THE ARCHITECTS' JOURNAL

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Next week the Current Architecture Section will be devoted to Some Surrey Houses by Mr. Guy Dawber. There will be an appreciative article by Mr. H. C. Hughes. The Plumber in Domestic Architecture will be the subject of an illustrated article by Mr. William Harvey.

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PRINCIPAL CONTENTS

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CHRISTIAN BARMAN, *Editor*

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

RENDERINGS OF ARCHITECTURE

Selected and annotated by Dr. Tancred Borenius.

xlix : Antonio Canale (Canaletto) (1697-1768).
The Piazza, Venice.

Antonio Canale's late style is admirably exemplified in the present picture and its companion piece, also in the National Gallery : both are views of the square of St. Mark's at Venice, seen from under the colonnades surrounding it. An excellent device of composition is the big arcade, which in the picture here reproduced encloses the view of the Piazza, where the church of St. Mark, with its fantastic spires and cupolas, stands out in full sunlight effectively contrasted with the belt of shadow across the foreground. Canaletto's peculiar, calligraphic use of oil-paint can be particularly well studied in this picture, which also shows to the full that exquisite sensitiveness to atmospheric perspective, which is one of the salient characteristics of Canaletto's art, no less, indeed, than that almost miraculous exactitude of topographical statement which also was his. The companion piece shows the colonnade of the Procuratie Nuove—the colonnade on the right looking up to St. Mark's.—National Gallery, No. 2515.]

THE ARCHITECTS' JOURNAL

Wednesday, December 22nd, 1926

ARCHITECTURE AND ENGINEERING

A DISAGREEMENT of opinion has arisen between architects and engineers in regard to the question of the manner in which their respective fees are to be paid and the degree of control which architects are to exercise over engineers, or vice versa, in cases where buildings can only be designed by the joint collaboration of members of the two professions. Architects may apparently be divided into two sections, those who have the mathematical ability to design ferro-concrete foundations and frameworks themselves, and those who have not this particular technical ability, or do not think it worth their while to exercise it. It may be said at once that the first section is numerically very much smaller than the second; in fact, so small that its members may be described as constituting exceptions to a general rule. We are at liberty to take the view either that architectural students ought in increasing numbers to be taught how to design in ferro-concrete or else we may affirm that it would be harmful to architecture if the practitioners of this art were to allow their attention to be too much occupied by technical considerations to the partial exclusion of those æsthetic problems of design which should ever be their principal concern. The latter view appears to have reason upon its side. They are no friends to architecture who contend that the architect should himself become an expert in all the branches of knowledge which are now utilized by experts whose task it is to provide the numerous technical equipments which a modern building often requires. After all, it was a very wise man who said that the way to get on in the world is never to do yourself what you can possibly delegate to somebody else. Such a policy leaves a man free to do the things which he alone can do. If architects to-day are not often to be found successfully devoting themselves to their highest function it is because they are being asked to do a host of other things which are not their proper business. In the case of ferro-concrete it should suffice if the architect acquaint himself with the general capacities of this material. His contribution to the design of a building should consist in the creative act whereby the forms assumed by the structure are brought into the domain of architecture.

The architectural profession cannot, without deliberately committing suicide, assent to the doctrine that the experts in ferro-concrete, in virtue of their engineering skill, should assume charge over the design of buildings.

The question of the respective status of architect and engineer on those occasions when they are both employed on the design of a building becomes an acute one as soon as an attempt is made to determine the manner of their payment. In his letter published in this JOURNAL last week, Mr. H. J. Deane, president of the Institution of Structural Engineers, suggests that where the cost of reinforced concrete is only a fraction of that of the total cost of the building it would be proper that a consultant engineer should be paid by the architect, but where the main proportion of the building is of an engineering character he considers that the position of the architect and the structural engineer be reversed, and that the architect should be employed and paid by the engineer. But such an arrangement would imply that the architect had been merely called in as a decorator, and he would have abrogated his principal function, which is to determine not merely the decoration but the whole form of a building and its disposition towards its neighbours. The obvious solution of the question would appear to be that in view of the fact that ferro-concrete construction often results in a considerable economy of building costs the client should be made aware that the structural engineer's fee must be set against this economy and that it must represent a distinct addition to the architect's fee as arranged according to the R.I.B.A. scale. And where the architect does his own calculations for the ferro-concrete work he should be paid a structural engineer's fee in addition to his ordinary fee as an architectural designer.

It might occur that the cost of labour and materials in a ferro-concrete building might be less than an alternative one in brick or stone. Yet if we add to the former the structural engineer's fee the balance of economy would be reversed. In such an instance the client should be encouraged to choose the latter, for it is only fair that in preparing the costs of these two types of building regard should be paid to the fact that while both demand equal attention on the part of the architect who is responsible for their design, to the cost of materials in the one case there must be added an item of expenditure on account of the intellectual labours entailed in their technical manipulation. The proper status of the two professions could best be maintained if the engineer is not paid by the architect nor the architect by the engineer, but both are paid by the client. The essential point, however, is that the architectural profession should never surrender the right to having the determining voice in the design of all buildings by whatsoever means they may be built.

NEWS AND TOPICS

THE U.S. SUPREME COURT UPHOLDS ZONING—THE DANGER FROM DAMS—STONEHENGE—THE TRUTH ABOUT SKY-SCRAPERS—PANTOMIME AT THE A.A.

THE jumble of residences, flats, stores, and factories that mar some of the American cities can now be prevented by zoning laws, just upheld as constitutional by the Supreme Court. A huge apartment house cannot be intruded into a residential section, or a block of stores or a movie palace be run up next door to a house if the city fathers "zone" the town and set off appropriate areas for each of these things, just as the torrid, temperate, and arctic zones each has its appropriate trees, animals, and style of dwelling. A final and sweeping victory for the system of city zoning, of significance to every urban community in the United States, is seen in the recent decision of the Supreme Court upholding the constitutionality of municipal zoning ordinances. Under the ruling of the Court, city zoning does not violate the Fourteenth Amendment, which provides that citizens may not be deprived of liberty and property without due process of law. This is an affirmation of the right and power of cities to regulate and allocate the construction of buildings within their limits.

* * *

The particular case decided by the Court originated in Euclid, a suburb of Cleveland, where a population of between five and ten thousand is scattered over an area of ten or twelve square miles. A property owner was granted an injunction against the enforcement of a zoning law enacted by the village. His contention was that the enforcement of the ordinance would depreciate the value of the property, since it would hamper materially the lines along which the property might be developed and made profitable. The Supreme Court has now overthrown this contention. It supports zoning in a broad way as a logical development of the police power under modern conditions of urban life. Had the Supreme Court's decision been adverse to zoning, its effect might have been very upsetting, for in the past ten years 500 municipalities in the United States have followed the lead of New York and adopted zoning ordinances. Mr. Justice Sutherland, who wrote the majority opinion, concedes that some years ago zoning would have been considered an intolerable interference with personal freedom. But the reasonableness of a regulation, we are reminded, depends upon conditions—and conditions have changed. Segregation of residence, business, and industrial buildings increases the security of home life, tends to prevent street accidents, decreases noise and other conditions which produce or intensify nervous disorders, and preserves a more favourable environment in which to rear the young. It finds a menace in the advance of the apartment house into districts that might be reserved for individual dwellings.

* * *

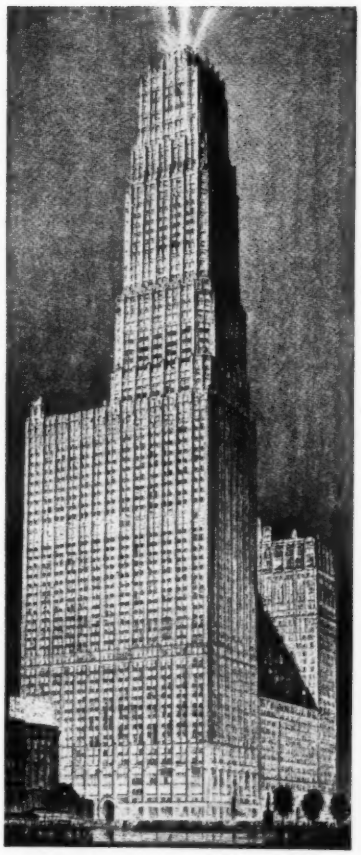
In handing down his ruling, Mr. Justice Sutherland said: "Building-zone laws are of modern origin. They began in this country about twenty-five years ago. Until recent years, urban life was comparatively simple; but with the great increase and concentration of population, problems have developed, and constantly are developing, which require, and will continue to require, additional restrictions in respect of the use and occupation of private lands in urban communities. . . . And in this there is no inconsistency, for while the meaning of constitutional guarantees never varies, the scope of their application must expand or contract to meet the new and different conditions which are constantly coming within the field of their operation. In a changing world it is impossible that it should be otherwise."

* * *

It is very satisfactory to learn that a Bill has been introduced in the House of Commons with the object of preventing disasters which may be brought about by the unforeseen sudden bursting of dams. Under the terms of the Bill it is proposed that the Home Secretary may at any time inspect any dam, embankment, or reservoir, either when in course of construction or after completion. He is also to have the right to make inquiries as to the structural fitness of the works, and to require from the designers plans, specifications, and measurements. Whether the Bill pass into law or not, one hopes that the mere fact that it has been brought forward will call attention to the danger that exists at present in connection with structures which receive heavy lateral loads. In the East, where irrigation dams have been a matter of everyday building construction from the remote past, and where a living tradition still exists, the common sense of dam design is generally summed up in the phrase: "The water never sleeps." This pictorial saying should not need translation into our more prosaic tongue, but recent disasters show that its homely wisdom is not yet fully understood by our engineers. It means that the pressure of the water follows up every minute defect occasioned by the slight natural yielding of the material of the dam as it responds to stress, and that, as the structure increases in age, the defects also increase and the water-pressure is applied in more and more damaging forms. The approach of danger is so slow as to be imperceptible to casual observation, but may be brought to light by purposeful surveys diligently prosecuted for its discovery. The fact is that no dam, however competently designed and constructed, is exempt from this natural ultimate decay, and it is correct to assume that all dams need periodical inspection, and such substantial works of repair as will suffice to give them a new period of usefulness.

* * *

No visitor to Stonehenge can have failed to feel the irksome effect of the ugly sheds that stand on Salisbury Plain for no other purpose than to spoil the scenery and dwarf the scale of the ruins of the extraordinary megalithic architecture of the old temple. Inquiries conducted by the *Morning Post* go to show that the buildings are derelict and serve no more useful end than to shelter a few tramps who make free with such accommodation as they afford. The buildings formed part of a bombing centre during the war, and for such an object the remote position was suitable enough, but that is no reason for their continued existence in a dilapidated and unsightly condition. It is some satisfaction to learn that the Earl of Crawford has already interested himself in the removal of these "horrors, atrocities, and monstrosities," and the Council for the Preservation of Rural England has here a clear case which justifies and requires its intervention. The removal of the objectionable buildings will mean an immense gain to the appropriateness of the surroundings of the lonely ruins, and nobody need be one penny the worse for their demolition.



The Proposed Book Tower, Detroit.

Some months ago I gave an account of the Book Tower to be erected in Detroit next year. It will be the tallest building in the world, 873 ft. high, and twenty-six storeys higher than Cass Gilbert's Woolworth building in New York. Mr. Alfred C. Bossom says a good word for skyscrapers. "Instead of causing traffic congestion, skyscrapers relieve it. They convert horizontal traffic into perpendicular traffic. In other words, by building skyscrapers, Americans are diverting traffic from their streets into the air. Our skyscrapers are really our streets, and occupants travel three and four blocks up and down in the air instead of travelling three or four blocks in a horizontal direction, as they would have to do if there were only six-storey buildings. The proof that skyscrapers do not cause traffic congestion is furnished by London, where there is worse traffic congestion with six-storey buildings than there is in New York City with skyscrapers."

* * *

Those who are responsible for drawing up the policy of the Council for the Preservation of Rural England would be well advised to pay some attention to the method adopted in France to protect natural beauties. Over twenty years ago it was realized in France that a systematic effort was necessary to carry out in that country the movement that has only begun this autumn in Great Britain. The *Syndicats d'Initiative* are often thought by partially-informed travellers to be solely concerned with the exploitation and advertising of holiday resorts. They are much more than this, and are organized in three sections, local, regional, and national, with the Office National du Tourisme at the head.

France is divided into nineteen Federations, composed of the different "Syndicats." Each group consists of local persons who are prepared to work wholly in an honorary capacity and without any regard to municipal or national politics. One of their principal objects is to protect ancient sites and monuments and to take care of the natural beauties of the countryside, for they realize what assets these are in attracting tourists. In many districts, for example, they have taken the lead in preventing posters being exhibited in too conspicuous places. They have already provided in many places the "park ways," or pleasant pathways, advocated by Mr. G. L. Pepler and others in regional planning reports. For the *Syndicats d'Initiative* have made many footpaths where pedestrians may walk quietly out of danger from traffic. Recent reports of the "Union des Federations des Syndicats d'Initiative de France, ses Colonies et Protectorats" contain a number of photographs showing what exactly has been done to preserve the countryside.

* * *

It has sometimes been said that architects are a little apt to take themselves too seriously. This is scarcely to be wondered at considering that alone of all the practitioners of the visual arts they are for ever surrounded by the products of their own craft. Architects see too many buildings and they think too much about buildings, consequently more than other people they are in need of occasional rest. It is good for us that we should occasionally laugh at architecture and make it into a fit subject for humour and fantasy. It was in search of this humour and fantasy that I visited the pantomime at Bedford Square last week. The Architectural Association is well known to our profession as a very important school for the teaching of architecture, but it also has a highly-developed social side, for it forms a link between the students and a large number of practising architects who find pleasure in retaining their connection with the school. One of the most interesting functions organized by this body is its annual pantomime, which has for its ostensible object the raising of money for the Architects' Benevolent Fund, but which, however, also serves the purpose of providing an outlet for the very considerable musical and dramatic talent which year after year the students seem able to exhibit. "Cylinderella" was in every respect a finished performance which would have done great credit to a professional body of entertainers. When one considers that not only the scenery, but all the music and the words was composed by the students, one realizes what lively intelligence is to be found among them. At one thing alone was I horrified. I learnt for the first time how architectural terms can be employed for the purpose of personal abuse.

* * *

But, of course, if one lady student says to another: "Your face is quite enough, my dear, to cause a beam to fail in sheer," it is but fitting that the retort courteous should be: "Your wooden head is like a tread complete with moulded nosing." I came away, however, more than ever convinced that in the words of the final chorus: "Now Bedford Square is quite a seat for learning and endeavour," and the consciousness of this did much to console me while contemplating the awful truth expressed in the closing line of the couplet: "But all the shops in Regent Street are standing there for ever."

ASTRAGAL

BERTRAM GROSVENOR GOODHUE

[BY KINETON PARKES]

IN 1688 John Grosvenor emigrated from Cheshire to the colony of Connecticut. Dying three years after, it was left to his widow to establish the family there. It was their great-grandson, Colonel Thomas Grosvenor, a figure in American history, who built the mansion on Pomfret Hill, where, in 1869, Bertram Grosvenor Goodhue was born, his mother being the grand-daughter of the colonel. She had married Charles Wells Goodhue, the son of a well-to-do banker of Brattleboro in Vermont. Bertram inherited artistic tastes from his mother, and mother and son had little studios on the attic floor of the family mansion. The boy was nine years old when he declared for architecture, and he never veered. Most of his school hours at New Haven were spent in learning to draw, but this did not prevent him embracing a wide culture. He was always from his earliest years an omnivorous reader.

The details of an architect's professional career are more frequently than not associated with those of his partners. As Goodhue was so exceptional in his powers, the actual facts need a succinct statement. From the age of fifteen until he was twenty-one he was in the office of James Renwick of New York. In 1890 he entered the office of Cram and Wentworth of Boston, and in the following year became a member of the firm. Wentworth died soon after, and from then until 1914 the firm was Cram, Goodhue, and Ferguson. As early as 1902 work at West Point necessitated a New York office, and Goodhue took charge there and always remained. The comparative individualism of this arrangement was succeeded by the absolute when the partnership was dissolved in 1914, for Goodhue's spirit demanded complete freedom for the expression of his quickly-developing ideas. Ralph Adams Cram, the sympathetic associate of a quarter of a century, allows that Goodhue overflowed with infectious and creative vitality, and that his powers of invention were almost uncanny, and that while he revelled in detail of ornament he did not care for the mechanical details of planning and organic development, which consequently fell to Cram. So they worked in their respective offices in New York and Boston, but it may be said that everything designed in the New York office was by Goodhue. The period of the association includes the Church of All Saints at Ashmont down to the St. Thomas of New York.

In the spring of 1925 as much material as could be gathered together was exhibited at the Century Club in New York. The general public realized then how much the American nation owes to Goodhue. To fix this impression and to make a permanent record, a study was subsequently issued, edited by Charles Harris Whitaker, who

Bertram Grosvenor Goodhue. Edited by Charles Harris Whitaker. New York City: Press of the American Institute of Architects. Buckram bound, 30 dollars; morocco, 50 dollars. (London: B. T. Batsford, Ltd.)

The Cathedral of Maryland, Baltimore. By Bertram Grosvenor Goodhue. First scheme.

