those statements were words of commendation and nothing more.

There were really only three things of which complaint was made—the shrinkage of the woodwork, cracks in the plaster, and cheap casement fastenings—all of which could be remedied for £195. The utmost pains had been taken to secure the best possible materials, but it was impossible to alter the course of nature. Timber could not be procured which was so dry that it would not be affected when it was first continuously exposed to a hotter temperature than that to which it had been subjected.

The best seasoned wood and the best fibrous plaster must shrink slightly. It had been said that in Mr. Bell's flat there was more change than would be normally expected. Who could say to



The machine setting-out shop of E. Pollard & Co., Ltd. [From a poster by Frank Brangwyn.]

what extent there had been overheating in that flat? What other theory was possible when it was remembered that the timber, the fibrous plaster, and the other material throughout the flats came from the same source? The jury would be able to form an opinion whether Mr. Bell had bestowed the same care on the flat as he would have bestowed on it if he had been completely content with it.

Defendant gave evidence, and said he employed the best architect and quantity surveyor he could find, and a first-class builder, and the building was erected to the satisfaction of the Howard de Walden estate architect. He had honestly thought he was justified in calling them "flats de luxe." The building of the flats had cost him £127,000.

Mr. William Kaula, a partner in Messrs. Wills and Kaula, architects, who acted for Mr. Lee when the flats were built, said that Mr. Lee never gave any indication of sacrificing security on the ground of expense. No inferior material was used. In his opinion the cracking and warping in Mr. Bell's flat were due to excessive temperature.

In cross-examination, the witness said that he did not know that when Mr. Lee had received the builders' tenders he asked one of the builders to do the work for the lower sum that had been tendered by another firm.

Sir Patrick Hastings: If you had known it you would have been furious?—I should.

The witness agreed that Mr. Lee refused to pay him more than 5 per cent. commission and had cut down his remuneration by taking certain work out of the contract. Referring to the plans, he said that the paper on which they were drawn had shrunk.

The jury, who had previously viewed the building, intimated that they were satisfied that the materials used in the structure were of adequate quality. The jury, after retiring for forty-five minutes, announced that while they found that Mr. Lee had not defrauded Mr. Bell, they could not agree on the question whether he had committed a breach of warranty.

The Lord Chief Justice, on the assumption that the question of warranty was one of law for his decision, said he held that there was no warranty, and, further, that there was no evidence upon which a jury could find there was warranty. In his opinion, the words used by Mr. Lee to Mr. Bell were words of simple commendation of the flat, innocently and honestly made, and not entitled to be described as warranty. In those circumstances he gave judgment for the defendant, with costs.

A stay of execution was granted.

IN PARLIAMENT

[BY OUR SPECIAL REPRESENTATIVE]

Mr. Chamberlain informed Mr. T. Williams that the average price of parlour houses included in contracts let by, or in direct labour schemes of, local authorities during the month of June 1928 (excluding the cost of land and development) was £426, compared with £481 in June 1927. In the same period the corresponding average price of non-parlour houses had fallen from £425 to £356.

In answer to Captain Waterhouse, Mr. Chamberlain said that up to July 1, 1928, 64,509 houses had been completed by local authorities in England and Wales under the Housing Act, 1923, and a further 3,377 were under construction at that date.

Replying to further questions, Mr. Chamberlain said that 9,404 houses were completed during last June in connection with subsidy schemes under the Housing Acts of 1923 and 1924. The average prices of houses included in contracts let by, or in direct labour schemes of, local authorities during the same month (excluding the cost of land and development) were £426 for parlour houses and £356 for non-parlour houses. Under the Acts of 1923 and 1924 the numbers of houses under construction, and authorized but not started, were, on July 1, 1926, 91,662 and 135,845; on July 1, 1927, 115,765 and 96,674; and on July 1, 1928, 59,151 and 85,298 respectively. The numbers under construction on July 1 in each year under the Act of 1919 were 753,996 and nil.

Mr. Harris asked the Minister of Health whether there was now any serious shortage of bricklayers; whether he could state the attitude of his department now to the use of forms of construction other than brick; and whether he was still encouraging the construction of steel houses?

Mr. Chamberlain replied that he was not aware of any serious shortage of bricklayers for house building. With regard to the second and last parts of the question, the conditions in force governing the payment of subsidy under the Housing Acts did not prohibit the grant of assistance in respect of houses constructed with materials other than bricks, and although comparatively few proposals of this nature were now being submitted, he would not withhold his consent to the grant of assistance in respect of any satisfactory schemes for the erection of houses which complied with the conditions laid down.

Mr. Chamberlain informed Sir Basil Peto that it was proposed to provide for the continuance for one year of the Rent Restriction Act in their present form by including them in the Expiring Laws Continuance Bill.

Answering Mr. Stephens, Sir Kingsley Wood stated that the total amount of Exchequer subsidy paid in respect of housing schemes of local authorities and houses erected by private builders in England and Wales up to March 31, 1928, was £63,534,657.

Mr. Betterton, Parliamentary Secretary to the Ministry of Labour, stated that the number of insured persons classified as belonging to the building industry recorded as unemployed in Great Britain at June 20, 1927, and June 25, 1928, respectively, were:

Occupation.	Numbers recorded as unemployed at	
	June 20, 1927.	June 25, 1928.
Carpenters	3,433	7,978
Bricklayers	908	3,690
Masons	957	1,345
Slaters	201	416
Plasterers	385	2,299
Painters	6,466	7,481
Plumbers	2,278	2,934
Labourers to above	20,551	29,237
All other Occupations ..	16,873	22,489
Total	52,112*	77,869†

* Including 1,367 insured persons temporarily stopped from the service of their employers.

† Including 2,382 insured persons temporarily stopped from the service of their employers.

The number of insured persons classified as belonging to the building industry recorded as unemployed in Great Britain at the date nearest July 1 in each of the years 1926, 1927, and 1928 for which figures were available were:

Date.	Numbers recorded as Unemployed.	Number included in previous column who were temporarily stopped.
June 21, 1926	68,191	5,702
June 20, 1927	52,112	1,367
June 25, 1928	77,869	2,382

Colonel Ashley, the Minister of Transport, stated that the Central Electricity Board had appointed Sir Reginald Blomfield, M.A., R.A., to advise them on questions arising in connection with the design and colouring of the towers for carrying electric transmission lines.

RAPID FACTORY-BUILDING IN SHROPSHIRE

Considerable interest is being taken in building circles in the large beet sugar factory which has just been completed in Shropshire by Messrs. Perry and Co. (Bow), London, the contractors, from the designs of Mr. C. W. Glover, A.M.I.N.S.T.C.E. The factory was built in record time, the use of Aerocrete pre-cast units for the walls, floors, and partitions being an important factor in this connection.

These units are made of a mixture of cement and aggregate, richer than one to one, giving ample strength for all building purposes. It has been found that the strength of units made from this mixture averages 500 lb. per square inch after twenty-eight days, and resistances of as much again have been obtained. The walls and partition blocks are cast individually in metal forms, the standard dimensions being 24 in. by 12 in. by 2, 3, 4½, 8½ or 9½ in. in thickness. Three of the edges of the blocks are recessed with ¾-in. half-round grooves for jointing purposes, and during erection the blocks are well wetted and jointed in the usual manner with mortar in the proportion of 2 of Aerocrete to 1 of sand. The blocks can be pre-cast with a fair face on both sides assured, or with a face which will give an effective key for plastering.

Many properties are claimed by the manufacturers, Messrs. Aerocrete Units (London), Ltd., for the material, and these claims have been substantiated by exhaustive tests in this country and abroad. Among the properties claimed are that the material is light, insulating, sound deadening, weather resisting, fire resisting and permanent. A pre-cast block for building purposes weighs only from 45 to 55 lb. per cubic foot, and yet from tests conducted it has been proved to possess adequate strength for all general purposes. Due to this lightness, steelwork may be reduced, thus effecting a saving in the cost of erection, and this in turn reduces the dead load of the building and results in a saving in foundations and transportation.

