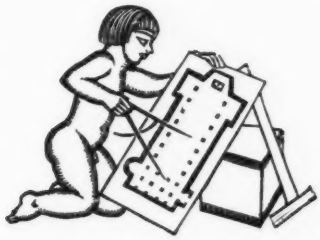
THE ARCHITECTS' JOURNAL



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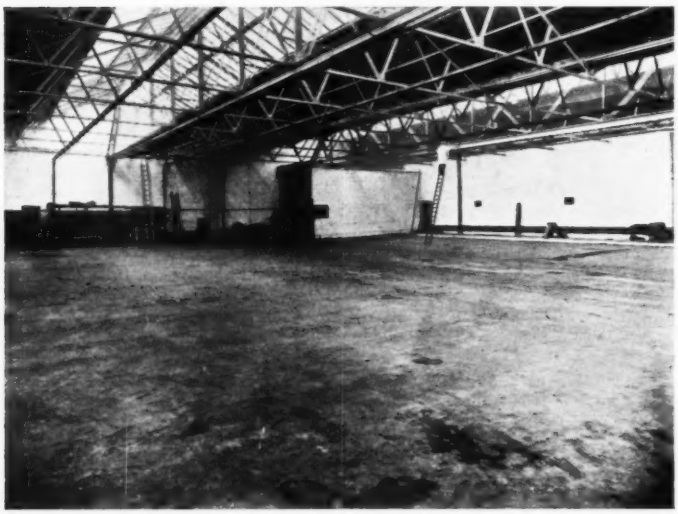
CHRISTIAN BARMAN, *Editor*

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

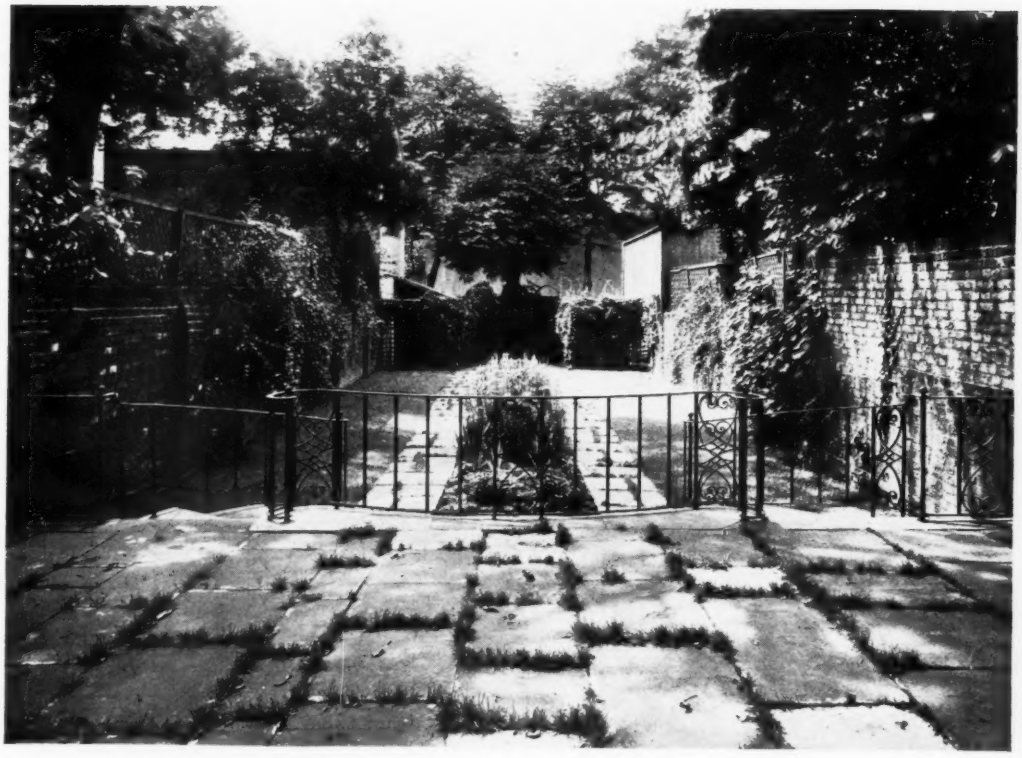
WEDNESDAY, AUGUST 10, 1927. NUMBER 1699: VOLUME 66

PRINCIPAL CONTENTS

Two individuals might hold varying opinions as to what class of normal use of a garage floor surface might subject it to the most severe wear and tear. Most people will agree that a garage into and out of which heavy steel-tyred horse wagons, petrol lorries, and steam wagons move daily—generally with the burden of a five-ton load—must possess the best floor available if freedom from wear is to result. Just that sort of service is seen year in and year out by the "Colemanoid" concrete floors in the garage in Queen Elizabeth Street, London, S.E., owned by Messrs. Courage, the brewers. The floors have been carrying heavy traffic for six and one-half years. They were planned by Mr. F. M. Kirby, Messrs. Courage's architect, to be as good as floors could be made. Not only are their surfaces as perfect today as on the day they were finished, but the "Colemanoid" added to the gauging water when the concrete mortar was mixed made the floor toppings impervious to the penetration of oil and grease. The two accompanying illustrations are from photographs of sections of the main floor, which measures nearly 1,000 yards super. Write to me at Regent House, Regent Street, London, W.1, for "Dustless Floor Specifications."



Frederic Coleman



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

GARDEN RAILING AT 52 CAMPDEN HILL SQUARE, W.8

BY HENRY M. FLETCHER

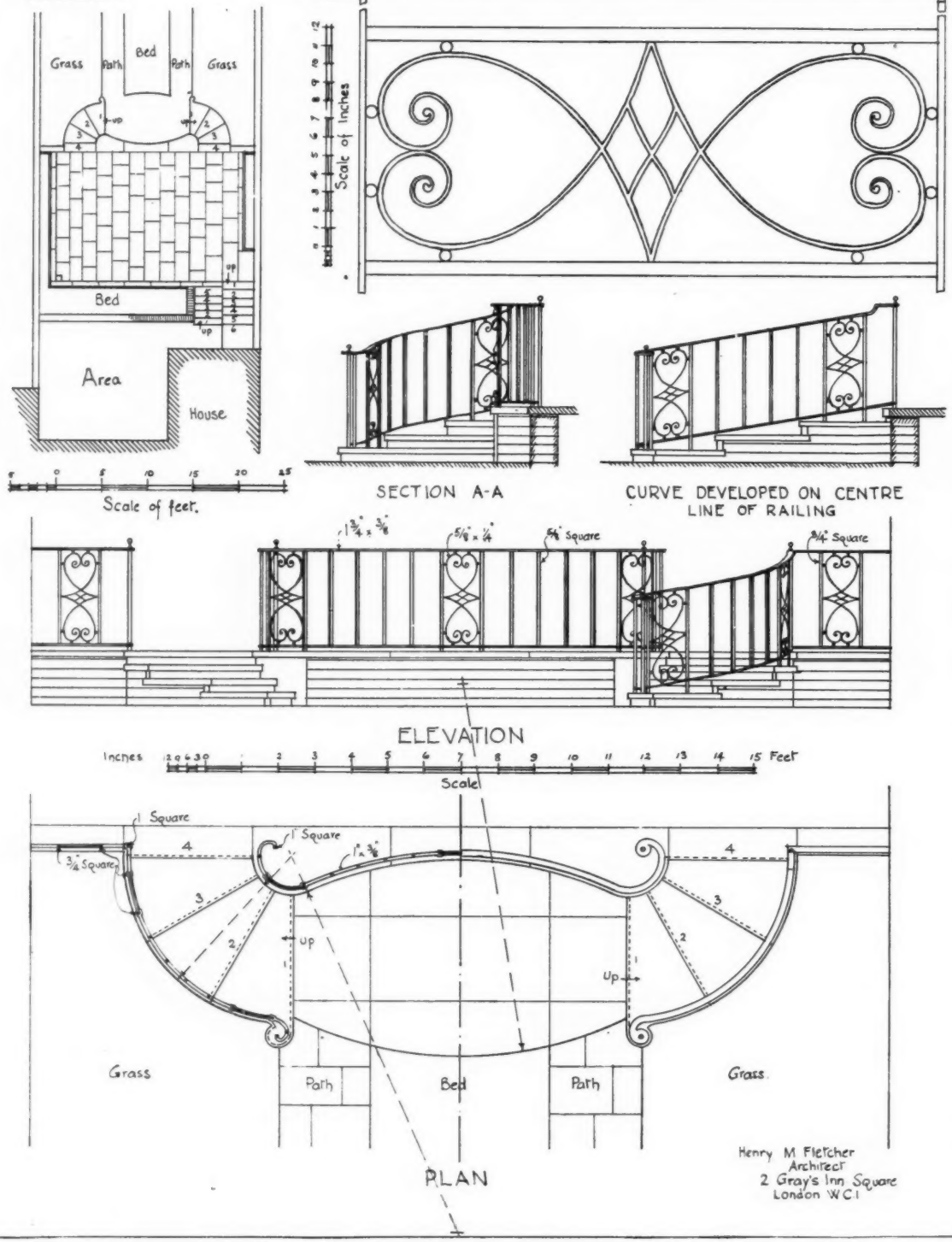
THE WEEK'S DETAIL

[BY HENRY M. FLETCHER]

The railing serves to mark a change of level in a narrow London garden. As the drop is only one of eighteen inches it was decided that the balustrade could safely be made very light and graceful, to preserve the character of the other ironwork in the neighbourhood, and the balusters were accordingly spaced at nine-inch centres. The paving itself is of York stone, but the steps and the sill under the balustrade are of Portland. The panels were suggested by, though not copied from, some genuine old work on Campden Hill.

52 CAMPDEN HILL SQUARE – W·8·

GARDEN STEPS & RAILING



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

THE ARCHITECTS' JOURNAL

Wednesday, August 10, 1927

NOISE AND FATIGUE

Professor J. Spooner is a leading authority upon health problems involved in noise and consequent fatigue. Writing in *The Nation's Health*, in 1922, he drew attention to a scheme for setting aside the first Monday in December as " Fatigue Elimination Day," when public attention would be concentrated on the urgency of eliminating preventable noise. At least three-quarters of the noise that makes portions of our modern towns virtually uninhabitable is preventable, and " if preventable," as King Edward once said in another connection, " why not prevented ? " Professor Spooner has now submitted a report, on the movement for the reduction or prevention of harmful noise, to the International Fatigue Committee of the American Society of Industrial Engineers. The report is divided into fifteen main points and recommendations.

No one will dispute the fatiguing effects of noises in our streets—the mechanical uproar of the tramways, the variety of raucous motor hooters, shrill railway whistles, and the dreadful noise of the pneumatic drill. When we consider the effects of these combined noises upon healthy individuals, what must be the toll of health in the adjacent hospitals, nursing homes, and schools ? Neither is the evil confined to its direct effect upon the nerves. Even in Government offices in so comparatively quiet a street as Whitehall it is impossible to hold a conference in the front rooms with the windows open, and the health of the inmates suffers accordingly. Among the distresses to which we are submitted there are a few that, for some obscure reason, are always treated humorously; among the principal of these are sea-sickness, love-sickness, and cats that howl at night. The last of these constitute a veritable plague, and the loss of sleep and efficiency due to our criminal folly and negligence is extremely serious. It is no laughing matter, and it could easily be remedied if our citizens had any sense of neighbourliness and responsibility.

Professor Spooner points out that the most serious aspect of the noise problem has received no attention. Few seem to realize the enormous loss due to impairment of working capacity and efficiency in city and industrial life; more particularly as to men of affairs, principals and executives whose capacity for clear thinking, hard work, and energetic action is perceptibly weakened by the incessant if unconscious strain upon their nervous system caused by the din of typewriters and adding machines, and by the babel of noise penetrating into their offices fro outside. The loss due to ill-health and premature death cannot be estimated, but the economic loss " could conceivably be a great deal over £1,000,000 a week in America alone." Yet nothing worth mentioning appears to have been done in any country by the authorities responsible for the nation's health to protect the nervous health of the people in this respect.

Noise means lack of efficiency, not only in its secondary effects, which we have hitherto been considering, but also in the running of machinery, where it entails abnormal wear and waste of power; also, in reducing the productive powers of the workers it may be a cause of accidents. The professor claims, with good reason, that noise is one of the heaviest overhead costs in modern business. It is a charge, like air pollution, that brings in no return, but only evil. He suggests that designers and constructors of machinery should pay more attention to the balancing of rotating parts, particularly those running at high speed, and to the mounting of machinery on anti-vibration supports. The effect of this precaution can be seen on a small scale in any office where a typewriter stands on a wooden floor. When the legs of the table rest direct upon the floor an unpleasant vibration is set up which has its effect even if it is not directly observed, and can be cured by mounting the table legs on rubber pads.

It is difficult to see how we can forbid the use of pneumatic rock drills (as is suggested) in the streets of towns, and particularly in the vicinity of hospitals, nursing homes, and schools. The breaking-up of concrete foundations must, in the present state of our knowledge, always be a noisy process; the rock drill may be more noisy than the old hand method, but at least it gets the job over quicker and is so much cheaper that breaking by hand is ruled out. The best that we can do is to tear up roads as seldom as possible and to make services accessible without necessitating the opening up of the road. In the meanwhile we must hope that science will devise some means of silencing these pneumatic drills. Certainly no excuse of urgency or necessity should allow of their use in towns at night. We have recently had experience of this in London. We entirely endorse Professor Spooner's contention that there is a wide field unexplored awaiting organized activities of engineers and medical men, and, with him, we hope that before long the public may wake up to the folly of neglecting the problem of noise.

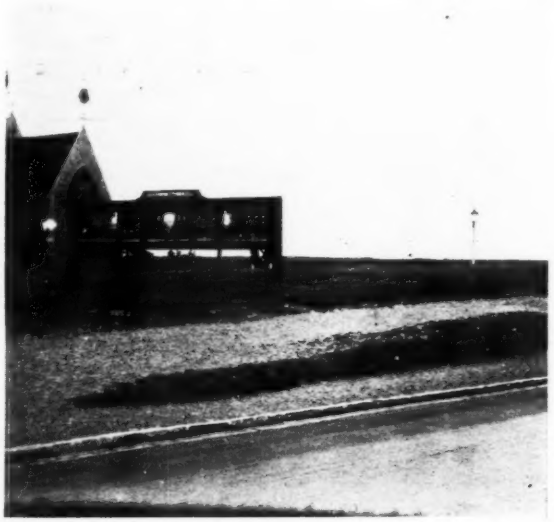
NEWS AND TOPICS

BRITISH WATER-WAYS—THE SOCIETY OF ARTS EXHIBITION OF DESIGNS—THE OFFICE OF WORKS ARTS GROUP

WHAT a callous stepmother to the amenities is the L.C.C. Dear deluded old lady, how she idolizes and spoils the impudent brat Utility, while hardly disguising her contempt for mere Beauty! She has just laid her clumsy and impious hand on modest Blackheath. Because Blackheath gives itself no pretentious airs as a professional "beauty spot," Madam L.C.C., quite incompetent to discern beauty that is not distinctly labelled and popularly acclaimed, ignorantly assumes that loveliness of a less obvious kind can be flouted with impunity. I can imagine the slightly impecunious and rather rattled old dame sobbing out the unbeautiful word "utilize" as she sets her baleful eyes on Blackheath. Surely, she wept like anything to see such quantities of—grass. What an outrage, that acres and acres of barren grass-land should continue to run to waste! For dear Economy's sake, let us utilize them by putting up a few remunerative advertisement hoardings! Plenty of enterprising traders will be eager to pay handsomely for the privilege of broadcasting their wares over so expansive a field. This "paying proposition" must have been adopted almost unanimously by a Council that, notoriously unable to see an inch beyond its nose, counts confidently on the public vision being equally feeble. So the purblind old dame ordains the erection, on the southern extremity of spacious Blackheath, of the advertisement hoarding that now blots out a charming vista of the Village as one approaches it from the Heath, and obliterates the delightful view of the Heath that was formerly seen from the Village, thus killing two fair birds with one fell stone; a characteristic stroke of deadly economy. Against the hoarding itself (which, by the way, is about 20 ft. wide by 8 ft. tall) I have but little to say, except this—that it is a vulgar intrusion on the landscape, that, having nothing in common with the Gothicity of the church of All Saints' on the one side, or with the crow-stepped-gabled houses on the other, it ought to be deported miles away from both.

* * *

British water-ways of divers kinds are receiving more adequate attention. I refer especially to our spas and hydros, but am not forgetting that motor-boats may conceivably render more prosperous than ever our forlorn canals. I understand that great developments of water-carriage are in prospect, but information on this head is at present rather dubious and indefinite. We must wait and see. In the meanwhile, the British Spas Federation is clearing its decks for determined action. It is organizing a committee of experts who are to make research into the properties of the mineral waters of Britain. Doctors are to be kept informed of the results. This movement is apparently one of the sequelæ of the Great War, which created the newly poor in numbers out of all proportion inferior to those of the newly rich. There is a felt necessity for spending in our own country as much as possible of such money as it was a pre-war habit to spend abroad. Much of it went to continental spas. Now that stringent economy is imperative, while the development of the national resources is a duty of patriotism, Britons are inquiring more strictly whether the native medicinal springs are at all inferior to those found on the Continent. I take it to be an indisputable fact that Britons are much too modest to declare boldly—what I believe to be the truth—that Bath and Matlock, Leamington and Harrogate, Cheltenham and Tunbridge Wells, are better than most of the vaunted cures of the Continent. Therefore, I welcome



The right thing in the wrong place.

this new movement to boost British spas. It implies—does it not?—that more money will be kept in our own country for application to the sweet uses of building; and the venerable shades of the Woods of Bath, and of Decimus Burton (sometime of Tunbridge Wells), would assure us, if they had the opportunity, that the pump-room is but the nucleus of a vast array of miscellaneous buildings that soon spring up in the regions round about a sufficiently advertised spa.

* * *

Before the Bank Holiday I attended the Conference held at the Royal Institute of British Architects of building teachers who were assembled in London for a course of instruction. At this meeting an illuminating lecture was given by Dr. R. E. Stradling, Director of Building Research. The teachers stated afterwards that they had learnt for the first time some of the new developments of the building industry. Considerable emphasis was laid on the question of accidents, and how far these were due to the negligence of architects, the ignorance of building supervisors, or to the carelessness of the operatives. Dr. Stradling confessed that he had a "morbid outlook" owing to the fact that the Building Research Station was rather like a hospital to which reports were sent of all notifiable accidents to buildings. It was certainly surprising to hear that there are nearly double the number of non-fatal accidents to building operatives than there are to railway men. Dr. Stradling also gave a somewhat illuminating account of his experience with clinker. He said that he knew of two housing schemes where the tenants had to be taken out of the houses as they were seriously imperilled. He stated that there was no traditional knowledge behind clinker and its uses. Several architects who spoke, including Mr. Martin Briggs, owned that they were seriously alarmed by the risks of using clinker without greater knowledge of its shortcomings, for by the law they might easily become liable for negligence.