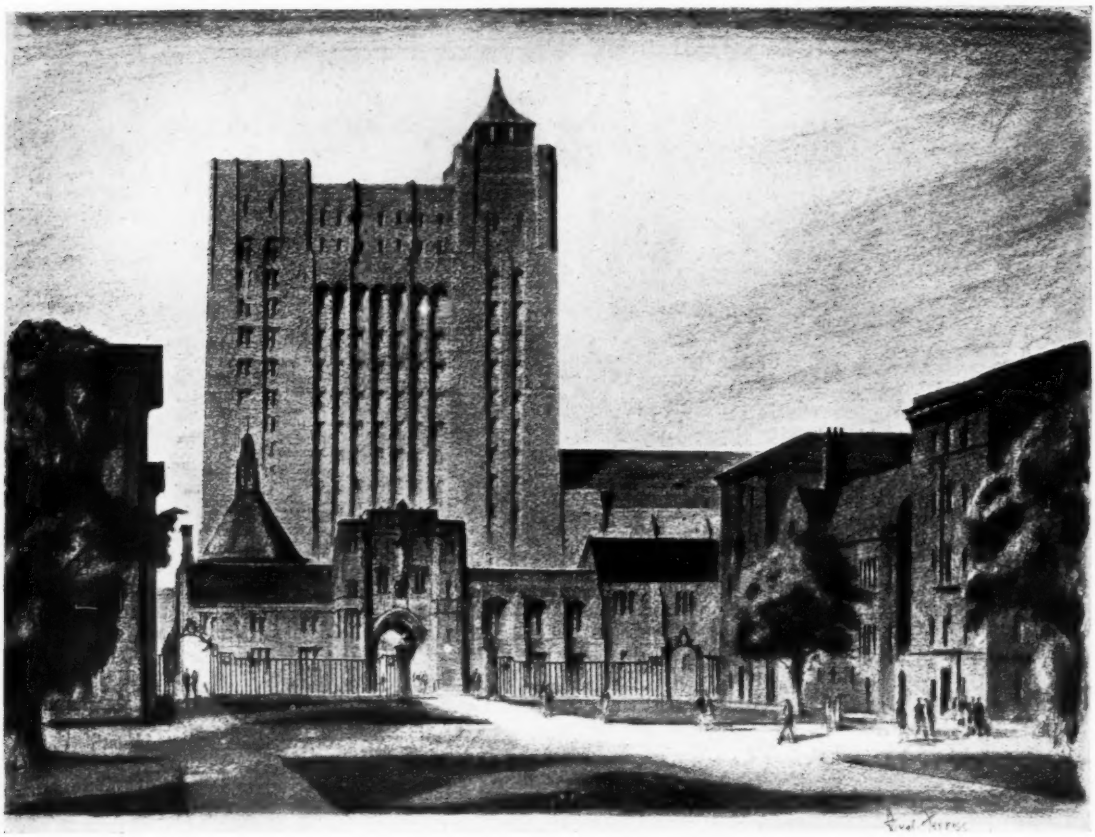
The Cathedral of Maryland, Baltimore. By Bertram Grosvenor Goodhue. Second scheme.

contributed an interesting introduction. The other parts of the text are by Hartley Burr Alexander, Ralph Adams Cram, George Ellery Hale, C. Howard Walker, and Lee Lawrie. The latter is the distinguished sculptor who carried out all Goodhue's important plastic work, and acted as coadjutor. His description of their association is of first-rate interest and importance as showing the terms upon which æsthetically two artists may co-operate in great works.

It is unfortunate that a better show was not made of the exhibition in April last at the Architectural Association, for Goodhue was keen on being appreciated in Great Britain. He often stated that the British were the finest people in the world, and that he thought more of their opinions than of any others. The exhibition included 100 drawings, prints, and photographs. Some of the drawings were elaborately pictorial and coloured, in themselves works of art, for Goodhue was a magnificent draughtsman *per se*. Nearly 300 examples, from cathedrals to book-plates, are provided in the handsome volume which the American Institute of Architects has dedicated to the memory of the greatest exponent of their art in the United States. It was at the Architectural Association exhibition that Sir Giles Gilbert Scott paid his tribute to Goodhue as architect and man: "I am proud to have been able to number Goodhue amongst my greatest friends. He was a man of extraordinarily captivating personality. . . . His work was always fresh and independent. He worked in many styles." In the handsome volume devoted to his memory, Adams Cram says he "never swerved from his vital originality. . . Blond, slender, debonair, with a 'schoolgirl complexion,' and a native grace of carriage, he presented a personality made up of the joy of life, fantastic humour, whimsical fads and fancies, blended with a dominating ambition, an incomparable sense of beauty, an abounding friendliness, and a capacity for hard work that nothing could daunt."

In the same beautiful volume his sculptor-coadjutor, Lee Lawrie, says that: "As a friend he was warm and tender; as an architectural chief uncompromising. He could not slight work no matter how small or comparatively unimportant it might be; whatever was before him afforded an opportunity to do a distinctive thing. It afforded the same opportunity to those artists and artisans who had a part in his buildings." He had his difficulties in this direction, for most of the workmen he employed were Italians used to the Renaissance style and to soft materials, whereas the materials to hand in America were hard in substance and difficult to work. With a sculptor of the powers of Lee Lawrie there was no difficulty; the two worked as one, and among many satisfactory results the masterpiece of this duality was the reredos of St. Thomas's Church, New York. If the 270-odd plates in the volume could have been printed chronologically a better estimate of Goodhue's impressive talents in their free and rapid development would have been possible. The illustrations are not even dated, so that it is only upon internal evidence that a judgment can be made, and then only a tentative one. But the grand fact of the results of the talents themselves is everywhere apparent.

To take the Gothic work first: the most extensive is the Cathedral of the Incarnation at Baltimore—the cathedral of the diocese of Maryland—for which the architect made a first set of designs, including the subsidiary buildings. They were impressive, but not satisfying. Their greatest use was to bring home to their designer the fact that, after seeing what Liverpool Cathedral was to become in the hands of Sir Gilbert Scott, they would not do. The second scheme shows Scott's influence, and it is altogether an



advance. The main massing is infinitely improved, and the general shape takes on a noble and even romantic air. In the passage from the first scheme to its successor, Goodhue learned once and for all the difference between medieval and modern Gothic.

The lesser churches and chapels are no less important artistically; indeed, Goodhue's love of detail was, perhaps, better exercised on a smaller subject of which he had a firmer grasp. St. Thomas's, New York, is compact and wieldy; its exterior is true in proportion and solidly massed. Inside, its nave, chancel, and side chapel possess a severe dignity which is not discounted by the exuberance of the ornamental detail. The most important of the decorative work is the astonishing reredos, covering the whole wall with its many carved marble figures and modelled panels by Lee Lawrie; then follow the fine stalls and pulpit and the well-placed organ; the lectern and

Above, a university library. By Bertram Grosvenor Goodhue. Below, reredos, St. Thomas's Church, New York. By Bertram Grosvenor Goodhue. Lee Lawrie, sculptor.

the font are admirably designed and well carved. The Church of St. Vincent Ferrer is a plainer structure, with some figure and ornamental work outside; a pulpit with figure-work; a metal grille to the St. Joseph's chapel and an elaborate tabernacle in bronze, enamel, and gilt. The vaulting is good, but the fenestration is uninteresting. The Chapel of the Intercession is an important work, with particularly good subsidiary buildings, including a small graveyard with a good cross, compactly planned, and a square tower with a pinnacle at one corner. Inside, the organ is noticeable, and the font lavishly decorated. Other Gothic work of importance is at West Point Academy and Princeton University, and both the first and second schemes for a new chapel for the University of Chicago show a fine sense of massing, the interior of the first being spoiled by the over-ornamentalizing of the vaulting and arches.

[*To be concluded*]

CURRENT
ARCHITECTURE
SECTION

RAILWAY HOUSING

[BY MAJOR HARRY BARNES]

THERE is an aspect of housing which, if not a main aspect, is sufficiently important to merit a little attention. It is the provision of a house as part of the emoluments of an occupation. That sounds a little grandiose when applied to the cottage occupied by a farm-servant, though quite appropriate if we think of No. 10 Downing Street or the Lord Chancellor's house. I remember a series of debates, occupying much Parliamentary time in committee, on the question as to whether we should provide the Lord Chancellor with a second bath and a lift, and I recollect some wit pleading for the bath on the ground that the Lord Chancellor must come into Court with clean hands; while an opponent of the lift based his opposition on the ground that the then occupant of the office had never been known to require one. Between these extremes we have a whole range of occupations and callings in the pursuit of which a house is part of the prize.

Agriculture and mining leap to the eye as basic industries in which housing is a distinct and definite part of the equipment, while the services of the local authorities furnish many examples of the house following the job. Indeed, it is not too much to say that if local authorities recognized the housing of their employees to be a part of their duties, they could make a very substantial contribution to the demand for shelter. It is something, then, to turn to instances in which the heads of the greatest branches of the transport industry have done something to meet this need of their men.

I must not be thought to be ungracious if I say, in passing, that the companies have some leeway to make up in this matter. The sight of railway cottages in the depth of the country, a little group at a wayside junction or at a station set remote from any town is familiar enough, but when we come to the big towns there is many a railway man sheltering in a house not provided by his company. Moreover, if I am to draw an indictment I might as well make it complete, the companies have some sins upon their shoulders in respect of dehousing without rehousing.

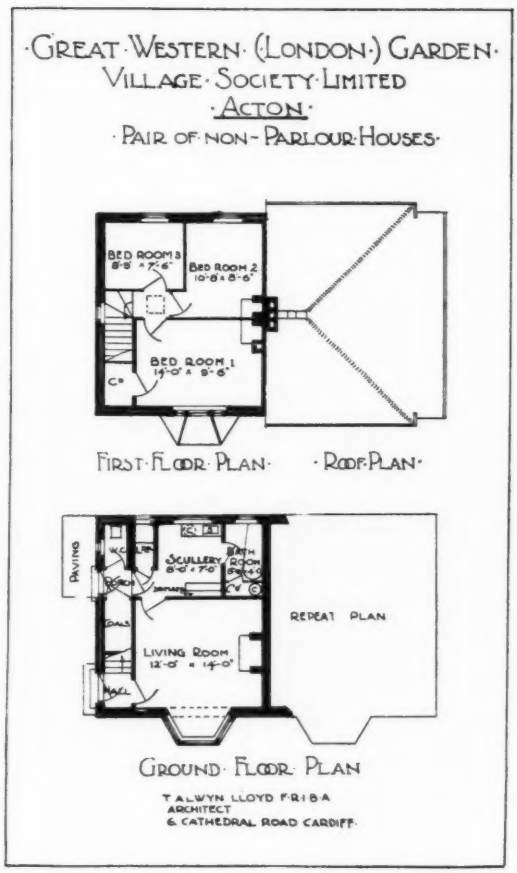
If one looks through old Parliamentary papers, records of committees and commissions, they are full of complaints against railway schemes in the Metropolis and the great provincial cities. They were the great slum clearers, but unfortunately they left half their task undone, and did not provide elsewhere the accommodation they had swept away. The stable door was locked as usual after the horse was stolen, and the companies put under severe obligations to rehouse where they dehoused. The connection of the railways with housing is thus seen to be both direct and

Railwaymen's houses at Plymouth. By T. Alwyn Lloyd.

Above, railwaymen's houses at Plymouth. Centre and bottom, railwaymen's houses at Hayes. By T. Alwyn Lloyd.

intimate, but indirectly the connection is, perhaps, of even more consequence. The relationship of passenger traffic to housing accommodation is close and inseparable. Housing in London will always depend on the close mating of this pair, and cheap fares be seen to be but the counterpart of cheap rents, all of which considerations lead me with interest to the examination of the work recently done in housing by the Great Western, and the London and North-Eastern Railway Companies.

Of these, that done by the Great Western is on the larger scale. Under the schemes of this company housing estates are in operation from London to Land's End. They will provide in all for nearly 2,000 houses, of which some 500 are already built. This achievement is a constructive one, with definite architectural results; but in addition I understand the facilities given by the company to their employees have enabled them to purchase houses where they would, 90 per cent. of the value repayable in twenty years on 5 per cent. having been advanced. Leaving this, however, and turning to the schemes, they have all been prepared by Mr. T. Alwyn Lloyd, F.R.I.B.A., the well-known architect to the Welsh Town-Planning Trust. In one or two cases, such as at Plymouth and Truro, he has been associated with local architects. The schemes are in such diverse places as London (Acton and Hayes), Plymouth, Truro, Penzance, Severn Tunnel Junction, Barry in Wales, Caerphilly, and Swansea. They are subtly distinguished as garden suburbs, garden villages, of which more anon, and housing societies. They all, as might be expected, give evidence of careful study and obedience to the last canons of lay-out. Contours are considered. The Close and the Road are agreeably connected, playgrounds are provided, and the allotment is not forgotten. No one could have done it

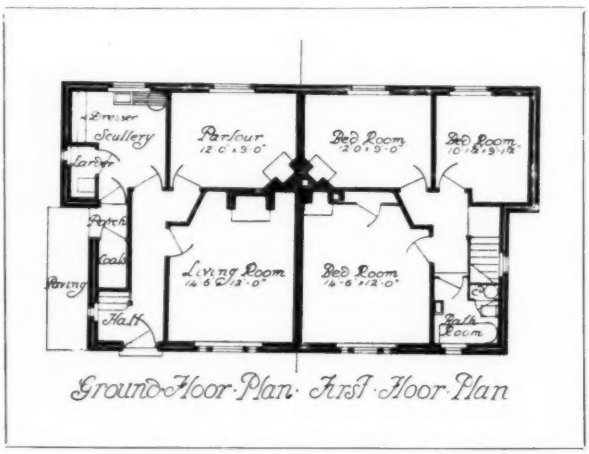


A pair of railwaymen's houses at Acton. By T. Alwyn Lloyd. Above, a general view. Below, the plans.

better. The spilled-out effect which so many housing schemes produce is not to be found in any one of these—in all of them a touch of formality corrects the haphazard result which the uncontrolled cult of the contour will otherwise produce. It is not to say that finality has been reached. Mr. Lloyd would be the last person to say so, or to expect it to be said. Even the perusal of his clever plans is not clear of a trace of that disappointment which the multiplication of housing schemes tends to produce. Truth is, we are attempting the impossible when we attempt to recreate the English village of a thousand years in as many days. It cannot be done. That slow aggregation of folk, the naïve and artless structures that followed on human need, the tender, tolerant touch of time; these cannot be reproduced even by talent as great as has been displayed here. We do well to remind ourselves of it, and to remind others of it, too. It will serve to check a criticism all too frequent. Mr. Lloyd has been lucky enough in one or two cases to get a chance all or nearly all his own: to be able to plan a village instead of a suburb. Under any circumstances it is a little disheartening to plan suburbs, to put patches, however beautiful, on gowns so ugly, and it is Mr. Lloyd's achievement that some of the dwellers in his Closes may come to believe that the patch is the gown.

The village is a different matter, but even here the times have their limitations. What is a village without a "pub" and a pond, and in these days of licensing and sanitary authorities, what chance has an architect of getting either in a new village? But there is everything to be said for the garden village if it can be got. To create a unit instead of a fraction is a great thing to compass, however small the unit and however great the fraction, and it is all to the good that Mr. Lloyd and others should be questing after it. The eyes of the fool are at the ends of the earth, it is said, and conversely, I suppose, the eyes of the wise are on the village green. What a place London would have been could it have kept its villages. May town planning preserve them for us at least on the Surrey side!

But villages are easier sought than found. One begins dimly to see that housing schemes, as housing schemes, do not belong to the country, but to the town. Villages grow, they are not built. You may add house to house, but you don't make a village thereby. In towns houses may be alike, indeed, for them to be anything else is almost indecent, but in the village it is the essence of the thing. In the towns houses stand

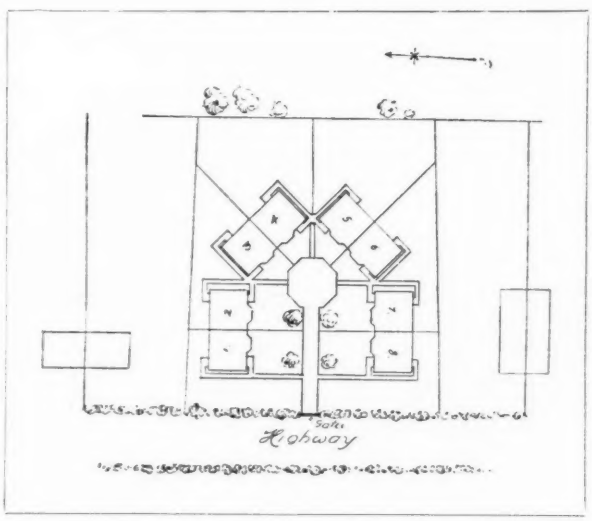


Railwaymen's cottages in Westward Rise, Barry Garden Suburb. By. T. Alwyn Lloyd. Above, a general view. Below, the plans.

at attention, in the country at ease, they lean and slouch and sprawl. This one is broad and low, that narrow and high, this one faces the road, that one turns from it. Each one is an attitude of some long-gone occupant. If there is any uniformity it is in the village street, and begins and ends with a row of almshouses or the like. That is why it is that however skilful the architect, however considered the site, if houses are repeated in design the effect is alien, foreign to the countryside. This is emphasized by their detachment. It is possible to believe in one unity with a repetition of parts, but that distinct units should be absolutely alike is incredible, and irritates with its incredibility. No, houses that are built in the country will have to be designed one by one, and I commend that view to the Society for the Preservation of Rural England.