The material has been used in many other buildings, among the more important being Devonshire House, London, where Messrs. Holland, Hannen and Cubitt, Ltd., used it for the casing of the skeleton steelwork, the extensions to the Stockholm Railway Station, a hydro-electric power station in Sweden, houses at Wembley, and various large industrial buildings. It has been fully approved by the Ministry of Health, the British Government Housing Committee, the London County Council and the principal British building authorities. Houses erected with the material are qualified for the Government subsidy. Cottages are being erected on the two general principles, *in situ* Aerocrete or in pre-cast Aerocrete blocks.

The material has been tested for certain and various purposes at the City and Guilds Engineering College, London; at the Columbia University Testing Laboratories, New York; Engineering College, Stockholm, Sweden; by Professor Chas. McKergow, of McGill University; by Professor Barker, at the University College, London; at the Queen's University, Belfast Engineering Laboratory; and by Mr. R. H. Stanger, A.M.I.C.E., A.M.I.MECH.E., F.C.S., at the Testing Works and Chemical Laboratories, Broadway House, Westminster. From each of these tests it has emerged with great success.

COMPETITION CALENDAR

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

September 1. The Council of the R.I.B.A. have accepted an offer from the directors of the Gloster Aircraft Co., Ltd., and Messrs. H. H. Martyn & Co., Ltd., to give a prize for the best imaginative scheme for a London aircraft terminus suitable to the supposed requirements of air traffic fifteen years hence. The competition is open to Associates, elected Students, or registered Probationers of the R.I.B.A. below the age of thirty years on September 1. The competition will be in two stages. From the preliminary competition ten competitors will be selected for the final, and each will be paid

£5 for his expenses. The closing date for the final is January 10. There will be two prizes in the final, a first prize of £125 and a second prize of £25. The following have consented to form the jury to award the prizes: Sir Sifton Branker, K.C.B., Mr. C. Cowles-Voysey, Mr. E. Vincent Harris, Sir Edwin Lutyens, R.A., Major R. Mayo (consulting engineer, Imperial Airways, Ltd.), Mr. T. S. Tait, Mr. Maurice E. Webb, Mr. G. E. Woods-Humphery (general manager, Imperial Airways, Ltd.). Particulars may be obtained free on application at the R.I.B.A.

September 29. The British Portland Cement Association, Ltd., is offering awards for the best concrete houses erected during the current year. These awards are offered for work that has been actually designed and constructed. The prize awards will be as follows: To architects, 1st prize, £100; 2nd prize, £50; to builders, to the builder of the house awarded the 1st prize, £50; 2nd prize, £25. Assessor: Mr. E. Guy Dawber, A.R.A. Any concrete house or bungalow, the contract price of which is from £500 to £2,000, designed and erected in Great Britain under the supervision of an architect, is eligible. Houses must conform to the following requirements: 1: Only cement of British manufacture shall have been specified and used, with the exception of white cement which only may be used for obtaining special effects: 2: Concrete must be used for the roof of houses where a flat roof is called for. The covering for other types of roof must be pre-cast concrete tiles except where extra expense is entailed by the employment of this latter form of covering. The actual construction must be completed by the end of 1928 in order that the prizes may be awarded early in 1929. Further particulars from The British Portland Cement Association, Ltd., 20 Dartmouth Street, London, S.W.1

LEEDS COMPETITION RESULT

The result of the competition for the Meanwood Park Colony, Leeds, is as follows: 1: Mr. H. Carter-Pegg, London; 2: Mr. J. H. Morton, South Shields; 3: Mr. J. C. Proctor, Leeds. There were eight selected architects. The designs are exhibited in the Leeds City Art Gallery until August 4. The winning design is illustrated this week in our Competition Supplement.

THE NEW HOME OF THE ADVENTURERS

Following are the names of the general contractors and sub-contractors for Hudson's Bay House, illustrated on pages 151 to 158: General contractors, Messrs. Dove Bros., Ltd., who were also responsible for the demolition and joinery; British Fibro-Cement Works, Ltd., fireproof floors, Escala tubes; H. T. Jenkins and Son, Ltd., granite work; White, Allom & Co., models of external carving, special decoration of offices; H. H. Martyn & Co., external carving; Walton, Goody and Cripps, wall linings—Ancaster stone; Walter Macfarlane & Co., turret; J. Starkie Gardner, Ltd., turret balustrades and dome; Joseph Brooke and Sons, Silex York stone steps and paving; Dixon Corbett and R. S. Newall & Co., Ltd., lightning conductor; J. A. King & Co., Ltd., "Ferro-glass" patent roof lights; Coubro and Scrutton, flagstaffs; Nine Elms Stonemasonry Works, Portland stonework; Richard Crittall & Co., Ltd., heating and ventilation; Combustions, Ltd., oil burners (Rotamisor); Tyler and Freeman, electrical installations; Bagues, Ltd., gates, wrought-iron grilles, and external lanterns; Express Lift Co., lifts; Stevens and Adams, Ltd., wood block flooring; Crittall Manufacturing Co., steel windows and skylights; John Blaikie and Sons, Ltd., drainage and plumbing work; H. Pontifex and Sons, Ltd., sanitary fittings; Diespeker & Co., marble mosaic floors, walls, and partitions; Vitrolite Construction Co., Ltd., wall linings; Haywards, Ltd., pavement and stallboard lights; Chubb and Sons' Lock and Safe Co., Ltd., safe and safe doors; Merchant Trading Co., soundproof rooms (Celotex); Comyn Ching, Ltd., ironmongery; Palmer's Travelling Cradle Co., permanent fixings for cradles; Expanded Metal Co., Ltd., suspended ceilings; Val de Travers Asphalte Co., asphalt work; Synchronome Co., Ltd., clocks; A. Goslett & Co., Ltd., glazing. Messrs. Dorman Long & Co., Ltd., manufactured, fabricated, and erected the steelwork, which amounted to 920 tons. The Leyland and Birmingham Rubber Co. were contractors for rubber tiling of a total area of 160 sq. yds., the design being white octagons with black and white marble dots. The London Brick Co. and Forders, Ltd., supplied 500,000 Phorpres Flettons for the building. Mr. Percy Smith carved the lettering.

READERS' QUERIES

A SEPTIC TANK

S. H. B. writes: "The accompanying drawing shows a 'septic' tank which has been designed for a subsidy bungalow. It has been in use for two years without trouble so far. It is not what I understand a septic tank should be, and I should be obliged if you would inform me whether it is good design or not."

The tank illustrated is merely a small leaching cesspool divided into two parts. Its subterranean filter-bed (supposing the second compartment to be intended as a filter) would hardly be large enough to purify the tank liquid from the first compartment or "septic" tank, even if provided with adequate ventilation, and no means of ventilation are shown in the diagram. The final effluent is probably highly poisonous and malodorous at the point of its escape from the filter, but the fact that the discharge takes place underground permits of these facts passing unnoticed. Given a large enough area of suitable ground in which this poisonous effluent can spread, it is probably purified naturally before it does any harm, provided that water supplies are not drawn off the same area.

Such a leaching cesspool should not be installed where it is likely to poison water supplies, but apart from this possibility it is a very useful type. A leaching cesspool on absorbent soil is a very satisfactory apparatus, if used scientifically. Enough flushing water should be used to keep the

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.

inlets and outlets flowing free of accumulations of scum, but not enough to waterlog the surrounding soil or to dislodge scum with a rush from the first tank and shoot it into the second tank or the outlet.

The tank illustrated is somewhat small, and a certain amount of good luck may have contributed to its efficient working without needing attention for a period of two years. Too small a tank sometimes suffers from the disturbance of scum by an inrush of bath water and subsequent stopping up of the outlets.

I know of a larger tank of similar type which has been working efficiently without needing attention for four years, but both soil and subsoil are favourable to its action, the soil being absorbent sandy loam, and the subsoil absorbent broken white chalk. So thirsty is this particular spot that a trial pit dug within a yard of the outlet failed to receive any moisture from it during several months. On clay soils the effluent would

probably become offensive by lying stagnant in the upper layer without either becoming adequately purified or draining away out of range of sight and scent.

The practice of covering the whole apparatus with earth, as shown in the diagram, affords a cheap and excellent deodorizing agent. It may be necessary to dig the earth away once every few years for access to the tank, but the convenience of keeping the affair hidden is worth the expense of labour. The design of the leaching cesspool may therefore be called a good design to be used on porous subsoil away from sources of water supply. It is unsuitable for use on clay lands or near to sources of water supply, and would be highly dangerous if used in these positions. Such a leaching cesspool would not be officially permitted by the by-laws of some districts, but many district surveyors now sanction their use in suitable places.