At the same meeting Mr. Briggs, an inspector of technical classes for the Board of Education, made an interesting statement of his views as to the position of the architect in the Middle Ages. He said that the medieval architect was, above all things, a trained mason. He understood stonework, and he also probably had a certain knowledge of geometry. It was doubtful, however, whether he had any scientific knowledge of structures. Sir Christopher Wren, in his opinion, succeeded not entirely because of his knowledge of science, but because he was an artist who had a good foundation of science. Mr. Martin Briggs's views are, of course, of special interest, for he has given so much attention, since he was at the University of Leeds nearly thirty years ago, to the study of architecture in its earlier stages.

* * *

I am almost tempted to suggest that an appropriate label for the Society of Arts Exhibition of Designs at the Imperial Institute would be "All hope abandon ye who enter here." Because, for all the huge and gallant efforts of the Society, including its own and many other considerable money prizes, the return is slight. Can we hope for anything from the Schools of Art of the country? It does not appear from this exhibition that we can. The reports of the judges of these hundreds of designs give little hope. Much of the work is said to be inferior to that of last year, which is, indeed, admitting a great deal. Although the competition is open, the show has all the air of a provincial art school annual exhibition. In flat decoration, like wallpapers and printed and woven textiles, there is a lamentable falling off from the old William Morris standard and the works that came soon after. The new style is based on the worst examples of the worst period of last century. The posters are atrocious. In pottery and glass there is no gleam of grace; in furniture no glimmering of originality. It is a weary, dreary task to try to find, with all the goodwill in the world, in this exhibition some new and real feeling for decoration. There is incentive enough in this effort of the Society of Arts, but from what is to be seen here the country has not risen to the occasion. There must surely be better talent about: there is, for I have seen it displayed.

* * *

Fortunately it is in the section of architectural decoration that some little common sense and some little taste is exhibited. The best show of all is that of the designs for wrought-iron gates. Here there is a sign of the sense of material, and the quality of the draughtsmanship with which it is projected is more than respectable. There is, indeed, one drawing of a large detail that is excellent. The judges in this section, too, describe the work as of a high standard. Generally speaking, the judges speak well, either in praise or blame; but I noticed that in the really bad sections they do not speak at all. Indeed, there is no word for it in most cases. They are right in regarding the design for an entrance hall to a large block of flats as below the standard expected; it is below the lowest standard of cheap commercial decoration. In the section of topographical drawing—rather awkwardly named—there is a bit more talent discernible, and the best example comes from the Architectural Association School, which is satisfactory in itself and proves abundantly the value of specialization. The failure of this exhibition is due, in the first place, to this want of specializing by students who do not understand the subject they are working for or the materials they should be working in, under the mistaken guidance of teachers whose only knowledge is obtained in schools and from books, instead of from factories. So bad is this feature here that the judges find it necessary to deprecate the copying of photographs by would-be competitors in the section of topographical drawing! It applies less, however, to a specialized craft like architecture, in which there must be knowledge and accomplishment, than to miscellaneous attempts at cups and saucers, plates and dishes, and fabrics for the clothing of little girls.

* * *

I imagine there is no hobby so profitable as that which is connected with a man's work in life. Certainly there could be no more pleasant a one than that exhibited at the present show of Spanish sketches at the Office of Works Arts Group at 1 Little George Street, Westminster. From the prospectus of the group it may be seen that its aim is to associate the possessors of a taste in the practice of the graphic arts. The present exhibition by two of the members indicates their facility in the rendering of architectural subjects. There are twenty-six pleasant small drawings in black and white by P. M. Stratton, and in watercolour by H. T. Rees, and they show a capacity which is neither that of the amateur nor professional. They are practical drawings, in the case of P. M. Stratton, in charcoal and pencil, and a broad use of a heavy pen seen to advantage in four drawings at Ronda. The Square at Algeciras and the Giralda at Seville are in a daintier, but not less effective style of pen handling. The watercolours of H. T. Rees are not ambitious, but just quiet, honest work done for the pure love of an architectural scene. A tour which included so many delightful places must have given great satisfaction to this pair of seekers after the architectural picturesque.

* * *

Instructive anecdote from the *Engineering News-Record*: The twin cities of Omaha and Council Bluffs felt need for a new bridge over the Missouri River, and desired to procure a suitable design. The Kiwanis clubs of the two cities threw themselves into the breach and instituted a competition for designs for the bridge. It was to be a memorial bridge, and particularly handsome. The ordinary procedure of inviting bridge engineers to submit designs did not seem just the thing; instead, the two clubs enlisted the school children of Nebraska and Iowa in a bridge-design contest. To stimulate interest they set up a number of prizes, one for the best design sent in each week and a grand prize for the best of them all. Fifty dollars in cash money was to be the grand prize. "The bridge-drawing contest continued for more than twelve weeks," proudly records the Omaha *World-Herald*. Naturally enough, "hundreds of remarkable designs" were submitted during this period, according to President Patrick of the Omaha Kiwanis Club. The final decision gave the grand prize to a fourteen-year-old boy of Kearney, Neb., for a sketch of a five-arch structure duly equipped with piers, roadway, lamp-posts, and space for memorial groups and tablets.

ASTRAGAL

HOUSING IN VIENNA

[BY JOHN GLOAG]

If you approach Vienna by aeroplane from the direction of Prague you gain a most informing glimpse of the city as the machine crosses and re-crosses the Danube on its way to the aerodrome. If your attention is not claimed exclusively by the towers and palaces of the city you may have time to wonder as the machine flies above the Nordbahn-Brücke why there are so very few new buildings to be seen. You have passed over, at the most, three or four groups of red-roofed cottages that have an air of newness about them; but the rest of the city and its suburbs, so far as you have seen, only possesses buildings that have been toned by time.

But should you be moved to explore the outer suburbs (towards Schönbrunn, for instance), you will occasionally see huge blocks of dwellings with six or seven stories, in brick and concrete, all having a rather harsh angularity of appearance, a stern simplicity that seems hopelessly out of place even in the outskirts of a city that is composed largely of gracious baroque buildings. These new blocks of flats, designed for what are called "workers," might be barracks for robots. They lack the fanciful touches that redeem modern German buildings from harshness, and they are almost grimly utilitarian. "Fitness for purpose" has been given a mechanical emphasis which has produced clean-looking, efficient, but unbeautiful architecture. These are the first impressions which one has on seeing most of the new Viennese suburban buildings; and one is loath to modify such first thoughts with more favourable qualifications. Indeed, a more searching inspection of these blocks of dwellings induces doubts as to their efficiency as buildings for human habitation. The windows are ungenerously small; the rooms are rather cramped in size; invasion of privacy seems inevitable when so many people are associated in one building without sufficient safeguards for their individual seclusion and immunity from the activities of their neighbours. The walls that separate flat from flat are not soundproof; and it is doubtful whether the musical disposition of all classes in Vienna can be allowed that freedom of expression which would seem essential to happiness.

The municipal authorities in Vienna have certainly turned their attention to their housing problem with a great deal of earnest energy. Their political ideas have made them set about the solution of this particular problem in an original, and not altogether commendable way. Socialism is in the air in Vienna. The city is still suffering from the effect of a great reaction after centuries of repressive autocracy. This reaction has taken the form of what

View of a courtyard.

Above, view in Neuwallgasse, towards the Platz. Below, portion of Kreuzgasse.

D

is sometimes called by unconscious humorists, " practical Socialism." Exactly how practical it has been may be judged from this Viennese experiment of destroying one class of property in order to solve its housing problem. Owners of house property in Vienna have been ruined by socialistic policy. Millions of pounds' worth of property has been rendered valueless so far as its owners are concerned. It is impossible to dispose of house property because, unless you are going to occupy it yourself, it is no longer of any value as an investment. Rents have been restricted until they are merely a matter of form whereby the owner of a house may retain his title and, incidentally, his responsibility for repairs. A moderately sized house or flat containing eight or nine rooms may be rented in Vienna today for a few schillings a year, a sum which may be just under, or just over an English pound. Taxes are adjusted by the municipality to bring the expenses of living in any house up to what would be a fair rent, so that a family living in a house and paying its unfortunate owner, say, £1 a year for the privilege of occupying his property, will pay to the city fathers of Vienna £50 or £60 annually in taxes, which money is used by those authorities for building the great blocks of flats for the " workers " which have already been described.

It is an ingenious system whereby the property-owning class is expropriated for the benefit of the proletariat. How the congested intelligence of Karl Marx would have been warmed to enthusiasm over this situation, not only because wealth has been readjusted (and everybody rendered poorer, for even the "workers" are experiencing hard times and widespread unemployment), but because socialism in Vienna has achieved its great ideal of smashing private enterprise in one trade at least, and destroying thrift. The building trade in Vienna has been taken over almost entirely by the municipality. What Sir Ernest Benn has called the " dead hand of the State " lies heavily on the city. The only building that is being done at all is in connection with the blocks of flats, which are being erected at the expense of private property. No private individuals can afford to build. There is, indeed, no inducement for them to build, for house property is no longer an investment. The building trade of Vienna seems doomed to develop into a branch of the civil service.

The discouragement of thrift is, perhaps, the most serious outcome of this experiment in government. People will no longer save when investments are closed to them. Hundreds of people lost their savings entirely in the periods of currency inflation, and no one feels inclined to keep money which even today offers no final guarantee against some sudden destruction of value. Vienna and its suburbs and the surrounding country cannot hope under a socialistic regime to have any great architecture. No large houses will be built ; " the dead hand of the State " is raised against independent expression in building; and vitality is ebbing from architectural inspiration. Vienna is enduring a nightmare of poverty, and it will be a great European tragedy if this city, with its wonderful architectural past, should be doomed to a future of æsthetic poverty.

Above, façade of court. Below, corner of Passetti Strasse and Kaiserwasserstrasse.

MR. T. H. LYON

[BY HAROLD TOMLINSON]

THOMAS HENRY LYON is an architect whose work shows great originality in the employment of traditional forms. As director of design at Cambridge University School of Architecture for many years, he has happily infused his pupils with an enthusiasm for architecture without attempting to bias their judgment towards his own stylistic preferences. His sympathetic help gives to students that valuable curiosity which stimulates them to find things out for themselves, and it is no doubt largely due to him that so many young Cambridge architects have quickly succeeded in independent practice after the brief training which the school provides.

All his buildings have this in common—that they are traditional in style; but on the traditional foundation is imposed an originality so untrammelled that his work does not always find favour with the fastidiously correct, in detail. The window which he inserted in Wilkins' building at King's College is a case in point. Mr. Lyon has never been an admirer of Wilkins' Gothic; but the gesture of negation which the new window expresses is as naughty as it is amusing.

Some years ago, when Corpus Christi College decided to expand, Mr. Lyon was commissioned to add another story to Wilkins' block there. The rooms were housed in a mansard roof, and though this excited some adverse criticism, there is no doubt that it was the best possible solution. To have imposed further verticality on the already too wiry revival Gothic was unthinkable, and the new roof is now unnoticed behind the castellated parapet. When Mr. Lyon built the baths, and inserted dormers in the "old" court at the same college, he did not in any way mar the charm of one of the most pleasant fragments of medieval Cambridge, and, indeed, his just horror for too much vegetation had far-reaching consequences. The ivy here was exerting almost completely anæsthesia on the architecture, and when it had been removed the improvement was so great that other colleges followed the example. The publicity and illustration in the Press of the rediscovered architectural charms, resulted in a widespread massacre of ivy which has not always been happy in its disclosures!

The hostel for Peterhouse, Mr. Lyon's latest work, shows better than any other building his courage in facing an unusually difficult problem. Near by is the master's lodge,

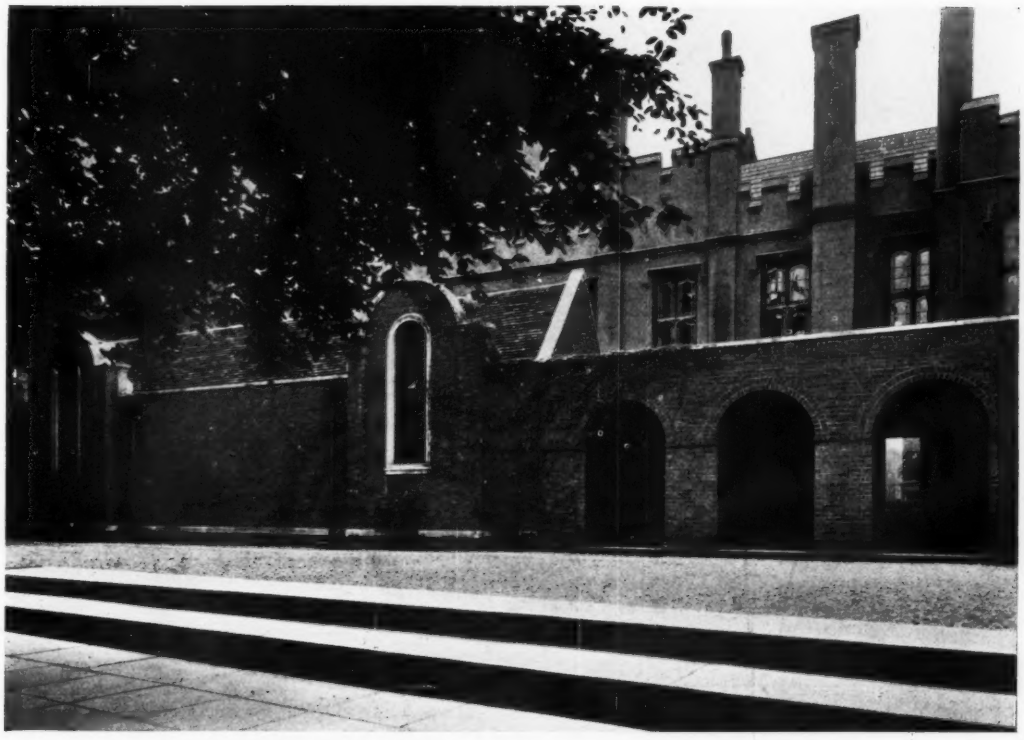
Sidney Sussex College, Cambridge. Entrance to new building. By T. H. Lyon.

Sidney Sussex College, Cambridge. New building. By T. H. Lyon. Sitting-room in fellows' set.

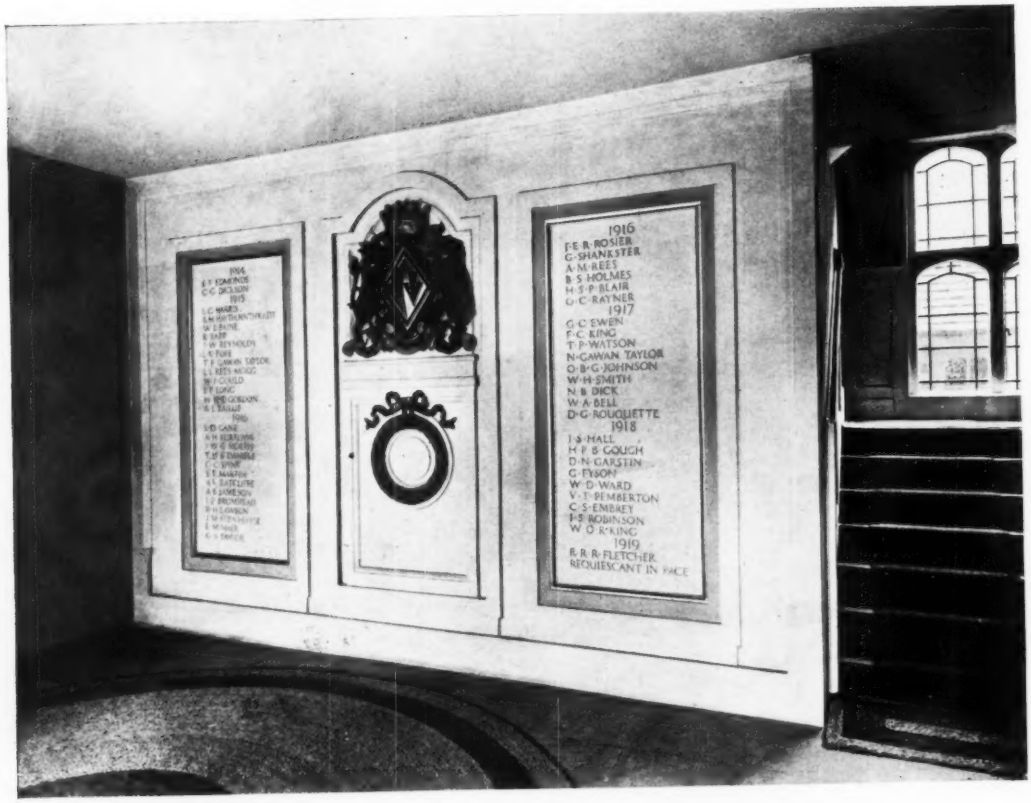
an impeccable eighteenth-century brick house. Opposite is Peterhouse Chapel, built by Wren's uncle when Wren was an infant, and mingling quaintly in its street façade the last manifestations of expiring Gothic with the almost Baroque virility of the new style. The architect might have played for safety by producing one more of those sad buildings, in a deflated Georgian manner, which are so common in modern Cambridge; but he chose to produce a work which should pay no more compliment than neighbourly courtesy demanded. The result is completely satisfactory. The photographs were taken before the work was quite complete, and the lay-out in front cannot be shown. This open space might well be copied in future work, for most architecture in Cambridge is visible only with aching neck, or sectionally through railings. How much finer will King's Chapel and the Senate House appear when King's College redeems its promise and removes its railings! Here the open space obviates those claustrophobic associations which make æsthetic pleasure impossible, and the subtleties of the façade are gradually appreciated. It is no mean feat to have superimposed with success a fenestration of four units on a ground floor of three, while the punctuation of the gables provides something at once novel and satisfactory. The tiles come from older buildings which were pulled down to make way for the new one, and the circular ornaments on the second string course pleasantly echo the iron rings which were features of the cornices of the old houses, and may still be seen on the master's lodge. These rings are reminders of the days when in case of fire the thatch was pulled off the roof by means of hooked poles.

