THE ARCHITECTS' JOURNAL

THE ARCHITECTS' JOURNAL
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As announced in our New Year issue, in which we gave a selection of the work of Mr. Clough Williams-Ellis, THE ARCHITECTS' JOURNAL for Wednesday next will illustrate the additions that have been made by that architect to the buildings at Stowe School, Buckinghamshire. A critical article is contributed by Mr. A. R. Powys. The Editor regrets that owing to the large numbers of questionnaires that reached him at the last minute his report on architectural criticism will not only have to be postponed, but owing to its great length it will be necessary to publish it in two instalments. The first of these will appear on Wednesday next, April 28, and the other the week following.

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PRINCIPAL CONTENTS

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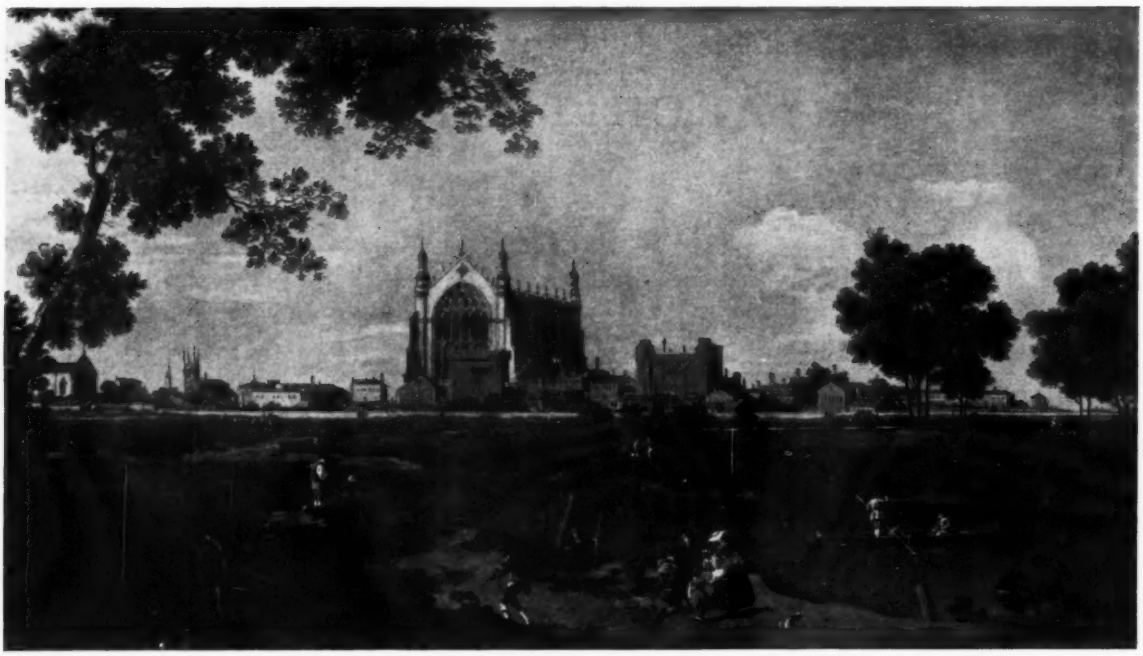
CHRISTIAN BARMAN, *Editor*

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



RENDERINGS OF ARCHITECTURE

Selected and annotated by Dr. Tancred Borenius.

xvi. Antonio Canale, called Canaletto (1697-1768). Eton College.

Until recently, the circumstances under which Canaletto visited England were but insufficiently known ; but thanks to the researches of Mrs. Finberg, we now possess considerable information concerning this interesting episode of the artist's career. It is thus established beyond the possibility of doubt that Canaletto stayed in England from 1746 to 1755, save for an eight months' visit to Venice in 1750-51 ; and even the house in which Canaletto lodged in London—in Beak Street, off Regent Street—has been identified. Views of London figure most prominently among Canaletto's English subjects ; but he was also in the habit of going farther afield, as he has done, for instance, in this charming view of Eton, with the River Thames in the foreground and the chapel and school buildings in the middle distance—a picture probably painted about 1747. The peculiar fascination which attaches to Canaletto's English subjects may be defined as springing from the blending of exquisite Venetian Rococo gracefulness, with characteristic, more severe and staid English features.—[National Gallery, No. 942.]

THE ARCHITECTS' JOURNAL

Wednesday, April 21, 1926

ART, INDUSTRIALISM, AND DEMOCRACY

One of the most difficult tasks which architects are called upon to perform is that of adjusting themselves to modern conditions. And not only must they make this continual compromise with an insistent modernity, but they must exhibit an alert intelligence which will enable them to ascertain the true quality of contemporary conditions; for some of these are merely ephemeral, while others reach towards the future, and are thus entitled to a determining influence upon the practice of their art. Of this latter kind, is a circumstance brought about by industrialism, namely a tendency towards the mechanization of the means by which all manner of objects are made. That stimulating series of little volumes on great subjects called *Books of To-day and To-morrow*, issued by Mr. Kegan Paul, is worthy of special study by architects, who can scarcely fail to find in them matter of interest to themselves. Mr. Lionel R. McColvin's essay entitled " Euterpe," or " The Future of Art," has for its subject the effect on art of mechanical methods of reproduction and the conclusions to which he arrives have naturally a bearing upon architecture.

It is apparent that our art is affected even more seriously by these methods than are the sister arts of painting and sculpture, because while in the latter the processes of reproduction are frequently employed to multiply examples of what is good in art, copies of famous paintings or statues, for instance, of which the cultural value is actually extended by this process, in architecture the multiplication of what is beautiful can less easily take place. Buildings are living things which have or should have an organic relationship to their sites and, moreover, are determined by conditions of an architectural " programme " which can very seldom be repeated in every detail; so such standardization as can appear in architecture either takes the form of an abortion, such as the " standard house," or else it consists in the mechanical reproduction of doors, windows, or other features of a house. To standardize architectural design is always fatal, but to standardize small units of material capable of being combined in an infinite variety of ways is, of course, quite permissible, and leads to a great economy in construction. The only way to combat the abuse of standardization is so to educate the public that it will be able to recognize and, having recognized, to condemn the harshness and inadequacy of those designs in which standardized parts inharmoniously related to the features adjacent to them have been incorporated. And here we come to another factor to which Mr. McColvin has devoted a considerable part of his argument, namely, the corruption of public taste brought about by the great increase in the number of those who have at least some appreciation of the arts and have been elevated to the status of patrons, with powers to determine to an important degree the commercial output of artistic products. Mr. McColvin raises the question : how far democracy is compatible with the maintenance of a high standard in the arts ? He seems imbued with the belief that the corruption of the arts comes from below, and that it is possible for representatives of the comparatively large class who have but a limited appreciation of the arts to take charge of artistic developments and to create movements and tendencies in defiance of the few master spirits who are the true interpreters of art. This is a somewhat dangerous attitude to take, and it is perhaps questionable whether it is justified in history. Ultimate responsibility for the condition of art must always rest with artists, and it is not permitted to them to blame others less qualified than themselves for whatever is evil in the world of art. For where the general standard of achievement is low we are justified in assuming either that the leaders of opinion had no knowledge of any method whereby this state of affairs could be remedied or else having such knowledge, they were unable to communicate it to others. In the one case they are convicted of ignorance, and in the other they show themselves to be lacking both in energy and in public spirit.

It would be difficult to find an historical example of a civilization in which the high standard of excellence in the practice of the most famous living artists was not accompanied by a very creditable achievement on the part of humbler executants. Let us consider the eighteenth century in England, for instance. In that period great architects flourished, whose buildings still rank among the chief ornaments of our cities. But at the same time we find that the most obscure builders seemed imbued with the capacity to design structures in entire harmony with those which the great architects erected. A high level of taste permeated right through the society of that age. The builders in all humility studied the works of the great architects and reproduced their style, modifying it to meet the requirements of the house or street which they were designing. And does not the speculative builder of to-day with a similar humility turn to the pages of the architectural journals for inspiration ? Let us be candid with ourselves and admit that there is no fault in the speculative builder's work which does not owe its existence to examples which architects themselves have set before them, and this especially applies to the last century, during which our art reached its very nadir. Now that the standard of professional achievement has made a notable advance the buildings which are not designed by architects also show an improvement. It is not in the power of democracy to destroy the arts. Only artists themselves can do this.

NEWS AND TOPICS

MR. GILBERT BAYES and Mr. Laurence A. Turner joined forces at the R.I.B.A. on Monday night in their plea for the co-operation of the architect and the craftsman. In architecture the entasis on a column or the balance of a building may be a very fine thing, said Mr. Bayes, but it was not enough to hold the attention of the unsophisticated, and he urged that here the craftsman could help the architect, in fact he was necessary to him. A craftsman might have ways of getting round a difficulty that the architect did not know, just as the architect had difficulties that the craftsman had not realized; one of his difficulties was, of course, cost, but even here the craftsman might be of use in suggesting the alternative treatment or material. America had done very fine work in applying sculpture to architecture, and there the sculptor, in some cases at least, was called in at a much earlier stage to co-operate with the architect, and the work between the two was apparently much closer than was usually the case here. Of course, one could recall cases where the co-operation had been almost perfect, but it was the exception rather than the rule.

Mr. Laurence Turner said that the ideal position for the architect to take was to design his building, to suggest the main lines of the enrichments, and to leave the detailing of the embellishments to the man who had to carry them out. If he said the man was not capable of doing so, it was evident he had gone to the wrong craftsman.

* * *

The Building Exhibition that was formally declared open by the Lord Mayor of London, Sir William Pryke, last Wednesday, and which remains open until the 28th of this month, is distinctly the best of the notable series of exhibitions which have been organized by Mr. Greville Montgomery. Never was a building exhibition more necessary than at the present time, when building materials, both traditional and novel, are alike subjected to keen scrutiny by those who are interested in making good the housing shortage. The privilege of choosing the materials for a building under conditions which allow of the quotations and the qualities offered by different firms being readily compared with one another is a very real benefit to the house-owner and his representatives, the architect and the builder, and, if exercised wisely, will assuredly help to decide whether houses in the near future shall be built in brick or no. Mr. Montgomery and all those who have assisted him should be proud of their achievement, for they have rendered a great service to the community in making accessible to it essential information which was formerly inaccessible. The subject matter of the exhibition is extensive, ranging from sanitation to decoration, and from students' handicrafts to modern machinery, and the amount of material handled is prodigious. Large as Olympia is, the floor space is taxed to accommodate the number of stalls as they are at present arranged, and the captious visitor may complain that he is being given too much for his money! Seriously speaking, facilities for seeing the various stalls in comfort could be vastly extended by an up-to-date remodelling of the exhibition plan with special reference to accessibility and visibility. Good as the exhibition is at present, its effectiveness as a distributor of information could be easily trebled by these means, which would also, incidentally, vastly improve its artistic appeal.

* * *

It is said that evidence of public spirit is on the wane but then every age compares itself unfavourably with its predecessors. Whether that be so or not two of Manchester's citizens have, in the course of the last week, enriched their city by a most magnanimous gift. Mr. and Mrs. E. D. Simon have given to the Corporation of Manchester Wythenshawe Hall and a surrounding 250 acres. Mr. Simon is a well-known figure, not only in his native town in which a few years ago he was Lord Mayor, but also in Westminster, he is known, too, by architects as one keenly interested in housing, and as the author of *Housing for All*, and part author of *The Smokeless City*. The gift of Wythenshawe is particularly appropriate, since the area is one which was scheduled as parklands in the regional town planning scheme. Moreover the Corporation was already contemplating buying the whole of the Wythenshawe estate comprising some 4,500 acres for development for housing. Should this scheme still go forward the neighbourhood is assured of a fine open space, and the south of the city will have a park commensurate with Heaton Park in the north. The timely gift has obviated the disaster which occurred at Trafford Park, when that estate was snapped up for speculative development right under the very noses, as it were, of the Corporation who were negotiating its purchase. Wythenshawe Hall itself will, in all probability, be used as is Heaton Hall, as a branch art gallery or museum.

* * *

According to Mr. Flower, chairman of the Shakespeare Memorial Theatre, there is to be a new building at Stratford-on-Avon, and not a re-building of the old theatre, and the design is to be the subject of a competition. This is good news. The competition, provided that the conditions are wisely drawn up, should be one of the most interesting in recent years. I hope that some opportunity will be given for the successful architect, or even for a panel of selected architects, to make a thorough study of the theatres of Europe and, perhaps, America. For my own part I do not think that the plan of Wagner's theatre at Beyreuth can be bettered. I attended some performances there in 1911, when, by the way, a committee of us discussed with Siegfried Wagner the possibility of erecting a temporary theatre near London for some special performances of Parsifal, until then never performed outside Beyreuth, and I was very greatly impressed by the perfect visibility and acoustics from every part of the theatre. The trouble is that the plan is so direct and simple, that it does not appeal to the present-day mind, which seems to eschew the simple, direct, and obvious solution to any problem. The appearance of the Festspielhaus leaves much to be desired, but Wagner was short of money, and we hope the memorial theatre will not find themselves in that predicament, although I believe that so far they have only the £25,000 insurance money (£20,000 for the building, and £5,000

for the wardrobe), which will not go far towards a new theatre. It is most important, in my opinion, that the competing architects be unhampered. There must, at all events, be no restrictions as to style. It would be as foolish to build in the "Shakespearean" style as to equip the theatre with a "Shakespearean" lighting installation or a "Shakespearean" drainage system.

* * *

By the time these pages appear in print the new Smoke Abatement Bill may have come up for discussion. Personally I think little of it, and I doubt if the atmosphere of England will be appreciably benefited, and that, after all, is, I presume, the object of the Bill. With two such serious omissions, that of domestic smoke and of steamship smoke, but little atmospheric purification can come about. The exclusion of steamers is quite incomprehensible; at least no, it is not, it shows clearly enough the immense power of vested interests to obstruct the welfare of the community. I remember last summer dining at the Yacht Club at Copenhagen and looking out across the great harbour. The sea and the sky were blue, the air clean and clear, with scarcely a wisp of smoke to blemish its purity, and yet great ships were coming and going unceasingly. My first impressions of Copenhagen were like Sterne's impressions of France, "They manage these things better in Denmark." There are better reasons for the exclusion of domestic smoke, although wise legislation would have attempted to offer some sort of an inducement to householders to make their houses smokeless, on the lines suggested by Dr. Owens, and recently dealt with in this JOURNAL. As far as I can see, this Bill is a mass of by-laws, and "powers," and exemptions—while fogs will continue, lungs become affected, tuberculosis flourish, buildings rot, and sunshine, which alone can cure our ailments and refresh our spirits, will, as heretofore, be denied us.

* * *

From May 17 to 23 the twenty-first birthday of Letchworth Garden City will be celebrated with a "Civic week," of which the Duke of York has consented to act as patron, and Brigadier-General Viscount Hampden, Lord-Lieutenant of the County of Hertfordshire, as president. There are to be conferences, exhibitions, official receptions, lunches, and dances, a window-dressing carnival and May-day festival. Speakers at the conferences will include Mr. Ebenezer Howard, the founder; Mr. Neville Chamberlain, Minister of Health; Dr. Seward, vice-chancellor of Cambridge University; Mr. Cecil Harmsworth, and Mr. J. H. Wheatley. They will discuss housing, town planning, local government, education, and industrial welfare. It is noteworthy that when a census was recently taken, it was found that the number of persons residing at Letchworth was about 13,000. The capital cost to the main company up to the end of 1925 was £750,000, that spent on land and development, £450,000. Water, electricity, and other undertakings controlled by the company have cost £300,000 including loans. Investors had to wait fifteen years before they saw any dividend, but for the past three years the maximum dividend of 5 per cent. has been paid, and for the year ending September, 1925, net profit amounted to £12,500. Some £2,000,000 has been sunk altogether in houses and factories. There are parks, playing fields, tree-lined avenues, theatres, shops, a swimming bath, golf-course, and every amenity conducive to recreation and health. The founders of Letchworth Garden City have reason to be proud of their achievement.

* * *

The Church of St. Magnus the Martyr, although it has lately suffered the indignity of being completely overborne by its new architectural neighbour at London Bridge, yet receives some honour even in this generation, and has just been the scene of a festival celebrating its patron saint. Evidence from calendars seems to point that this personage was one or other of the early Roman martyrs. It appears probable from the facts that in 1067 the church is distinguished as a "stone church," that it stood in an important position near the head of the Roman bridge just below the Forum, and in a densely populated part of the City, and from its dedication to an early Roman martyr, that the church was founded by St. Augustine or St. Mellitus, or even in Romano-British times. It stands on a site held probably for at least a thousand years, and was once guardian of the bridge and gate of London, and thus witness of a large part of English history. When the question of the "nineteen City churches" is finally put these considerations may carry weight and help to save from demolition a beautiful Wren church.

* * *

Derwent Wood delighted in fine form, spatial or flat. The exhibition of his works at the Leicester Galleries is as remarkable for its studies as for its accomplishments, both in the region of the plastic and the graphic. It is not surprising, therefore, to find he had also a proper feeling for architecture. In life he always resented interference and hated to work in harness even though his fellow in the collar were an architect. He worked successfully with architects, but there are indications in this memorial exhibition which are eloquent of what he might have done in this direction if he had had further opportunities. He

was never called upon to exercise in London the undoubted gift for the monumental he possessed. Here it is only demonstrated by sketches. Despite his assertive personality, no one more successfully hid his talents under a bushel. Known, except to the few, as sculptor, he is here displayed as painter in oils and as draughtsman in line and water-colour; as fertile designer and as student of Nature. Sometimes he was a better designer in the flat than in the round, as witness his conventional Entombment in plaster, and his astonishing revelation of the same subject in oil-painting, a work which is in some respects the most startling of the show. There are numbers of his exquisite statuettes in bronze in the total of 118 works exhibited, and these give some indication of his accomplished plastic technique. His love of nature and his designing powers are well seen in numbers of drawings and decorative panels.

* * *

The general effect of the large central gallery at Spring Gardens gives the impression that the New English Art Club is given over to sombre decoration. Most of the large designs are very low in tone and not very well drawn or conceived. Here and there the effect, apt to become depressing, is lightened by Fairlie Harmer, Eric George, Barnard Lintott, Wilson Steer, Henry Tonks, and J. Southall. There are two memorial collections, that of the fine strong work of Robert Bevan, who could make decorations of his pictures, and that of Francis Urwin, to whom architecture was as attractive as landscape. Architectural understanding reaches a high pitch of excellence in the two fine drawings by Allan McNab: Scilla, and Genova, whose landscape is perfunctory. Further, there are the quite admirable drawing of Henry Rushbury (Governor's Court, Bank of England), and the picture of Venice, by Francis Dodd.

* * *

The most interesting pictures now on view in London are to be seen at the Leicester Galleries, where Mr. Joseph Southall and Mr. C. R. W. Nevinson are holding a joint exhibition. The work of both these artists has a particular interest for architects. Mr. Southall was himself an articled pupil to an architect from 1878 to 1882. That this training has since exercised a very marked influence upon his work is easily seen in his treatment of buildings in his painting. His sane and delicate understanding of their construction, his careful sense of their perspective, his obvious joy in their surfaces have made his many paintings of them profoundly expressive of their nature and quality. A serene and untroubled outlook, conscientious technique, original colour-sense, and, above all, a precise knowledge of his limitations have made Mr. Southall within a limited sphere one of the most perfect artists of our day. Mr. Nevinson's work affords a striking contrast to that of his co-exhibitor. More ambitious, more versatile, infinitely more curious intellectually, more contemporary in spirit than Mr. Southall, he is his inferior in delicacy and conscientious craftsmanship. But there is about his painting a particular glamour and fascination—his easy familiarity with various styles, his boldness, the peculiarly contemporary angle of his vision. As might be expected, his treatment of such contemporary phenomena as commercial buildings and others is full of understanding. Some excellent examples are to be seen here. "A Paris Morning," "Place Blanche," steel construction, and "The Rising City" are all excellent examples. None of them is, however, quite so inspired as his much older picture of New York, through Brooklyn Bridge.

* * *

The 117th exhibition of the Royal Institute of Painters in Water-colours is disappointing. The great majority of the exhibitors have been content to turn out easy little studies according to formulæ which are the worse for being discredited and hackneyed. Mr. P. Lancaster's "The Ridge" has more solidity and sincerity than most, while Mr. F. Spenlove-Spenlove's "As the Grey Day Closes—The Thames near Pangbourne," has lamentably less. Mr. Van Anrooy's "In the Catacombs, Palermo" is an exceedingly skilful piece of work, but the standard of the exhibition is, unfortunately, a low one. So also is that of the 165th Exhibition of the Royal Society of British Artists. The majority of the pictures are uninteresting. Mr. Claude Flight's "Buses in a London Street" is a witty decoration which has attracted considerable attention.

* * *

How true it is, even unto triteness, that often we cannot see the wood for the trees. The party of "hoteliers" from the States, in the course of hustling around our towns to ascertain the backwardness of the hotels of Britain, spared an hour or so for Oxford University. Having "done" all the colleges at lightning speed, a member of the party—a lady—innocently requested: "And now show us your University, I'm longing to see it—I've heard so much about it." It was another lady of the same party who, not being bashful, asked a youthful gownsman: "Are you at school here?" Now, in America, the University ordinarily consists of a large football field, with a negligible college-building attachment. So I am told by a first cousin of Truthful James.

ASTRAGAL

ARRANGEMENTS

THURSDAY, APRIL 22

At the Royal Institute of British Architects. 3.0 p.m. The Earl of Crawford and Balcarres, Hon. F.R.I.B.A., opens the Exhibition of drawings and photographs of Old Bridges of France. The Exhibition will remain open until May 15.

FRIDAY, APRIL 23

At the Town-Planning Institute. 6.0 p.m. Harold Swann on Differences in the Problem of Planning Built-upon and Unbuilt-upon Land.

MONDAY, APRIL 26

At the Institute of Structural Engineers. 6.0 p.m. Ewart S. Andrews on Theory versus Practice.

At the Royal Society of Arts. 8.0 p.m. Charles Reed Peers, C.B.E., M.A., on Ornament in Britain. (Lecture II.)

At the Architectural Association. 7.30 p.m. W. R. Davidge, F.R.I.B.A., F.S.I., on London Development.—Nomination of Officers and Council for Session 1926–1927.

SATURDAY, MAY 1

The Royal Institute of British Architects. Visit to Stowe School, Buckinghamshire.

MONDAY, MAY 3

At the Royal Society of Arts. 8.0 p.m. Charles Reed Peers, C.B.E., M.A., on Ornament in Britain. (Lecture III.)

At the Royal Institute of British Architects. Annual General Meeting.

THE FURNITURE OF THE REGENCY

BY JOHN C. ROGERS

i: COUCHES

[It is a curious fact that the furniture of the Regency is not nearly so well known as the work of the three preceding centuries: moreover, though closer to our own time, it is not commonly seen. Most dealers regard it as unmarketable, and few collectors have yet realized what interesting work was produced during the first two decades of the nineteenth century. Not only is much of this work skilfully designed and faultlessly executed, but we believe that it contains the seeds of genuine modernity, and that more is to be learnt from a study of the products of this period than from those of any other. Mr. Rogers will deal, at regular intervals, with the various groups into which this furniture is divided by its function.—Editor, A.J.]

IT is the purpose in this series of articles to illustrate and describe a variety of the objects of furniture of the Regency, a period which includes the later work of makers and designers such as Sheraton, Chippendale, and Haig; the architects Henry Holland and Sir John Soane, and the much-travelled amateur, Thomas Hope, who was responsible for the remarkable furniture in classic and Egyptian taste with which he equipped his residence in Duchess Street, Cavendish Square, and Deepdene, near Dorking. Designers of Regency furniture were contemporaries of the Adam brothers, and well versed in the adaptation of classic forms; this source of inspiration was increased by a knowledge of the arts of ancient Egypt, which spread rapidly over Europe following Napoleon's expedition to the Nile in 1798. Apart from this, English work owes very little to the French Empire style. The phase developed through architects like Henry Holland direct from the Adam tradition; the designer was free to work as his fancy dictated; in some pieces we see the Sheraton manner merely differing by an increase in mass and proportion, in others a general Sheraton type is enlivened with exquisitely wrought classic detail, or may be Egyptian sphinxes, etc., yet again the entire form will be reminiscent of ancient Rome, and this perhaps with Egyptian enrichment; such things by their skilful rendering indicate a very close study of the originals and a remarkable ability to adapt old shapes and ornament to new uses.

The series commences with couches and settees, and I distinguish between these two terms by placing under couches all those designs in which a support for the recliner is placed at one end only, settees having a complete upper framework with a back and two ends. The woods generally employed in the construction of these settees and couches were beech, mahogany, and rosewood; the first was used for pieces of cheaper quality, stained and polished mahogany colour, or when painted decoration, ebonizing, or veneers were intended. All these have suffered more or less severely from worm, but beech will be found in the underframing of the seat in nearly all types and designs. Mahogany was probably the wood most frequently used for good quality work, the Jamaica and Spanish (i.e. West Indian growths) being preferred to the lighter and open-grained Honduras. Rosewood being a hard, dense wood was also very suitable; a tough, compact grain and fibre

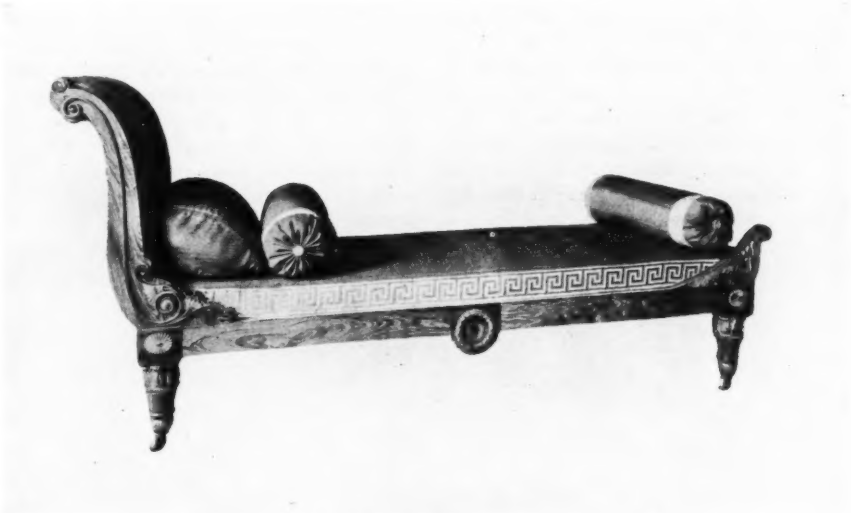


Figure one. A "scrole-end" couch, the frame veneered in an exotic wood resembling tulipwood, and enriched with ormolu mounts (c. 1805). From Mr. E. Knoblock.

being essential in designs embodying so many curved forms in which short grain could not be avoided; moreover, these curved members necessitated much waste of material, yet existing accounts show that the cost of manufacture was quite reasonable, e.g. in the Soane accounts (published by Mr. Bolton in his *The Works of Sir John Soane*) a 4 ft. mahogany couch with "scrole end" stuffed in fine brown linen, bordered hair squab, and feather pillow covered with satin hair cloth welted and stuffed, turned legs on brass socket castors, is priced at eleven guineas. This was in 1817, and in the following year another was supplied : a 5 ft. 6 in. mahogany Grecian couch with " scrole end," etc., etc., for £10. These two pieces were made by John Robins, of Warwick Street, Golden Square; while Kent, Luck and Kent were another firm of cabinet and chair makers working for Soane in the first decade of the nineteenth century.