It is not one of Mr. Lloyd's least merits that such diversity as, no doubt, alone was possible has been imparted to his designs. An inspection of them will reveal to what degree. How difficult in these days of mass production at the lowest cost is the task of design. As the brown rat has forced out the black rat, and the blue slate the red tile, so is concrete driving out brick and masonwork. The granite masons are setting concrete blocks, and the plasterers asbestos ceilings.

You can go through Morocco in a Pullman car and find a French hotel in a desert oasis, and if on going to sleep at Hayes you woke up at Truro you might think you had not moved but for the fact that in one place the houses wear Courtrai-Du Nord tiles, and in the other Delabole slates. One touch of roughcast makes the whole world kin. In these days of scrutinized costs, Mr. Lloyd must be a bit of a magician to persuade his clients to use either tile or slate, and not to demand asbestos as a roof-covering for his work. There is one other little extravagance they might have allowed him, and that was to forgo the posts and wiring that mar the foreground of all his work. The optimist in me whispers that some day evergreens will grow between them and creepers over them and form "so large a fan that they will not be seen," but it is a pity our eyes should for any time be drawn by reason of their dull irrelevance from his admirable and direct designs.



Railwaymen's cottage homes at Great Corby, near Carlisle. By Charles H. E. Bridgen. Above, a general view. Below, the lay-out plan.

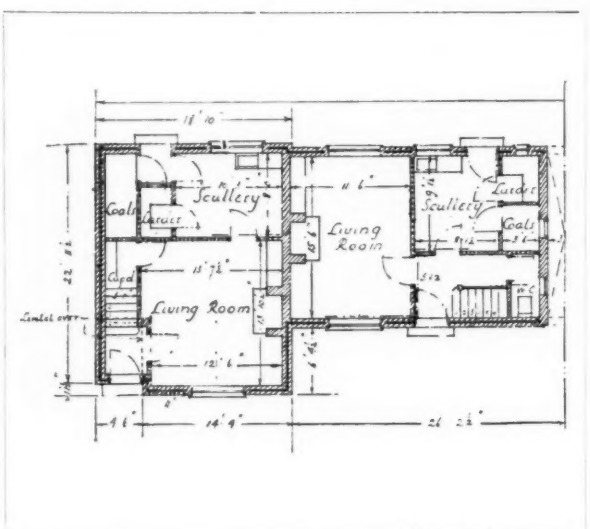
Comparisons are odious, they say, but Mr. Lloyd must not mind if I pick out Minet Drive and the road junction on the Hayes estate, type 5 at Acton, and

houses in Porth-y-Castell, and Westward Rise, Barry, as some that specially please. For he will find other admirers, and for the whole there should be profound appreciation of the enlightened interest and effort of his clients, the Great Western Railway.

All these houses are available to their employees under the most advantageous terms ; they may enjoy the pleasures of ownership without its limitations. They buy not a house, but a share in a public utility society ; they may leave at their will, and if they cannot take their house with them they can take their investment in full. Such a sense at once of security and freedom is only to be obtained through the agency of public utility societies, such as are made possible by the Great Western Railway Company. It buys the land, constructs roads and sewers, and then leases on a 4 per cent. basis to a society which, in its turn, builds and sells, being provided with funds by the company for mortgage purposes up to 90 per cent. of the value of the house.

The members of the society have only to find the 10 per cent. remainder of the value, and then repayments are calculated on a 5 per cent. return. It is an excellent example that has been given to other industries by this great railway company, and it deserves the commendation of all good citizens.

The action of the London and North-Eastern Railway has moved on other lines. It draws nearer in character to the movement for providing aged miners' homes, which has done so much good work in Northumberland and Durham. It is altogether on a smaller scale. Commencing with a donation of £10,000, it has grown as a benefit fund by the joint contributions of the directors and their employees. Building cottage homes at first for men disabled on war service, and afterwards for men retired from railway service, there have been completed ninety-nine cottages and thirty-six bungalows, and sixteen cottages and six bungalows are now being built. In the nature of things such buildings are not as closely cut as those built under economic restrictions, and this is clearly apparent by a glance at the designs. A pleasant group at Scarborough, another at Corby, a pair at Knaresborough show the general character of the work, and give evidence of the generous work in hand. The architect of the fund, Mr. Charles H. E. Bridgen, is to be congratulated on his happy association with so kindly a work, and the fund may, in its turn, be congratulated on his services. May the movement thrive till every aged couple in this great railway system have their latter days brightened by the peace and repose these dwellings afford.



Railwaymen's cottage homes at Willerby. By Charles H. E. Bridgen. Above, a general view. Below, the ground-floor plan.

It would have been interesting to have been able to compare the costs of these houses carried out in such different parts of the country, but the figures are not available. It would have involved a comparison of floor and cubic space for which, again, there is no data. The plans of the houses are of interest. In the Northern ones separate washhouse accommodation is provided, evidence of a difference in domestic custom. Without the furniture being shown on the plans it is not easy to judge them in detail, but a cursory examination suggests that they are good in arrangement, with knowledge of and provision for domestic requirements. To complete the tale it would be interesting at some near date to be able to tell the story of the housing activities of the other two members of the great grouped railways, the London, Midland and Scottish, and the Southern Railways.

[Some further particulars of the schemes appear on page 789.]

TRIBULATIONS OF EARLY PRACTICE: ii

[BY KARSHISH]

IX: SETTLING UP

IT is not the purpose of these articles to display the technical minutiæ of building operations. The illustrations given in the last number were not intended to exhibit the trenches these described, but to show the actualities which will confront our architect when he inspects building work. Instead of four, forty examples of trench lore might have been represented and, to these, four thousand curious and particular points bearing on the structure of the completed building might readily be added. There is no object in reduplicating illustrations and, perhaps, weakening an impression to which I have been at some pains to give an authentic colour. We will, therefore, pass to the business of "Settling up," in which consideration we shall be particularly concerned in the awkward matters of extras. It is important that the builder should present his final statement of account while the circumstances it deals with are fresh in memory, and our architect, therefore, should arrange so that a substantial sum will be due on the "final certificate," the amount of which is the agreed total of the statement of account less the 5 per cent. retention, so that the builder can only keep the architect waiting for the account for so long as he is prepared to go without his money. This precaution also speeds up agreement of the total, and discourages the builder from prolonged haggling over trifles.

Our architect will now for the first time be face to face with that bugbear of owner and architect—EXTRAS, which word I make no apology for writing in block capitals. How is our architect to meet, deal with, explain, and excuse this bald account of past oversights, forgotten orders, corrected mistakes, and inadequate provisions all valued to the nearest penny, and adding to such a staggering total? The answer to this question is a simple one. Our architect must not have any extras; that is to say, there must be no extras for which he is accountable; he is rather to show a saving on the contract sum.

Extras, by which is meant sums additional to the contracted price which become due to the builder while the work is being carried out may be caused by omission from the contract of (1) work and provisions intended by the owner to be included, e.g. entrance road and gates, and lavatories in bedrooms; (2) of work necessary properly to complete the building, e.g. guard to prevent snow falling from roof on to conservatory; and (3) of work necessary to enable the architect to carry out his design effectively, e.g. return of panelling of hall up bottom flight of stairs; also by (4) alterations in work built to correct oversights, e.g. impossibility of getting flue over door and into chimney-stack; (5) elaboration of details without reference to corresponding work included in contract, e.g. mantelpieces; (6) pulling down and rebuilding of work which dissatisfies the architect, e.g. replacing a half hip by gable; (7) the ordering by the owner of variations, additions, and fittings in excess of provisional sums allowed for them.

It will be seen that there is no excuse for the extras under the first six of the above classifications for which the architect is responsible. If our architect roughs out half-inch details so far as is necessary for him clearly to visualize and test the whole of his design; and if before finishing his own he proves its completeness by running over the heads of some good standard specification, and has also ascertained that his client understands what is, and what is not, included in the contract, then there will be no occasion for him to involve himself in extras. All work the need for which is doubtful, e.g. drainage of subsoil, he can cover by a provisional sum; and in addition he may securely bury all reasonable human infirmity in a grand *Provision for Contingencies*—the chief contingency thus provided for being (although not so stated in the textbooks) the contingency of the architect forgetting something. The amount of this provision may be 2½ per cent. of the estimated cost of the works or, under special circumstances, a larger sum, and it may be well asked what more does any architect want? He is not responsible for circumstances of which ordinary precaution does not inform him, such as an outcrop of rock under the surface soil or a pocket of quicksand; and the most terrific "Acts of God" leave him smiling. Thus situated he can fully secure himself if he will merely keep a firm hold of the bathing rope and disport himself without going beyond his depth: he must keep in touch with the contract at all times, and strictly observe the formalities which regulate the sanctioning of extras. As long as he keeps to the letter of the rules it will be scarcely possible for the builder to free himself from the restrictions they impose; and yet, it will be objected, extras remain the bugbear of architect and building-owner alike. That is so, but there is more to say on this matter.

Speaking broadly of building contracts in general, it may be stated that it is the client alone who is responsible for extras. This is not to be taken to mean that every extra is ordered by the client, but that the interferences of the client make such wreckage of the exact stipulations with which the contract documents seek to protect him, that the whole system breaks down, and architects have come to share in a muddle they are powerless to prevent. The work must go on; oral directions for variations must serve; the fact of a variation constituting an extra cannot be at once known; one alteration involves modifications which cannot be always foreseen, and before one matter is straightened out it is confused by a new variation. Variations always lead to increase in cost, whether the quantity surveyor or the architect settles the prices, for the rates allowed must be the most favourable the builder can fairly claim—as is only fair when the inconvenience, waste and upset of his well-considered arrangements is remembered.

One difficulty our architect will be faced with is that of giving estimates. His client, or more especially his client's wife, may go over the works with him and ask what will it cost if she has this—what if she has the other; very much as though she were pricing remnants at a bargain sale. Our architect cannot say "I do not know," even if that is the fact. He may say tactfully, "Well, I don't like to reply off-hand, I should have to measure the work and see how it can be managed first"; but he will then be met with "Oh, but, of course, I only want a *rough* estimate." Our architect will thus be led to give his opinion of the value of this, that, and the other. We will imagine that he is able to use an experienced judgment, but when the account comes in and his rough estimate of forty pounds is represented by an item of £67 2s. 7d., he is considered at fault. All he can do under these circumstances is to muddle along as best he may, like everyone else, and, in any important matter, get an estimate from the builder. This can only be obtained, perhaps, after a drawing and specification have been prepared, and it may then happen that the lady has lost her dog or is for some other reason deflated, and so decides not to have a bedroom balcony on the bay window after all. One architect, whose rough estimate was represented in the final account by a somewhat inflated figure was called upon to explain the circumstance to his client, who was a stock jobber. "But you *quoted* me £200," he said. "When *I* give a quote" (meaning on the floor of "the house") "I always have to stand by it." This is an extreme example of the wide misunderstanding there is, even among men of affairs, on the nature of building contracts and the duties and responsibilities of architects. All our architect can do is to be unsparing in sympathy, and enduring in patience. His reward in gratitude and friendship will not be stinted.

We have seen that although our architect ought to be able to avoid involving his client in extras, he will himself be involved in the inability of the latter to observe a like discretion, who may in perfect good faith even report, "My architect let me in for a heavy bill of extras." This injustice our architect should prevent

by drawing the summary of account with which he covers the builders' final statement to the client, in the following form :—

	Amount of contract		£7,642 9 8
Extras ordered by proprietor :			
A	£594 14 1		
Deduct omissions:			
B	£41 10 0		
Total add ..	£553 4 1	£553 4 1	
Total		£8,195 13 9	
Other extras (ordered by architect):			
C	£78 4 5		
Deduct contract provisions not expended:			
D	£121 12 4		
Total deduct ..	£43 7 11	£43 7 11	
Total of builder's account ..		£8,152 5 10	

At " A " is a list of all extras ordered by the building owner with the cost of each and total cast up. At " B " are omissions similarly displayed. At " C " will be shown any particular extra works which have been found necessary and for which the architect takes responsibility, e.g. lightning conductor, piping ditch under entrance road, clearing ditch and outfall and so forth. At " D " is given a figure which is the difference between the total of provisions, plus omissions ordered by the architect, and all extras for which he is responsible, which are not detailed at " C." If the extras at " C " exceed the figure at " D " the total of the extras for which the architect is responsible will still be represented by " C " less " D." Thus, as an extreme case, " C " and " D " might be shown in one item of total extras on the above contract as follows :—

Extra (ordered by architect) :

Bolt to larder door .. .. 1s. 4d.

I am inclined to think that the virtue of the architect is more overpowering to contemplate when represented in this way than when he displays an actual saving on the provisions.

The retention money, usually 5 per cent. of the contract sum, is kept back out of the final certificate until the expiration of the specified months within which the builder must make good defects due to faulty materials and workmanship, and during those months our architect may receive from his client, whom we will suppose to have occupied the house, letters and messages notifying him of matters which the builder must attend to. Our architect will be likely to find that many of the points raised are trivial, and that it would be unreasonable to trouble the builder to send men out to attend to them. He must remember, however, that the new owner of a new house has a mind focused upon its delights and perfections, and a microscopic eye for its blemishes. He is like a man whose tailor has just sent home his new coat and who perceives, or fancies he perceives, shortcomings in the garment which he will forget all about next day and never afterwards notice. The smooth, flawless, surfaces of a new house show up the most trifling irregularities, and where all is so perfectly contrived an inhuman standard of perfection is set up. Our architect should not belittle these matters, nor feel impatience, but explain that the builder will attend to all at the end of his term of maintenance when the worst have been revealed.

Before that time the leg of the daddy-long-legs embedded in the paint of the drawing-room door will have been forgotten; the cook will cease to fancy and complain that when the scullery tap is allowed to run to waste the water splashes from the sink to a degree before unknown to any other water or sink, and the tendency of the dining-room fire to smoke when first lighted will have yielded to ordinary care in lighting it. When the builder's time for visiting the house and easing doors comes round he will do more than can be rightly required of him rather than leave behind any cause for dissatisfaction with the job.

So now the house is completed and paid for, and it is only necessary for us to observe our architect presenting his little bill before we leave him to his own resources.

[*To be concluded*]

IN PARLIAMENT

[BY OUR SPECIAL CORRESPONDENT]

Before Parliament rose for the Christmas recess, which is to last until February 8, Mr. Basil Peto, on behalf of Colonel Vaughan-Morgan, asked the Minister of Transport what steps he proposed to take to give effect to the recommendations of the Royal Commission on Cross-River Traffic in London; and whether he was prepared to receive a deputation representative of the localities concerned.

Colonel Ashley replied that the report of the Royal Commission raised issues of the greatest importance, and the Government were considering very carefully the recommendations of the Commission. He thought it would be premature to receive a deputation. The Government must consider this important matter first.

Mr. Gosling has been unable to proceed further this session with his Bill to provide for the erection of a war memorial to the men of the Mercantile Marine on Tower Hill owing to non-compliance with the Standing Orders of the House, but the measure will be reintroduced when the new session opens in February, and passed into law with all possible speed.

The Housing (Rural Workers) Bill and the Public Health (Smoke Abatement) Bill have received the Royal assent.

Mr. Chamberlain informed Captain P. MacDonald that according to the last return the number of unemployed persons connected with the building trade in Great Britain was 88,064. Of this number, the total of bricklayers, slaters, and plasterers was 4,063, while the great bulk, amounting to 84,001 were painters, labourers, and others. He was not aware that housing schemes were being held up by a shortage of labour, of which there was any material surplus elsewhere, and he did not think that any serious difficulty arose in securing the transfer of labour to areas where it was required.

Replying to Colonel Horlick, Mr. Chamberlain stated that the total loans sanctioned for housing purposes to the Welwyn Rural District Council amount to £695,512.