The college block for Sidney Sussex was completed three years ago, and loses much from the absence of the terrace which was to have flanked the garden front. On account of the sloping site, and owing to the small projection of the stone base, one gets an impression of inadequate plinth. A cure will no doubt be effected if, as one hopes, the terrace is completed in the future. The plan is an unusual one for a college for men, for, save for the modern women's colleges at Girton and Newnham, the corridor plan is little used in Cambridge. In older buildings the sets of rooms were grouped round staircases, and although a large building might appear uneconomically planned, owing to the large area devoted to stairs, yet the plan had much to commend it in the isolation of infectious illnesses, and it is to this that the complete absence of serious epidemics is attributed. The need for economy in post-war buildings has resulted in the adoption of the corridor, and it remains to be seen whether or not the gloomy forebodings of the more conservative dons will be realized. As will be seen from the plan, there are many points of difference between the rooms of the fellows and those of the undergraduates. The fellows' sets are finished in hard wood, and have fireplaces; but a saving of expense and labour has been effected in the undergraduates' rooms by the omission of fireplaces. The undergraduates have a kind of recess, resembling a fire opening, which houses a gas-ring, the rooms being central heated, and the chimney stacks are used for purposes of ventilation.

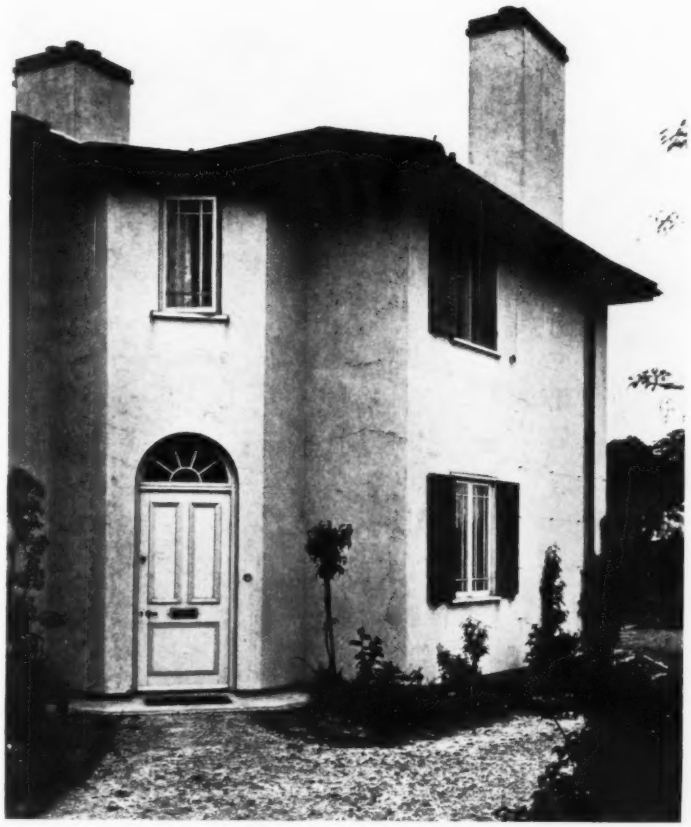
Near this block is a small bath-house designed by Mr. Lyon, and behind this the college chapel, which he completely remodelled, only portions of the old shell being used. The chapel, entered as it is by way of a court of repellent



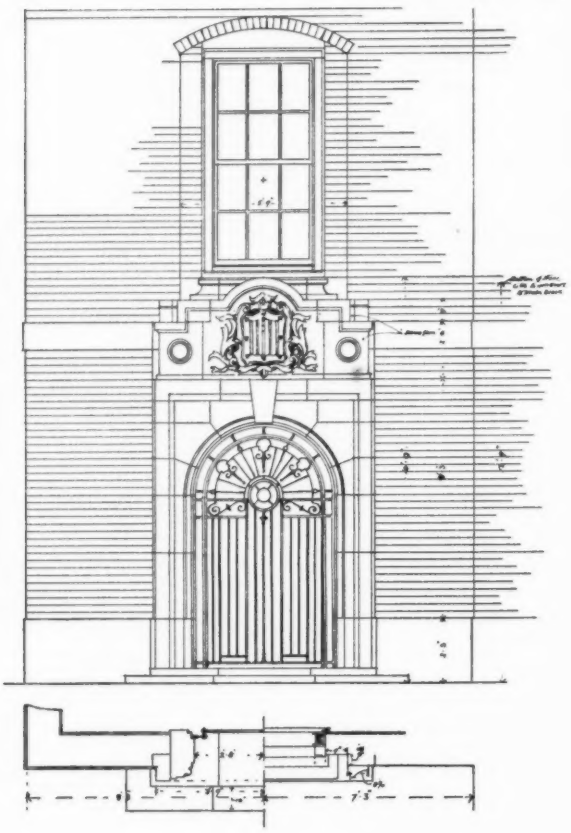
Sidney Sussex College, Cambridge. New building. By T. H. Lyon. Above, the baths flanking the new building. Below, the end elevation seen through the arcading to the baths.



Sidney Sussex College, Cambridge. Above, war memorial in ante chapel. By T. H. Lyon. Below, high altar of College Chapel, seen through the Lady Chapel arch.



No. 23 Storeys Way, Cambridge. By T. H. Lyon. Above, the garden front. Below, the entrance.

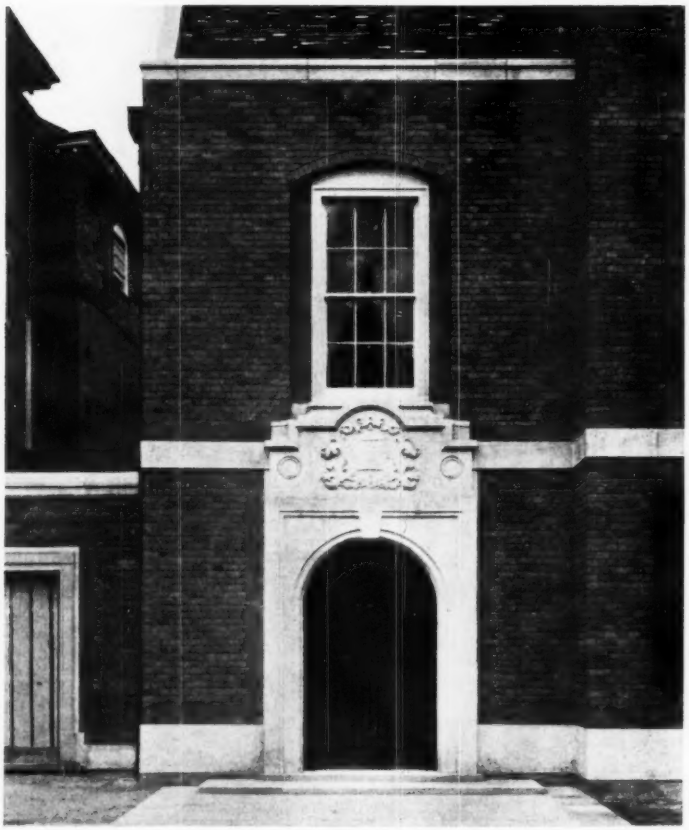


aspect, provides a surprise of startling contrast. The interior is panelled in oak, and the modelled, barrel-vaulted ceiling, coloured-marble floor and altar, together with the gilded and coloured heraldic devices, give a feeling of great richness.

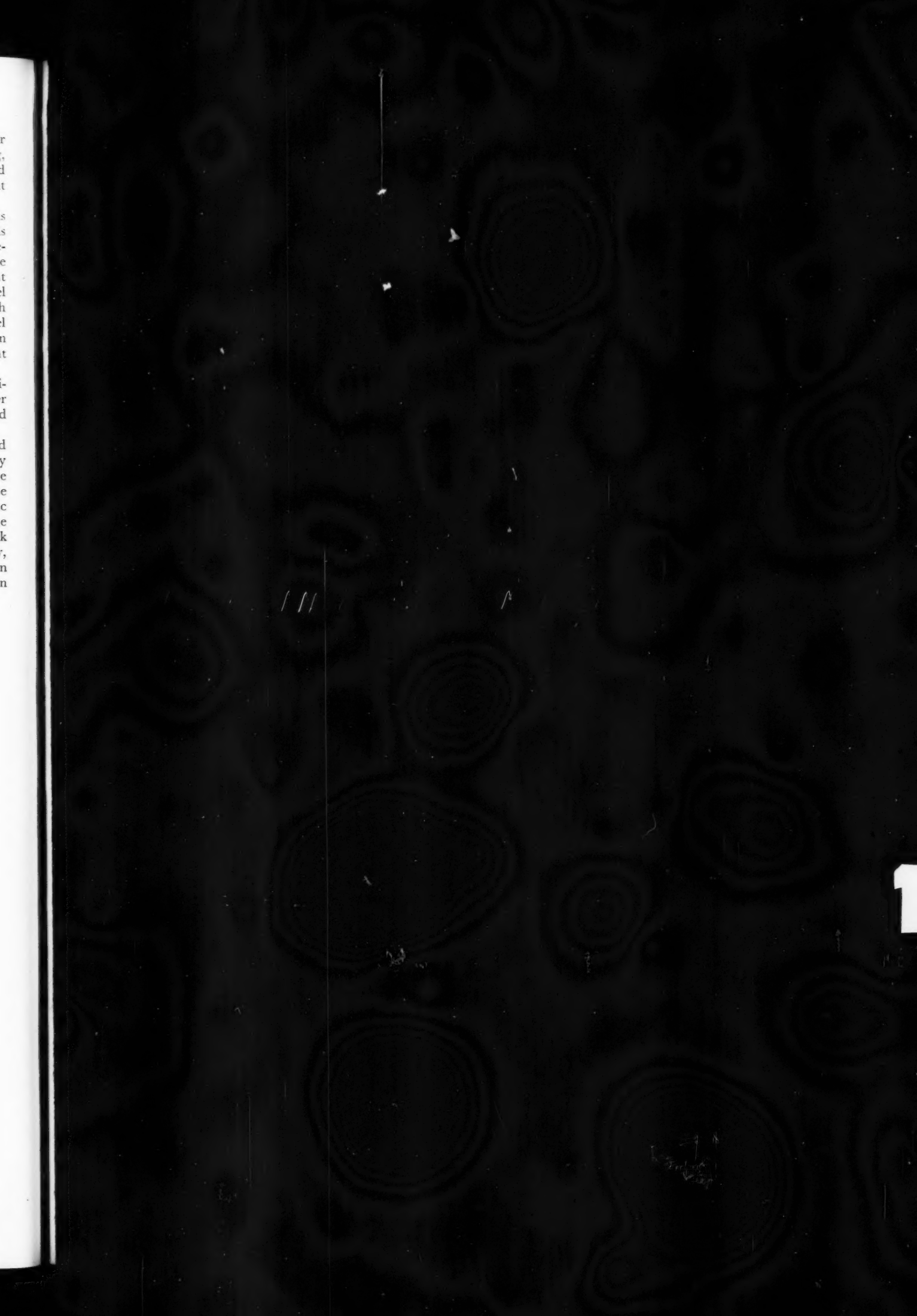
Against the east wall is a tall reredos, and so there is no room for a large east window; but a splendid effect is obtained from a round window inserted in the lunette-shaped wall above. Owing to the conformation of the existing roof the ceiling height had to be changed—but the spandrel formed by the abutment of the two barrel vaults is cleverly masked by two peacocks in relief, which fill the awkward space to perfection. In the ante-chapel is the memorial to members of the college who fell in the late war, and here, too, heraldry is used to great advantage.

Further ecclesiastical work in Cambridge by this architect is seen in King's College Chapel, where he did another war memorial, and in Trinity Chapel, where his skilled use of coloured marble is again seen.

It is unfortunate that his churches in England and abroad cannot be included here, but his large church at Wembley is not yet finished, and the fact that he was unwilling to see it illustrated in its incomplete state was responsible for the purely local nature of this article. The bulk of his domestic work lies in his native Devon, and so it, too, is outside the scope of the present description; but the nurses' block at Addenbrooke's Hospital, which is, unfortunately, completely hidden behind the bulk of the main building, and the small house show how happy he is in this sphere.



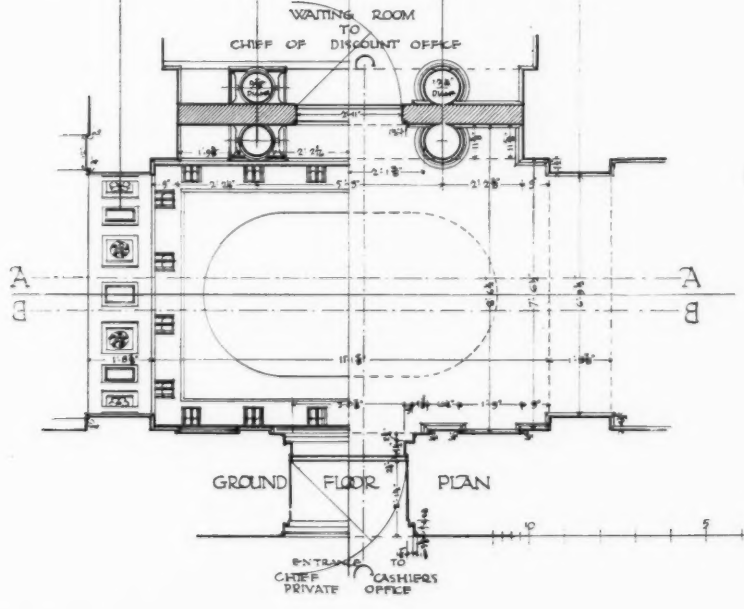
Peterhouse Hostel, Cambridge. By T. H. Lyon. The entrance.



THE BANK OF

SECTION A-A

SECTION C-C



GROUND FLOOR PLAN

SCALE OF FEET

HALF INCH SCALE PLANS AND

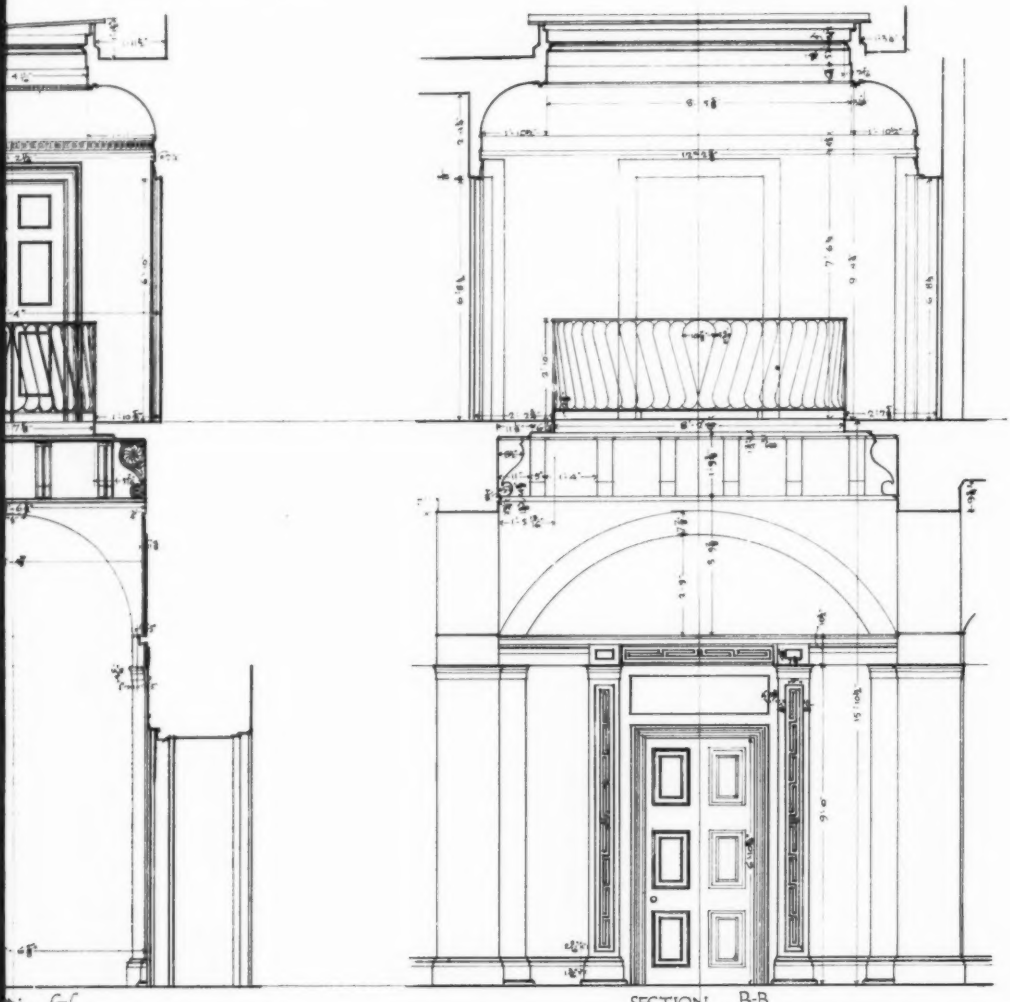
FEATURE IN MAIN

NOTE: HATCHED PORTION OF WALL HAS

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

OF ENGLAND

DRAWING No 72



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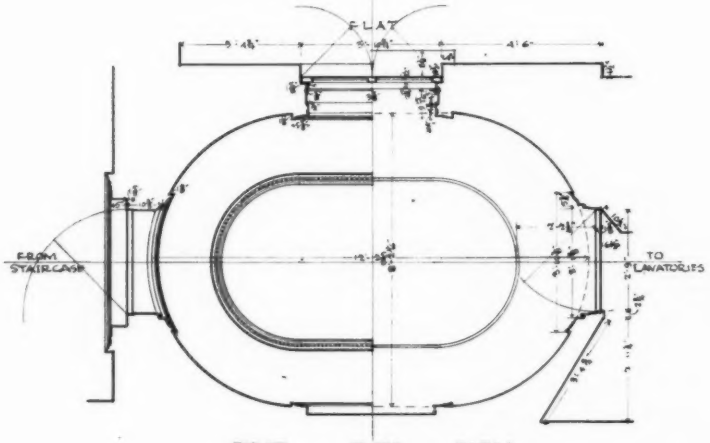


FIRST FLOOR PLAN

R.I.B.A.
E. W.C.1
D. ARCHER

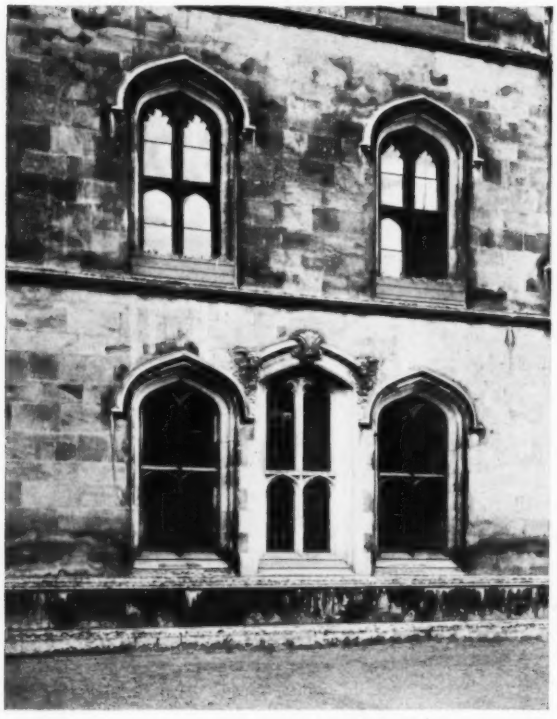
10

OF FEET

SOANE'S BANK OF ENGLAND. MEASURED DRAWINGS OF THE INTERIORS. (*ix*) FEATURE IN MAIN CORRIDOR. PLANS AND SECTIONS.