Figures 1 and 2 show two couches with the simple " scrole end." The first is a fine example, veneered in the strongly-marked wood closely resembling tulipwood, and enriched with very good ormolu mounts; it is of excellent workmanship, and reflects the Hope manner in the Greco-Egyptian scrolls in ormolu on the side of head-frame and on spur at the foot. The seat rail centres in an ormolu wreath, while oval rosettes are placed above the turned and mounted legs.

Above, figure two. A rosewood couch with scrolling end or head ; the flat faces of the frame inlaid with arabesques in brass, the curved legs mounted with chased ormolu castors (c. 1810). From Messrs. Lenygon and Morant. Below, figure three. A Regency couch with scroll head and foot, the curves continued into the legs. The frame is painted rosewood colour and decorated in gilt, with borders and classic panel on seat rail (c. 1810). From Messrs. Lenygon and Morant.

In figure 2 a rosewood couch is seen, inlaid with a sort of arabesque pattern in brass, the " scrole end " is rather more boldly curved, and again sits on the seat rail; the legs are of a popular and very general type, each pair arranged in balancing curves, tapering and of rectangular section. The brass castors have richly-chased ormolu capping scrolls. It is evident that the profiling of the scroll ends and the curved legs were set out with great care, and in many examples we find these curves struck from the horizontal seat frame. Figure 3 well expresses this type; the head is very gracefully curved and tapered, and a foot-rest is contrived between the small side scrolls at the lower end.

Above, figure four. A couch with scroll head and foot, with side-wing addition, the frame is mahogany carved with drapery and leaf sprays in panels and reeded on face, the curves terminate in rosettes (c. 1815). From Messrs. Brinsley. Below, figure five. A couch constructed in beechwood, stained and polished to simulate mahogany. The head and foot scrolls are similarly treated, and the prominent curves of the side-wing are very effective (c. 1815-20). From Sir George Lewis.

The frame is painted with a slight grained effect with cream border, the panel on the seat rail is much influenced by the earlier Adam work, admirably proportioned and suited to its position; the legs, which sweep into the upper scrolls, terminate in claw socket castors.

The position which it was originally intended the couch should occupy is generally pretty obvious from its design. The types in figures 1, 2, and 3 are equally suitable to be placed with a side against a wall or with the head backing on the wall and projecting into the room. If the decoration of the framing is found on both sides, the latter position may be safely inferred, and in large rooms of the period this was often done, sometimes a pair were so placed as may be seen in the illustration of a room at Crowley House, Bedfordshire, furnished in 1806, on page xl, vol. i, of *The Dictionary of English Furniture*.

legs are arranged in outward sweeping curves, joining the seat rail in a tablet carved with drapery, and terminating in a circular rosette similar to those at the apex of the head and foot scrolls. A third tablet centres the seat rail.

The fully-developed settee, which I will discuss in the next article, had the side-wing extended to connect two equal ends, either of which could be the head, but in the couch the head is always distinguishable by its preponderating mass and curvature. In figure 5 we see what in a sense is a transitional type between couch and settee (though, of course, settees were in use long before this period), inasmuch as the side-wing goes three parts of the way along the wall, and the foot rises in curves, which are just a smaller edition of the head-frame. This is a very graceful piece of very refined lines, suggesting rest and comfort, the head and foot scrolls are carved with the rope twist and, together with

Figure six. An ebonized couch displaying Continental influence, enriched with cord and rosette mounts in ormolu, the gilt legs vigorously-carved lion paws (c. 1820). From Messrs. Brinsley.

Not only the living-room, but bedrooms also were furnished with couches, and in the latter it was usual to place a side against a wall or the foot of the bed, and in small houses a couch could only occupy a wall position in any room. The demand for this type led to the introduction of a distinctive feature in the provision of a side wing, which is seen in three styles in figures 4, 5, and 6. It should be noted they are all left-handed, and by far the greater majority were so made, the reason, I surmise, was to leave the right arm free to hold a book or to write.

In addition to forming a protection to the wall surface, this wing considerably added to the strength of the member forming the scrolled head, the joints between which and the seat rail are under strain when supporting a reclining person.

Figure 4 is a mahogany couch with reeded framework; the scrolled head resembles figure 1 in the slightness of its curves, while the foot shows prominent inward scrolls forming a very graceful termination and giving quite a different effect from the low or ordinary couch end. The the seat rail, are of oval section. The legs spring from the latter in rectangular panels, have the usual outward curve, and terminate in good foliated socket castors. The side-wing is pleasantly profiled, the effect of the whole being enhanced by its free terminal scroll. The construction appears to be beech throughout, stained and polished a rich mahogany colour.

From figure 5 we may trace the development in figure 6. The upholstery of the head stops short of the scroll, the terminals being linked with a turned spindle. The frame is beech, lacquered black, with ormolu enrichments, and looks very striking with its boldly curving forms; the gilt lion-claw legs are very unusual and somewhat unrelated to the superstructure, although actually the effect is good.

The curved work in these couches represents a degree of daring and skill in joinery which is seldom found in earlier styles, and is the expression of an age in which furniture craftsmen had reached the summit of executive ability, and were possessed of a sense and knowledge of architectural form and detail.

CURRENT
ARCHITECTURE
SECTION

THE ROYAL NORTHERN HOSPITAL NURSES' HOME

BY ADAMS, HOLDEN AND PEARSON

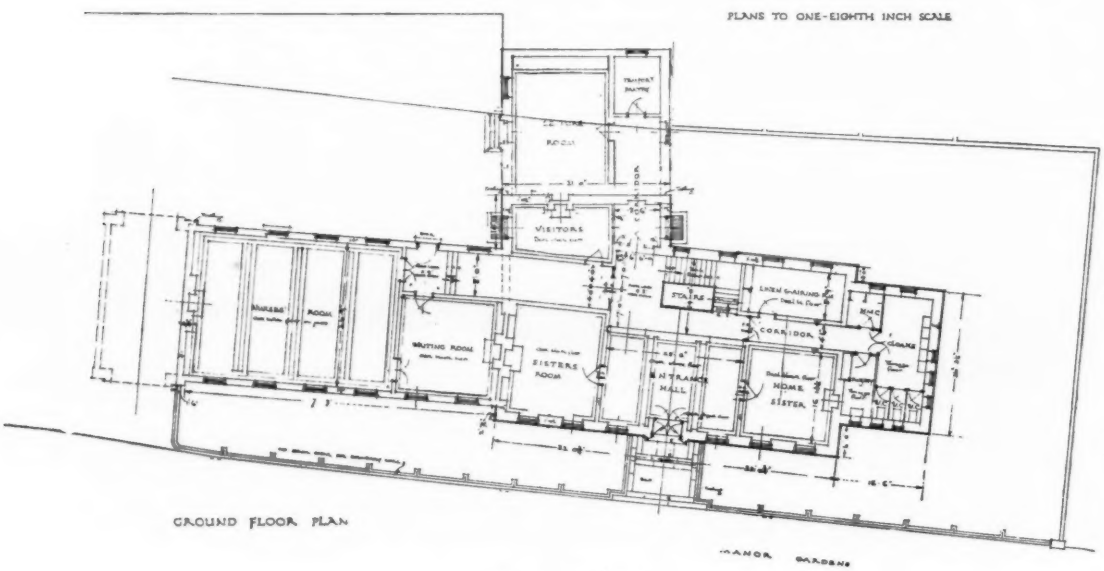
How often it happens that the architect works for himself alone; how often must he suffer discouragement from the knowledge that the care which he expends upon detail will pass for all time unappreciated, and how great, therefore, must be his delight to find here and there someone who appreciates all his labour. The architects of the Nurses' Home at the Royal Northern Hospital are in this fortunate position, for the whole staff seems to be aware of the beauty and elegance of their new home, and to take a pride and delight therein. And truly there is much to delight in.

The main entrance in Manor Gardens

Coming up the quiet Manor Gardens which run off from the rear of Holloway Road, the mellow brickwork, and all who are familiar with the work of Messrs. Adams, Holden and Pearson will know just how mellow and how fine in texture the brickwork will be, is the first delight; then there is the beauty of the proportion of the windows, the directness of the masonry, and the simplicity of the iron-work, all a prelude to the delights within, the first of which are encountered in the entrance hall. It requires an analytical mind to discover just what it is that is so pleasing about this first glimpse of the inside of the Home. The delicate treatment of the ceiling, the radiator grille, the billiard-cloth notice-board, with its black frame on the white ground, the architraves, the doors, and the sturdy table—designed by the architects—and the neutral tinted walls are the ingredients. The principal room on the ground floor is the large nurses' sitting-room, reticent and elegant with its space and proportions; it has little of the "institution" feeling about it, and yet somehow just a nuance, sufficient to distinguish it from a Mayfair drawing-room.

The writing-room is in its way just as cheerful and pleasant, and the lettering of the word "Silence" over the fireplace is a decoration in itself. Lettering, indeed, is one of those small matters of detail upon which care has been taken, and the little notices which are in evidence here, there, and everywhere, "Please switch off the light when not in use," and so on, are so beautifully printed that whatever rebuke may lay in the admonition is readily overlooked.

ROYAL NORTHERN HOSPITAL : HOLLOWAY ROAD N : NEW NURSES' HOME



Plans of the ground and first floors

A general view.

Above, a nurses' sitting-room.
Below, a sisters' sitting-room.

The two sisters' rooms athwart the main entrance are pleasant light rooms, and in both the ceilings merit attention, that on the right with its deep cove being particularly attractive. The ceilings of the corridors, too, are charming and delicate.

The comfort of the nurses has been well considered. The meals are served in the hospital, but provision has been made for the serving of breakfast in the bedrooms of the night-duty staff, for which purpose there is a small kitchen. The bathrooms and w.c.'s are gathered into a block at the end of the passages, where there is also a shampoo basin with electric hair-drying appliance, separately metered for the insertion of money. Accommodation is provided for personal laundry and ironing, and there is a small first-aid room. Those who advocate wash-basins in every bedroom may criticize the absence of them in the nurses' bedrooms, but there is much to be said in favour of omitting their installation. In the first place, they add very considerably to the initial cost, and funds for hospital building are rarely plentiful, yet this by itself would not, perhaps, be a serious objection. But the addition of a hundred or so wash-basins adds to upkeep expenses; wastes become frequently choked, owing to basins being used for purposes for which they are not intended; basins become cracked, or they are allowed to overflow and so cause great damage, and, later, are left dripping. It is clear, therefore, that there is much to be said against installing them on a large scale.

Mention has been made of the hall table which was designed by the architects. Several other pieces of furniture are their work, and it is not difficult to distinguish them, for they are informed with much the same quality as informs the building. There is a smaller table, also in the hall, the only ornamentation on which is a couple of square grooves, or chases, round the legs, near the ground, the same "motif" as may be seen in certain masonry details: it is a fine sturdy little table, thoroughly sensible and satisfactory; so, too, are the lattice-backed chairs.

The portion of the Home at present completed is but a first instalment, and the whole Home is but part of a much larger scheme which, when completed, will fill the gap along Manor Gardens between the present portion and the new building lower down the street which was built as a war memorial. Then behind there are to be new ward blocks connected by balconies. The Royal Northern Hospital thus has a complete building programme which it will take a great many years to complete. It is well that the town-planning idea should be adopted for buildings of this kind, for they are, indeed, a microcosm of our towns, and in the past have developed in just the same haphazard way, with just the same uneconomical and unsatisfactory results.

Those who are familiar with the work of Messrs. Adams, Holden and Pearson may, perhaps, be inclined to compare this block to some of their earlier work, to, let us say, Midhurst Sanatorium (a much vaster undertaking). And as we have made use of the word "mellow" earlier in this article, we may do so again and say that this recent building seems to have throughout a surer touch and an increased quality of mellowness in the design. Without a doubt when the full programme is finished there will be a notable addition to London architecture, albeit one which as likely as not will receive all too little recognition. Nevertheless it must be some consolation for the architects to know, as we have already hinted, that their building is appreciated by those whose work is carried on within its walls, and, we think, too, that its charm, its dignity, its beauty, and its grace are not without their unconscious effect upon the welfare of those who come and go and dwell within its walls.

H. J. B.

(For list of contractors and sub-contractors, see page 637.)

Above, the writing room.
Below, the entrance hall.

A LANDMARK OF NEW AMERICA

BY JOHN ROTHENSTEIN

THE building which the Telephone Company has lately erected in San Francisco is a momentous stepping-stone in the direction of American emancipation from the classical tradition. In truth, it is more than a stepping-stone; it is a victory, a victory as necessary to America's architectural freedom from European domination as any of those won by Washington's soldiers were to her political independence of Great Britain.

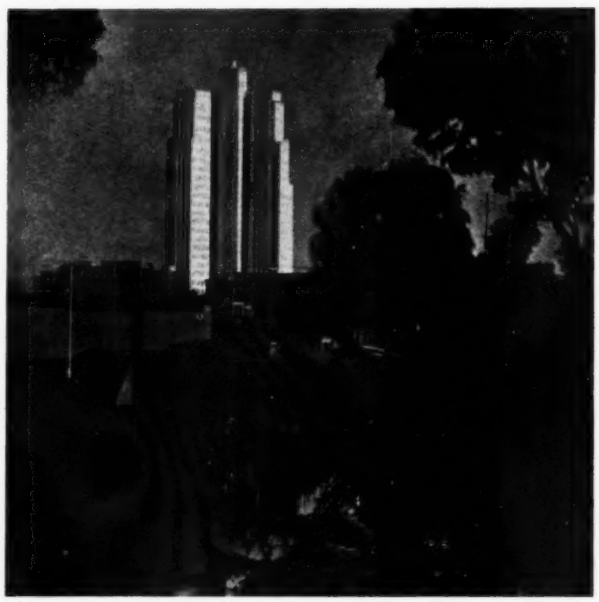
American architects are the world's masters in the art of creative eclecticism. A truly native architecture has not yet emerged, in spite of its essentially native needs and no less essentially native material. Indeed, it is questionable whether a new architecture can be called into being by construction alone. The San Francisco telephone building is not fundamentally a victory for mere parallelopiped-steel-cage construction, but for the eclectic who claims to exercise his gifts unrestricted. And restricted hitherto the American architect has been. No one has been trained to stricter classicism than he, in which tradition he has achieved much. Now he intends to search the East (for new inspiration), where illimitable fields lie unexplored and even unknown. It is significant that this step should have been taken on the Pacific coast where, it has been said, "East is West and West is East, for the twain at last have met."

Such a movement as this, having as its aim the disciplining of the exuberant and infinite invention of the East by Western conceptions of order and unity might revolutionize the architecture of both Orient and Occident.

The San Francisco telephone building is, in many respects, the complete antithesis of the usual American office block or bank. Mr. J. S. Cahill in an extraordinarily interesting article has called it "characteristic of the bold invention of capital created by invention" as compared with the usual bank building, which he terms "typical of the timid initiative of capital accumulated by caution." Although undoubtedly a far greater number of interesting buildings are going up on the other side of the Atlantic the usual American office building tends to have all the bad qualities of our own. There, in both, are found the same medley of hackneyed architectural ideas extravagantly carried out in sumptuous marble. Both tend to be situated in the centre of the town, where the land is most valuable. In America banks are often built only one story in height in order to underline this fact. The designers of the telephone building have pursued an entirely independent policy. In a relatively inexpensive part of the city the tallest possible building towers up, magnificently dignified, simple in outline, economical to a fault; a worthy home for one of the greatest inventions of modern times.

A twenty-six-story building rising to the height of 436 ft., seen from the bay it completely dominates the town of San Francisco. In plan it resembles a letter "E," but it is at present incomplete, one of the horizontal bars being cut down to within a dozen feet of the upright. All its sides have been treated as fronts, as in skyscrapers the terms "side" and "rear" cease to have any meaning above the skyline of surrounding blocks. The discovery of this truth marked an important step in the evolution of the tower building. It meant that it was no longer felt to be an ordinary building, enormously attenuated, but a type of its own.

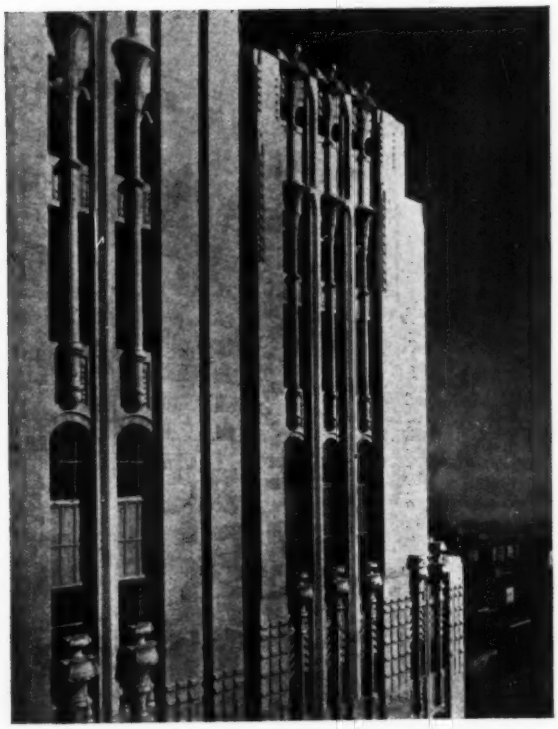
Before this was realized the "finished front" of the ordinary sort had been whirled up hundreds of feet into the air, topped often with a pediment looking unsightly at such a height. The blank sides and ugly nondescript rears, usually mercifully hidden in low buildings by the multitude of others, were exposed in all their horror. The indecency of such exposure was soon realized. There followed four-fronted buildings with cornices all round, with, perhaps, a dome or gable surmounting the whole. This period was one when the architect was content to play second fiddle to the engineer, to decorate with a little nicely-chosen classic or Gothic the giant steel parallelopipeds. But now the architect himself has grasped steel construction so firmly that it is not his master, but his servant. With the coming of this phase it was recognized that the American skyscraper constituted the nearest approach to a purely contemporary convention that the modern world has achieved. The designers of the telephone building were so keenly aware of the "all sides are fronts" axiom in its most modern interpretation, that it might be said that they planned for the sky and carried their conception down to earth rather than for the ground and continued it up into the air.

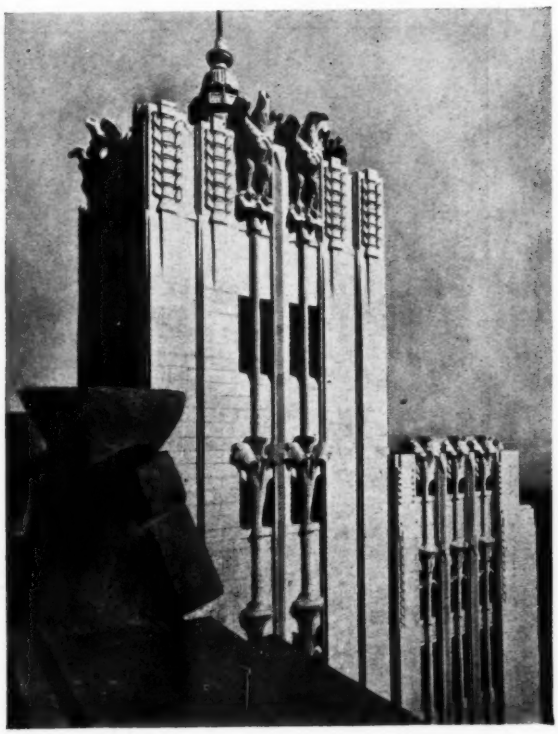


The Telephone Building from a distant hill. By J. R. Miller, architect, and L. Pflueger and A. A. Cantin, associated architects.

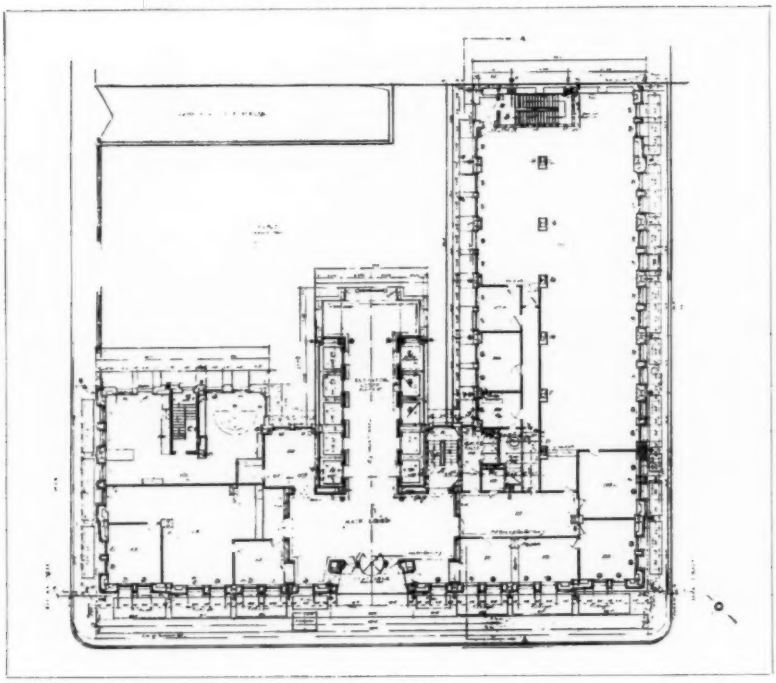
The surface treatment of the building is one of its most remarkable features. Like most modern tower buildings, it recedes as it rises. In this case the recession is so slight

A rear view. Another wing is to be added.

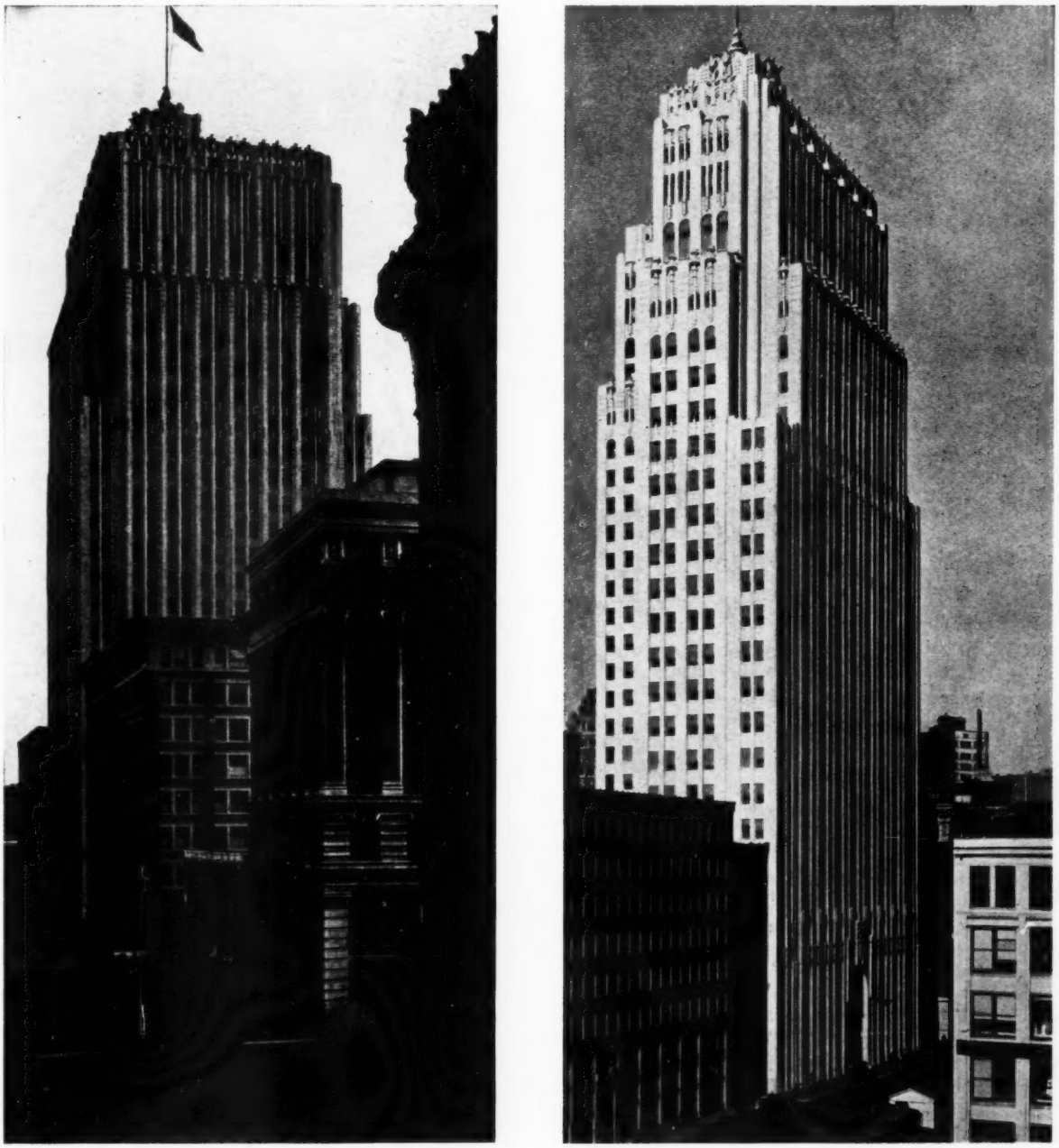




Above, left, a detail view of the upper stories; and right, a detail of the pent house. Below, the ground-floor plan.



that it is rather felt than seen, but it gives the building a silhouette of great beauty. The architects in decorating these surfaces (there are nearly six acres of them in all) have with great insight avoided the three most dangerous traps: the Gothic manner, the classic manner, and the empty surface. Gothic, logically carried out in its elaborate detail, would have been enormously expensive, entirely out of keeping with the intensely modern spirit of the rest; in fact, a form of ornamentation hardly more relevant to the telephone building than a coat of paint. Neither in itself is American Gothic a style in any way commendable. A classical manner would have been equally unsuitable. It would either have given horizontality where verticality was needed, or been made ridiculous in the attempt. Lastly there remained the temptation to use mechanically vast surfaces, empty save for the monotonous rows of windows. Perhaps the greatest fault among modern advanced American architects is the disposition to obtain facile effects by mere blankness. The great artist almost invariably over-decorates his work, and then he is forced to refine, to simplify. It is from this conflict between the desire to decorate and the desire to simplify that real simplicity comes. Too many contemporary American buildings reveal by the facile blankness of their great planes



Left, a view looking south on New Montgomery Street; and, right, Natoma and New Montgomery Street façades.

Left, entry-doors from the inside; and, right, the elevator lobby on the main floor.

that they have never served as battle-grounds for the clash of such desires. The whole decorative surfaces have been reduced to a series of perpendicular piers ascending the full height of the building. Horizontal lines have not been used. Some diversity has been given to this unity by a paradoxical though by no means new device. Necessary bands of horizontality have been produced not by cutting or interrupting the vertical lines, but by duplicating them. An interpolated system of stem decoration which reaches its full expression at top of the building is introduced quite low down. It next appears fourteen stories higher, across the nineteenth floor, in a more attenuated form, as though eager to shoot even farther upwards. Higher up still there is a recrudescence of the stem motive, this time in a yet more aspiring form. This motive of horizontal bands of stems which become longer as they approach the summit of the building, convey vividly an impression of tense, almost breathless ascension. They endow this vast mass with an eager, yet withal a wonderfully graceful, quality of aspiration. The singularly happy effect of unity attained by these means is further heightened by the use in the whole surface of a material of uniform colour. This is speckled terra-cotta of the exact tone of pale grey granite.