NEW INVENTIONS

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

LATEST PATENT APPLICATIONS

30322. Barth, H., Brandt, W. Convertible swimming-baths, etc. November 30.

30370. Barton, C. H. Building construction. December 1.

30525. Beckett, A. Repairing slate roofing. December 2.

30249. Bentley, J. H. Cement manufacture. November 30.

30490. Clayton, R. M. Apparatus for protecting attendants in banks, etc. December 2.

SPECIFICATIONS PUBLISHED

261895. Robinson, F. W. L. Block-making machine.

261910. Ransomes and Rapier, Ltd., and Ionides, P.D. Concrete-mixing apparatus.

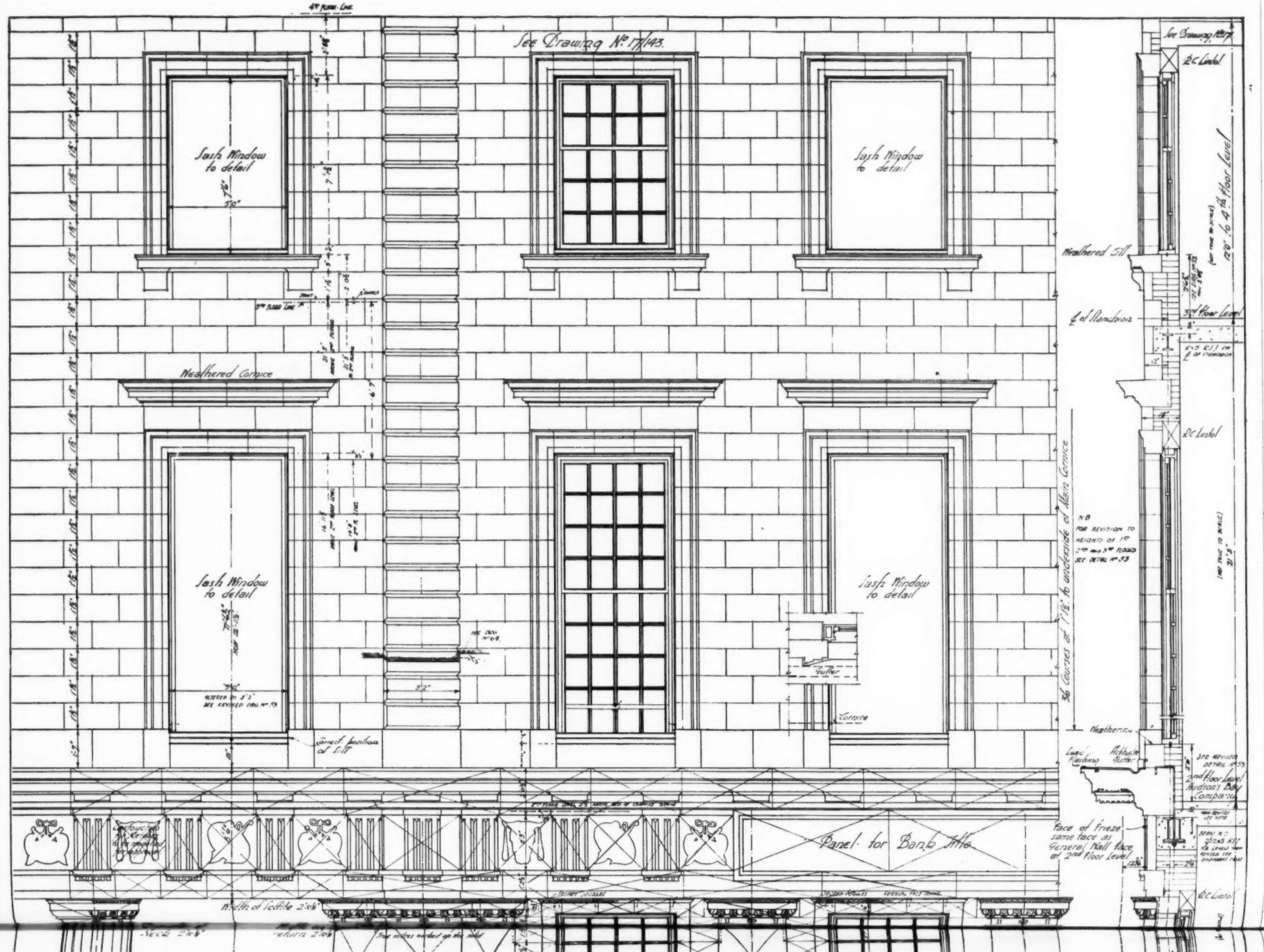
261943. Rauwald, F. Building structures either under ground or wholly or partly under water.

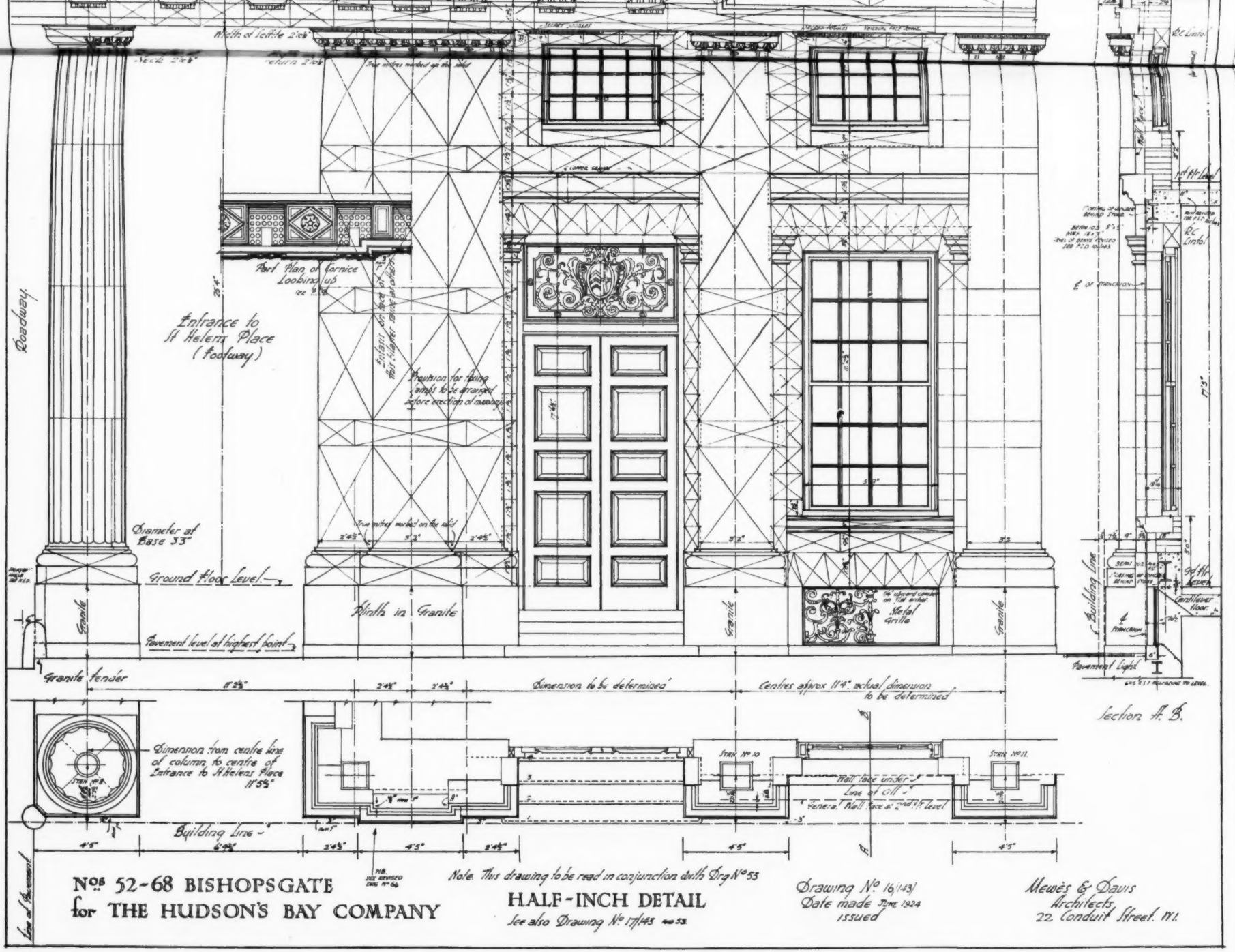
261952. Pickerill, J. Moulds for making concrete blocks.

261964. McClatchy, J. H. Building slabs and apparatus for making the same.

ABSTRACT PUBLISHED

259832. Patterson, T. K., Hinckley, Demesne Avenue, and Hodgins, L. H., Bangor, Co. Down, Ireland. Building bricks.


See Drawing No. 17/143.
Sash Window to detail
Sash Window to detail
Sash Window to detail
Sash Window to detail
Weathered Cornice
Weathered Sill
Panel for Bank Title
Gutter
Cornice
Face of frieze same face as General Wall face at 2nd Floor Level
36 Courses at 1'1½" to underside of Main Cornice
2C Lintel
2C Lintel
2C Lintels
See Drawing No. 17
Width of Soffite 2'0½"
Neck 2'0½"
Return 2'0½"



Nos 52-68 BISHOPSGATE
for THE HUDSON'S BAY COMPANY

HALF-INCH DETAIL
See also Drawing No 17/143 & 53

Note. This drawing to be read in conjunction with Drg No 53

Drawing No 16/143
Date made June 1924
Issued

Mewès & Davis
Architects
22 Conduit Street. W1.

THE HUDSON'S BAY COMPANY'S BUILDING, BISHOPSGATE. BY MEWÈS AND DAVIS.

PRESENT-DAY BUILDING CONSTRUCTION: V

[BY WILLIAM HARVEY]

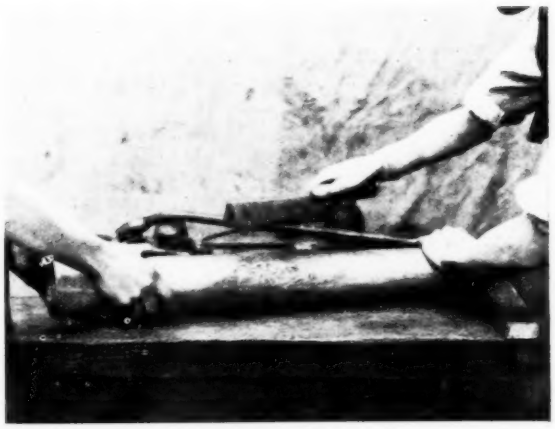
PLUMBING: I: THE PLUMBER IN TRAINING

More nonsense is spoken and written about the plumber than about any of the other craftsmen engaged on building work, and, in its way, this somewhat dubious tribute acknowledges his importance, or even his indispensability in modern building construction. His responsibilities are wider and his range of operations more varied than those of some of the other craftsmen, and the material in which he works possesses many attributes which place it in a class apart from the brittle substances of which the main bulk of our buildings are composed. The plumber has habitually to deal with the lead by the several distinct processes of casting, burning, and soldering, as he might deal with some other fusible metal, but he has also to learn to cut it to shape, as if it were leather, and model with it as he might with some specially tough form of clay.

In the plumbing workshop at the Northern Polytechnic these many aspects of the metal and of the craft are recognized by the provision of apparatus which permits of all these varied operations being carried on simultaneously. Oxygen jets, and supplies of acetylene and coal gas have been installed for providing the different temperatures necessary for dealing with the lead and solder in their fluid forms, and hardwood topped benches and full-size models of parts of buildings, such as flat roofs, gutters, and cisterns are available for working the lead in its cold state. The labour of dressing the lead cold by bossing it into shape is first undertaken by the student, who is set to work to prepare a square corner with sides raised up at right angles to the flat base of the original flat sheet of lead. The rather more complicated operation of bossing up an internal break is illustrated in figure one. The student has set out the marks for the junction of the flat and the upright portions of the work with the help of the chalk line, an operation sometimes known as "striking in," and has emphasized the positions of the chalk lines by "setting in" the arrises with the chase wedge. The extreme corner of the sheet of lead has been trimmed away with the shears (or snips), so that no more weight of lead has to be dressed that is necessary. To leave the corner intact would mean a great deal more labour in the working, and it would only have to be trimmed off in the end. The method of supporting the sheet of lead by bending up the corner to be worked upon is clearly shown in the illustration, where the method of handling the boxwood-headed and cane-hafted bossing-mallet and the boxwood bossing-stick is also to be seen. The early stages of the work are performed with fairly vigorous blows, until the lead is roughly in the intended position, afterwards the bossing-stick and mallet are exchanged for a pair of boxwood dressers, and the marks are taken out by driving the lead against the dresser held in the left hand, with a series of taps delivered by the flat face of the dresser held in the right hand. The handle of one dresser is seen on the extreme left of the illustration beyond the specimen of completed work.

Figure two shows a preliminary process in the work of making a square bend in a pipe. The bend is formed by making a succession of kinks in the pipe by bending it around the plumber's knee, or by means of the bending dresser seen in the background of figure three, and then smoothing the kinks out from within the pipe by means of a dummy. The end of the pipe is protected from injury by working the stem of the dummy over a piece of wood, which acts as fulcrum and is nailed down on the bench in a convenient position. Spare dummies with their necks bent at different angles for use at later stages of the proceedings may be seen at the back of the bench, together with one of the string of snatch bobbins used for pulling through the inside of the pipe to keep its bore circular and smooth. In figure three this operation of using the snatch bobbins is seen in progress. The wooden beads are threaded on a stout length of sashline, which gives somewhat as they are laboriously hauled through the bent pipe, but the work is hard, and two pairs of hands are kept busy holding on to the pipe and hauling the reluctant string round the bend. In the background appear another pipe partly bent to shape and a bending dresser and flat-faced boxwood dresser. Just how a purchase is obtained in pulling on the sashline may also be seen. The cord is given a half-turn around the handle of the plumber's hammer, and then another half-turn round its head, the loose end of the line and the hammer handle being grasped together in hauling the snatch bobbins through the pipe.

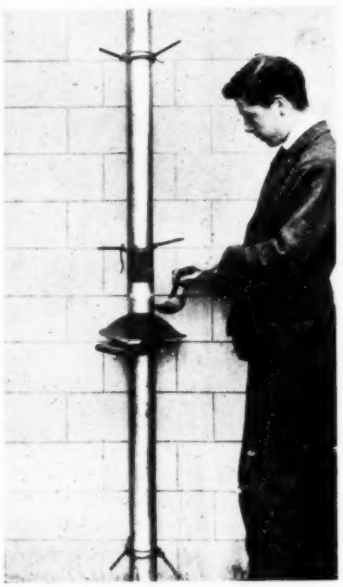
Left, figure one, commencing the formation of an "internal break" with the bossing-mallet in the left hand and the bossing-stick in the right. The shears or "snips" are in the background, and the handle of the boxwood "dresser" is seen on the extreme left. Right, figure two, starting to make a "square bend" by first kinking the pipe and then smoothing out the kink with the dummy. These dummies have iron handles and heads of plumber's solder wiped on to screw sockets.



Left, figure three, a further stage in the pipe-bending operations. Hauling snatch bobbins through the partly bent pipe by means of sashline and a plumber's hammer. Right, figure four, bending the pipe. Dressing down the bulges formed in the lead by the action of the dummy. A boxwood dresser is used for this purpose in the final stages, and beech or hornbeam dressers during the roughing out.

Dressing the surface of the pipe to remove bulges and marks is illustrated in figure four. Working with the dummy in the dark interior of the pipe produces a certain number of unavoidable dents and bulges which might thin down the metal on the heel of the bend unduly, and permit it to burst after fixing, if the excessive projection is not reduced and the lead rendered compact once more by dressing from outside. Care has to be taken not to straighten the pipe in the process of smoothing it, and the assistant has not only to hold the pipe, but to keep it bent if possible, whatever operations are going forward. The comparatively simple apparatus for pipe bending in the school faithfully reflects the lack of special facilities which the plumber will find to be normal when he leaves his training behind him, and starts work under practical commercial conditions on small building jobs.

The fifth illustration shows a student preparing a branch joint in a large pipe by opening up a hole in its side and raising the metal to form the junction. The tool he is holding in his left hand is known as a " bent bolt " in the London district, and as a " tommy " in the North. Its end is inserted in a small hole in the pipe made at or about the spot where the central axis of the branch pipe is to join on to the main stack. The side of the bent bolt is then tapped with the plumber's hammer until the hole is sufficiently large and its rim sufficiently high. A certain amount of modelling is performed in making the raised rim, so that the direction of flow is clearly marked. In the example shown in figure five the flow is obviously from right to left, as a more definite groove has been formed between the rim and the main pipe on the right-hand side. On the left of the illustration is a piece of pipe which has been taken a stage further towards the making of an actual joint. The raised rim has been brought up to a considerable height above the pipe and a border of " soil " or " smudge " has been painted neatly on in a concentric ring around the junction. The soil-pot, which is visible in the background, is generally filled with a mixture of lamp-black and size made up by the plumber himself, but ready-made soil, or smudge as it is called by some North Country plumbers, can be purchased by those who forsake this time-honoured custom. The purpose of the margin of soil is not merely ornament, although a careful workman likes to see it neatly applied. Its practical function is to keep the splashes of molten metal from melting the surface of the pipe and adhering to it at any other point than that at which the joint is to be made. Where the lead is to be covered with the wiped, soldered joint the soil is scraped off again with the shave-hook with scrupulous care until the metal shows bright and clean, when it is immediately smeared with tallow to keep it from being tarnished by various chemical reagents present in the atmosphere. The end of the branch pipe which is shown in the middle of the picture, is treated to a coat of soil in exactly the same manner as the main pipe, and the part that is to receive the solder is scraped with the



Centre, figure five, opening a hole in the side of pipe to prepare it to receive a branch junction. The " bent bolt," or " tommy," is used in conjunction with the plumber's hammer. Below, figure six, preparing to wipe an upright joint, with ladle, splash-stick, and wiping cloth. The solder is composed of two parts by weight of lead to one part of tin.

shave-hook and tallowed as already described. Around the base of the branch pipe a groove is cut into the metal to show how far it should project into the main pipe. Without some such guide the branch might be thrust in too far, and, projecting into the fairway of the main pipe, it would obstruct the flow and cause an accumulation of solid matter just above the junction.

Before attempting to wipe the joint, the plumber ties the branch junction and the main pipe in their proper relative positions above the surface of the bench, where he supports them on blocks of deal with V grooves in their tops to grip the pipes, and make it an easier matter to lash them rigidly in position with thin sashline or whipcord tie-strings. The supports and lashings are placed carefully, so as to leave an absolutely free space about the joint and give room for the hand and the wiping-cloth. Just where and what lashings will be required are points to be decided in connection with every separate piece of work, and it is sometimes found convenient to steady the pipes, or other objects dealt with, by means of little pigs of lead cast in a mould for the purpose instead of with tie-strings.