Peterhouse Hostel, Cambridge. By T. H. Lyon. Two views of the elevation to Trumpington Street.

Peterhouse Hostel, Cambridge. By T. H. Lyon. The back elevation.



Left, additional window to junior combination room, King's College. Right, Pembroke College war memorial in the cloisters. By T. H. Lyon.

New nurses' quarters, Addenbrooke's Hospital. By T. H. Lyon. Above, a general view. Below, the entrance doorway.

Above, restoration of Old Court, Corpus Christi College, showing new sundial and memorial to Marlowe and Fletcher. Below, Corpus Christi College, Cambridge. New buildings with baths under. By T. H. Lyon.

DESIGNING THE LAUNDRY

[BY C. F. TOWNSEND AND J. HERBERT PEARSON]

I: ROUTINE AND AMENITIES

VERY few people realize the magnitude and importance of the laundry industry of the present day. It is only some forty or fifty years since it emerged from the washerwoman stage, and now there are laundries fitted with costly machinery, dealing regularly with a turnover of £2,000 a week, with a capital cost for machinery and buildings of, perhaps, £50,000 or more. Furthermore, it is an industry which is extending fairly rapidly. Until comparatively recently the laundries only dealt with what is known as finished work, i.e. the soiled linen was washed and ironed by machinery and by hand to the highest pitch of excellence of which the staff was capable. This, as it involved much hand work, was comparatively costly, and only well-to-do people could afford it. Now laundries are endeavouring to cater for the needs of the greater part of the community that cannot afford this finished work, or only in the case of a few special articles; the remainder of the washing being done at home. The laundries are finding it to their advantage, whilst not abandoning fully finished work for those who desire it, and can afford to pay for it, to offer to the public different varieties of partly finished work at a lower price. This, as it necessitates the handling of a much greater bulk of linen, is causing the installation of very large machines, with the accompanying necessity for greatly extended floor space, and in many cases new buildings altogether; and these new services are extending very rapidly. Consequently there is now, and there is likely to be still more so in the near future, as soon as the troubled industrial situation has settled down, a period of marked activity in the building and extension of laundries.

As so many laundries have commenced in quite a small way, often in really unsuitable buildings, such as stables, or even private houses, that were never designed for factory purposes, and even laundries that were built some time ago *ad hoc* were very badly planned, or the original planning has become quite unsuitable for the accommodation of up-to-date machines, much and perhaps the more important part of the architect's work will be concerned with the re-planning of existing laundries, where extensions are contemplated, rather than with entirely new buildings. For this reason alone it is of the first importance that the architect should possess some knowledge of laundry operations, and of the reason for the position of the various machines and departments. Smoothness and economy in the working of the laundry depend to a very large extent upon good planning, and the proper "lay-out" of the departments and the machines. The linen, from the time it comes into the sorting-room to the time it goes out of the packing-room, should, if possible, never cross its own trail, and the position of the machines should be arranged not only to serve this end, but to avoid the use of countershafts, which mean multiplication of belts, increase of dust and dirt kept in motion, and loss of power. One of the great advantages of electric driving is that it eliminates most of the shafting, pulleys, and belts; but this will be referred to later.

To put it as simply as possible, the hampers and parcels of soiled linen are unloaded from the vans, which back up to the door of the sorting room. In the very latest laundries the bags used for auxiliary or partly finished services are unloaded on to a conveyor, which carries them up to the sorters. The hampers, parcels, and bags are emptied, checked with the customer's list, marked with the customer's number, where necessary, and then sorted to separate the different classes of articles from one another—sheets in one lot, table linen in another, and so on.

In the older laundries the articles are marked by a girl at a desk, who assists at the sorting, but in up-to-date laundries the marking is done by a machine, each marker having a little enclosure to herself called a booth, and the goods are brought to her by a "conveyor," upon which or another she throws the articles after they have been marked. The goods, in the old-fashioned style, are thrown into wooden bins, whence the washhouseman carries them in armfuls to the machines. In more modern systems they are thrown into basket trucks, which are wheeled to the machines, and in the very latest conveyors are beginning to be used. They will probably be universal in up-to-date laundries before very long. Consequently the architect, in designing or remodelling a laundry, must have the conveyor idea at the back of his mind.

It is necessary to provide ample space for the sorting room. Many laundries suffer severely in efficiency through the sorting room being cramped. The white goods, such as sheets, and shirts, and collars, and the woollens and coloureds and "finery" take separate courses, the former being washed in large rotary machines, the largest of which have a capacity of 500 to 600 shirts, and the other goods either by hand or in small special machines, frequently in a separate department, known as the flannel washhouse, although this is not essential. Launderers, however, usually prefer to have a small separate washhouse for dealing with certain women's garments, but again this is not essential. The last two are often combined. The flannels, finery, etc., go straight to the drying-room, or the presses, after having been washed, but the white goods, after being washed and "hydroed," i.e. having as much moisture as possible squeezed out of them by centrifugal action in a circular basket running at a very high speed, are separated into "flat work," i.e. sheets, pillow-cases, table linen, towels, kitchen cloths, etc., and shirts and collars and body linen.

The articles included in the first class, which make up the bulk of the work of the laundry, are dried and ironed on very large machines, in which the linen is passed under one or more rollers, steam-heated or not, revolving in steam-heated beds. These machines have now grown to a large size, and will be referred to later. When they leave these machines, known as calenders, the goods are dry, ironed, and finished, and go straight to the packing room, where they are joined by the woollens, coloured articles, finery, etc., and by the body linen, which has been pressed or hand-ironed. The goods belonging to the various customers are now reassembled and packed for dispatch. Here again it is essential that the van should be able to back up to the door of the packing-room, so that it can be readily loaded. The packing-room itself requires to have plenty of space and a good light. It usually has one or more tables in the middle with "racks," i.e. pigeon-holes round the walls, bearing the customers' numbers, into which the finished goods are sorted or "racked" as they come from the different departments.

It will be gathered from this that the ideal laundry should be a long building with the different departments in sequence, so that the soiled linen comes in at one end, passes straight through the building from one department to another, and emerges from the packing-room at the other end with direct access to the road. There are a few fortunate laundries actually arranged like this, but in most cases the shape of the area upon which the laundry is erected and the road access makes the ideal unattainable, and the architect has to so arrange the departments that the sequence is preserved as far as possible, although the goods are not able to travel in a straight line.

In the plan, which will appear in the next instalment, it will be observed that a space is reserved for a storeroom, which should not be omitted, next to the sorting room and adjacent to the washhouse, where most of the stores will be used. The office is placed next to the packing-room. This is the quietest part of the laundry and the most convenient in which to interview customers or callers. The manager's room adjoins, and the glass partition gives a complete view of the laundry, so that he can always see what is going on. The boiler and engine are placed in an annexe adjoining the washhouse and the drying room, and not far from the calenders and presses. The steam is required by the washers, drying room, presses, and calenders, so that the length of steam-pipe is reduced to the minimum, and with it the loss of heat by radiation. There is convenient access for the

vans to the sorting room, and for coal carts to the boiler-house, and there is plenty of room for the vans to turn.

It will, of course, be necessary to provide separate sanitary conveniences for both sexes of the workers, the women being in the great majority. Apart from the management, it may be taken roughly that the proportion between the two is somewhere about one man to every fifteen to twenty women. The forewomen and the packers sometimes have accommodation separate from the remainder of the women workers. This is true also of the messroom accommodation, and space for hanging up outdoor garments, and the lavatories, but only in very large laundries. In the most up-to-date laundries a good deal of attention has been paid to these details. Not only lavatory basins for washing the hands, but baths are provided. There is a rest-room for any girl who feels unwell, where she can, if necessary, receive medical attention, and the messing arrangements are somewhat elaborate, with kitchens attached, where the girls can either have their own food cooked, or dinners can be provided by the management at cost price. This can only be done on a fairly large scale. In any case a messroom is a necessity in a modern laundry, even if no meals are provided. There must be a gas stove with an attendant to cook the girls' food ready for the midday meal, also to prepare tea in the afternoon.

Instead of merely rows of hat-pegs on a wall, recent laundries provide lockers made of sheet metal, ventilated and heated by hot-water pipes, large enough to hold a girl's outdoor garments and other belongings; so that if she arrives wet in the morning her garments are dry by the time she needs to put them on again to go home. The comfort of the workers is now being much more studied than it was, as it is realized that all amenities of this kind help to keep the girls happy and contented and healthy, and more capable of doing their work properly.

For the same reason, anything that can be done in construction to brighten the interior of the laundry, and especially the messrooms, and make it more cheerful, forms a good investment, even regarded purely from a business point of view. It is well worth the while of the laundry proprietor to do whatever is possible in this direction, even if it cost a little more money.

[*To be continued*]

THE BUILDING INDUSTRY

[BY ALFRED C. BOSSOM]

Is it worth while metaphorically stepping from our environment and reviewing the efforts that create buildings, to ascertain if the processes in use and materials employed are giving the best results that are obtainable? Thinking particularly with reference to buildings designed and erected for commercial purposes, such as stores, offices, flats, hotels, housing schemes, etc., it is obviously desirable that all these be so handled that they give the utmost benefit to all interested parties. To the public, by better accommodation, with possibly lower rents; to the owners, by earning larger incomes; to the architects, by more opportunities to design fine buildings; to the builders, by the availability of more and satisfactory contracts; to the workers, by continuous occupation at higher salaries.

So much has been heard about academic economics in the building industry that perhaps it is natural a certain amount of boredom prevails regarding that subject, but all will agree that in the past other countries have been only too pleased to copy and adopt from England any of her successful methods that have redounded to their own advantage, and now that in certain countries improved methods and materials have been developed, there seems no logical reason why England in turn should not take advantage of such information. No one country has the monopoly of knowledge or common sense in the building world, and while not one iota of deterioration in beauty or artistic quality should be tolerated, there is no advantage to be gained by continuing to follow existing processes which have outlived their day of desirability.

A most superficial investigation of the present relationships of the trades under the direction of the general contractor clearly shows that a more independent alignment in certain branches would rapidly encourage more progressive methods. Take the average stone yard; if reduced to a more highly competitive basis, much of the old-time difficult handling of the stock and the avoidable hand work placed upon finished material would be brushed aside. A little such decentralization of unallied activities might encourage competition with much progress as to speed of work and reduction of cost of sub-contract trades thus affected. The master builder or general contractor abroad has advantageously turned largely into the agent of the owner, sub-letting the work and material of practically every trade without employing his own people except for the rough labour, such as rough carpentry, rough brickwork, etc., and by this procedure has created the strongest competition within each trade, raising the quality of the work, and actually raising the salaries of workers and yet reducing the ultimate cost. So much for the general organization of the contractors' section of the industry.

England's system of creating enduring buildings in the past may, perhaps, have somewhat befogged the issue, for enduring buildings are needed today as much as ever, but modern structures are so filled with mechanical devices for heating, lighting, ventilating, lifts, etc., each unit of which equipment is subject to the most violent wear and tear, that need of replacement is much greater than was formerly the case. This makes it essential that buildings be built, not so much like the old-time fortress, as like a take-to-piece house, which will enable repairs and replacements to be made without undue expense, delay or inconvenience.

England in general, and London in particular, seems due for an active era of building. The present time seems most propitious, therefore, for a thorough examination of existing building methods. The older-day office building no longer satisfies. The younger firms are demanding more up-to-date accommodation. The servant question has made the modern flat, whether we like it or not, the current mode of living. Speed of transportation has made visitors far more frequent to the different centres, thereby causing the modern hotel to become a necessity instead of a luxury. If commercial buildings can be made to pay good financial returns upon their investment, funds will naturally gravitate to them as safe propositions quite as readily as they now do into oil developments or rubber plantations, and such like.

To make buildings sound financial undertakings, after the architect has evolved the desirable plans, they must satisfy certain definite requirements. Speed of erection is essential, thus reducing the overhead investment and making the return develop all the sooner. The utmost accommodation must be available within the space enclosed, and the elimination of expense of upkeep and reduction of maintenance to the limit have become factors that must be respected with the utmost exactitude. These beneficial conditions may be brought about by the standardization, to a very large extent, of the non-artistic details. For instance, hand work upon steel girders, columns, beams, etc., should be reduced to the minimum, and the steel frame in itself should be made of appropriate safe strength, neither unduly heavy nor unduly light. A thorough review might reveal that walls properly insulated against heat and cold could be reduced very considerably in thickness, which also means correspondingly in weight, thus relieving the steel work of much dead load and enabling lesser steel to give equally good or even more satisfactory results than the heavier sections of steel of to-day. Shrouding the exterior of the building with the cobweb pole scaffold undoubtedly costs more, takes much time in erection and removal, and has a tendency to stain the building more than the modern hanging scaffold which may be adjusted with the slightest personal effort and reused a hundred times without trouble. Demolition by human hands, with the debris placed in baskets carried on human shoulders, as is so frequently seen in congested places, adds a cost which mechanical ingenuity has disposed of years ago in many countries.

Actual trade practices are the result of ages of experience, but

take the removable pin hinge or butt, for example. This enables a door to be hung or adjusted very quickly. This removable pin hinge is a thoroughly known quantity in England, and almost universally adopted elsewhere, but the English trade practice has not made it a current method of door-hanging.

With the high price of labour and the great demand for work, and that preferably at even a higher price than rules today, it does seem desirable that all concerned, from the owner down, make a concerted effort to cause the building industry to bring itself up-to-date, and to do this one of the first items of revision must be the general building laws. Due to the great strides made recently, the controlling statutes are capable of much advantageous reconsideration. Theories of ventilation, ideas on plumbing, questions of fire exits, staircases, insulation of electrical wiring, etc., could be looked upon through the eyes of experience gained elsewhere to the benefit of all concerned. All such revisions must of necessity be approached with hesitation, but it must never be forgotten that no one portion of any great industry can permanently be prosperous unless all participating in it join in benefiting from a generally improved condition.

The industry does not desire revision from outside agencies, nor would this be satisfactory even if possible. Modifications should come from those already following building as their life's work and possessing a closer sense of understanding of the problems involved. Therefore it does seem worth while that a review of existing conditions be made. Technical schools and colleges should not only know and teach the latest established procedures, but should also encourage technical investigation, such as the medical school or experimental chemical laboratory foster. This industry, that houses the nation both in its working and resting hours, must be approached with conservatism and modified only after mature consideration, but this should not prohibit the use of the beneficial experience which other countries have proven to be eminently desirable under similar circumstances.

CORRESPONDENCE

CHARING CROSS BRIDGE: AN INGENIOUS SCHEME

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—The accompanying photograph of a model I have made for a two-level bridge at Charing Cross may be of interest to your readers as illustrating an original form of construction, namely, the combination of granite and steel. The bridge is designed to cross the river in three equal spans.

My desire has been to construct a bridge of granite, so that the enormous resistance that material gives to crushing loads may be fully used, and also that the tensile members may be reduced to the minimum. Again, it is my aim to use structurally the essential horizontal traffic decks and, finally, in this way to design a structure which shall be a complete unit; that is to say, each part of the bridge, each arch, each deck, and each tension-rod would be dependent upon the others for strength so that no portion can be eliminated without the failure of the whole fabric.

The structural principle underlying the design is the use of a major and minor arch—the greater arch being formed of three practically straight members meeting at the points indicated by the lamp-posts, where the bulk of the weight is concentrated. From these points rods are dropped to take the weight of the minor arch, while the thrust of this arch is resisted horizontally by the line of the lower deck. This minor arch prevents the central horizontal portion of the main arch from "sagging." The intervening portions of the railway track are carried by tie rods from the minor arch and those of the road above by piers on the haunches of the major arch.

In the model I have arranged three planes of arches, but a greater number might be more convenient. The traffic decks between these would be formed of reinforced concrete. A structural weakness of the preliminary scheme, as shown, is that the central voussoirs of the minor arch are also used in the major arch and are therefore doubly stressed. This, however, can be put right by slightly flattening the minor arch and so increase the masonry at the central point. The opportunity could, at the same time, be taken of emphasizing the horizontal member of the major arch. It will be noted that all the steel members are designed to be of short length, so the movement due to changes in temperature should be reduced to a minimum.

J. E. M. MACGREGOR

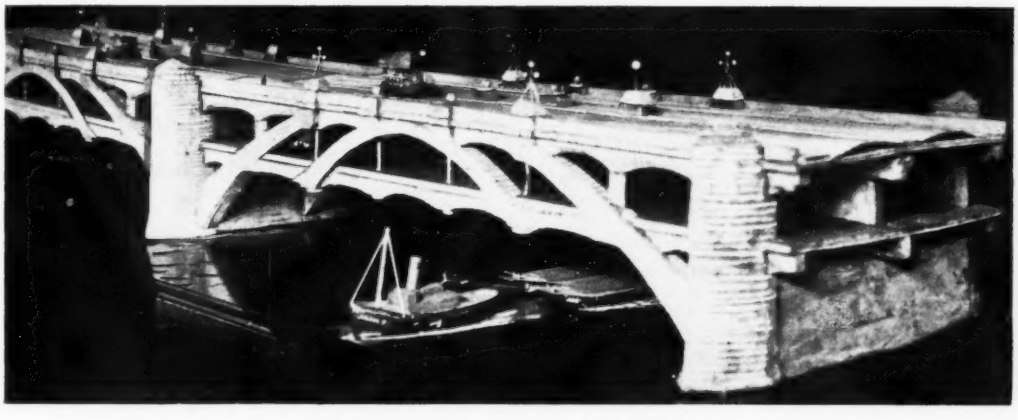
CHARTERHOUSE NEW CHAPEL

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Your always interesting contributor, Astragal, is mistaken with regard to my attitude towards Charterhouse New Chapel. In his paragraph referring to Mr. Ralph Knott's letter to the *Morning Post*, he said that "dissatisfaction" was expressed by the art critic of that paper, "who regretted the supersession of the old chapel." Will you allow me to say that I did nothing of the sort, as both you and Astragal can see by reading my article in the *Morning Post* for July 22, which begat Mr. Knott's letter.