The originality of conception has flagged a little in the interior decoration. The effort to be influenced by no school has, in some of the rooms, proved too great. For example, the cafeteria floor gives the impression of a rather empty, rather insipid Moorishness.

The carved decoration, usually the weakest point in American buildings, is in this one, although entirely derivative in inspiration, adapted in a manner original and pertinent. So successfully has it been used that, instead of being merely the usual decorative stuff at so much the yard to be stuck on at random, it contributes integrally to the exquisite upward tendency of the whole.

Despite the remoteness of the sources of its inspiration, there is nothing alien, jarring, or out of place in the telephone building. It seems to have grown as naturally as a tree upon the coast of the Pacific Ocean, so skilfully assimilated and so firmly disciplined have been these exotic influences. But significant as these influences are, it is possible to over-emphasize their importance. For there is so much about this achievement that is typical of all the best modern American architecture. Enormous size, light mouldings, flat relief, relative absence of projections are all solidly native characteristics. Nowhere have the architects attempted to create, speciously, "interesting" form, and yet they have created something marvellously expressive of their age. "Is this," it may be asked, "an especial advantage when the outward aspect of this particular age is almost universally ugly?" I should reply that to be strikingly expressive of any civilization is to be artistically in the highest degree meritorious. It is now generally admitted that a building's most important æsthetic attribute is its suitability to its surroundings. How much greater, how much more profound, then, is the building which, in addition to being quite apart from its surroundings extraordinarily beautiful yet entirely in harmony with them, reflects and, as it were, contains in itself these surroundings?

The originality and the sanity of this great building, as well as its extraordinary grace, constitute the realization of a dream long unfulfilled: that out of "the common parallelopipeds of commerce" would emerge great architecture.

THE COMPETITORS' CLUB

DEVOLUTION AND DISCIPLINE

UNTIL recently the tendency of most professional societies has been centripetal, the influence of the metropolis having drawn all their activities into the central organization. The R.I.B.A. has been by no means exceptional in this respect, despite the considerable time during which it has included in its orbit a number of allied societies. It might have been imagined that in a small country like Great Britain the movement would have been permanently in this direction, and not, as appears to be the case at the moment, in the reverse one. Ireland may be left out of the account, being now in large measure an independent State. But Scotland has reorganized its architects on a national basis, and many of the more populous centres in England itself feel justified in claiming increased powers of self-government owing to the fact that they include a much larger number of qualified architects than formerly.

In so far as this makes for greater vitality in the architectural profession, such a movement is all to the good, and wherever the profession is led, as is the case in several of the provincial centres, by a group of able and active men, the position and qualifications of architects will be much better appreciated there than if these could only act by means of a central body. This condition has come about mainly through the establishment of universities in all populous districts and the immense strides that have consequently been made in architectural training outside London, with the result that the technical standard in these districts has been greatly strengthened.

For these reasons the provincial societies now find themselves less dependent on the central body, and like, being British, to grasp at this freedom as soon as it is found to be within their power to secure the ends they aim at off their own bat. This is natural enough, especially as it is not practicable to visualize all local conditions from the metropolis ; but while this must be recognized, and every form of " regional " activity encouraged, there is still the other aspect to be considered, namely, that the position of architecture from the national point of view requires all the support it can secure, and this can only be afforded by the action of the central organization, with the aid of its allied societies.

Now, there are many ways in which the brief for architecture and architectural practice can be presented. We all see how far short of our ideals the current attitude of the general public is, and how many deplorable things are permitted to happen owing to these shortcomings, but we are here concerned with the question of competition, and it is in regard to the effect of this " regional " movement on these that a few remarks may be worth while. To begin with, the question whether a competition should be open or local is strictly one for the promoters, who are quite qualified to decide whether they want the maximum chance of securing an outstanding design or whether they attach more importance to securing an architect of the district with whom they expect to be in closer touch and who will, they may assume, have special local experience. Usually they will demand the wider range for large and important buildings, the narrower one for smaller undertakings, but the decision is also sometimes affected by the feeling that where there is a good standard of local ability it should receive encouragement. Sometimes in cases of buildings of a special class it is almost essential to make the competition an open one, in order to secure those having exceptional experience in the type demanded. Promoters may, with advantage, appoint an assessor before making their decision on this point, whose help will be of service in determining the comparative advantages of either course. In the case of open competitions or those limited by locality the regulations of the R.I.B.A. are applicable in their entirety, and in the case of the latter it is particularly important that collaboration with an architect not otherwise eligible should be inadmissible, as such an evasion of the local limitation would be obviously unfair.

There are, however, other cases where a few architects are invited, and in these it has often been urged that some relaxation of the R.I.B.A. rules might be allowed. The methods by which these rules could be evaded have already been hinted at in this column, and the phrase—When is a competition not a competition ?—might be employed as a summary of these. Apart from such methods it is best that there should be no whittling down of the requirements as to the conduct prescribed by the regulations, as such modifications, though they may appear not unreasonable in special cases, are bound, if admitted, to be regarded as precedents, with the result that the standard of conduct would slip back, discipline would become relaxed, and we should lose the firm footing that has recently been acquired. This is almost the only reason why it seems necessary for the present to retain the control of competitions by the central body. As experience has proved, it is much more difficult for local organizations to resist appeals for relaxation based in special circumstances, and, indeed, representatives of allied societies have on several occasions made a plea for discretionary powers ; but we should bear in mind the proverb, " Hard cases make bad law," and maintain a firm attitude in all cases where in any competition, however small, it is demanded that the system of conduct should be substantially modified, as otherwise no clear line can be drawn, and the wholesome discipline now imposed on members of the R.I.B.A. will be seriously weakened if not completely destroyed.

SENESCHAL

COMPETITION CALENDAR

The following competitions are announced with the full approval of the R.I.B.A.

Friday, April 30. New interior design for Wagon-Lits. Premiums, 100,000 francs, 25,000 francs, 10,000 francs, and 5,000 francs. Particulars from La Compagnie des Wagons-Lits, 49 Rue de l'Arcade, Paris.

Monday, May 10. Isolation Hospital for Infectious Diseases, Doncaster. Assessor, Mr. T. R. Milburn, F.R.I.B.A. Particulars from Mr. W. Bagshaw, Town Clerk. Deposit £1 1s.

Friday, May 21. Elementary school, Bristnall Hall Lane, Warley, Worcestershire, for the Oldbury U.D.C. Assessor, Mr. W. S. Skinner, F.R.I.B.A. Premiums, £200, £100, and £50. Particulars from Mr. Arthur Culwick, Clerk to the Council, Council Offices, Oldbury, Worcs. Deposit £2 2s.

Monday, June 14. Dance Hall, Restaurant, Pavilion, and Shops at the Sea Beach, Aberdeen, for the Town Council. Assessor, the President of the Incorporation of Architects in Scotland. Particulars from Mr. A. B. Gardner, Town House, Aberdeen.

Saturday, July 31. Australian National War Memorial, Villers Bretonneux, France. Open to Australians. Particulars from High Commissioner's Office, Australia House, Strand. Deposit £2 2s.

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

June 21-23. Royal Society of Arts : Competition for Industrial Designs. Particulars from the Secretary of the Society, Adelphi, W.C.2.

Monday, July 12. Royal National Eisteddfod of Wales, Swansea, Competitions : (1) National Parliament House of Wales (Prize, £100; (2) Street Façade to a Large Stores (Prize, £25); (3) Set of Measured Drawings of Architecture (Prize, £25). Assessor, Mr. Arthur Keen, F.R.I.B.A. Particulars from the publishers, Messrs. Morgan and Higgs, Heathfield Street, Swansea (1s. 2d. post paid).

Monday, July 12. Lay-out for new cemetery for Leicester City Council. Assessor, Mr. H. V. Lanchester, F.R.I.B.A. Premiums, £100, £50, and £25. Particulars from the City Surveyor. Deposit £1.

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

No date. Conference Hall, for League of Nations, Geneva. 100,000 Swiss francs to be divided among architects submitting best plans.

No date. Manchester Town Hall Extension. Assessors, Mr. T. R. Milburn, F.R.I.B.A., Mr. Robert Atkinson, F.R.I.B.A., and Mr. Ralph Knott, F.R.I.B.A.

No date. Cenotaph for Liverpool, on the St. George's Hall Plateau. Particulars from Town Clerk.

No date. New Nurses' Home, Walsall. Premiums, £50 and £25. Open to local practitioners only. Particulars from the Walsall Board of Guardians.

SOME USES OF PLYWOOD IN BUILDING

With the extending market for plywood in the building industry has come an appreciation of its qualities and a recognition of its value to the builder. Plywood is timber in a new form, which has very definite advantages over ordinary timber, and which can be used for many purposes for which the latter is quite unsuitable, or is much less suitable. The fact that plywood is available in the form of large flat boards in many sizes and thicknesses makes it an extremely convenient material for the builder to use. While ordinary timber is only obtainable in limited widths for normal purposes, plywood can be had in dimensions to meet any ordinary requirements. The user of plywood enjoys the additional advantage of buying his material ready for use, and so effects economies in cutting, planing, and sanding.

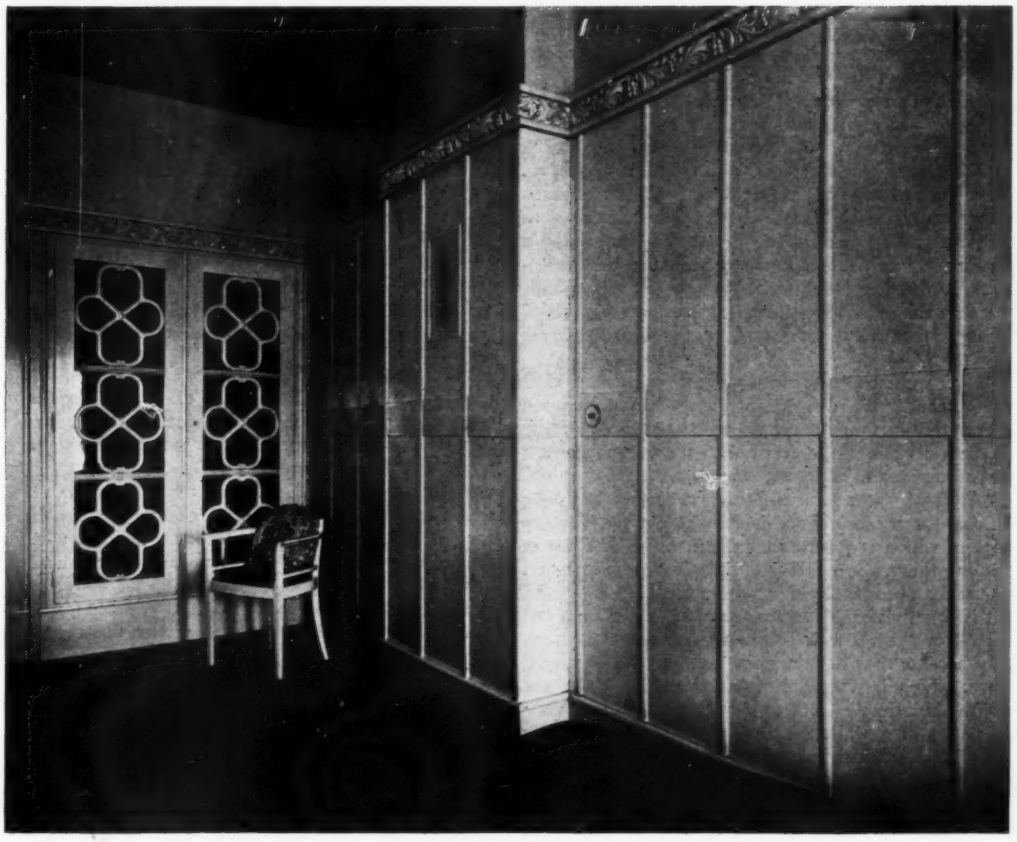
The economies involved in using plywood are only fully appreciated when the saving of labour is taken into account. In making up a panel from a number of pieces of solid wood there is necessarily much labour expended in jointing the boards. If a plywood panel is used this is completely eliminated, and, moreover, a plywood panel can be relied on not to shrink or swell and be a source of trouble after it has been put up, as is so often the case with a panel made from solid wood. Ordinary timber is always liable to swell across the grain, but owing to the way in which a plywood board is built up this movement is impossible. Adjacent plies are placed with their grain at right angles, so that any tendency which might exist for swelling across the grain of the face plies is held in check by the adjoining plies to which they are firmly cemented, and whose grain is at right angles to the grain of the faces.

By using plywood it is possible to cover large surfaces economically. Moreover, owing to the alternate crossing of the grain-direction of the plies, a piece of plywood is extremely tough and pliable, and can be bent to any curve normally required in building work. Every woodworker knows the difficulties which may occur in constructing a curved skirting or a slightly-vaulted ceiling. When solid timber is used there is often much expenditure of time and money in the process of steaming and in building up the curve with the help of cauls. By using plywood the work is greatly simplified, as it can be readily adapted to the shape required. Plywood is also a very suitable material for cutting irregular or small overhanging shapes, as its construction practically precludes any possibility of splitting or breaking off.

The principal use to which plywood is put in building to-day is in covering walls and ceilings, as its qualities described above, its strength and the convenient sizes in which it can be obtained make it very well adapted for these uses. The plasterer can be dispensed with, and a wall or ceiling constructed which is economical and durable. Comparatively unskilled labour can be employed to fasten the plywood boards on to the wall battens or on to the floor joists of the room above, and the job can be done with a minimum expenditure of time.

Another important use for plywood is in the construction of

An entrance to a cinema, showing plywood panelled walls and ceiling.



Above, the interior of a German house. The walls, ceilings, and doors are constructed throughout of thick plywood. Below, an example of plywood wall panelling. The ceiling is also of plywood.

partitions, either permanent or temporary. A plywood partition in office or factory can be erected at a low cost, and can be easily moved or adapted to new requirements.

It is only possible to mention some of the purposes for which plywood can be used. The woodworker can always find new uses for it in constructional work of various kinds. It is a material with very great possibilities, and there is no doubt that in the future it will be employed more and more extensively as its properties become more widely appreciated.

Some interesting results have been obtained by experiments in the Forest Products Laboratory of the United States. When plywood panels of various kinds were brought from the soaked to the over-dry condition the average shrinkage parallel to the grain of the face plies was ·45 per cent., and the shrinkage perpendicular to it was ·67 per cent. Experiments on 150 species of solid wood gave an average shrinkage under similar conditions of 8·5 per cent. across the grain for flat, sawn boards, and 4·5 per cent. for quarter-sawn lumber. In other words, the proportionate shrinkage of an ordinary board is more than twelve times that of plywood under similar conditions.

Another important feature of plywood construction is the symmetry which is always observed in building up a panel. The board is built up round a core in such a way that it is evenly weighted on each side, and any stress in one part of the board which may be set up by variations in humidity is offset by a corresponding stress working in the opposite direction on the other side of the board. In order to ensure this symmetry it is necessary that a ply cemented to one side of the core should be counterbalanced by another ply on the other side. This principle is simply illustrated in the case of a three-ply board. When there are five, seven, or more plies, the same principle holds good. For every ply on one side of the core there is a corresponding ply at the same distance from the core on the other side, of the same thickness and with its grain running in the same direction. As different species of wood are affected by changes in humidity in different degrees, it is also necessary that each pair of corresponding plies should be of the same wood.

The best-known and most widely used type of plywood is the ordinary three-ply board, about $\frac{3}{16}$ in. in thickness. In addition to this type, however, there is the multi-ply board, built up from five, seven, nine, or more plies, which can be used for a great many purposes when something thicker and more rigid than three-ply is needed. The plies which are placed with their grain at right angles to that of the core in a multi-ply board are known as "the crossbands," and the outside plies are the faces. The multi-ply board is, naturally, superior in strength to the thinner three-ply. The effect of increasing the number of plies is to make a board which is very nearly uniform in character both along and across the grain of the face plies—the strength is approximately the same in both directions.

CORRESPONDENCE

THE TROUBLES OF THE PAINTERS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—In spite, or perhaps because, of "Astragal's" flattering reference to me in his notice of the debate between Mr. Emmanuel and Mr. Wolmark, I must protest not on behalf of either of the disputants, but on that of the Muse of painting herself.

It is only right and proper that "Astragal" should think his own calling superior to any other, and, therefore, exalt architecture above painting, but, unfortunately, "Astragal's" enthusiasm carries him, if he will forgive me for saying so, a little out of his depth.

It is no more true to say that painters have a duty towards architecture than to claim that architects have a duty towards painting—no more and no less; but to prove this would take a good deal more space than you could grant me in your correspondence columns. I, therefore, only wish to take up one point. "Astragal" scorns the modernists because "the 'arrangement' apparently being to them all that matters," to use his own phrase verbatim.

But is not "arrangement" the principal thing in every art? Is not "arrangement" the distinction, for example, between building and architecture, though even the sorriest kind of building is based on some kind of arrangement? Is not "arrangement" the *sine qua non* of music, and of poetry, even of prose?

But where "Astragal" goes so woefully and despairingly wrong is in his belief that the nobility of architecture must shed its glory upon paintings of which it forms the subject. The nobility of architecture is one thing, the nobility of painting quite another. It is possible to make a beautiful picture out of a pigsty—Morland has done it; it is equally possible to make a very bad picture out of "St. Peter's" or "St. Paul's"—thousands have done this. Why? Mainly because they have neglected the "arrangement" of their picture, which is a matter apart altogether from the architecture of the building.

The æsthetic unit of a wall painting—mural decoration, for instance—is the building; but easel pictures are marked as an æsthetic unit by their frame, and can, æsthetically, be judged only by the "arrangement" of lines, shapes, masses, and colours in relation to the space within the frame—no matter what their ostensible "subject" may be.

This "no matter what the ostensible subject may be" is not the whole truth, but to attempt to give the whole truth would require the space of a volume; at all events it is true enough in respect of "Astragal's" particular line of reasoning.

HERBERT FURST

OFFICE HOURS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—The two types of office, of which your correspondent writes, exist also in the United States of America.

In one office of the "Prussian" type in New York, a red roller-blind cover over the draughtsman's board indicates very clearly to the office supervisor the adherence of its occupant to strict hours. In this office the supervisor makes frequent circulation of the aisles between the draughting tables, chanting a dirge of "Attend strictly to your work, gentlemen, please!" High wages and the that usual time and a half for overtime are paid, but I gathered the draughtsmen there were mainly of the "transient" type.

Another office in New York has nominal office hours, but draughtsmen are allowed, within reason, to work during any hours they please. Their time of entering and leaving the office during office hours is kept in the doorman's register, and time for work done out of office hours is recorded on slips which are filled in by the draughtsman. Salaries are paid on the basis of a thirty-nine hour week, independently of the number of hours actually worked. When the office is busy the draughtsman makes up time, which is on record to his credit, and when the office is slack that time is at his disposal. Salaries are docked when a man gets twenty-four hours behind his normal time, and he then starts again from scratch.

This elastic arrangement works admirably from both points of view, as labour is always available when there is much to do, and overtime is only paid in times of special urgency. The system is seldom abused, as it attracts the man who is more interested in architecture than in the clock, and who likes to feel that his soul is his own, even between the hours of nine and five.

An adaption could possibly be made to suit the smaller English office.

HUBERT CLINT

THE REGULATING OF ARCHITECTS

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—Your correspondent who signs himself a "Client," and tells how he would like to regulate architects, no doubt expresses

common-sense views, but, of course, his ideas are at variance with the rules of the profession. "An architect does not publicly advertise, nor offer his services by means of circulars, or other means of publicity employed in trade or commerce. The profession of architecture is uncommercial. It is incompatible with business." A "Client" says: "The public are not going to worry about the architect unless he, through his societies, tries to help the public." This is very true, but this would mean publicity and a propaganda department. It would mean relaxing the stringent conceptions of etiquette and scrapping many ancient rules and regulations and restrictions. Such conduct might be thought incompatible with the "dignity" of the profession. The latter is considered by many of more importance than rendering service to, and seeking to educate, the general public. Apparently also, it is considered by many of greater importance than rendering practical assistance to struggling members of the profession. The head society looks down at the other dogs, running away with its bones, and appeals for subscriptions for the Architects' Benevolent Society, "funds for which are urgently needed." In very many parts of England an architect has very little chance of practising his art, on account of the fact that almost all the building work (chiefly domestic) is done through the offices of house and estate agents, who hold the land, and can impose their own conditions. The result is that generally quite unqualified men are employed to prepare designs, and to assume the title of architect. When it is considered what a very large amount of building work is done through these channels, it cannot be denied that to get qualified men at the head of such departments and as assistants would undoubtedly be a boon and a blessing to the general public from every standpoint, and also to the profession itself. Woe, however, to any member of the R.I.B.A. if he becomes associated with such firms.

A Registration Bill is undoubtedly necessary. It is equally necessary that the administration of same shall be in the hands of practical, democratic, and broad-minded men. There is a grave danger at present that this Bill only seeks to place more power in the hands of those who clog the progress and development of the profession, and deny enlightenment to the general public, few of whom have ever heard of the R.I.B.A., and know nothing of the duties of an architect, or the advantages of employing one. R. E. HASTEWELL

ARCHITECT, BUILDER, CRAFTSMAN

To the Editor of THE ARCHITECTS' JOURNAL

SIR,—May I suggest in reply to Mr. Aumonier's letter that the whole secret of modern building work lies in the evolution of the contractor who has to a large extent ousted the builder.

I suppose to those of us engaged in architecture there is nothing more fascinating than the old-fashioned builder's yard, with all the building industries in full swing. To-day all this is being largely superseded by the contractor, a different type of business altogether, for whereas the builder really was the builder, the contractor is but a mere contractor, a man who contracts to build, but whose functions are almost entirely financial and clerical. This gives rise to an entirely different personality, that whereas before one dealt with a master craftsman—a man very often with traditions of generations of builders behind him—now being gradually replaced by big financial organizations, known as contractors.

Commercialism forces the pace of modern building to such an extent that the old-time builder, with his delightful, old-fashioned, solid methods, can no longer grapple with the vastness and speed of modern building operations. It has therefore become necessary to have a contractor who co-opts an army of highly-specialized sub-contractors. The general building contract, however, is made entirely between the architect and the contractor; the sub-contractor, vital as he is to the success of the job, has no *locus standi*, and it is left to the contractor to squeeze him all he can and extort any conditions that the sub-contractor will accept. The sub-contractor driven for want of work, or very often for want of money, must of necessity accept the conditions of the contractor, and the fault is that the architect does not control these sub-contracts as it should be his moral duty to do.

If there is any remedy it can only be as Mr. Aumonier suggests: by the architect supervising every sub-contract made by the contractor, and this should be simplified into a standardized form of sub-contract agreed to by all parties. The builders have their Federation and the architects their Institute, but the sub-contractors are isolated units, and it is up to them to form a sub-contractors' association to look after their joint interests. That is how it appears to me. IONIC

SOCIETIES AND INSTITUTIONS

R.I.B.A. New Members

At a general meeting of the Royal Institute of British Architects, held on Monday, March 29, the following members were elected:

As Fellows—10

Livock, Stanley Gage
Milburn, Stanley Wayman, M.C.
Milburn, William, Junr., B.SC., F.S.I.
Moore, Major Frederick William, D.S.O., M.C.
Phillips, Rees
Beckwith, Henry Langton, F.S.I.
Chadwick, Major John, T.D.
Faunch, Frederick George
Waddington, Frederick Turner
Walsh, Joseph Frederick, F.S.I.

As Associates—33

Blizzard, Henry George
Brookfield, George Piers, B.LITT. OXON., B.SC.
Burton, John
Castellino, Sylvester Joseph Trinity D'Souza
Coombes, Robert Edwin Montague
Cooper, William Reginald Roydon
Currie, Murdoch
Dann, Clifford Horace
Doyle, Stanley Hodgson
Gray, Charles Clare
Green, Christopher, B.A.OXON.
Green, Ralston Tilsley
Harley, Thomas
Kemp, Cecil George
Kimber, Charles Frank, M.C.
Lipson, Samuel
McKewan, Arthur Malcolm
Messent, Claude John Wilson
Moore, John Robert
Palmer, Philip Evans
Paramor, Frank William
Pashen, John Herbert
Patker, Purushottam Mukund
Poushkine, Barbara
Rowse, Eric Anthony Ambrose
Simpson, Douglas James
Thomas, Bryan William Rylands
Vine, Ronald Owen
Watson, Edwin
Welsh, Oliver Martin
Wilde, George
Wilford, Charles Edmund
Winter, Percy Harold, F.A.S.I.

As Hon. Associate—1

Batsford, Harry

R.I.B.A. Prizes and Studentships, 1926-1927

The R.I.B.A. Prizes and Studentships pamphlet for 1926-1927 has just been issued. The pamphlet contains full information upon the various prizes and studentships, totalling in value nearly £2,000, together with the detailed programmes for the competitions. In the case of the Godwin Bursary and Wimperis Bequest, the attention of competitors is drawn to the fact that the value of the prize has been increased from £130 to £250. The pamphlet also gives particulars of the London County Council Scholarships in Architecture and Building Construction.

Additional copies of the pamphlet are obtainable at the R.I.B.A., price 1s., exclusive of postage.

The Devon and Cornwall Society of Architects

The annual meeting of the Devon and Cornwall Architectural Society was held at Plymouth. In the unavoidable absence of the president, Mr. J. Leighton Fouracre, the chair was taken by Mr. A. C. Norman, F.R.I.B.A., of Plymouth, who drew the attention of members to the alteration in title of the Society which was taking place from that day, and expressed the hope that "The Devon and Cornwall Society of Architects" would make even greater progress than had been the case under the old title of "The Devon and Exeter Architectural Society." Mr. E. F. Hooper, L.R.I.B.A., of Exeter, was elected president for the ensuing year and received the badge of office. The following officers and committee were elected: Messrs. A. C. Norman and R. M. Challice, vice-presidents; Mr. J. Leighton Fouracre, past president; Mr. S. Dobell, hon. treasurer; Mr. L. F. Tonar, hon. auditor; Mr. J. Challice, hon. secretary. Members of Council: Messrs. P. Morris, J. Bennett, W. J. M. Thomasson, F. W. Beech, W. N. Couldrey, W. H. May, A. S. Parker, B. Priestly Shires, and W. A. Vercoe. Associate members of Council: Messrs. D. W. Cooper and A. T. Martindale. The prizes awarded in connection with the measured-drawing competition of the Society were presented to Mr. J. R. Nillman and Mr. H. A. Peters.