To accustom the student to work under something like the difficult conditions of actual practice, the work is sometimes fixed against a partition so that there is only the ordinary amount of room for the fingers between the pipe and the wall. An upright joint ready for wiping in such a position is shown in figure six. The ends of the two pieces of pipe have been carefully cut off square across and pared down to a knife edge at their rims. The top of the lower length of pipe is slightly opened out by driving in a cone of boxwood, and the foot of the upper length is shaved away to fit into it tightly. The parts of the pipes near the joint have been cleaned with the shave-hook and bordered with soil, and, below the joint, is a collar of lead which has been coated with soil in order that it may pick up the splashes of solder which fall on it from the wiping operations above.

The pipes are rigidly fixed by means of " points," or long, sharp-pointed steel spikes, which are hammered into the wall, or partition, in pairs in such a way that the " points " in each pair make an angle with one another, so that the pipes are gripped by their converging lines near the wall and by the tie-strings in front. The joint is about to be completed by forming a smooth, raised boss of solder over the parts of the pipes which have been brightened by scraping with the shave-hook and kept bright by means of the tallow which has been smeared upon them. A good supply of solder is melted over an adjoining gas-ring in a cast-iron plumber's pot, and smaller quantities are brought to the joint in the ladle held in the student's left hand. The molten metal is applied to the joint by means of an iron " splash-stick," whose upper end is bound round with string to keep the fingers from the hot metal, as the iron absorbs heat from the lead in the ladle. The splashing is a matter of particular skill, and if smartly performed, enough solder is made to cling on to the pipes to finish the joint in one operation.

The metal should be just hot enough almost to run, but just cool enough to avoid doing so. The experienced plumber gauges this matter of temperature with uncanny precision, and is enabled to finish the joint without more trouble than a wipe round on every side with the wiping-cloth, which is a pad of finely-woven " moleskin " folded upon itself several times and coated with tallow.

In the illustration the wiping-cloth is placed ready on one of the points just below the joint. It must be where it is wanted or the solder will cool before the wiping action can be successfully performed, and will need heating up again by some means. The blow-pipe is now generally resorted to for this purpose, but it is not so many years since the old-fashioned plumbing-iron was made red-hot and applied to the joint to warm it to the necessary degree.

The difficulty of keeping a fire going to warm the plumbing-iron was painfully familiar to the British householder of the last generation.

[To be concluded]

SOCIETIES AND INSTITUTIONS

R.I.B.A. New Members

At the last general meeting of the Royal Institute of British Architects the following members were elected :

AS HON. FELLOW (1)

Lee of Fareham, The Rt. Hon. Viscount, P.C., G.C.S.I., G.B.E., K.C.B.

AS FELLOWS (40)

Allison, William, P.A.S.I.
Aylwin, Guy Maxwell.
Bagot, Walter Hervey.
Bishop, John Percival.
Brocklehurst, Arthur.
Brownlee, Herbert John.
Buck, Walter Gerard.
Bush, Raymond (formerly Wheston, Wray).
Cameron, Rhoderic.
Caryer, Major George Thomas, O.B.E.
Chandabhoy, Munchershah Nusserwanjee.
Cleveland, Charles Barry.
Coggin, Clarence Tilt.
Cowley, Captain Herbert Reginald, P.A.S.I.
Davies, William George.
Eaton, George Morley, P.A.S.I.
Ford, Lawton Robert, F.S.I.
Forrester, Alfred.
Gall, Robert Robb.
Gaunt, Oliver.
Goodman, John.
Gummer, William Henry.
Harrison, Fred.
Haward, Francis Robert Boyd.
Hickson, Clifford.
Hill, Henry Leonard Gauntlett, O.B.E.
Horth, Frederick John.
James, Charles Holloway.
Jones, George Sydney.
Kerr, Robert Sidney.
Lawson, Sydney Herbert.
Lynham, Arthur George.
Maxwell, Joseph Charlton.
Nightingale, Frederick Bayliss.
Norris, Ernest Bower.
Prosser, Howell.
Townend, Thomas.
Turner, Robert Charles.
Vinycomb, John Knox.
Wickenden, Arthur Fred, A.M.INST. C.E., P.A.S.I.

AS ASSOCIATES (71)

Alexander, Richard Rennie.
Apps, Leslie Mason.
Arthur, John Abercromby.
Barrett, Walter.
Barrington-Baker, James.
Barton, Herbert Leslie, A.ARCH. (Liverpool).
Bent, Frank.
Booth, Rolfe Gilbert.
Bourne, John Henry.
Bruce, William George Hay Black.
Bryce, William Theodore Percival, M.A., Cantab., B.SC.ARCH. (Glasgow)
Cachemaille-Day, Nugent Francis Cachemaille.
Calder, Herbert Kitchener.
Carter, Peter George Jeffery.
Carter, Richard Jeffery.
Chester, Harold William.
Davidson, James Henderson.
Dunphy, Norah, B.ARCH. (Liverpool)
Durnin, Leo.
Edwards, Kendrick, M.INST.C.E.
Felgate, Eric George.
Foubister, Peter John Malcolm Johnstone.
Goldsmith, Edward Felix.
Green, Frank Stanley Morden.
Grey, John.
Horner, Hugh Baldwynne Lyle.
Inglis, Frank Alexander Greig.
Lewis, Ernest Wamsley.
Ley, Arthur Harris.
Lloyd, William Antony Sampson, M.A.
MacDonald, Alister Gladstone.
MacMacus, Frederick Edward Bradshaw.
Monroe, Leonard.
Morrison, James.
Nash, Edward Tindal Elwin.
Nash, Vivian Leslie.
Oakley, William Owen.
Oldacre, William Bernard.
Parker, Captain Robert, M.C., P.A.S.I.
Peters, Henry Alban, B.ARCH. (Liverpool).
Phillips, Herbert Gordon, B.ARCH. (Liverpool).
Price, Arthur John.
Pringle, Gordon, M.A. (Cantab.)
Punchard, Stanley Charles.
Remnant, Eustace Archibald, P.A.S.I.
Richard, John Cyril.
Ritchie, James Watson, DIP.ARCH. (Edin.).
Roberts, Alfred Georges.
Roberts, Douglas Hugh Poynter.
Roberts, Thomas Idwal.
Robertson, Albert Victor.
Salt, Geoffrey Wyndham.
Saunders, Dyce Chalmers.
Scott, Cecil James.
Seely, Henry John Alexander.
Sidnell, William Ewart.
Sloot, Lambert Louis Theodore.
Smith, Frank Halliburton.
Smith, Harry Hirst.
Snailum, Terence Walter.
Soper, Dorothy Elizabeth.
Sutcliffe, Brian Lister.
Theobald, Robert Courtenay, B.A. (Lond.)
Thrasher, William James.
Trent, William Sydney.
Tyler, Eric Brian.
Wall, Maud Amy Margaret.
Watson, John, Junr.
White, Leonard William Thornton.
Wilson, Edward Douglas.
Wright, Hubert.

AS HON. ASSOCIATES (5)

Davison, Sir William Henry, K.B.E., D.L., M.P.
Heath, Sir Henry Frank, K.C.B.
Hill, Leonard Erskine, M.B., M.R.C.S., L.R.C.P., F.R.S.
Stradling, Reginald Edward, M.C., D.SC., PH.D., ASSOC.M.INST.C.E.
Woolley, Charles Leonard, M.A.

AS HON. CORRESPONDING MEMBERS (8)

Clemmensen, Andreas Lauritz.
Hultl, Dr. Desiderius Von.
Korb, Professor Florestan.
Legros, Georges.
Medary, Milton Bennett.
Monberg, Christen Emanuel.
Rafu, Aage.
Wail, Dan Everett, B.S., LL.D.

Hampshire and Isle of Wight Architectural Association

A general meeting of the Hampshire and Isle of Wight Architectural Association was held at the Castle of Winchester, with Mr. J. Arthur Smith, F.R.I.B.A., vice-president, in the chair. Mr. A. L. Roberts, hon. secretary and treasurer, reported that the council had, under section iv., rule 18, elected the following members to vacancies on the council: Fellows—Mr. J. H. Blizard, F.R.I.B.A., Mr. V. G. Cogswell, A.R.I.B.A., Mr. L. M. Field, L.R.I.B.A., Mr. W. T. Reynolds, and Mr. A. E. Shervey, F.R.I.B.A.; and Associates—Mr. S. A. Gulliford and Mr. C. C. Jackson.

THE COMPETITORS' CLUB

CITY OF BIRMINGHAM CIVIC CENTRE

SUMMARY OF THE CONDITIONS OF COMPETITION

The Corporation of the City of Birmingham is inviting those qualified or practising as architects or town planners to submit designs in competition for laying out an area for the purposes of a civic centre.

Assessor: Mr. H. V. Lanchester, F.R.I.B.A., M.T.P.I.

Premiums: To the author of the design placed first, £1,000. A further sum, not exceeding £1,000, will be divided between the authors of other designs.

Should the Corporation require to consult the author of the design placed first on any adjustments, or other matters connected with the execution of the scheme, he will be remunerated at the rate recognized in his profession on the basis of time and expenses involved.

Each design, and the report accompanying it, must be sent in without name, motto, or distinguishing mark of any kind, and must be the personal work of the competitor. Each design to be contained in one package and sent, carriage paid, to Mr. Herbert H. Humphries, M.INST.C.E., M.T.P.I., City Engineer, The Council House, Birmingham, with the endorsement "Design for Civic Centre," not later than June 30, 1927. Any questions which the competitors desire to ask must be addressed to the City Engineer on or before January 31, 1927.

The conditions and the following plans and information will be forwarded to intending competitors on application, with a deposit of £1 1s. paid, to the City Engineer.

A general plan of Birmingham, scale 3½ in. = 1 mile.
A plan of the site to the scale of $\frac{1}{1250}$
Aerial photograph of the site.
Photographs of municipal buildings, Hall of Memory, etc.
Declaration form to be filled in by the competitor, and envelope for same.

Drawings, etc., required. A plan of the scheme to a scale of $\frac{1}{1250}$ showing the proposed lay-out and indicating the levels. Other drawings (*not exceeding* four in number) showing such details, traffic diagrams, and views as the competitor considers will best explain his design, and rendered in the manner he considers most appropriate, and showing the areas allotted to various purposes—public buildings, commercial buildings, roads, footways, gardens, etc. The area for which a scheme for development as a civic centre is desired is contained within the space of a circle having the Hall of Memory as a centre, and with a radius of, approximately, 900 ft. The main canals on the north, south, and west sides are to be retained, but the branches within the specified area may be filled in and included in the area to be developed.

It may be pointed out that Broad Street, which is part of an arterial road, is a shopping thoroughfare, and if its character is changed in the portion near the civic buildings it might be desirable to consider some method of relating the shopping portion of the street to the centre of the town.

Schedule of public buildings which may be erected on the specified area:

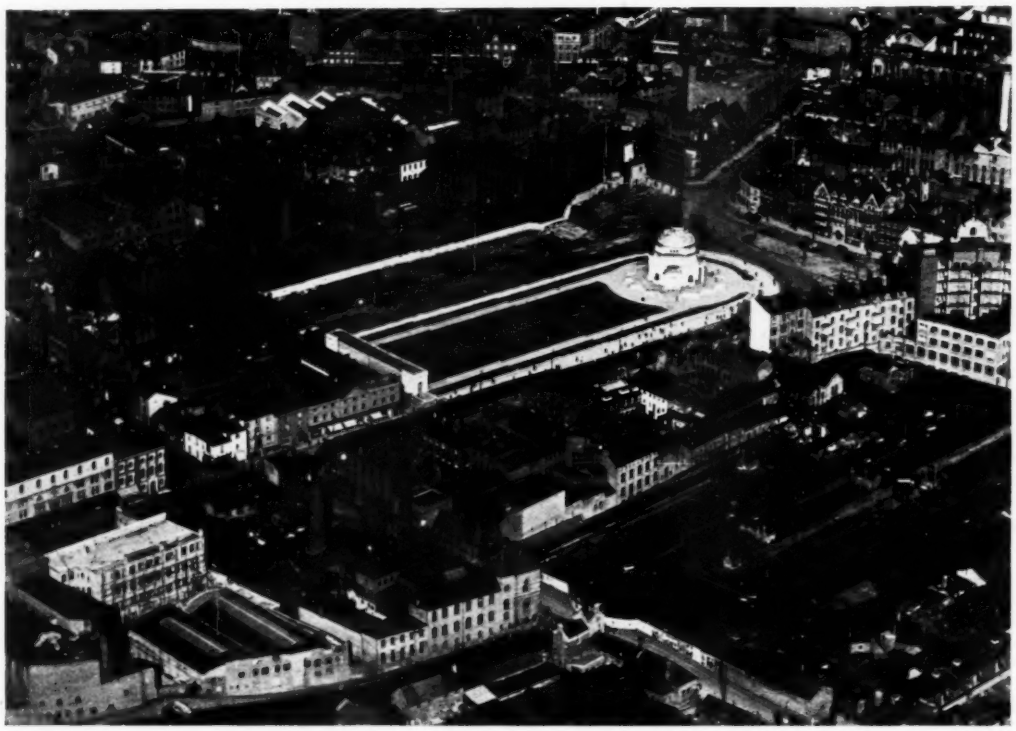
1: Municipal offices (to be within the area coloured pink), covering about	40,000	sup. ft.
2: City Hall (seating about 5,000) covering about	50,000	,,
3: Reserved for public offices	40,000	,,
4: Reserved for public library	40,000	,,
5: Reserved for Lord Mayor's Mansion House, covering about	6,000	,,
6: Natural History Museum, covering about	40,000	,,

Other sites may be suggested, and subject to this the remainder of the ground should be allocated approximately as follows:

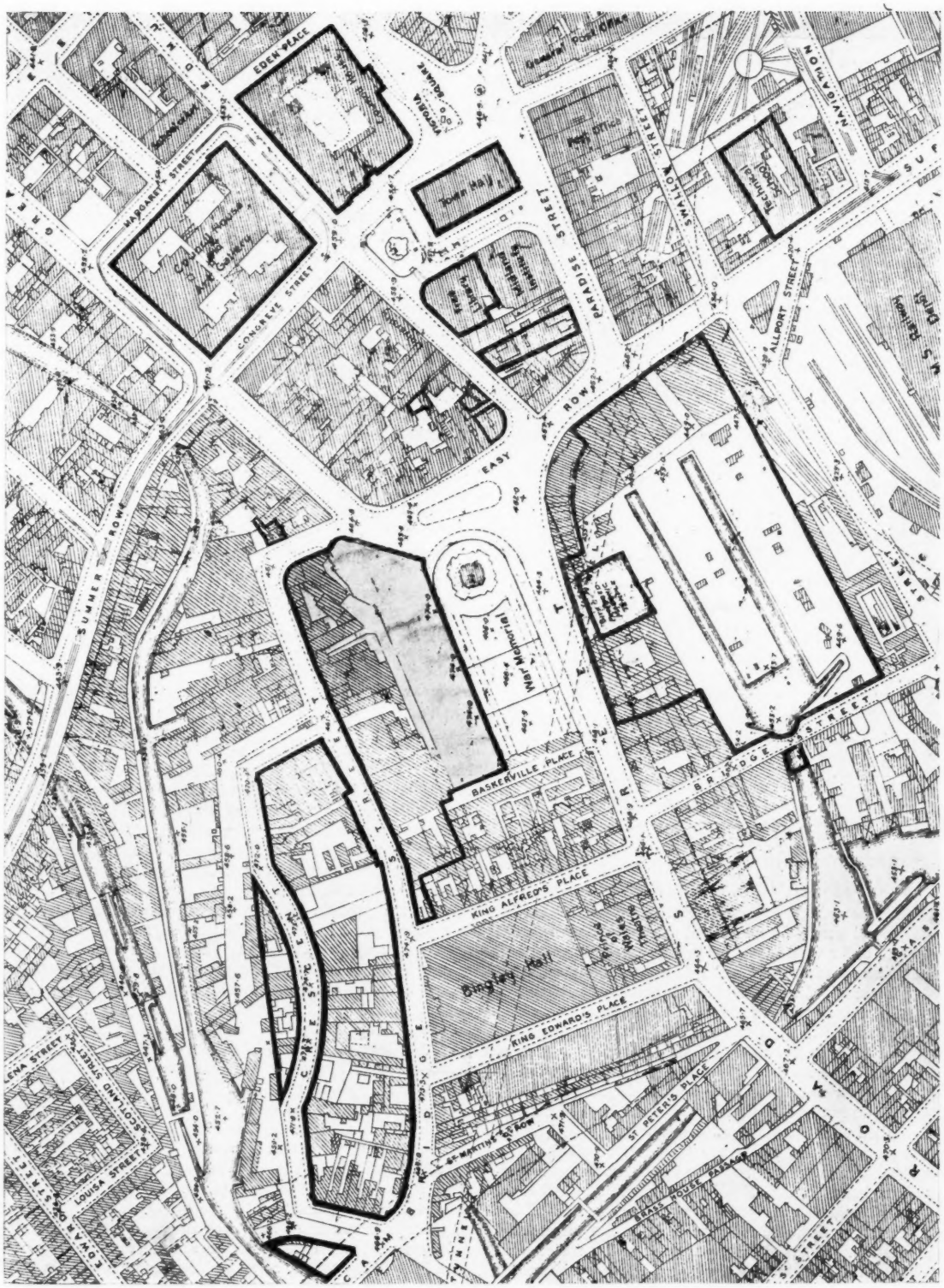
Roads and footways	50 per cent.
Business premises	30 ,,
Gardens, etc.	20 ,,

but these proportions are entirely at the discretion of the competitors.