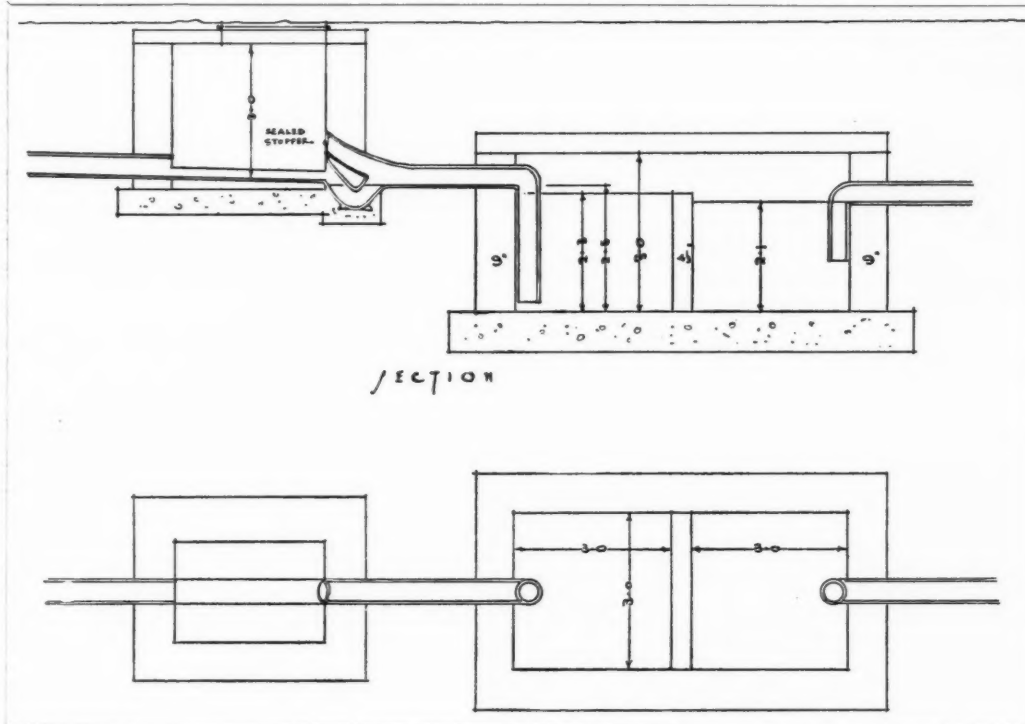
W. H.

ROOFING SLATES

F. C. writes: "Is it possible to obtain stone roofing 'slates' from the Collyweston district?"

The Collyweston quarries are carried on by Messrs. W. Close and Son, Ecclesiastical and University Stone Slaters, Collyweston, Stamford, from whom prices and particulars may be had on application. Generally speaking, the firm quote for fixing complete, and as the technique of stone slating is a special art that demands particular study and experience, this is a sound arrangement unless a craftsman trained in the work is already at hand.

W. H.



A septic tank. [See answer to S. H. B.]

THE WEEK'S BUILDING NEWS

Plans passed at **ELTHAM**: Pavilion, Park View Road, for Edwards Construction Co., Ltd.; club premises, Eltham Hill, for Mr. W. T. H. Indmarsh; twenty-seven houses, Sidcup Road, for Messrs. C. and D. J. Barwell; six almshouses, High Street, for Philpot Charity Trustees; five houses, Berota Road, for Mr. J. B. Farrugia; twenty-nine houses, Green Lane, for Messrs. Kevan and Buen; church, Westhorne Avenue, for Messrs. William Harbrow, Ltd.; nine houses, Eltham Hill, for Mr. W. W. Wright.

The **BEDFORD** Corporation has obtained sanction to borrow £28,580, for the London Road housing scheme.

Plans passed at **CHARLTON**: 107 houses, Charlton Park estate, for Messrs. Fretho, Ltd.

Plans passed at **NORWOOD**: Showroom, store and fifteen garages, Westmoreland House, Norwood Road, for Mr. C. Hannaford.

Plans passed at **BROCKLEY**: Eighteen houses, Grierson Road, for Mr. W. Warman; seven houses, Brockley Grove, for Messrs. J. W. Heath and Sons.

Plans passed at **HERNE HILL**: Fifty houses, Brantwood Road, for Mr. E. W. Banfield; five houses, Ferndene Road, for Mr. E. W. Wallis.

Plans passed at **FOREST HILL**: Cinema, London Road, for Mr. J. S. Beard.

Plans passed at **WANDSWORTH**: Extensions of premises, Columbia Gramophone Co., Ltd., Garrett Lane, for Mr. W. M. Marcus; factory and offices, Merton Road, for Messrs. Murrell and Pigott.

Plans passed at **CLAPHAM**: Block of flats, site of 84 King's Avenue, for Messrs. Searle and Searle.

The **SWANSEA** Corporation has obtained sanction to borrow £100,000 for housing advances.

The **West Riding** Education Committee is seeking sanction to borrow £12,500 for extensions to **HEMSWORTH** secondary school.

At a conference of local authorities as to the provision for smallpox, a resolution was passed urging the **DORSET** County Council to build a smallpox hospital for the county.

Plans passed by the **STOKE NEWINGTON** B.C.: Parish hall, Seven Sisters Road, for Messrs. G. T. Hellicar and N. E. Jones; garages, Albion Road, for Messrs. Boxall and Boxall.

Plans passed at **CATFORD**: Pavilion, Beckenham Hill, for St. John's Hospital Aid Society; thirty houses, Newquay Road, for Mr. A. E. Thomas; twenty-four houses, Crantock Road, for Mr. A. E. Thomas.

Plans passed by the **LOWESTOFT** Corporation: Petrol station, Belvedere and Mill Roads, for the Cities Service Oil Co., Ltd.; shop, Blackheath Road, for Mr. E. R. Crake; additions to workshop, East Street, for Messrs. Slater and Barnard; bungalow, Hall Road, Oulton Broad, for Mr. W. Hatch.

The **BRADFORD** Corporation has approved the plans and specifications submitted by the gas engineer for the proposed reconstruction of plant at Birkshall and Valley Road gas works, and authorized the town clerk to make application for sanction to borrow the sum of £80,000 for the purpose.

The **L.C.C.** is to erect another block of thirty-two tenements of simplified construction on the Whitmore estate, **HOXTON**, at an estimated cost of £11,830. It is proposed to place the contract with Messrs. Rowley Bros., Ltd., who are now erecting dwellings on the estate.

The **West Riding** Education Committee is to erect a new school at **EAST** and **WEST MORTON** to accommodate 250 children.

Plans passed by the **BEDFORD** Corporation: Two houses, Newnham Avenue, for Messrs. Usher and Anthony; warehouse, 22 St. Mary's Street, for Messrs. Randalls, Ltd.; two houses, Sidney Road, for Mr. W. E. G. Hull; two flats, 46 De Pary's Avenue, for Mr. E. H. C. Inskip; alterations, 9 St. Mary's Street, for Messrs. Cox and Harper; handicraft centres, Amphill Road and Queen's Park Schools, for Mr. G. P. Allen; alterations, The Café D'ansant, The Embankment, for Mr. I. Doughtry.

Plans passed by the **BATTERSEA** B.C.: Addition, 71 Lavender Hill, for Messrs. Perry and Rose; addition, 55 Northcote Road, for Mr. H. H. Parsons; wharf premises, 16 Lombard Road, for Russian Oil Products, Ltd.; twenty-two garages, Worfield Works, Worfield Street, for Mr. T. W. Weeks.

Plans passed by the **LEWISHAM** B.C.: Ten houses, Holme Lacey Road, for Messrs. W. J. Scudamore & Co., Ltd.; eighteen houses, Grierson Road, for Messrs. F. N. Sutton and F. C. Benstead; two houses, Le May Avenue, for Messrs. W. J. Scudamore, Ltd.; five houses, Westwood Road, for Mr. E. C. Christmas; additions, Lewisham Prendergast School, for Mr. E. A. Stone; 160 houses, Woolstone and Perry Hill estate, for Messrs. Tysoe and Harris.