Moreover, a year ago I said in the *Morning Post* that Charterhouse New Chapel was the "finest war memorial in England."

THE ART CRITIC OF THE *Morning Post*



Sketch model for a two-level granite bridge. By John E. M. MacGregor.

LIABILITY OF ARCHITECTS FOR NEGLIGENCE

[BY A BARRISTER-AT-LAW]

THE variation in the relationship of an architect to a building owner in a particular transaction has been once more clearly illustrated by the latest High Court case on the subject, in which judgment has just been delivered. In that case it is true that there were, at least, four issues raised, but the really important one was whether or not the architect concerned was a quasi-arbitrator, and therefore not liable to the local authority, the building owners, and plaintiffs in the case, or whether he was merely the plaintiffs' agent, and therefore liable.

The questions involved related to certain interim certificates given by the architect, the defendant in the action, by reason of which the plaintiffs alleged that they had been compelled to pay twice through the defendant's negligence in granting such interim certificates. It appeared that certain matters were allowed for in a certificate to the builders and paid by the plaintiffs, and that it was also certified by the architect that the Disposals Board was entitled to be paid for the same things, the Board being paid by the plaintiffs as well. The Ministry of Health, it was stated, had rights in connection with the building scheme in question by which they could compel war material which the Disposals Board had for sale to be used. In his defence the defendant contended that he was a quasi-arbitrator, and therefore not liable, and that the action was premature, because there was power to rectify under a final certificate, and such final certificate had not been issued. Moreover, the defendant urged that should that final certificate be issued it would be found that the builders had not been overpaid because of a certain sum due to them for paying increased wages. If the matter could not be rectified the defendant alleged that there had been a final certificate, and that this was contained in a document referred to as a summary by reason of which he could not be sued for negligence. Furthermore, if he had been negligent, so, too, in the defendant's contention, were the plaintiffs for not keeping and checking their accounts.

It is sufficient to say, as to the last three of these points, that the learned judge who tried the case ruled against the defendant upon all of them. His lordship held that there was no power to rectify, for several reasons, one of which was the delay. Since the mistake had been recognized the builder carrying on the business had become a bankrupt, and the partnership which had existed had been dissolved for a considerable period. Time had been allowed, apparently, to see whether the defendant could get the money from the builders, but, it seemed, without result. The learned judge did not think the builders were entitled to any sum for increased wages, which had, in fact, been disallowed by the Ministry of Health acting within their right of revising prices under the particular building scheme connected with the case. His lordship decided that the summary referred to was not a final certificate, and was not issued or intended as such, while he also held that the plaintiffs had not been negligent and had committed no breach of any duty which they owed to the defendant. This left the substantial question for consideration as to whether the architect was, at the material time, an arbitrator, or quasi-arbitrator, or merely an agent of the building owners, the plaintiffs. Upon this point there was a careful examination of the various legal authorities.

Some twenty-six years ago a case came before the Court of Appeal, when this subject led to a dissenting judgment. An architect was professionally employed by a building owner to supervise the erection of certain houses by a contractor. The building contract provided for payments on account of the price of the work during their progress and for payment of the balance after completion, upon the architect's certificates. It was provided that the certificate of the architect, showing the final balance due or payable to the contractor, should be conclusive evidence of the due completion and that the contractor was entitled to receive such final balance. The architect sued for work done by him as such for the defendant in the matter. The claim was admitted, but the defendant counterclaimed against the plaintiff for negligence alleged in relation to the measuring up of work done by the contractor and in permitting the latter to include in his accounts sums to which he was not entitled, and in certifying such accounts. Two of the Lords Justices in that case held that, in ascertaining the amount due to the contractor and in certifying for the same under the contract, the architect occupied the position of an arbitrator and, therefore, was not liable to an action by the building owner for negligence in exercising those functions. The conclusions arrived at by the two Lords Justices referred to were that if the architect had been merely in the position of an agent he would have been clearly liable for negligence; but that if the architect occupied, as in their opinion he had, the position of arbitrator, then, beyond all doubt, the building owner could not sue him for negligence, for in that case the architect would be only liable in an action on the ground of fraud or collusion.

It may be remarked here that neither in that case, nor in the present case just decided, was there any suggestion at all against the architect of anything in the nature of fraud or collusion. The Lord Justice who dissented in the former case felt that the balance of legal authority was in favour of different conclusions and considered that the other view put forward by him in his judgment was more in consonance with natural justice. His lordship added, in dissenting from the two other Lords Justices: "I think it would be lamentable that in cases of this kind an employer who pays an architect for supervising work, and who has sustained damage by his negligence in the performance of the duties for which he is paid, should have no remedy against him."

It will be understood, of course, that in all cases the contract itself must be looked at to see whether or not in giving an interim certificate the architect is acting as arbitrator or quasi-arbitrator. This was the view expressly stated in the present and latest case by the learned judge, who also relied upon the majority judgment of the Court of Appeal in the earlier case mentioned. His lordship referred to the building contract in the present case, and pointed out that the defendant was deciding no dispute and was settling no final balance, but was merely acting as agent for the plaintiffs. In giving the judgment already indicated in favour of the plaintiffs, and in coming to the conclusion that the defendant was not acting as arbitrator or as a quasi-arbitrator, the learned judge dealt at length with the law on the subject. His lordship added: "Although it is probably right to say that in giving a final certificate the architect acts in a quasi-judicial character, unless there is some express clause in the contract to contradict it, it cannot, I think, be asserted that in giving an interim certificate he is so acting. Personally, I should have thought that the inference was just the other way, namely, that in giving an interim certificate he is merely acting as agent for the building owner, unless there is something in the contract to contradict that relationship." In view of this latest judicial observation on the question it becomes highly desirable, in the interests of all parties, that the relevant clauses in building contracts should be made clear and unequivocal in their meaning in order to avoid the possibility of conflicting opinions arising between those concerned.

ANNOUNCEMENTS

Messrs. Jackson and Fox, architects, surveyors, and valuers, have moved their offices to 1 Harrison Road, Halifax. Telephone: Halifax 2486.

Mr. T. D. Atkinson and Mr. C. W. Long, of 4 Trumpington Street, Cambridge, have dissolved partnership. The practice will be continued by Mr. C. W. Long, under the title of "Atkinson and Long."

Messrs. R. H. Turner, B.ARCH., A.R.I.B.A., and F. S. Fry have commenced architectural practice at the National Provincial Bank Chambers, Weston-super-Mare, and will be pleased to receive trade catalogues.

LAW REPORTS

NUISANCE BY NOISE. INJUNCTION GRANTED

Clover Garage, Ltd. v. *Cadogan Motors, Ltd. Chancery Division. Before Mr. Justice Tomlin*

This action was brought by the plaintiffs, the lessees of No. 1 Clover Mews, Chelsea, against defendants, who occupy premises in Dilke Street, Chelsea, which adjoins the plaintiffs' premises, where they carry on the trade of coachbuilders, for an injunction to restrain defendants from causing an alleged nuisance by noise and vibration from a forge and an electric fan, etc.

Mr. Maugham, K.C., and Mr. Uthwatt appeared for the plaintiffs, and Mr. Farwell, K.C., and Mr. Swords for the defendants.

Mr. Mitchell was the tenant of Clover Garage, and his case was that his premises were situated in a residential district, and his complaint was in regard to noises resulting from the working of a smithy, which involved continuous banging during all hours of the day; from the hammering and filing going on continuously; and generally from the noises caused by the use of the premises as a factory.

The defendants denied that the district was a residential one, and said that in addition to the businesses of plaintiffs and defendants there was also a factory in the neighbourhood and other garages. The defendants further denied that they had been guilty of any nuisance as alleged.

His lordship, in giving judgment, said he was satisfied that the evidence of Mitchell and his wife, with regard to the state of affairs which existed at the date the writ was issued, was to be accepted, and that there was, in fact, a serious nuisance. It was quite plain that at the end of May or the beginning of June defendants took the trouble to remedy certain matters about which there had been complaint, but the nuisance had not disappeared. There might be periods of repose to those who lived next door, but there might also be periods of disturbance. The business of defendants was one which required constant care and attention to secure that it did not cause a nuisance. There must be an injunction, and defendants must pay the costs. On the other hand, this was a matter where one desired to disturb the business as little as possible, and he would be prepared, if defendants were willing to undertake their best endeavours in the meantime to prevent any recurrence of the noise calculated to cause a nuisance, to suspend the operation of the injunction for a month.

Mr. Swords gave the undertaking suggested.

LIGHT AND AIR DISPUTE

Barnes v. *Allen and Kearley. Chancery Division. Before Mr. Justice Tomlin*

This action had reference to an alleged interference with the access of light and air, and alleged trespass on a gable wall at the premises of Mr. J. Barnes, 10 Alexandra Road, Wisbech, who sought a mandatory injunction and damages against the defendants, as lessees of the adjoining property, 11 Alexandra Road. The defendants admitted the plaintiff's ancient lights, but denied that what had been done constituted any obstruction to plaintiff's lights.

Mr. Robert Peel represented the plaintiff, and Mr. Harman appeared for the defendants.

Plaintiff's case was that the defendants in making alterations to their premises, where they carried on the business of a confectioner and teashop, had increased the height and width of their building, with the result that they had very seriously diminished the light and air which the plaintiff had hitherto enjoyed. In fact, plaintiff alleged, the defendants' action had caused his house to be dark and uncomfortable for occupation.

Expert evidence in support of the plaintiff's case was given by Mr. F. B. Ward, architect, of Wisbech, and Mr. J. L. Carnell, architect, of King's Lynn.

For the defence evidence was given that the defendants' alterations had not materially affected the plaintiff's comfortable enjoyment of his premises, and the experts who gave evidence on their behalf were Mr. A. Ruddell, architect, Peterborough, Mr. J. W. Crouch, architect, Wisbech, and Mr. T. F. Parker, architect, Wisbech and Hunstanton.

His lordship held that the erection of the defendants' buildings constituted a nuisance to the plaintiff as it diminished his light. He did not make a mandatory order to pull down, but directed an inquiry as to damage suggested by the plaintiff, plaintiff to have the costs of the action. In the course of his judgment, his lordship said this was one of those unfortunate actions in which litigation ensued between small property owners as a result of their failure to adjust their relations so that each might use his property to the best advantage without injuring his neighbour. He was satisfied that the defendants' alterations and additions had caused an appreciable diminution of the plaintiff's light. With regard to the gable wall no heavier burden had been imposed than before, and the only damage the plaintiff could get so far as that was concerned was in respect of his light. Then the plaintiff sought a mandatory injunction against the defendants. But here he had not made the owner a party to the action, and yet he asked the Court for such an order, when the property was that of a lessor. He failed to see how he could make an order upon the defendants which they could not comply with and upon which he might be asked to send them to prison. The Court would not make an order upon a defendant which affected his personal liberty unless it was an order he could comply with, and if a person was not a party to the action an order could not be made against him. It was therefore impossible to make the mandatory order asked for by the plaintiff. The action would be met by an order for damages, and he directed an inquiry, the costs of such inquiry to be reserved.

DEMOLITION: ALLEGED NEGLIGENCE BY HOUSEBREAKERS

Konskier v. *B. Goodman, Ltd. King's Bench Division. Before Mr. Justice Salter*

This action arose out of the demolition of premises at Houndsditch adjoining those of the plaintiff, who carried on the business there of a blouse and robe manufacturer. Defendants are housebreakers, and plaintiff alleged that they acted negligently in the demolition and left debris on his roof, which choked up the rain pipes and caused water to get into the basement, which he used as a store room, and do considerable damage to his stock. Defendants, by their defence, denied negligence, and alleged contributory negligence on the part of the plaintiff, pleading that the plaintiff should have taken precautions against his rain pipes becoming choked, and further, that the basement was not reasonably fit for a store and plaintiff should not have used it as such.

Mr. Blanco White appeared for the plaintiff, and Mr. Malcolm Hilbery represented the defendants.

Mr. White said the defendants demolished the adjoining building to the plaintiff in the spring and early summer of 1926, and from what subsequently happened it would appear that the defendants must have failed to clear the rubbish from the plaintiff's gutters. The demolition was completed by June 17, and there was no heavy rainfall until August 31, when there was a fall of ·95 of an inch of rain. The following morning plaintiff's basement was found to be flooded to the extent of 2 or 3 in. in the deeper part. Plaintiff's claim was in respect to ninety-seven ladies' dresses which were contained in boxes on the floor and were damaged by rain water and dirt, and there was also a claim for £10 for the loss of the use of basement.

For the plaintiff, Mr. G. Coles, F.R.I.B.A., of Craven Street, W.C., gave evidence.

Mr. Hilbery contended that he had no case to answer. In his admission the plaintiff had not established that the defendants owed him a duty at all during the time he was tenant and occupier of the premises, which he took over in July, as no demolition work

was shown to have been done after he became tenant. There was no evidence of negligence, or that the defendants did not clear the plaintiff's roof.

Evidence was called for the defence, and the witnesses included Mr. H. A. Scrase, of Gresham House, E.C.

His lordship found in favour of the plaintiff, and directed an inquiry as to the amount of damages. He entered judgment for such damages as would be ascertained on inquiry. His lordship said he came to the conclusion that the flooding was caused by the defendants' negligence and that the flooding caused the damage to the plaintiff's goods. He was not able to accept Mr. Hilbery's contention that there was no evidence of duty owing by the defendants to the plaintiff. When they did the work and finished it there was a duty on them to all persons who were using or had property on the premises at 87 Houndsditch, where plaintiff carried on business. There was an act of continuing negligence, and that negligence was continuing when the plaintiff became tenant. There was no evidence of contributory negligence on the part of the plaintiff. For these reasons he found for the plaintiff.

IN PARLIAMENT

[BY OUR SPECIAL REPRESENTATIVE]

A question was put to the Prime Minister with regard to the Charing Cross Bridge scheme by Mr. Ammon, who inquired why the committee of engineers, representatives of the Government, the London County Council, and the Southern Railway Company, which had been recommended to inquire into and estimate the cost of a bridge and its approaches at Charing Cross, in furtherance of the recommendation of the Royal Commission on Cross-river Traffic in London, had not been appointed?

Colonel Ashley, the Minister of Transport, who replied, said that on May 14 he requested Messrs. Mott, Hay and Anderson, the well-known firm of engineers, to undertake this inquiry in conjunction with Sir George Humphreys, the chief engineer of the London County Council, and with the assistance of Mr. A. W. Szlumper, the chief engineer of the Southern Railway. Those gentlemen had been actively engaged upon the examination of the problem ever since.

Lord Apsley asked the Minister of Transport why a brightly-coloured signpost had been erected between Halkyn House and Bathurst House, in Belgrave Square; and whether it was a unique specimen or one of a series that was to be repeated in other parts of London?

Colonel Ashley said that the signpost in question, and other similar ones, had been erected experimentally to indicate to drivers a route between Hyde Park Corner and Vauxhall Bridge which avoided Victoria Station and its vicinity. That route, if used to any considerable extent, would materially lessen the serious traffic congestion at Victoria. If the experiment was found to be successful it was proposed to indicate a few other alternative routes, the use of which would relieve certain highly-congested streets.

Mr. Chamberlain informed Captain Crookshank that the terms of reference of the Royal Commission on London Squares were: "To inquire and report on the squares and similar open spaces existing in the area of the administrative county of London, with special reference to the conditions on which they are held and used and the desirability of their preservation as open spaces, and to recommend whether any or all of them should be permanently safeguarded against any use detrimental to their character as open spaces, and if so, by what means and on what terms and conditions." The composition of the Commission was as follows: The most Hon. the Marquess of Londonderry (chairman); Alderman C. H. Bird; Mr. Frank Briant; Dame Caroline Bridgeman; Sir George Duckworth; Sir Howard Frank; Mr. M. L. Gwyer; Mr. F. W. Hobbs; Alderman Sir Henry F. New; Mr. R. C. Norman; Councillor the Rev. A. S. Pritchard; Mr. H. Snell; Mr. Carmichael Thomas; and Col. K. P. Vaughan-Morgan; secretary, Mr. I. F. Armer.

Mr. Chamberlain informed Mr. Mackinder that the housing subsidy would continue after September. The rates of Exchequer contributions under the Housing Acts of 1923 and 1924, payable in respect of houses completed between October 1, 1927, and October 1, 1928, were set out in the Housing Acts (Revision of Contributions) Order, 1926, the draft of which was approved by resolution of the House of Commons on December 2 last.

Mr. Chamberlain informed Brig.-Gen. Clifton-Brown that schemes under the Housing (Rural Workers) Act submitted by forty county councils and five rural district councils had so far been sanctioned. He had already approved applications in those cases covering upwards of 2,600 houses. One county council (Devon) had applied for and been granted sanction to a loan of £6,000 for the purposes of the Act. No other similar applications had yet been received either from county councils or rural district councils.

SOCIETIES AND SCHOOLS

R.I.B.A. Council Meeting

Following are notes from the minutes of the last meeting of the Council of the R.I.B.A.:

Presentation of Drawings to the R.I.B.A. The Council passed a cordial vote of thanks to Lady Harriet Lindsay for her k ndness in presenting William Burges's competition drawings of Edinburgh Cathedral to the Institute. The drawings will be exhibited in the meeting-room at the inaugural meeting in November.

The British School at Rome. The Council has appointed Mr. H. M. Fletcher, chairman of the Board of Architectural Education, as one of their two representatives on the Council of the British School at Rome for a term of three years.

Distribution of Schools of Architecture. A comprehensive and valuable report on the subject of architectural education in Great Britain has been prepared by a special committee of the Board of Architectural Education. This report, which deals particularly with the various methods of entry into the profession and the distribution of the schools in which architecture is taught, has been adopted by the Council, and the Board has been requested to give effect, as far as possible, to the recommendations and suggestions contained in it.

The School of Architecture, Edinburgh. The Council, on the recommendation of the Board of Architectural Education, has approved the proposed five years' part-time course at the Edinburgh School of Architecture for the purpose of exemption from the R.I.B.A. Intermediate Examination.

The School of Architecture of the Municipal School of Arts and Crafts, Southend-on-Sea. The Council, on the recommendation of the Board of Architectural Education, has granted this school exemption from the R.I.B.A. Intermediate Examination, under the usual conditions, for its three years' full-time day course of architecture.