LITERATURE

THE PRINCIPLES OF DECORATION

One wishes this book fulfilled its purpose so adequately stated in the preface briefly to disuade the decorator from the use of ornament irrespective of functional end, and to encourage him to work upon constructive principles rather than along decayed traditional themes. Unfortunately the designs, "drawn in the artist's own manner," are somewhat ineffectual, and appear but insipid interpretations of traditional patterns. We doubt, too, with the excess of allurements provided these modern days for our diversion, if such homely pursuits as colouring the illustrations provided, will offer sufficient incentive to more ambitious projects. The average student, moreover, is likely to be confused by such phraseology as "the samples of our grandmothers were sets of units to be applied to various circumstances"; while the attempt to clear up the distinction between true and false beauty is likely to end "in confusion worse confounded." The numerous quotations scattered like plums throughout the pages somewhat hamper our appreciation of the text, even if we are duly bound to recognize the extensiveness of the research after such fruity titbits.

There is, however, much sound wisdom and advice, such as in emphasizing the need of keeping our minds from æsthetic prejudices, and of distinguishing the "permanent and abiding" from that "accidental and variant." The prescription suggested, of carrying a Greek coin in our pocket as a perpetual reminder of this significant fact, and to keep oneself in good judgment, however, may not necessarily serve any other purpose than to provide a Greek "bias." This fact is fully realized by the author himself later in his criticism of that too exclusive study of Michelangelo which results in a melodramatic sense of form rather than investing the student with the spirit which inspired and produced his art. Again, it is doubtful if the axiom as "the study of the nude is a sure grounding in taste" is any truer than one we will coin to serve the occasion, "the avoidance of the nude is sure grounding in morality."

Likewise "the proportion of the human figure is proportion at its best" may be an idea more hackneyed than reliable, even admitting the proportions of the human figure are eminently beautiful. Such dogmas tend to fix the mind in grooves of thought which are detrimental to any vital appreciation of an abstract idea of form, by which (as the author refers to in a later chapter in a quotation from Sir Joshua Reynolds) "the artist may be said to be admitted into the great council of Nature." Even the Greek conventionalized the human proportions to an ideal conception, conceived with innate sense of fitness. Thus we come to the realm of "ideas"—from individual fact "that which exists once only" to "that which exists an infinite number of times in an infinite number of ways," and this, as the author asserts himself, implies not merely a geometrical, but a philosophical sense, and which may include colour, surface, texture, etc.

Tests and axioms can be applied too recklessly, for the æsthetic sensibility is apprehended, not learned mechanically, and surely every artist of worth will come naturally to laws *chiefly* through that innate faculty. The exercises set page 15 as a test for such æsthetic sensibility seem rather more suitable as a test for ingenuity in solving a mechanical problem, in filling a given space in an infinite variety of ways which mean little more than the manipulation of mechanical relationship. On the other hand, such may be successful in demonstrating how to reduce "elements handled to a minimum," and of achieving organic relationship by harmonizing "parts to whole," excellent counsel and exercise.

In considering the psychological significance of scales of effects, the illustration, i.e. a bag decorated by a couple of "tabbied cats," and the given reason of relative sizes of cats, viz. "larger for a child and smaller for a lady," severely strains our intelligence. Moreover, whatever parts are emphasized the design itself must offer a consistency. Here the "cats" are "tabbied" out of existence as cats, and we are left with a paucity of design which no dexterity in the application of colour could rectify. A truth fully recognized in the book, and cannot be too strongly enforced.

With its many excellent parts, however, it is regretted the intention is partly frustrated by such minor discrepancies.

The Principles of Decoration, by R. G. Hatton. Chapman and Hall.

TOWN PLANNING SEEN INTERNATIONALLY

Mr. Ebenezer Howard, in replying to the three welcoming addresses to foreign delegates attending the New York Conference of the International Federation for Town and Country Planning and Garden Cities, held in April last under his presidency, paid a graceful compliment to the extraordinary power of the American people to conceive and carry out new ideas. This enviable proclivity of theirs is to some extent exemplified in the report of the proceedings at the conference. On its cover we get, lest we should miss the purport of this substantial volume, the threefold description, Report, Compte Rendu, Bericht, and the three languages indicated make casual appearances in the text. This gesture of international courtesy is not the less graceful for being customary and commonplace. Greeks, Spaniards, Dutch, Scandinavians, and Poles, who were present at the conference, would no doubt take it as complimentary to their linguistic attainments that they were evidently credited with a knowledge of one or other or all three of the languages in which parts of the report are printed. When the Federation of the World, foreseen by Tennyson, supervenes on the International Federation for Town Planning, a perfected international language may render polyglot reports unnecessary. In the meantime, let us cordially acknowledge the thoroughness with which this particular report has been prepared. Embodying the contributions of delegates from several different countries, it affords an excellent opportunity for eclectic and comprehensive study of the subject in its varying phases and aspects, national, international, geographical. We should have been delighted to accord the volume unqualified praise—to proclaim it all that a report should be; but, alas for human perfectibility, even of the American variety, the achievement falls short of this praise by the lack of an index. Consultation of so valuable a report should be facilitated by every available means, and it would be an enormous advantage to be able to find quickly and without overmuch research any particular item contained—one had been tempted to say concealed—within these 532 pages. There is certainly a full list of contents, but that, as an American might say, does not fill the bill. It is merely an indication of subjects and authors, and affords but an indifferent clue to any special detail of "The Traffic Problem," of "Regional Planning," of "The Government of Metropolitan Areas," of "Business Values," of "Planning Unbuilt Areas," and so forth. It is indeed a pity that such a valuable mass of information should be inaccessible save to the diligent digger. So many of us lack time or capacity for such arduous labour. Most of the contents of the volume repay perusal, and, in some if not in most instances, careful study will be justified. A paper to which British town planners may be expected to turn with special avidity is that on the "Fundamental Principles of American Zoning," by Edward M. Bassett. But the entire volume is replete with valuable practical information by acknowledged experts on the whole subject of town planning or on special phases of it. Two folding maps and several diagrams, that would have been more useful if they had been of larger size, increase the value of a volume that is sure to be welcomed by every technical library.

Report of the International Town Planning Conference, New York, 1925. Price and publishers not stated.

ST. PAUL'S CATHEDRAL

It is fortunate that art and scholarship do not rely entirely on the support and encouragement of commercial houses, otherwise they would fare badly, for many of the things that are most worth doing cannot be regarded as paying propositions, and do not make an immediate financial return on the money invested in their production. The universities and, to some extent, the Govern-

ment, do very valuable work in financing the publication of documents which would otherwise remain unknown, and since the days of The Dilettante Society there have always been co-operative efforts which have rendered incalculable service to the student and the scholar. To-day art, literature, and the drama are all under deep obligations to societies which are inspired by the same ideals as the Dilettante Society. The Vasari Society publishes drawings by the Old Masters which would otherwise remain unknown, except to those who have easy access to the national and private collections; and the Stage Society and its rivals perform plays that no commercial manager, unless unmindful of that tyrant of the theatre, the box office, would dare to produce. The Walpole Society and a host of others do equally valuable service to letters by publishing original documents which would not otherwise be readily accessible to students.

One of the newest and not the least welcome of its associations is the Wren Society, whose object is to publish reproductions of Wren's original drawings, the second volume of whose publication has just appeared. Wren's drawings, after remaining a collection in the possession of his family for some years after his death, unfortunately became scattered at the end of the eighteenth century, some volumes finding their way into libraries, such as St. Paul's Cathedral, All Souls' College, Oxford, and the R.I.B.A., and others have been lost sight of, but as is hinted in the introduction of the volume under review, they may yet come to light; in fact, some have already done so since the Wren Society's first volume was published. It is obvious that it is extremely inconvenient for the research worker that the material which he has to study is so widely scattered, making detailed analysis and comparison difficult, if not impossible. The publications of the Wren Society are making it possible for the serious student to carry out his researches with greater ease, and they facilitate the production of what may be regarded as the raw material of the historian. The second volume of the Wren Society publication consists of a selection from the drawings contained in the first of the two Wren books in St. Paul's Cathedral Library, together with a complete list of all the prints and drawings contained in this volume, with most useful cross-references to the Wren volumes in the All Souls' collection at Oxford. The drawings selected from the second book will form the subject of the 1926 issue of the Society. In making this selection, the committee have chosen those drawings that illustrate the development of Wren's ideas in working out his masterpiece in preference to more finished drawings which, it is conjectured, were intended for the use of the engraver. They form an absorbingly interesting collection, as they show how carefully Wren worked out the practical constructional details. The studies for the distribution of the weight of the dome on the piers are of particular interest at the present time. The sketches of the more decorative parts of the cathedral are extremely interesting, showing the relationship which exists between the architect and his craftsman, such as Grinling Gibbons and Tijou. The main lines of a decorative element, such as the organ or choir stalls, seems to be carefully worked out, but the ornament is only slightly indicated, such was his confidence in his collaborators. Another interesting point is that the drawings give definite evidence that Sir Christopher employed French designers, as a sketch for a lamp is reproduced which is reminiscent of Marot's work, and bears an inscription in French.

The joint secretaries, Mr. Arthur Bolton and Mr. Duncan Hendrie, who are to be heartily congratulated on the success of their painstaking labours, point out that it is most desirable to increase the number of plates in each subsequent volume from the present number of thirty to forty. This can only be done by an increase in membership, and it is sincerely to be hoped that many more members will join the Society; the two volumes that have appeared up to date are a good guarantee that they will not be disappointed should they enrol, and they will know that every new member will make it possible to enlarge subsequent volumes, and so give even better value for the guinea subscription than is given at present, which is saying much.

GRAHAME B. TUBBS

The Second Volume of the Wren Society, 1925. St. Paul's Cathedral. Oxford University Press. To subscribers only.

AN EXPLANATION

You do not, of course, expect to find architecture "explained," in any full sense of the word, within the limits of a single volume. Architecture has a long and significant history; it has a terminology at once so sonorous and so difficult as to be the delight of poets and the despair of common men. All this must be learnt, and buildings must be studied on the spot before the inquirer can be said to know anything much about it. As Mr. Howard Robertson himself says: "The art of architecture is so difficult as almost to forbid its inclusion in intellectual small talk." Yet he attempts to explain it in one volume! The truth is that all he tries to do is what has already been done—too often, perhaps—for painting and music; that is, to lay down a few general principles, a few standards of conduct—"architectural good manners," he calls it—which should enable the ordinary man to tell an obviously good building from an obviously bad one. He uses no technical words, and he takes the history almost in his stride. He includes a number of photographs, in which bad buildings and good are shown side by side. His explanations are extraordinarily clear and to the point—he is particularly good on "scale," for instance—and, in fact, he has produced an extremely clever little book, which is unlike anything that has gone before it, and undoubtedly fills a gap in the literature of architecture.

That such a gap should still exist, with the world so full of critics, is astonishing—until we remember the difficulty of the subject. But that very difficulty accentuates the need. Furthermore, architecture is a common necessity of everyday life—like eating. You can live without music—or, indeed, without hearing anything at all. You can live without painting—the blind often reach a hale old age. But you are unlikely to survive one English winter if you have not a roof over your head. Yet even the art of eating has its Brillat Savarin, while architecture still awaits its Mrs. Beaton. Or it did until Mr. Howard Robertson came along. He doesn't give us the detailed recipes yet—that may come, one hopes, in a later volume—but he has the right, simple, everyday touch. He says: "That is a bad façade, because of the bad window spacing; it would have been better like this, or this." Or, "That is a bad shop, because it is built to look like a temple of Jupiter."

But there you are pulled up. The worst of all these discussions about art is that however "sound" the author may be, every second statement he makes will be arguable. The temple expressed the reverence our ancestors felt towards religion. May not Selfridge's express our own reverential attitude towards trade? If so, it is, at any rate, an honest building, and passes Mr. Robertson's own tests in that respect. Again, Mr. Robertson is so anxious to find some good in original modern work (originality being our great need) that he goes out of his way to praise such a building as the new Adelaide House, near London Bridge. Surely the kind of "progress" represented by that uninteresting draughtboard design falls under his own condemnation of a "jar or brutality of transition." Its one merit seems to be that it shows us, by contrast, what a little gentleman is the building of the Fishmongers' Company (I think it is), which stands opposite. Yet it is possible that Adelaide House might appear pleasing in Germany. Mr. Robertson says:

Modern buildings, which in Germany take their place without harshness to their surroundings, would, in England, be considered insupportable, because we have not in this country progressed far enough through the initial stages to prepare us for frankly modern architectural treatments.

To achieve the necessary "surroundings" for this kind of "progress" in London we should have to pull down the Wren churches—and much more. Perhaps another air raid or two. . . .

But these are small points. Mr. Robertson probably neither expects nor desires that everybody should agree with him all the time. As Oscar Wilde once said, that would make him feel that he must be wrong. In the main, he is always right, and he ends on a note of cheery optimism about the future, which will be welcomed by anyone who is acquainted with the admirable work which is being done by so many architects—and so many of the younger men among them—at the present time. As Mr. J. C.

Squire says in a sympathetic introductory note : " Regret over the Middle Ages is useless; cynicism about this is a mean resort; we have to make terms with our industrial society, and find a way out." After all, modern methods of construction offer limitless possibilities. And there is every hope that they will not be altogether neglected or misused. CLENNELL WILKINSON

Architecture Explained. By Howard Robertson, F.R.I.B.A., S.A.D.G., with an introductory note by J. C. Squire. Benn. 7s. 6d.

GREAT ENGLISH SCHOOLS

This remarkable, artistic, argumentative, well-written book should not be missed by any father with sons to educate and with doubts equally his own of the best school at which to educate them. If such a father happens to be also an architect, from this book he may increase or refresh his knowledge of the architectural influences under which his sons will fall if his boys go to any of the twelve great public schools principally cross-examined by Mr. Wilkins. This is probably the best test of any, for while no two architects may agree upon the right curriculum, tone, traditions that they desire for their sons, a layman must believe that they will be in accord upon the architectural style best fitted to affect the character of a scholar and a gentleman. Mr. Webb's woodcuts, removed as they rightly are from architectural draughtsmanship, yet suggest more than it is their business to record. The intentions of the pious founders may be divined from them. It is with these intentions, and with the manner in which posterity has played fast and loose with them, that Mr. Wilkins chiefly deals. With remorseless research and unfailing pertinacity he states the case for breach of trust, and, if his astonishing and sometimes humorous narrations are read, as they ought to be read, for the argument of a root-and-branch reformer, rightly reckless of anything except his brief, we can learn much, laugh much, and yet not lose our tempers. His case is this : " The last modern State inquiry into the administration and endowments of the greater public schools took place in 1864. . . . Flagrant abuses by the governing bodies . . . had continued unchecked for nearly 300 years " (i.e. " poor children have long been deprived of the educational benefits which the founders of the older public schools had intended them to enjoy "). " The ideal, therefore," concludes Mr. Wilkins, " is to apply their resources and endowments in such a way as, in the words of the preamble of the Endowed Schools Act of 1869, ' will carry out the main designs of the founders thereof by putting a liberal education within the reach of children of all classes.' " This case is none the worse for being a hardy annual. Indeed, it is the technical abuses that everyone admits and takes, therefore, as a matter of course, that are so difficult to remedy. The long sentences, here reluctantly condensed, are examples of a rather breathless style, the style of a man whose mind is boiling over with his subject. This quality makes the pages of Mr. Wilkins exciting to read, but the better equipped an advocate is, the more, indeed, that we admire his advocacy, the more necessary it is to retain our own detachment.

Is there any answer to the twelve counts against the twelve famous schools that fill Mr. Wilkins's three hundred breezy pages ? The case is not new; the testimony exists; the facts are accessible. The periodic Royal Commissions, the successive foundation of new schools intending and desiring to be other than the old, suggest an uneasy conscience, do they not ? There are, too, the protests of labour, of would-be reformers of all kinds; and yet Eton and Winchester, Harrow and Rugby, Dulwich, St. Paul's, and the rest seem more securely rooted on their present foundations than St. Paul's Cathedral. He would probably be a rash man who tried to overthrow Mr. Wilkins on the ground that he has chosen. But suppose we admit all that he has to say; suppose, in short, that we plead guilty. Is there any fact that counsel for the prosecution has overlooked ?

I venture to think so, and I infer from Mr. Wilkins's book that he is—dare I say ?—temperamentally hindered from appreciating it. His name, like that of his publisher, is new to the present writer, but, presuming on this ignorance, and using such powers of divination as I possess, I deduce a gentleman blind to the English character, and thus imperfectly fitted to judge, or rather to *taste* the flavour, and consequently the interior ideal of English educational institutions. The Englishman (this is my postulate : there is no space to argue the obvious here) is by instinct an aristocrat, and our present confusion of mind on education, as on other matters, arises from the accident that, with no change in the English character, since the French Revolution our professions have been democratic. If the axiom—for it is more than a postulate—be overlooked, everything seems chaotic. Once the truth be *seen* (and approval or disapproval of such truths are almost equally impertinent), the explanation is obvious. We know at last where we are—which is almost everything. Now, the aristocratic ideal expresses itself in exclusiveness; the democratic in expansion. The contrast may be noted when English and American customs are compared; there are, for example, also no hedges or fences in America. The democratic likes to mix the classes, which exist, by the way, more pronouncedly in democracies than even with us; the aristocratic to divide them (they *refuse* to mix in England). This is why all our old schools have been captured by the rich, and almost closed to poor scholars. Against the national instinct no barrier prevails, and it is extraordinary that a man of Mr. Wilkins's intelligence, whose sympathies seem to be democratic, should himself hanker after Eton and Winchester for the poor. If I were a democrat, I should give thanks daily that my democratically numerous progeny were for ever excluded from these haunts o gentry, for I should suspect that any democratic boy who went to them would suffer the sea-change that Labour M.P.'s (or even independent Irish, on Parnell's unimpeachable authority) are said to suffer on election to the " gasworks " (as they irreverently call it).

Accepting the facts as they are, then, I suggest that, had Mr. Wilkins dealt rather with the less-known grammar schools of Yorkshire and the north, with the kind of education that is eagerly given by urban local authorities in great abundance, he would have found a set of schools still to his mind comparatively uncorrupt, and almost free from the atmosphere that, one imagines, must taint the air of Winchester for him. These non-residential schools and colleges have a quality that many reflective old public-school boys sometimes envy in their later life. That, however, is another story, and if these remarks should stimulate Mr. Wilkins to a second volume, one reader at least will eagerly await another provocative and stimulating book. OSBERT BURDETT

Great English Schools. By Harold T. Wilkins, with eighteen wood engravings by H. George Webb. Noel Douglas. Price 15s.

PUBLICATIONS RECEIVED

A Wayfarer in Alsace. By B. S. TOWNROE. Methuen. 7s. 6d. net.

The Protection of Buildings against Vermin. By ERNEST G. BLAKE, M.R.S.I. Crosby Lockwood and Son. 2s. net.

Modern Technical Drawing. By GEORGE ELLIS. Batsford. 10s. 6d. net.

ANNOUNCEMENTS

Mr. Gordon Pringle, M.A., architect, has moved to 1a Kensington Place, W.8. Telephone : Park 0069.

Mr. Alan Brace, architect, has removed his office from 16 Old Buildings, Lincoln's Inn, W.C.2 to 19 St. Mary Abbott's Terrace, Kensington, W.14. Telephone : Park 7934.

Miss I. H. K. Beattie, only daughter of the late Mr. Lewis Beattie, Mossknowe, Canonbie, has been awarded the prize for one of the competitions held by the Edinburgh Architectural Association, and is the first lady student to achieve this success.

In our issue for April 7 we stated that the architects for Lazard's Bank are Messrs. Gunton and Gunton. This is incorrect. The architects are Mr. A. Victor Heal, in association with Messrs. Gunton and Gunton.

Mr. Leonard Aloysius Scott Stokes, of Mulberry Walk, Chelsea, S.W., formerly of Great Smith Street, S.W., a former president of the R.I.B.A. and of the Architectural Association, designer of the new quadrangle of Emmanuel College, Cambridge, a member of the Royal Commission on Historical Monuments, who died on December 25, aged sixty-seven, left estate of the gross value of £8,810, with net personalty £8,549.

TRADE NOTES

In consequence of the demolition and rebuilding of 326 Gray's Inn Road, W.C.1, Messrs. Reginald Lugg & Company, brick merchants, have taken offices temporarily at 76-8 Swinton Street, Gray's Inn Road, W.C.1, to which address all communications should be sent until further notice. The telegraphic address, "Luggdom, London," and the telephone number, Museum 4588, remain unaltered.

Messrs. Geerz Bros., Ltd., of 47 Friday Street, Cheapside, London, have made arrangements to take over the hardware and chinaware section of The Products Corporation Ltd., of Salisbury House, London, E.C.4, and have acquired the business in tiles, fireplaces, and building material hitherto carried on by Messrs. Ramarac, Ltd., of 4 Great St. Thomas Apostle, London, E.C.4. Mr. V. C. Ramsden, the principal shareholder and manager of Messrs. Ramarac, Ltd., has joined the board, as well as Mr. R. Markus, who will represent the interests of the Products Corporation, Ltd. The title of the firm is now Messrs. Geerz Bros. and Ramsden, Ltd.

Those who contemplate the erection of horticultural buildings will find many practical hints in the new catalogue just issued by Messrs. Messenger & Co., Ltd. In the first portion of the catalogue there is much sound advice, accompanied by detail drawings on the erection and equipment of every type of building, and then follows a very comprehensive selection of photographs and drawings of the many types of winter gardens, conservatories, porches, verandas, summer-houses and greenhouses erected by the firm in all parts of the country. The majority of the buildings shown have been erected from the designs of architects. It is pointed out that one of the greatest mistakes frequently made in the construction of horticultural structures, not only by the horticulturist, but by experienced builders, is that heavy, solid masses of timber ensure durability. It is stated that however applicable this theory may be to other buildings, it is the reverse in horticultural structures. The variations of temperature, the humidity of the atmosphere, and other effects of artificial cultivation all tend to decay timber. Large pieces of timber when exposed to a damp atmosphere absorb it readily, and when once moisture obtains a lodgment in the heart of the timber no amount of heat will expel it, especially as it is being constantly replenished by the moisture produced in plant cultivation. It will be readily understood that this ever-increasing deposit of moisture will eventually decay the timber in which it is harboured, and houses subjected to high moist temperatures are, of course, most liable to this danger. The true remedy is to reduce the timbers to as small dimensions as possible, so restricting the area of absorption and ensuring their being continually dry, or nearly so. As a proof of this assertion we suggest that anyone who may be sceptical will examine the state of preservation in the larger and smaller timbers of, say, an old vinery. It will invariably be found that the larger timbers, such as sills, heavy rafters, and wall plates are decayed, while the smaller timbers, such as sash bars, are sound. This examination, we think, will be sufficiently convincing. A copy of the catalogue can be obtained from the firm at the Midland Horticultural Works, Cumberland Road, Loughborough, and 122 Victoria Street, London, S.W.

The director and chief engineer of Messrs. Ruston and Hornsby, Ltd., of Lincoln, engineers, Mr. F. H. Livens, M.I.MECH.E., completed fifty years' service with the company last month. At the last board meeting the chairman, on behalf of the company and directors, presented him with an oil painting as a mark of their personal friendship and esteem, and of their great appreciation of his valued services. In making the presentation the chairman expressed the hope that they would have the benefit of Mr. Livens's experience for many years to come. The picture is by Niemann, and the subject, "Lincoln," as seen in 1858 from the Witham Bank of the south-east of the city. It is characteristic of that artist's best style, and was formerly in the collection of the late Mr. Alfred Shuttleworth.

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 patents and specifications should be addressed to the Editor, 9 Queen Anne's Gate, Westminster, S.W.1. For copies of the full specifications here enumerated readers should apply to the Patent Office, 25 Southampton Buildings, W.C.2. The price is 1s. each.]

LATEST PATENT APPLICATIONS

8198.—Badel, J. L.—Framing for building constructions. March 25.
7977.—Gavin, W. A.—Moulds for concrete structures. March 23.
8095.—Joseph, R. G. and R. W.—Building blocks. March 24.
8202.—Smith, W. H.—Lintels, floor beams, &c. March 25.
8302.—Thomson, R.—Dwelling-houses. March 26.

SPECIFICATIONS PUBLISHED

248815.—Ingerslev, C. F. A.—Reinforced concrete blocks and methods of building linings for tunnels, and other purposes.
248894.—Talbert, H. L.—Concrete building blocks and system of reinforced blockwork building construction.
248937.—Warren, H. P.—Concrete building construction, and blocks therefor.
248965.—Bennetts, J. H.—Devices for spacing, strutting, and clamping in position shuttering-forms for the construction of concrete structures.
248987.—Soc. Anon, dite Etablissements Zondervan.—Motor-driven press for the manufacturing of bricks, building-stones, and agglomerates.

ABSTRACT PUBLISHED

246950.—Hurden, E., and Hurden, A. P.—Walls. The Haven, Harefield, Middlesex.

READERS' QUERIES

The Strength of a Roof

S. D. writes : " The accompanying detail is of a proposed roof. The span is 25 ft., and the height to ridge from floor 36 ft. The walls are in cement 18 in. thick, and there are no buttresses. Will this be safe ? "

Experience shows that walls 18 in. thick, and approximately 19 ft. high to the effective bearing of the principal rafter would not be strong enough to withstand, for a long period, the oblique pressures likely to be generated by a roof of this class.

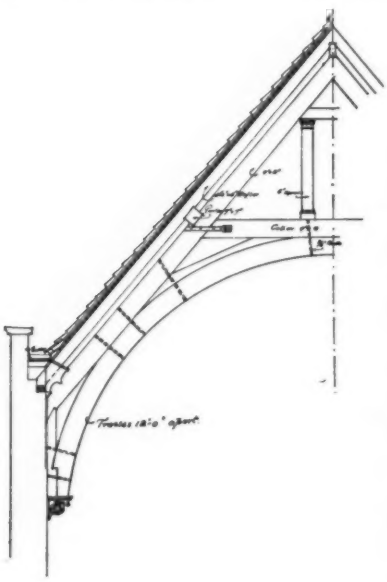
In medieval work such a roof would have been supported upon walls from 2 ft. 6 in. to 3 ft. 6 in. in thickness, and the substitution of cement for lime does not make enough difference in the tenacity of the mass to justify such a great reduction in the substance of the wall. The actual weight of the wall counts in the balancing of the arch and rafter thrusts, and the thickness of the wall is also valuable in resisting its own outward deformation between gable and gable.

The length of the hall and the distance between each pair of principals is not stated, but these factors are important, as the side wall of a short hall which contains only one intermediate truss and is provided with solid gables at each end is less liable to fail than the side wall of a long hall which is subjected to the kick of several trusses. The side walls of old, long halls are almost invariably found to have bowed outwards in a long curve, the greatest overhang of each side wall being approximately in the centre of its length. With a thin wall built in cement, instead of a thick wall built in lime mortar, fractures at the heads and sills of the windows next to the ends of the hall would probably be substituted for the bending. A large initial deflection of the roof under its load has to be counted upon, and a further deflection occurs in the course of time as the wood undergoes shrinkage with the completion of its seasoning, and as it becomes distorted by age and pressure. Supposing the strap at the end of the collar beam to be in effective contact with its bearings when the principal rafter is first placed in position, and that the wood then shrinks and compresses under the strap to the extent of a $\frac{1}{4}$ in. after erection, the foot of the principal rafter will move out 1 in. on each side of the roof from this cause alone, irrespective of the bending of the timbers under their load or by warping.

If it is necessary to keep the thickness of the walls down to 18 in., the outward thrust at the feet of the loaded truss should be determined experimentally by placing it on roller bearings and measuring the force which has to be exerted by a pair of hydraulic rams in keeping its feet from spreading as the load is applied.