SENESCHAL



An aerial photo of the site of the new civic centre, Birmingham.



Ordnance map of the site of the new civic centre, Birmingham.

COMPETITION CALENDAR

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

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

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

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

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

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

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

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

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

CORRESPONDENCE

AUTHORITY AND LIBERTY IN ARCHITECTURE

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—If Mr. Howard Robertson does not wish to join issue with me in my general conclusions it is unfortunate that he should have chosen to differ with me over the issue of small panes and plate-glass, because it so happens that I do regard the use of small panes as fundamental. The historic fact is that no headway was made with the revival of architecture until Norman Shaw and his colleagues had the courage to turn their backs upon the use of plate-glass, and I do not believe it was a mere coincidence. There was, I believe, a reason for it, though it is a reason that is more easily apprehended than explained. And because there is a reason for it I do not believe that large sheets of plate-glass will ever be reconciled with architecture. I am not impressed by the efforts of German, Dutch, and other Continental architects to overcome the difficulty. In my opinion they attempt an impossibility, and are bound to fail. The Modernist argument that we ought to use plate-glass because it is a typical product of our civilization does not disturb me because I am not enamoured of our civilization. I know that, judged by any sociological standards, it is a disease which, if it cannot be cured, must result in death. I can see no more reason for using plate-glass because it is modern than for using corrugated iron because it is modern. Nobody suggests that architects should cover their roofs with corrugated iron—perhaps because it is not durable. But supposing a durable form of corrugated iron was invented, I can imagine that some architects would begin to think they could only repay their debt to society by using it instead of tiles or slates, and would proceed to tell us how the medieval builders would have been transported with delight had they only been presented with a sheet of corrugated iron. But I for one, being forwarned, shall not be intimidated. I shall say to them "Rats!"

No doubt Mr. Robertson will be surprised to hear all this, for he says that he would have imagined I with my outlook "would have been the first to deplore the suggestion that a window with small panes spelt finality on account of the difficulties of scale attendant on its suppression." He supposes that because I cannot endure the ultra-Classical school I am a Modernist. But in this he is mistaken; for, according to my point of view, Modernism and ultra-Classicalism are two opposite forms of error. Ultra-Classicalism is erroneous because it denies the present, and Modernism is erroneous because it denies the past. There is a third position which stands midway between these extremes, and that is where I stand. It is the position of those who know too much about progress to have any illusions about it, and sufficient about the architecture of the past to know it is a mine of unexplored possibilities. There is not, unfortunately, any label to identify those who subscribe to this position, though their numbers are, I believe, not inconsiderable. But if I interpret faithfully their point of view, it is that they are conscious of a certain sense of freshness about all early forms of architecture which they miss in later work, and are working for a style of architecture that shall retain the freshness of early work. It is not an impossible ideal, for a certain number of old buildings possess such a quality. But it brings us into collision with the ultra-Classical school because they would substitute a formula for thought, and into collision with the Modernist school because they demand we shall bow to successful stupidities.

I think the error of Modernism begins by a peculiar interpretation of the idea that architecture should express the age, for it is simply impossible as a principle of work. The question arises, How can architecture avoid expressing the age? It must express one aspect or other because it can't do otherwise. The work of our greatest architect is no more and no less an expression of the age than that of the speculating builder. But good architecture is something else in addition. It is prophetic, and to be prophetic is finally the only rational motive for any school of architecture. But to aim at making architecture express the age is suicidal. It has reduced an architect of my acquaintance, and a very skilled one too, to a condition of imbecility. For in his endeavour to make his architecture the expression of what he supposes to be the spirit of the age he has been led to deny the validity of his own instincts, which are excellent, and to accept the work of inferiors as his standards.

Except where Mr. Robertson speaks in favour of stucco, I am in agreement with him in what he says about the relation of architecture and construction. Here again he labours under a misapprehension in identifying me with the constructional school. My position is that there is an external law of appearances as well as an internal law of construction or reality, and that it should be the aim of the architect to bring them as near together as possible. The acceptance of such a position would, I imagine, prevent design becoming abstract on the one hand, or go after strange gods on the other.

When Mr. Robertson criticizes me for what I said about the schools he has me at a disadvantage, because he can speak with inside knowledge, whereas I cannot. Nevertheless, from what I have learnt from students and others I am led to suppose that my criticisms are not without point. It may be my criticisms are a little out of date, and more attention is nowadays being given to domestic work than was the case. Yet I cannot help feeling that instead of domestic architecture and vernacular traditions being taught as something fundamental, as the true root and basis of all architecture, they are treated as a poor relation, as the kind of thing to do when money is short, but without any intrinsic value. It is for such reasons I have a feeling that there is in the school a fundamentally wrong approach to the problem of architecture; or, in other words, that the values

are all wrong. And I am led to suppose such is the case because from time to time I read a lecture or speech by some professor or master which I assume is some index of what is taught in the schools.

ARTHUR J. PENTY

NEW-COMERS IN OXFORD STREET

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—With reference to Professor Reilly's article in your last issue entitled *New-Comers in Oxford Street*, I should be glad if you would point out that the architects for the new premises for Messrs. Bourne & Hollingsworth are Messrs. Slater & Moberly, and any credit or criticism for the building falls upon both myself and my partner, whose name, by the way, is spelt "Moberly" and not "Moberley."

J. ALAN SLATER

RAILWAY HOUSING

The following notes on the villages for the Great Western railwaymen, illustrated in the article which begins on page 775, have been supplied by Mr. T. Alwyn Lloyd, the architect. About three years ago the company decided on two methods of assisting their workers to obtain houses. The first of these was by means of individual loans for the purchase of a house for the occupation of the employee. Under this scheme the company agreed to advance up to 90 per cent. of the value of the house at 5 per cent., the repayment being spread over a period of twenty years. A large number of men employed by the company availed themselves of these facilities, and acquired houses in different parts of the country. These, however, were on scattered sites, and were placed in no definite relationship to one another. The other, and the more attractive scheme from a technical and, indeed, from a social point of view, has taken the form of facilities granted by the company for the formation of public utility societies by Great Western railwaymen in various districts. Some nine of the societies have been formed, and the building of garden villages of varying sizes has resulted. The method adopted by the company in relation to these societies is to acquire favourable sites, large enough to provide for a considerable amount of development, and yet convenient to the men's work. When the societies are formed, the company then constructs roads and sewers and leases to the societies such portions of the estates as are required for building purposes. The ground rents of the leased areas are calculated on 4 per cent. basis, which, of course, is a very favourable one, particularly when one bears in mind the advantageous prices at which the company has been able to acquire land in bulk, even within a few miles of the centre of London.

Sites having been acquired, and such roads and sewers constructed as are necessary for including in areas leased to societies, the latter were enabled to obtain financial assistance on generous terms from the company for building. This took the form of advances by way of mortgage to societies up to 90 per cent. of the cost of the houses, at 4 per cent. interest, the loans being on a fifty years' basis. This means that the societies have only to find from their members 10 per cent. of the total cost of building. This investment is taken up by tenant members in ordinary shares and loan stock, the rents being calculated to pay 5 per cent. interest on the shares. The houses are not sold to individuals, but are retained communally by the society. The advantage to the tenant member is that in the event of his desiring to leave his house for any good reason, he is repaid his investment in full, instead of having to dispose of his house. This is an obvious advantage in the case of railwaymen, who are liable to be moved about to the different centres of employment.

These public utility societies have received full encouragement from the Ministry of Health and from the local authorities of the areas in which they are operating. In all cases subsidies under the 1923 or 1924 Housing Acts have been obtained from the local authority, or direct from the Ministry of Health. In most cases the annual subsidies payable under the 1924 Act have been taken up, as they were considered to be more favourable in the long run than the capital subsidies available under the 1923 Act.

The villages which have already come into being are situated at Acton, Hayes (Middlesex), Plymouth, Truro, Severn Tunnel Junction, Barry, Caerphilly, Swansea, and Llanelly.

At Acton, a site large enough for 500 houses was purchased. By arrangement between the Borough Council and the company a main thoroughfare, known as Noel Road, 50 ft. wide, was constructed through the site, connecting with Twyford Avenue and Ealing at the west end. The West Acton station on the Ealing and Shepherds Bush line actually adjoins the site at one end, and at the other end there is the North Acton Recreation Ground and Acton G.W.R. station. It is intended to restrict the tenants on this site to trainmen and those who are employed at short call at the Old Oak Common engine works. One hundred and fifty houses have already been built, and it is intended to proceed with further building in the near future. The houses have all been built in brick, some in multi-coloured facings, and others finished in roughcast. The roofs are covered with sandfaced or Courtrai-du Nord tiles. Double-hung sashes have been used mainly, but there are a few groups with casement and transom windows; 60 per cent. of the houses are of the non-parlour, and 40 per cent. of the parlour type.

At Hayes, Middlesex, an estate capable of taking about 600 houses was acquired, having a frontage to the recently widened Coldharbour Lane. There are pleasant orchards and tree-lined meadows to the west and north. So far 162 houses have been built, sixty-two of these being in "Easiform" concrete construction, which has proved to be an economical method of building in this district, where ample supplies of gravel and graded clinker are available. The roofs of these houses are covered with Danish pantiles on felt, the windows being wooden casements. The ceilings are of asbestos sheets, the joints being covered with wood strips, and the floors are laid with pitch-pine blocks. The brick houses are partly of facing bricks and partly finished in roughcast, with sandfaced tiles and sash and casement windows.

Plymouth: An excellent site on rising ground at Peverel was acquired by the company, and on this the society has erected eighty-four houses. In the lay-out plan full advantage has been taken of the contours of the site. The houses have been built in "Easiform" concrete construction, the external walls being finished in roughcast colour-washed, and the roofs are covered with Danish pantiles on felting. Windows are double-hung sashes, and bay windows and trellis porches have been added to give variety. The Plymouth Corporation has afforded every assistance to the scheme, and the maximum subsidies payable under the 1924 Act are being granted.

Barry: Instead of forming a new society for railwaymen, arrangements were made with an existing public utility society, Barry Garden Suburb, Ltd., under which part of the beautiful site belonging to that society, adjoining the cliffs above the Bristol Channel, was allocated for the erection of 108 houses for railwaymen. The usual financial assistance was afforded to this society by the company, and the houses, together with roads and sewers to serve them, were recently completed. The external walling is 9 in. thick, consisting of two bricks on edge and a 2 in. cavity, covered with two coats of roughcast colour-washed. The roofs are covered with slates, the windows being double-hung sashes. The lay-out plan provides for a recreation ground and ultimately a village institute. Sir Felix Pole, general manager of the G.W.R., performed the opening ceremony of the first house in December, 1925.

Following are brief particulars of the other schemes:

	Houses provided for on the site.	In course of erection.	Houses Erected.
Truro	—	—	36
Severn Tunnel Junction ..	120	—	30
Caerphilly	200	58	—
Swansea	200	57	—
Llanelly	100	—	—

At Penzance it is proposed to proceed with a small scheme of twenty houses.

The whole of the Great Western garden villages have been designed by, and carried out under the supervision of, Mr. T. Alwyn Lloyd, F.R.I.B.A., architect to the Welsh Town Planning and Housing Trust, Ltd., of Cardiff and London. At Plymouth he was associated with Mr. M. Alton Bazeley, F.R.I.B.A., and at Truro with Mr. B. C. Andrew, L.R.I.B.A., as local architects. The Great Western Railway Company's surveyor and estate agent, Mr. F. W. Showers, F.S.I., has acted for the company throughout in the acquisition of sites and the formulation of schemes. He has, moreover, taken a keen personal interest in the success of the various societies, and has acted as chairman of the London society.

Mr. J. E. Reid sends us the following notes on the London and North Eastern railwaymen's villages: At the present time, when so many complaints are being made—and it must be confessed not without reason—at the spoliation of the countryside by the erection of unsightly houses, it is refreshing to direct attention to the well-designed and pleasing dwellings that are being erected in the north-eastern counties by the N.E.R. Cottage Homes and Benefit Fund, an instructive example of co-operation between employer and employed. The fund owes its inception to Lady Granger, who, in 1919, placed £10,000 at the disposal of the directors of the late N.E.R. Company, as a memorial to her late brother, Dr. Tempest Anderson. This gift formed the nucleus of a fund for building cottage homes, at first for men disabled on war service, and, latterly, for railwaymen retired through age or infirmity. The directors gave every assistance to make the scheme the success it is to-day. The fund is now administered by a committee of management, and is contributed to by all grades.

At first cottages with three bedrooms were provided, as at Knaresborough and Scarborough, but latterly the demand has mostly been for two bedrooms, similar to those built at Willerby. In order to satisfy the requirements of older claimants, bungalows with one bedroom have been built such as those at Great Corby. These have proved so satisfactory that a further number are to be erected with two bedrooms. In all ninety-nine cottages and thirty-six bungalows have been built, and sixteen cottages and six bungalows are now building, and, wherever possible, advantage has been taken of the Government housing subsidy.

The cottages have been erected in pairs or in blocks of four on isolated sites, and it has only been since bungalows have been built that opportunities for grouping have presented themselves. This has been taken full advantage of at Great Corby, one of the most beautiful parts of Cumberland, where eight bungalows are arranged round a green ; and at Acomb, near York. All the dwellings are planned with a living-room having a bay window, an enclosed dresser, a combination range having a back boiler generating hot water which is laid on to bath, lavatory basin and sink. In the scullery a wash-boiler and gas-cooker are provided. There is a larder, coal-cellar under cover, a bathroom with separate w.c., and one, two, or three bedrooms, and it must be conceded that every possible device has been adopted to ensure the evening of one's days being passed in ease and comfort.

The activities of the fund have attracted the commendation of many distinguished men, including Lord Joicey, Sir Alexander K. Butterworth, Mr. Wm. Whitelaw, Viscount Grey of Fallodon, and many others who have shown their appreciation and interest by opening several blocks of houses. The architect to the fund, Mr. Chas. H. E. Bridgen, A.R.I.B.A., of York, has made a special study of the small house, and has designed all the dwellings illustrated. He has successfully avoided any suggestion of monotony, and by a happy combination of simple proportions and materials has welded brickwork, roughcast, tile roofs, and steel casements into many attractive combinations.

Following is a list of the contractors for the Great Western railwaymen's garden villages:

Acton: First and second 50 houses, also roads, Ernest Clarke, Melton Mowbray. Third 50 houses: The Building and Public Works Construction Co., Ltd., Swindon. Hayes: 162 houses, also road and sewers, John Laing and Son, Ltd., London. Plymouth: 84 houses, also roads and sewers, John Laing and Son, Ltd., London. Truro: 36 houses, J. H. Lobb, Mevagissey, Cornwall. Severn Tunnel Junction: 30 houses, Ernest Clarke, Melton Mowbray. Barry: 100 houses, Ernest Clarke, Melton Mowbray. Caerphilly: 58 houses, F. R. Absalom, Ltd., Penarth. Swansea: 57 houses, Hawkins and James, Merthyr Tydfil.

TRADE NOTES

We are informed that the jointless flooring at 100-102 Oxford Street (illustrated in our last issue) was supplied by the British Magnesite Flooring Co., of 59 New Oxford Street, W.C.

The twenty-third annual dinner of the Waygood-Otis Club, which took place on the 11th inst., at Pagani's Restaurant, offered striking evidence—were it needed—of the cordial relations and unity of purpose which exist between the Waygood-Otis Company and its staff; and the sincerity with which this highly-desirable condition of affairs was referred to by various speakers during the evening left no doubt in the minds of the guests that loyalty and contentment were their direct outcome.

The chairman, Mr. D. W. R. Green, in proposing the toast of "The Waygood-Otis Club and its Officials," drew a striking analogy between the company's numerous departments and the club's equally manifold activities, and showed how, in each case, success could only be achieved by good team-work. Mr. Kirton, who responded, paid a fitting tribute to the munificence of the directors in presenting to the club the fine new sports ground and pavilion at Elmers End; and Mr. A. Nunn, who was well chosen as sponsor for the toast of "The Waygood-Otis Company," expressed on behalf of the employees their gratitude for much generosity on the part of the directors—especially in connection with the old-age pension scheme, the savings scheme, and other beneficent movements. In the course of his acknowledgment, Mr. C. Clarke expressed the directors' appreciation of the energy and intelligent effort so consistently shown by the employees.