The R.I.B.A. Intermediate Examination. The Board of Architectural Education reported the results as follows: Examined, eighty-five; passed, thirty; relegated, fifty-five; percentage passed, thirty-five. The Council approved the recommendation of the Board that a candidate relegated in one of the optional historical subjects should, if he so desired, be permitted to offer a different optional historical subject upon his subsequent examination.

Examination in Professional Practice for Students of Recognized Schools exempted from the Final Examination. The Board of Architectural Education reported the results as follows: McGill University, Montreal, November 1926. Examined, five; relegated nil; passed, five.

Special Examination in Design for former Members of the Society of Architects, Durban. The Board of Architectural Education reported the results as follows: Examined, one; relegated, nil; passed, one.

The R.I.B.A. Travelling Card. The Board of Architectural Education has prepared a précis of information received from the R.I.B.A. hon. corresponding members with reference to the

regulations for sketching and measuring public buildings in various countries in Europe. This précis will be published in the Journal and Kalendar, and also in the R.I.B.A. Travelling Card.

R.I.B.A. (Anderson and Webb) Scholarship at Cambridge University School of Architecture. The Council has approved the recommendation of the Board of Architectural Education that, in future, students of Girton and Newnham shall be eligible, on the same conditions as men, for the R.I.B.A. (Anderson and Webb) Scholarship at the Cambridge University School of Architecture.

R.I.B.A. Maintenance Scholarships. The Council, on the recommendation of the Board of Architectural Education, has decided to offer for competition this year one maintenance scholarship of a maximum value of £100, for two years, tenable in the fourth- and fifth-year courses at a school recognized for exemption from the Final Examination by a student who has already completed satisfactorily a three-years' course in a recognized school.

R.I.B.A. Maintenance Scholarships in Architecture

The Board of Architectural Education of the R.I.B.A., in conjunction with the Artists' General Benevolent Institution, offer for award in September 1927, a maintenance scholarship of a maximum value of £100, tenable from October 1, 1927. The scholarship will be tenable in the first instance for one year, and will be renewable for two further periods of one year each. It is intended to enable the orphan of an architect or artist, or son or daughter of an architect or artist, who has not the necessary means, to attend an approved course at one of the schools of architecture recognized for exemption from the R.I.B.A. examinations. Students who are already taking such a course would not be eligible to apply for the scholarship. The value of the scholarship, up to the limit of £100, will depend upon the financial circumstances of the parents or guardians of the candidate. The parents or guardians will be required to furnish particulars, on the proper form, of their financial position. Full particulars of the scholarship, including the method of application and selection of the candidate, may be obtained from the secretary to the Board of Architectural Education, R.I.B.A., 9 Conduit Street, W.1, not later than August 20.

The Board of Architectural Education of the R.I.B.A. announces that the following R.I.B.A. maintenance scholarships in architecture have been renewed for the academic year 1927-1928:

Austin K. Brown (Newcastle), School of Architecture, Armstrong College, Newcastle-upon-Tyne.

E. L. W. Davies (Colchester), Bartlett School of Architecture, University of London.

B. I. Day (Bideford, Devon), R.W.A. School of Architecture, Bristol.

H. Jackson (Birmingham), Birmingham School of Architecture.

E. J. White (Hull), Bartlett School of Architecture, University of London.

The scholarships are intended to enable promising students to attend an approved course at one of the schools of architecture recognized by the R.I.B.A. for the purpose of exemption from its examinations.

Conference with Teachers of Building

The Board of Architectural Education and the Science Standing Committee of the R.I.B.A. held a conference with representative teachers of building who have been undergoing a course in London arranged by the Board of Education. The conference took place in the galleries, and was largely attended. The chairman of the Board of Architectural Education, Mr. Henry M. Fletcher, F.R.I.B.A., M.A.Cantab., presided, and a paper on "Instruction in the Application of Science to Building Construction" was read by Dr. R. E. Stradling, director of building research, Department of Scientific and Industrial Research. In the subsequent discussion the following spoke: Messrs. Hugh Davies, H.M.I., P. J. Waldram, L.R.I.B.A., J. L. Manson, H.M.I., B. S. Townroe, F. Shaw (Wigan), Norman Howdill, B.SC. (Tottenham), Alan E. Munby, F.R.I.B.A., Martin S. Briggs, F.R.I.B.A., H.M.I. The teachers subsequently inspected the following examples of architects' working drawings, which were exhibited in the galleries: House at Stowell Hill, Ashley Chase, Dorset, by Mr. E. Guy Dawber, F.R.I.B.A., F.S.A., A.R.A.; the church of St. Mary, Harrogate, by Mr. Walter Tapper, F.R.I.B.A., A.R.A.; and Kensington Kinema, by Messrs. Granger and Leathart, AA.R.I.B.A.

A.A.S.T.A. Reunion Dinner.

The reunion dinner of the members of the Association of Architects, Surveyors and Technical Assistants' Visits Abroad was held at the Coventry Restaurant, London. There was present a representative gathering of members and friends who had been members of parties which had visited Rome, Florence, and Provence, under the auspices of the A.A.S.T.A. Mr. John Mitchell, general secretary of the Association, occupied the chair. Mr. W. Chester proposed the toast of "The Association," and drew attention to the important work being accomplished by the A.A.S.T.A., not only on behalf of the economic interests of members, but in providing them with facilities of travel at a cost within the reach of all. He valued these trips because of the opportunity afforded of travelling in company with others who were interested more or less in the objects of interest in the city or district visited. One advantage was that with so many minds devoted to seeking the same general end, one missed very little that could be said to have architectural claims. The visits seemed to be always well arranged, and it was still a wonder to him how those responsible could make the cost cover so many advantages. In replying on behalf of the Association, Mr. Mitchell said how important was travel abroad to the modern architect. Progress today was swifter than in the past only because of greater mobility in travel available for large masses of the peoples of the world. Thereby they were provided with the opportunity of examining the best of the world's work and comparing it with their own standards, and the outcome was a friendly rivalry which tended to carry their art or profession towards a fuller expression. Ethics of beauty today were more widely appreciated and there was less toleration for the freak, the fantastic, the crudely ugly and the sham. For all this, travel was directly responsible. The organization of these visits by the Association was a sign that the youth of today desired to supervise and promote as far as possible the direction of its own education. These visits abroad were an expression of members' absorbing interest in their profession and therefore a guarantee that the future of architecture was safe in their hands. Mr. Chester, who conducted the party to Provence at Easter, supported Mr. Mitchell. A vote of thanks was heartily accorded Mr. P. W. Dawney for the satisfactory arrangements of the dinner, to which Mr. Dawney suitably responded.

Cardiff Technical College Department of Architecture and Civic Design

The following awards have been made as a result of the sessional examinations at the School of Architecture at the Technical College, Cardiff. Professor A. C. Dickie, M.A., F.S.A., A.R.I.B.A., was the external examiner.

Fifth Examination: For the diploma awarded at the end of the five years' full-time day course. (Individual students who are awarded this diploma are exempted from the R.I.B.A. Final Examination, with the exception of the subject of professional practice): D. J. Williams, diploma; H. Bull, diploma, subject to completion of six months' practical experience.

Fourth Examination: P. G. Budgen.

Third Examination: For the certificate awarded at the end of the three years' full-time day course, exempting from the R.I.B.A. Intermediate Examination: Miss O. E. Price, C. J. Bartlett, C. L. Bugler.

Second Examination: F. K. Aitken, J. W. Bishop, C. A. E. Thatcher.

First Examination: H. J. Hughes, W. H. Maton, C. Rosser, J. P. Ward.

COMPETITION CALENDAR

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

August 23. University Buildings, Western Australia. To cost £150,000. Premiums: £400, £300, £200. Open to British subjects or citizens of U.S.A. Assessors: Professor Leslie Wilkinson, F.R.I.B.A., Mr. A. R. L. Wright, L.R.I.B.A., President, Royal Institute of Architects of Western Australia, and Member of University Senate. Particulars from Agent-General for Western Australia, Savoy House, 115-116 Strand, London, W.C.2, or Australian Trade Commission, 44 Whitehall Street, New York, U.S.A.

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

No Date. Designs are invited by the Herne Bay Urban District Council for the erection of municipal buildings and business premises on a prominent site at Herne Bay. The President of the R.I.B.A. has nominated Professor A. E. Richardson, F.S.A., F.R.I.B.A., to act as assessor. Premiums: £150, £100, £50. Printed conditions can be obtained from the Clerk to the Council, Westminster Bank House, Herne Bay. A deposit of one guinea is required for a set of the printed conditions, which will be returned upon the submission of a bona fide design.

CLINKER CONCRETE PARTITION SLABS

BY BRIG.-GENL. F. P. CROZIER, C.B., C.M.G., D.S.O.

Clinker concrete partition slabs play such a considerable part in constructional work that it is as important for the architect, builder, or contractor to understand all about them as for the engineer to know about the steel he is using. Too often, through lack of understanding, no particular slab is specified in a contract, with the result that an inferior article is introduced. Although there is no real art in making a slab, there is a certain amount of "technique," whether it be made by hand or machine. To produce a good slab at a fair price the provision of sufficient good cement is necessary, together with a non-greasy, well-crushed clinker, of suitable hardness, and dry.

The "cheap" manufacturer, who skimps the cement and at the same time charges high prices, not only damages his own reputation, but that of the manufacturers of all slabs. Buyers are apt to think that by saving ½d. or 1d. on a yard of 2 in. slab, or even 3d. or 4d. on a yard of 3 in. or 4 in. slab, they are saving money. What they are often doing is getting less cement, sometimes insufficient for the job.

The question of maturing is important, but not so important as the manner in which the slab is manufactured, because it can be corrected. In maturing, time is the factor, but if a sufficient proportion of cement is present less time for maturing is required. Sometimes buyers do not realize this point. I have known a case in which a buyer insisted on slabs being matured for six months (when six weeks would have been more than ample), and never inquired what proportion of cement was used.

The introduction of rapid-hardening cement has, of course, revolutionized maturing, and it is no exaggeration to say that, provided the right quantity and quality of cement of this nature is used in manufacture, partly green slabs can be fixed at a pinch and allowed to dry out, without fear of cracking, although naturally this is not to be recommended. The pros and cons of the controversial subject of the merits and demerits of the hand-made slab, versus his machine-made brother, do not come into the sphere of this brief survey.

The foregoing remarks will demonstrate to architects the importance of specification. No competent slab maker should object to being asked to submit his wares for examination and test, for it is only by doing so that the industry can be securely maintained.

TRADE NOTES

A particularly interesting feature of the Hastings Corporation Health Week Exhibition was the display of "Magnet" household electric appliances given by the Corporation Electricity Department on their four-roomed stand. The extent to which electrical appliances are to the forefront in domestic hygiene may be appreciated from the fact that the Electricity Department's stand was awarded a silver medal for "The Hygienic Value of (Electrical) Appliances." The fittings and "Magnet" appliances were supplied by the General Electric Co., Ltd. Immediately following the exhibition, the Electricity Department arranged for an augmented display of "Magnet" appliances to be given in their showrooms at 12 York Buildings, Hastings.

A better way of balancing double-hung sashes for new and existing buildings, ships, etc., is the title of a new booklet issued by Messrs. Robert Adams to explain the uses of the Pullman unit sash-balances. It is claimed that once used, the inherent value of the balances is so self-evident as to be absolutely convincing to the most sceptical. They are claimed to be "durable and, when properly installed, capable of lasting indefinitely; practically noiseless and smooth running. Where the Pullman balances are used there are neither rattling weights nor squeaking pulleys; no jerky, uneven travel of the sash, but a rightly balanced, level, and easy movement that delights the householder; no more cords to fray and break; no expensive box frames which waste valuable space and may be draughty in winter, but a plain frame instead, a positive saving of material and labour and requiring a minimum of space." There are now over six million balances in use. They have been manufactured and on the market over thirty years. Therefore the firm is in a position to point to installations having a record of more than twenty-five years of continuous satisfactory service.

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, London, W.C.2. The price is 1s. each.]

LATEST PATENT APPLICATIONS

18956. Bolinder, E. A. Cooking-ranges. July 18.
19327. Bunn, C. W. Apparatus for raising, &c., windows. July 21.
19018. Feist, A. Manufacture of tiles for walls, &c. July 18.
19069. Galy, A. A. Cement, &c., moulding machines. July 18.
18965. Harris, R. G. Tiles for reinforced concrete structures.

SPECIFICATIONS PUBLISHED

274149. Atkinson, J. B., Mitchell, A., and Smith, J. W. Windows and window sashes.
274209. Erith's Engineering Co., Ltd., and Diplock, W. J. H. Apparatus for the drying of timber and other materials.
252155. Thomas, A. D. Mechanism for opening and closing gates, doors, and the like.
274291. Glover, C. W., and Smith, H. F. Construction of floors or ceilings for buildings.
268380. Chassis en Ciment Arme M.T. Sash frames adapted for assembling *in situ*.

ABSTRACT PUBLISHED

272033. Mullenger, A. R., Dublin. Walls.

THE WEEK'S BUILDING NEWS

Plans passed by the ILFORD Corporation: Extension to cold store, Britannia Works, Roden Street, for Messrs. Ilford, Ltd.; four houses, Keswick Gardens, for Messrs. Brand and White, Ltd.; ten houses, Woodford Avenue, for Mr. P. E. Brand; new roads and sewers, Virginia Gardens, Westminster Gardens, Waverley Gardens, and Craven Gardens, for Mr. J. Aldridge; thirty-one shops and dwellings, Becontree Avenue, for Mr. W. A. Warwick; animals' sanatorium, Woodford Bridge Road, for Messrs. A. and V. Burr; five houses, Levett Gardens, for Messrs. J. W. Moore and Son; chapel, Wangey Road, for Mr. A. Moore.

*

Plans passed by the BARKING U.D.C.: Steel-framed buildings, Rippleside, for Mr. C. Warrick; two steel-framed buildings, Creeksmouth, for Messrs. De Pass Fertilizers; extension to factory, Broadway, for British East Light Ltd.; additions to office and factory, Hertford Road, for Messrs. Sanders and Forster, Ltd.; additions, Elim Hall, Ripple Road, for Mr. E. J. Phillips.

*

The LANCASHIRE County Council is to proceed with a scheme for the utilization of the Wrightington Hall estate for the treatment of non-pulmonary tuberculosis, at a cost of £148,000. The scheme allows for the adaptation and extension of the existing hall so as to accommodate the staff and provide the necessary administrative quarters. It also includes the provision of accommodation for 226 beds by the erection of five new pavilions and an isolation block.

*

The BARKING TOWN U.D.C. architect has now prepared plans for the lay-out of the southern portion of the Upney housing estate, and the plans are to be submitted to the Ministry of Health.

*

The BARKING TOWN U.D.C. is applying for consent to borrow £100,000 for further housing advances.

*

The SOUTH ESSEX Waterworks Co., Ltd., is to construct a new surface reservoir near Hog Hill, and carry out various works on the banks of the River Stour.

*

The Canonbury Construction Co., Ltd., has submitted to the Hornsey Corporation plans for a new telephone exchange at Grand Avenue, MUSWELL HILL.

*

The Lancashire Education Committee has acquired a site in Manchester Road, LEIGH, for the erection of a secondary school for boys.

The Lancashire County Agricultural Committee is acquiring land on the South Lathon estate, SKELMERSDALE, for small holdings. It is proposed to erect new houses and buildings at a cost of £17,000.

*

The Lancashire C.C. is to construct a new bridge to replace Ruskinville Bridge at BARROW-IN-FURNESS at a cost of £13,500.

*

The Notts Education Committee is to erect an elementary school for about 1,000 children at COLWICK.

*

Messrs. Murray, Delves, and Murray have prepared plans for the committee of the Princess Alice Hospital for the conversion of premises in Bedfordwell Road, EASTBOURNE, into a nurses' home.

*

The EASTBOURNE Corporation Housing Committee has decided to get fresh tenders for the erection of forty houses of small type on the Hutments site.

*

The REDDITCH U.D.C. has appointed a subcommittee to consider the provision of a library.

*

The MANCHESTER Corporation Housing Committee is to proceed with the erection of 264 houses on the Burnage extension estate at a cost of £146,000.

*

The BOLTON Corporation has passed plans, submitted by Northern Greyhound Racers, Ltd., for the construction of a greyhound racing track, stands, etc., off St. Halens Road.

*

The POPLAR B.C. Housing Committee has been furnished by the borough surveyor with particulars of several available sites for building purposes, together with draft schemes and plans. Negotiations have been proceeding for the acquisition of some of the sites for months past under the direction of the Special Housing Committee. In two instances it directed that the draft schemes should be submitted to the Ministry of Health without delay. These schemes would provide accommodation for 140 families. In respect to certain other sites, it directed that further negotiations should be continued with a view to acquisition at reasonable price and the results submitted to the Special Housing Committee for consideration and decision.

*

The BRIGHTON Corporation has asked the Works Committee to consider the question of the improvement of the beach from the West Pier to the West Street Shelter Hall, including the construction of a bathing pool between the West Pier and the slope opposite the Hotel Metropole.

Plans passed by the BRIGHTON Corporation: Alterations, 17 and 17a North Street, for Messrs. Hanningtons, Ltd.; covered way and workshop, 18 Blackman Street, for Messrs. E. G. Brown, Ltd.; alterations, 93 St. James's Street, for Home and Colonial Stores, Ltd.; alterations, "Baths Arms," Union Street, for Messrs. Tamplin and Sons Brewery, Ltd.; additional store and flat, Preston Drive, for Brighton Equitable Co-operative Society; rebuilding "Leconfield Arms," Edward Street, for Messrs. E. Robins and Sons, Ltd.; alterations, Abbott's Hotel, King's Road, for Mr. C. E. Martin; eight houses, Hollingbury Rise, for Mr. J. A. Parris; five houses, Osborne Road, for Mr. C. T. James; rebuilding, 1 and 2 London Road, for Messrs. F. W. Woolworth & Co., Ltd.; rebuilding, 130 and 131 London Road, for Messrs. Clark's Bread Co., Ltd.

*

The Mental Hospitals Committee urges the Middlesex C.C. to proceed with the scheme for the erection of a mental hospital on the Porters Park site, SHENLEY, the total cost of which is estimated at £1,202,000.

*

The Middlesex Education Committee is to provide an elementary school for 250 children at KENTON.

*

The Middlesex C.C. has arranged terms with the Metropolitan Railway Co., for the reconstruction of the road bridge over the NORTH HARROW station, the cost being estimated at £12,000.

*

The TEDDINGTON Education Committee is shortly obtaining tenders for the erection of the new Nelson school buildings to provide accommodation for 336 children.