The **BEDFORD** Central Electricity Board has selected as a suitable site for its main sub-station at Bedford four acres on the Wingfield estate.

Plans passed by the **SHOREDITCH** B.C.: Glass warehouse, site at junction of Shepherdess Walk and Eagle Wharf Road; rebuild factory, 15 Charles Square; factory building, 33a Dunloe Street.

The **SWANSEA** Corporation Housing Committee has approved plans submitted by the borough architect showing the layout for the erection of a further 436 houses at Townhill in the following ratio: namely, 100 parlour type, 176 two-bedroom type, and 160 three-bedroom type houses.

Plans passed by the **PAIGNTON** U.D.C.: Layout of estate, Totnes Road, for Mr. T. R. Robinson; ten garages, rear Dartmouth Road, for the Torbay Mill Co.; showroom and store, Manor Road, for the Direct Suppliers, Ltd.; four houses, Osney Crescent, for Messrs. H. T. Drew and Son; six flats, Winner Street, for Mr. W. J. R. James; six houses, Laura Grove, for Mr. R. M. Ely; two houses, showroom and flat, Torquay Road, for Mr. R. M. Ely.

The **PAIGNTON** U.D.C. has arranged that Messrs. Bridgman and Bridgman, architects, prepare a revised layout plan of the remaining part of the Preston housing estate, and plans, specifications and estimates for the roads and sewers to be constructed by the Council on the estate.

The **Unity Builders** (Paignton), Ltd., propose to erect a further thirty-six houses on land at the rear of Tweenway Terrace, **COLLATON**.

The **Northants** Education Committee is purchasing a site at **FINEDON** for the erection of an infants' school.

The **LEEDS** Education Committee has decided to proceed with the erection of a new public elementary school at **Osmondthorpe** to accommodate 1,250 children.

The **West Riding** Education Committee has approved sketch plans for the erection of the **SADDLEWORTH DELPH** new school at an estimated cost of £10,000.

Plans passed by the **HACKNEY** B.C.: Additions, 2 Varttry Road, for Messrs. A. S. R. Ley and Son; workshop, 170 High Street, Homerton, for Mr. M. M. Shire; workshop and garage, 98 Farleigh Road, for Mr. H. J. Sayer; additions to showrooms, 54 Stamford Hill, for Messrs. W. H. T. Kelland and Sons, Ltd.

Plans passed by the SWANSEA Corporation: Alterations and additions, "Full Moon" public-house, High Street, for Messrs. Truman, Hanbury, Buxton & Co., Ltd.; house and shop, Chemical Road, for Mr. J. Y. Ladd; store and showroom, Westbury Street, for Messrs. W. E. Fuller & Co.; offices and stores, Eaton Road, for Messrs. Samuel and Evans; alterations and additions, Glais Inn, Glais, for Messrs. Truman, Hanbury, Buxton & Co., Ltd.; house and shop, Millwood Street, for Mr. L. M. Carthews; offices, 2 Orchard Street, for Mr. J. Rowland James, Ltd.; parish hall, Castle Avenue, Mumbles, for the vicar and churchwardens; alterations and additions, "Pryswyllfa," St. Helen's Road, for the General Accident Life and Fire Assurance Co., Ltd.; twenty-two houses, Derwen Fawr Road, for Mr. C. Tyler; warehouse and showroom, 42 Walter's Road, for Messrs. D. and A. E. Wilks; rebuilding, "Cardiff Arms" public-house, the Strand, for Messrs. Truman, Hanbury, Buxton & Co., Ltd.; twelve houses, Graiglywd Road, for Messrs. T. and G. Spragg; house and two shops, Foxhole Road, for Mr. D. Bowen.

The HACKNEY B.C. has decided to invite further tenders for the erection of 100 tenements in Southwold Road.

The Durham County Education Committee has acquired a site of 10 acres for the proposed new secondary school at SHILDON.

Plans passed by the GLOSSOP Corporation: House, Norfolk Street, for Mr. L. Clay; eight houses, Fauvel Road, for the Glossopdale New Industrial Co-operative Society, Ltd.; conversion of Hare and Hounds Inn into two houses, Manor Park Road, for Messrs. Isaac Jackson and Sons, Ltd.; alterations to Norfolk Hotel and alterations at Spring Tavern, Brookfield, for Messrs. Gartsides (Brookside Brewery), Ltd., Ashton-under-Lyne; power-house, Howard Street, for Glossop Printers, Ltd.

Plans passed by the ST. PANCRAS B.C.: Building upon the sites of "The Tally Ho" public-house, Fortress Road, 12, 14, 16, and 18 Highgate Road, and 2, 4, 6, and 8 Willow Walk; addition, Central London Throat, Nose and Ear Hospital, abutting upon Wicklow Street; buildings, 303 and 305 Euston Road, for Mr. S. G. Soper.

Plans passed by the TYNEMOUTH Corporation: Theatre, Russell Street, for Messrs. Dixon and Bell, for Mr. Dixon Scott; two houses, Dene Road, for Mr. W. Stockdale; layout of land at Billy Mill, for Messrs. F. R. N. Haswell and Son; four houses, Lynn Road, for Messrs. F. R. N. Haswell and Son; six houses, Links Road, Cullercoats, for Messrs. A. and E. Brannen; alterations, tramway offices, John Street, Cullercoats, for Mr. A. H. Fennell, for Tynemouth and District Tramway Co.

The Rev. Thomas McManemy is to provide a new public elementary non-provided Roman Catholic school for about 150 children at HIGHFIELD, Durham.

The DARLINGTON Education Committee is to enlarge the Dodmire Council School by providing additional accommodation for about 440 children.

The Savoy Cinemas, Ltd., have submitted to the BRIGHTON Corporation plans for the erection of a cinema and restaurant at 75-9 East Street.

The Durham County Education Committee is to provide new school accommodation in COUNDON at a cost of £17,000.

The HERNE BAY U.D.C. has asked the surveyor to prepare sketch plans and specifications for a concrete open-air swimming bath.

Plans passed by the BRIGHTON Corporation: Alterations, 93 Western Road, for Messrs. Woolley and Bevis; twelve houses, Roedale Road and Dudley Road, for Mr. A. T. Dockerill; extension, 41 London Road, for the British Shoe Co.; alterations and additions, 101 and 102 Upper Lewes Road ("The New Inn"), for Messrs. Tamplin's and Sons; thirty houses, Coombe Road, Canfield Road, and Carlyle Avenue, for Messrs. Braybans, Ltd.; two houses, Carden Avenue, for Mr. H. W. Adams; rebuilding, "The Irish House," East Street, for Messrs. Knowland Bros.; reconstruction of premises, corner of Carlton Hill and Marine View, for the Kemp Town Brewery; alterations, 36 Ship Street, for Mr. J. L. Denman.

Plans passed by the FULHAM B.C.: Buildings, Otto House site and North End House site, North End Road, Grove Terrace, and FitzJames Avenue, for Messrs. Joseph; garages, Jervis Road, for Mr. F. J. Potter; offices, at Messrs. Macfarlane, Lang & Co.'s biscuit works, Townmead Road, for Messrs. J. M. Monroe and Son; new buildings at Darracq Motor Works, for Messrs. H. Roffey and Sons; additional building, 85 and 87 Hammersmith Road, for the Westminster Bank, for Messrs. Hall Jones and Dewhurst; classroom, Lady Margaret School, Parson's Green, for Messrs. J. and R. Thompson, Ltd.; building, 247 and 248 New King's Road, for Messrs. Hammond and Barr, on behalf of the British Legion; nurses' home, Fulham Workhouse, Fulham Palace Road, for Messrs. Prestige & Co.; building, "Hand and Flower" public-house, 617 New King's Road, for Mr. W. F. Foster; workshops, 245 North End Road, for Messrs. Ram and Austin.

The Office of Works has acquired Boyne Lodge, Kingston Road, MERTON, for conversion into a telephone exchange.

H.M. Office of Works has purchased land at the rear of Stuarts Road and Richmond Road, STECHFORD, Birmingham, for the purpose of erecting a telephone exchange.