At the Trocadero Restaurant a complimentary dinner was given by the managing director, Mr. H. L. McGurk, of the Frigidaire Company, in honour of Mr. G. D. Riedel, the European manager, and Mr. N. van Ausdal, European chief engineer, and to mark the near close of a year of uninterrupted successful development. Warm expressions of appreciation were demonstrated by the staff to Mr. Riedel, who, on arrival at the ante-room of the banqueting hall, was greeted with cheers, followed by musical honours. A number of speeches were given by distinguished guests, representing the directorates of some of the largest businesses in this country. Mr. Riedel gave an interesting résumé of his experiences in an 8,000-mile trip to the chief capitals of Europe on Frigidaire business. He expressed surprise at the considerable knowledge of this subject displayed by continental business men, which included detailed information regarding progress in Great Britain. It was evident that the whole Continent of Europe was alive to the extreme importance of pure food and mechanical aids to its realization. Mr. Julius Salmon, managing director of Messrs. J. Lyons and Company, spoke of the very large number of equipments of Frigidaire which his company had installed, and the chief engineer of the same company, Mr. S. Joliffe Butler, confirmed the satisfaction of Messrs. J. Lyons and Company in the value of mechanical refrigeration and of the highly efficient and reliable service which Frigidaire had rendered. Mr. W. Stephenson, managing director of Messrs. Woolworth and Company, complimented the company on having chosen Mr. Riedel for the responsible position he now held. Other speakers included Mr. H. L. McGurk, London managing director, and Mr. B. Y. Jackson, sales manager.

A CORRECTION

The Editor regrets that in Professor C. H. Reilly's article "New-comers in Oxford Street," which appeared in the issue for December 15, the eastern block of Messrs. Peter Robinson was ascribed to Mr. T. P. Clarkson in collaboration with Mr. H. Austen Hall. The architects were Messrs. T. P. and E. S. Clarkson only.

THE WEEK'S BUILDING NEWS

Improvements to Donegal Roads

Sanction has been received by the Donegal County Council to spend £23,210 on roads in the northern division of the county.

A New Bridge for Dover

A reinforced concrete bridge, with a 22-ft. span and a width of 25 ft., is to be constructed at Common Lane, Dover.

More Miners' Houses for Doncaster

One hundred and eighty more miners' houses are to be erected at Brodsworth Colliery, Doncaster.

Housing at Ashton

Forty-eight houses are to be erected on the Oakfold estate, Smallshaw, by the Ashton Town Council.

East Ham Housing Loan

The East Ham Council has received sanction to borrow £100,000 under the Small Dwellings Acquisition Acts.

Two Hundred Houses for Feltham

The Feltham Urban District Council has under consideration the erection of another 200 houses.

More Houses for Pudsey

Application is being made by the Pudsey Town Council to the Ministry of Health for sanction to build 300 more houses.

A New Bradford Hotel

The erection of a large hotel in Bradford, estimated to cost £1,500,000, is under consideration.

Housing at Eastbourne

The Eastbourne Town Council has accepted a tender for the erection of forty-eight concrete houses at its garden suburb, Hampden Park, at a cost of £410 each.

Plans Passed at Rubery

At a meeting of the North Bromsgrove District Council plans were passed for thirty-one houses to be erected at Callow Brook Lane, Rubery.

Farnworth Street Improvements

An inquiry is to be held by the Ministry of Health into the works of private street improvement proposed to be carried out in the Farnworth Urban District.

Housing at Hyde

Application is being made by the Hyde Town Council for sanction to a loan of £28,700 to build sixty-four houses in Bennett Street.

A New Bridge Across the Severn

A reinforced concrete bridge of five spans, with a length of 500 ft., is to be erected across the river Severn at Atcham, near Shrewsbury.

A New Infirmary for Derby

The Derby Guardians have received the sanction of the Ministry of Health to borrow £81,249 for building and equipping a new infirmary.

Newcastle Improvements

Sanction has been received by the Corporation to borrow £190,333 in respect of the concert hall and baths in Northumberland Road, and £121,558 for the Heaton secondary school.

Enlargement of a Birmingham School

Revised plans have been approved by the Birmingham Education Committee for the remodelling and enlargement of Osler Street council school. The estimated cost is £22,100.

Barnsley Waterworks Scheme

The Barnsley Town Council has resolved to make application for Parliamentary powers to construct additional waterworks, with a reservoir at Royd Moor, at an estimated cost of £362,000.

Houses for Great Yarmouth

The site of the Great Yarmouth barracks is to be used by the Yarmouth Town Council for housing purposes. The area is about 26 acres, and it is intended that about 380 houses shall be erected upon it.

Viscount Astor's Gift to Plymouth

In the development of the South-West University, Viscount Astor has offered to defray the cost, estimated at £10,000, of erecting in Plymouth a hostel to accommodate forty students.

Hendon Housing Scheme

The Hendon Urban District Council has instructed the engineer and accountant to submit a joint report on the proposed scheme for the erection of 156 houses at The Hyde, West Hendon.

Housing at Manchester

The Manchester Corporation Housing Committee has accepted tenders from seven firms for building 1,400 houses on the Kingsway estate, and 313 on the Gorton estate.

Proposed Entertainment Centre for Eastbourne

At a meeting of the Eastbourne Hotel and Boarding-House Proprietors' Association it was made known that a syndicate had offered the Eastbourne Council £100,000 for the Great Redoubt site, for development as an entertainment centre.

Eighty Houses for Friern Barnet

The Housing Committee of the Friern Barnet Urban District Council has recommended the purchase of 8 acres of land east of Oakleigh Road and south of Russell Lane for the building of eighty houses upon it.

Flats for Piccadilly

A new company has been formed, with a nominal capital of £210,000, and has acquired the site at the corner of Piccadilly and Stratton Street for the erection of a large block of buildings which will comprise shops and flats.

Housing at Langport

Sanction has been received by the Langport Rural District Council, Somerset, from the Ministry of Health to a loan of £8,823 for the erection of twenty houses. Provisional approval has also been received to the erection of a further sixteen houses.

Remodelling a Brighton Park

Plans have been made for remodelling Preston Park, Brighton's largest recreation ground. The work will cost about £50,000. A feature of the scheme is the construction of a 6-acre lake, surrounded by terraces.

Ealing School Plans to be Prepared

Plans are being prepared for the Ealing Education Committee for the erection of a new school for 400 children on a site adjoining the North Ealing Girls' School. The committee is also seeking sites for the erection of schools in North and South Greenford as well as a centrally situated school.

Heywood Housing

The Heywood Town Council has confirmed the proposal of the Housing Committee to build 100 houses, about half on the Darley Hall site, and the remainder in Hopwood. It has therefore been decided to apply to the Ministry of Health for permission to borrow £51,730 for the erection of them.

Ilfracombe's Pavilion and Promenade

Plans have been prepared for the Ilfracombe Urban District Council, Devon, for extending the west end of the Victoria Pavilion by a glass and iron structure similar to the existing building. The estimated cost of this undertaking is £6,800. A sketch plan has also been prepared of a concrete promenade the whole length of the pavilion supported by iron columns, the estimated cost of which is £5,000.

A New Arcade for Peterborough

Plans are being prepared by Mr. Alan W. Ruddle, F.R.I.B.A., for carrying an arcade right through from Westgate to Cumbergate, and the erection of nearly thirty shops, of a lock-up character, in Peterborough. The arcade will be rather more than 90 yards in length, with a width of 13 ft. for the greater part of the distance. It is proposed that the shops erected on either side of the arcade shall be two-story buildings, and the arcade itself covered with a glazed roof.

RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 8	1 3½
A₁	Abergavenny	S. Wales & M.	1 7½	1 2½
B	Abingdon ..	S. Counties	1 6	1 1½
A	Accrington	N.W. Counties	1 8	1 3½
A₃	Addlestone	S. Counties	1 6½	1 2
A	Adlington	N.W. Counties	1 8	1 3½
A	Airdrie ..	Scotland	*1 8	1 3½
C₁	Aldeburgh	E. Counties	1 4	1 0½
A	Altrincham	N.W. Counties	1 8	1 3½
B₃	Appleby ..	N.W. Counties	1 4½	1 0½
A	Ashton-under-Lyne	N.W. Counties	1 8	1 3½
A₃	Atherstone	Mid. Counties	1 6½	1 2
B₃	Aylesbury ..	S. Counties	1 4½	1 0½
B₃	BANBURY	S. Counties	1 4½	1 0½
B₃	Bangor ..	N.W. Counties	1 5	1 1
A	BarnardCastle	N.E. Coast	1 8	1 3½
A	Barnsley ..	Yorkshire	1 8	1 3½
B₁	Barnstaple	S.W. Counties	1 5½	1 1½
A	Barrow ..	N.W. Counties	1 8	1 3½
A	Barry ..	S. Wales & M.	1 8	1 3½
B₃	Basingstoke	S.W. Counties	1 4½	1 0½
B	Bath ..	S.W. Counties	1 6	1 1½
A	Batley ..	Yorkshire	1 8	1 3½
B	Bedford ..	E. Counties	1 6	1 1½
A₃	Berwick-on-Tweed	N.E. Coast	1 7	1 2½
A₃	Bewdley ..	Mid. Counties	1 6½	1 2
B₃	Bicester ..	Mid. Counties	1 4½	1 0½
A	Birkenhead	N.W. Counties	†1 9	1 3½
A	Birmingham	Mid. Counties	1 8	1 3½
A	Bishop Auckland	N.E. Coast	1 8	1 3½
A	Blackburn	N.W. Counties	1 8	1 3½
A	Blackpool	N.W. Counties	1 8	1 3½
A	Blyth ..	N.E. Coast	1 8	1 3½
B₃	Bognor ..	S. Counties	1 4½	1 0½
A	Bolton ..	N.W. Counties	1 8	1 3½
A₃	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1½
A	Bradford ..	Yorkshire	1 8	1 3½
A₃	Brentwood	E. Counties	1 6½	1 2
A	Bridgend ..	S. Wales & M.	1 8	1 3½
B₂	Bridgwater	S.W. Counties	1 5	1 1
A₁	Bridlington	Yorkshire	1 7½	1 2½
A	Brighouse	Yorkshire	1 8	1 3½
B₁	Brighton ..	S. Counties	1 6	1 1½
A	Bristol ..	S.W. Counties	1 8	1 3½
B₃	Brixham ..	S.W. Counties	1 4½	1 0½
A₃	Bromsgrove	Mid. Counties	1 6½	1 2
C	Bromyard ..	Mid. Counties	1 4	1 0½
A	Burnley ..	N.W. Counties	1 8	1 3½
A	Burslem ..	Mid. Counties	1 8	1 3½
A₃	Burton-on-Trent	Mid. Counties	1 7	1 2½
A	Bury ..	N.W. Counties	1 8	1 3½
A₃	Buxton ..	N.W. Counties	1 6½	1 2
B	CAMBRIDGE	E. Counties	1 6	1 1½
B₃	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 8	1 3½
A	Carlisle ..	N.W. Counties	1 8	1 3½
B	Carmarthen	S. Wales & M.	1 6	1 1½
B₃	Carnarvon	N.W. Counties	1 5	1 1
A₁	Carnforth ..	N.W. Counties	1 7½	1 2½
A	Castleford	Yorkshire	1 8	1 3½
B₁	Chatham ..	S. Counties	1 5½	1 1½
B₁	Chelmsford	E. Counties	1 5½	1 1½
B	Cheltenham	S.W. Counties	1 6	1 1½
A	Chester ..	N.W. Counties	1 8	1 3½
A	Chesterfield	Mid. Counties	‡1 8	1 3½
B₃	Chichester	S. Counties	1 4½	1 0½
A	Chorley ..	N.W. Counties	1 8	1 3½
B₃	Cirencester	S. Counties	1 5	1 1
A	Clitheroe ..	N.W. Counties	1 8	1 3½
A	Clydebank	Scotland	1 8	1 3½
A	Coalville ..	Mid. Counties	1 8	1 3½
B₁	Colchester ..	E. Counties	1 5½	1 1½
A	Colne ..	N.W. Counties	1 8	1 3½
B₁	Colwyn Bay	N.W. Counties	1 5½	1 1½
A	Consett ..	N.E. Coast	1 8	1 3½
B₁	Conway ..	N.W. Counties	1 5½	1 1½
A	Coventry ..	Mid. Counties	1 8	1 3½
A₃	Crewe ..	N.W. Counties	1 6½	1 2
A₃	Cumberland	.....	1 6½	1 2
A	DARLINGTON	N.E. Coast	1 8	1 3½
A	Darwen ..	N.W. Counties	1 8	1 3½
B₃	Deal ..	S. Counties	1 4½	1 0½
B₁	Denbigh ..	N.W. Counties	1 5½	1 1½
A	Derby ..	Mid. Counties	1 8	1 3½
A	Dewsbury	Yorkshire	1 8	1 3½
B	Didcot ..	S. Counties	1 6	1 1½
A	Doncaster	Yorkshire	1 8	1 3½
C₁	Dorchester	S.W. Counties	1 4	1 0½
A₃	Driffield ..	Yorks	1 6½	1 2
A₃	Droitwich	Mid. Counties	1 6½	1 2
A₃	Dudley ..	Mid. Counties	1 7	1 2½
A	Dundee ..	Scotland	1 8	1 3½
A	Durham ..	N.E. Coast	1 8	1 3½
B₁	EASTBOURNE	S. Counties	1 6	1 1½
A	Ebbw Vale	S. Wales & M.	1 8	1 3½
A	Edinburgh	Scotland	1 8	1 3½
A	E. Glamorganshire & Monmouthshire	S. Wales & M.	1 8	1 3½
B	Exeter ..	S.W. Counties	§1 7	1 2½
B₂	Exmouth ..	S.W. Counties	1 5	1 1
B	FELIXSTOWE	E. Counties	1 6	1 1½
A₃	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W. Counties	1 8	1 3½
B₃	Folkestone	S. Counties	1 4½	1 0½
A	Frodsham	N.W. Counties	1 8	1 3½
B₃	Frome ..	S.W. Counties	1 4½	1 0½
A	GATESHEAD	N.E. Coast	1 8	1 3½
B₁	Gillingham	S. Counties	1 5½	1 1½
B	Gloucester	S.W. Counties	1 6	1 1½
A₃	Goole ..	Yorkshire	1 7	1 2½
B₁	Gosport ..	S. Counties	1 5½	1 1½
A₃	Grantham	Mid. Counties	1 6½	1 2
A₃	Gravesend	S. Counties	1 7	1 2½
A	Greenock ..	Scotland	*1 8	1 3½
A	Grimsby ..	Yorkshire	1 8	1 3½
B₁	Guildford ..	S. Counties	1 5½	1 1½
A	HALIFAX ..	Yorkshire	1 8	1 3½
A₁	Hanley ..	Mid. Counties	1 7½	1 2½
A	Harrogate	Yorkshire	1 8	1 3½
A	Hartlepools	N.E. Coast	1 8	1 3½
B₂	Harwich ..	E. Counties	1 5	1 1
B₃	Hastings ..	S. Counties	1 4½	1 0½
B₁	Hatfield ..	S. Counties	1 5½	1 1½
B	Hereford ..	S. W. Counties	1 6	1 1½
B	Hertford ..	E. Counties	1 5½	1 1½
A₁	Heysham	N.W. Counties	1 7½	1 2½
A	Howden ..	N.E. Coast	1 8	1 3½
A	Huddersfield	Yorkshire	1 8	1 3½
A	Hull ..	Yorkshire	1 8	1 3½