*

The county authorities of North Riding of Yorkshire and Durham are to confer regarding the provision of a new bridge to replace the bridge at BARNARD CASTLE.

*

The WARRINGTON Corporation has obtained sanction for a loan of £50,000 for further housing advances.

*

Messrs. Wright and Hamlyn are to erect premises in Louis Street, WARRINGTON, for Messrs. Regals, Ltd.

*

The COVENTRY Corporation has passed an amended estimate of £60,000 for the construction of the Lockhurst Lane road bridge.

*

The COVENTRY Corporation has acquired land at Brownshill Green for waterworks purposes.

The TYNEMOUTH Corporation Housing Committee has asked the borough surveyor to prepare a report as to the general lay-out of the land at Cullercoats, including cost of streets, sewers, etc., and the housing architect and borough treasurer are to confer as to the plans of the various types of houses and costs.

*

Plans passed by the TYNEMOUTH Corporation: Twelve houses, St. George's Crescent, Chirton Green, for Messrs. F. R. N. Haswell and Son; sixteen houses, Hatherton Avenue, Cullercoats, for Mr. J. R. Wallace; six houses, Houghton Avenue, St. George's estate, Cullercoats, for Messrs. F. R. N. Haswell and Son; sixteen houses, St. George's Road, for Mr. H. D. Burton; workshop, Lovaine Place, North Shields, for Mr. W. Relph.

*

The United Dairies, Ltd., is to erect premises in Becontree Avenue, BECONTREE.

*

In connection with the Shooters Hill by-pass the L.C.C. has to demolish fifty-eight houses, and make arrangements for alternative accommodation to be provided by the WOOLWICH B.C. on the Well Hall estate.

*

The L.C.C. is acquiring the Horton Lodge estate of 23 acres to provide additional accommodation at West Park Mental Hospital, EPSOM.

*

The L.C.C. is to extend the accommodation at FARMFIELD Mental Hospital.

*

The YORK Corporation has passed plans submitted by the National Electric Picture Theatre for a picture theatre at Goodramgate.

*

The YORK Corporation is to confer with the Escrick R.D.C. in regard to a sewerage scheme for part of the district.

*

The SHEFFIELD Corporation has decided to proceed with the reconstruction of the River Lane and Creswick Walk slum area.

*

The city architect of SHEFFIELD has prepared plans for a branch library to be erected on a site in Firth Park.

*

The city architect of SHEFFIELD has prepared lay-out plans for houses on two further portions of the Longley estate and been authorized to obtain tenders.

*

The trustees of the Sheffield District of the Yorkshire Baptists' Association have acquired a site in Prince of Wales Road, SHEFFIELD, for the erection of a church.

Plans passed by the SHEFFIELD Corporation: 138 houses, Wybourn estate, for Corporation Housing Committee; four houses, Richmond Road, for Mr. George Payling; four houses, Crawford Road, for Messrs. Hammett & Co.; four houses, Folds Crescent, for Messrs. A. J. Belton, Ltd.; eight houses, Dobcroft Road, for Mr. E. Sivil; two houses and three shops, Prince of Wales Road, for Mr. P. Schofield; house, shop, stores, and garage, Wulfric Road, for Mr. G. H. Watson; house and alterations, Warminster Road, for University of Sheffield; sixteen houses, fire-station, etc., Division Street, for Watch Committee; house, warehouse, offices, and garage, Sheldon Row and Willey Street, for Messrs. A. Balfour & Co., Ltd.

*

The TORQUAY Education Committee has given the architect instructions on points of detail in connection with the preparation of plans for the enlargement of the Homelands Central School.

*

Plans passed by TORQUAY Corporation: Ten houses, Daison estate, for Messrs. H. Lloyd and Son; alterations and additions, "Hotel Tudors," Meadfoot Road, for Mrs. Green; nine houses, Daison Heights, First Avenue, for Messrs. H. Lloyd and Sons; grandstand, Plainmoor Football Ground, for Torquay United A.F.C.; two houses, Windsor Road, for Messrs. Murch and Tucker; two houses, Isaacs Road, Barton, for Mr. R. L. Kellow.

*

The trustees of St. Mary's Church Council are to build a church at Barton, TORQUAY.

*

The NEWCASTLE Corporation has decided to proceed with the scheme for the provision of baths and washhouses at Armstrong Road, SCOTSWOOD.

*

The WISBECH R.D.C. is acquiring an acre of land at Wisbech St. Mary for the erection of cottages.

*

The ISLE OF ELY Education Committee has approved plans for the enlargement of the Wisbech Grammar School.

*

Plans passed by CHESTERFIELD Corporation: New printing department, Goyt Side Road, for Messrs. Robinson and Sons, Ltd.; alterations, "Chesterfield Arms," Newbold Road, for the Chesterfield Brewery Co., Ltd.; transformer house and conveniences, new tramway depot, Sheffield Road, for the bus and tramway department; workshops, Silk Mill Yard, for Mr. W. Yeomans; alterations to club, Hasland Road, for the Hasland Working Men's Club; three houses, Storrs' Road, for Messrs. Plowright Bros., Ltd.; two houses, Farnsworth Street, Hasland, for Mr. J. B. Randall; pump-house and office to depot off Wharf Lane, for the British Petroleum Co., Ltd.

The CHESTERFIELD Corporation has asked the borough surveyor to submit plans for the erection of large A.3 houses on the streets made on the Highfield estate, and twenty A.2 houses and fifteen large A.3 houses on the streets on the St. Augustine's estate. Messrs. Wilcockson and Cutts and Messrs. Clayton and Rignall have been appointed the architects to supervise the erection of the houses.

*

The governors of the junior secondary school are to acquire premises in Newton Road, TORQUAY, for extending the school.

*

The SHEFFIELD Corporation has obtained sanction to borrow £48,530 for the erection of 127 houses included in the Longley estate scheme, and twelve houses in Prince of Wales Road.

*

The city engineer of HULL has prepared a scheme for extensions at the East District destructor works at a cost of £23,336.

*

The city engineer of HULL has prepared an amended estimate, of £22,600, for the construction of the proposed by-pass road at Anlaby.

*

The trustees of the St. Malachy's Roman Catholic School, MANCHESTER, have submitted the plans for the new buildings to the Board of Education.

*

The MANCHESTER Education Committee has authorized the city surveyor to make inquiries for a site for the proposed high school for boys for the Openshaw-Gorton district.

*

The SHEFFIELD Corporation has obtained sanction for the following loans for the water department: £21,500 for the purchase of part of Longshaw Lodge estate, £16,000 for the extension of trunk mains, and £17,000 for ordinary mains extensions.

*

The Surrey Education Committee has now completed the plans for the erection of a secondary school at OXTED, and forwarded them to the Board of Education for approval. The cost is estimated at £36,000.

*

Plans passed by the LLANDUDNO U.D.C.: Fourteen houses, Bryniau Road, for Mr. Edward Salisbury; alterations, 103 Mostyn Street, for Messrs. Barclays Bank.

*

The OXFORD Corporation has passed a scheme submitted by Messrs. Hinkins and Frewin for the development of a building estate at Cumnor Hill.

*

The borough engineer of BIRKENHEAD is to prepare plans for the development of the site of demolished insanitary property in Fox Street.

READERS' QUERIES

ROAD EMBANKMENT

G. V. writes: "Figure one shows a section through a road having an embankment sloping 1 in 1½ on one side. The embankment, which is of clay, has slipped badly across the paths, and experiments have shown that the earth will not remain stationary on slopes greater than 1 in 2½. Owing to restricted space it is impossible to get back to this slope, and it is decided to erect a reinforced concrete wall of varying height and to throw back the earth behind to the safe slope. The wall was designed as shown on figure one, but it was afterwards suggested that the heel be reversed and made to form the pavement basis. I should be glad to know if this is a safe procedure, and if, where the height H greatly exceeds the width B, there is any danger of the structure lifting or tending to lift at A. Furthermore, is the bending moment at "y" equal to that at "x"? The suggestion was made in order to obviate excavation for the heel and the consequent danger of further slipping of the embankment."

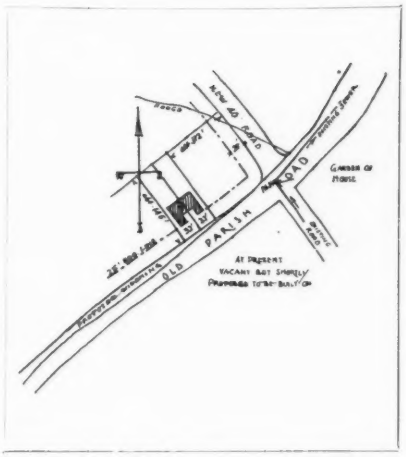
There is an essential difference in principle involved in reversing the heel of the reinforced concrete retaining wall, and if the heel is brought out in the open in front, as shown in figure two, the construction should be worked out experimentally on its merits. As drawn, the wall looks far too light for its purpose. The function of the heel in figure one is to *entrap a heavy load of earth and make it do duty against the pressure of the sliding wedge.* By this method the earth, which costs practically nothing, is used instead of a great mass of expensive concrete or brickwork in the old-fashioned form of solid wall. The danger of figure two is that it has no equivalent for this economic equipoise. To ensure that the earth will be carried effectively on the heel, and that heel and face-slab shall act together, it is usual to insert diaphragms (which are sometimes miscalled "buttresses"), which having a tensile function should be adequately reinforced.

The bending moments at *x* and *y*, figure two, would probably not be markedly different from one another, and in this experimental type of revetment it would be well to have sample lengths erected and kept under observation for signs of movement and failure. In all forms of reinforced and skeletonized retaining walls the angles are points of weakness in view of the difficulty of reinforcing them satisfactorily. And in the long run there is a danger that the concrete will become cracked and let in moisture to rust the steel. Ample masses of material should be provided to afford protection for as long a period as possible, and strong gussets and diaphragms should be used to stiffen the work and prevent minute rocking movements which will be liable to open up cracks.

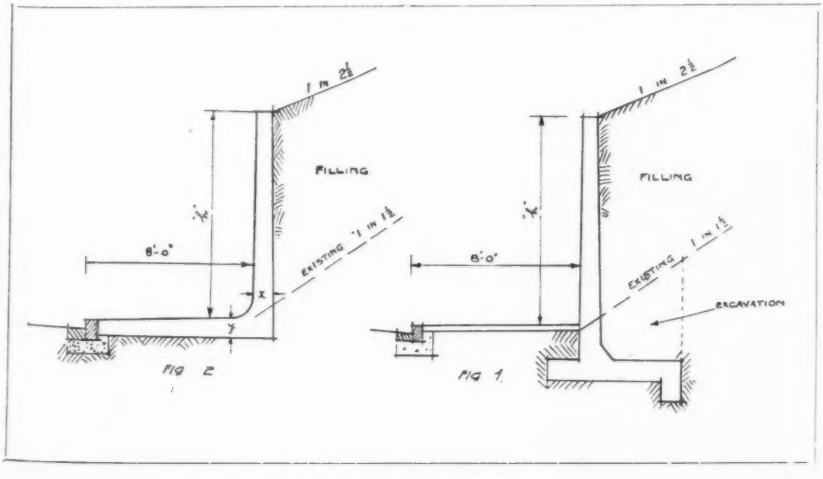
The Editor welcomes readers' inquiries on all matters connected, directly or indirectly, with architectural practice. These inquiries are dealt with by a board of experts, to which additions are constantly being made as, and when, need arises. No charge is made to readers for this expert service. Diagrams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

AN OLD PARISH ROAD

M. B. writes: "The old parish road and adjoining land, both sides, shown on the accompanying map, are in the area of local authority, who have declared their intention of adopting a town-planning scheme, but have not yet obtained the necessary powers. They show on their town-planning map the old road to be widened to about 40 ft. The local authority have approved the lay-out of the estate on the north side which belongs to my clients, and of which this portion shown in the sketch is a part, subject to certain conditions, one of which is that the strip shown for widening should be given up by the owners without compensation. Has the Council power to make and enforce such a condition on an old parish road which they recognize as such? It is proposed to build a pair of semi-detached houses where indicated, and there is a soil sewer and m.h. where shown. The lane is a very old parish road but little used for many years and has got overgrown, and no proper foundation has ever been laid to make a good roadway, so that at present it is hardly possible to cart along it, specially after heavy rain. Are the Council bound to provide drainage for the proposed houses, and other houses farther west and fronting the old lane, by extending their sewer when plans are submitted and approved and the demand has arisen? There is no question of fall for sewer as the lane drops steeply to the eastward and the site to be built on is above the lane. Also, are the Council bound to make up the lane at once in such a way as to make it passable for pedestrians and vehicles? All surface water will deliver into the ditches as there is no storm-water sewer available, and the Council will not allow it into the sewer—neither will they allow combined drainage to the houses. It is proposed to bring a new by-pass road, 60 ft. wide, right through the estate; but the owners are not favourable, believing that it will be detrimental to the estate, which is residential. For most of the way it will follow the line of one of the proposed new roads on the estate. Are the owners bound to give up the land, being the difference between the 40 ft. and the 60 ft. road, free without compensation?"



I imagine that it will be an advantage to your client to have the 40 ft. road, although the U.D.C. have no powers to take the strip of frontage without compensation, yet it would be a very small concession on the owner's part to throw it into the roadway. The Council cannot refuse to pass the plans for the proposed new houses if they conform to the by-laws. The Council are not bound to extend their sewer, nor are they under any obligation to improve the old lane; if they are liable for any repairs at all, it can only be to the extent that they have been executed hitherto. The land for the new by-pass road must be paid for by the acquiring authority at its market value, and the matter will be dealt with by the Government valuation officer for the district when the time comes. F. S. I.



RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 8	1 3½
A₁	Abergavenny	S. Wales & M.	1 7½	1 2½
B	Abingdon ..	S. Counties	1 6	1 1½
A	Accrington	N.W. Counties	1 8	1 3½
A₂	Addlestone	S. Counties	1 6½	1 2
A	Adlington ..	N.W. Counties	1 8	1 3½
A	Airdrie ..	Scotland	*1 8	1 3½
C₁	Aldeburgh	E. Counties	1 4	1 0½
A	Altrincham	N.W. Counties	1 8	1 3½
B₂	Appleby ..	N.W. Counties	1 4½	1 0½
A	Ashton-under-Lyne	N.W. Counties	1 8	1 3½
A₂	Atherstone	Mid. Counties	1 6½	1 2
B₂	Aylesbury ..	S. Counties	1 4½	1 0½
B₂	BANBURY	S. Counties	1 4½	1 0½
B₂	Bangor ..	N.W. Counties	1 5	1 1
A	BarnardCastle	N.E. Coast	1 8	1 3½
A	Barnsley ..	Yorkshire	1 8	1 3½
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
B₂	Basingstoke	S.W. Counties	1 4½	1 0½
B	Bath ..	S.W. Counties	1 6	1 1½
A	Batley ..	Yorkshire	1 8	1 3½
B	Bedford ..	E. Counties	1 6	1 1½
A₂	Berwick-on-Tweed	N.E. Coast	1 7	1 2½
A₂	Bewdley ..	Mid. Counties	1 7	1 2½
B₂	Bicester ..	Mid. Counties	1 4½	1 0½
A	Birkenhead	N.W. Counties	*1 10	1 4½
A	Birmingham	Mid. Counties	1 8	1 3½
A	Bishop Auckland	N.E. Coast	1 8	1 3½
A	Blackburn	N.W. Counties	1 8	1 3½
A	Blackpool	N.W. Counties	1 8	1 3½
A	Blyth ..	N.E. Coast	1 8	1 3½
B₂	Bognor ..	S. Counties	1 4½	1 0½
A	Bolton ..	N.W. Counties	1 8	1 3½
A₂	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1½
B₂	Bovey Tracey	S.W. Counties	1 5	1 1
A	Bradford ..	Yorkshire	1 8	1 3½
A₂	Brentwood	E. Counties	1 7	1 2½
A	Bridgend ..	S. Wales & M.	1 8	1 3½
B₂	Bridgwater	S.W. Counties	1 5	1 1
A₁	Bridlington	Yorkshire	1 7½	1 2½
A	Brighouse	Yorkshire	1 8	1 3½
B₁	Brighton ..	S. Counties	1 6	1 1½
A	Bristol ..	S.W. Counties	1 8	1 3½
B₂	Brixham ..	S.W. Counties	1 4½	1 0½
A₂	Bromsgrove	Mid. Counties	1 7	1 2½
C	Bromyard ..	Mid. Counties	1 4	1 0½
A	Burnley ..	N.W. Counties	1 8	1 3½
A	Burslem ..	Mid. Counties	1 8	1 3½
A₂	Burton-on-Trent	Mid. Counties	1 7	1 2½
A	Bury ..	N.W. Counties	1 8	1 3½
A₁	Buxton ..	N.W. Counties	1 7½	1 2½
B	CAMBRIDGE	E. Counties	1 6	1 1½
B₂	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 8	1 3½
A	Carlisle ..	N.W. Counties	1 8	1 3½
B	Carmarthen	S. Wales & M.	1 6	1 1½
B₂	Carnarvon	N.W. Counties	1 5	1 1
A₁	Carnforth ..	N.W. Counties	1 7½	1 2½
A	Castleford	Yorkshire	1 8	1 3½
B₁	Chatham ..	S. Counties	1 5½	1 1½
B₁	Chelmsford	E. Counties	1 5½	1 1½
A₂	Cheltenham	S.W. Counties	1 6½	1 2
A	Chester ..	N.W. Counties	1 8	1 3½
A	Chesterfield	Mid. Counties	*1 8	1 3½
B₂	Chichester	S. Counties	1 4½	1 0½
A	Chorley ..	N.W. Counties	1 8	1 3½
B₂	Cirencester	S. Counties	1 5	1 1
A	Clitheroe ..	N.W. Counties	1 8	1 3½
A	Clydebank	Scotland	1 8	1 3½
A	Coalville ..	Mid. Counties	1 8	1 3½
B₁	Colchester ..	E. Counties	1 5½	1 1½
A	Colne ..	N.W. Counties	1 8	1 3½
B₁	Colwyn Bay	N.W. Counties	1 5½	1 1½
A	Consett ..	N.E. Coast	1 8	1 3½
B₁	Conway ..	N.W. Counties	1 5½	1 1½
A	Coventry ..	Mid. Counties	1 8	1 3½
A₂	Crewe ..	N.W. Counties	1 6½	1 2
A₂	Cumberland	.....	1 6½	1 2
A	DARLINGTON	N.E. Coast	1 8	1 3½
A	Darwen ..	N.W. Counties	1 8	1 3½
B₂	Deal ..	S. Counties	1 4½	1 0½
B₁	Denbigh ..	N.W. Counties	1 5½	1 1½
A	Derby ..	Mid. Counties	1 8	1 3½
A	Dewsbury ..	Yorkshire	1 8	1 3½
B	Didcot ..	S. Counties	1 6	1 1½
A	Doncaster	Yorkshire	1 8	1 3½
C₁	Dorchester	S.W. Counties	1 4	1 0½
A₂	Driffield ..	Yorks	1 6½	1 2
A₂	Droitwich ..	Mid. Counties	1 6½	1 2
A₁	Dudley ..	Mid. Counties	1 7½	1 2½
A	Dundee ..	Scotland	1 8	1 3½
A	Durham ..	N.E. Coast	1 8	1 3½
B₁	EASTBOURNE	S. Counties	*1 6	1 1½
A	Ebbw Vale	S. Wales & M.	1 8	1 3½
A	Edinburgh	Scotland	1 8	1 3½
A	E. Glamorganshire & Monmouthshire	S. Wales & M.	1 8	1 3½
B	Exeter ..	S.W. Counties	*1 7	1 2½
B₂	Exmouth ..	S.W. Counties	1 5	1 1
B	FELIXSTOWE	E. Counties	1 6	1 1½
A₂	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W. Counties	1 8	1 3½
B₂	Folkestone	S. Counties	1 5	1 1
A	Frodsham ..	N.W. Counties	1 8	1 3½
B₂	Frome ..	S.W. Counties	1 4½	1 0½
A	GATESHEAD	N.E. Coast	1 8	1 3½
B₁	Gillingham	S. Counties	1 5½	1 1½
A₂	Gloucester	S.W. Counties	1 6½	1 2
A₂	Goole ..	Yorkshire	1 7	1 2½
B	Gosport ..	S. Counties	1 6	1 1½
A₂	Grantham	Mid. Counties	1 6½	1 2
A₁	Gravesend	S. Counties	1 7½	1 2½
A	Greenock ..	Scotland	*1 8	1 3½
A	Grimsby ..	Yorkshire	1 8	1 3½
B₁	Guildford ..	S. Counties	1 5½	1 1½
A	HALIFAX ..	Yorkshire	1 8	1 3½
A	Hanley ..	Mid. Counties	1 8	1 3½
A	Harrogate	Yorkshire	1 8	1 3½
A	Hartlepools	N.E. Coast	1 8	1 3½
B₂	Harwich ..	E. Counties	1 5	1 1
B₂	Hastings ..	S. Counties	1 4½	1 0½
B₁	Hatfield ..	S. Counties	1 5½	1 1½
B	Hereford ..	S. W. Counties	1 6	1 1½
B	Hertford ..	E. Counties	1 5½	1 1½
A₁	Heysham ..	N.W. Counties	1 7½	1 2½
A	Howden ..	N.E. Coast	1 8	1 3½
A	Huddersfield	Yorkshire	1 8	1 3½
A	Hull ..	Yorkshire	1 8	1 3½