The authorities of the Church of Christ are to purchase land in Yardley Wood Road, BIRMINGHAM, for the purpose of erecting church buildings.

The Metropolitan Water Board is to lay mains at a cost of £48,000 for the improvement of supply to HENDON and adjacent areas in the western district.

Plans passed by the CROYDON Corporation: Workshop, Stafford Road, for Mr. E. Pressey; six houses and garages, Ballards Way, for Mr. J. G. Bevan; alterations and additions, North End and Hedgis Yard, for Messrs. T. Jay Evans and Son; addition to hall, Woodside Green, for Mr. L. S. Goodbun; five houses, Lynwood Gardens, for Mr. L. A. Aston; twenty houses, Wickham Road, for the Spring Park Estate, Ltd.; three houses, Bensham Lane, for Mr. R. B. Manser; four shops, Purley Way, for Mr. A. Andrews; alterations and additions, 94 High Street, for Mr. E. H. Smith; alterations and additions, "Horse and Groom" public-house, Cherry Orchard Road, for Mr. C. R. Riches; four houses, Rockmount Road, for Messrs. New and Marriage; sixteen garages, Pollards Hill, for Mr. L. A. Aston; twenty-seven houses, Lonsdale and Archer Roads, for Messrs. Steel and Howes.

The L.C.C. is to erect tenements and shops on the Holland estate, STEPNEY, at a cost of £41,800.

The BOURNEMOUTH Corporation has adopted a scheme for the layout of pavilion grounds at a cost of £14,800.

The BOURNEMOUTH Corporation Housing Committee is to erect thirty-nine houses at Lower Charminster Road.

The BEXHILL Corporation has decided to purchase 3½ acres at Sidley for the erection of thirty-eight houses.

Plans passed by the NEWBURY Corporation: House, Westgate Road, for Messrs. Hoskings and Pond; alterations and additions, Lloyds Bank, Bridge Street, for Lloyds Bank, Ltd.; alterations and additions, 126-127 Bartholomew Street, for Mr. C. W. Burns; alterations and additions, 6 Rockingham Road, for Mr. W. C. Parr.

The Batley Co-operative Society is to erect shops at Syke Lane, ARDSLEY.

The West Riding c.c. has prepared plans for widening and reconstructing the bridge over the River Don in the SWINTON rural district at a cost of £35,500.