Tie-bars across the springing may then be inserted to deal safely with these pressures, or, alternatively, the wall heads may be reinforced sufficiently to withstand these loads. If tie-bars are not considered desirable, two reinforced concrete beams, one at the level of the corbel and one at the foot of the principal rafter may be inserted to pick up these lateral pressures and transmit them to anchors in the gable walls. The tie-bar is, of course, the more direct expedient, and if the hall is a long one, the side walls might need to be thickened, if only to give space for the reinforced concrete beams. The effective " depth " of a beam taking lateral thrust has to be measured in a horizontal plane, and room must be allowed for a sufficient " depth " of beam and for a quantity of material impervious to moisture to protect the reinforcement from the weather on the outside of the wall.

W. H.



A Dancing Floor Without Springs

Colombo writes : " Can you suggest how a ballroom floor can be constructed to secure resiliency without the use of iron or steel springs ? "

A certain degree of resiliency can be secured by choosing suitable wood for the joists and the boarding of the floor. A timber similar in character to lance-wood (*Guatteria virgata*) might be used with a wood or woods of pleasing appearance and capable of taking a high polish for the upper surface of the floor. The floor should be laid in two thicknesses of boarding laid to cross one another at angles of 60 deg., and both layers should cross the floor joists at that same angle. In this way the most perfect continuity of support can be obtained with a given thickness of material. Additional resiliency can be gained by packing the bearing surfaces of the joists with thick strips of indiarubber, packing felt, or packing wadding, such as is sold by makers of soundproof chambers in music schools. A ceiling board of good quality and stout thickness, such as $\frac{3}{8}$ in. Sundeala laid between the upper and under thicknesses of boarding, improves the spring and deadens any tendency to creaking and rattling. Another method of improving resiliency is to prepare the upper surface of the floor in self-contained units, such as squares, lozenges, hexagons, or octagons and squares of exact size to fit closely to one another, and to bed them upon strips of packing material at their edges, where they are alone fixed down. The central part of each unit bridges a slight air-space, and " gives " slightly under foot. The panels are usually made of plywood with a finish in parquet glued or cemented under pressure to the upper surface, and may not be suitable for the hot and moist climate of Colombo.

If spring action is to be imitated without springs in the bearing of the main timbers, it can be achieved experimentally by employing double cantilevers of some elastic wood, so that each pair of beams rests on the ends of a series of see-saws. Sample floors would have to be made and tested to obtain the right degree of spring in the cantilevers, and stops must be provided to keep tilting and deflection within safe bounds. It would probably be cheaper and safer to use steel springs and arrange for proper access to them for oiling, cleaning, and preservation.

W. H.

Injuring from Falling Slates

H. writes : " If a slate falls from my roof and kills someone, is there any legal responsibility ? "

If a slate falls from a roof and kills or very seriously injures a passer-by, the owner is probably not liable. But if the person injured, or his representatives, can show gross and continued negligence after knowledge of the danger or risk had been brought to his notice, the owner would be liable.

S. ST. S.

Garage Approaches

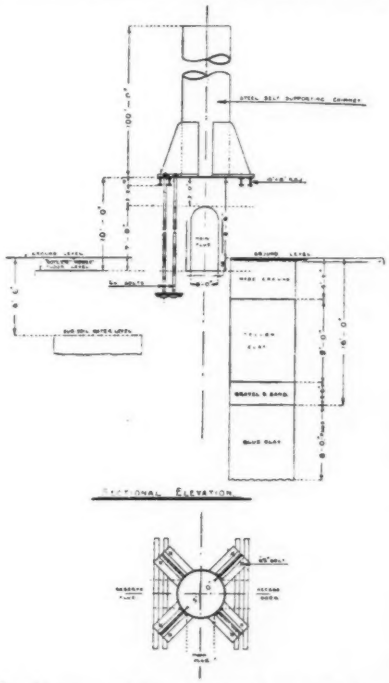
Subscriber writes: " A local authority is endeavouring to restrict the width of a " combined " paved approach from a carriage-way to a garage drive to 10 ft. From the accompanying sketch it will be seen that the garages have been so arranged as to break up the grass plots as little as possible. Cars are usually backed out from the garage on to road, and the width is not sufficient. May not the owners construct an approach of more reasonable width ? Twelve feet wide would be agreed by them. The road is a highway repairable by the inhabitants at large, the approaches are constructed at the expense of the individual house owners."

We can see no reason why the owners of the houses should be prohibited from widening the approaches by 2 ft., but it is necessary that a solicitor should be consulted. It is probable that local Acts of Parliament may have conferred special powers on the local authority.

S. ST. J. S.

Concrete Base for a Chimney

W. J. B. writes: "*I have recently purchased an iron chimney 5 ft. in diameter and 100 ft. high, weighing about 11 tons. I require a concrete foundation for it, and as the chimney will not be guyed it is necessary to provide sufficient stability in the base to render the chimney self-supporting. I have obtained some tenders for constructing the base from firms undertaking this class of work, but all offer a solid block of concrete in the approximate form of a cube, and containing about 80 to 90 tons of material. It appears to me that this form does not dispose the material in the most efficient manner, and that a design approximating to the outlines of the Eiffel Tower, and possibly embodying the use of steel reinforcement, would give the required stability with greater economy of material, and a reduction in the amount of excavation required; while it would also take advantage of the weight of the superimposed soil. The problem is an unusual one, and I shall very much appreciate advice as to a suitable design. I enclose herewith drawing showing the base of*



the chimney, and I have purposely omitted from the drawing any details of the foundation. You will note that the base of the chimney rests on four rolled steel joists, 10 in. by 6 in. in section, and 12 ft. 6 in. long; the chimney is fitted with four angle-plate brackets riveted thereto; long foundation bolts, 2½ in. in diameter, will hold these brackets down to the concrete base. The length of the bolts can be made to suit any requirements. An above-ground flue, 7 ft. high and 3 ft. wide (or 6 ft. by 3 ft. 6 in.) will be required in one side of the base and corresponding openings in two other sides. The fourth side can be left solid. The underside of the girders, which will rest on the concrete base, must be 8 ft. 6 in. above ground level. The drawing also indicates the nature of the subsoil, which has been ascertained for a depth of 24 ft. The 2 ft. 6 in. bed of gravel and sand is water-bearing. The chimney is not screened from the weather by any surrounding buildings."

Those who advocate the use of a cubic mass of concrete weighing some 90 tons are working in accordance with a sound old tradition which is based on experience, and which has been found to produce enduringly good results. Weighty solid blocks of masonry and concrete were almost invariably used to form the lower parts of lofty minarets which are often only provided with a spiral stair above the level of the adjoining roofs of mosque or cloister. The lower part is solid and square, the upper part being merely a light tube-like shaft of masonry stiffened by the steps of the stair.

The function of the heavy solid mass supporting a light cylindrical shaft is threefold:

1. During its construction it compresses and consolidates the subsoil at the foundation in an equable manner before the erection of the light upper portion of the shaft, thereby reducing very considerably the risk of local settlement at the leeward corner of the base when a gale first blows after the stack has been built.

2. The solid massive base provides inertia and a low centre of gravity in the whole composition.

3. That portion of the solid base which is buried in the earth enlists its lateral pressures in the resistance of the overturning forces applied by wind-pressure.

In the present case a solid block of concrete also provides something substantial for the holding-down bolts to anchor into and supplies them with a surrounding mass of material to protect them from rusting in the water-bearing subsoil.

Alternative methods of design which permit of economies in material can only be made to produce similar advantages if attention is specially directed to the purpose. The light base is also more liable to disintegrate and fail in the course of time, but, as the steel shaft is itself hardly of a permanent character, long duration of the base in an efficient state may not be of paramount importance, though the light and complete base is the more likely to bring about an accidental fall of the shaft. Whether the form of base be solid and heavy, or light and skeletonized, the wind-pressure upon the stack has to be met by the tensile strength of the holding-down bolts on its windward side, and by their effective hold upon the metal of the stack and upon their anchors in the concrete of the base. The 11 tons' weight of the stack alone is quite insufficient to deflect a great horizontal force applied some 60 ft. above ground level in such a way as would bring it safely into the base at the foundation.

If the "Eiffel Tower" suggestion is acted upon this question of wind-pressure makes it important that each windward leg of the tower arrangement should be large and strong enough to pick up a sufficient weight of earth, and that each leeward leg should have sufficient bearing surface on the blue clay to prevent settlement.

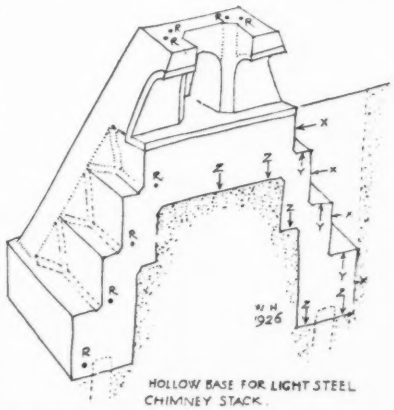
If the legs are too small or light the base will rock under wind-pressure acting upon the shaft, and changes in the direction of the wind will produce changes of stress from tension to compression in one leg after another. The result would be unequal settlement, and the production of a growing inclination of the stack to the vertical.

The attempt to erect an imitation Eiffel Tower upon a clay base at Wembley Park some thirty years ago had to be abandoned on account of unequal settlement in its four separate foundation blocks, and it seems that a continuous base is preferable to one composed of four separate legs.

A base in the form of an inverted hopper or funnel would probably meet the case. It would require a broad rim of reinforced concrete to stand upon, and the upper surface of this rim should be made to pick up a weight of earth sufficient to give anchor hold to the bolts on the windward side. The exact design in detail and the size of each part must be determined after investigation of the weight and bearing capacity of the several strata of ground. If excavation through the water-bearing strata presents difficulties, a way may be found to enclose the base of the inverted funnel, or hopper, with sheet piling, and to bind the heads of the sheet piles together, and incorporate them in the reinforced rim of the base. If the sides of the base are formed with vertical "risers" and horizontal "treads," like gigantic steps, the maximum grip will be obtained upon the subsoil of the foundations, and the utmost benefit will be gained from the weight and lateral pressure of the superincumbent earth.

The reinforced concrete should be designed with a liberal factor of safety, and with special precautions against rusting of the reinforcement.

W. H.



HOLLOW BASE FOR LIGHT STEEL CHIMNEY STACK.

A base in the form of a stepped inverted hopper would press upon the subsoil with bearing surfaces (Z), *and pick up earth load with ledges* (Y). *Vertical surfaces* (X) *obtain the benefit of lateral pressure of the soil. It is extremely doubtful whether this base, which would have to be elaborately reinforced* (R) *in every part, would be, in the end, as efficient as a simple block provided at an equal cost.*

THE WEEK'S BUILDING NEWS

Church Army Houses

Seventy-five houses are to be built by the Church Army at Palmers Green, N.

Extensions to a Woodford School

The Woodford County High School is to be extended at a cost of £34,898.

A New Library for Eastbourne

It is proposed to erect a new branch public library at the east end of Eastbourne.

Housing at Loughborough

The Loughborough Corporation has decided to apply for sanction to build 100 houses.

More Houses for West Lancs.

The West Lancashire Rural District Council has received sanction to the erection of a further fifty houses.

More Houses for Lye

The Ministry of Health has sanctioned the erection of fifty more Council houses by the Lye District Council.

A St. Thomas Housing Scheme

Ninety-six houses are to be erected under the St. Thomas Rural District Council's new housing scheme.

A Building Site for Beverley

The Beverley Town Council has decided to purchase the Walker estate for £10,000 as a building site.

Housing at Dartford

The Ministry of Health has sanctioned the erection of 300 houses by the Dartford Urban District Council.

A Knutsford Sewerage Scheme

The Knutsford Urban District Council has received sanction to carry out a sewerage scheme at a cost of £50,500.

Enlargement of Napsbury Asylum

A scheme has been prepared for enlarging Napsbury (Herts) lunatic asylum at a cost of £57,000.

Improvements to Eastbourne Infirmary

The Eastbourne Board of Guardians has decided to carry out extensions to the infirmary and other improvements at a cost not exceeding £24,500.

A Hospital for Hendon

The Hendon Council has a scheme under consideration for the erection of an isolation hospital. It would be necessary to borrow £66,850 for this purpose.

Houses for London Citizens

The London City Corporation has acquired for £30,300 the freehold interests in land in Shepherdess Walk, Turner's Place, and Wenlock Road for the purpose of providing accommodation for persons dispossessed from houses within the City.

A Bridge Scheme at Glasgow

The Glasgow Corporation has under consideration a scheme for the construction of a high-level bridge across the Clyde at Finnieston, at a cost of over £1,000,000.

Housing at St. Laurence

Over 160 houses are to be erected in the St. Laurence district, which will become an important centre when the railway station is opened in July.

Housing Sanctioned at Wednesbury

The Ministry of Health has approved of the proposal of the Wednesbury Town Council to proceed with the erection of eighty houses on the Churchfield site.

The Bank's Underground Vault

The City of London Corporation has given permission to the Bank of England to construct a vault beneath the footway along the full length of the frontage abutting upon Lothbury.

A New Infirmary for Harrogate

The governors of the Harrogate Infirmary have decided to proceed with the erection of a new institution, at a cost of about £90,000. Messrs. Elcock and Sutcliffe are the architects.

Electrical Improvements at Nottingham

The Nottingham City Council has adopted a recommendation to apply to the Electricity Commissioners for sanction to borrow a further sum of £135,000 for electrical improvements.

Developments at Ossett

At a meeting of the Ossett Town Council it was decided to proceed with the laying-out of recreation grounds in the North and East wards, and the surveyor was instructed to prepare plans for the erection of forty-two municipal houses, and two new streets off the new road (Queen's Drive).

Charing Cross Hospital Extension Scheme

The Charing Cross Hospital has completed an agreement for the purchase of the Royal Westminster Ophthalmic Hospital site and buildings. The existing buildings will be altered and re-equipped, the cost of the purchase and alterations being estimated at about £100,000.

Land Acquisition at Glasgow

Recommendations for the acquisition of the following areas of ground as sites for houses has been made by the Glasgow Housing Committee: Two acres at Langlands, Govan; 58 acres on the west side of Garscadden Road, Knightswood; 32½ acres at Shettleston; and about 7 acres at Colston.

Housing at Hemsworth

The Hemsworth Rural Council has agreed to the granting of a subsidy in respect of 262 houses, which are to be erected for the Upton Colliery Co., Ltd. The houses are to be of three different types. The Council has approved of plans for fifty houses at Great Houghton, fifty at Ryhill, fifty at South Elmsall, and fifty at Brierley.

A New London Opera House

A further stage in the development of the scheme put forward by Mr. Isidore de Lara for the founding of a permanent opera house in London has been decided upon. The scheme is that a £2,000,000 fund shall be accumulated by £1 donations, one half of which would be devoted to the erection in London of a permanent home for opera.

Housing Plans at Doncaster

The Doncaster Rural District Council proposes to erect 93 houses at Bawtry at an estimated cost of £62,681, and 20 houses at Barmborough. The Doncaster Corporation has decided to acquire a site on the north-east side of Hexthorpe for the erection of 70 houses, and application is being made for sanction to borrow £57,135.

Slum Improvements in Somers Town

The first annual report of the St. Pancras House Improvement Society states that the society has been enabled to acquire a large area in Drummond Crescent, Somers Town, offering special opportunities for building and reconditioning. An appeal is made for £50,000 to cover the cost of purchasing the freehold and converting it into habitable flats.

A Generous Gift to Manchester

The Manchester Parks Committee has recommended the acceptance of Wythenshawe Hall and its grounds of 250 acres, which have been offered as a gift to the city by Mr. and Mrs. E. D. Simon. The gift comprises part of the greater Wythenshawe estate, the purchase of which for housing purposes has recently been keenly debated.

The Victoria Circus Scheme

Improvement works are proceeding at Vauxhall Bridge Road and Wilton Road in connection with the Victoria Circus scheme. An area of nearly 100 yards by 30 yards has been cleared. It is proposed to set back the Windsor Castle Hotel 30 ft., and ultimately a widening of 80 ft. in Vauxhall Bridge Road and of 60 ft. in the Wilton Road approach to Victoria Station will be secured.

Steel Houses Dispute

In connection with the dispute at a Glasgow sawmill over the question of the supplying of material to be used in the erection of Weir steel houses, it is reported that the Glasgow Master Wrights' Association has decided to accept the report of the Scottish Joint Regional Council for the Building Industry, that members should not purchase materials from a firm trading with another firm violating the working rules and conditions of the building industry.

THE BUILDING EXHIBITION

SUPPLEMENT THE SECOND

SOME IMPRESSIONS OF THE EXHIBITION

BY WILLIAM HARVEY

ONE may freely admit that the present Building Exhibition improves upon the standard set by those of former years, and that, like them, and more than them all, it is filled with objects worthy of the keenest attention.

The Exhibition appears particularly admirable when one stops to remember what other exhibitions have been, and to consider the immense labour which goes to their arrangement, or the difficulties to be overcome before a host of rival exhibitors can be persuaded to get together under the conditions governing our commercial civilization. But between a reasoned appreciation and a first impression a human weakness has to be recognized. One's first impression is, in fact, the chaotic negation of impression—bewilderment. A series of stands, and of avenues between stands, occupies the floor space; no focal point of interest has been provided, and the visitor is lost and confused from the moment he passes in. No distant view is practicable which would enable him to determine by sight how to make in the most direct manner to his principal objective, but, instead, a discord of shapes and colours crowds upon the eye on every side and stuns and deadens his powers of observation.

In my own case, I actually walked the whole length of the central avenue wondering what in the world I could write about such a medley before a single vivid impression struck home to my consciousness. It was not until the name "Tibbett" in gilded letters upon the fascia of Stall 125A suddenly brought to mind Edgar Wallace's delightful *Lieutenant Bones* that I woke out of my brown study.

Now, I might be inclined modestly to blame my own inattention and absence of mind if it were not for the fact that I have accompanied other inquirers to former building exhibition, and know from experience how they also immediately lost their bearings.

After a while one ceases to bother about regarding the Exhibition as a collective whole; ceases to look for harmonies of colour, ordered symmetries of shape, or adaptation of plan to purpose, and settles down, with a sense of foolish ineptitude and frustration, to the knowledge that one must find one's way to any particular stall by means of the map in the catalogue. This is an insufferable waste of time and energy, and seems to suggest that the lay-out might not be guided by thought for the ebb and flow of the crowd of visitors, but by the chance whether one exhibitor or another happens to purchase a particular piece of floor-space on which to erect his stall.

Granted that the diverse objects such as are assembled at Olympia will not easily compose into an artistic colour-scheme, there is still the commercial object of the Exhibition to be thought of, and it would be interesting to see whether a larger an amount of business was done by the exhibitors if the public were brought before the stalls they wish to inspect in a pleasant and rational manner by the direct use of their eyes and without troublesome reference to a map. There is so much that is useful in the details of the Exhibition that it is a pity to leave any one of them to risk being overlooked for want of improvements in the lay-out.

The grouping of similar classes of exhibits in stalls arranged in courtyard form solves at once the practical problems of visibility and accessibility, and brings the other artistic problems of balance of mass and of colour within range of a possible satisfactory solution. Humanly speaking, there is a limit to the number of times that it is possible to stop in the midst of a stream of people to take out the map, identify one's position, and strike out anew for the desired exhibit. After this limit has been passed, fatigue and boredom reproduce the state of bewilderment which afflicted the visitor at his first entry into the Exhibition. Instead of his whole time having been available for practical inquiry, only a fraction of it has been usefully employed, and a great part has been spent in listlessly wandering about the avenues between the stalls and obstructing the stream of human traffic.

Mr. William Harvey.

If any reader doubts whether a courtyard arrangement of the exhibits in groups of similar objects would not be an improvement from the practical and commercial as well as the artistic point of view, he should visit the Exhibition in company of someone who has studied optics and can explain how the long avenues vanishing away in perspective necessarily and automatically produce eye-strain and nervous exhaustion.

Yet, though these were my depressions, it must be laid stress on that many of them may have been particular to me. The band played, the electric lights shone brightly on fresh paint and polished metalwork, and everywhere around one was a feeling of prosperity and brisk business. I set out to find and examine several things which only an Exhibition such as this can bring before one. In only one instance was my quest in vain.

Several stands in the Exhibition show delightful facing-brick, but my requirement is not a facing-brick, or even a backing-brick, or any other hyphenated or adjectival brick whatsoever. The brick that England wants, and I want, is a brick which can be bought at a moderate cost and used indifferently for facing or backing, for footings or copings, sills, walls, arches, or vaults.

It must be a hard brick and yet cutable, able to stand wear and weather, and yet be pleasant in colour so that it does not need to be disguised with added plaster and decoration. For this reason it must also be fairly regular and fairly smooth, but not unpleasantly or inartistically so.

My search almost seemed to be at the point of success when one firm of pressed brick makers showed me a well-baked miniature sample, but my hopes were dashed when I was informed that, after all, it must be purchased either as a facing-brick (at a facing price), or as a common brick at a common price according to its colour.

Presumably this course is adopted in order to give the foreigner and the brick substitute manufacturers a sporting chance, and all is for the best. I am still on the look-out for the brick.

SECTION THE SECOND

MACHINERY AND EQUIPMENT

BRICK, TILE, AND CONCRETE MACHINERY

A model of a Hercules press for the manufacture of sand-lime and cement-concrete bricks is an important feature on the stand of HERBERT ALEXANDER AND CO., LTD. (Row L, Stand 212). The firm are pioneers in the manufacture of this class of machinery, and, prior to the war, they had supplied Germany alone with over two hundred Hercules presses. Sand-lime bricks are now produced in large quantities in England by the firm's machinery. They are uniform in shape and size, and are claimed to be practically fireproof, and to withstand frost and atmospheric conditions. Owing to their natural light colour they are frequently used as interior linings, without being plastered. The bricks are of good shape and have a good face, which makes them popular as a facing brick. They can be used the day after they are made. This is due to the fact that they are not burnt, thus no time is lost in waiting for them to come from the kiln. The sand-lime brick is really a reconstituted stone made from sand, mixed with a small percentage of lime, and hardened under high temperature steam. On the stand are a number of sand-lime bricks made from various kinds of sand. Some are in the natural colour, and others have been artificially coloured. In addition the firm show bricks made on other processes.

* * *

Among the exhibits of J. DAWSON FAWCETT (DARLINGTON), LTD. (Row V, Stand 299), are brickmaking and pressing machinery, and concrete mixers. The firm's Duo stiff plastic brick-making and pressing machine is for making high-grade building, facing, fire, and enamel bricks. It is of the type in which the finely-mixed material falls direct into the central feed at the back of the mould cylinder, into which it is forced by a back-rammer. This machine combines all the latest improvements, and the power required to drive it is about 6 to 8 h.p. It has powerful toggles which give two distinct presses, and during each operation the finishing pressure is much greater than the first one. The firm's sand-faced brick press is for pressing sand on to either wire-cut or hand-made bricks. It is fitted with a collapsible mould which imparts equal pressure to the ends, the sides, and the tops of the bricks to secure perfect edges. The firm's portable concrete mixer is driven by a 3 h.p. petrol engine. It is light in structure, but of great strength and easy portability, and is suitable for all classes of concrete work in the construction of roads and the erection of houses.

* * *

THE BRITISH STEEL PILING CO., LTD. (Row V, Stand 305), exhibit concrete mixers and a hoist. The No. 3 Wonder concrete mixer is on road wheels, and has a capacity of 5½ cu. ft., and an output of 3½ cu. ft. of mixed concrete. It is shown complete with a 2 h.p. petrol engine. The No. 4 has an output batch capacity of 5 cu. ft. of mixed concrete and an ingoing batch of 7 cu. ft. It is exhibited with a side loader, road wheels, an automatic water measuring tank, and a petrol engine. The Wonder 6 SA hoist is supplied with 6 h.p. petrol engine, and has a lifting capacity of 1,560 lbs. at 100 ft. per minute. The mixers are used extensively for mixing concrete, lime, putty, granolithic, and artificial stone. It is claimed that the petrol engine is extremely reliable, and that with the ball-bearing feature on the drum very low petrol consumption is effected. The hoist is provided with the same type of engine as is included with the mixers. The engine is free to drive by means of a belt any other unit that may be required when it is not operating the hoist.

* * *

THE AUSTRALIA CONCRETE MACHINERY AND ENGINEERING CO., LTD. (Row B, Stand 7) show, among other exhibits, the DE concrete mixing machine. It is a rotary type mixer, so designed as to knead thoroughly and turn the material over and over simultaneously. This result is obtained by the aggregate being thrown by a zig-zag movement from one cube face to another six times in each revolution of the drum, somewhat in the form of a figure 8. No paddles or blades are required, and consequently there are no parts for the concrete to lodge and settle in, or blades to be renewed at short intervals.

* * *

THE LINER CONCRETE MACHINERY CO. (Row S, Stand 275) exhibit their semi-plastic mixer and their combination slab, block, and brick machine. The latter is stocked in two standard sizes, 18 in. × 9 in. or 9¾ in., and 24 in. × 12 in., in which can be made plain slabs of different thicknesses, slabs, tongued and grooved or grooved only, of different thicknesses; rock-faced building blocks and quoins of any size and thickness; bricks, frogged or plain; and hollow blocks, plain or rock-faced. Other sizes can be supplied when a slab or block of unusual size or design is needed. One machine will make slabs, rock-faced blocks, hollow blocks and bricks on the same cheap wooden pallets.

* * *

Two concrete mixers, a standard 10/7 machine and a 6/4 hoisting model, are on the stand of JOHN FOWLER AND CO. (LEEDS), LTD. (Row C, Stand 38). Both mixers are mounted on special disc road wheels, and equipped with side power loaders, automatic water tanks, and Petter petrol-paraffin engines. The drum of the firm's concrete mixers is of two different metals which results in lightness as well as strength. The centre section, where all the mixing shocks are received, is a semi-steel casting, and the sides are of pressed-steel plate. The drive is arranged both from the engine to the countershaft and countershaft to the drum by a chain which is flexible and absorbs all shocks. The power loader is quickly emptied by means of a patent vibratory device. The 6/4 model has a batch capacity of 4 cu. ft. of mixed concrete, and gives an hourly output of 6 cu. yds. The 10/7 Fowler concrete mixer has a capacity of 7 cu. ft. of mixed concrete per batch and gives an hourly output of 8 to 10 cu. yds.

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Concrete mixers and a hydraulic brick and block press are prominently displayed by STOTHERT AND PITT, LTD. (Row G, Stand 126). The No. 7 Victoria concrete mixer is coupled direct to a 5 b.h.p. Lister hopper-cooled petrol engine, and is fitted with a power-operated side-loader and an 18-gallon automatic water-measuring tank. The machine is mounted on a road wheel truck. It has a mixed batch capacity of 7 cu. ft., and a skip capacity of 10½ cu. ft. The Victoria H.M. concrete mixer has a mixed batch capacity

of 3 cu. ft. and a skip capacity of 4½ cu. ft. It is coupled direct to a 2½ b.h.p. Lister petrol engine, and fitted with a power-operated sideloader, and a 5-gallon automatic water-measuring tank. The machine is mounted on a two-wheel truck, and is

A Stothert and Pitt concrete mixer.

easily wheeled about. The light Smith mixer is of the tilting type. It has a mixed batch capacity of 4½ cu. ft. and a skip capacity of 7 cu. ft. It is coupled direct to a 3½ b.h.p. Lister petrol engine, and is fitted with a power-operated sideloader and a 5-gallon automatic water-measuring tank. It is mounted on a road wheel truck with swivelling fore-carriage. The firm's hydraulic brick and block press has been introduced to meet the demand for a simple, efficient, and rapid method of producing concrete bricks, blocks, or slabs. The plant is capable of making 700 standard plain bricks, or 117 blocks (18 in. by 9 in. by any depth up to 4½ in.) per hour.