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

			I	II
			s. d.	s. d.
A	ILKLEY ..	Yorkshire	1 8	1 3½
A	Immingham	Mid. Counties	1 8	1 3½
B	Ipswich ..	E. Counties	1 6	1 1½
C₁	Isle of Wight	S. Counties	1 4	1 0½
A	JARROW ..	N.E. Coast	1 8	1 3½
A	KEIGHLEY	Yorkshire	1 8	1 3½
B₂	Kendal ..	N.W. Counties	1 5	1 1
B₂	Keswick ..	N.W. Counties	1 5	1 1
B	Kettering ..	Mid. Counties	1 6	1 1½
A₃	Kidderminster	Mid. Counties	1 6½	1 2
B₂	King's Lynn	E. Counties	1 5	1 1
A₁	LANCASTER	N.W. Counties	1 7½	1 2
A₃	Leamington	Mid. Counties	1 6½	1 2½
A	Leeds ..	Yorkshire	1 8	1 3½
A	Leek ..	Mid. Counties	1 8	1 3½
A	Leicester ..	Mid. Counties	1 8	1 3½
A	Leigh ..	N.W. Counties	1 8	1 3½
B₂	Lewes ..	S. Counties	1 4½	1 0½
A₃	Lichfield ..	Mid. Counties	1 6½	1 2
A	Lincoln ..	Mid. Counties	1 8	1 3½
A	Liverpool ..	N.W. Counties	‖1 10	1 4½
B	Llandudno	N.W. Counties	1 6	1 1½
A	Llanelly ..	S. Wales & M.	1 8	1 3½
	London (12 miles radius)		1 9½	1 4½
	Do. (12-15 miles radius)		1 9	1 4
A	Long Eaton	Mid. Counties	1 8	1 3½
A	Loughborough	Mid. Counties	1 8	1 3½
B	Luton ..	E. Counties	1 6	1 1½
A	Lytham ..	N.W. Counties	1 8	1 3½
A₁	MACCLESFIELD	N.W. Counties	1 7½	1 2½
B	Maidstone	S. Counties	1 5½	1 1½
A₃	Malvern ..	Mid. Counties	1 6½	1 2
A	Manchester	N.W. Counties	1 8	1 3½
A	Mansfield ..	Mid. Counties	1 8	1 3½
B₃	Margate ..	S. Counties	1 4½	1 0½
A₃	Matlock ..	Mid. Counties	1 6½	1 2
A	Merthyr ..	S. Wales & M.	1 8	1 3½
A	Middlesbrough	N.E. Coast	1 8	1 3½
A₃	Middlewich	N.W. Counties	1 6½	1 2
A	Monmouth	S. Wales & M.	1 8	1 3½
	S. and E. Glamorganshire			
A₁	Morecambe	N.W. Counties	‡‡[1 7½	1 2½
A₃	NANTWICH	N.W. Counties	1 6½	1 2
A	Neath ..	S. Wales & M.	1 8	1 3½
A	Nelson ..	N.W. Counties	1 8	1 3½
A	Newcastle	N.E. Coast	1 8	1 3½
A	Newport ..	S. Wales & M.	1 8	1 3½
A	Normanton	Yorkshire	1 8	1 3½
A₂	Northampton	Mid. Counties	1 7	1 2½
A	North Staffs.	Mid. Counties	1 8	1 3½
A	North Shields	N.E. Coast	1 8	1 3½
B	Norwich ..	E. Counties	1 6	1 1½
A	Nottingham	Mid. Counties	1 8	1 3½
A	Nuneaton ..	Mid. Counties	1 8	1 3½
B	OAKHAM ..	Mid. Counties	1 5½	1 1½
A	Oldham ..	N.W. Counties	1 8	1 3½
A₃	Oswestry ..	Mid. Counties	1 6½	1 2
B	Oxford ..	S. Counties	1 6	1 1½
A	PAISLEY ..	Scotland	*1 8	1 3½
C	Pembroke	S. Wales & M.	1 4½	1 0½
A	Perth ..	Scotland	*1 8	1 3
A₃	Peterborough	Mid. Counties	1 6½	1 2
A	Plymouth	S.W. Counties	¶1 8	1 3½
A	Pontefract	Yorkshire	1 8	1 3½
A	Pontypridd	S. Wales & M.	1 8	1 3½
B	Portsmouth	S. Counties	1 6	1 1½
A	Preston ..	N.W. Counties	1 8	1 3½
A	QUEENSFERRY	N.W. Counties	1 8	1 3½
B	READING ..	S. Counties	1 6	1 1½
B	Reigate ..	S. Counties	1 5½	1 1½
A₃	Retford ..	Mid. Counties	1 6½	1 2
A	Rhondda Valley	S. Wales & M.	1 8	1 3½
A₃	Ripon ..	Yorkshire	1 6½	1 2
A	Rochdale ..	N.W. Counties	1 8	1 3½
B	Rochester	S. Counties	1 5½	1 1½
A₁	Ruabon ..	N.W. Counties	1 7½	1 2½
A₂	Rugby ..	Mid. Counties	1 8	1 3½
A₃	Rugeley ..	Mid. Counties	1 6½	1 2
A	Runcorn ..	N.W. Counties	1 8	1 3½
A₃	ST. ALBANS	E. Counties	1 6½	1 2
A	St. Helens	N.W. Counties	1 8	1 3½
A₁	Scarborough	Yorkshire	1 7½	1 2½
A	Scunthorpe	Mid. Counties	1 8	1 3½
A	Sheffield ..	Yorkshire	1 8	1 3½
A	Shipley ..	Yorkshire	1 8	1 3½
A₃	Shrewsbury	Mid. Counties	1 6½	1 2
A₂	Skipton ..	Yorkshire	1 7	1 2½
B	Slough ..	S. Counties	1 5½	1 1½
A₂	Solihull ..	Mid. Counties	1 7	1 2½
B	South'pton	S. Counties	1 6	1 1½
B₁	Southend-on-Sea	E. Counties	1 5½	1 1½
A	Southport	N.W. Counties	1 8	1 3½
A	S. Shields ..	N.E. Coast	1 8	1 3½
A₂	Stafford ..	Mid. Counties	1 7	1 2½
A	Stockport ..	N.W. Counties	1 8	1 3½
A	Stockton-on-Tees	N.E. Coast	1 8	1 3½
A	Stoke-on-Trent	Mid. Counties	1 8	1 3½
B	Stroud ..	S.W. Counties	1 5½	1 1½
A	Sunderland	N.E. Coast	1 8	1 3½
A	Swansea ..	S. Wales & M.	1 8	1 3½
B	Swindon ..	S.W. Counties	1 6	1 1½
A₁	TAMWORTH	N.W. Counties	1 7½	1 2½
B₁	Taunton ..	S.W. Counties	1 5½	1 1½
A	Teeside Dist.	N.E. Counties	1 8	1 3½
A	Todmorden	Yorkshire	1 8	1 3½
A₂	Torquay ..	S.W. Counties	1 7	1 2½
B₁	Tunbridge Wells	S. Counties	1 5½	1 1½
A	Tunstall ..	Mid. Counties	1 8	1 3½
A	Tyne District	N.E. Coast	1 8	1 3½
A	WAKEFIELD	Yorkshire	1 8	1 3½
A₂	Walsall ..	Mid. Counties	1 7	1 2½
A	Warrington	N.W. Counties	1 8	1 3½
A₃	Warwick ..	Mid. Counties	1 6½	1 2
B	Wellingborough	Mid. Counties	1 6	1 1½
A	West Bromwich	Mid. Counties	1 8	1 3½
B	Weston-s-Mare	S.W. Counties	1 6	1 1½
A₃	Whitby ..	Yorkshire	1 6½	1 2
A	Widnes ..	N.W. Counties	1 8	1 3½
A	Wigan ..	N.W. Counties	1 8	1 3½
B₂	Winchester	S. Counties	1 5	1 1
B	Windsor ..	S. Counties	1 6	1 1½
A	Wolverhampton	Mid. Counties	1 8	1 3½
A₃	Worcester	Mid. Counties	1 6½	1 2
A	Worksop ..	Yorkshire	1 8	1 3½
A₁	Wrexham ..	N.W. Counties	1 7½	1 2½
B	Wycombe	S. Counties	1 6	1 1½
B₁	YARMOUTH	E. Counties	1 5½	1 1½
B₂	Yeovil ..	S.W. Counties	1 5	1 1
A	York ..	Yorkshire	1 8	1 3½

* Plasterers, 1s. 9d.

† Carpenters and Painters, 1s. 8½d.

‡ Plumbers, 1s. 9d.

§ Painters, 1s. 6d.

‖ Carpenters and Plasterers, 1s. 8½d.

¶ Painters, 1s. 7d.

PRICES CURRENT

EXCAVATOR AND CONCRETOR

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

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

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

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

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

Transport hire per day:

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

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

Exceeding 6 ft., but under 12 ft., add 30 per cent.

In stiff clay, add 30 per cent.

In underpinning, add 100 per cent.

In rock, including blasting, add 225 per cent.

If basketed out, add 80 per cent. to 150 per cent.

Headings, including timbering, add 400 per cent.

RETURN, fill, and ram, ordinary earth, per yd.	£0	2	4
SPREAD and level, including wheeling, per yd.	0	2	4
PLANKING, per ft. sup.	0	0	5

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

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

DO. in upper floors, add 15 per cent.

DO. in reinforced-concrete work, add 20 per cent.

DO. in underpinning, add 60 per cent.

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

DRAINER

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

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

STONEWARE DRAINS, jointed in cement, tested pipes, 4 in., per ft.	0	4	3
DO. 6 in., per ft.	0	5	0
DO. 9 in., per ft.	0	7	9
CAST-IRON DRAINS, jointed in lead, 4 in., per ft.	0	9	0
DO. 6 in., per ft.	0	11	0

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

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

BRICKLAYER

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

London stocks, per M.	£4	15	0
Flettons, per M.	2	18	0
Staffordshire blue, per M.	9	10	0
Firebricks, 2½ in., per M.	11	3	0
Glazed salt, white, and ivory stretchers, per M.	23	0	0
DO. *headers, per M.*	23	10	0
Colours, extra, per M.	£5	10	0
Seconds, less, per M.	1	0	0

Cement and sand, see "Excavator" above.

Lime, grey stone, per ton	£2	17	0
Mixed lime mortar, per yd.	1	6	0
Damp course, in rolls of 4½ in., per roll	0	2	6
DO. 9 *in. per roll*	0	4	9
DO. 14 *in. per roll*	0	7	6
DO. 18 *in. per roll*	0	9	6

BRICKWORK in stone lime mortar, Flettons or equal, per rod	33	0	0
DO. in cement do., per rod	36	0	0

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

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

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

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

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

MASON

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

Portland Stone:			
Whitbed, per ft. cube	£0	4	6
Basebed, per ft. cube	0	4	7
Bath stone, per ft. cube	0	3	0

Usual trade extras for large blocks.

York paving, av. 2½ in., per yd. sup.	0	6	6
York templates sawn, per ft. cube	0	6	9
Slate shelves, rubbed, 1 in., per ft. sup.	0	2	6

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

HOISTING and setting stone, per ft. cube	£0	2	2
DO. for every 10 ft. above 30 ft., add 15 per cent.			
PLAIN face Portland basis, per ft. sup.	£0	2	8
DO. circular, per ft. sup.	0	4	0
SUNK FACE, per ft. sup.	0	3	9
DO. circular, per ft. sup.	0	4	10
JOINTS, arch, per ft. sup.	0	2	6
DO. sunk, per ft. sup.	0	2	7
DO. DO. circular, per ft. sup.	0	4	6
CIRCULAR-CIRCULAR work, per ft. sup.	1	2	0
PLAIN MOULDING, straight, per inch of girth, per ft. run	0	1	1
DO. circular, do. per ft. run	0	1	4
HALF SAWING, per ft. sup.	£0	1	0

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

DO. Mansfield, 12½ per cent.

Deduct for Bath, 33⅓ per cent.

DO. for Chilmark, 5 per cent.

SETTING 1 in. slate shelving in cement, per ft. sup.	£0	0	6
RUBBED round nosing to do., per ft. lin.	0	0	6
YORK STEPS, rubbed T. & R., ft. cub. fixed	1	9	0
YORK SILLS, W. & T., ft. cub. fixed	1	13	0

SLATER AND TILER

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

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

Slates, 1st quality, per M:			
Portmadoc Ladies	£14	0	0
Countess	27	0	0
Duchess	32	0	0
Clips, lead, per lb.	0	0	4
Clips, copper, per lb.	0	2	0
Nails, compo, per cwt.	1	6	0
Nails, copper, per lb.	0	1	10

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

Hand-made tiles, per M.	£5	18	0
Machine-made tiles, per M.	5	8	0
Westmorland slates, large, per ton	9	0	0
DO. *Peggies, per ton*	7	5	0

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

Ladies, per square	£4	0	0
Countess, per square	4	5	0
Duchess, per square	4	10	0
WESTMORLAND, in diminishing courses, per square	6	5	0
CORNISH DO., per square	6	3	0
Add, if vertical, per square approx.	0	13	0
Add, if with copper nails, per square approx.	0	2	6
Double course at eaves, per ft. approx.	0	1	0
TILING, 4 in. gauge, every 4th course nailed, in hand-made tiles, average per square	5	6	0
DO., machine-made DO., per square	4	17	0

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

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

See "Sundries for Asbestos Tiling."

CARPENTER AND JOINER

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

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

7 × 3, per std.	£20	0	0
11 × 4, per std.	30	0	0

Memel or Equal. Slightly less than foregoing.

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

PITCH PINE, add 33⅓ per cent.

FIXING only boarding in floors, roofs, etc., per sq.	0	13	6
SARKING FELT laid, 1-ply, per yd.	0	1	6
DO., 3-ply, per yd.	0	1	9
CENTERING for concrete, etc., including horsing and striking, per sq.	3	10	0
SLATE BATTENING, per sq.	0	18	6

PRICES CURRENT; *continued.*

CARPENTER AND JOINER: *continued.*

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

PLUMBER

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

Lead, milled sheet, per cwt.	£2	4	6
DO. *drawn pipes, per cwt.*	2	6	0
DO. *soil pipe, per cwt.*	2	8	0
DO. *scrap, per cwt.*	1	9	6
Copper, sheet, per lb.	0	1	0
Solder, plumber's, per lb.	0	1	2
DO. *fine, per lb.*	0	1	5
Cast-iron pipes, etc.:			
L.C.C. soil, 3 in., per yd.	0	4	1
DO. *4 in. per yd.*	0	5	0
R.W.P., 2½ in., per yd.	0	2	0
DO. *3 in., per yd.*	0	2	5
DO. *4 in., per yd.*	0	3	3
Gutter, 4 in. H.R., per yd.	0	1	5
DO. *4 in. O.G., per yd.*	0	1	9
MILLED LEAD and labour in gutters, flashings, etc.	3	12	6
LEAD PIPE, fixed, including running joints, bends, and tacks, ½ in., per ft.	0	2	1
DO. ¾ in., per ft.	0	2	5
DO. 1 in., per ft.	0	3	3
DO. 1¼ in., per ft.	0	4	6
LEAD WASTE or soil, fixed as above, complete, 2½ in., per ft.	0	6	0
DO. 3 in., per ft.	0	7	0
DO. 4 in., per ft.	0	9	9
CAST-IRON R.W. PIPE, at 24 lb. per length, jointed in red lead, 2½ in., per ft.	0	2	5
DO. 3 in., per ft.	0	2	10
DO. 4 in., per ft.	0	3	3
CAST-IRON H.R. GUTTER, fixed, with all clips, etc., 4 in., per ft.	0	2	7
DO. O.G., 4 in., per ft.	0	2	10
CAST-IRON SOIL PIPE, fixed with caulked joints and all ears, etc., 4 in., per ft.	0	7	0
DO. 3 in., per ft.	0	6	0
Fixing only:			
W.C. PANS and all joints, P. or S., and including joints to water waste preventers, each	2	5	0
BATHS only, with all joints	1	18	0
LAVATORY BASINS only, with all joints, on brackets, each	1	10	0

PLASTERER

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

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

GLAZIER

GLAZIER, 1*s.* 8½*d. per hour.*

Glass: 4ths in crates:			
Clear, 21 oz.	£0	0	6
DO. *26 oz.*	0	0	7½
Cathedral white, per ft.	0	0	6½
Polished plate, British ¼ in., up to 2 ft. sup.	0	2	0
DO. *3 ft. sup.*	0	2	6
DO. *7 ft. sup.*	0	3	6
DO. *25 ft. sup.*	0	4	0
DO. *100 ft. sup.*	0	4	6
Rough plate, ⅞ in.	0	0	6
DO. *¼ in., per ft.*	0	0	6½
Linseed oil putty, per cwt.	0	16	0
GLAZING in putty, clear sheet, 21 oz.	£0	0	11
DO. 26 oz.	0	1	0
GLAZING in beads, 21 oz., per ft.	0	1	1
DO. 26 oz., per ft.	0	1	4

Small sizes slightly less (under 3 ft. sup.).
Patent glazing in rough plate, normal span 1*s.* 6*d.* to 2*s.* per ft.

LEAD LIGHTS, plain, med. sqs. 21 oz., usual domestic sizes, fixed, per ft. sup. and up	£0	3	6

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

DECORATOR

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

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

SMITH

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

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

SUNDRIES

Fibre or wood pulp boardings, according to quality and quantity. The measured work price is on the same basis . . . per ft. sup.	£0	0	2½
FIBRE BOARDINGS, including cutting and waste, fixed on, but not including studs or grounds, per ft. sup. . . . from 3*d.* to	0	0	6
Plaster board, per yd. sup. . from	0	1	7
PLASTER BOARD, fixed as last, per yd. sup. . . . . from	0	2	8
Asbestos sheeting, 5/32 in., grey flat, per yd. sup.	0	2	3
DO. *corrugated, per yd. sup.*	0	3	3
ASBESTOS SHEETING, fixed as last, flat, per yd. sup.	0	4	0
DO. corrugated, per yd. sup.	0	5	0
ASBESTOS slating or tiling on, but not including battens, or boards, plain "diamond" per square, grey	2	15	0
DO., red	3	0	0
Asbestos cement slates or tiles, 5/32 in. punched per M., grey	16	0	0
DO. *red*	18	0	0
ASBESTOS COMPOSITION FLOORING: Laid in two coats, average ¾ in. thick, in plain colour, per yd. sup.	0	7	0
DO. ½ in. thick, suitable for domestic work, unpolished, per yd.	0	6	6
Metal casements for wood frames, domestic sizes, per ft. sup.	0	1	6
DO. *in metal frames, per ft. sup.*	0	1	9
HANGING only metal casement in, but not including wood frames, each	0	2	10
BUILDING in metal casement frames, per ft. sup.	0	0	7
Waterproofing compounds for cement. Add about 75 per cent. to 100 per cent. to the cost of cement used.			
Plywood:			
3 m/m alder, per ft. sup.	0	0	2
4½ m/m amer. white, per ft. sup.	0	0	3½
¼ m/m figured ash, per ft. sup.	0	0	5
4½ m/m 3rd quality, composite birch, per ft. sup.	0	0	1½

	5	6
	1	2
	1	7
	1	10
	2	4
	9	0
	3	0
	1	2
	0	11

hour;
s. 9½d.
OURER,

	10	0
	0	0
	0	0
	0	0
	1	10
	1	1
	18	0
	10	0
	10	0
	0	0
	0	0
	0	0
	5	0
	2	0
	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
	0	2
	0	3½
	0	5
	0	1½