RATES OF WAGES

		I	II			I	II			I	II			
		s. d.	s. d.			s. d.	s. d.			s. d.	s. d.			
A	ABERDARE	S. Wales & M.	1 7 1	1 2 1	A	E. Glamor-	S. Wales & M.	1 7 1	1 2 1	A	NANTWICH	N.W. Counties	1 7 1	1 2 1
A ₁	Aberavenny	S. Wales & M.	1 7 1	1 2 1	A	ganshire &		1 7 1	1 2 1	A	Neath	S. Wales & M.	1 7 1	1 2 1
B	Abingdon	S. Counties	1 6 1	1 1 1	B	Monmouthshire		1 6 1	1 1 1	A	Nelson	N.W. Counties	1 7 1	1 2 1
A	Accrington	N.W. Counties	1 7 1	1 2 1	B	Exeter	S.W. Counties	1 5 1	1 1 1	A	Newcastle	N.E. Coast	1 7 1	1 2 1
A	Addlestone	S. Counties	1 6 1	1 1 1	B	Exmouth	S.W. Counties	1 4 1	1 0 1	A	Newport	S. Wales & M.	1 7 1	1 2 1
A	Adlington	N.W. Counties	1 7 1	1 2 1	B	FELIXSTOWE	E. Counties	1 5 1	1 1 1	A	Normanton	Yorkshire	1 7 1	1 2 1
A	Airdrie	Scotland	1 7 1	1 2 1	A ₃	Filey	Yorks	1 6 1	1 1 1	A	Northampton	Mid. Counties	1 7 1	1 2 1
C ₁	Aldeburgh	E. Counties	1 3 1	1 1 1	A	Fleetwood	N.W. Counties	1 7 1	1 2 1	A	North Staffs.	Mid. Counties	1 7 1	1 2 1
A	Altrincham	N.W. Counties	1 7 1	1 2 1	B ₂	Folkestone	S. Counties	1 4 1	1 0 1	A ₃	North Shields	N.E. Coast	1 7 1	1 2 1
B ₂	Appleby	N.W. Counties	1 7 1	1 2 1	A	Frodsham	N.W. Counties	1 7 1	1 2 1	A	Norwich	E. Counties	1 6 1	1 1 1
A	Ashton-under-Lyne	N.W. Counties	1 7 1	1 2 1	B ₃	Frome	S.W. Counties	1 4 1	1 0 1	A	Nottingham	Mid. Counties	1 7 1	1 2 1
A ₃	Atherstone	Mid. Counties	1 6 1	1 1 1						A	Nuneaton	Mid. Counties	1 7 1	1 2 1
B ₃	Aylesbury	S. Counties	1 4 1	1 0 1	A	GATESHEAD	N.E. Coast	1 7 1	1 2 1	B	OKHAM	Mid. Counties	1 5 1	1 1 1
B	BANBURY	S. Counties	1 4 1	1 0 1	B ₁	Gillingham	S. Counties	1 5 1	1 0 1	A	Oldham	N.W. Counties	1 7 1	1 2 1
B ₂	Bangor	N.W. Counties	1 4 1	1 0 1	A ₂	Gloucester	S.W. Counties	1 6 1	1 1 1	A ₃	Oswestry	Mid. Counties	1 6 1	1 1 1
A	Barnard Castle	N.E. Coast	1 7 1	1 2 1	B	Goole	Yorkshire	1 6 1	1 2 1	B	Oxford	S. Counties	1 6 1	1 1 1
A	Barnsley	Yorkshire	1 7 1	1 2 1	B	Gosport	S. Counties	1 5 1	1 1 1	A	PAISLEY	Scotland	1 7 1	1 2 1
B ₁	Barnstaple	S.W. Counties	1 5 1	1 0 1	A ₃	Grantham	Mid. Counties	1 6 1	1 1 1	C	Pembroke	S. Wales & M.	1 7 1	1 2 1
A	Barrow	N.W. Counties	1 7 1	1 2 1	A ₁	Gravesend	S. Counties	1 7 1	1 2 1	A	Perth	Scotland	1 7 1	1 2 1
A	Barry	S. Wales & M.	1 7 1	1 2 1	A	Greenock	Scotland	1 7 1	1 2 1	A ₁	Peterborough	Mid. Counties	1 6 1	1 1 1
B ₃	Basingstoke	S.W. Counties	1 4 1	1 0 1	A	Grimby	Yorkshire	1 7 1	1 2 1	A ₂	Plymouth	S.W. Counties	1 7 1	1 2 1
B	Bath	S.W. Counties	1 5 1	1 1 1	B ₁	Guildford	S. Counties	1 5 1	1 0 1	A	Pontefract	Yorkshire	1 7 1	1 2 1
A	Batley	Yorkshire	1 7 1	1 2 1	A	HALIFAX	Yorkshire	1 7 1	1 2 1	A	Pontypridd	S. Wales & M.	1 7 1	1 2 1
B	Bedford	E. Counties	1 5 1	1 1 1	A	Hanley	Mid. Counties	1 7 1	1 2 1	B	Portsmouth	S. Counties	1 5 1	1 1 1
A ₂	Berwick-on-Tweed	N.E. Coast	1 6 1	1 2 1	A	Harrogate	Yorkshire	1 7 1	1 2 1	A	Preston	N.W. Counties	1 7 1	1 2 1
A ₂	Bewdley	Mid. Counties	1 6 1	1 2 1	A	Hartlepool	N.E. Coast	1 7 1	1 2 1	A	QUEENS-FERRY	N.W. Counties	1 7 1	1 2 1
B ₃	Bicester	Mid. Counties	1 4 1	1 0 1	B ₂	Harwich	E. Counties	1 4 1	1 0 1	A ₃	READING	S. Counties	1 6 1	1 1 1
A	Birkenhead	N.W. Counties	1 7 1	1 2 1	B ₁	Hatfield	S. Counties	1 4 1	1 0 1	B	Reigate	S. Counties	1 5 1	1 1 1
A	Birmingham	Mid. Counties	1 7 1	1 2 1	B	Hereford	S. Counties	1 5 1	1 1 1	A ₃	Reform	Mid. Counties	1 6 1	1 1 1
A	Bishop Auckland	N.E. Coast	1 7 1	1 2 1	B	Hereford	S. W. Counties	1 5 1	1 1 1	A ₃	Rhondda	S. Wales & M.	1 7 1	1 2 1
A	Blackburn	N.W. Counties	1 7 1	1 2 1	A ₁	Hereford	E. Counties	1 5 1	1 1 1	A ₃	Valley	Mid. Counties	1 6 1	1 1 1
A	Blackpool	N.W. Counties	1 7 1	1 2 1	A ₁	Heysham	N.W. Counties	1 7 1	1 2 1	A ₃	Ripon	Yorkshire	1 6 1	1 1 1
A	Blyth	N.E. Coast	1 7 1	1 2 1	A	Howden	N.E. Coast	1 7 1	1 2 1	A ₃	Rochdale	N.W. Counties	1 7 1	1 2 1
B ₃	Bognor	S. Counties	1 4 1	1 0 1	A	Huddersfield	Yorkshire	1 7 1	1 2 1	B	Rochester	S. Counties	1 5 1	1 1 1
A	Bolton	N.W. Counties	1 7 1	1 2 1	A	Hull	Yorkshire	1 7 1	1 2 1	A	Ruabon	N.W. Counties	1 7 1	1 2 1
A ₂	Boston	Mid. Counties	1 6 1	1 1 1						A ₂	Rugby	Mid. Counties	1 6 1	1 1 1
B ₁	Bournemouth	S. Counties	1 5 1	1 0 1						A ₃	Rugley	Mid. Counties	1 6 1	1 1 1
B	Boyce Tracy	S.W. Counties	1 4 1	1 0 1						A ₃	Runcorn	N.W. Counties	1 7 1	1 2 1
A	Bradford	Yorkshire	1 7 1	1 2 1						A ₃	ST. ALBANS	E. Counties	1 6 1	1 1 1
A ₂	Brentwood	E. Counties	1 6 1	1 2 1						A	St. Helens	N.W. Counties	1 7 1	1 2 1
A	Bridgend	S. Wales & M.	1 7 1	1 2 1						B ₃	Salisbury	S.W. Counties	1 4 1	1 0 1
A ₁	Bridgwater	S.W. Counties	1 4 1	1 0 1						A ₁	Scarborough	Yorkshire	1 7 1	1 2 1
A ₁	Bridlington	Yorkshire	1 7 1	1 2 1						A	Scunthorpe	Mid. Counties	1 7 1	1 2 1
A	Brighouse	Yorkshire	1 7 1	1 2 1						A	Sheffield	Yorkshire	1 7 1	1 2 1
B ₁	Brighton	S. Counties	1 5 1	1 0 1						A	Shipley	Yorkshire	1 7 1	1 2 1
A	Bristol	S.W. Counties	1 7 1	1 2 1						A ₂	Shrewsbury	Mid. Counties	1 6 1	1 1 1
A ₂	Brixham	S.W. Counties	1 4 1	1 0 1						A ₂	Skipton	Yorkshire	1 6 1	1 2 1
A ₂	Bromsgrove	Mid. Counties	1 6 1	1 2 1						A ₃	Slough	S. Counties	1 6 1	1 1 1
C	Bromyard	Mid. Counties	1 3 1	1 1 1						A ₂	Solihull	Mid. Counties	1 6 1	1 2 1
A	Burnley	N.W. Counties	1 7 1	1 2 1						A ₃	South'pton	S. Counties	1 6 1	1 1 1
A	Burslem	Mid. Counties	1 7 1	1 2 1						A ₂	Southend-on-Sea	E. Counties	1 6 1	1 2 1
A ₂	Burton-on-Trent	Mid. Counties	1 6 1	1 2 1						A	Southport	N.W. Counties	1 7 1	1 2 1
A	Bury	N.W. Counties	1 7 1	1 2 1						A	S. Shields	N.E. Coast	1 7 1	1 2 1
A ₁	Buxton	N.W. Counties	1 7 1	1 2 1						A ₂	Stafford	Mid. Counties	1 6 1	1 2 1
B	CAMBRIDGE	E. Counties	1 5 1	1 1 1						A	Stockport	N.W. Counties	1 7 1	1 2 1
B ₂	Canterbury	S. Counties	1 4 1	1 0 1						A	Stockton-on-Tees	N.E. Coast	1 7 1	1 2 1
A	Cardiff	S. Wales & M.	1 7 1	1 2 1	A	JARROW	N.E. Coast	1 7 1	1 2 1		Stoke-on-Trent	Mid. Counties	1 7 1	1 2 1
A	Cardis	N.W. Counties	1 7 1	1 2 1						B	Stroud	S.W. Counties	1 5 1	1 1 1
B	Carmarthen	S. Wales & M.	1 5 1	1 1 1	A	KEIGHLEY	Yorkshire	1 7 1	1 2 1	A	Sunderland	N.E. Coast	1 7 1	1 2 1
B ₁	Carnarvon	N.W. Counties	1 4 1	1 0 1	B ₁	Kendal	N.W. Counties	1 5 1	1 0 1	A	Swadincote	Mid. Counties	1 7 1	1 2 1
A	Carnforth	N.W. Counties	1 7 1	1 2 1	B ₁	Keswick	N.W. Counties	1 5 1	1 0 1	A	Swansea	S. Wales & M.	1 7 1	1 2 1
A	Castleford	Yorkshire	1 7 1	1 2 1	A ₃	Kettering	Mid. Counties	1 6 1	1 1 1	B	Swindon	S.W. Counties	1 5 1	1 1 1
B ₁	Chatham	S. Counties	1 5 1	1 0 1	A ₂	Kidderminster	Mid. Counties	1 6 1	1 2 1					
B ₁	Chelmsford	E. Counties	1 5 1	1 0 1	B ₂	King's Lynn	E. Counties	1 4 1	1 0 1					
A ₃	Cheltenham	S.W. Counties	1 6 1	1 1 1						A ₁	TAMWORTH	N.W. Counties	1 7 1	1 2 1
A	Chester	N.W. Counties	1 7 1	1 2 1						B ₁	Taunton	N.W. Counties	1 5 1	1 0 1
A	Chesterfield	Mid. Counties	1 7 1	1 2 1						A	Teeside Dist.	N.E. Counties	1 7 1	1 2 1
B ₁	Chichester	S. Counties	1 4 1	1 0 1	A	LANCASTER	N.W. Counties	1 7 1	1 2 1	B	Teignmouth	S.W. Coast	1 5 1	1 1 1
A	Chorley	N.W. Counties	1 7 1	1 2 1	A ₂	Leamington	Mid. Counties	1 6 1	1 1 1	A	Todmorden	Yorkshire	1 7 1	1 2 1
B ₂	Cirencester	S. Counties	1 4 1	1 0 1	A	Leeds	Yorkshire	1 7 1	1 2 1	C	Torquay	S.W. Counties	1 7 1	1 2 1
A	Clytheroe	N.W. Counties	1 7 1	1 2 1	A	Leek	Mid. Counties	1 7 1	1 2 1	B ₁	Truro	S.W. Counties	1 3 1	1 1 1
A	Clydebank	Scotland	1 7 1	1 2 1	A	Leicester	Mid. Counties	1 7 1	1 2 1	A	Tunbridge Wells	S. Counties	1 5 1	1 0 1
A	Coalville	Mid. Counties	1 7 1	1 2 1	A ₃	Leigh	N.W. Counties	1 7 1	1 2 1	A	Tunstall	Mid. Counties	1 7 1	1 2 1
B	Colchester	E. Counties	1 5 1	1 1 1	B ₃	Lewes	S. Counties	1 4 1	1 0 1	A	Tyne District	N.E. Coast	1 7 1	1 2 1
A	Colne	N.W. Counties	1 7 1	1 2 1	A	Lichfield	Mid. Counties	1 6 1	1 1 1					
A ₂	Colwyn Bay	N.W. Counties	1 6 1	1 1 1	A	Lincoln	Mid. Counties	1 7 1	1 2 1	A	WAKE-FIELD	Yorkshire	1 7 1	1 2 1
A	Consett	N.E. Coast	1 7 1	1 2 1	A ₂	Liverpool	N.W. Counties	1 10 1	1 4 1	A ₁	Walsall	Mid. Counties	1 7 1	1 2 1
A ₃	Conway	N.W. Counties	1 6 1	1 1 1	A ₃	Llandudno	N.W. Counties	1 6 1	1 1 1	A	Warrington	N.W. Counties	1 7 1	1 2 1
A	Coventry	Mid. Counties	1 7 1	1 2 1	A	Llanelli	S. Wales & M.	1 7 1	1 2 1	A ₂	Warwick	Mid. Counties	1 6 1	1 1 1
A ₃	Crewe	N.W. Counties	1 6 1	1 1 1		London (12 miles radius)		1 9 1	1 4 1	A	Wellingborough	Mid. Counties	1 6 1	1 1 1
A ₃	Cumberland	N.W. Counties	1 6 1	1 1 1		Do. (12-15 miles radius)		1 8 1	1 3 1	A	West Bromwich	Mid. Counties	1 7 1	1 2 1
			1 6 1	1 1 1	A	Long Eaton	Mid. Counties	1 7 1	1 2 1	B	Weston-s-Mare	S.W. Counties	1 5 1	1 1 1
					A	Loughborough	Mid. Counties	1 7 1	1 2 1	A ₂	Whitby	Yorkshire	1 6 1	1 1 1
A	DARLINGTON	N.E. Coast	1 7 1	1 2 1	A ₂	Luton	E. Counties	1 6 1	1 1 1	A ₂	Widnes	N.W. Counties	1 7 1	1 2 1
A	Darwen	N.W. Counties	1 7 1	1 2 1	A	Lytham	N.W. Counties	1 7 1	1 2 1	A ₂	Wigan	N.W. Counties	1 7 1	1 2 1
B ₂	Deal	S. Counties	1 4 1	1 0 1						A ₂	Winchester	S. Counties	1 4 1	1 0 1
A ₃	Denbigh	N.W. Counties	1 6 1	1 1 1	A ₁	MACCLESFIELD	N.W. Counties	1 7 1	1 2 1	A ₃	Windsor	S. Counties	1 6 1	1 1 1
A	Derby	Mid. Counties	1 7 1	1 2 1	B	Maidstone	S. Counties	1 5 1	1 1 1	A	Wolverhampton	Mid. Counties	1 7 1	1 2 1
A	Dewsbury	Yorkshire	1 7 1	1 2 1	A ₂	Malvern	Mid. Counties	1 6 1	1 1 1	A ₃	Worcester	Mid. Counties	1 6 1	1 1 1
B	Didcot	S. Counties	1 5 1	1 0 1	A	Manchester	N.W. Counties	1 7 1	1 2 1	A ₃	Workshop	Yorkshire	1 6 1	1 1 1
A	Doncaster	Yorkshire	1 7 1	1 2 1	A	Mansfield	Mid. Counties	1 7 1	1 2 1	A	Wrexham	N.W. Counties	1 7 1	1 2 1
C ₁	Dorchester	S.W. Counties	1 3 1	1 1 1	B ₂	Margate	S. Counties	1 4 1	1 0 1	B	Wycombe	S. Counties	1 5 1	1 1 1
A ₃	Driffield	Yorks	1 6 1	1 1 1	A ₂	Matlock	Mid. Counties	1 6 1	1 1 1					
A ₃	Droitwich	Mid. Counties	1 6 1	1 1 1	A	Merthyr	S. Wales & M.	1 7 1	1 2 1					
A ₃	Dudley	Mid. Counties	1 7 1	1 2 1	A	Middlesbrough	N.E. Coast	1 7 1	1 2 1					
A	Dundee	Scotland	1 7 1	1 2 1	A ₂	Middlewich	N.W. Counties							