* * *

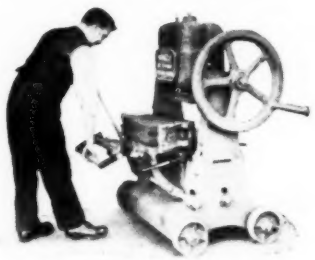
The exhibits of the TRIANGULAR CONSTRUCTION CO., LTD. (Row B, Stand 8), include their block and slab-making machine, tile machine, and their erecting machine, which has been specially constructed for the rapid erection of triangular blocks. The Trianco block and slab machines allow of a wet mix being used, with the result, it is claimed, that perfect hydration

The Trianco block-making machine.

of the cement takes place and that very satisfactory partition slabs are made with twelve parts of clinker to one of cement. When this mixture is in the mould the machine subjects it to a top and bottom pressure up to 10 tons. The finished block or slab is stripped from the mould by an extrusion process. The strength of the Trianco moulded units is demonstrated on the stand by a special hydraulic press. The concrete tile-making machine turns out tiles similar in appearance to hand-made clay tiles, and uniform in strength, form and texture. With this machine it is claimed that a boy can make from 800 to 1,200 tiles a day at a very low cost. In the Triangular system the units are of two kinds: impervious blocks and porous blocks, obtained by varying the nature of the aggregates. The impervious and porous blocks are alternated when laying so that the wall has an impervious exterior face and a porous interior with diagonal bonding between the faces and the courses. It is claimed that the exterior face will resist the worst weather conditions and that the porous interior face eliminates condensation. Test apparatus on the stand shows how the porous interior wall minimises the effect of temperature changes on the inner faces. The system is flexible, and erection can be carried out by means of the Trianco erecting machines. It is claimed that blocks have been laid by this machine at the rate equivalent to 16,000 bricks per day with only two men working it.

* * *

MESSRS. WINGET (1924), LTD. (Row N, Stand 233), display architectural designs and plans of housing schemes which have been largely carried out in concrete by means of their machinery. These are hung on the wall facing the stand on which the machines themselves are shown at work. The houses are mainly of the municipal type, and are typical of those being erected at Becontree, Liverpool, Birmingham, Wakefield, Sheffield, and elsewhere. The stand shows a wide range of concrete and allied machinery. The concrete block and slab-making plant ranges from the simple Westminster machines and hand presses, with 120–150 per hour

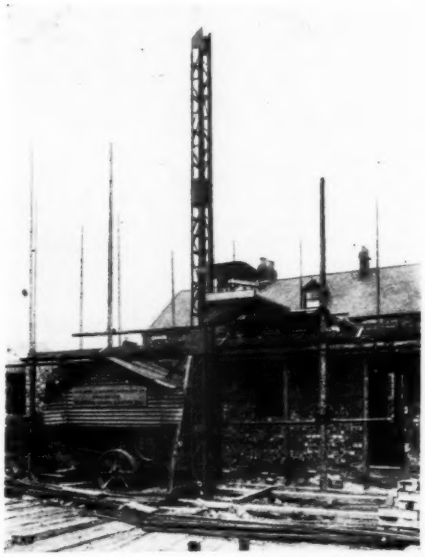


A Winget block-making machine.

records, to the No. 3 automatic slab maker, with an output well above the 200 per hour mark. The Westminster frogged brick machine and the new Winget concrete roofing tile machine are also exhibited, as well as the Winget No. 1 vertical slab-making machine. The 1926 models of concrete mixers, also exhibited, include the latest type of the semi-spiral wet mixer, which is noticeable for the number of improvements now introduced. This, like the other power-driven machines on the stand, is driven by a Lister engine. It is easily rendered portable by rubber-tyred disc wheels. The Warwick 2½ cu. ft. mixer, engine-driven, and the paddle arm mixers, of 3 cu. ft. and 4 cu. ft. batch capacity, are also represented. Besides mixers and block-making machines, the Winget stand includes various types of plant for reducing every suitable material down to the best possible aggregate for modern concrete construction.

* * *

The exhibits of the BUILDERS' AND CONTRACTORS' PLANT, LTD. (Row P, Stand 247), also include machinery for every building and contracting activity. The Exe-Roll concrete mixing and placing plant combines a range of concrete mixers, with a travelling, hoisting, and placing tower. The placing is done by a belt conveyor, working radially from the tower, and rising with the building. The concrete is



The Exe hoist

discharged from the belt at any point by a travelling discharge chute. Plants can be supplied capable of dealing with from 30 yds. a day up to 30 yds. an hour, mixed and placed, and for any usual dimensions as to height and width of building. The double Exe patent hoist is an adaptation of the Exe for a double barrow load, with the added advantage of improved discharge facilities at any floor. The two standard sizes of the Exe patent hoist are shown. The year's improvement consists of the addition of controls for operation from floor level or for any other floor alternatively. The positive action geared friction winch is retained, however, so that the load starts and stops at full speed without jar or jerk. The Roll centrifugal concrete mixer has an instantaneous discharge, and mixes without the aid of paddles. The Neo-Roll concrete mixer is built on the same lines for strength and stability as the Roll, but it is designed more especially for road or building work in a confined space. It is arranged for total or partial discharge, and rated on mixed batch capacity.

DOORS, WINDOWS, ETC.

The exhibit of THE WOCO DOOR CO. (Row D, Stand 57) consists of a house built entirely of Woco doors. These doors were first introduced in 1907, and have been used for numerous municipal and private housing schemes throughout England. They are the product of thirty-five years' experience in door manufacture, during which the natural faults inherent in all woods have been eliminated to such an extent that the company is prepared to guarantee the doors through a maintenance period of three years.

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Metco Columbian pine doors and Celotex insulating lumber are the chief exhibits of THE MERCHANT TRADING COMPANY, LTD. Metco doors are manufactured from old-growth Columbian pine, thoroughly seasoned and kiln-dried. There are many attractive patterns from which to choose, and the company (an all-British firm) import and carry large stocks, both in London and Liverpool. Metco doors are fully guaranteed. They were approved by, and received the official endorsement of, the National Federation of Building Trades Employers, and the Amalgamated Society of Woodworkers and Joiners of Great Britain and Ireland in October, 1923, and the permit was confirmed on March 1, 1926. Celotex is a strong, rigid, woven building material, made from sugar cane. It is supplied in 3 ft. and 4 ft. widths, and 8 ft. to 12 ft. lengths. Celotex is a substitute for lath and plaster, and lends itself to several methods of interior decoration. Alternatively, it forms a binding material for plaster, and it can be used equally well as a base for roughcast. Exhibits of the material treated in various ways are shown on the stand (Row Q, Stand 258). Celotex is in use by many well-known contractors, and by the London County Council in their housing schemes.

* * *

The Unit doorway shown by THE DOOR UNIT COMPANY, LTD., has plain surfaces. It is strongly reinforced with steel tubes, with alternation of wood grains, thus preventing warping and twisting. It is hinged to its frame, which is clamped together with a patented steel fastening, and is supplied complete with architraves, lock, and furniture, ready for fixing as a whole. The Unit can also be supplied in oak or mahogany, examples of which can be seen. There is also a range of external doors of attractive designs. Hardwood doors are also exhibited. Demonstrations are given of the simple manner in which the Unit is installed. (Row E, Stand 85.)

* * *

The DRYTONE PAVILION (Row D, Stand 56) reveals in an interesting manner the developments that have taken place in Drytone woodwork during the last two years. The central portion is designed as an entrance hall, with a domed ceiling in Western hemlock, Drytoned silver-grey relieved with gold, and flanked on either side with fluted Doric columns in black. Drytone standard doors, also shown, are made in British Columbia pine, Western hemlock, red cedar, and other woods in two standard sizes, viz. : 6 ft. 4 in. by 2 ft. 8 in. and 6 ft. 4 in. by 2 ft. 4 in. They range from the one-panel type to the more elaborate examples, with inlaid crossbanding and other enrichments. The Drytone Canadian door is made by a well-known manufacturer in Ontario, for which the company are sole agents. The Drytone hospital door is of the flush type. It has a laminated facing dovetailed to the frame on both sides, and is Drytoned and eggshell polished. The Drytone kitchen cabinet is in British Columbia pine with steel bronzed fittings. It comprises a broom cupboard, stores cupboards, and a large porcelain enamelled steel table top —all totally enclosed, but instantly accessible. Drytone standard panelling in British Columbia pine and other woods, finished in the Drytone colours, are also shown, as well as Drytone furniture. The stand is floored with Expanco, which serves as a floor covering and carpet at the same time. It can be laid straight on concrete.

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In Row H, Stand 146, BRYCE, WHITE AND CO., LTD., show Red Cone Brand Western pine doors. These doors have solid rails and stiles with rotary cut figured panels, and are suitable for staining or polishing. The Castle Brand Swedish redwood doors have been imported solely by the firm for many years, and their excellence is being proved continually by enormously increased annual sales. A very wide range of exterior and interior patterns is available from stock. A comprehensive stock of mouldings is always on hand.

* * *

The stand of RIPPERS, LTD, is designed to show a treatment for a staircase and surround in oak, the style being reminiscent of the Tudor domestic period. Examples of hardwood doors are also on view together with the firm's hospital doors. Another section of the exhibit is devoted to a representative selection of joinery, designed to meet present-day housing requirements. (Row D, Stand 52.)

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The stand of BATH ARTCRAFT, LTD. (Row J, Stand 173) forms in itself part of the exhibit. It is of modern design, and is original and distinctive both in its proportions and in the method of its decoration. In two bays are shown pairs of double-spring folding doors of simple design, and in another bay is a small section of counter, with a shaped front. Within the stand are specimens of fibrous plaster decoration, of Grinling Gibbons' carving, and pieces of furniture.

The exterior of the stand of SAMUEL ELLIOTT AND SONS (READING), LTD. (Row J, Stand 181), is built of English oak with adzed finish. There are two rooms. One is panelled and fitted with English oak, and has solid beams to the ceiling, supported on heavy posts, all adzed. The staircase has twisted balusters and a carved newel post. The entrance door is of the old boarded and ledged type, hung on hammered iron strap hinges. Fireplace and hearth are built of old sandfaced bricks, with an ingle seat on either side, and the floor is of wide elm boarding. The second room shows various types of panelling, mostly used in contracts in progress. On Stand 248, Row P, the firm show their two-compartment revolving door in mahogany, and various sample colours and timbers.

* * *

The exhibit of THE EDUCATIONAL SUPPLY ASSOCIATION, LTD. (Row T, Stand 292), consists of their special Esavian folding and sliding partitions, windows, and screens. One side of the exhibit shows a circular window which can be thrown wide open. This is rendered possible by the ingenious arrangement of the sliding upright, which provides the necessary space occupied by the curved leaves when folded. A sliding window where each leaf is curved is only possible where the necessary space is provided into which each pair of leaves can fold, as is the case with the Esavian pattern. The top and bottom joints are rendered weatherproof, the top being rebated, while a water bar is provided at the bottom. One of the panes in each half is hinged and can be opened so that the outside of the window can be cleaned from the inside. At one end of the stand there is a garage door with the upper part glazed. The door can be folded very easily and quickly to one side, and occupies very little space when so folded. Such an arrangement will be found specially suitable for any garage where there is not much space available for doors, while they will be found exceptionally useful in the case of a high wind, as there is no danger of the car being damaged by the door being blown against it. The doors fold so that the whole of the internal wall space is available for shelves or for hanging various articles. At the opposite end of the stand there is an ordinary glazed and panelled partition, such as is used for dividing schoolrooms and lecture halls, and admirably adapted for church institutes and similar buildings. When panelled throughout it has been largely adopted for hotels, restaurants, and buildings of a similar character. Although the Esavian partitions have floor movements, a removable sill can be provided, so that when a room is required for dancing or similar purposes there is no obstruction left in the floor.

* * *

The standardized joinery shown by BOULTON AND PAUL, LTD. (Row T, Stand 295), is of the type used in housing schemes and villas. It includes doors of mahogany and oak, Oregon pine bay and ordinary windows, and stock mouldings, comprising picture rails, architraves, and skirtings. All the joinery is of good design and workmanship. The joinery workshops of the firm are several acres in extent, and are equipped with the latest and best machinery for obtaining first-class finish. Only skilled joiners are employed in the assembly.

* * *

DAVIES BROS. (Row T, Stand 288), exhibit typical examples of their inexpensive door and window-frames. Large stocks of doors, gates, and mouldings of all kinds are held by the firm, and immediate delivery can be made.

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A special attraction on the stand of SOOLE AND SON, LTD. (Row J, Stand 188), is a short flight of oak stairs. This has circular treads, a wreathed string, capping and handrail, and spiral balusters. Two styles of oak wall panelling are also shown. The hardwood window-frames also shown are made either in English oak or teak. They are fitted with Crittall's casements, and glazed with lead lights. Special designs of English made doors are also exhibited, including a special flush hospital door and draught-proof casement doors.

THE FERNDEN FENCING CO., LTD. (Row C, Stand 37), show their Fernden cleft chestnut pale fencing of British standard specification. There is a large range of patterns in various heights suitable for all purposes.

ART AND OTHER METALWORK

J. WIPPELL AND CO., LTD. (Row D, Stand 59), exhibit architectural and ecclesiastical woodwork, metalwork, stained and leaded glass. An altar is shown complete with riddels and all appointments, and a showcase of ecclesiastical silver work, drawings, and examples of leaded glass for domestic and church windows.

* * *

LIPS, LTD. (Row T, Stand 291), exhibit cylinder locks and latches, lever locks, door furniture, door checks, floor springs and safes. A sectional model is shown of the mechanical working cylinder used in the firm's locks. These cylinders are especially protected against drilling.

* * *

The growing popularity of iron furniture and fittings for cottages and small country houses makes the wide choice of these articles in armour bright and dull black finishes shown by NETTLEFOLD AND SONS, LTD. (Row F, Stand 107), extremely interesting. Special patterns in wrought iron to architects' own drawings, which help to give individuality to a house, are also shown. A striking exhibit is the range of new model Bardsley springs. In addition to the Mark 2 single-action springs, now well known, a new "enclosed" pattern, specially suitable for use in hospitals and wherever it is essential that dust should not be allowed to collect, is being shown for the first time. There is also a new double-action Bardsley for single or double swing doors, operated by a rising arm gear.

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THE PRESTO LOCK CO. (Row F, Stand 116) are demonstrating the Schlage button locks, which dispense with keyholes and inside keys.

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The advantages of the use of steel doors, shutters, and partitioning are well known, and the wide range of products shown by RONEO, LTD., ART METAL EQUIPMENT CO., LTD. (Row F, Stand 104), covers the whole field of present-day requirements. The doors can be made from solid plate or sheet steel packed with insulating material, and are approved by the F.O.C. and L.C.C. authorities. The steel shutter exhibited is typical of this class of work. External steel shutters, electrically operated, are now being fitted to many large and important stores, the remote electrical control especially appealing to the user.

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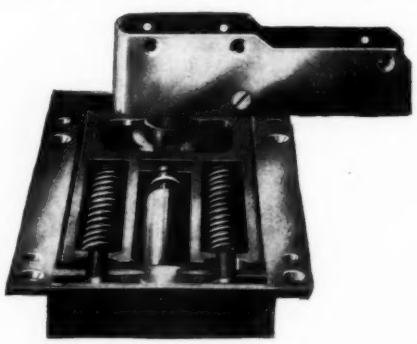
The firm of ROBERT ADAMS (Row D, Stand 53) show working models of Victor door springs and hinges of various types. These include the Crown Victor double-action spring



The "Sceptre Victor" spring block.

hinge, which has an unusually wide opening capacity, and the London Victor single-action pattern, which has an opening capacity of the half circle. There are also various types specially designed for shallow floors. Among these are the Sceptre Victor double-action, and the Gem Victor single-action. All the foregoing are of the silent check type, and in the new models water-tight boxes are supplied, if required. Other exhibits include the pneumatic type Victor spring hinges, both double and single action (floor types), and the overhead patterns, both of the oil-check and pneumatic-check type. Victor spring hinges are all supplied with the firm's patent adjustable shoes and top centres. Other exhibits include Victor fanlight openers and gearing. In this connection it may be interesting to recall that the screwed rod and regulator system of ventilating gear was the invention of the late Mr. Robert Adams. This type of gearing is now universally used for all kinds of opening sashes. Further exhibits include the new type of reversible window fittings, exit bolts, weather bars, casement, bolts, stays, fasteners, and high-class locks and door furniture. There are also sash balances designed to supersede the use of weights, cords, and pulleys. Robert Adams' connection with the Building Exhibition dates, we believe, from the very first of the series that was held in London (at the Agricultural Hall, Islington). Numerous first-class medals and diplomas have been awarded to the firm at the most important exhibitions during the last fifty years.

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Improved chains for sash hanging are exhibited by RHODES CHAINS, LTD. (Row C, Stand 40), together with a large range of pulleys of the round and square grooved ordinary axle-type and cog-wheel pattern. The firm also show

The Rhodes sash chain.

their ball-bearing pulleys with cog and square grooved wheels. A special feature is made of the firm's patent sleeve-bearing pulley. A section of this may be seen. It shows the fixed solid steel sleeve over which the wheel runs. This gives a bearing surface four times greater than the ordinary axle pulley, and is claimed to ensure easy running and long life. There is no bushing to wear away, and it is claimed that the wheel does not become eccentric. Sash chains specially designed to run over existing pulleys should interest all those who are concerned in maintenance costs. These can be used to take the place of existing sash cords as they break. Practical demonstrations are given of windows fitted with pulleys and chains, suitable for sashes of various sizes from shop fronts to housing schemes. A wide range of steel, copper, and brass chains for suspending, driving, lifting, and pull-down purposes may also be seen. All sections of the building trade are catered for in respect to the heavier types of chains.

* * *

SKYLUX, LTD., show their window-opening gear. Single sashes, pairs, and series are operated with ease, and it has to its credit the long span of simultaneously opening sashes on the roof lights of the new Olympia exhibition building. The basic principle of the system lies in the elimination of cords, pulleys, and other gear.

* * *

THE CRITTALL MANUFACTURING CO., LTD., show as representative a range of metal windows as possible in the space available. The Universal casement window is being largely used in modern London buildings, such as Vigo House, Adelaide House, Britannic House, Liberty's, Regent Street, and Victoria House. The Crittall standard metal window is, we are informed, becoming increasingly popular all over the world for domestic work. Considerable improvements have been introduced, as is instanced by the greater rigidity of the opening casement and the means of attachment of the substantial fittings. A novelty is the metal window, complete in wood surround. Examples are also shown of the all-metal bay window and the standard French door. A new range of standard windows for tropical use is also shown. These are already being used in considerable quantities in the Colonies and in various overseas markets. For factory and warehouse use one window is shown out of the series of Crittall standard sash. Though primarily designed for factory use, these are suitable for schools and other institutions. A bronze swing door forms one of the entrances to the stand (Row H, Stand 153), and other examples of architectural bronzework are shown. Probably the most important development is the Zincspra rustproofing process, by which, it is claimed, steel windows are made permanently rustproof.

* * *

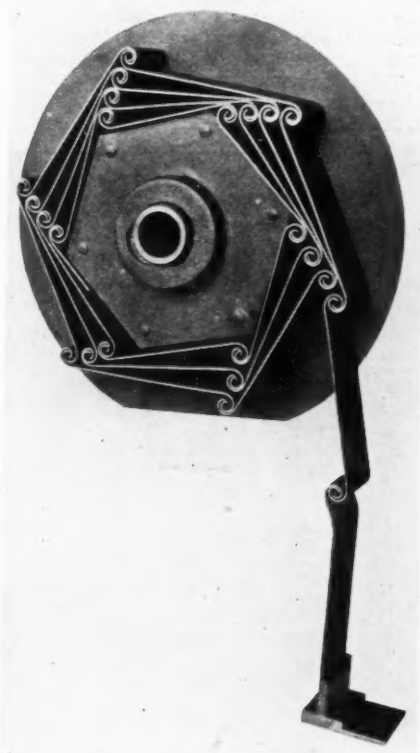
Minimax Bluebottle window ventilators, to keep buildings free from flies, etc., in summer, and to minimize draughts in winter, are shown by MINIMAX, LTD., together with sheet metalwork of all descriptions. (Row P, Stand 249.)

* * *

HYDER AND SONS show hand-wrought ironwork made by blacksmiths in a village in Kent. In addition, the firm exhibit illustrations and drawings of wrought ironwork, dating from the early centuries, which they will reproduce to order. (Row C, Stand 26.)

* * *

On the stand of E. POLLARD AND CO. LTD. (Row H, Stand 150), is a full-size working model of the Rolador ball-bearing shutter. The accompanying illustration shows a part of the mechanism. It will be seen that in place of the spring barrel a fixed supporting shaft is fitted, upon which the shutter revolves by means of roller bearings. The box



"Rolador" ball-bearing shutter.

between the supporting shaft and laths contains the spring. The number of these spring boxes varies according to the length and depth of the shutter. Another feature, not shown in the illustration, is the sliding-end bearings which carry the supporting shaft closer to the grooves as the shutter descends. This arrangement allows each lath to drop vertically. Other exhibits include E.P. signs.

* * *

Shutters, steel and wood, of all types for all purposes, are to be seen on the stand of SAML. HASKINS AND BROS., LTD. (Row G, Stand 143). Other specialities of the firm include Firola fireproof roller doors for party wall openings, Kalamein bronze sheathed hardwood, solid bronze mouldings and castings, shop fronts, showcases and fittings, hardwood joinery, decorations, and electrical equipment. On the stand is a steel shutter, 19 ft. wide and 13 ft. 6 in. drop, operated by an electric motor.

* * *

THE BRILLIANT SIGN CO. (1907) LTD., exhibit a full range of brilliant signs and letters for facias, stall-plates, tablets, hanging signs, together with specimens of their new day and night double-purpose letter. Specimens of their new Durasign are also exhibited, and there is a large range of samples of the latest bronze and metal sash bars, caps, and bases for shop fronts. (Row J, Stand 176.)

* * *

FREDERICK SAGE AND CO., LTD. (Row Q, Stand 256), show a bronze metal shop front, with examples of drawn and cast metal joinery, and steel furniture. For shops there are unit equipment, display fittings, and air-tight showcases.

* * *

THE NEATEX CURTAIN RAIL CO., show their L curtain rail. This can be fixed without the use of screwdriver or hammer, and is capable of being cord-controlled round any shaped window. It is claimed to be the simplest rail to fix, and is sold at a popular price. It retains the neat effect of all Neatex rails, even the cords being carried behind the rail. This range of rails is demonstrated by a staff by means of specially prepared curtain schemes shown on model windows. (Row H, Stand 155.)

A staircase by Ferodo, Ltd.

The "Kooksjoie" range.

STAIR TREADS

FERODO, LTD., exhibit specimens and models of Ferodo patent woven stair treads, showing the different methods of fixing to various types of stairs. It is claimed that these treads are made of specially woven cotton treated by a special process to give them great durability and that they grip the sole of the boot so firmly that slipping without a deliberate effort is impossible. They can be supplied to fit any size of step, and in standard lengths with bound edges. They may be fitted to wood, stone, iron, or marble. An attractive range of colours is provided, and methods are shown of backing with linoleum. Other specialities shown include a patent attachment for worn stone steps, and a serrated edge for tramway running boards. (Row D, Stand 55.)

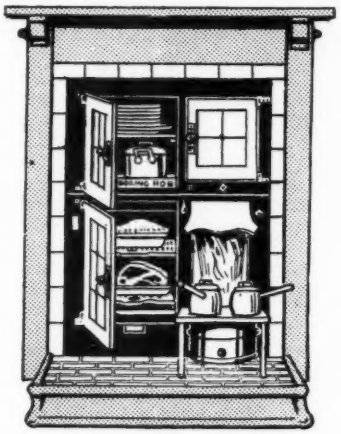
* * *

THE DIAMOND TREAD CO., LTD. (Row J, Stand 178), show Diamond treads as supplied to H.M. War Office and Admiralty. The L section in brass and aluminium framings is particularly suitable for use on restaurant steps. Diamond non-slipping mosaics for floors are also shown.

COOKING AND HEATING APPARATUS

In operation on the stand of THE LONDON WARMING CO., LTD. (Row L, Stand 219), is the Kooksjoie range, one of a series in use in nearly every part of the globe, including India, South America, Madeira, and South Africa. With anthracite as fuel, it is continuous burning, and is available for use at any time. It can be used for cooking and ensures a constant supply of hot water. The range is self-setting, and no brickwork is required. It will burn all fuels, and is claimed to be giving the utmost satisfaction with peat in Ireland, wood in India and the Colonies, and coke and coal in the United Kingdom. The best results are obtained with anthracite. Another exhibit likely to appeal to all interested in housing schemes is the LoCoCo low coal consumption combination grate. This can be used like an ordinary open grate, but when closed it becomes a cooking-stove. Two trivets form the hot plate, and together with the oven, which is over the fire, are capable of dealing with any class of cookery. The Everbrite boiler grate, also shown, burns small anthracite, and is designed to enable radiators to be heated without the use of an independent boiler. Another interesting exhibit is the A.O.C. Florence patent anthracite or coal grate. This has all the advantages of the closed anthracite fire, but differs inasmuch that it meets the demand for an open fire. It can be made the medium for central heating by means of radiators, and it is fitted with a powerful boiler. It can also be supplied without a boiler for use as an ordinary fire.

THE TRIPLEX FOUNDRY, LTD. (Row B, Stand 11), show their grate model C at work, coupled up to a 30-gal. cylinder. This gives a copious supply of hot water, two baths per hour being guaranteed. The roasting oven is large enough to suit a good-sized family, and is built of cast-iron. The boiling hot closet above the oven is heated entirely from exhaust gases from the oven below, and will keep three saucepans boiling at once. The G pattern Triplex is also shown at work, and will cook for from six to twenty in family. It is fitted with a large oven, a boiling hot plate, grilling hearth oven, and hot chamber



A "Triplex" grate.

capable of warming a whole dinner-service. The bath boiler is guaranteed to produce two hot baths per hour. The Workwell open-fire grate has been specially designed for workmen's dwellings, where a bright fire, a good cooking oven, and a large boiling hot plate are necessary features. An opening only 14 in. deep is required, thus economizing considerable space in the kitchen. The flues are self-contained, and the grate can be fixed by unskilled labour. A special new feature is the G Triplex, with an oven on each side of the fire. This is designed to meet heavy requirements in large houses for entertaining. It is a powerful cooker.

* * *

A selection of boilers for central heating and domestic hot-water supply are exhibited by JONES AND ATTWOOD, LTD.