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

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

PRICES CURRENT

EXCAVATOR AND CONCRETOR

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

Broken brick or stone, 2 in., per yd. . £0 11 6
Thames ballast, per yd. . . . 0 11 0
Pit gravel, per yd. 0 18 0
Pit sand, per yd. 0 14 6
Washed sand 0 15 0
Screened ballast or gravel, add 10 per cent. per yd.
Clinker, breeze, etc., prices according to locality.
Portland cement, per ton . . . £2 19 0
Lias lime, per ton 2 10 0
Sacks charged extra at 1s. 9d. each and credited when returned at 1s. 6d.
Transport hire per day:
Cart and horse £1 3 0 *Trailer* . £0 15 6
3-ton motor lorry 3 15 0 *Steam roller* 4 5 0
Steam lorry, 5-ton 4 0 0 *Water cart* 1 5 0

EXCAVATING and throwing out in ordinary earth not exceeding 6 ft. deep, basis price, per yd. cube . . 0 3 0
Exceeding 6 ft., but under 12 ft., add 30 per cent.
In stiff clay, add 30 per cent.
In underpinning, add 100 per cent.
In rock, including blasting, add 225 per cent.
If basketed out, add 80 per cent. to 150 per cent.
Headings, including timbering, add 400 per cent.
RETURN, fill, and ram, ordinary earth, per yd. £0 1 6
SPREAD and level, including wheeling, per yd. 0 1 6
FILLING into carts and carting away to a shoot or deposit, per yd. cube . 0 10 6
TRIMMING earth to slopes, per yd. sup. 0 0 6
HACKING up old grano. or similar paving, per yd. sup. . . . 0 1 3
PLANKING to excavations, per ft. sup.. 0 0 5
DO. over 10 ft. deep, add for each 5 ft. in depth, 30 per cent.
If left in, add to above prices, per ft. cube 0 2 0
HARDCORE, 2 in. ring, filled and rammed, 4 in. thick, per yd. sup. . 0 2 1
DO. 6 in. thick, per yd. sup. . . 0 2 10
PUDDLING, per yd. cube . . . 1 10 0
CEMENT CONCRETE, 4-2-1, per yd. cube 2 3 0
DO. 6-2-1, per yd. cube . . . 1 18 0
DO. in upper floors, add 15 per cent.
DO. in reinforced-concrete work, add 20 per cent.
DO. in underpinning, add 60 per cent.
LIAS-LIME CONCRETE, per yd. cube . £1 16 0
BREEZE CONCRETE, per yd. cube . 1 7 0
DO. in lintels, etc., per ft. cube . 0 1 6
CEMENT concrete 4–2–1 in lintels packed around reinforcement, per ft. cube 0 3 9
FINE concrete benching to bottom of manholes, per ft. cube . . . 0 2 6
FINISHING surface of concrete spade face, per yd. sup. 0 0 9

DRAINER

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

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

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

Note.—These prices include digging concrete bed and filling for normal depths, and are average prices.
Fittings in Stoneware and Iron according to type. *See* Trade Lists.

BRICKLAYER

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

London stocks, per M. . . . £4 15 0
Flettons, per M. 2 18 0
Staffordshire blue, per M. . . . 9 10 0
Firebricks, 2½ in., per M. . . . 11 3 0
Glazed salt, white, and ivory stretchers per M. 24 10 0
DO *headers, per M.* 24 0 0
Colours, extra, per M. 5 10 0
Seconds, less, per M. 1 0 0
Cement and sand, see "Excavator" above.
Lime, grey stone, per ton . . . 2 17 0
Mixed lime mortar, per yd. . . . 1 6 0
Damp course, in rolls of 4½ in., per roll 0 2 6
DO. 9 *in. per roll* 0 4 9
DO. 14 *in. per roll* 0 7 6
DO. 18 *in. per roll* 0 9 6

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

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

MASON

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

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

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

HALF SAWING, per ft. sup. . . . £0 1 0
Add to the foregoing prices, if in York stone, 35 per cent.
DO. Mansfield, 12½ per cent.
Deduct for Bath, 33⅓ per cent.
DO. for Chilmark, 5 per cent.
SETTING 1 in. slate shelving in cement, per ft. sup. 0 0 6
RUBBED round nosing to do., per ft. lin. 0 0 6
YORK STEPS, rubbed T. & R., ft. cub. fixed 1 9 0
YORK SILLS, W. & T., ft. cub. fixed . 1 13 0
ARTIFICIAL stone paving, 2 in. thick, per ft. sup.. . . . . 0 1 6
DO. 2½ in. thick, per ft. sup. . . 0 1 9

SLATER AND TILER

SLATER, 1s. 9½d. *per hour*; TILER, 1s. 9½d. *per hour*; SCAFFOLDER, 1s. 5½d. *per hour*; LABOURER, 1s. 4½d. *per hour.*
N.B.—Tiling is often executed as piecework.

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

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

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

SLATING, 3 in. lap, compo nails, Portmadoc or equal:
Ladies, per square £4 0 0
Countess, per square 4 5 0
Duchess, per square 4 10 0
WESTMORLAND, in diminishing courses, per square 6 5 0
CORNISH DO., per square 6 3 0
Add, if vertical, per square approx. . 0 13 0
Add, if with copper nails, per square approx. 0 2 6
Double course at eaves, per ft. approx. 0 1 0
SLATING with old Delabole slates to a 3 in. lap with copper nails at per square.

	Med. Grey	Med. Green
24 in. × 12 in.	£5 0 0	£5 2 0
20 in. × 10 in.	5 5 0	5 10 0
16 in. × 10 in.	4 15 0	5 1 0
14 in. × 8 in.	4 10 0	4 15 0

Green randoms 6 7 0
Grey-green do. 5 9 0
Green peggies, 12 in. to 8 in. long . 4 17 0
TILING, 4 in. gauge, every 4th course nailed, in hand-made tiles, average per square 5 6 0
DO., machine-made do., per square . 4 17 0
Vertical Tiling, including pointing, add 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 1 6
Mahogany, Honduras, per ft. sup. of 1 in. 0 1 4
DO. *Cuba, per ft. sup. of 1 in.* . . 0 2 6
DO., *African, per ft. sup.* . . 0 1 3
Teak, per ft. sup. of 1 in. . . . 0 1 6
DO., *ft. cube* 0 15 0

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

continued overleaf

CARPENTER AND JOINER: *continued.*

SHUTTERING to face of concrete, per square	£1	10	0
DO. in narrow widths to beams, etc., per ft. sup.	0	0	6
USE and waste of timbers, allow 25 per cent. of above prices.			
SLATE BATTENING, per sq.	£0	12	6
DEAL boarding to flats, 1 in. thick and firrings to falls, per square	2	10	0
STOUT feather-edged tilting fillet to eaves, per ft. run	0	0	6
FEATHER-edged springer to trimmer arches, per ft. run	0	0	4
STOUT herringbone strutting (joists measured in), per ft. run	0	0	6
SOUND boarding, ⅞ in. thick and fillets nailed to sides of joists (joists measured over), per square	2	0	0
RUBEROID or similar quality roofing, one-ply, per yd. sup.	0	2	3
DO., two-ply, per yd. sup.	0	2	6
DO., three-ply, per yd. sup.	0	3	0
TONGUED and grooved flooring, 1½ in. thick, laid complete with splayed headings, per square	2	5	0
DEAL skirting torus, moulded 1½ in. thick, including grounds and backings, per ft. sup.	0	1	0
TONGUED and mitred angles to do.	0	0	6
WOOD block flooring standard blocks laid herringbone in mastic :			
Deal 1 in. thick, per yd. sup.	0	10	0
DO. 1½ in. thick, per yd. sup.	0	12	0
Maple 1½ in. thick, per yd. sup.	0	15	0
DEAL moulded sashes, 1¼ in. with moulded bars in small squares, per ft. sup.	0	2	6
DO. 2 in. do., per ft. sup.	0	2	9
DEAL cased frames, oak sills and 2 in. moulded sashes, brass-faced pulleys and iron weights, per ft. sup.	0	4	6
MOULDED horns, extra each	0	0	3
DOORS, 4-panel square both sides, 1½ in. thick, per ft. sup.	0	2	6
DO. moulded both sides, per ft. sup.	0	2	9
DO. 2 in. thick, square both sides, per ft. sup.	0	2	9
DO. moulded both sides, per ft. sup.	0	3	0
DO. in 3 panels, moulded both sides, upper panel with diminished stiles with moulded bars for glass, per ft. sup.	0	3	6
If in oak, mahogany or teak, multiply 3 times.			
DEAL frames, 4 in. × 3 in., rebated and beaded, per ft. cube	£0	15	0
Add for extra labours, per ft. run	0	0	1
STAIRCASE work :			
DEAL treads 1¼ in. and risers 1 in., tongued and grooved including fir carriages, per ft. sup.	0	2	6
DEAL wall strings, 1¼ in. thick, moulded, per ft. run	0	2	6
If ramped, per ft. run	0	5	0
SHORT ramps, extra each	0	7	6
ENDS of treads and risers housed to strings, each	0	1	0
2 in. deal mopstick handrail fixed to brackets, per ft. run	0	1	6
4½ in. × 3 in. oak fully moulded handrail, per ft. run	0	5	6
1¼ in. square deal bar balusters, framed in, per ft. run	0	0	6
FITTINGS :			
SHELVES and bearers, 1 in., cross-tongued, per ft. sup.	0	1	6
1¼ in. beaded cupboard fronts, moulded and square, per ft. sup.	0	2	9
TEAK grooved draining boards, 1¼ in. thick and bedding, per ft. sup.	0	4	6
IRONMONGERY :			
Fixing only (including providing screws) :			
To DEAL—			
Hinges to sashes, per pair	0	1	2
Do. to doors, per pair	0	1	7
Barrel bolts, 9 in., iron, each	0	1	0
Sash fasteners, each	0	1	0
Rim locks, each	0	1	9
Mortice locks, each	0	4	0

SMITH

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

*

Mild Steel in British standard sections, per ton	£12	10	0
Sheet Steel :			
Flat sheets, black, per ton	19	0	0
DO., *galvd., per ton*	20	0	0
Corrugated sheets, galvd., per ton	20	0	0
Driving screws, galvd., per grs.	0	1	10
Washers, galvd., per grs.	0	1	1
Bolts and nuts, per cwt. and up	1	18	0

*

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

PLUMBER

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

*

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

*

MILLED LEAD and labour in gutters, flashings, etc.	3	2	6
LEAD PIPE, fixed, including running joints, bends, and tacks, ½ in., per ft.	0	2	0
DO. ¾ in., per ft.	0	2	3
DO. 1 in., per ft.	0	3	0
DO. 1½ in., per ft.	0	4	0
LEAD WASTE or soil, fixed as above, complete, 2½ in., per ft.	0	6	0
DO. 3 in., per ft.	0	7	0
DO. 4 in., per ft.	0	9	9
WIPED soldered joint, ½ in., each	0	2	6
DO. ¾ in., each	0	3	2
DO. 1 in., each	0	3	8
BRASS screw-down stop cock and two soldered joints, ½ in., each	0	11	0
DO. ¾ in., each	0	13	6
CAST-IRON rainwater pipe, jointed in red lead, 2½ in., per ft. run.	0	1	7
DO. 3 in., per ft. run	0	2	0
DO. 4 in., per ft. run	0	2	10
CAST-IRON H.R. GUTTER, fixed, with all clips, etc., 4 in., per ft.	0	2	0
DO. O.G., 4 in., per ft.	0	2	3
CAST-IRON SOIL PIPE, fixed with caulked joints and all ears, etc., 4 in., per ft.	0	4	6
DO. 3 in., per ft.	0	3	6
Fixing only :			
W.C. PANS and all joints, P. or S., and including joints to water waste preventers, each	2	5	0
BATHS, with all joints	1	3	6
LAVATORY BASINS only, with all joints, on brackets, each	1	10	0

PLASTERER

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

*

Chalk lime, per ton	£2	17	0
Hair, per cwt.	1	15	0
Sand and cement see "Excavator," etc., above.			
Lime putty, per cwt.	£0	2	9
Hair mortar, per yd.	1	7	0
Fine stuff, per yd.	1	14	0
Sawn laths, per bdl.	0	2	9
Keene's cement, per ton	5	15	0
Sirapite, per ton	3	10	0
DO. *fine, per ton*	3	18	0
Plaster, per ton	3	0	0
DO. *per ton*	3	12	6
DO. *fine, per ton*	5	12	0
Thistle plaster, per ton	3	9	0
Lath nails, per lb.	0	0	4

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LATHING with sawn laths, per yd.	0	1	7
METAL LATHING, per yd.	0	2	3
FLOATING in Cement and Sand, 1 to 3, for tiling or woodblock, ¾ in., per yd.	0	2	4
DO. vertical, per yd.	0	2	7
RENDER, on brickwork, 1 to 3, per yd.	0	2	7
RENDER in Portland and set in fine stuff, per yd.	0	3	3
RENDER, float, and set, trowelled, per yd.	0	2	9
RENDER and set in Sirapite, per yd.	0	2	5
DO. in Thistle plaster, per yd.	0	2	5
EXTRA, if on but not including lathing, any of foregoing, per yd.	0	0	5
EXTRA, if on ceilings, per yd.	0	0	5
ANGLES, rounded Keene's on Portland, per ft. lin.	0	0	6
PLAIN CORNICES, in plaster, per inch girth, including dubbing out, etc., per ft. lin.	0	0	3
WHITE glazed tiling set in Portland and jointed in Parian, per yd., from	1	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	4½
DO. 26 oz.	0	0	5
Cathedral white, per ft.	0	0	7
Polished plate, British ¼ in., up to 2 ft. sup. per ft.	0	1	6
DO. *4 ft. sup.* "	0	2	9
DO. *6 ft. sup.* "	0	3	0
DO. *20 ft. sup.* "	0	3	7
DO. *45 ft. sup.* "	0	3	9
DO. *65 ft. sup.* "	0	3	11
DO. *100 ft. sup.* "	0	4	4
Rough plate, ⅛ in., per ft.	0	0	6½
DO. *¼ in., per ft.*	0	0	6¾
Linseed oil putty, per cwt.	0	15	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	0
Glazing only, polished plate, 6½*d.* to 8*d.* per ft. according to size.			

PAINTER AND PAPERHANGER

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

*

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

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

SUNDRIES

Fibre or wood pulp boardings, according to quality and quantity.
The measured work price is on the same basis . . . per ft. sup. £0 0 2½

FIBRE BOARDINGS, including cutting and waste, fixed on, but not including studs or grounds, per ft. sup. . . . from 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, $\frac{5}{32}$ in., grey flat, per yd. sup.	0	2	3
DO., *corrugated, per yd. sup.*	0	3	3
ASBESTOS SHEETING, fixed as last, flat, per yd. sup.	0	4	0
DO., corrugated, per yd. sup.	0	5	0
ASBESTOS slating or tiling on, but not including battens, or boards, plain "diamond" per square, grey	2	15	0
DO., red	3	0	0
Asbestos cement slates or tiles, $\frac{5}{32}$ in. punched per M. grey	16	0	0
DO., *red*	18	0	0
ASBESTOS COMPOSITION FLOORING : Laid in two coats, average ¾ in. thick, in plain colour, per yd. sup.	0	7	0
DO., ¼ in. thick, suitable for domestic work, unpolished, per yd.	0	6	6
Metal casements for wood frames, domestic sizes, per ft. sup.	0	1	6
DO., *in metal frames, per ft. sup.*	0	1	9
HANGING only metal casement in, but not including wood frames, each	0	2	10
BUILDING in metal casement frames, per ft. sup.	0	0	7

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

PLYWOOD, per ft. sup.

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