PRICES CURRENT

EXCAVATOR AND CONCRETOR

EXCAVATOR, 1s. 4d. per hour; LABOURER, 1s. 4d. per hour; NAVY, 1s. 4d. per hour; TIMBERMAN, 1s. 5d. per hour; SCAFFOLDER, 1s. 5d. per hour; WATCHMAN, 7s. 6d. per shift.

Broken brick or stone, 2 in., per yd.	£0 11 6
Thames ballast, per yd.	0 11 0
Pit gravel, per yd.	0 18 0
Pit sand, per yd.	0 14 6
Washed sand	0 15 0
Screned ballast or gravel, add 10 per cent. per yd.	
Clinker, breeze, etc., prices according to locality.	
Portland cement, per ton	£2 15 0
Lias lime, per ton	3 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	5 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 banded out, add 80 per cent. to 150 per cent. Headings, including timbering, add 400 per cent.

RETURN, fill, and ram, ordinary earth, per yd. £0 1 6

SPREAD and level, including wheeling, per yd. 0 1 6

FILLING into carts and carting away to a shoot or deposit, per yd. cube 0 10 6

TRIMMING earth to slopes, per yd. sup. 0 0 6

HACKING up old grano, or similar paving, per yd. sup. 0 1 3

PLANING to excavations, per ft. sup. 0 0 5

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

If left in, add to above prices, per ft. cube 0 2 0

HARDWARE, 2 in. ring, filled and rammed, 4 in. thick, per yd. sup. 0 2 10

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 80 per cent.

DO. in underpinning, add 60 per cent.

Lias-Lime CONCRETE, per yd. cube £1 16 0

BREEZE CONCRETE, per yd. cube 1 7 0

DO. in lintels, etc., per ft. cube 0 1 6

CEMENT concrete 4-2-1 in lintels packed around reinforcement, per ft. cube 0 3 9

FINE concrete benching to bottom of manholes, per ft. cube 0 2 6

FINISHING surface of concrete spade face, per yd. sup. 0 0 9

DRAINER

LABOURER, 1s. 4d. per hour; TIMBERMAN, 1s. 5d. per hour; BRICKLAYER, 1s. 9d. per hour; PLUMBER, 1s. 9d. per hour; WATCHMAN, 7s. 6d. per shift.

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

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

DO. 6 in., per ft. 0 5 0

DO. 9 in., per ft. 0 7 9

CAST-IRON DRAINS, jointed in lead, 4 in., per ft. 0 8 0

DO. 6 in., per ft. 0 10 0

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

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

BRICKLAYER

BRICKLAYER, 1s. 9d. per hour; LABOURER, 1s. 4d. per hour; SCAFFOLDER, 1s. 5d. per hour.

London stocks, per M.	£4 15 0
Flettons, per M.	5 0 0
Midhurst white facing bricks, per M.	7 7 9
T.L.B., multi-coloured facings, per M.	7 7 9
DO. red best facings, per M.	12 0 6
DO. rubbers 9½ in., per M.	9 10 0
Staffordshire blue, per M.	11 3 0
Glazed salt, white, and teary stretchers, per M.	24 10 0
DO. headers, per M.	24 0 0
Colours, extra, per M.	5 10 0
Secunda, less, per M.	1 0 0
Cement and sand, see "Excavator" above.	
Lime, grey stone, per ton	2 17 0
Mixed lime mortar, per yd.	1 6 0
Damp course, in rolls of 4½ in., per roll	0 2 6
DO. 9 in., per roll	0 4 9
DO. 14 in., per roll	0 7 6
DO. 18 in., per roll	0 9 6

BRICKWORK in stone lime mortar.

Flettons or equal, per rod £33 0 0

DO. in cement do., per rod 36 0 0

DO. in stocks, add 25 per cent. per rod.

DO. in blues, add 100 per cent. per rod.

DO. circular on plan, add 12½ per cent. per rod.

DO. in backing to masonry, add 12½ per cent. per rod.

DO. in raising on old walls, etc., add 12½ per cent. per rod.

DO. in underpinning, add 20 per cent. per rod.