The "Domestikatum" boiler.

(Row C, Stand 39). The exhibits include the Domestikatum boiler for the supply of hot water. This has an open fire and special cooking facilities. The boiler and a gas cooker make a combination suitable for all duties. The models include several new and improved features. The Bon-Fire is a boiler for central heating, or hot water supply, where an open fire boiler is not required. The Batheater combines boiler and storage cylinder in one unit. It saves flow and return pipes between boiler and cylinder, and offers special facilities for cleaning. The Cultivatum greenhouse boiler, also shown, is made in sizes to suit the amateur or the small-grower. All-night, small independent boilers are particularly suitable for garages where it is important to keep the fire away from the building. The firm also exhibit pipes and connections, radiators, and builders' castings.

* * *

The Ure back-to-back grate is shown in operation by STOOKE AND SPARKS, LTD. (Row B, Stand 13). The grate has been supplied to the London County Council, to the Manchester, Edinburgh, Glasgow, and other corporations, as well as for many private building schemes.

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BRATT COLBRAN AND CO. AND THE HEAPED FIRE COMPANY, LTD., show a representative selection of high-grade wood mantels and wrought-metal interiors. In the latter, they make a special display of rustless steel. The heaped fire is embodied in most of the fireplace suites. The firms' specialities are of high-grade workmanship, and of quiet, dignified design.

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Ladies will be especially impressed with the exhibit of SMITH AND WELLSTOOD, LTD., because of the abolition of blackleading of cooking ranges. Many new devices are also introduced into the fire chambers of ranges to do away with the daily fire lighting, and with soot in the flues. Columbian cookers are displayed with enamelled fronts to ensure cleanliness, padded doors to prevent overheating the kitchen, and polished hobs to reduce wasteful heat radiation, but, nevertheless, to increase the heating efficiency immediately a pot is placed upon them. A new pattern is the Countess, which has a new form of elevated hot closet and brackets below the hot closet to take additional utensils, the contents of which it may be desired to keep warm. Esse water heaters are now made in various sizes. With these heaters ashes cannot be littered on the kitchen floor, the fire is always visible, and cannot be choked with an accumulation of ash in the front, the ashes can be shaken down without opening the fire door, and the fire will keep alight for lengthy periods, even although kitchen refuse is thrown upon it. One of the important points with all Esse boilers is that there is a waterway over as well as around the fire. The New Leader range, which is particularly suitable for tenement property, has been improved by a boiler for heating bath water. The Wellstood range is again occupying a prominent position.

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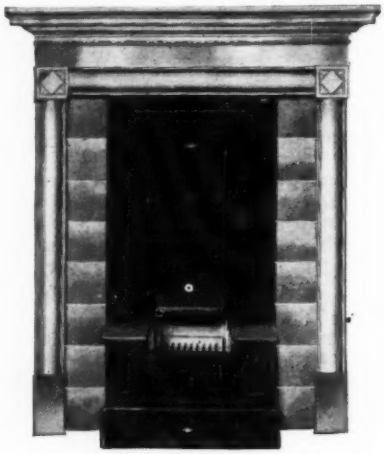
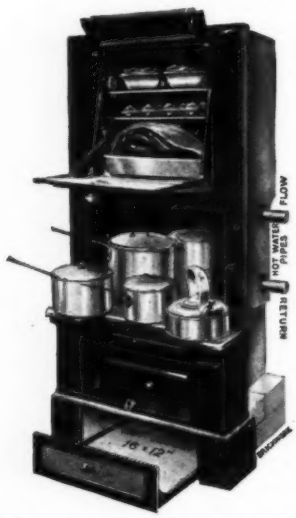
The exhibits of SAMUEL SMITH AND SONS, LTD. (Row L, Stand 217), include Foresight combination ranges. Among the advantages claimed for the range are: "cooks the food perfectly, ensures a plentiful supply of hot water at all times, enables several boiling utensils to be in use at the same time, reduces the fuel bill by 50 per cent., easily and quickly converted from an efficient cooking range into an open fire, warms the room as it cooks, coal consumption regulated by automatic movable canopy, draught easily regulated by sliding ventilator in the fret, working parts cannot burn away or get out of order as they are away from the fire, flues are easily cleaned, maximum heat in room radiated from special all-firebrick back, substantially made to stand long and hard wear, and parts easily replaced, should breakage occur, as they are all standardized."

THE INTEROVEN STOVE CO., LTD., show the original Interoven stove. This is 20 in. wide. It cooks for nine persons, and supplies hot water for baths and domestic purposes. When cooking is finished it can be converted into a



The "Super Interoven" as an open fire.

sitting-room fire. It can be fitted with a hot closet under the stove for plate-warming or light cooking. This also raises the stove to a more convenient height for cooking, and saves stooping. The fire is in a central position. The Super Interoven (24 in. wide) is an entirely new model. It has been



The "Super Interoven" with open oven, and hot plate lowered.

designed to meet the demand for a stove with a larger oven than that in the 20 in. original Interoven, but less costly than the 35 in. Super Interoven, and suitable for narrow openings. This new model embodies every known improvement, ensuring it is claimed easy flue cleaning, high efficiency, low fuel consumption, and simple action. The bread-baking oven will take a large joint, and the boiler heats a 40-gallon tank or cylinder, giving plenty of hot water for baths and domestic purposes. It is also supplied with hot closet, as described for the 20 in. Interoven. The Super Interoven (35 in. wide) has an oven of the same size and capacity as the 24 in. wide model. In addition it has side hot closets for light baking and plate warming, and an extra wide hot plate, the space of which is equal to a large range. The boiler works a 45-gallon tank or cylinder to supply hot water for baths. When converted into a sitting-room grate this model exactly represents a tiled register hob grate. Interoven and Super Interoven stoves can be obtained complete with mantel and tiles, or they may be fitted easily to existing mantels and hot-water pipes. (Row L, Stand 222).

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In Row V, Stands 306–310, THE GAS LIGHT AND COKE CO. have a display of gas and coke appliances for cooking, heating, and hot water supply, and of gas lighting fittings and switches.

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The Davis Alpine high efficiency gas range on the stand of the DAVIS GAS FIRE COMPANY AND THE NAUTILUS FIRE COMPANY, LTD., is represented in a pattern which has Davis efficiency boiling-burners on the hot-plate, and the Davis air controller to the oven. Davis efficiency burners give short, sharp flames, which spread widely and evenly under the bottom of the cooking-vessels. The flames do not creep up the sides of the utensil, and the bars do not cross the flames. The oven, double-cased and packed, is of an improved construction, and is fitted with the Davis air controller, which prevents too much air passing through the oven when the gas consumption is such as is needed for normal cooking purposes. All the burners and fittings, both of the oven and the hot-plate can be easily taken out for cleaning, and as easily replaced. The Davis Front-Line gas cooker, which has Davis efficiency boiling-burners, a double-cased and packed oven, and a door equipped with a white enamelled panel, is also shown. Among the gas fires displayed in mantel settings are examples of the Davis Armoured series, which are distinguished in that the fronts are fashioned of hand-wrought metal—hammered copper, antique brass, or old pewter finish. The Armoured gas grates are each equipped with the radiation patent injector ventilator, which ventilates the room while the fire warms it. A Davis gas-mantle register is shown in conjunction with a Nautilus economy gas flue. The latter consists of hollow cast-concrete blocks built into the thickness of the walls for carrying away the products of combustion of gas fires, the flue being terminated above the roof in a small cast-concrete stack. The use of the Nautilus flues does away with projecting chimney-breasts, foundation concrete, brick footings, trimming joists, and trimmers, concrete hearths, skew-back arches, and large brick chimneystacks.

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A range of automatic water heaters delivering from 3 gallons —by increases of ½ gallon—to 5½ gallons per minute, is shown by CLARKHILLS, LTD. These can be fitted in the kitchen, scullery or other convenient position, and will supply hot water for an entire house or flat without using a hot-water tank, return or expansion pipe. (Row L, Stand 211.)

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In Row K, Stand 190, THE "HURRY" WATER HEATER CO., show their geysers, with bright copper finish or white porcelain exteriors. The No. 10 Hurry cylinder is also shown. It gives a continuous supply of hot water to all taps without, it is claimed, pressure danger.

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An innovation on the stand of FENLON AND SON is the Two-point geyser, which provides a solution to the supply of hot water for a flat or for a small house where the requirements are not great.

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The exhibit of the firm of THOMAS POTTERTON contains a selection of the standardized types of Victor gas boilers, and gives a working example of a system supplying hot water for general domestic use. A small installation for warming purposes, with circulating water radiators heated by

gas, controlled automatically, is in operation as an instance of supplementary heating equipment for residence or offices, or as an example of treatment for small conservatories. Thermostats, for the automatic regulation of gas consumption, both water-type and atmospheric-type, can be seen in action. Another exhibit is the Victor combination boiler, using coke or other smokeless fuel or gas. (Row C, Stand 41.)

PLUMBING AND SANITARY FITTINGS

EVANS AND RONALD, LTD., show a clip-on draining board which fits any sink, anywhere on the sink, and can be instantly fitted or removed. Other exhibits include the Eddoll gate latch, a mortice night latch, and the Evron bolt. (Row C, Stand 25.)

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THE ELSAN MANUFACTURING CO., LTD., exhibit their main drainage chemical indoor closet. This is for use in homes, parks, sports grounds, and pavilions in districts unconnected with public sewers. The system is self-contained and works by chemical action. The Admiralty has installed the system at Singapore, and it has been, or is being, installed at Fishguard, Heathfield, Monkstown, Chippenham, Goring, New Malden, and Bedford. It is also being used by county councils in various districts, and in Canada and Australia. (Row B, Stand 15.)

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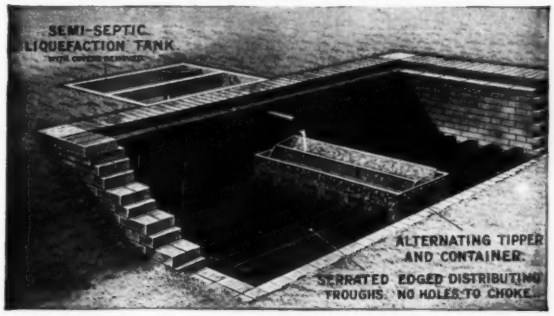
In Row H, Stand 154, DOULTON AND CO., LTD., have an attractive exhibit of modern sanitary equipment. This includes rolled edge porcelain enamelled cast-iron baths of varied sizes. The Delphian bath, made specially for building into the wall, is stocked in nine patterns, and ensures a sound joint into the wall by means of the special rim which also obviates any risk of moisture behind bath. Sinks are shown in a range of sizes in both Belfast and London types, as well as the improved Belfast sink with soap shelf all in one piece of ware. Water closets are shown in earthenware and fireclay to suit all conditions, and for use with overhead cisterns or the low-down compact types. Other schemes are shown for operating w.c.'s from a flushing valve instead of the customary water waste preventers. Many designs of lavatory

The Delphian bath.

basins are to be seen suited for bathroom or bedroom. Particularly interesting is the new Glenholm basin having a wide, flat shelf between the taps. Terra-cotta and glazed ware fireplaces are also exhibited.

* * *

TUKE AND BELL, LTD. (Row D, Stand 60), show various fittings in connection with their system of sewage purification and water filtration. One-half of the stand is occupied by a full-size model showing a semi-septic sewage purification plant capable of dealing with the drainage from a country house with six or eight persons in residence. This installation comprises the semi-septic liquefaction tank, which is supplied in ferro-concrete sections ready for fixing, self-contained baffle, galvanized wrought-iron inlet and outlet slides removable for cleaning and a ferro-concrete cover in two pieces. The aerobic bacterial filter bed is built in brickwork on a concrete base, sloped and rendered and fitted with effluent channel. The bed is filled with suitably graded filtering media, and the special distributing apparatus is fitted. This consists of a galvanized wrought-iron double-acting automatic



tipper with brass-bushed bearings and rubber buffers, fixed in, and includes galvanized wrought-iron container, with cast-iron chute outlets and cast-iron serrated edged distributing channels. This provides for distribution of each unit of discharge to some 900 points over the surface of the filter. The final humus settling chamber is also built in brickwork and fitted with ferro-concrete baffle and weir slabs and cast-iron cover grating. It provides for the settling out of the effete mineralized organic matter so as to prevent any discoloration of the ditch or stream, or pond into which the purified effluent passes.

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Y.C.W. light-gauge housing tubes, shown on the stand of the YORKSHIRE COPPER WORKS, LTD. (Row R, Stand 268), are produced in a special finish which makes them particularly suitable for use with all types of compression joints. They can be bent, drifted, flanged without annealing, thus ensuring a quick job with minimum labour costs. All the tubes are made from new metal and tested to 1,000 lbs. per square inch water pressure before dispatch. Y.C.W. special light-gauge housing tubes, we are informed, are specified by architects for housing schemes, hospitals, and other public institutions throughout the world. Copper tubes are shown in standard sections for water service pipes, and demonstrations are given showing the ease and facility with which the tubes can be bent and drifted.

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A special demonstration of the utility of the Califont is given by EWART AND SON, LTD. Although the Califont has been sold for over thirty years, it is not generally realized that it will provide an unlimited supply of hot water at any point in the house. A 46-B pattern Califont, with a heating capacity of 10 galls. of water per minute, is fixed in the centre of the stand (Row K, Stand 189), and delivers hot water to four points. The hot water falls from a height of 10 ft. for a continuous period of ten hours daily into baths placed at each corner of the stand. A modification of the Califont is shown in the Supreme, which heats 2½ galls. per minute. The Supreme is shown heating three or four points, one being in the form of a spray. Lightning and Victor geysers, the Emperor smoke cure, and the Ewart all-copper ventilator are also shown.

LIFTS AND SAFES

A typical MARRYAT-SCOTT lift capable of raising loads up to 2 tons at a speed of 200 ft. per minute is shown in Row E, Stand 101. This lift has a special decelerator equipment, as designed and supplied to H.M. Post Office for the Post Office London tube railway. Other exhibits include a Marryat-Scott

automatic electric goods and service lift, with the latest push-button operation and safety features; and a range of Marryat-Scott standard components comprising controllers, gate locks, and safety limit switches.

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WAYGOOD-OTIS, LTD., have erected an electric passenger lift to convey passengers from the ground floor to the gallery. The lift is fitted in a steel structure. It is one of the firm's patent micro drive self-levelling types, and is arranged to give a level stopping at the floor in either direction, whatever may be the load in the car at any particular journey. The lift is arranged so that it can be operated by car switch or by push-buttons with automatic control. On the firm's stand (Row F, Stand 114) are a model of an automatic electric passenger lift and examples of hand-power dinner lifts. In one case the dinner lift is arranged to work with an endless rope from all floors, and in the other to wind up by handle from below. An accessories board is also provided, comprising locks and other fittings.

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Strong-room doors and safes in a number of qualities for various degrees of risk are shown by JOHN TANN, LTD., as well as a massive bullion-room door of the latest design and construction. This Anchor Reliance crane-hinged water-tight anti-blowpipe door is complete with steel vestibule and ventilating grille, and is of a construction certified to be proof against all methods of attack. Other types of drill-proof anti-blowpipe bankers' doors are also shown. In contrast to this door is the twelve-corner bent steel fire-resisting ledger safe, also exhibited. This was recently introduced by the firm to meet the demand for a reliable safe at a moderate price. Another exhibit of interest is a section of brickwork containing two Anchor Reliance wall safes. These are designed to provide protection in dwelling-houses for small quantities of jewellery and cash. When built in and covered with wall-paper the presence of the safe is unnoticed. (Row C, Stand 42.)

BUILDERS' PLANT

Patent telescopic ladders, in two, three, and four sections, and from 9 ft. to 90 ft. high, are shown by DREW, CLARK AND CO. Here are also patent decorators' ladders, platform steps, scaffold trestles, tower ladders, and Higgs' and Drew's Rap-Rig sectional scaffold for use in connection with interior decoration work. (Row K, Stand 195.)

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STEPHENS AND CARTER, LTD. (Row P, Stand 245), have an exhibition of extension ladders, handcarts, and other plant for the building trade. A full-sized travelling cradle is shown working on a continuous track.

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Demonstrations are given daily on the stand of SCAFFOLDING (GREAT BRITAIN), LTD. (Row D, Stand 51), of the advantages attaching to the use of tubular scaffolding. This scaffolding comprises sprocketed steel tubes, universal couplers, and reinforced putlogs (which eliminate putlog holes), suspended scaffolds, and Scaffixer scaffold ties. Photographs of contracts executed are on view. Demonstrations are also given of Conforms adjustable stanchion plates. These centre a column or pilaster to any dimension in a few seconds. The firm also supply stamped steel shuttering for all concrete work. Typical lay-outs are on view.

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A particularly useful little machine, the Acme Victor crusher, is among the exhibits of GOODWIN, BARSBY AND CO., LTD. (Row H, Stand 162). This is a modification of the regular patent Acme machines. It is worked with a single toggle, and it has the wedge adjustment. As its name implies, it is for dealing with old concrete, blue bricks, or even occasional pieces of soft stone. It has a deep front to give the proper crushing angle. The bearings of the shaft are renewable and adjustable right through. The jaw faces and side plates are renewable, as also is the toggle seating in the jaw stock.

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H. AND E. LINTOTT (Row C, Stand 32) exhibit one of their Vulcan pugmills complete with elevator and crushing roller. The mill can be used without either or both of these attachments. The main feature of the elevator is that it delivers the pug direct on to the table. This eliminates boy labour, and at the same time further pugs the clay. The pugmill is suitable for all classes of clay for bricks and tiles, and the capacity is sufficient for 800–1,000 bricks per hour, according to the nature of the clay.

MATERIALS

[A first notice appeared last week]

WALLING AND ROOFING MATERIALS

Manu-marble is shown in Row F, Stand 122, by THE MANU-MARBLE CO. It is a British reconstructed marble, and has been extensively adopted for important buildings over a period of twenty years. The material is homogeneous, the colours going right through the material, and the texture is the same from front to back. For floors the material is made with an egg-shell gloss. It has a good foot-grip, and its wearing qualities are guaranteed.

* * *

Glazed wall tiling for interior and exterior of every description of building is exhibited by CARTER AND CO., LTD. (Row F, Stand 102). They also show examples of their ceramic constructional materials in ceramic marble (glazed terra-cotta) and faience, which have been extensively used for theatre, cinema, shop, public buildings, and hotel facades. Samples of the firm's all-tile fireplaces complete the exhibit.

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The brick pavilion of the SUSSEX BRICK AND ESTATES CO., LTD., has been again specially designed to demonstrate the firm's Southwater engineering and facing bricks, and hand-made reds and stock bricks. Kirkaldy's post-war tests on the engineering grade showed a crushing strain of over 500 tons per sq. ft. combined with porosity of under 1 per cent. (0.83 per cent.). The Southwater facings and paving bricks are produced in red, mottled, and brindled colours, and are claimed to possess great wearing durability and true alinement. The firm are also makers of S.B.E.C. hand-made flared reds and kiln stocks, the latter in dark, medium, and light shades, Sussex clamp stocks and roofing tiles pressed and wire-cut. Common bricks are also produced by the firm.

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A. COHEN AND CO., LTD., show at Row S, Stand 282, the A.C.O. two-in-one cavity face brick. Its size is 9 in. × 9 in. × 2⅝ in., double that of an ordinary brick, and it weighs about 7½ lb. or about half as much again as a single brick. Thus it is claimed that the brick facilitates speed in erection and ensures a considerable saving in weight. Its cavities are claimed to make it a non-conductor and therefore proof against fire or weather conditions and to ensure a perfectly dry wall. A wall built of A.C.O. bricks can be seen at the stand.

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On the stand of THE WILLESDEN PAPER AND CANVAS WORKS, LTD. (Row F, Stand 119), the principal uses of Willesden paper as underlining and underslating are demonstrated. A large scale model of a house and garden shows Willesden underslating on the roof and Willesden interlining under the floors, etc. Round the house in the garden are Willesden tents.

FIELD AND FIELD, LTD., are direct importers of Courtrai and Du Nord tiles, and the stand consists of a hip roof, designed to show their artistic and protective properties. Two slopes are covered with Courtrai tiles from Tuilerie " La Lys " Lauwe, les Courtrai, Belgium, and with tiles from Tuilerie Mecanique, du Pont de Baches, Nord France. There is also an exhibit of steel windows, manufactured in Birmingham.

* * *

JOHN BOARD AND CO., LTD., show a small mansard roof covered with patent weather block plain tiles, with the bonnet hips reproduced in weathered colour. The patent plain tiles are claimed to possess many advantages. The firm also exhibit a large range of tiles in single bond in various colours.

* * *

H. J. AND C. MAJOR, LTD. (Row J, Stand 177) show interlocking Roman tiles, angular, Grecian, Welbeck, and plain tiles, ordinary Roman, treble, and pantiles, ridges and finials, and bricks of every description. Major's tiles are extensively used on many public buildings throughout the British Isles and in the Colonies and numerous housing schemes throughout the country.

* * *

The stand of LANGLEY, LONDON, LTD. (Row H, Stand 148), is designed by Messrs. Welch and Hollis, architects. Messrs. Langley are the sole importers and distributors of Marseilles roofing tiles, Beauvais roofing tiles, Gilardoni Freres' roofing tiles, and interlocking improved pantiles.

* * *

The exhibit of D. ANDERSON AND SON, LTD. (Row F, Stand 112) consists of a framed building covered with Rok roofing, the new Rok mineral surface roofing, and Rok Flextile shingles. The woodwork of the building is treated externally with green Sidol wood preservative. The walls of the veranda and office show panelling stained with various shades of Sidol. All classes of Red Hand roofings—Rok, Stoniflex, Hippo, and the patent fire-resisting roofing Pyropruf—are shown. The exhibits also include lining felts and dampcourses. Other exhibits include models of a Belfast roof, Sanador felt lining under slates, and Stablex applied on brickwork and covered over with pebble dash.

* * *

The display of WILLIAM BRIGGS AND SONS, LTD. (Row C, Stand 33) comprises bituminous specialities, amongst which are dampcourses for foundation walls. These include Aqualite, Plastique, and Challenge brands. The roofings include the following brands : Challenge, Bituflex, and Utex. Specimens and models are shown to demonstrate the Challenge composite roofing system, which consists of laying either two or three layers of their Challenge roofing to either flat or slightly pitched roofs of wood or concrete.

* * *

The possibilities of decorative work in cement, concrete, plaster, and roughcast, by the use of Freeman's Cementone products are indicated on the stand of JOSEPH FREEMAN, SONS AND CO., LTD. (Row S, Stand 278). Examples are shown in panels of roughcast, tinted in various shades by the incorporation of No. 1 Cementone colours with the roughcasting materials. Coloured concrete floors, wall dados, bridges, steps, garden paths, rockeries, tiles, etc., are illustrated in permanent colours. Variegated designs in imitation of the world's finest marbles and granites, mosaics and composition flooring are also shown, as well as Cementone No. 3 flat and No. 4 gloss surface waterproofing liquids, colourless. Among other exhibits are Cementone No. 5 concrete floor binder for curing floors showing a tendency to " dust," and Cementone No. 6 flat and No. 7 glaze finishes, in fourteen standard shades. Cementone No. 8 liquid concrete hardener mixed with the gauging water is claimed to hasten the " setting " and to increase the hardness and durability of concrete. Cementone Nos. 9 and 10 " stone effects " transform metal, wood, brick, compo-board, asbestos-cement, etc., into a realistic resemblance to stone, No. 10 also possessing waterproofing properties.

WATERPROOFING MATERIALS

THE WATEREX CO., LTD., show on their Row K, Stand 194 Waterex waterproofing, a liquid which is applied in two different ways. Above ground it is applied with a spray to the exterior surface of the wall. It is absorbed by the wall and, when dry, is colourless. Surfaces so treated are claimed to render proof against the heaviest driving rains. Below ground, in basements, tunnels, tanks, ponds, reservoirs, etc., Waterex waterproofing is mixed with cement and sand, and applied in the form of a rendering. This rendering, it is claimed, will withstand the heaviest water pressure. The chief exhibits are waterproofed brick and concrete walls, with water running down the surface, to demonstrate the effect of treatment with Waterex waterproofing. Water and oil-proofed tanks made of breeze slabs and insulating cork slabs coated with a waterproof rendering, demonstrate the use of Waterex for cold storage rooms. Demonstration of the resisting powers of Waterex rendering against high pressure is shown by a special machine. Here 6 in. of a 7 to 1 mix of concrete with a ½ in. Waterex rendering on the outside is subjected to a pressure of 160 lb. to the sq. in., the face of the rendering remaining perfectly dry.

* * *

THE HARVIE CORPORATION, LTD., exhibit on an island site, (Row G, Stand 128), their specialized products, which are manufactured under the title of Harvi-proof products. These include Colorfortis, a liquidized compound for colouring, waterproofing, hardening, and dustproofing, concrete, cement work, brickwork, coke breeze, roughcast, stucco, asbestos, plaster, stone; Ironfortis, a covering for iron and steel work (new or old); Wallfortis, a transparent liquid claimed to be of a highly water repellent nature; Harvifloor, a new coloured composition flooring; Fortisplaster, a high-grade finishing waterproof plaster, for interior and exterior work, irrespective of nature of surface; Cemenfortis, a cement and concrete hardener and waterproofer; Stonefortis, a protector for new or old stonework of any description; Roadfortis, a colloidal compound for hardening, binding, and waterproofing concrete and macadam roads, or for re-surfacing; and the Harvi-proof tennis court composition, in either red or green colour.

FLOORING

A sample spring floor for dancing, and for racquet, badminton, squash, and other similar courts is shown by FRANCIS MORTON, JUNIOR, AND CO. (Row J, Stand 186). The floor is carried upon the firm's patent Valtor system of steel springs and girders, with locking-gear for rendering the floor rigid or resilient as required. The specimen floor is 20 ft. by 10 ft. The tongued and grooved oak flooring is secretly nailed to timber battens, these battens being spiked to timber joists cut into short lengths, and resting upon light steel Valtor girders. These Valtor girders are also cut into short lengths, and are supported over the body of the floor upon Valtor spring fitments consisting of steel spiral springs in iron casings. The automatic locking gear for rendering the floor rigid or resilient as required, consists of lines of steel bars having iron wedges bolted to them and connected at one end of the floor by a toothed quadrant mechanism. By turning the quadrant in one direction the wedges are drawn in underneath the Valtor girders, thus supporting the floor solidly off the wedges. By reversing the motion the

wedges are released and the floor once more rests on the springs. This system of locking gear was originally introduced by the firm to the Savoy Hotel, London, and has since been adopted for large numbers of floors both for private and public institutions at home and abroad.

* * *

Granwood floor blocks are shown by the GRANWOOD FLOORING CO., LTD. Granwood is a patent composition produced by subjecting fibrous material and certain other ingredients to intense pressure. No magnesite is used in its manufacture. It is made in blocks of one standard size, 6×2×⅝ in., which size permits of ready handling, and arranged in any kind of pattern desired. The blocks are made in light or dark oak, mahogany and black, so that, for instance, while using either of these for the main area of a floor, the other colours mentioned are available for use as designs or borders. The standard colour resembles natural oak, and as the tint varies to a small extent in the making, a pleasing and artistic effect is produced in the finished floor. The blocks are laid like an ordinary tile floor. They are laid in 1 to 3 cement and sand on an ordinary level concrete bed; the concrete should be screeded with a wood screed (not floated), no portion of the concrete being less than ⅞ in. or more than 1⅛ in. below the finished floor line; the joints filled with grout (powder for which is supplied with all Granwood floor blocks) and any excess of grout rubbed off with sawdust before it has time to dry. The flooring is then cleaned up with Granwood floor polish.