HALF-BRICK walls in stocks in cement mortar (1-3), per ft. sup. £0 1 0

BEDDING plates in cement mortar, per ft. run 0 0 3

BEDDING window or door frames, per ft. run 0 0 3

LEAVING chases 2½ in. deep for edges of concrete floors not exceeding 6 in. thick, per ft. run 0 0 2

CUTTING do. in old walls in cement, per ft. run 0 0 4

CUTTING, toothing and bonding new work to old (labour and materials), per ft. sup. 0 0 7

TERRA-COTTA flue pipes 9 in. diameter, jointed in fireclay, including all cuttings, per ft. run 0 3 6

DO. 14 ft. by 9 in. do. per ft. run 0 6 0

FLAUNCHING chimney pots, each 0 2 0

CUTTING and pinning ends of timbers, etc., in cement 0 1 0

FACINGS fair, per ft. sup. extra 0 0 3

DO. picked stocks, per ft. sup. extra 0 0 7

DO. red rubbers gauged and set in putty, per ft. sup. extra 0 4 9

DO. in salt white or ivory glazed, per ft. sup. extra 0 5 6

TUCK pointing, per ft. sup. extra 0 0 10

WEATHER pointing, do. 0 0 3

TILE creasing with cement fillet each side per ft. run 0 0 6

GRANOLITHIC PAVING, 1 in., per yd. sup. 0 5 0

DO. 1½ in., per yd. sup. 0 6 0

DO. 2 in., per yd. sup. 0 7 0

If coloured with red oxide, per yd. sup. 0 1 0

If finished with carborundum, per yd. sup. 0 0 6

If in small quantities in finishing to steps, etc., per ft. sup. 0 1 4

Jointing new grano, paving to old, per ft. run 0 0 4

Extra for dishing grano, or cement paving around gullies, each 0 1 6

BITUMINOUS DAMP COURSE, ex. rolls, per ft. sup. 0 0 7

ASPHALT (MASTIC) DAMP COURSE, ½ in., per yd. sup. 0 8 0

DO. vertical, per yd. sup. 0 11 0

SLATE DAMP COURSE, per ft. sup. 0 0 10

ASPHALT ROOFING (MASTIC) in two thicknesses, ½ in., per yd. 0 8 6

DO. SKIRTING, 6 in. 0 0 11

BREEZE PARTITION BLOCKS, set in cement, 1½ in. per yd. sup. 0 5 3

DO. DO. 3 in. 0 6 6

BREEZE fixing bricks, extra for each 0 0 3

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

MASON

MASON, 1s. 9d. per hour; DO. fixer, 1s. 10d. per hour; LABOURER, 1s. 4d. per hour; SCAFFOLDER, 1s. 5d. per hour.

Portland Stone:

Whitbed, per ft. cube	£0 4 6
Barebed, per ft. cube	0 4 7
Both stone, per ft. cube	0 3 0
Usual trade extras for large blocks.	
York paving, av. 24 in., per yd. super	0 6 6
York templates, av. 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, 33½ 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. 1 9 0

YORK SILLS, W. & T. ft. cub. fixed 1 13 0

ARTIFICIAL stone paving, 2 in. thick, per ft. sup. 0 1 6

DO. 2½ in. thick, per ft. sup. 0 1 9

SLATER AND TILER

SLATER, 1s. 9d. per hour; TILER, 1s. 9d. per hour; SCAFFOLDER, 1s. 5d. per hour; LABOURER, 1s. 4d. per hour.

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

Slates, 1st quality, per 1,200:

Portmadoc Ladies £14 0 0

Countess 27 0 0

Duchess 32 0 0

Old Delabole Med. Grey Med. Green

24 in. x 12 in. £42 11 3

20 in. x 10 in. 31 4 3

16 in. x 10 in. 20 18 0

14 in. x 8 in. 12 1 0

Green Randoes, per ton 8 3 9

Grey-green do., per ton 7 3 9

Green peggies, 12 in. to 8 in. long, per ton 7 3 9

In 4-ton truck loads, delivered Nine Elms station, Clips, lead, per lb. £0 0 6

Chips, copper, per lb. 0 2 0

Nails, compo, per cub. 1 6 0

Nails, copper, per lb. 0 1 10

Cement and sand, see "Excavator," etc., above.

Hand-made tiles, per M. £5 18 0

Machine-made tiles, per M. 5 8 0

Westmorland slates, large, per ton 9 0 0

DO. Peggies, per ton 7 5 0

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

Ladies, per square £4 0 0

Countess, per square 4 5 0

Duchess, per square 4 10 0

WESTMORLAND, in diminishing courses, per square 6 5 0

CORNISH DO., per square 6 3 0

Add, if vertical, per square approx. 0 13 0

Add, if with copper nails, per square approx. 0 2 6

Double course at eaves, per ft. approx. 0 1 0

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

24 in. x 12 in. Med. Grey Med. Green

20 in. x 10 in. 5 5 0

16 in. x 10 in. 4 15 0

14 in. x 8 in. 4 10 0

Green randoes 6 7 0

Grey-green do. 5 9 0

Green peggies, 12 in. to 8 in. long 4 17 0

TILING, 4 in. gauge, every 4th course nailed, in hand-made tiles, average per square 5 6 0

DO., machine-made do., per square 4 17 0

Vertical Tiling, including pointing, add 18s. 0d. per square.

FIXING lead soakers, per dozen £0 0 10

STRIPPING old slates and stacking for re-use, and clearing away surplus and rubbish, per square 0 10 0

LABOUR only in laying slates, but including nails, per square 1 0 0

See "Sundries for Asbestos Tiling."

CARPENTER AND JOINER

CARPENTER, 1s. 9d. per hour; JOINER, 1s. 9d. per hour; LABOURER, 1s. 4d. per hour.

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

7x3, per std. £21 0 0

11x4, per std. 33 0 0

Memel or Equal. Slightly less than foregoing.

Flooring, P.E., 1 in., per sq. £1 2 6

DO. T. and G., 1 in., per sq. 1 2 0

Planed boards, 1 in. x 11 in., per std. 30 0 0

Wainscot oak, per ft. sup. of 1 in. 0 1 4

Mahogany, Honduras, per ft. sup. of 1 in. 0 1 3

DO. Cuba, per ft. sup. of 1 in. 0 2 3

DO., African, per ft. sup. 0 1 0

Teak, per ft. sup. of 1 in. 0 1 3

DO., ft. cube 0 12 6

FIR fixed in wall plates, lintels, sleepers, etc., per ft. cube 0 5 6

DO. framed in floors, roofs, etc., per ft. cube 0 6 6

DO. framed in trusses, etc., including ironwork, per ft. cube 0 7 6

PITCH PINE, add 33½ per cent.

FIXING only boarding in floors, roofs, etc., per sq. 0 13 6

SARKING FELT laid, 1-ply, per yd. 0 1 6

DO. 3-ply, per yd. 0 1 9

CERTIFIER for concrete, etc., including horsing and striking, per sq. 2 10 0

TURNING pieces to flat or segmental soffits, 4½ in. wide, per ft. run 0 0 4½

DO. 9 in. wide and over per ft. sup. 0 1 2

continued overleaf.

PLUMBER

GLAZIER

PAINTER AND PAPERHANGER

SUNDRIES

Oregon	Pine	5	4	—	5	5	—	6	—	—	—	—
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MILD STEEL in trusses, etc., erected,	25	10 0
per ton		
DO., in small sections as reinforcement,	16	10 0
per ton		
DO., in compounds, per ton	17	0 0
DO., in bar or rod reinforcement, per		
ton	20	0 0
WROUGHT-IRON in chimney bars, etc.,		
including building in, per cwt.	20	0 0
DO., light railings and balusters,		
per cwt.	2	5 0
FIXING only corrugated sheeting, in-		
cluding washers and driving screws,		
per yd.	0	2 0

1 1
1 4
ul span,

3 0
per ft.

GER
1s. id.
hour;

7 6
3 6
3 8
4 0
8 6
18 0

5 0
3 6
0 4½

2 0
12 6
12 0
16 0
17 6
15 0

0 3
0 6
0 9
0 7

0 10
0 9
1 2½

3 8
5 6
1 2
0 6

1 7
1 10
2 4
9 0

3 0
1 2
0 11

0 2½

0 6

1 7

2 8

2 3
3 3

4 0
5 0

15 0
0 0

0 0
0 0

7 0

6 6

1 6

1 9

2 10

0 7

sin.
AA. A. B.
4. 4. 4.
5. 7. 6.
8. 7. 8.
10. 10. -
11. - -
12. - -
13. - -