* * *

THE MARBLE MOSAIC CO., LTD. (Row F, Stand 106), show Roman mosaic floors, terrazzo floors, dados and steps, Linolith jointless flooring, and Imperator pre-cast constructional and decorative work, and flooring tiles.

PAINTING, DECORATING AND WOOD-PRESERVING MATERIALS

C. A. PETERS, LTD., show at Row D, Stand 64, their Peteroid coloured waterproof cements. These are of great value for decorative purposes to builders who like to buy standard qualities of cements rather than buy colours and mix them by hand. The firm grind the colours in the cement in their mills, so that they are absolutely durable and permanent. The firm are also exhibiting Carbolineum wood preservative, which has been manufactured by the firm in Derby, and has been sold by them in this country for over forty years.

* * *

A room, English in style, decorated with Duresco, is one of the outstanding features on the stand of the SILICATE PAINT CO., LTD. (Row E, Stand 97). The ceiling, cornice, and mouldings are treated with white Duresco No. 46; the frieze is maize gold on which is stencilled a honeysuckle ornament. The panelled walls are in a lighter shade, corn yellow, the dado and woodwork is finished with white Silpaco, and the plain deal door is stained with the company's mahogany stain and varnished with pine copal oak varnish. The exterior generally is treated with blush-rose Duresco, the fascias and dado are in deep marigold Duresco, and the pilasters, etc., are in broken white Silpaco. Another special feature of the stand is the panels decorated in Duresco by the prizewinners in the Silicate Paint Company's Duresco competition. An interesting exhibit is a slab of Duresco measuring 36 in. by 24 in. by 1 in. thick, approximately 1,500 coats of the material showing that Duresco applied on a secure ground will not flake or disintegrate however many times treatment may be repeated.

* * *

MANDER BROTHERS, LTD., show a large pavilion decorated with some of the firm's products. In the interior the coved ceiling is decorated with aqualine water paint, the walls with aqualine water paint, and the doors with mahogany matsine. On the exterior the fascia is decorated in Vernasca flat oil-paint, the panels and frieze with Vernasca flat oil-paint, and the doors and woodwork with ebony black finish. (Row G, Stand 138.)

* * *

GLICO PETROLEUM, LTD. (Row O, Stand 235) follow their usual practice of exhibiting work done with Decco turps, in direct comparison with work done with American turps. Pairs of panels which have been exposed for considerably longer than two years are exhibited; some of these were exposed on the exterior of a building, the others in the interior. It is claimed that the results shown on the stand can be obtained by any competent decorator, and that no special treatment or preparation of the surface is required.

* * *

THE DRY ROT AND FIRE PREVENTION CO., LTD., exhibit their wood preservative Toritna. The chief advantages briefly summarised and claimed for this new method are: "The solution has a specific toxic action on dry rot moulds and prevents their growth. It is odourless and permanent. It is supplied at a low cost. It is easily applied to any wood surface. It readily takes polish and varnish, and makes an ideal floor stain, being easily wax-polished, or treated with any of the floor polishes which are on the market. It is made up in a large variety of colours, and can be used for the decorative treatment of wooden erections, such as bungalows, summer-houses, etc., and also for the internal decoration of new houses." The preparation can be supplied combined with the firm's patent fire-resisting composition.

* * *

L.A.P. paste powder for paperhangers and decorators is exhibited by the LIVERPOOL ADHESIVE PASTE CO., LTD. Two brands of the powder are supplied, one for use with boiling water and the other for cold water mixing. The powder can be used for all grades of paper, in fact, for all pasting purposes; and it is claimed that it will not spot, stain, or discolour the most delicate shades.

* * *

The chief exhibit of KIRKWOOD, CRAIG AND CO., LTD., is Tapwata dry paste for paperhangers. This adhesive mixes in cold water, and is claimed to be harmless to use with all colours, and to enable wallpaper to slide easily into position. Samples are handed to anybody who chooses to ask. Kirkor liquid glue for home repairs is also a prominent feature, and Glood fluid glue is also on show. Yunite cold water glue powder and "101," the household scourer for cleaning paintwork, metal, etc., are also shown.

* * *

ALLEN-LIVERSIDGE, LTD., show (Row T, Stand 289) the rapid removal of old paint from iron, wood or stone surfaces by means of the A-L air-acetylene blow-pipe, using dissolved acetylene in cylinders combined with atmospheric air. They also show lead-burning by means of the A-L oxy-acetylene system, using dissolved acetylene in cylinders combined with oxygen under pressure, and brazing, soldering, cable-jointing, etc., by means of the A-L air-acetylene blow-pipes, using dissolved acetylene in cylinders combined with atmoshperic air.

PORTLAND CEMENT

All visitors to the exhibition are invited to call at the stand of THE CEMENT MARKETING CO., LTD. (Row F, Stand 111), to discuss matters relating to the following products sold by the company: Blue Circle Portland cement; Ferrocrete, rapid-hardening Portland cement; Lightning brand British aluminous cement, and Hydralime lime for plastering. Ornamenting the stand are concrete columns, ornaments and lamp-posts. A section of the Vantage porous court is also on view.

LAW REPORTS

DILAPIDATIONS COVENANT: ALLEGED BREACH

Richmond v. *Savill. King's Bench Division. Before Mr. Justice Finlay*

This action gave rise to an interesting point of law on the construction of a covenant covering dilapidations in a lease of premises, The Grove, Hollington, St. Leonards-on-Sea.

The plaintiff was the landlord, and he sued the executor of the late Lady Mary Katherine Humphery, for breach of covenant and for rent, £38 odd, alleged to be due. The defence was that there had been a release from the obligations of the covenant, and a denial that any rent was due.

Mr. Neilson, K.C., for the plaintiff, stated that the late Lady Mary was granted a lease of the premises in 1911, and that was surrendered in 1923, when a new lease was granted for a part of the premises. Plaintiff said the tenant covenanted to keep the inside, outside, stables, etc., in good and tenantable repair and condition, and at the expiration of the term pay the lessor £300 in satisfaction of all claims for dilapidations. The new lease was for twenty-one years from September, 1922. Lady Humphery died in November, 1924, and defendant, as her executor, continued in possession till March 25, 1925. Then Mr. William Owen Richmond, brother of plaintiff, and acting on plaintiff's behalf, wrote to defendant offering to release him if possession were given up not later than March 25, 1925. That offer, plaintiff said, was not accepted, and defendant continued in possession for another two months. As to the allegation that there had been a release from the dilapidations obligations, that the plaintiff denied.

Mr. Hawke, K.C., for the defendant, said his contention was that the offer of the plaintiff was accepted and possession given. That this was so was apparent from the fact that the plaintiff gave Mr. Bray, a Hastings estate agent, instructions to sell in January, 1925, and in the following month a notice board was put up to that effect.

His lordship gave judgment for the defendant on the claim, with costs. In the course of his judgment his lordship said he was of opinion that the defendant gave up possession in February, 1925, by virtue of an agreement with the plaintiff's brother (acting on plaintiff's behalf), who offered a release if the 1923 lease was surrendered. The main question, his lordship stated, was: "Did the surrender of the 1923 lease relieve the defendant of liability under all or any of the covenants?" It was not questioned that the effect of the surrender was to bring to an end all the provisions of the lease. The principle was that the surrender of a lease involved this, that there should be a giving back to the lessor the entirety of the property comprised in the lease and a corresponding release of the tenant from the covenants contained in the lease. A surrender implied giving up in its entirety all the lease which was put an end to by the surrender. He did not doubt, however, that when a surrender was agreed upon there might be a collateral agreement to pay some sum of money in respect of breaches of covenant, but there was no such agreement in this case. It followed that in his view it was impossible for the plaintiff to enforce any of the covenants, and neither could he sustain the claim to the rent.

QUESTION AS TO LIABILITY OF ROAD MAKING

Lowther v. *Clifford. Court of Appeal. Before the Master of the Rolls, and Lords Justices Scrutton and Sargant*

This was an appeal by the defendant from a judgment of Mr. Justice McCardie sitting in the King's Bench Division.

The action in the Court below was to recover the sum of £188 15s. 3d. by the representatives of the landlord, the trustees of the will of the late Right Hon. Sir Gerard Augustus Lowther, Bart., against the representatives of the tenant, the executors of the late Mr. Charles Clifford, market gardener, who occupied land at Barnes, as money paid by the landlord to the Barnes Urban Council for the making up of a new road. The point at issue was whether the tenant was liable to pay that sum to the landlord, because it was a term of the tenancy that he should pay according to the lease of 1885 "all taxes, rates, tithes, assessments, impositions and outgoings." It appeared that towards the 'seventies the land, including that in question, began to be developed for building purposes and certain charges were then made by the local authority with regard to the roads. The amount in dispute was the amount charged against the defendant.

For the defence it was contended that this was a case which the tenant was holding over under such terms as were applicable to a yearly tenancy and that there was no case in which a tenant so holding over was liable to pay the expenses in question. It was further urged that no yearly tenant of what was an agricultural holding and paying such a rent should be assumed to be contemplating such a liability as was here involved. It was also contended that the land was an agricultural holding and that the claim was not maintainable by reason of the provision of section 16 of the Agricultural Holdings Act, 1923, and that the matter was one for arbitration.

For the plaintiff it was maintained that the defendant under his covenant undertook to pay the charge in question.

Mr. Justice McCardie, in his judgment, said the question was whether the sum paid by the landlord to the Council for the making up of the road fell within the clause in the lease, which provided that the tenant should pay all assessments, impositions, and outgoings. In his lordship's view the words of the lease were adequate and the liability of the tenant was not to be alienated by the mere circumstance that he possessed a short term of occupation. As to the point that the Court had no jurisdiction and that the matter should go to arbitration by reason of section 16 of the Agricultural Holdings Act, his lordship held that the land in question did not come within the scope of the Act. It was a country orchard, and the object of the land was not market gardening in the ordinary sense at all. In these circumstances he held that the dispute did not come within the scope of the Act and gave judgment for the plaintiffs for the amount claimed.

From this judgment the defendants appealed. Mr. Eustace Hill, K.C., argued the case for the appellants, and Mr. Holman Gregory, K.C., for the respondents.

The Court dismissed the appeal with costs.

The Master of the Rolls said that counsel for the defendant did not seriously contend that if the covenant was binding upon defendant he was within its wide words. The words were aptly drawn to include the unknown and the uncertain, as well as such payments as experience had led the tenant to expect. The appellant's second point was that the land held by him was a market garden, that section 16 of the Agricultural Holdings Act, 1923, applied, and that the effect of the section was to refer the respondents to arbitration and to exclude the respondents from enforcing their rights by an action at law. In his lordship's judgment, the land came within the definition of a market garden in section 57 of the Agricultural Holdings Act. In construing this section the Court had to bear in mind section 54, which reserved to the landlord certain rights in regard to his tenant. Thus section 16 must be limited in some way, and according to the authorities it was for the appellant to show that the landlord's right of action had been taken away in this matter. He had not done this and his appeal failed on all points.

Lords Justices Scrutton and Sargant agreed.

ROYAL NORTHERN HOSPITAL NURSES' HOME

The general contractor for the erection of this building (illustrated on page 601 *et seq.*), was Mr. F. G. Minter, who was also responsible for the plumbing and hospital doors. The sub-contractors were: Kleine Co., reinforced concrete and fireproof construction; S. & E. Collier, Ltd., Reading, bricks; Thomas Lawrence and Sons, Bracknell, quoins; W. B. Simpson and Sons, Ltd., tiles and wall tiles; The Luxfer Co., patent glazing; Art Pavements and Decorations, Ltd., patent flooring; Fretwell Heating Co., central heating; Bratt Colbran & Co., stoves and mantels; Berkeley Electrical Co., electric wiring; A. E. Davis, door furniture and windows; Crittall Manufacturing Co., casements; Relay Automatic Telephone Co., Ltd., telephones; Modellers and Plastic Decorations, Ltd., decorative plaster; Fredk. Jukes, metalwork; J. P. White and Sons, Ltd., joinery; Doulton & Co., sanitary fittings. Mr. Eric Gill, lettered the memorial archway, and Mr. Joseph Armitage, was responsible for the carving of vases.

RATES OF WAGES

			I	II
			s. d.	s. d.
A	ABERDARE	S. Wales & M.	1 8	1 3½
A₁	Abergavenny	Do.	1 7½	1 2½
B	Abingdon ..	S. Counties	1 6	1 1½
A	Accrington	N.W.Counties	1 8	1 3½
A₃	Addlestone	S. Counties	1 6½	1 2
A	Adlington ..	N.W.Counties	1 8	1 3½
A	Airdrie ..	Scotland	*1 8	1 3½
C₁	Aldeburgh	E. Counties	1 4	1 0½
A	Altrincham	N.W.Counties	1 8	1 3½
B₃	Appleby ..	N.W. Counties	1 4½	1 0½
A	Ashton-under-Lyne	N.W.Counties	1 8	1 3½
A₃	Atherstone	Mid. Counties	1 6½	1 2
B₃	Aylesbury ..	S. Counties	1 4½	1 0½
B	BATH ..	S.W.Counties	1 6	1 1½
B₃	Banbury ..	S. Counties	1 4½	1 0½
B₃	Bangor ..	N.W. Counties	1 5	1 1
A	BarnardCastle	N.E. Coast	1 8	1 3½
A	Barnsley ..	Yorkshire	1 8	1 3½
B₁	Barnstaple	S.W. Counties	1 5½	1 1½
A	Barrow ..	N.W.Counties	1 8	1 3½
A	Barry ..	S. Wales & M.	1 8	1 3½
B₃	Basingstoke	S.W. Counties	1 4½	1 0½
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
A₃	Bewdley ..	Mid.Counties	1 6½	1 2
B₃	Bicester ..	Mid. Counties	1 4½	1 0½
A	Birkenhead	N.W.Counties	†1 9	1 3½
A	Birmingham	Mid. Counties	1 8	1 3½
A	Bishop Auckland	N.E. Coast	1 8	1 3½
A	Blackburn	N.W.Counties	1 8	1 3½
A	Blackpool	N.W.Counties	1 8	1 3½
A	Blyth ..	N.E. Coast	1 8	1 3½
B₃	Bognor ..	S. Counties	1 4½	1 0½
A	Bolton ..	N.W.Counties	1 8	1 3½
A₃	Boston ..	Mid. Counties	1 6½	1 2
B₁	Bournemouth	S. Counties	1 6	1 1½
A	Bradford ..	Yorkshire	1 8	1 3½
A₃	Brentwood	E. Counties	1 6½	1 2
A	Bridgend ..	S. Wales & M.	1 8	1 3½
B₂	Bridgwater	S.W. Counties	1 5	1 1
A₁	Bridlington	Yorkshire	1 7½	1 2½
A	Brighouse ..	Yorkshire	1 8	1 3½
B₁	Brighton ..	S. Counties	1 6	1 1½
A	Bristol ..	S.W. Counties	1 8	1 3½
B₃	Brixham ..	S.W. Counties	1 4½	1 0½
A₃	Bromsgrove	Mid. Counties	1 6½	1 2
C	Bromyard ..	Mid. Counties	1 4	1 0½
A	Burnley ..	N.W.Counties	1 8	1 3½
A	Burslem ..	Mid. Counties	1 8	1 3½
A₂	Burton on-Trent	Mid. Counties	1 7	1 2½
A	Bury ..	N.W.Counties	1 8	1 3½
A₃	Buxton ..	N.W.Counties	1 6½	1 2
B	CAMBRIDGE	E. Counties	1 6	1 1½
B₃	Canterbury	S. Counties	1 4½	1 0½
A	Cardiff ..	S. Wales & M.	1 8	1 3½
A	Carlisle ..	N.W.Counties	1 8	1 3½
B	Carmarthen	S. Wales & M.	1 6	1 1½
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
B	Cheltenham	S.W. Counties	1 6	1 1½
A	Chester ..	N.W.Counties	1 8	1 3½
A	Chesterfield	Mid Counties	‡1 8	1 3½
B₃	Chichester ..	S. Counties	1 4½	1 0½
A	Chorley ..	N.W.Counties	1 8	1 3½
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
A₃	Crewe ..	N.W.Counties	1 6½	1 2
A₃	Cumberland	.....	1 6½	1 2
A	DARLINGTON	N.E. Coast	1 8	1 3½
A	Darwen ..	N.W.Counties	1 8	1 3½
B₃	Deal ..	S. Counties	1 4½	1 0½
B₁	Denbigh ..	N.W.Counties	1 5½	1 1½
A	Derby ..	Mid. Counties	1 8	1 3½
A	Dewsbury ..	Yorkshire	1 8	1 3½
B	Didcot ..	S. Counties	1 6	1 1½
A	Doncaster ..	Yorkshire	1 8	1 3½
C₁	Dorchester	S.W.Counties	1 4	1 0½
A₃	Driffield ..	Yorks	1 6½	1 2
A₃	Droitwich ..	Mid. Counties	1 6½	1 2
A₂	Dudley ..	Mid. Counties	1 7	1 2½
A	Dundee ..	Scotland	1 8	1 3½
A	Durham ..	N.E. Coast	1 8	1 3½
B₁	EASTBOURNE	S. Counties	1 6	1 1½
A	Ebbw Vale	S. Wales & M.	1 8	1 3½
A	Edinburgh	Scotland	1 8	1 3½
A	E. Glamorganshire & Monmouthshire	S. Wales & M.	1 8	1 3½
B	Exeter ..	S.W. Counties	§1 7	1 2½
B₃	Exmouth ..	S.W. Counties	1 5	1 1
B	FELIXSTOWE	E. Counties	1 6	1 1½
A₃	Filey ..	Yorks	1 6½	1 2
A	Fleetwood ..	N.W.Counties	1 8	1 3½
B₃	Folkestone	S. Counties	1 4½	1 0½
A	Frodsham ..	N.W.Counties	1 8	1 3½
B₃	Frome ..	S.W.Counties	1 4½	1 0½
A	GATESHEAD	N.E. Coast	1 8	1 3½
B₁	Gillingham	S. Counties	1 5½	1 1½
B	Gloucester ..	S.W.Counties	1 6	1 1½
A₂	Goole ..	Yorkshire	1 7	1 2½
B₁	Gosport ..	S. Counties	1 5½	1 1½
A₃	Grantham ..	Mid. Counties	1 6½	1 2
A₃	Gravesend ..	S. Counties	1 7	1 2½
A	Greenock ..	Scotland	*1 8	1 3½
A	Grimsby ..	Yorkshire	1 8	1 3½
B₁	Guildford ..	S. Counties	1 5½	1 1½
A	HALIFAX ..	Yorkshire	1 8	1 3½
A₁	Hanley ..	Mid. Counties	1 7½	1 2½
A	Harrogate ..	Yorkshire	1 8	1 3½
A	Hartlepools	N.E. Coast	1 8	1 3½
B₂	Harwich ..	E. Counties	1 5	1 1
B₃	Hastings ..	S. Counties	1 4½	1 0½
B₁	Hatfield ..	S. Counties	1 5½	1 1½
B	Hereford ..	S.W.Counties	1 6	1 1½
B	Hertford ..	E. Counties	1 5½	1 1½
A₁	Heysham ..	N.W.Counties	1 7½	1 2½
A	Howden ..	N.E. Coast	1 8	1 3½
A	Huddersfield	Yorkshire	1 8	1 3½
A	Hull ..	Yorkshire	1 8	1 3½

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

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

* Plasterers, 1s. 9d.
† Carpenters and Painters, 1s. 8½d.
‡ Plumbers, 1s. 9d.
§ Painters, 1s. 6d.
‖ Carpenters and Plasterers, 1s. 8½d.
¶ Painters, 1s. 7d.

PRICES CURRENT

EXCAVATOR AND CONCRETOR

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

Broken brick or stone, 2 in., per yd.	£0	10	0
Thames ballast, per yd.	0	13	0
Pit gravel, per yd.	0	18	0
Pit sand, per yd.	0	14	6
Washed sand	0	16	6
Screened ballast or gravel, add 10 per cent. per yd.			
Clinker, breeze, etc., prices according to locality.			
Portland cement, per ton	£2	19	0
Lias lime, per ton	2	5	0
Sacks charged extra at 1s. 9d. each and credited when returned at 1s. 6d.			

Transport hire per day:

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

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

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

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

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

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

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

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

DRAINER

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

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

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

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

BRICKLAYER

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

London stocks, per M.	£4	7	0
Flettons, per M.	3	0	0
Staffordshire blue, per M.	9	12	0
Firebricks, 2½ in., per M.	11	3	0
Glazed salt, white, and ivory stretchers, per M.	22	0	0
DO. *headers, per M.*	21	10	0
Colours, extra, per M.	£5	10	0
Seconds, less, per M.	1	0	0
Cement and sand, see "Excavator" above.			
Lime, grey stone, per ton	£2	12	0
Mixed lime mortar, per yd.	1	6	0
Damp course, in rolls of 4½ in., per roll	0	2	6
DO. *9 in. per roll*	0	4	9
DO. *14 in. per roll*	0	7	6
DO. *18 in. per roll*	0	9	6

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

DO. in stocks, add 25 per cent. per rod.
DO. in blues, add 100 per cent. per rod.
DO. circular on plan, add 12½ per cent. per rod.

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

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

MASON

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

Portland Stone:			
Whitbed, per ft. cube	£0	4	4
Basebed, per ft. cube	0	4	7
Bath stone, per ft. cube	0	2	9½
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

SLATER AND TILER

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

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

Slates, 1st quality, per M:			
Portmadoc Ladies	£14	0	0
Countess	27	0	0
Duchess	32	0	0
Clips, lead, per lb.	0	0	4
Clips, copper, per lb.	0	2	0
Nails, compo, per cwt.	1	6	0
Nails, copper, per lb.	0	1	10
Cement and sand, see EXCAVATOR, *etc., above.*			
Hand-made tiles, per M.	£5	18	0
Machine-made tiles, per M.	5	8	0
Westmorland slates, large, per ton	9	0	0
DO. *Peggies, per ton*	7	5	0

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

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

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

See "Sundries for Asbestos Tiling."

CARPENTER AND JOINER

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

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

7×3, per std.	£23	0	0
11×4, per std.	33	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.	33	0	0
Wainscot oak, per ft. sup. of 1 in.	0	2	0
Mahogany, per ft. sup. of 1 in.	0	2	0
DO. *Cuba, per ft. sup. of 1 in.*	0	3	0
Teak, per ft. sup. of 1 in.	0	3	0
DO., *ft. cube*	0	15	0
FIR fixed in wall plates, lintels, sleepers, etc., per ft. cube	0	5	9
DO. framed in floors, roofs, etc., per ft. cube	0	6	3
DO., framed in trusses, etc., including ironwork, per ft. cube	0	7	3
PITCH PINE, add 33⅓ per cent.			
FIXING only boarding in floors, roofs, etc., per sq.	0	13	6
SARKING FELT laid, 1-ply, per yd.	0	1	6
DO., 3-ply, per yd.	0	1	9
CENTERING for concrete, etc., including horsing and striking, per sq.	3	10	0
SLATE BATTENING, per sq.	0	18	6

PRICES CURRENT; *continued.*

CARPENTER AND JOINER; *continued.*

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

PLUMBER

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

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

PLASTERER

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

Chalk lime, per ton	£2	12	6
Hair, per cwt.	0	18	0
Sand and cement see EXCAVATOR, *etc., above.*			
Lime putty, per cwt.	£0	2	8
Hair mortar, per yd.	1	7	0
Fine stuff, per yd.	1	14	0
Sawn laths, per bdl.	0	2	4
Keene's cement, per ton	5	15	0
Sirapite, per ton	3	10	0
DO. *fine, per ton*	3	18	0
Plaster, per ton	3	0	0
DO. *per ton*	3	12	6
DO. *fine, per ton*	5	12	0
Thistle plaster, per ton	£3	9	0
Lath nails per lb.	0	0	4
LATHING with sawn laths, per yd.	0	1	7
METAL LATHING, per yd.	0	2	3
FLOATING in Cement and Sand, 1 to 3, for tiling or woodblock, ¾ in., per yd.	0	2	4
DO. vertical, per yd.	0	2	7
RENDER, on brickwork, 1 to 3, per yd.	0	2	7
RENDER in Portland and set in fine stuff, per yd.	0	3	3
RENDER, float, and set, trowelled, per yd.	0	2	9
RENDER and set in Sirapite, per yd.	0	2	5
DO. in Thistle plaster, per yd.	0	2	5
EXTRA, if on but not including lathing, any of foregoing, per yd.	0	0	5
EXTRA, if on ceilings, per yd.	0	0	5
ANGLES, rounded Keene's on Portland, per ft. lin.	0	0	6
PLAIN CORNICES, in plaster, per inch girth, including dubbing out, etc., per ft. lin.	0	0	5
WHITE glazed tiling set in Portland and jointed in Parian, per yd., from	1	11	6
FIBROUS PLASTER SLABS, per yd.	0	1	10

GLAZIER

GLAZIER, 1*s.* 8½*d. per hour.*

Glass : 4ths in crates :			
Clear, 21 oz.	£0	0	5
DO. 26 oz.	0	0	6
Cathedral white, per ft.	0	0	5½
Polished plate, British ¼ in., up to 2 ft. sup.	0	2	5
DO. *3ft. sup.*	0	3	2
DO. *7 ft. sup.*	0	3	9
DO. *25 ft. sup.*	0	4	3
DO. *100 ft. sup.*	0	5	1
Rough plate, ⅛ in.	0	0	5½
DO. *¼ in., per ft.*	0	0	6
Linseed oil putty, per cwt.	0	16	0
GLAZING in putty, clear sheet, 21 oz.	0	0	10
DO. 26 oz.	0	0	11
GLAZING in beads, 21 oz., per ft.	0	1	0
DO. 26 oz., per ft.	0	1	3
Small sizes slightly less (under 3 ft. sup.).			
Patent glazing in rough plate, normal span. 1*s.* 5*d.* to 2*s.* per ft.			
LEAD LIGHTS, plain, med. sqs. 21 oz., usual domestic sizes, fixed, and up, per ft. sup.	£0	3	6
Glazing only, polished plate, 6½*d.* to 8*d.* per ft., according to size.			

DECORATOR

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

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

SMITH

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

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

SUNDRIES

Fibre or wood pulp boardings, according to quality and quantity.			
The measured work price is on the same basis per ft. sup.	£0	0	2½
FIBRE BOARDINGS, fixed on, but not including studs or grounds, per ft. sup.	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, ⅛ 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, ⅛ in. punched per M. grey	17	0	0
DO., *red*	19	0	0
ASBESTOS COMPOSITION FLOORING : Laid in two coats, average ¼ 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			
3 m/m alder, per ft. sup.	0	0	2
4½ m/m amer. white, per ft. sup.	0	0	3½
¾ m/m figured ash, per ft. sup.	0	0	5
4½ m/m 3rd quality, composite birch, per ft. sup.	0	0	1½